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

FCC RADIO TEST REPORT

Applicant's company	**Aerohive Networks, Inc.**
Applicant Address	330 Gibraltar Drive, Sunnyvale, CA 94089
FCC ID	**WBV-AP3X0**
Manufacturer's company	**Accton Technology Corporation**
Manufacturer Address	1, Creation Road 3, Hsinchu Science Park , Hsinchu 30077 , Taiwan , R.O.C

Product Name	Access Point
Brand Name	Aerohive
Model No.	AP370 / AP390
Test Rule Part(s)	47 CFR FCC Part 15 Subpart E § 15.407
Test Freq. Range	5150 ~ 5250MHz
Received Date	Jun. 20, 2013
Final Test Date	Sep. 16, 2013
Submission Type	Class II Change
Operating Mode	Master

Statement

Test result included is for the IEEE 802.11n and IEEE 802.11a/ac (5150 ~ 5250MHz) 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 v02**.

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
FR362046-02AB	Rev. 01	Initial issue of report	Oct. 01, 2013

Certificate No.: CB10209170

1. CERTIFICATE OF COMPLIANCE

Product Name	:	Access Point
Brand Name	:	Aerohive
Model No.	:	AP370 / AP390
Applicant	:	Aerohive Networks, Inc.
Test Rule Part(s)	:	47 CFR FCC Part 15 Subpart E § 15.407

Sporton International as requested by the applicant to evaluate the EMC performance of the product sample received on Jun. 20, 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	15.407(a)	Maximum Conducted Output Power	Complies	0.02 dB
4.2	15.407(b)	Radiated Emissions	Complies	3.00 dB
4.3	15.407(b)	Band Edge Emissions	Complies	8.09 dB
4.4	15.203	Antenna Requirements	Complies	-

3. GENERAL INFORMATION

3.1. Product Details

IEEE 802.11n/ac

Items	Description
Product Type	WLAN (3TX, 3RX)
Radio Type	Intentional Transceiver
Power Type	From Power Adapter or PoE
Modulation	see the below table for IEEE 802.11n/ac
Data Modulation	For 802.11n: OFDM (BPSK / QPSK / 16QAM / 64QAM) For 802.11ac: OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)
Data Rate (Mbps)	see the below table for IEEE 802.11n/ac
Frequency Range	5150 ~ 5250MHz
Channel Number	4 for 20MHz bandwidth ; 2 for 40MHz bandwidth 1 for 80MHz bandwidth
Maximum Conducted Output Power	Mode 1 (EUT 1): 802.11ac MCS0, Nss1 (20MHz): 13.86 dBm ; 802.11ac MCS0, Nss1 (40MHz): 16.90 dBm ; 802.11ac MCS0, Nss1 (80MHz): 16.98 dBm Mode 2 (EUT 2): 802.11ac MCS0, Nss1 (20MHz): 15.39 dBm ; 802.11ac MCS0, Nss1 (40MHz): 16.88 dBm ; 802.11ac MCS0, Nss1 (80MHz): 16.85 dBm
Carrier Frequencies	Please refer to section 3.4
Antenna	Please refer to section 3.3

IEEE 802.11a

Items	Description
Product Type	WLAN (1TX, 1RX) ; WLAN (3TX, 3RX)
Radio Type	Intentional Transceiver
Power Type	From Power Adapter or PoE
Modulation	OFDM for IEEE 802.11a
Data Modulation	OFDM (BPSK / QPSK / 16QAM / 64QAM)
Data Rate (Mbps)	OFDM (6/9/12/18/24/36/48/54)
Frequency Range	5150 ~ 5250MHz
Channel Number	4
Maximum Conducted Output Power	Mode 1 (EUT 1) / 1TX: 16.71 dBm Mode 1 (EUT 1) / 3TX: 13.94 dBm Mode 2 (EUT 2) / 1TX: 16.61 dBm Mode 2 (EUT 2) / 3TX: 14.91 dBm
Carrier Frequencies	Please refer to section 3.4
Antenna	Please refer to section 3.3

Antenna & Band width

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

IEEE 11n/ac Spec.

Protocol	Number of Transmit Chains (NTX)	Data Rate / MCS
802.11n (HT20)	3	MCS 0-23
802.11n (HT40)	3	MCS 0-23
802.11ac (VHT20)	3	MCS 0-9, Nss1-3
802.11ac (VHT40)	3	MCS 0-9, Nss1-3
802.11ac (VHT80)	3	MCS 0-9, Nss1-3
Note 1: IEEE Std. 802.11n modulation consists of HT20 and HT40 (HT: High Throughput). Then EUT support HT20 and HT40. Note 2: IEEE Std. 802.11ac modulation consists of VHT20, VHT40, VHT80 and VHT160 (VHT: Very High Throughput). 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

Power	Brand Holder	Model No.	Rating	Remark
Adapter	Powertron Electronics Corp.	PA1024-2HU	INPUT:100-240V～50-60Hz 0.6A OUTPUT:12V 2.0A, 24W Max	With a Core

3.3. Table for Class II Change

This product is an extension of original one reported under Sporton project number: 362046

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

Modifications	Performance Checking
1. It adds and swaps EMI components for this device in order to improve test result of radiated emission. 2. It adds two Gaskets on the shielding case of RF module.	1. Maximum Conducted Output Power. 2. Radiated Emissions (30MHz～1GHz). 3. Band Edge Emissions: IEEE 802.11ac MCS0, Nss1 20MHz CH 36 IEEE 802.11ac MCS0, Nss1 40MHz CH 38 IEEE 802.11ac MCS0, Nss1 80MHz CH 42 IEEE 802.11a CH 36

3.4. Table for Filed Antenna

For EUT 1 (Model No. AP370)

Ant.	Brand	Model No.	Type	Connector	True Gain (dBi)	
					2.4GHz	5GHz
1	Accton	AC-02-PB002-004	PIFA	I-PEX	4.42	-
2	Accton	AC-02-PB002-005	PIFA	I-PEX	4.42	-
3	Accton	AC-02-PB002-006	PIFA	I-PEX	4.42	-
4	Accton	AC-02-PB001-004	PIFA	I-PEX	-	4.54
5	Accton	AC-02-PB001-005	PIFA	I-PEX	-	4.54
6	Accton	AC-02-PB001-006	PIFA	I-PEX	-	4.54

Note: Chain 1: Connect to Ant. 1, Chain 2: Connect to Ant. 2, Chain 3: Connect to Ant. 3, Chain 4: Connect to Ant. 4, Chain 5: Connect to Ant. 5, Chain 6: Connect to Ant. 6.

For EUT 2 (Model No. AP390)

Ant.	Brand	Model No.	Type	Connector	Gain (dBi)		Cable loss		True Gain (dBi)	
					2.4GHz	5GHz	2.4GHz	5GHz	2.4GHz	5GHz
1	Master Wave	98152MRSX007	Dipole	I-PEX	4	-	0.4	-	3.6	-
2	Master Wave	98152URSX002	Dipole	I-PEX	-	4	-	0.7	-	3.3

Note: Chain 1~ Chain 3: Connect to Ant. 1, Chain 4~ Chain 6: Connect to Ant. 2.

<For 2.4GHz Band:>

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

Only Chain 1 could transmit/receive simultaneously.

For IEEE 802.11b/g mode (3TX, 3RX):

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

For IEEE 802.11n mode (3TX, 3RX):

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

<For 5GHz Band:>

For IEEE 802.11a mode (1TX, 1RX):

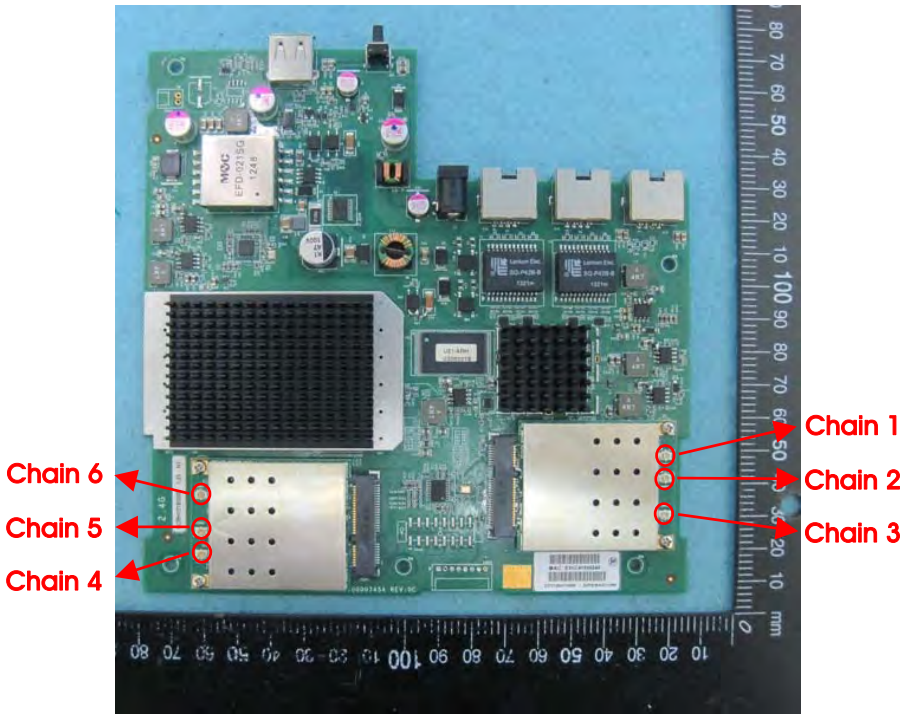
Only Chain 4 could transmit/receive simultaneously.

For IEEE 802.11a mode (3TX, 3RX):

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

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

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



3.5. Table for Carrier Frequencies

There are three bandwidth systems.

For 20MHz bandwidth systems, use Channel 36, 40, 44, 48.

For 40MHz bandwidth systems, use Channel 38, 46.

For 80MHz bandwidth systems, use Channel 42.

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
	42	5210 MHz	-	-

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
Max. Conducted Output Power	11ac 20MHz	Band 1	MCS0, Nss1	36/40/48	4+5+6
	11ac 40MHz	Band 1	MCS0, Nss1	38/46	4+5+6
	11ac 80MHz	Band 1	MCS0, Nss1	42	4+5+6
	11a/BPSK	Band 1	6Mbps	36/40/48	4 4+5+6
Radiated Emission Below 1GHz	Normal Link		-	-	-
Band Edge Emission	11ac 20MHz	Band 1	MCS0, Nss1	36	4+5+6
	11ac 40MHz	Band 1	MCS0, Nss1	38	4+5+6
	11ac 80MHz	Band 1	MCS0, Nss1	42	4+5+6
	11a/BPSK	Band 1	6Mbps	36	4+5+6

The following test modes were performed for all tests:

For Radiated Emission below 1GHz test:

Mode 1. EUT 1 put vertically+Adapter

Mode 2. EUT 1 put horizontally+Adapter

Mode 3. EUT 1 put vertically+PoE

Mode 4. EUT 1 put horizontally+PoE

Mode 5. EUT 2 put vertically+Adapter

Mode 6. EUT 2 put horizontally+Adapter

Mode 7. EUT 2 put vertically+PoE

Mode 8. EUT 2 put horizontally+PoE

Mode 3 and Mode 7 are worst test result among Mode 1~8, and the test result of those modes are selected to record in this test report.

For Radiated Emissions above 1GHz test:

Mode 1. EUT 1 put vertically

Mode 2. EUT 1 put horizontally

Mode 3. EUT 2 put vertically

Mode 4. EUT 2 put horizontally

Mode 1 and Mode 3 are the worst case, so it was selected to record in this test report.

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	-
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 Multiple Listing

The model numbers in the following table are all refer to the identical product.

Model No.	Antenna Type	Remark
AP370	PIFA Antenna	EUT 1
AP390	Dipole Antenna	EUT 2

3.9. Table for Supporting Units

For Radiated Emission below 1GHz tests:

Support Unit	Brand	Model	FCC ID
NB	DELL	E6220	QDS-BRCM1049LE
NB	DELL	E6220	QDS-BRCM1049LE
NB	DELL	E6220	QDS-BRCM1049LE
Flash Disk 3.0	ADATA	C103	DoC
PoE	Powerdsine	PD-3501G/AC	N/A

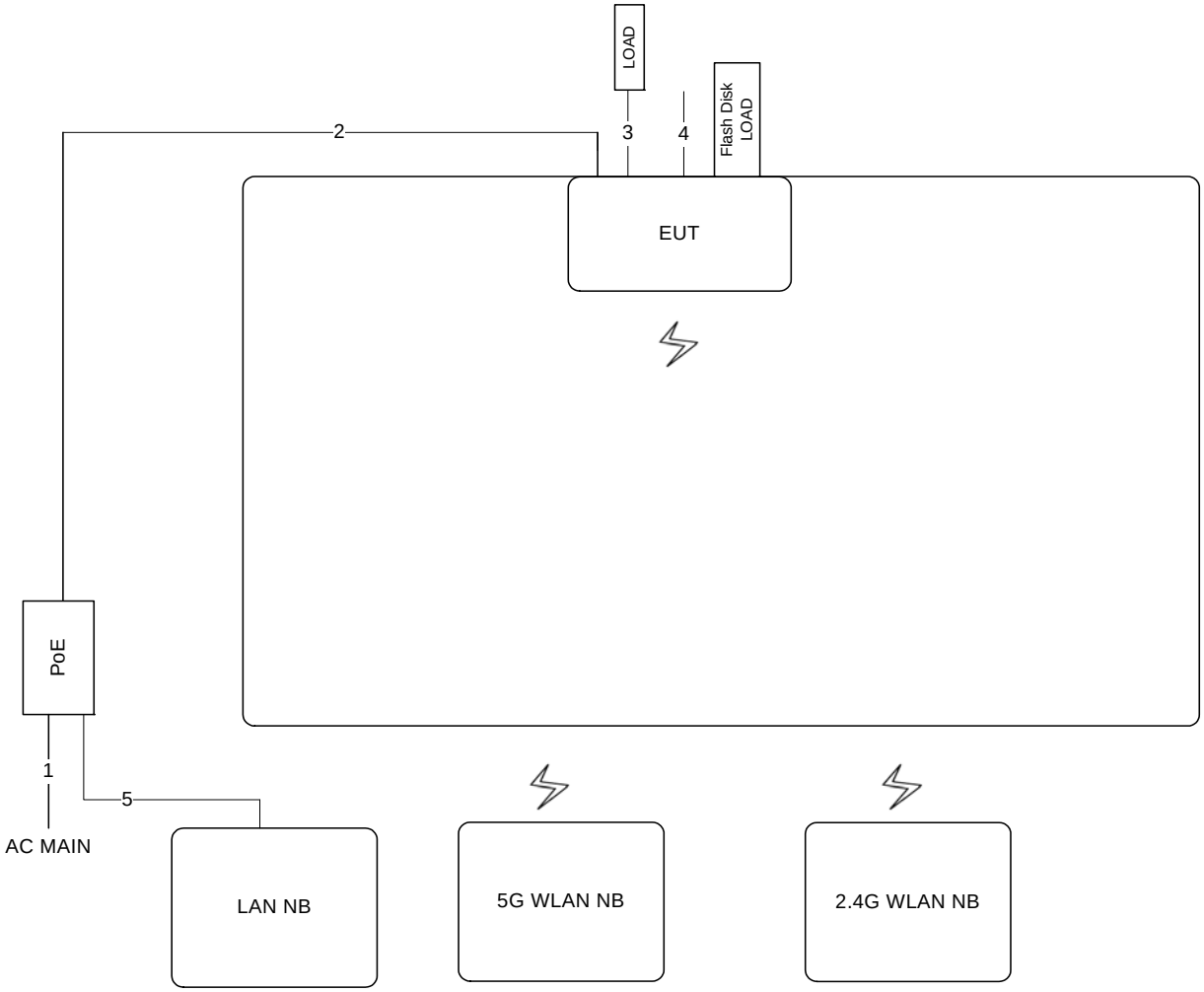
For Others tests:

Support Unit	Brand	Model	FCC ID
NB	DELL	E6220	QDS-BRCM1049LE

3.10. Test Configurations

3.10.1. Radiated Emission Test Configuration

Test Configuration: below 1GHz / Test Mode: Mode 3, Mode 7



Item	Connection	Shielded	Length
1	Power cable	No	1.8m
2	RJ-45 cable	No	10m
3	RJ45 cable	No	1m
4	Console cable	No	1m
5	RJ-45 cable	No	1.5m

4. TEST RESULT

4.1. Maximum Conducted Output Power Measurement

4.1.1. 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.

4.1.2. Measuring Instruments and Setting

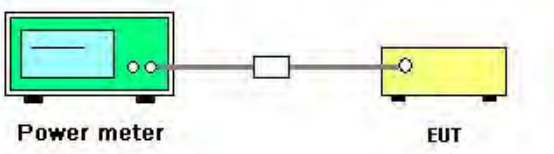
The following table is the setting of the peak power meter.

Power Meter Parameter	Setting
Detector	AVERAGE

4.1.3. 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 v02 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.

4.1.4. Test Setup Layout



4.1.5. Test Deviation

There is no deviation with the original standard.

4.1.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.1.7. Test Result of Maximum Conducted Output Power

Temperature	25°C	Humidity	56%
Test Engineer	Denis Su	Configurations	IEEE 802.11ac
Test Date	Jul. 28, 2013	Test Mode	Mode 1 (EUT 1)

Configuration IEEE 802.11ac MCS0, Nss1 20MHz / Chain 4+ Chain 5+ Chain 6

Channel	Frequency	Conducted Power (dBm)			Total Conducted Output Power (dBm)	Max. Limit (dBm)	Result
		Chain 4	Chain 5	Chain 6			
36	5180 MHz	8.71	9.47	8.71	13.75	17.00	Complies
40	5200 MHz	8.88	9.55	8.79	13.86	17.00	Complies
48	5240 MHz	8.82	9.46	8.94	13.85	17.00	Complies

Configuration IEEE 802.11ac MCS0, Nss1 40MHz / Chain 4+ Chain 5+ Chain 6

Channel	Frequency	Conducted Power (dBm)			Total Conducted Output Power (dBm)	Max. Limit (dBm)	Result
		Chain 4	Chain 5	Chain 6			
38	5190 MHz	11.72	12.23	11.68	16.66	17.00	Complies
46	5230 MHz	11.98	12.45	11.95	16.90	17.00	Complies

Configuration IEEE 802.11ac MCS0, Nss1 80MHz / Chain 4+ Chain 5+ Chain 6

Channel	Frequency	Conducted Power (dBm)			Total Conducted Output Power (dBm)	Max. Limit (dBm)	Result
		Chain 4	Chain 5	Chain 6			
42	5210 MHz	12.05	12.48	12.08	16.98	17.00	Complies

Temperature	25°C	Humidity	56%
Test Engineer	Denis Su	Configurations	IEEE 802.11a
Test Date	Jul. 28, 2013	Test Mode	Mode 1 (EUT 1)

Configuration IEEE 802.11a / Chain 4

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
36	5180 MHz	16.59	17.00	Complies
40	5200 MHz	16.71	17.00	Complies
48	5240 MHz	16.58	17.00	Complies

Configuration IEEE 802.11a / Chain 4+ Chain 5+ Chain 6

Channel	Frequency	Conducted Power (dBm)			Total Conducted Output Power (dBm)	Max. Limit (dBm)	Result
		Chain 4	Chain 5	Chain 6			
36	5180 MHz	9.11	9.56	8.81	13.94	17.00	Complies
40	5200 MHz	8.3	9.21	8.48	13.45	17.00	Complies
48	5240 MHz	8.09	8.84	8.39	13.22	17.00	Complies

Temperature	25°C	Humidity	56%
Test Engineer	Denis Su	Configurations	IEEE 802.11ac
Test Date	Jul. 28, 2013	Test Mode	Mode 2 (EUT 2)

Configuration IEEE 802.11ac MCS0, Nss1 20MHz / Chain 4+ Chain 5+ Chain 6

Channel	Frequency	Conducted Power (dBm)			Total Conducted Output Power (dBm)	Max. Limit (dBm)	Result
		Chain 4	Chain 5	Chain 6			
36	5180 MHz	10.81	10.49	10.54	15.39	17.00	Complies
40	5200 MHz	10.46	10.53	10.62	15.31	17.00	Complies
48	5240 MHz	10.49	10.53	10.78	15.37	17.00	Complies

Configuration IEEE 802.11ac MCS0, Nss1 40MHz / Chain 4+ Chain 5+ Chain 6

Channel	Frequency	Conducted Power (dBm)			Total Conducted Output Power (dBm)	Max. Limit (dBm)	Result
		Chain 4	Chain 5	Chain 6			
38	5190 MHz	11.91	11.85	11.97	16.68	17.00	Complies
46	5230 MHz	12.21	11.96	12.15	16.88	17.00	Complies

Configuration IEEE 802.11ac MCS0, Nss1 80MHz / Chain 4+ Chain 5+ Chain 6

Channel	Frequency	Conducted Power (dBm)			Total Conducted Output Power (dBm)	Max. Limit (dBm)	Result
		Chain 4	Chain 5	Chain 6			
42	5210 MHz	12.14	11.93	12.15	16.85	17.00	Complies

Temperature	25°C	Humidity	56%
Test Engineer	Benson Peng	Configurations	IEEE 802.11a
Test Date	Jul. 26, 2013	Test Mode	Mode 2 (EUT 2)

Configuration IEEE 802.11a / Chain 4

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
36	5180 MHz	16.61	17.00	Complies
40	5200 MHz	16.52	17.00	Complies
48	5240 MHz	16.48	17.00	Complies

Temperature	25°C	Humidity	56%
Test Engineer	Denis Su	Configurations	IEEE 802.11a
Test Date	Jul. 28, 2013	Test Mode	Mode 2 (EUT 2)

Configuration IEEE 802.11a / Chain 4+ Chain 5+ Chain 6

Channel	Frequency	Conducted Power (dBm)			Total Conducted Output Power (dBm)	Max. Limit (dBm)	Result
		Chain 4	Chain 5	Chain 6			
36	5180 MHz	10.34	9.91	9.99	14.86	17.00	Complies
40	5200 MHz	10.10	10.11	10.22	14.91	17.00	Complies
48	5240 MHz	9.96	10.09	10.27	14.88	17.00	Complies

4.2. Radiated Emissions Measurement

4.2.1. 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. 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

4.2.2. Measuring Instruments and Setting

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

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	40 GHz
RBW / VBW (Emission in restricted band)	1MHz / 3MHz for Peak, 1MHz / 10Hz for Average
RBW / VBW (Emission in non-restricted band)	1MHz / 3MHz for peak

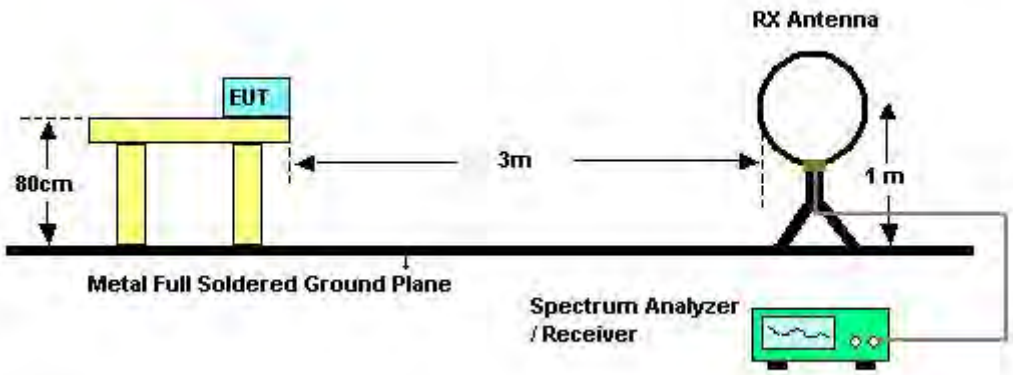
Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RBW 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RBW 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RBW 120kHz for QP

4.2.3. Test Procedures

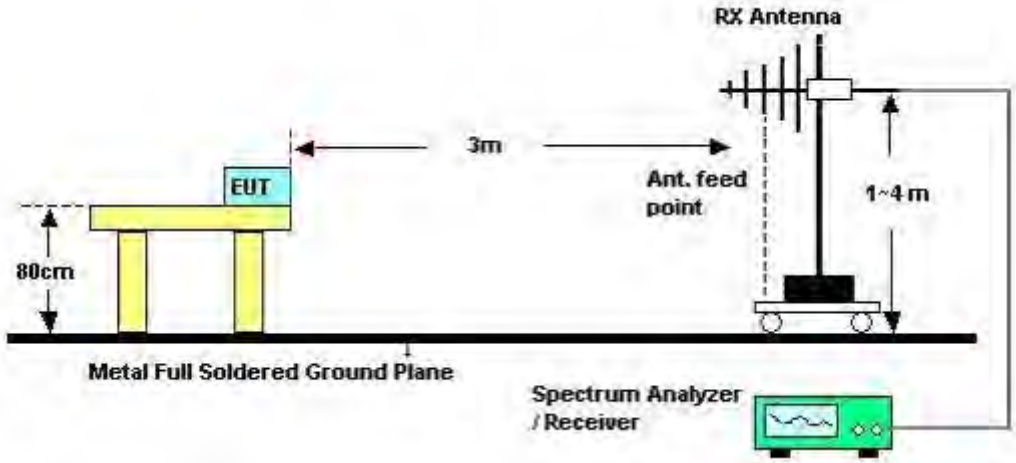
1. Configure the EUT according to ANSI C63.10. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting 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.

4.2.4. Test Setup Layout

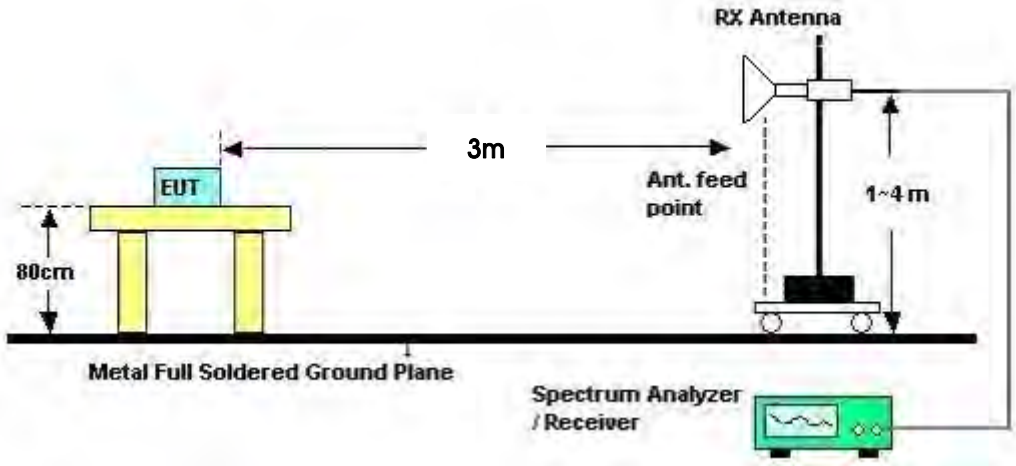
For Radiated Emissions: 9kHz ~30MHz



For Radiated Emissions: 30MHz~1GHz



For Radiated Emissions: Above 1GHz



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

Temperature	24°C	Humidity	58%
Test Engineer	David Tseng	Configurations	Normal Link
Test Date	Sep. 16, 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 20 dB below the permissible value has no need to be reported.

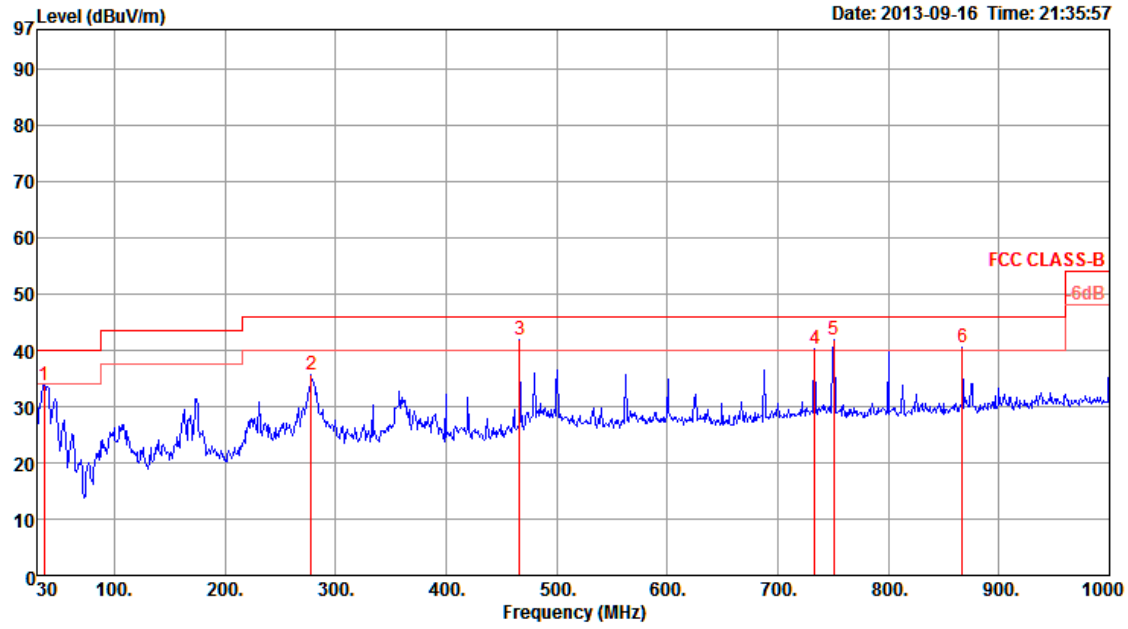
Distance extrapolation factor = 40 log (specific distance / test distance) (dB);

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

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

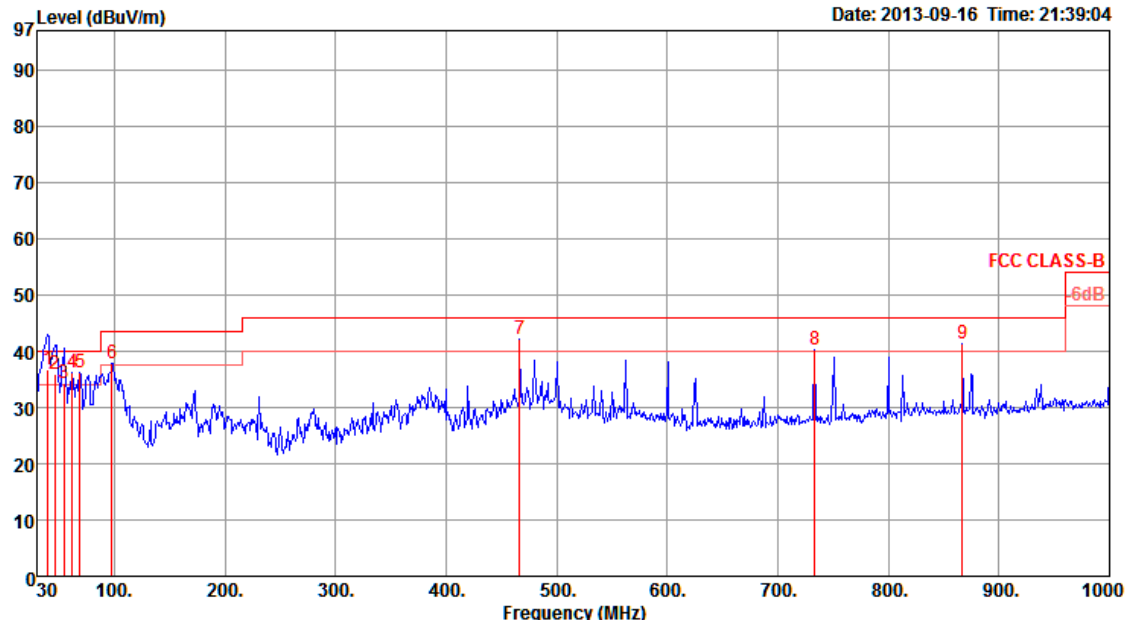
Temperature	24°C	Humidity	58%
Test Engineer	David Tseng	Configurations	Normal Link
Test Mode	Mode 3		

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	36.79	33.87	40.00	-6.13	45.30	0.95	28.00	15.62	Peak	0	400	HORIZONTAL
2	278.32	35.73	46.00	-10.27	46.61	2.52	26.88	13.48	Peak	0	400	HORIZONTAL
3	466.50	41.75	46.00	-4.25	49.06	3.29	27.86	17.26	Peak	0	400	HORIZONTAL
4	733.25	40.37	46.00	-5.63	43.16	4.19	27.11	20.13	Peak	0	400	HORIZONTAL
5	750.71	41.96	46.00	-4.04	44.66	4.21	27.12	20.21	Peak	0	400	HORIZONTAL
6	867.11	40.40	46.00	-5.60	41.49	4.49	26.88	21.30	Peak	0	400	HORIZONTAL

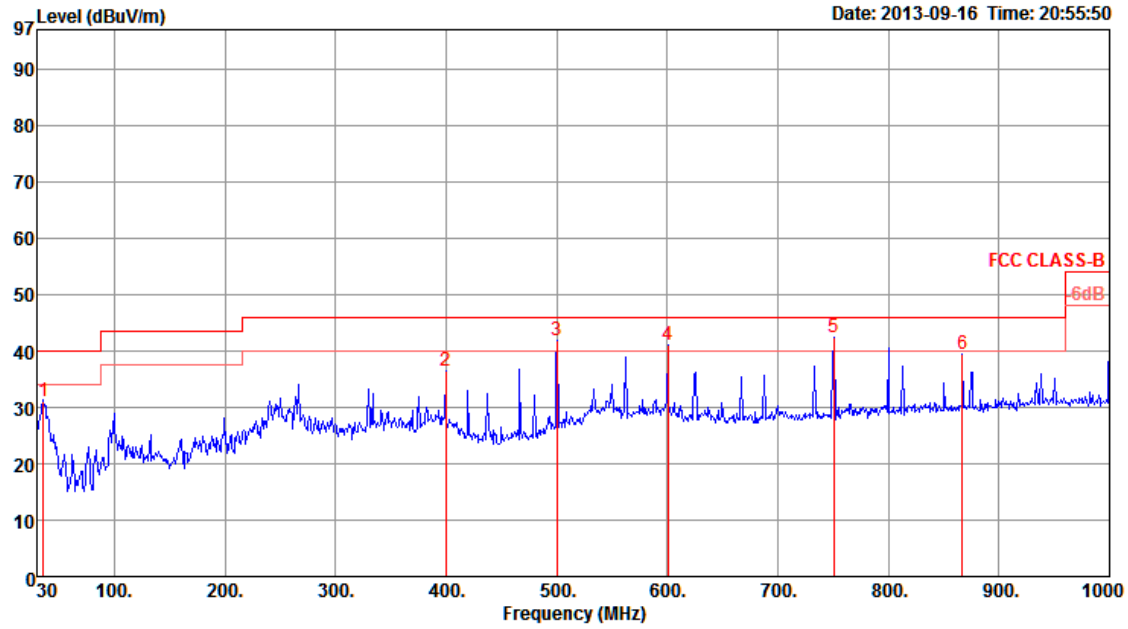
Vertical



	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	39.70	36.84	40.00	-3.16	50.14	0.99	27.99	13.70	QP	26	125	VERTICAL
2	46.49	35.88	40.00	-4.12	52.70	1.01	27.93	10.10	QP	26	125	VERTICAL
3	54.25	34.39	40.00	-5.61	53.19	1.12	27.90	7.98	QP	26	125	VERTICAL
4	62.01	36.24	40.00	-3.76	56.15	1.18	27.97	6.88	Peak	0	100	VERTICAL
5	68.80	36.18	40.00	-3.82	56.05	1.26	27.94	6.81	Peak	0	100	VERTICAL
6	97.90	37.90	43.50	-5.60	53.27	1.48	27.83	10.98	Peak	0	100	VERTICAL
7	466.50	42.17	46.00	-3.83	49.48	3.29	27.86	17.26	Peak	0	100	VERTICAL
8	733.25	40.30	46.00	-5.70	43.09	4.19	27.11	20.13	Peak	0	100	VERTICAL
9	867.11	41.28	46.00	-4.72	42.37	4.49	26.88	21.30	Peak	0	100	VERTICAL

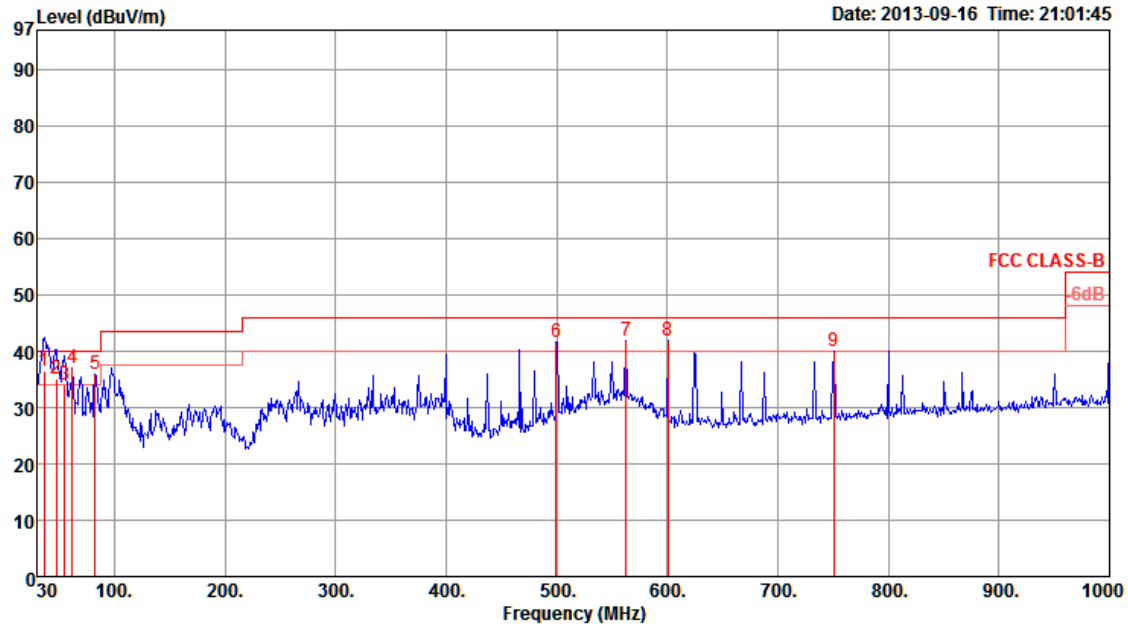
Temperature	24°C	Humidity	58%
Test Engineer	David Tseng	Configurations	Normal Link
Test Mode	Mode 7		

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	35.82	31.16	40.00	-8.84	41.97	0.93	28.00	16.26	Peak	0	400	HORIZONTAL
2	399.57	36.50	46.00	-9.50	44.47	2.99	27.46	16.50	Peak	0	400	HORIZONTAL
3	500.45	41.81	46.00	-4.19	48.56	3.38	27.93	17.80	Peak	0	400	HORIZONTAL
4	600.36	41.15	46.00	-4.85	45.72	3.73	27.60	19.30	Peak	0	400	HORIZONTAL
5	750.71	42.39	46.00	-3.61	45.09	4.21	27.12	20.21	Peak	0	400	HORIZONTAL
6	867.11	39.44	46.00	-6.56	40.53	4.49	26.88	21.30	Peak	0	400	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	36.79	36.52	40.00	-3.48	47.95	0.95	28.00	15.62	QP	192	100	VERTICAL
2	47.46	35.13	40.00	-4.87	52.29	1.02	27.93	9.75	QP	216	103	VERTICAL
3	55.22	34.13	40.00	-5.87	53.10	1.13	27.90	7.80	QP	179	100	VERTICAL
4	62.01	37.00	40.00	-3.00	56.91	1.18	27.97	6.88	Peak	0	100	VERTICAL
5	82.38	35.82	40.00	-4.18	54.50	1.36	27.90	7.86	Peak	0	100	VERTICAL
6	499.48	41.62	46.00	-4.38	48.39	3.38	27.93	17.78	Peak	0	100	VERTICAL
7	562.53	41.82	46.00	-4.18	47.12	3.59	27.81	18.92	Peak	0	100	VERTICAL
8	600.36	41.91	46.00	-4.09	46.48	3.73	27.60	19.30	Peak	0	100	VERTICAL
9	750.71	40.05	46.00	-5.95	42.75	4.21	27.12	20.21	Peak	0	100	VERTICAL

Note:

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

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

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

4.3. Band Edge Emissions Measurement

4.3.1. 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. 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

4.3.2. Measuring Instruments and Setting

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

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

4.3.3. 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.

4.3.4. Test Setup Layout

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

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 Band Edge and Fundamental Emissions

Temperature	24°C	Humidity	58%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0, Nss1 20MHz CH 36 / Chain 4+ Chain 5+ Chain 6
Test Date	Sep. 14, 2013	Test Mode	Mode 1 (EUT 1)

Channel 36

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5150.00	40.98	54.00	-13.02	3.88	3.43	33.67	0.00	Average	114	66	HORIZONTAL
2	5150.00	53.72	74.00	-20.28	16.62	3.43	33.67	0.00	Peak	114	66	HORIZONTAL
3	5185.80	108.60			71.43	3.44	33.73	0.00	Peak	114	66	HORIZONTAL
4	5186.00	97.64			60.47	3.44	33.73	0.00	Average	114	66	HORIZONTAL

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

Note:

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

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

Temperature	24°C	Humidity	58%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0, Nss1 40MHz CH 38 / Chain 4+ Chain 5+ Chain 6
Test Date	Sep. 14, 2013	Test Mode	Mode 1 (EUT 1)

Channel 38

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5144.00	59.89	74.00	-14.11	22.79	3.43	33.67	0.00	Peak	102	68	HORIZONTAL
2	5147.20	45.24	54.00	-8.76	8.14	3.43	33.67	0.00	Average	102	68	HORIZONTAL
3	5204.00	97.43			60.22	3.45	33.76	0.00	Average	102	68	HORIZONTAL
4	5204.00	109.80			72.59	3.45	33.76	0.00	Peak	102	68	HORIZONTAL

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

Note:

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

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

Temperature	24°C	Humidity	58%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0, Nss1 80MHz CH 42 / Chain 4+ Chain 5+ Chain 6
Test Date	Sep. 14, 2013	Test Mode	Mode 1 (EUT 1)

Channel 42

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5143.00	49.19	54.00	-4.81	12.12	3.43	33.64	0.00	Average	112	271	HORIZONTAL
2	5143.00	65.91	74.00	-8.09	28.84	3.43	33.64	0.00	Peak	112	271	HORIZONTAL
3	5222.00	89.96			52.71	3.46	33.79	0.00	Average	112	271	HORIZONTAL
4	5223.00	106.54			69.29	3.46	33.79	0.00	Peak	112	271	HORIZONTAL
5	5350.00	42.09	54.00	-11.91	4.57	3.49	34.03	0.00	Average	112	271	HORIZONTAL
6	5357.00	56.13	74.00	-17.87	18.61	3.49	34.03	0.00	Peak	112	271	HORIZONTAL

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

Note:

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

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

Temperature	24°C	Humidity	58%
Test Engineer	Nick Peng	Configurations	IEEE 802.11a CH 36 / Chain 4+ Chain 5+ Chain 6
Test Date	Sep. 14, 2013	Test Mode	Mode 1 (EUT 1)

Channel 36

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5149.00	53.68	74.00	-20.32	16.58	3.43	33.67	0.00	Peak	100	268	HORIZONTAL
2	5150.00	41.27	54.00	-12.73	4.17	3.43	33.67	0.00	Average	100	268	HORIZONTAL
3	5186.00	109.89			72.72	3.44	33.73	0.00	Peak	100	268	HORIZONTAL
4	5186.60	99.11			61.94	3.44	33.73	0.00	Average	100	268	HORIZONTAL

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

Note:

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

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

Temperature	24°C	Humidity	58%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0, Nss1 20MHz CH 36 / Chain 4+ Chain 5+ Chain 6
Test Date	Sep. 14, 2013	Test Mode	Mode 3 (EUT 2)

Channel 36

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5149.60	53.84	74.00	-20.16	16.74	3.43	33.67	0.00	Peak	115	23	VERTICAL
2	5150.00	41.65	54.00	-12.35	4.55	3.43	33.67	0.00	Average	115	23	VERTICAL
3	5183.60	99.52			62.35	3.44	33.73	0.00	Average	115	23	VERTICAL
4	5184.40	110.16			72.99	3.44	33.73	0.00	Peak	115	23	VERTICAL

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

Note:

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

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

Temperature	24°C	Humidity	58%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0, Nss1 40MHz CH 38 / Chain 4+ Chain 5+ Chain 6
Test Date	Sep. 14, 2013	Test Mode	Mode 3 (EUT 2)

Channel 38

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5147.60	42.55	54.00	-11.45	5.45	3.43	33.67	0.00	Average	101	25	VERTICAL
2	5148.00	56.93	74.00	-17.07	19.83	3.43	33.67	0.00	Peak	101	25	VERTICAL
3	5187.20	95.21			58.04	3.44	33.73	0.00	Average	101	25	VERTICAL
4	5187.60	106.76			69.59	3.44	33.73	0.00	Peak	101	25	VERTICAL

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

Note:

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

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

Temperature	24°C	Humidity	58%
Test Engineer	Nick Peng	Configurations	IEEE 802.11ac MCS0, Nss1 80MHz CH 42 / Chain 4+ Chain 5+ Chain 6
Test Date	Sep. 14, 2013	Test Mode	Mode 3 (EUT 2)

Channel 42

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5146.00	60.59	74.00	-13.41	23.49	3.43	33.67	0.00	Peak	100	14	VERTICAL
2	5147.00	45.20	54.00	-8.80	8.10	3.43	33.67	0.00	Average	100	14	VERTICAL
3	5235.00	90.21			52.93	3.46	33.82	0.00	Average	100	14	VERTICAL
4	5236.00	105.99			68.71	3.46	33.82	0.00	Peak	100	14	VERTICAL
5	5350.00	41.53	54.00	-12.47	4.01	3.49	34.03	0.00	Average	100	14	VERTICAL
6	5351.00	54.65	74.00	-19.35	17.13	3.49	34.03	0.00	Peak	100	14	VERTICAL

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

Note:

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

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

Temperature	24°C	Humidity	58%
Test Engineer	Nick Peng	Configurations	IEEE 802.11a CH 36 / Chain 4+ Chain 5+ Chain 6
Test Date	Sep. 14, 2013	Test Mode	Mode 3 (EUT 2)

Channel 36

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5144.60	54.63	74.00	-19.37	17.53	3.43	33.67	0.00	Peak	100	25	VERTICAL
2	5150.00	40.93	54.00	-13.07	3.83	3.43	33.67	0.00	Average	100	25	VERTICAL
3	5181.20	108.73			71.56	3.44	33.73	0.00	Peak	100	25	VERTICAL
4	5181.60	98.28			61.11	3.44	33.73	0.00	Average	100	25	VERTICAL

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

Note:

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

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

4.4. Antenna Requirements

4.4.1. 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.

4.4.2. Antenna Connector Construction

Please refer to section 3.4 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
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)
Pre-Amplifier	Agilent	8447D	2944A10991	0.1MHz ~ 1.3GHz	Nov. 27, 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. 12, 2013	Radiation (03CH01-CB)
Turn Table	INN CO	CO 2000	N/A	0 ~ 360 degree	N.C.R	Radiation (03CH01-CB)
Antenna Mast	INN CO	CO2000	N/A	1 m - 4 m	N.C.R	Radiation (03CH01-CB)
RF Cable-low	Woken	Low Cable-1	N/A	30 MHz - 1 GHz	Nov. 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, 2013	Conducted (TH01-CB)
RF Power Divider	Woken	3 Way	MDC2366	2GHz ~ 18GHz	Nov. 18, 2012	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.

N.C.R. means Non-Calibration required.

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

Contribution	Uncertainty of x_i			$u(x_i)$
	Value	Unit	Probability Distribution k	
Receiver reading	±0.173	dB	K=1	0.086
Cable loss	±0.174	dB	K=2	0.087
Antenna gain	±0.169	dB	K=2	0.084
Site imperfection	±0.433	dB	Triangular	0.214
Pre-amplifier gain	±0.366	dB	K=2	0.183
Transmitter antenna	±1.200	dB	Rectangular	0.600
Signal generator	±0.461	dB	Rectangular	0.231
Mismatch	±0.080	dB	U-shape	0.040
Spectrum analyzer	±0.500	dB	Rectangular	0.250
Combined standard uncertainty Uc(y)				1.778
Measuring uncertainty for a level of confidence of 95% U=2Uc(y)				3.555

Uncertainty of Conducted Emission Measurement

Contribution	Uncertainty of x_i			$u(x_i)$
	Value	Unit	Probability Distribution k	
Cable loss	±0.038	dB	K=2	0.019
Attenuator	±0.047	dB	K=2	0.024
Power Meter specification	±0.300	dB	Triangular	0.150
Power Sensor specification	±0.300	dB	Rectangular	0.150
Signal generator	±0.461	dB	Rectangular	0.231
Mismatch	±0.080	dB	U-shape	0.040
Spectrum analyzer	±0.500	dB	Rectangular	0.250
Combined standard uncertainty Uc(y)				0.863
Measuring uncertainty for a level of confidence of 95% U=2Uc(y)				1.726