Partial FCC RF Test Report

APPLICANT	:	**Qualcomm Atheros, Inc.**
EQUIPMENT	:	**PCIE 802.11a/b/g/n 2.4GHz/5GHz + USB BT 4.0 card**
BRAND NAME	:	**Atheros**
MODEL NAME	:	**AR5B22**
FCC ID	:	**PPD-AR5B22**
STANDARD	:	**FCC Part 15 Subpart E §15.407**
CLASSIFICATION	:	**(NII) Unlicensed National Information Infrastructure**

This is a partial report which is included the Conducted Power and Unwanted Emissions Measurement items. The product was received on Dec. 14, 2013 and testing was completed on Jan. 20, 2014. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures and shown to be compliant with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

Reviewed by: Joseph Lin / Supervisor

Approved by: Jones Tsai / Manager

Testing Laboratory 1190

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR3D1404D	Rev. 01	Initial issue of report	Feb. 12, 2014
FR3D1404D	Rev. 02	Revising conducted power in section 1.4 and 2.2	Feb. 24, 2014
FR3D1404D	Rev. 03	Revising applicant information in cover page and section 1.1.	Feb. 25, 2014

SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.407(b)	RSS-210 A9.3	Unwanted Emissions	≤ -17, -27 dBm (depend on band)&15.209(a)	Pass	Under limit 0.25 dB at 5725.000 MHz
3.2	15.203 & 15.407(a)	RSS-210 A9.2	Antenna Requirement	N/A	Pass	-

1 General Description

1.1 Applicant

Qualcomm Atheros, Inc.
1700 Technology Drive, San Jose, CA 95110

1.2 Manufacturer

Qualcomm Atheros, Inc.
1700 Technology Drive, San Jose, CA 95110

1.3 Feature of Equipment Under Test

Product Feature	
Equipment	PCIE 802.11a/b/g/n 2.4GHz/5GHz + USB BT 4.0 card
Brand Name	Atheros
Model Name	AR5B22
FCC ID	PPD-AR5B22
Sample 1	EUT with Antenna 1
Sample 2	EUT with Antenna 2
Installed into host	Equipment Name: Tablet PC Brand Name: Lenovo Marketing Name: Lenovo Miix 2 11
EUT supports Radios application	WLAN 11a/b/g/n HT20/HT40 Bluetooth v2.1 + EDR Bluetooth v4.0 + LE
EUT Stage	Production Unit

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

1.4 Product Specification of Equipment Under Test

<table>
<tr><th colspan="2">Product Specification subjective to this standard</th></tr>
<tr><td>Tx/Rx Channel Frequency Range</td><td>5180 MHz ~ 5240 MHz
5260 MHz ~ 5320 MHz
5500 MHz ~ 5580 MHz
5660 MHz ~ 5700 MHz</td></tr>
<tr><td>Maximum Output Power</td><td>SISO <Ant. Port 2>
<5180 MHz ~ 5240 MHz>
802.11a : 11.53 dBm / 0.0142 W
<5260 MHz ~ 5320 MHz>
802.11a : 14.98 dBm / 0.0315 W
<5500 MHz ~ 5580 MHz and 5660 MHz ~ 5700 MHz >
802.11a : 14.26 dBm / 0.0267 W
MIMO <Ant. Port 1+2>
<5180 MHz ~ 5240 MHz>
802.11a : 14.46 dBm / 0.0279 W
802.11n HT20 : 14.20 dBm / 0.0263 W
802.11n HT40 : 16.50 dBm / 0.0447 W
<5260 MHz ~ 5320 MHz>
802.11a : 17.53 dBm / 0.0566 W
802.11n HT20 : 17.58 dBm / 0.0573 W
802.11n HT40 : 12.59 dBm / 0.0182 W
<5500 MHz ~ 5580 MHz and 5660 MHz ~ 5700 MHz >
802.11a : 17.30 dBm / 0.0537 W
802.11n HT20 : 17.67 dBm / 0.0585 W
802.11n HT40 : 18.00 dBm / 0.0631 W</td></tr>
<tr><td>Type of Modulation</td><td>802.11a/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)</td></tr>
<tr><td>Antenna Function Description</td><td>
<table>
<tr><th></th><th>Ant. Port 1</th><th>Ant. Port 2</th></tr>
<tr><td>802.11 a SISO</td><td>-</td><td>V</td></tr>
<tr><td>802.11 a MIMO</td><td>V</td><td>V</td></tr>
<tr><td>802.11 n MIMO</td><td>V</td><td>V</td></tr>
</table>
</td></tr>
</table>

Antenna Information			
Antenna 1	Manufacturer	WNC	
	P/N	Main: 025.9000X.0001	Aux.: 025.9000Y.0001
	Antenna Type	Main: PIFA Antenna	Aux.: PIFA Antenna
	Antenna connector	RF	
	Peak gain	Main Antenna : WLAN (5G) : -0.16 dBi	Aux. Antenna : WLAN (5G) : 2.73 dBi
Antenna 2	Manufacturer	HT	
	P/N	Main: 025.9000X.0011	Aux.: 025.9000Y.0011
	Antenna Type	Main: PIFA Antenna	Aux.: PIFA Antenna
	Antenna connector	IPEX	
	Peak gain	Main Antenna : WLAN (5G) : 1.27 dBi	Aux. Antenna : WLAN (5G) : 1.07 dBi

1.5 Modification of EUT

No modifications are made to the EUT during all test items.

1.6 Testing Site

Test Site	SPORTON INTERNATIONAL INC.		
Test Site Location	No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-3273456 / FAX: +886-3-3284978		
Test Site No.	Sporton Site No.		FCC/IC Registration No.
	TH02-HY	03CH06-HY	722060/4086B-1

The test site complies with ANSI C63.4 2003 requirement.

1.7 Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC Part 15 Subpart E
- FCC KDB 789033 D01 General UNII Test Procedures v01r03
- FCC KDB 662911 D01 Multiple Transmitter Output v02r01.
- ANSI C63.4-2003

Remark: All test items were verified and recorded according to the standards and without any deviation during the test.

2 Test Configuration of Equipment Under Test

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: radiated emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (Z plane) were recorded in this report.

The final configuration from all the combinations and the worst-case data rates were investigated by measuring the maximum power across all the data rates and modulation modes under section 2.2.

Based on the worst configuration found above, the RF power setting is set individually to meet FCC compliance limit for the final conducted and radiated tests shown in section 2.3.

2.1 Carrier Frequency and Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5150-5250 MHz Band 1 (U-NII-1)	36	5180	44	5220
	38	**5190**	**46**	**5230**
	40	5200	48	5240

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5250-5350 MHz Band 2 (U-NII-2A)	52	5260	60	5300
	54	**5270**	**62**	**5310**
	56	5280	64	5320

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5470-5600 MHz and 5650-5725 MHz Band 3 (U-NII-2C)	100	5500	116	5580
	102	**5510**	132	5660
	104	5520	**134**	**5670**
	108	5540	136	5680
	110	**5550**	140	5700
	112	5560		

Note: The above Frequency and Channel in boldface were 802.11n HT40.

2.2 Pre-Scanned RF Power

Preliminary tests were performed in different data rate and data rate associated with the highest power were chosen for full test in the following tables.

SISO <Ant. Port 2>

5GHz 802.11a mode <5150 MHz ~ 5250MHz> Duty Cycle: 99.12%			
Channel	**Ch36**	**Ch44**	**Ch48**
Avg. Power (dBm)	11.45	11.36	**11.53**

5GHz 802.11a mode <5250 MHz ~ 5350MHz> Duty Cycle: 99.12%			
Channel	**Ch52**	**Ch60**	**Ch64**
Avg. Power (dBm)	**14.98**	11.66	11.29

5GHz 802.11a mode <5470 MHz ~ 5725 MHz> Duty Cycle: 99.12%			
Channel	**Ch100**	**Ch116**	**Ch140**
Avg. Power (dBm)	11.20	**14.26**	10.09

MIMO <Ant. Port 1+2>

5GHz 802.11a mode <5150 MHz ~ 5250MHz>			
Channel	**Ch36**	**Ch44**	**Ch48**
Avg. Power (dBm)	14.33	**14.46**	14.35

5GHz 802.11a mode <5250 MHz ~ 5350MHz>			
Channel	**Ch52**	**Ch60**	**Ch64**
Avg. Power (dBm)	**17.53**	14.38	14.36

5GHz 802.11a mode <5470 MHz ~ 5725 MHz>			
Channel	**Ch100**	**Ch116**	**Ch140**
Avg. Power (dBm)	14.30	**17.30**	13.43

5GHz 802.11n HT20 mode <5150 MHz ~ 5250MHz>			
Channel	**Ch36**	**Ch44**	**Ch48**
Avg. Power (dBm)	**14.20**	14.14	14.19

5GHz 802.11n HT20 mode <5250 MHz ~ 5350MHz>			
Channel	**Ch52**	**Ch60**	**Ch64**
Avg. Power (dBm)	**17.58**	14.42	14.24

5GHz 802.11n HT20 mode <5470 MHz ~ 5725 MHz>			
Channel	**Ch100**	**Ch116**	**Ch140**
Avg. Power (dBm)	15.98	**17.67**	16.06

5GHz 802.11n HT40 mode <5150 MHz ~ 5250MHz>		
Channel	**Ch38**	**Ch46**
Avg. Power (dBm)	12.65	**16.50**

5GHz 802.11n HT40 mode <5250 MHz ~ 5350MHz>		
Channel	**Ch54**	**Ch62**
Avg. Power (dBm)	**12.59**	12.22

5GHz 802.11n HT40 mode <5470 MHz ~ 5725 MHz>			
Channel	**Ch102**	**Ch110**	**Ch134**
Avg. Power (dBm)	12.20	**18.00**	16.19

Note 1. The data rates were set in 6Mbps for 802.11a <SISO Ant. Port 2>; MCS8 for 802.11a <MIMO Ant. Port 1+2>; MCS8 for 802.11n HT20 <MIMO Ant. Port 1+2>; MCS8 for 802.11n HT40 <MIMO Ant. Port 1+2>; due to the highest RF output power for rest of test items.

Note 2. MIMO Ant. 1+2 is a calculated result from sum of the power MIMO Ant. 1 and MIMO Ant. 2.

2.3 Test Mode

Final results of test modes, data rates and test channels are shown as following table.

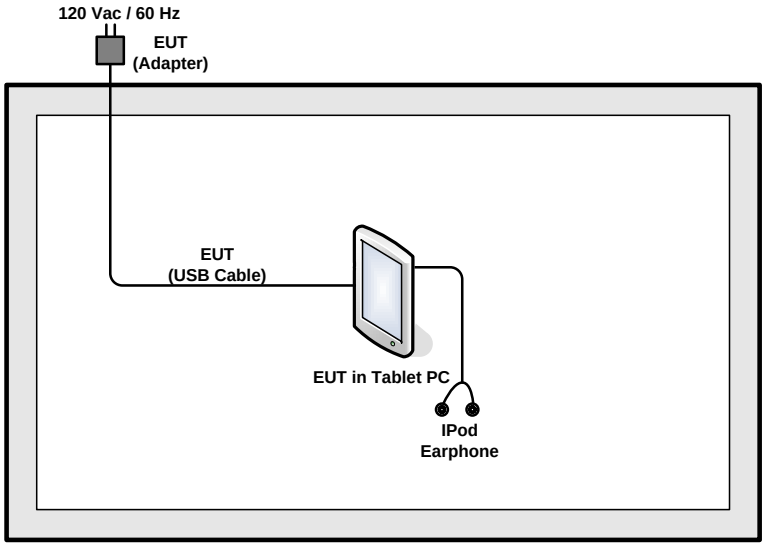
Test Cases				
Radiated TCs	Test Items	Mode	Data rate	Test Channel
	Radiated Band Edge	802.11a	6 Mbps	L/H
		802.11n HT20	MCS8	L/H
		802.11n HT40	MCS8	L/H
	Radiated Spurious Emission	802.11a	6 Mbps	L/M/H
		802.11n HT20	MCS8	L/M/H
		802.11n HT40	MCS8	L/M/H
Remark: All test items were performed with Sample1 and Battery 1.				

Ch. #		Band I：5150-5250 MHz	Band II：5250-5350 MHz	Band III：5470-5600 MHz and 5650-5725MHz
		802.11a	802.11a	802.11a
L	Low	36	52	100
M	Middle	44	60	116
H	High	48	64	140

Ch. #		Band I：5150-5250 MHz	Band II：5250-5350 MHz	Band III：5470-5600 MHz and 5650-5725MHz
		802.11n HT20	802.11n HT20	802.11n HT20
L	Low	36	52	100
M	Middle	44	60	116
H	High	48	64	140

Ch. #		Band I：5150-5250 MHz	Band II：5250-5350 MHz	Band III：5470-5600 MHz and 5650-5725MHz
		802.11n HT40	802.11n HT40	802.11n HT40
L	Low	38	54	102
M	Middle	-	-	110
H	High	46	62	134

2.4 Connection Diagram of Test System



2.5 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	iPod Earphone	Apple	A1285	Verification	Shielded, 1.2 m	N/A

2.6 EUT Operation Test Setup

The programmed RF utility “artgui.exe”, is installed in Tablet PC to provide channel selection, power level, data rate and the application type. RF Utility can send transmitting signal for all testing. 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.

3 Test Result

3.1 Unwanted Emissions Measurement

This section as specified in FCC Part 15.407(b) is to measure unwanted emissions through radiated measurement for band edge spurious emissions and out of band emissions measurement. The unwanted emissions shall comply with 15.407(b)(1) to (6), and restricted bands per FCC Part15.205.

3.1.1 Limit of Unwanted Emissions

(1) For transmitters operating in the 5150-5250 MHz band: all emissions outside of the 5150-5350 MHz band shall not exceed an EIRP of –27dBm/MHz.

For transmitters operating in the 5250-5350 MHz band: all emissions outside of the 5150-5350 MHz band shall not exceed an EIRP of -27 dBm/MHz. Devices operating in the 5250-5350 MHz band that generate emissions in the 5150-5250 MHz band must meet all applicable technical requirements for operation in the 5150-5250 MHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of -27 dBm/MHz in the 5150-5250 MHz band.

For transmitters operating in the 5470-5600 MHz and 5650-5725MHz band: all emissions outside of the 5470-5600 MHz and 5650-5725MHz band shall not exceed an EIRP of -27 dBm/MHz.

(2) Unwanted spurious emissions fallen in restricted bands per FCC Part15.205 shall comply with the general field strength limits set forth in § 15.209 as below table,

Frequency (MHz)	Field Strength (microvolts/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

Note: The following formula is used to convert the EIRP to field strength.

$$E=\frac{1000000\sqrt{30P}}{3}$$ μV/m, where P is the eirp (Watts)

EIRP (dBm)	Field Strength at 3m (dBμV/m)
-17	78.3
- 27	68.3

(3) KDB789033 v01r03 H)2)c)(i) As specified in 15.407(b), emissions above 1000 MHz that are outside of the restricted bands are subject to a peak emission limit of -27 dBm/MHz (or -17 dBm/MHz as specified in 15.407(b)(4)). However, an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit.

3.1.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.1.3 Test Procedures

1. The testing follows FCC KDB 789033 D01 General UNII Test Procedures v01r03. Section H) Unwanted emissions measurement.

   (1) Procedure for Unwanted Emissions Measurements Below 1000MHz

   - RBW = 120 kHz
   - VBW = 300 kHz
   - Detector = Peak
   - Trace mode = max hold

   (2) Procedure for Peak Unwanted Emissions Measurements Above 1000 MHz

   - The setting follows the H) 5) of FCC KDB 789033.
   - RBW = 1 MHz
   - VBW ≥ 3 MHz
   - Detector = Peak
   - Sweep time = auto
   - Trace mode = max hold

   (3) Procedures for Average Unwanted Emissions Measurements Above 1000MHz

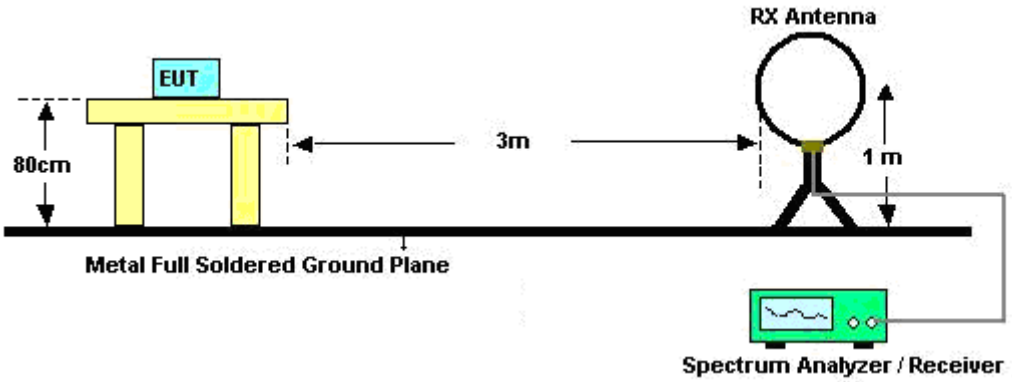
   - The setting follows H) 6) of FCC KDB 789033.
   - RBW = 1 MHz
   - VBW = 10 Hz, when duty cycle is no less than 98 percent.
   - VBW ≥ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

Antenna	Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting
1	802.11a	99.12	-	-	10Hz
2	802.11a	99.12	-	-	
1	5GHz 802.11n HT20	99.04	-	-	
2	5GHz 802.11n HT20	99.04	-	-	
1	5GHz 802.11n HT40	98.69	-	-	
2	5GHz 802.11n HT40	98.69	-	-	
1+2	802.11a for Ant 1	99.12	-	-	
1+2	802.11a for Ant 2	99.12	-	-	
1+2	5GHz 802.11n HT20 for Ant 1	98.44	-	-	
1+2	5GHz 802.11n HT20 for Ant 2	98.44	-	-	
1+2	5GHz 802.11n HT40 for Ant 1	97.62	1230.00	0.81	1kHz
1+2	5GHz 802.11n HT40 for Ant 2	97.62	1230.00	0.81	

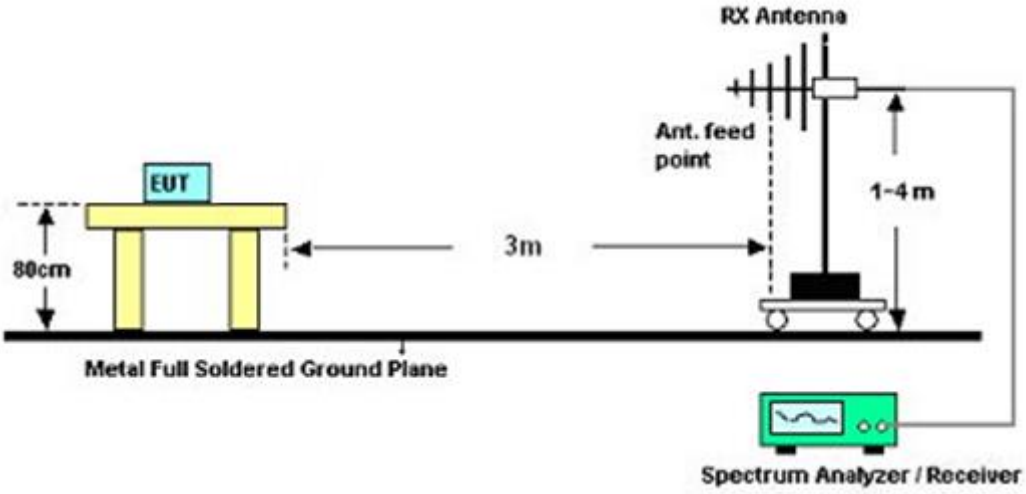
2. The EUT was placed on a rotatable table top 0.8 meter above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The antenna is a broadband antenna and its height is adjusted between one meter and four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
5. For each suspected emission, the EUT was arranged to its worst case and then adjust the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
6. For testing below 1GHz, if the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the CISPR quasi-peak method and reported.
7. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in average mode also complies with the limit in average mode), then peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

3.1.4 Test Setup

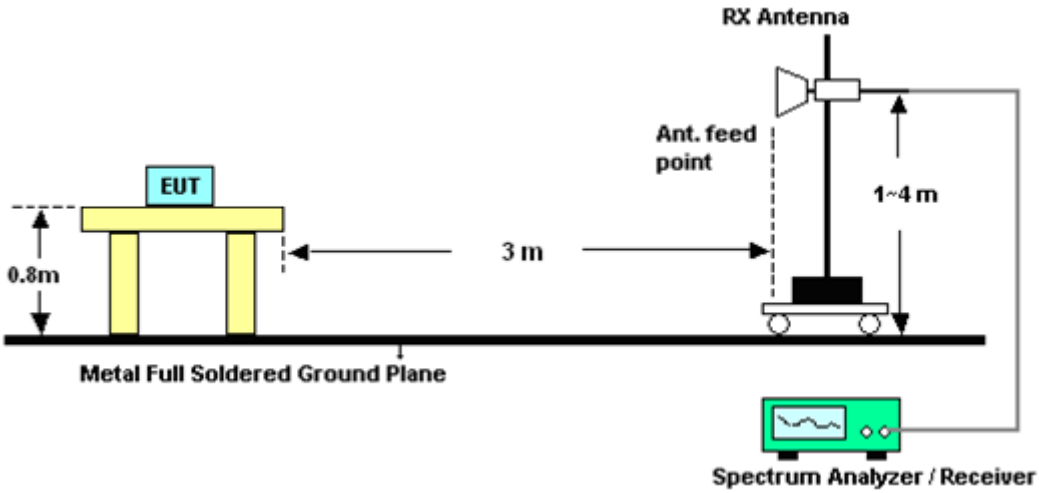
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



3.1.5 Test Results of Radiated Emissions (9 kHz ~ 30 MHz)

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

3.1.6 Test Result of Radiated Band Edges

MIMO <Ant. 1+2>

Test Mode :	802.11a	**Temperature :**	22~23°C
Test Channel :	36	**Relative Humidity :**	49~50%
Test Engineer :	Gavin Wu		

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5150	65.04	-8.96	74	53.5	34.45	10.44	33.35	100	358	Peak
5150	44.09	-9.91	54	32.55	34.45	10.44	33.35	100	358	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5149.85	60.48	-13.52	74	48.94	34.45	10.44	33.35	100	38	Peak
5149.1	42.74	-11.26	54	31.2	34.45	10.44	33.35	100	38	Average

Test Mode :	802.11a	**Temperature :**	22~23°C
Test Channel :	48	**Relative Humidity :**	49~50%
Test Engineer :	Gavin Wu		

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5132.45	54.8	-19.2	74	43.33	34.43	10.4	33.36	111	353	Peak
5000	41.73	-12.27	54	30.62	34.3	10.23	33.42	111	353	Average
5404.67	56.29	-17.71	74	44.01	34.7	10.82	33.24	111	353	Peak
5365.29	42.81	-11.19	54	30.66	34.67	10.75	33.27	111	353	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5019.05	54.73	-19.27	74	43.59	34.32	10.23	33.41	100	36	Peak
5000	41.67	-12.33	54	30.56	34.3	10.23	33.42	100	36	Average
5447.35	55.82	-18.18	74	43.44	34.75	10.86	33.23	100	36	Peak
5365.29	42.69	-11.31	54	30.54	34.67	10.75	33.27	100	36	Average

Test Mode :	802.11a	Temperature :	22~23°C
Test Channel :	52	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu		

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5049.5	54.98	-19.02	74	43.73	34.35	10.3	33.4	122	345	Peak
5001.05	41.7	-12.3	54	30.59	34.3	10.23	33.42	122	345	Average
5377.61	55.77	-18.23	74	43.59	34.68	10.75	33.25	122	345	Peak
5367.05	42.75	-11.25	54	30.6	34.67	10.75	33.27	122	345	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5087.9	55.23	-18.77	74	43.91	34.38	10.33	33.39	100	35	Peak
5000.45	41.67	-12.33	54	30.56	34.3	10.23	33.42	100	35	Average
5367.93	56.21	-17.79	74	44.06	34.67	10.75	33.27	100	35	Peak
5364.85	42.7	-11.3	54	30.55	34.67	10.75	33.27	100	35	Average

Test Mode :	802.11a	Temperature :	22~23°C
Test Channel :	64	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu		

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5352.53	66.72	-7.28	74	54.62	34.65	10.72	33.27	104	116	Peak
5350	45.46	-8.54	54	33.36	34.65	10.72	33.27	104	116	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5351.43	63.67	-10.33	74	51.57	34.65	10.72	33.27	124	181	Peak
5350.88	44.04	-9.96	54	31.94	34.65	10.72	33.27	124	181	Average

Test Mode :	802.11a	Temperature :	22~23°C
Test Channel :	100	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu		

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5468.72	68.32	-5.68	74	55.88	34.77	10.89	33.22	100	113	Peak
5470	46.37	-7.63	54	33.93	34.77	10.89	33.22	100	113	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5469.52	64.11	-9.89	74	51.67	34.77	10.89	33.22	100	220	Peak
5470	45	-9	54	32.56	34.77	10.89	33.22	100	220	Average

Test Mode :	802.11a	Temperature :	22~23°C
Test Channel :	140	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu		

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725.32	63.09	-10.91	74	50.02	35.02	11.34	33.29	100	12	Peak
5725	45.46	-8.54	54	32.39	35.02	11.34	33.29	100	12	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725.24	61.9	-12.1	74	48.83	35.02	11.34	33.29	139	46	Peak
5726.68	44.97	-9.03	54	31.9	35.02	11.34	33.29	139	46	Average

Test Mode :	802.11n HT20	Temperature :	22~23°C
Test Channel :	36	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu		

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5150	68.18	-5.82	74	56.64	34.45	10.44	33.35	105	359	Peak
5150	47.26	-6.74	54	35.72	34.45	10.44	33.35	105	359	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5147.3	67.09	-6.91	74	55.55	34.45	10.44	33.35	109	332	Peak
5150	47.1	-6.9	54	35.56	34.45	10.44	33.35	109	332	Average

Test Mode :	802.11n HT20	Temperature :	22~23°C
Test Channel :	48	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu		

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5087.6	55.28	-18.72	74	43.96	34.38	10.33	33.39	123	354	Peak
5002.85	41.71	-12.29	54	30.6	34.3	10.23	33.42	123	354	Average
5423.48	56.45	-17.55	74	44.15	34.72	10.82	33.24	123	354	Peak
5365.18	42.85	-11.15	54	30.7	34.67	10.75	33.27	123	354	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5129.45	55.26	-18.74	74	43.79	34.43	10.4	33.36	100	34	Peak
5000	41.7	-12.3	54	30.59	34.3	10.23	33.42	100	34	Average
5452.63	56.1	-17.9	74	43.68	34.75	10.89	33.22	100	34	Peak
5365.29	42.74	-11.26	54	30.59	34.67	10.75	33.27	100	34	Average

Test Mode :	802.11n HT20	Temperature :	22~23°C
Test Channel :	52	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu		

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5036	55.07	-18.93	74	43.89	34.33	10.26	33.41	121	4	Peak
5000	41.78	-12.22	54	30.67	34.3	10.23	33.42	121	4	Average
5369.25	55.83	-18.17	74	43.68	34.67	10.75	33.27	121	4	Peak
5360.12	42.9	-11.1	54	30.77	34.65	10.75	33.27	121	4	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5135	54.82	-19.18	74	43.35	34.43	10.4	33.36	100	36	Peak
5003.3	41.7	-12.3	54	30.59	34.3	10.23	33.42	100	36	Average
5361.33	56.64	-17.36	74	44.49	34.67	10.75	33.27	100	36	Peak
5366.94	42.75	-11.25	54	30.6	34.67	10.75	33.27	100	36	Average

Test Mode :	802.11n HT20	Temperature :	22~23°C
Test Channel :	64	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu		

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5354.73	69.21	-4.79	74	57.11	34.65	10.72	33.27	103	117	Peak
5350	49.12	-4.88	54	37.02	34.65	10.72	33.27	103	117	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5350.66	61.12	-12.88	74	49.02	34.65	10.72	33.27	100	77	Peak
5350	44.53	-9.47	54	32.43	34.65	10.72	33.27	100	77	Average

Test Mode :	802.11n HT20	Temperature :	22~23°C
Test Channel :	100	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu		

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5468.4	72.16	-1.84	74	59.72	34.77	10.89	33.22	100	115	Peak
5470	50.91	-3.09	54	38.47	34.77	10.89	33.22	100	115	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5470	68.39	-5.61	74	55.95	34.77	10.89	33.22	197	338	Peak
5470	50.52	-3.48	54	38.08	34.77	10.89	33.22	197	338	Average

Test Mode :	802.11n HT20	Temperature :	22~23°C
Test Channel :	140	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu		

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725.32	71.71	-2.29	74	58.64	35.02	11.34	33.29	112	358	Peak
5725	53.06	-0.94	54	39.99	35.02	11.34	33.29	112	358	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	61.31	-12.69	74	48.24	35.02	11.34	33.29	100	135	Peak
5725	46.36	-7.64	54	33.29	35.02	11.34	33.29	100	135	Average

Test Mode :	802.11n HT40	Temperature :	22~23°C
Test Channel :	38	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu		

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5147.9	68.7	-5.3	74	57.16	34.45	10.44	33.35	106	350	Peak
5150	52.13	-1.87	54	40.59	34.45	10.44	33.35	106	350	Average
5368.04	56.19	-17.81	74	44.04	34.67	10.75	33.27	106	350	Peak
5367.16	43.42	-10.58	54	31.27	34.67	10.75	33.27	106	350	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5150	65.26	-8.74	74	53.72	34.45	10.44	33.35	100	185	Peak
5150	50.09	-3.91	54	38.55	34.45	10.44	33.35	100	185	Average
5403.68	55.99	-18.01	74	43.74	34.7	10.79	33.24	100	185	Peak
5353.74	43.59	-10.41	54	31.49	34.65	10.72	33.27	100	185	Average

Test Mode :	802.11n HT40	Temperature :	22~23°C
Test Channel :	46	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu		

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5149.85	60.57	-13.43	74	49.03	34.45	10.44	33.35	110	353	Peak
5149.25	45.09	-8.91	54	33.55	34.45	10.44	33.35	110	353	Average
5351.54	56.53	-17.47	74	44.43	34.65	10.72	33.27	110	353	Peak
5393.67	43.53	-10.47	54	31.31	34.68	10.79	33.25	110	353	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5148.35	60.67	-13.33	74	49.13	34.45	10.44	33.35	100	165	Peak
5149.55	45.83	-8.17	54	34.29	34.45	10.44	33.35	100	165	Average
5413.69	56.18	-17.82	74	43.88	34.72	10.82	33.24	100	165	Peak
5360.12	43.53	-10.47	54	31.4	34.65	10.75	33.27	100	165	Average

Test Mode :	802.11n HT40	Temperature :	22~23°C
Test Channel :	54	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu		

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5039.9	55.5	-18.5	74	44.3	34.35	10.26	33.41	101	204	Peak
5004.35	42.4	-11.6	54	31.27	34.32	10.23	33.42	101	204	Average
5410.5	56.34	-17.66	74	44.06	34.7	10.82	33.24	101	204	Peak
5376.51	43.48	-10.52	54	31.31	34.67	10.75	33.25	101	204	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5095.85	56.17	-17.83	74	44.78	34.4	10.37	33.38	100	166	Peak
5001.5	42.41	-11.59	54	31.3	34.3	10.23	33.42	100	166	Average
5410.06	56.07	-17.93	74	43.79	34.7	10.82	33.24	100	166	Peak
5367.6	43.4	-10.6	54	31.25	34.67	10.75	33.27	100	166	Average

Test Mode :	802.11n HT40	Temperature :	22~23°C
Test Channel :	62	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu		

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5041.7	55.4	-18.6	74	44.2	34.35	10.26	33.41	103	117	Peak
5002.7	42.5	-11.5	54	31.39	34.3	10.23	33.42	103	117	Average
5350	68.13	-5.87	74	56.03	34.65	10.72	33.27	103	117	Peak
5350	53.41	-0.59	54	41.31	34.65	10.72	33.27	103	117	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5014.7	54.81	-19.19	74	43.68	34.32	10.23	33.42	102	301	Peak
5024	42.49	-11.51	54	31.31	34.33	10.26	33.41	102	301	Average
5350.11	62.95	-11.05	74	50.85	34.65	10.72	33.27	102	301	Peak
5350	48.55	-5.45	54	36.45	34.65	10.72	33.27	102	301	Average

Test Mode :	802.11n HT40	Temperature :	22~23°C
Test Channel :	102	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu		

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5469.2	68.72	-5.28	74	56.28	34.77	10.89	33.22	101	68	Peak
5470	53.06	-0.94	54	40.62	34.77	10.89	33.22	101	68	Average
5727.72	56.83	-17.17	74	43.76	35.02	11.34	33.29	101	68	Peak
5735.4	44.08	-9.92	54	31	35.04	11.34	33.3	101	68	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5468.4	64.03	-9.97	74	51.59	34.77	10.89	33.22	196	300	Peak
5470	49.38	-4.62	54	36.94	34.77	10.89	33.22	196	300	Average
5753.56	57.25	-16.75	74	44.1	35.06	11.39	33.3	196	300	Peak
5750.92	44.05	-9.95	54	30.92	35.04	11.39	33.3	196	300	Average

Test Mode :	802.11n HT40	Temperature :	22~23°C
Test Channel :	134	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu		

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5455.44	55.84	-18.16	74	43.42	34.75	10.89	33.22	106	113	Peak
5354.32	43.51	-10.49	54	31.41	34.65	10.72	33.27	106	113	Average
5727.32	70.25	-3.75	74	57.18	35.02	11.34	33.29	106	113	Peak
5725	53.75	-0.25	54	40.68	35.02	11.34	33.29	106	113	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5385.68	55.98	-18.02	74	43.76	34.68	10.79	33.25	199	32	Peak
5363.6	43.7	-10.3	54	31.55	34.67	10.75	33.27	199	32	Average
5727.08	64.72	-9.28	74	51.65	35.02	11.34	33.29	199	32	Peak
5725.16	49.41	-4.59	54	36.34	35.02	11.34	33.29	199	32	Average

3.1.7 Test Result of Unwanted Radiated Emission (30MHz ~ 10th Harmonic)

MIMO <Ant. 1+2>

Test Mode :	802.11a	**Temperature :**	22~23°C
Test Channel :	36	**Relative Humidity :**	49~50%
Test Engineer :	Gavin Wu	**Polarization :**	Horizontal
Remark :	1. 5181 MHz is fundamental signal which can be ignored.. 2. 10359 MHz is not within a restricted band, and satisfies both the average and peak limits of 15.209. 3. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5181	94.44	-	-	82.83	34.48	10.47	33.34	100	358	Average
5181	105.48	-	-	93.87	34.48	10.47	33.34	100	358	Peak
10359	51.97	-22.03	74	59.52	37.17	10.64	55.36	100	0	Peak
15543	44.58	-9.42	54	46.88	39.73	11.79	53.82	104	355	Average
15543	58.62	-15.38	74	60.92	39.73	11.79	53.82	104	355	Peak

Test Mode :	802.11a	**Temperature :**	22~23°C
Test Channel :	36	**Relative Humidity :**	49~50%
Test Engineer :	Gavin Wu	**Polarization :**	Vertical
Remark :	1. 5181 MHz is fundamental signal which can be ignored. 2. 10359 MHz is not within a restricted band, and satisfies both the average and peak limits of 15.209. 3. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5181	94	-	-	82.39	34.48	10.47	33.34	100	38	Average
5181	105.09	-	-	93.48	34.48	10.47	33.34	100	38	Peak
10359	52.33	-21.67	74	59.88	37.17	10.64	55.36	100	204	Peak
15540	42.6	-11.4	54	44.9	39.73	11.79	53.82	100	172	Average
15540	56.19	-17.81	74	58.49	39.73	11.79	53.82	100	172	Peak

Test Mode :	802.11a	Temperature :	22~23°C
Test Channel :	44	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 5222 MHz is fundamental signal which can be ignored. 2. 10440 MHz is not within a restricted band, and satisfies both the average and peak limits of 15.209. 3. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5222	95.89	-	-	84.15	34.52	10.54	33.32	123	354	Average
5222	107.56	-	-	95.82	34.52	10.54	33.32	123	354	Peak
10440	52.58	-21.42	74	59.98	37.23	10.65	55.28	100	315	Peak
15660	45.86	-8.14	54	47.81	39.86	11.75	53.56	100	355	Average
15660	58.54	-15.46	74	60.49	39.86	11.75	53.56	100	355	Peak

Test Mode :	802.11a	Temperature :	22~23°C
Test Channel :	44	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 5220 MHz is fundamental signal which can be ignored. 2. 10440 MHz is not within a restricted band, and satisfies both the average and peak limits of 15.209. 3. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5220	94.42	-	-	82.69	34.52	10.54	33.33	100	34	Average
5220	105.12	-	-	93.39	34.52	10.54	33.33	100	34	Peak
10440	53.69	-20.31	74	61.09	37.23	10.65	55.28	100	314	Peak
15663	43.71	-10.29	54	45.61	39.87	11.75	53.52	100	9	Average
15663	56.23	-17.77	74	58.13	39.87	11.75	53.52	100	9	Peak

Test Mode :	802.11a	Temperature :	22~23°C
Test Channel :	48	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 5239 MHz is fundamental signal which can be ignored. 2. 10479 MHz is not within a restricted band, and satisfies both the average and peak limits of 15.209. 3. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5239	96.19	-	-	84.4	34.53	10.58	33.32	111	353	Average
5239	107.02	-	-	95.23	34.53	10.58	33.32	111	353	Peak
10479	51.56	-22.44	74	58.84	37.28	10.66	55.22	100	0	Peak
15720	45.83	-8.17	54	47.58	39.92	11.74	53.41	100	347	Average
15720	58.92	-15.08	74	60.67	39.92	11.74	53.41	100	347	Peak

Test Mode :	802.11a	Temperature :	22~23°C
Test Channel :	48	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 5241 MHz is fundamental signal which can be ignored. 2. 10482 MHz is not within a restricted band, and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5241	94.22	-	-	82.43	34.53	10.58	33.32	100	36	Average
5241	104.98	-	-	93.19	34.53	10.58	33.32	100	36	Peak
10482	43.13	-10.87	54	50.41	37.28	10.66	55.22	100	315	Average
10482	55.8	-18.2	74	63.08	37.28	10.66	55.22	100	315	Peak
15726	44.36	-9.64	54	46.12	39.92	11.73	53.41	131	9	Average
15726	56.46	-17.54	74	58.22	39.92	11.73	53.41	131	9	Peak

Test Mode :	802.11a	Temperature :	22~23°C
Test Channel :	52	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 5259 MHz is fundamental signal which can be ignored. 2. 10521 MHz is not within a restricted band, and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
91.56	21.52	-21.98	43.5	43.32	8.9	1.06	31.76	-	-	Peak
173.64	22.31	-21.19	43.5	42.86	9.64	1.56	31.75	-	-	Peak
180.66	21.89	-21.61	43.5	42.89	9.3	1.45	31.75	-	-	Peak
331.5	25.27	-20.73	46	41.28	13.75	1.99	31.75	-	-	Peak
847.4	31.15	-14.85	46	38.9	20.78	3.22	31.75	-	-	Peak
893.6	33.23	-12.77	46	40.48	20.96	3.35	31.56	100	191	Peak
5259	98.98	-	-	87.14	34.57	10.58	33.31	122	345	Average
5259	110.52	-	-	98.68	34.57	10.58	33.31	122	345	Peak
10521	50.52	-3.48	54	57.72	37.31	10.67	55.18	132	295	Average
10521	63.1	-10.9	74	70.3	37.31	10.67	55.18	132	295	Peak
15780	52.85	-1.15	54	54.44	39.98	11.72	53.29	100	347	Average
15780	64.64	-9.36	74	66.23	39.98	11.72	53.29	100	347	Peak

Test Mode :	802.11a	Temperature :	22~23°C
Test Channel :	52	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 5258 MHz is fundamental signal which can be ignored. 2. 10521 MHz is not within a restricted band, and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	29.58	-10.42	40	42.24	18.5	0.64	31.8	100	217	Peak
51.6	21.43	-18.57	40	44.42	7.98	0.81	31.78	-	-	Peak
91.56	26.81	-16.69	43.5	48.61	8.9	1.06	31.76	-	-	Peak
443.5	22.73	-23.27	46	35.47	16.83	2.3	31.87	-	-	Peak
601	25.11	-20.89	46	34.99	19.41	2.77	32.06	-	-	Peak
858.6	24.66	-21.34	46	32.31	20.8	3.25	31.7	-	-	Peak
5258	98.09	-	-	86.27	34.55	10.58	33.31	100	35	Average
5258	108.79	-	-	96.97	34.55	10.58	33.31	100	35	Peak
10521	53.56	-0.44	54	60.76	37.31	10.67	55.18	100	315	Average
10521	64.56	-9.44	74	71.76	37.31	10.67	55.18	100	315	Peak
15780	51.18	-2.82	54	52.77	39.98	11.72	53.29	100	185	Average
15780	63.18	-10.82	74	64.77	39.98	11.72	53.29	100	185	Peak

Test Mode :	802.11a	Temperature :	22~23°C
Test Channel :	60	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 5298 MHz is fundamental signal which can be ignored. 2. 10599 MHz is not within a restricted band, and satisfies both the average and peak limits of 15.209. 3. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5298	96.42	-	-	84.46	34.6	10.65	33.29	103	116	Average
5298	107.53	-	-	95.57	34.6	10.65	33.29	103	116	Peak
10599	53.01	-20.99	74	60.05	37.36	10.68	55.08	100	106	Peak
15900	42.05	-11.95	54	43.3	40.1	11.68	53.03	129	174	Average
15900	58.19	-15.81	74	59.39	40.11	11.68	52.99	129	174	Peak

Test Mode :	802.11a	Temperature :	22~23°C
Test Channel :	60	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	5299 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5299	92.23	-	-	80.27	34.6	10.65	33.29	100	190	Average
5299	102.82	-	-	90.86	34.6	10.65	33.29	100	190	Peak
10600	44.95	-9.05	54	51.99	37.36	10.68	55.08	100	317	Average
10600	55.74	-18.26	74	62.78	37.36	10.68	55.08	100	317	Peak
15897	43.1	-10.9	54	44.35	40.1	11.68	53.03	100	326	Average
15897	55.29	-18.71	74	56.54	40.1	11.68	53.03	100	326	Peak

Test Mode :	802.11a	Temperature :	22~23°C
Test Channel :	64	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 5319 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5319	96.68	-	-	84.67	34.62	10.68	33.29	104	116	Average
5319	107.27	-	-	95.26	34.62	10.68	33.29	104	116	Peak
10640	52.97	-21.03	74	59.93	37.38	10.69	55.03	100	308	Peak
15960	44.47	-9.53	54	45.52	40.17	11.66	52.88	100	174	Average
15960	56.46	-17.54	74	57.51	40.17	11.66	52.88	100	174	Peak

Test Mode :	802.11a	Temperature :	22~23°C
Test Channel :	64	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	5321 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5321	93.18	-	-	81.17	34.62	10.68	33.29	124	181	Average
5321	103.84	-	-	91.83	34.62	10.68	33.29	124	181	Peak
10644	40.38	-13.62	54	47.34	37.38	10.69	55.03	100	10	Average
10644	56.15	-17.85	74	63.11	37.38	10.69	55.03	100	10	Peak
15957	44.23	-9.77	54	45.28	40.17	11.66	52.88	100	329	Average
15957	56.53	-17.47	74	57.58	40.17	11.66	52.88	100	329	Peak

Test Mode :	802.11a	Temperature :	22~23°C
Test Channel :	100	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 5498 MHz is fundamental signal which can be ignored. 2. 16500 MHz is not within a restricted band, and satisfies both the average and peak limits of 15.209. 3. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5498	99	-	-	86.48	34.8	10.93	33.21	100	113	Average
5498	110.08	-	-	97.56	34.8	10.93	33.21	100	113	Peak
11001	52.33	-21.67	74	58.57	37.6	10.76	54.6	100	236	Peak
16500	47.74	-6.26	54	48.22	41	11.82	53.3	100	229	Average
16500	61.77	-12.23	74	62.25	41	11.82	53.3	100	229	Peak

Test Mode :	802.11a	Temperature :	22~23°C
Test Channel :	100	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 5498 MHz is fundamental signal which can be ignored. 2. 16500 MHz is not within a restricted band, and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5498	95.77	-	-	83.25	34.8	10.93	33.21	100	220	Average
5498	107.32	-	-	94.8	34.8	10.93	33.21	100	220	Peak
11000	45.58	-8.42	54	51.82	37.6	10.76	54.6	100	323	Average
11000	57.34	-16.66	74	63.58	37.6	10.76	54.6	100	323	Peak
16500	47.6	-6.4	54	48.08	41	11.82	53.3	100	335	Average
16500	61.01	-12.99	74	61.5	40.97	11.82	53.28	100	335	Peak

Test Mode :	802.11a	Temperature :	22~23°C
Test Channel :	116	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 5579 MHz is fundamental signal which can be ignored. 2. 16740 MHz is not within a restricted band, and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5579	100.74	-	-	88.03	34.87	11.09	33.25	100	1	Average
5579	111.84	-	-	99.13	34.87	11.09	33.25	100	1	Peak
11160	53.54	-0.46	54	59.36	37.67	10.84	54.33	100	304	Average
11160	68.25	-5.75	74	74.07	37.67	10.84	54.33	100	304	Peak
16740	50.31	-3.69	54	50.27	41.24	11.91	53.11	100	335	Average
16740	64.66	-9.34	74	64.62	41.24	11.91	53.11	100	335	Peak

Test Mode :	802.11a	Temperature :	22~23°C
Test Channel :	116	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 5580 MHz is fundamental signal which can be ignored. 2. 16737 MHz is not within a restricted band, and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5580	99.7	-	-	86.99	34.87	11.09	33.25	102	55	Average
5580	110.7	-	-	97.99	34.87	11.09	33.25	102	55	Peak
11166	52.85	-1.15	54	58.65	37.67	10.86	54.33	106	313	Average
11166	66.49	-7.51	74	72.29	37.67	10.86	54.33	106	313	Peak
16737	50.41	-3.59	54	50.37	41.24	11.91	53.11	112	194	Average
16737	62.81	-11.19	74	62.77	41.24	11.91	53.11	112	194	Peak

Test Mode :	802.11a	Temperature :	22~23°C
Test Channel :	140	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 5699 MHz is fundamental signal which can be ignored. 2. 17100 MHz is not within a restricted band, and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5699	94.94	-	-	81.93	34.99	11.3	33.28	100	12	Average
5699	105.91	-	-	92.9	34.99	11.3	33.28	100	12	Peak
11400	50.66	-3.34	54	55.86	37.76	11	53.96	100	290	Average
11400	62.69	-11.31	74	67.89	37.76	11	53.96	100	290	Peak
17100	44.61	-9.39	54	44.25	41.34	12.12	53.1	120	222	Average
17100	56.52	-17.48	74	56.16	41.34	12.12	53.1	120	222	Peak

Test Mode :	802.11a	Temperature :	22~23°C
Test Channel :	140	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 5702 MHz is fundamental signal which can be ignored. 2. 17103 MHz is not within a restricted band, and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5702	94.64	-	-	81.61	35.01	11.3	33.28	139	46	Average
5702	105.48	-	-	92.45	35.01	11.3	33.28	139	46	Peak
11403	45.53	-8.47	54	50.74	37.76	10.99	53.96	100	5	Average
11403	59.1	-14.9	74	64.31	37.76	10.99	53.96	100	5	Peak
17103	44.64	-9.36	54	44.28	41.34	12.12	53.1	100	201	Average
17103	57.34	-16.66	74	56.98	41.34	12.12	53.1	100	201	Peak

Test Mode :	802.11n HT20	Temperature :	22~23°C
Test Channel :	36	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 5179 MHz is fundamental signal which can be ignored. 2. 10360 MHz is not within a restricted band, and satisfies both the average and peak limits of 15.209. 3. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5179	93.24	-	-	81.63	34.48	10.47	33.34	105	359	Average
5179	105	-	-	93.39	34.48	10.47	33.34	105	359	Peak
10360	51.38	-22.62	74	58.93	37.17	10.64	55.36	100	316	Peak
15540	45.15	-8.85	54	47.45	39.73	11.79	53.82	100	333	Average
15540	57.69	-16.31	74	59.99	39.73	11.79	53.82	100	333	Peak

Test Mode :	802.11n HT20	Temperature :	22~23°C
Test Channel :	36	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 5181 MHz is fundamental signal which can be ignored. 2. 10360 MHz is not within a restricted band, and satisfies both the average and peak limits of 15.209. 3. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5181	93.78	-	-	82.17	34.48	10.47	33.34	109	332	Average
5181	105.86	-	-	94.25	34.48	10.47	33.34	109	332	Peak
10360	50.95	-23.05	74	58.5	37.17	10.64	55.36	100	0	Peak
15540	44.22	-9.78	54	46.52	39.73	11.79	53.82	200	353	Average
15540	56.32	-17.68	74	58.62	39.73	11.79	53.82	200	353	Peak

Test Mode :	802.11n HT20	Temperature :	22~23°C
Test Channel :	44	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 5219 MHz is fundamental signal which can be ignored. 2. 10440 MHz is not within a restricted band, and satisfies both the average and peak limits of 15.209. 3. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5219	93.78	-	-	82.05	34.52	10.54	33.33	124	352	Average
5219	106.47	-	-	94.74	34.52	10.54	33.33	124	352	Peak
10440	50.94	-23.06	74	58.34	37.23	10.65	55.28	100	0	Peak
15660	45.25	-8.75	54	47.15	39.87	11.75	53.52	104	356	Average
15660	57.96	-16.04	74	59.86	39.87	11.75	53.52	104	356	Peak

Test Mode :	802.11n HT20	Temperature :	22~23°C
Test Channel :	44	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 5221 MHz is fundamental signal which can be ignored. 2. 10440 MHz is not within a restricted band, and satisfies both the average and peak limits of 15.209. 3. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5221	93.58	-	-	81.84	34.52	10.54	33.32	177	347	Average
5221	105.84	-	-	94.1	34.52	10.54	33.32	177	347	Peak
10440	52.14	-21.86	74	59.49	37.25	10.66	55.26	100	314	Peak
15660	43.73	-10.27	54	45.68	39.86	11.75	53.56	189	347	Average
15660	55.41	-18.59	74	57.36	39.86	11.75	53.56	189	347	Peak

Test Mode :	802.11n HT20	Temperature :	22~23°C
Test Channel :	48	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 5241 MHz is fundamental signal which can be ignored. 2. 10480 MHz is not within a restricted band, and satisfies both the average and peak limits of 15.209. 3. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5241	93.3	-	-	81.51	34.53	10.58	33.32	123	354	Average
5241	105.04	-	-	93.25	34.53	10.58	33.32	123	354	Peak
10480	52.83	-21.17	74	60.11	37.28	10.66	55.22	156	284	Peak
15720	44.02	-9.98	54	45.77	39.92	11.74	53.41	100	352	Average
15720	56.1	-17.9	74	57.85	39.92	11.74	53.41	100	352	Peak

Test Mode :	802.11n HT20	Temperature :	22~23°C
Test Channel :	48	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 5242 MHz is fundamental signal which can be ignored. 2. 10480 MHz is not within a restricted band, and satisfies both the average and peak limits of 15.209. 3. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5242	92.73	-	-	80.92	34.55	10.58	33.32	100	34	Average
5242	104.71	-	-	92.9	34.55	10.58	33.32	100	34	Peak
10480	53.18	-20.82	74	60.46	37.28	10.66	55.22	100	317	Peak
15720	43.35	-10.65	54	45.1	39.92	11.74	53.41	183	38	Average
15720	54.7	-19.3	74	56.45	39.92	11.74	53.41	183	38	Peak

Test Mode :	802.11n HT20	Temperature :	22~23°C
Test Channel :	52	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 5259 MHz is fundamental signal which can be ignored. 2. 10520 MHz is not within a restricted band, and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5259	95.92	-	-	84.08	34.57	10.58	33.31	121	4	Average
5259	108.13	-	-	96.29	34.57	10.58	33.31	121	4	Peak
10520	48.54	-5.46	54	55.74	37.31	10.67	55.18	142	309	Average
10520	57.35	-16.65	74	64.55	37.31	10.67	55.18	142	309	Peak
15780	50.48	-3.52	54	52.03	39.99	11.72	53.26	100	208	Average
15780	62.18	-11.82	74	63.73	39.99	11.72	53.26	100	208	Peak

Test Mode :	802.11n HT20	Temperature :	22~23°C
Test Channel :	52	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 5258 MHz is fundamental signal which can be ignored. 2. 10520 MHz is not within a restricted band, and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5258	93.98	-	-	82.16	34.55	10.58	33.31	100	36	Average
5258	106.51	-	-	94.69	34.55	10.58	33.31	100	36	Peak
10520	49.95	-4.05	54	57.15	37.31	10.67	55.18	100	316	Average
10520	61.14	-12.86	74	68.34	37.31	10.67	55.18	100	316	Peak
15780	49.1	-4.9	54	50.69	39.98	11.72	53.29	152	331	Average
15780	60.7	-13.3	74	62.29	39.98	11.72	53.29	152	331	Peak

Test Mode :	802.11n HT20	Temperature :	22~23°C
Test Channel :	60	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 5298 MHz is fundamental signal which can be ignored. 2. 10596 MHz is not within a restricted band, and satisfies both the average and peak limits of 15.209. 3. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5298	92.19	-	-	80.23	34.6	10.65	33.29	102	203	Average
5298	104.68	-	-	92.72	34.6	10.65	33.29	102	203	Peak
10596	52.77	-21.23	74	59.84	37.35	10.68	55.1	138	302	Peak
15903	46.03	-7.97	54	47.23	40.11	11.68	52.99	100	198	Average
15903	56.81	-17.19	74	58.01	40.11	11.68	52.99	100	198	Peak

Test Mode :	802.11n HT20	Temperature :	22~23°C
Test Channel :	60	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 5299 MHz is fundamental signal which can be ignored. 2. 10599 MHz is not within a restricted band, and satisfies both the average and peak limits of 15.209. 3. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5299	89.22	-	-	77.26	34.6	10.65	33.29	100	57	Average
5299	101.79	-	-	89.83	34.6	10.65	33.29	100	57	Peak
10599	53.17	-20.83	74	60.21	37.36	10.68	55.08	100	316	Peak
15900	43.5	-10.5	54	44.75	40.1	11.68	53.03	104	332	Average
15900	53.8	-20.2	74	55.05	40.1	11.68	53.03	104	332	Peak

Test Mode :	802.11n HT20	Temperature :	22~23°C
Test Channel :	64	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	5319 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5319	96.24	-	-	84.23	34.62	10.68	33.29	103	117	Average
5319	109.76	-	-	97.75	34.62	10.68	33.29	103	117	Peak
10638	43.1	-10.9	54	50.06	37.38	10.69	55.03	100	311	Average
10638	55.23	-18.77	74	62.19	37.38	10.69	55.03	100	311	Peak
15960	44.29	-9.71	54	45.34	40.17	11.66	52.88	154	348	Average
15960	57.41	-16.59	74	58.46	40.17	11.66	52.88	154	348	Peak

Test Mode :	802.11n HT20	Temperature :	22~23°C
Test Channel :	64	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	5322 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5322	90.21	-	-	78.2	34.62	10.68	33.29	100	77	Average
5322	102.66	-	-	90.65	34.62	10.68	33.29	100	77	Peak
10638	43.22	-10.78	54	50.18	37.38	10.69	55.03	100	296	Average
10638	55.38	-18.62	74	62.34	37.38	10.69	55.03	100	296	Peak
15960	46.15	-7.85	54	47.2	40.17	11.66	52.88	100	309	Average
15960	57.99	-16.01	74	59.04	40.17	11.66	52.88	100	309	Peak

Test Mode :	802.11n HT20	Temperature :	22~23°C
Test Channel :	100	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 5498 MHz is fundamental signal which can be ignored. 2. 16503 MHz is not within a restricted band, and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5498	99.85	-	-	87.33	34.8	10.93	33.21	100	115	Average
5498	112.55	-	-	100.03	34.8	10.93	33.21	100	115	Peak
11004	45.17	-8.83	54	51.41	37.6	10.76	54.6	100	320	Average
11004	56.95	-17.05	74	63.19	37.6	10.76	54.6	100	320	Peak
16503	49.82	-4.18	54	50.3	41	11.82	53.3	142	353	Average
16503	62.92	-11.08	74	63.4	41	11.82	53.3	142	353	Peak

Test Mode :	802.11n HT20	Temperature :	22~23°C
Test Channel :	100	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 5499 MHz is fundamental signal which can be ignored. 2. 16500 MHz is not within a restricted band, and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5499	95.72	-	-	83.2	34.8	10.93	33.21	197	338	Average
5499	109.31	-	-	96.79	34.8	10.93	33.21	197	338	Peak
10995	46.49	-7.51	54	52.73	37.6	10.76	54.6	102	279	Average
10995	58.5	-15.5	74	64.74	37.6	10.76	54.6	102	279	Peak
16500	48.08	-5.92	54	48.56	41	11.82	53.3	100	311	Average
16500	61.36	-12.64	74	61.84	41	11.82	53.3	100	311	Peak

Test Mode :	802.11n HT20	Temperature :	22~23°C
Test Channel :	116	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 5578 MHz is fundamental signal which can be ignored. 2. 16743 MHz is not within a restricted band, and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
154.74	23.45	-20.05	43.5	43.6	10.2	1.4	31.75	-	-	Peak
181.74	22.55	-20.95	43.5	43.61	9.24	1.45	31.75	-	-	Peak
260.85	23.83	-22.17	46	39.96	13.81	1.79	31.73	-	-	Peak
800.5	29.95	-16.05	46	38.84	20	3.06	31.95	-	-	Peak
900.6	30.49	-15.51	46	37.55	21.09	3.37	31.52	100	161	Peak
947.5	30.03	-15.97	46	36.47	21.3	3.35	31.09	-	-	Peak
5578	99.87	-	-	87.16	34.87	11.09	33.25	100	1	Average
5578	112.33	-	-	99.62	34.87	11.09	33.25	100	1	Peak
11160	53.48	-0.52	54	59.3	37.67	10.84	54.33	107	289	Average
11160	66.6	-7.4	74	72.42	37.67	10.84	54.33	107	289	Peak
16743	49.73	-4.27	54	49.69	41.24	11.91	53.11	100	321	Average
16743	62.57	-11.43	74	62.53	41.24	11.91	53.11	100	321	Peak

Test Mode :	802.11n HT20	Temperature :	22~23°C
Test Channel :	116	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 5581 MHz is fundamental signal which can be ignored. 2. 16743 MHz is not within a restricted band, and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	29.21	-10.79	40	41.87	18.5	0.64	31.8	100	26	Peak
51.6	22.51	-17.49	40	45.5	7.98	0.81	31.78	-	-	Peak
85.35	21.31	-18.69	40	44.25	7.8	1.02	31.76	-	-	Peak
440	21.63	-24.37	46	34.4	16.8	2.29	31.86	-	-	Peak
601	24.25	-21.75	46	34.13	19.41	2.77	32.06	-	-	Peak
860	24.69	-21.31	46	32.33	20.8	3.26	31.7	-	-	Peak
5581	97.79	-	-	85.08	34.87	11.09	33.25	103	56	Average
5581	110.68	-	-	97.97	34.87	11.09	33.25	103	56	Peak
11157	50.41	-3.59	54	56.27	37.66	10.84	54.36	102	311	Average
11157	63.46	-10.54	74	69.32	37.66	10.84	54.36	102	311	Peak
16743	50.62	-3.38	54	50.58	41.24	11.91	53.11	102	334	Average
16743	62.38	-11.62	74	62.34	41.24	11.91	53.11	102	334	Peak

Test Mode :	802.11n HT20	Temperature :	22~23°C
Test Channel :	140	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 5699 MHz is fundamental signal which can be ignored. 2. 17103 MHz is not within a restricted band, and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5699	96.44	-	-	83.43	34.99	11.3	33.28	112	358	Average
5699	108.73	-	-	95.72	34.99	11.3	33.28	112	358	Peak
11394	50.06	-3.94	54	55.31	37.75	10.99	53.99	102	309	Average
11394	61.87	-12.13	74	67.12	37.75	10.99	53.99	102	309	Peak
17103	43.65	-10.35	54	43.29	41.34	12.12	53.1	138	336	Average
17103	56.28	-17.72	74	55.92	41.34	12.12	53.1	138	336	Peak

Test Mode :	802.11n HT20	Temperature :	22~23°C
Test Channel :	140	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 5701 MHz is fundamental signal which can be ignored. 2. 17103 MHz is not within a restricted band, and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5701	91.26	-	-	78.23	35.01	11.3	33.28	100	135	Average
5701	103.67	-	-	90.64	35.01	11.3	33.28	100	135	Peak
11403	48.28	-5.72	54	53.49	37.76	10.99	53.96	103	306	Average
11403	59.13	-14.87	74	64.34	37.76	10.99	53.96	103	306	Peak
17103	45.98	-8.02	54	45.62	41.34	12.12	53.1	100	326	Average
17103	57.96	-16.04	74	57.6	41.34	12.12	53.1	100	326	Peak

Test Mode :	802.11n HT40	Temperature :	22~23°C
Test Channel :	38	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 5191 MHz is fundamental signal which can be ignored. 2. 10380 MHz is not within a restricted band, and satisfies both the average and peak limits of 15.209. 3. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5191	90.6	-	-	78.93	34.5	10.51	33.34	106	350	Average
5191	101.59	-	-	89.92	34.5	10.51	33.34	106	350	Peak
10380	50.12	-23.88	74	57.64	37.18	10.64	55.34	100	0	Peak
15570	52.86	-21.14	74	55.06	39.77	11.78	53.75	100	297	Peak

Test Mode :	802.11n HT40	Temperature :	22~23°C
Test Channel :	38	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 5189 MHz is fundamental signal which can be ignored. 2. 10380 MHz is not within a restricted band, and satisfies both the average and peak limits of 15.209. 3. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5189	88.2	-	-	76.55	34.48	10.51	33.34	100	185	Average
5189	99.1	-	-	87.45	34.48	10.51	33.34	100	185	Peak
10380	49.78	-24.22	74	57.3	37.18	10.64	55.34	100	0	Peak
15570	53.5	-20.5	74	55.7	39.77	11.78	53.75	100	153	Peak

Test Mode :	802.11n HT40	Temperature :	22~23°C
Test Channel :	46	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 5231 MHz is fundamental signal which can be ignored. 2. 10467 MHz is not within a restricted band, and satisfies both the average and peak limits of 15.209. 3. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5231	94.32	-	-	82.57	34.53	10.54	33.32	110	353	Average
5231	105.6	-	-	93.85	34.53	10.54	33.32	110	353	Peak
10467	52.83	-21.17	74	60.14	37.27	10.66	55.24	100	297	Peak
15690	48.73	-5.27	54	50.57	39.89	11.75	53.48	100	242	Average
15690	61.1	-12.9	74	62.94	39.89	11.75	53.48	100	242	Peak

Test Mode :	802.11n HT40	Temperature :	22~23°C
Test Channel :	46	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 5229 MHz is fundamental signal which can be ignored. 2. 10460 MHz is not within a restricted band, and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5229	93.63	-	-	81.88	34.53	10.54	33.32	100	165	Average
5229	104.88	-	-	93.13	34.53	10.54	33.32	100	165	Peak
10460	43.25	-10.75	54	50.56	37.27	10.66	55.24	100	314	Average
10460	54.74	-19.26	74	62.05	37.27	10.66	55.24	100	314	Peak
15690	46.44	-7.56	54	48.28	39.89	11.75	53.48	100	187	Average
15690	57.77	-16.23	74	59.61	39.89	11.75	53.48	100	187	Peak

Test Mode :	802.11n HT40	Temperature :	22~23°C
Test Channel :	54	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 5268 MHz is fundamental signal which can be ignored. 2. 10359 MHz is not within a restricted band, and satisfies both the average and peak limits of 15.209. 3. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5268	89.28	-	-	77.41	34.57	10.61	33.31	101	204	Average
5268	100.2	-	-	88.33	34.57	10.61	33.31	101	204	Peak
10539	49.28	-24.72	74	56.45	37.32	10.67	55.16	100	0	Peak
15810	53.07	-20.93	74	54.57	40.01	11.71	53.22	100	311	Peak

Test Mode :	802.11n HT40	Temperature :	22~23°C
Test Channel :	54	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 5269 MHz is fundamental signal which can be ignored. 2. 10539 MHz is not within a restricted band, and satisfies both the average and peak limits of 15.209. 3. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5269	88.33	-	-	76.46	34.57	10.61	33.31	100	166	Average
5269	98.51	-	-	86.64	34.57	10.61	33.31	100	166	Peak
10539	50.14	-23.86	74	57.31	37.32	10.67	55.16	100	0	Peak
15810	52.61	-21.39	74	54.11	40.01	11.71	53.22	100	2	Peak

Test Mode :	802.11n HT40	Temperature :	22~23°C
Test Channel :	62	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 5311 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit. 3. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5311	93.16	-	-	81.15	34.62	10.68	33.29	103	117	Average
5311	103.85	-	-	91.84	34.62	10.68	33.29	103	117	Peak
10620	49.61	-24.39	74	56.61	37.37	10.69	55.06	100	0	Peak
15930	52.79	-21.21	74	53.94	40.13	11.67	52.95	100	242	Peak

Test Mode :	802.11n HT40	Temperature :	22~23°C
Test Channel :	62	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 5311 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit. 3. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5311	87.83	-	-	75.82	34.62	10.68	33.29	102	301	Average
5311	98.7	-	-	86.69	34.62	10.68	33.29	102	301	Peak
10620	50.54	-23.46	74	57.54	37.37	10.69	55.06	100	0	Peak
15930	52.82	-21.18	74	53.97	40.13	11.67	52.95	100	27	Peak

Test Mode :	802.11n HT40	Temperature :	22~23°C
Test Channel :	102	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 5512 MHz is fundamental signal which can be ignored. 2. 16530 MHz is not within a restricted band, and satisfies both the average and peak limits of 15.209. 3. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5512	94.71	-	-	82.17	34.8	10.96	33.22	101	68	Average
5512	106.35	-	-	93.81	34.8	10.96	33.22	101	68	Peak
11019	49.7	-24.3	74	55.9	37.61	10.76	54.57	100	0	Peak
16530	41.77	-12.23	54	42.18	41.03	11.83	53.27	100	311	Average
16530	54.47	-19.53	74	54.88	41.03	11.83	53.27	100	311	Peak

Test Mode :	802.11n HT40	Temperature :	22~23°C
Test Channel :	102	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 5512 MHz is fundamental signal which can be ignored. 2. 16530 MHz is not within a restricted band, and satisfies both the average and peak limits of 15.209. 3. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5512	90.84	-	-	78.3	34.8	10.96	33.22	196	300	Average
5512	101.95	-	-	89.41	34.8	10.96	33.22	196	300	Peak
11019	49.59	-24.41	74	55.79	37.61	10.76	54.57	100	0	Peak
16530	52.99	-21.01	74	53.4	41.03	11.83	53.27	100	5	Peak

Test Mode :	802.11n HT40	Temperature :	22~23°C
Test Channel :	110	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 5552 MHz is fundamental signal which can be ignored. 2. 16650 MHz is not within a restricted band, and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5552	101.39	-	-	88.73	34.85	11.05	33.24	100	66	Average
5552	112.89	-	-	100.23	34.85	11.05	33.24	100	66	Peak
11100	48.61	-5.39	54	54.59	37.64	10.82	54.44	100	304	Average
11100	59.83	-14.17	74	65.81	37.64	10.82	54.44	100	304	Peak
16650	49.11	-4.89	54	49.25	41.16	11.88	53.18	100	292	Average
16650	59.64	-14.36	74	59.81	41.14	11.88	53.19	100	292	Peak

Test Mode :	802.11n HT40	Temperature :	22~23°C
Test Channel :	110	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 5552 MHz is fundamental signal which can be ignored. 2. 16644 MHz is not within a restricted band, and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5552	96.82	-	-	84.16	34.85	11.05	33.24	194	300	Average
5552	108.64	-	-	95.98	34.85	11.05	33.24	194	300	Peak
11109	48.26	-5.74	54	54.2	37.65	10.82	54.41	100	310	Average
11109	59.8	-14.2	74	65.74	37.65	10.82	54.41	100	310	Peak
16644	51.24	-2.76	54	51.41	41.14	11.88	53.19	100	5	Average
16644	62.18	-11.82	74	62.35	41.14	11.88	53.19	100	5	Peak

Test Mode :	802.11n HT40	Temperature :	22~23°C
Test Channel :	134	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 5672 MHz is fundamental signal which can be ignored. 2. 17016 MHz is not within a restricted band, and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
40.26	19.02	-20.98	40	37.83	12.24	0.74	31.79	-	-	Peak
69.96	20.32	-19.68	40	44.65	6.5	0.94	31.77	-	-	Peak
140.16	22.16	-21.34	43.5	41.58	11.02	1.31	31.75	-	-	Peak
800.5	29.5	-16.5	46	38.39	20	3.06	31.95	-	-	Peak
879.6	31.04	-14.96	46	38.44	20.9	3.31	31.61	-	-	Peak
903.4	32.29	-13.71	46	39.35	21.07	3.37	31.5	100	88	Peak
5672	96.2	-	-	83.24	34.97	11.26	33.27	106	113	Average
5672	107.47	-	-	94.51	34.97	11.26	33.27	106	113	Peak
11340	53.03	-0.97	54	58.41	37.73	10.96	54.07	100	294	Average
11340	65.51	-8.49	74	70.89	37.73	10.96	54.07	100	294	Peak
17016	46.34	-7.66	54	45.8	41.47	12	52.93	100	125	Average
17016	58.8	-15.2	74	58.26	41.47	12	52.93	100	125	Peak

Test Mode :	802.11n HT40	Temperature :	22~23°C
Test Channel :	134	Relative Humidity :	49~50%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 5672 MHz is fundamental signal which can be ignored. 2. 17019 MHz is not within a restricted band, and satisfies both the average and peak limits of 15.209.		

Frequency (MHz)	Level (dBµV/m)	Over Limit (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	28.05	-11.95	40	40.71	18.5	0.64	31.8	-	-	Peak
40.26	31.48	-8.52	40	50.29	12.24	0.74	31.79	100	32	Peak
71.85	23.67	-16.33	40	47.99	6.5	0.95	31.77	-	-	Peak
480.6	27.49	-18.51	46	39.48	17.61	2.31	31.91	-	-	Peak
702.5	22.73	-23.27	46	32.43	19.42	2.9	32.02	-	-	Peak
903.4	25.01	-20.99	46	32.07	21.07	3.37	31.5	-	-	Peak
5672	94.6	-	-	81.64	34.97	11.26	33.27	199	32	Average
5672	106.17	-	-	93.21	34.97	11.26	33.27	199	32	Peak
11343	47.52	-6.48	54	52.9	37.73	10.96	54.07	100	315	Average
11343	59.39	-14.61	74	64.77	37.73	10.96	54.07	100	315	Peak
17019	48.11	-5.89	54	47.57	41.47	12	52.93	100	339	Average
17019	61.92	-12.08	74	61.38	41.47	12	52.93	100	339	Peak

3.2 Antenna Requirements

3.2.1 Standard Applicable

According to FCC 47 CFR Section 15.407(a)(1)(2) ,if transmitting antenna directional gain is greater than 6 dBi, both the peak transmit 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.

3.2.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.2.3 Antenna Gain

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

For CDD transmissions, directional gain is calculated as

$$Directional Gain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$$

where

Each antenna is driven by no more than one spatial stream;

N_{SS} = the number of independent spatial streams of data;

N_{ANT} = the total number of antennas

$g_{j,k} = 10^{G_k / 20}$ if the kth antenna is being fed by spatial stream j, or zero if it is not;

G_k is the gain in dBi of the kth antenna.

The EUT supports CDD mode.

The power and PSD limit should be modified if the directional gain of EUT is over 6 dBi,

The directional gain “DG” is calculated as following table.

<For Sample 1>

	Ant. Port 1 (dBi)	Ant. Port 2 (dBi)	DG for Power (dBi)	DG for PSD (dBi)	Power Limit Reduction (dB)	PSD Limit Reduction (dB)
Band I	-0.71	2.73	1.34	4.35	0.00	0.00
Band II	-0.71	2.73	1.34	4.35	0.00	0.00
Band III	-0.16	2.69	1.49	4.51	0.00	0.00

Power Limit Reduction = DG(Power) – 6dBi, (min = 0)

PSD Limit Reduction = DG(PSD) – 6dBi, (min = 0)

<For Sample 2>

	Ant. Port 1 (dBi)	Ant. Port 2 (dBi)	DG for Power (dBi)	DG for PSD (dBi)	Power Limit Reduction (dB)	PSD Limit Reduction (dB)
Band I	-0.94	1.07	0.18	3.19	0.00	0.00
Band II	-0.94	1.07	0.18	3.19	0.00	0.00
Band III	1.27	-0.14	0.62	3.63	0.00	0.00

Power Limit Reduction = DG(Power) – 6dBi, (min = 0)

PSD Limit Reduction = DG(PSD) – 6dBi, (min = 0)

4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSP30	101067	9kHz ~ 30GHz	Nov. 20, 2013	Jan. 19, 2014~ Jan. 20, 2014	Nov. 19, 2014	Radiation (03CH06-HY)
Spectrum Analyzer	Agilent	E4408B	MY44211030	9kHz ~ 26.5GHz	Dec. 02, 2013	Jan. 19, 2014~ Jan. 20, 2014	Dec. 01, 2014	Radiation (03CH06-HY)
Spectrum Analyzer	Agilent	E4408B	MY44211028	9kHz ~ 26.5GHz	Aug. 29, 2013	Jan. 19, 2014~ Jan. 20, 2014	Aug. 28, 2014	Radiation (03CH06-HY)
EMI Test Receiver	R&S	ESVS10	834468/0003	20MHz ~ 1000MHz	May 06, 2013	Jan. 19, 2014~ Jan. 20, 2014	May 05, 2014	Radiation (03CH06-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	860004/0001	9kHz ~ 30MhZ	Jul. 03, 2012	Jan. 19, 2014~ Jan. 20, 2014	Jul. 02, 2014	Radiation (03CH06-HY)
Bilog Antenna	Schaffner	CBL6112B	2885	30MHz ~ 2GHz	Oct. 10, 2013	Jan. 19, 2014~ Jan. 20, 2014	Oct. 09, 2014	Radiation (03CH06-HY)
Double Ridge Horn Antenna	EMCO	3117	00066583	1GHz ~ 18GHz	Aug. 02, 2013	Jan. 19, 2014~ Jan. 20, 2014	Aug. 01, 2014	Radiation (03CH06-HY)
Amplifier	Agilent	310N	186713	9kHz ~ 1GHz	Apr. 12, 2013	Jan. 19, 2014~ Jan. 20, 2014	Apr. 11, 2014	Radiation (03CH06-HY)
Pre Amplifier	EMCI	EMC051845	SN980048	1GHz ~ 18GHz	Jul. 18, 2013	Jan. 19, 2014~ Jan. 20, 2014	Jul. 17, 2014	Radiation (03CH06-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	15GHz ~ 40GHz	Oct. 03, 2013	Jan. 19, 2014~ Jan. 20, 2014	Oct. 02, 2014	Radiation (03CH06-HY)
Preamplifier	Agilent	8449B	3008A01917	1GHz ~ 26.5GHz	Apr. 12, 2013	Jan. 19, 2014~ Jan. 20, 2014	Apr. 11, 2014	Radiation (03CH06-HY)
Turn Table	INN-CO	DS2000	420/650/00	0 ~ 360 degree	N/A	Jan. 19, 2014~ Jan. 20, 2014	N/A	Radiation (03CH06-HY)
Antenna Mast	MF	MF-7802	MF780208212	1 m ~ 4 m	N/A	Jan. 19, 2014~ Jan. 20, 2014	N/A	Radiation (03CH06-HY)
Power Meter	Anritsu	ML2495A	1036004	300MHz~40GHz	Aug. 17, 2013	Dec. 17, 2013	Aug. 16, 2014	Conducted (TH02-HY)
Power Sensor	Anritsu	MA2411B	1027253	300MHz~40GHz	Aug. 17, 2013	Dec. 17, 2013	Aug. 16, 2014	Conducted (TH02-HY)

5 Uncertainty of Evaluation

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.50**