



FCC RF Test Report

APPLICANT : Motorola Solutions, Inc.
EQUIPMENT : Enterprise Tablet
BRAND NAME : Motorola
MODEL NAME : ET1N0
FCC ID : UZ7ET1N0
STANDARD : FCC Part 15 Subpart E
CLASSIFICATION : (NII) Unlicensed National Information Infrastructure TX

The product was received on Oct. 22, 2011 and completely tested on Nov. 22, 2011. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.4-2003 and shown compliance 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:

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.

SPORTON INTERNATIONAL INC.

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FCC ID : UZ7ET1N0

Page Number : 1 of 127

Report Issued Date : Nov. 25, 2011

Report Version : Rev. 01



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR1O2207C	Rev. 01	Initial issue of report	Nov. 25, 2011

**SUMMARY OF TEST RESULT**

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.403(i)	A9.2	26dB & 99% Bandwidth	-	Pass	-
3.2	15.407(a)	A9.2	Maximum Conducted Output Power	$\leq 17, 24, 30$ dBm (depend on band)	Pass	-
3.3	15.407(a)	A9.2	Power Spectral Density	$\leq 4, 11, 17$ dBm (depend on band)	Pass	-
3.4	15.207	Gen 7.2.4	AC Conducted Emission	15.207(a)	Pass	Under limit 12.90 dB at 0.414 MHz
3.5	15.407(b)	A9.3	Unwanted Emissions	$\leq -17, -27$ dBm (depend on band)&15.209(a)	Pass	Under limit 1.28 dB at 5725 MHz
3.6	15.407(b)	A9.3	Peak Excursion Ratio	≤ 13 dB	Pass	-
3.7	15.407(c)	A9.5	Automatically Discontinue Transmission	Discontinue Transmission	Pass	-
3.8	15.407(g)	A9.5	Frequency Stability	Within Operation Band	Pass	-
3.9	15.203 & 15.407(a)	A9.2	Antenna Requirement	N/A	Pass	-



1 General Description

1.1 Applicant

Motorola Solutions, Inc.
One Motorola Plaza, Holtsville, NY 11742-1300 USA

1.2 Manufacturer

Motorola Solutions, Inc.
One Motorola Plaza, Holtsville, NY 11742-1300 USA

1.3 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	Enterprise Tablet
Brand Name	Motorola
Model Name	ET1N0
FCC ID	UZ7ET1N0
Tx/Rx Frequency Range	5150 MHz ~ 5250 MHz 5250 MHz ~ 5350 MHz 5470 MHz ~ 5725 MHz
Maximum Output Power to Antenna	<5150 MHz ~ 5250 MHz> 802.11a : 13.59 dBm / 0.0229 W 802.11n (BW 20MHz) : 13.34 dBm / 0.0216 W <5250 MHz ~ 5350 MHz> 802.11a : 20.36 dBm / 0.1086 W 802.11n (BW 20MHz) : 20.31 dBm / 0.1074 W <5470 MHz ~ 5725 MHz> 802.11a : 20.25 dBm / 0.1059 W 802.11n (BW 20MHz) : 20.20 dBm / 0.1047 W
Antenna Type	<5150 MHz ~ 5250 MHz> PIFA Antenna with gain 2.02 dBi <5250 MHz ~ 5350 MHz> PIFA Antenna with gain 2.62 dBi <5470 MHz ~ 5725 MHz> PIFA Antenna with gain 2.51 dBi
HW Version	DV
SW Version	P0-271301-0532-0400-00-D1-091611
Type of Modulation	OFDM (BPSK / QPSK / 16QAM / 64QAM)
EUT Stage	Identical Prototype

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



1.4 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.
	CO05-HY	03CH07-HY	722060/4086B-1

1.5 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 v01
- ANSI C63.4-2003

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.

1.6 Ancillary Equipment List

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	WLAN AP	D-Link	DIR-628	KA2DIR628A2	N/A	Unshielded, 1.8 m
2.	Notebook	DELL	Vostro 1510	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
3.	Notebook	DELL	P20G	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
4.	LCD Monitor	Dell	U2410	FCC DoC	Shielded, 1.6 m	Unshielded, 1.8 m
5.	Bluetooth Earphone	Nokia	BH-102	PYAHS-107W	N/A	N/A
6.	iPod	Apple	A1285	FCC DoC	Shielded, 1.0 m	N/A
7.	Earpiece	Motorola	21-154925-01R	N/A	N/A	Unshielded, 1.3 m



2 Test Configuration of Equipment Under Test

2.1 Carrier Frequency Channel

802.11a Carrier Frequency Channel							
Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
36	5180	40	5200	44	5220	48	5240
52	5260	56	5280	60	5300	64	5320
100	5500	104	5520	108	5540	112	5560
116	5580	132	5660	136	5680	140	5700

802.11n (BW 20MHz) Carrier Frequency Channel							
Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
36	5180	40	5200	44	5220	48	5240
52	5260	56	5280	60	5300	64	5320
100	5500	104	5520	108	5540	112	5560
116	5580	132	5660	136	5680	140	5700

2.2 RF Power

Preliminary RF power output tests were performed in different data rate and recorded the in the following table:

Channel	Frequency	5GHz 802.11a RF Power (dBm)							
		Data Rate							
		6 Mbps	9 Mbps	12 Mbps	18 Mbps	24 Mbps	36 Mbps	48 Mbps	54 Mbps
CH 36	5180 MHz	13.23	13.15	13.12	13.11	12.90	13.17	13.07	13.08
CH 44	5220 MHz	13.42	13.39	13.20	13.38	13.10	13.24	13.15	13.11
CH 48	5240 MHz	13.59	13.45	13.40	13.45	13.29	13.41	13.34	13.33
CH 52	5260 MHz	20.15	20.10	20.10	20.13	20.04	19.96	19.98	19.91
CH 60	5300 MHz	20.36	20.33	20.29	20.34	20.30	20.21	20.18	20.20
CH 64	5320 MHz	18.54	18.48	18.36	18.46	18.35	18.44	18.31	18.31
CH 100	5500 MHz	17.38	17.30	17.16	17.26	17.16	17.18	17.22	17.01
CH 116	5580 MHz	20.25	20.16	20.22	20.23	20.11	20.09	20.12	20.05
CH 140	5700 MHz	15.91	15.82	15.80	15.73	15.66	15.58	15.56	15.53

Channel	Frequency	5GHz 802.11n (BW 20MHz) RF Power (dBm)							
		Data Rate							
		6.5 Mbps	13 Mbps	19.5 Mbps	26 Mbps	39 Mbps	52 Mbps	58.5 Mbps	65 Mbps
CH 36	5180 MHz	13.07	12.93	12.91	13.04	12.96	12.87	12.81	12.93
CH 44	5220 MHz	13.20	13.09	13.02	13.11	13.11	12.94	12.94	13.05
CH 48	5240 MHz	13.34	13.32	13.23	13.24	13.22	13.11	13.07	13.16
CH 52	5260 MHz	19.99	19.89	19.98	19.84	19.95	19.93	19.90	20.02
CH 60	5300 MHz	20.31	20.26	20.30	20.24	20.26	20.12	20.15	20.25
CH 64	5320 MHz	17.83	17.81	17.79	17.73	17.73	17.57	17.61	17.70
CH 100	5500 MHz	16.65	16.46	16.50	16.61	16.51	16.39	16.37	16.54
CH 116	5580 MHz	20.20	20.12	20.17	20.18	20.05	20.04	20.00	20.17
CH 140	5700 MHz	13.65	13.47	13.49	13.59	13.51	13.48	13.32	13.47

Remark:

1. The data rates of WLAN 802.11a/n were set in 6Mbps for 802.11a and 6.5Mbps for 802.11n (BW 20MHz) for all the test cases due to the highest RF output power.
2. The EUT is programmed to transmit signal continuously for all testing.



2.3 Test Mode

The EUT has been associated with peripherals pursuant to ANSI C63.4-2003 and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conduction (150 kHz to 30 MHz), radiation (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower).

Pre-scanned tests, X, Y, Z in three orthogonal panels, were conducted to determine the final configuration from all possible combinations, laptop / tablet modes.

The following tables are showing the test modes as the worst cases (H plane) and recorded in this report.

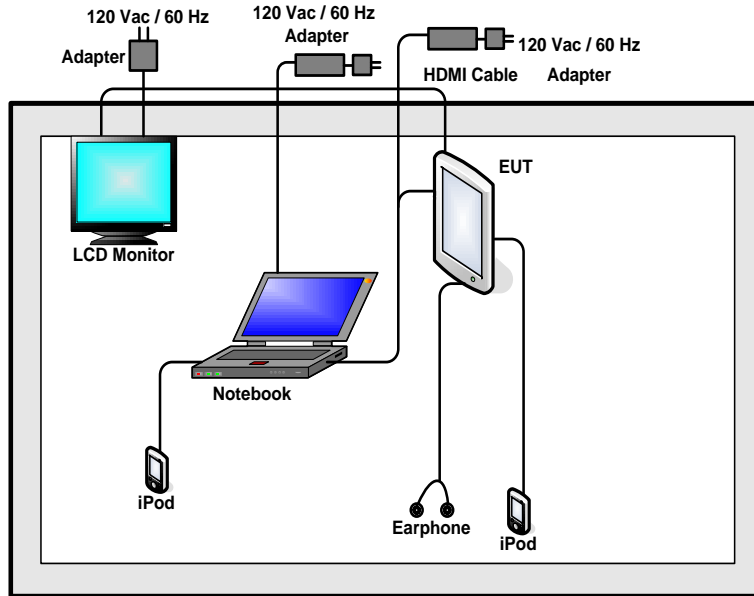
Test Cases	
Test Item	802.11a/n (Modulation : OFDM)
Conducted TCs	<ul style="list-style-type: none">■ Mode 1: 802.11a_CH36_5180 MHz■ Mode 2: 802.11a_CH44_5220 MHz■ Mode 3: 802.11a_CH48_5240 MHz■ Mode 4: 802.11a_CH52_5260 MHz■ Mode 5: 802.11a_CH60_5300 MHz■ Mode 6: 802.11a_CH64_5320 MHz■ Mode 7: 802.11a_CH100_5500 MHz■ Mode 8: 802.11a_CH116_5580 MHz■ Mode 9: 802.11a_CH140_5700 MHz■ Mode 10: 802.11a_CH36_5180 MHz (BW 20M)■ Mode 11: 802.11a_CH44_5220 MHz (BW 20M)■ Mode 12: 802.11a_CH48_5240 MHz (BW 20M)■ Mode 13: 802.11a_CH52_5260 MHz (BW 20M)■ Mode 14: 802.11a_CH60_5300 MHz (BW 20M)■ Mode 15: 802.11a_CH64_5320 MHz (BW 20M)■ Mode 16: 802.11a_CH100_5500 MHz (BW 20M)■ Mode 17: 802.11a_CH116_5580 MHz (BW 20M)■ Mode 18: 802.11a_CH140_5700 MHz (BW 20M)



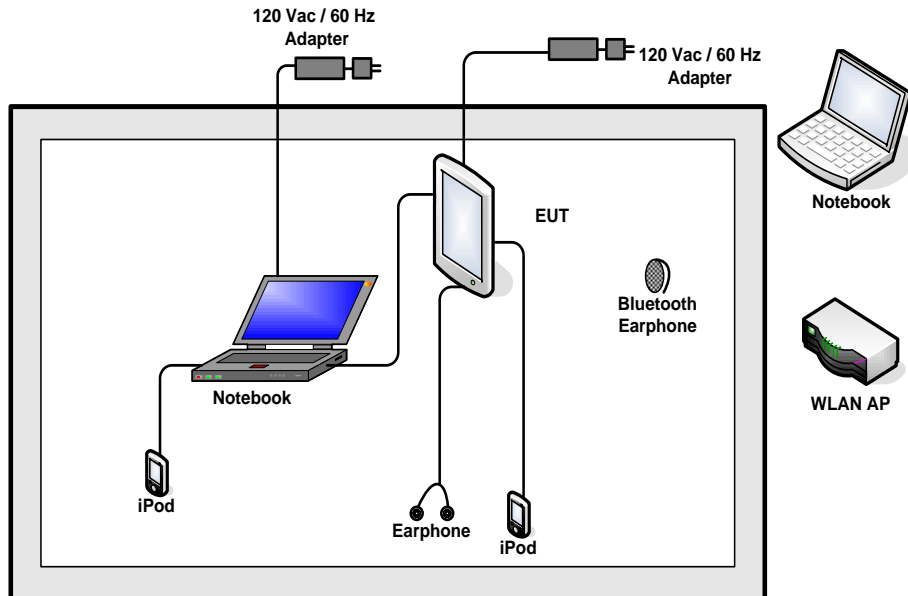
Test Cases	
Test Item	802.11a/n (Modulation : OFDM)
Radiated TCs	<ul style="list-style-type: none"> ■ Mode 1: 802.11a_CH36_5180 MHz ■ Mode 2: 802.11a_CH44_5220 MHz ■ Mode 3: 802.11a_CH48_5240 MHz ■ Mode 4: 802.11a_CH52_5260 MHz ■ Mode 5: 802.11a_CH60_5300 MHz ■ Mode 6: 802.11a_CH64_5320 MHz ■ Mode 7: 802.11a_CH100_5500 MHz ■ Mode 8: 802.11a_CH116_5580 MHz ■ Mode 9: 802.11a_CH140_5700 MHz ■ Mode 10: 802.11a_CH36_5180 MHz (BW 20M) ■ Mode 11: 802.11a_CH44_5220 MHz (BW 20M) ■ Mode 12: 802.11a_CH48_5240 MHz (BW 20M) ■ Mode 13: 802.11a_CH52_5260 MHz (BW 20M) ■ Mode 14: 802.11a_CH60_5300 MHz (BW 20M) ■ Mode 15: 802.11a_CH64_5320 MHz (BW 20M) ■ Mode 16: 802.11a_CH100_5500 MHz (BW 20M) ■ Mode 17: 802.11a_CH116_5580 MHz (BW 20M) ■ Mode 18: 802.11a_CH140_5700 MHz (BW 20M)
AC Conducted Emission	Mode 1 : Bluetooth Link + WLAN (5G) Link + USB Cable (Data Link with Notebook) + Earphone + Micro USB Connector with iPod + Adapter
<p>Remark:</p> <ol style="list-style-type: none"> 1. "Bluetooth Link" stands for terminal linked to headset by Bluetooth function. 2. "WLAN Link" stands for terminal associated with AP at 2.4GHz band. 3. Link with Notebook means data application transferred mode between DUT and Notebook. 	

2.4 Connection Diagram of Test System

<WLAN Tx Mode>



<AC Conducted Emission Mode>





2.5 RF Utility

The programmed RF Utility "RF_Regulator", is installed in EUT to provide channel selection, power level, data rate and the application type. RF Utility can send transmitting signal for all testing. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

3 Test Result

3.1 26dB & 99% Bandwidth Measurement

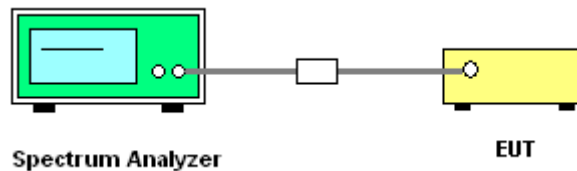
3.1.1 Measuring Instruments

See list of measuring instruments of this test report.

3.1.2 Test Procedures

1. The testing follows FCC KDB 789033 D01 General UNII Test Procedures v01.
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%.

3.1.3 Test Setup



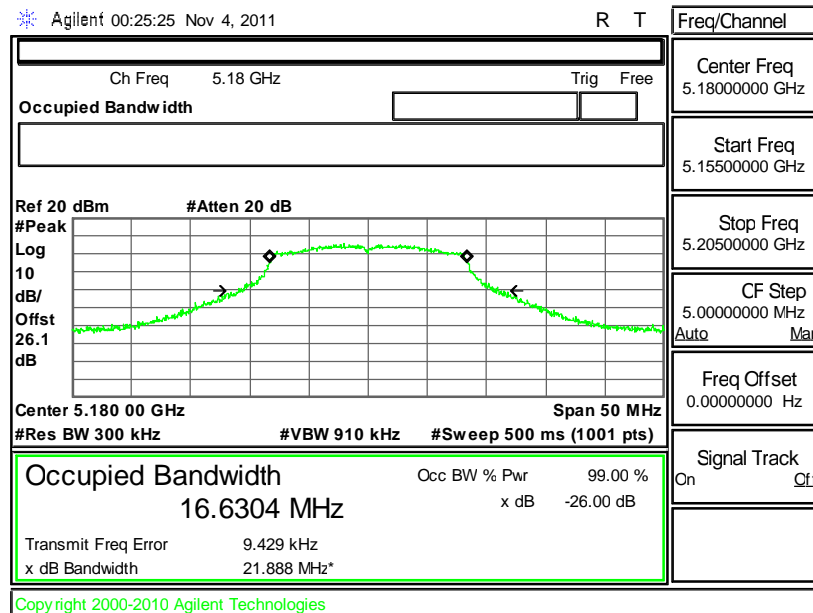


3.1.4 Test Result of 26dB & 99% Bandwidth Plots

Test Mode :	Mode 1~9	Temperature :	24~26°C
Test Engineer :	Alan Liu	Relative Humidity :	45~49%

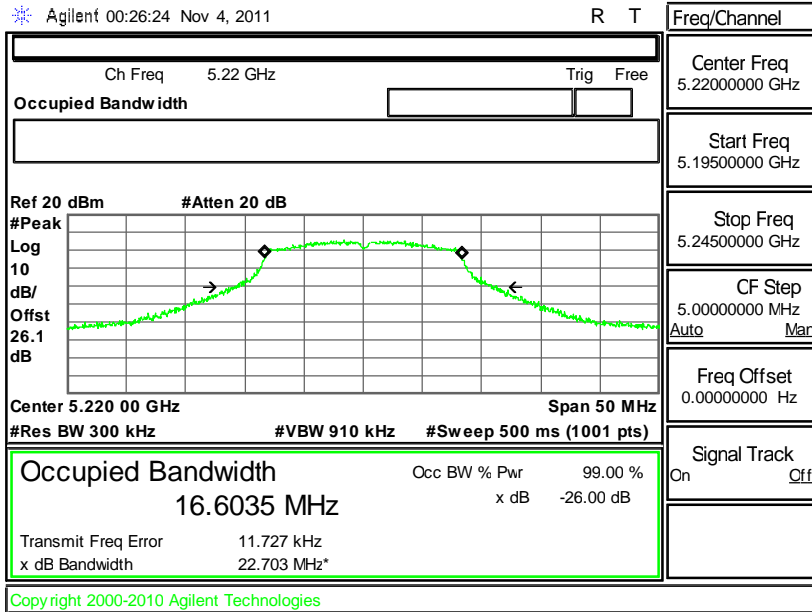
Channel	Frequency (MHz)	802.11a 26dB Bandwidth (MHz)	Pass/Fail
36	5180	21.888	N/A
44	5220	22.703	N/A
48	5240	22.655	N/A
52	5260	27.769	N/A
60	5300	32.808	N/A
64	5320	24.843	N/A
100	5500	22.742	N/A
116	5580	28.132	N/A
140	5700	22.876	N/A

26 dB Bandwidth Plot on 802.11a Channel 36

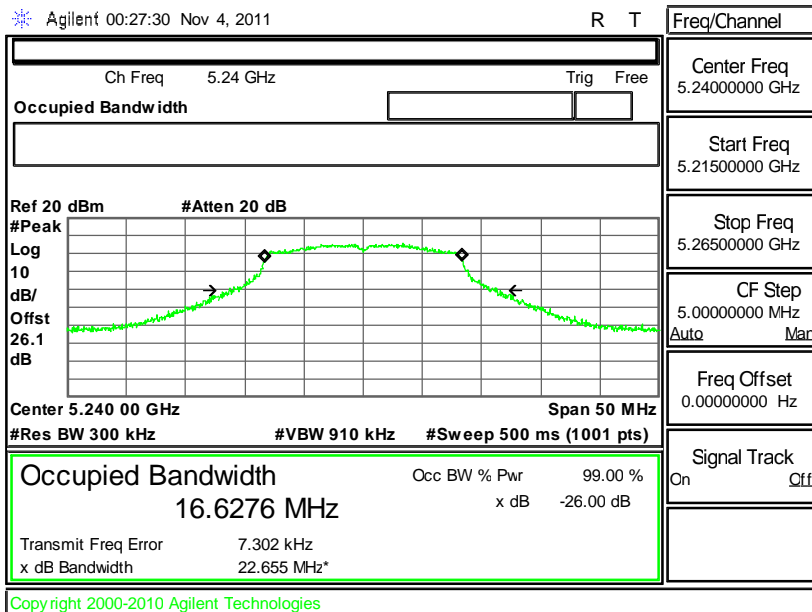




26 dB Bandwidth Plot on 802.11a Channel 44

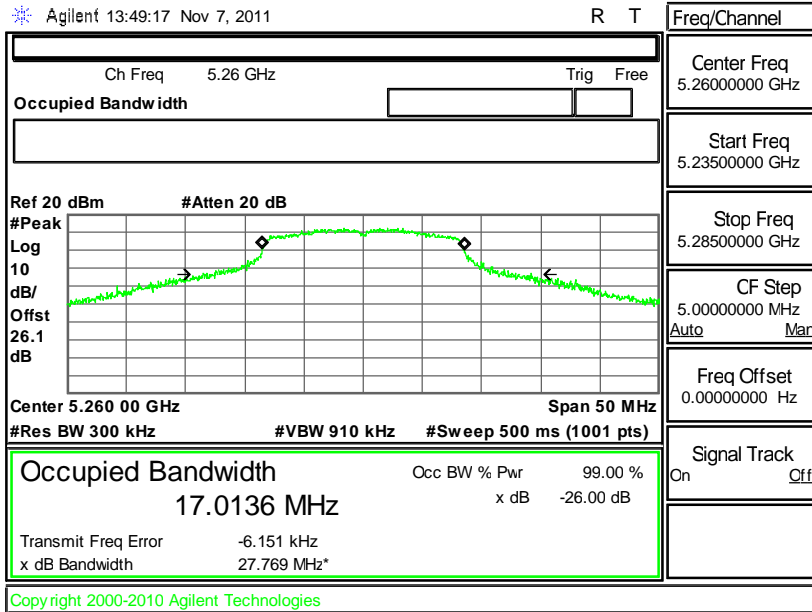


26 dB Bandwidth Plot on 802.11a Channel 48

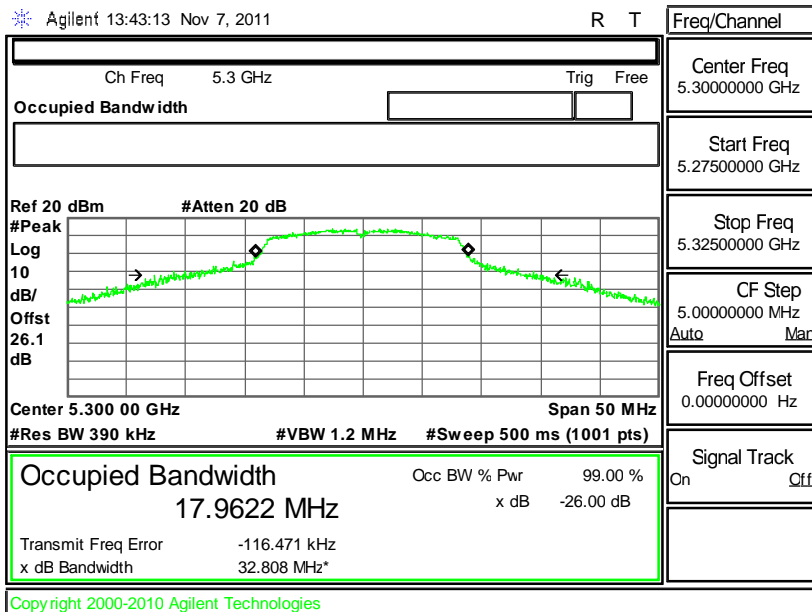




26 dB Bandwidth Plot on 802.11a Channel 52

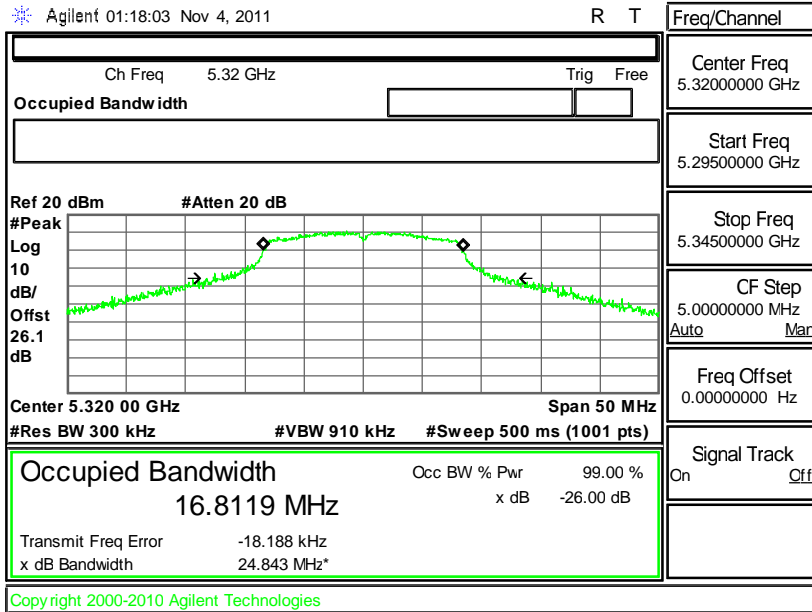


26 dB Bandwidth Plot on 802.11a Channel 60

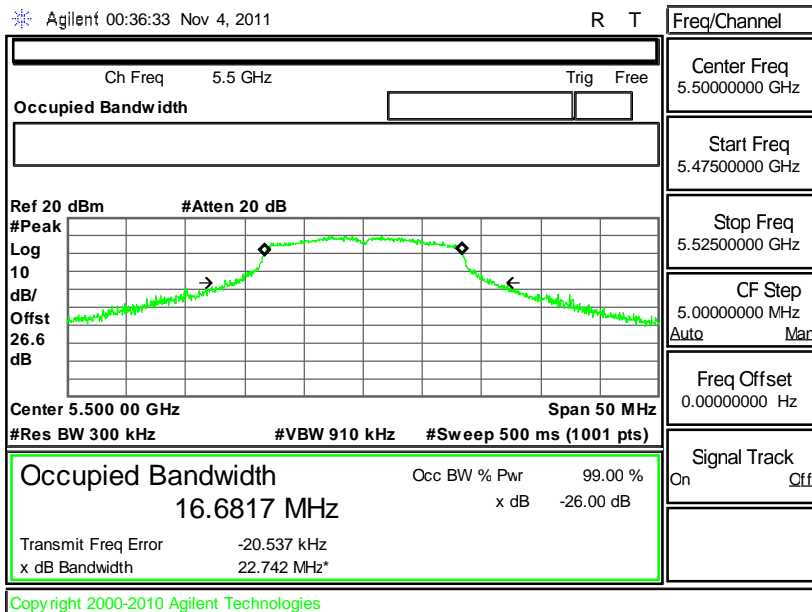




26 dB Bandwidth Plot on 802.11a Channel 64

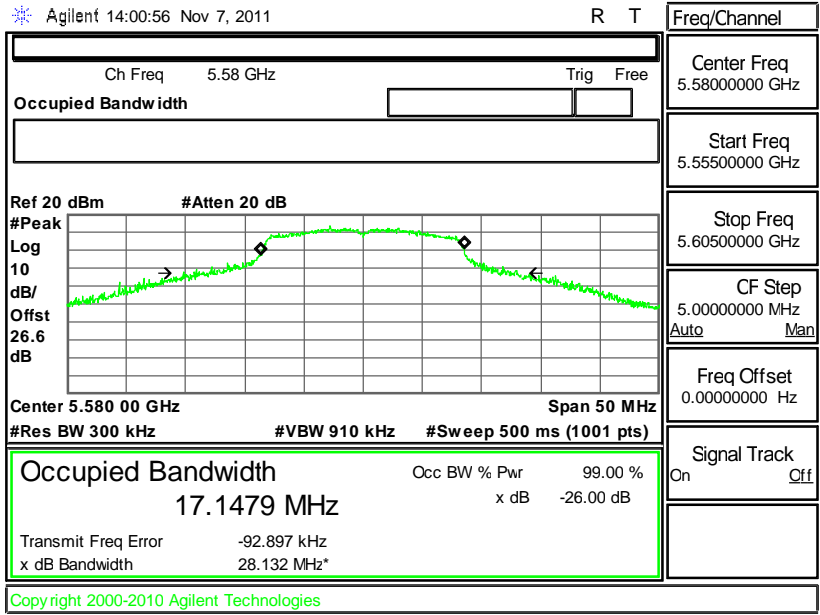


26 dB Bandwidth Plot on 802.11a Channel 100

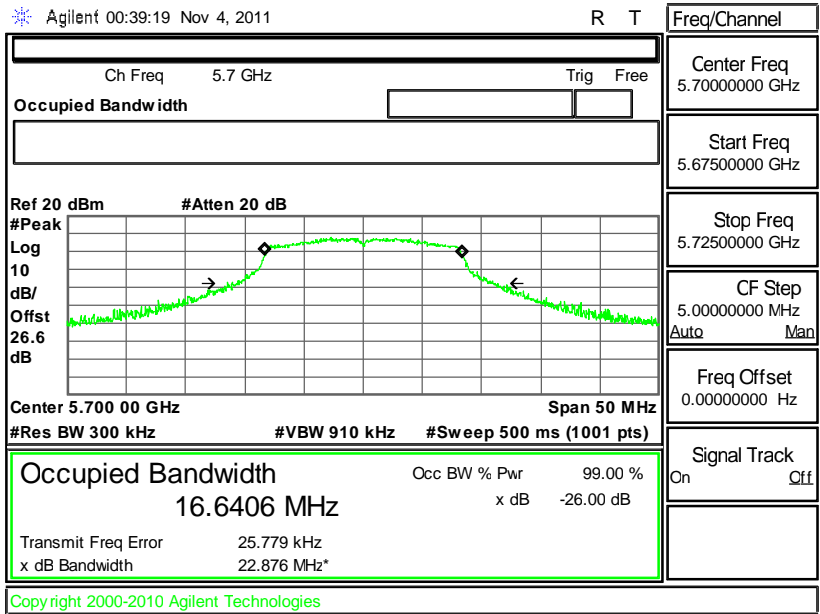




26 dB Bandwidth Plot on 802.11a Channel 116



26 dB Bandwidth Plot on 802.11a Channel 140

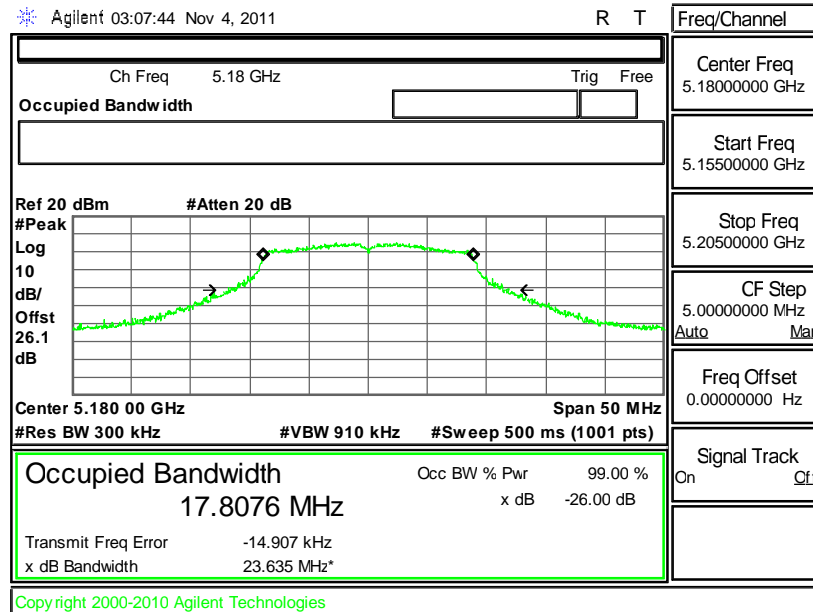




Test Mode :	Mode 10~18	Temperature :	24~26°C
Test Engineer :	Alan Liu	Relative Humidity :	45~49%

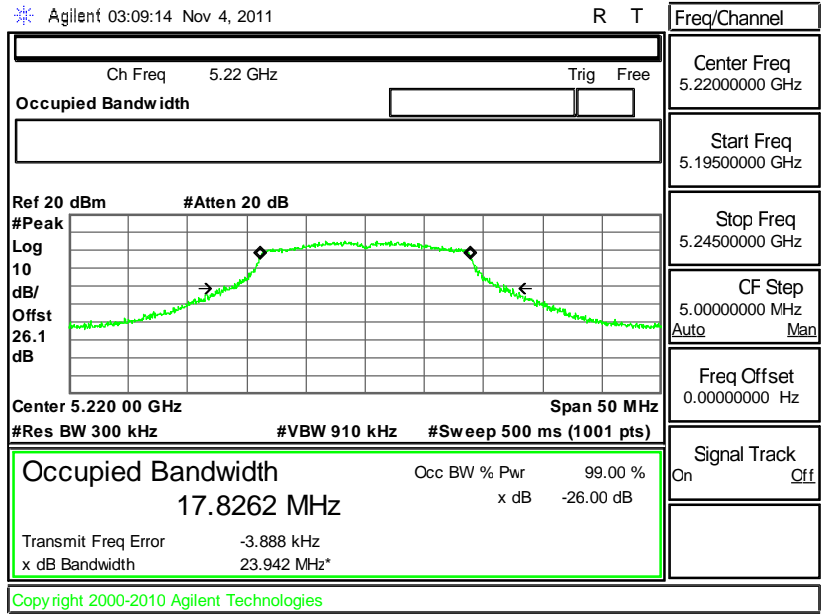
Channel	Frequency (MHz)	802.11n (BW 20MHz) 26dB Bandwidth (MHz)	Pass/Fail
36	5180	23.635	N/A
44	5220	23.942	N/A
48	5240	23.458	N/A
52	5260	28.550	N/A
60	5300	32.623	N/A
64	5320	27.170	N/A
100	5500	23.498	N/A
116	5580	31.469	N/A
140	5700	24.108	N/A

26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 36

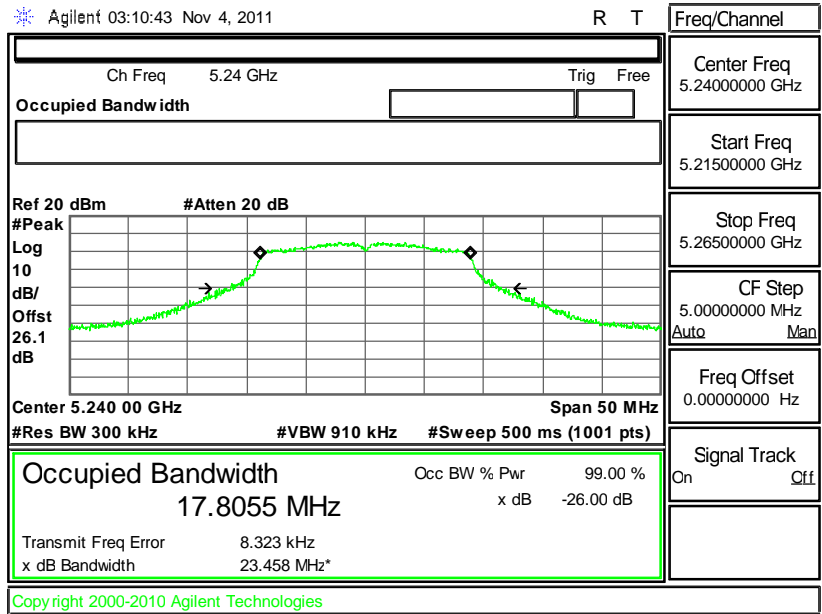




26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 44

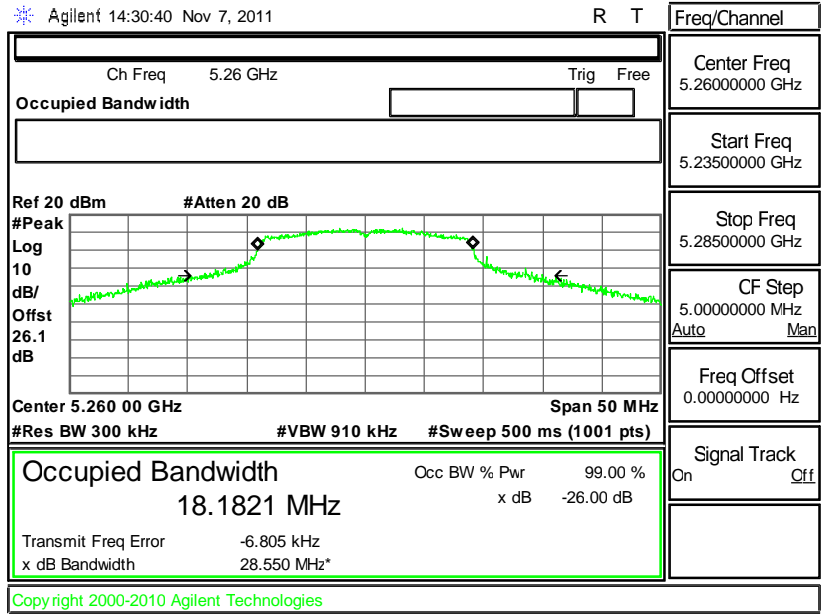


26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 48

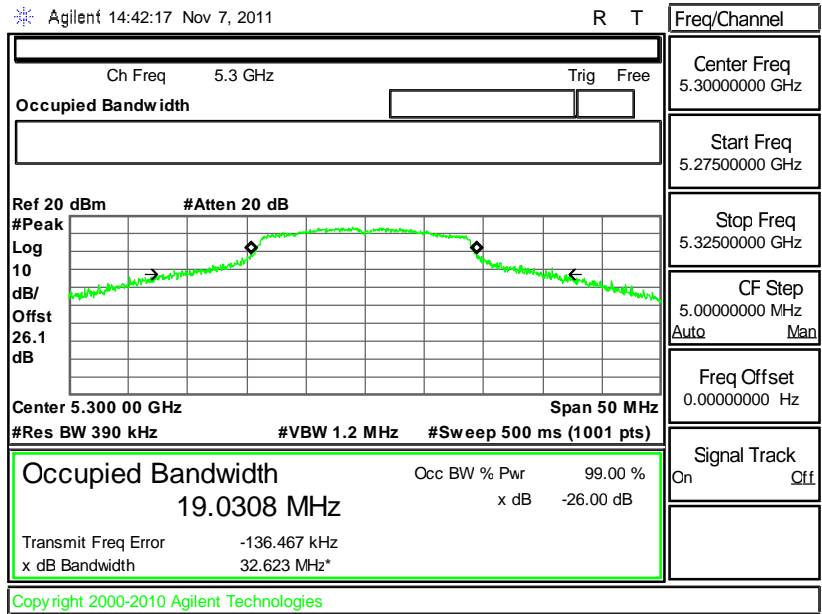




26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 52

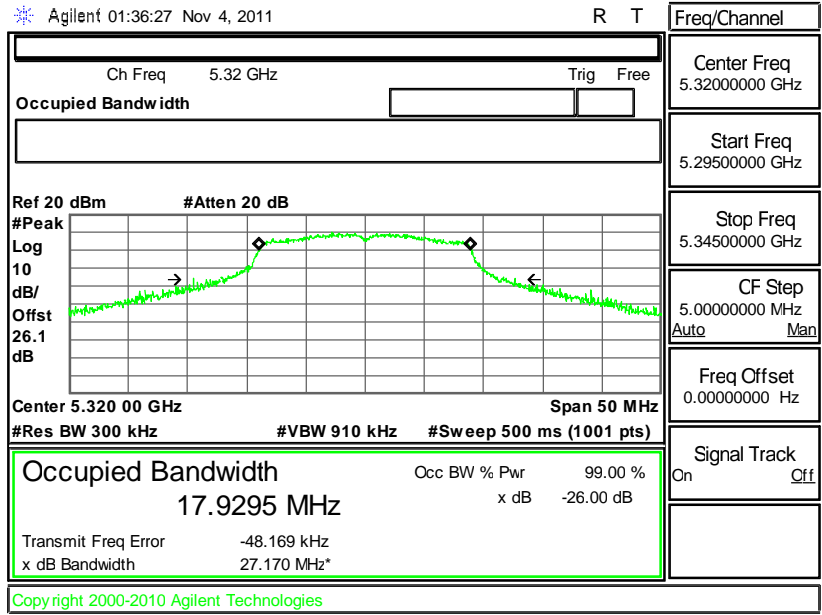


26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 60

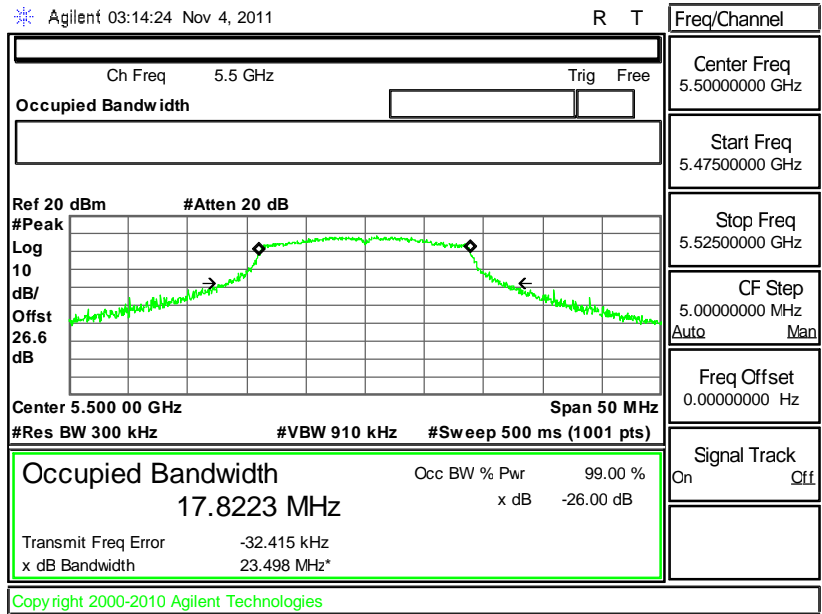




26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 64

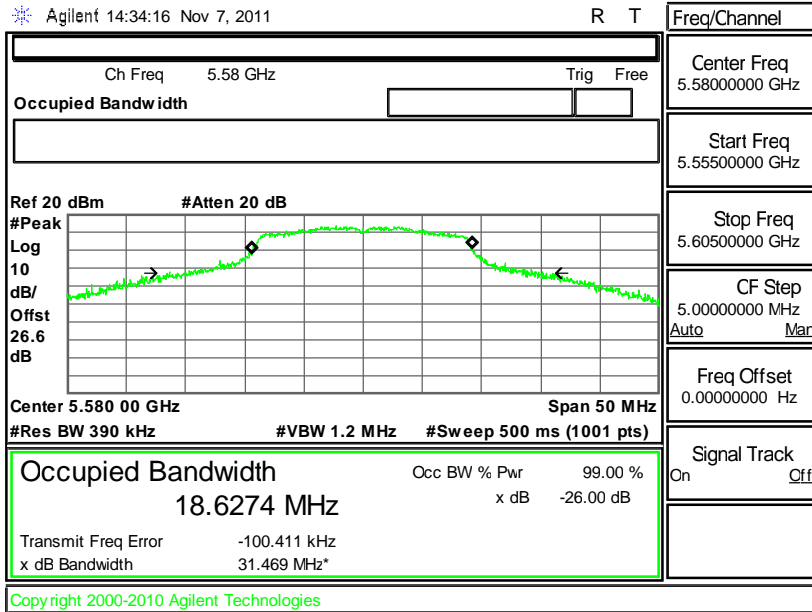


26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 100

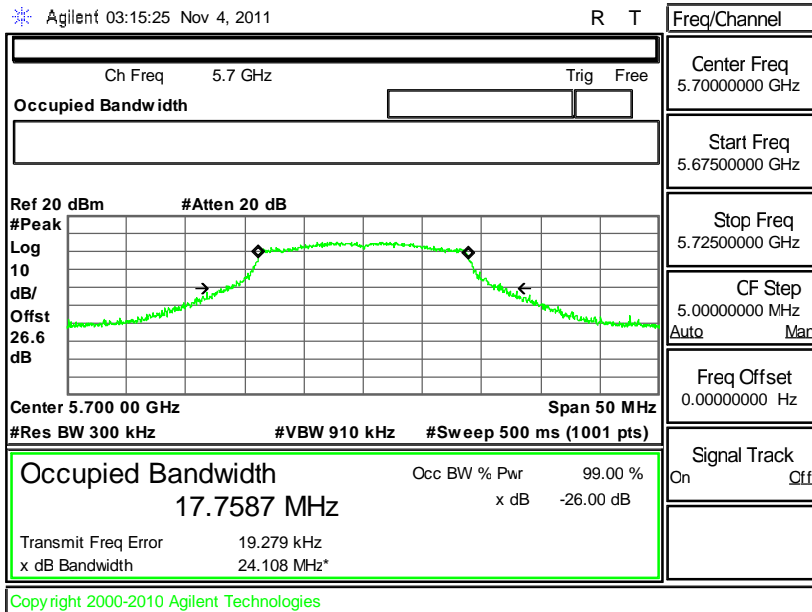




26 dB Bandwidth Plot on 802.11a Channel 116



26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 140



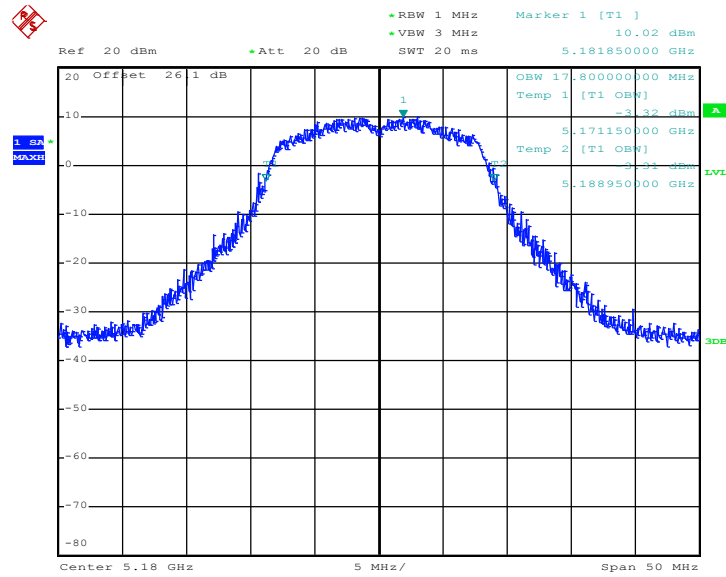


3.1.5 Test Result of 99% Bandwidth Plots

Test Mode :	Mode 1~9	Temperature :	24~26°C
Test Engineer :	Alan Liu	Relative Humidity :	45~49%

Channel	Frequency (MHz)	802.11a 99% Bandwidth (MHz)	Pass/Fail
36	5180	17.800	N/A
44	5220	17.700	N/A
48	5240	17.700	N/A
52	5260	18.350	N/A
60	5300	18.850	N/A
64	5320	18.050	N/A
100	5500	17.850	N/A
116	5580	18.650	N/A
140	5700	17.750	N/A

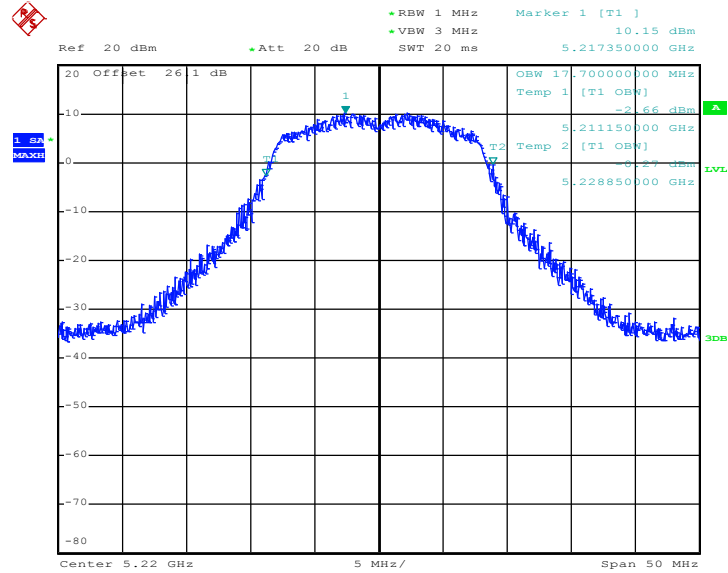
99% Bandwidth Plot on 802.11a Channel 36



Date: 8.NOV.2011 02:52:47

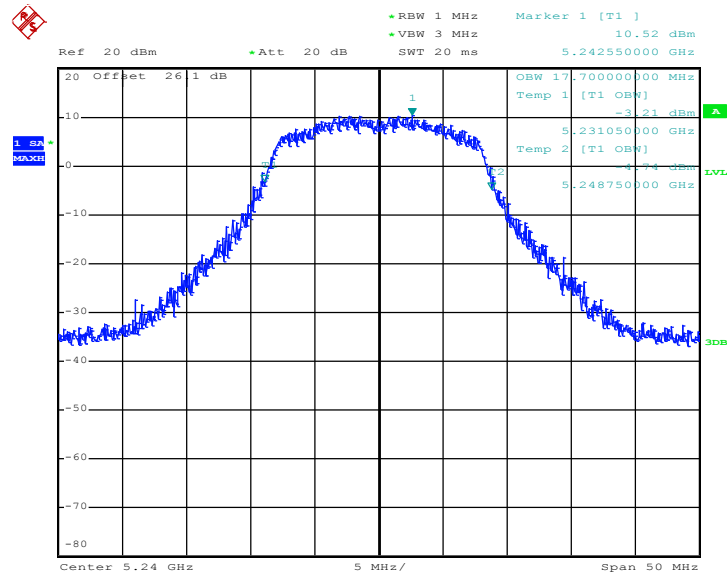


99% Bandwidth Plot on 802.11a Channel 44



Date: 8.NOV.2011 02:53:30

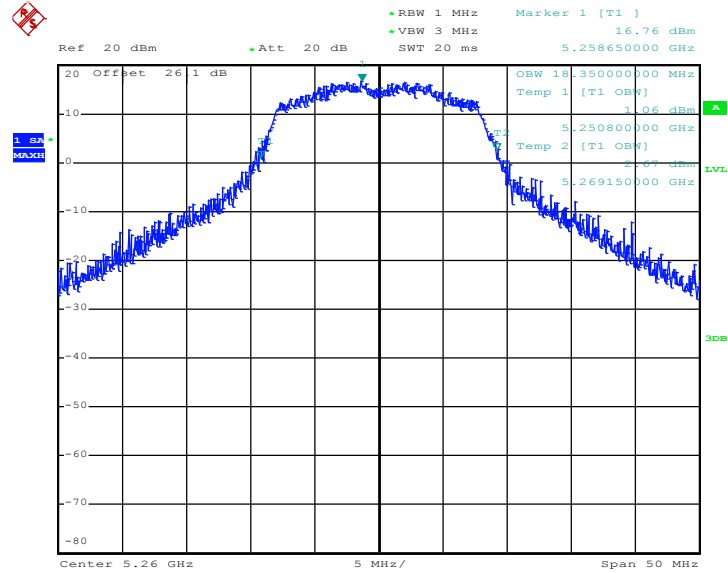
99% Bandwidth Plot on 802.11a Channel 48



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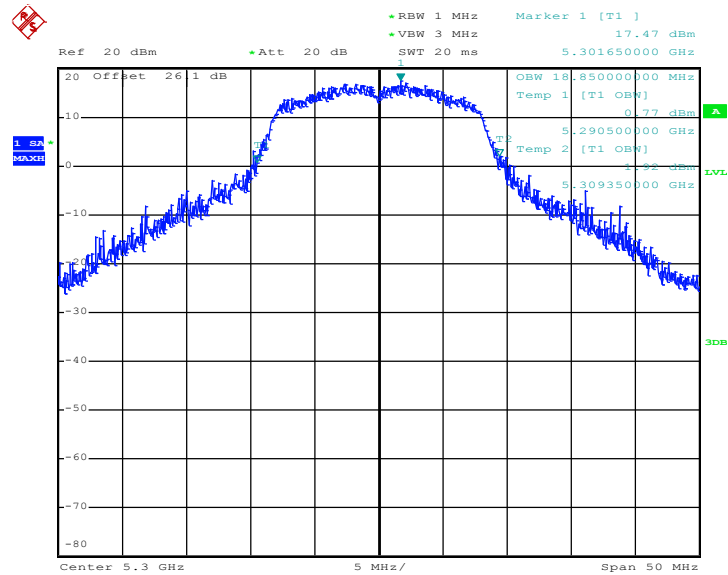


99% Bandwidth Plot on 802.11a Channel 52



Date: 8.NOV.2011 02:55:08

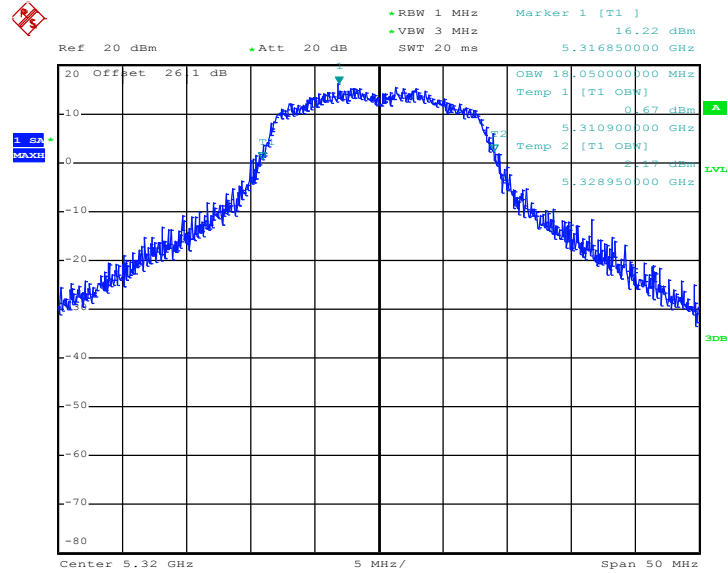
99% Bandwidth Plot on 802.11a Channel 60



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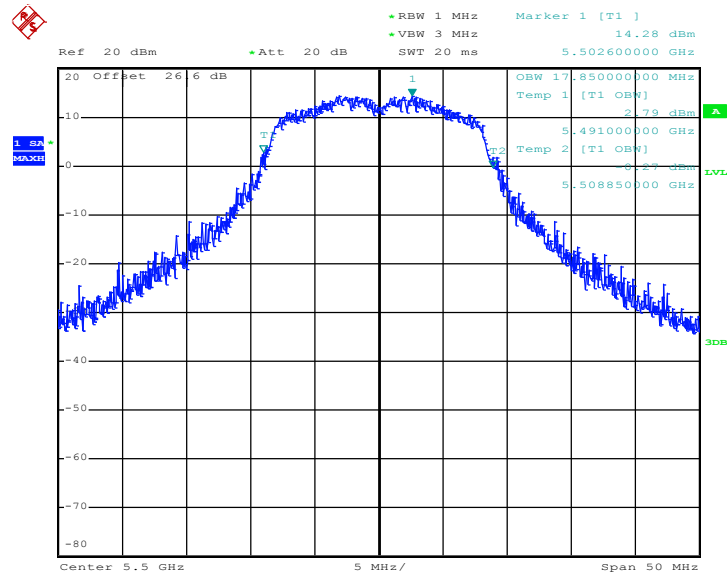


99% Bandwidth Plot on 802.11a Channel 64



Date: 8.NOV.2011 02:58:25

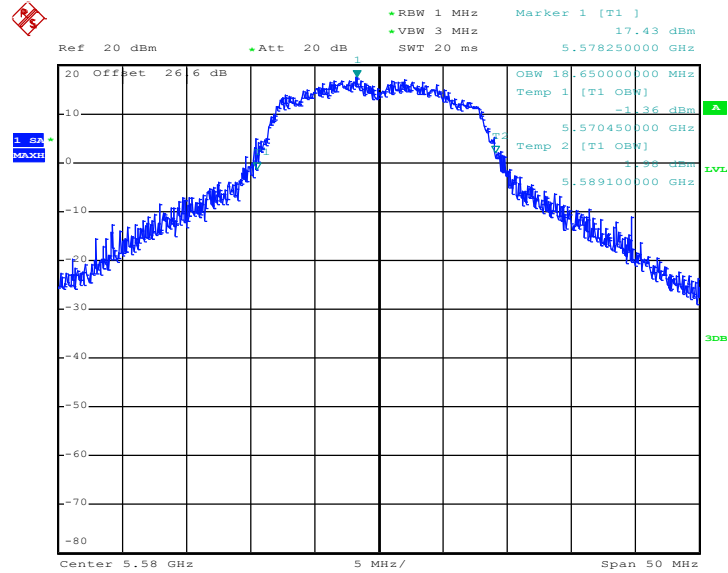
99% Bandwidth Plot on 802.11a Channel 100



Date: 8.NOV.2011 03:00:36

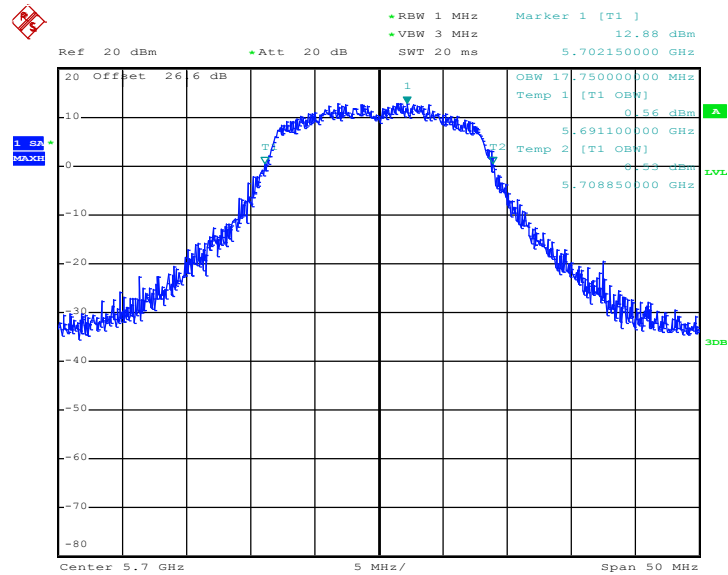


99% Bandwidth Plot on 802.11a Channel 116



Date: 8.NOV.2011 03:01:21

99% Bandwidth Plot on 802.11a Channel 140



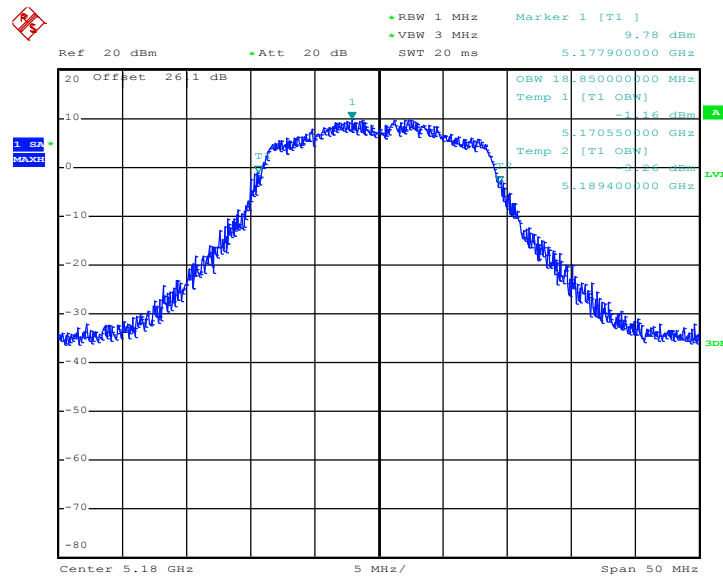
Date: 8.NOV.2011 03:03:58



Test Mode :	Mode 10~18	Temperature :	24~26°C
Test Engineer :	Alan Liu	Relative Humidity :	45~49%

Channel	Frequency (MHz)	802.11n (BW 20MHz) 99% Bandwidth (MHz)	Pass/Fail
36	5180	18.850	N/A
44	5220	18.850	N/A
48	5240	18.900	N/A
52	5260	19.300	N/A
60	5300	19.750	N/A
64	5320	19.050	N/A
100	5500	18.900	N/A
116	5580	19.650	N/A
140	5700	18.850	N/A

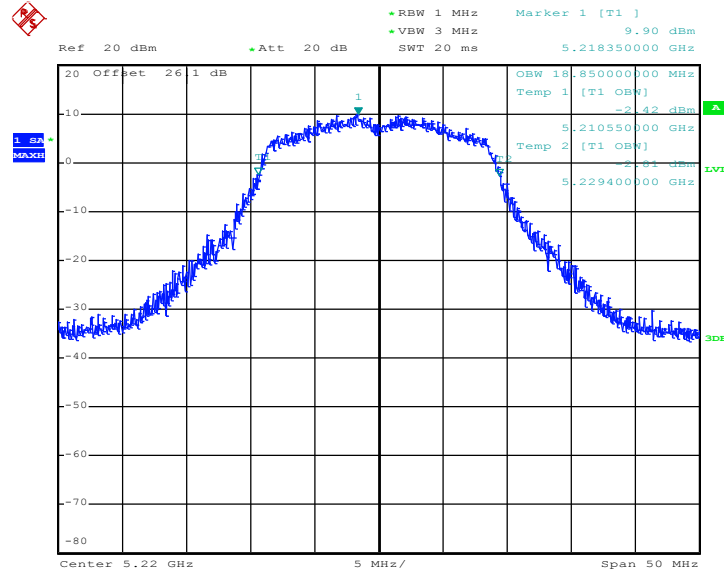
99% Bandwidth Plot on 802.11n (BW 20MHz) Channel 36



Date: 8.NOV.2011 02:35:24

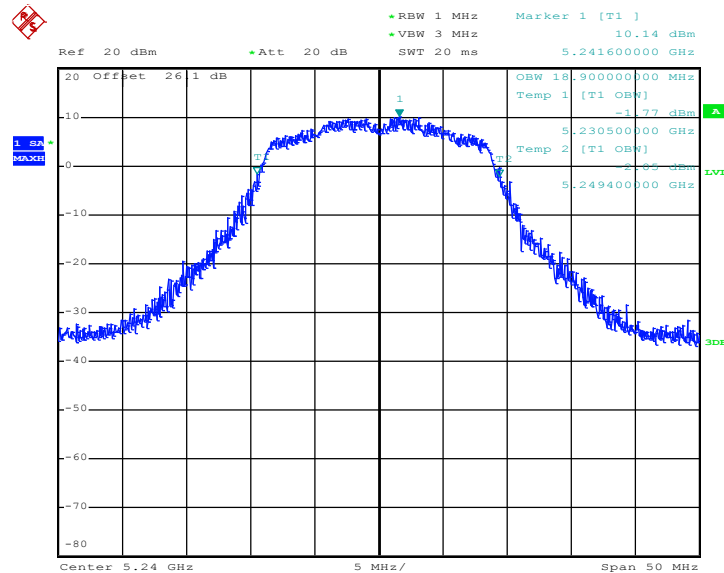


99% Bandwidth Plot on 802.11n (BW 20MHz) Channel 44



Date: 8.NOV.2011 02:36:04

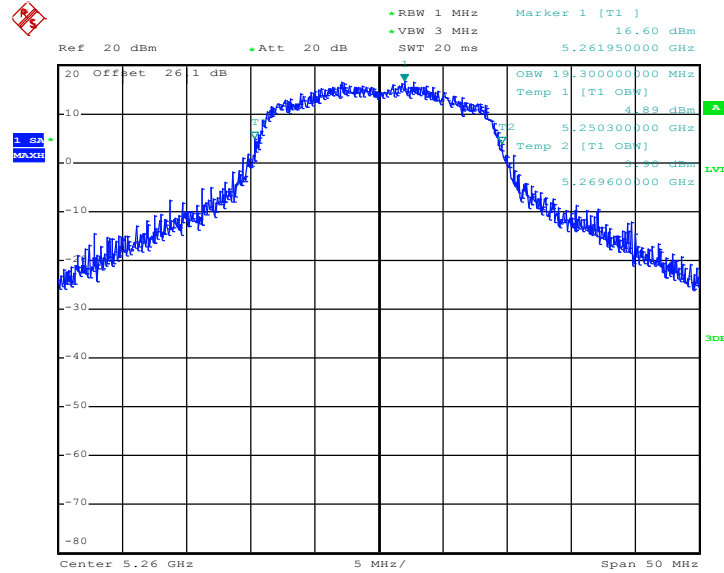
99% Bandwidth Plot on 802.11n (BW 20MHz) Channel 48



Date: 8.NOV.2011 02:36:45

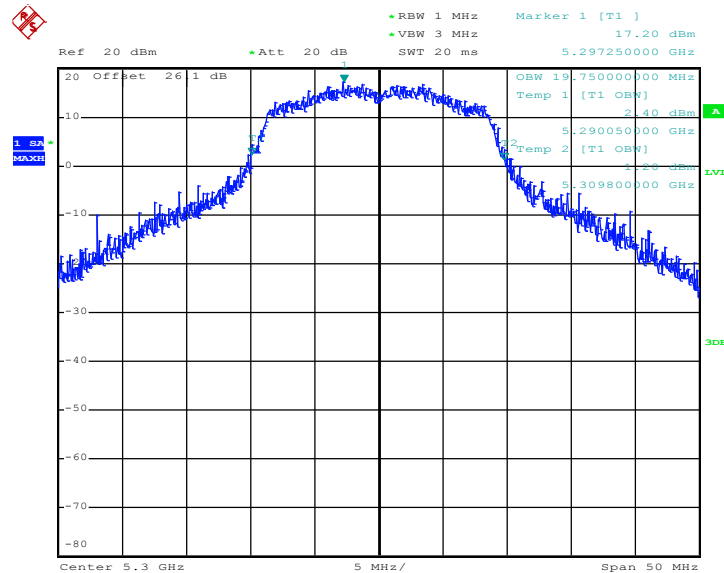


99% Bandwidth Plot on 802.11n (BW 20MHz) Channel 52



Date: 8.NOV.2011 02:37:46

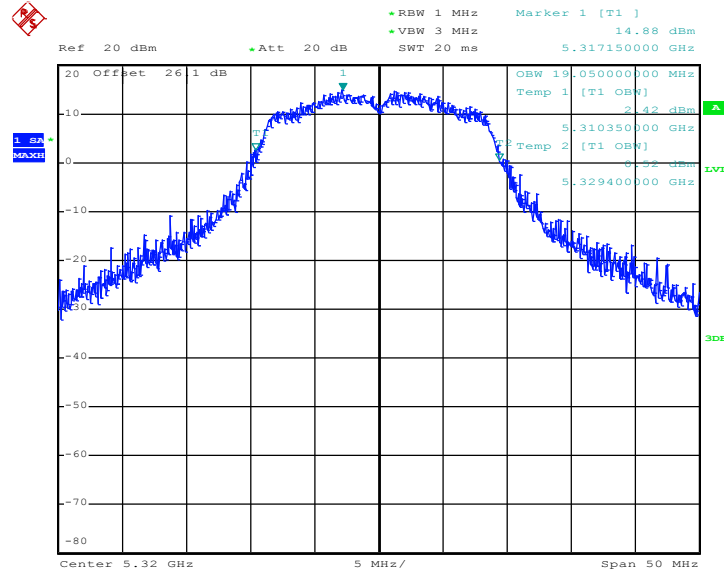
99% Bandwidth Plot on 802.11n (BW 20MHz) Channel 60



Date: 8.NOV.2011 02:38:39

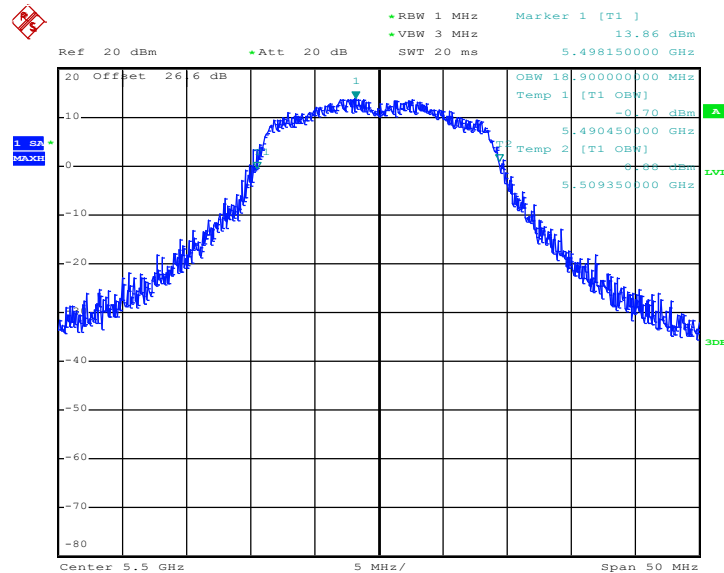


99% Bandwidth Plot on 802.11n (BW 20MHz) Channel 64



Date: 8.NOV.2011 02:42:58

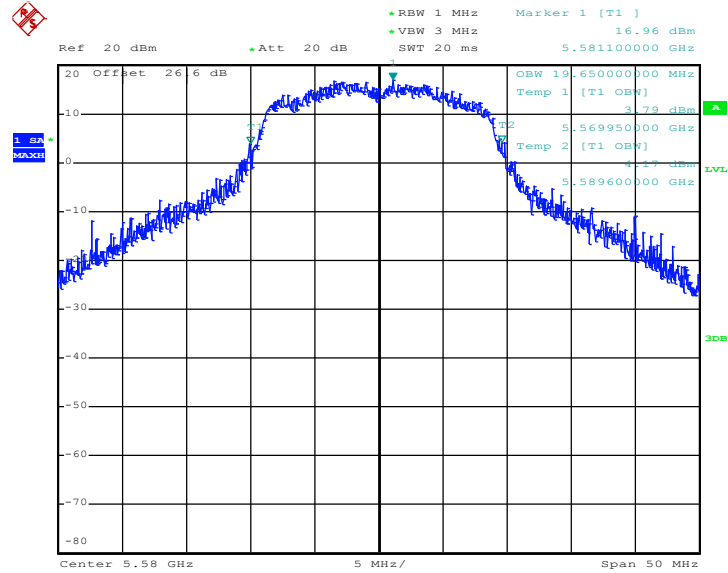
99% Bandwidth Plot on 802.11n (BW 20MHz) Channel 100



Date: 8.NOV.2011 02:45:43

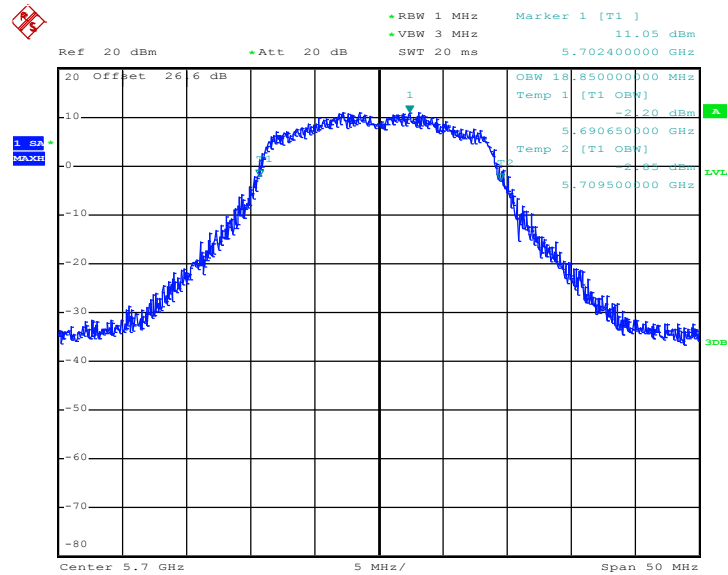


99% Bandwidth Plot on 802.11a Channel 116



Date: 8.NOV.2011 02:46:31

99% Bandwidth Plot on 802.11n (BW 20MHz) Channel 140



Date: 8.NOV.2011 02:49:24



3.2 Maximum Conducted Output Power Measurement

3.2.1 Limit of Maximum Conducted Output Power

For the band 5.15~5.25 GHz, 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 MHz. If transmitting antenna directional gain is greater than 6 dBi, the peak output power and power density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power shall not exceed the lesser of 250 mW (24dBm) or $11 \text{ dBm} + 10\log B$. If transmitting antenna directional gain is greater than 6 dBi, the peak output power and power density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.2.2 Measuring Instruments

See list of measuring instruments of this test report.

3.2.3 Test Procedures

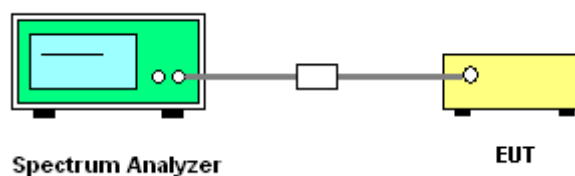
The duty cycle of WLAN 802.11a/n were 100 % for 802.11a and 100 % for 802.11n (BW 20MHz).

1. The testing follows Method SA-1 of FCC KDB 789033 D01 General UNII Test Procedures v01.
 - 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 = Sample
 - Trace average at least 100 traces in power averaging mode.
 - Compute power by integrating the spectrum across the 26 dB EBW of the signal using the spectrum analyzer's band power measurement function with band limits set equal to the EBW band edges. If the spectrum analyzer does not have a band power function, sum the spectrum levels at 1 MHz intervals extending across the 26 dB EBW of the spectrum.
2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable, as below example,

For 802.11a Channel 36, the final power in test report is 10.41 dBm which is the reading of spectrum analyzer with offset cable loss (0.5 dB), and attenuator loss (25.6 dB).

3. Measure the power and record it.

3.2.4 Test Setup





3.2.5 Test Result of Maximum Conducted Output Power

Test Mode :	Mode 1~9	Temperature :	24~26°C
Test Engineer :	Alan Liu	Relative Humidity :	45~49%

Channel	Frequency (MHz)	Measured Power Output (dBm)	Max. Limits (dBm)	Pass/Fail
36	5180	13.23	17.00	Pass
44	5220	13.42	17.00	Pass
48	5240	13.59	17.00	Pass
52	5260	20.15	24.00	Pass
60	5300	20.36	24.00	Pass
64	5320	18.54	24.00	Pass
100	5500	17.38	24.00	Pass
116	5580	20.25	24.00	Pass
140	5700	15.91	24.00	Pass

Note:

1. For the band 5.15~5.25 GHz, the maximum conducted output power shall not exceed the lesser of 50 mW (17dBm) or 4 dBm + 10log (26dB BW)
2. For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power shall not exceed the lesser of 250 mW (24dBm) or 11 dBm + 10log (26dB BW)



Test Mode :	Mode 10~18	Temperature :	24~26°C
Test Engineer :	Alan Liu	Relative Humidity :	45~49%

Channel	Frequency (MHz)	Measured Power Output (dBm)	Max. Limits (dBm)	Pass/Fail
36	5180	13.07	17.00	Pass
44	5220	13.20	17.00	Pass
48	5240	13.34	17.00	Pass
52	5260	19.99	24.00	Pass
60	5300	20.31	24.00	Pass
64	5320	17.83	24.00	Pass
100	5500	16.65	24.00	Pass
116	5580	20.20	24.00	Pass
140	5700	13.65	24.00	Pass

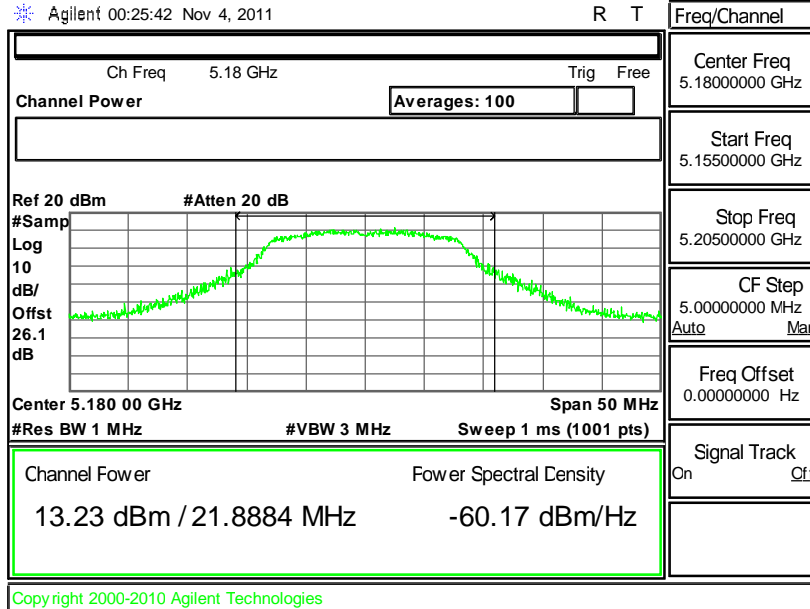
Note:

1. For the band 5.15~5.25 GHz, the maximum conducted output power shall not exceed the lesser of 50 mW (17dBm) or 4 dBm + 10log (26dB BW)
2. For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power shall not exceed the lesser of 250 mW (24dBm) or 11 dBm + 10log (26dB BW)

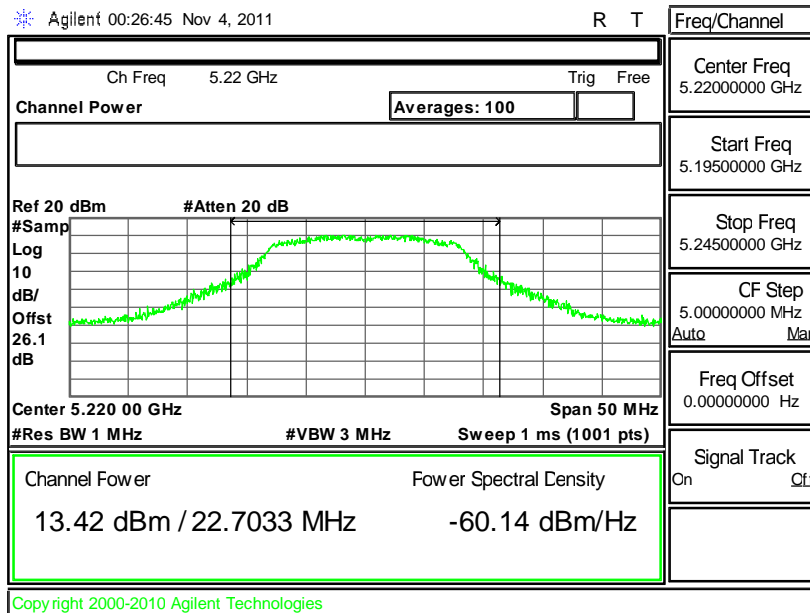


3.2.6 Test Result of Power Output Plots

Output Power Plot on 802.11a Channel 36

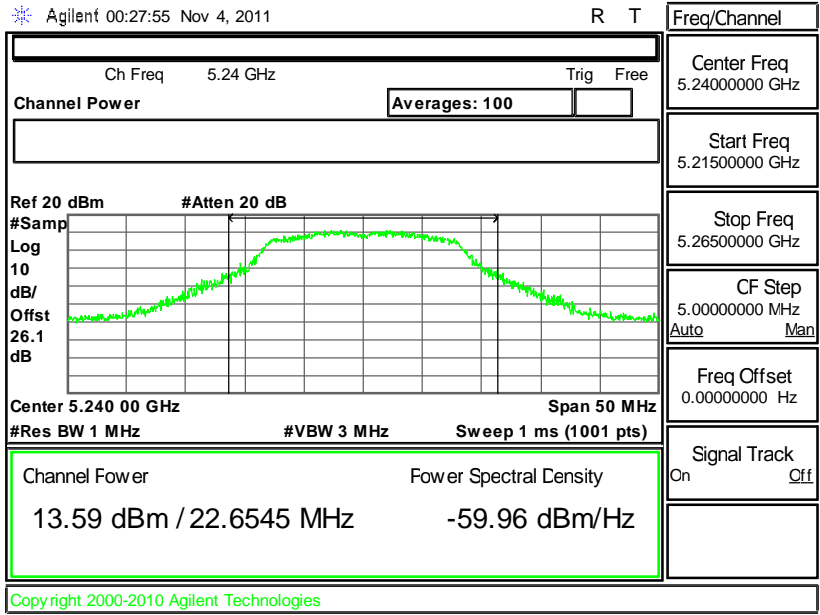


Output Power Plot on 802.11a Channel 44

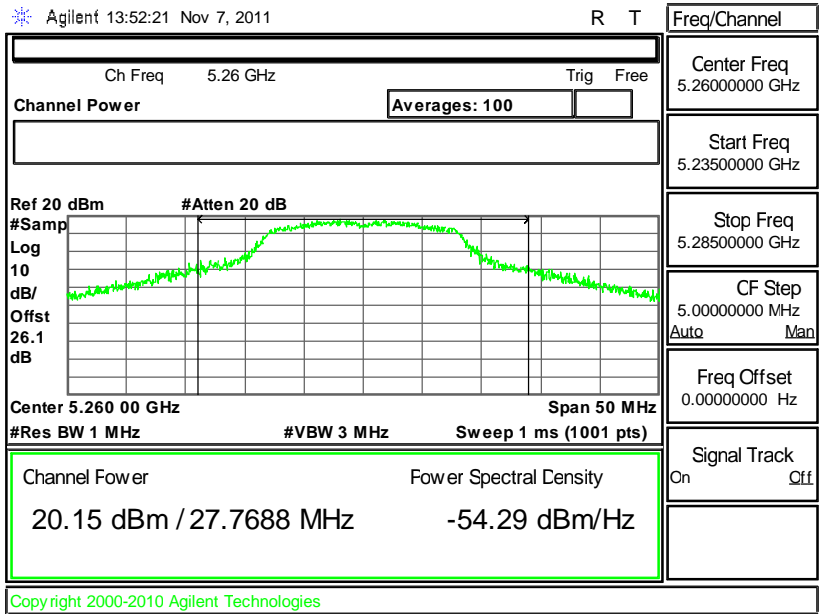




Output Power Plot on 802.11a Channel 48

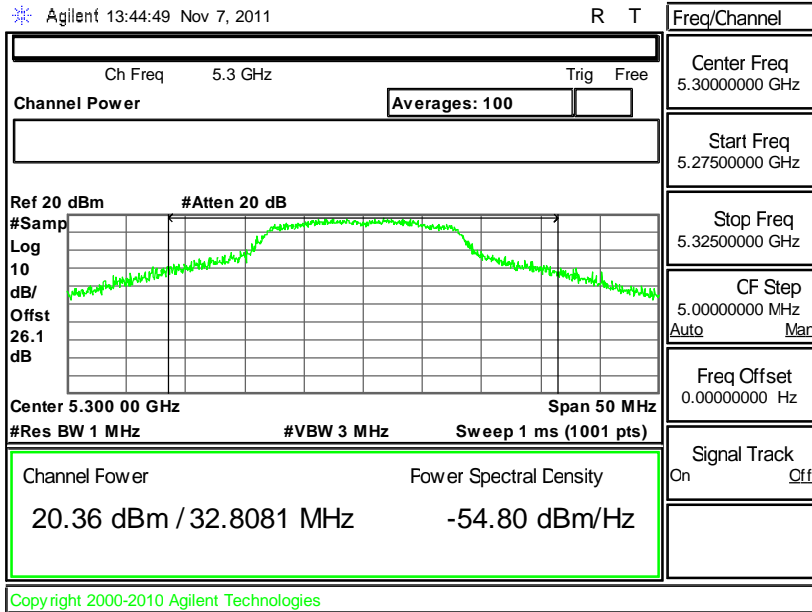


Output Power Plot on 802.11a Channel 52

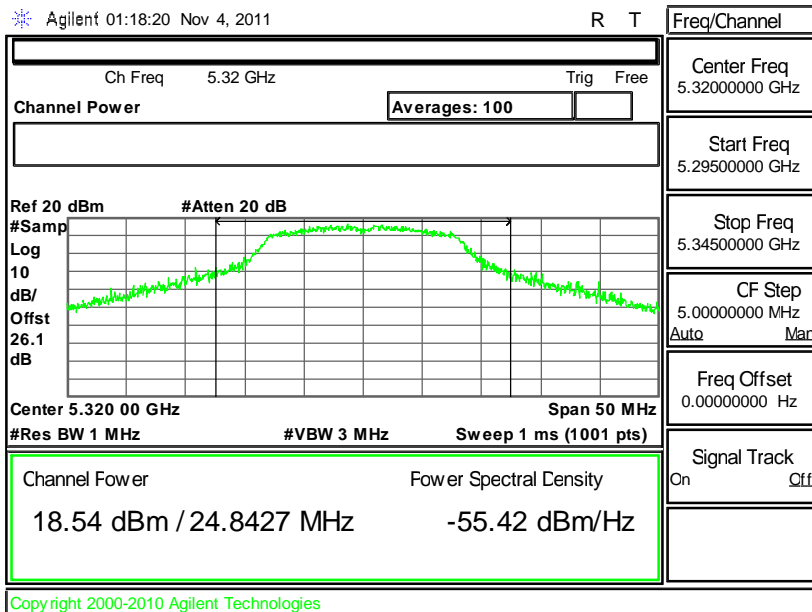




Output Power Plot on 802.11a Channel 60

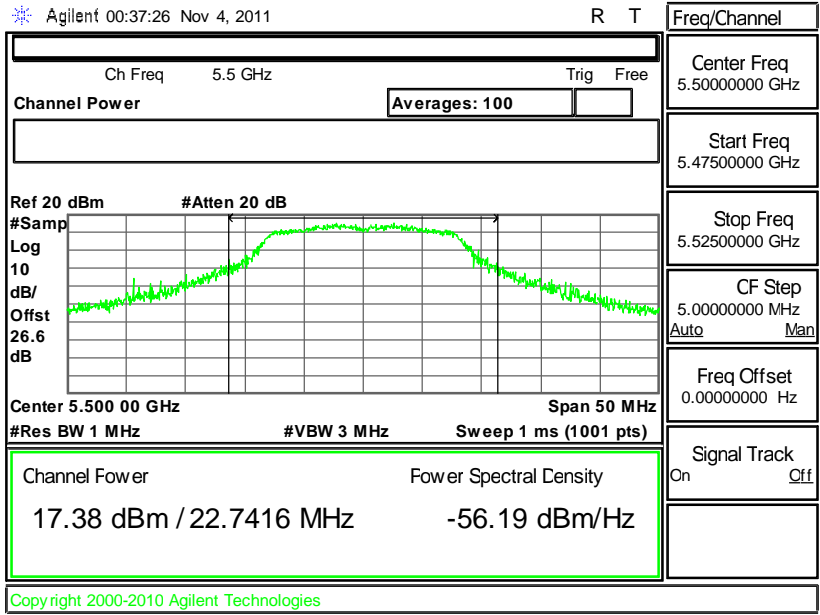


Output Power Plot on 802.11a Channel 64

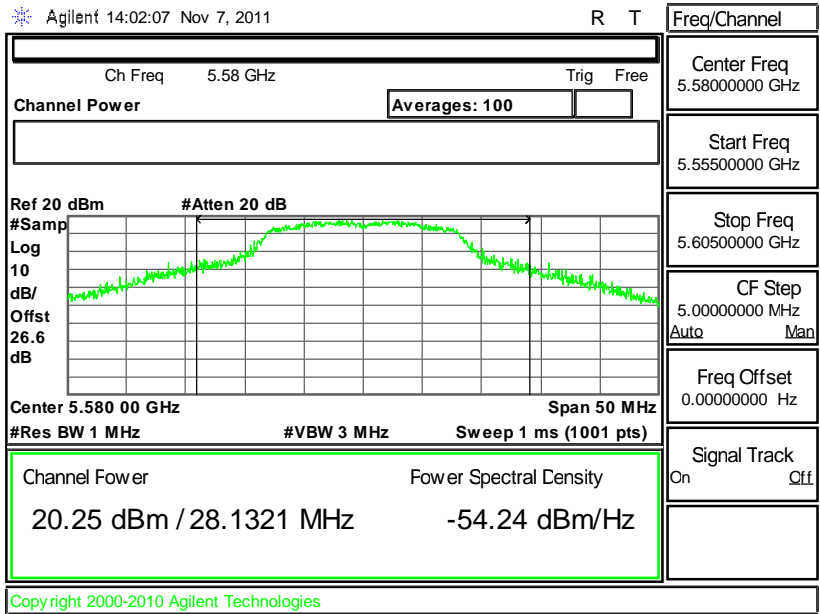




Output Power Plot on 802.11a Channel 100

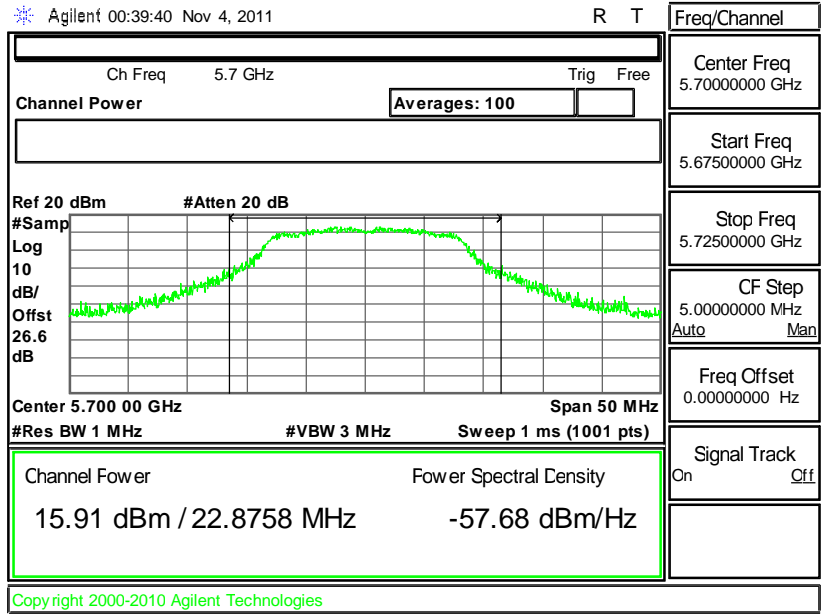


Output Power Plot on 802.11a Channel 116

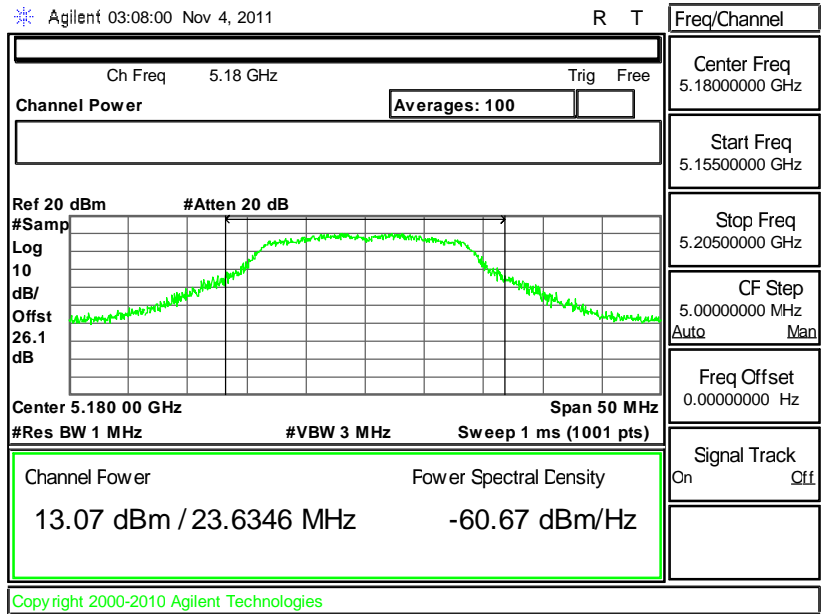




Output Power Plot on 802.11a Channel 140

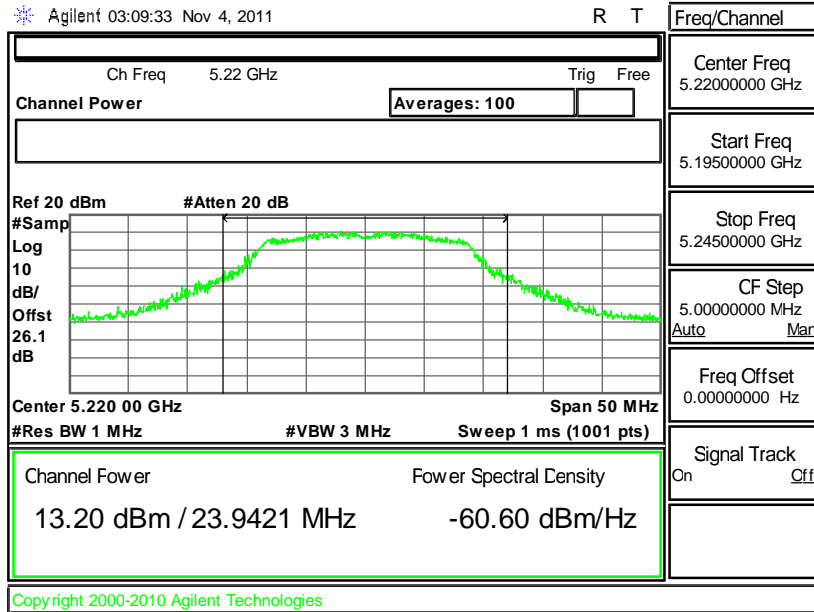


Output Power Plot on 802.11n (BW 20MHz) Channel 36

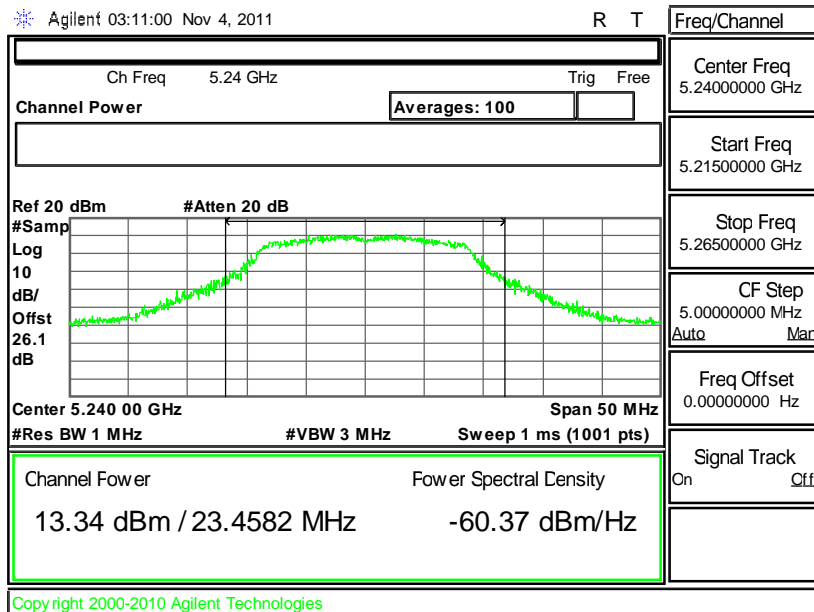




Output Power Plot on 802.11n (BW 20MHz) Channel 44

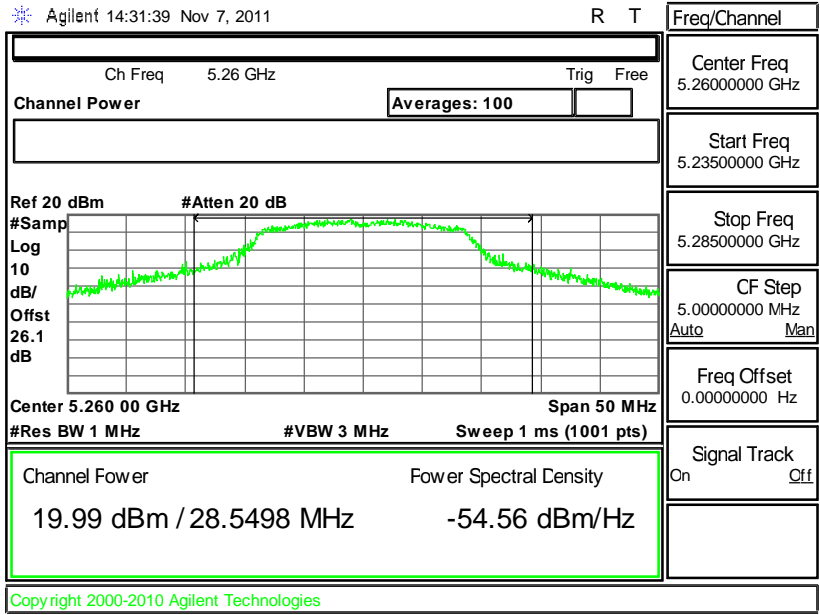


Output Power Plot on 802.11n (BW 20MHz) Channel 48

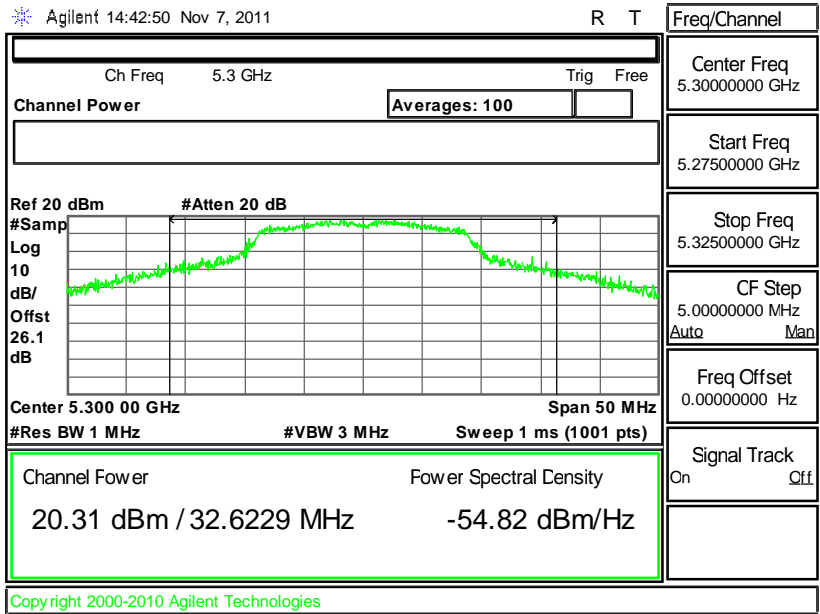




Output Power Plot on 802.11n (BW 20MHz) Channel 52

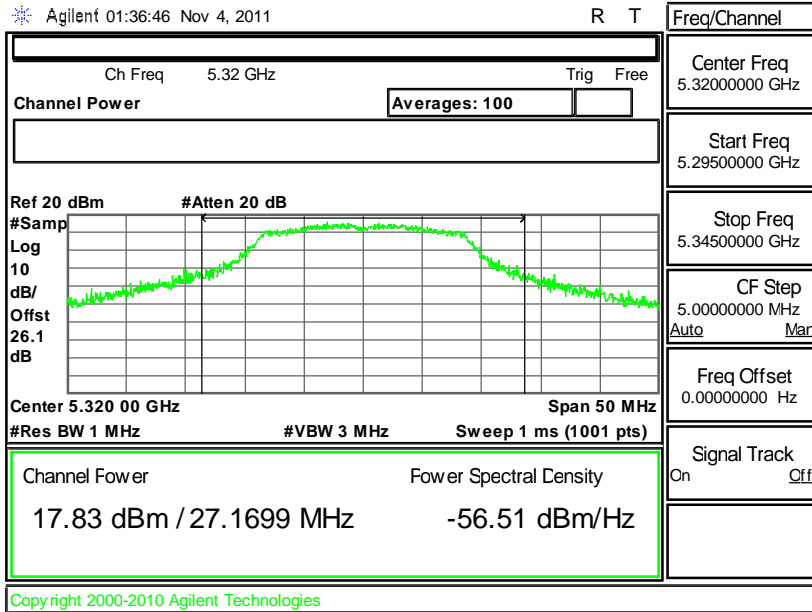


Output Power Plot on 802.11n (BW 20MHz) Channel 60

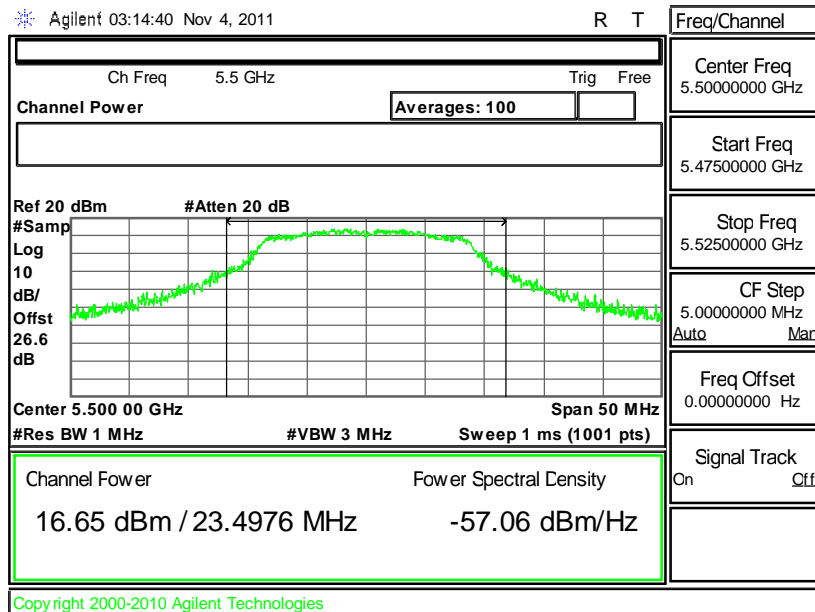




Output Power Plot on 802.11n (BW 20MHz) Channel 64

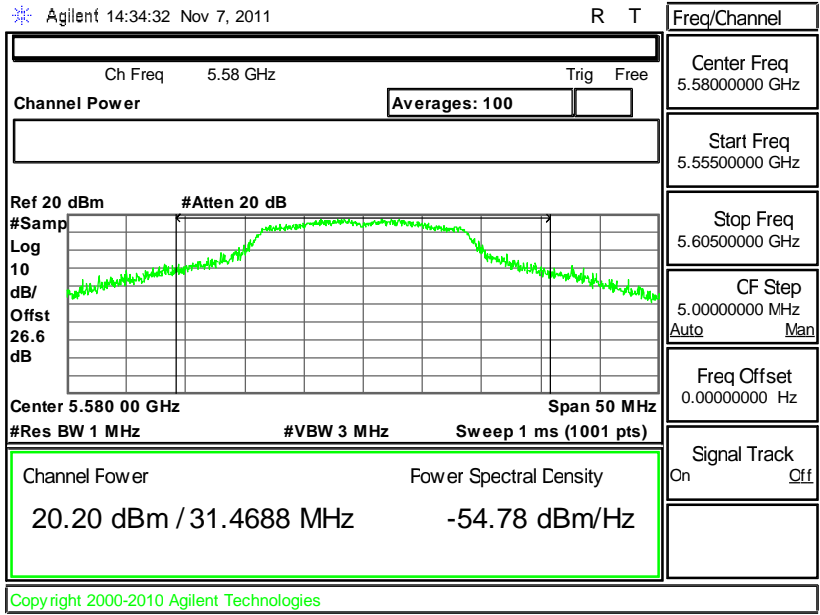


Output Power Plot on 802.11n (BW 20MHz) Channel 100

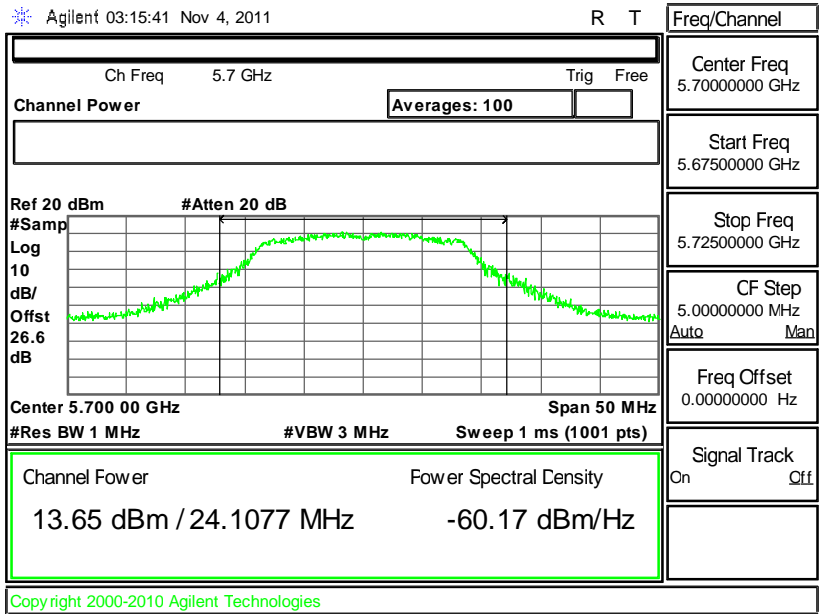




Output Power Plot on 802.11n (BW 20MHz) Channel 116



Output Power Plot on 802.11n (BW 20MHz) Channel 140



3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

For the band 5.15–5.25 GHz, the peak power spectral density shall not exceed 4 dBm in any 1MHz band. For the 5.25–5.35 GHz and 5.47–5.725 GHz bands, the peak power spectral density shall not exceed 11 dBm in any 1MHz 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.

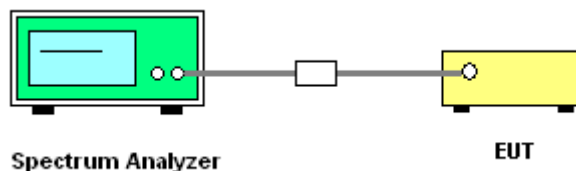
3.3.2 Measuring Instruments

See list of measuring instruments of this test report.

3.3.3 Test Procedures

1. The testing follows Method SA-1 of FCC KDB 789033 D01 General UNII Test Procedures v01.
 - 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 = Sample
 - Trace average at least 100 traces in power averaging mode.
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



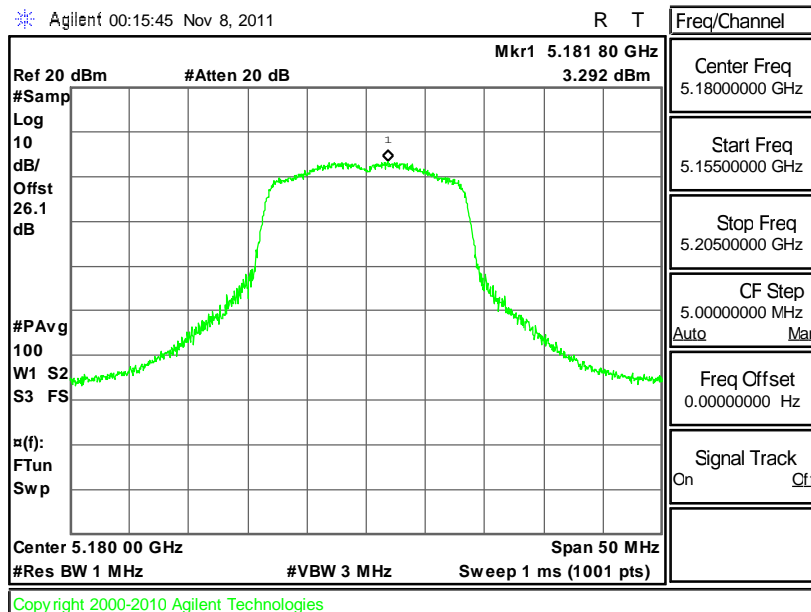


3.3.5 Test Result of Power Spectral Density

Test Mode :	Mode 1~9	Temperature :	24~26°C
Test Engineer :	Alan Liu	Relative Humidity :	45~49%

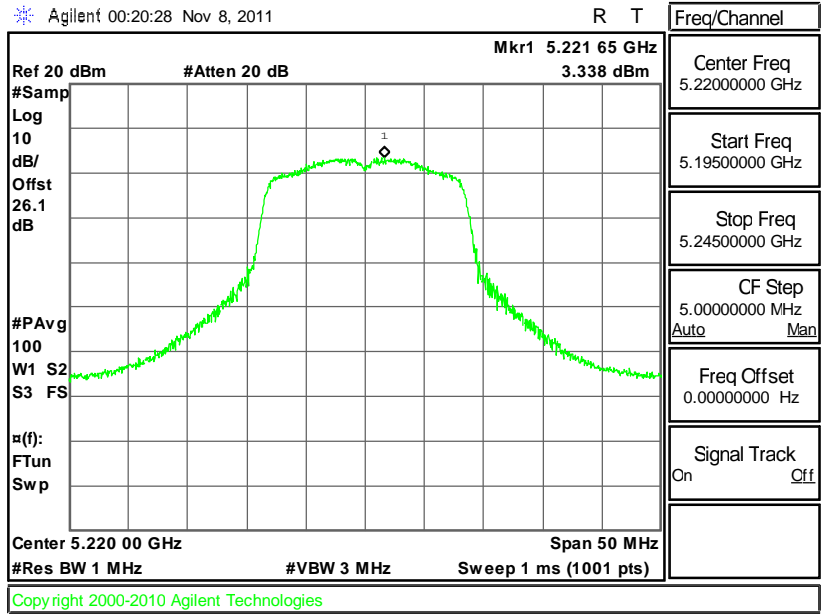
Channel	Frequency (MHz)	Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
36	5180	3.292	4	Pass
44	5220	3.338	4	Pass
48	5240	3.624	4	Pass
52	5260	10.397	11	Pass
60	5300	10.539	11	Pass
64	5320	8.807	11	Pass
100	5500	7.628	11	Pass
116	5580	10.448	11	Pass
140	5700	6.529	11	Pass

PSD Plot on 802.11a Channel 36

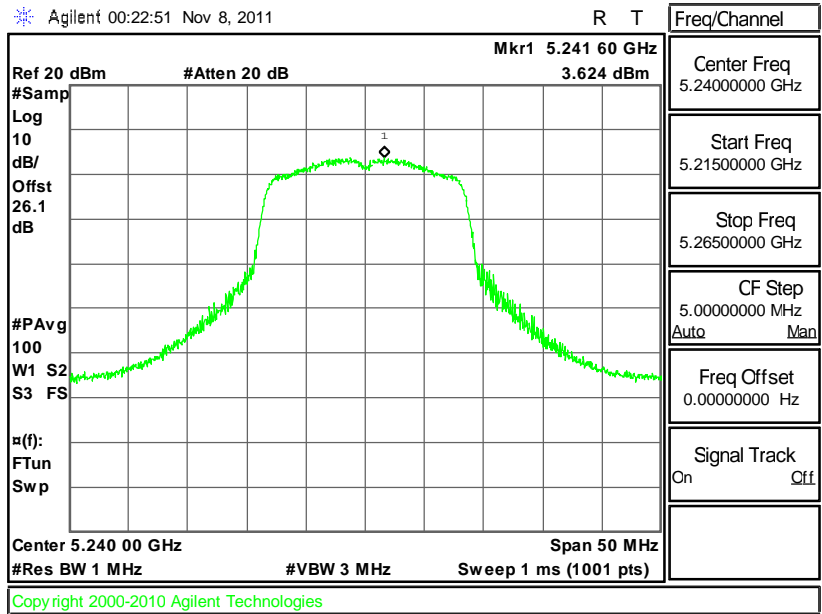




PSD Plot on 802.11a Channel 44

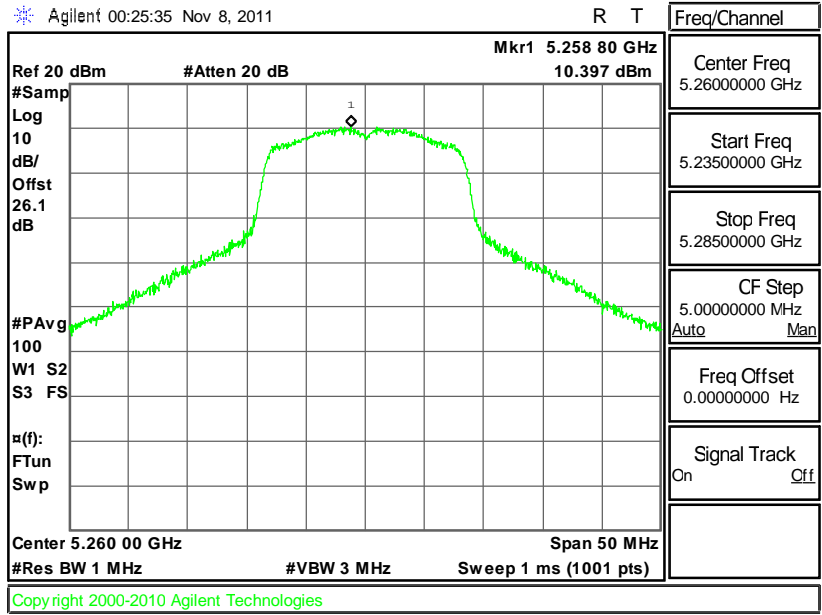


PSD Plot on 802.11a Channel 48

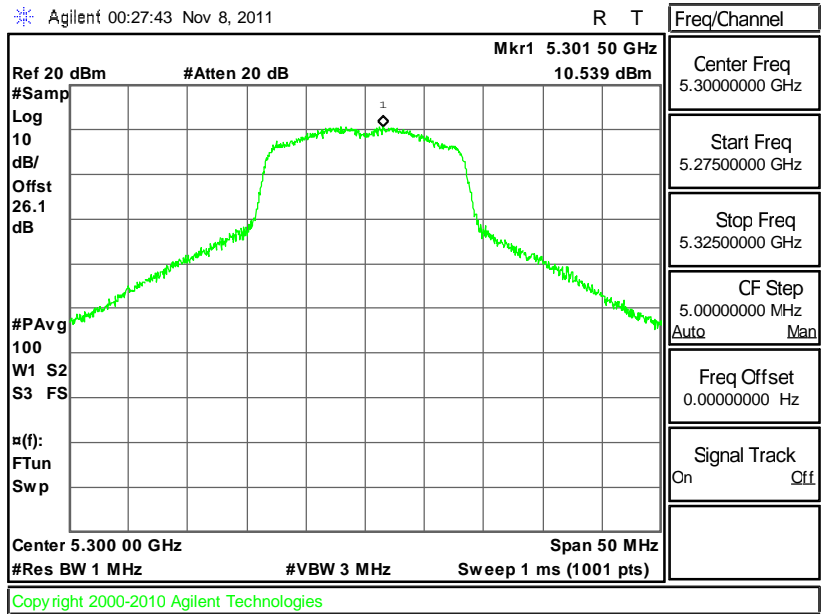




PSD Plot on 802.11a Channel 52

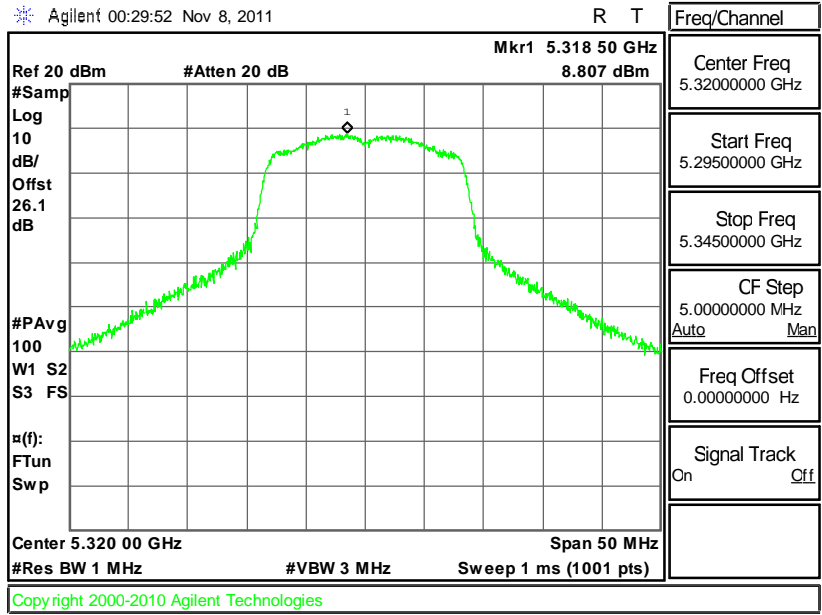


PSD Plot on 802.11a Channel 60

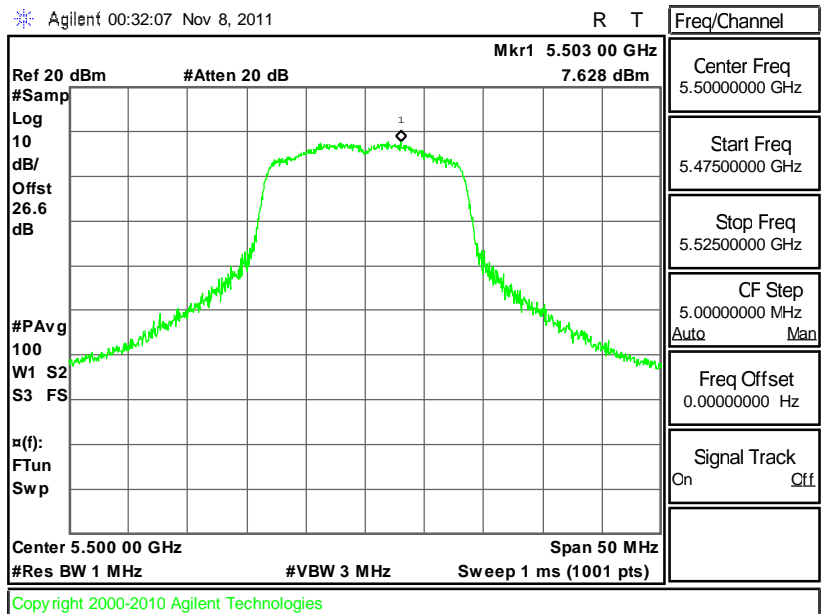




PSD Plot on 802.11a Channel 64

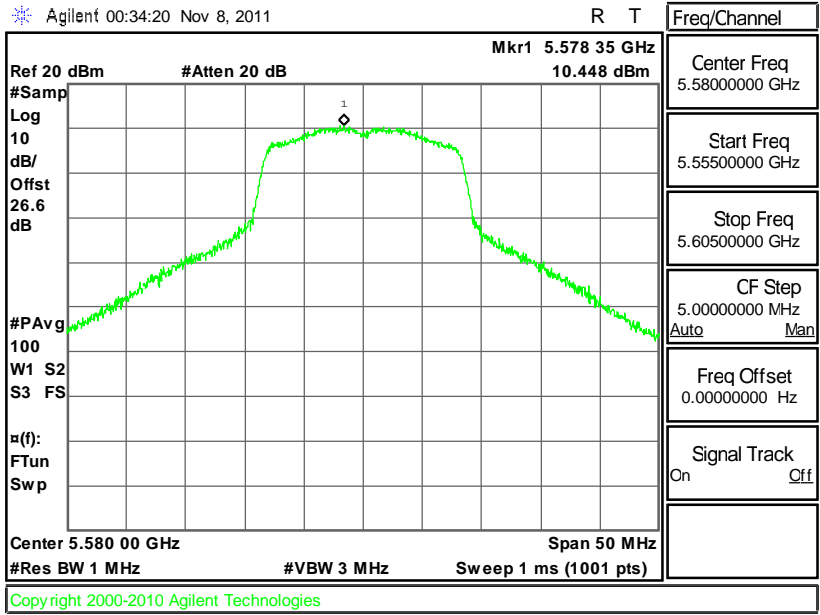


PSD Plot on 802.11a Channel 100

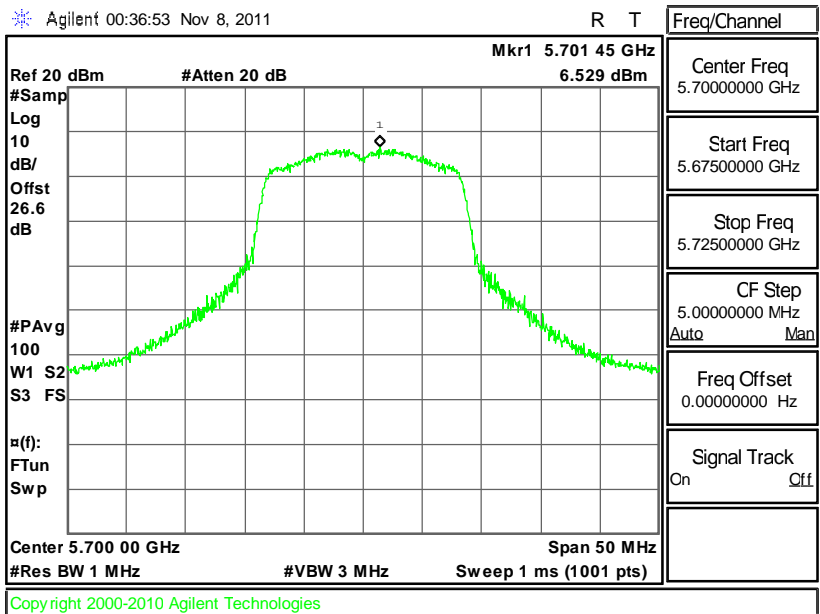




PSD Plot on 802.11a Channel 116



PSD Plot on 802.11a Channel 140

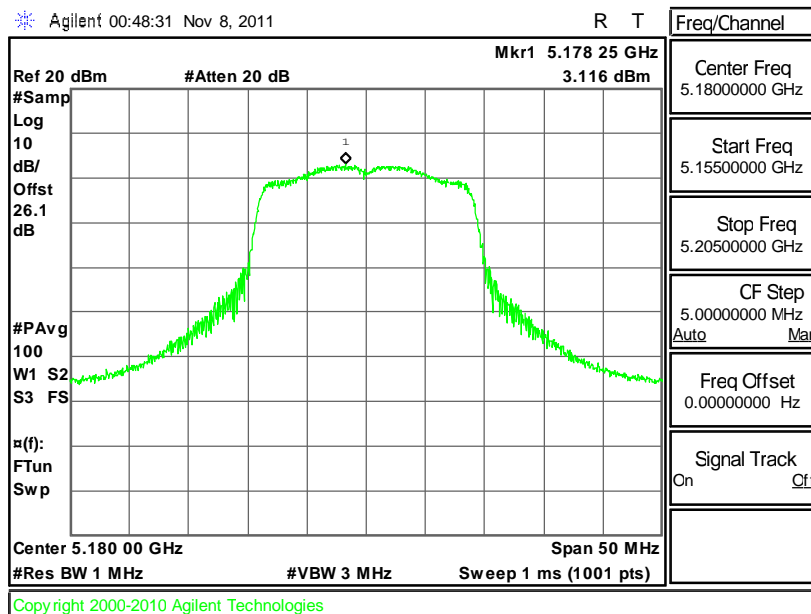




Test Mode :	Mode 10~18	Temperature :	24~26°C
Test Engineer :	Alan Liu	Relative Humidity :	45~49%

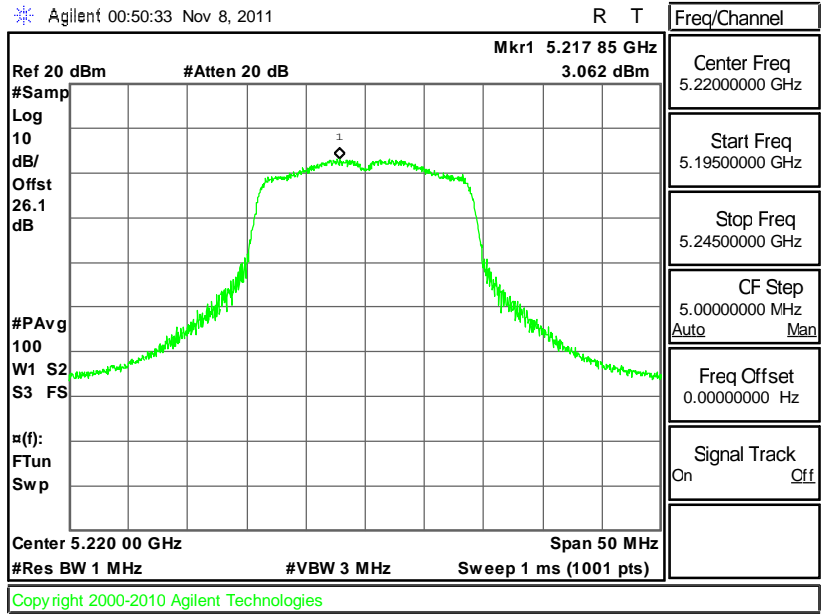
Channel	Frequency (MHz)	Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
36	5180	3.116	4	Pass
44	5220	3.062	4	Pass
48	5240	3.402	4	Pass
52	5260	9.982	11	Pass
60	5300	10.355	11	Pass
64	5320	8.182	11	Pass
100	5500	6.766	11	Pass
116	5580	10.228	11	Pass
140	5700	4.351	11	Pass

PSD Plot on 802.11n (BW 20MHz) Channel 36

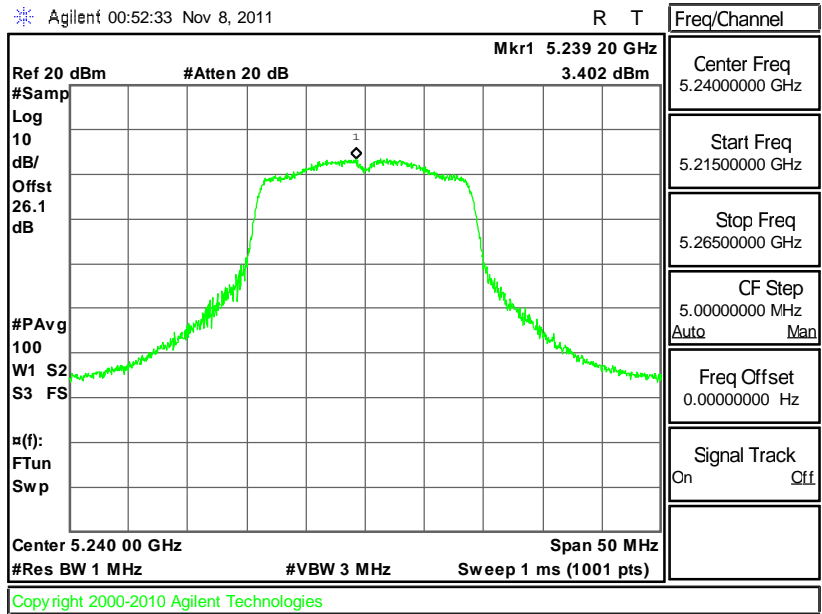




PSD Plot on 802.11n (BW 20MHz) Channel 44

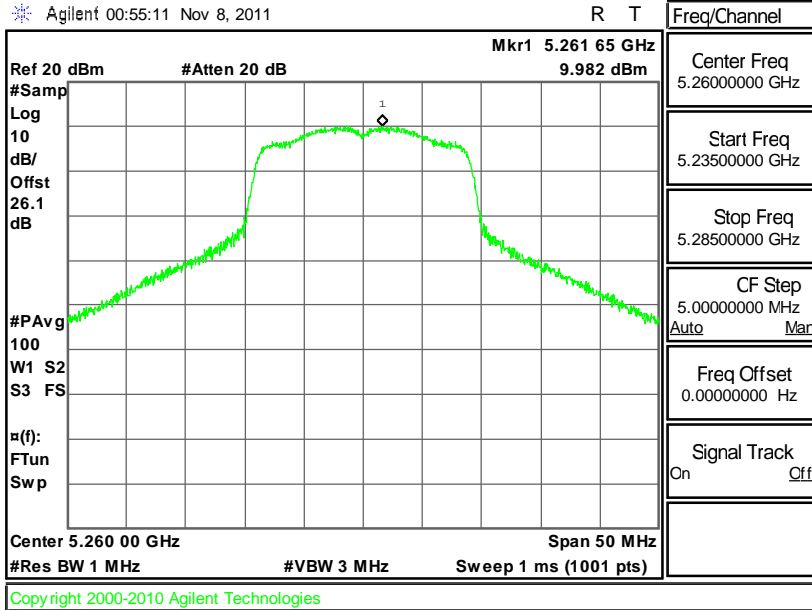


PSD Plot on 802.11n (BW 20MHz) Channel 48

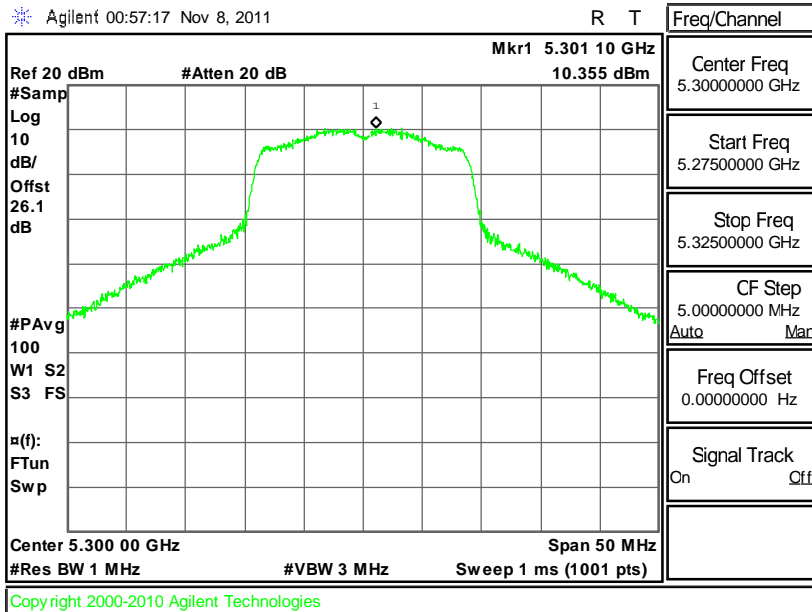




PSD Plot on 802.11n (BW 20MHz) Channel 52

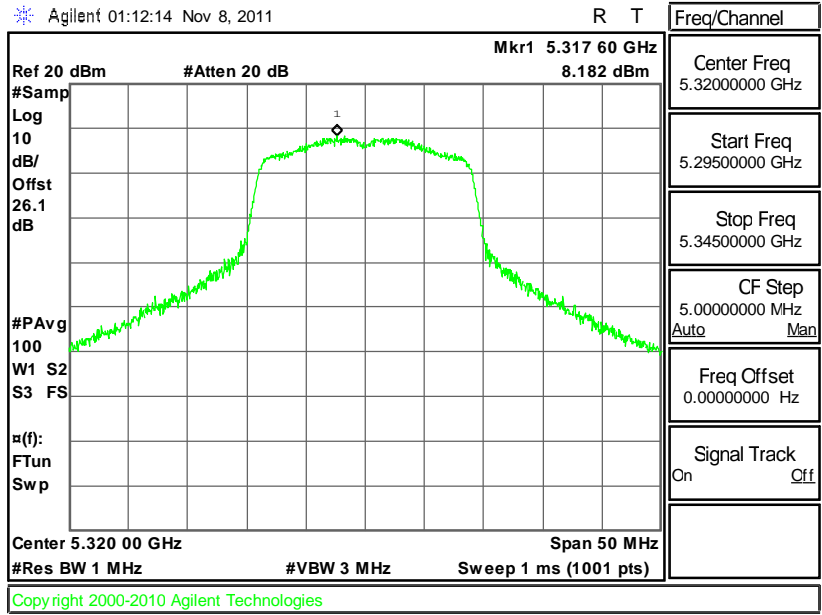


PSD Plot on 802.11n (BW 20MHz) Channel 60

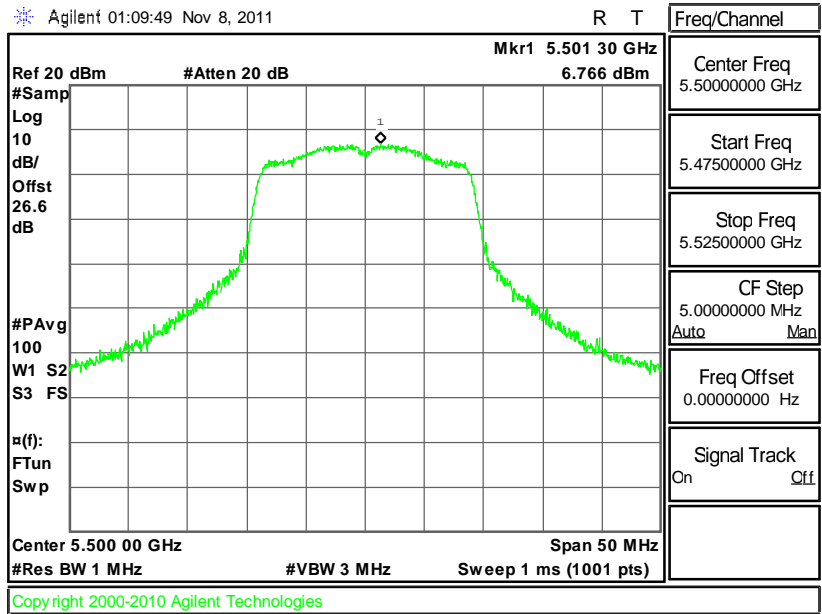




PSD Plot on 802.11n (BW 20MHz) Channel 64

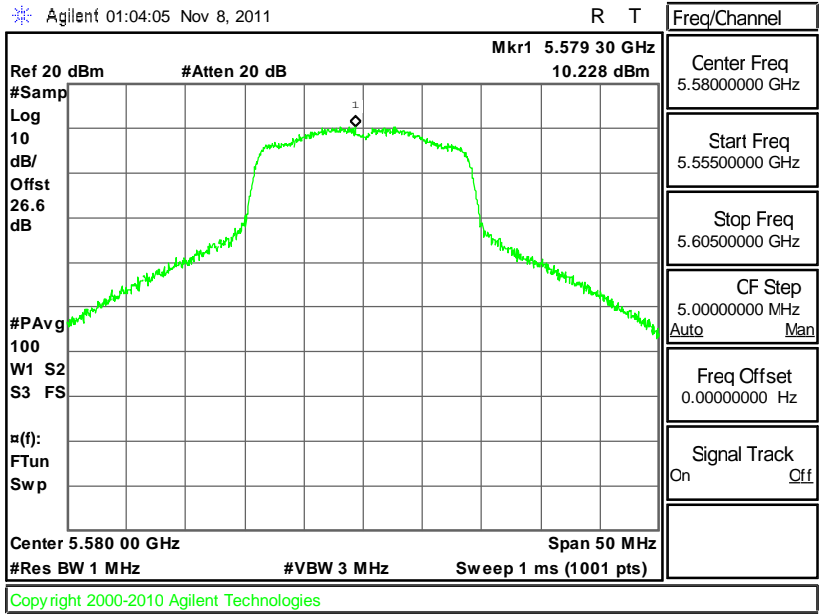


PSD Plot on 802.11n (BW 20MHz) Channel 100

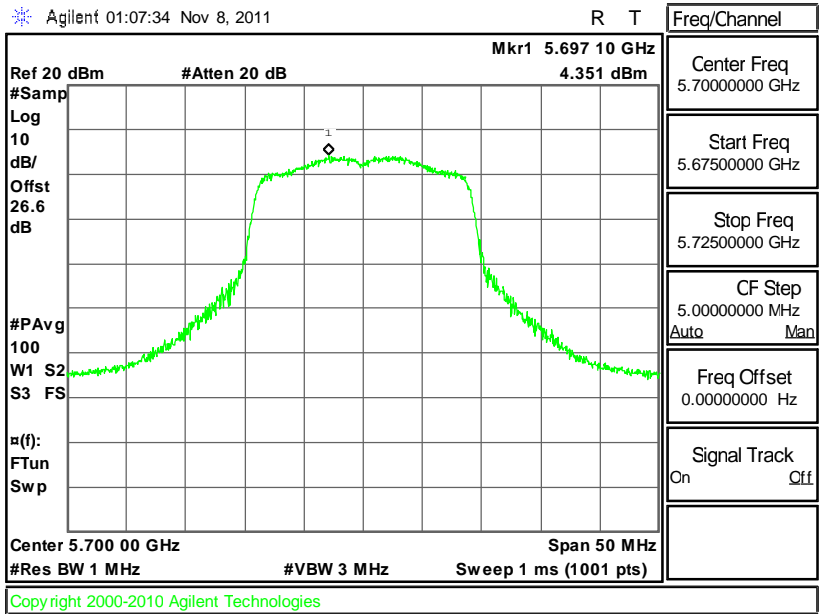




PSD Plot on 802.11n (BW 20MHz) Channel 116



PSD Plot on 802.11n (BW 20MHz) Channel 140



3.4 AC Conducted Emission Measurement

3.4.1 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 (dBuV)	
	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.

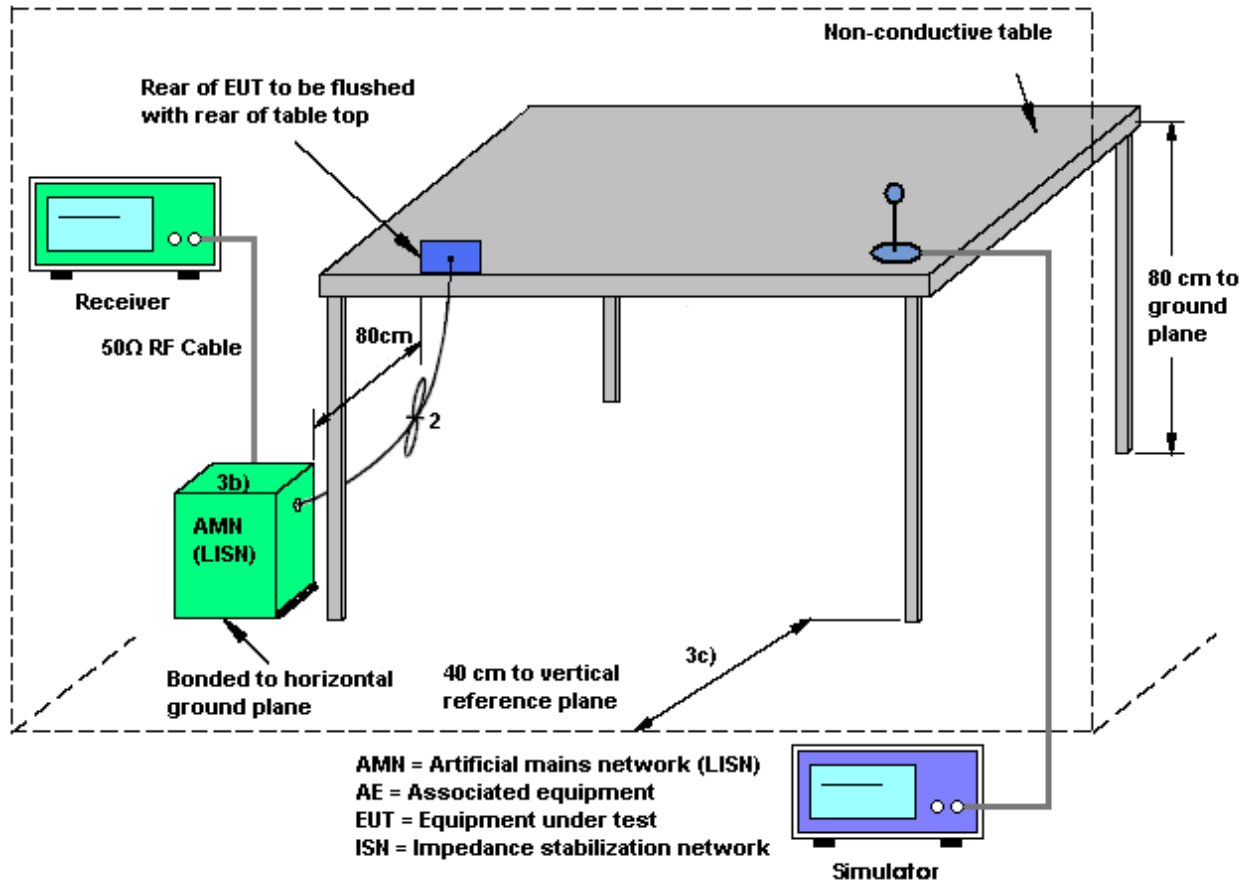
3.4.2 Measuring Instruments

See list of measuring instruments of this test report.

3.4.3 Test Procedures

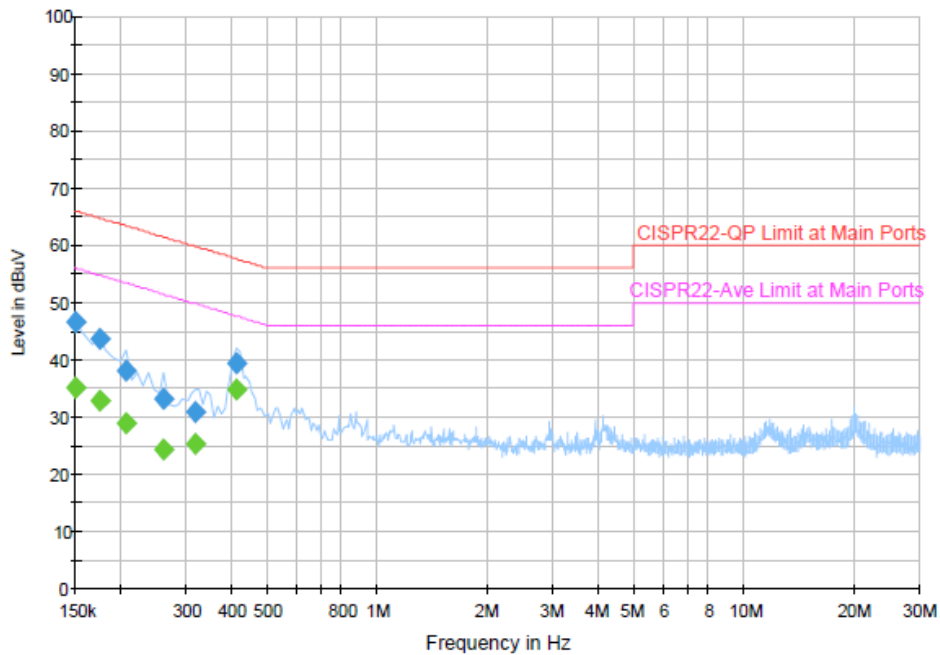
1. Please follow the guidelines in ANSI C63.4-2003.
2. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
3. Connect EUT to the power mains through a line impedance stabilization network (LISN).
4. All the support units are connecting to the other LISN.
5. The LISN provides 50 ohm coupling impedance for the measuring instrument.
6. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
7. Both sides of AC line were checked for maximum conducted interference.
8. The frequency range from 150 kHz to 30 MHz was searched.
9. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

3.4.4 Test Setup



3.4.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	Temperature :	20~22°C
Test Engineer :	Novic Chiang	Relative Humidity :	40~42%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	Bluetooth Link + WLAN (5G) Link + USB Cable (Data Link with Notebook) + Earphone + Micro USB Connector with iPod + Adapter		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



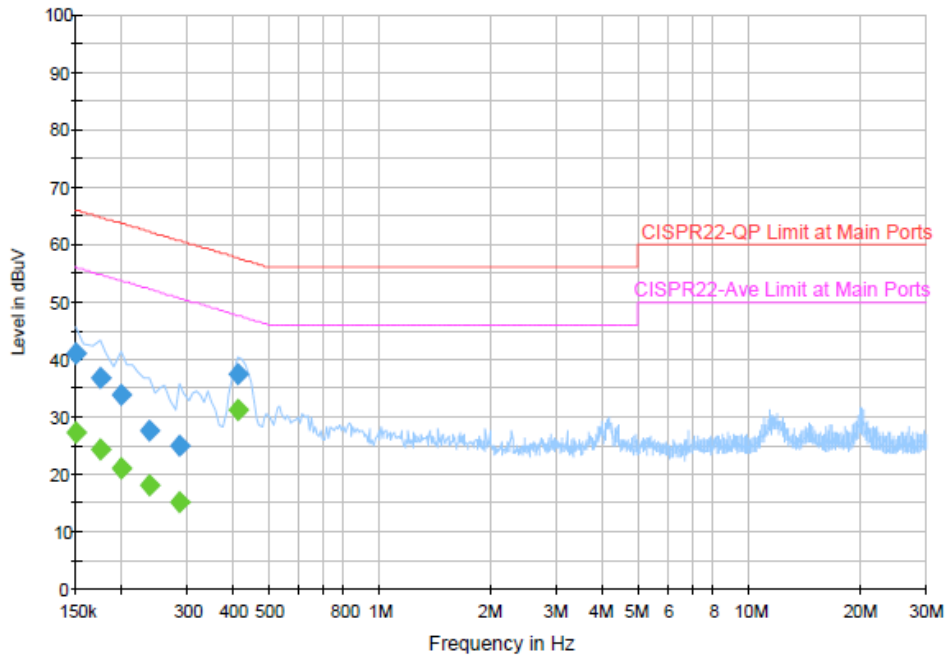
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	46.7	Off	L1	19.4	19.3	66.0
0.174000	43.5	Off	L1	19.4	21.3	64.8
0.206000	38.0	Off	L1	19.4	25.4	63.4
0.262000	33.0	Off	L1	19.4	28.4	61.4
0.318000	30.8	Off	L1	19.4	29.0	59.8
0.414000	39.4	Off	L1	19.5	18.2	57.6

Final Result 2

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	35.1	Off	L1	19.4	20.9	56.0
0.174000	32.8	Off	L1	19.4	22.0	54.8
0.206000	29.0	Off	L1	19.4	24.4	53.4
0.262000	24.2	Off	L1	19.4	27.2	51.4
0.318000	25.1	Off	L1	19.4	24.7	49.8
0.414000	34.7	Off	L1	19.5	12.9	47.6

Test Mode :	Mode 1	Temperature :	20~22°C
Test Engineer :	Novic Chiang	Relative Humidity :	40~42%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	Bluetooth Link + WLAN (5G) Link + USB Cable (Data Link with Notebook) + Earphone + Micro USB Connector with iPod + Adapter		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.150000	41.0	Off	N	19.4	25.0	66.0
0.174000	36.9	Off	N	19.4	27.9	64.8
0.198000	33.6	Off	N	19.4	30.1	63.7
0.238000	27.5	Off	N	19.4	34.7	62.2
0.286000	24.9	Off	N	19.4	35.7	60.6
0.414000	37.3	Off	N	19.5	20.3	57.6

Final Result 2

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.150000	27.1	Off	N	19.4	28.9	56.0
0.174000	24.3	Off	N	19.4	30.5	54.8
0.198000	21.0	Off	N	19.4	32.7	53.7
0.238000	18.1	Off	N	19.4	34.1	52.2
0.286000	15.1	Off	N	19.4	35.5	50.6
0.414000	31.1	Off	N	19.5	16.5	47.6

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 5.15–5.25 GHz band: all emissions outside of the 5.15–5.35 GHz band shall not exceed an EIRP of –27dBm/MHz. For transmitters operating in the 5.725-5.825 GHz band: all emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an EIRP of -17 dBm/MHz (78.3dBuV/m); for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an EIRP of -27 dBm/MHz (68.3dBuV/m).
- (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.

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

EIRP (dBm)	Field Strength at 3m (dBuV/m)
- 27	68.3

3.5.2 Measuring Instruments

See list of measuring instruments of this test report.



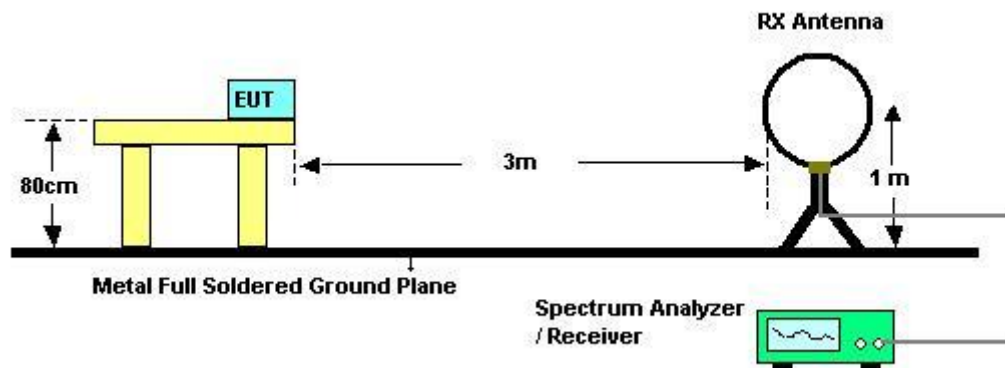
3.5.3 Test Procedures

1. The testing follows the guidelines in FCC KDB 789033 D01 General UNII Test Procedures v01.
 - (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 G) 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 G) 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.
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 table was rotated 360 degrees to determine the position of the highest radiation.
5. 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.

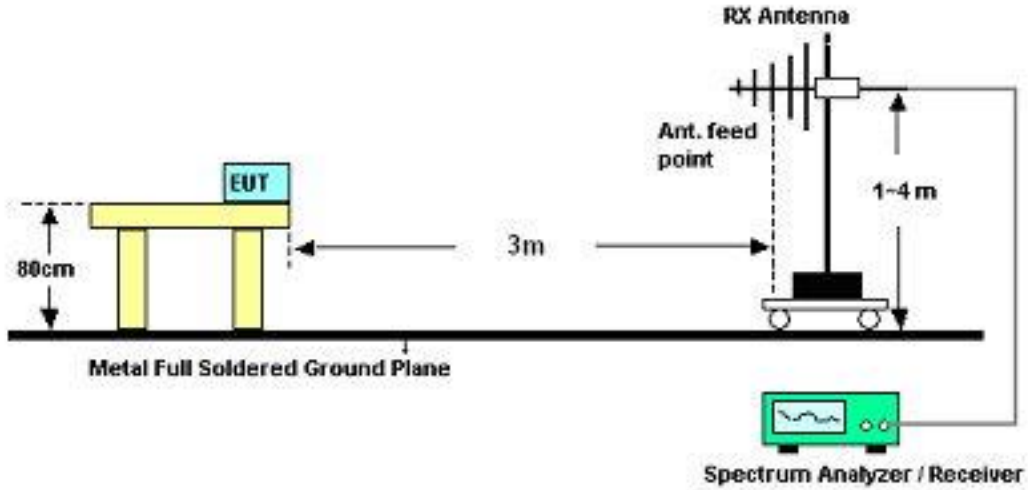
6. For each suspected emission, the EUT was arranged to its worst case and then adjust the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
7. For testing below 1GHz, if the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the CISPR quasi-peak method and reported.
8. 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 testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

3.5.4 Test Setup

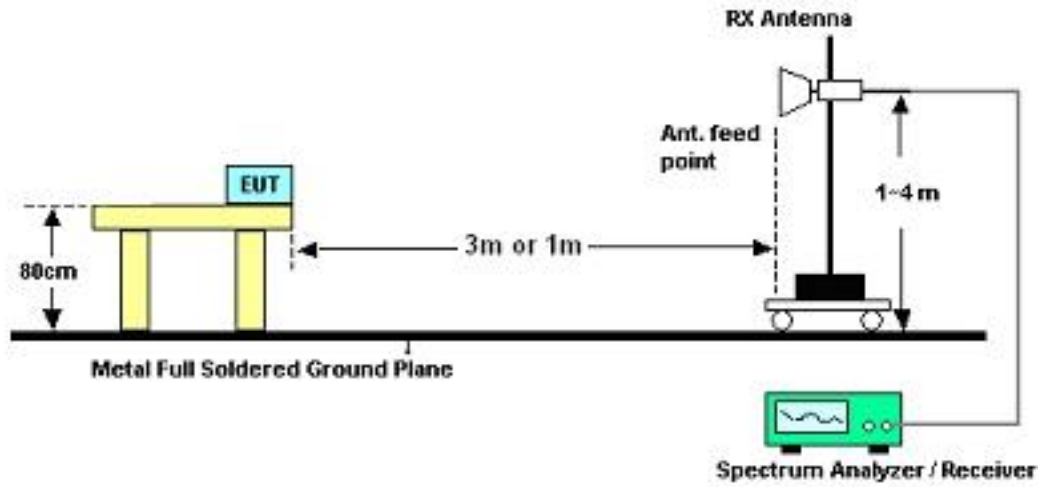
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz





3.5.5 Test Result

3.5.6 Test Result of Radiated Band Edges

Test Mode :	Mode 1	Temperature :	23~25°C
Test Band :	802.11a	Relative Humidity :	50~51%
Test Channel :	36	Test Engineer :	Ivan Chiang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5150	56.58	-17.42	74	46.6	34.22	9.41	33.65	101	303	Peak
5150	44.37	-9.63	54	34.39	34.22	9.41	33.65	101	303	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5150	56.65	-17.35	74	46.67	34.22	9.41	33.65	136	271	Peak
5150	43.76	-10.24	54	33.78	34.22	9.41	33.65	136	271	Average

Test Mode :	Mode 3	Temperature :	23~25°C
Test Band :	802.11a	Relative Humidity :	50~51%
Test Channel :	48	Test Engineer :	Ivan Chiang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5350	52.82	-21.18	74	41.96	34.38	9.74	33.26	100	305	Peak
5350	41.31	-12.69	54	30.45	34.38	9.74	33.26	100	305	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5350	52.46	-21.54	74	41.6	34.38	9.74	33.26	100	22	Peak
5350	41.01	-12.99	54	30.15	34.38	9.74	33.26	100	22	Average



Test Mode :	Mode 4	Temperature :	23~25°C
Test Band :	802.11a	Relative Humidity :	50~51%
Test Channel :	52	Test Engineer :	Ivan Chiang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5150	53.8	-20.2	74	43.82	34.22	9.41	33.65	100	305	Peak
5150	41.94	-12.06	54	31.96	34.22	9.41	33.65	100	305	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5150	51.85	-22.15	74	41.87	34.22	9.41	33.65	100	29	Peak
5150	40.78	-13.22	54	30.8	34.22	9.41	33.65	100	29	Average

Test Mode :	Mode 6	Temperature :	23~25°C
Test Band :	802.11a	Relative Humidity :	50~51%
Test Channel :	64	Test Engineer :	Ivan Chiang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5350	71.75	-2.25	74	60.89	34.38	9.74	33.26	100	234	Peak
5350	52.15	-1.85	54	41.29	34.38	9.74	33.26	100	234	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5350	71.06	-2.94	74	60.2	34.38	9.74	33.26	101	301	Peak
5350	52.14	-1.86	54	41.28	34.38	9.74	33.26	101	301	Average



Test Mode :	Mode 7	Temperature :	23~25°C
Test Band :	802.11a	Relative Humidity :	50~51%
Test Channel :	100	Test Engineer :	Ivan Chiang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5470	66.55	-1.75	68.3	55.15	34.47	9.94	33.01	112	316	Peak

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5470	65.22	-3.08	68.3	53.82	34.47	9.94	33.01	111	288	Peak

Test Mode :	Mode 9	Temperature :	23~25°C
Test Band :	802.11a	Relative Humidity :	50~51%
Test Channel :	140	Test Engineer :	Ivan Chiang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	67.02	-1.28	68.3	55.47	34.81	9.92	33.18	108	285	Peak

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	66.39	-1.91	68.3	54.84	34.81	9.92	33.18	101	241	Peak



Test Mode :	Mode 10	Temperature :	23~25°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	50~51%
Test Channel :	36	Test Engineer :	Ivan Chiang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5150	55.1	-18.9	74	45.12	34.22	9.41	33.65	100	317	Peak
5150	43.41	-10.59	54	33.43	34.22	9.41	33.65	100	317	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5150	54.43	-19.57	74	44.45	34.22	9.41	33.65	161	273	Peak
5150	42.97	-11.03	54	32.99	34.22	9.41	33.65	161	273	Average

Test Mode :	Mode 12	Temperature :	23~25°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	50~51%
Test Channel :	48	Test Engineer :	Ivan Chiang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5350	52.52	-21.48	74	41.66	34.38	9.74	33.26	100	311	Peak
5350	41.28	-12.72	54	30.42	34.38	9.74	33.26	100	311	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5350	52.82	-21.18	74	41.96	34.38	9.74	33.26	160	270	Peak
5350	41.58	-12.42	54	30.72	34.38	9.74	33.26	160	270	Average



Test Mode :	Mode 13	Temperature :	23~25°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	50~51%
Test Channel :	52	Test Engineer :	Ivan Chiang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5150	54.1	-19.9	74	44.12	34.22	9.41	33.65	161	268	Peak
5150	41.24	-12.76	54	31.26	34.22	9.41	33.65	161	268	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5150	52.76	-21.24	74	42.78	34.22	9.41	33.65	100	308	Peak
5150	48.88	-5.12	54	38.9	34.22	9.41	33.65	100	308	Average

Test Mode :	Mode 15	Temperature :	23~25°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	50~51%
Test Channel :	64	Test Engineer :	Ivan Chiang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5350	72.41	-1.59	74	61.55	34.38	9.74	33.26	100	234	Peak
5350	51.79	-2.21	54	40.93	34.38	9.74	33.26	100	234	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5350	71.73	-2.27	74	60.87	34.38	9.74	33.26	101	297	Peak
5350	51.99	-2.01	54	41.13	34.38	9.74	33.26	101	297	Average



Test Mode :	Mode 16	Temperature :	23~25°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	50~51%
Test Channel :	100	Test Engineer :	Ivan Chiang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5470	66.56	-1.74	68.3	55.16	34.47	9.94	33.01	111	235	Peak

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5470	66.61	-1.69	68.3	55.21	34.47	9.94	33.01	100	290	Peak

Test Mode :	Mode 18	Temperature :	23~25°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	50~51%
Test Channel :	140	Test Engineer :	Ivan Chiang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	66.21	-2.09	68.3	54.66	34.81	9.92	33.18	110	33	Peak

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	64.21	-4.09	68.3	52.66	34.81	9.92	33.18	131	273	Peak



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

Temperature	23~25°C	Humidity	50~51%
Test Engineer	Ivan Chiang		

Frequency	Measurement Distance	Field Strength	Antenna Factor	Distance Factor	Limit Distance	Field Strength at Limit Distance (30m)	Limit (30m)
(MHz)	(m)	(dBuV/m)	(dB/m)	(dB/decade)	(m)	(dBuV/m)	(dBuV/m)
26	3	12.02	19.7	40	30	-27.98	29.54

Note:

- In accordance with 15.33 (a): For each frequency at which a measurement is made at only one distance, the square of an inverse linear distance extrapolation factor (40 dB/decade) is applied.
 Distance extrapolation factor = 40 log (specific distance / test distance) (dB);
 Limit line = specific limits (dBuV) + distance extrapolation factor.
- The field strength measured is direct conversion of all parameters (antenna factor and distance extrapolation factor) and loaded into the spectrum.
- For example:
 Field Strength at 3m=10 (dBuV/m)
 Field Strength at 30m=10- 40*log(30m/3m)=-30 (dBuV/m)



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

Test Mode :	Mode 1	Temperature :	23~25°C
Test Channel :	36	Relative Humidity :	50~51%
Test Engineer :	Ivan Chiang	Polarization :	Horizontal
Remark :	5180 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
31.62	19.59	-20.41	40	34.46	16.04	0.55	31.46	-	-	Peak
129.9	17.49	-26.01	43.5	36.34	11.57	1.15	31.57	-	-	Peak
244.65	23.52	-22.48	46	41.15	12.26	1.53	31.42	-	-	Peak
511.4	21.24	-24.76	46	31.43	18.39	2.47	31.05	-	-	Peak
819.4	26.12	-19.88	46	30.93	22.7	3.19	30.7	-	-	Peak
940.5	27.51	-18.49	46	30.52	24.14	3.44	30.59	100	152	Peak
5150	56.58	-17.42	74	46.6	34.22	9.41	33.65	101	303	Peak
5150	44.37	-9.63	54	34.39	34.22	9.41	33.65	101	303	Average
5180	99.87	-	-	89.77	34.25	9.45	33.6	101	303	Average
5180	110.26	-	-	100.16	34.25	9.45	33.6	101	303	Peak
5350	53.45	-20.55	74	42.59	34.38	9.74	33.26	101	303	Peak
5350	41.06	-12.94	54	30.2	34.38	9.74	33.26	101	303	Average



Test Mode :	Mode 1	Temperature :	23~25°C
Test Channel :	36	Relative Humidity :	50~51%
Test Engineer :	Ivan Chiang	Polarization :	Vertical
Remark :	1. 5180 MHz is Fundamental Signals which can be ignored. 2. 6974 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30.81	20.19	-19.81	40	34.84	16.27	0.54	31.46	-	-	Peak
118.29	19.87	-23.63	43.5	38.98	11.36	1.09	31.56	-	-	Peak
240.33	15.51	-30.49	46	33.42	11.98	1.53	31.42	-	-	Peak
511.4	24.39	-21.61	46	34.58	18.39	2.47	31.05	-	-	Peak
716.5	25.29	-20.71	46	31.94	21.15	2.98	30.78	-	-	Peak
920.9	27.05	-18.95	46	30.42	23.89	3.39	30.65	144	126	Peak
5150	43.76	-10.24	54	33.78	34.22	9.41	33.65	136	271	Average
5150	56.65	-17.35	74	46.67	34.22	9.41	33.65	136	271	Peak
5180	99.44	-	-	89.34	34.25	9.45	33.6	136	271	Average
5180	109.56	-	-	99.46	34.25	9.45	33.6	136	271	Peak
5350	41.07	-12.93	54	30.21	34.38	9.74	33.26	136	271	Average
5350	52.86	-21.14	74	42	34.38	9.74	33.26	136	271	Peak
6974	62.29	-6.01	68.3	50.96	35.69	9.91	34.27	136	271	Peak



Test Mode :	Mode 2	Temperature :	23~25°C
Test Channel :	44	Relative Humidity :	50~51%
Test Engineer :	Ivan Chiang	Polarization :	Horizontal
Remark :	5220 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
31.62	19.92	-20.08	40	34.79	16.04	0.55	31.46	-	-	Peak
217.38	14.84	-31.16	46	34.56	10.34	1.4	31.46	-	-	Peak
237.09	20.65	-25.35	46	38.86	11.71	1.51	31.43	-	-	Peak
643	21.89	-24.11	46	29.7	20.25	2.82	30.88	-	-	Peak
830.6	25.27	-20.73	46	29.94	22.82	3.22	30.71	-	-	Peak
932.1	26.34	-19.66	46	29.51	24.03	3.42	30.62	100	169	Peak
5150	40.95	-13.05	54	30.97	34.22	9.41	33.65	112	304	Average
5150	53.08	-20.92	74	43.1	34.22	9.41	33.65	112	304	Peak
5220	100.56	-	-	90.26	34.27	9.53	33.5	112	304	Average
5220	111.06	-	-	100.76	34.27	9.53	33.5	112	304	Peak
5350	41.14	-12.86	54	30.28	34.38	9.74	33.26	112	304	Average
5350	52.67	-21.33	74	41.81	34.38	9.74	33.26	112	304	Peak



Test Mode :	Mode 2	Temperature :	23~25°C
Test Channel :	44	Relative Humidity :	50~51%
Test Engineer :	Ivan Chiang	Polarization :	Vertical
Remark :	5220 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
31.89	20.05	-19.95	40	34.92	16.04	0.55	31.46	-	-	Peak
118.02	19.44	-24.06	43.5	38.55	11.36	1.09	31.56	-	-	Peak
240.33	15.54	-30.46	46	33.45	11.98	1.53	31.42	-	-	Peak
511.4	24.32	-21.68	46	34.51	18.39	2.47	31.05	-	-	Peak
716.5	25.28	-20.72	46	31.93	21.15	2.98	30.78	-	-	Peak
951	27.03	-18.97	46	29.87	24.27	3.46	30.57	100	185	Peak
5150	40.59	-13.41	54	30.61	34.22	9.41	33.65	100	25	Average
5150	51.65	-22.35	74	41.67	34.22	9.41	33.65	100	25	Peak
5220	107.72	-	-	97.42	34.27	9.53	33.5	100	25	Peak
5220	97.18	-	-	86.88	34.27	9.53	33.5	100	25	Average
5350	41.01	-12.99	54	30.15	34.38	9.74	33.26	100	25	Average
5350	52.66	-21.34	74	41.8	34.38	9.74	33.26	100	25	Peak



Test Mode :	Mode 3	Temperature :	23~25°C
Test Channel :	48	Relative Humidity :	50~51%
Test Engineer :	Ivan Chiang	Polarization :	Horizontal
Remark :	5240 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
32.7	19.31	-20.69	40	34.42	15.8	0.56	31.47	-	-	Peak
107.49	16.42	-27.08	43.5	36.48	10.45	1.04	31.55	-	-	Peak
240.33	23.57	-22.43	46	41.48	11.98	1.53	31.42	-	-	Peak
442.1	27.73	-18.27	46	39.3	17.27	2.28	31.12	122	147	Peak
822.9	25.38	-20.62	46	30.15	22.73	3.2	30.7	-	-	Peak
945.4	27.25	-18.75	46	30.18	24.2	3.45	30.58	-	-	Peak
5150	40.81	-13.19	54	30.83	34.22	9.41	33.65	100	305	Average
5150	52.08	-21.92	74	42.1	34.22	9.41	33.65	100	305	Peak
5240	100.37	-	-	89.96	34.29	9.57	33.45	100	305	Average
5240	110.21	-	-	99.8	34.29	9.57	33.45	100	305	Peak
5350	52.82	-21.18	74	41.96	34.38	9.74	33.26	100	305	Peak
5350	41.31	-12.69	54	30.45	34.38	9.74	33.26	100	305	Average



Test Mode :	Mode 3	Temperature :	23~25°C
Test Channel :	48	Relative Humidity :	50~51%
Test Engineer :	Ivan Chiang	Polarization :	Vertical
Remark :	5240 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
31.89	19.97	-20.03	40	34.84	16.04	0.55	31.46	-	-	Peak
118.29	20.04	-23.46	43.5	39.15	11.36	1.09	31.56	-	-	Peak
271.65	15.29	-30.71	46	32.01	13.01	1.64	31.37	-	-	Peak
511.4	24.5	-21.5	46	34.69	18.39	2.47	31.05	-	-	Peak
716.5	25.58	-20.42	46	32.23	21.15	2.98	30.78	-	-	Peak
937.7	27.3	-18.7	46	30.36	24.11	3.43	30.6	135	149	Peak
5150	52.12	-21.88	74	42.14	34.22	9.41	33.65	100	22	Peak
5150	40.54	-13.46	54	30.56	34.22	9.41	33.65	100	22	Average
5240	106.92	-	-	96.51	34.29	9.57	33.45	100	22	Peak
5240	96.94	-	-	86.53	34.29	9.57	33.45	100	22	Average
5350	52.46	-21.54	74	41.6	34.38	9.74	33.26	100	22	Peak
5350	41.01	-12.99	54	30.15	34.38	9.74	33.26	100	22	Average



Test Mode :	Mode 4	Temperature :	23~25°C
Test Channel :	52	Relative Humidity :	50~51%
Test Engineer :	Ivan Chiang	Polarization :	Horizontal
Remark :	5260 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
31.08	19.71	-20.29	40	34.36	16.27	0.54	31.46	-	-	Peak
118.02	14.81	-28.69	43.5	33.92	11.36	1.09	31.56	-	-	Peak
240.33	16.67	-29.33	46	34.58	11.98	1.53	31.42	-	-	Peak
646.5	22.68	-23.32	46	30.43	20.29	2.83	30.87	-	-	Peak
848.1	25.37	-20.63	46	29.82	23.02	3.26	30.73	-	-	Peak
951.7	26.42	-19.58	46	29.25	24.28	3.46	30.57	165	247	Peak
5150	41.94	-12.06	54	31.96	34.22	9.41	33.65	100	305	Average
5150	53.8	-20.2	74	43.82	34.22	9.41	33.65	100	305	Peak
5260	107.88	-	-	97.36	34.31	9.62	33.41	100	305	Average
5260	117.72	-	-	107.3	34.3	9.57	33.45	100	305	Peak
5350	54.55	-19.45	74	43.69	34.38	9.74	33.26	100	305	Peak
5350	42.54	-11.46	54	31.68	34.38	9.74	33.26	100	305	Average



Test Mode :	Mode 4	Temperature :	23~25°C
Test Channel :	52	Relative Humidity :	50~51%
Test Engineer :	Ivan Chiang	Polarization :	Vertical
Remark :	5260 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
31.89	20.51	-19.49	40	35.38	16.04	0.55	31.46	-	-	Peak
118.29	19	-24.5	43.5	38.11	11.36	1.09	31.56	-	-	Peak
273.81	14.49	-31.51	46	31.17	13.04	1.64	31.36	-	-	Peak
511.4	24.13	-21.87	46	34.32	18.39	2.47	31.05	-	-	Peak
716.5	25.35	-20.65	46	32	21.15	2.98	30.78	-	-	Peak
932.1	27.04	-18.96	46	30.21	24.03	3.42	30.62	222	128	Peak
5150	40.78	-13.22	54	30.8	34.22	9.41	33.65	100	29	Average
5150	51.85	-22.15	74	41.87	34.22	9.41	33.65	100	29	Peak
5260	103.42	-	-	92.9	34.31	9.62	33.41	100	29	Average
5260	113.52	-	-	103.1	34.3	9.57	33.45	100	29	Peak
5350	52.25	-21.75	74	41.39	34.38	9.74	33.26	100	29	Peak
5350	41.52	-12.48	54	30.66	34.38	9.74	33.26	100	29	Average



Test Mode :	Mode 5	Temperature :	23~25°C
Test Channel :	60	Relative Humidity :	50~51%
Test Engineer :	Ivan Chiang	Polarization :	Horizontal
Remark :	5300 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
36.75	17.19	-22.81	40	33.7	14.38	0.6	31.49	-	-	Peak
211.17	14.7	-28.8	43.5	34.88	9.92	1.37	31.47	-	-	Peak
241.41	22.61	-23.39	46	40.45	12.05	1.53	31.42	-	-	Peak
444.2	21.69	-24.31	46	33.21	17.3	2.29	31.11	-	-	Peak
750.1	24.01	-21.99	46	29.98	21.67	3.06	30.7	-	-	Peak
943.3	26.67	-19.33	46	29.63	24.18	3.45	30.59	195	123	Peak
5150	40.06	-13.94	54	30.08	34.22	9.41	33.65	109	303	Average
5150	50.87	-23.13	74	40.89	34.22	9.41	33.65	109	303	Peak
5300	107.25	-	-	96.61	34.34	9.66	33.36	109	303	Average
5300	117.11	-	-	106.47	34.34	9.66	33.36	109	303	Peak
5350	66.96	-7.04	74	56.1	34.38	9.74	33.26	109	303	Peak
5350	49.08	-4.92	54	38.22	34.38	9.74	33.26	109	303	Average



Test Mode :	Mode 5	Temperature :	23~25°C
Test Channel :	60	Relative Humidity :	50~51%
Test Engineer :	Ivan Chiang	Polarization :	Vertical
Remark :	5300 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30.54	20.32	-19.68	40	34.97	16.27	0.54	31.46	-	-	Peak
118.02	19.4	-24.1	43.5	38.51	11.36	1.09	31.56	-	-	Peak
240.06	19.98	-26.02	46	37.89	11.98	1.53	31.42	-	-	Peak
511.4	23.71	-22.29	46	33.9	18.39	2.47	31.05	-	-	Peak
761.3	24.21	-21.79	46	29.97	21.86	3.08	30.7	-	-	Peak
939.8	26.82	-19.18	46	29.85	24.13	3.44	30.6	257	147	Peak
5150	40.47	-13.53	54	30.49	34.22	9.41	33.65	102	300	Average
5150	51.47	-22.53	74	41.49	34.22	9.41	33.65	102	300	Peak
5300	106.16	-	-	95.52	34.34	9.66	33.36	102	300	Average
5300	115.96	-	-	105.32	34.34	9.66	33.36	102	300	Peak
5350	63.47	-10.53	74	52.61	34.38	9.74	33.26	102	300	Peak
5350	46.78	-7.22	54	35.92	34.38	9.74	33.26	102	300	Average



Test Mode :	Mode 6	Temperature :	23~25°C
Test Channel :	64	Relative Humidity :	50~51%
Test Engineer :	Ivan Chiang	Polarization :	Horizontal
Remark :	5320 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30.27	19.97	-20.03	40	34.39	16.51	0.53	31.46	-	-	Peak
118.02	15.55	-27.95	43.5	34.66	11.36	1.09	31.56	-	-	Peak
236.01	19.95	-26.05	46	38.23	11.64	1.51	31.43	-	-	Peak
545.7	21.25	-24.75	46	30.77	18.93	2.54	30.99	-	-	Peak
850.2	25.57	-20.43	46	29.97	23.06	3.27	30.73	-	-	Peak
925.8	26.74	-19.26	46	30.01	23.96	3.4	30.63	185	174	Peak
5150	41.76	-12.24	54	31.78	34.22	9.41	33.65	100	234	Average
5150	54.56	-19.44	74	44.58	34.22	9.41	33.65	100	234	Peak
5320	105.54	-	-	94.8	34.35	9.7	33.31	100	234	Average
5320	115.36	-	-	104.62	34.35	9.7	33.31	100	234	Peak
5350	71.75	-2.25	74	60.89	34.38	9.74	33.26	100	234	Peak
5350	52.15	-1.85	54	41.29	34.38	9.74	33.26	100	234	Average



Test Mode :	Mode 6	Temperature :	23~25°C
Test Channel :	64	Relative Humidity :	50~51%
Test Engineer :	Ivan Chiang	Polarization :	Vertical
Remark :	5320 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30.27	19.98	-20.02	40	34.4	16.51	0.53	31.46	-	-	Peak
118.02	20.08	-23.42	43.5	39.19	11.36	1.09	31.56	-	-	Peak
221.97	15.03	-30.97	46	34.38	10.68	1.43	31.46	-	-	Peak
511.4	24.68	-21.32	46	34.87	18.39	2.47	31.05	-	-	Peak
716.5	24.56	-21.44	46	31.21	21.15	2.98	30.78	-	-	Peak
920.2	26.53	-19.47	46	29.9	23.89	3.39	30.65	196	136	Peak
5150	42.06	-11.94	54	32.08	34.22	9.41	33.65	101	301	Average
5150	52.81	-21.19	74	42.83	34.22	9.41	33.65	101	301	Peak
5320	105.22	-	-	94.48	34.35	9.7	33.31	101	301	Average
5320	114.7	-	-	103.96	34.35	9.7	33.31	101	301	Peak
5350	71.06	-2.94	74	60.2	34.38	9.74	33.26	101	301	Peak
5350	52.14	-1.86	54	41.28	34.38	9.74	33.26	101	301	Average



Test Mode :	Mode 7	Temperature :	23~25°C
Test Channel :	100	Relative Humidity :	50~51%
Test Engineer :	Ivan Chiang	Polarization :	Horizontal
Remark :	1. 5500 MHz is Fundamental Signals which can be ignored. 2. 5470 MHz and 5725 MHz are not within a restricted band.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
31.89	20.07	-19.93	40	34.94	16.04	0.55	31.46	157	149	Peak
118.02	14.6	-28.9	43.5	33.71	11.36	1.09	31.56	-	-	Peak
240.06	23.12	-22.88	46	41.03	11.98	1.53	31.42	-	-	Peak
469.4	20.3	-25.7	46	31.3	17.72	2.35	31.07	-	-	Peak
844.6	25.17	-20.83	46	29.65	22.99	3.26	30.73	-	-	Peak
995.8	26.8	-27.2	54	29.03	24.84	3.51	30.58	-	-	Peak
5470	66.55	-1.75	68.3	55.15	34.47	9.94	33.01	112	316	Peak
5500	112.59	-	-	101.08	34.49	9.98	32.96	112	316	Peak
5500	101.91	-	-	90.3	34.5	10.02	32.91	112	316	Average
5725	53.71	-14.59	68.3	42.16	34.81	9.92	33.18	112	316	Peak



Test Mode :	Mode 7	Temperature :	23~25°C
Test Channel :	100	Relative Humidity :	50~51%
Test Engineer :	Ivan Chiang	Polarization :	Vertical
Remark :	1. 5500 MHz is Fundamental Signals which can be ignored. 2. 5470 MHz and 5725 MHz are not within a restricted band.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30.27	19.95	-20.05	40	34.37	16.51	0.53	31.46	-	-	Peak
118.29	19.25	-24.25	43.5	38.36	11.36	1.09	31.56	-	-	Peak
264.09	14.42	-31.58	46	31.32	12.89	1.61	31.4	-	-	Peak
511.4	23.52	-22.48	46	33.71	18.39	2.47	31.05	-	-	Peak
716.5	24.35	-21.65	46	31	21.15	2.98	30.78	-	-	Peak
934.9	26.66	-19.34	46	29.78	24.07	3.42	30.61	100	312	Peak
5470	65.22	-3.08	68.3	53.82	34.47	9.94	33.01	111	288	Peak
5500	113.93	-	-	102.32	34.5	10.02	32.91	111	288	Peak
5500	104.2	-	-	92.59	34.5	10.02	32.91	111	288	Average
5725	52.73	-15.57	68.3	41.18	34.81	9.92	33.18	111	288	Peak



Test Mode :	Mode 8	Temperature :	23~25°C
Test Channel :	116	Relative Humidity :	50~51%
Test Engineer :	Ivan Chiang	Polarization :	Horizontal
Remark :	1. 5580 MHz is Fundamental Signals which can be ignored. 2. 5470 MHz and 5725 MHz are not within a restricted band.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
32.7	19.26	-20.74	40	34.37	15.8	0.56	31.47	158	265	Peak
129.9	15.16	-28.34	43.5	34.01	11.57	1.15	31.57	-	-	Peak
238.17	20.78	-25.22	46	38.83	11.85	1.52	31.42	-	-	Peak
365.8	18.62	-27.38	46	32.3	15.51	2.07	31.26	-	-	Peak
536.6	20.83	-25.17	46	30.53	18.78	2.52	31	-	-	Peak
825.7	24.19	-21.81	46	28.93	22.76	3.21	30.71	-	-	Peak
5470	54.19	-14.11	68.3	42.79	34.47	9.94	33.01	113	316	Peak
5580	106.83	-	-	95.43	34.47	9.94	33.01	113	316	Average
5580	117.27	-	-	105.68	34.6	9.99	33	113	316	Peak
5725	53.73	-14.57	68.3	42.18	34.81	9.92	33.18	113	316	Peak



Test Mode :	Mode 8	Temperature :	23~25°C
Test Channel :	116	Relative Humidity :	50~51%
Test Engineer :	Ivan Chiang	Polarization :	Vertical
Remark :	1. 5580 MHz is Fundamental Signals which can be ignored. 2. 5470 MHz and 5725 MHz are not within a restricted band.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
33.24	19.2	-20.8	40	34.31	15.8	0.56	31.47	-	-	Peak
118.02	19.39	-24.11	43.5	38.5	11.36	1.09	31.56	-	-	Peak
257.34	16.08	-29.92	46	33.15	12.78	1.57	31.42	-	-	Peak
511.4	25.89	-20.11	46	36.08	18.39	2.47	31.05	-	-	Peak
716.5	24.95	-21.05	46	31.6	21.15	2.98	30.78	-	-	Peak
915.3	26.87	-19.13	46	30.32	23.83	3.38	30.66	162	181	Peak
5470	54.85	-13.45	68.3	43.45	34.47	9.94	33.01	100	292	Peak
5580	116.16	-	-	104.57	34.6	9.99	33	100	292	Peak
5580	106.04	-	-	94.45	34.6	9.99	33	100	292	Average
5725	54.62	-13.68	68.3	43.07	34.81	9.92	33.18	100	292	Peak



Test Mode :	Mode 9	Temperature :	23~25°C
Test Channel :	140	Relative Humidity :	50~51%
Test Engineer :	Ivan Chiang	Polarization :	Horizontal
Remark :	1. 5700 MHz is Fundamental Signals which can be ignored. 2. 5470 MHz and 5725 MHz are not within a restricted band.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
34.59	18.19	-21.81	40	33.75	15.33	0.58	31.47	-	-	Peak
118.02	14.08	-29.42	43.5	33.19	11.36	1.09	31.56	-	-	Peak
240.33	17.59	-28.41	46	35.5	11.98	1.53	31.42	-	-	Peak
430.9	20.7	-25.3	46	32.51	17.07	2.25	31.13	-	-	Peak
842.5	26.22	-19.78	46	30.72	22.97	3.25	30.72	-	-	Peak
948.9	26.95	-19.05	46	29.82	24.24	3.46	30.57	100	126	Peak
5470	53.14	-15.16	68.3	41.74	34.47	9.94	33.01	108	285	Peak
5700	114.27	-	-	102.72	34.77	9.93	33.15	108	285	Peak
5700	104.31	-	-	92.76	34.77	9.93	33.15	108	285	Average
5725	67.02	-1.28	68.3	55.47	34.81	9.92	33.18	108	285	Peak



Test Mode :	Mode 9	Temperature :	23~25°C
Test Channel :	140	Relative Humidity :	50~51%
Test Engineer :	Ivan Chiang	Polarization :	Vertical
Remark :	1. 5700 MHz is Fundamental Signals which can be ignored. 2. 5470 MHz and 5725 MHz are not within a restricted band.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
34.86	18.63	-21.37	40	34.19	15.33	0.58	31.47	-	-	Peak
118.29	19.53	-23.97	43.5	38.64	11.36	1.09	31.56	-	-	Peak
240.33	16.42	-29.58	46	34.33	11.98	1.53	31.42	-	-	Peak
511.4	24.97	-21.03	46	35.16	18.39	2.47	31.05	-	-	Peak
615	25.03	-20.97	46	33.28	19.93	2.73	30.91	-	-	Peak
932.1	26.06	-19.94	46	29.23	24.03	3.42	30.62	100	187	Peak
5470	52.41	-15.89	68.3	41.01	34.47	9.94	33.01	101	241	Peak
5700	112.9	-	-	101.35	34.77	9.93	33.15	101	241	Peak
5700	103.35	-	-	91.8	34.77	9.93	33.15	101	241	Average
5725	66.39	-1.91	68.3	54.84	34.81	9.92	33.18	101	241	Peak



Test Mode :	Mode 10	Temperature :	23~25°C
Test Channel :	36	Relative Humidity :	50~51%
Test Engineer :	Ivan Chiang	Polarization :	Horizontal
Remark :	5180 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
34.86	18.25	-21.75	40	33.81	15.33	0.58	31.47	-	-	Peak
160.41	15.07	-28.43	43.5	34.99	10.38	1.22	31.52	-	-	Peak
244.38	21.33	-24.67	46	38.96	12.26	1.53	31.42	-	-	Peak
363.7	19.93	-26.07	46	33.68	15.45	2.07	31.27	-	-	Peak
855.8	25.87	-20.13	46	30.21	23.11	3.28	30.73	-	-	Peak
937	27.42	-18.58	46	30.5	24.09	3.43	30.6	148	168	Peak
5150	43.41	-10.59	54	33.43	34.22	9.41	33.65	100	317	Average
5150	55.1	-18.9	74	45.12	34.22	9.41	33.65	100	317	Peak
5180	96.89	-	-	86.79	34.25	9.45	33.6	100	317	Average
5180	107.33	-	-	97.23	34.25	9.45	33.6	100	317	Peak
5350	52.4	-21.6	74	41.54	34.38	9.74	33.26	100	317	Peak
5350	41.1	-12.9	54	30.24	34.38	9.74	33.26	100	317	Average



Test Mode :	Mode 10	Temperature :	23~25°C
Test Channel :	36	Relative Humidity :	50~51%
Test Engineer :	Ivan Chiang	Polarization :	Vertical
Remark :	5180 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
37.02	17.84	-22.16	40	34.35	14.38	0.6	31.49	-	-	Peak
118.29	19.43	-24.07	43.5	38.54	11.36	1.09	31.56	-	-	Peak
211.98	14.94	-28.56	43.5	35.05	9.99	1.37	31.47	-	-	Peak
511.4	24	-22	46	34.19	18.39	2.47	31.05	-	-	Peak
615	24.18	-21.82	46	32.43	19.93	2.73	30.91	-	-	Peak
953.8	27.29	-18.71	46	30.1	24.3	3.46	30.57	100	321	Peak
5150	42.97	-11.03	54	32.99	34.22	9.41	33.65	161	273	Average
5150	54.43	-19.57	74	44.45	34.22	9.41	33.65	161	273	Peak
5180	97.36	-	-	87.26	34.25	9.45	33.6	161	273	Average
5180	107	-	-	96.9	34.25	9.45	33.6	161	273	Peak
5350	52.9	-21.1	74	42.04	34.38	9.74	33.26	161	273	Peak
5350	41.29	-12.71	54	30.43	34.38	9.74	33.26	161	273	Average



Test Mode :	Mode 11	Temperature :	23~25°C
Test Channel :	44	Relative Humidity :	50~51%
Test Engineer :	Ivan Chiang	Polarization :	Horizontal
Remark :	5220 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
32.43	19.57	-20.43	40	34.68	15.8	0.56	31.47	-	-	Peak
129.9	16.34	-27.16	43.5	35.19	11.57	1.15	31.57	-	-	Peak
239.25	24.32	-21.68	46	42.3	11.91	1.53	31.42	-	-	Peak
564.6	21.24	-24.76	46	30.39	19.22	2.59	30.96	-	-	Peak
719.3	28.46	-17.54	46	35.04	21.2	2.99	30.77	111	162	Peak
932.1	27.2	-18.8	46	30.37	24.03	3.42	30.62	-	-	Peak
5150	40.68	-13.32	54	30.7	34.22	9.41	33.65	100	314	Average
5150	52.17	-21.83	74	42.19	34.22	9.41	33.65	100	314	Peak
5220	97.25	-	-	86.95	34.27	9.53	33.5	100	314	Average
5220	107.86	-	-	97.56	34.27	9.53	33.5	100	314	Peak
5350	53.18	-20.82	74	42.32	34.38	9.74	33.26	100	314	Peak
5350	41.16	-12.84	54	30.3	34.38	9.74	33.26	100	314	Average



Test Mode :	Mode 11	Temperature :	23~25°C
Test Channel :	44	Relative Humidity :	50~51%
Test Engineer :	Ivan Chiang	Polarization :	Vertical
Remark :	5220 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
118.29	19.12	-24.38	43.5	38.23	11.36	1.09	31.56	-	-	Peak
129.09	17.1	-26.4	43.5	35.96	11.57	1.14	31.57	-	-	Peak
238.17	14.44	-31.56	46	32.49	11.85	1.52	31.42	-	-	Peak
511.4	24.15	-21.85	46	34.34	18.39	2.47	31.05	-	-	Peak
819.4	27.01	-18.99	46	31.82	22.7	3.19	30.7	-	-	Peak
920.9	27.69	-18.31	46	31.06	23.89	3.39	30.65	100	154	Peak
5150	40.59	-13.41	54	30.61	34.22	9.41	33.65	159	273	Average
5150	51.55	-22.45	74	41.57	34.22	9.41	33.65	159	273	Peak
5220	98.17	-	-	87.87	34.27	9.53	33.5	159	273	Average
5220	107.62	-	-	97.32	34.27	9.53	33.5	159	273	Peak
5350	52.65	-21.35	74	41.79	34.38	9.74	33.26	159	273	Peak
5350	41.38	-12.62	54	30.52	34.38	9.74	33.26	159	273	Average



Test Mode :	Mode 12	Temperature :	23~25°C
Test Channel :	48	Relative Humidity :	50~51%
Test Engineer :	Ivan Chiang	Polarization :	Horizontal
Remark :	5240 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
42.42	15.6	-24.4	40	34.88	11.59	0.64	31.51	-	-	Peak
160.41	14.64	-28.86	43.5	34.56	10.38	1.22	31.52	-	-	Peak
240.33	26.99	-19.01	46	44.9	11.98	1.53	31.42	159	68	Peak
722.1	26.21	-19.79	46	32.75	21.24	2.99	30.77	-	-	Peak
822.2	25.55	-20.45	46	30.32	22.73	3.2	30.7	-	-	Peak
917.4	26.65	-19.35	46	30.08	23.85	3.38	30.66	-	-	Peak
5150	40.45	-13.55	54	30.47	34.22	9.41	33.65	100	311	Average
5150	52.28	-21.72	74	42.3	34.22	9.41	33.65	100	311	Peak
5240	98.48	-	-	88.07	34.29	9.57	33.45	100	311	Average
5240	108.13	-	-	97.81	34.29	9.53	33.5	100	311	Peak
5350	52.52	-21.48	74	41.66	34.38	9.74	33.26	100	311	Peak
5350	41.28	-12.72	54	30.42	34.38	9.74	33.26	100	311	Average



Test Mode :	Mode 12	Temperature :	23~25°C
Test Channel :	48	Relative Humidity :	50~51%
Test Engineer :	Ivan Chiang	Polarization :	Vertical
Remark :	5240 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
118.29	18.82	-24.68	43.5	37.93	11.36	1.09	31.56	-	-	Peak
129.09	17.65	-25.85	43.5	36.51	11.57	1.14	31.57	-	-	Peak
238.17	17.96	-28.04	46	36.01	11.85	1.52	31.42	-	-	Peak
511.4	24.49	-21.51	46	34.68	18.39	2.47	31.05	-	-	Peak
615	24.59	-21.41	46	32.84	19.93	2.73	30.91	-	-	Peak
937	26.74	-19.26	46	29.82	24.09	3.43	30.6	100	92	Peak
5150	40.62	-13.38	54	30.64	34.22	9.41	33.65	160	270	Average
5150	52.56	-21.44	74	42.58	34.22	9.41	33.65	160	270	Peak
5240	97.76	-	-	87.35	34.29	9.57	33.45	160	270	Average
5240	107.13	-	-	96.81	34.29	9.53	33.5	160	270	Peak
5350	52.82	-21.18	74	41.96	34.38	9.74	33.26	160	270	Peak
5350	41.58	-12.42	54	30.72	34.38	9.74	33.26	160	270	Average



Test Mode :	Mode 13	Temperature :	23~25°C
Test Channel :	52	Relative Humidity :	50~51%
Test Engineer :	Ivan Chiang	Polarization :	Horizontal
Remark :	5260 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
35.94	17.7	-22.3	40	33.73	14.86	0.59	31.48	-	-	Peak
118.02	14.14	-29.36	43.5	33.25	11.36	1.09	31.56	-	-	Peak
240.06	19.61	-26.39	46	37.52	11.98	1.53	31.42	-	-	Peak
427.4	20.31	-25.69	46	32.18	17.03	2.24	31.14	-	-	Peak
657	22.95	-23.05	46	30.56	20.4	2.85	30.86	-	-	Peak
864.2	26.58	-19.42	46	30.8	23.21	3.29	30.72	100	185	Peak
5150	41.24	-12.76	54	31.26	34.22	9.41	33.65	161	268	Average
5150	54.1	-19.9	74	44.12	34.22	9.41	33.65	161	268	Peak
5260	106.84	-	-	96.32	34.31	9.62	33.41	161	268	Average
5260	117.86	-	-	107.44	34.3	9.57	33.45	161	268	Peak
5350	54.56	-19.44	74	43.7	34.38	9.74	33.26	161	268	Peak
5350	42.84	-11.16	54	31.98	34.38	9.74	33.26	161	268	Average



Test Mode :	Mode 13	Temperature :	23~25°C
Test Channel :	52	Relative Humidity :	50~51%
Test Engineer :	Ivan Chiang	Polarization :	Vertical
Remark :	5260 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
117.21	18.59	-24.91	43.5	37.78	11.28	1.09	31.56	-	-	Peak
129.09	18.04	-25.46	43.5	36.9	11.57	1.14	31.57	-	-	Peak
250.86	15.32	-30.68	46	32.5	12.69	1.54	31.41	-	-	Peak
511.4	24.58	-21.42	46	34.77	18.39	2.47	31.05	-	-	Peak
749.4	24.31	-21.69	46	30.28	21.67	3.06	30.7	-	-	Peak
946.1	27.03	-18.97	46	29.96	24.2	3.45	30.58	100	93	Peak
5150	48.88	-5.12	54	38.9	34.22	9.41	33.65	100	308	Average
5150	52.76	-21.24	74	42.78	34.22	9.41	33.65	100	308	Peak
5260	105.63	-	-	95.11	34.31	9.62	33.41	100	308	Average
5260	115.31	-	-	104.89	34.3	9.57	33.45	100	308	Peak
5350	54.73	-19.27	74	43.87	34.38	9.74	33.26	100	308	Peak
5350	49.87	-4.13	54	39.01	34.38	9.74	33.26	100	308	Average



Test Mode :	Mode 14	Temperature :	23~25°C
Test Channel :	60	Relative Humidity :	50~51%
Test Engineer :	Ivan Chiang	Polarization :	Horizontal
Remark :	5300 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
118.02	14.88	-28.62	43.5	33.99	11.36	1.09	31.56	-	-	Peak
247.62	20.74	-25.26	46	38.16	12.46	1.53	31.41	-	-	Peak
273.81	18.75	-27.25	46	35.43	13.04	1.64	31.36	-	-	Peak
438.6	20.73	-25.27	46	32.38	17.2	2.27	31.12	-	-	Peak
822.2	25.47	-20.53	46	30.24	22.73	3.2	30.7	-	-	Peak
951.7	27.01	-18.99	46	29.84	24.28	3.46	30.57	112	132	Peak
5150	41.77	-12.23	54	31.79	34.22	9.41	33.65	100	237	Average
5150	53.28	-20.72	74	43.3	34.22	9.41	33.65	100	237	Peak
5300	106.99	-	-	96.35	34.34	9.66	33.36	100	237	Average
5300	117.42	-	-	106.78	34.34	9.66	33.36	100	237	Peak
5350	67.11	-6.89	74	56.25	34.38	9.74	33.26	100	237	Peak
5350	49.41	-4.59	54	38.55	34.38	9.74	33.26	100	237	Average



Test Mode :	Mode 14	Temperature :	23~25°C
Test Channel :	60	Relative Humidity :	50~51%
Test Engineer :	Ivan Chiang	Polarization :	Vertical
Remark :	5300 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
119.37	18.91	-24.59	43.5	37.92	11.45	1.1	31.56	-	-	Peak
129.9	18.2	-25.3	43.5	37.05	11.57	1.15	31.57	-	-	Peak
268.41	14.69	-31.31	46	31.48	12.96	1.63	31.38	-	-	Peak
511.4	23.77	-22.23	46	33.96	18.39	2.47	31.05	-	-	Peak
716.5	24.7	-21.3	46	31.35	21.15	2.98	30.78	-	-	Peak
931.4	27.43	-18.57	46	30.61	24.02	3.42	30.62	132	141	Peak
5150	40.52	-13.48	54	30.54	34.22	9.41	33.65	100	22	Average
5150	52.16	-21.84	74	42.18	34.22	9.41	33.65	100	22	Peak
5300	105.11	-	-	94.47	34.34	9.66	33.36	100	22	Average
5300	115.05	-	-	104.41	34.34	9.66	33.36	100	22	Peak
5350	64.75	-9.25	74	53.89	34.38	9.74	33.26	100	22	Peak
5350	46.73	-7.27	54	35.87	34.38	9.74	33.26	100	22	Average



Test Mode :	Mode 15	Temperature :	23~25°C
Test Channel :	64	Relative Humidity :	50~51%
Test Engineer :	Ivan Chiang	Polarization :	Horizontal
Remark :	5320 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
119.1	13.91	-29.59	43.5	32.92	11.45	1.1	31.56	-	-	Peak
239.25	24.38	-21.62	46	42.36	11.91	1.53	31.42	-	-	Peak
242.22	21.19	-24.81	46	38.96	12.12	1.53	31.42	-	-	Peak
595.4	21.37	-24.63	46	29.92	19.7	2.68	30.93	-	-	Peak
819.4	26.58	-19.42	46	31.39	22.7	3.19	30.7	-	-	Peak
917.4	26.67	-19.33	46	30.1	23.85	3.38	30.66	132	146	Peak
5150	52.96	-21.04	74	42.98	34.22	9.41	33.65	100	234	Peak
5150	41.62	-12.38	54	31.64	34.22	9.41	33.65	100	234	Average
5320	114.33	-	-	103.59	34.35	9.7	33.31	100	234	Peak
5320	104.62	-	-	93.88	34.35	9.7	33.31	100	234	Average
5350	51.79	-2.21	54	40.93	34.38	9.74	33.26	100	234	Average
5350	72.41	-1.59	74	61.55	34.38	9.74	33.26	100	234	Peak



Test Mode :	Mode 15	Temperature :	23~25°C
Test Channel :	64	Relative Humidity :	50~51%
Test Engineer :	Ivan Chiang	Polarization :	Vertical
Remark :	5320 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
118.29	18.71	-24.79	43.5	37.82	11.36	1.09	31.56	-	-	Peak
129.09	18.49	-25.01	43.5	37.35	11.57	1.14	31.57	-	-	Peak
263.82	15.09	-30.91	46	31.99	12.89	1.61	31.4	-	-	Peak
511.4	24.16	-21.84	46	34.35	18.39	2.47	31.05	-	-	Peak
663.3	27.65	-18.35	46	35.16	20.48	2.87	30.86	100	23	Peak
937.7	26.51	-19.49	46	29.57	24.11	3.43	30.6	-	-	Peak
5150	41.08	-12.92	54	31.1	34.22	9.41	33.65	101	297	Average
5150	52.8	-21.2	74	42.82	34.22	9.41	33.65	101	297	Peak
5320	104.3	-	-	93.56	34.35	9.7	33.31	101	297	Average
5320	113.98	-	-	103.24	34.35	9.7	33.31	101	297	Peak
5350	71.73	-2.27	74	60.87	34.38	9.74	33.26	101	297	Peak
5350	51.99	-2.01	54	41.13	34.38	9.74	33.26	101	297	Average



Test Mode :	Mode 16	Temperature :	23~25°C
Test Channel :	100	Relative Humidity :	50~51%
Test Engineer :	Ivan Chiang	Polarization :	Horizontal
Remark :	1. 5500 MHz is Fundamental Signals which can be ignored. 2. 5470 MHz and 5725 MHz are not within a restricted band.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
129.09	14.26	-29.24	43.5	33.12	11.57	1.14	31.57	-	-	Peak
159.06	13.65	-29.85	43.5	33.5	10.45	1.22	31.52	-	-	Peak
243.3	19.56	-26.44	46	37.26	12.19	1.53	31.42	-	-	Peak
497.4	20.09	-25.91	46	30.54	18.18	2.44	31.07	-	-	Peak
663.3	23.47	-22.53	46	30.98	20.48	2.87	30.86	-	-	Peak
895.7	25.83	-20.17	46	29.63	23.57	3.33	30.7	100	53	Peak
5470	66.56	-1.74	68.3	55.16	34.47	9.94	33.01	111	235	Peak
5500	111.4	-	-	99.79	34.5	10.02	32.91	111	235	Peak
5500	101.45	-	-	89.84	34.5	10.02	32.91	111	235	Average
5725	54.54	-13.76	68.3	42.99	34.81	9.92	33.18	111	235	Peak



Test Mode :	Mode 16	Temperature :	23~25°C
Test Channel :	100	Relative Humidity :	50~51%
Test Engineer :	Ivan Chiang	Polarization :	Vertical
Remark :	1. 5500 MHz is Fundamental Signals which can be ignored. 2. 5470 MHz and 5725 MHz are not within a restricted band.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
118.29	19.1	-24.4	43.5	38.21	11.36	1.09	31.56	-	-	Peak
129.09	18.78	-24.72	43.5	37.64	11.57	1.14	31.57	-	-	Peak
220.89	20.29	-25.71	46	39.71	10.61	1.43	31.46	-	-	Peak
511.4	25.19	-20.81	46	35.38	18.39	2.47	31.05	-	-	Peak
716.5	24.51	-21.49	46	31.16	21.15	2.98	30.78	-	-	Peak
928.6	26.13	-19.87	46	29.36	23.98	3.41	30.62	100	24	Peak
5470	66.61	-1.69	68.3	55.21	34.47	9.94	33.01	100	290	Peak
5500	112.82	-	-	101.31	34.49	9.98	32.96	100	290	Peak
5500	103.1	-	-	91.49	34.5	10.02	32.91	100	290	Average
5725	53.4	-14.9	68.3	41.85	34.81	9.92	33.18	100	290	Peak



Test Mode :	Mode 17	Temperature :	23~25°C
Test Channel :	116	Relative Humidity :	50~51%
Test Engineer :	Ivan Chiang	Polarization :	Horizontal
Remark :	1. 5580 MHz is Fundamental Signals which can be ignored. 2. 5470 MHz and 5725 MHz are not within a restricted band.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
129.09	14.78	-28.72	43.5	33.64	11.57	1.14	31.57	-	-	Peak
160.14	13.72	-29.78	43.5	33.64	10.38	1.22	31.52	-	-	Peak
238.98	16.93	-29.07	46	34.98	11.85	1.52	31.42	-	-	Peak
430.9	21.03	-24.97	46	32.84	17.07	2.25	31.13	-	-	Peak
511.4	20.99	-25.01	46	31.18	18.39	2.47	31.05	-	-	Peak
937	26.62	-19.38	46	29.7	24.09	3.43	30.6	100	38	Peak
5470	52.68	-15.62	68.3	41.28	34.47	9.94	33.01	113	314	Peak
5580	116.6	-	-	105.01	34.6	9.99	33	113	314	Peak
5580	106.14	-	-	94.55	34.6	9.99	33	113	314	Average
5725	53.81	-14.49	68.3	42.26	34.81	9.92	33.18	113	314	Peak



Test Mode :	Mode 17	Temperature :	23~25°C
Test Channel :	116	Relative Humidity :	50~51%
Test Engineer :	Ivan Chiang	Polarization :	Vertical
Remark :	1. 5580 MHz is Fundamental Signals which can be ignored. 2. 5470 MHz and 5725 MHz are not within a restricted band.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
118.02	18.88	-24.62	43.5	37.99	11.36	1.09	31.56	-	-	Peak
129.09	18.04	-25.46	43.5	36.9	11.57	1.14	31.57	-	-	Peak
238.17	17.09	-28.91	46	35.14	11.85	1.52	31.42	-	-	Peak
511.4	24.55	-21.45	46	34.74	18.39	2.47	31.05	-	-	Peak
663.3	27.12	-18.88	46	34.63	20.48	2.87	30.86	-	-	Peak
942.6	27.27	-18.73	46	30.25	24.17	3.44	30.59	100	99	Peak
5470	54.19	-14.11	68.3	42.79	34.47	9.94	33.01	100	289	Peak
5580	105.82	-	-	94.23	34.6	9.99	33	100	289	Average
5580	116.36	-	-	104.77	34.6	9.99	33	100	289	Peak
5725	54.71	-13.59	68.3	43.16	34.81	9.92	33.18	100	289	Peak



Test Mode :	Mode 18	Temperature :	23~25°C
Test Channel :	140	Relative Humidity :	50~51%
Test Engineer :	Ivan Chiang	Polarization :	Horizontal
Remark :	1. 5700 MHz is Fundamental Signals which can be ignored. 2. 5470 MHz and 5725 MHz are not within a restricted band.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
107.49	15.64	-27.86	43.5	35.7	10.45	1.04	31.55	-	-	Peak
129.09	17.65	-25.85	43.5	36.51	11.57	1.14	31.57	-	-	Peak
240.33	23.02	-22.98	46	40.93	11.98	1.53	31.42	-	-	Peak
422.5	22.43	-23.57	46	34.41	16.95	2.22	31.15	-	-	Peak
528.2	22.45	-23.55	46	32.3	18.66	2.51	31.02	-	-	Peak
822.9	25.8	-20.2	46	30.57	22.73	3.2	30.7	100	47	Peak
5470	53.29	-15.01	68.3	41.89	34.47	9.94	33.01	110	33	Peak
5700	110.82	-	-	99.27	34.77	9.93	33.15	110	33	Peak
5700	101.21	-	-	89.66	34.77	9.93	33.15	110	33	Average
5725	66.21	-2.09	68.3	54.66	34.81	9.92	33.18	110	33	Peak



Test Mode :	Mode 18	Temperature :	23~25°C
Test Channel :	140	Relative Humidity :	50~51%
Test Engineer :	Ivan Chiang	Polarization :	Vertical
Remark :	1. 5700 MHz is Fundamental Signals which can be ignored. 2. 5470 MHz and 5725 MHz are not within a restricted band.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
118.02	19.01	-24.49	43.5	38.12	11.36	1.09	31.56	-	-	Peak
129.9	17.6	-25.9	43.5	36.45	11.57	1.15	31.57	-	-	Peak
239.25	15.53	-30.47	46	33.51	11.91	1.53	31.42	-	-	Peak
511.4	24.68	-21.32	46	34.87	18.39	2.47	31.05	-	-	Peak
663.3	26.04	-19.96	46	33.55	20.48	2.87	30.86	-	-	Peak
819.4	27.53	-18.47	46	32.34	22.7	3.19	30.7	100	75	Peak
5470	52.97	-15.33	68.3	41.57	34.47	9.94	33.01	131	273	Peak
5700	111.84	-	-	100.29	34.77	9.93	33.15	131	273	Peak
5700	102.53	-	-	90.98	34.77	9.93	33.15	131	273	Average
5725	64.21	-4.09	68.3	52.66	34.81	9.92	33.18	131	273	Peak

3.6 Peak Excursion Ratio Measurement

3.6.1 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.

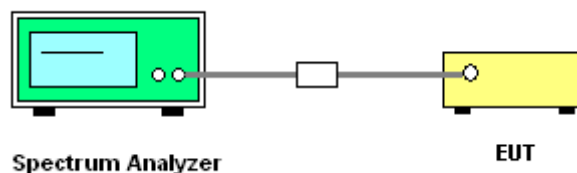
3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

3.6.3 Test Procedures

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 = 1 MHz.
 - *Set VBW \leq 3 MHz.
 - *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.

3.6.4 Test Setup

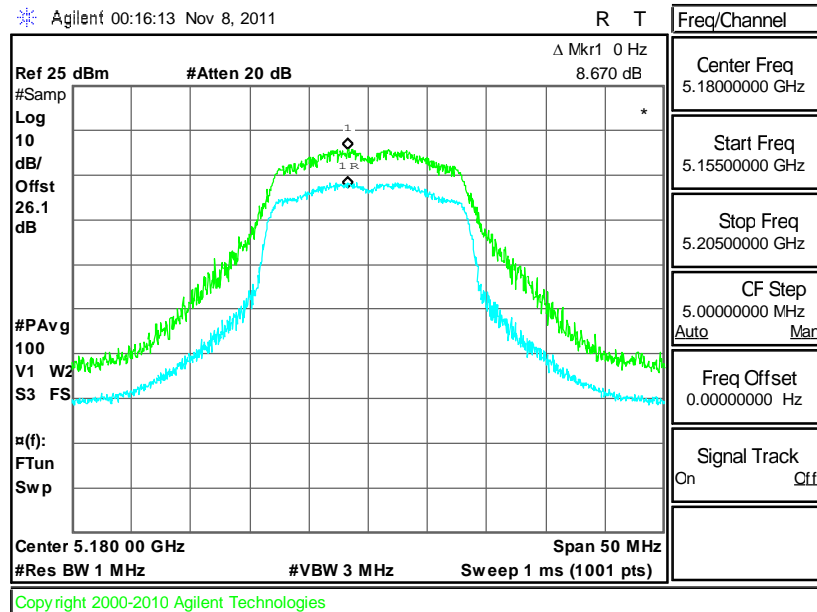




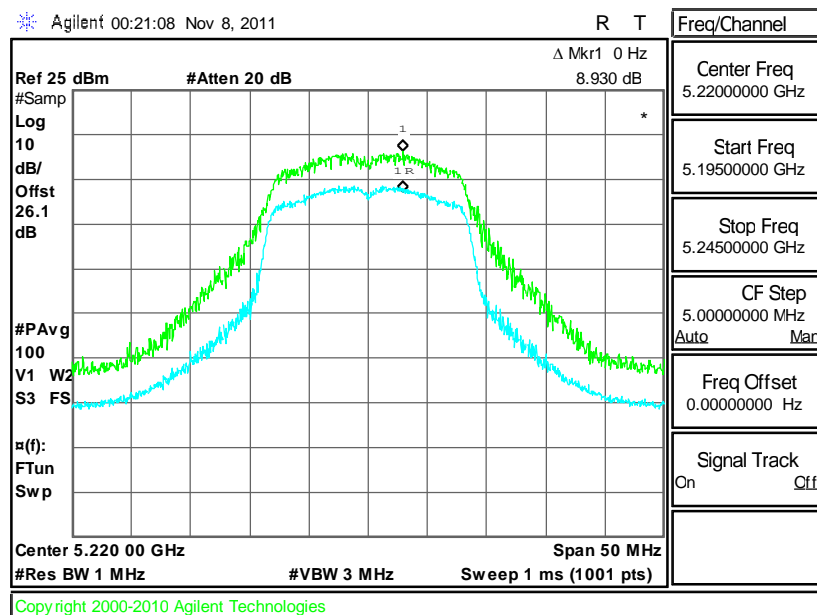
3.6.5 Test Result of Peak Excursion Ratio

Test Mode :	Mode 1~9	Temperature :	24~26°C
Test Engineer :	Alan Liu	Relative Humidity :	45~49%

Peak Excursion Ratio Plot on 802.11a Channel 36

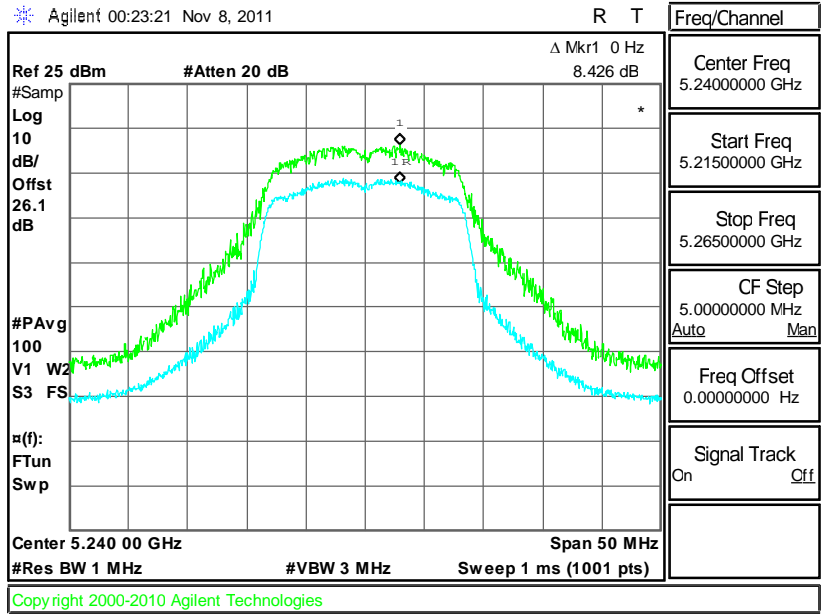


Peak Excursion Ratio Plot on 802.11a Channel 44

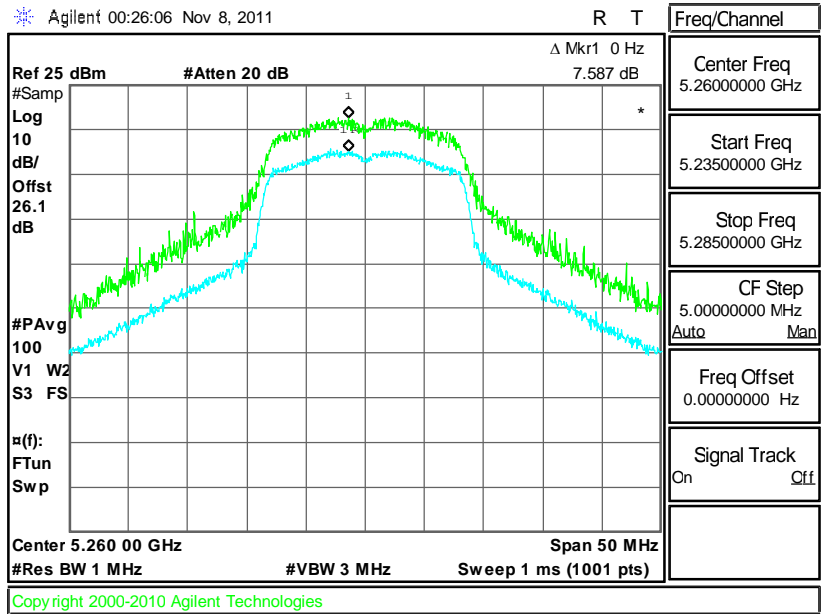




Peak Excursion Ratio Plot on 802.11a Channel 48

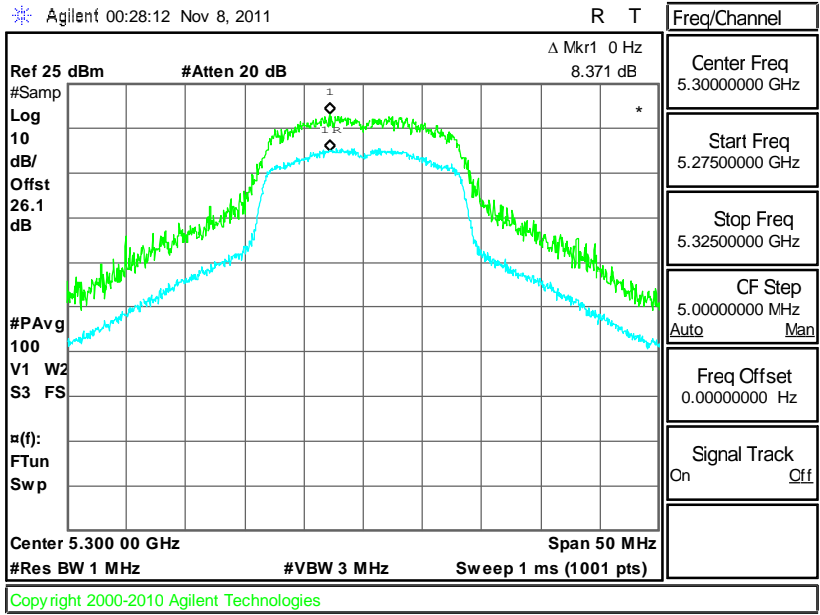


Peak Excursion Ratio Plot on 802.11a Channel 52

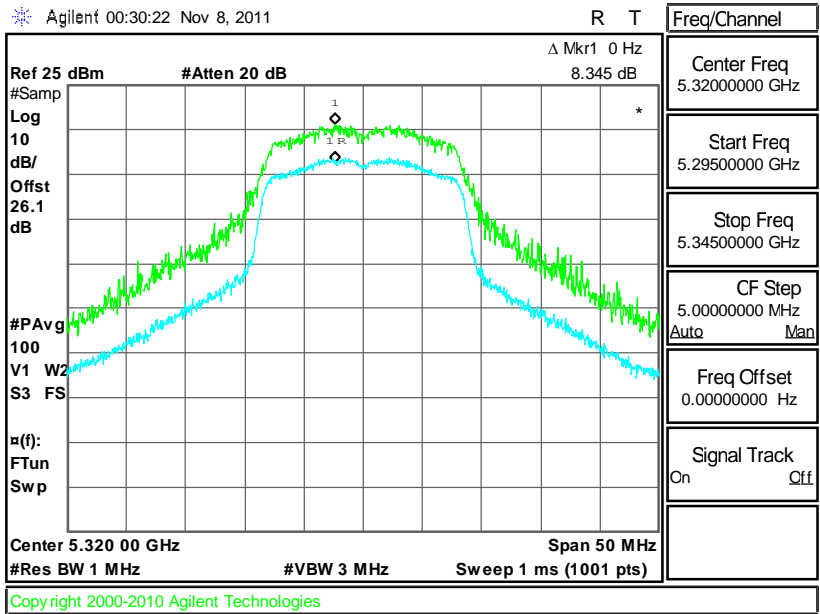




Peak Excursion Ratio Plot on 802.11a Channel 60

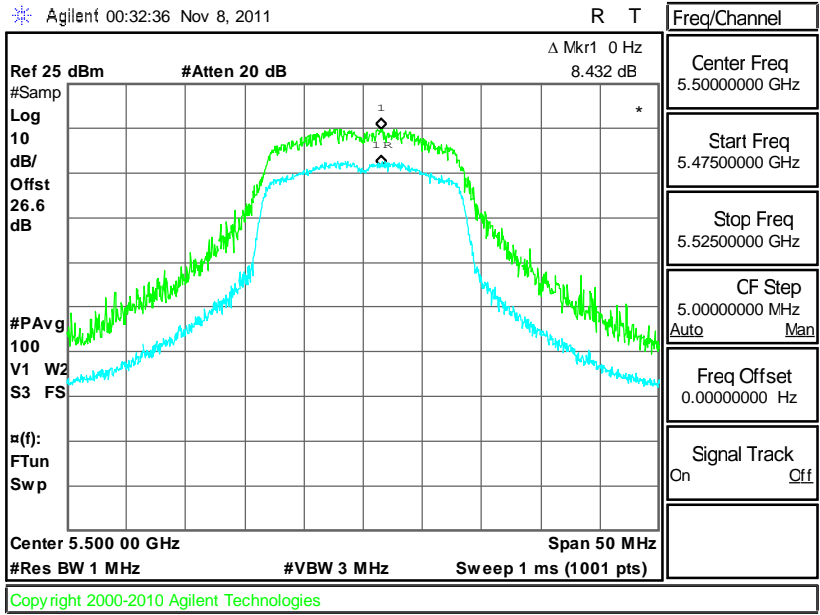


Peak Excursion Ratio Plot on 802.11a Channel 64

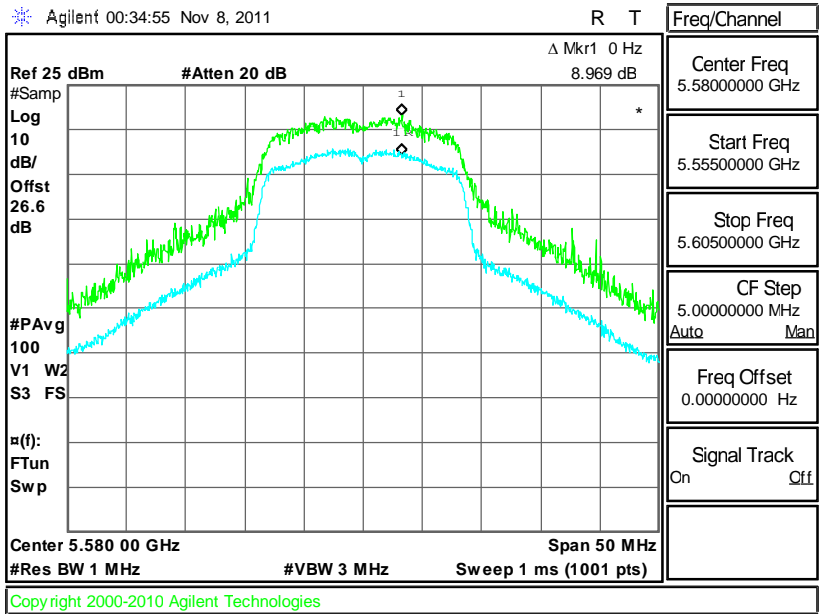




Peak Excursion Ratio Plot on 802.11a Channel 100

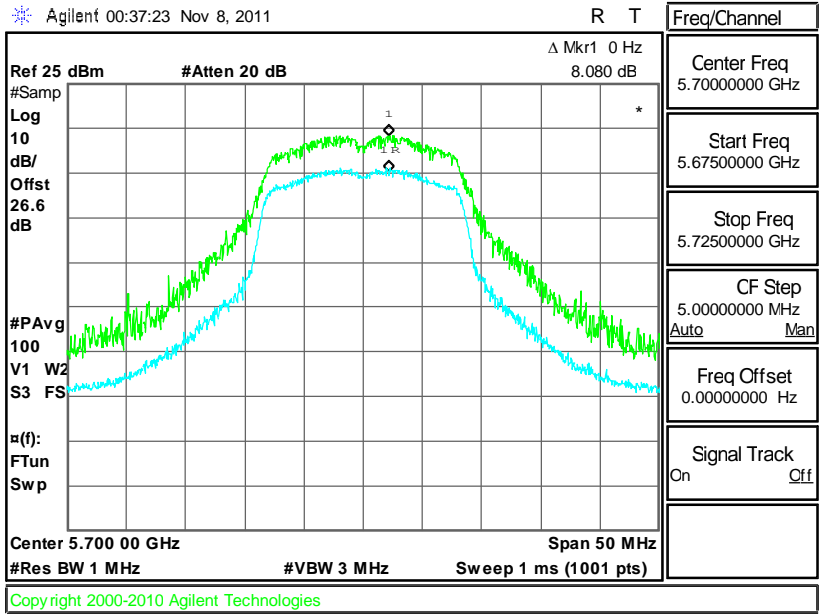


Peak Excursion Ratio Plot on 802.11a Channel 116





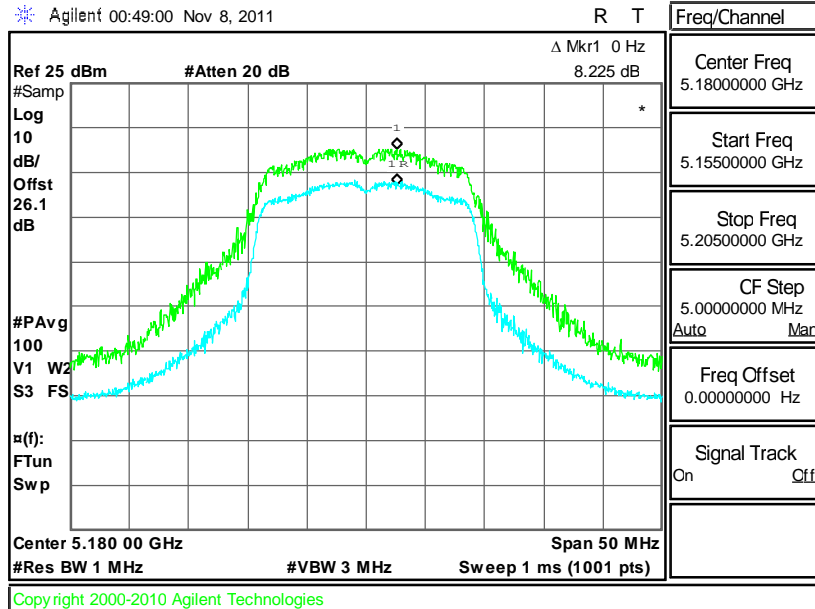
Peak Excursion Ratio Plot on 802.11a Channel 140



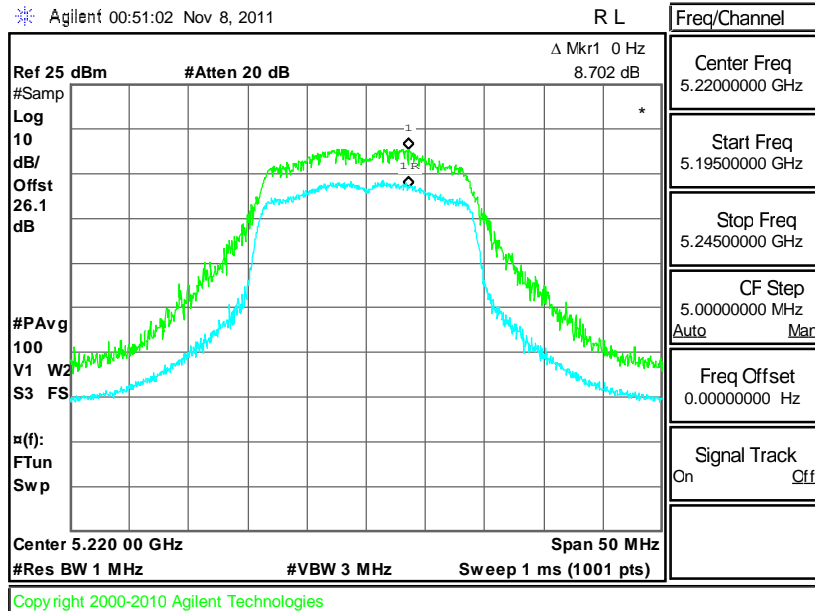


Test Mode :	Mode 10~18	Temperature :	24~26°C
Test Engineer :	Alan Liu	Relative Humidity :	45~49%

Peak Excursion Ratio Plot on 802.11n (BW 20MHz) Channel 36

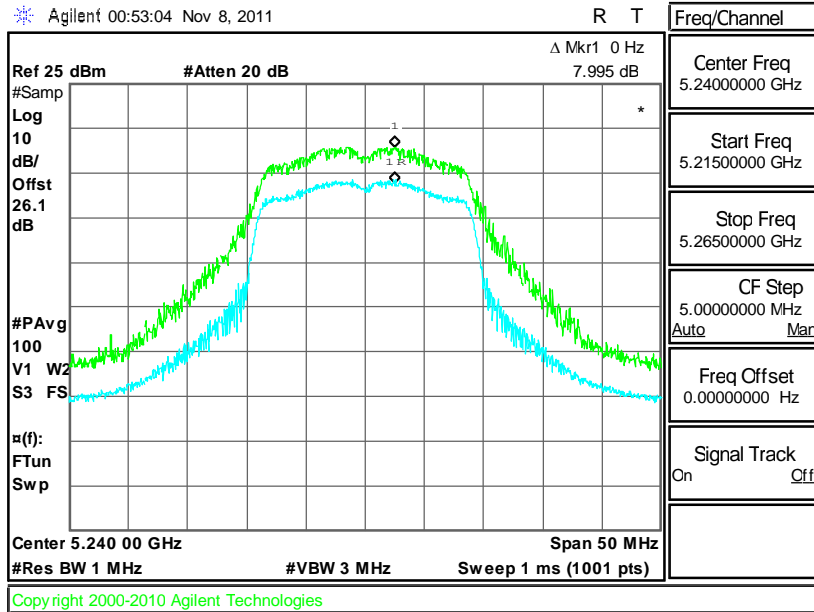


Peak Excursion Ratio Plot on 802.11n (BW 20MHz) Channel 44

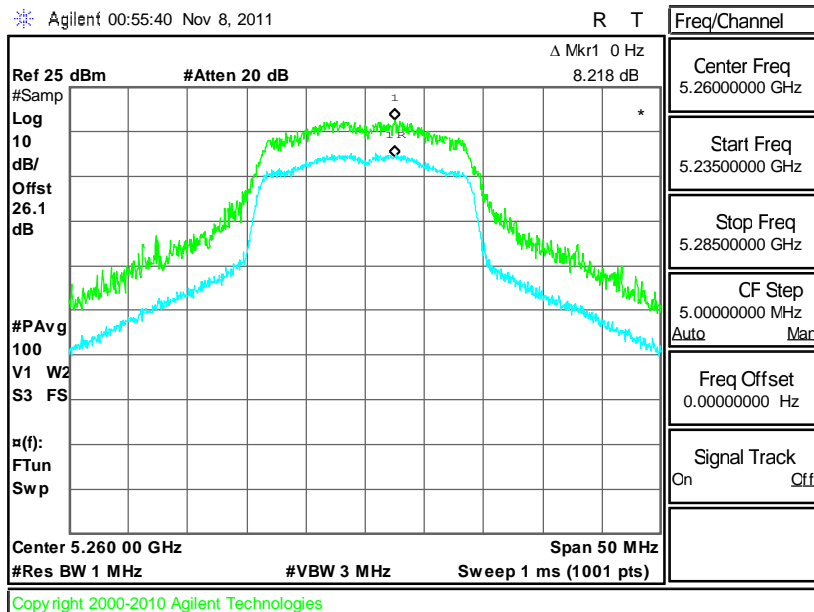




Peak Excursion Ratio Plot on 802.11n (BW 20MHz) Channel 48

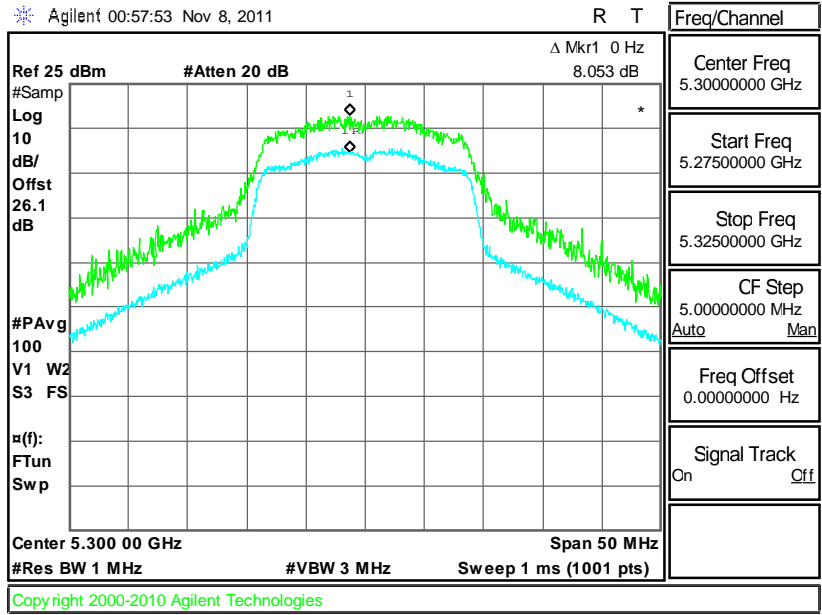


Peak Excursion Ratio Plot on 802.11n (BW 20MHz) Channel 52

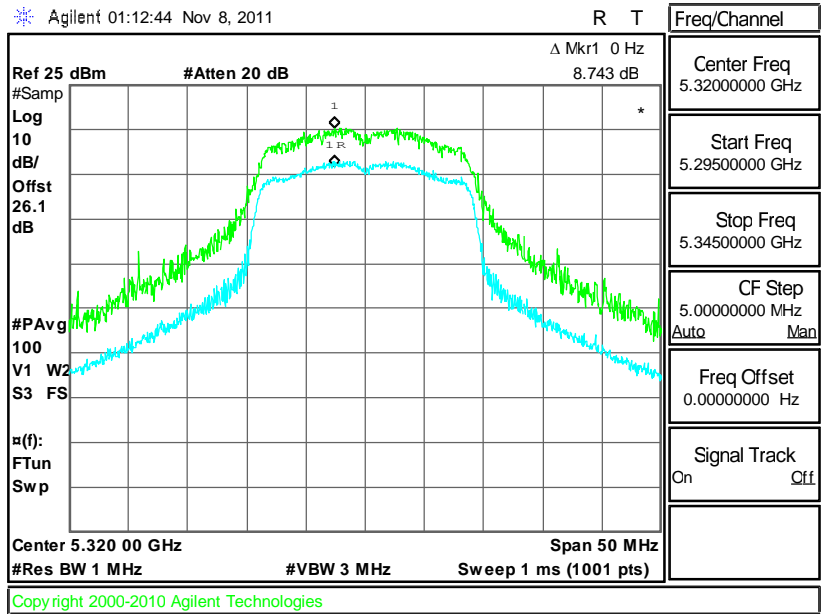




Peak Excursion Ratio Plot on 802.11n (BW 20MHz) Channel 60

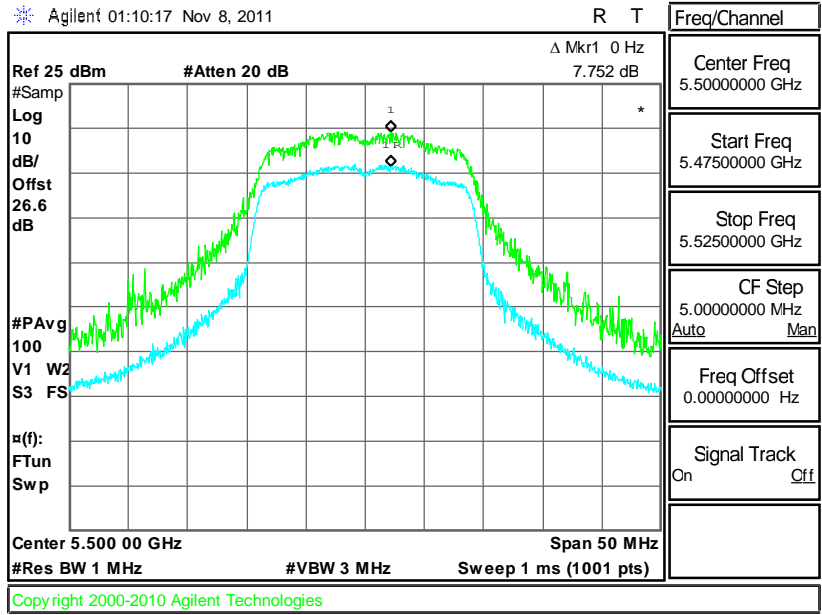


Peak Excursion Ratio Plot on 802.11n (BW 20MHz) Channel 64

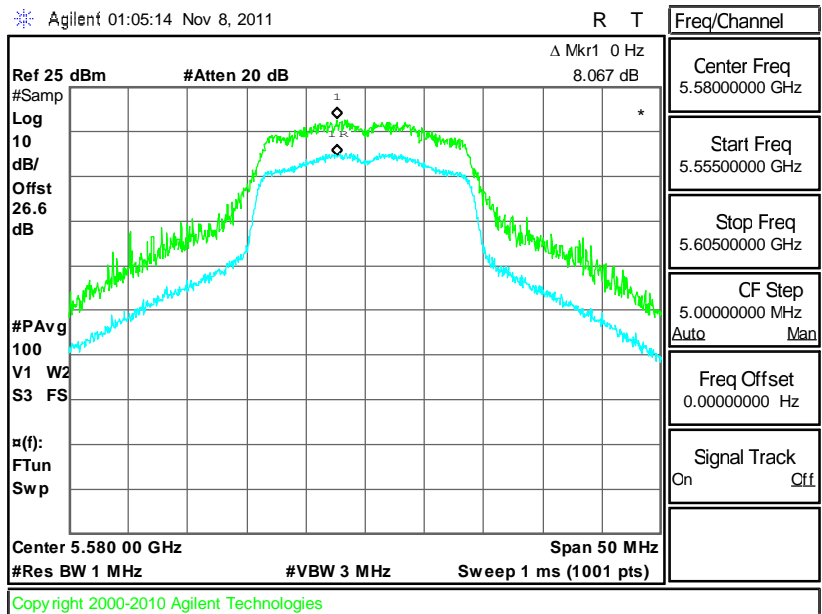




Peak Excursion Ratio Plot on 802.11n (BW 20MHz) Channel 100

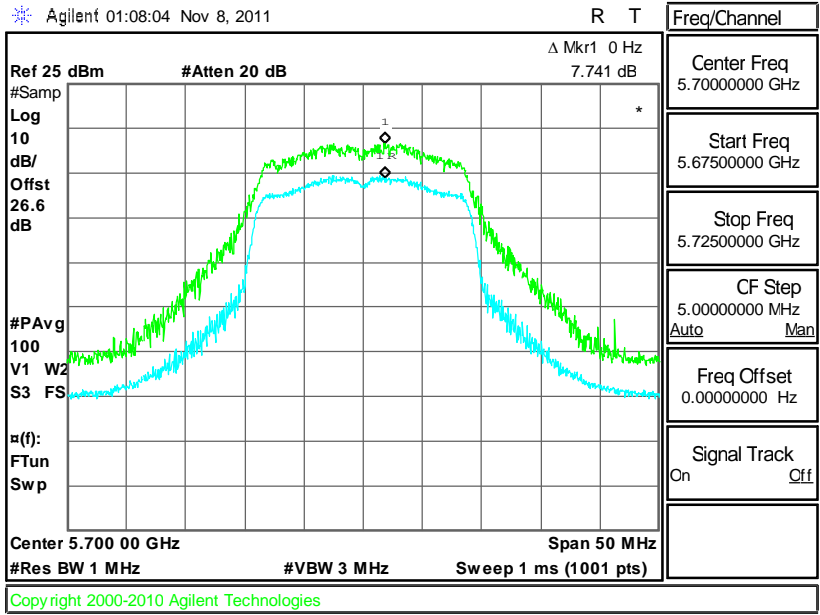


Peak Excursion Ratio Plot on 802.11n (BW 20MHz) Channel 116





Peak Excursion Ratio Plot on 802.11n (BW 20MHz) Channel 140





3.7 Automatically Discontinue Transmission

3.7.1 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.

3.7.2 Measuring Instruments

See list of measuring instruments of this test report.

3.7.3 Test Result of Automatically Discontinue Transmission

During no any information transmission, 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.

3.8 Frequency Stability Measurement

3.8.1 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.

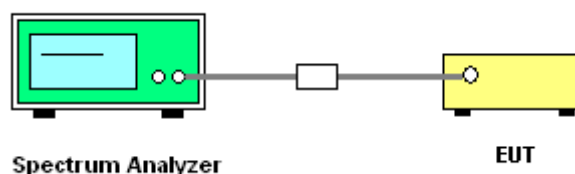
3.8.2 Measuring Instruments

See list of measuring instruments of this test report.

3.8.3 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.

3.8.4 Test Setup





3.8.5 Test Result of Frequency Stability

Test Mode :	Mode 1~9	Temperature :	24~26°C
Test Engineer :	Alan Liu	Relative Humidity :	45~49%

Channel	Frequency (MHz)	Low Frequency (Fl)	High Frequency (Fh)	Frequency Stability (ppm)
36	5180	5171.775	5188.200	-2.41
44	5220	5211.800	5228.250	4.79
48	5240	5231.750	5248.225	-2.39
52	5260	5251.775	5268.200	-2.38
60	5300	5291.725	5308.200	-7.08
64	5320	5311.750	5328.175	-7.05
100	5500	5491.750	5508.275	2.27
116	5580	5571.725	5588.175	-8.96
140	5700	5691.775	5708.250	2.19

Test Mode :	Mode 10~18	Temperature :	24~26°C
Test Engineer :	Alan Liu	Relative Humidity :	45~49%

Channel	Frequency (MHz)	Low Frequency (Fl)	High Frequency (Fh)	Frequency Stability (ppm)
36	5180	5171.175	5188.875	4.83
44	5220	5211.175	5228.825	0.00
48	5240	5231.125	5248.825	-4.77
52	5260	5251.200	5268.800	0.00
60	5300	5291.175	5308.800	-2.36
64	5320	5311.150	5328.800	-4.70
100	5500	5491.125	5508.825	-4.55
116	5580	5571.150	5588.825	-2.24
140	5700	5691.175	5708.875	4.39



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 Connected Construction

The antennas type used in this product is PIFA Antenna without connector and it is considered to meet antenna requirement of FCC.

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 Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSP40	100055	9kHz~40GHz	Jun. 13, 2011	Nov. 03, 2011 ~ Nov. 08, 2011	Jun. 12, 2012	Conducted (TH02-HY)
Power Meter	Anritsu	ML2495A	0932001	N/A	Sep. 18, 2011	Nov. 03, 2011 ~ Nov. 08, 2011	Sep. 17, 2012	Conducted (TH02-HY)
Power Sensor	Anritsu	MA2411B	0846202	N/A	Sep. 18, 2011	Nov. 03, 2011 ~ Nov. 08, 2011	Sep. 17, 2012	Conducted (TH02-HY)
Power Meter	Agilent	E4416A	GB41292344	N/A	Feb. 18, 2011	Nov. 03, 2011 ~ Nov. 08, 2011	Feb. 17, 2012	Conducted (TH02-HY)
Power Sensor	Agilent	E9327A	US40441548	N/A	Feb. 18, 2011	Nov. 03, 2011 ~ Nov. 08, 2011	Feb. 17, 2012	Conducted (TH02-HY)
EMI Test Receive	R&S	ESCI 7	100724	9kHz~7GHz	Aug. 22, 2011	Oct. 28, 2011	Aug. 21, 2012	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100081	9KHz – 30MHz	Dec. 03, 2010	Oct. 28, 2011	Dec. 02, 2011	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100080	9KHz – 30MHz	Dec. 01, 2010	Oct. 28, 2011	Nov. 30, 2011	Conduction (CO05-HY)
AC Power Source	APC	APC-1000W	N/A	N/A	N/A	Oct. 28, 2011	N/A	Conduction (CO05-HY)
Bilog Antenna	SCHAFFNER	CBL6111C	2726	30MHz ~ 1GHz	Oct. 22, 2011	Oct. 30, 2011 ~ Nov. 22, 2011	Oct. 21, 2012	Radiation (03CH07-HY)
Spectrum Analyzer	R&S	FSP30	101067	9KHz ~ 30GHz	Dec. 03, 2010	Oct. 30, 2011 ~ Nov. 22, 2011	Dec. 02, 2011	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	00075962	1GHz ~ 18GHz	Aug. 10, 2011	Oct. 30, 2011 ~ Nov. 22, 2011	Aug. 09, 2012	Radiation (03CH07-HY)
Pre Amplifier	Agilent	8449B	3008A02362	1GHz~ 26.5GHz	Dec. 06, 2010	Oct. 30, 2011 ~ Nov. 22, 2011	Dec. 05, 2011	Radiation (03CH07-HY)
Pre Amplifier	COM-POWER	PA-103A	161241	10-1000MHz.32 dB.GAIN	Mar. 29, 2011	Oct. 30, 2011 ~ Nov. 22, 2011	Mar. 28, 2012	Radiation (03CH07-HY)
EMI TEST RECEIVER	R&S	ESCI 7	100724	9kHz~7GHz	Aug. 22, 2011	Oct. 30, 2011 ~ Nov. 22, 2011	Aug. 21, 2012	Radiation (03CH07-HY)
Pre Amplifier	MITEQ	AMF-7D-0010 1800-30-10P	159088	1GHz ~ 18GHz	Feb. 21, 2011	Oct. 30, 2011 ~ Nov. 22, 2011	Feb. 20, 2012	Radiation (03CH07-HY)
Loop Antenna	R&S	HFH2-Z2	860004/001	9KHz ~ 30MHz	Jul. 29, 2010	Oct. 30, 2011 ~ Nov. 22, 2011	Jul. 28, 2012	Radiation (03CH07-HY)

5 Uncertainty of Evaluation

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

Contribution	Uncertainty of X_i		$u(X_i)$
	dB	Probability Distribution	
Receiver Reading	0.10	Normal (k=2)	0.05
Cable Loss	0.10	Normal (k=2)	0.05
AMN Insertion Loss	2.50	Rectangular	0.63
Receiver Specification	1.50	Rectangular	0.43
Site Imperfection	1.39	Rectangular	0.80
Mismatch	+0.34 / -0.35	U-Shape	0.24
Combined Standard Uncertainty $U_c(y)$	1.13		
Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	2.26		

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

Contribution	Uncertainty of X_i		$u(X_i)$
	dB	Probability Distribution	
Receiver Reading	0.41	Normal (k=2)	0.21
Antenna Factor Calibration	0.83	Normal (k=2)	0.42
Cable Loss Calibration	0.25	Normal (k=2)	0.13
Pre-Amplifier Gain Calibration	0.27	Normal (k=2)	0.14
RCV/SPA Specification	2.50	Rectangular	0.72
Antenna Factor Interpolation for Frequency	1.00	Rectangular	0.29
Site Imperfection	1.43	Rectangular	0.83
Mismatch	+0.39 / -0.41	U-Shape	0.28
Combined Standard Uncertainty $U_c(y)$	1.27		
Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	2.54		



Uncertainty of Radiated Emission Measurement (1GHz ~ 40GHz)

Contribution	Uncertainty of X_i		$u(X_i)$	C_i	$C_i * u(X_i)$
	dB	Probability Distribution			
Receiver Reading	±0.10	Normal (k=2)	0.10	1	0.10
Antenna Factor Calibration	±1.70	Normal (k=2)	0.85	1	0.85
Cable Loss Calibration	±0.50	Normal (k=2)	0.25	1	0.25
Receiver Correction	±2.00	Rectangular	1.15	1	1.15
Antenna Factor Directional	±1.50	Rectangular	0.87	1	0.87
Site Imperfection	±2.80	Triangular	1.14	1	1.14
Mismatch Receiver VSWR $\Gamma_1 = 0.197$ Antenna VSWR $\Gamma_2 = 0.194$ Uncertainty = $20\text{Log}(1-\Gamma_1*\Gamma_2)$	+0.34 / -0.35	U-Shape	0.244	1	0.244
Combined Standard Uncertainty Uc(y)	2.36				
Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	4.72				



Appendix A. Photographs of EUT

Please refer to Sporton report number EP1O2207 as below.