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FCC RADIO TEST REPORT

Applicant's company	**Realtek Semiconductor Corp.**
Applicant Address	No. 2,Innovation Road II, Hsinchu Science Park, Hsinchu 300,Taiwan
FCC ID	**TX2-RTL8821AE**
Manufacturer's company	**Realtek Semiconductor Corp.**
Manufacturer Address	No. 2,Innovation Road II, Hsinchu Science Park, Hsinchu 300,Taiwan

Product Name	802.11a/b/g/n/ac RTL8821AE Combo module
Brand Name	REALTEK
Model No.	RTL8821AE
Test Rule Part(s)	47 CFR FCC Part 15 Subpart E § 15.407
Test Freq. Range	5150 ~ 5350MHz / 5470 ~ 5725MHz
Received Date	Apr. 26, 2013
Final Test Date	May 28, 2013
Submission Type	Original Equipment
Operating Mode	Client (with radar detection function)

Statement

Test result included is for the IEEE 802.11n and IEEE 802.11a/ac (5150 ~ 5350MHz / 5470 ~ 5725MHz) 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, KDB 789033 D01 v01r03** and **KDB 662911 D01 v01r02**.

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

Testing Laboratory
1190

Table of Contents

History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR342603AB	Rev. 01	Initial issue of report	Jun. 28, 2013

Certificate No.: CB10206135

1. CERTIFICATE OF COMPLIANCE

Product Name	:	802.11a/b/g/n/ac RTL8821AE Combo module
Brand Name	:	REALTEK
Model No.	:	RTL8821AE
Applicant	:	Realtek Semiconductor Corp.
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. 26, 2013 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

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	10.97 dB
4.2	15.407(a)	26dB Spectrum Bandwidth & 99% Occupied Bandwidth	Complies	-
4.3	15.407(a)	Maximum Conducted Output Power	Complies	0.61 dB
4.4	15.407(a)	Power Spectral Density	Complies	1.10 dB
4.5	15.407(a)	Peak Excursion	Complies	3.12 dB
4.6	15.407(b)	Radiated Emissions	Complies	4.78 dB
4.7	15.407(b)	Band Edge Emissions	Complies	0.50 dB
4.8	15.407(g)	Frequency Stability	Complies	-
4.9	15.203	Antenna Requirements	Complies	-

3. GENERAL INFORMATION

3.1. Product Details

IEEE 802.11n/ac

Items	Description
Product Type	WLAN (1TX, 1RX)
Radio Type	Intentional Transceiver
Power Type	From Host System
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	5150 ~ 5350MHz / 5470 ~ 5725MHz
Channel Number	16 for 20MHz bandwidth ; 7 for 40MHz bandwidth ; 3 for 80MHz bandwidth
Channel Band Width (99%)	802.11ac MCS0/Nss1 (20MHz): 18.24 MHz ; 802.11ac MCS0/Nss1 (40MHz): 36.80 MHz ; 802.11ac MCS0/Nss1 (80MHz): 76.16 MHz
Maximum Conducted Output Power	Band 1: 802.11ac MCS0/Nss1 (20MHz): 16.39 dBm ; 802.11ac MCS0/Nss1 (40MHz): 16.31 dBm ; 802.11ac MCS0/Nss1 (80MHz): 11.41 dBm Band 2: 802.11ac MCS0/Nss1 (20MHz): 16.41 dBm ; 802.11ac MCS0/Nss1 (40MHz): 16.18 dBm ; 802.11ac MCS0/Nss1 (80MHz): 10.01 dBm Band 3: 802.11ac MCS0/Nss1 (20MHz): 16.31 dBm ; 802.11ac MCS0/Nss1 (40MHz): 16.09 dBm ; 802.11ac MCS0/Nss1 (80MHz): 10.42 dBm
Carrier Frequencies	Please refer to section 3.4
Antenna	Please refer to section 3.3

IEEE 802.11a

Items	Description
WLAN (1TX, 1RX)	WLAN (1TX, 1RX)
Intentional Transceiver	Intentional Transceiver
From Host System	From Host System
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	5150 ~ 5350MHz / 5470 ~ 5725MHz
Channel Number	16
Channel Band Width (99%)	17.12 MHz
Maximum Conducted Output Power	Band 1: 16.32 dBm ; Band 2: 16.42 dBm ; Band 3: 16.48 dBm
Carrier Frequencies	Please refer to section 3.4
Antenna	Please refer to section 3.3

Antenna & Band width

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

IEEE 11n/ac Spec.

Protocol	Number of Transmit Chains (NTX)	Data Rate / MCS
802.11n (HT20)	1	MCS 0-7
802.11n (HT40)	1	MCS 0-7
802.11ac (VHT20)	1	MCS 0-8/Nss1
802.11ac (VHT40)	1	MCS 0-9/Nss1
802.11ac (VHT80)	1	MCS 0-9/Nss1
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 support VHT20, VHT40 and VHT80. Note 3: Modulation modes consist of below configuration: 11a: IEEE 802.11a, HT20/HT40: IEEE 802.11n, VHT20/VHT40/VHT80: IEEE 802.11ac		

3.2. Accessories

N/A

3.3. Table for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	
					2.4GHz	5GHz
1	LYNwave	ALA110-222050-300011	PIFA Antenna	I-PEX MHF4	3.5	5.0
2	LYNwave	ALA110-222050-300010	PIFA Antenna	I-PEX	3.5	5.0
3	JOYMAX	TWF-614XMPXX-500	Dipole Antenna	I-PEX	3.0	5.0
4	Realtek	PANT-001	SLOT Antenna	I-PEX	3.33	4.52
5	Realtek	PANT-002	SLOT Antenna	I-PEX MHF4	3.33	4.52

There are six configurations of EUT. The more information is listed as below table.

Configuration	Type	Power Type	Antenna Variety	Type of Antenna
1	HMC	PCI-E	Diversity	PIFA with I-PEX connector
				Dipole with I-PEX connector
				SLOT with I-PEX connector
2	HMC	PCI-E	Fixed	PIFA with I-PEX connector
				Dipole with I-PEX connector
				SLOT with I-PEX connector
3	NGFF	PCI-E	Diversity	PIFA with I-PEX MHF4 connector
				SLOT with I-PEX MHF4 connector
4	NGFF	SDIO	Diversity	PIFA with I-PEX MHF4 connector
				SLOT with I-PEX MHF4 connector
5	NGFF	PCI-E	Fixed	PIFA with I-PEX MHF4 connector
				SLOT with I-PEX MHF4 connector
6	NGFF	SDIO	Fixed	PIFA with I-PEX MHF4 connector
				SLOT with I-PEX MHF4 connector

Note: The more detail information of diversity type and fixed type is listed as below.

For diversity type: (Both of those two antenna connectors can be used.)

<For 2.4GHz Band:>

The EUT supports the antenna with TX/RX diversity function for 2.4GHz WLAN and Bluetooth, but only one of them will be used at the same time.

Base on WLAN's operation mode to select the other antenna to work.

(Ex. Assume Main port was selected to conduct transmitting function in 2.4GHz WLAN, so AUX port was selected in Bluetooth Mode. Vice versa.)

<For 5GHz Band:>

The EUT supports the antenna with TX/RX diversity function for 5GHz WLAN and Bluetooth, and both them can transmit and receive signal simultaneously.

For WLAN function (1TX, 1RX):

Both of Chain 1 and Chain 2 can be used as transmitting/receiving functions, but only one antenna can be used as transmitting/receiving functions at the same time.

Chain 1 generated the worst case than Chain 2, so it is tested and recorded in the report.

For Bluetooth function (1TX, 1RX):

Both of Chain 1 and Chain 2 can be used as transmitting/receiving functions, but only one antenna can be used as transmitting/receiving functions at the same time.

Chain 1 generated the worst case than Chain 2, so it is tested and recorded in the report.

For fixed type: (Chain 1 is designated for 2.4 GHz WLAN function, Chain 2 is designated for 5GHz WLAN and Bluetooth functions.)

For 2.4GHz WLAN function (1TX, 1RX):

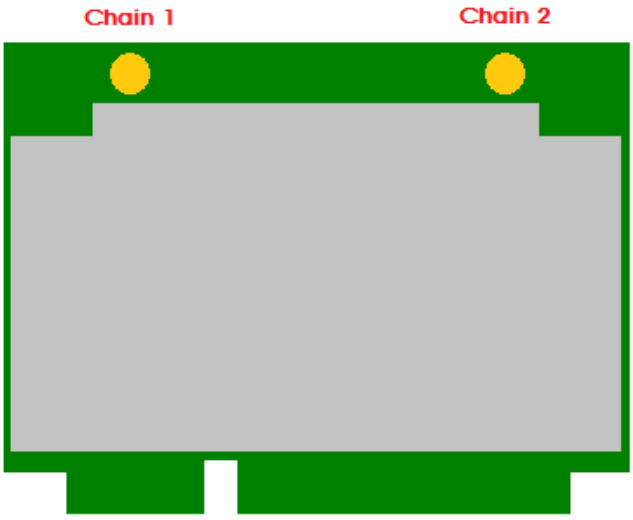
Only Chain 1 can be used as transmitting/receiving functions.

For 5GHz WLAN function (1TX, 1RX):

Only Chain 2 can be used as transmitting/receiving functions.

For Bluetooth function (1TX, 1RX):

Only Chain 2 can be used as transmitting/receiving functions.



3.4. Table for Carrier Frequencies

The EUT has two bandwidth system.

For 20MHz bandwidth systems, use Channel 36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 132, 136, 140.

For 40MHz bandwidth systems, use Channel 38, 46, 54, 62, 102, 110, 134.

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
5150~5250 MHz Band 1	36	5180 MHz	44	5220 MHz
	38	5190 MHz	46	5230 MHz
	40	5200 MHz	48	5240 MHz
5250~5350 MHz Band 2	52	5260 MHz	60	5300 MHz
	54	5270 MHz	62	5310 MHz
	56	5280 MHz	64	5320 MHz
5470~5725 MHz Band 3	100	5500 MHz	116	5580 MHz
	102	5510MHz	132	5660 MHz
	104	5520 MHz	134	5670 MHz
	108	5540 MHz	136	5680 MHz
	110	5550 MHz	140	5700 MHz
	112	5560 MHz	-	-

3.5. Table for Product Information

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

3.6. 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	11ac 20MHz	Band 1~2	MCS0/Nss1	36/40/48/52/60/64	1
		Band 3	MCS0/Nss1	100/116/140	1
	11ac 40MHz	Band 1~2	MCS0/Nss1	38/46/54/62	1
		Band 3	MCS0/Nss1	102/110/134	1
	11ac 80MHz	Band 1~2	MCS0/Nss1	42/58	1
		Band 3	MCS0/Nss1	106	1
	11a/BPSK	Band 1~2	6Mbps	36/40/48/52/60/64	1
		Band 3	6Mbps	100/116/140	1
Power Spectral Density	11ac 20MHz	Band 1~2	MCS0/Nss1	36/40/48/52/60/64	1
		Band 3	MCS0/Nss1	100/116/140	1
	11ac 40MHz	Band 1~2	MCS0/Nss1	38/46/54/62	1
		Band 3	MCS0/Nss1	102/110/134	1
	11ac 80MHz	Band 1~2	MCS0/Nss1	42/58	1
		Band 3	MCS0/Nss1	106	1
	11a/BPSK	Band 1~2	6Mbps	36/40/48/52/60/64	1
		Band 3	6Mbps	100/116/140	1
26dB Spectrum Bandwidth 99% Occupied Bandwidth Measurement	11ac 20MHz	Band 1~2	MCS0/Nss1	36/40/48/52/60/64	1
		Band 3	MCS0/Nss1	100/116/140	1
	11ac 40MHz	Band 1~2	MCS0/Nss1	38/46/54/62	1
		Band 3	MCS0/Nss1	102/110/134	1
	11ac 80MHz	Band 1~2	MCS0/Nss1	42/58	1
		Band 3	MCS0/Nss1	106	1
	11a/BPSK	Band 1~2	6Mbps	36/40/48/52/60/64	1
		Band 3	6Mbps	100/116/140	1
Peak Excursion	11ac 20MHz	Band 1~2	MCS0/Nss1	36/40/48/52/60/64	1
		Band 3	MCS0/Nss1	100/116/140	1
	11ac 40MHz	Band 1~2	MCS0/Nss1	38/46/54/62	1
		Band 3	MCS0/Nss1	102/110/134	1
	11ac 80MHz	Band 1~2	MCS0/Nss1	42/58	1
		Band 3	MCS0/Nss1	106	1

	11a/BPSK	Band 1~2	6Mbps	36/40/48/52/60/64	1
		Band 3	6Mbps	100/116/140	1
Radiated Emission Below 1GHz	Normal Link		-	-	-
Radiated Emission Above 1GHz	11ac 20MHz	Band 1~2	MCS0/Nss1	36/40/48/52/60/64	1
		Band 3	MCS0/Nss1	100/116/140	1
	11ac 40MHz	Band 1~2	MCS0/Nss1	38/46/54/62	1
		Band 3	MCS0/Nss1	102/110/134	1
	11ac 80MHz	Band 1~2	MCS0/Nss1	42/58	1
		Band 3	MCS0/Nss1	106	1
	11a/BPSK	Band 1~2	6Mbps	36/40/48/52/60/64	1
		Band 3	6Mbps	100/116/140	1
Band Edge Emission	11ac 20MHz	Band 1~2	MCS0/Nss1	36/40/48/52/60/64	1
		Band 3	MCS0/Nss1	100/140	1
	11ac 40MHz	Band 1~2	MCS0/Nss1	38/46/54/62	1
		Band 3	MCS0/Nss1	102/110/134	1
	11ac 80MHz	Band 1~2	MCS0/Nss1	42/58	1
		Band 3	MCS0/Nss1	106	1
	11a/BPSK	Band 1~2	6Mbps	36/40/48/52/60/64	1
		Band 3	6Mbps	100/140	1
Frequency Stability	Un-modulation		-	40/60/100	N/A

The following test modes were performed for all tests:

For Conducted Emission test:

The mode “diversity + SLOT antenna” has been evaluated to be the worst case for Radiated emission below 1GHz test.

Consequently, measurement for Conducted emission test will follow this same test mode.

Mode 1. HMC + PCI-E + Diversity + SLOT antenna (I-PEX connector)

Mode 2. NGFF + PCI-E + Diversity + SLOT antenna (I-PEX MHF4 connector)

Mode 3. NGFF + SDIO + Diversity + SLOT antenna (I-PEX MHF4 connector)

Mode 2 is found as the worst case among Mode 1 ~ Mode 3, so it was recorded in the report.

For Radiated Emission below 1GHz test:

Mode 1. HMC + PCI-E + Diversity + SLOT antenna (I-PEX connector)

Mode 2. HMC + PCI-E + Fixed + SLOT antenna (I-PEX connector)

Mode 1 is found as the worse case between Mode 1 and Mode 2, thus the measurement (Diversity type) for Mode 3 ~ Mode 8 will follow this same test mode.

Mode 3. HMC + PCI-E + Diversity + PIFA antenna (I-PEX connector)

Mode 4. HMC + PCI-E + Diversity + Dipole antenna (I-PEX connector)

Mode 5. NGFF + SDIO + Diversity + SLOT antenna (I-PEX MHF4 connector)

Mode 6. NGFF + PCI-E + Diversity + SLOT antenna (I-PEX MHF4 connector)

Mode 7. NGFF + SDIO + Diversity + PIFA antenna (I-PEX MHF4 connector)

Mode 8. NGFF + PCI-E + Diversity + PIFA antenna (I-PEX MHF4 connector)

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

For Radiated Emission above1GHz test:

Mode 1. HMC + PCI-E + Diversity + SLOT antenna (I-PEX connector)

Mode 2. HMC + PCI-E + Fixed + SLOT antenna (I-PEX connector)

Mode 3. NGFF + PCI-E + Diversity + SLOT antenna (I-PEX MHF4 connector)

Mode 4. NGFF + SDIO + Diversity + SLOT antenna (I-PEX MHF4 connector)

Mode 5. NGFF + PCI-E + Fixed + SLOT antenna (I-PEX MHF4 connector)

Mode 6. NGFF + SDIO + Fixed + SLOT antenna (I-PEX MHF4 connector)

Mode 7. HMC + PCI-E + Diversity + PIFA antenna (I-PEX connector)

Mode 8. HMC + PCI-E + Fixed + PIFA antenna (I-PEX connector)

Mode 9. NGFF + PCI-E + Diversity + PIFA antenna (I-PEX MHF4 connector)

Mode 10. NGFF + SDIO + Diversity + PIFA antenna (I-PEX MHF4 connector)

Mode 11. NGFF + PCI-E + Fixed + PIFA antenna (I-PEX MHF4 connector)

Mode 12. NGFF + SDIO + Fixed + PIFA antenna (I-PEX MHF4 connector)

Mode 13. HMC + PCI-E + Diversity + Dipole antenna (I-PEX connector)

Mode 14. HMC + PCI-E + Fixed + Dipole antenna (I-PEX connector)

Mode 3, Mode 9 and Mode 13 generated the worst test result, so these three modes were recorded in the report.

For Other Tests:

After pre-testing, the mode “Configuration 3 + SLOT antenna” has been evaluated to be the worst case for Conducted output power.

Therefore, it was selected to perform other test items and record in the report.

Mode 1. NGFF + PCI-E + Diversity + SLOT antenna (I-PEX MHF4 connector)

For Co-location Test:

The mode "PCI-E + diversity" has been evaluated to be the worst case for Radiated emission above 1GHz test.

Consequently, measurement for Co-location test will follow this same test mode.

Mode 1. NGFF + PCI-E + Diversity + SLOT antenna (I-PEX MHF4 connector) / 2.4GHz WLAN + Bluetooth

Mode 2. NGFF + PCI-E + Diversity + SLOT antenna (I-PEX MHF4 connector) / 5GHz WLAN + Bluetooth

Mode 3. NGFF + PCI-E + Diversity + PIFA antenna (I-PEX MHF4 connector) / 2.4GHz WLAN + Bluetooth

Mode 4. NGFF + PCI-E + Diversity + PIFA antenna (I-PEX MHF4 connector) / 5GHz WLAN + Bluetooth

Mode 5. HMC + PCI-E + Diversity + Dipole antenna (I-PEX connector) / 2.4GHz WLAN + Bluetooth

Mode 6. HMC + PCI-E + Diversity + Dipole antenna (I-PEX connector) / 5GHz WLAN + Bluetooth

All the test result were recorded in the report.

The EUT could be applied with WLAN function and Bluetooth function; therefore Maximum Permissible Exposure (Please refer to Appendix B) and Co-location (please refer to Appendix C) tests are added for simultaneously transmit between WLAN function and Bluetooth function.

3.7. Table for Testing Locations

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).

Please refer section 6 for Test Site Address.

3.8. Table for Supporting Units

Test Site: CO01-CB

Support Unit	Brand	Model	FCC ID
Wireless AP	Planex	GW-AP54SGX	N/A
Notebook	DELL	E6430	QDS-BRCM1049LE
Notebook	DELL	E6220	QDS-BRCM1049LE
Mouse	Logitech	M-U0026	DoC
Earphone	SHYARO CHI	MIC-04	N/A
Test Fixture (For HMC type)	REALTEK	PCIE Adapter	N/A
Test Fixture (For NGFF type)	REALTEK	PCIE & SDIO Adapter	N/A

Test Site: 03CH01-CB

Support Unit	Brand	Model	FCC ID
Notebook	DELL	E6430	QDS-BRCM1049LE
Mouse	Logitech	M-U0026	DoC
Earphone	E-BOOKI	E-EPC040	N/A
Wireless AP	Planex	GW-AP54SGX	N/A
Notebook	DELL	E6430	QDS-BRCM1049LE
Test Fixture (For HMC type)	REALTEK	PCIE Adapter	N/A
Test Fixture (For NGFF type)	REALTEK	PCIE & SDIO Adapter	N/A

Test Site: TH01-CB

Support Unit	Brand	Model	FCC ID
Notebook	DELL	E6220	D2A62L1989V5
Test Fixture (For HMC type)	REALTEK	PCIE Adapter	N/A
Test Fixture (For NGFF type)	REALTEK	PCIE & SDIO Adapter	N/A

3.9. Table for Parameters of Test Software Setting

During testing, Channel & 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.

Power Parameters of IEEE 802.11ac MCS0/Nss1 20MHz

Test Software Version	Realtek 11ac 8821A PCIE WLAN MP Diagnostic Program 0.0032.20130412								
Frequency	5180 MHz	5200 MHz	5240 MHz	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz
MCS0/Nss1 20MHz	56	56	55	54	53	51	52	49	48

Power Parameters of IEEE 802.11ac MCS0/Nss1 40MHz

Test Software Version	Realtek 11ac 8821A PCIE WLAN MP Diagnostic Program 0.0032.20130412						
Frequency	5190 MHz	5230 MHz	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz
MCS0/Nss1 40MHz	48	55	54	44	47	51	49

Power Parameters of IEEE 802.11ac MCS0/Nss1 80MHz

Test Software Version	Realtek 11ac 8821A PCIE WLAN MP Diagnostic Program 0.0032.20130412		
Frequency	5210 MHz	5290 MHz	5530 MHz
MCS0/Nss1 80MHz	44	39	40

Power Parameters of IEEE 802.11a

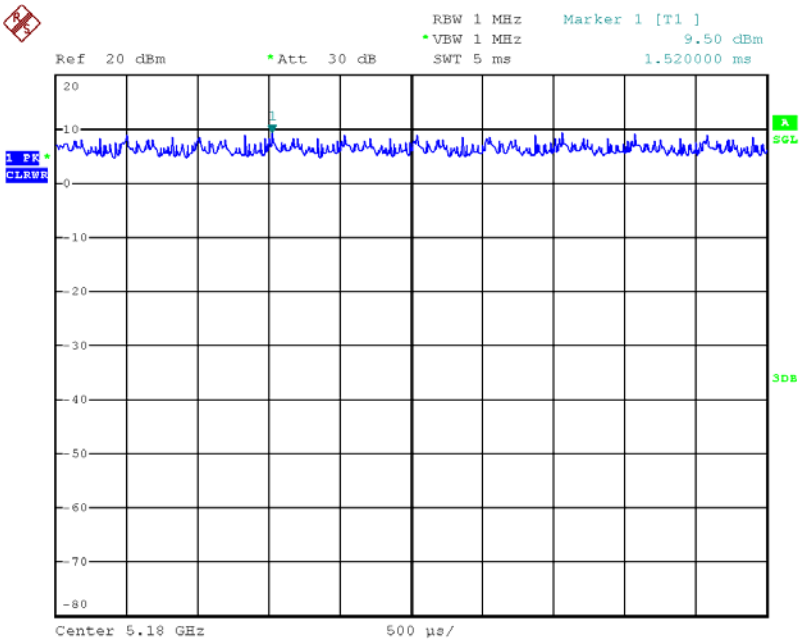
Test Software Version	Realtek 11ac 8821A PCIE WLAN MP Diagnostic Program 0.0032.20130412								
Frequency	5180 MHz	5200 MHz	5240 MHz	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz
IEEE 802.11a	56	56	55	54	53	51	52	49	48

3.10. EUT Operation during Test

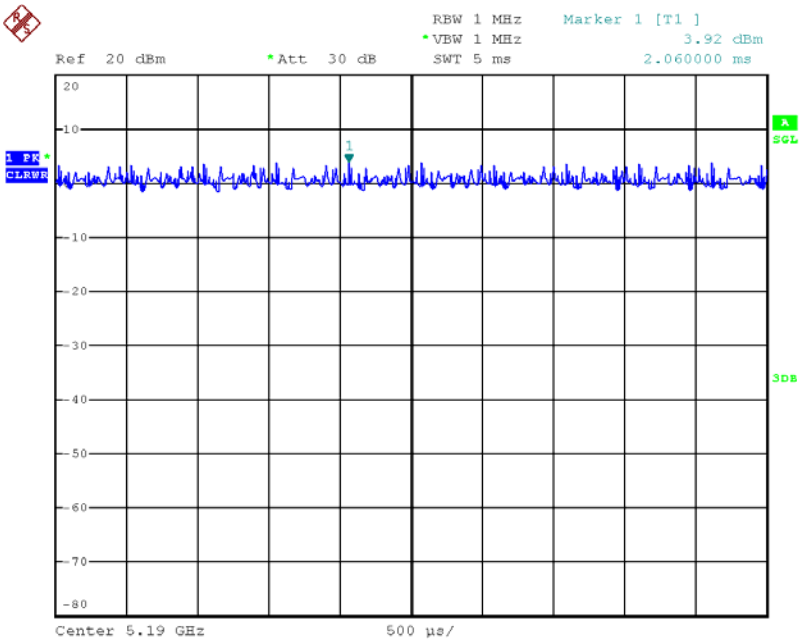
The EUT was programmed to be in continuously transmitting mode.

3.11. Duty Cycle

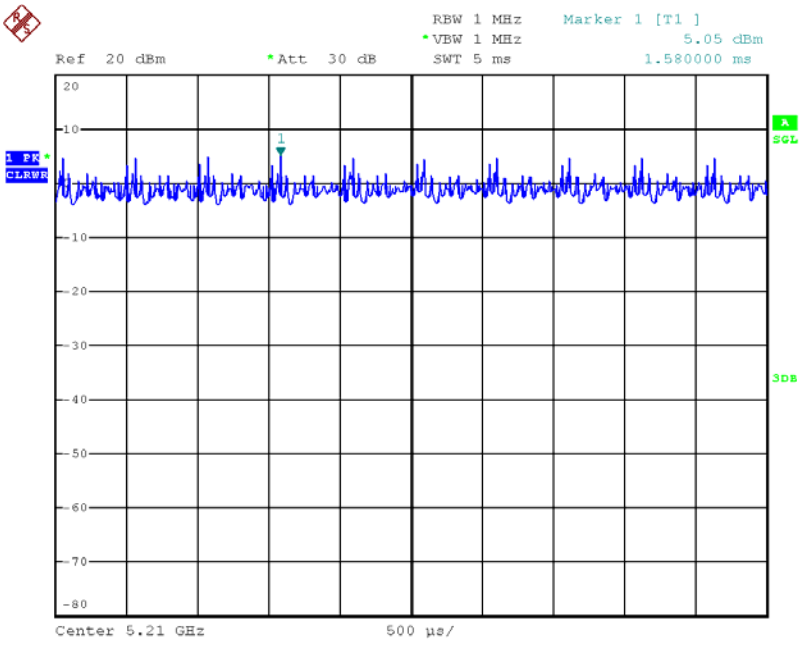
IEEE 802.11ac MCS0/Nss1 20MHz



IEEE 802.11ac MCS0/Nss1 40MHz



IEEE 802.11ac MCS0/Nss1 80MHz



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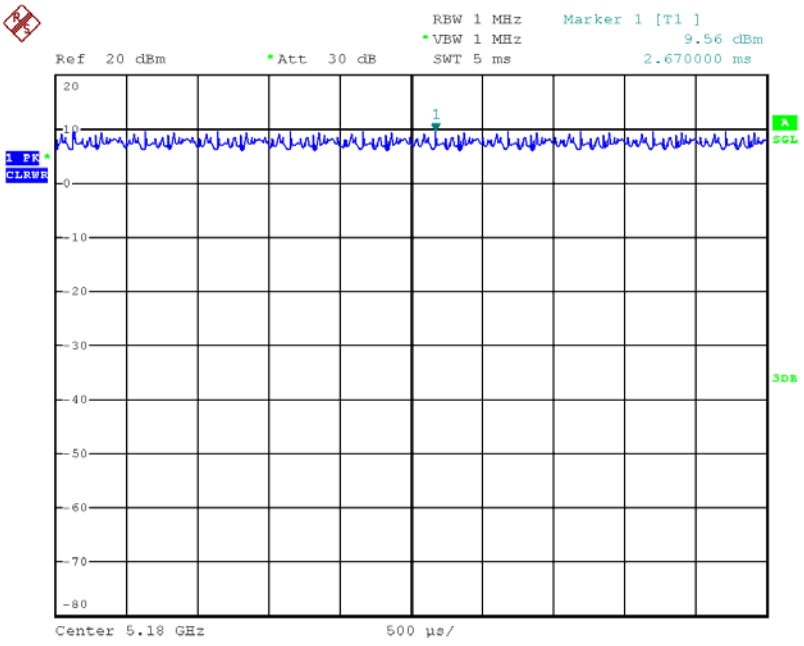
IEEE 802.11a



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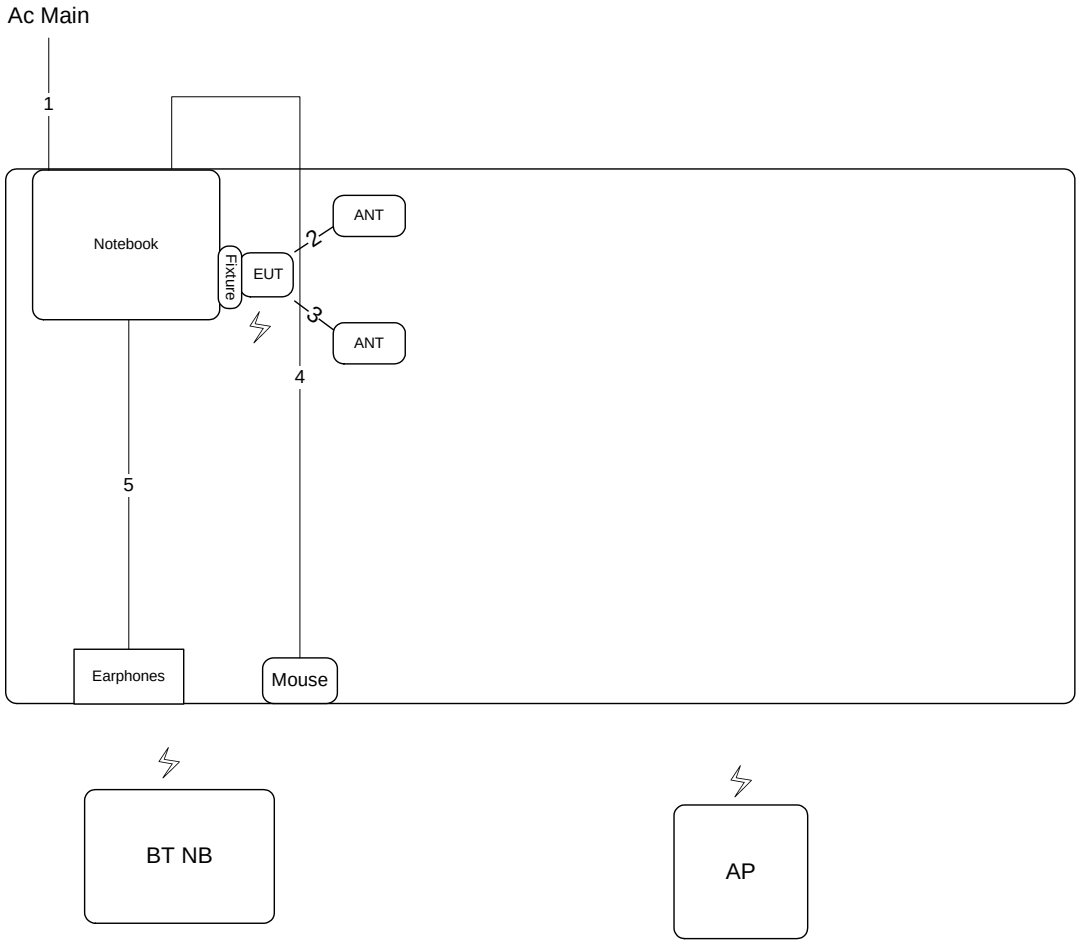
3.12. Test Configurations

3.12.1. AC Power Line Conduction Emissions Test Configuration

Test Mode: Mode 2

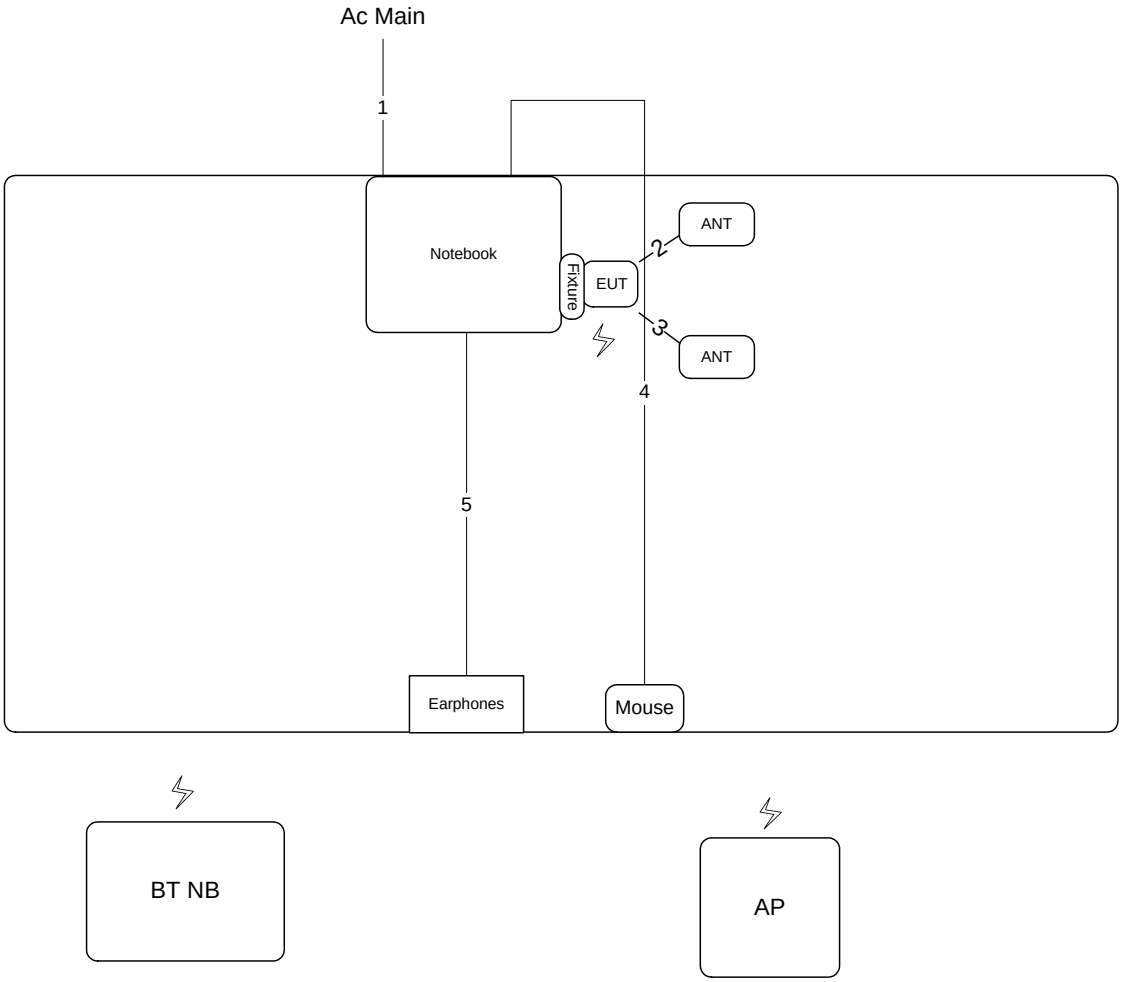


Item	Connection	Shield	Length	Remark
1	Power cable	No	2.6m	-
2	ANT cable	Yes	0.3m	-
3	ANT cable	Yes	0.3m	-
4	USB cable	No	1.8m	-
5	Audio cable	No	1.1m	-

3.12.2. Radiation Emissions Test Configuration

Test Configuration: 30MHz~1GHz

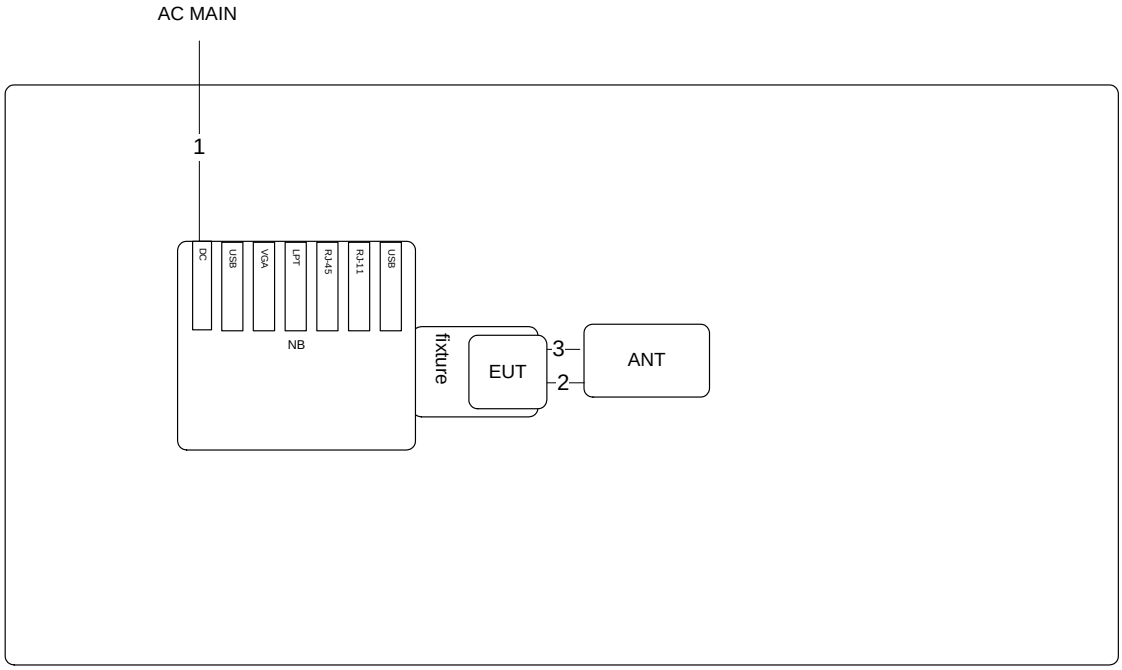
Test Mode: Mode 1



Item	Connection	Shield	Length	Remark
1	Power cable	No	2.6m	-
2	ANT cable	Yes	0.3m	-
3	ANT cable	Yes	0.3m	-
4	USB cable	No	1.8m	-
5	Audio cable	No	1.1m	-

Test Configuration: Radiated emission above 1GHz

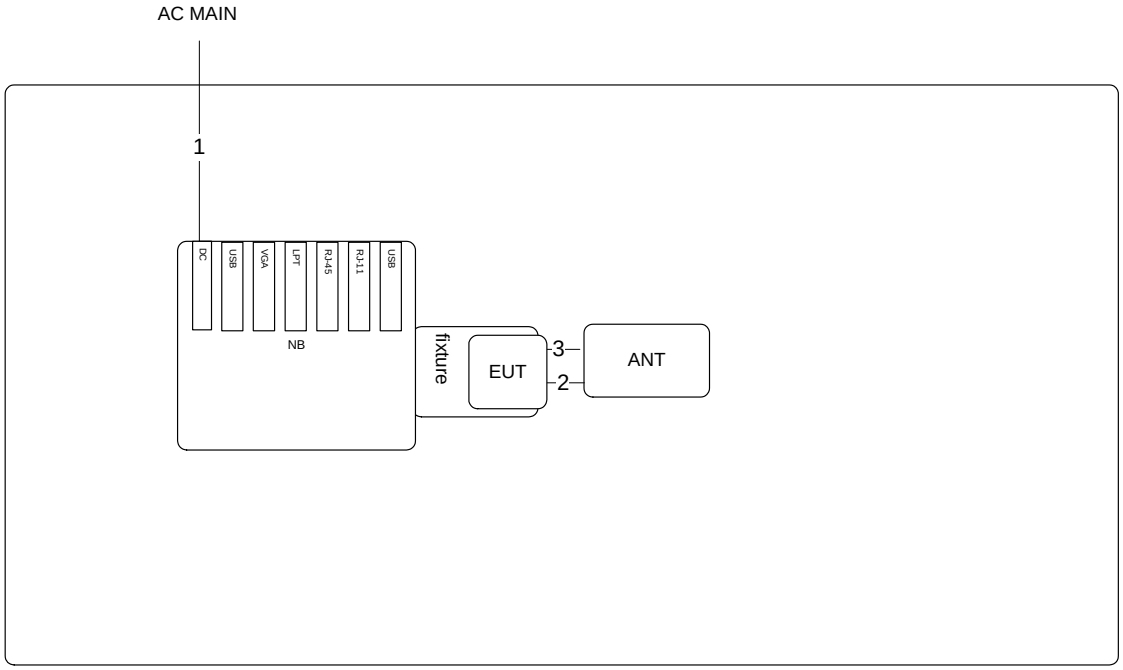
Test Mode: Mode 3 / Mode 9



Item	Connection	Shield	Length	Remark
1	Power cable	No	2.6m	-
2	ANT cable	No	0.3m	-
3	ANT cable	No	0.3m	-

Test Configuration: Radiated emission above 1GHz

Test Mode: Mode 13



Item	Connection	Shield	Length	Remark
1	Power cable	No	2.6m	-
2	ANT cable	No	0.18m	-
3	ANT cable	No	0.18m	-

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

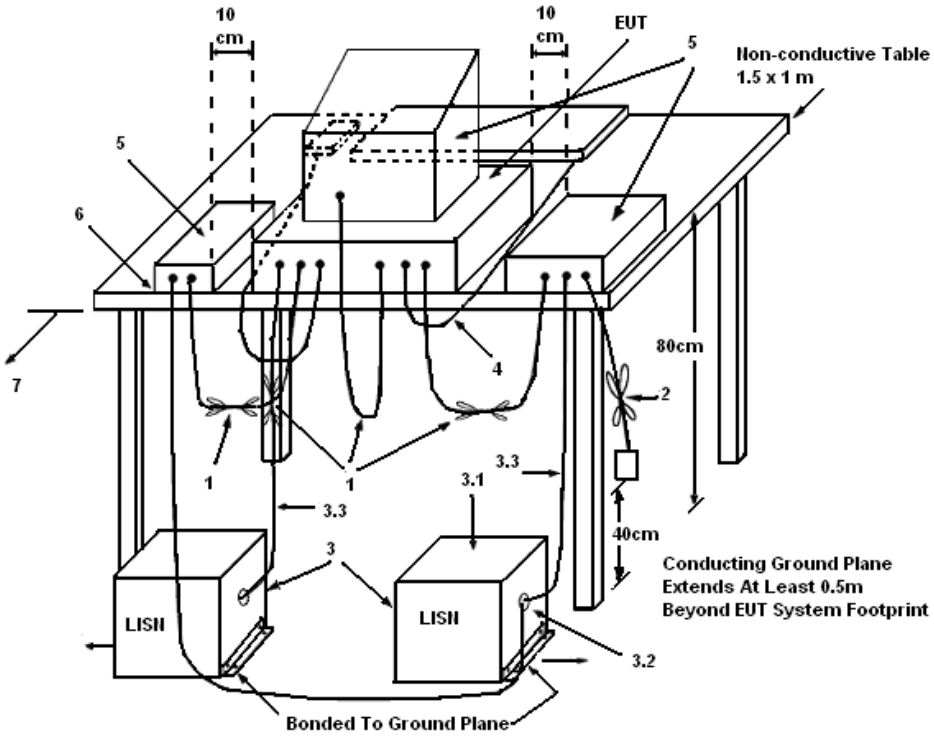
Please refer to section 5 of equipments list in this report. The following table is the setting of the receiver.

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

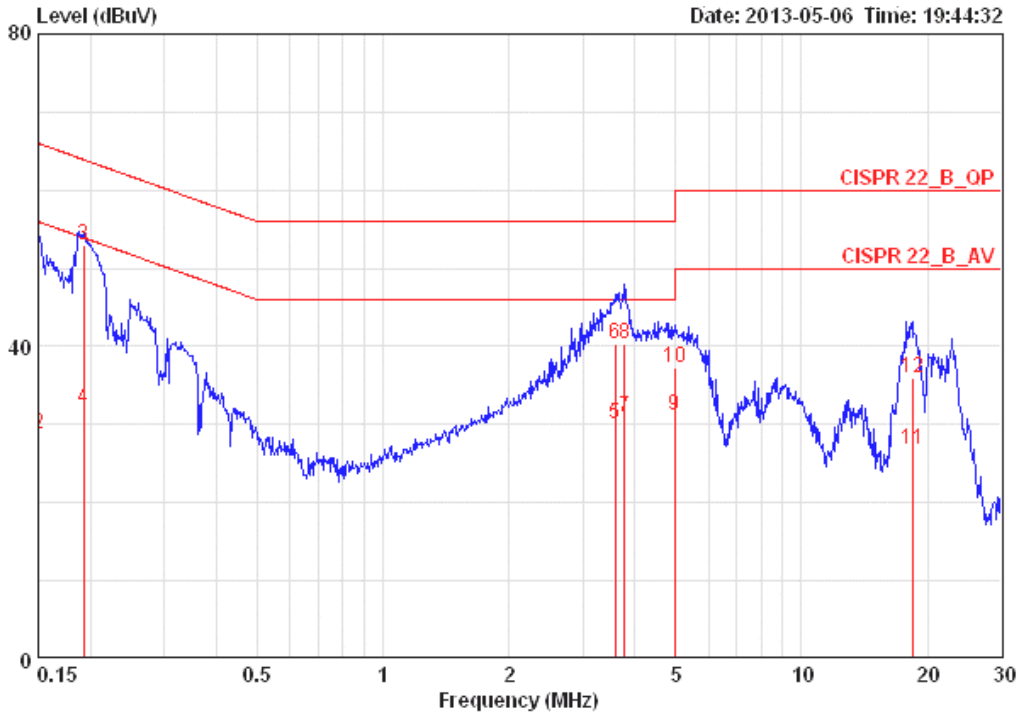
There is no deviation with the original standard.

4.1.6. EUT Operation during Test

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

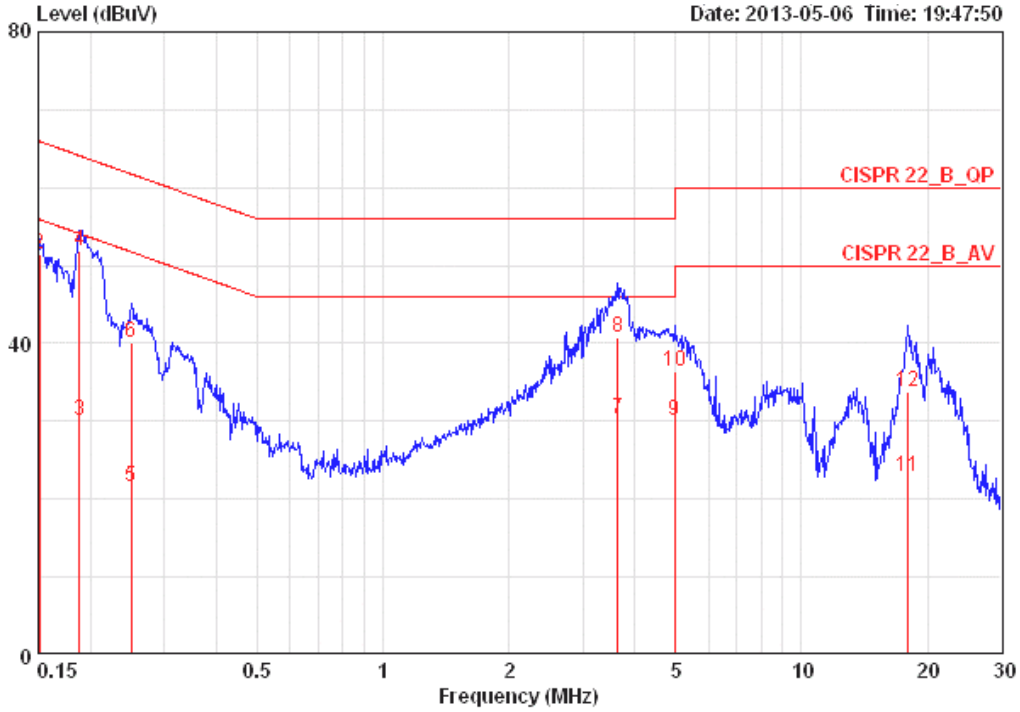
4.1.7. Results of AC Power Line Conducted Emissions Measurement

Temperature	25℃	Humidity	60%
Test Engineer	Sin Chang	Phase	Line
Configuration	Normal Link	Test Mode	Mode 2



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Pol/Phase	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.15000	45.07	-20.93	66.00	44.73	0.16	0.18	LINE	QP
2	0.15000	28.87	-27.13	56.00	28.53	0.16	0.18	LINE	AVERAGE
3 @	0.19242	52.96	-10.97	63.93	52.61	0.15	0.20	LINE	QP
4	0.19242	32.06	-21.87	53.93	31.71	0.15	0.20	LINE	AVERAGE
5	3.584	30.19	-15.81	46.00	29.69	0.21	0.28	LINE	AVERAGE
6	3.584	40.30	-15.70	56.00	39.80	0.21	0.28	LINE	QP
7	3.779	30.86	-15.14	46.00	30.35	0.22	0.29	LINE	AVERAGE
8	3.779	40.36	-15.64	56.00	39.85	0.22	0.29	LINE	QP
9	4.978	31.14	-14.86	46.00	30.58	0.24	0.32	LINE	AVERAGE
10	4.978	37.27	-18.73	56.00	36.71	0.24	0.32	LINE	QP
11	18.426	26.90	-23.10	50.00	25.95	0.46	0.49	LINE	AVERAGE
12	18.426	36.01	-23.99	60.00	35.06	0.46	0.49	LINE	QP

Temperature	25℃	Humidity	60%
Test Engineer	Sin Chang	Phase	Neutral
Configuration	Normal Link	Test Mode	Mode 1



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Pol/Phase	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.15080	32.19	-23.77	55.96	31.93	0.08	0.18	NEUTRAL	AVERAGE
2	0.15080	51.40	-14.56	65.96	51.14	0.08	0.18	NEUTRAL	QP
3	0.18838	30.12	-23.99	54.11	29.84	0.08	0.20	NEUTRAL	AVERAGE
4	0.18838	51.89	-12.22	64.11	51.61	0.08	0.20	NEUTRAL	QP
5	0.25078	21.57	-30.16	51.73	21.29	0.08	0.20	NEUTRAL	AVERAGE
6	0.25078	40.21	-21.52	61.73	39.93	0.08	0.20	NEUTRAL	QP
7	3.642	30.28	-15.72	46.00	29.87	0.13	0.28	NEUTRAL	AVERAGE
8	3.642	40.69	-15.31	56.00	40.28	0.13	0.28	NEUTRAL	QP
9	4.978	30.11	-15.89	46.00	29.64	0.15	0.32	NEUTRAL	AVERAGE
10	4.978	36.37	-19.63	56.00	35.90	0.15	0.32	NEUTRAL	QP
11	17.944	22.89	-27.11	50.00	22.05	0.36	0.48	NEUTRAL	AVERAGE
12	17.944	33.77	-26.23	60.00	32.93	0.36	0.48	NEUTRAL	QP

Note:

Level = Read Level + LISN Factor + Cable Loss

4.2. 26dB Bandwidth & 99% Occupied Bandwidth Measurement

4.2.1. Limit

No restriction limits.

4.2.2. Measuring Instruments and Setting

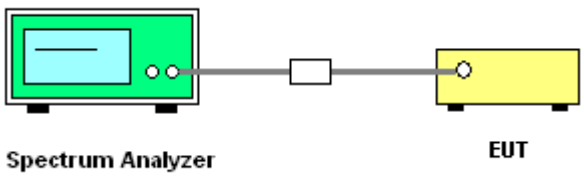
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

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

1. The transmitter output (antenna port) was connected 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



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 & 99% Occupied Bandwidth

Temperature	25℃	Humidity	56%
Test Engineer	Benson Peng	Configurations	IEEE 802.11ac
Test Mode	Mode 1		

Configuration IEEE 802.11ac MCS0/Nss1 20MHz / Chain 1

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
36	5180 MHz	22.40	18.08
40	5200 MHz	23.52	18.24
48	5240 MHz	22.72	18.24
52	5260 MHz	21.92	18.08
60	5300 MHz	22.40	18.08
64	5320 MHz	22.40	18.24
100	5500 MHz	23.68	18.24
116	5580 MHz	25.92	18.24
140	5700 MHz	23.36	18.24

Configuration IEEE 802.11ac MCS0/Nss1 40MHz / Chain 1

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
38	5190 MHz	42.88	36.48
46	5230 MHz	46.40	36.80
54	5270 MHz	42.88	36.48
62	5310 MHz	43.52	36.48
102	5510MHz	42.56	36.48
110	5550 MHz	43.84	36.80
134	5670 MHz	42.88	36.48

Configuration IEEE 802.11ac MCS0/Nss1 80MHz / Chain 1

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
42	5210 MHz	82.56	76.16
58	5290 MHz	84.48	76.16
106	5530 MHz	84.48	76.16

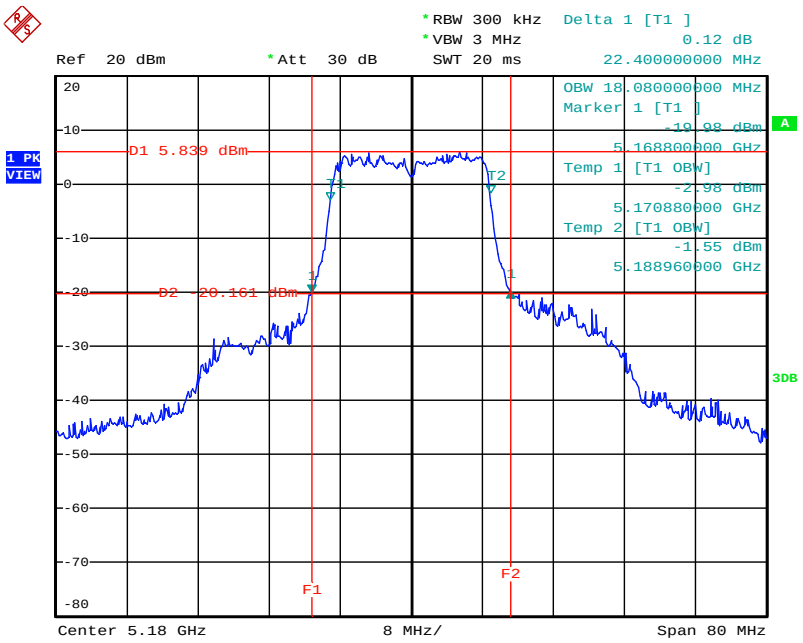
Temperature	25℃	Humidity	56%
Test Engineer	Benson Peng	Configurations	IEEE 802.11a
Test Mode	Mode 1		

Configuration IEEE 802.11a / Chain 1

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
36	5180 MHz	23.20	16.96
40	5200 MHz	23.20	17.12
48	5240 MHz	23.36	16.96
52	5260 MHz	22.88	17.12
60	5300 MHz	21.12	17.12
64	5320 MHz	21.28	17.12
100	5500 MHz	21.28	16.96
116	5580 MHz	23.68	17.12
140	5700 MHz	24.96	17.12

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1

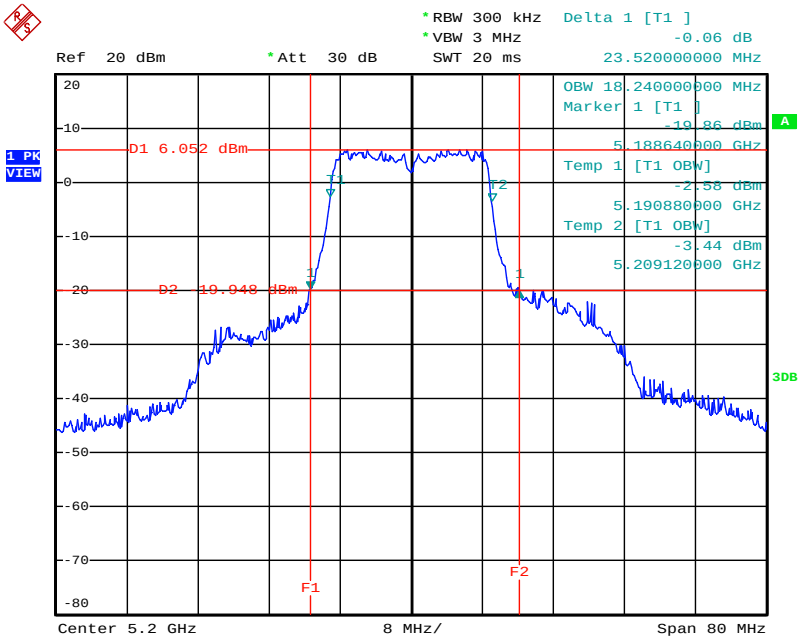
20MHz / Chain 1 / 5180 MHz



Date: 28.MAY.2013 19:15:18

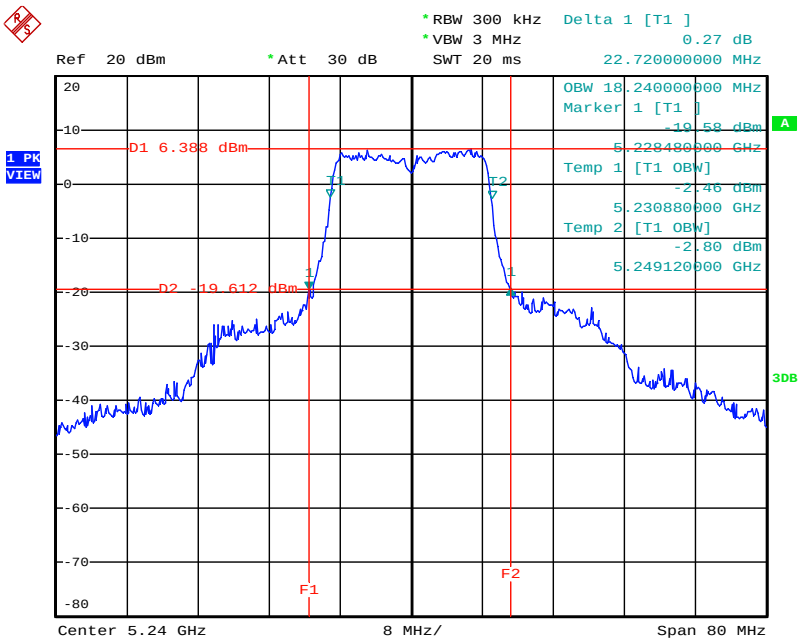
26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1

20MHz / Chain 1 / 5200 MHz



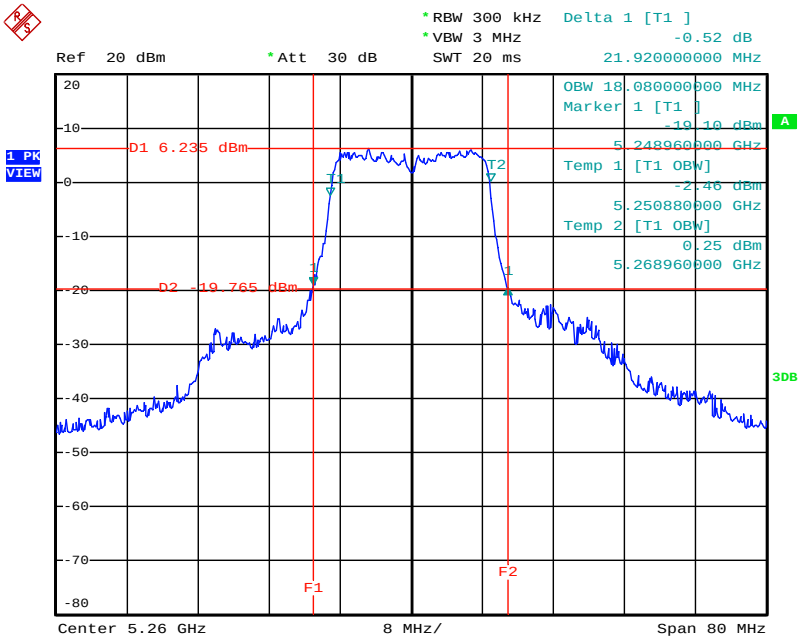
Date: 28.MAY.2013 19:14:52

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 20MHz / Chain 1 / 5240 MHz



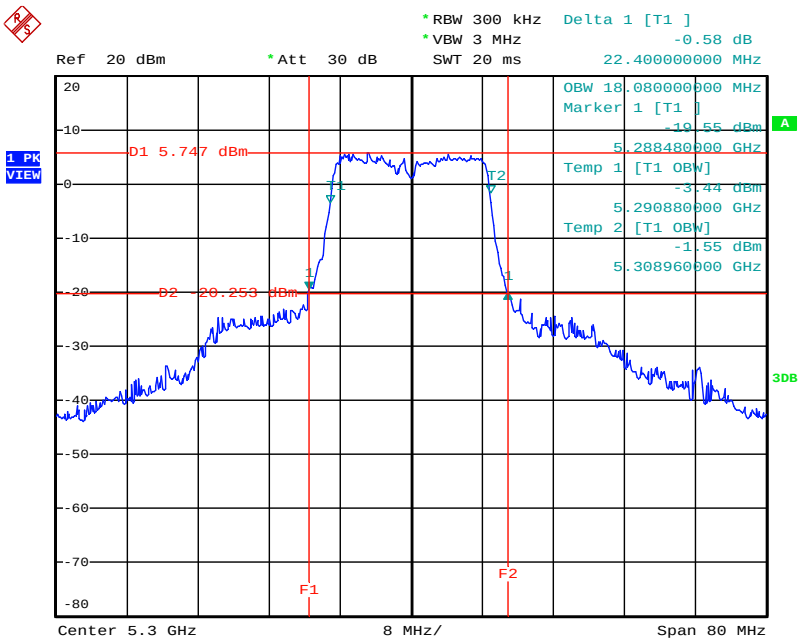
Date: 28.MAY.2013 19:14:29

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 20MHz / Chain 1 / 5260 MHz



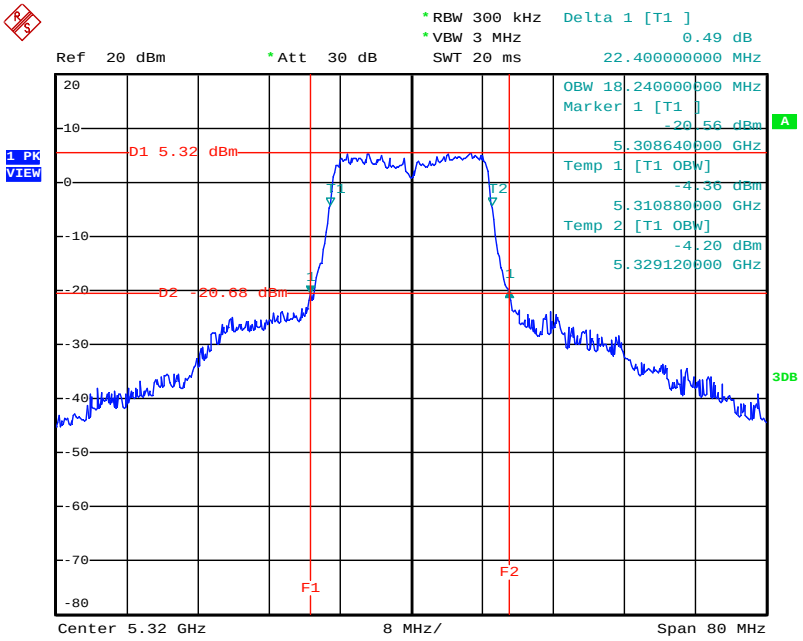
Date: 28.MAY.2013 19:14:06

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 20MHz / Chain 1 / 5300 MHz



Date: 28.MAY.2013 19:13:40

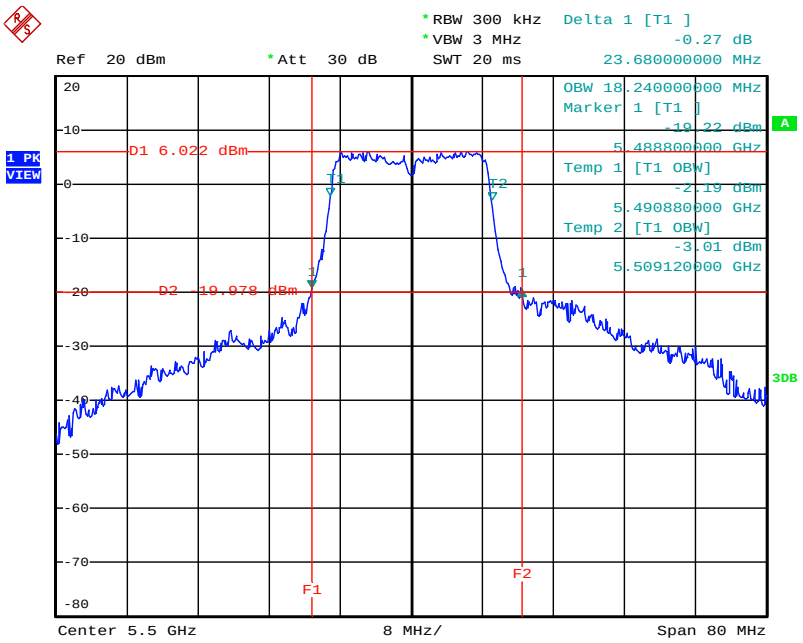
26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 20MHz / Chain 1 / 5320 MHz



Date: 28.MAY.2013 19:13:19

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1

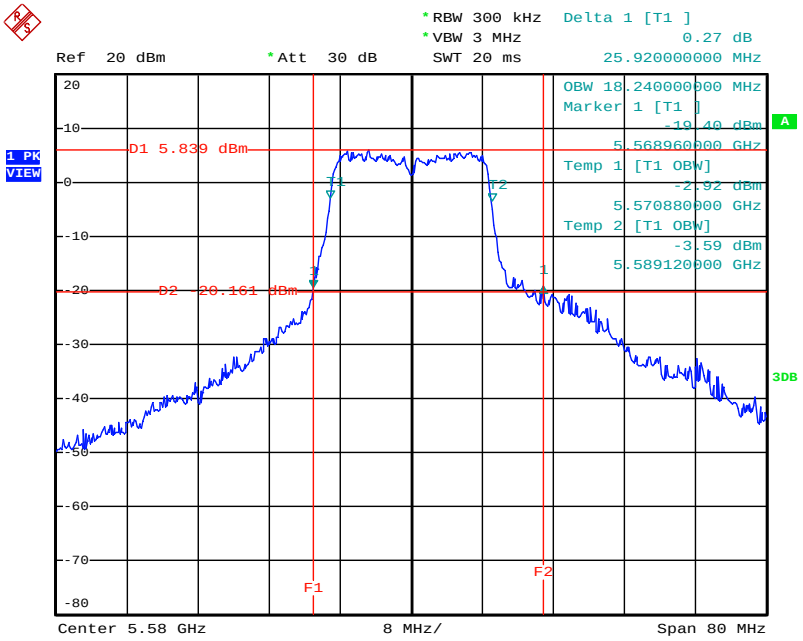
20MHz / Chain 1 / 5500 MHz



Date: 28.MAY.2013 19:12:54

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1

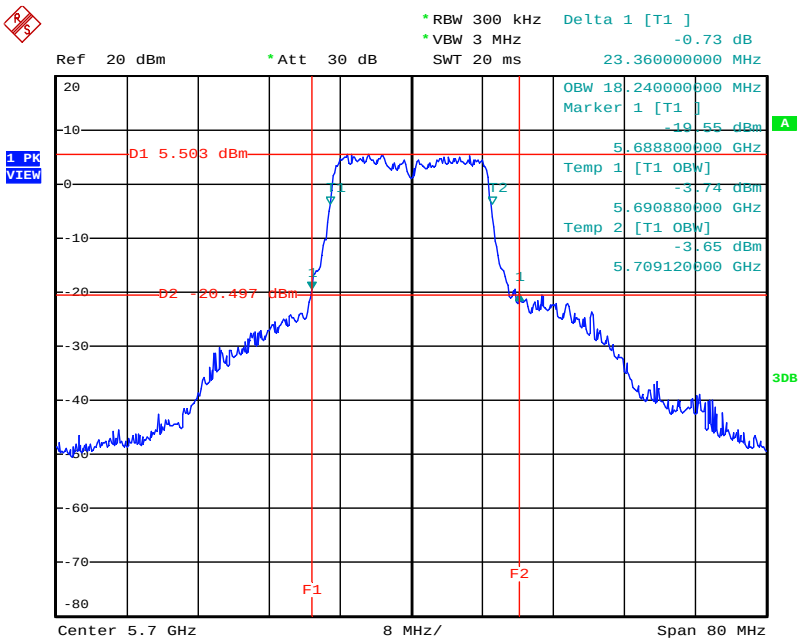
20MHz / Chain 1 / 5580 MHz



Date: 28.MAY.2013 19:12:28

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1

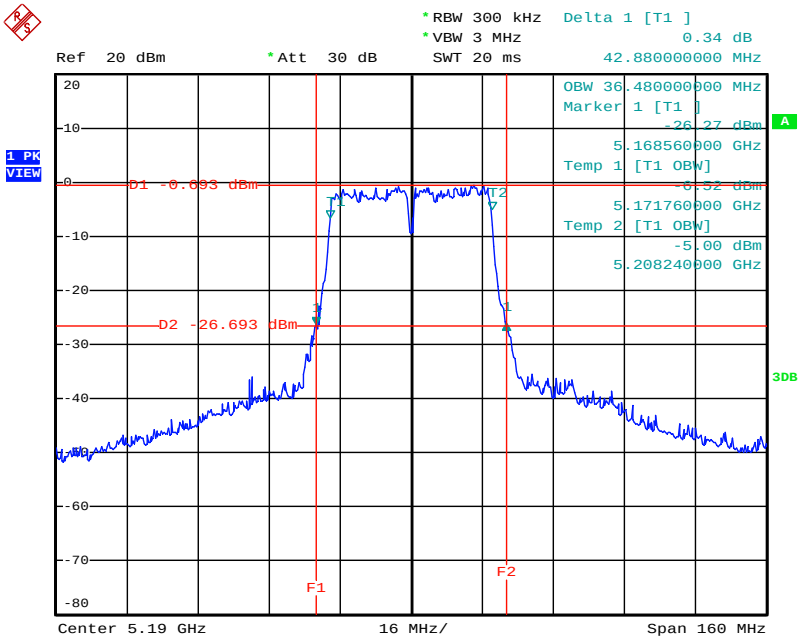
20MHz / Chain 1 / 5700 MHz



Date: 28.MAY.2013 19:12:05

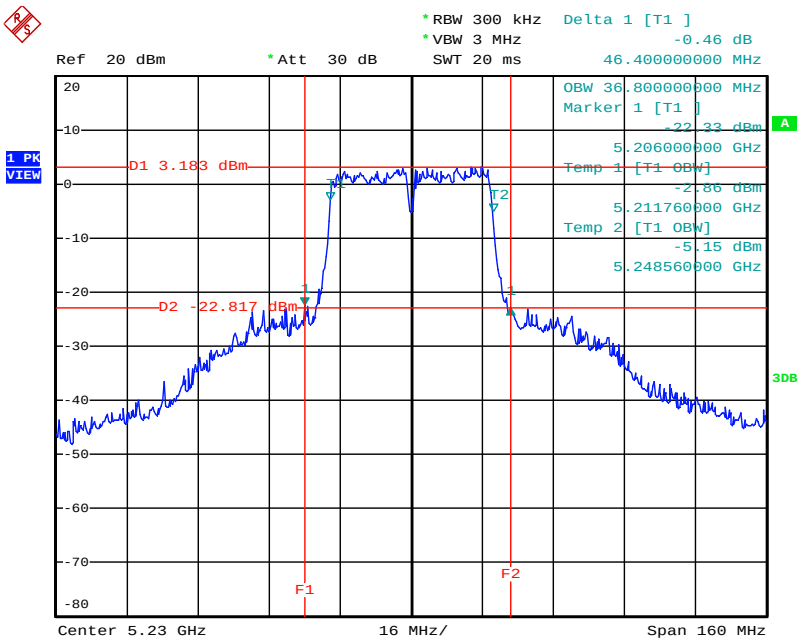
26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1

40MHz / Chain 1 / 5190 MHz



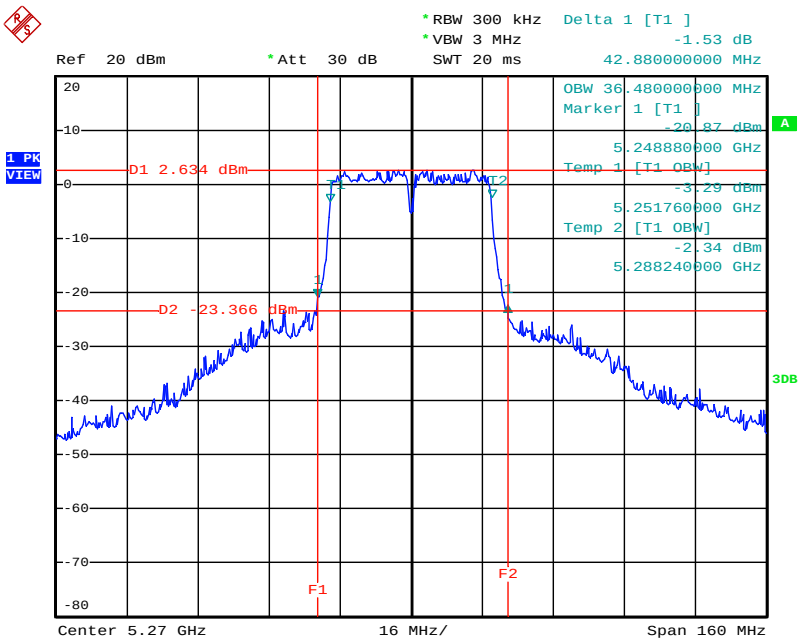
Date: 28.MAY.2013 19:16:00

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 40MHz / Chain 1 / 5230 MHz



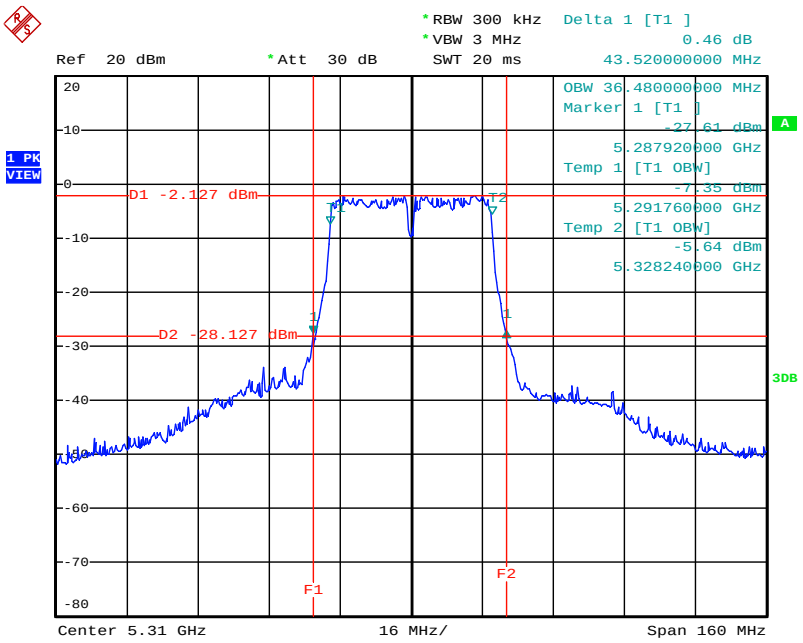
Date: 28.MAY.2013 19:16:41

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 40MHz / Chain 1 / 5270 MHz



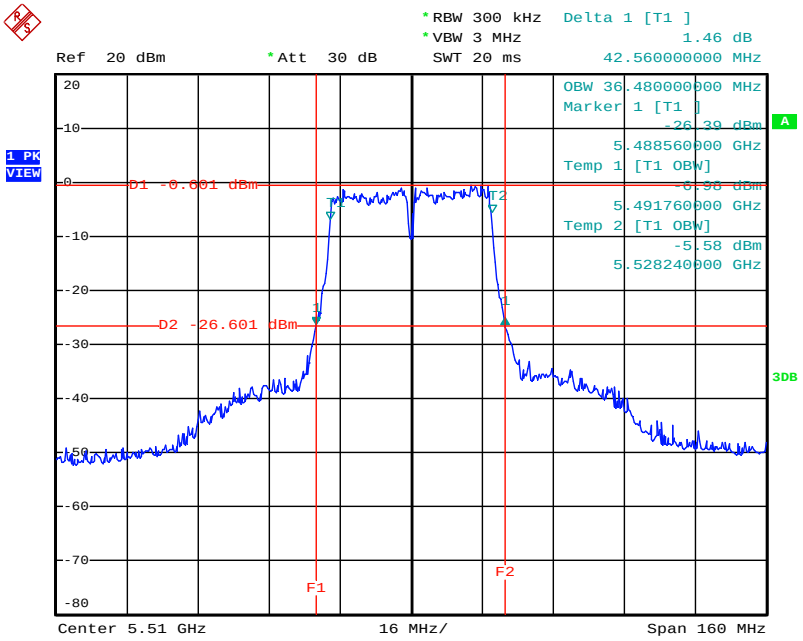
Date: 28.MAY.2013 19:17:04

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 40MHz / Chain 1 / 5310 MHz



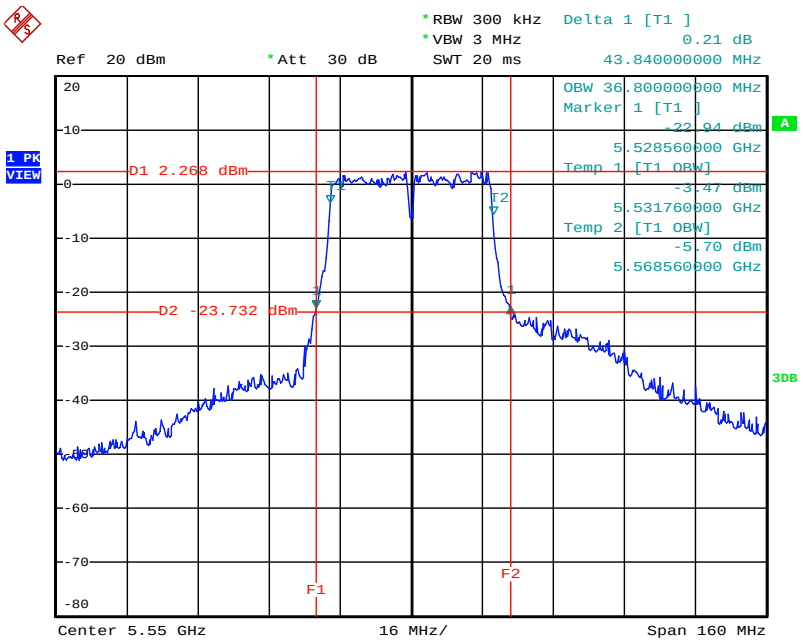
Date: 28.MAY.2013 19:17:29

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 40MHz / Chain 1 / 5510MHz



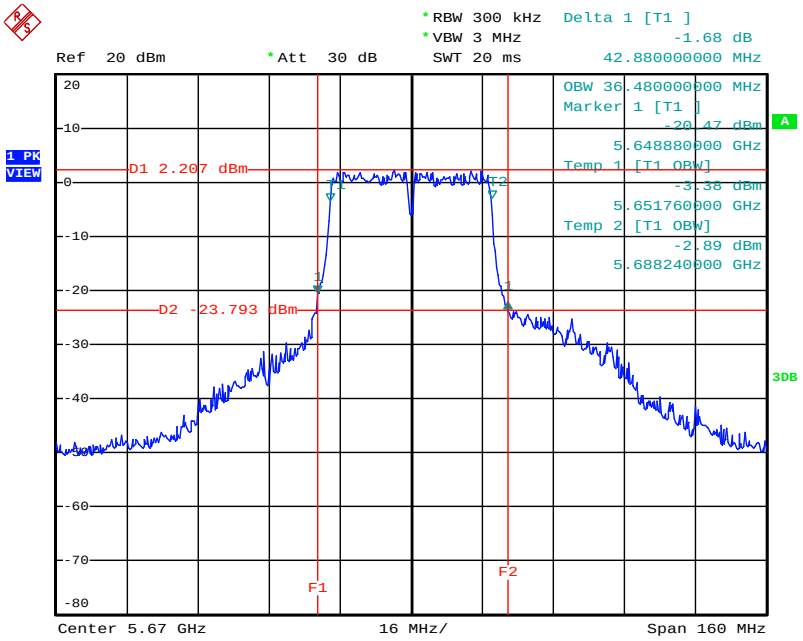
Date: 28.MAY.2013 19:17:58

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 40MHz / Chain 1 / 5550 MHz



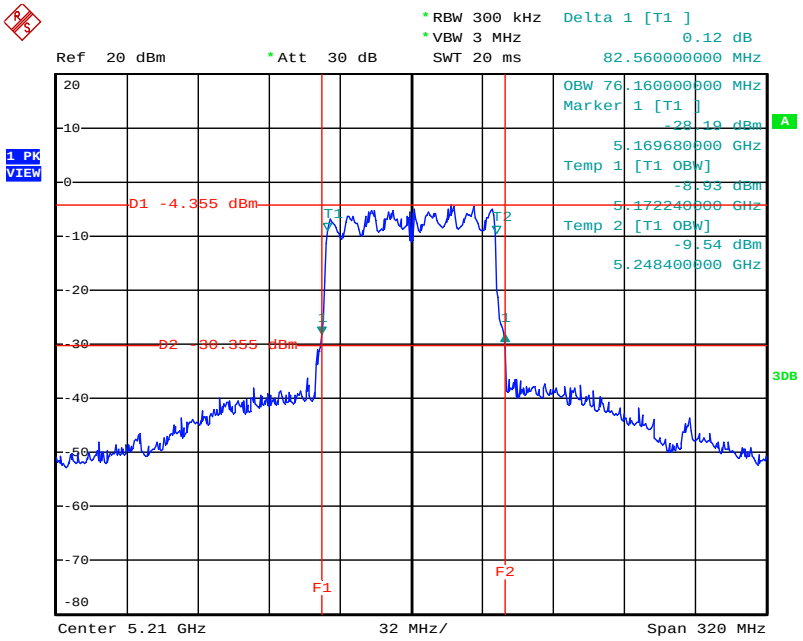
Date: 28.MAY.2013 19:18:19

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 40MHz / Chain 1 / 5670 MHz



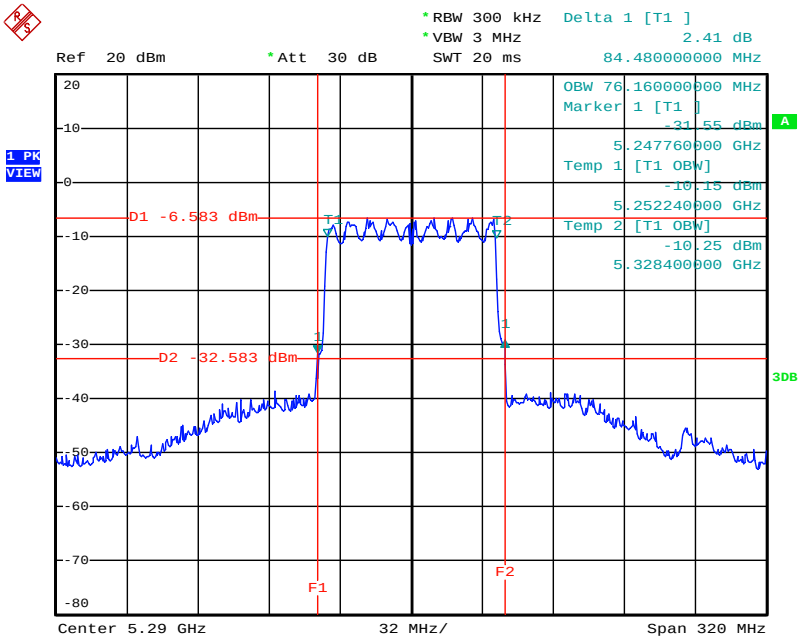
Date: 28.MAY.2013 19:18:44

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 80MHz / Chain 1 / 5210 MHz



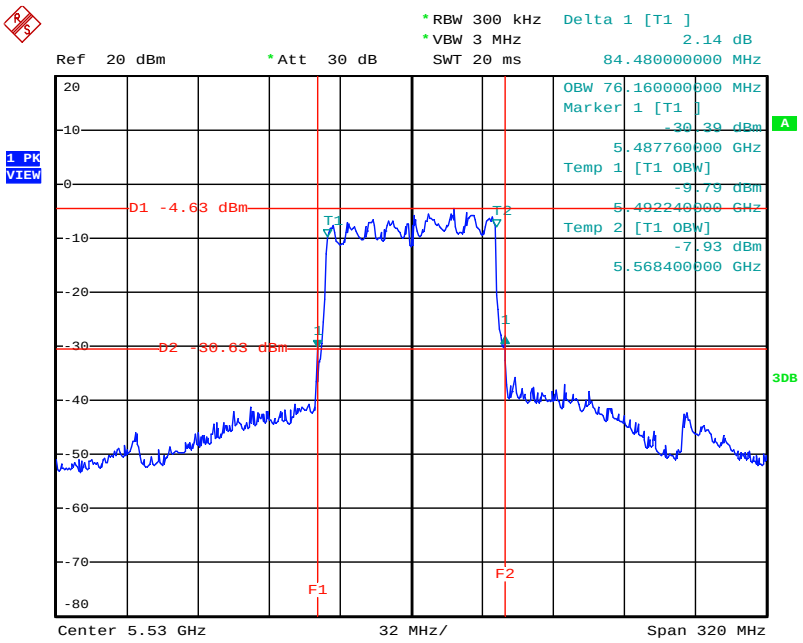
Date: 28.MAY.2013 19:19:31

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 80MHz / Chain 1 / 5290 MHz



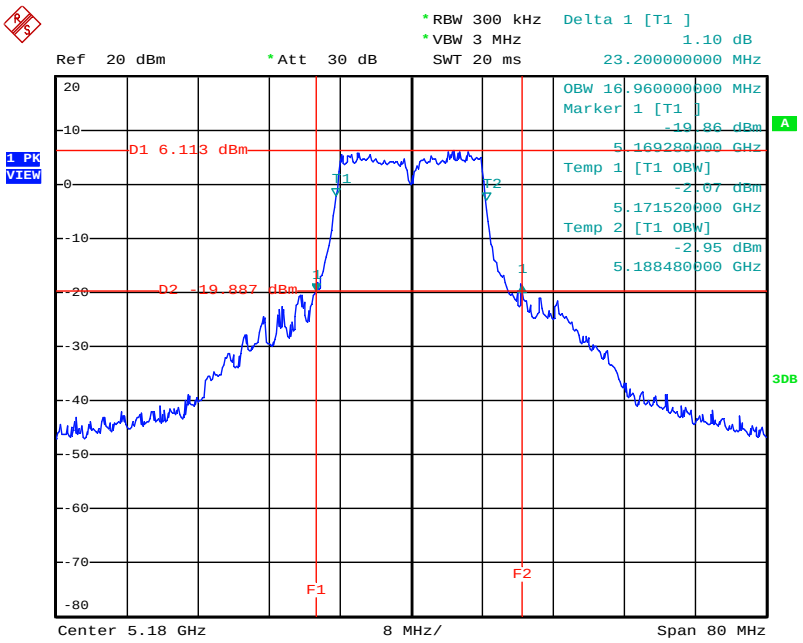
Date: 28.MAY.2013 19:20:06

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 80MHz / Chain 1 / 5530 MHz



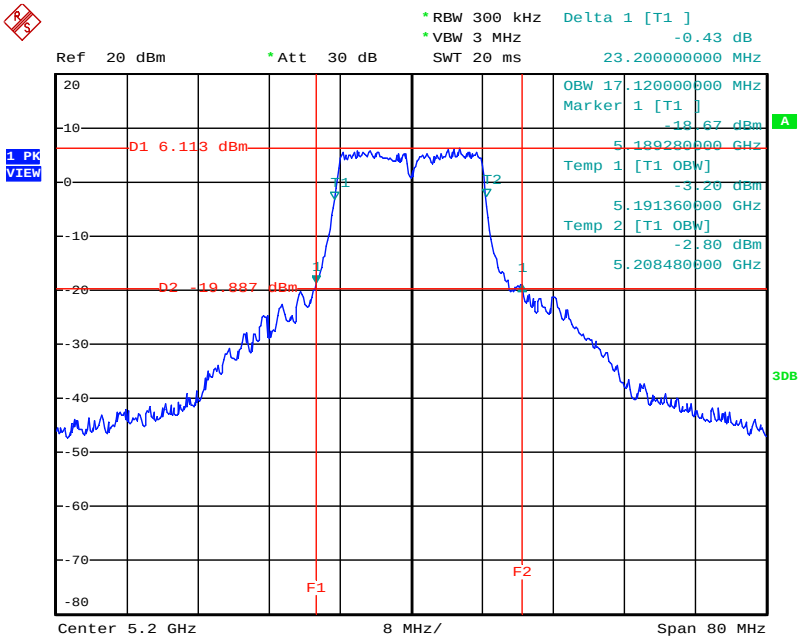
Date: 28.MAY.2013 19:20:36

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 / 5180 MHz



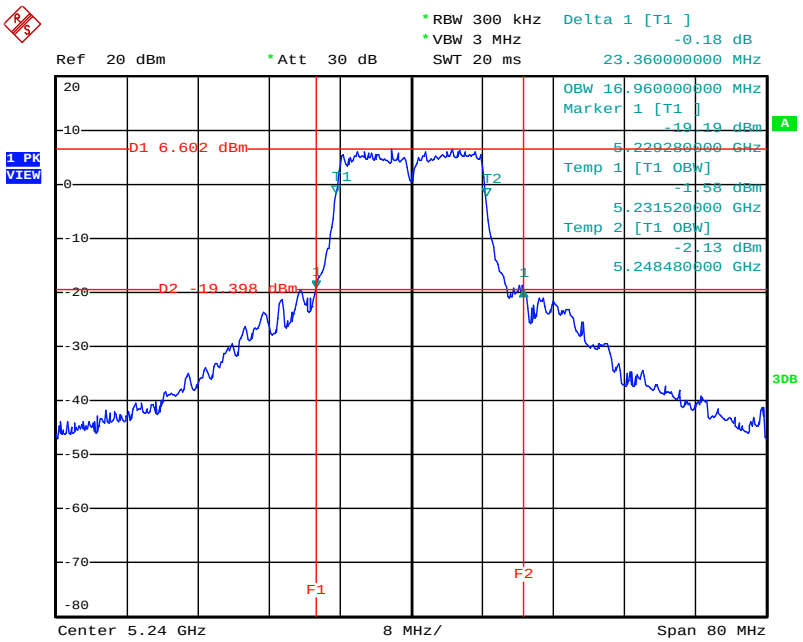
Date: 28.MAY.2013 19:08:27

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 / 5200 MHz



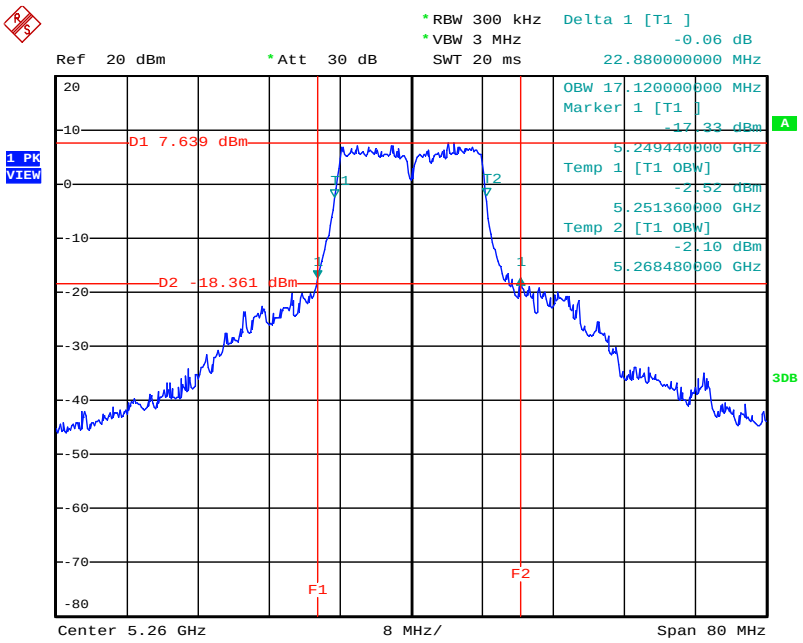
Date: 28.MAY.2013 19:09:44

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 / 5240 MHz



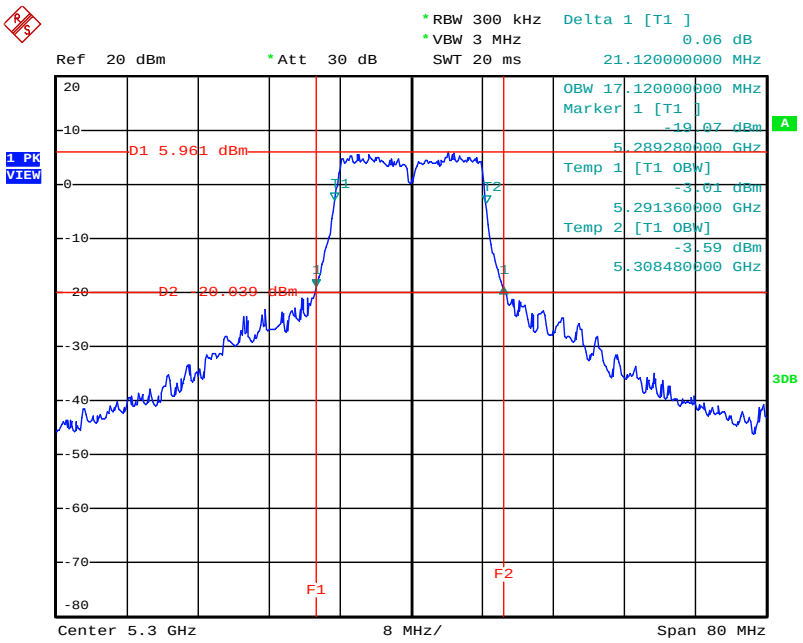
Date: 28.MAY.2013 19:06:29

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 / 5260 MHz



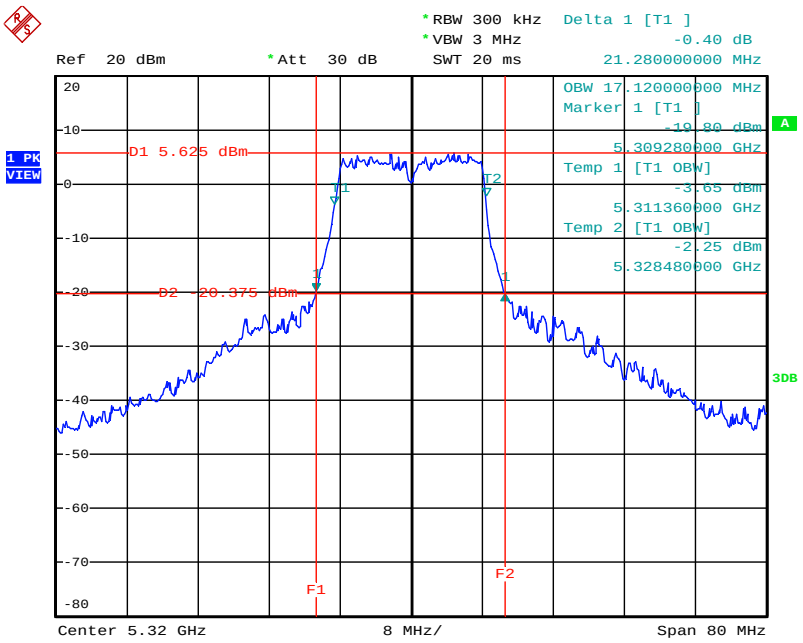
Date: 28.MAY.2013 19:07:07

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 / 5300 MHz



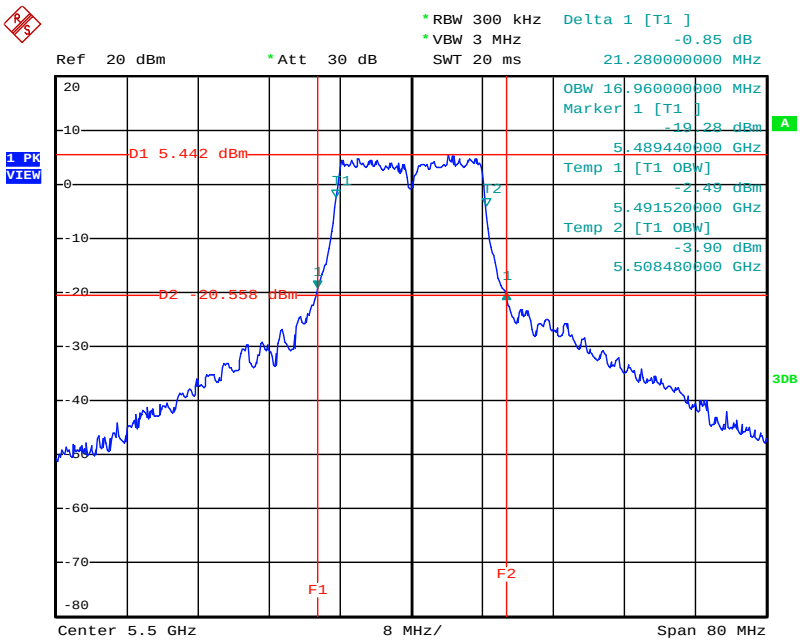
Date: 28.MAY.2013 19:07:34

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 / 5320 MHz



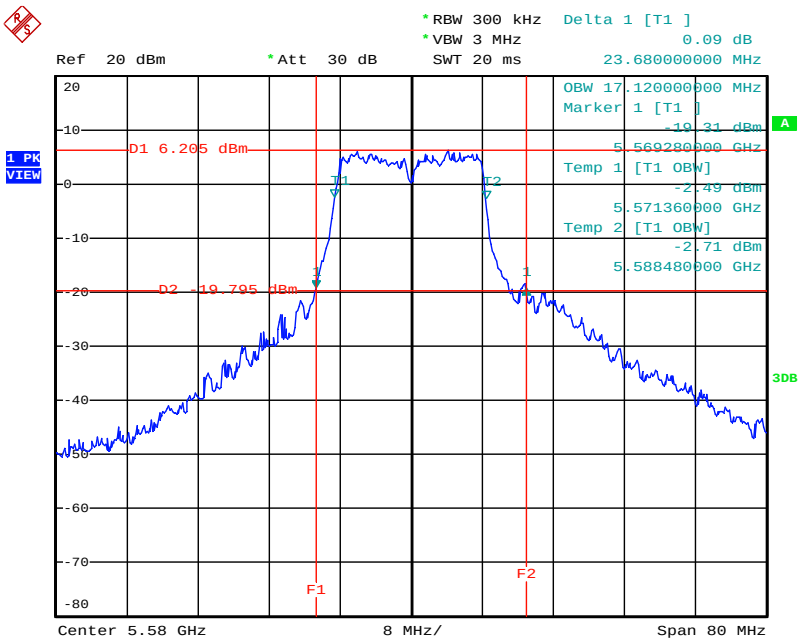
Date: 28.MAY.2013 19:07:55

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 / 5500 MHz



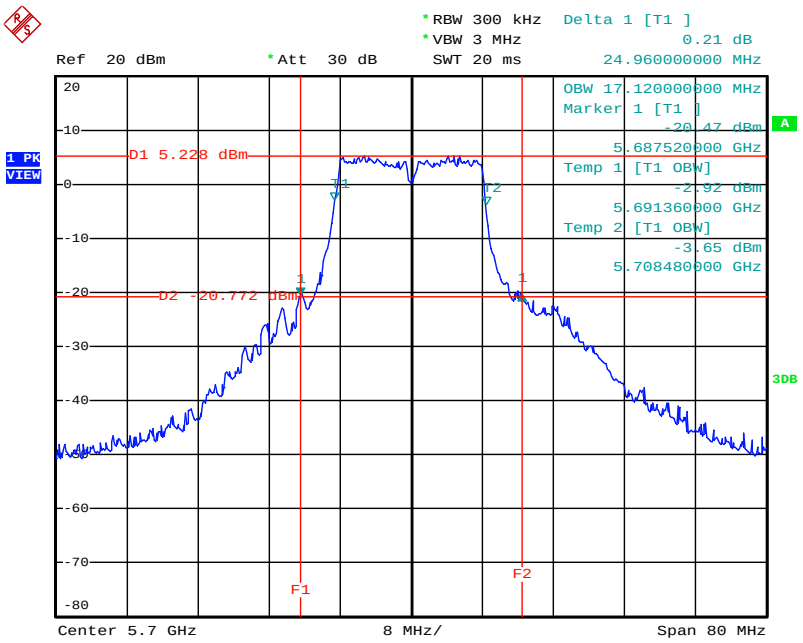
Date: 28.MAY.2013 19:10:47

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 / 5580 MHz



Date: 28.MAY.2013 19:11:10

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 / 5700 MHz



Date: 28.MAY.2013 19:11:33

4.3. Maximum Conducted Output Power Measurement

4.3.1. Limit

For the band 5.15~5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 50 mW (17dBm) or 4 dBm + 10log B, where B is the 26 dB emissions bandwidth in MHz. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

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 peak 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

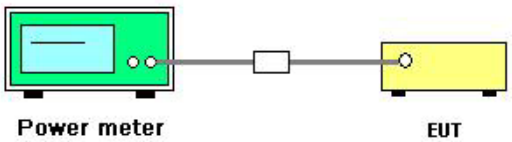
The following table is the setting of the peak power meter.

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 KDB 789033 D01 v01r03 for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - Part 15, Subpart E,section (E) Maximum conducted output power =>(3) Method PM (Measurement using an RF average power meter) Multiple antenna systems was performed in accordance with KDB 662911 D01 v01r02 Emissions Testing of Transmitters with Multiple Outputs in the Same Band.
3. 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

Temperature	25℃	Humidity	56%
Test Engineer	Benson Peng	Configurations	IEEE 802.11ac
Test Date	May 28, 2013	Test Mode	Mode 1

Configuration IEEE 802.11ac MCS0/Nss1 20MHz / Chain 1

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
36	5180 MHz	16.25	17.00	**Complies**
40	5200 MHz	16.31	17.00	**Complies**
48	5240 MHz	16.39	17.00	**Complies**
52	5260 MHz	16.38	24.00	**Complies**
60	5300 MHz	16.41	24.00	**Complies**
64	5320 MHz	16.09	24.00	**Complies**
100	5500 MHz	16.01	24.00	**Complies**
116	5580 MHz	16.31	24.00	**Complies**
140	5700 MHz	16.23	24.00	**Complies**

Configuration IEEE 802.11ac MCS0/Nss1 40MHz / Chain 1

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
38	5190 MHz	13.06	17.00	**Complies**
46	5230 MHz	16.31	17.00	**Complies**
54	5270 MHz	16.18	24.00	**Complies**
62	5310 MHz	12.15	24.00	**Complies**
102	5510MHz	12.48	24.00	**Complies**
110	5550 MHz	16.09	24.00	**Complies**
134	5670 MHz	16.01	24.00	**Complies**

Configuration IEEE 802.11ac MCS0/Nss1 80MHz / Chain 1

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
42	5210 MHz	11.41	17.00	**Complies**
58	5290 MHz	10.01	24.00	**Complies**
106	5530 MHz	10.42	24.00	**Complies**

Temperature	25℃	Humidity	56%
Test Engineer	Benson Peng	Configurations	IEEE 802.11a
Test Date	May 28, 2013	Test Mode	Mode 1

Configuration IEEE 802.11a / Chain 1

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
36	5180 MHz	16.32	17.00	**Complies**
40	5200 MHz	16.31	17.00	**Complies**
48	5240 MHz	16.32	17.00	**Complies**
52	5260 MHz	16.39	24.00	**Complies**
60	5300 MHz	16.42	24.00	**Complies**
64	5320 MHz	16.11	24.00	**Complies**
100	5500 MHz	16.05	24.00	**Complies**
116	5580 MHz	16.48	24.00	**Complies**
140	5700 MHz	16.18	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)
5.15~5.25 GHz	4
5.25-5.35 GHz	11
5.470-5.725 GHz	11

4.4.2. Measuring Instruments and Setting

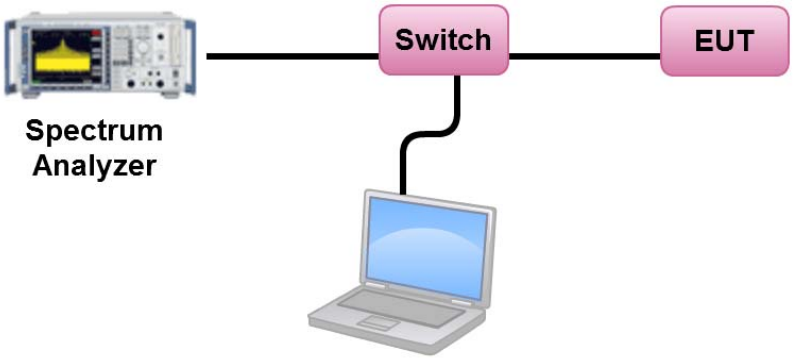
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

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 KDB 789033 D01 v01r03 for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - Part 15, Subpart E,section (C) Maximum conducted output power => (d) Method SA-2 (trace averaging across on and off times of the EUT transmissions, followed by duty cycle correction).
3. Multiple antenna systems was performed in accordance KDB 662911 D01 v01r02 in-Band Power Spectral Density (PSD) Measurements (1) 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

Temperature	25℃	Humidity	56%
Test Engineer	Benson Peng	Configurations	IEEE 802.11ac
Test Date	May 28, 2013	Test Mode	Mode 1

Configuration IEEE 802.11ac MCS0/Nss1 20MHz / Chain 1

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
36	5180 MHz	2.77	4.00	**Complies**
40	5200 MHz	2.71	4.00	**Complies**
48	5240 MHz	2.84	4.00	**Complies**
52	5260 MHz	2.57	11.00	**Complies**
60	5300 MHz	2.64	11.00	**Complies**
64	5320 MHz	2.91	11.00	**Complies**
100	5500 MHz	2.73	11.00	**Complies**
116	5580 MHz	2.95	11.00	**Complies**
140	5700 MHz	2.54	11.00	**Complies**

Configuration IEEE 802.11ac MCS0/Nss1 40MHz / Chain 1

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
38	5190 MHz	-3.49	4.00	**Complies**
46	5230 MHz	-0.46	4.00	**Complies**
54	5270 MHz	-0.05	11.00	**Complies**
62	5310 MHz	-4.30	11.00	**Complies**
102	5510MHz	-3.68	11.00	**Complies**
110	5550 MHz	-0.53	11.00	**Complies**
134	5670 MHz	-0.61	11.00	**Complies**

Configuration IEEE 802.11ac MCS0/Nss1 80MHz / Chain 1

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
42	5210 MHz	-8.14	4.00	**Complies**
58	5290 MHz	-9.35	11.00	**Complies**
106	5530 MHz	-8.73	11.00	**Complies**

Temperature	25℃	Humidity	56%
Test Engineer	Benson Peng	Configurations	IEEE 802.11a
Test Date	May 28, 2013	Test Mode	Mode 1

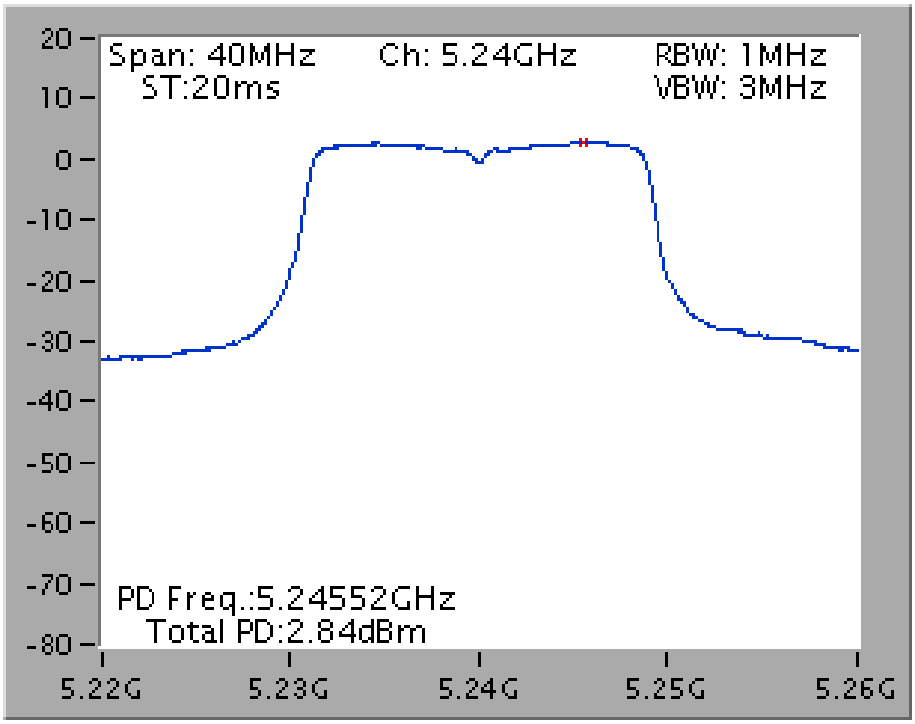
Configuration IEEE 802.11a / Chain 1

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
36	5180 MHz	2.60	4.00	**Complies**
40	5200 MHz	2.90	4.00	**Complies**
48	5240 MHz	2.70	4.00	**Complies**
52	5260 MHz	2.93	11.00	**Complies**
60	5300 MHz	2.91	11.00	**Complies**
64	5320 MHz	2.57	11.00	**Complies**
100	5500 MHz	2.77	11.00	**Complies**
116	5580 MHz	2.67	11.00	**Complies**
140	5700 MHz	2.91	11.00	**Complies**

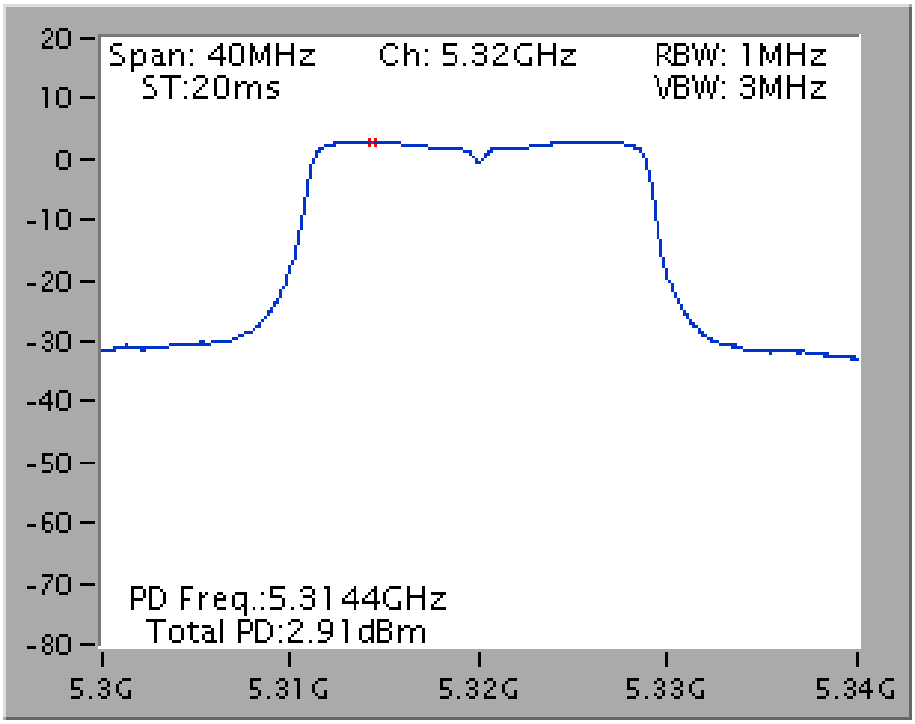
Note: All the test values were listed in the report.

For plots, only the channel with maximum results was shown.

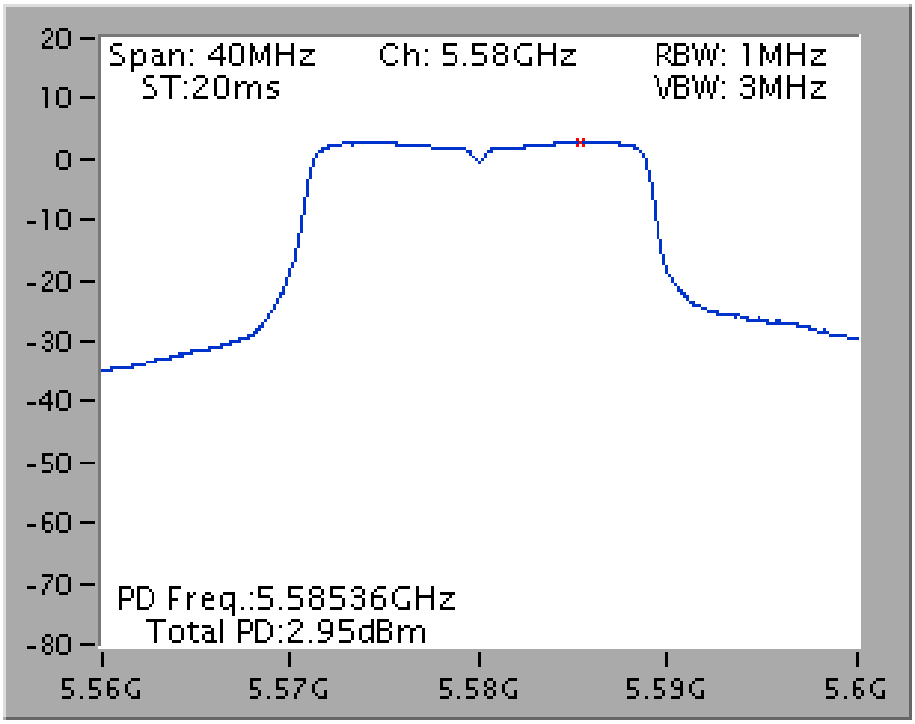
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 20MHz / Chain 1 / 5240 MHz



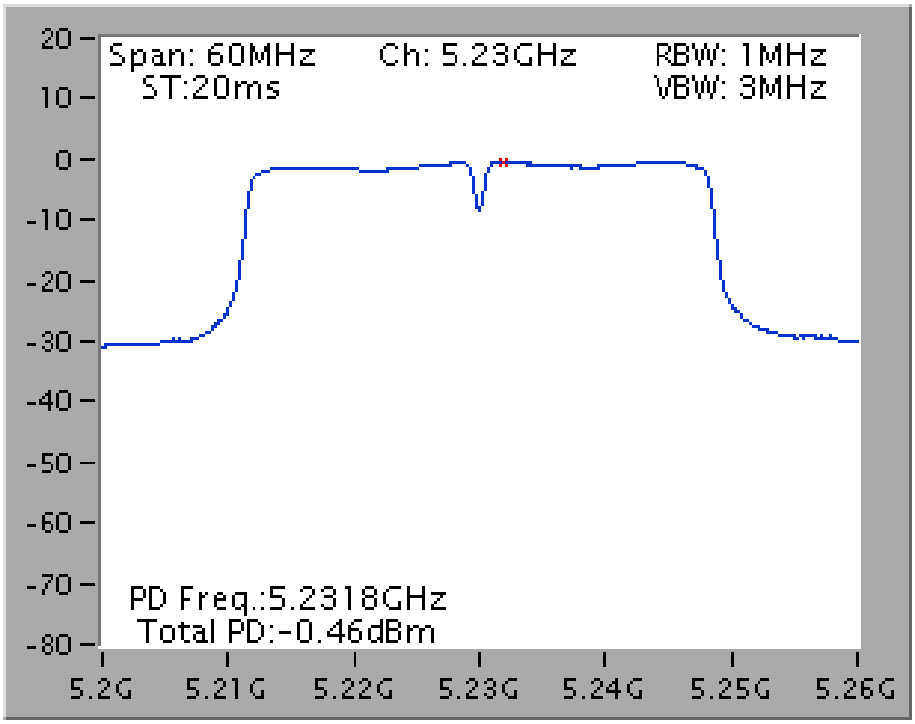
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 20MHz / Chain 1 / 5320 MHz



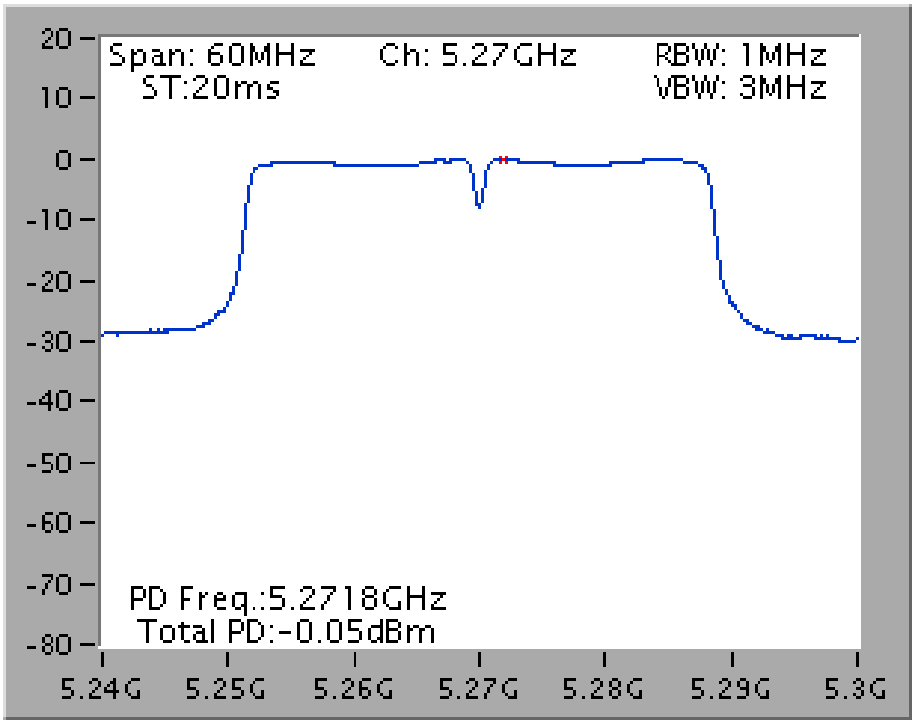
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 20MHz / Chain 1 / 5580 MHz



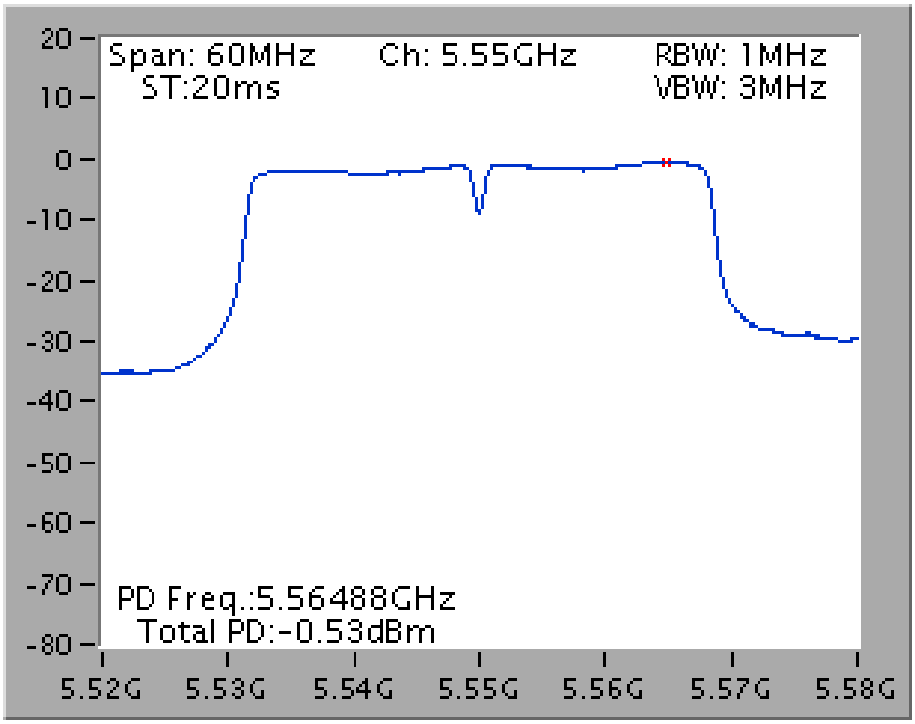
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 40MHz / Chain 1 / 5230 MHz



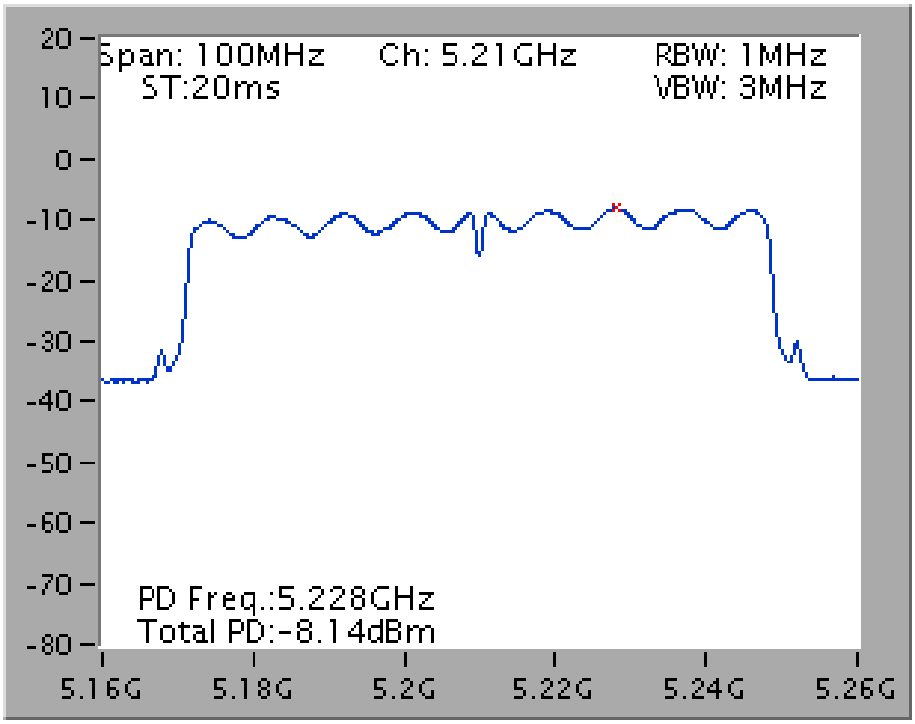
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 40MHz / Chain 1 / 5270 MHz



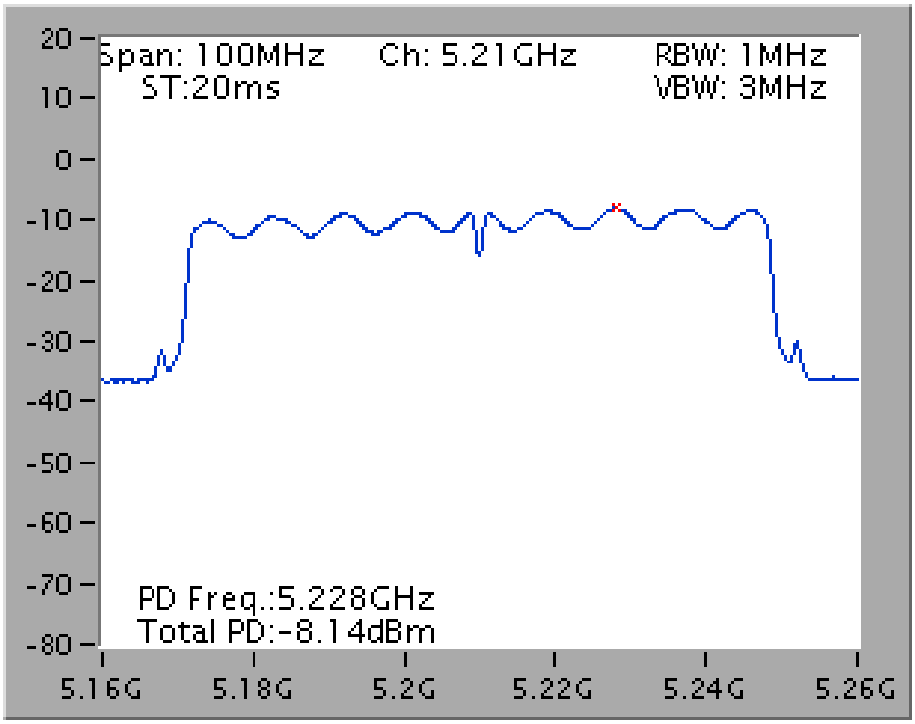
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 40MHz / Chain 1 / 5550 MHz



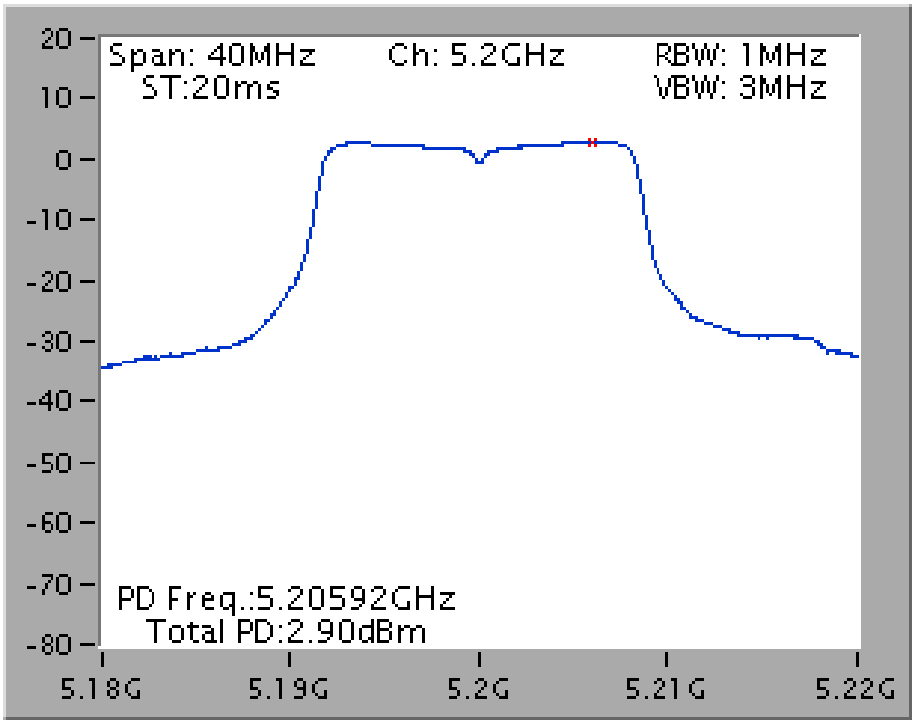
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 80MHz / Chain 1 / 5210 MHz



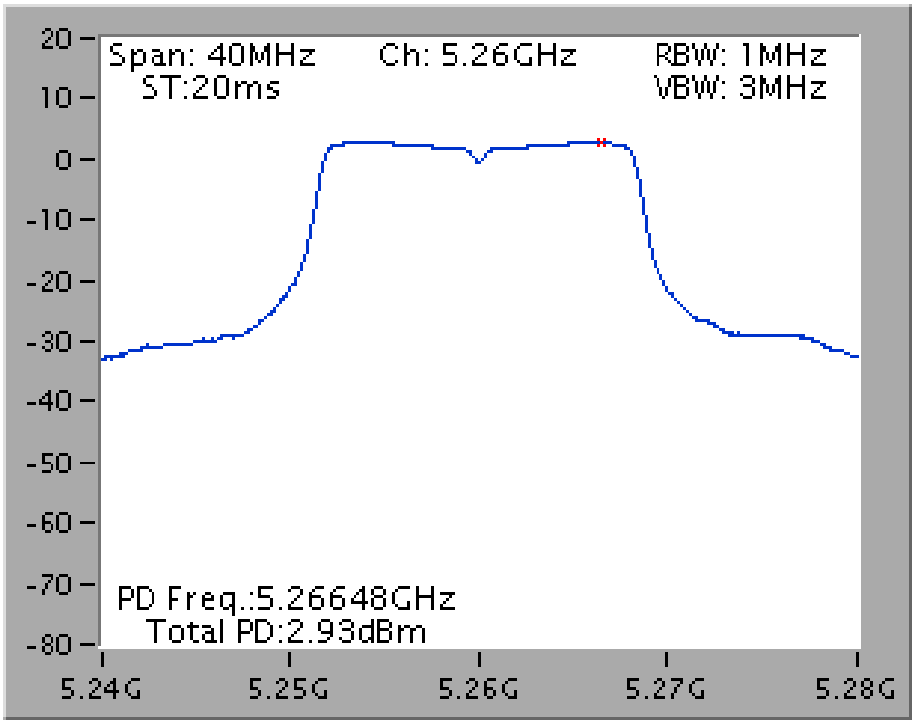
Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 80MHz / Chain 1 / 5210 MHz



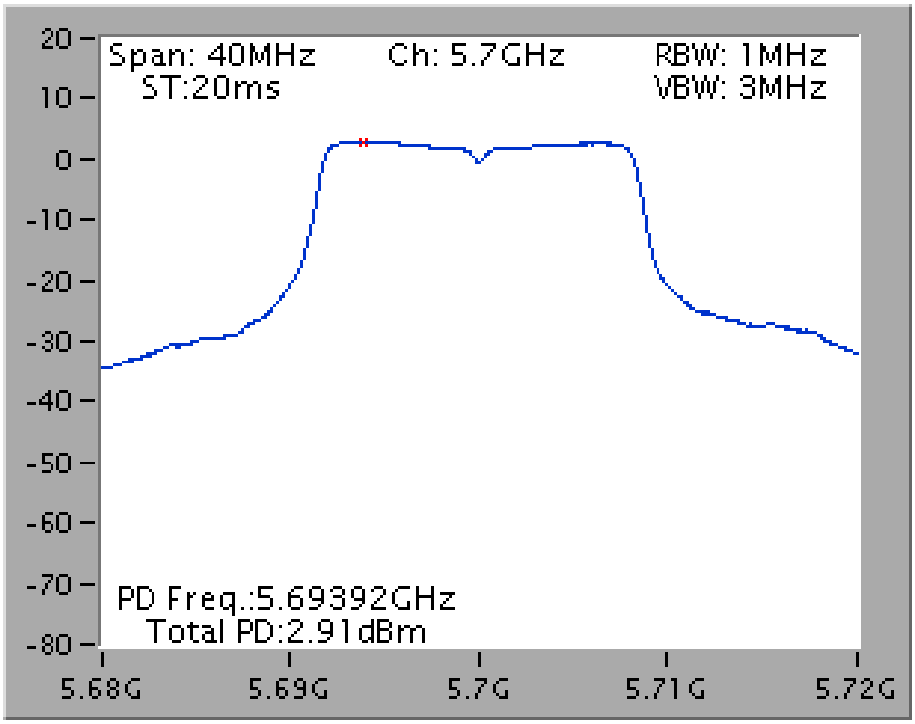
Power Density Plot on Configuration IEEE 802.11a / Chain 1 / 5200 MHz



Power Density Plot on Configuration IEEE 802.11a / Chain 1 / 5260 MHz



Power Density Plot on Configuration IEEE 802.11a / Chain 1 / 5700 MHz



4.5. Peak Excursion Measurement

4.5.1. Limit

The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the maximum conducted output power (measured as specified above) shall not exceed 13 dB across any 1 MHz bandwidth or the emissions bandwidth whichever is less.

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 the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Encompass the entire emissions bandwidth (EBW) of the signal
RBW	1MHz (Peak Trace) / 1MHz (Average Trace)
VBW	≥ 3MHz (Peak Trace) / ≥ 3MHz (Average Trace)
Detector	Peak (Peak Trace) / RMS (Average Trace)
Trace	Trace: Max hold (Peak Trace) / Trace Average Sweep Count 100 (Average Trace)
Sweep Time	AUTO

4.5.3. Test Procedures

1. Trace A, Set RBW =1MHz, VBW = 3MHz, Span >26dB bandwidth, Max. hold.
2. Delta Mark trace A Maximum frequency and trace B same frequency.
3. Repeat the above procedure until measurements for all frequencies were complete.
4. Testing each modulation mode on a single channel in single operating band at single output port. All signal types need test (DSSS, OFDM). All modulation types need test (BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM). All bandwidth modes need test.

4.5.4. Test Setup Layout

This test setup layout is the same as that shown in section 4.4.4.

4.5.5. Test Deviation

There is no deviation with the original standard.

4.5.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.5.7. Test Result of Peak Excursion

Temperature	25℃	Humidity	56%
Test Engineer	Benson Peng	Configurations	IEEE 802.11ac
Test Mode	Mode 1		

Configuration IEEE 802.11ac MCS0/Nss1 20MHz / Chain 1

Modulation	Frequency	Peak Excursion (dB)	Max. Limit (dB)	Result
BSPK(MCS0)	5240MHz	8.69	13	**Complies**
QPSK(MCS1)	5240MHz	8.66	13	**Complies**
16QAM(MCS3)	5240MHz	8.66	13	**Complies**
64QAM(MCS5)	5240MHz	8.74	13	**Complies**
256QAM(MCS8)	5240MHz	8.87	13	**Complies**
BSPK(MCS0)	5300MHz	8.25	13	**Complies**
QPSK(MCS1)	5300MHz	9.66	13	**Complies**
16QAM(MCS3)	5300MHz	9.29	13	**Complies**
64QAM(MCS5)	5300MHz	8.80	13	**Complies**
256QAM(MCS8)	5300MHz	9.64	13	**Complies**
BSPK(MCS0)	5580MHz	8.53	13	**Complies**
QPSK(MCS1)	5580MHz	8.77	13	**Complies**
16QAM(MCS3)	5580MHz	9.21	13	**Complies**
64QAM(MCS5)	5580MHz	9.49	13	**Complies**
256QAM(MCS8)	5580MHz	9.40	13	**Complies**

Configuration IEEE 802.11ac MCS0/Nss1 40MHz / Chain 1

Modulation	Frequency	Peak Excursion (dB)	Max. Limit (dB)	Result
BSPK(MCS0)	5230MHz	8.02	13	**Complies**
QPSK(MCS1)	5230MHz	8.80	13	**Complies**
16QAM(MCS3)	5230MHz	8.78	13	**Complies**
64QAM(MCS5)	5230MHz	9.35	13	**Complies**
256QAM(MCS8)	5230MHz	8.56	13	**Complies**
BSPK(MCS0)	5270MHz	8.73	13	**Complies**
QPSK(MCS1)	5270MHz	8.70	13	**Complies**
16QAM(MCS3)	5270MHz	8.84	13	**Complies**
64QAM(MCS5)	5270MHz	9.82	13	**Complies**
256QAM(MCS8)	5270MHz	8.73	13	**Complies**
BSPK(MCS0)	5550MHz	8.22	13	**Complies**
QPSK(MCS1)	5550MHz	8.62	13	**Complies**
16QAM(MCS3)	5550MHz	8.74	13	**Complies**
64QAM(MCS5)	5550MHz	9.32	13	**Complies**
256QAM(MCS8)	5550MHz	8.72	13	**Complies**

Configuration IEEE 802.11ac MCS0/Nss1 80MHz / Chain 1

Modulation	Frequency	Peak Excursion (dB)	Max. Limit (dB)	Result
BSPK(MCS0)	5210MHz	8.38	13	**Complies**
QPSK(MCS1)	5210MHz	7.86	13	**Complies**
16QAM(MCS3)	5210MHz	9.36	13	**Complies**
64QAM(MCS5)	5210MHz	8.69	13	**Complies**
256QAM(MCS8)	5210MHz	9.01	13	**Complies**
BSPK(MCS0)	5290MHz	8.46	13	**Complies**
QPSK(MCS1)	5290MHz	8.03	13	**Complies**
16QAM(MCS3)	5290MHz	9.28	13	**Complies**
64QAM(MCS5)	5290MHz	8.52	13	**Complies**
256QAM(MCS8)	5290MHz	7.95	13	**Complies**
BSPK(MCS0)	5530MHz	8.61	13	**Complies**
QPSK(MCS1)	5530MHz	7.78	13	**Complies**
16QAM(MCS3)	5530MHz	9.65	13	**Complies**
64QAM(MCS5)	5530MHz	8.31	13	**Complies**
256QAM(MCS8)	5530MHz	9.86	13	**Complies**

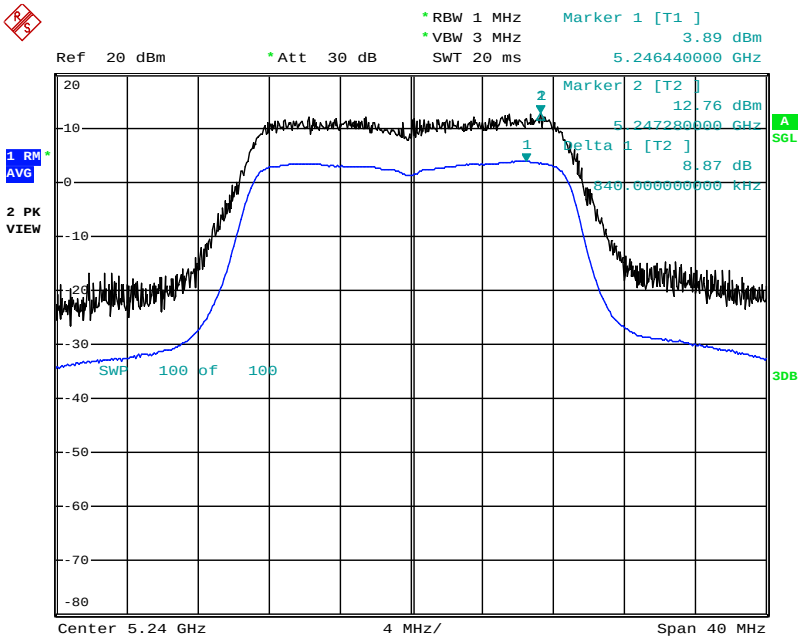
Temperature	25℃	Humidity	56%
Test Engineer	Benson Peng	Configurations	IEEE 802.11a
Test Mode	Mode 1		

Configuration IEEE 802.11a / Chain 1

Modulation	Frequency	Peak Excursion (dB)	Max. Limit (dB)	Result
BSPK(6Mbps)	5180MHz	8.16	13	**Complies**
QPSK(12Mbps)	5180MHz	9.09	13	**Complies**
16QAM(24Mbps)	5180MHz	9.17	13	**Complies**
64QAM(48Mbps)	5180MHz	9.03	13	**Complies**
BSPK(6Mbps)	5300MHz	8.56	13	**Complies**
QPSK(12Mbps)	5300MHz	9.54	13	**Complies**
16QAM(24Mbps)	5300MHz	9.65	13	**Complies**
64QAM(48Mbps)	5300MHz	9.13	13	**Complies**
BSPK(6Mbps)	5580MHz	8.21	13	**Complies**
QPSK(12Mbps)	5580MHz	9.22	13	**Complies**
16QAM(24Mbps)	5580MHz	9.39	13	**Complies**
64QAM(48Mbps)	5580MHz	9.88	13	**Complies**

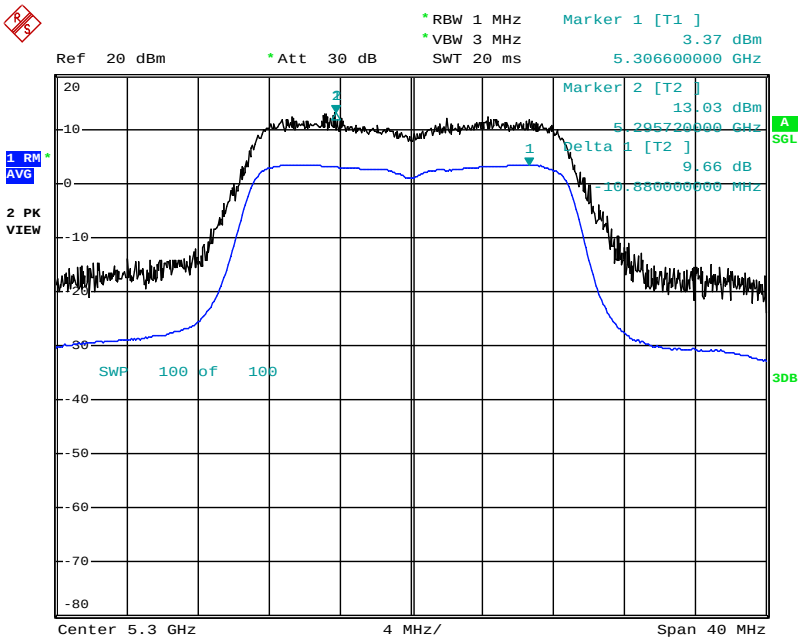
Note: Only the channel with maximum results was listed in the report.

Peak Excursion Plot on Configuration IEEE 802.11ac MCS0/Nss1 20MHz / Chain 1 + Chain 2 / 256QAM(MCS8) / 5240 MHz



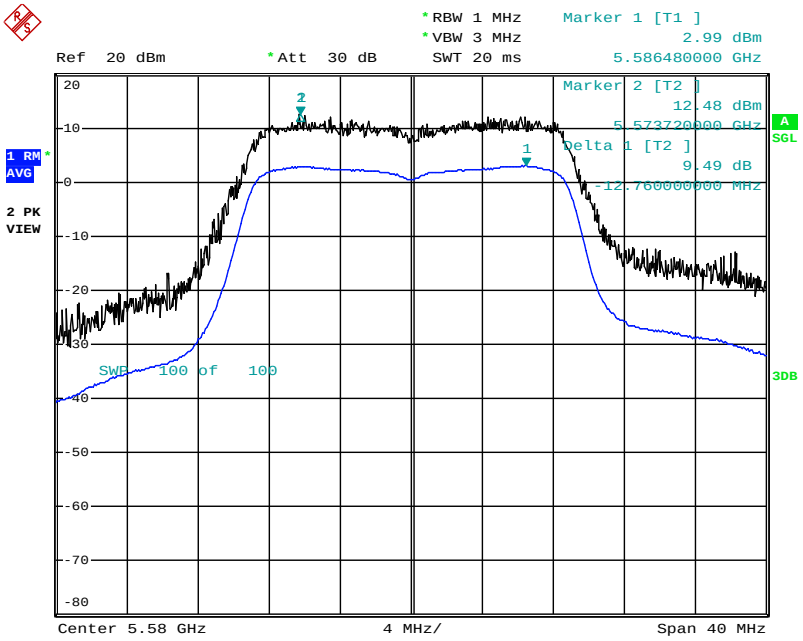
Date: 28.MAY.2013 22:04:35

Peak Excursion Plot on Configuration IEEE 802.11ac MCS0/Nss1 20MHz / Chain 1 + Chain 2 / QPSK(MCS1) / 5300 MHz



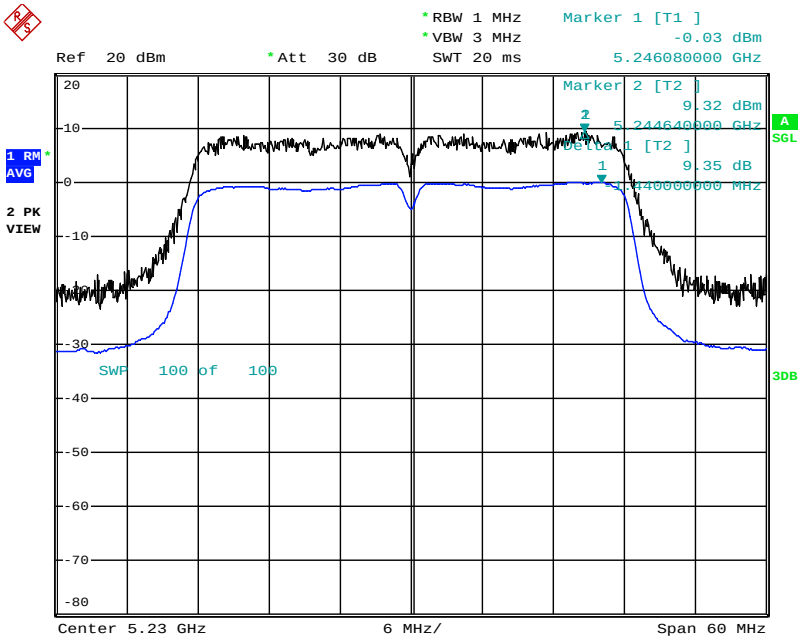
Date: 28.MAY.2013 22:02:25

Peak Excursion Plot on Configuration IEEE 802.11ac MCS0/Nss1 20MHz / Chain 1 + Chain 2 / 64QAM(MCS5) / 5580 MHz



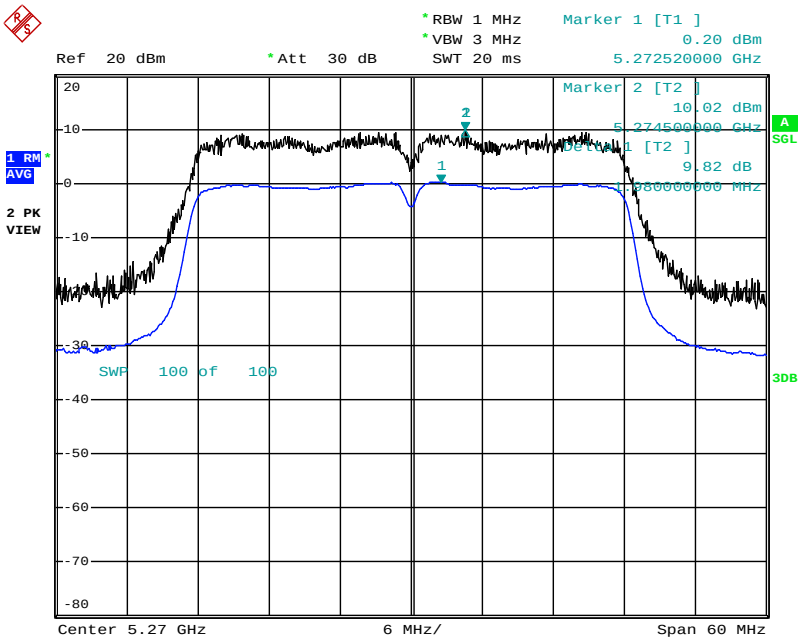
Date: 28.MAY.2013 21:38:22

Peak Excursion Plot on Configuration IEEE 802.11ac MCS0/Nss1 40MHz / Chain 1 + Chain 2 / 64QAM(MCS5) / 5230 MHz



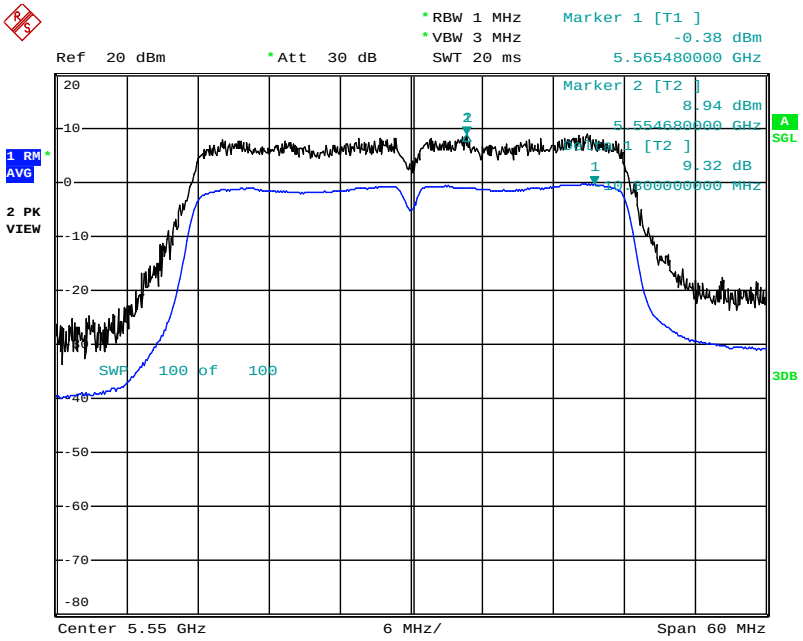
Date: 28.MAY.2013 22:09:03

Peak Excursion Plot on Configuration IEEE 802.11ac MCS0/Nss1 40MHz / Chain 1 + Chain 2 / 64QAM(MCS5) / 5270 MHz



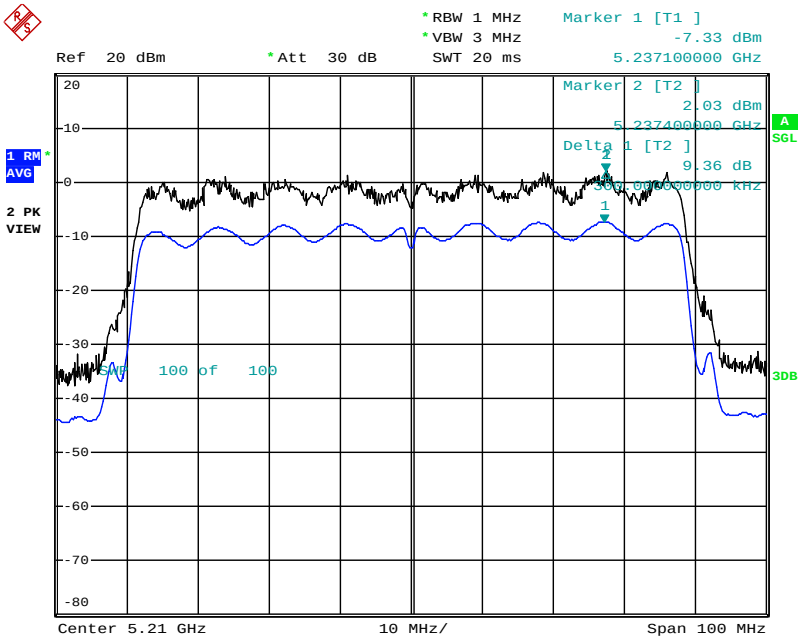
Date: 28.MAY.2013 22:10:41

Peak Excursion Plot on Configuration IEEE 802.11ac MCS0/Nss1 40MHz / Chain 1 + Chain 2 / 64QAM(MCS5) / 5550 MHz



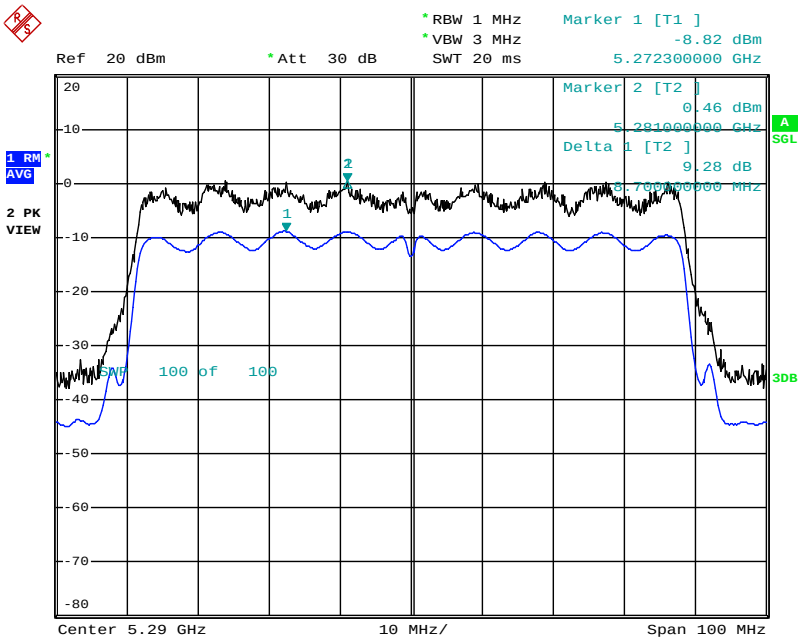
Date: 28.MAY.2013 22:14:45

Peak Excursion Plot on Configuration IEEE 802.11ac MCS0/Nss1 80MHz / Chain 1 + Chain 2 / 16QAM(MCS3) / 5210 MHz



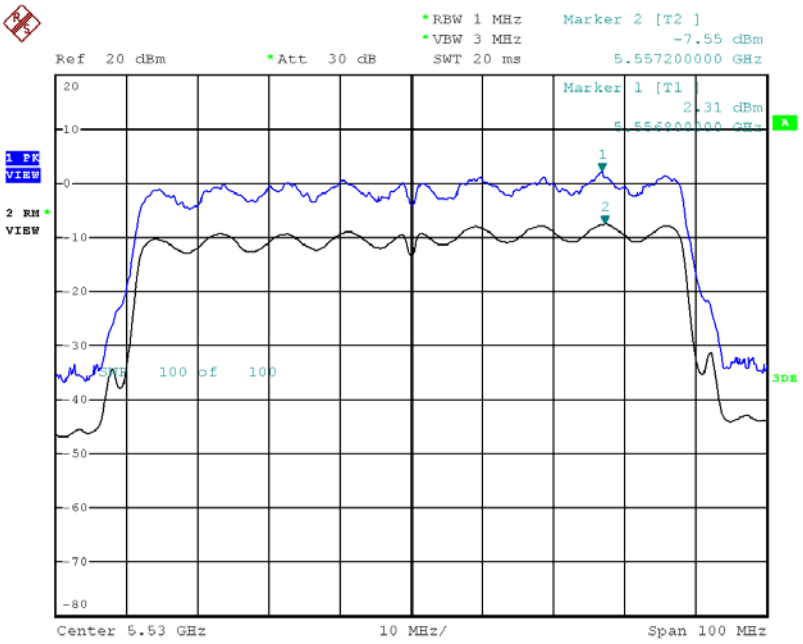
Date: 28.MAY.2013 22:22:27

Peak Excursion Plot on Configuration IEEE 802.11ac MCS0/Nss1 80MHz / Chain 1 + Chain 2 / 16QAM(MCS3) / 5290 MHz



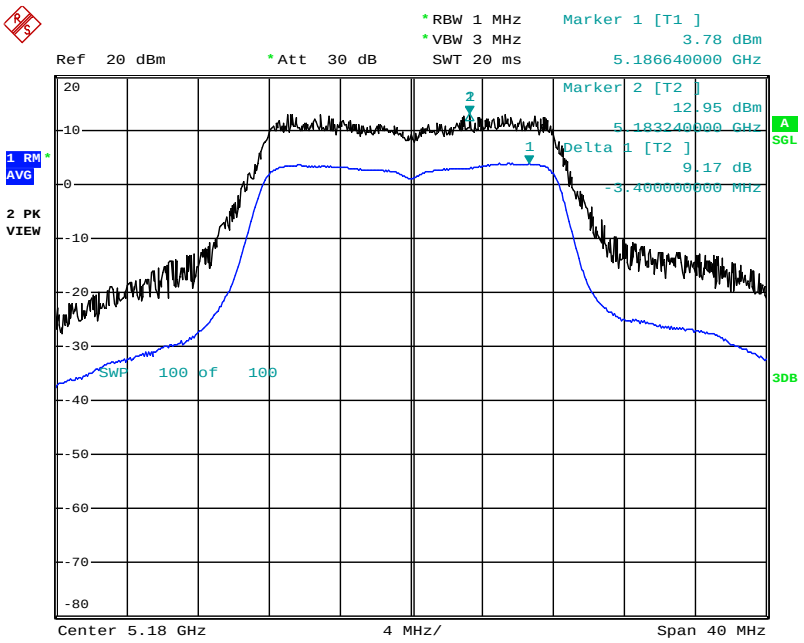
Date: 28.MAY.2013 22:19:47

Peak Excursion Plot on Configuration IEEE 802.11ac MCS0/Nss1 80MHz / Chain 1 + Chain 2 / 256QAM(MCS8) / 5530 MHz



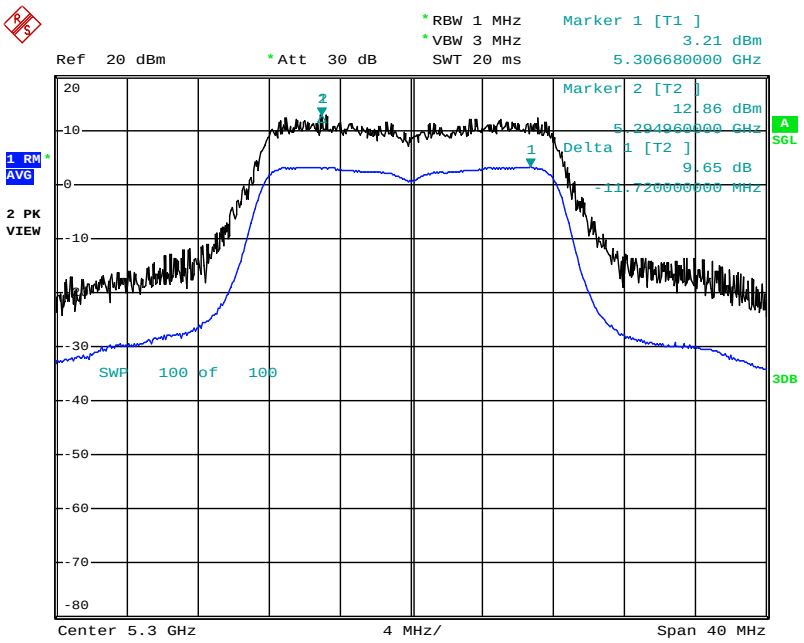
Date: 26.JUN.2013 21:54:48

Peak Excursion Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 / 16QAM(24Mbps) / 5180 MHz



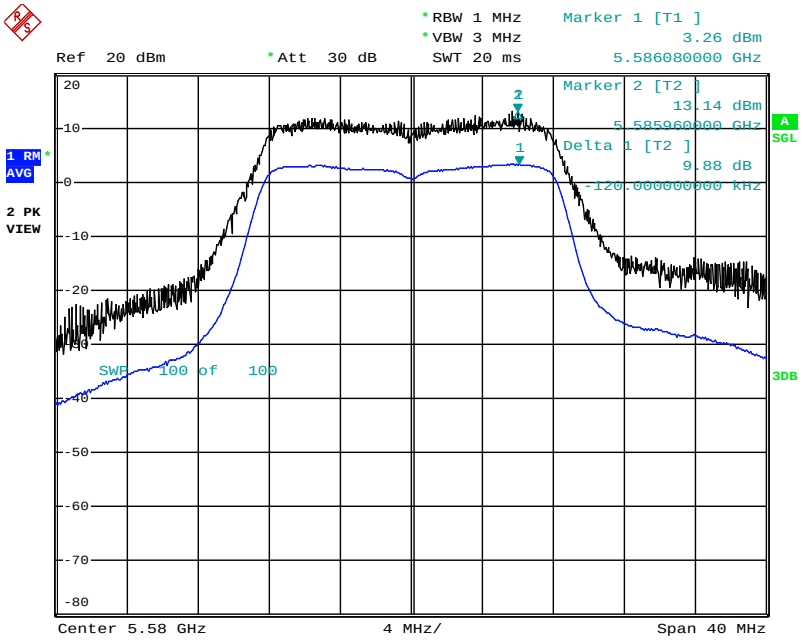
Date: 28.MAY.2013 21:29:21

Peak Excursion Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 / 16QAM(24Mbps) / 5300 MHz



Date: 28.MAY.2013 21:31:11

Peak Excursion Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 / 64QAM(48Mbps) / 5580 MHz



Date: 28.MAY.2013 21:34:20

4.6. Radiated Emissions Measurement

4.6.1. Limit

For transmitters operating in the 5.15-5.35 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed a -27dBm peak limit or average 54dBuV/m and peak 74dBuV/m limits. For transmitters operating in the 5.470-5.725 GHz band: all emissions outside of the 5.470-5.725 GHz band shall not exceed a -27dBm peak limit or average 54dBuV/m and peak 74dBuV/m limits. 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 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, 1 MHz / 10Hz for Average
RBW / VBW (Emission in non-restricted band)	1MHz / 3MHz for peak

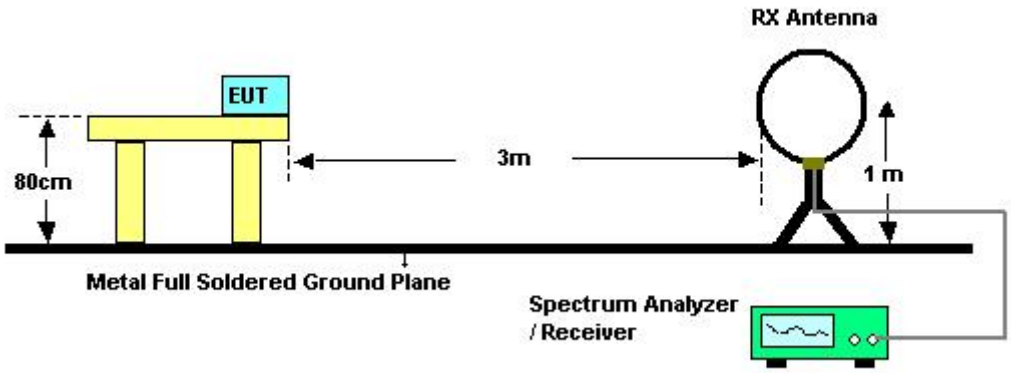
Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RBW 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RBW 120kHz for QP

4.6.3. Test Procedures

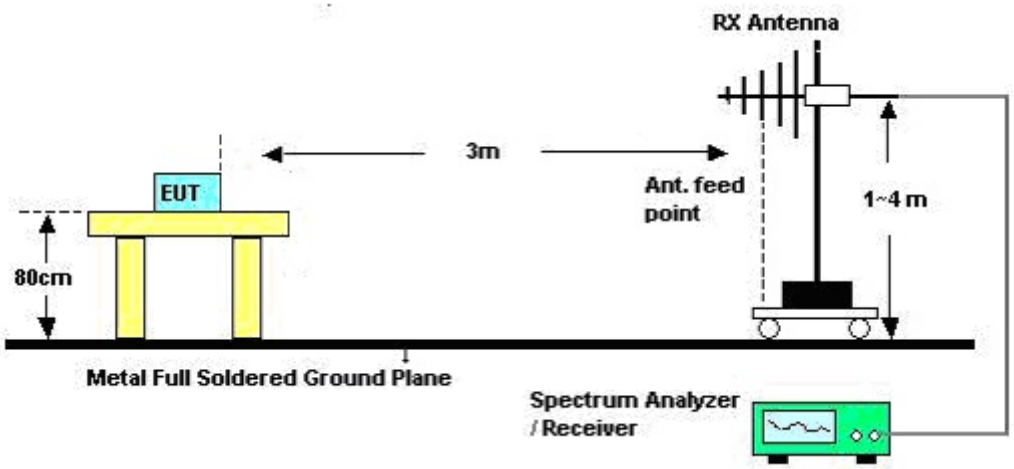
1. Configure the EUT according to ANSI C63.10. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting 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. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value.
8. 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.
9. 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.
10. 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.

4.6.4. Test Setup Layout

For radiated emissions below 1GHz



For radiated emissions above 1GHz



4.6.5. Test Deviation

There is no deviation with the original standard.

4.6.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

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

Temperature	24.5℃	Humidity	60%
Test Engineer	Kenneth Huang	Configurations	Normal Link
Test Date	May 23, 2013		

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.

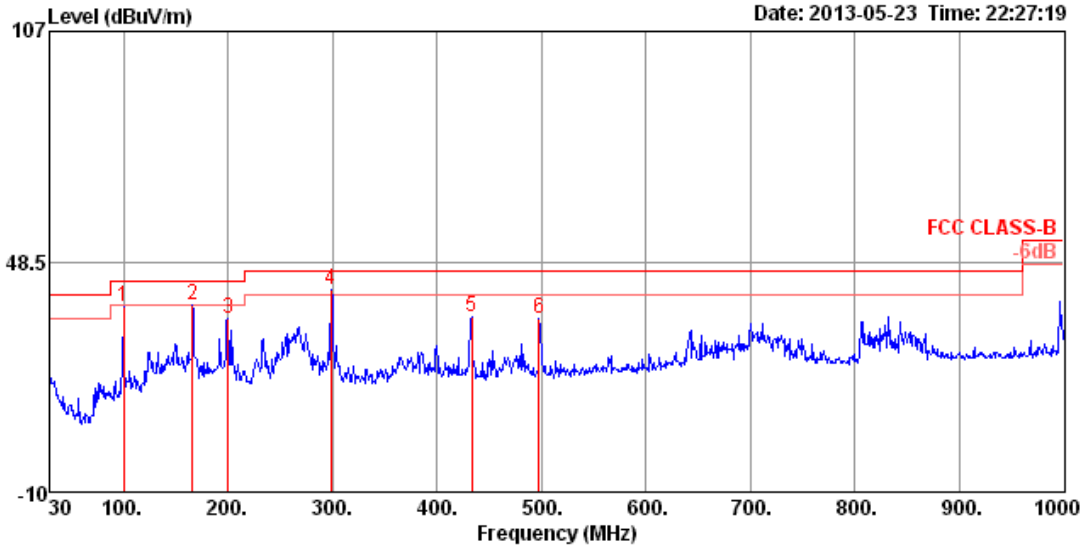
Distance extrapolation factor = 40 log (specific distance / test distance) (dB);

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

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

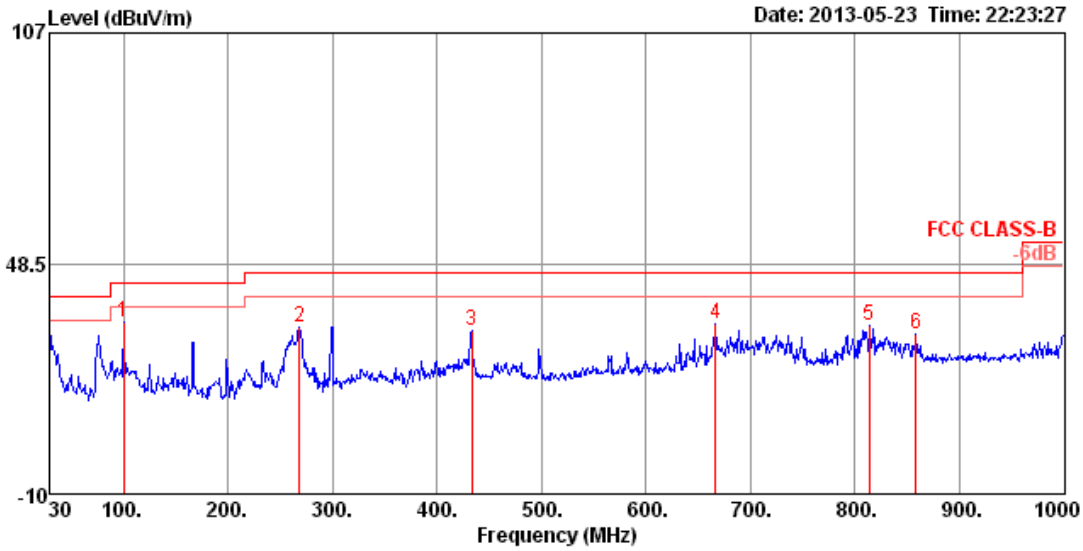
Temperature	24.5℃	Humidity	60%
Test Engineer	Kenneth Huang	Configurations	Normal Link
Test Mode	Mode 1		

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	99.84	37.13	43.50	-6.37	57.25	1.18	10.31	31.61	400	357	HORIZONTAL	Peak
2	165.80	37.46	43.50	-6.04	58.06	1.56	9.38	31.54	300	179	HORIZONTAL	Peak
3	199.75	33.95	43.50	-9.55	55.01	1.70	8.75	31.51	150	174	HORIZONTAL	Peak
4 pp	298.69	41.22	46.00	-4.78	57.55	2.12	12.98	31.43	100	126	HORIZONTAL	Peak
5	433.52	34.65	46.00	-11.35	47.04	2.59	16.17	31.15	100	285	HORIZONTAL	Peak
6	497.54	33.83	46.00	-12.17	45.53	2.81	16.88	31.39	100	130	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 pp	99.84	33.59	43.50	-9.91	53.71	1.18	10.31	31.61	150	242	VERTICAL	Peak
2	268.62	32.23	46.00	-13.77	49.39	1.98	12.41	31.55	150	2	VERTICAL	Peak
3	433.52	31.58	46.00	-14.42	43.97	2.59	16.17	31.15	125	112	VERTICAL	Peak
4	666.32	33.03	46.00	-12.97	42.31	3.31	18.81	31.40	125	315	VERTICAL	Peak
5	813.76	32.90	46.00	-13.10	40.20	3.70	20.21	31.21	100	133	VERTICAL	Peak
6	858.38	30.44	46.00	-15.56	37.51	3.84	20.28	31.19	150	121	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.

4.6.9. Results for Radiated Emissions (1GHz~40GHz)

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 20MHz Ch36 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	a 15539.35	41.67	54.00	-12.33	30.12	7.85	34.79	38.49	Average	135	100	HORIZONTAL
2	p 15540.22	54.68	74.00	-19.32	43.13	7.85	34.79	38.49	Peak	135	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	p 15538.90	54.67	74.00	-19.33	43.12	7.85	34.79	38.49	Peak	222	100	VERTICAL
2	a 15539.89	41.79	54.00	-12.21	30.24	7.85	34.79	38.49	Average	222	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 20MHz Ch40 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	15601.17	54.34	74.00	-19.66	42.84	7.88	34.86	38.48	Peak	124	100	HORIZONTAL
2 a	15601.64	41.54	54.00	-12.46	30.04	7.88	34.86	38.48	Average	124	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	15599.45	54.53	74.00	-19.47	43.03	7.88	34.86	38.48	Peak	260	100	VERTICAL
2 a	15602.20	41.45	54.00	-12.55	29.95	7.88	34.86	38.48	Average	260	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 20MHz Ch48 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	15719.23	55.05	74.00	-18.95	43.61	7.92	34.94	38.46	Peak	159	100	HORIZONTAL
2 a	15722.30	41.80	54.00	-12.20	30.36	7.92	34.94	38.46	Average	159	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	15717.76	54.76	74.00	-19.24	43.32	7.92	34.94	38.46	Peak	252	100	VERTICAL
2 a	15719.63	41.77	54.00	-12.23	30.33	7.92	34.94	38.46	Average	252	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 20MHz Ch52 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	15778.71	55.79	74.00	-18.21	44.43	7.93	35.01	38.44	Peak	166	100	HORIZONTAL
2 a	15780.16	42.83	54.00	-11.17	31.47	7.93	35.01	38.44	Average	166	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	15780.03	42.59	54.00	-11.41	31.23	7.93	35.01	38.44	Average	253	100	VERTICAL
2 p	15781.20	55.10	74.00	-18.90	43.74	7.93	35.01	38.44	Peak	253	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 20MHz Ch60 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	10600.01	38.42	54.00	-15.58	28.46	6.60	35.12	38.48	Average	183	100	HORIZONTAL
2 p	10602.02	52.27	74.00	-21.73	42.29	6.60	35.10	38.48	Peak	183	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	10600.12	38.16	54.00	-15.84	28.20	6.60	35.12	38.48	Average	228	100	VERTICAL
2 p	10601.01	51.19	74.00	-22.81	41.21	6.60	35.10	38.48	Peak	228	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 20MHz Ch64 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	a 10640.03	38.17	54.00	-15.83	28.19	6.59	35.08	38.47	Average	218	100	HORIZONTAL
2	p 10641.71	50.79	74.00	-23.21	40.81	6.59	35.08	38.47	Peak	218	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	a 10638.29	37.74	54.00	-16.26	27.76	6.59	35.08	38.47	Average	295	100	VERTICAL
2	p 10641.69	50.18	74.00	-23.82	40.20	6.59	35.08	38.47	Peak	295	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 20MHz Ch100 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	10999.72	38.87	54.00	-15.13	28.82	6.46	34.81	38.40	Average	173	100	HORIZONTAL
2 p	11000.61	51.09	74.00	-22.91	41.04	6.46	34.81	38.40	Peak	173	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	10999.27	52.13	74.00	-21.87	42.08	6.46	34.81	38.40	Peak	198	100	VERTICAL
2 a	10999.83	38.95	54.00	-15.05	28.90	6.46	34.81	38.40	Average	198	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 20MHz Ch116 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	11159.88	38.82	54.00	-15.18	28.64	6.56	34.81	38.43	Average	171	100	HORIZONTAL
2 p	11161.42	53.17	74.00	-20.83	42.99	6.56	34.81	38.43	Peak	171	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	11159.37	51.22	74.00	-22.78	41.04	6.56	34.81	38.43	Peak	240	100	VERTICAL
2 a	11160.00	38.98	54.00	-15.02	28.80	6.56	34.81	38.43	Average	240	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 20MHz Ch140 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	a 11399.94	38.93	54.00	-15.07	28.58	6.69	34.82	38.48	Average	199	100	HORIZONTAL
2	p 11401.32	51.85	74.00	-22.15	41.50	6.69	34.82	38.48	Peak	199	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	a 11397.99	38.14	54.00	-15.86	27.79	6.69	34.82	38.48	Average	268	100	VERTICAL
2	p 11398.55	50.87	74.00	-23.13	40.52	6.69	34.82	38.48	Peak	268	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 40MHz Ch38 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	15567.61	53.95	74.00	-20.05	42.41	7.86	34.81	38.49	Peak	145	100	HORIZONTAL
2 a	15569.79	41.46	54.00	-12.54	29.92	7.86	34.81	38.49	Average	145	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	15569.04	54.65	74.00	-19.35	43.11	7.86	34.81	38.49	Peak	211	100	VERTICAL
2 a	15570.30	41.32	54.00	-12.68	29.78	7.86	34.81	38.49	Average	211	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 40MHz Ch46 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	15688.30	41.86	54.00	-12.14	30.42	7.90	34.92	38.46	Average	192	100	HORIZONTAL
2 p	15690.58	54.35	74.00	-19.65	42.91	7.90	34.92	38.46	Peak	192	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	15688.44	41.62	54.00	-12.38	30.18	7.90	34.92	38.46	Average	253	100	VERTICAL
2 p	15691.11	55.06	74.00	-18.94	43.62	7.90	34.92	38.46	Peak	253	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 40MHz Ch54 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	a 15807.51	42.30	54.00	-11.70	30.94	7.95	35.03	38.44	Average	130	100	HORIZONTAL
2	p 15807.81	55.74	74.00	-18.26	44.38	7.95	35.03	38.44	Peak	130	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	a 15810.03	42.38	54.00	-11.62	31.02	7.95	35.03	38.44	Average	211	100	VERTICAL
2	p 15812.35	54.98	74.00	-19.02	43.62	7.95	35.03	38.44	Peak	211	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 40MHz Ch62 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	10619.68	38.11	54.00	-15.89	28.13	6.60	35.10	38.48	Average	133	100	HORIZONTAL
2 p	10620.51	50.42	74.00	-23.58	40.44	6.60	35.10	38.48	Peak	133	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	10619.87	37.88	54.00	-16.12	27.90	6.60	35.10	38.48	Average	264	100	VERTICAL
2 p	10620.78	50.44	74.00	-23.56	40.46	6.60	35.10	38.48	Peak	264	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 40MHz Ch102 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	11017.84	50.34	74.00	-23.66	40.28	6.47	34.81	38.40	Peak	190	100	HORIZONTAL
2 a	11018.10	37.45	54.00	-16.55	27.39	6.47	34.81	38.40	Average	190	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	11019.91	38.00	54.00	-16.00	27.94	6.47	34.81	38.40	Average	235	100	VERTICAL
2 p	11020.69	50.04	74.00	-23.96	39.98	6.47	34.81	38.40	Peak	235	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 40MHz Ch110 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	11098.11	51.39	74.00	-22.61	41.26	6.52	34.81	38.42	Peak	147	100	HORIZONTAL
2 a	11100.12	39.27	54.00	-14.73	29.14	6.52	34.81	38.42	Average	147	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	11098.18	51.18	74.00	-22.82	41.05	6.52	34.81	38.42	Peak	209	100	VERTICAL
2 a	11099.96	38.88	54.00	-15.12	28.75	6.52	34.81	38.42	Average	209	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 40MHz Ch134 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	a 11339.99	38.58	54.00	-15.42	28.28	6.65	34.82	38.47	Average	103	100	HORIZONTAL
2	p 11341.31	50.94	74.00	-23.06	40.64	6.65	34.82	38.47	Peak	103	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	p 11339.70	52.24	74.00	-21.76	41.94	6.65	34.82	38.47	Peak	213	100	VERTICAL
2	a 11339.86	39.33	54.00	-14.67	29.03	6.65	34.82	38.47	Average	213	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 80MHz Ch42 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	15630.67	41.68	54.00	-12.32	30.20	7.89	34.88	38.47	Average	178	100	HORIZONTAL
2 p	15631.19	54.53	74.00	-19.47	43.05	7.89	34.88	38.47	Peak	178	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	15628.46	55.49	74.00	-18.51	44.01	7.88	34.88	38.48	Peak	255	100	VERTICAL
2 a	15628.54	41.74	54.00	-12.26	30.26	7.89	34.88	38.47	Average	255	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 80MHz Ch58 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	15867.65	55.45	74.00	-18.55	44.13	7.97	35.07	38.42	Peak	124	100	HORIZONTAL
2 a	15868.38	42.45	54.00	-11.55	31.13	7.97	35.07	38.42	Average	124	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	15869.39	55.46	74.00	-18.54	44.14	7.97	35.07	38.42	Peak	230	100	VERTICAL
2 a	15871.43	42.53	54.00	-11.47	31.21	7.97	35.07	38.42	Average	230	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 80MHz Ch106 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	11059.29	51.03	74.00	-22.97	40.93	6.50	34.81	38.41	Peak	176	100	HORIZONTAL
2 a	11059.95	38.33	54.00	-15.67	28.23	6.50	34.81	38.41	Average	176	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	11060.01	38.67	54.00	-15.33	28.57	6.50	34.81	38.41	Average	238	100	VERTICAL
2 p	11060.46	50.51	74.00	-23.49	40.41	6.50	34.81	38.41	Peak	238	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.

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 36 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	15538.72	54.55	74.00	-19.45	43.00	7.85	34.79	38.49	Peak	230	100	HORIZONTAL
2 a	15541.62	41.55	54.00	-12.45	30.00	7.85	34.79	38.49	Average	230	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	15541.55	54.81	74.00	-19.19	43.26	7.85	34.79	38.49	Peak	180	100	VERTICAL
2 a	15542.19	41.54	54.00	-12.46	29.99	7.85	34.79	38.49	Average	180	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 40 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	p 15600.48	54.32	74.00	-19.68	42.82	7.88	34.86	38.48	Peak	262	100	VERTICAL
2	a 15601.61	41.54	54.00	-12.46	30.04	7.88	34.86	38.48	Average	262	100	VERTICAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	a 15599.42	41.35	54.00	-12.65	29.85	7.88	34.86	38.48	Average	204	100	HORIZONTAL
2	p 15599.61	54.13	74.00	-19.87	42.63	7.88	34.86	38.48	Peak	204	100	HORIZONTAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 48 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	15719.80	41.71	54.00	-12.29	30.27	7.92	34.94	38.46	Average	194	100	HORIZONTAL
2 p	15719.83	54.80	74.00	-19.20	43.36	7.92	34.94	38.46	Peak	194	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	15719.57	41.64	54.00	-12.36	30.20	7.92	34.94	38.46	Average	302	100	VERTICAL
2 p	15719.84	54.49	74.00	-19.51	43.05	7.92	34.94	38.46	Peak	302	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 52 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	15777.80	55.67	74.00	-18.33	44.31	7.93	35.01	38.44	Peak	221	100	HORIZONTAL
2 a	15780.96	42.46	54.00	-11.54	31.10	7.93	35.01	38.44	Average	221	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	15779.53	55.04	74.00	-18.96	43.68	7.93	35.01	38.44	Peak	290	100	VERTICAL
2 a	15781.05	42.34	54.00	-11.66	30.98	7.93	35.01	38.44	Average	290	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 60 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	10600.01	38.78	54.00	-15.22	28.82	6.60	35.12	38.48	Average	198	100	HORIZONTAL
2 p	10601.01	51.77	74.00	-22.23	41.79	6.60	35.10	38.48	Peak	198	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	10600.02	38.60	54.00	-15.40	28.64	6.60	35.12	38.48	Average	254	100	VERTICAL
2 p	10600.07	50.72	74.00	-23.28	40.76	6.60	35.12	38.48	Peak	254	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 64 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	10638.02	38.44	54.00	-15.56	28.46	6.59	35.08	38.47	Average	148	100	HORIZONTAL
2 p	10639.61	50.65	74.00	-23.35	40.67	6.59	35.08	38.47	Peak	148	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	10637.86	50.68	74.00	-23.32	40.70	6.59	35.08	38.47	Peak	218	100	VERTICAL
2 a	10639.77	38.04	54.00	-15.96	28.06	6.59	35.08	38.47	Average	218	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 100 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	11000.12	38.80	54.00	-15.20	28.75	6.46	34.81	38.40	Average	199	100	HORIZONTAL
2 p	11000.50	51.31	74.00	-22.69	41.26	6.46	34.81	38.40	Peak	199	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	11000.12	38.91	54.00	-15.09	28.86	6.46	34.81	38.40	Average	247	100	VERTICAL
2 p	11000.78	50.33	74.00	-23.67	40.28	6.46	34.81	38.40	Peak	247	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 116 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	11159.75	51.26	74.00	-22.74	41.08	6.56	34.81	38.43	Peak	168	100	HORIZONTAL
2 a	11159.93	39.21	54.00	-14.79	29.03	6.56	34.81	38.43	Average	168	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	11159.93	38.83	54.00	-15.17	28.65	6.56	34.81	38.43	Average	224	100	VERTICAL
2 p	11160.29	51.16	74.00	-22.84	40.98	6.56	34.81	38.43	Peak	224	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 140 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	11399.68	51.32	74.00	-22.68	40.97	6.69	34.82	38.48	Peak	224	100	HORIZONTAL
2 a	11402.07	38.35	54.00	-15.65	28.00	6.69	34.82	38.48	Average	224	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	11397.69	51.05	74.00	-22.95	40.70	6.69	34.82	38.48	Peak	162	100	VERTICAL
2 a	11399.93	39.86	54.00	-14.14	29.51	6.69	34.82	38.48	Average	162	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.

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 20MHz Ch36 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 9

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	15537.69	55.01	74.00	-18.99	43.46	7.85	34.79	38.49	Peak	228	100	HORIZONTAL
2 a	15541.97	42.31	54.00	-11.69	30.76	7.85	34.79	38.49	Average	228	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	15542.04	55.70	74.00	-18.30	44.15	7.85	34.79	38.49	Peak	178	100	VERTICAL
2 a	15542.11	42.60	54.00	-11.40	31.05	7.85	34.79	38.49	Average	178	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 20MHz Ch40 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 9

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	15597.90	42.24	54.00	-11.76	30.71	7.88	34.83	38.48	Average	211	100	HORIZONTAL
2 p	15600.09	55.37	74.00	-18.63	43.87	7.88	34.86	38.48	Peak	211	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	15598.39	42.23	54.00	-11.77	30.70	7.88	34.83	38.48	Average	151	100	VERTICAL
2 p	15599.84	55.06	74.00	-18.94	43.56	7.88	34.86	38.48	Peak	151	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 20MHz Ch48 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 9

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	15717.97	41.52	54.00	-12.48	30.08	7.92	34.94	38.46	Average	204	100	HORIZONTAL
2 p	15720.32	54.31	74.00	-19.69	42.87	7.92	34.94	38.46	Peak	204	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	15717.94	41.54	54.00	-12.46	30.10	7.92	34.94	38.46	Average	121	100	VERTICAL
2 p	15719.51	53.99	74.00	-20.01	42.55	7.92	34.94	38.46	Peak	121	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 20MHz Ch52 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 9

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	a 15777.71	42.00	54.00	-12.00	30.64	7.93	35.01	38.44	Average	224	100	HORIZONTAL
2	p 15778.44	55.35	74.00	-18.65	43.99	7.93	35.01	38.44	Peak	224	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	a 15779.38	41.93	54.00	-12.07	30.57	7.93	35.01	38.44	Average	160	100	VERTICAL
2	p 15779.50	54.75	74.00	-19.25	43.39	7.93	35.01	38.44	Peak	160	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 20MHz Ch60 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 9

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	10599.70	51.87	74.00	-22.13	41.91	6.60	35.12	38.48	Peak	208	100	HORIZONTAL
2 a	10600.37	39.73	54.00	-14.27	29.77	6.60	35.12	38.48	Average	208	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	10600.01	42.59	54.00	-11.41	32.63	6.60	35.12	38.48	Average	133	100	VERTICAL
2 p	10600.03	55.48	74.00	-18.52	45.52	6.60	35.12	38.48	Peak	133	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 20MHz Ch64 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 9

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	a 10639.53	39.29	54.00	-14.71	29.31	6.59	35.08	38.47	Average	230	100	HORIZONTAL
2	p 10641.04	53.13	74.00	-20.87	43.15	6.59	35.08	38.47	Peak	230	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	a 10639.82	41.04	54.00	-12.96	31.06	6.59	35.08	38.47	Average	153	100	VERTICAL
2	p 10640.02	53.98	74.00	-20.02	44.00	6.59	35.08	38.47	Peak	153	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 20MHz Ch100 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 9

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	10997.71	38.66	54.00	-15.34	28.61	6.46	34.81	38.40	Average	181	100	HORIZONTAL
2 p	11001.64	50.95	74.00	-23.05	40.90	6.46	34.81	38.40	Peak	181	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	10999.02	58.28	74.00	-15.72	48.23	6.46	34.81	38.40	Peak	22	100	VERTICAL
2 a	10999.97	43.74	54.00	-10.26	33.69	6.46	34.81	38.40	Average	22	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 20MHz Ch116 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 9

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	a 11160.60	39.69	54.00	-14.31	29.51	6.56	34.81	38.43	Average	248	100	HORIZONTAL
2	p 11161.53	52.50	74.00	-21.50	42.32	6.56	34.81	38.43	Peak	248	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	p 11158.42	56.20	74.00	-17.80	46.02	6.56	34.81	38.43	Peak	24	100	VERTICAL
2	a 11159.87	42.75	54.00	-11.25	32.57	6.56	34.81	38.43	Average	24	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 20MHz Ch140 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 9

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	11399.98	37.74	54.00	-16.26	27.39	6.69	34.82	38.48	Average	207	100	HORIZONTAL
2 p	11400.58	50.05	74.00	-23.95	39.70	6.69	34.82	38.48	Peak	207	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	11399.92	39.75	54.00	-14.25	29.40	6.69	34.82	38.48	Average	16	100	VERTICAL
2 p	11400.16	52.02	74.00	-21.98	41.67	6.69	34.82	38.48	Peak	16	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 40MHz Ch38 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 9

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	15567.59	55.62	74.00	-18.38	44.08	7.86	34.81	38.49	Peak	224	100	HORIZONTAL
2 a	15570.44	42.46	54.00	-11.54	30.92	7.86	34.81	38.49	Average	224	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	15569.34	56.23	74.00	-17.77	44.69	7.86	34.81	38.49	Peak	154	100	VERTICAL
2 a	15570.13	42.52	54.00	-11.48	30.98	7.86	34.81	38.49	Average	154	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 40MHz Ch46 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 9

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	15691.40	54.46	74.00	-19.54	43.02	7.90	34.92	38.46	Peak	224	100	HORIZONTAL
2 a	15691.45	41.91	54.00	-12.09	30.47	7.90	34.92	38.46	Average	224	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	15689.39	41.89	54.00	-12.11	30.45	7.90	34.92	38.46	Average	166	100	VERTICAL
2 p	15689.74	56.18	74.00	-17.82	44.74	7.90	34.92	38.46	Peak	166	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 40MHz Ch54 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 9

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	15808.00	54.44	74.00	-19.56	43.08	7.95	35.03	38.44	Peak	244	100	HORIZONTAL
2 a	15808.15	41.97	54.00	-12.03	30.61	7.95	35.03	38.44	Average	244	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	15810.76	54.43	74.00	-19.57	43.07	7.95	35.03	38.44	Peak	153	100	VERTICAL
2 a	15811.23	41.94	54.00	-12.06	30.58	7.95	35.03	38.44	Average	153	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 40MHz Ch62 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 9

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	10617.95	51.70	74.00	-22.30	41.72	6.60	35.10	38.48	Peak	179	100	HORIZONTAL
2 a	10618.53	38.89	54.00	-15.11	28.91	6.60	35.10	38.48	Average	179	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	10619.81	39.42	54.00	-14.58	29.44	6.60	35.10	38.48	Average	107	100	VERTICAL
2 p	10620.96	51.54	74.00	-22.46	41.56	6.60	35.10	38.48	Peak	107	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 40MHz Ch102 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 9

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	11017.65	38.44	54.00	-15.56	28.38	6.47	34.81	38.40	Average	209	100	HORIZONTAL
2 p	11018.97	49.78	74.00	-24.22	39.72	6.47	34.81	38.40	Peak	209	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	11019.91	39.40	54.00	-14.60	29.34	6.47	34.81	38.40	Average	126	100	VERTICAL
2 p	11022.22	50.37	74.00	-23.63	40.29	6.48	34.81	38.41	Peak	126	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 40MHz Ch110 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 9

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	11100.16	40.51	54.00	-13.49	30.38	6.52	34.81	38.42	Average	158	100	VERTICAL
2 p	11101.24	52.23	74.00	-21.77	42.10	6.52	34.81	38.42	Peak	158	100	VERTICAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	11099.79	39.03	54.00	-14.97	28.90	6.52	34.81	38.42	Average	168	100	HORIZONTAL
2 p	11100.14	51.76	74.00	-22.24	41.63	6.52	34.81	38.42	Peak	168	100	HORIZONTAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 40MHz Ch134 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 9

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	a 11337.53	37.66	54.00	-16.34	27.36	6.65	34.82	38.47	Average	214	100	HORIZONTAL
2	p 11341.40	50.61	74.00	-23.39	40.31	6.65	34.82	38.47	Peak	214	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	a 11339.93	39.02	54.00	-14.98	28.72	6.65	34.82	38.47	Average	152	100	VERTICAL
2	p 11340.40	52.15	74.00	-21.85	41.85	6.65	34.82	38.47	Peak	152	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 80MHz Ch42 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 9

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	15628.53	54.70	74.00	-19.30	43.22	7.89	34.88	38.47	Peak	253	100	HORIZONTAL
2 a	15628.71	42.14	54.00	-11.86	30.66	7.89	34.88	38.47	Average	253	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	15629.44	42.39	54.00	-11.61	30.91	7.89	34.88	38.47	Average	188	100	VERTICAL
2 p	15630.33	54.78	74.00	-19.22	43.30	7.89	34.88	38.47	Peak	188	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 80MHz Ch58 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 9

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	15869.30	42.02	54.00	-11.98	30.70	7.97	35.07	38.42	Average	246	100	HORIZONTAL
2 p	15871.70	55.57	74.00	-18.43	44.25	7.97	35.07	38.42	Peak	246	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	15870.72	54.86	74.00	-19.14	43.54	7.97	35.07	38.42	Peak	162	100	VERTICAL
2 a	15871.75	42.08	54.00	-11.92	30.76	7.97	35.07	38.42	Average	162	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 80MHz Ch106 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 9

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	11060.16	38.38	54.00	-15.62	28.28	6.50	34.81	38.41	Average	217	100	HORIZONTAL
2 p	11060.19	51.46	74.00	-22.54	41.36	6.50	34.81	38.41	Peak	217	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	11060.02	39.91	54.00	-14.09	29.81	6.50	34.81	38.41	Average	140	100	VERTICAL
2 p	11060.92	52.39	74.00	-21.61	42.29	6.50	34.81	38.41	Peak	140	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.

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 36 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 9

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	15538.52	54.91	74.00	-19.09	43.36	7.85	34.79	38.49	Peak	197	100	HORIZONTAL
2 a	15541.80	42.51	54.00	-11.49	30.96	7.85	34.79	38.49	Average	197	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	15537.87	42.83	54.00	-11.17	31.28	7.85	34.79	38.49	Average	136	100	VERTICAL
2 p	15537.97	54.96	74.00	-19.04	43.41	7.85	34.79	38.49	Peak	136	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 40 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 9

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	15597.65	42.29	54.00	-11.71	30.76	7.88	34.83	38.48	Average	212	100	HORIZONTAL
2 p	15598.90	54.67	74.00	-19.33	43.17	7.88	34.86	38.48	Peak	212	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	15600.56	55.29	74.00	-18.71	43.79	7.88	34.86	38.48	Peak	145	100	VERTICAL
2 a	15601.02	42.23	54.00	-11.77	30.73	7.88	34.86	38.48	Average	145	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 48 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 9

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	15719.22	54.62	74.00	-19.38	43.18	7.92	34.94	38.46	Peak	218	100	HORIZONTAL
2 a	15721.20	41.61	54.00	-12.39	30.17	7.92	34.94	38.46	Average	218	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	15717.50	53.97	74.00	-20.03	42.53	7.92	34.94	38.46	Peak	140	100	VERTICAL
2 a	15717.89	41.84	54.00	-12.16	30.40	7.92	34.94	38.46	Average	140	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 52 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 9

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	15782.11	42.05	54.00	-11.95	30.68	7.94	35.01	38.44	Average	200	100	HORIZONTAL
2 p	15782.22	54.79	74.00	-19.21	43.42	7.94	35.01	38.44	Peak	200	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	15778.98	54.51	74.00	-19.49	43.15	7.93	35.01	38.44	Peak	120	100	VERTICAL
2 a	15782.18	41.94	54.00	-12.06	30.57	7.94	35.01	38.44	Average	120	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 60 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 9

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	10600.54	53.20	74.00	-20.80	43.24	6.60	35.12	38.48	Peak	173	100	HORIZONTAL
2 a	10602.00	39.94	54.00	-14.06	29.96	6.60	35.10	38.48	Average	173	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	10600.19	44.35	54.00	-9.65	34.39	6.60	35.12	38.48	Average	27	100	VERTICAL
2 p	10600.29	58.10	74.00	-15.90	48.14	6.60	35.12	38.48	Peak	27	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 64 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 9

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	10639.81	39.22	54.00	-14.78	29.24	6.59	35.08	38.47	Average	211	100	HORIZONTAL
2 p	10641.99	51.88	74.00	-22.12	41.90	6.59	35.08	38.47	Peak	211	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	10639.93	42.99	54.00	-11.01	33.01	6.59	35.08	38.47	Average	47	100	VERTICAL
2 p	10641.86	55.94	74.00	-18.06	45.96	6.59	35.08	38.47	Peak	47	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 100 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 9

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	10997.81	50.20	74.00	-23.80	40.15	6.46	34.81	38.40	Peak	207	100	HORIZONTAL
2 a	11000.22	37.70	54.00	-16.30	27.65	6.46	34.81	38.40	Average	207	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	10998.29	57.23	74.00	-16.77	47.18	6.46	34.81	38.40	Peak	28	100	VERTICAL
2 a	11000.27	44.80	54.00	-9.20	34.75	6.46	34.81	38.40	Average	28	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 116 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 9

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	11157.98	52.54	74.00	-21.46	42.36	6.56	34.81	38.43	Peak	205	100	HORIZONTAL
2 a	11159.80	39.53	54.00	-14.47	29.35	6.56	34.81	38.43	Average	205	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	11159.93	55.88	74.00	-18.12	45.70	6.56	34.81	38.43	Peak	32	100	VERTICAL
2 a	11160.12	42.65	54.00	-11.35	32.47	6.56	34.81	38.43	Average	32	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 140 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 9

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	a 11398.44	37.55	54.00	-16.45	27.20	6.69	34.82	38.48	Average	211	100	HORIZONTAL
2	p 11399.13	50.67	74.00	-23.33	40.32	6.69	34.82	38.48	Peak	211	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	p 11398.76	51.96	74.00	-22.04	41.61	6.69	34.82	38.48	Peak	26	100	VERTICAL
2	a 11400.19	39.91	54.00	-14.09	29.56	6.69	34.82	38.48	Average	26	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.

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 20MHz Ch36 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 13

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	15539.63	42.65	54.00	-11.35	31.10	7.85	34.79	38.49	Average	100	100	HORIZONTAL
2 p	15539.70	56.26	74.00	-17.74	44.71	7.85	34.79	38.49	Peak	100	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	15540.90	42.49	54.00	-11.51	30.94	7.85	34.79	38.49	Average	215	100	VERTICAL
2 p	15540.94	55.61	74.00	-18.39	44.06	7.85	34.79	38.49	Peak	215	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 20MHz Ch40 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 13

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	p 15599.97	55.72	74.00	-18.28	44.22	7.88	34.86	38.48	Peak	170	100	HORIZONTAL
2	a 15600.26	42.08	54.00	-11.92	30.58	7.88	34.86	38.48	Average	170	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	a 15599.43	42.21	54.00	-11.79	30.71	7.88	34.86	38.48	Average	111	100	VERTICAL
2	p 15600.55	55.71	74.00	-18.29	44.21	7.88	34.86	38.48	Peak	111	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 20MHz Ch48 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 13

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	15719.02	42.31	54.00	-11.69	30.87	7.92	34.94	38.46	Average	260	100	HORIZONTAL
2 p	15719.47	55.03	74.00	-18.97	43.59	7.92	34.94	38.46	Peak	260	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	15719.31	42.33	54.00	-11.67	30.89	7.92	34.94	38.46	Average	354	100	VERTICAL
2 p	15719.40	55.57	74.00	-18.43	44.13	7.92	34.94	38.46	Peak	354	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 20MHz Ch52 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 13

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	15779.65	42.88	54.00	-11.12	31.52	7.93	35.01	38.44	Average	259	100	HORIZONTAL
2 p	15779.98	56.86	74.00	-17.14	45.50	7.93	35.01	38.44	Peak	259	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	15779.31	42.96	54.00	-11.04	31.60	7.93	35.01	38.44	Average	163	100	VERTICAL
2 p	15780.92	55.80	74.00	-18.20	44.44	7.93	35.01	38.44	Peak	163	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 20MHz Ch60 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 13

Horizontal

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1		10599.68	38.74	54.00	-15.26	28.78	6.60	35.12	38.48	Average	124	100	HORIZONTAL
2		10599.76	52.62	74.00	-21.38	42.66	6.60	35.12	38.48	Peak	124	100	HORIZONTAL
3	p	15899.50	56.80	74.00	-17.20	45.50	7.97	35.09	38.42	Peak	166	100	HORIZONTAL
4	a	15900.60	43.65	54.00	-10.35	32.34	7.98	35.09	38.42	Average	166	100	HORIZONTAL

Vertical

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1		10599.12	39.28	54.00	-14.72	29.32	6.60	35.12	38.48	Average	155	100	VERTICAL
2		10600.05	52.04	74.00	-21.96	42.08	6.60	35.12	38.48	Peak	155	100	VERTICAL
3	p	15899.03	56.79	74.00	-17.21	45.49	7.97	35.09	38.42	Peak	225	100	VERTICAL
4	a	15900.35	43.57	54.00	-10.43	32.27	7.97	35.09	38.42	Average	225	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 20MHz Ch64 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 13

Horizontal

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1		10639.90	38.29	54.00	-15.71	28.31	6.59	35.08	38.47	Average	85	100	HORIZONTAL
2		10640.36	51.95	74.00	-22.05	41.97	6.59	35.08	38.47	Peak	85	100	HORIZONTAL
3	p	15959.02	56.96	74.00	-17.04	45.71	8.00	35.16	38.41	Peak	150	100	HORIZONTAL
4	a	15959.27	43.43	54.00	-10.57	32.18	8.00	35.16	38.41	Average	150	100	HORIZONTAL

Vertical

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1		10639.55	52.57	74.00	-21.43	42.59	6.59	35.08	38.47	Peak	160	100	VERTICAL
2		10639.92	39.34	54.00	-14.66	29.36	6.59	35.08	38.47	Average	160	100	VERTICAL
3	p	15959.15	56.82	74.00	-17.18	45.57	8.00	35.16	38.41	Peak	96	100	VERTICAL
4	a	15960.35	43.54	54.00	-10.46	32.29	8.00	35.16	38.41	Average	96	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 20MHz Ch100 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 13

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	a 10999.28	38.21	54.00	-15.79	28.16	6.46	34.81	38.40	Average	181	100	HORIZONTAL
2	p 11000.70	51.22	74.00	-22.78	41.17	6.46	34.81	38.40	Peak	181	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	a 11000.05	39.59	54.00	-14.41	29.54	6.46	34.81	38.40	Average	111	100	VERTICAL
2	p 11000.40	52.36	74.00	-21.64	42.31	6.46	34.81	38.40	Peak	111	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 20MHz Ch116 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 13

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	11159.92	38.33	54.00	-15.67	28.15	6.56	34.81	38.43	Average	149	100	HORIZONTAL
2 p	11160.35	51.75	74.00	-22.25	41.57	6.56	34.81	38.43	Peak	149	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	11159.43	52.49	74.00	-21.51	42.31	6.56	34.81	38.43	Peak	229	100	VERTICAL
2 a	11159.87	41.05	54.00	-12.95	30.87	6.56	34.81	38.43	Average	229	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 20MHz Ch140 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 13

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	11399.04	51.81	74.00	-22.19	41.46	6.69	34.82	38.48	Peak	183	100	HORIZONTAL
2 a	11401.00	38.82	54.00	-15.18	28.47	6.69	34.82	38.48	Average	183	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	11399.78	54.27	74.00	-19.73	43.92	6.69	34.82	38.48	Peak	265	100	VERTICAL
2 a	11399.97	41.27	54.00	-12.73	30.92	6.69	34.82	38.48	Average	265	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 40MHz Ch38 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 13

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	15570.76	55.62	74.00	-18.38	44.08	7.86	34.81	38.49	Peak	221	100	HORIZONTAL
2 a	15570.96	42.26	54.00	-11.74	30.72	7.86	34.81	38.49	Average	221	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	15570.14	56.36	74.00	-17.64	44.82	7.86	34.81	38.49	Peak	1	100	VERTICAL
2 a	15570.89	42.28	54.00	-11.72	30.74	7.86	34.81	38.49	Average	1	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 40MHz Ch46 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 13

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	15689.64	42.35	54.00	-11.65	30.91	7.90	34.92	38.46	Average	75	100	HORIZONTAL
2 p	15690.24	55.54	74.00	-18.46	44.10	7.90	34.92	38.46	Peak	75	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	15690.13	42.20	54.00	-11.80	30.76	7.90	34.92	38.46	Average	165	100	VERTICAL
2 p	15690.38	55.91	74.00	-18.09	44.47	7.90	34.92	38.46	Peak	165	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 40MHz Ch54 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 13

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	15810.07	43.22	54.00	-10.78	31.86	7.95	35.03	38.44	Average	154	100	HORIZONTAL
2 p	15810.15	56.06	74.00	-17.94	44.70	7.95	35.03	38.44	Peak	154	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	15810.04	57.05	74.00	-16.95	45.69	7.95	35.03	38.44	Peak	113	100	VERTICAL
2 a	15810.33	43.52	54.00	-10.48	32.16	7.95	35.03	38.44	Average	113	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 40MHz Ch62 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 13

Horizontal

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1		10619.06	38.48	54.00	-15.52	28.50	6.60	35.10	38.48	Average	221	100	HORIZONTAL
2		10621.00	52.13	74.00	-21.87	42.15	6.60	35.10	38.48	Peak	221	100	HORIZONTAL
3	a	15929.96	43.70	54.00	-10.30	32.42	7.99	35.12	38.41	Average	199	100	HORIZONTAL
4	p	15930.26	57.10	74.00	-16.90	45.84	7.99	35.14	38.41	Peak	199	100	HORIZONTAL

Vertical

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1		10619.59	51.60	74.00	-22.40	41.62	6.60	35.10	38.48	Peak	293	100	VERTICAL
2		10619.86	38.97	54.00	-15.03	28.99	6.60	35.10	38.48	Average	293	100	VERTICAL
3	a	15929.77	43.49	54.00	-10.51	32.21	7.99	35.12	38.41	Average	228	100	VERTICAL
4	p	15930.56	56.18	74.00	-17.82	44.92	7.99	35.14	38.41	Peak	228	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 40MHz Ch102 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 13

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	a 11019.11	38.62	54.00	-15.38	28.56	6.47	34.81	38.40	Average	218	100	HORIZONTAL
2	p 11019.63	51.24	74.00	-22.76	41.18	6.47	34.81	38.40	Peak	218	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	a 11019.32	38.51	54.00	-15.49	28.45	6.47	34.81	38.40	Average	111	100	VERTICAL
2	p 11020.19	51.29	74.00	-22.71	41.23	6.47	34.81	38.40	Peak	111	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 40MHz Ch110 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 13

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	a 11099.29	39.53	54.00	-14.47	29.40	6.52	34.81	38.42	Average	113	100	HORIZONTAL
2	p 11100.97	51.88	74.00	-22.12	41.75	6.52	34.81	38.42	Peak	113	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	p 11099.76	53.02	74.00	-20.98	42.89	6.52	34.81	38.42	Peak	206	100	VERTICAL
2	a 11100.14	41.66	54.00	-12.34	31.53	6.52	34.81	38.42	Average	206	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 40MHz Ch134 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 13

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	11339.06	51.74	74.00	-22.26	41.44	6.65	34.82	38.47	Peak	200	100	HORIZONTAL
2 a	11340.44	38.45	54.00	-15.55	28.15	6.65	34.82	38.47	Average	200	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	11339.18	53.09	74.00	-20.91	42.79	6.65	34.82	38.47	Peak	100	100	VERTICAL
2 a	11339.94	40.25	54.00	-13.75	29.95	6.65	34.82	38.47	Average	100	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 80MHz Ch42 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 13

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	a 15629.13	42.33	54.00	-11.67	30.85	7.89	34.88	38.47	Average	259	100	HORIZONTAL
2	p 15629.43	55.15	74.00	-18.85	43.67	7.89	34.88	38.47	Peak	259	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	a 15629.34	42.45	54.00	-11.55	30.97	7.89	34.88	38.47	Average	358	100	VERTICAL
2	p 15629.66	55.90	74.00	-18.10	44.42	7.89	34.88	38.47	Peak	358	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 80MHz Ch58 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 13

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	15869.31	55.86	74.00	-18.14	44.54	7.97	35.07	38.42	Peak	178	100	HORIZONTAL
2 a	15870.55	43.39	54.00	-10.61	32.07	7.97	35.07	38.42	Average	178	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	15870.01	56.27	74.00	-17.73	44.95	7.97	35.07	38.42	Peak	40	100	VERTICAL
2 a	15870.77	43.33	54.00	-10.67	32.01	7.97	35.07	38.42	Average	40	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 80MHz Ch106 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 13

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	11059.94	52.47	74.00	-21.53	42.37	6.50	34.81	38.41	Peak	240	100	HORIZONTAL
2 a	11060.47	38.78	54.00	-15.22	28.68	6.50	34.81	38.41	Average	240	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	11059.86	40.26	54.00	-13.74	30.16	6.50	34.81	38.41	Average	164	100	VERTICAL
2 p	11059.90	51.94	74.00	-22.06	41.84	6.50	34.81	38.41	Peak	164	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.

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 36 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 13

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	15539.62	42.59	54.00	-11.41	31.04	7.85	34.79	38.49	Average	222	100	HORIZONTAL
2 p	15539.76	56.44	74.00	-17.56	44.89	7.85	34.79	38.49	Peak	222	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	15539.92	56.09	74.00	-17.91	44.54	7.85	34.79	38.49	Peak	357	100	VERTICAL
2 a	15540.58	42.57	54.00	-11.43	31.02	7.85	34.79	38.49	Average	357	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 40 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 13

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	a 15599.87	42.35	54.00	-11.65	30.85	7.88	34.86	38.48	Average	180	100	HORIZONTAL
2	p 15600.86	55.80	74.00	-18.20	44.30	7.88	34.86	38.48	Peak	180	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	p 15599.51	55.95	74.00	-18.05	44.45	7.88	34.86	38.48	Peak	71	100	VERTICAL
2	a 15599.79	42.20	54.00	-11.80	30.70	7.88	34.86	38.48	Average	71	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 48 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 13

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	15720.05	42.17	54.00	-11.83	30.73	7.92	34.94	38.46	Average	253	100	HORIZONTAL
2 p	15720.94	55.07	74.00	-18.93	43.63	7.92	34.94	38.46	Peak	253	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	15719.87	42.29	54.00	-11.71	30.85	7.92	34.94	38.46	Average	166	100	VERTICAL
2 p	15721.00	55.90	74.00	-18.10	44.46	7.92	34.94	38.46	Peak	166	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 52 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 13

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	a 15779.76	42.91	54.00	-11.09	31.55	7.93	35.01	38.44	Average	252	100	HORIZONTAL
2	p 15780.11	56.46	74.00	-17.54	45.10	7.93	35.01	38.44	Peak	252	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	a 15779.86	42.91	54.00	-11.09	31.55	7.93	35.01	38.44	Average	164	100	VERTICAL
2	p 15780.30	56.06	74.00	-17.94	44.70	7.93	35.01	38.44	Peak	164	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 60 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 13

Horizontal

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1		10599.39	52.14	74.00	-21.86	42.18	6.60	35.12	38.48	Peak	189	100	HORIZONTAL
2		10600.07	38.98	54.00	-15.02	29.02	6.60	35.12	38.48	Average	189	100	HORIZONTAL
3	p	15899.46	56.37	74.00	-17.63	45.07	7.97	35.09	38.42	Peak	238	100	HORIZONTAL
4	a	15900.07	43.72	54.00	-10.28	32.42	7.97	35.09	38.42	Average	238	100	HORIZONTAL

Vertical

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1		10599.97	40.07	54.00	-13.93	30.11	6.60	35.12	38.48	Average	287	100	VERTICAL
2		10600.02	53.29	74.00	-20.71	43.33	6.60	35.12	38.48	Peak	287	100	VERTICAL
3	p	15900.49	56.62	74.00	-17.38	45.32	7.97	35.09	38.42	Peak	323	100	VERTICAL
4	a	15900.97	43.48	54.00	-10.52	32.17	7.98	35.09	38.42	Average	323	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 64 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 13

Horizontal

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1		10640.67	51.33	74.00	-22.67	41.35	6.59	35.08	38.47	Peak	306	100	HORIZONTAL
2		10640.68	38.31	54.00	-15.69	28.33	6.59	35.08	38.47	Average	306	100	HORIZONTAL
3	p	15959.30	56.51	74.00	-17.49	45.26	8.00	35.16	38.41	Peak	272	100	HORIZONTAL
4	a	15960.00	43.48	54.00	-10.52	32.23	8.00	35.16	38.41	Average	272	100	HORIZONTAL

Vertical

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1		10640.00	40.31	54.00	-13.69	30.33	6.59	35.08	38.47	Average	123	100	VERTICAL
2		10640.66	51.81	74.00	-22.19	41.83	6.59	35.08	38.47	Peak	123	100	VERTICAL
3	a	15959.52	43.34	54.00	-10.66	32.09	8.00	35.16	38.41	Average	182	100	VERTICAL
4	p	15960.90	56.99	74.00	-17.01	45.74	8.00	35.16	38.41	Peak	182	100	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 100 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 13

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	10999.78	38.15	54.00	-15.85	28.10	6.46	34.81	38.40	Average	69	100	HORIZONTAL
2 p	11000.48	50.96	74.00	-23.04	40.91	6.46	34.81	38.40	Peak	69	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	10999.90	52.36	74.00	-21.64	42.31	6.46	34.81	38.40	Peak	269	129	VERTICAL
2 a	11000.00	41.07	54.00	-12.93	31.02	6.46	34.81	38.40	Average	269	129	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 116 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 13

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	11160.19	52.16	74.00	-21.84	41.98	6.56	34.81	38.43	Peak	177	100	HORIZONTAL
2 a	11160.93	38.47	54.00	-15.53	28.29	6.56	34.81	38.43	Average	177	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	11159.90	55.96	74.00	-18.04	45.78	6.56	34.81	38.43	Peak	118	121	VERTICAL
2 a	11159.91	43.14	54.00	-10.86	32.96	6.56	34.81	38.43	Average	118	121	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 140 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 13

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	11400.57	52.47	74.00	-21.53	42.12	6.69	34.82	38.48	Peak	294	100	HORIZONTAL
2 a	11400.63	38.70	54.00	-15.30	28.35	6.69	34.82	38.48	Average	260	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	11399.97	41.15	54.00	-12.85	30.80	6.69	34.82	38.48	Average	120	116	VERTICAL
2 p	11400.48	52.69	74.00	-21.31	42.34	6.69	34.82	38.48	Peak	120	116	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.

4.7. Band Edge Emissions Measurement

4.7.1. Limit

For transmitters operating in the 5.15-5.35 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed a -27dBm peak limit or average 54dBuV/m and peak 74dBuV/m limits. For transmitters operating in the 5.470-5.725 GHz band: all emissions outside of the 5.470-5.725 GHz band shall not exceed a -27dBm peak limit or average 54dBuV/m and peak 74dBuV/m limits. 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

4.7.2. 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	100 MHz
RBW / VBW (Emission in restricted band)	1MHz / 3MHz for Peak, 1 MHz / 10Hz for Average
RBW / VBW (Emission in non-restricted band)	1MHz / 3MHz for Peak

4.7.3. Test Procedures

1. The test procedure is the same as section 4.6.3, only the frequency range investigated is limited to 100MHz around bandedges.

4.7.4. Test Setup Layout

This test setup layout is the same as that shown in section 4.6.4.

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 transmitting mode.

4.7.7. Test Result of Band Edge and Fundamental Emissions

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 20MHz Ch 36, 40, 48 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 3

Channel 36

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1		5149.20	65.95	74.00	-8.05	28.47	4.34	0.00	33.14	Peak	187	114	HORIZONTAL
2	!	5150.00	49.21	54.00	-4.79	11.73	4.34	0.00	33.14	Average	187	114	HORIZONTAL
3	a	5174.20	101.18			63.63	4.36	0.00	33.19	Average	187	114	HORIZONTAL
4	p	5175.20	111.04			73.49	4.36	0.00	33.19	Peak	187	114	HORIZONTAL

Item 3, 4 are the fundamental frequency at 5180 MHz.

Channel 40

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1		5148.80	58.86	74.00	-15.14	21.38	4.34	0.00	33.14	Peak	187	114	HORIZONTAL
2		5150.00	43.40	54.00	-10.60	5.92	4.34	0.00	33.14	Average	187	114	HORIZONTAL
3	p	5204.80	110.78			73.19	4.37	0.00	33.22	Peak	187	114	HORIZONTAL
4	a	5205.20	101.41			63.82	4.37	0.00	33.22	Average	187	114	HORIZONTAL

Item 3, 4 are the fundamental frequency at 5200 MHz.

Channel 48

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1		5150.00	52.47	74.00	-21.53	14.99	4.34	0.00	33.14	Peak	190	112	HORIZONTAL
2		5150.00	40.37	54.00	-13.63	2.89	4.34	0.00	33.14	Average	190	112	HORIZONTAL
3	a	5245.40	102.23			64.53	4.40	0.00	33.30	Average	190	112	HORIZONTAL
4	p	5246.00	111.73			74.03	4.40	0.00	33.30	Peak	190	112	HORIZONTAL
5		5350.00	52.03	74.00	-21.97	14.10	4.47	0.00	33.46	Peak	190	112	HORIZONTAL
6		5350.00	40.42	54.00	-13.58	2.49	4.47	0.00	33.46	Average	190	112	HORIZONTAL

Item 3, 4 are the fundamental frequency at 5240 MHz.

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 20MHz Ch 52, 60, 64 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 3

Channel 52

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1		5150.00	51.29	74.00	-22.71	13.81	4.34	0.00	33.14	Peak	188	112	HORIZONTAL
2		5150.00	39.77	54.00	-14.23	2.29	4.34	0.00	33.14	Average	188	112	HORIZONTAL
3	p	5264.80	111.24			73.49	4.42	0.00	33.33	Peak	188	112	HORIZONTAL
4	a	5265.40	101.72			63.97	4.42	0.00	33.33	Average	188	112	HORIZONTAL
5		5350.00	55.08	74.00	-18.92	17.15	4.47	0.00	33.46	Peak	188	112	HORIZONTAL
6		5350.00	41.61	54.00	-12.39	3.68	4.47	0.00	33.46	Average	188	122	HORIZONTAL

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

Channel 60

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	p	5295.60	111.27			73.45	4.44	0.00	33.38	Peak	188	112	HORIZONTAL
2	a	5305.20	101.88			64.06	4.44	0.00	33.38	Average	188	112	HORIZONTAL
3		5350.00	61.44	74.00	-12.56	23.51	4.47	0.00	33.46	Peak	188	112	HORIZONTAL
4		5350.00	45.85	54.00	-8.15	7.92	4.47	0.00	33.46	Average	188	112	HORIZONTAL

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

Channel 64

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	a	5314.20	100.79			62.93	4.45	0.00	33.41	Average	192	113	HORIZONTAL
2	p	5315.20	110.86			73.00	4.45	0.00	33.41	Peak	192	113	HORIZONTAL
3	!	5350.00	70.32	74.00	-3.68	32.39	4.47	0.00	33.46	Peak	192	113	HORIZONTAL
4	!	5350.00	53.06	54.00	-0.94	15.13	4.47	0.00	33.46	Average	192	113	HORIZONTAL

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

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 20MHz Ch 100, 140 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 3

Channel 100

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1		5460.00	62.55	74.00	-11.45	24.39	4.54	0.00	33.62	Peak	189	100	HORIZONTAL
2		5460.00	44.81	54.00	-9.19	6.65	4.54	0.00	33.62	Average	189	100	HORIZONTAL
3	!	5470.00	69.85	74.00	-4.15	31.65	4.55	0.00	33.65	Peak	189	100	HORIZONTAL
4	!	5470.00	51.40	54.00	-2.60	13.20	4.55	0.00	33.65	Average	189	100	HORIZONTAL
5	p	5494.60	110.26			72.03	4.56	0.00	33.67	Peak	189	100	HORIZONTAL
6	a	5505.20	100.55			62.28	4.57	0.00	33.70	Average	189	100	HORIZONTAL

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

Channel 140

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	p	5694.60	107.19			68.22	4.70	0.00	34.27	Peak	207	102	HORIZONTAL
2	a	5694.60	97.61			58.64	4.70	0.00	34.27	Average	207	102	HORIZONTAL
3		5725.00	66.12	74.00	-7.88	27.03	4.72	0.00	34.37	Peak	207	102	HORIZONTAL
4	!	5725.00	49.72	54.00	-4.28	10.63	4.72	0.00	34.37	Average	207	102	HORIZONTAL

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

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 40MHz Ch 38, 46 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 3

Channel 38

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1		5150.00	66.81	74.00	-7.19	29.33	4.34	0.00	33.14	Peak	192	113	HORIZONTAL
2	!	5150.00	53.45	54.00	-0.55	15.97	4.34	0.00	33.14	Average	192	113	HORIZONTAL
3	p	5200.40	105.04			67.45	4.37	0.00	33.22	Peak	192	113	HORIZONTAL
4	a	5203.20	95.37			57.78	4.37	0.00	33.22	Average	192	113	HORIZONTAL

Item 3, 4 are the fundamental frequency at 5190 MHz.

Channel 46

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1		5150.00	60.26	74.00	-13.74	22.78	4.34	0.00	33.14	Peak	190	113	HORIZONTAL
2		5150.00	46.21	54.00	-7.79	8.73	4.34	0.00	33.14	Average	190	113	HORIZONTAL
3	p	5244.80	108.01			70.31	4.40	0.00	33.30	Peak	190	113	HORIZONTAL
4	a	5245.60	98.71			61.01	4.40	0.00	33.30	Average	190	113	HORIZONTAL

Item 3, 4 are the fundamental frequency at 5230 MHz.

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 40MHz Ch 54, 62 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 3

Channel 54

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	p	5271.20	107.68			69.93	4.42	0.00	33.33	Peak	190	112	HORIZONTAL
2	a	5271.60	98.48			60.73	4.42	0.00	33.33	Average	190	112	HORIZONTAL
3		5350.00	64.56	74.00	-9.44	26.63	4.47	0.00	33.46	Peak	190	112	HORIZONTAL
4	!	5350.00	48.19	54.00	-5.81	10.26	4.47	0.00	33.46	Average	190	112	HORIZONTAL

Item 1, 2 are the fundamental frequency at 5270 MHz.

Channel 62

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	p	5308.00	104.22			66.40	4.44	0.00	33.38	Peak	188	100	HORIZONTAL
2	a	5308.00	94.09			56.27	4.44	0.00	33.38	Average	188	100	HORIZONTAL
3	!	5350.00	53.49	54.00	-0.51	15.56	4.47	0.00	33.46	Average	188	100	HORIZONTAL
4	!	5355.60	68.71	74.00	-5.29	30.78	4.47	0.00	33.46	Peak	188	100	HORIZONTAL

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

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 40MHz Ch 102, 110, 134 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 3

Channel 102

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1		5460.00	61.88	74.00	-12.12	23.72	4.54	0.00	33.62	Peak	189	100	HORIZONTAL
2		5460.00	47.73	54.00	-6.27	9.57	4.54	0.00	33.62	Average	189	100	HORIZONTAL
3	!	5470.00	68.54	74.00	-5.46	30.34	4.55	0.00	33.65	Peak	189	100	HORIZONTAL
4	!	5470.00	53.49	54.00	-0.51	15.29	4.55	0.00	33.65	Average	189	100	HORIZONTAL
5	a	5508.00	93.57			55.30	4.57	0.00	33.70	Average	189	100	HORIZONTAL
6	p	5524.00	102.35			64.02	4.58	0.00	33.75	Peak	189	100	HORIZONTAL

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

Channel 110

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1		5458.00	54.38	74.00	-19.62	16.22	4.54	0.00	33.62	Peak	205	115	HORIZONTAL
2		5460.00	41.85	54.00	-12.15	3.69	4.54	0.00	33.62	Average	205	115	HORIZONTAL
3		5470.00	56.03	74.00	-17.97	17.83	4.55	0.00	33.65	Peak	205	115	HORIZONTAL
4		5470.00	43.87	54.00	-10.13	5.67	4.55	0.00	33.65	Average	205	115	HORIZONTAL
5	a	5548.00	96.32			57.86	4.60	0.00	33.86	Average	205	115	HORIZONTAL
6	p	5548.80	105.65			67.19	4.60	0.00	33.86	Peak	205	115	HORIZONTAL

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

Channel 134

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	p	5655.20	104.16			65.32	4.67	0.00	34.17	Peak	206	100	HORIZONTAL
2	a	5655.60	94.62			55.78	4.67	0.00	34.17	Average	206	100	HORIZONTAL
3		5725.00	62.99	74.00	-11.01	23.90	4.72	0.00	34.37	Peak	206	100	HORIZONTAL
4		5725.00	47.11	54.00	-6.89	8.02	4.72	0.00	34.37	Average	206	100	HORIZONTAL

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

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 80MHz Ch 42, 58 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 3

Channel 42

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1		5128.00	67.72	74.00	-6.28	30.28	4.33	0.00	33.11	Peak	192	112	HORIZONTAL
2	!	5145.00	53.47	54.00	-0.53	15.99	4.34	0.00	33.14	Average	192	112	HORIZONTAL
3	p	5228.00	101.61			63.95	4.39	0.00	33.27	Peak	192	112	HORIZONTAL
4	a	5228.00	91.02			53.36	4.39	0.00	33.27	Average	192	112	HORIZONTAL
5		5350.00	55.92	74.00	-18.08	17.99	4.47	0.00	33.46	Peak	192	112	HORIZONTAL
6		5350.00	46.53	54.00	-7.47	8.60	4.47	0.00	33.46	Average	192	112	HORIZONTAL

Item 3, 4 are the fundamental frequency at 5210 MHz.

Channel 58

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1		5147.60	52.50	74.00	-21.50	15.02	4.34	0.00	33.14	Peak	188	100	HORIZONTAL
2		5147.60	41.77	54.00	-12.23	4.29	4.34	0.00	33.14	Average	188	100	HORIZONTAL
3	a	5307.60	89.94			52.12	4.44	0.00	33.38	Average	188	100	HORIZONTAL
4	p	5308.40	99.45			61.63	4.44	0.00	33.38	Peak	188	100	HORIZONTAL
5	!	5350.00	53.43	54.00	-0.57	15.50	4.47	0.00	33.46	Average	188	100	HORIZONTAL
6	!	5352.40	68.42	74.00	-5.58	30.49	4.47	0.00	33.46	Peak	188	100	HORIZONTAL

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

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 80MHz Ch 106 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 3

Channel 106

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1		5459.00	66.75	74.00	-7.25	28.59	4.54	0.00	33.62	Peak	188	118	HORIZONTAL
2	!	5460.00	52.45	54.00	-1.55	14.29	4.54	0.00	33.62	Average	188	118	HORIZONTAL
3		5465.00	67.95	74.00	-6.05	29.75	4.55	0.00	33.65	Peak	188	118	HORIZONTAL
4	!	5466.00	53.20	54.00	-0.80	15.00	4.55	0.00	33.65	Average	188	118	HORIZONTAL
5	p	5548.00	98.33			59.87	4.60	0.00	33.86	Peak	188	118	HORIZONTAL
6	a	5548.00	88.96			50.50	4.60	0.00	33.86	Average	188	118	HORIZONTAL
7		5725.00	55.27	74.00	-18.73	16.18	4.72	0.00	34.37	Peak	188	118	HORIZONTAL
8		5725.00	45.87	54.00	-8.13	6.78	4.72	0.00	34.37	Average	188	118	HORIZONTAL

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

Note:

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

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

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 36, 40, 48 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 3

Channel 36

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1		5150.00	66.16	74.00	-7.84	28.68	4.34	0.00	33.14	Peak	188	114	HORIZONTAL
2	!	5150.00	49.79	54.00	-4.21	12.31	4.34	0.00	33.14	Average	188	114	HORIZONTAL
3	p	5173.80	111.91			74.36	4.36	0.00	33.19	Peak	188	114	HORIZONTAL
4	a	5174.60	102.42			64.87	4.36	0.00	33.19	Average	188	114	HORIZONTAL

Item 3, 4 are the fundamental frequency at 5180 MHz.

Channel 40

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1		5149.60	57.74	74.00	-16.26	20.26	4.34	0.00	33.14	Peak	188	114	HORIZONTAL
2		5150.00	43.65	54.00	-10.35	6.17	4.34	0.00	33.14	Average	188	114	HORIZONTAL
3	p	5204.00	111.80			74.21	4.37	0.00	33.22	Peak	188	114	HORIZONTAL
4	a	5206.40	102.70			65.11	4.37	0.00	33.22	Average	188	114	HORIZONTAL

Item 3, 4 are the fundamental frequency at 5200 MHz.

Channel 48

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1		5139.20	52.67	74.00	-21.33	15.23	4.33	0.00	33.11	Peak	190	114	HORIZONTAL
2		5150.00	40.55	54.00	-13.45	3.07	4.34	0.00	33.14	Average	190	114	HORIZONTAL
3	p	5245.40	112.27			74.57	4.40	0.00	33.30	Peak	190	114	HORIZONTAL
4	a	5246.00	102.81			65.11	4.40	0.00	33.30	Average	190	114	HORIZONTAL
5		5359.60	52.60	74.00	-21.40	14.67	4.47	0.00	33.46	Peak	190	114	HORIZONTAL
6		5360.20	41.05	54.00	-12.95	3.12	4.47	0.00	33.46	Average	190	114	HORIZONTAL

Item 3, 4 are the fundamental frequency at 5240 MHz.

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 52, 60, 64 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 3

Channel 52

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	5150.00	50.95	74.00	-23.05	13.47	4.34	0.00	33.14	Peak	187	112	HORIZONTAL
2	5150.00	39.87	54.00	-14.13	2.39	4.34	0.00	33.14	Average	187	112	HORIZONTAL
3 p	5265.40	111.74			73.99	4.42	0.00	33.33	Peak	187	112	HORIZONTAL
4 a	5266.00	102.30			64.55	4.42	0.00	33.33	Average	187	112	HORIZONTAL
5	5350.00	52.64	74.00	-21.36	14.71	4.47	0.00	33.46	Peak	187	112	HORIZONTAL
6	5350.00	41.50	54.00	-12.50	3.57	4.47	0.00	33.46	Average	187	112	HORIZONTAL

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

Channel 60

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	5293.60	102.38			64.56	4.44	0.00	33.38	Average	190	111	HORIZONTAL
2 p	5305.60	111.48			73.66	4.44	0.00	33.38	Peak	190	111	HORIZONTAL
3	5350.00	45.82	54.00	-8.18	7.89	4.47	0.00	33.46	Average	190	111	HORIZONTAL
4	5352.00	60.34	74.00	-13.66	22.41	4.47	0.00	33.46	Peak	190	111	HORIZONTAL

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

Channel 64

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	5316.00	110.59			72.73	4.45	0.00	33.41	Peak	192	113	HORIZONTAL
2 a	5326.20	101.60			63.74	4.45	0.00	33.41	Average	192	113	HORIZONTAL
3 !	5350.00	68.70	74.00	-5.30	30.77	4.47	0.00	33.46	Peak	192	113	HORIZONTAL
4 !	5350.00	53.12	54.00	-0.88	15.19	4.47	0.00	33.46	Average	192	113	HORIZONTAL

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

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 100, 140 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 3

Channel 100

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1		5460.00	61.05	74.00	-12.95	22.89	4.54	0.00	33.62	Peak	188	100	HORIZONTAL
2		5460.00	44.35	54.00	-9.65	6.19	4.54	0.00	33.62	Average	188	100	HORIZONTAL
3		5467.60	67.49	74.00	-6.51	29.29	4.55	0.00	33.65	Peak	188	100	HORIZONTAL
4	!	5470.00	50.71	54.00	-3.29	12.51	4.55	0.00	33.65	Average	188	100	HORIZONTAL
5	p	5506.80	110.36			72.09	4.57	0.00	33.70	Peak	188	100	HORIZONTAL
6	a	5506.80	101.02			62.75	4.57	0.00	33.70	Average	188	100	HORIZONTAL

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

Channel 140

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	p	5693.20	106.99			68.02	4.70	0.00	34.27	Peak	207	102	HORIZONTAL
2	a	5694.00	97.92			58.95	4.70	0.00	34.27	Average	207	102	HORIZONTAL
3	!	5725.00	48.37	54.00	-5.63	9.28	4.72	0.00	34.37	Average	207	102	HORIZONTAL
4		5726.00	66.80	74.00	-7.20	27.71	4.72	0.00	34.37	Peak	207	102	HORIZONTAL

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

Note:

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

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

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 20MHz Ch 36, 40, 48 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 9

Channel 36

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	5148.20	61.37	74.00	-12.63	23.89	4.34	0.00	33.14	Peak	341	118	VERTICAL
2	5150.00	46.51	54.00	-7.49	9.03	4.34	0.00	33.14	Average	341	118	VERTICAL
3 a	5185.20	98.29			60.74	4.36	0.00	33.19	Average	341	118	VERTICAL
4 p	5185.40	107.70			70.15	4.36	0.00	33.19	Peak	341	118	VERTICAL

Item 3, 4 are the fundamental frequency at 5180 MHz.

Channel 40

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	5149.20	56.25	74.00	-17.75	18.77	4.34	0.00	33.14	Peak	341	118	VERTICAL
2	5150.00	41.99	54.00	-12.01	4.51	4.34	0.00	33.14	Average	341	118	VERTICAL
3 p	5195.20	107.84			70.25	4.37	0.00	33.22	Peak	341	118	VERTICAL
4 a	5205.20	98.19			60.60	4.37	0.00	33.22	Average	341	118	VERTICAL

Item 3, 4 are the fundamental frequency at 5200 MHz.

Channel 48

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	5135.60	52.50	74.00	-21.50	15.06	4.33	0.00	33.11	Peak	342	100	VERTICAL
2	5150.00	39.86	54.00	-14.14	2.38	4.34	0.00	33.14	Average	342	100	VERTICAL
3 a	5245.40	99.03			61.33	4.40	0.00	33.30	Average	342	100	VERTICAL
4 p	5246.00	108.69			70.99	4.40	0.00	33.30	Peak	342	100	VERTICAL
5	5357.80	52.27	74.00	-21.73	14.34	4.47	0.00	33.46	Peak	342	100	VERTICAL
6	5357.80	41.86	54.00	-12.14	3.93	4.47	0.00	33.46	Average	342	100	VERTICAL

Item 3, 4 are the fundamental frequency at 5240 MHz.

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 20MHz Ch 52, 60, 64 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 9

Channel 52

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1		5148.20	39.77	54.00	-14.23	2.29	4.34	0.00	33.14	Average	342	103	VERTICAL
2		5148.80	52.41	74.00	-21.59	14.93	4.34	0.00	33.14	Peak	342	103	VERTICAL
3	a	5265.40	98.59			60.84	4.42	0.00	33.33	Average	342	103	VERTICAL
4	p	5266.00	108.26			70.51	4.42	0.00	33.33	Peak	342	103	VERTICAL
5		5374.00	41.95	54.00	-12.05	3.98	4.48	0.00	33.49	Average	342	103	VERTICAL
6		5375.20	52.71	74.00	-21.29	14.74	4.48	0.00	33.49	Peak	342	103	VERTICAL

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

Channel 60

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	p	5306.00	109.98			72.16	4.44	0.00	33.38	Peak	358	104	VERTICAL
2	a	5306.40	100.34			62.52	4.44	0.00	33.38	Average	358	104	VERTICAL
3		5350.00	45.05	54.00	-8.95	7.12	4.47	0.00	33.46	Average	358	104	VERTICAL
4		5356.40	62.24	74.00	-11.76	24.31	4.47	0.00	33.46	Peak	358	104	VERTICAL

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

Channel 64

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	p	5325.40	110.81			72.95	4.45	0.00	33.41	Peak	350	115	VERTICAL
2	a	5325.40	101.31			63.45	4.45	0.00	33.41	Average	350	115	VERTICAL
3	!	5350.00	53.48	54.00	-0.52	15.55	4.47	0.00	33.46	Average	350	115	VERTICAL
4	!	5350.20	72.49	74.00	-1.51	34.56	4.47	0.00	33.46	Peak	350	115	VERTICAL

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

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 20MHz Ch 100, 140 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 9

Channel 100

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1		5459.60	64.49	74.00	-9.51	26.33	4.54	0.00	33.62	Peak	168	100	VERTICAL
2		5460.00	44.47	54.00	-9.53	6.31	4.54	0.00	33.62	Average	168	100	VERTICAL
3	!	5469.60	70.81	74.00	-3.19	32.61	4.55	0.00	33.65	Peak	168	100	VERTICAL
4	!	5470.00	51.70	54.00	-2.30	13.50	4.55	0.00	33.65	Average	168	100	VERTICAL
5	p	5494.60	110.92			72.69	4.56	0.00	33.67	Peak	168	100	VERTICAL
6	a	5505.20	101.19			62.92	4.57	0.00	33.70	Average	168	100	VERTICAL

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

Channel 140

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	a	5694.60	99.88			60.91	4.70	0.00	34.27	Average	156	108	VERTICAL
2	p	5695.20	109.66			70.69	4.70	0.00	34.27	Peak	156	108	VERTICAL
3	!	5725.00	70.39	74.00	-3.61	31.30	4.72	0.00	34.37	Peak	156	108	VERTICAL
4	!	5725.00	52.49	54.00	-1.51	13.40	4.72	0.00	34.37	Average	156	108	VERTICAL

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

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 40MHz Ch 38, 46 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 9

Channel 38

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	!	5150.00	68.46	74.00	-5.54	30.98	4.34	0.00	33.14	Peak	187	118	VERTICAL
2	!	5150.00	53.41	54.00	-0.59	15.93	4.34	0.00	33.14	Average	187	118	VERTICAL
3	a	5191.60	94.02			56.43	4.37	0.00	33.22	Average	187	118	VERTICAL
4	p	5192.80	103.80			66.21	4.37	0.00	33.22	Peak	187	118	VERTICAL

Item 3, 4 are the fundamental frequency at 5190 MHz.

Channel 46

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1		5147.20	55.69	74.00	-18.31	18.21	4.34	0.00	33.14	Peak	341	100	VERTICAL
2		5150.00	42.94	54.00	-11.06	5.46	4.34	0.00	33.14	Average	341	100	VERTICAL
3	a	5245.60	95.14			57.44	4.40	0.00	33.30	Average	341	100	VERTICAL
4	p	5246.40	103.97			66.27	4.40	0.00	33.30	Peak	341	100	VERTICAL

Item 3, 4 are the fundamental frequency at 5230 MHz.

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 40MHz Ch 54, 62 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 9

Channel 54

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	p	5268.80	104.31			66.56	4.42	0.00	33.33	Peak	135	113	HORIZONTAL
2	a	5273.20	95.02			57.27	4.42	0.00	33.33	Average	135	113	HORIZONTAL
3		5350.00	47.66	54.00	-6.34	9.73	4.47	0.00	33.46	Average	135	113	HORIZONTAL
4		5350.40	62.25	74.00	-11.75	24.32	4.47	0.00	33.46	Peak	135	113	HORIZONTAL

Item 1, 2 are the fundamental frequency at 5270 MHz.

Channel 62

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	a	5311.60	93.89			56.03	4.45	0.00	33.41	Average	357	103	VERTICAL
2	p	5326.80	103.12			65.23	4.46	0.00	33.43	Peak	357	103	VERTICAL
3		5350.00	67.18	74.00	-6.82	29.25	4.47	0.00	33.46	Peak	357	103	VERTICAL
4	!	5350.00	53.44	54.00	-0.56	15.51	4.47	0.00	33.46	Average	357	103	VERTICAL

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

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 40MHz Ch 102, 110, 134 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 9

Channel 102

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1		5458.40	62.02	74.00	-11.98	23.86	4.54	0.00	33.62	Peak	156	101	VERTICAL
2		5460.00	46.47	54.00	-7.53	8.31	4.54	0.00	33.62	Average	156	101	VERTICAL
3	!	5470.00	68.04	74.00	-5.96	29.84	4.55	0.00	33.65	Peak	156	101	VERTICAL
4	!	5470.00	53.37	54.00	-0.63	15.17	4.55	0.00	33.65	Average	156	101	VERTICAL
5	p	5524.40	104.23			65.90	4.58	0.00	33.75	Peak	156	101	VERTICAL
6	a	5524.40	94.99			56.66	4.58	0.00	33.75	Average	156	101	VERTICAL

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

Channel 110

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1		5456.80	53.57	74.00	-20.43	15.41	4.54	0.00	33.62	Peak	152	100	VERTICAL
2		5460.00	41.27	54.00	-12.73	3.11	4.54	0.00	33.62	Average	152	100	VERTICAL
3		5470.00	53.29	74.00	-20.71	15.09	4.55	0.00	33.65	Peak	152	100	VERTICAL
4		5470.00	43.14	54.00	-10.86	4.94	4.55	0.00	33.65	Average	152	100	VERTICAL
5	p	5551.20	107.78			69.32	4.60	0.00	33.86	Peak	152	100	VERTICAL
6	a	5551.60	98.69			60.23	4.60	0.00	33.86	Average	152	100	VERTICAL

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

Channel 134

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	a	5658.00	96.16			57.32	4.67	0.00	34.17	Average	159	100	VERTICAL
2	p	5662.00	105.47			66.63	4.67	0.00	34.17	Peak	159	100	VERTICAL
3		5725.00	65.17	74.00	-8.83	26.08	4.72	0.00	34.37	Peak	159	100	VERTICAL
4	!	5725.00	49.20	54.00	-4.80	10.11	4.72	0.00	34.37	Average	159	100	VERTICAL

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

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 80MHz Ch 42, 58 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 9

Channel 42

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1		5150.00	66.29	74.00	-7.71	28.81	4.34	0.00	33.14	Peak	338	117	VERTICAL
2	!	5150.00	53.47	54.00	-0.53	15.99	4.34	0.00	33.14	Average	338	117	VERTICAL
3	p	5226.00	98.50			60.84	4.39	0.00	33.27	Peak	338	117	VERTICAL
4	a	5228.00	90.29			52.63	4.39	0.00	33.27	Average	338	117	VERTICAL
5		5350.00	55.19	74.00	-18.81	17.26	4.47	0.00	33.46	Peak	338	117	VERTICAL
6		5350.00	44.56	54.00	-9.44	6.63	4.47	0.00	33.46	Average	338	117	VERTICAL

Item 3, 4 are the fundamental frequency at 5210 MHz.

Channel 58

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1		5150.00	50.45	74.00	-23.55	12.97	4.34	0.00	33.14	Peak	357	103	VERTICAL
2		5150.00	40.61	54.00	-13.39	3.13	4.34	0.00	33.14	Average	357	103	VERTICAL
3	a	5308.00	89.49			51.67	4.44	0.00	33.38	Average	357	103	VERTICAL
4	p	5309.00	99.29			61.47	4.44	0.00	33.38	Peak	357	103	VERTICAL
5	!	5352.00	53.33	54.00	-0.67	15.40	4.47	0.00	33.46	Average	357	103	VERTICAL
6	!	5353.00	68.18	74.00	-5.82	30.25	4.47	0.00	33.46	Peak	357	103	VERTICAL

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 80MHz Ch 106 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 9

Channel 106

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1		5450.00	66.21	74.00	-7.79	28.05	4.54	0.00	33.62	Peak	157	100	VERTICAL
2	!	5460.00	52.33	54.00	-1.67	14.17	4.54	0.00	33.62	Average	157	100	VERTICAL
3		5465.00	66.87	74.00	-7.13	28.67	4.55	0.00	33.65	Peak	157	100	VERTICAL
4	!	5466.00	53.33	54.00	-0.67	15.13	4.55	0.00	33.65	Average	157	100	VERTICAL
5	a	5548.00	92.70			54.24	4.60	0.00	33.86	Average	157	100	VERTICAL
6	p	5549.00	101.32			62.86	4.60	0.00	33.86	Peak	157	100	VERTICAL
7		5725.00	55.38	74.00	-18.62	16.29	4.72	0.00	34.37	Peak	157	100	VERTICAL
8		5725.00	47.01	54.00	-6.99	7.92	4.72	0.00	34.37	Average	157	100	VERTICAL

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

Note:

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

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

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 36, 40, 48 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 9

Channel 36

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	5149.80	59.61	74.00	-14.39	22.13	4.34	0.00	33.14	Peak	341	119	VERTICAL
2	5150.00	47.16	54.00	-6.84	9.68	4.34	0.00	33.14	Average	341	119	VERTICAL
3 p	5183.20	108.47			70.92	4.36	0.00	33.19	Peak	341	119	VERTICAL
4 a	5186.20	99.22			61.67	4.36	0.00	33.19	Average	341	119	VERTICAL

Item 3, 4 are the fundamental frequency at 5180 MHz.

Channel 40

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	5148.40	55.23	74.00	-18.77	17.75	4.34	0.00	33.14	Peak	341	118	VERTICAL
2	5150.00	42.24	54.00	-11.76	4.76	4.34	0.00	33.14	Average	341	118	VERTICAL
3 p	5205.60	108.47			70.88	4.37	0.00	33.22	Peak	341	118	VERTICAL
4 a	5206.80	99.06			61.47	4.37	0.00	33.22	Average	341	118	VERTICAL

Item 3, 4 are the fundamental frequency at 5200 MHz.

Channel 48

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	5149.40	52.21	74.00	-21.79	14.73	4.34	0.00	33.14	Peak	341	100	VERTICAL
2	5150.00	40.01	54.00	-13.99	2.53	4.34	0.00	33.14	Average	341	100	VERTICAL
3 p	5245.40	109.20			71.50	4.40	0.00	33.30	Peak	341	100	VERTICAL
4 a	5245.40	99.52			61.82	4.40	0.00	33.30	Average	341	100	VERTICAL
5	5353.60	42.09	54.00	-11.91	4.16	4.47	0.00	33.46	Average	341	100	VERTICAL
6	5361.40	54.18	74.00	-19.82	16.21	4.48	0.00	33.49	Peak	341	100	VERTICAL

Item 3, 4 are the fundamental frequency at 5240 MHz.

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 52, 60, 64 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 9

Channel 52

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1		5137.40	52.82	74.00	-21.18	15.38	4.33	0.00	33.11	Peak	172	105	VERTICAL
2		5145.20	40.01	54.00	-13.99	2.53	4.34	0.00	33.14	Average	172	105	VERTICAL
3	p	5266.60	110.75			73.00	4.42	0.00	33.33	Peak	172	105	VERTICAL
4	a	5266.60	101.40			63.65	4.42	0.00	33.33	Average	172	105	VERTICAL
5		5373.40	42.31	54.00	-11.69	4.34	4.48	0.00	33.49	Average	172	105	VERTICAL
6		5375.20	54.26	74.00	-19.74	16.29	4.48	0.00	33.49	Peak	172	105	VERTICAL

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

Channel 60

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	a	5306.40	101.23			63.41	4.44	0.00	33.38	Average	355	103	VERTICAL
2	p	5306.80	110.73			72.91	4.44	0.00	33.38	Peak	355	103	VERTICAL
3		5350.00	45.72	54.00	-8.28	7.79	4.47	0.00	33.46	Average	355	103	VERTICAL
4		5351.60	60.76	74.00	-13.24	22.83	4.47	0.00	33.46	Peak	355	103	VERTICAL

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

Channel 64

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	p	5325.80	110.27			72.41	4.45	0.00	33.41	Peak	184	103	VERTICAL
2	a	5326.20	102.25			64.39	4.45	0.00	33.41	Average	184	103	VERTICAL
3	!	5350.00	68.38	74.00	-5.62	30.45	4.47	0.00	33.46	Peak	184	103	VERTICAL
4	!	5350.00	53.50	54.00	-0.50	15.57	4.47	0.00	33.46	Average	184	103	VERTICAL

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

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 100, 140 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 9

Channel 100

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1		5460.00	57.58	74.00	-16.42	19.42	4.54	0.00	33.62	Peak	168	100	VERTICAL
2		5460.00	44.25	54.00	-9.75	6.09	4.54	0.00	33.62	Average	168	100	VERTICAL
3		5467.00	67.76	74.00	-6.24	29.56	4.55	0.00	33.65	Peak	168	100	VERTICAL
4	!	5470.00	51.26	54.00	-2.74	13.06	4.55	0.00	33.65	Average	168	100	VERTICAL
5	p	5505.60	111.38			73.11	4.57	0.00	33.70	Peak	168	100	VERTICAL
6	a	5506.20	101.90			63.63	4.57	0.00	33.70	Average	168	100	VERTICAL

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

Channel 140

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	p	5693.40	110.43			71.46	4.70	0.00	34.27	Peak	158	108	VERTICAL
2	a	5706.20	100.65			61.62	4.71	0.00	34.32	Average	158	108	VERTICAL
3	!	5725.00	52.29	54.00	-1.71	13.20	4.72	0.00	34.37	Average	158	108	VERTICAL
4	!	5725.80	70.56	74.00	-3.44	31.47	4.72	0.00	34.37	Peak	158	108	VERTICAL

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

Note:

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

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

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 20MHz Ch 36, 40, 48 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 13

Channel 36

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1		5146.40	67.04	74.00	-6.96	29.56	4.34	0.00	33.14	Peak	163	112	VERTICAL
2	!	5150.00	51.43	54.00	-2.57	13.95	4.34	0.00	33.14	Average	163	112	VERTICAL
3	p	5175.60	112.31			74.76	4.36	0.00	33.19	Peak	163	112	VERTICAL
4	a	5185.20	102.82			65.27	4.36	0.00	33.19	Average	163	112	VERTICAL

Item 3, 4 are the fundamental frequency at 5180 MHz.

Channel 40

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1		5150.00	59.13	74.00	-14.87	21.65	4.34	0.00	33.14	Peak	162	100	VERTICAL
2		5150.00	43.49	54.00	-10.51	6.01	4.34	0.00	33.14	Average	162	100	VERTICAL
3	p	5195.20	111.51			73.92	4.37	0.00	33.22	Peak	162	100	VERTICAL
4	a	5205.20	102.01			64.42	4.37	0.00	33.22	Average	162	100	VERTICAL

Item 3, 4 are the fundamental frequency at 5200 MHz.

Channel 48

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1		5148.80	54.46	74.00	-19.54	16.98	4.34	0.00	33.14	Peak	160	111	VERTICAL
2		5150.00	41.51	54.00	-12.49	4.03	4.34	0.00	33.14	Average	160	111	VERTICAL
3	a	5234.00	102.72			65.06	4.39	0.00	33.27	Average	160	111	VERTICAL
4	p	5234.60	112.44			74.78	4.39	0.00	33.27	Peak	160	111	VERTICAL
5		5356.00	53.75	74.00	-20.25	15.82	4.47	0.00	33.46	Peak	160	111	VERTICAL
6		5356.60	41.05	54.00	-12.95	3.12	4.47	0.00	33.46	Average	160	111	VERTICAL

Item 3, 4 are the fundamental frequency at 5240 MHz.

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 20MHz Ch 52, 60, 64 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 13

Channel 52

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1		5133.80	52.73	74.00	-21.27	15.29	4.33	0.00	33.11	Peak	160	121	VERTICAL
2		5147.60	40.72	54.00	-13.28	3.24	4.34	0.00	33.14	Average	160	121	VERTICAL
3	a	5265.40	101.82			64.07	4.42	0.00	33.33	Average	160	121	VERTICAL
4	p	5266.00	111.34			73.59	4.42	0.00	33.33	Peak	160	121	VERTICAL
5		5350.00	41.94	54.00	-12.06	4.01	4.47	0.00	33.46	Average	160	121	VERTICAL
6		5352.40	53.91	74.00	-20.09	15.98	4.47	0.00	33.46	Peak	160	121	VERTICAL

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

Channel 60

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	a	5305.20	101.58			63.76	4.44	0.00	33.38	Average	162	109	VERTICAL
2	p	5306.40	111.22			73.40	4.44	0.00	33.38	Peak	162	109	VERTICAL
3		5350.00	45.25	54.00	-8.75	7.32	4.47	0.00	33.46	Average	162	109	VERTICAL
4		5357.20	60.48	74.00	-13.52	22.55	4.47	0.00	33.46	Peak	162	109	VERTICAL

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

Channel 64

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	p	5315.20	111.97			74.11	4.45	0.00	33.41	Peak	262	117	VERTICAL
2	a	5325.20	102.35			64.49	4.45	0.00	33.41	Average	262	117	VERTICAL
3	!	5350.00	50.37	54.00	-3.63	12.44	4.47	0.00	33.46	Average	262	117	VERTICAL
4	!	5353.00	68.53	74.00	-5.47	30.60	4.47	0.00	33.46	Peak	262	117	VERTICAL

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

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 20MHz Ch 100, 140 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 13

Channel 100

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1		5459.60	62.38	74.00	-11.62	24.22	4.54	0.00	33.62	Peak	130	111	VERTICAL
2		5460.00	44.09	54.00	-9.91	5.93	4.54	0.00	33.62	Average	130	111	VERTICAL
3	!	5470.00	70.24	74.00	-3.76	32.04	4.55	0.00	33.65	Peak	130	111	VERTICAL
4	!	5470.00	50.72	54.00	-3.28	12.52	4.55	0.00	33.65	Average	130	111	VERTICAL
5	p	5494.40	111.48			73.25	4.56	0.00	33.67	Peak	130	111	VERTICAL
6	a	5494.60	101.45			63.22	4.56	0.00	33.67	Average	130	111	VERTICAL

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

Channel 140

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	a	5694.20	100.72			61.75	4.70	0.00	34.27	Average	139	100	VERTICAL
2	p	5694.60	110.65			71.68	4.70	0.00	34.27	Peak	139	100	VERTICAL
3	!	5725.00	53.49	54.00	-0.51	14.40	4.72	0.00	34.37	Average	139	100	VERTICAL
4	!	5727.60	73.29	74.00	-0.71	34.20	4.72	0.00	34.37	Peak	139	100	VERTICAL

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

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 40MHz Ch 38, 46 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 13

Channel 38

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1		5147.20	66.43	74.00	-7.57	28.95	4.34	0.00	33.14	Peak	164	111	VERTICAL
2	!	5150.00	53.48	54.00	-0.52	16.00	4.34	0.00	33.14	Average	164	111	VERTICAL
3	a	5188.00	95.61			58.06	4.36	0.00	33.19	Average	164	111	VERTICAL
4	p	5200.40	105.39	-----	-----	67.80	4.37	0.00	33.22	Peak	164	111	VERTICAL

Item 3, 4 are the fundamental frequency at 5190 MHz.

Channel 46

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1		5148.00	61.87	74.00	-12.13	24.39	4.34	0.00	33.14	Peak	164	100	VERTICAL
2		5150.00	47.76	54.00	-6.24	10.28	4.34	0.00	33.14	Average	164	100	VERTICAL
3	p	5228.80	107.93			70.27	4.39	0.00	33.27	Peak	164	100	VERTICAL
4	a	5231.60	98.71			61.05	4.39	0.00	33.27	Average	164	100	VERTICAL

Item 3, 4 are the fundamental frequency at 5230 MHz.

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 40MHz Ch 54, 62 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 13

Channel 54

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	a	5271.60	99.53			61.78	4.42	0.00	33.33	Average	273	111	VERTICAL
2	p	5273.60	108.86			71.11	4.42	0.00	33.33	Peak	273	111	VERTICAL
3	!	5350.00	49.83	54.00	-4.17	11.90	4.47	0.00	33.46	Average	273	111	VERTICAL
4		5352.40	65.22	74.00	-8.78	27.29	4.47	0.00	33.46	Peak	273	111	VERTICAL

Item 1, 2 are the fundamental frequency at 5270 MHz.

Channel 62

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	p	5320.40	105.96			68.10	4.45	0.00	33.41	Peak	273	115	VERTICAL
2	a	5323.20	96.04			58.18	4.45	0.00	33.41	Average	273	115	VERTICAL
3	!	5350.00	53.48	54.00	-0.52	15.55	4.47	0.00	33.46	Average	273	115	VERTICAL
4	!	5350.80	68.07	74.00	-5.93	30.14	4.47	0.00	33.46	Peak	273	115	VERTICAL

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

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 40MHz Ch 102, 110, 134 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 13

Channel 102

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1		5459.60	62.62	74.00	-11.38	24.46	4.54	0.00	33.62	Peak	217	112	VERTICAL
2		5460.00	46.64	54.00	-7.36	8.48	4.54	0.00	33.62	Average	217	112	VERTICAL
3	!	5470.00	68.13	74.00	-5.87	29.93	4.55	0.00	33.65	Peak	217	112	VERTICAL
4	!	5470.00	53.45	54.00	-0.55	15.25	4.55	0.00	33.65	Average	217	112	VERTICAL
5	a	5511.60	94.07			55.80	4.57	0.00	33.70	Average	217	112	VERTICAL
6	p	5526.80	103.78			65.45	4.58	0.00	33.75	Peak	217	112	VERTICAL

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

Channel 110

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1		5460.00	60.22	74.00	-13.78	22.06	4.54	0.00	33.62	Peak	263	112	VERTICAL
2		5460.00	44.25	54.00	-9.75	6.09	4.54	0.00	33.62	Average	263	112	VERTICAL
3		5470.00	64.33	74.00	-9.67	26.13	4.55	0.00	33.65	Peak	263	112	VERTICAL
4		5470.00	47.01	54.00	-6.99	8.81	4.55	0.00	33.65	Average	263	112	VERTICAL
5	p	5548.80	110.30			71.84	4.60	0.00	33.86	Peak	263	112	VERTICAL
6	a	5551.60	100.83			62.37	4.60	0.00	33.86	Average	263	112	VERTICAL

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

Channel 134

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	p	5668.00	108.35			69.45	4.68	0.00	34.22	Peak	276	102	VERTICAL
2	a	5671.60	99.00			60.10	4.68	0.00	34.22	Average	276	102	VERTICAL
3	!	5725.00	68.73	74.00	-5.27	29.64	4.72	0.00	34.37	Peak	276	102	VERTICAL
4	!	5725.00	50.77	54.00	-3.23	11.68	4.72	0.00	34.37	Average	276	102	VERTICAL

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

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 80MHz Ch 42, 58 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 13

Channel 42

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	!	5146.00	53.26	54.00	-0.74	15.78	4.34	0.00	33.14	Average	159	109	VERTICAL
2		5148.40	66.79	74.00	-7.21	29.31	4.34	0.00	33.14	Peak	159	109	VERTICAL
3	p	5227.60	101.80			64.14	4.39	0.00	33.27	Peak	159	109	VERTICAL
4	a	5227.60	91.66			54.00	4.39	0.00	33.27	Average	159	109	VERTICAL

Item 3, 4 are the fundamental frequency at 5210 MHz.

Channel 58

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	p	5307.60	101.63			63.81	4.44	0.00	33.38	Peak	278	100	VERTICAL
2	a	5307.60	91.57			53.75	4.44	0.00	33.38	Average	278	100	VERTICAL
3		5352.40	67.40	74.00	-6.60	29.47	4.47	0.00	33.46	Peak	278	100	VERTICAL
4	!	5362.80	53.22	54.00	-0.78	15.25	4.48	0.00	33.49	Average	278	100	VERTICAL

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

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11ac MCS0/Nss1 80MHz Ch 106 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 13

Channel 106

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1		5458.40	66.65	74.00	-7.35	28.49	4.54	0.00	33.62	Peak	271	112	VERTICAL
2	!	5460.00	52.42	54.00	-1.58	14.26	4.54	0.00	33.62	Average	271	112	VERTICAL
3	!	5467.60	53.34	54.00	-0.66	15.14	4.55	0.00	33.65	Average	271	112	VERTICAL
4		5468.40	66.89	74.00	-7.11	28.69	4.55	0.00	33.65	Peak	271	112	VERTICAL
5	p	5547.60	102.22			63.76	4.60	0.00	33.86	Peak	271	112	VERTICAL
6	a	5547.60	92.49			54.03	4.60	0.00	33.86	Average	271	112	VERTICAL

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

Note:

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

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

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 36, 40, 48 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 13

Channel 36

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	5147.00	64.91	74.00	-9.09	27.43	4.34	0.00	33.14	Peak	263	112	VERTICAL
2 !	5150.00	50.43	54.00	-3.57	12.95	4.34	0.00	33.14	Average	263	112	VERTICAL
3 p	5185.40	111.87			74.32	4.36	0.00	33.19	Peak	263	112	VERTICAL
4 a	5186.20	102.53			64.98	4.36	0.00	33.19	Average	263	112	VERTICAL

Item 3, 4 are the fundamental frequency at 5180 MHz.

Channel 40

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	5119.60	43.78	54.00	-10.22	6.37	4.32	0.00	33.09	Average	263	112	VERTICAL
2	5148.00	58.68	74.00	-15.32	21.20	4.34	0.00	33.14	Peak	263	112	VERTICAL
3 p	5204.00	112.06			74.47	4.37	0.00	33.22	Peak	263	112	VERTICAL
4 a	5206.40	102.64			65.05	4.37	0.00	33.22	Average	263	112	VERTICAL

Item 3, 4 are the fundamental frequency at 5200 MHz.

Channel 48

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	5149.40	52.88	74.00	-21.12	15.40	4.34	0.00	33.14	Peak	264	111	VERTICAL
2	5150.00	41.15	54.00	-12.85	3.67	4.34	0.00	33.14	Average	264	111	VERTICAL
3 p	5245.40	112.69			74.99	4.40	0.00	33.30	Peak	264	111	VERTICAL
4 a	5245.40	103.02			65.32	4.40	0.00	33.30	Average	264	111	VERTICAL
5	5357.80	51.98	74.00	-22.02	14.05	4.47	0.00	33.46	Peak	264	111	VERTICAL
6	5357.80	41.24	54.00	-12.76	3.31	4.47	0.00	33.46	Average	264	111	VERTICAL

Item 3, 4 are the fundamental frequency at 5240 MHz.

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 52, 60, 64 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 13

Channel 52

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	5144.60	53.21	74.00	-20.79	15.73	4.34	0.00	33.14	Peak	264	110	VERTICAL
2	5145.80	40.32	54.00	-13.68	2.84	4.34	0.00	33.14	Average	264	110	VERTICAL
3 p	5265.40	112.59			74.84	4.42	0.00	33.33	Peak	264	110	VERTICAL
4 a	5266.60	103.22			65.47	4.42	0.00	33.33	Average	264	110	VERTICAL
5	5350.00	53.00	74.00	-21.00	15.07	4.47	0.00	33.46	Peak	264	110	VERTICAL
6	5350.00	42.17	54.00	-11.83	4.24	4.47	0.00	33.46	Average	264	110	VERTICAL

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

Channel 60

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 a	5306.40	103.53			65.71	4.44	0.00	33.38	Average	290	112	VERTICAL
2 p	5306.80	112.08			74.26	4.44	0.00	33.38	Peak	290	112	VERTICAL
3	5350.00	59.56	74.00	-14.44	21.63	4.47	0.00	33.46	Peak	290	112	VERTICAL
4	5350.00	45.81	54.00	-8.19	7.88	4.47	0.00	33.46	Average	290	112	VERTICAL

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

Channel 64

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	5323.40	112.61			74.75	4.45	0.00	33.41	Peak	253	111	VERTICAL
2 a	5326.20	102.94			65.08	4.45	0.00	33.41	Average	253	111	VERTICAL
3	5350.00	66.36	74.00	-7.64	28.43	4.47	0.00	33.46	Peak	253	111	VERTICAL
4 !	5350.00	50.21	54.00	-3.79	12.28	4.47	0.00	33.46	Average	253	111	VERTICAL

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

Temperature	23℃	Humidity	64%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 100, 140 / Chain 1
Test Date	May 23, 2013	Test Mode	Mode 13

Channel 100

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1		5460.00	57.89	74.00	-16.11	19.73	4.54	0.00	33.62	Peak	266	115	VERTICAL
2		5460.00	44.15	54.00	-9.85	5.99	4.54	0.00	33.62	Average	266	115	VERTICAL
3		5467.20	67.98	74.00	-6.02	29.78	4.55	0.00	33.65	Peak	266	115	VERTICAL
4	!	5470.00	50.85	54.00	-3.15	12.65	4.55	0.00	33.65	Average	266	115	VERTICAL
5	p	5493.60	112.67			74.44	4.56	0.00	33.67	Peak	266	115	VERTICAL
6	a	5506.20	103.06			64.79	4.57	0.00	33.70	Average	266	115	VERTICAL

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

Channel 140

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	a	5706.20	102.29			63.26	4.71	0.00	34.32	Average	266	111	VERTICAL
2	p	5707.20	111.33			72.30	4.71	0.00	34.32	Peak	266	111	VERTICAL
3	!	5725.00	53.49	54.00	-0.51	14.40	4.72	0.00	34.37	Average	266	111	VERTICAL
4	!	5726.00	73.12	74.00	-0.88	34.03	4.72	0.00	34.37	Peak	266	111	VERTICAL

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

Note:

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

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

4.8. Frequency Stability Measurement

4.8.1. 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).

4.8.2. Measuring Instruments and Setting

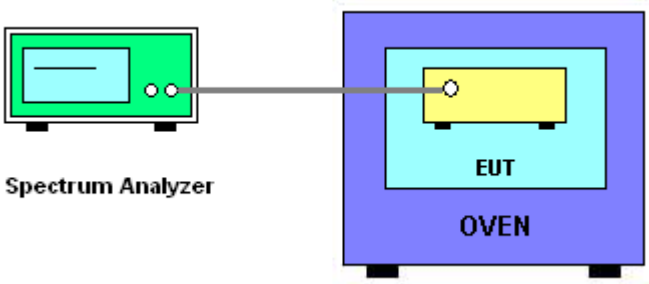
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

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

4.8.3. 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 rule is -20°C~70°C.

4.8.4. Test Setup Layout



4.8.5. Test Deviation

There is no deviation with the original standard.

4.8.6. EUT Operation during Test

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

4.8.7. Test Result of Frequency Stability

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)		
(V)	5200	5300	5500
126.50	5199.9730	5299.9718	5499.9724
110.00	5199.9724	5299.9714	5499.9720
93.50	5199.9720	5299.9714	5499.9712
Max. Deviation (MHz)	0.028000	0.028600	0.028800
Max. Deviation (ppm)	5.38	5.40	5.24

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)		
(℃)	5200	5300	5500
-20	5199.9764	5299.9780	5499.9790
-10	5199.9756	5299.9784	5499.9786
0	5199.9752	5299.9768	5499.9780
10	5199.9754	5299.9762	5499.9782
20	5199.9750	5299.9760	5499.9768
30	5199.9742	5299.9750	5499.9760
40	5199.9728	5299.9752	5499.9756
50	5199.9732	5299.9742	5499.9730
60	5199.9722	5299.9732	5499.9722
70	5199.9708	5299.9723	5499.9710
Max. Deviation (MHz)	0.027200	0.025800	0.027000
Max. Deviation (ppm)	5.23	4.87	4.91

4.9. Antenna Requirements

4.9.1. 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.

4.9.2. 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	100377	9kHz ~ 2.75GHz	Oct. 23, 2012	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50-16-2	04083	150kHz ~ 100MHz	Nov. 26, 2012	Conduction (CO01-CB)
V- LISN	Schwarzbeck	NSLK 8127	8127-478	9kHz ~ 30MHz	Jun. 22, 2012	Conduction (CO01-CB)
Impulsbegrenzer Pulse Limiter	Rohde&Schwarz	ESH3-Z2	100430	9kHz~30MHz	Feb. 21, 2013	Conduction (CO01-CB)
COND Cable	Woken	Cable	01	0.15MHz~30MHz	Dec. 04, 2012	Conduction (CO01-CB)
Software	Audix	E3	5.410e	-	-	Conduction (CO01-CB)
BILOG ANTENNA	Schaffner	CBL6112D	22021	20MHz ~ 2GHz	Apr. 16, 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. 27, 2012	Radiation (03CH01-CB)
Horn Antenna	SCHWARZBEAK	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Nov. 23, 2012	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8447D	2944A10991	0.1MHz ~ 1.3GHz	Nov. 27, 2012	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02310	1GHz ~ 26.5GHz	Nov. 23, 2012	Radiation (03CH01-CB)
Pre-Amplifier	WM	TF-130N-R1	923365	26.5GHz ~ 40GHz	Jul. 31, 2012	Radiation (03CH01-CB)
Spectrum analyzer	R&S	FSP40	100056	9KHz~40GHz	Nov. 16, 2012	Radiation (03CH01-CB)
EMI Test Receiver	R&S	ESCS 30	100355	9KHz ~ 2.75GHz	Apr. 15, 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. 18, 2012	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-1	N/A	1 GHz – 26.5 GHz	Nov. 18, 2012	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-2	N/A	1 GHz – 26.5 GHz	Nov. 18, 2012	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-3	N/A	1 GHz - 40 GHz	Nov. 18, 2012	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-4	N/A	1 GHz - 40 GHz	Nov. 18, 2012	Radiation (03CH01-CB)
Signal analyzer	R&S	FSV40	100979	9kHz~40GHz	Oct. 08, 2012	Conducted (TH01-CB)
Temp. and Humidity Chamber	Ten Billion	TTH-D3SP	TBN-931011	-30~100 degree	Jun. 04, 2012	Conducted (TH01-CB)
Temp. and Humidity Chamber	Ten Billion	TTH-D3SP	TBN-931011	-30~100 degree	Jun. 04, 2013	Conducted (TH01-CB)
Signal Generator	R&S	SMR40	100302	10MHz-40GHz	Nov. 27, 2012	Conducted (TH01-CB)

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
RF Power Divider	Woken	2 Way	0120A02056002D	2GHz ~ 18GHz	Nov. 18, 2012	Conducted (TH01-CB)
RF Power Divider	Woken	3 Way	MDC2366	2GHz ~ 18GHz	Nov. 18, 2012	Conducted (TH01-CB)
RF Power Divider	Woken	4 Way	0120A04056002D	2GHz ~ 18GHz	Nov. 18, 2012	Conducted (TH01-CB)
Signal generator	R&S	SMU200A	102782	25MHz-6GHz	Sep. 26, 2012	Conducted (TH01-CB)
Horn Antenna	COM-POWER	AH-118	071187	1GHz – 18GHz	May 15, 2013	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-7	-	1 GHz – 26.5 GHz	Nov. 19, 2012	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-8	-	1 GHz – 26.5 GHz	Nov. 19, 2012	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-9	-	1 GHz – 26.5 GHz	Nov. 19, 2012	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-10	-	1 GHz – 26.5 GHz	Nov. 19, 2012	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-11	-	1 GHz – 26.5 GHz	Nov. 19, 2012	Conducted (TH01-CB)
Power Sensor	Anritsu	MA2411B	0917223	300MHz~40GHz	Nov. 28, 2012	Conducted (TH01-CB)
Power Meter	Anritsu	ML2495A	1035008	300MHz~40GHz	Nov. 27, 2012	Conducted (TH01-CB)

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

* Calibration Interval of instruments listed above is two years.

6. TEST LOCATION

SHIJR	ADD	:	6Fl., No. 106, Sec. 1, Shintai 5th Rd., Shijr City, Taipei, Taiwan 221, R.O.C.
	TEL	:	886-2-2696-2468
	FAX	:	886-2-2696-2255
HWA YA	ADD	:	No. 52, Hwa Ya 1st Rd., Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.
	TEL	:	886-3-327-3456
	FAX	:	886-3-318-0055
LINKOU	ADD	:	No. 30-2, Dingfu Tsuen, Linkou Shiang, Taipei, Taiwan 244, R.O.C
	TEL	:	886-2-2601-1640
	FAX	:	886-2-2601-1695
DUNGHU	ADD	:	No. 3, Lane 238, Kangle St., Neihu Chiu, Taipei, Taiwan 114, R.O.C.
	TEL	:	886-2-2631-4739
	FAX	:	886-2-2631-9740
JUNGHE	ADD	:	7Fl., No. 758, Jungjeng Rd., Junghe City, Taipei, Taiwan 235, R.O.C.
	TEL	:	886-2-8227-2020
	FAX	:	886-2-8227-2626
NEIHU	ADD	:	4Fl., No. 339, Hsin Hu 2nd Rd., Taipei 114, Taiwan, R.O.C.
	TEL	:	886-2-2794-8886
	FAX	:	886-2-2794-9777
JHUBEI	ADD	:	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

7. MEASUREMENT UNCERTAINTY

Uncertainty of Conducted Emission Measurement (150kHz ~ 30MHz)

Contribution	Uncertainty of x_i			$u(x_i)$
	Value	Unit	Probability Distribution k	
Receiver reading	0.026	dB	normal(k=2)	0.013
Cable loss	0.002	dB	normal(k=2)	0.001
AMN/LISN specification	1.200	dB	normal(k=2)	0.600
Mismatch Receiver VSWR 1= AMN/LISN VSWR 2=	-0.080	dB	U-shaped	0.060
combined standard uncertainty Ue(y)	1.2			
Measuring uncertainty for a level of confidence of 95% U=2Ue(y)	2.4			

Uncertainty of Conducted Emission Measurement

Contribution	Uncertainty of x_i			$u(x_i)$
	Value	Unit	Probability Distribution k	
Cable loss	0.038	dB	normal(k=2)	0.019
Attenuator	0.047	dB	normal(k=2)	0.024
Power Meter specification	0.300	dB	normal(k=2)	0.150
Power Sensor specification	0.300	dB	normal(k=2)	0.150
Mismatch Receiver VSWR 1= Antenna VSWR 2= Pre Amplifier VSWR 3=	-0.080	dB	U-shaped	0.060
combined standard uncertainty Ue(y)	0.403			
Measuring uncertainty for a level of confidence of 95% U=2Ue(y)	0.806			

Uncertainty of Radiated Emission Measurement (30MHz ~ 1,000MHz)

Contribution	Uncertainty of x_i			$u(x_i)$
	Value	Unit	Probability Distribution k	
Receiver reading	0.1727	dB	normal(k=1)	0.1727
Cable loss	0.1736	dB	normal(k=2)	0.0868
Antenna gain	0.1687	dB	normal(k=2)	0.0843
Site imperfection	0.4898	dB	Triangular	0.2
Pre-amplifier gain	0.3661	dB	normal(k=2)	0.183
Transmitter antenna	1.7	dB	rectangular	0.9815
Signal generator	0.5	dB	rectangular	0.2887
Mismatch	0.08	dB	u-shape	0.244
Spectrum analyzer	0.5	dB	rectangular	0.2887
combined standard uncertainty Ue(y)	1.1434			
Measuring uncertainty for a level of confidence of 95% U=2Ue(y)	2.2869			

Uncertainty of Radiated Emission Measurement (1GHz ~ 18GHz)

Contribution	Uncertainty of x_i			$u(x_i)$
	Value	Unit	Probability Distribution k	
Receiver reading	0.1908	dB	normal(k=1)	0.1908
Cable loss	0.1685	dB	normal(k=2)	0.0843
Antenna gain	0.1912	dB	normal(k=2)	0.0956
Site imperfection	1.3091	dB	Triangular	0.5344
Pre-amplifier gain	0.3043	dB	normal(k=2)	0.1521
Transmitter antenna	1.7	dB	rectangular	0.9815
Signal generator	0.5	dB	rectangular	0.2887
Mismatch	0.08	dB	u-shape	0.244
Spectrum analyzer	0.8	dB	rectangular	0.4619
combined standard uncertainty Ue(y)	1.2965			
Measuring uncertainty for a level of confidence of 95% U=2Ue(y)	2.593			

Uncertainty of Radiated Emission Measurement (18GHz ~ 40GHz)

Contribution	Uncertainty of x_i			$u(x_i)$
	Value	Unit	Probability Distribution k	
Receiver reading	0.1864	dB	normal(k=1)	0.1864
Cable loss	0.1666	dB	normal(k=2)	0.0833
Antenna gain	0.1904	dB	normal(k=2)	0.0952
Site imperfection	0.4882	dB	Triangular	0.1993
Pre-amplifier gain	0.2688	dB	normal(k=2)	0.1344
Transmitter antenna	1.7	dB	rectangular	0.9815
Signal generator	0.5	dB	rectangular	0.2887
Mismatch	0.08	dB	u-shape	0.244
Spectrum analyzer	0.8	dB	rectangular	0.4619
combined standard uncertainty Ue(y)	1.1874			
Measuring uncertainty for a level of confidence of 95% U=2Ue(y)	2.3749			