

FCC RF Test Report

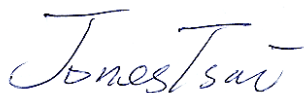
APPLICANT : VERTU Corporation Limited
EQUIPMENT : Cellular Telephone
BRAND NAME : VERTU
MODEL NAME : SIGNATURE TOUCH
TYPE(LTE) : RM-980V
TYPE(WCDMA) : RM-980C
FCC ID : P7QRM-980V
STANDARD : FCC Part 15 Subpart E §15.407
CLASSIFICATION : (NII) Unlicensed National Information Infrastructure

The product was received on Mar. 03, 2014 and testing was completed on May 21, 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



SPORTON INTERNATIONAL INC.

No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR430314D	Rev. 01	Initial issue of report	May 26, 2014

SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.403(i)	RSS-210 A9.2	26dB & 99% Bandwidth	-	Pass	-
3.2	15.407(a)	RSS-210 A9.2	Maximum Conducted Output Power	$\leq 17, 24, 30$ dBm (depend on band)	Pass	-
3.3	15.407(a)	RSS-210 A9.2	Power Spectral Density	$\leq 4, 11, 17$ dBm (depend on band)	Pass	-
3.4	15.407(a)(6)	RSS-210 A9.3	Peak Excursion Ratio	≤ 13 dB	Pass	-
3.5	15.407(b)	RSS-210 A9.3	Unwanted Emissions	$\leq -17, -27$ dBm (depend on band)&15.209(a)	Pass	Under limit 3.02 dB at 5468.56 MHz
3.6	15.207	RSS-Gen 7.2.4	AC Conducted Emission	15.207(a)	Pass	Under limit 9.40 dB at 0.150 MHz
3.7	15.407(g)	-	Frequency Stability	Within Operation Band	Pass	-
3.8	15.407(c)	RSS-210 A9.4	Automatically Discontinue Transmission	Discontinue Transmission	Pass	-
3.9	15.203 & 15.407(a)	RSS-210 A9.2	Antenna Requirement	N/A	Pass	-

1 General Description

1.1 Applicant

VERTU Corporation Limited

Beacon Hill Road, Church Crookham, Hampshire GU52 8DY, United Kingdom

1.2 Manufacturer

VERTU Corporation Limited

Beacon Hill Road, Church Crookham, Hampshire GU52 8DY, United Kingdom

1.3 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	Cellular Telephone
Brand Name	VERTU
Model Name	SIGNATURE TOUCH
Type (LTE)	RM-980V
Type (WCDMA)	RM-980C
FCC ID	P7QRM-980V
EUT supports Radios application	GSM/EGPRS/WCDMA/HSPA/LTE/NFC WLAN 2.4GHz 802.11b/g/n HT20/ WLAN 5GHz 802.11a/n HT20/HT40/ WLAN 5GHz 802.11ac VHT20/VHT40/VHT80/ Bluetooth v3.0 + EDR/Bluetooth v4.0 LE
HW Version	F2
SW Version	1_160_0001
Sample #1	LTE SKU
Sample #2	WCDMA SKU
Sample #3	LTE SKU with 2 nd EMMC
EUT Stage	Identical Prototype

Remark:

1. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.
2. There are three different types of EUT sample #1, sample #2 and sample #3. For WWAN bands, Sample 1 support WCDMA and LTE bands, sample #2 only support WCDMA band and LTE band is disabled by software. Sample #1 and Sample #3 are different for EMMC. We choose sample #1 to perform all tests.

List of Accessory:

Specification of Accessory		
AC Adapter	Brand Name	VERTU
	Model Name	AC-32V
Battery	Brand Name	VERTU
	Model Name	BP-9V
Car Charger	Brand Name	VERTU
	Model Name	DC-30V
Portable Power Charger	Brand Name	VERTU
	Model Name	DC-15V
Earphone 1	Brand Name	VERTU
	Model Name	WH-4V
Earphone 2	Brand Name	VERTU
	Model Name	WH-5V
USB Cable	Brand Name	VERTU
	Model Name	CA-225DV
Wireless Charger	Brand Name	VERTU
	Model Name	AC-35V

1.4 Product Specification of Equipment Under Test

Product Specification subjective to this standard	
Tx/Rx Frequency Range	5180 MHz ~ 5240 MHz 5260 MHz ~ 5320 MHz 5500 MHz ~ 5580 MHz 5660 MHz ~ 5700 MHz
Maximum Output Power to Antenna	<5180 MHz ~ 5240 MHz> 802.11a : 12.11 dBm / 0.0163 W 802.11n HT20 : 9.83 dBm / 0.0096 W 802.11n HT40 : 10.13 dBm / 0.0103 W 802.11ac VHT20: 8.26 dBm / 0.0067 W 802.11ac VHT40: 8.22 dBm / 0.0066 W 802.11ac VHT80: 7.93 dBm / 0.0062 W <5260 MHz ~ 5320 MHz> 802.11a : 12.29 dBm / 0.0169 W 802.11n HT20 : 10.19 dBm / 0.0104 W 802.11n HT40 : 10.06 dBm / 0.0101 W 802.11ac VHT20: 8.46 dBm / 0.0070 W 802.11ac VHT40: 8.41 dBm / 0.0069 W 802.11ac VHT80: 8.45 dBm / 0.0070 W <5500 MHz ~ 5580 MHz and 5660 MHz ~ 5700 MHz > 802.11a : 11.97 dBm / 0.0157 W 802.11n HT20 : 9.95 dBm / 0.0099 W 802.11n HT40 : 10.04 dBm / 0.0101 W 802.11ac VHT20: 8.40 dBm / 0.0069 W 802.11ac VHT40: 8.22 dBm / 0.0066 W 802.11ac VHT80: 8.47 dBm / 0.0070 W
99% Occupied Bandwidth	802.11a : 19.05 MHz 802.11n HT20 : 19.40 MHz 802.11n HT40 : 36.63 MHz 802.11ac VHT20 : 19.10 MHz 802.11ac VHT40 : 36.72 MHz 802.11ac VHT80 : 75.00 MHz
Antenna Type	PIFA Antenna
Antenna Gain	5150 MHz ~ 5250 MHz : -0.78 dBi 5250 MHz ~ 5350 MHz : 0.78 dBi 5470 MHz ~ 5725 MHz : 0.63 dBi
Type of Modulation	802.11a/n: OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.11ac: OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)

Note: 5600 MHz ~ 5650 MHz is notched.

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 1 st 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	CO05-HY	03CH06-HY 03CH07-HY	722060/4086B-1

Note: 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
- ♦ ANSI C63.4-2003
- ♦ IC RSS-210 Issued 8
- ♦ IC RSS-Gen Issue 3
- ♦ NOTICE 2012-DRS0126

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.



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: conducted emission (150 kHz to 30 MHz) and 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 (Y 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 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		

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. Final Output Power equals to Measured Output Power adds the duty factor.

5GHz 802.11a RF Output Power (dBm)										
Power vs. Channel			Power vs. Data Rate							
Channel	Frequency (MHz)	Data Rate 6Mbps	Channel	9Mbps	12Mbps	18Mbps	24Mbps	36Mbps	48Mbps	54Mbps
CH 36	5180	11.73	CH 48	12.05	12.02	12.09	12.05	12.08	12.07	12.08
CH 44	5220	11.96								
CH 48	5240	12.11								
CH 52	5260	11.98	CH 64	12.20	12.18	12.28	12.23	12.19	12.27	12.18
CH 60	5300	12.00								
CH 64	5320	12.29								
CH 100	5500	11.97	CH 100	11.95	11.85	11.93	11.91	11.90	11.93	11.91
CH 116	5580	11.65								
CH 140	5700	11.63								

5GHz 802.11n HT20 RF Output Power (dBm)										
Power vs. Channel			Power vs. MCS Index							
Channel	Frequency (MHz)	MCS Index MCS0	Channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
CH 36	5180	9.78	CH 48	9.69	9.81	9.78	9.80	9.78	9.70	9.79
CH 44	5220	9.54								
CH 48	5240	9.83								
CH 52	5260	10.02	CH 60	9.99	10.03	9.93	9.99	9.98	10.05	10.02
CH 60	5300	10.19								
CH 64	5320	10.18								
CH 100	5500	9.95	CH 100	9.81	9.85	9.73	9.92	9.86	9.89	9.76
CH 116	5580	9.91								
CH 140	5700	9.87								

5GHz 802.11n HT40 RF Output Power (dBm)										
Power vs. Channel			Power vs. MCS Index							
Channel	Frequency (MHz)	MCS Index MCS0	Channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
CH 38	5190	10.13	CH 38	10.10	10.08	9.91	10.10	9.96	10.10	10.02
CH 46	5230	9.84								
CH 54	5270	9.99	CH 62	10.03	10.04	10.01	9.98	10.04	10.05	10.05
CH 62	5310	10.06								
CH 102	5510	8.73	CH 134	9.90	9.90	9.86	9.87	9.89	9.90	9.90
CH 110	5550	9.52								
CH 134	5670	10.04								

5GHz 802.11ac VHT20 RF Output Power (dBm)											
Power vs. Channel			Power vs. MCS Index								
Channel	Frequency (MHz)	MCS Index MCS0	Channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8
CH 36	5180	7.85	CH 48	8.24	8.18	8.18	8.22	8.24	8.21	8.21	8.17
CH 44	5220	7.99									
CH 48	5240	8.26									
CH 52	5260	8.41	CH 60	8.44	8.35	8.35	8.36	8.41	8.41	8.38	8.37
CH 60	5300	8.46									
CH 64	5320	7.53									
CH 100	5500	8.15	CH 116	7.90	7.80	8.00	8.00	8.07	8.10	8.00	7.88
CH 116	5580	8.40									
CH 140	5700	7.95									



5GHz 802.11ac VHT40 RF Output Power (dBm)												
Power vs. Channel			Power vs. MCS Index									
Channel	Frequency (MHz)	MCS Index MCS0	Channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9
CH 38	5190MHz	8.22	CH 38	7.95	8.08	8.03	8.04	8.17	8.05	8.12	8.18	8.15
CH 46	5230MHz	7.80										
CH 54	5270MHz	7.86	CH 62	8.34	8.37	8.35	8.35	8.40	8.37	8.35	8.38	8.40
CH 62	5310MHz	8.41										
CH 102	5510MHz	7.68	CH 134	7.83	7.87	7.79	7.99	8.19	8.15	8.04	8.15	8.14
CH 110	5550MHz	7.88										
CH 134	5670MHz	8.22										

5GHz 802.11ac VHT80 RF Output Power (dBm)											
Power vs. Channel			Power vs. MCS Index								
Channel	Frequency (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9
CH 42	5210	7.93	7.56	7.64	7.85	7.86	7.78	7.90	7.72	7.92	7.87
CH 58	5290	8.45	7.16	7.16	7.14	7.24	7.32	7.46	7.21	7.45	7.58
CH 106	5530	8.47	8.45	7.74	7.94	8.46	8.35	8.43	8.38	8.34	8.36

2.3 Test Mode

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

Test Cases				
	Test Items	Mode	Data rate	Test Channel
Conducted TCs	26dB and 99% BW Power Spectral Density	802.11a	6 Mbps	L/M/H
		802.11n HT20	MCS 0	L/M/H
		802.11n HT40	MCS 0	L/M/H
		802.11ac VHT20	MCS 0	L/M/H
		802.11ac VHT40	MCS 0	L/M/H
		802.11ac VHT80	MCS 0	M
	Output Power	802.11a	6 Mbps	L/M/H
		802.11n HT20	MCS 0	L/M/H
		802.11n HT40	MCS 0	L/M/H
		802.11ac VHT20	MCS 0	L/M/H
		802.11ac VHT40	MCS 0	L/M/H
		802.11ac VHT80	MCS 0	M
	Peak Excursion	802.11a	6 Mbps	L
		802.11n HT20	MCS 0	L
		802.11n HT40	MCS 0	L
		802.11ac VHT20	MCS 0	L
		802.11ac VHT40	MCS 0	L
		802.11ac VHT80	MCS 0	M
	Frequency Stability	802.11a	6 Mbps	L/H
Radiated TCs	Radiated Band Edge	802.11a	6 Mbps	L/H
		802.11n HT20	MCS 0	L/H
		802.11n HT40	MCS 0	L/H
		802.11ac VHT80	MCS 0	M
	Radiated Spurious Emission	802.11a	6 Mbps	L/M/H
		802.11n HT20	MCS 0	L/M/H
		802.11n HT40	MCS 0	L/M/H
		802.11ac VHT80	MCS 0	M

Test Cases	
AC Conducted Emission	Mode 1 : LTE Band 2 Idle + WLAN 5GHz Link + Bluetooth Link + USB Cable (Data Link with Notebook) + NFC Tx + Earphone 1
	Mode 2 : GSM1900 Idle + WLAN (2.4GHz) Link + Bluetooth Link + WPC Charging + GPS Rx + Earphone 2 + Wireless charger (Charging from Adapter)

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

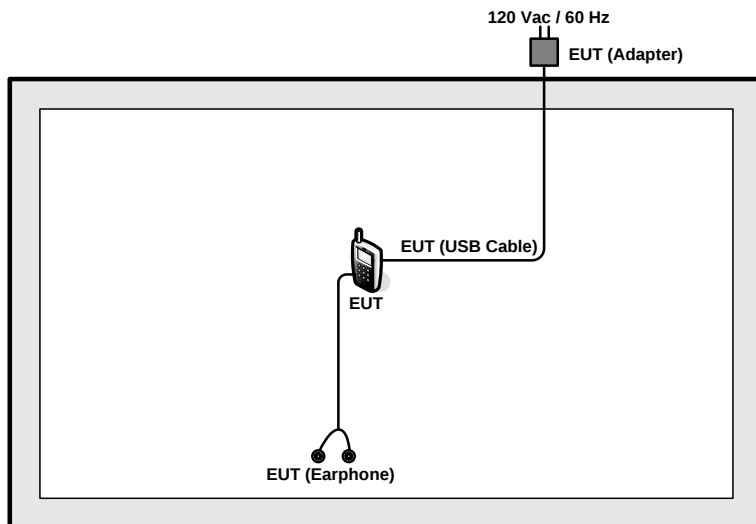
Ch. #		Band I : 5150-5250 MHz	Band II : 5250-5350 MHz	Band III : 5470-5600 MHz and 5650-5725MHz
		802.11n HT20/11ac VHT20	802.11n HT20/11ac VHT20	802.11n HT20/11ac VHT20
L	Low	36	52	100
M	Middle	44	60	116
H	High	48	64	140

Ch. #		Band I : 5150-5250 MHz	Band II : 5250-5350 MHz	Band III : 5470-5600 MHz and 5650-5725MHz
		802.11n HT40/11ac VHT40	802.11n HT40/11ac VHT40	802.11n HT40/11ac VHT40
L	Low	38	54	102
M	Middle	-	-	110
H	High	46	62	134

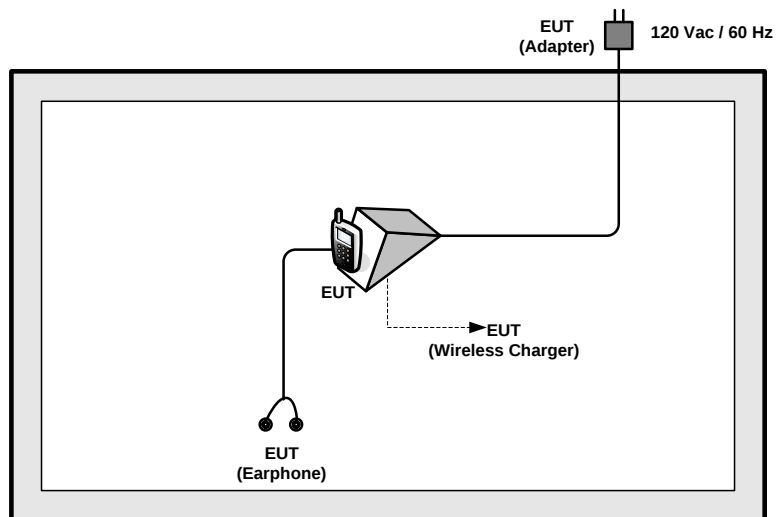
Ch. #		Band I : 5150-5250 MHz	Band II : 5250-5350 MHz	Band III : 5470-5600 MHz and 5650-5725MHz
		802.11ac VHT80	802.11ac VHT80	802.11ac VHT80
L	Low	-	-	-
M	Middle	42	58	106
H	High	-	-	-

2.4 Connection Diagram of Test System

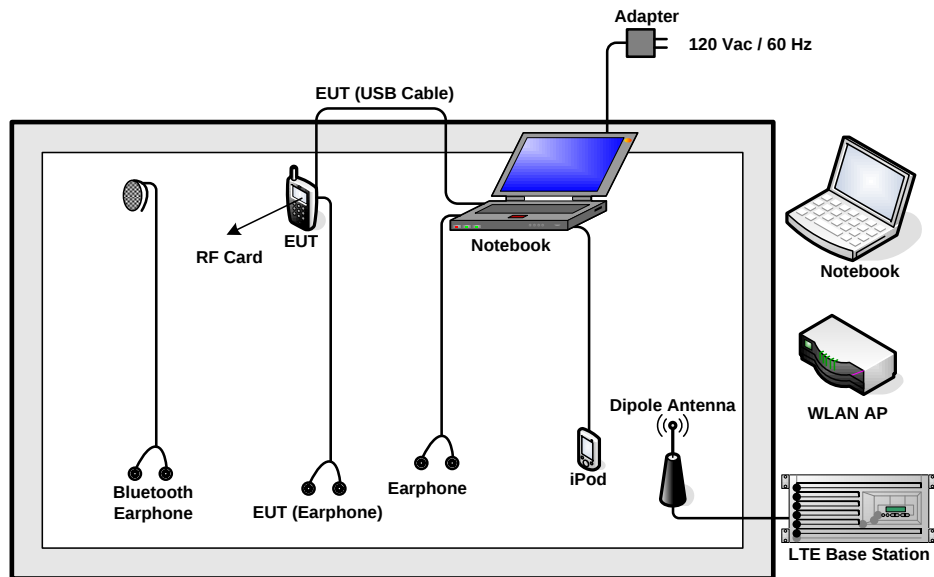
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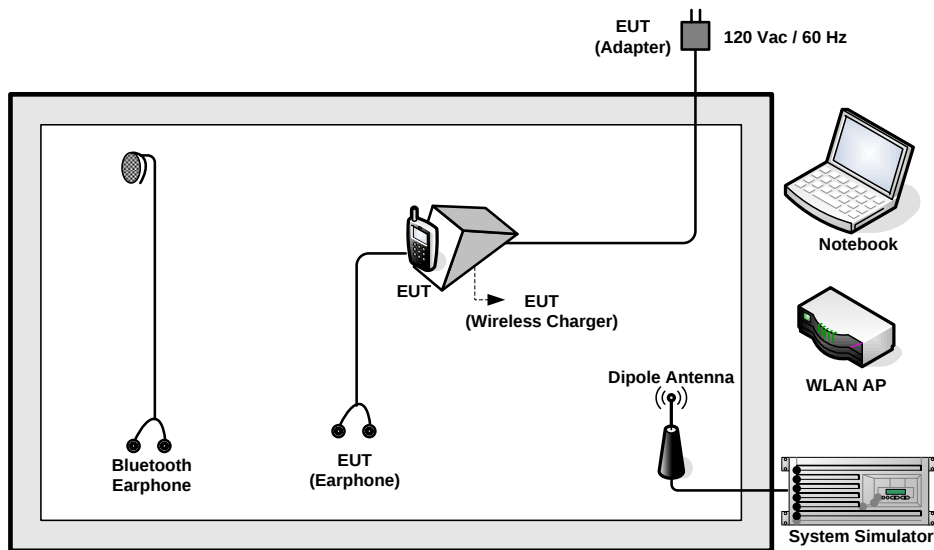
<WLAN Tx Mode with WPC Charging>



<AC Conducted Emission Mode>



<AC Conducted Emission Mode for WPC Charging Mode>



2.5 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	LTE Base Station	R&S	CMW 500	N/A	N/A	Unshielded, 1.8 m
2.	DC Power Supply	TOPWARD	3303D	N/A	N/A	Unshielded, 1.8 m
3.	WLAN AP	D-Link	DIR-628	KA2DIR628A2	N/A	Unshielded, 1.8 m
4.	Notebook	DELL	Latitude E6320	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
5.	Notebook	Lenovo	G480	N/A	N/A	AC I/P: Unshielded, 0.9 m DC O/P: Shielded, 1.8 m
6.	Bluetooth Earphone	Sony Erricsson	MW600	PY700A2029	N/A	N/A
7.	iPod	Apple	A1285	FCC DoC	Shielded, 1.0 m	N/A
8.	Earphone	Apple	A1285	FCC DoC	Unshielded, 1.2 m	N/A
9.	RF Card	Metro Taipei	Easy Card	N/A	N/A	N/A

2.6 EUT Operation Test Setup

For WLAN RF test items, an engineering test program was provided and enabled to make EUT continuous transmit/receive.

For AC power line conducted emissions, the EUT was set to connect with the WLAN AP under large package sizes transmission.

2.7 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

Example :

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

Following shows an offset computation example with cable loss 7.9 dB and 20dB attenuator.

$$\begin{aligned}\text{Offset(dB)} &= \text{RF cable loss(dB)} + \text{attenuator factor(dB)} \\ &= 7.9 + 20 = 27.9 \text{ (dB)}\end{aligned}$$



3 Test Result

3.1 26dB & 99% Occupied Bandwidth Measurement

3.1.1 Description of 26dB & 99% Occupied Bandwidth

There is no restriction limits for bandwidth. The maximum conducted output power can be limited by measured emission bandwidth (B).

For the band 5150-5250 MHz, 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.

For the bands 5250-5350 MHz and 5470-5600 MHz and 5650-5725MHz, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW (24dBm) or 11 dBm + 10log B.

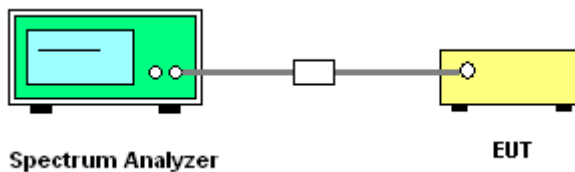
3.1.2 Measuring Instruments

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 D) Emission bandwidth
2. Set RBW = approximately 1% of the emission bandwidth.
3. Set the VBW > RBW.
4. Detector = Peak.
5. Trace mode = max hold
6. Measure the maximum width of the emission that is 26 dB down from the peak of the emission.
Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.
7. For 99% Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) is set 1MHz and set the Video bandwidth (VBW) $\geq 3 * \text{RBW}$.
8. Measure and record the results in the test report.

3.1.4 Test Setup



**3.1.5 Test Result of 26dB & 99% Occupied Bandwidth Plots**

Test Band :	5GHz band 1	Temperature :	21~23°C
Test Engineer :	Stuart Lin & Osolemio Chang	Relative Humidity :	51~54%

Mod.	Data Rate	N _{TX}	Channel	Freq. (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)	IC 99% Bandwidth EIRP Limit (dBm)	FCC 26dB Bandwidth Power Limit (dBm)
11a	6Mbps	1	36	5180	18.15	22.20	22.59	16.99
11a	6Mbps	1	44	5220	18.20	22.45	22.60	16.99
11a	6Mbps	1	48	5240	18.25	22.25	22.61	16.99
HT20	MCS0	1	36	5180	18.85	22.75	22.75	16.99
HT20	MCS0	1	44	5220	18.95	22.90	22.78	16.99
HT20	MCS0	1	48	5240	19.00	22.80	22.79	16.99
HT40	MCS0	1	38	5190	36.45	45.09	23.01	16.99
HT40	MCS0	1	46	5230	36.63	45.36	23.01	16.99
VHT20	MCS0	1	36	5180	18.95	22.40	22.78	16.99
VHT20	MCS0	1	44	5220	19.10	22.30	22.81	16.99
VHT20	MCS0	1	48	5240	19.05	22.95	22.80	16.99
VHT40	MCS0	1	38	5190	36.72	44.73	23.01	16.99
VHT40	MCS0	1	46	5230	36.54	45.00	23.01	16.99
VHT80	MCS0	1	42	5210	74.88	89.16	23.01	16.99



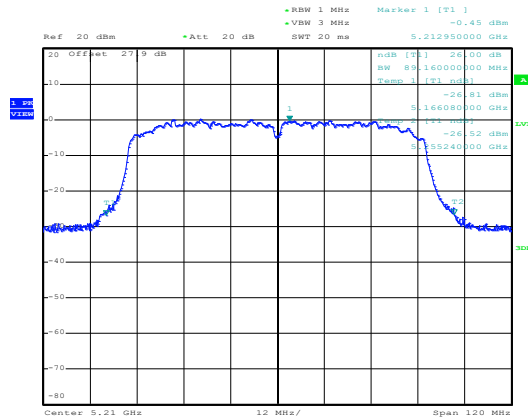
Test Band :	5GHz band 2	Temperature :	21~23°C
Test Engineer :	Stuart Lin & Osolemio Chang	Relative Humidity :	51~54%

Mod.	Data Rate	N _{TX}	Channel	Freq. (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)	IC 99% Bandwidth EIRP Limit (dBm)	FCC 26dB Bandwidth Power Limit (dBm)
11a	6Mbps	1	52	5260	18.10	22.50	29.58	23.98
11a	6Mbps	1	60	5300	18.20	22.30	29.60	23.98
11a	6Mbps	1	64	5320	18.15	22.25	29.59	23.98
HT20	MCS0	1	52	5260	19.05	22.90	29.80	23.98
HT20	MCS0	1	60	5300	18.90	22.85	29.76	23.98
HT20	MCS0	1	64	5320	19.00	22.65	29.79	23.98
HT40	MCS0	1	54	5270	36.45	45.09	30.00	23.98
HT40	MCS0	1	62	5310	36.54	45.18	30.00	23.98
VHT20	MCS0	1	52	5260	19.00	22.60	29.79	23.98
VHT20	MCS0	1	60	5300	18.90	22.45	29.76	23.98
VHT20	MCS0	1	64	5320	19.00	22.45	29.79	23.98
VHT40	MCS0	1	54	5270	36.54	45.36	30.00	23.98
VHT40	MCS0	1	62	5310	36.63	45.27	30.00	23.98
VHT80	MCS0	1	58	5290	75.00	87.72	30.00	23.98

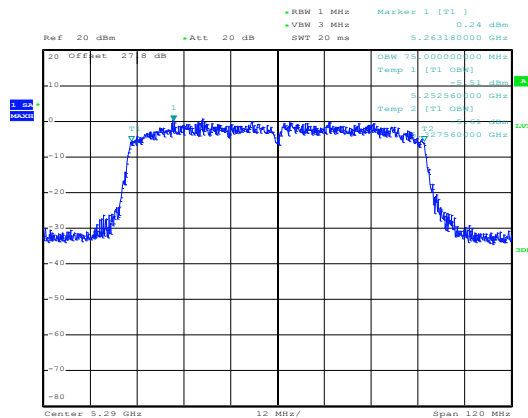


Test Band :	5GHz band 3	Temperature :	21~23°C
Test Engineer :	Stuart Lin & Osolemio Chang	Relative Humidity :	51~54%

Mod.	Data Rate	N _{TX}	Channel	Freq. (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)	IC 99% Bandwidth EIRP Limit (dBm)	FCC 26dB Bandwidth Power Limit (dBm)
11a	6Mbps	1	100	5500	18.20	22.40	29.60	23.98
11a	6Mbps	1	116	5580	18.25	22.25	29.61	23.98
11a	6Mbps	1	140	5700	19.05	28.00	29.80	23.98
HT20	MCS0	1	100	5500	18.90	22.55	29.76	23.98
HT20	MCS0	1	116	5580	18.85	22.75	29.75	23.98
HT20	MCS0	1	140	5700	19.40	27.95	29.88	23.98
HT40	MCS0	1	102	5510	36.54	44.73	30.00	23.98
HT40	MCS0	1	110	5550	36.45	44.82	30.00	23.98
HT40	MCS0	1	134	5670	36.54	45.27	30.00	23.98
VHT20	MCS0	1	100	5500	18.95	22.45	29.78	23.98
VHT20	MCS0	1	116	5580	18.90	22.50	29.76	23.98
VHT20	MCS0	1	140	5700	18.80	22.40	29.74	23.98
VHT40	MCS0	1	102	5510	36.45	45.45	30.00	23.98
VHT40	MCS0	1	110	5550	36.63	45.27	30.00	23.98
VHT40	MCS0	1	134	5670	36.63	45.09	30.00	23.98
VHT80	MCS0	1	106	5530	75.00	86.16	30.00	23.98

Maximum 26dB Bandwidth


Date: 24.MAR.2014 21:42:33

Maximum 99% Occupied Bandwidth


Date: 24.MAR.2014 22:08:24

Note : The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

3.2 Maximum Conducted Output Power Measurement

3.2.1 Limit of Maximum Conducted Output Power

For the band 5150-5250 MHz, the maximum conducted output power shall not exceed the lesser of 50 mW (17dBm) or $4 \text{ dBm} + 10\log B$, where B is the 26 dB emissions bandwidth in 1-MHz. If transmitting antenna directional gain is greater than 6 dBi, the peak output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the bands 5250-5350 MHz and 5470-5600 MHz and 5650-5725 MHz, bands, the maximum conducted output power shall not exceed the lesser of 250 mW (24dBm) or $11 \text{ dBm} + 10\log B$, where B is the 26 dB emissions bandwidth in 1-MHz. If transmitting antenna directional gain is greater than 6 dBi, the peak output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

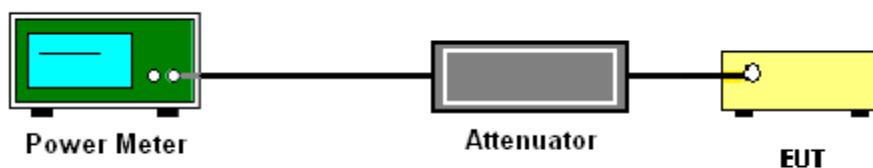
The testing follows Method PM of FCC KDB 789033 D01 General UNII Test Procedures v01r03.

Method PM (Measurement using an RF average power meter):

1. Measurement is performed using a wideband RF power meter.
2. The EUT is configured to transmit continuously with a consistent duty cycle at its maximum power control level.
3. Measure the average power of the transmitter, and the average power is corrected with duty factor, $10 \log(1/x)$, where x is the duty cycle.

3.2.4 Test Setup

For normal channel:



3.2.5 Test Result of Maximum Conducted Output Power

Test Band :	5GHz band 1	Temperature :	21~23℃
Test Engineer :	Stuart Lin & Osolemio Chang	Relative Humidity :	51~54%

Mod.	Data Rate	N _{TX}	Channel	Freq. (MHz)	Duty Factor (dB)	Average Conducted Power (dBm)	FCC Conducted Power Limit (dBm)	DG (dBi)	Pass/Fail
11a	6Mbps	1	36	5180	0.59	11.73	16.99	-0.78	Pass
11a	6Mbps	1	44	5220	0.59	11.96	16.99	-0.78	Pass
11a	6Mbps	1	48	5240	0.59	12.11	16.99	-0.78	Pass
HT20	MCS0	1	36	5180	0.66	9.78	16.99	-0.78	Pass
HT20	MCS0	1	44	5220	0.66	9.54	16.99	-0.78	Pass
HT20	MCS0	1	48	5240	0.66	9.83	16.99	-0.78	Pass
HT40	MCS0	1	38	5190	1.21	10.13	16.99	-0.78	Pass
HT40	MCS0	1	46	5230	1.21	9.84	16.99	-0.78	Pass
VHT20	MCS0	1	36	5180	0.82	7.85	16.99	-0.78	Pass
VHT20	MCS0	1	44	5220	0.82	7.99	16.99	-0.78	Pass
VHT20	MCS0	1	48	5240	0.82	8.26	16.99	-0.78	Pass
VHT40	MCS0	1	38	5190	1.47	8.22	16.99	-0.78	Pass
VHT40	MCS0	1	46	5230	1.47	7.80	16.99	-0.78	Pass
VHT80	MCS0	1	42	5210	2.61	7.93	16.99	-0.78	Pass

Mod.	Data Rate	N _{TX}	Channel	Freq. (MHz)	Duty Factor (dB)	Average Conducted Power (dBm)	IC Conducted Power Limit (dBm)	DG (dBi)	EIRP Power Limit (dBm)	Pass/Fail
11a	6Mbps	1	36	5180	0.59	11.73	23.37	-0.78	22.59	Pass
11a	6Mbps	1	44	5220	0.59	11.96	23.38	-0.78	22.60	Pass
11a	6Mbps	1	48	5240	0.59	12.11	23.39	-0.78	22.61	Pass
HT20	MCS0	1	36	5180	0.66	9.78	23.53	-0.78	22.75	Pass
HT20	MCS0	1	44	5220	0.66	9.54	23.56	-0.78	22.78	Pass
HT20	MCS0	1	48	5240	0.66	9.83	23.57	-0.78	22.79	Pass
HT40	MCS0	1	38	5190	1.21	10.13	23.79	-0.78	23.01	Pass
HT40	MCS0	1	46	5230	1.21	9.84	23.79	-0.78	23.01	Pass
VHT20	MCS0	1	36	5180	0.82	7.85	23.56	-0.78	22.78	Pass
VHT20	MCS0	1	44	5220	0.82	7.99	23.59	-0.78	22.81	Pass
VHT20	MCS0	1	48	5240	0.82	8.26	23.58	-0.78	22.80	Pass
VHT40	MCS0	1	38	5190	1.47	8.22	23.79	-0.78	23.01	Pass
VHT40	MCS0	1	46	5230	1.47	7.80	23.79	-0.78	23.01	Pass
VHT80	MCS0	1	42	5210	2.61	7.93	23.79	-0.78	23.01	Pass

Note:

1. Final Output Power equals to Measured Output Power adds the duty factor.
2. For the band 5150-5250 MHz, the maximum average conducted output power shall not exceed lesser of 50 mW (17dBm) or 4 dBm + 10log (B), where B is 26dB BW for FCC.
3. For the band 5150-5250 MHz, the maximum average EIRP output power shall not exceed lesser of 200 mW (23dBm) or 10 dBm + 10log (B), where B is 99%OBW for IC.



Test Band :	5GHz band 2	Temperature :	21~23°C
Test Engineer :	Stuart Lin & Osolemio Chang	Relative Humidity :	51~54%

Mod.	Data Rate	N _{TX}	Channel	Freq. (MHz)	Duty Factor (dB)	Average Conducted Power (dBm)	FCC Conducted Power Limit (dBm)	DG (dBi)	Pass/Fail
11a	6Mbps	1	52	5260	0.59	11.98	23.98	0.78	Pass
11a	6Mbps	1	60	5300	0.59	12.00	23.98	0.78	Pass
11a	6Mbps	1	64	5320	0.59	12.29	23.98	0.78	Pass
HT20	MCS0	1	52	5260	0.66	10.02	23.98	0.78	Pass
HT20	MCS0	1	60	5300	0.66	10.19	23.98	0.78	Pass
HT20	MCS0	1	64	5320	0.66	10.18	23.98	0.78	Pass
HT40	MCS0	1	54	5270	1.21	9.99	23.98	0.78	Pass
HT40	MCS0	1	62	5310	1.21	10.06	23.98	0.78	Pass
VHT20	MCS0	1	52	5260	0.82	8.41	23.98	0.78	Pass
VHT20	MCS0	1	60	5300	0.82	8.46	23.98	0.78	Pass
VHT20	MCS0	1	64	5320	0.82	7.53	23.98	0.78	Pass
VHT40	MCS0	1	54	5270	1.47	7.86	23.98	0.78	Pass
VHT40	MCS0	1	62	5310	1.47	8.41	23.98	0.78	Pass
VHT80	MCS0	1	58	5290	2.61	8.45	23.98	0.78	Pass

Mod.	Data Rate	N _{TX}	Channel	Freq. (MHz)	Duty Factor (dB)	Average Conducted Power (dBm)	IC Conducted Power Limit (dBm)	DG (dBi)	EIRP Power Limit (dBm)	Pass/Fail
11a	6Mbps	1	52	5260	0.59	11.98	23.58	0.78	29.58	Pass
11a	6Mbps	1	60	5300	0.59	12.00	23.60	0.78	29.60	Pass
11a	6Mbps	1	64	5320	0.59	12.29	23.59	0.78	29.59	Pass
HT20	MCS0	1	52	5260	0.66	10.02	23.80	0.78	29.80	Pass
HT20	MCS0	1	60	5300	0.66	10.19	23.76	0.78	29.76	Pass
HT20	MCS0	1	64	5320	0.66	10.18	23.79	0.78	29.79	Pass
HT40	MCS0	1	54	5270	1.21	9.99	23.98	0.78	30.00	Pass
HT40	MCS0	1	62	5310	1.21	10.06	23.98	0.78	30.00	Pass
VHT20	MCS0	1	52	5260	0.82	8.41	23.79	0.78	29.79	Pass
VHT20	MCS0	1	60	5300	0.82	8.46	23.76	0.78	29.76	Pass
VHT20	MCS0	1	64	5320	0.82	7.53	23.79	0.78	29.79	Pass
VHT40	MCS0	1	54	5270	1.47	7.86	23.98	0.78	30.00	Pass
VHT40	MCS0	1	62	5310	1.47	8.41	23.98	0.78	30.00	Pass
VHT80	MCS0	1	58	5290	2.61	8.45	23.98	0.78	30.00	Pass

Note:

1. Final Output Power equals to Measured Output Power adds the duty factor.
2. For the 5250-5350 MHz and 5470-5600 MHz and 5650-5725 MHz bands, the maximum conducted output power shall not exceed the lesser of 250 mW (24dBm) or 11 dBm + 10log (B), where B is 26dB BW for FCC and 99% OBW for IC.



Test Band :	5GHz band 3	Temperature :	21~23°C
Test Engineer :	Stuart Lin & Osolemio Chang	Relative Humidity :	51~54%

Mod.	Data Rate	N _{TX}	Channel	Freq. (MHz)	Duty Factor (dB)	Average Conducted Power (dBm)	FCC Conducted Power Limit (dBm)	DG (dBi)	Pass/Fail
11a	6Mbps	1	100	5500	0.59	11.97	23.98	0.63	Pass
11a	6Mbps	1	116	5580	0.59	11.65	23.98	0.63	Pass
11a	6Mbps	1	140	5700	0.59	11.63	23.98	0.63	Pass
HT20	MCS0	1	100	5500	0.66	9.95	23.98	0.63	Pass
HT20	MCS0	1	116	5580	0.66	9.91	23.98	0.63	Pass
HT20	MCS0	1	140	5700	0.66	9.87	23.98	0.63	Pass
HT40	MCS0	1	102	5510	1.21	8.73	23.98	0.63	Pass
HT40	MCS0	1	110	5550	1.21	9.52	23.98	0.63	Pass
HT40	MCS0	1	134	5670	1.21	10.04	23.98	0.63	Pass
VHT20	MCS0	1	100	5500	0.82	8.15	23.98	0.63	Pass
VHT20	MCS0	1	116	5580	0.82	8.40	23.98	0.63	Pass
VHT20	MCS0	1	140	5700	0.82	7.95	23.98	0.63	Pass
VHT40	MCS0	1	102	5510	1.47	7.68	23.98	0.63	Pass
VHT40	MCS0	1	110	5550	1.47	7.88	23.98	0.63	Pass
VHT40	MCS0	1	134	5670	1.47	8.22	23.98	0.63	Pass
VHT80	MCS0	1	106	5530	2.61	8.47	23.98	0.63	Pass

Mod.	Data Rate	N _{TX}	Channel	Freq. (MHz)	Duty Factor (dB)	Average Conducted Power (dBm)	IC Conducted Power Limit (dBm)	DG (dBi)	EIRP Power Limit (dBm)	Pass/Fail
11a	6Mbps	1	100	5500	0.59	11.97	23.60	0.63	29.60	Pass
11a	6Mbps	1	116	5580	0.59	11.65	23.61	0.63	29.61	Pass
11a	6Mbps	1	140	5700	0.59	11.63	23.80	0.63	29.80	Pass
HT20	MCS0	1	100	5500	0.66	9.95	23.76	0.63	29.76	Pass
HT20	MCS0	1	116	5580	0.66	9.91	23.75	0.63	29.75	Pass
HT20	MCS0	1	140	5700	0.66	9.87	23.88	0.63	29.88	Pass
HT40	MCS0	1	102	5510	1.21	8.73	23.98	0.63	30.00	Pass
HT40	MCS0	1	110	5550	1.21	9.52	23.98	0.63	30.00	Pass
HT40	MCS0	1	134	5670	1.21	10.04	23.98	0.63	30.00	Pass
VHT20	MCS0	1	100	5500	0.82	8.15	23.78	0.63	29.78	Pass
VHT20	MCS0	1	116	5580	0.82	8.40	23.76	0.63	29.76	Pass
VHT20	MCS0	1	140	5700	0.82	7.95	23.74	0.63	29.74	Pass
VHT40	MCS0	1	102	5510	1.47	7.68	23.98	0.63	30.00	Pass
VHT40	MCS0	1	110	5550	1.47	7.88	23.98	0.63	30.00	Pass
VHT40	MCS0	1	134	5670	1.47	8.22	23.98	0.63	30.00	Pass
VHT80	MCS0	1	106	5530	2.61	8.47	23.98	0.63	30.00	Pass

Note:

1. Final Output Power equals to Measured Output Power adds the duty factor.
2. For the 5250-5350 MHz and 5470-5600 MHz and 5650-5725 MHz bands, the maximum conducted output power shall not exceed the lesser of 250 mW (24dBm) or 11 dBm + 10log (B), where B is 26dB BW for FCC and 99% OBW for IC.

3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

For the band 5150-5250 MHz, the peak power spectral density shall not exceed 4 dBm in any 1-MHz band.

For the bands 5250-5350 MHz and 5470-5600 and 5650-5725 MHz, the peak power spectral density shall not exceed 11 dBm in any 1-MHz band.

If transmitting antenna directional gain is greater than 6 dBi, 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.

3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

The testing follows FCC KDB 789033 D01 General UNII Test Procedures v01r03.

Section F) Peak power spectral density (PPSD).

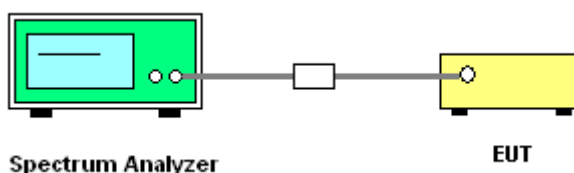
Note: Though the rule refers to “peak power spectral density”, the intent is to measure the maximum value of the time average of the power spectral density measured during a period of continuous transmission.

Method SA-2

(trace averaging across on and off times of the EUT transmissions, followed by duty cycle correction).

1. The testing follows Method SA-2 of FCC KDB 789033 D01 General UNII Test Procedures v01r03.
 - Measure the duty cycle.
 - Set span to encompass the entire emission bandwidth (EBW) of the signal.
 - Set RBW = 1 MHz.
 - Set VBW $\geq$ 3 MHz.
 - Number of points in sweep $\geq$ 2 Span / RBW.
 - Sweep time = auto.
 - Detector = RMS
 - Trace average at least 100 traces in power averaging mode.
 - Add $10 \log(1/x)$, where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times. For example, add $10 \log(1/0.25) = 6$ dB if the duty cycle is 25 percent.
2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
3. Each plot has already offset with cable loss, and attenuator loss. Measure the PPSD and record it.

3.3.4 Test Setup



3.3.5 Test Result of Power Spectral Density

Test Band :	5GHz band 1	Temperature :	21~23℃
Test Engineer :	Stuart Lin & Osolemio Chang	Relative Humidity :	51~54%

Mod.	Data Rate	N _{TX}	CH	Freq. (MHz)	Duty Factor (dB)	Average Power Density (dBm/MHz)	Average PSD Limit (dBm)	DG (dBi)	Pass/Fail
11a	6Mbps	1	36	5180	0.59	-0.30	4.00	-0.78	Pass
11a	6Mbps	1	44	5220	0.59	-0.07	4.00	-0.78	Pass
11a	6Mbps	1	48	5240	0.59	0.60	4.00	-0.78	Pass
HT20	MCS0	1	36	5180	0.66	-1.82	4.00	-0.78	Pass
HT20	MCS0	1	44	5220	0.66	-2.43	4.00	-0.78	Pass
HT20	MCS0	1	48	5240	0.66	-1.74	4.00	-0.78	Pass
HT40	MCS0	1	38	5190	1.21	-4.29	4.00	-0.78	Pass
HT40	MCS0	1	46	5230	1.21	-4.05	4.00	-0.78	Pass
VHT20	MCS0	1	36	5180	0.82	-3.45	4.00	-0.78	Pass
VHT20	MCS0	1	44	5220	0.82	-3.10	4.00	-0.78	Pass
VHT20	MCS0	1	48	5240	0.82	-2.67	4.00	-0.78	Pass
VHT40	MCS0	1	38	5190	1.47	-5.26	4.00	-0.78	Pass
VHT40	MCS0	1	46	5230	1.47	-5.65	4.00	-0.78	Pass
VHT80	MCS0	1	42	5210	2.61	-8.63	4.00	-0.78	Pass



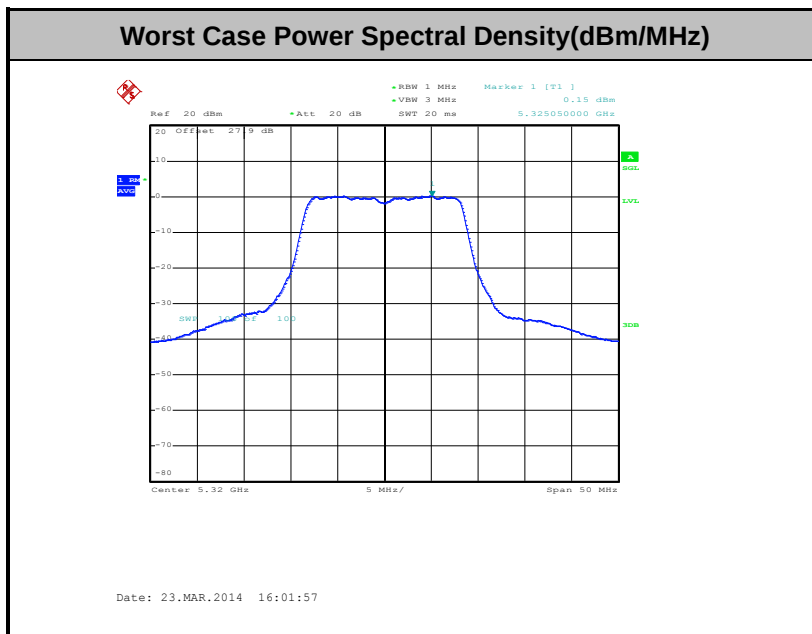
Test Band :	5GHz band 2	Temperature :	21~23°C
Test Engineer :	Stuart Lin & Osolemio Chang	Relative Humidity :	51~54%

Mod.	Data Rate	N _{TX}	CH	Freq. (MHz)	Duty Factor (dB)	Average Power Density (dBm/MHz)	Average PSD Limit (dBm)	DG (dBi)	Pass/Fail
11a	6Mbps	1	52	5260	0.59	0.06	11.00	0.78	Pass
11a	6Mbps	1	60	5300	0.59	-0.03	11.00	0.78	Pass
11a	6Mbps	1	64	5320	0.59	0.74	11.00	0.78	Pass
HT20	MCS0	1	52	5260	0.66	-1.62	11.00	0.78	Pass
HT20	MCS0	1	60	5300	0.66	-1.19	11.00	0.78	Pass
HT20	MCS0	1	64	5320	0.66	-1.23	11.00	0.78	Pass
HT40	MCS0	1	54	5270	1.21	-4.24	11.00	0.78	Pass
HT40	MCS0	1	62	5310	1.21	-4.19	11.00	0.78	Pass
VHT20	MCS0	1	52	5260	0.82	-2.76	11.00	0.78	Pass
VHT20	MCS0	1	60	5300	0.82	-2.45	11.00	0.78	Pass
VHT20	MCS0	1	64	5320	0.82	-3.35	11.00	0.78	Pass
VHT40	MCS0	1	54	5270	1.47	-5.91	11.00	0.78	Pass
VHT40	MCS0	1	62	5310	1.47	-4.92	11.00	0.78	Pass
VHT80	MCS0	1	58	5290	2.61	-8.71	11.00	0.78	Pass



Test Band :	5GHz band 3	Temperature :	21~23℃
Test Engineer :	Stuart Lin & Osolemio Chang	Relative Humidity :	51~54%

Mod.	Data Rate	N _{TX}	CH	Freq. (MHz)	Duty Factor (dB)	Average Power Density (dBm/MHz)	Average PSD Limit (dBm)	DG (dBi)	Pass/Fail
11a	6Mbps	1	100	5500	0.59	0.15	11.00	0.63	Pass
11a	6Mbps	1	116	5580	0.59	-0.21	11.00	0.63	Pass
11a	6Mbps	1	140	5700	0.59	0.04	11.00	0.63	Pass
HT20	MCS0	1	100	5500	0.66	-1.43	11.00	0.63	Pass
HT20	MCS0	1	116	5580	0.66	-1.47	11.00	0.63	Pass
HT20	MCS0	1	140	5700	0.66	-1.51	11.00	0.63	Pass
HT40	MCS0	1	102	5510	1.21	-4.23	11.00	0.63	Pass
HT40	MCS0	1	110	5550	1.21	-4.55	11.00	0.63	Pass
HT40	MCS0	1	134	5670	1.21	-3.69	11.00	0.63	Pass
VHT20	MCS0	1	100	5500	0.82	-2.91	11.00	0.63	Pass
VHT20	MCS0	1	116	5580	0.82	-2.71	11.00	0.63	Pass
VHT20	MCS0	1	140	5700	0.82	-3.09	11.00	0.63	Pass
VHT40	MCS0	1	102	5510	1.47	-5.56	11.00	0.63	Pass
VHT40	MCS0	1	110	5550	1.47	-5.71	11.00	0.63	Pass
VHT40	MCS0	1	134	5670	1.47	-5.18	11.00	0.63	Pass
VHT80	MCS0	1	106	5530	2.61	-8.55	11.00	0.63	Pass



Note: Average Power Density (dB) = Measured value+ Duty Factor

3.4 Peak Excursion Ratio Measurement

3.4.1 Limit of Peak Excursion Ratio

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

3.4.2 Measuring Instruments

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

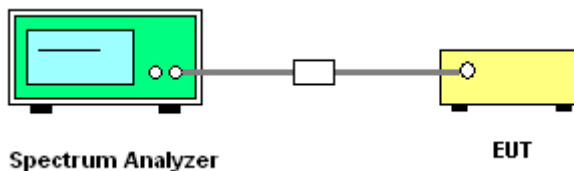
3.4.3 Test Procedures

The testing follows FCC KDB 789033 D01 General UNII Test Procedures v01r03.

Section G) Peak excursion measurement

1. The transmitter output is connected to the spectrum analyzer.
2. Set the spectrum analyzer span to view the entire emission bandwidth.
3. Find the maximum of the peak-max-hold spectrum.
 - *Set RBW = 1MHz.
 - *Set VBW $\geq$ 3MHz.
 - *Detector = peak.
 - *Trace mode = max-hold.
 - *Allow the sweeps to continue until the trace stabilizes.
 - *Use the peak search function to find the peak of the spectrum.
4. Use the procedure found under section 3.3 to measure the PPSD.
5. Compute the ratio of the maximum of the peak-max-hold spectrum to the PPSD.

3.4.4 Test Setup

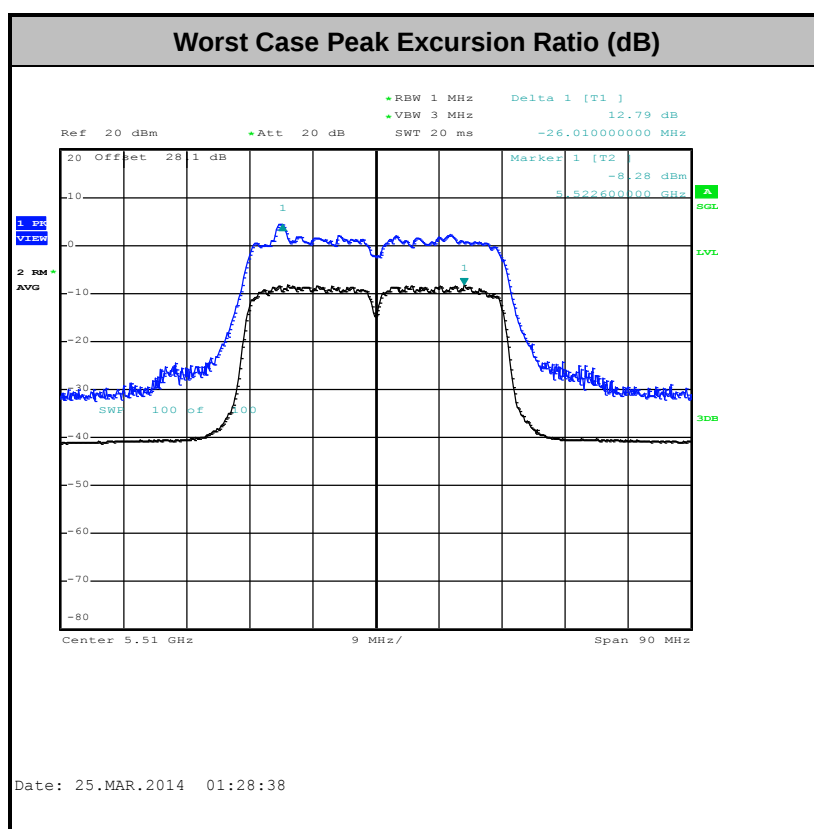


3.4.5 Test Result of Peak Excursion Ratio

Test Band :	5GHz band 3	Temperature :	21~23°C
Test Engineer :	Stuart Lin & Osolemio Chang	Relative Humidity :	51~54%

Mod.	N _{TX}	Channel	Freq. (MHz)	Peak Excursion Ratio (dB)					Max. Limits (dB)	Pass/Fail
				BPSK	QPSK	16QAM	64QAM	256QAM		
11a	1	100	5500	9.40	9.58	10.22	10.06	-	13.00	Pass
HT20	1	100	5500	9.73	9.34	10.21	9.64	-	13.00	Pass
HT40	1	102	5510	8.65	9.09	9.32	8.28	-	13.00	Pass
VHT20	1	100	5500	8.09	8.44	8.32	8.17	7.09	13.00	Pass
VHT40	1	102	5510	8.61	10.40	8.15	7.85	7.78	13.00	Pass
VHT80	1	106	5530	8.93	8.01	7.65	7.27	8.48	13.00	Pass

Note: All modulation measured based on the minimum data rate setting.



Note: Peak Excursion Ratio (dB) = Peak – (Average + Duty Cycle Offset)

Duty Cycle Offset: 2.39 dB

3.5 Unwanted Radiated Emission 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.

3.5.1 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.

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

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.

3.5.2 Measuring Instruments

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

3.5.3 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 $\geq$ 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 $\geq$ 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.

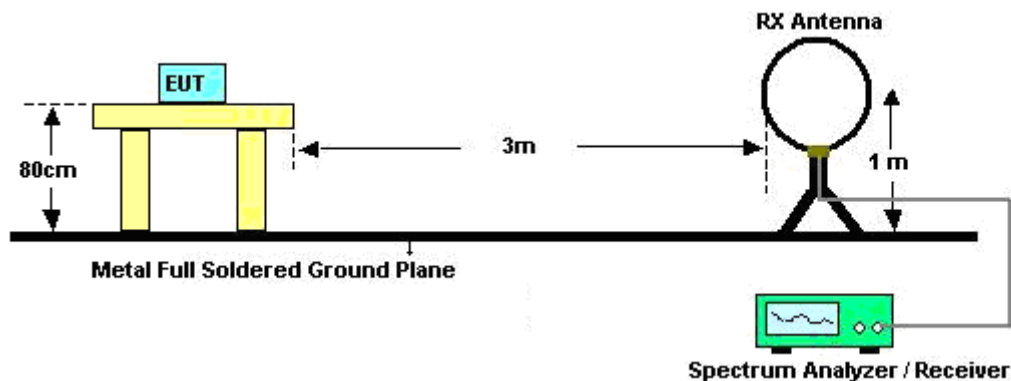
Band	Duty Cycle(%)	T(μ s)	1/T(kHz)	VBW Setting
802.11a	87.26	1370	0.730	1kHz
802.11n HT20	85.95	1272	0.786	1kHz
802.11n HT40	75.71	636	1.572	3kHz
802.11n VHT20	82.74	978	1.022	3kHz
802.11n VHT40	71.26	496	2.016	3kHz
802.11n VHT80	54.87	248	4.032	10kHz

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.

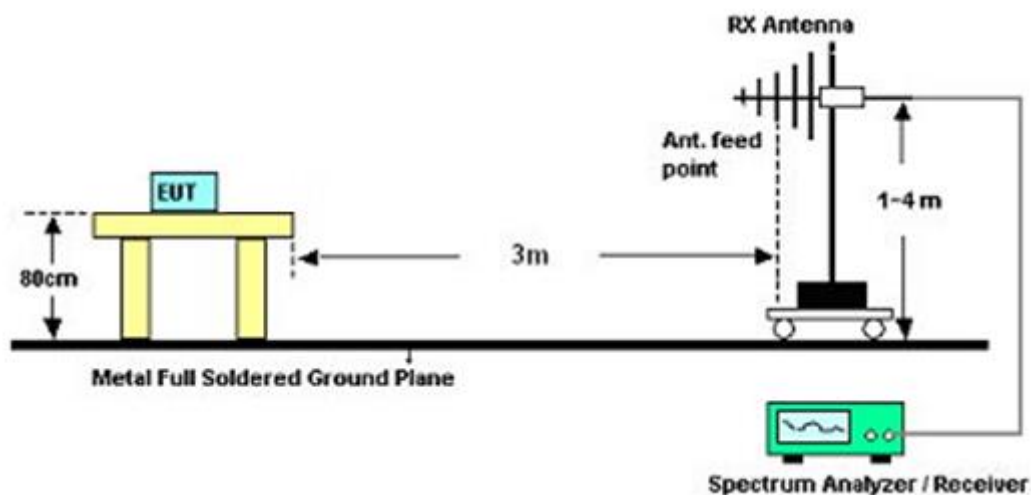
4. The antenna is a broadband antenna and its height is adjusted between one meter and four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
5. For each suspected emission, the EUT was arranged to its worst 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.

3.5.4 Test Setup

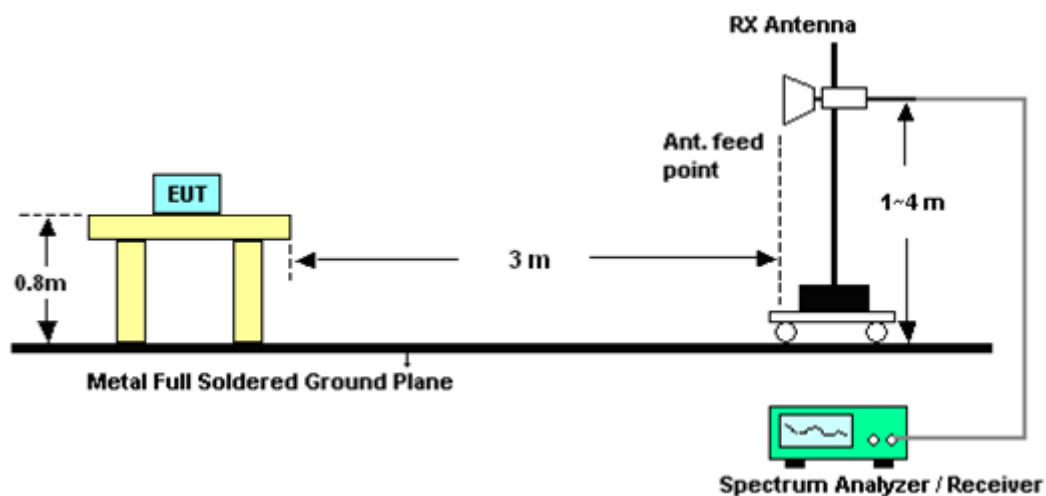
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



3.5.5 Test Result

3.5.5.1 Test Result of Radiated Band Edges

Test Mode :	802.11a	Temperature :	25~26°C
Test Channel :	36	Relative Humidity :	44~45%
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
5127.50	56.09	-17.91	74	44.62	34.43	10.4	33.36	106	24	Peak
5127.65	45.83	-8.17	54	34.36	34.43	10.4	33.36	106	24	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
5128.85	54.96	-19.04	74	43.49	34.43	10.4	33.36	100	3	Peak
5149.25	44.94	-9.06	54	33.4	34.45	10.44	33.35	100	3	Average

Test Mode :	802.11a	Temperature :	25~26°C
Test Channel :	48	Relative Humidity :	44~45%
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
5102.60	55.27	-18.73	74	43.88	34.4	10.37	33.38	127	39	Peak
5147.75	44.74	-9.26	54	33.2	34.45	10.44	33.35	127	39	Average
5423.48	56.99	-17.01	74	44.69	34.72	10.82	33.24	127	39	Peak
5443.83	45.49	-8.51	54	33.13	34.73	10.86	33.23	127	39	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
5096.15	56.06	-17.94	74	44.67	34.4	10.37	33.38	100	337	Peak
5142.35	44.66	-9.34	54	33.13	34.45	10.44	33.36	100	337	Average
5428.21	56.23	-17.77	74	43.88	34.72	10.86	33.23	100	337	Peak
5450.65	45.46	-8.54	54	33.07	34.75	10.86	33.22	100	337	Average

Test Mode :	802.11a	Temperature :	25~26°C
Test Channel :	52	Relative Humidity :	44~45%
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
5086.10	56.11	-17.89	74	44.79	34.38	10.33	33.39	103	21	Peak
5130.80	44.71	-9.29	54	33.24	34.43	10.4	33.36	103	21	Average
5365.73	56.4	-17.60	74	44.25	34.67	10.75	33.27	103	21	Peak
5452.63	45.44	-8.56	54	33.02	34.75	10.89	33.22	103	21	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
5131.10	55.01	-18.99	74	43.54	34.43	10.4	33.36	100	339	Peak
5133.50	44.62	-9.38	54	33.15	34.43	10.4	33.36	100	339	Average
5393.56	56.66	-17.34	74	44.44	34.68	10.79	33.25	100	339	Peak
5453.84	45.51	-8.49	54	33.09	34.75	10.89	33.22	100	339	Average

Test Mode :	802.11a	Temperature :	25~26°C
Test Channel :	64	Relative Humidity :	44~45%
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
5355.06	58.13	-15.87	74	46.03	34.65	10.72	33.27	103	220	Peak
5372.44	46.18	-7.82	54	34.03	34.67	10.75	33.27	103	220	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
5393.67	56.31	-17.69	74	44.09	34.68	10.79	33.25	100	11	Peak
5441.30	45.41	-8.59	54	33.05	34.73	10.86	33.23	100	11	Average



Test Mode :	802.11a	Temperature :	25~26°C
Test Channel :	100	Relative Humidity :	44~45%
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
5467.44	62.5	-11.50	74	50.06	34.77	10.89	33.22	100	210	Peak
5470.00	47.4	-6.60	54	34.96	34.77	10.89	33.22	100	210	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
5417.84	56.16	-17.84	74	43.86	34.72	10.82	33.24	100	226	Peak
5470.00	45.81	-8.19	54	33.37	34.77	10.89	33.22	100	226	Average

Test Mode :	802.11a	Temperature :	25~26°C
Test Channel :	140	Relative Humidity :	44~45%
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
5730.52	61.78	-12.22	74	48.72	35.02	11.34	33.3	108	215	Peak
5725.56	48.79	-5.21	54	35.72	35.02	11.34	33.29	108	215	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
5725.8	62.85	-11.15	74	49.78	35.02	11.34	33.29	108	354	Peak
5725.4	49.12	-4.88	54	36.05	35.02	11.34	33.29	108	354	Average



Test Mode :	802.11n HT20	Temperature :	25~26°C
Test Channel :	36	Relative Humidity :	44~45%
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
5148.50	55.90	-18.10	74	44.36	34.45	10.44	33.35	138	31	Peak
5128.40	45.10	-8.90	54	33.63	34.43	10.4	33.36	138	31	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
5115.35	55.35	-18.65	74	43.94	34.42	10.37	33.38	100	338	Peak
5128.40	44.89	-9.11	54	33.42	34.43	10.4	33.36	100	338	Average

Test Mode :	802.11n HT20	Temperature :	25~26°C
Test Channel :	48	Relative Humidity :	44~45%
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
5074.25	55.03	-18.97	74	43.71	34.38	10.33	33.39	200	40	Peak
5149.40	44.63	-9.37	54	33.09	34.45	10.44	33.35	200	40	Average
5451.97	56.10	-17.90	74	43.71	34.75	10.86	33.22	200	40	Peak
5450.76	45.43	-8.57	54	33.04	34.75	10.86	33.22	200	40	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
5031.95	55.53	-18.47	74	44.35	34.33	10.26	33.41	100	334	Peak
5149.70	44.59	-9.41	54	33.05	34.45	10.44	33.35	100	334	Average
5459.12	55.92	-18.08	74	43.5	34.75	10.89	33.22	100	334	Peak
5448.45	45.41	-8.59	54	33.03	34.75	10.86	33.23	100	334	Average



Test Mode :	802.11n HT20	Temperature :	25~26°C
Test Channel :	52	Relative Humidity :	44~45%
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
5136.80	55.21	-18.79	74	43.74	34.43	10.40	33.36	103	22	Peak
5133.20	44.71	-9.29	54	33.24	34.43	10.40	33.36	103	22	Average
5438.11	56.21	-17.79	74	43.85	34.73	10.86	33.23	103	22	Peak
5444.38	45.42	-8.58	54	33.06	34.73	10.86	33.23	103	22	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
5146.55	55.61	-18.39	74	44.07	34.45	10.44	33.35	100	334	Peak
5144.00	44.64	-9.36	54	33.10	34.45	10.44	33.35	100	334	Average
5445.81	56.22	-17.78	74	43.84	34.75	10.86	33.23	100	334	Peak
5447.35	45.40	-8.60	54	33.02	34.75	10.86	33.23	100	334	Average

Test Mode :	802.11n HT20	Temperature :	25~26°C
Test Channel :	64	Relative Humidity :	44~45%
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
5423.59	56.73	-17.27	74	44.43	34.72	10.82	33.24	102	21	Peak
5371.67	46.15	-7.85	54	34.00	34.67	10.75	33.27	102	21	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
5431.40	56.35	-17.65	74	43.99	34.73	10.86	33.23	108	339	Peak
5457.80	45.48	-8.52	54	33.06	34.75	10.89	33.22	108	339	Average



Test Mode :	802.11n HT20	Temperature :	25~26°C
Test Channel :	100	Relative Humidity :	44~45%
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
5465.52	61.94	-12.06	74	49.5	34.77	10.89	33.22	100	215	Peak
5448.08	47.31	-6.69	54	34.93	34.75	10.86	33.23	100	215	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
5400.24	56.11	-17.89	74	43.86	34.7	10.79	33.24	105	333	Peak
5448.24	45.72	-8.28	54	33.34	34.75	10.86	33.23	105	333	Average

Test Mode :	802.11n HT20	Temperature :	25~26°C
Test Channel :	140	Relative Humidity :	44~45%
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
5726.12	64.56	-9.44	74	51.49	35.02	11.34	33.29	169	16	Peak
5725.00	50.24	-3.76	54	37.17	35.02	11.34	33.29	169	16	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
5725.08	64.24	-9.76	74	51.17	35.02	11.34	33.29	100	352	Peak
5725.00	49.15	-4.85	54	36.08	35.02	11.34	33.29	100	352	Average



Test Mode :	802.11n HT40	Temperature :	25~26°C
Test Channel :	38	Relative Humidity :	44~45%
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	60.5	-13.50	74	48.96	34.45	10.44	33.35	116	22	Peak
5149.55	48.42	-5.58	54	36.88	34.45	10.44	33.35	116	22	Average
5384.98	56.27	-17.73	74	44.05	34.68	10.79	33.25	116	22	Peak
5427.55	45.74	-8.26	54	33.43	34.72	10.82	33.23	116	22	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
5150.00	57.37	-16.63	74	45.83	34.45	10.44	33.35	100	335	Peak
5150.00	46.32	-7.68	54	34.78	34.45	10.44	33.35	100	335	Average
5434.37	56.06	-17.94	74	43.70	34.73	10.86	33.23	100	335	Peak
5410.06	45.77	-8.23	54	33.49	34.70	10.82	33.24	100	335	Average



Test Mode :	802.11n HT40	Temperature :	25~26°C
Test Channel :	46	Relative Humidity :	44~45%
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
5124.05	55.72	-18.28	74	44.25	34.43	10.4	33.36	105	47	Peak
5125.40	45.17	-8.83	54	33.7	34.43	10.4	33.36	105	47	Average
5436.13	56.04	-17.96	74	43.68	34.73	10.86	33.23	105	47	Peak
5444.49	45.56	-8.44	54	33.2	34.73	10.86	33.23	105	47	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
5092.55	55.28	-18.72	74	43.9	34.4	10.37	33.39	200	312	Peak
5144.30	44.84	-9.16	54	33.3	34.45	10.44	33.35	200	312	Average
5375.08	56.4	-17.60	74	44.23	34.67	10.75	33.25	200	312	Peak
5439.98	45.59	-8.41	54	33.23	34.73	10.86	33.23	200	312	Average



Test Mode :	802.11n HT40	Temperature :	25~26°C
Test Channel :	54	Relative Humidity :	44~45%
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
5128.40	55.2	-18.8	74	43.73	34.43	10.4	33.36	105	47	Peak
5141.45	44.87	-9.13	54	33.34	34.45	10.44	33.36	105	47	Average
5355.50	56.16	-17.84	74	44.06	34.65	10.72	33.27	105	47	Peak
5452.63	45.61	-8.39	54	33.19	34.75	10.89	33.22	105	47	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
5096.00	54.91	-19.09	74	43.52	34.4	10.37	33.38	100	333	Peak
5132.15	44.76	-9.24	54	33.29	34.43	10.4	33.36	100	333	Average
5457.69	55.87	-18.13	74	43.45	34.75	10.89	33.22	100	333	Peak
5435.80	45.49	-8.51	54	33.13	34.73	10.86	33.23	100	333	Average



Test Mode :	802.11n HT40	Temperature :	25~26°C
Test Channel :	62	Relative Humidity :	44~45%
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
5135.15	55.44	-18.56	74	43.97	34.43	10.40	33.36	103	6	Peak
5144.75	44.68	-9.32	54	33.14	34.45	10.44	33.35	103	6	Average
5350.44	63.65	-10.35	74	51.55	34.65	10.72	33.27	103	6	Peak
5350.00	49.28	-4.72	54	37.18	34.65	10.72	33.27	103	6	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
5067.95	55.45	-18.55	74	44.17	34.37	10.30	33.39	100	326	Peak
5142.65	44.69	-9.31	54	33.16	34.45	10.44	33.36	100	326	Average
5352.75	61.2	-12.80	74	49.10	34.65	10.72	33.27	100	326	Peak
5350.66	47.12	-6.88	54	35.02	34.65	10.72	33.27	100	326	Average



Test Mode :	802.11n HT40	Temperature :	25~26°C
Test Channel :	102	Relative Humidity :	44~45%
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
5466.80	64.93	-9.07	74	52.49	34.77	10.89	33.22	100	298	Peak
5468.56	50.98	-3.02	54	38.54	34.77	10.89	33.22	100	298	Average
5740.52	56.67	-17.33	74	43.54	35.04	11.39	33.3	100	298	Peak
5747.32	46.00	-8.00	54	32.87	35.04	11.39	33.3	100	298	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
5469.20	61.14	-12.86	74	48.70	34.77	10.89	33.22	106	332	Peak
5469.68	47.99	-6.01	54	35.55	34.77	10.89	33.22	106	332	Average
5762.28	56.97	-17.03	74	43.83	35.06	11.39	33.31	106	332	Peak
5740.92	45.81	-8.19	54	32.68	35.04	11.39	33.3	106	332	Average



Test Mode :	802.11n HT40	Temperature :	25~26°C
Test Channel :	134	Relative Humidity :	44~45%
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
5417.20	55.77	-18.23	74	43.47	34.72	10.82	33.24	100	359	Peak
5439.60	45.35	-8.65	54	32.99	34.73	10.86	33.23	100	359	Average
5727.56	59.11	-14.89	74	46.04	35.02	11.34	33.29	100	359	Peak
5727.48	47.07	-6.93	54	34	35.02	11.34	33.29	100	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
5399.28	55.7	-18.30	74	43.45	34.7	10.79	33.24	100	343	Peak
5464.40	45.27	-8.73	54	32.83	34.77	10.89	33.22	100	343	Average
5726.20	57.72	-16.28	74	44.65	35.02	11.34	33.29	100	343	Peak
5725.00	46.57	-7.43	54	33.5	35.02	11.34	33.29	100	343	Average



Test Mode :	802.11ac VHT80	Temperature :	25~26°C
Test Channel :	42	Relative Humidity :	44~45%
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
5141.15	56.58	-17.42	74	45.05	34.45	10.44	33.36	107	11	Peak
5148.65	46.40	-7.60	54	34.86	34.45	10.44	33.35	107	11	Average
5415.89	55.98	-18.02	74	43.68	34.72	10.82	33.24	107	11	Peak
5394.33	45.65	-8.35	54	33.43	34.68	10.79	33.25	107	11	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
5128.25	55.32	-18.68	74	43.85	34.43	10.4	33.36	100	336	Peak
5148.35	45.2	-8.80	54	33.66	34.45	10.44	33.35	100	336	Average
5392.68	55.69	-18.31	74	43.47	34.68	10.79	33.25	100	336	Peak
5441.08	45.73	-8.27	54	33.37	34.73	10.86	33.23	100	336	Average



Test Mode :	802.11ac VHT80	Temperature :	25~26°C
Test Channel :	58	Relative Humidity :	44~45%
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
5138.30	54.82	-19.18	74	43.35	34.43	10.4	33.36	104	13	Peak
5146.55	44.77	-9.23	54	33.23	34.45	10.44	33.35	104	13	Average
5356.38	56.32	-17.68	74	44.19	34.65	10.75	33.27	104	13	Peak
5357.59	46.30	-7.70	54	34.17	34.65	10.75	33.27	104	13	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
5146.85	54.44	-19.56	74	42.9	34.45	10.44	33.35	100	340	Peak
5140.10	44.72	-9.28	54	33.19	34.45	10.44	33.36	100	340	Average
5357.15	55.92	-18.08	74	43.79	34.65	10.75	33.27	100	340	Peak
5418.20	45.52	-8.48	54	33.22	34.72	10.82	33.24	100	340	Average



Test Mode :	802.11ac VHT80	Temperature :	25~26°C
Test Channel :	106	Relative Humidity :	44~45%
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
5458.00	61.47	-12.53	74	49.05	34.75	10.89	33.22	100	8	Peak
5467.12	50.56	-3.44	54	38.12	34.77	10.89	33.22	100	8	Average
5727.80	56.21	-17.79	74	43.14	35.02	11.34	33.29	100	8	Peak
5761.96	46.21	-7.79	54	33.07	35.06	11.39	33.31	100	8	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	57.03	-16.97	74	44.59	34.77	10.89	33.22	100	296	Peak
5467.92	47.03	-6.97	54	34.59	34.77	10.89	33.22	100	296	Average
5731.56	56.22	-17.78	74	43.16	35.02	11.34	33.3	100	296	Peak
5760.84	46.22	-7.78	54	33.08	35.06	11.39	33.31	100	296	Average

<WLAN Tx Mode with WPC Charging>

Test Mode :	802.11n HT40	Temperature :	25~26°C
Test Channel :	102	Relative Humidity :	44~45%
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
5466	63.39	-10.61	74	50.95	34.77	10.89	33.22	100	350	Peak
5469.36	49.73	-4.27	54	37.29	34.77	10.89	33.22	100	350	Average
5750.04	56.71	-17.29	74	43.58	35.04	11.39	33.3	100	350	Peak
5756.2	45.67	-8.33	54	32.53	35.06	11.39	33.31	100	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
5469.2	65.09	-8.91	74	52.65	34.77	10.89	33.22	187	246	Peak
5470	50.92	-3.08	54	38.48	34.77	10.89	33.22	187	246	Average
5745.4	55.95	-18.05	74	42.82	35.04	11.39	33.3	187	246	Peak
5748.52	45.76	-8.24	54	32.63	35.04	11.39	33.3	187	246	Average

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

Note: Pre-scanned all test modes and only choose the worst case mode recorded in the test report for radiated spurious emission below 30MHz.

<WLAN Tx Mode with WPC Charging>

Test Mode :	802.11n HT40	Temperature :	23~25°C
Test Channel :	102	Relative Humidity :	43~45%
Test Engineer :	Eric Shih	Polarization :	Horizontal

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
0.01798	36.44	-86.07	122.51	15.89	20.26	0.29	-	-	Average
0.08103	25.32	-84.11	109.43	4.92	20.11	0.29	-	-	Average
0.09666	21.19	-86.71	107.9	0.83	20.07	0.29	-	-	QP
0.11316	21.76	-84.77	106.53	1.4	20.07	0.29	-	-	Average
0.17482	51.49	-51.26	102.75	31.17	20.03	0.29	-	-	Average
0.45362	46.29	-48.18	94.47	26	20	0.29	-	-	Average
1.519	49.58	-14.39	63.97	29.24	20.01	0.33	100	114	QP
10.832	37.02	-32.98	70	16.86	19.77	0.39	-	-	QP
18.916	36.74	-33.26	70	16.3	20.01	0.43	-	-	QP
25.845	36.64	-33.36	70	15.78	20.39	0.47	-	-	QP



Test Mode :	802.11n HT40	Temperature :	23~25°C
Test Channel :	102	Relative Humidity :	43~45%
Test Engineer :	Eric Shih	Polarization :	Vertical

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
0.01247	40.17	-85.52	125.69	19.62	20.26	0.29	-	-	Average
0.08145	24.12	-85.27	109.39	3.72	20.11	0.29	-	-	Average
0.0967	29.28	-78.62	107.9	8.92	20.07	0.29	-	-	QP
0.12012	27.76	-78.25	106.01	7.41	20.06	0.29	-	-	Average
0.17652	45.11	-57.56	102.67	24.79	20.03	0.29	-	-	Average
0.33972	40.28	-56.7	96.98	19.99	20	0.29	-	-	Average
1.489	43.71	-20.44	64.15	23.39	20.01	0.31	100	221	QP
9.552	34.64	-35.36	70	14.5	19.75	0.39	-	-	QP
19.564	37.78	-32.22	70	17.26	20.09	0.43	-	-	QP
25.83	35.85	-34.15	70	14.99	20.39	0.47	-	-	QP

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

Test Mode :	802.11a	Temperature :	25~26°C
Test Channel :	36	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 5182 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit. 3. Test result of emissions which are 20 dB lower than the limit is not reported per15.31.		

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
5182	102.97	-	-	91.36	34.48	10.47	33.34	106	24	Peak
5182	92.95	-	-	81.34	34.48	10.47	33.34	106	24	Average
10359	48.55	-25.45	74	56.1	37.17	10.64	55.36	100	0	Peak
15540	50.17	-23.83	74	52.47	39.73	11.79	53.82	100	0	Peak

Test Mode :	802.11a	Temperature :	25~26°C
Test Channel :	36	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 5182 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit. 3. 10359 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
5182	98.51	-	-	86.9	34.48	10.47	33.34	100	3	Peak
5182	87.98	-	-	76.37	34.48	10.47	33.34	100	3	Average
10359	48.87	-25.13	74	56.42	37.17	10.64	55.36	100	0	Peak
15540	49.95	-24.05	74	52.25	39.73	11.79	53.82	100	0	Peak

Test Mode :	802.11a	Temperature :	25~26°C
Test Channel :	44	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 5222 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit. 3. 10440 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
5222	103.39	-	-	91.65	34.52	10.54	33.32	103	22	Peak
5222	93.84	-	-	82.1	34.52	10.54	33.32	103	22	Average
10440	48.07	-25.93	74	55.47	37.23	10.65	55.28	100	0	Peak
15660	49.9	-24.10	74	51.85	39.86	11.75	53.56	100	0	Peak

Test Mode :	802.11a	Temperature :	25~26°C
Test Channel :	44	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 5222 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit. 3. 10440 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
5222	98.1	-	-	86.36	34.52	10.54	33.32	100	338	Peak
5222	88.34	-	-	76.6	34.52	10.54	33.32	100	338	Average
10440	47.07	-26.93	74	54.47	37.23	10.65	55.28	100	0	Peak
15660	49.76	-24.24	74	51.71	39.86	11.75	53.56	100	0	Peak

Test Mode :	802.11a	Temperature :	25~26°C
Test Channel :	48	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 5242 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit. 3. 10479 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
5242	105.33	-	-	93.52	34.55	10.58	33.32	127	39	Peak
5242	94.28	-	-	82.47	34.55	10.58	33.32	127	39	Average
10479	49.7	-24.30	74	56.98	37.28	10.66	55.22	100	0	Peak
15720	50.56	-23.44	74	52.31	39.92	11.74	53.41	100	0	Peak

Test Mode :	802.11a	Temperature :	25~26°C
Test Channel :	48	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 5242 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit. 3. 10479 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
5242	97.54	-	-	85.73	34.55	10.58	33.32	100	337	Peak
5242	88.06	-	-	76.25	34.55	10.58	33.32	100	337	Average
10479	47.69	-26.31	74	54.97	37.28	10.66	55.22	100	0	Peak
15720	50.11	-23.89	74	51.86	39.92	11.74	53.41	100	0	Peak

Test Mode :	802.11a	Temperature :	25~26°C
Test Channel :	52	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 5262 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit. 3. 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
5262	103.59	-	-	91.72	34.57	10.61	33.31	103	21	Peak
5262	93.52	-	-	81.65	34.57	10.61	33.31	103	21	Average
10521	48.97	-25.03	74	56.17	37.31	10.67	55.18	100	0	Peak
15780	50.63	-23.37	74	52.22	39.98	11.72	53.29	100	0	Peak

Test Mode :	802.11a	Temperature :	25~26°C
Test Channel :	52	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 5262 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit. 3. 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
5262	97.46	-	-	85.59	34.57	10.61	33.31	100	339	Peak
5262	87.73	-	-	75.86	34.57	10.61	33.31	100	339	Average
10521	47.52	-26.48	74	54.72	37.31	10.67	55.18	100	0	Peak
15780	50.92	-23.08	74	52.51	39.98	11.72	53.29	100	0	Peak

Test Mode :	802.11a	Temperature :	25~26°C
Test Channel :	60	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 5302 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
5302	103.31	-	-	91.35	34.6	10.65	33.29	100	22	Peak
5302	93.98	-	-	82.02	34.6	10.65	33.29	100	22	Average
10599	48.62	-25.38	74	55.66	37.36	10.68	55.08	100	0	Peak
15900	50.84	-23.16	74	52.09	40.1	11.68	53.03	100	0	Peak

Test Mode :	802.11a	Temperature :	25~26°C
Test Channel :	60	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 5302 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
5302	96.89	-	-	84.93	34.6	10.65	33.29	100	338	Peak
5302	87.71	-	-	75.75	34.6	10.65	33.29	100	338	Average
10599	47.31	-26.69	74	54.35	37.36	10.68	55.08	100	0	Peak
15900	49.98	-24.02	74	51.23	40.1	11.68	53.03	100	0	Peak

Test Mode :	802.11a	Temperature :	25~26°C
Test Channel :	64	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 5322 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
5322	103.67	-	-	91.66	34.62	10.68	33.29	103	220	Peak
5322	93.97	-	-	81.96	34.62	10.68	33.29	103	220	Average
10641	47.7	-26.30	74	54.66	37.38	10.69	55.03	100	0	Peak
15960	50.88	-23.12	74	51.93	40.17	11.66	52.88	100	0	Peak

Test Mode :	802.11a	Temperature :	25~26°C
Test Channel :	64	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 5322 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
5322	96.47	-	-	84.46	34.62	10.68	33.29	100	11	Peak
5322	86.68	-	-	74.67	34.62	10.68	33.29	100	11	Average
10641	47.11	-26.89	74	54.07	37.38	10.69	55.03	100	0	Peak
15960	50.24	-23.76	74	51.29	40.17	11.66	52.88	100	0	Peak

Test Mode :	802.11a	Temperature :	25~26°C
Test Channel :	100	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 5502 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit. 3. 16500 MHz are not within a restricted band.		

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
5502	104.08	-	-	91.54	34.8	10.96	33.22	100	210	Peak
5502	94.17	-	-	81.63	34.8	10.96	33.22	100	210	Average
11001	48.76	-25.24	74	55	37.6	10.76	54.6	100	0	Peak
16500	50.28	-23.72	74	50.76	41	11.82	53.3	100	0	Peak

Test Mode :	802.11a	Temperature :	25~26°C
Test Channel :	100	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 5502 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit. 3. 16500 MHz are not within a restricted band.		

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
5502	98.55	-	-	86.01	34.8	10.96	33.22	100	226	Peak
5502	88.87	-	-	76.33	34.8	10.96	33.22	100	226	Average
11001	48.8	-25.20	74	55.04	37.6	10.76	54.6	100	0	Peak
16500	50.9	-23.10	74	51.38	41	11.82	53.3	100	0	Peak

Test Mode :	802.11a	Temperature :	25~26°C
Test Channel :	116	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 5582 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit. 3. 16740 MHz are not within a restricted band.		

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
5582	104.75	-	-	92.02	34.89	11.09	33.25	108	215	Peak
5582	95.77	-	-	83.04	34.89	11.09	33.25	108	215	Average
11160	48.79	-25.21	74	54.61	37.67	10.84	54.33	100	0	Peak
16740	50.34	-23.66	74	50.3	41.24	11.91	53.11	100	0	Peak

Test Mode :	802.11a	Temperature :	25~26°C
Test Channel :	116	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 5582 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit. 3. 16740 MHz are not within a restricted band.		

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
5582	101.15	-	-	88.42	34.89	11.09	33.25	100	3	Peak
5582	91.53	-	-	78.8	34.89	11.09	33.25	100	3	Average
11160	47.48	-26.52	74	53.3	37.67	10.84	54.33	100	0	Peak
16740	50.05	-23.95	74	50.01	41.24	11.91	53.11	100	0	Peak

Test Mode :	802.11a	Temperature :	25~26°C
Test Channel :	140	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 5702 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit. 3. 17100 MHz are not within a restricted band.		

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
188.76	26.25	-17.25	43.5	47.44	9.08	1.48	31.75	-	-	Peak
195.24	26.27	-17.23	43.5	47.41	9.1	1.51	31.75	-	-	Peak
204.96	27.63	-15.87	43.5	48.68	9.15	1.55	31.75	102	289	Peak
303.5	27.22	-18.78	46	43.75	13.27	1.92	31.72	-	-	Peak
310.5	27.19	-18.81	46	43.58	13.4	1.94	31.73	-	-	Peak
345.5	24.34	-21.66	46	39.82	14.25	2.03	31.76	-	-	Peak
5702	104.11	-	-	91.08	35.01	11.3	33.28	108	215	Peak
5702	93.48	-	-	80.45	35.01	11.3	33.28	108	215	Average
11400	49.32	-24.68	74	54.53	37.76	10.99	53.96	100	0	Peak
17100	50.96	-23.04	74	50.6	41.34	12.12	53.1	100	0	Peak

Test Mode :	802.11a	Temperature :	25~26°C
Test Channel :	140	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 5702 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit. 3. 17100 MHz are not within a restricted band.		

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
42.15	27.92	-12.08	40	48.04	10.92	0.75	31.79	100	204	Peak
152.04	23.78	-19.72	43.5	43.66	10.5	1.37	31.75	-	-	Peak
192	23.67	-19.83	43.5	44.83	9.1	1.49	31.75	-	-	Peak
303.5	21.34	-24.66	46	37.87	13.27	1.92	31.72	-	-	Peak
550.6	20.74	-25.26	46	30.72	19.48	2.54	32	-	-	Peak
643	23.78	-22.22	46	33.45	19.57	2.8	32.04	-	-	Peak
5702	101.95	-	-	88.92	35.01	11.3	33.28	108	354	Peak
5702	92.55	-	-	79.52	35.01	11.3	33.28	108	354	Average
11400	48.17	-25.83	74	53.38	37.76	10.99	53.96	100	0	Peak
17100	50.45	-23.55	74	50.09	41.34	12.12	53.1	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	25~26°C
Test Channel :	36	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 5182 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit. 3. 10359 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
5182	100.78	-	-	89.17	34.48	10.47	33.34	138	31	Peak
5182	90.78	-	-	79.17	34.48	10.47	33.34	138	31	Average
10359	49.88	-24.12	74	57.43	37.17	10.64	55.36	100	0	Peak
15540	49.64	-24.36	74	51.94	39.73	11.79	53.82	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	25~26°C
Test Channel :	36	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 5182 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit. 3. 10359 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
5182	95.43	-	-	83.82	34.48	10.47	33.34	100	338	Peak
5182	86.57	-	-	74.96	34.48	10.47	33.34	100	338	Average
10359	48.83	-25.17	74	56.38	37.17	10.64	55.36	100	0	Peak
15540	48.63	-25.37	74	50.93	39.73	11.79	53.82	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	25~26°C
Test Channel :	44	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 5222 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit. 3. 10440 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
5222	100.47	-	-	88.73	34.52	10.54	33.32	104	41	Peak
5222	91.27	-	-	79.53	34.52	10.54	33.32	104	41	Average
10440	48.96	-25.04	74	56.36	37.23	10.65	55.28	100	0	Peak
15660	49.42	-24.58	74	51.37	39.86	11.75	53.56	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	25~26°C
Test Channel :	44	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 5222 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit. 3. 10440 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
5222	97.61	-	-	85.87	34.52	10.54	33.32	100	338	Peak
5222	87.99	-	-	76.25	34.52	10.54	33.32	100	338	Average
10440	47.08	-26.92	74	54.48	37.23	10.65	55.28	100	0	Peak
15660	48.9	-25.10	74	50.85	39.86	11.75	53.56	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	25~26°C
Test Channel :	48	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 5242 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit. 3. 10479 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
5242	100.74	-	-	88.93	34.55	10.58	33.32	200	40	Peak
5242	90.84	-	-	79.03	34.55	10.58	33.32	200	40	Average
10479	47.26	-26.74	74	54.54	37.28	10.66	55.22	100	0	Peak
15720	48.63	-25.37	74	50.38	39.92	11.74	53.41	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	25~26°C
Test Channel :	48	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 5240 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit. 3. 10479 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
5242	96.19	-	-	84.38	34.55	10.58	33.32	100	334	Peak
5242	86.64	-	-	74.83	34.55	10.58	33.32	100	334	Average
10479	48.02	-25.98	74	55.3	37.28	10.66	55.22	100	0	Peak
15720	49.89	-24.11	74	51.64	39.92	11.74	53.41	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	25~26°C
Test Channel :	52	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 5262 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit. 3. 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
5262	100.97	-	-	89.1	34.57	10.61	33.31	103	22	Peak
5262	91.82	-	-	79.95	34.57	10.61	33.31	103	22	Average
10521	47.35	-26.65	74	54.55	37.31	10.67	55.18	100	0	Peak
15780	49.28	-24.72	74	50.87	39.98	11.72	53.29	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	25~26°C
Test Channel :	52	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 5262 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit. 3. 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
5262	97.03	-	-	85.16	34.57	10.61	33.31	100	334	Peak
5262	87.55	-	-	75.68	34.57	10.61	33.31	100	334	Average
10521	48.54	-25.46	74	55.74	37.31	10.67	55.18	100	0	Peak
15780	49.88	-24.12	74	51.47	39.98	11.72	53.29	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	25~26°C
Test Channel :	60	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 5302 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
5302	100.68	-	-	88.72	34.6	10.65	33.29	102	21	Peak
5302	91.11	-	-	79.15	34.6	10.65	33.29	102	21	Average
10599	48.73	-25.27	74	55.77	37.36	10.68	55.08	100	0	Peak
15900	49.26	-24.74	74	50.51	40.1	11.68	53.03	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	25~26°C
Test Channel :	60	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 5302 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
5302	97.51	-	-	85.55	34.6	10.65	33.29	100	333	Peak
5302	87.21	-	-	75.25	34.6	10.65	33.29	100	333	Average
10599	47.72	-26.28	74	54.76	37.36	10.68	55.08	100	0	Peak
15900	49.67	-24.33	74	50.92	40.1	11.68	53.03	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	25~26°C
Test Channel :	64	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 5322 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
5322	102.58	-	-	90.57	34.62	10.68	33.29	102	21	Peak
5322	92.7	-	-	80.69	34.62	10.68	33.29	102	21	Average
10641	46.79	-27.21	74	53.75	37.38	10.69	55.03	100	0	Peak
15960	50.81	-23.19	74	51.86	40.17	11.66	52.88	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	25~26°C
Test Channel :	64	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 5320 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
5322	96.03	-	-	84.02	34.62	10.68	33.29	108	339	Peak
5322	86.75	-	-	74.74	34.62	10.68	33.29	108	339	Average
10641	47.48	-26.52	74	54.44	37.38	10.69	55.03	100	0	Peak
15960	50.25	-23.75	74	51.3	40.17	11.66	52.88	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	25~26°C
Test Channel :	100	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 5502 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit. 3. 16500 MHz are not within a restricted band.		

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
5502	103.54	-	-	91	34.8	10.96	33.22	100	215	Peak
5502	93.58	-	-	81.04	34.8	10.96	33.22	100	215	Average
11001	48.17	-25.83	74	54.41	37.6	10.76	54.6	100	0	Peak
16500	49.74	-24.26	74	50.22	41	11.82	53.3	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	25~26°C
Test Channel :	100	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 5502 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit. 3. 16500 MHz are not within a restricted band.		

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
5502	98.02	-	-	85.48	34.8	10.96	33.22	105	333	Peak
5502	88.58	-	-	76.04	34.8	10.96	33.22	105	333	Average
11001	48.84	-25.16	74	55.08	37.6	10.76	54.6	100	0	Peak
16500	49.32	-24.68	74	49.8	41	11.82	53.3	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	25~26°C
Test Channel :	116	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 5582 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit. 3. 16740 MHz are not within a restricted band.		

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
5582	101.37	-	-	88.64	34.89	11.09	33.25	100	215	Peak
5582	93.83	-	-	81.1	34.89	11.09	33.25	100	215	Average
11160	48.42	-25.58	74	54.24	37.67	10.84	54.33	100	0	Peak
16740	49.23	-24.77	74	49.19	41.24	11.91	53.11	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	25~26°C
Test Channel :	116	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 5582 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit. 3. 16740 MHz are not within a restricted band.		

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
5582	99.97	-	-	87.24	34.89	11.09	33.25	100	352	Peak
5582	90.2	-	-	77.47	34.89	11.09	33.25	100	352	Average
11160	47.5	-26.50	74	53.32	37.67	10.84	54.33	100	0	Peak
16740	49.63	-24.37	74	49.59	41.24	11.91	53.11	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	25~26°C
Test Channel :	140	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 5702 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit. 3. 17100 MHz are not within a restricted band.		

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
183.9	26.23	-17.27	43.5	47.46	9.06	1.46	31.75	-	-	Peak
201.45	27.73	-15.77	43.5	48.75	9.18	1.55	31.75	101	272	Peak
204.96	27.65	-15.85	43.5	48.7	9.15	1.55	31.75	-	-	Peak
303.5	27.84	-18.16	46	44.37	13.27	1.92	31.72	-	-	Peak
342	24.11	-21.89	46	39.75	14.1	2.02	31.76	-	-	Peak
786.5	23.76	-22.24	46	32.52	20.14	3.06	31.96	-	-	Peak
5702	103.42	-	-	90.39	35.01	11.3	33.28	169	16	Peak
5702	93.27	-	-	80.24	35.01	11.3	33.28	169	16	Average
11400	48.04	-25.96	74	53.25	37.76	10.99	53.96	100	0	Peak
17100	49.71	-24.29	74	49.35	41.34	12.12	53.1	100	0	Peak

Test Mode :	802.11n HT20	Temperature :	25~26°C
Test Channel :	140	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 5702 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit. 3. 17100 MHz are not within a restricted band.		

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
42.96	28.6	-11.40	40	48.72	10.92	0.75	31.79	100	185	Peak
51.06	23.69	-16.31	40	46.68	7.98	0.81	31.78	-	-	Peak
153.66	22.94	-20.56	43.5	42.91	10.4	1.38	31.75	-	-	Peak
303.5	21.43	-24.57	46	37.96	13.27	1.92	31.72	-	-	Peak
637.4	24.06	-21.94	46	33.66	19.66	2.79	32.05	-	-	Peak
653.5	23.64	-22.36	46	33.41	19.46	2.81	32.04	-	-	Peak
5702	101.96	-	-	88.93	35.01	11.3	33.28	100	352	Peak
5702	92.79	-	-	79.76	35.01	11.3	33.28	100	352	Average
11400	47.96	-26.04	74	53.17	37.76	10.99	53.96	100	0	Peak
17100	49.12	-24.88	74	48.76	41.34	12.12	53.1	100	0	Peak

Test Mode :	802.11n HT40	Temperature :	25~26°C
Test Channel :	38	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 5192 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit. 3. 10380 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
5192	98.88	-	-	87.21	34.5	10.51	33.34	116	22	Peak
5192	89.41	-	-	77.74	34.5	10.51	33.34	116	22	Average
10380	47.77	-26.23	74	55.29	37.18	10.64	55.34	100	0	Peak
15570	49.89	-24.11	74	52.09	39.77	11.78	53.75	100	0	Peak

Test Mode :	802.11n HT40	Temperature :	25~26°C
Test Channel :	38	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 5192 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit. 3. 10380 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
5192	93.37	-	-	81.7	34.5	10.51	33.34	100	335	Peak
5192	83.95	-	-	72.28	34.5	10.51	33.34	100	335	Average
10380	48.74	-25.26	74	56.26	37.18	10.64	55.34	100	0	Peak
15570	49.22	-24.78	74	51.42	39.77	11.78	53.75	100	0	Peak

Test Mode :	802.11n HT40	Temperature :	25~26°C
Test Channel :	46	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 5232 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit. 3. 10461 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
5232	98.54	-	-	86.79	34.53	10.54	33.32	105	47	Peak
5232	89.08	-	-	77.33	34.53	10.54	33.32	105	47	Average
10461	48.25	-25.75	74	55.56	37.27	10.66	55.24	100	0	Peak
15690	50.02	-23.98	74	51.86	39.89	11.75	53.48	100	0	Peak

Test Mode :	802.11n HT40	Temperature :	25~26°C
Test Channel :	46	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 5232 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit. 3. 10461 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
5232	95.9	-	-	84.15	34.53	10.54	33.32	200	312	Peak
5232	85.99	-	-	74.24	34.53	10.54	33.32	200	312	Average
10461	48.81	-25.19	74	56.12	37.27	10.66	55.24	100	0	Peak
15690	49.87	-24.13	74	51.71	39.89	11.75	53.48	100	0	Peak

Test Mode :	802.11n HT40	Temperature :	25~26°C
Test Channel :	54	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 5272 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit. 3. 10539 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
5272	99.31	-	-	87.43	34.57	10.61	33.3	105	47	Peak
5272	89.73	-	-	77.85	34.57	10.61	33.3	105	47	Average
10539	48.24	-25.76	74	55.41	37.32	10.67	55.16	100	0	Peak
15810	50.33	-23.67	74	51.83	40.01	11.71	53.22	100	0	Peak

Test Mode :	802.11n HT40	Temperature :	25~26°C
Test Channel :	54	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 5272 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit. 3. 10539 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
5272	97.63	-	-	85.75	34.57	10.61	33.3	100	333	Peak
5272	88.38	-	-	76.5	34.57	10.61	33.3	100	333	Average
10539	48.46	-25.54	74	55.63	37.32	10.67	55.16	100	0	Peak
15810	50	-24.00	74	51.5	40.01	11.71	53.22	100	0	Peak

Test Mode :	802.11n HT40	Temperature :	25~26°C
Test Channel :	62	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 5312 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
5312	100.2	-	-	88.19	34.62	10.68	33.29	103	6	Peak
5312	90.48	-	-	78.47	34.62	10.68	33.29	103	6	Average
10620	47.89	-26.11	74	54.89	37.37	10.69	55.06	100	0	Peak
15930	50.95	-23.05	74	52.1	40.13	11.67	52.95	100	0	Peak

Test Mode :	802.11n HT40	Temperature :	25~26°C
Test Channel :	62	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 5312 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
5312	96.38	-	-	84.37	34.62	10.68	33.29	100	326	Peak
5312	86.61	-	-	74.6	34.62	10.68	33.29	100	326	Average
10620	49.1	-24.90	74	56.1	37.37	10.69	55.06	100	0	Peak
15930	50.61	-23.39	74	51.76	40.13	11.67	52.95	100	0	Peak

Test Mode :	802.11n HT40	Temperature :	25~26°C
Test Channel :	102	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 5512 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
188.76	26.65	-16.85	43.5	47.84	9.08	1.48	31.75	-	-	Peak
201.45	27.16	-16.34	43.5	48.18	9.18	1.55	31.75	100	241	Peak
275.16	27.9	-18.10	46	44.91	12.89	1.83	31.73	-	-	Peak
314	26.42	-19.58	46	42.68	13.52	1.95	31.73	-	-	Peak
345.5	22.6	-23.40	46	38.08	14.25	2.03	31.76	-	-	Peak
769	22.79	-23.21	46	31.6	20.11	3.05	31.97	-	-	Peak
5512	101.56	-	-	89.02	34.8	10.96	33.22	100	298	Peak
5512	91.34	-	-	78.8	34.8	10.96	33.22	100	298	Average
11019	48.97	-25.03	74	55.17	37.61	10.76	54.57	100	0	Peak
16530	50.29	-23.71	74	50.7	41.03	11.83	53.27	100	0	Peak

Test Mode :	802.11n HT40	Temperature :	25~26°C
Test Channel :	102	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 5512 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
42.15	27.87	-12.13	40	47.99	10.92	0.75	31.79	100	206	Peak
51.06	22.48	-17.52	40	45.47	7.98	0.81	31.78	-	-	Peak
192	22.64	-20.86	43.5	43.8	9.1	1.49	31.75	-	-	Peak
303.5	21.12	-24.88	46	37.65	13.27	1.92	31.72	-	-	Peak
511.4	20.23	-25.77	46	31.76	17.91	2.5	31.94	-	-	Peak
643	24.24	-21.76	46	33.91	19.57	2.8	32.04	-	-	Peak
5512	96.23	-	-	83.69	34.8	10.96	33.22	106	332	Peak
5512	86.59	-	-	74.05	34.8	10.96	33.22	106	332	Average
11019	48.22	-25.78	74	54.42	37.61	10.76	54.57	100	0	Peak
16530	50.72	-23.28	74	51.13	41.03	11.83	53.27	100	0	Peak

Test Mode :	802.11n HT40	Temperature :	25~26°C
Test Channel :	110	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 5552 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
5552	101.28	-	-	88.62	34.85	11.05	33.24	100	10	Peak
5552	92.34	-	-	79.68	34.85	11.05	33.24	100	10	Average
11100	48.34	-25.66	74	54.32	37.64	10.82	54.44	100	0	Peak
16650	50.89	-23.11	74	51.03	41.16	11.88	53.18	100	0	Peak

Test Mode :	802.11n HT40	Temperature :	25~26°C
Test Channel :	110	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 5552 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
5552	98.6	-	-	85.94	34.85	11.05	33.24	100	282	Peak
5552	89.61	-	-	76.95	34.85	11.05	33.24	100	282	Average
11100	48.86	-25.14	74	54.84	37.64	10.82	54.44	100	0	Peak
16650	50.62	-23.38	74	50.76	41.16	11.88	53.18	100	0	Peak

Test Mode :	802.11n HT40	Temperature :	25~26°C
Test Channel :	134	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 5672 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
5672	100.52	-	-	87.56	34.97	11.26	33.27	100	359	Peak
5672	91.08	-	-	78.12	34.97	11.26	33.27	100	359	Average
11340	48.91	-25.09	74	54.29	37.73	10.96	54.07	100	0	Peak
17010	50.48	-23.52	74	49.94	41.47	12	52.93	100	0	Peak

Test Mode :	802.11n HT40	Temperature :	25~26°C
Test Channel :	134	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 5672 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
5672	99.04	-	-	86.08	34.97	11.26	33.27	100	343	Peak
5672	89.77	-	-	76.81	34.97	11.26	33.27	100	343	Average
11340	49.81	-24.19	74	55.19	37.73	10.96	54.07	100	0	Peak
17010	50.26	-23.74	74	49.72	41.47	12	52.93	100	0	Peak

Test Mode :	802.11ac VHT80	Temperature :	25~26°C
Test Channel :	42	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 5208 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
5208	93.59	-	-	81.89	34.52	10.51	33.33	107	11	Peak
5208	83.31	-	-	71.61	34.52	10.51	33.33	107	11	Average
10419	47.92	-26.08	74	55.35	37.22	10.65	55.3	100	0	Peak
15630	48.99	-25.01	74	50.99	39.84	11.76	53.6	100	0	Peak

Test Mode :	802.11ac VHT80	Temperature :	25~26°C
Test Channel :	42	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 5212 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
5212	89.02	-	-	77.29	34.52	10.54	33.33	100	336	Peak
5212	79.78	-	-	68.05	34.52	10.54	33.33	100	336	Average
10419	50.09	-23.91	74	57.52	37.22	10.65	55.3	100	0	Peak
15630	49.32	-24.68	74	51.32	39.84	11.76	53.6	100	0	Peak

Test Mode :	802.11ac VHT80	Temperature :	25~26°C
Test Channel :	58	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 5288 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
5288	92.77	-	-	80.84	34.58	10.65	33.3	104	13	Peak
5288	82.98	-	-	71.05	34.58	10.65	33.3	104	13	Average
10581	47.81	-26.19	74	54.88	37.35	10.68	55.1	100	0	Peak
15870	50.32	-23.68	74	51.62	40.08	11.69	53.07	100	0	Peak

Test Mode :	802.11ac VHT80	Temperature :	25~26°C
Test Channel :	58	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 5288 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
5288	89	-	-	77.07	34.58	10.65	33.3	100	340	Peak
5288	79.82	-	-	67.89	34.58	10.65	33.3	100	340	Average
10581	47.24	-26.76	74	54.31	37.35	10.68	55.1	100	0	Peak
15870	50.33	-23.67	74	51.63	40.08	11.69	53.07	100	0	Peak

Test Mode :	802.11ac VHT80	Temperature :	25~26°C
Test Channel :	106	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 5528 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
154.74	24.07	-19.43	43.5	44.22	10.2	1.4	31.75	-	-	Peak
192	26.68	-16.82	43.5	47.84	9.1	1.49	31.75	-	-	Peak
204.96	27.63	-15.87	43.5	48.68	9.15	1.55	31.75	100	286	Peak
307	26.43	-19.57	46	42.88	13.35	1.93	31.73	-	-	Peak
345.5	23.48	-22.52	46	38.96	14.25	2.03	31.76	-	-	Peak
384	21.95	-24.05	46	36.35	15.26	2.14	31.8	-	-	Peak
5528	96.24	-	-	83.65	34.82	11	33.23	100	8	Peak
5528	86.55	-	-	73.96	34.82	11	33.23	100	8	Average
11061	47.93	-26.07	74	54	37.63	10.79	54.49	100	0	Peak
16590	50.82	-23.18	74	51.1	41.09	11.86	53.23	100	0	Peak

Test Mode :	802.11ac VHT80	Temperature :	25~26°C
Test Channel :	106	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 5528 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
42.96	26.95	-13.05	40	47.07	10.92	0.75	31.79	100	239	Peak
51.06	24.29	-15.71	40	47.28	7.98	0.81	31.78	-	-	Peak
152.85	23.23	-20.27	43.5	43.2	10.4	1.38	31.75	-	-	Peak
303.5	21.31	-24.69	46	37.84	13.27	1.92	31.72	-	-	Peak
387.5	19.82	-26.18	46	34.06	15.42	2.15	31.81	-	-	Peak
643	24.4	-21.60	46	34.07	19.57	2.8	32.04	-	-	Peak
5528	92.61	-	-	80.02	34.82	11	33.23	100	296	Peak
5528	82.99	-	-	70.4	34.82	11	33.23	100	296	Average
11061	48.28	-25.72	74	54.35	37.63	10.79	54.49	100	0	Peak
16590	50.33	-23.67	74	50.61	41.09	11.86	53.23	100	0	Peak

<WLAN Tx Mode with WPC Charging>

Test Mode :	802.11n HT40	Temperature :	25~26°C
Test Channel :	102	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Horizontal
Remark :	1. 5512 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
123.69	24.69	-18.81	43.5	43.16	12.04	1.24	31.75	-	-	Peak
168.78	22.78	-20.72	43.5	43.1	9.82	1.61	31.75	-	-	Peak
199.02	23.26	-20.24	43.5	44.3	9.18	1.53	31.75	-	-	Peak
303.5	34.65	-11.35	46	51.18	13.27	1.92	31.72	100	157	Peak
319.6	24.52	-21.48	46	40.6	13.7	1.96	31.74	-	-	Peak
533.8	19.44	-26.56	46	30.3	18.59	2.52	31.97	-	-	Peak
5512	88.21	-	-	76.43	34.8	10.96	33.98	100	350	Average
5512	98.25	-	-	86.47	34.8	10.96	33.98	100	350	Peak
11019	44.25	-29.75	74	54.96	37.61	10.76	59.08	100	0	Peak
16530	45.41	-28.59	74	51.43	41.03	11.83	58.88	100	0	Peak

Test Mode :	802.11n HT40	Temperature :	25~26°C
Test Channel :	102	Relative Humidity :	44~45%
Test Engineer :	Gavin Wu	Polarization :	Vertical
Remark :	1. 5512 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
51.6	28.29	-11.71	40	51.28	7.98	0.81	31.78	-	-	Peak
74.01	27.94	-12.06	40	52.25	6.5	0.96	31.77	-	-	Peak
83.46	29.23	-10.77	40	52.46	7.52	1.01	31.76	102	123	Peak
305.6	22.45	-23.55	46	38.95	13.31	1.92	31.73	-	-	Peak
439.3	21.33	-24.67	46	34.1	16.8	2.29	31.86	-	-	Peak
523.3	20.19	-25.81	46	31.52	18.12	2.51	31.96	-	-	Peak
5512	90.3	-	-	78.52	34.8	10.96	33.98	187	246	Average
5512	101.27	-	-	89.49	34.8	10.96	33.98	187	246	Peak
11019	44.42	-29.58	74	55.13	37.61	10.76	59.08	100	0	Peak
16530	44.83	-29.17	74	50.85	41.03	11.83	58.88	-	-	Peak

3.6 AC Conducted Emission Measurement

3.6.1 Limit of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

Frequency of emission (MHz)	Conducted limit (dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

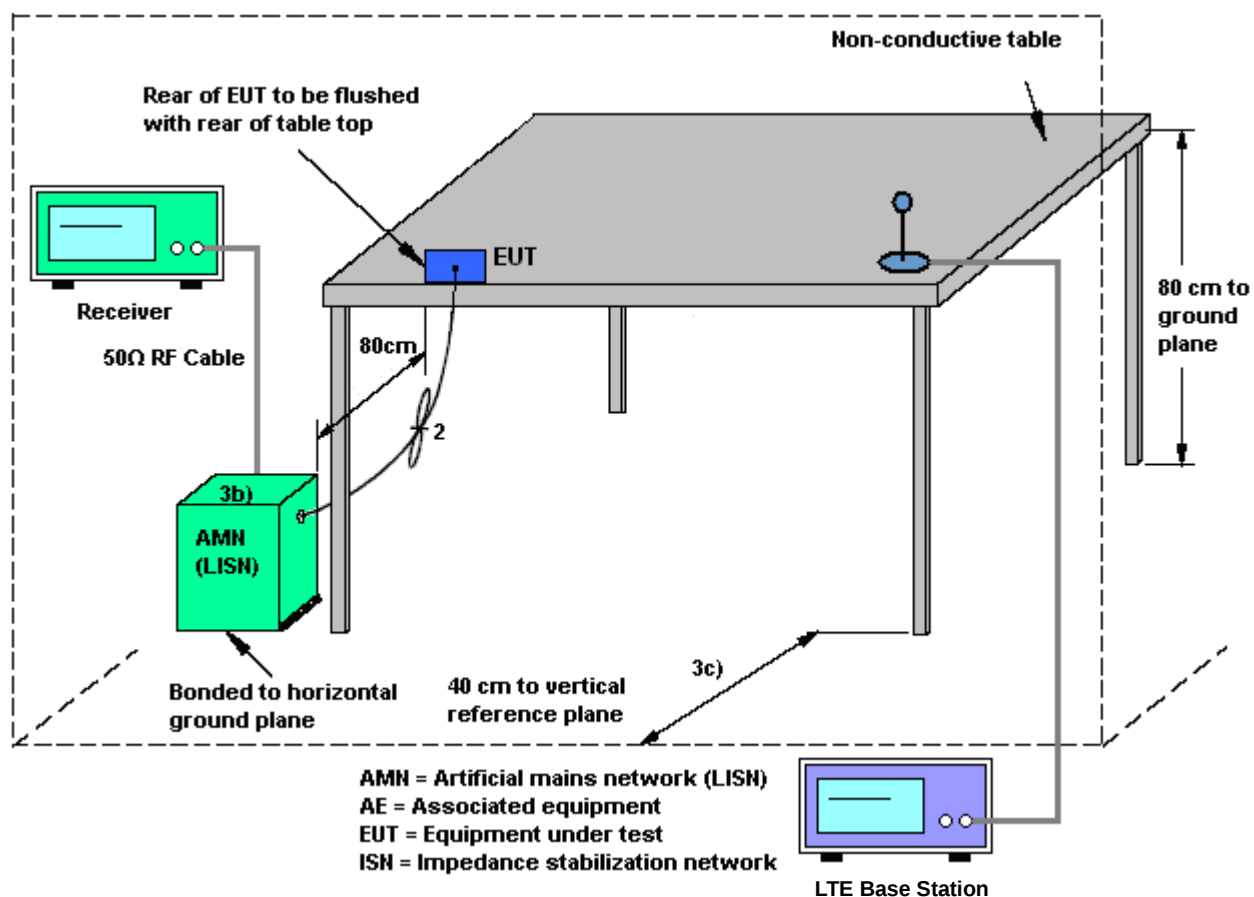
3.6.2 Measuring Instruments

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

3.6.3 Test Procedures

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

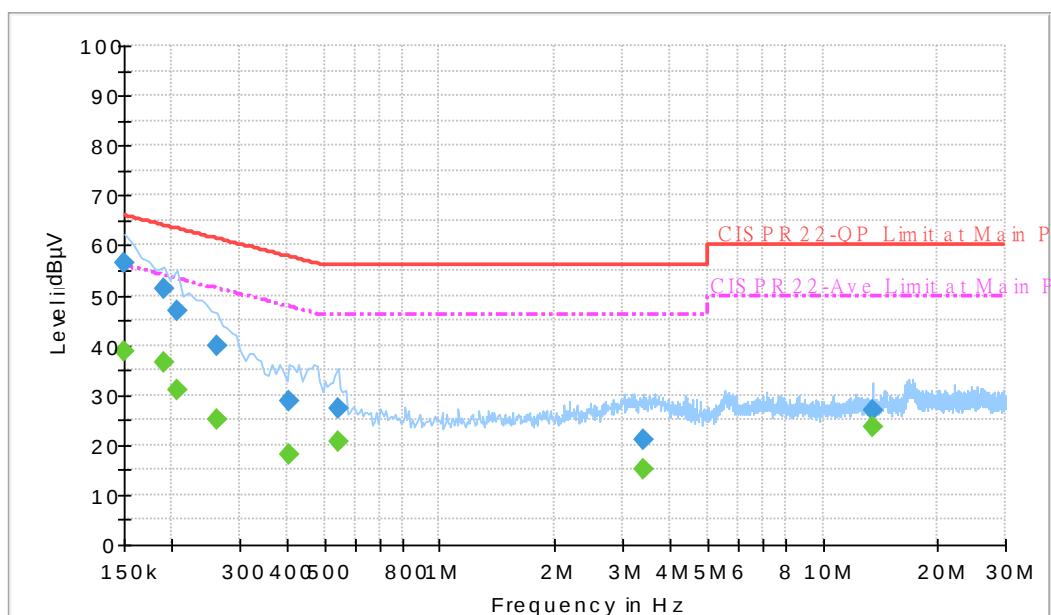
3.6.4 Test Setup



3.6.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	Temperature :	20~22℃
Test Engineer :	Kai-Chun Chu	Relative Humidity :	46~48%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	LTE Band 2 Idle + WLAN 5GHz Link + Bluetooth Link + USB Cable (Data Link with Notebook) + NFC Tx + Earphone 1		

ENV216 Auto Test



Final Result : QuasiPeak

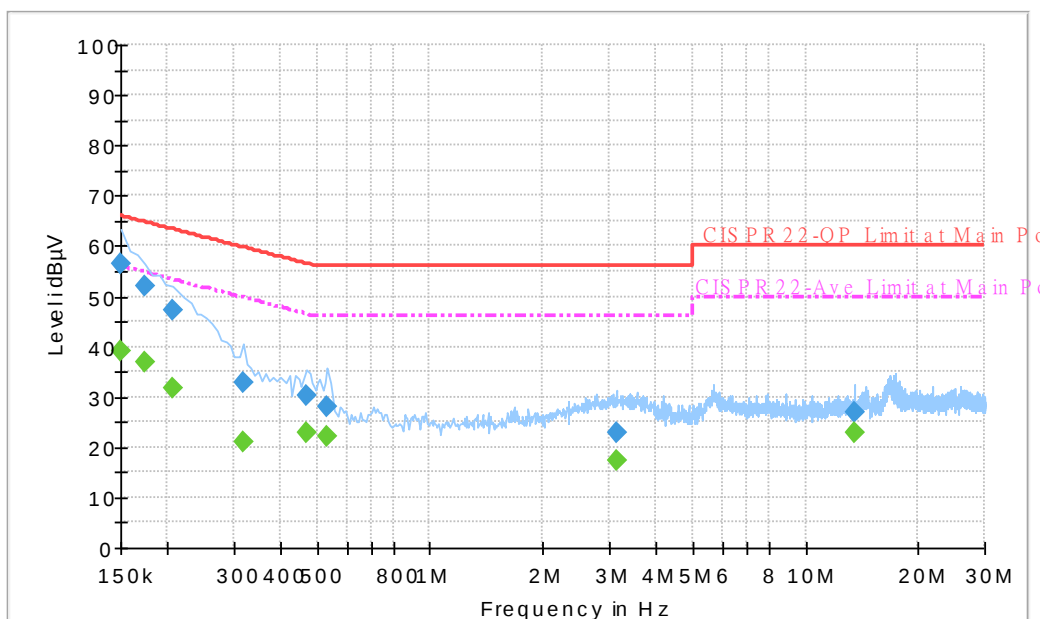
Frequency (MHz)	QuasiPeak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.150000	56.6	Off	L1	19.4	9.4	66.0
0.190000	51.1	Off	L1	19.4	12.9	64.0
0.206000	47.0	Off	L1	19.3	16.4	63.4
0.262000	39.8	Off	L1	19.3	21.6	61.4
0.406000	28.9	Off	L1	19.3	28.8	57.7
0.542000	27.2	Off	L1	19.3	28.8	56.0
3.390000	21.1	Off	L1	19.6	34.9	56.0
13.558000	26.9	Off	L1	19.8	33.1	60.0

Final Result : Average

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.150000	38.9	Off	L1	19.4	17.1	56.0
0.190000	36.5	Off	L1	19.4	17.5	54.0
0.206000	30.9	Off	L1	19.3	22.5	53.4
0.262000	25.2	Off	L1	19.3	26.2	51.4
0.406000	18.0	Off	L1	19.3	29.7	47.7
0.542000	20.5	Off	L1	19.3	25.5	46.0
3.390000	15.2	Off	L1	19.6	30.8	46.0
13.558000	23.6	Off	L1	19.8	26.4	50.0

Test Mode :	Mode 1	Temperature :	20~22°C
Test Engineer :	Kai-Chun Chu	Relative Humidity :	46~48%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	LTE Band 2 Idle + WLAN 5GHz Link + Bluetooth Link + USB Cable (Data Link with Notebook) + NFC Tx + Earphone 1		

ENV216 Auto Test


Final Result : QuasiPeak

Frequency (MHz)	QuasiPeak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.150000	56.3	Off	N	19.4	9.7	66.0
0.174000	52.1	Off	N	19.3	12.7	64.8
0.206000	47.1	Off	N	19.3	16.3	63.4
0.318000	32.7	Off	N	19.4	27.1	59.8
0.470000	30.2	Off	N	19.4	26.3	56.5
0.534000	28.2	Off	N	19.4	27.8	56.0
3.126000	22.8	Off	N	19.6	33.2	56.0
13.558000	27.1	Off	N	19.9	32.9	60.0

Final Result : Average

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.150000	39.1	Off	N	19.4	16.9	56.0
0.174000	36.7	Off	N	19.3	18.1	54.8
0.206000	31.7	Off	N	19.3	21.7	53.4
0.318000	20.9	Off	N	19.4	28.9	49.8
0.470000	22.7	Off	N	19.4	23.8	46.5
0.534000	22.2	Off	N	19.4	23.8	46.0
3.126000	17.3	Off	N	19.6	28.7	46.0
13.558000	22.8	Off	N	19.9	27.2	50.0

3.7 Frequency Stability Measurement

3.7.1 Limit of Frequency Stability

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

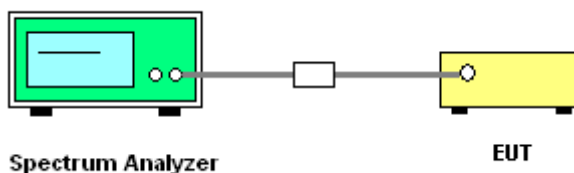
3.7.2 Measuring Instruments

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

3.7.3 Test Procedures

1. To ensure emission at the band edge is maintained within the authorized band, those values shall be measured by radiation emissions at upper and lower frequency points, and finally compensated by frequency deviation as procedures below.
2. The EUT was operated at the maximum output power, and connected to the spectrum analyzer, which is set to maximum hold function and peak detector. The peak value of the power envelope was measured and noted. The upper and lower frequency points were respectively measured relatively 10dB lower than the measured peak value.
3. The frequency deviation was calculated by adding the upper frequency point and the lower frequency point divided by two. Those detailed values of frequency deviation are provided in table below.

3.7.4 Test Setup



3.7.5 Test Result of Frequency Stability

Test Band :	5GHz band 1,2,3	Test Engineer :	Stuart Lin & Osolemio Chang
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Mod.	Data Rate	NTX	Channel	Freq. (MHz)	Center Frequency (MHz)	Frequency Deviation (MHz)	Frequency Stability (ppm)	Temperature (°C)	Voltage (V)
11a	6Mbps	1	36	5180	5180.000	0.000	0.00	20	3.50
11a	6Mbps	1	36	5180	5180.000	0.000	0.00	20	4.35
11a	6Mbps	1	36	5180	5180.025	0.025	4.83	20	4.00
11a	6Mbps	1	36	5180	5180.050	0.050	9.65	-10	4.00
11a	6Mbps	1	36	5180	5180.050	0.050	9.65	55	4.00

Mod.	Data Rate	NTX	Channel	Freq. (MHz)	Center Frequency (MHz)	Frequency Deviation (MHz)	Frequency Stability (ppm)	Temperature (°C)	Voltage (V)
11a	6Mbps	1	64	5320	5320.025	0.025	4.70	20	3.50
11a	6Mbps	1	64	5320	5320.025	0.025	4.70	20	4.35
11a	6Mbps	1	64	5320	5319.975	-0.025	-4.70	20	4.00
11a	6Mbps	1	64	5320	5320.075	0.075	14.10	-10	4.00
11a	6Mbps	1	64	5320	5320.050	0.050	9.40	55	4.00

Mod.	Data Rate	NTX	Channel	Freq. (MHz)	Center Frequency (MHz)	Frequency Deviation (MHz)	Frequency Stability (ppm)	Temperature (°C)	Voltage (V)
11a	6Mbps	1	100	5500	5500.000	0.000	0.00	20	3.50
11a	6Mbps	1	100	5500	5500.050	0.050	9.09	20	4.35
11a	6Mbps	1	100	5500	5500.000	0.000	0.00	20	4.00
11a	6Mbps	1	100	5500	5500.075	0.075	13.64	-10	4.00
11a	6Mbps	1	100	5500	5499.975	-0.025	-4.55	55	4.00

Note: Center Frequency = (Low Frequency + High Frequency) / 2.

3.8 Automatically Discontinue Transmission

3.8.1 Limit of Automatically Discontinue Transmission

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signaling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization to describe how this requirement is met.

3.8.2 Measuring Instruments

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

3.8.3 Test Result of Automatically Discontinue Transmission

While the EUT is not transmitting any information, the EUT can automatically discontinue transmission and become standby mode for power saving. The EUT can detect the controlling signal of ACK message transmitting from remote device and verify whether it shall resend or discontinue transmission.

3.9 Antenna Requirements

3.9.1 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.

3.9.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.9.3 Antenna Gain

The antenna gain is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.

4 List of Measuring Equipments

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	Rohde & Schwarz	FSP40	100055	9kHz~40GHz	Jun. 07, 2013	Mar. 23, 2014~ Mar. 25, 2014	Jun. 06, 2014	Conducted (TH02-HY)
Power Meter	Anritsu	ML2495A	1036004	300MHz~40GHz	Aug. 17, 2013	Mar. 23, 2014~ Mar. 25, 2014	Aug. 16, 2014	Conducted (TH02-HY)
Power Sensor	Anritsu	MA2411B	1027253	300MHz~40GHz	Aug. 17, 2013	Mar. 23, 2014~ Mar. 25, 2014	Aug. 16, 2014	Conducted (TH02-HY)
Thermal Chamber	Ten Billion	TTH-D3SP	TBN-930701	N/A	Jul. 19, 2013	Mar. 23, 2014~ Mar. 25, 2014	Jul. 18, 2014	Conducted (TH02-HY)
Spectrum Analyzer	R&S	FSP30	101067	9kHz ~ 30GHz	Nov. 20, 2013	Mar. 22, 2014~ May 21, 2014	Nov. 19, 2014	Radiation (03CH06-HY)
EMI Test Receiver	R&S	ESVS10	834468/0003	20MHz ~ 1000MHz	May 06, 2013	Mar. 22, 2014~ Mar. 28, 2014	May 05, 2014	Radiation (03CH06-HY)
EMI Test Receiver	R&S	ESVS10	834468/0003	20MHz ~ 1000MHz	May 06, 2014	May 21, 2014	May 05, 2015	Radiation (03CH06-HY)
Bilog Antenna	Schaffner	CBL6112B	2885	30MHz ~2GHz	Oct. 10, 2013	Mar. 22, 2014~ May 21, 2014	Oct. 09, 2014	Radiation (03CH06-HY)
Double Ridge Horn Antenna	EMCO	3117	00066583	1GHz ~ 18GHz	Aug. 02, 2013	Mar. 22, 2014~ May 21, 2014	Aug. 01, 2014	Radiation (03CH06-HY)
Amplifier	Agilent	310N	186713	9kHz ~ 1GHz	Apr. 12, 2013	Mar. 22, 2014~ Mar. 28, 2014	Apr. 11, 2014	Radiation (03CH06-HY)
Amplifier	SONOMA	310N	186713	9kHz ~ 1GHz	Apr. 16, 2014	May 21, 2014	Apr. 15, 2015	Radiation (03CH06-HY)
Pre Amplifier	EMCI	EMC051845	SN980048	1GHz ~ 18GHz	Jul. 18, 2013	Mar. 22, 2014~ May 21, 2014	Jul. 17, 2014	Radiation (03CH06-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	15GHz ~ 40GHz	Oct. 03, 2013	Mar. 22, 2014~ May 21, 2014	Oct. 02, 2014	Radiation (03CH06-HY)
Preamplifier	Agilent	8449B	3008A01917	1GHz ~ 26.5GHz	Feb. 10, 2014	Mar. 22, 2014~ May 21, 2014	Feb. 19, 2015	Radiation (03CH06-HY)
Turn Table	INN-CO	DS2000	420/650/00	0 - 360 degree	N/A	Mar. 22, 2014~ May 21, 2014	N/A	Radiation (03CH06-HY)
Antenna Mast	MF	MF-7802	MF780208212	1 m ~ 4 m	N/A	Mar. 22, 2014~ May 21, 2014	N/A	Radiation (03CH06-HY)
EMI Test Receiver	Rohde & Schwarz	ESCS 30	100356	9kHz ~ 2.75GHz	Nov. 12, 2013	Mar. 27, 2014 ~ May 19, 2014	Nov. 11, 2014	Conduction (CO05-HY)
Two-LISN (for auxiliary equipment)	Rohde & Schwarz	ENV216	100081	9kHz ~ 30MHz	Dec. 11, 2013	Mar. 27, 2014 ~ May 19, 2014	Dec. 10, 2014	Conduction (CO05-HY)
Two-LISN	Rohde & Schwarz	ENV216	100080	9kHz ~ 30MHz	Dec. 05, 2013	Mar. 27, 2014 ~ May 19, 2014	Dec. 04, 2014	Conduction (CO05-HY)
AC Power Source	APC	APC-1000W	N/A	N/A	N/A	Mar. 27, 2014 ~ May 19, 2014	N/A	Conduction (CO05-HY)



Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
EMI Test Receiver	Rohde & Schwarz	ESCI 7	100724	9kHz~7GHz	Sep. 06, 2013	May 21, 2014	Sep. 05, 2014	Radiation (03CH07-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	860004/0001	9 kHz~30 MHz	Jul. 03, 2012	May 21, 2014	Jul. 02, 2014	Radiation (03CH07-HY)
Bilog Antenna	Schaffner	CBL6111C	2726	30MHz ~ 1GHz	Oct. 10, 2013	May 21, 2014	Oct. 09, 2014	Radiation (03CH07-HY)
Preamplifier	COM-POWER	PA-103A	161241	10 MHz ~ 1000MHz 32dB GAIN	Mar. 17, 2014	May 21, 2014	Mar. 16, 2015	Radiation (03CH07-HY)
Turn Table	ChainTek	ChainTek 3000	N/A	0 ~ 360 degree	N/A	May 21, 2014	N/A	Radiation (03CH07-HY)
Antenna Mast	ChainTek	ChainTek 3000	N/A	N/A	N/A	May 21, 2014	N/A	Radiation (03CH07-HY)

5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.26
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Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

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