




FCC/IC RF Test Report

APPLICANT : PSION INC.
EQUIPMENT : EP10 Hand-Held Computer
BRAND NAME : 
MODEL NAME : 7515
FCC ID : GM37515UB
IC : 2739D-7515UB
STANDARD : FCC Part 15 Subpart E
IC RSS-210 Issue 8
CLASSIFICATION : (NII) Unlicensed National Information Infrastructure TX
EMISSION DESIGNATOR : 18M8D1D

The product was received on Jun. 13, 2011 and completely tested on Apr. 23, 2012. 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.



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR1D0814C	Rev. 01	Initial issue of report	Apr. 24, 2012

**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	-
3.4	15.407(a)	A9.2	Power Spectral Density	$\leq 4, 11, 17$ dBm (depend on band)	Pass	-
3.5	15.207	Gen 7.2.4	AC Conducted Emission	15.207(a)	Pass	Under limit 15.00 dB at 0.150 MHz
3.6	15.407(b)	A9.3	Unwanted Emissions	$\leq -17, -27$ dBm (depend on band)&15.209(a)	Pass	Under limit 0.48 dB at 6960.000 MHz
3.7	15.407(b)	A9.3	Peak Excursion Ratio	≤ 13 dB	Pass	-
3.8	15.407(c)	A9.5	Automatically Discontinue Transmission	Discontinue Transmission	Pass	-
3.9	15.407(g)	A9.5	Frequency Stability	Within Operation Band	Pass	-
3.10	15.203 & 15.407(a)	A9.2	Antenna Requirement	N/A	Pass	-



1 General Description

1.1 Applicant

PSION INC.

2100 Meadowvale Blvd, Mississauga ON L5N 7J9, CANADA

1.2 Manufacturer

PSION INC.

2100 Meadowvale Blvd, Mississauga ON L5N 7J9, CANADA



1.3 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	EP10 Hand-Held Computer
Brand Name	PSION
Model Name	7515
FCC ID	GM37515UB
IC	2739D-7515UB
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 : 12.27 dBm / 0.0169 W 802.11n (BW 20MHz) : 12.08 dBm / 0.0161 W <5250 MHz ~ 5350 MHz> 802.11a : 11.77 dBm / 0.0150 W 802.11n (BW 20MHz) : 12.00 dBm / 0.0158 W <5470 MHz ~ 5725 MHz> 802.11a : 12.05 dBm / 0.0160 W 802.11n (BW 20MHz) : 12.09 dBm / 0.0162 W
Antenna Type	PIFA Antenna
Antenna Gain	5150 MHz ~ 5250 MHz : 4.85 dBi 5250 MHz ~ 5350 MHz : 4.86 dBi 5470 MHz ~ 5725 MHz : 4.87 dBi
HW Version	3
SW Version	2.2.0.0
Type of Modulation	OFDM (BPSK / QPSK / 16QAM / 64QAM)
Type of Emission	18M8D1D
EUT Stage	Identical Prototype

Remark:

1. For other wireless features of this EUT, test report will be issued separately.
2. This test report recorded only product characteristics and test results of (NII) Unlicensed National Information Infrastructure TX.
3. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

List of Accessory:

Specification of Accessory		
AC Adapter 1	Brand Name	Leader
	Model Name	IU18-2050300-WP
AC Adapter 2	Brand Name	Phihong
	Model Name	PSA15R-050P
Battery	Brand Name	PSION / ETI
	Model Name	RV3010 / BP08-000760
Car Charger	Brand Name	AOEM
	Model Name	C15C-0520CD0-C0
Desktop Charger Cradle (Single Dock)	Brand Name	PSION
	Model Name	RV4000
Desktop Charger Cradle (AC Adapter)	Brand Name	FSP
	Model Name	FSP050-DBAB1
Charger Snap Module 1	Brand Name	PSION
	Model Name	RV4001
Charger Snap Module 2	Brand Name	PSION
	Model Name	RV4002
LCD Panel	Brand Name	Sharp
	Model Name	LS037V7DW01
Pouch	Brand Name	Psion
	Model Name	RV6091

Remark: For accessories equipped with this EUT, please refer to Appendix A.

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 v01r01
- ANSI C63.4-2003
- IC RSS-210 Issued 8
- IC RSS-Gen Issue 3

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.	System Simulator	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m
2.	WLAN AP	D-Link	DIR-628	KA2DIR628A2	N/A	Unshielded, 1.8 m
3.	Notebook	DELL	Vostro 1510	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
4.	LCD Monitor	Lenovo	6135-AB1	FCC DoC	Shielded, 1.6 m	Unshielded, 1.8 m
5.	Bluetooth Earphone	Sony Ericsson	MW600	PY70DA2029	N/A	N/A
6.	iPod	Apple	A1285	FCC DoC	Shielded, 1.0 m	N/A



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)
36	5180	44	5220	48	5240
52	5260	60	5300	64	5320
100	5500	116	5580	140	5700

802.11n (BW 20MHz) Carrier Frequency Channel					
Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
36	5180	44	5220	48	5240
52	5260	60	5300	64	5320
100	5500	116	5580	140	5700

2.2 RF Power

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

Band	5GHz 802.11a RF Power (dBm) (Duty cycle 100%)								
Channel	36	44	48	52	60	64	100	116	140
Frequency (MHz)	5180	5220	5240	5260	5300	5320	5500	5580	5700
Power	11.78	11.82	12.27	11.60	11.74	11.77	11.70	11.89	12.05

Band	5GHz 802.11n (BW 20MHz) RF Power (dBm) (Duty cycle 100%)								
Channel	36	44	48	52	60	64	100	116	140
Frequency (MHz)	5180	5220	5240	5260	5300	5320	5500	5580	5700
Power	11.90	11.75	12.08	11.53	12.00	11.77	11.47	12.09	11.83

Remark:

1. All the test data for each data rate were verified, but only the worst case was reported.
2. 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.
3. 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 (X plane) and recorded in this report.

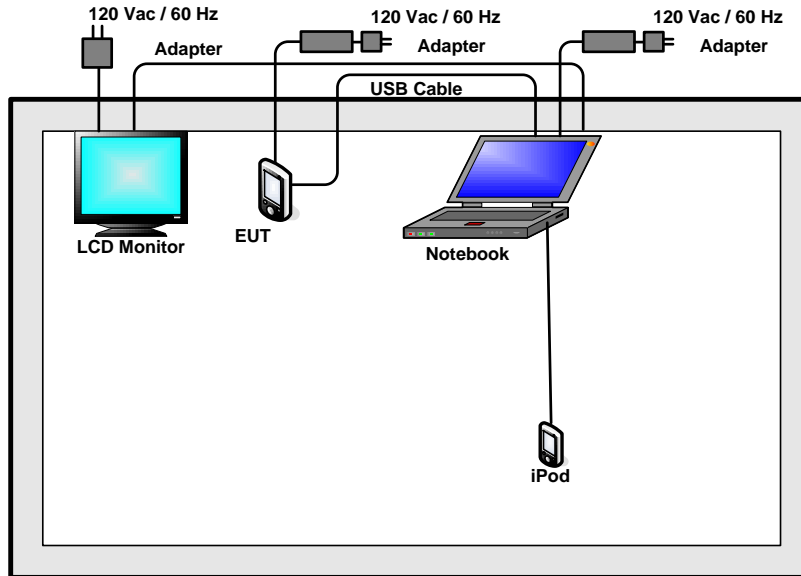
Test Cases	
Test Item	802.11a (Modulation : OFDM)
Conducted TCs	<ul style="list-style-type: none">■ Mode 1: 802.11a_CH36_5180 MHz■ Mode 2: 802.11a_CH44_5220 MHz■ Mode 3: 802.11a_CH48_5240 MHz■ Mode 4: 802.11a_CH52_5260 MHz■ Mode 5: 802.11a_CH60_5300 MHz■ Mode 6: 802.11a_CH64_5320 MHz■ Mode 7: 802.11a_CH100_5500 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)



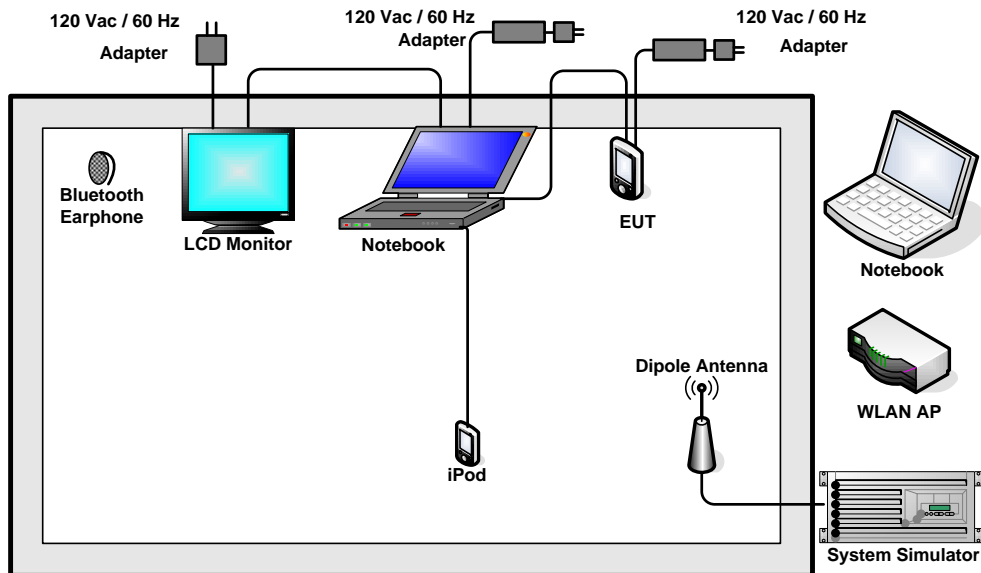
Test Cases	
Test Item	802.11a (Modulation : OFDM)
Radiated TCs	<ul style="list-style-type: none"> ■ Mode 1: 802.11a_CH36_5180 MHz ■ Mode 2: 802.11a_CH44_5220 MHz ■ Mode 3: 802.11a_CH48_5240 MHz ■ Mode 4: 802.11a_CH52_5260 MHz ■ Mode 5: 802.11a_CH60_5300 MHz ■ Mode 6: 802.11a_CH64_5320 MHz ■ Mode 7: 802.11a_CH100_5500 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 : WCDMA Band V Idle + WLAN (5G) Link + Bluetooth Link + MP3 + Camera + Battery + Sleeve (USB Port + DC Jack) + USB Cable (Link with Notebook) + Adapter 1
<p>Remark: TC stands for Test Configuration, and consists of Sleeve, Battery, USB Cable, and adapter 2 for Radiation test</p>	

2.4 Connection Diagram of Test System

<WLAN Tx Mode>



<AC Conducted Emission Mode>





2.5 RF Utility

The programmed RF Utility “call23WM”, 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

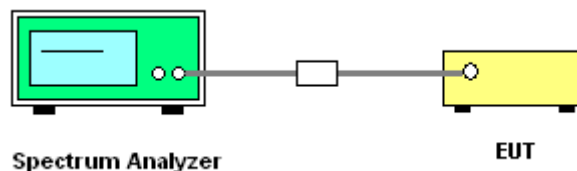
3.1.1 Measuring Instruments

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 v01r01.
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



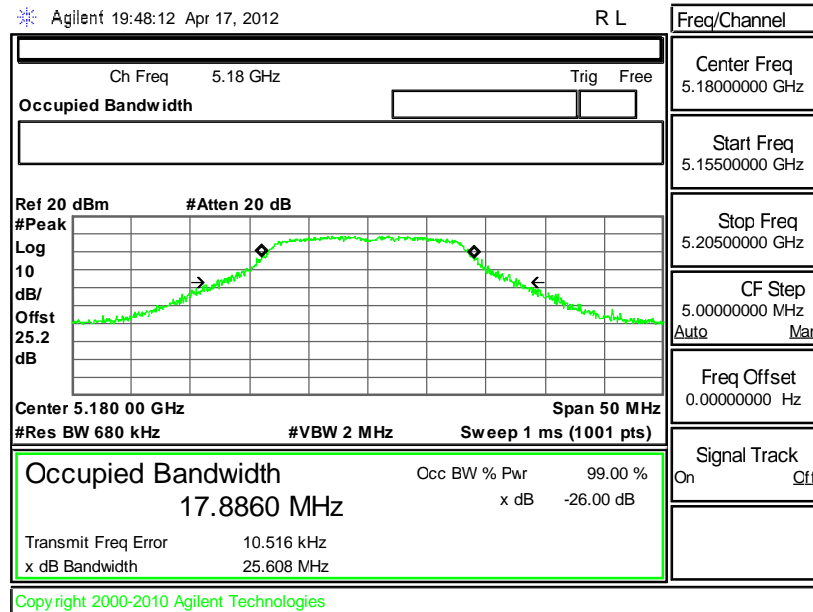


3.1.4 Test Result of 26dB Bandwidth Plots

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

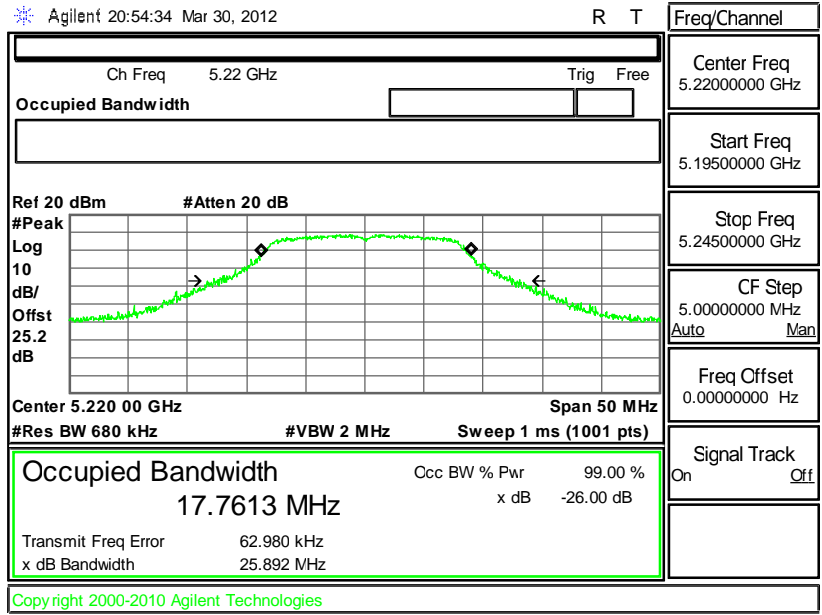
Channel	Frequency (MHz)	802.11a 26dB Bandwidth (MHz)	Pass/Fail
36	5180	25.608	N/A
44	5220	25.892	N/A
48	5240	24.397	N/A
52	5260	25.606	N/A
60	5300	25.649	N/A
64	5320	25.782	N/A
100	5500	25.596	N/A
116	5580	25.669	N/A
140	5700	26.140	N/A

26 dB Bandwidth Plot on 802.11a Channel 36

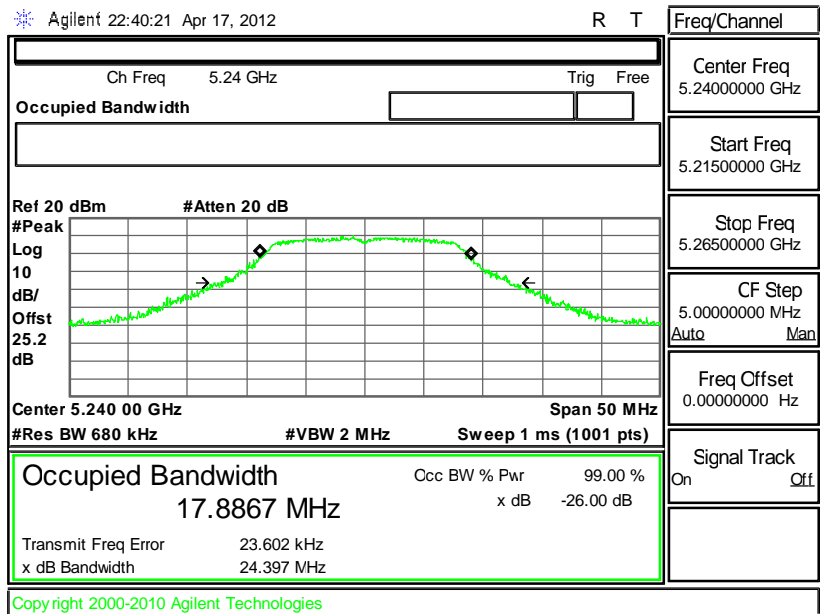




26 dB Bandwidth Plot on 802.11a Channel 44

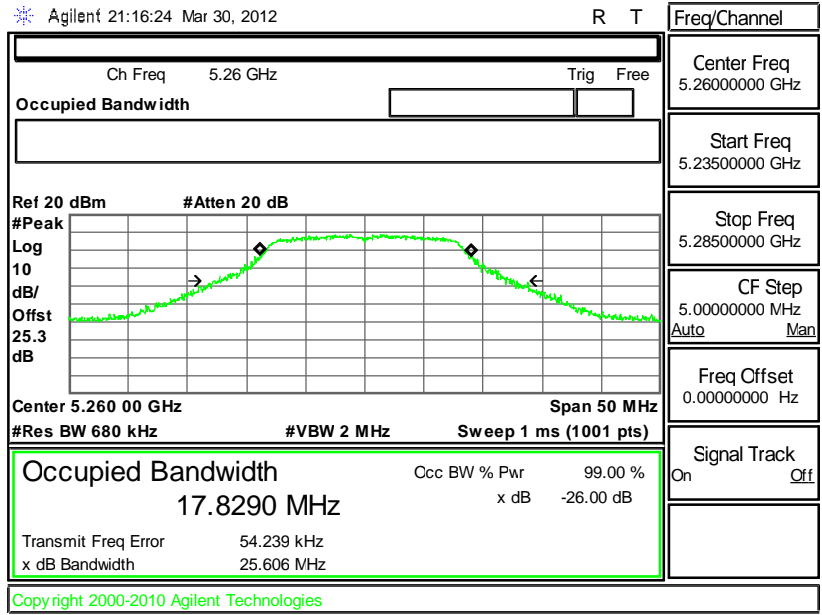


26 dB Bandwidth Plot on 802.11a Channel 48

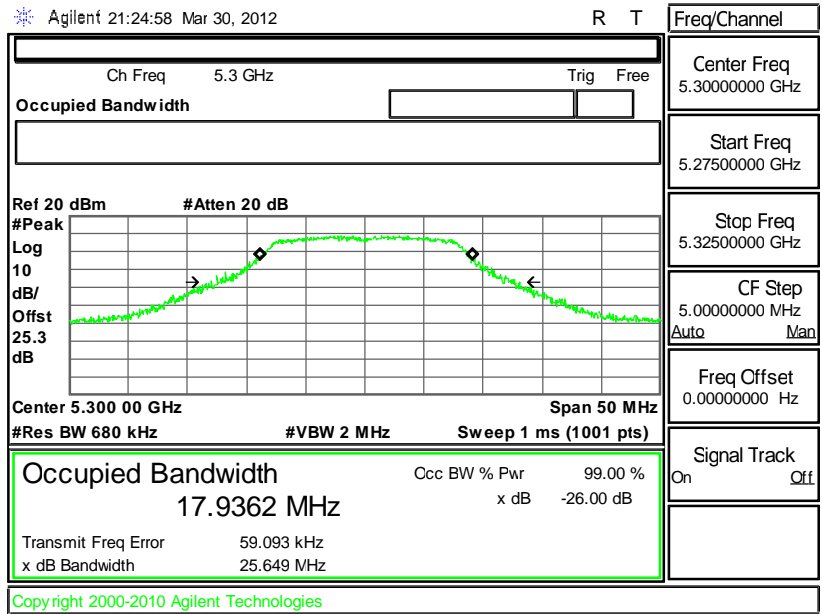




26 dB Bandwidth Plot on 802.11a Channel 52

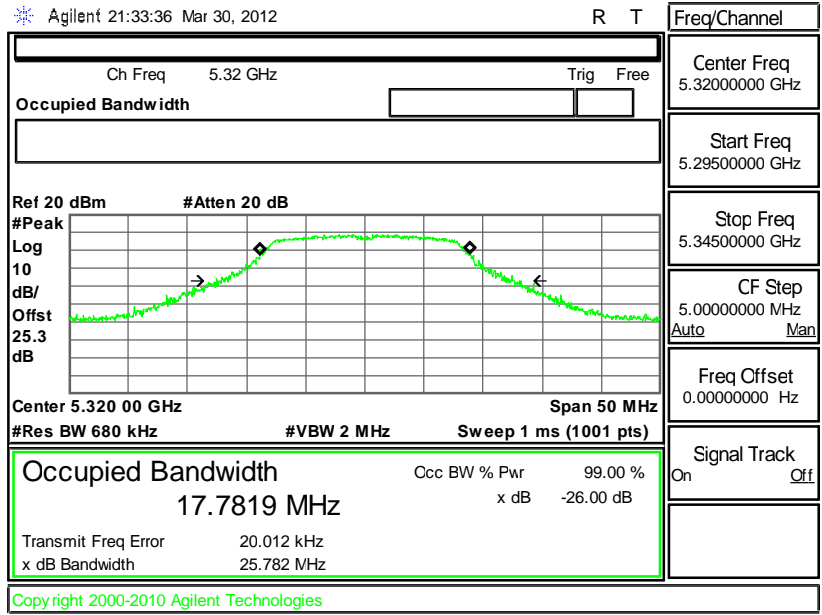


26 dB Bandwidth Plot on 802.11a Channel 60

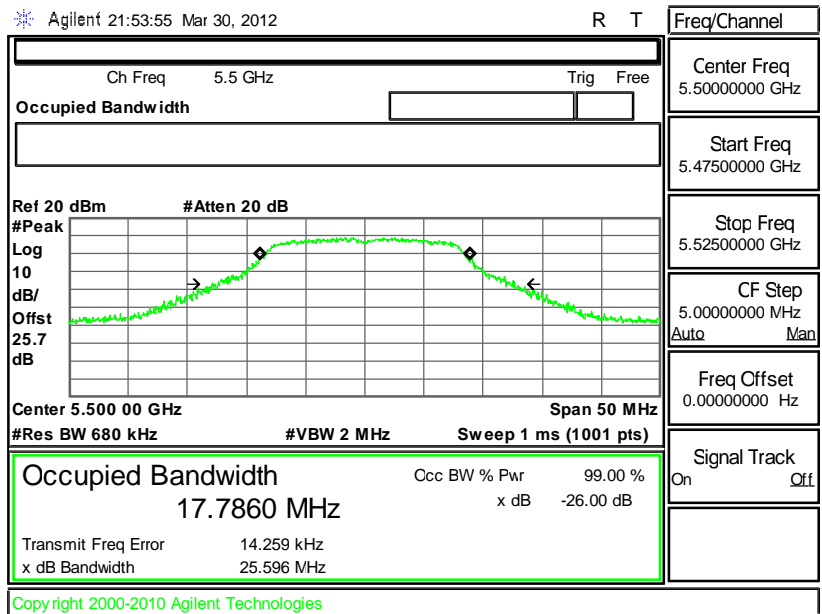




26 dB Bandwidth Plot on 802.11a Channel 64

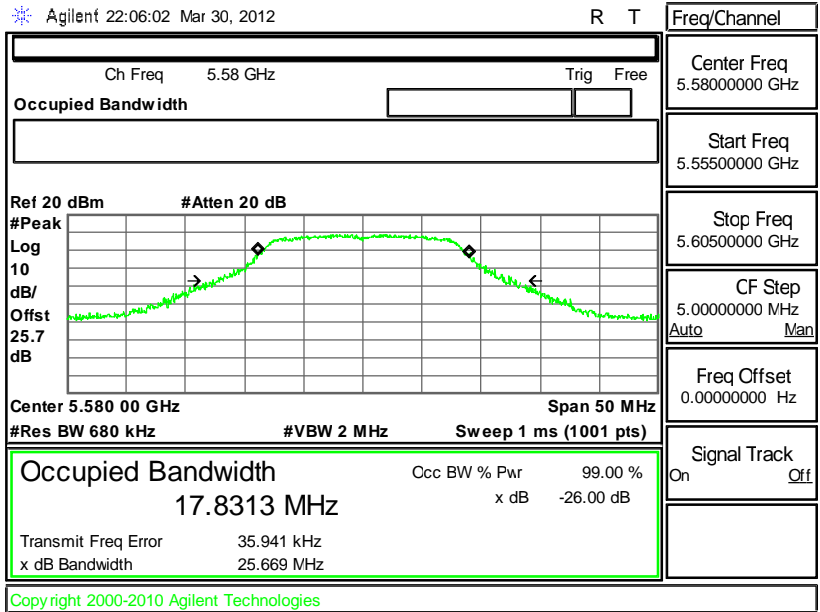


26 dB Bandwidth Plot on 802.11a Channel 100

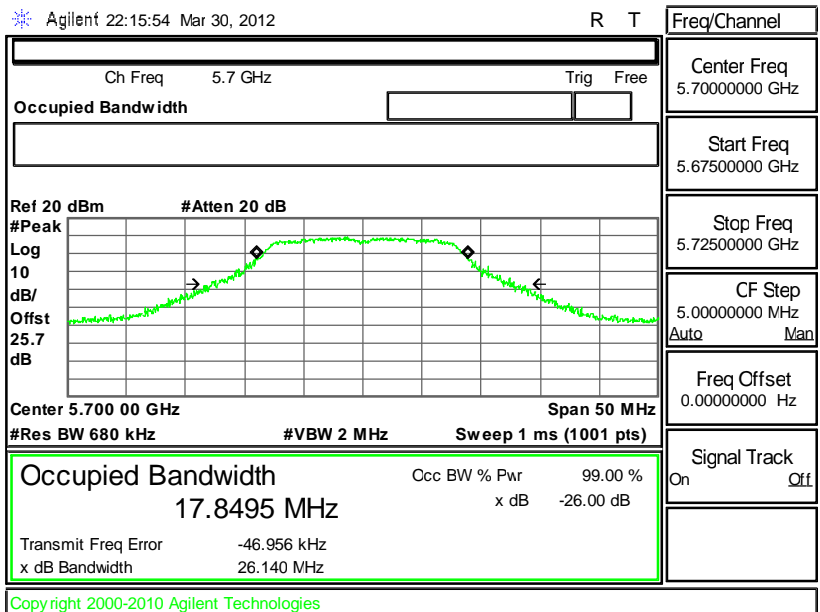




26 dB Bandwidth Plot on 802.11a Channel 116



26 dB Bandwidth Plot on 802.11a Channel 140

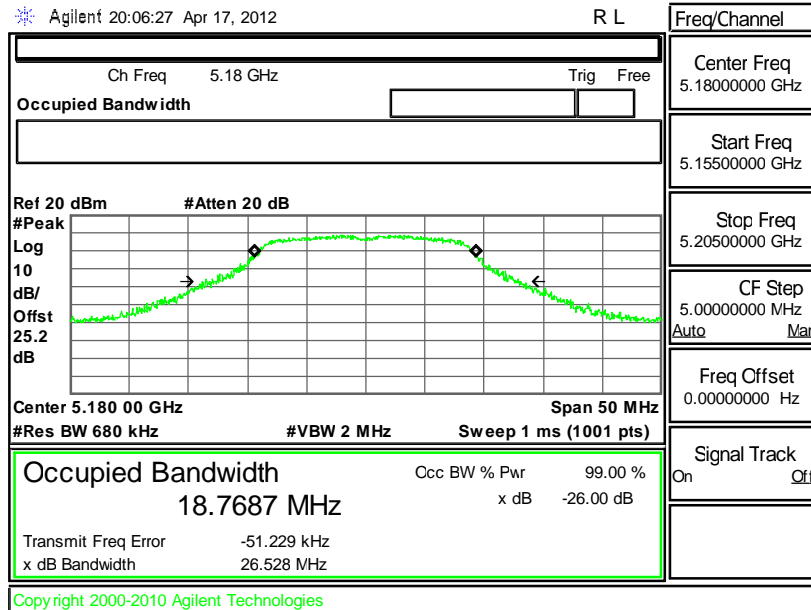




Test Mode :	Mode 10~18	Temperature :	24~26°C
Test Engineer :	Hank Yu	Relative Humidity :	45~49%

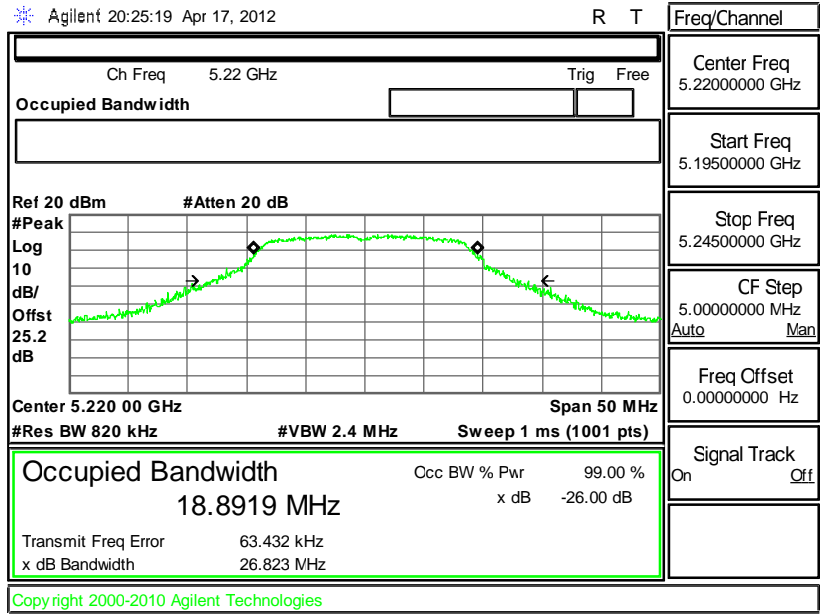
Channel	Frequency (MHz)	802.11n (BW 20MHz) 26dB Bandwidth (MHz)	Pass/Fail
36	5180	26.528	N/A
44	5220	26.823	N/A
48	5240	26.071	N/A
52	5260	26.416	N/A
60	5300	26.615	N/A
64	5320	26.474	N/A
100	5500	26.376	N/A
116	5580	26.569	N/A
140	5700	26.371	N/A

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

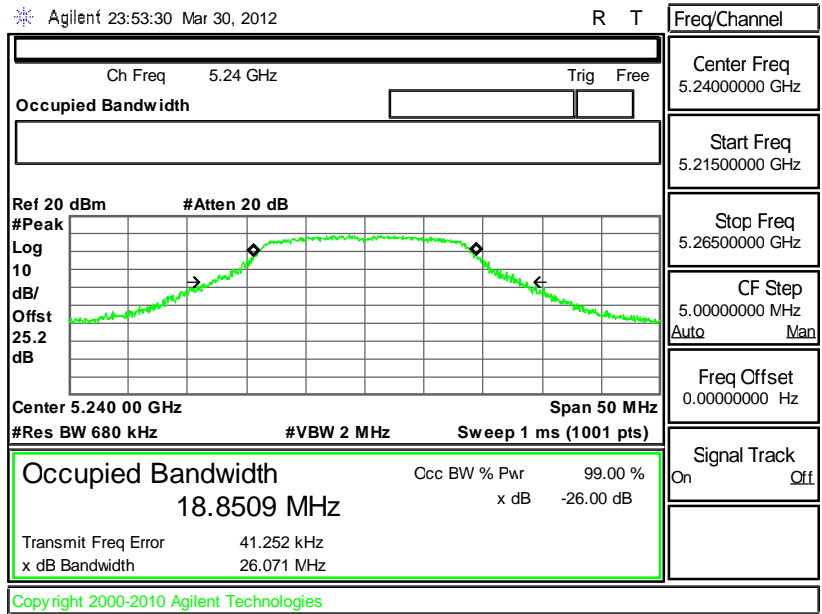




26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 44

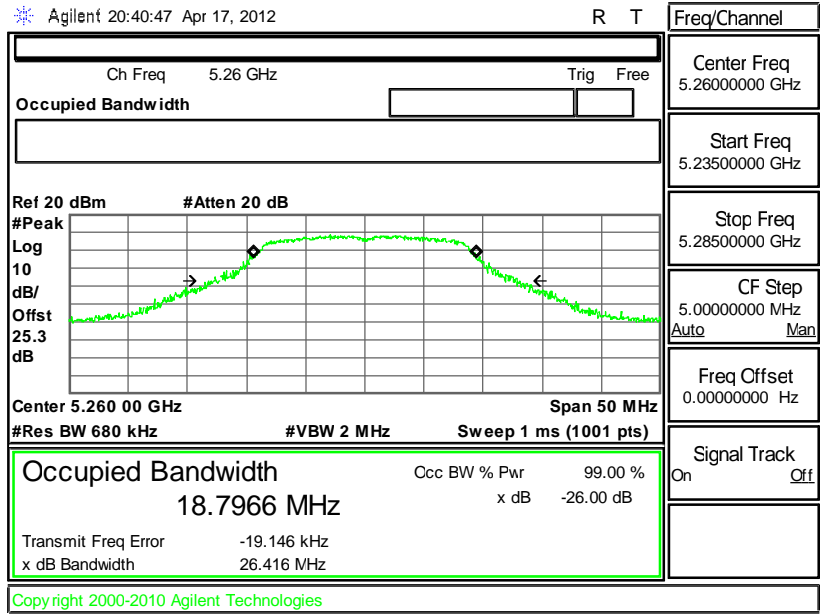


26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 48

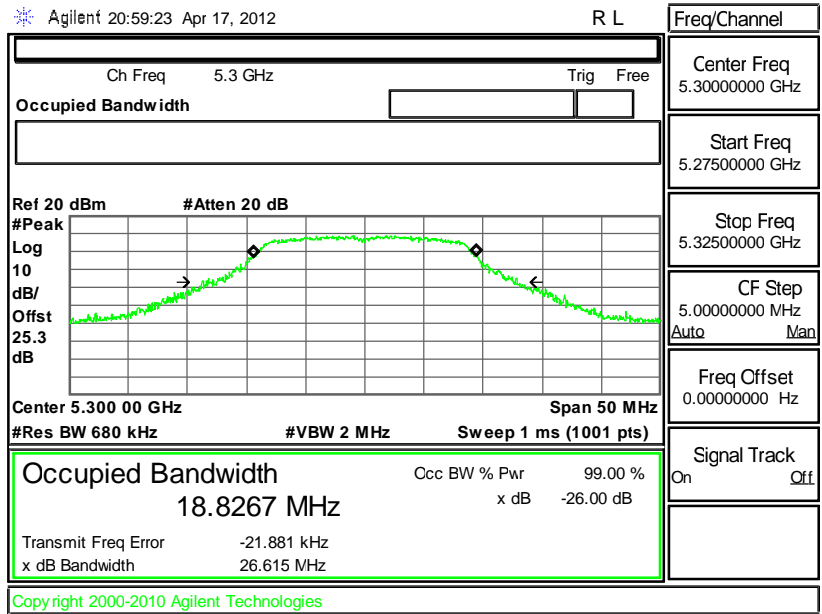




26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 52

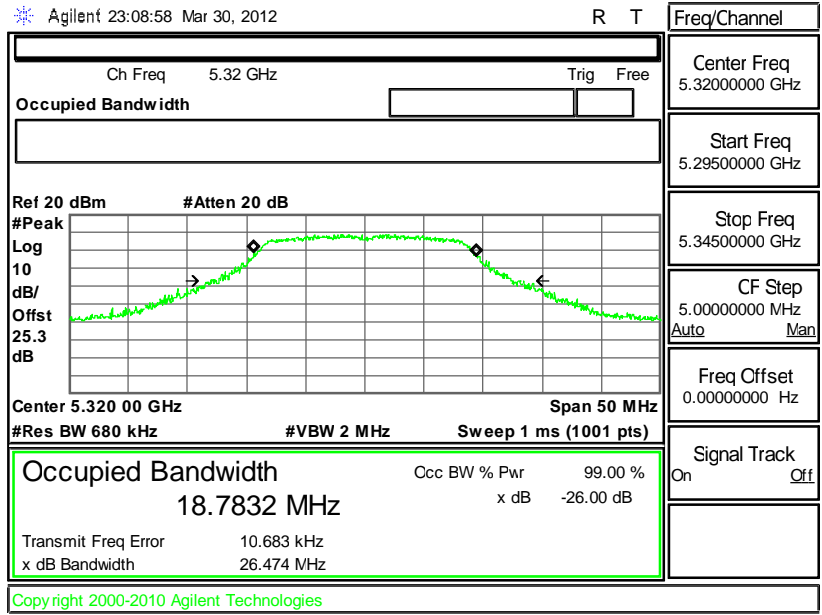


26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 60

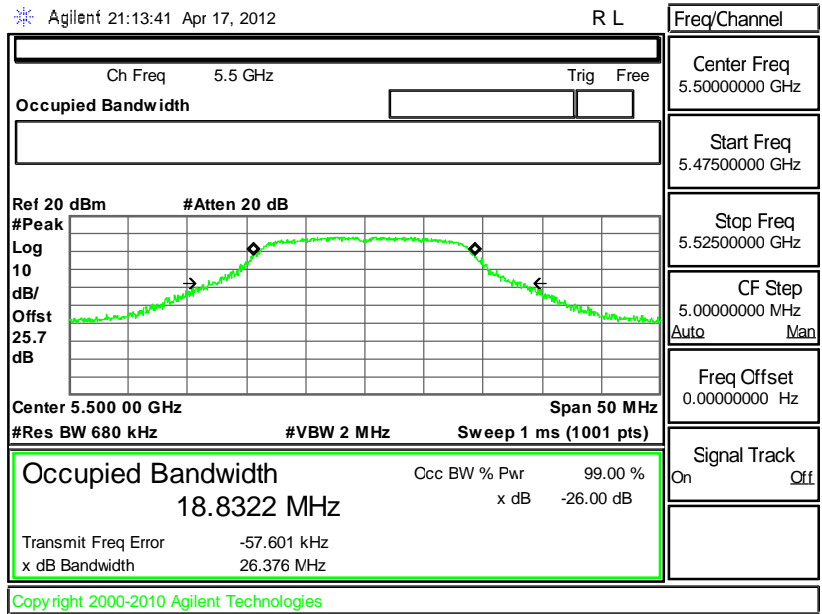




26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 64

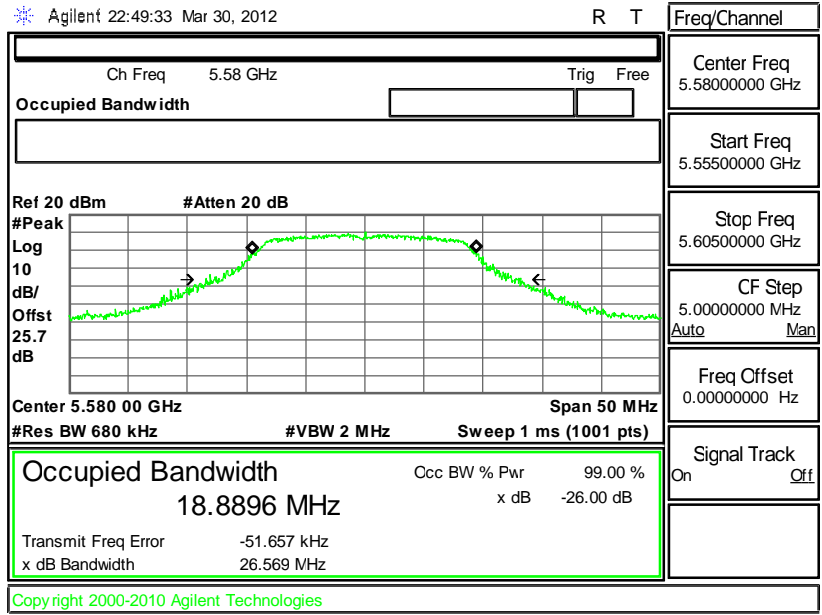


26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 100

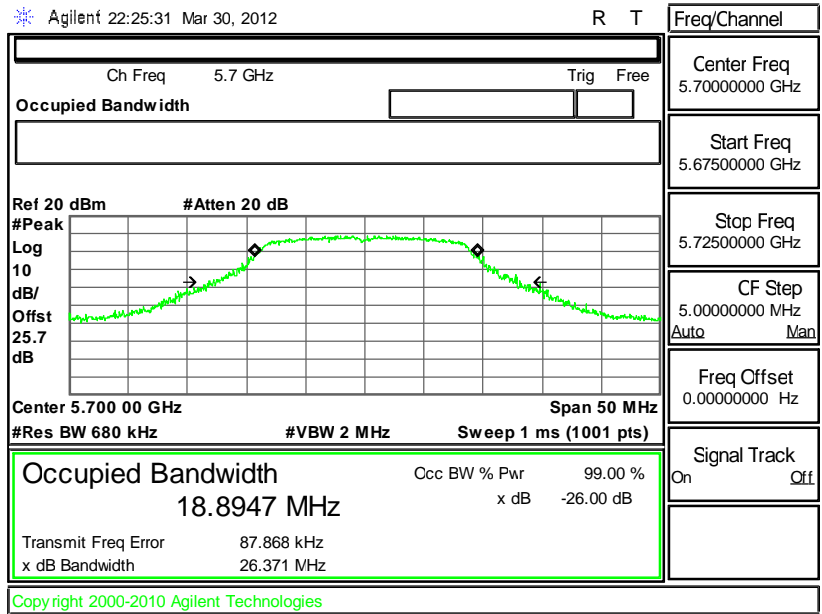




26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 116



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



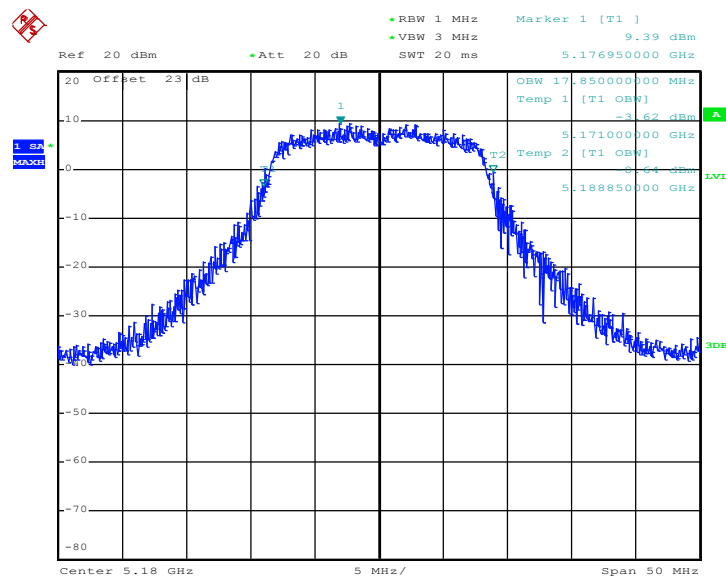


3.1.5 Test Result of 99% Bandwidth Plots

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

Channel	Frequency (MHz)	802.11a 99% Bandwidth (MHz)	Pass/Fail
36	5180	17.85	N/A
44	5220	18.00	N/A
48	5240	17.80	N/A
52	5260	17.70	N/A
60	5300	17.70	N/A
64	5320	17.70	N/A
100	5500	17.75	N/A
116	5580	17.75	N/A
140	5700	17.65	N/A

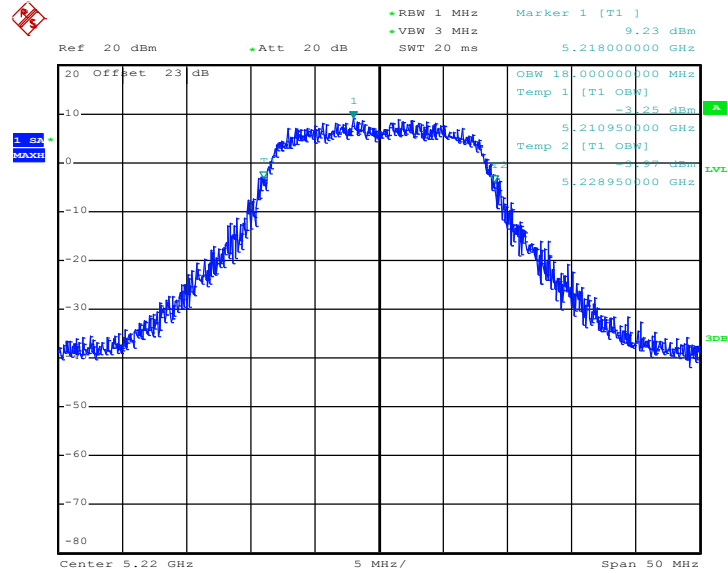
99% Bandwidth Plot on 802.11a Channel 36



Date: 20.APR.2012 16:57:53

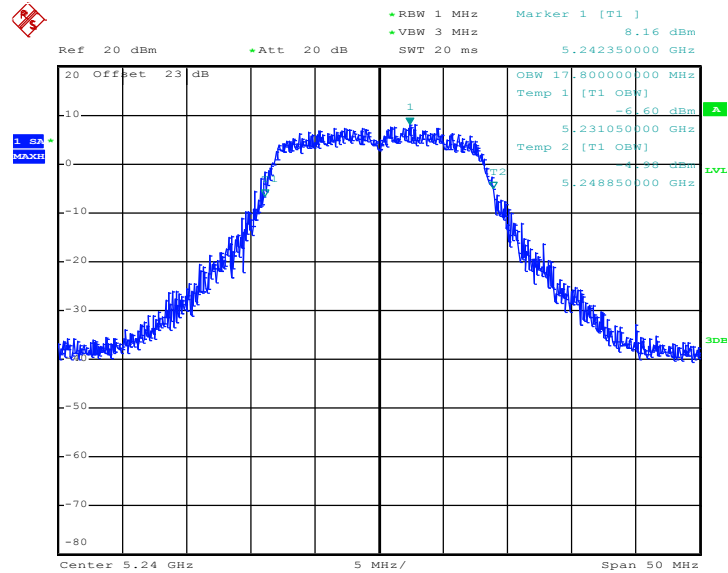


99% Bandwidth Plot on 802.11a Channel 44



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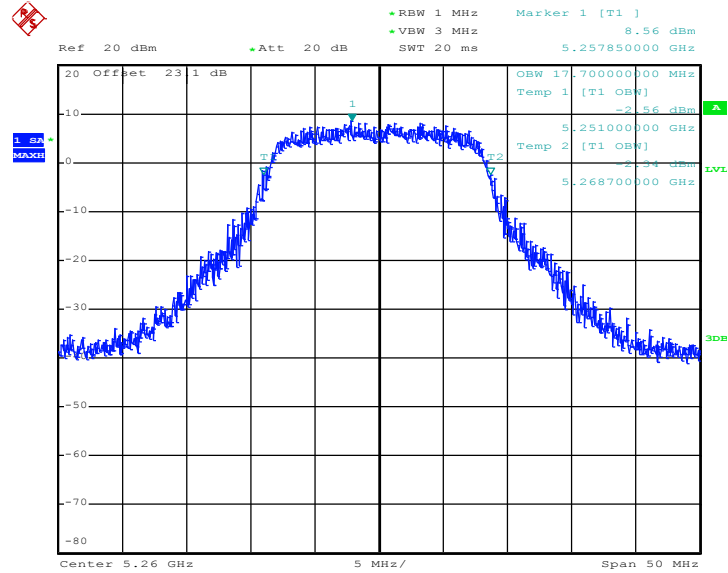
99% Bandwidth Plot on 802.11a Channel 48



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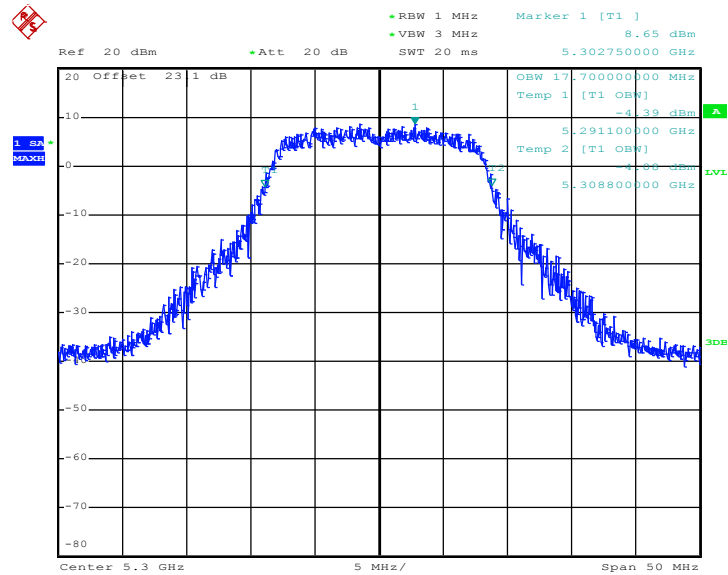


99% Bandwidth Plot on 802.11a Channel 52



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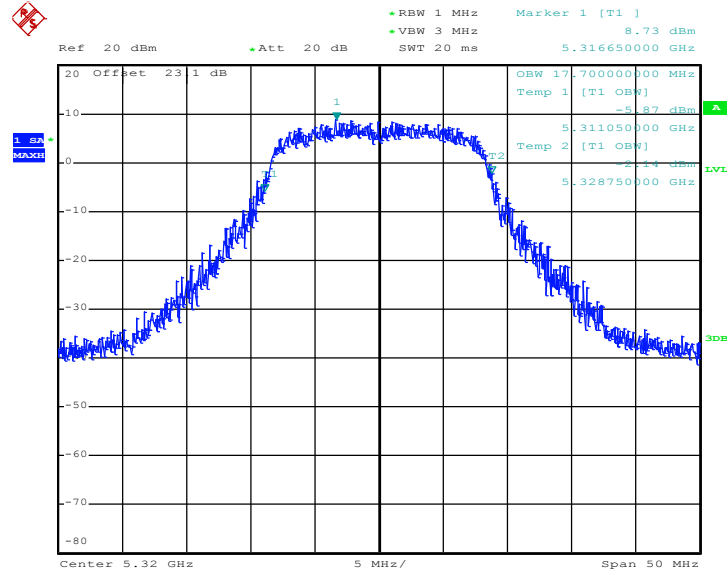
99% Bandwidth Plot on 802.11a Channel 60



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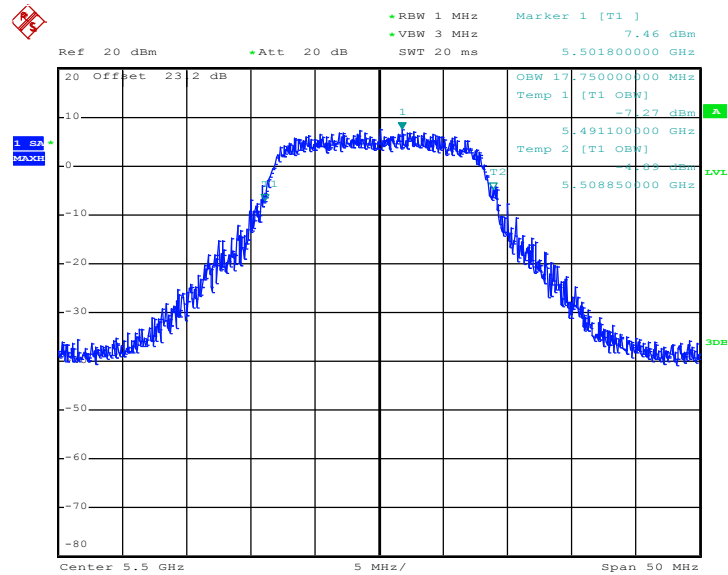


99% Bandwidth Plot on 802.11a Channel 64



Date: 20.APR.2012 17:13:57

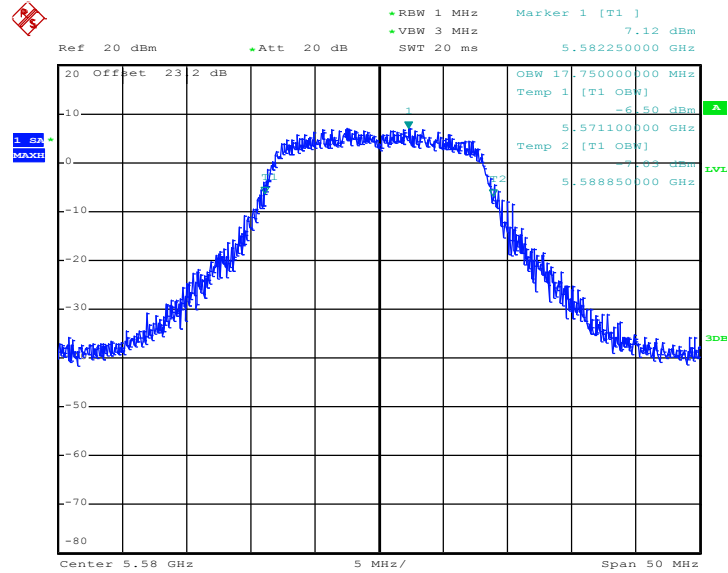
99% Bandwidth Plot on 802.11a Channel 100



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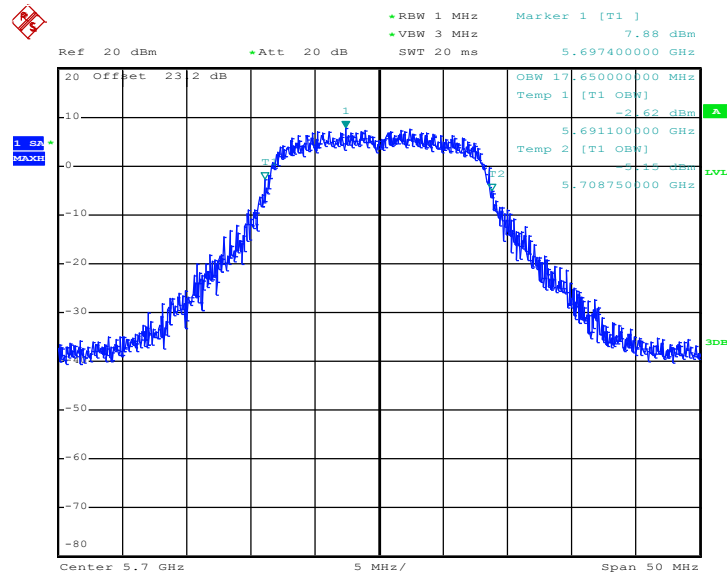


99% Bandwidth Plot on 802.11a Channel 116



Date: 20.APR.2012 17:21:51

99% Bandwidth Plot on 802.11a Channel 140



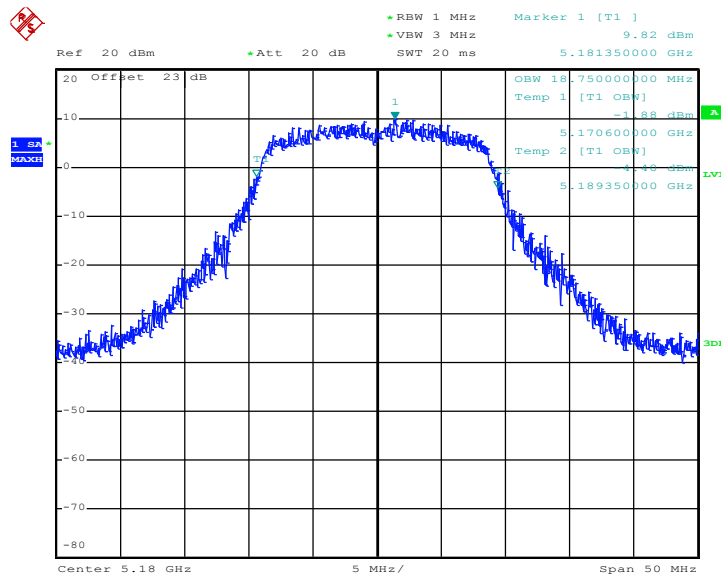
Date: 20.APR.2012 17:24:15



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

Channel	Frequency (MHz)	802.11n (BW 20MHz) 99% Bandwidth (MHz)	Pass/Fail
36	5180	18.75	N/A
44	5220	18.60	N/A
48	5240	18.80	N/A
52	5260	18.70	N/A
60	5300	18.65	N/A
64	5320	18.65	N/A
100	5500	18.70	N/A
116	5580	18.65	N/A
140	5700	18.80	N/A

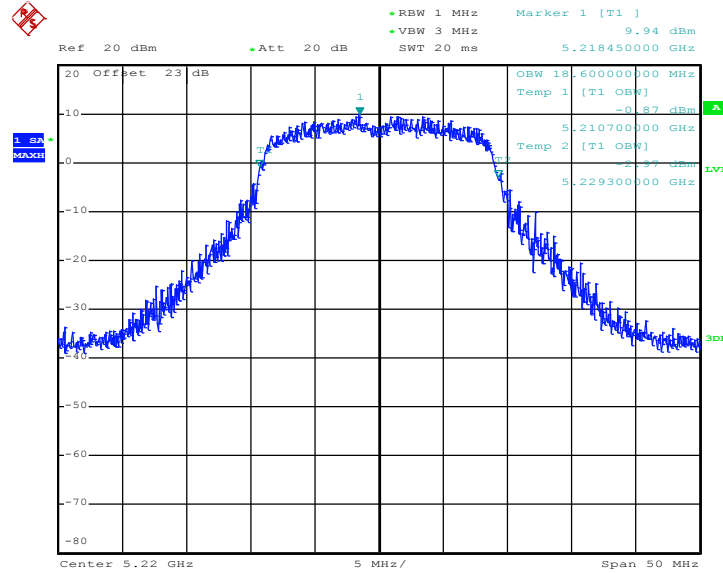
99% Bandwidth Plot on 802.11n (BW 20MHz) Channel 36



Date: 20.APR.2012 19:15:24

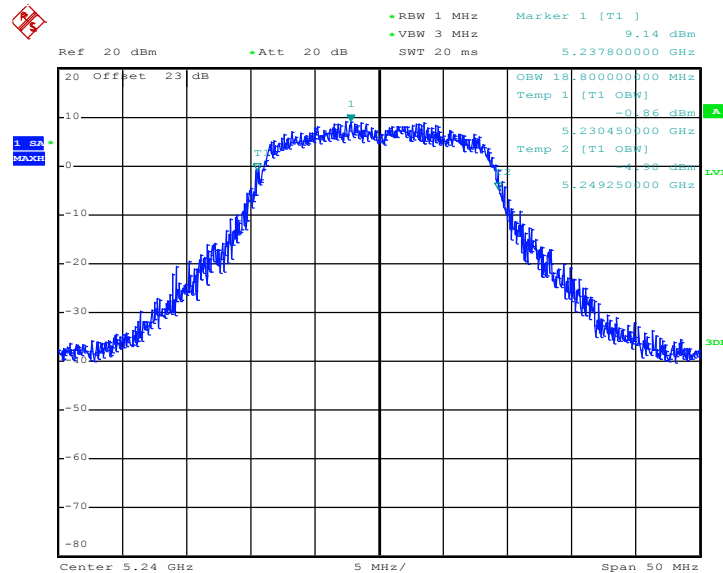


99% Bandwidth Plot on 802.11n (BW 20MHz) Channel 44



Date: 20.APR.2012 19:18:34

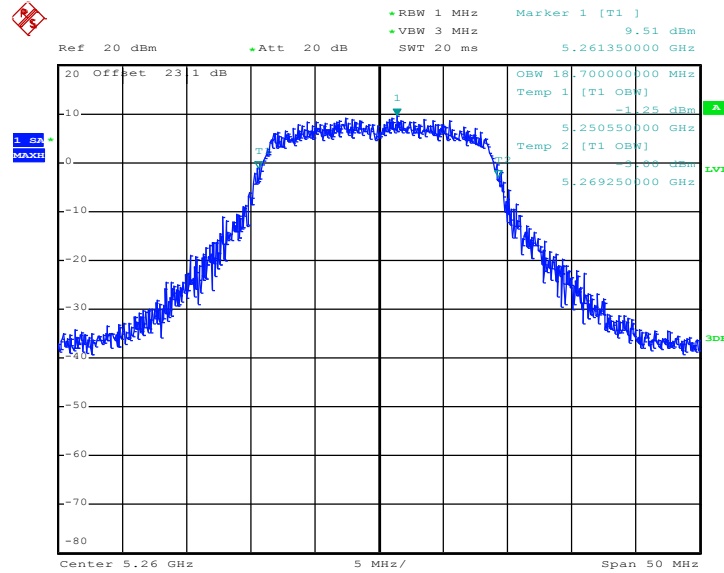
99% Bandwidth Plot on 802.11n (BW 20MHz) Channel 48



Date: 20.APR.2012 19:21:00

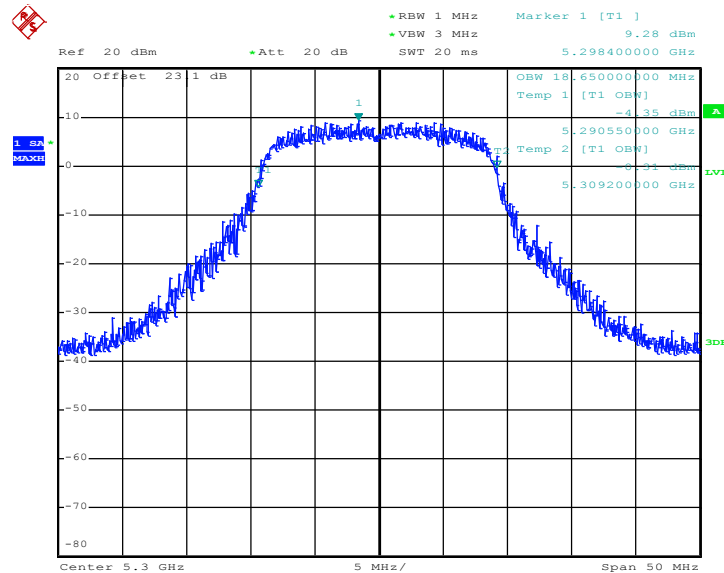


99% Bandwidth Plot on 802.11n (BW 20MHz) Channel 52



Date: 20.APR.2012 19:23:18

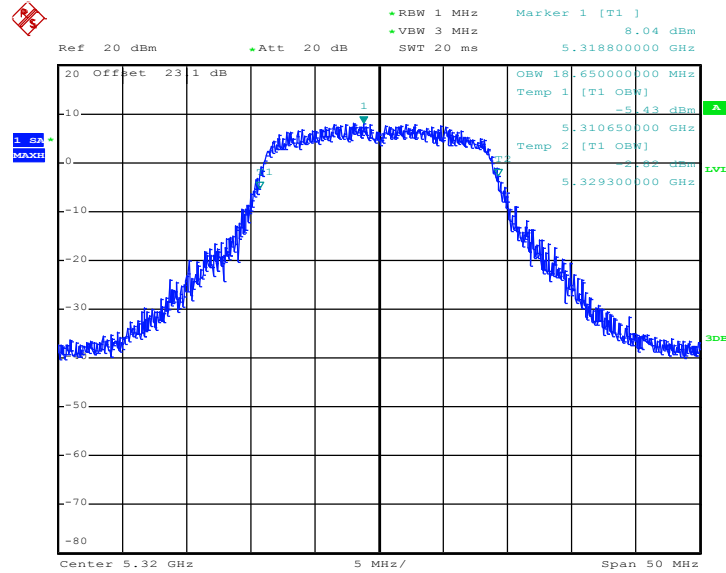
99% Bandwidth Plot on 802.11n (BW 20MHz) Channel 60



Date: 20.APR.2012 19:24:46

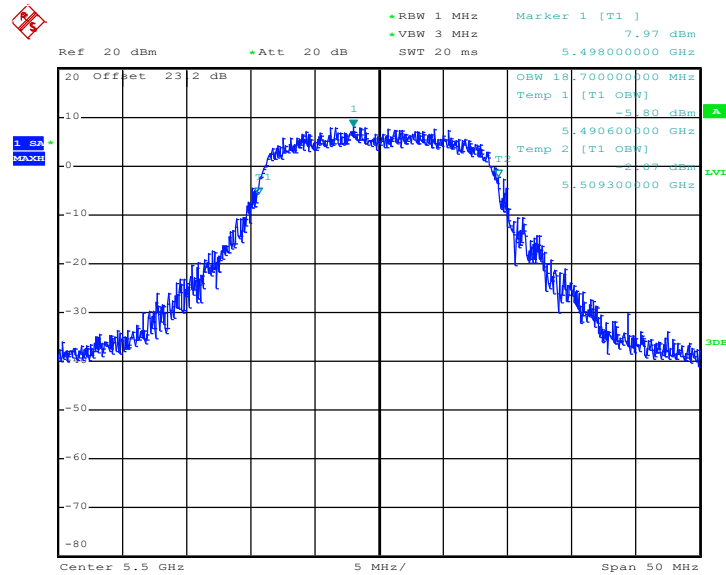


99% Bandwidth Plot on 802.11n (BW 20MHz) Channel 64



Date: 20.APR.2012 19:26:13

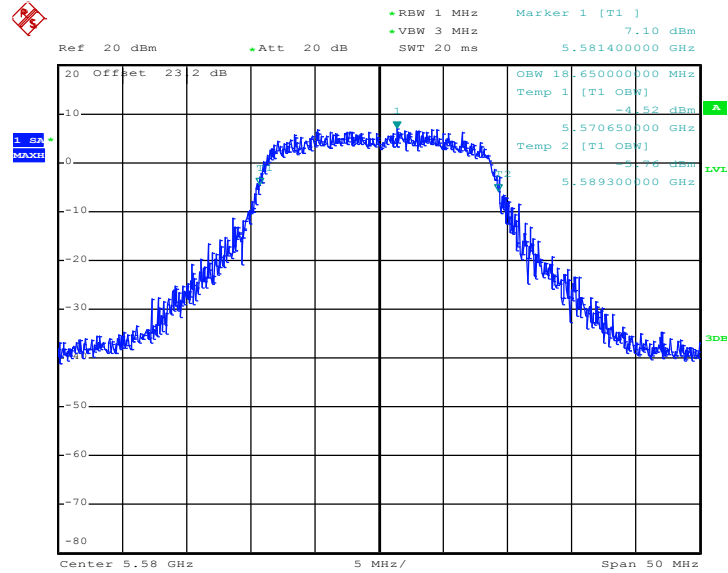
99% Bandwidth Plot on 802.11n (BW 20MHz) Channel 100



Date: 20.APR.2012 19:27:51

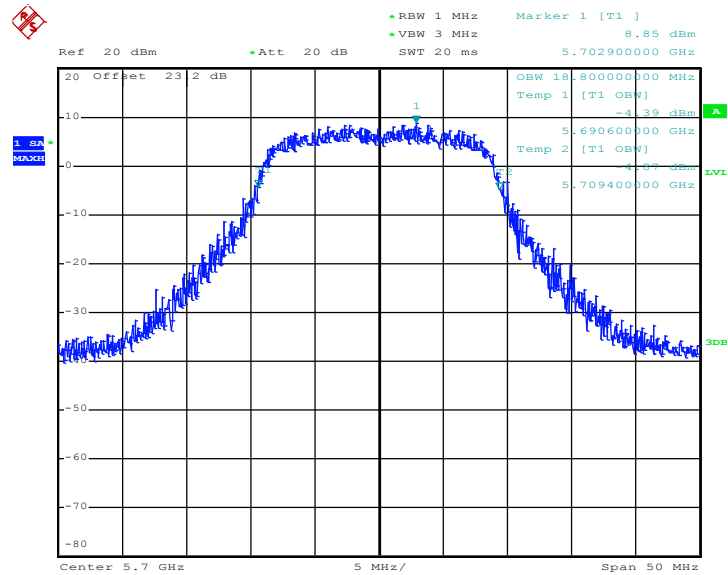


99% Bandwidth Plot on 802.11n (BW 20MHz) Channel 116



Date: 20.APR.2012 19:29:18

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



Date: 20.APR.2012 19:31:24

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).

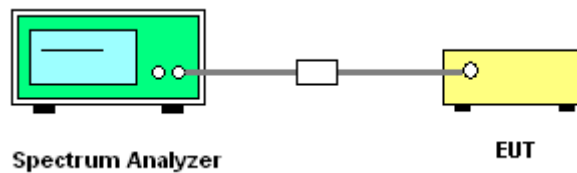
1. The testing follows Method SA-2 of FCC KDB 789033 D01 General UNII Test Procedures v01r01.
 - Measure the duty cycle.
 - Set span to encompass the entire emission bandwidth (EBW) of the signal.
 - Set RBW = 1 MHz.
 - Set VBW \geq 3 MHz.
 - Number of points in sweep \geq 2 Span / RBW.
 - Sweep time = auto.
 - Detector = sample
 - Do not use sweep triggering.
 - 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.

- Add $10 \log(1/x)$, where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times. For example, add $10 \log(1/0.25) = 6$ dB if the duty cycle is 25 percent.
2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable, as below example,

For 802.11a Channel 36, the final power in test report is 11.78 dBm which is the reading of spectrum analyzer with offset cable loss (0.2 dB), and attenuator loss (25.0 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 :	Hank Yu	Relative Humidity :	45~49%

Channel	Frequency (MHz)	Measured Power Output (dBm)	Max. Limits (dBm)	IC Max. Limits (dBm)	Pass/Fail
36	5180	11.78	17	16.52	Pass
44	5220	11.82	17	16.55	Pass
48	5240	12.27	17	16.50	Pass
52	5260	11.60	24	23.48	Pass
60	5300	11.74	24	23.48	Pass
64	5320	11.77	24	23.48	Pass
100	5500	11.70	24	23.49	Pass
116	5580	11.89	24	23.49	Pass
140	5700	12.05	24	23.47	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 :	Hank Yu	Relative Humidity :	45~49%

Channel	Frequency (MHz)	Measured Power Output (dBm)	Max. Limits (dBm)	IC Max. Limits (dBm)	Pass/Fail
36	5180	11.90	17	16.73	Pass
44	5220	11.75	17	16.70	Pass
48	5240	12.08	17	16.74	Pass
52	5260	11.53	24	23.72	Pass
60	5300	12.00	24	23.71	Pass
64	5320	11.77	24	23.71	Pass
100	5500	11.47	24	23.72	Pass
116	5580	12.09	24	23.71	Pass
140	5700	11.83	24	23.74	Pass

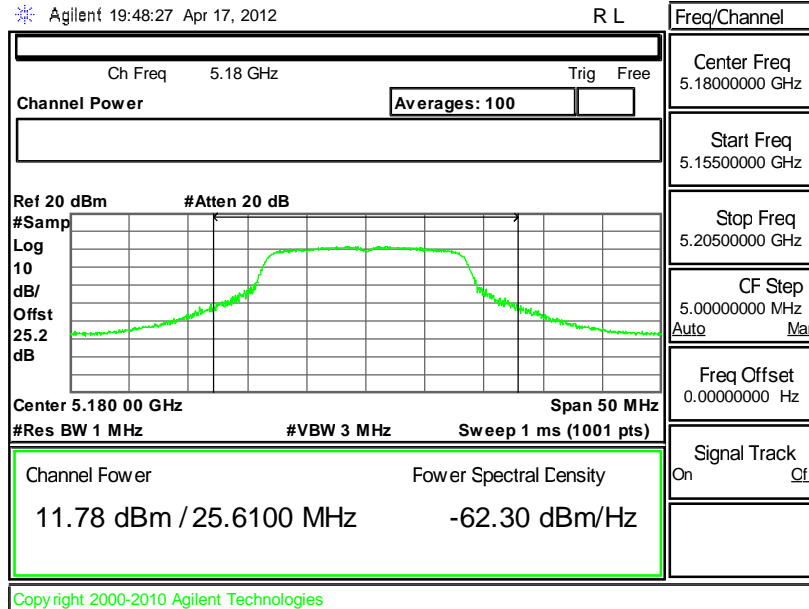
Note:

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)



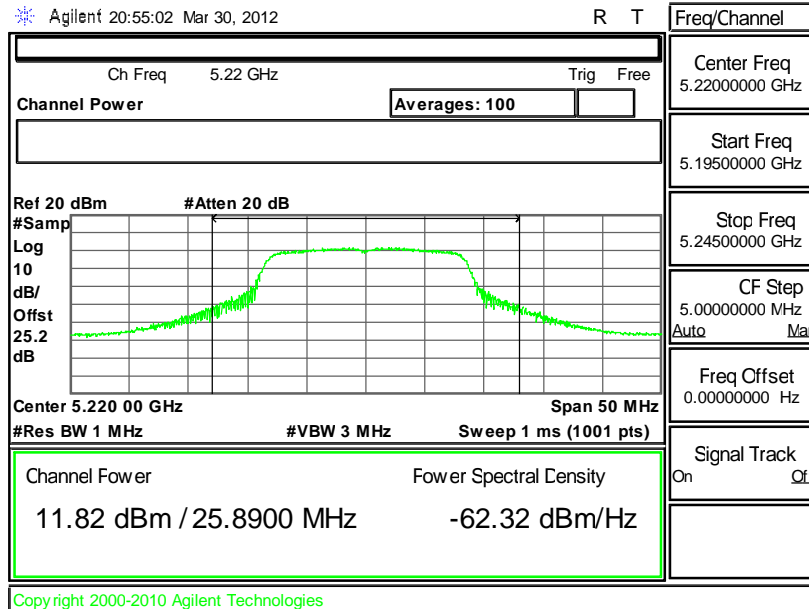
3.2.6 Test Result of Power Output Plots

Output Power Plot on 802.11a Channel 36



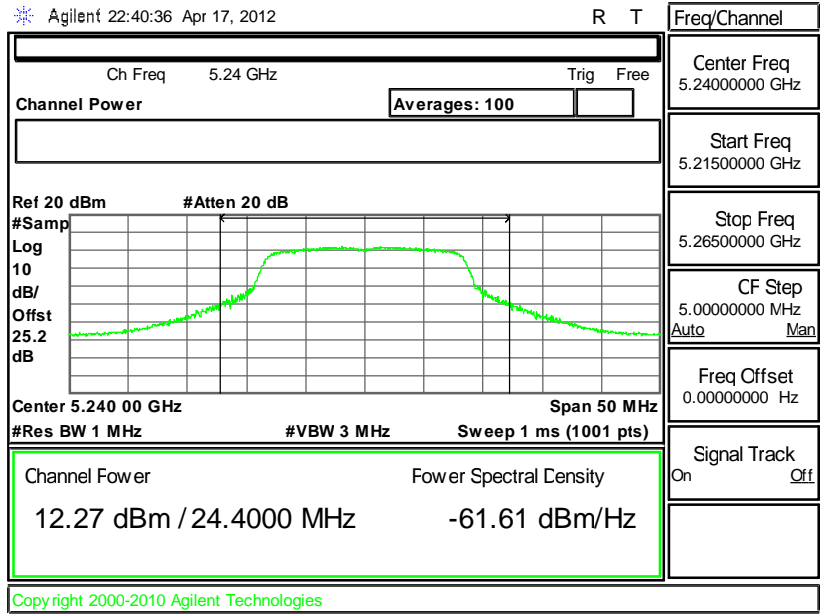
Total path loss 25.2 dB (cable loss: 0.2dB, attenuator: 25.0dB)

Output Power Plot on 802.11a Channel 44

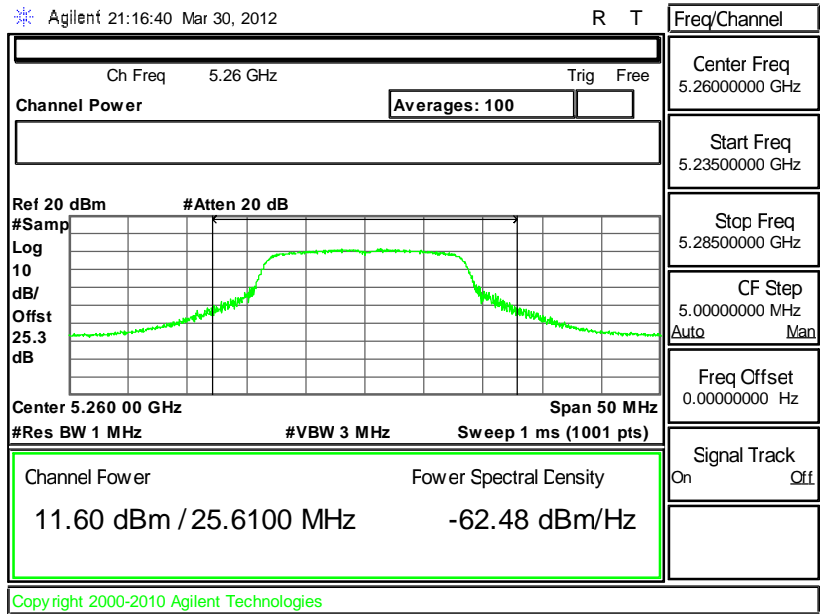




Output Power Plot on 802.11a Channel 48



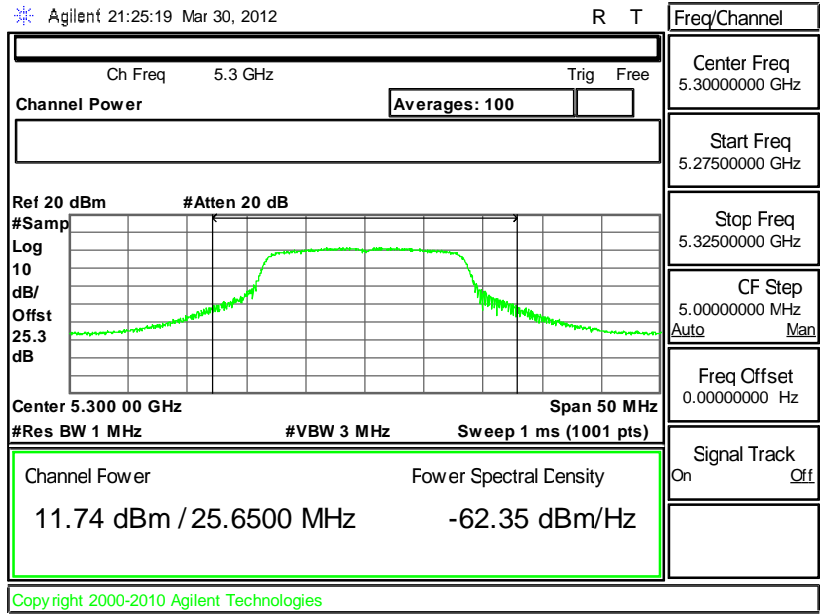
Output Power Plot on 802.11a Channel 52



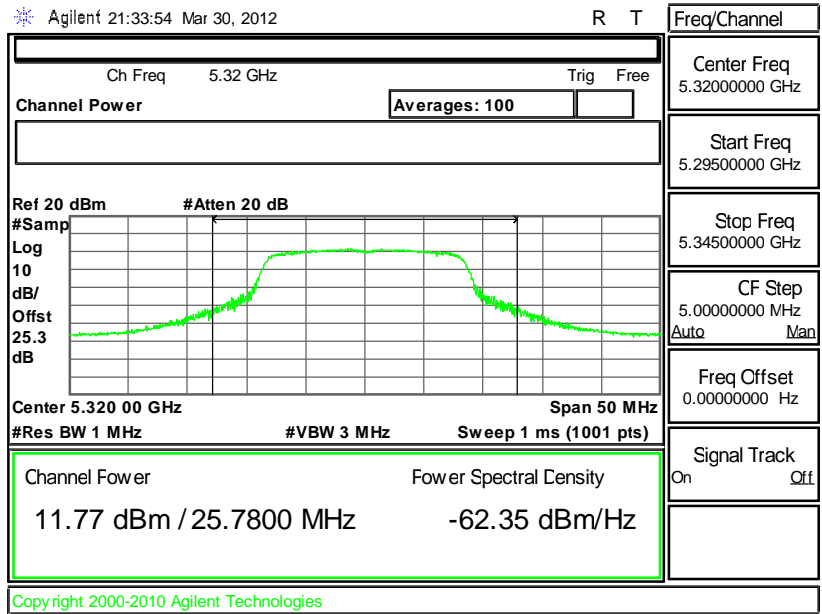
Total path loss 25.3 dB (cable loss: 0.2dB, attenuator: 25.1dB)



Output Power Plot on 802.11a Channel 60

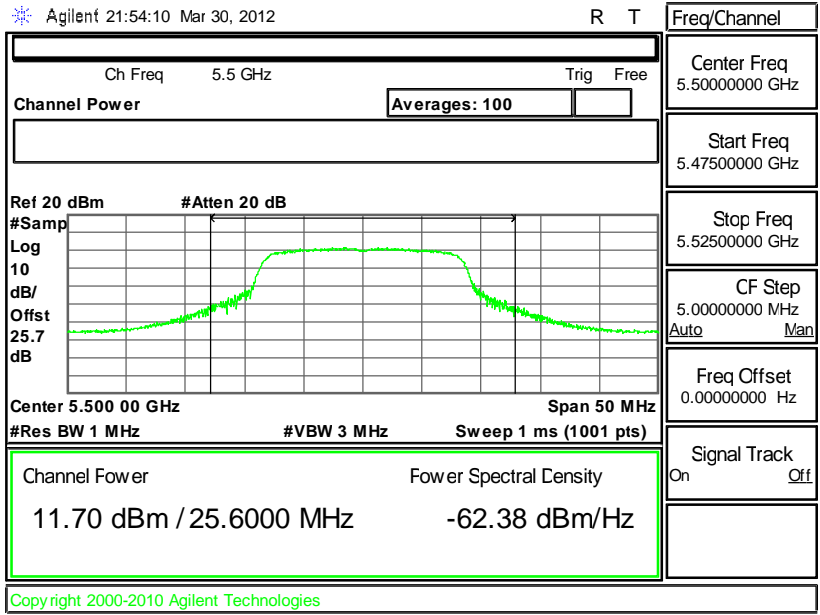


Output Power Plot on 802.11a Channel 64



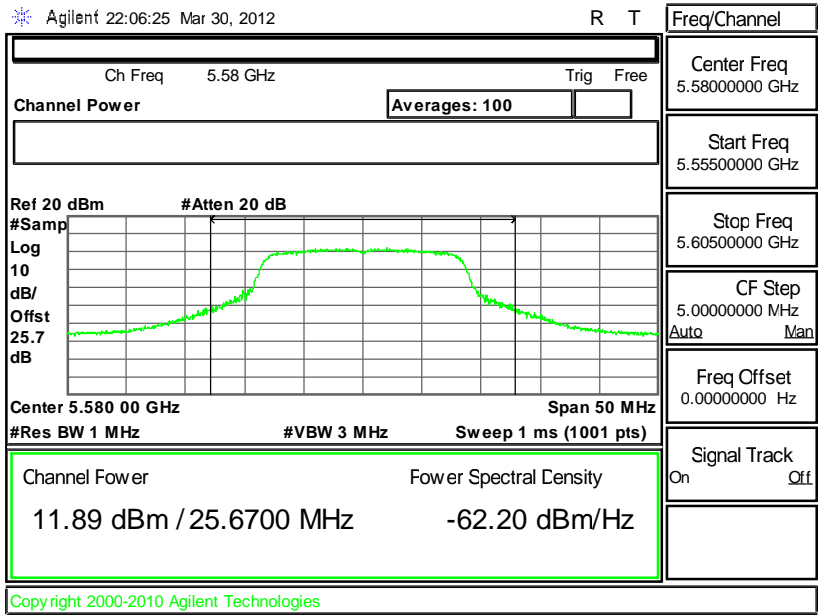


Output Power Plot on 802.11a Channel 100



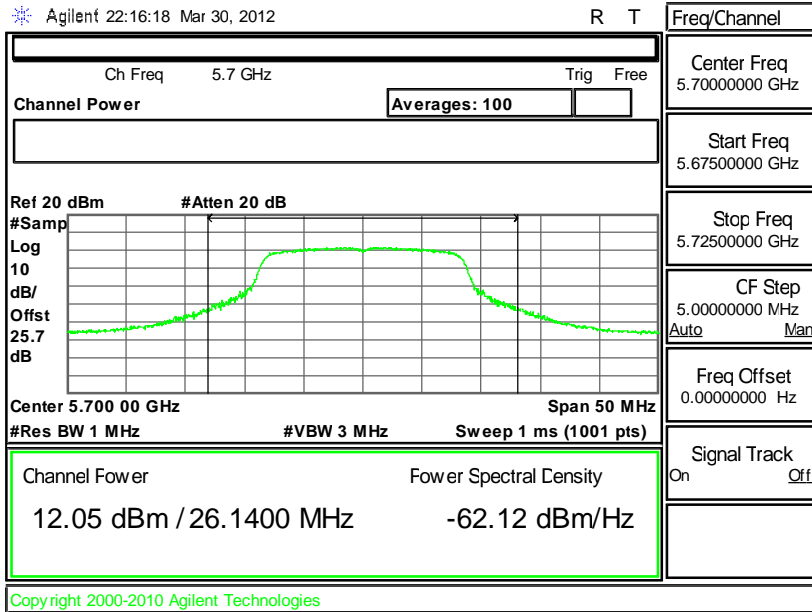
Total path loss 25.7 dB (cable loss: 0.2dB, attenuator: 25.5dB)

Output Power Plot on 802.11a Channel 116



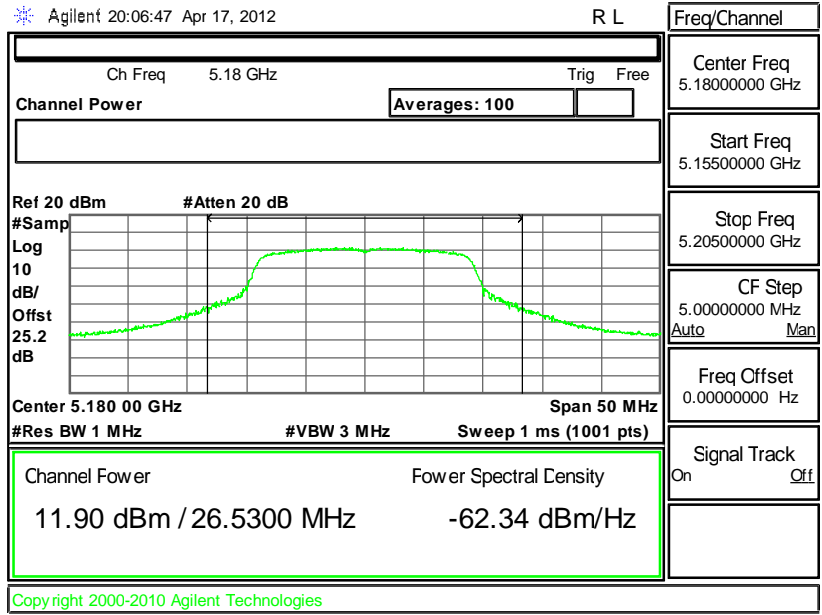


Output Power Plot on 802.11a Channel 140



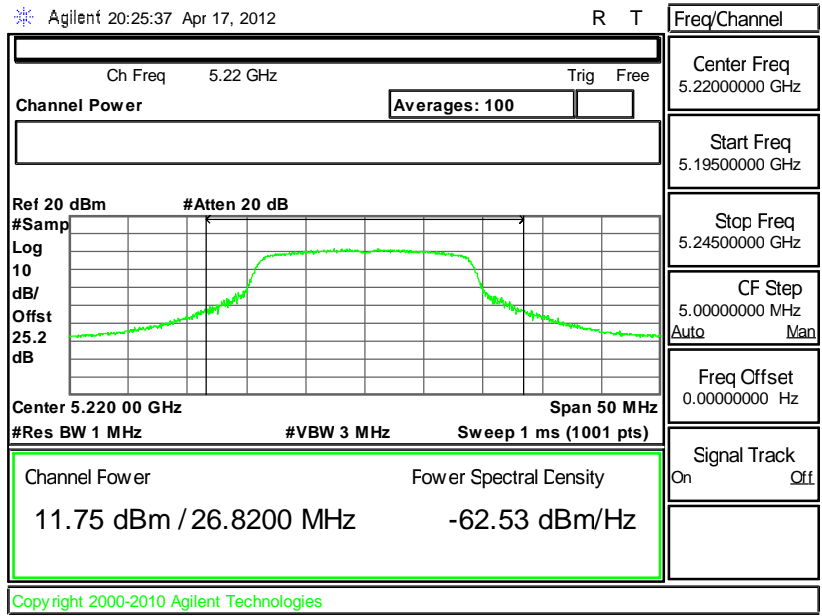


Output Power Plot on 802.11n (BW 20MHz) Channel 36



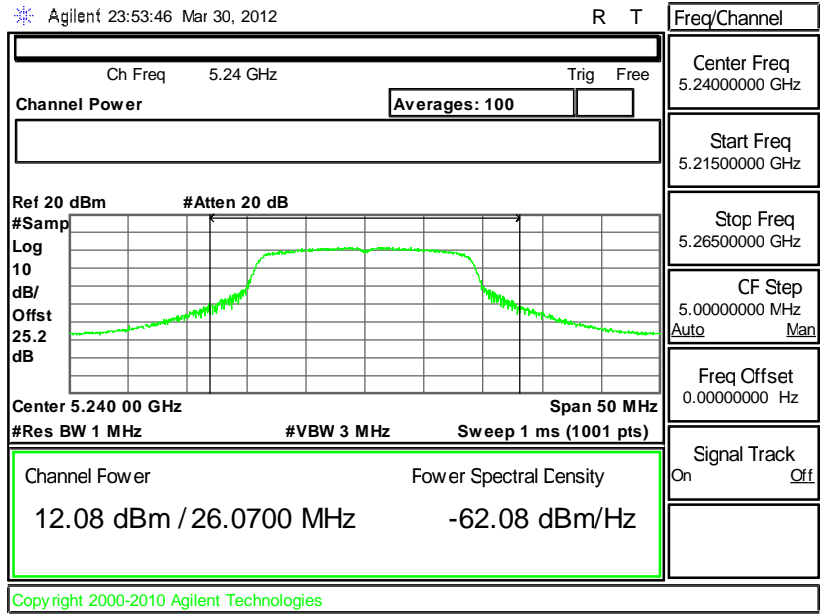
Total path loss 25.2 dB (cable loss: 0.2dB, attenuator: 25.0dB)

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

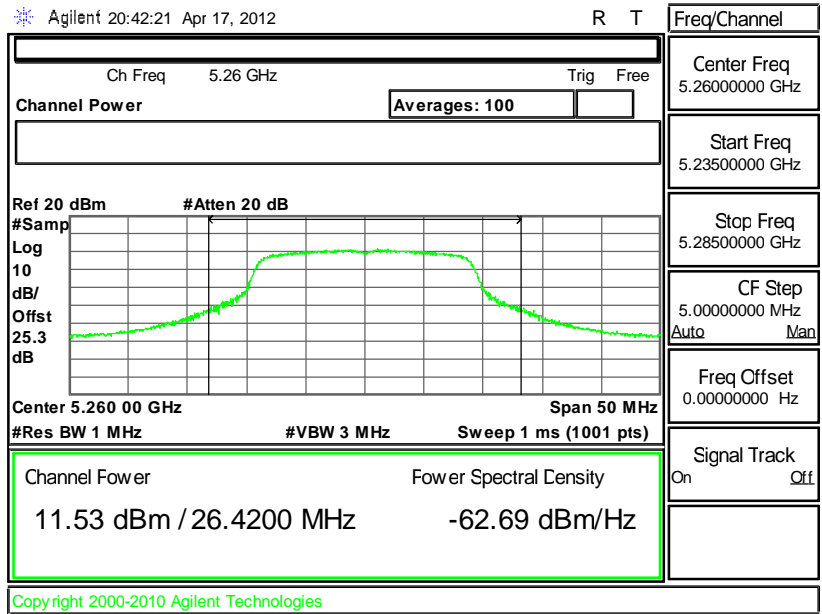




Output Power Plot on 802.11n (BW 20MHz) Channel 48



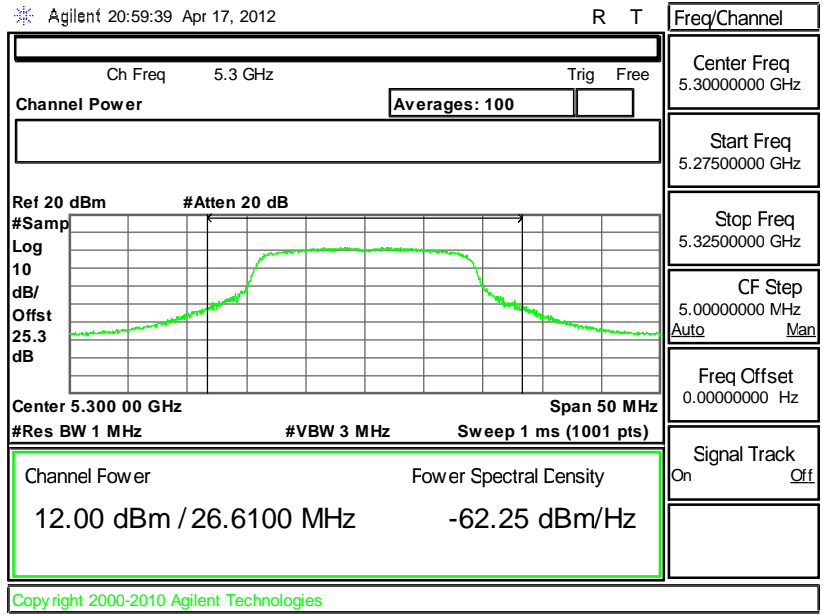
Output Power Plot on 802.11n (BW 20MHz) Channel 52



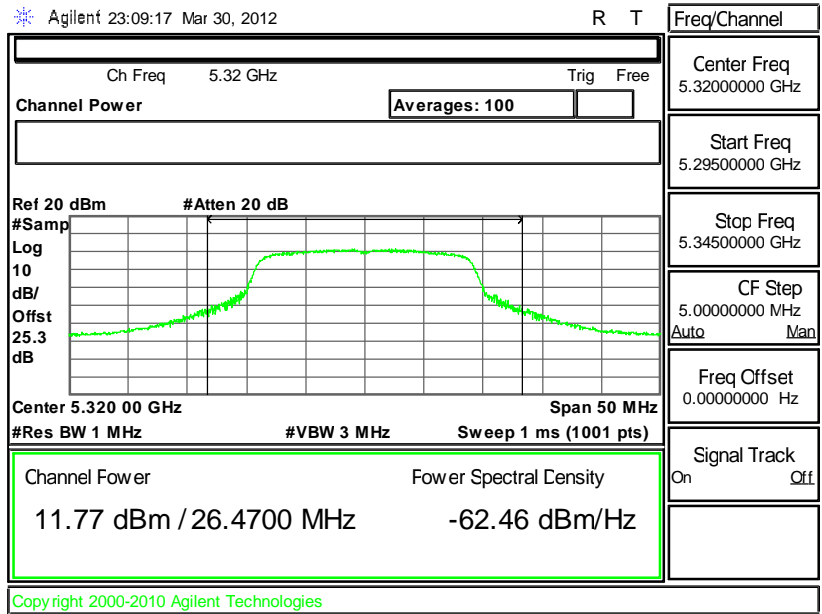
Total path loss 25.3 dB (cable loss: 0.2dB, attenuator: 25.1dB)



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

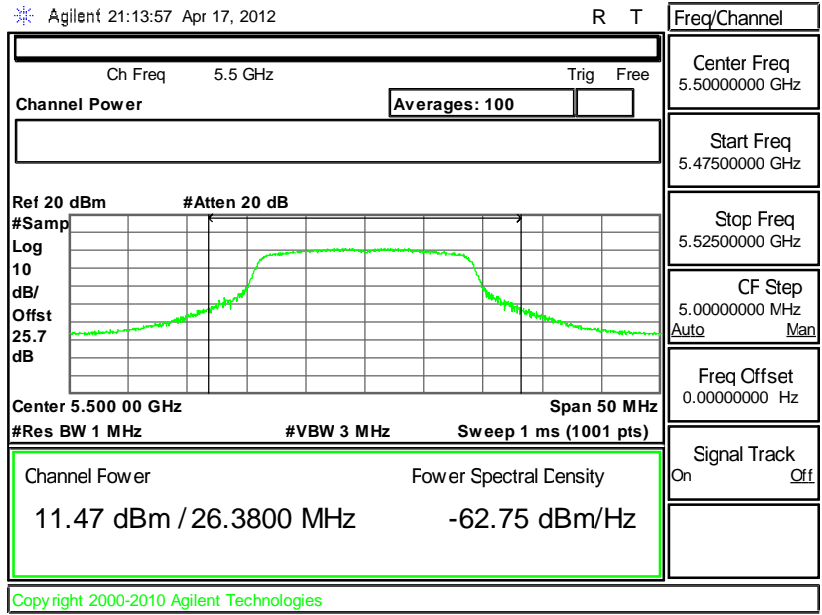


Output Power Plot on 802.11n (BW 20MHz) Channel 64



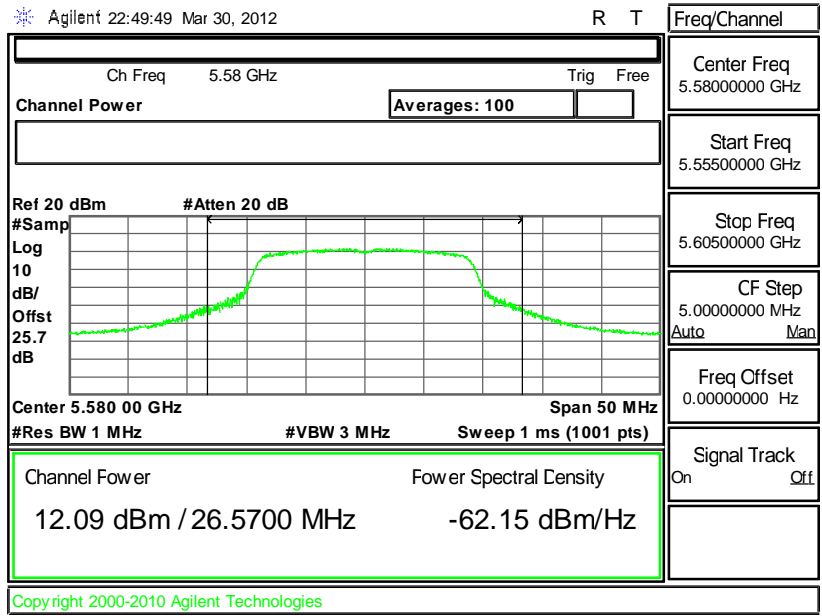


Output Power Plot on 802.11n (BW 20MHz) Channel 100



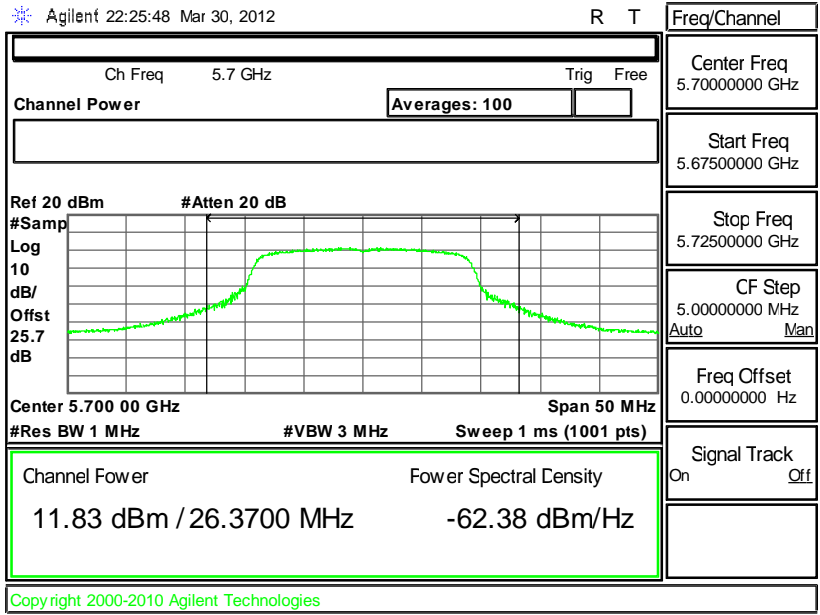
Total path loss 25.7 dB (cable loss: 0.2dB, attenuator: 25.5dB)

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





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



3.3 Maximum e.i.r.p. measurement

3.3.1 Limit of Maximum e.i.r.p.

The maximum equivalent isotropically radiated power(e.i.r.p.) can be limited by measured emission bandwidth (B). For the band 5150-5250 MHz, the maximum e.i.r.p. shall not exceed 200mW (23dBm) or $10 + 10\log_{10} B$, dBm, whichever power is less. For the bands 5250-5350 MHz and 5470-5725MHz, the maximum e.i.r.p. shall not exceed 1.0W (30dBm) or $17 + 10\log_{10} B$, dBm, whichever power is less.

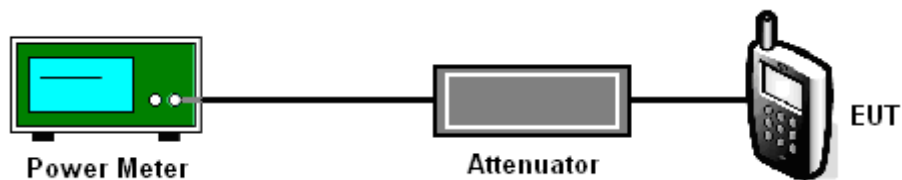
3.3.2 Measuring Instruments

See list of measuring instruments of this test report.

3.3.3 Test Procedures

1. The testing follows FCC Public Notice DA 02-2138 (Measurement Guidelines of UNII).
2. The RF output of EUT was connected to the power meter by a low loss cable.
3. Measure the power and record it.

3.3.4 Test Setup





3.3.5 Test Result of EIRP

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

Channel	Frequency (MHz)	Conducted Output Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Max. Limits (dBm)	Pass/Fail
36	5180	11.78	4.85	16.63	22.52	Pass
44	5220	11.82	4.85	16.67	22.55	Pass
48	5240	12.27	4.85	17.12	22.50	Pass
52	5260	11.60	4.86	16.46	29.48	Pass
60	5300	11.74	4.86	16.60	29.48	Pass
64	5320	11.77	4.86	16.63	29.48	Pass
100	5500	11.70	4.87	16.57	29.49	Pass
116	5580	11.89	4.87	16.76	29.49	Pass
140	5700	12.05	4.87	16.92	29.47	Pass

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

Channel	Frequency (MHz)	Conducted Output Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Max. Limits (dBm)	Pass/Fail
36	5180	11.90	4.85	16.75	22.73	Pass
44	5220	11.75	4.85	16.60	22.70	Pass
48	5240	12.08	4.85	16.93	22.74	Pass
52	5260	11.53	4.86	16.39	29.72	Pass
60	5300	12.00	4.86	16.86	29.71	Pass
64	5320	11.77	4.86	16.63	29.71	Pass
100	5500	11.47	4.87	16.34	29.72	Pass
116	5580	12.09	4.87	16.96	29.71	Pass
140	5700	11.83	4.87	16.70	29.74	Pass

3.4 Power Spectral Density Measurement

3.4.1 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.

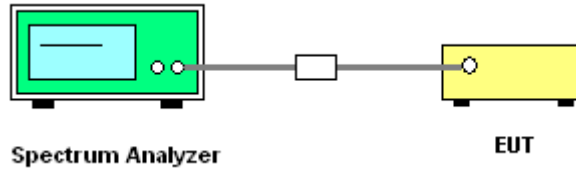
3.4.2 Measuring Instruments

See list of measuring instruments of this test report.

3.4.3 Test Procedures

1. The testing follows Method SA-2 of FCC KDB 789033 D01 General UNII Test Procedures v01r01.
 - Measure the duty cycle.
 - Set span to encompass the entire emission bandwidth (EBW) of the signal.
 - Set RBW = 1 MHz.
 - Set VBW \geq 3 MHz.
 - Number of points in sweep \geq 2 Span / RBW.
 - Sweep time = auto.
 - Detector = sample
 - Do not use sweep triggering.
 - Trace average at least 100 traces in power averaging mode.
 - Add $10 \log(1/x)$, where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times. For example, add $10 \log(1/0.25) = 6$ dB if the duty cycle is 25 percent.
2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
3. Each plot has already offset with cable loss, and attenuator loss. Measure the PPSD and record it.

3.4.4 Test Setup





3.4.5 Test Result of Power Spectral Density

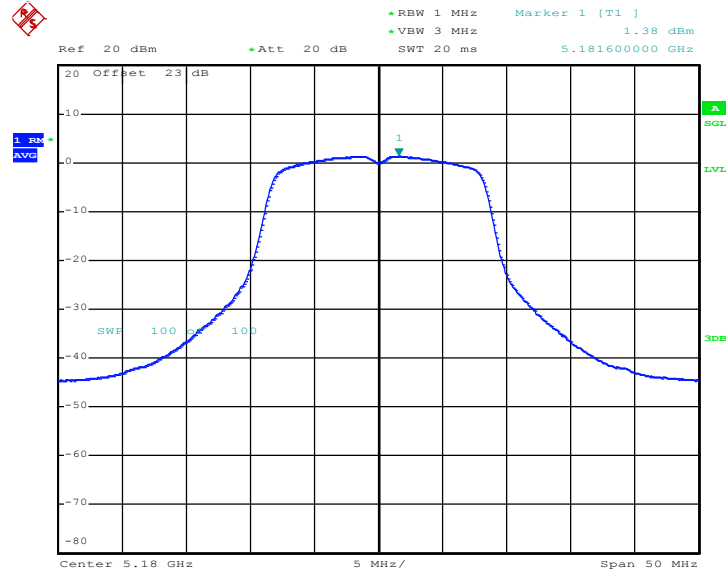
Test Mode :	Mode 1~9	Temperature :	24~26°C
Test Engineer :	Hank Yu	Relative Humidity :	45~49%

Channel	Frequency (MHz)	Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
36	5180	1.38	4	Pass
44	5220	0.79	4	Pass
48	5240	-0.22	4	Pass
52	5260	0.40	11	Pass
60	5300	0.55	11	Pass
64	5320	0.59	11	Pass
100	5500	-0.77	11	Pass
116	5580	-0.83	11	Pass
140	5700	-0.31	11	Pass

Channel	Frequency (MHz)	Measured e.i.r.p. PSD (dBm)	IC Max. Limits (dBm)	Pass/Fail
36	5180	6.23	10	Pass
44	5220	5.64	10	Pass
48	5240	4.63	10	Pass

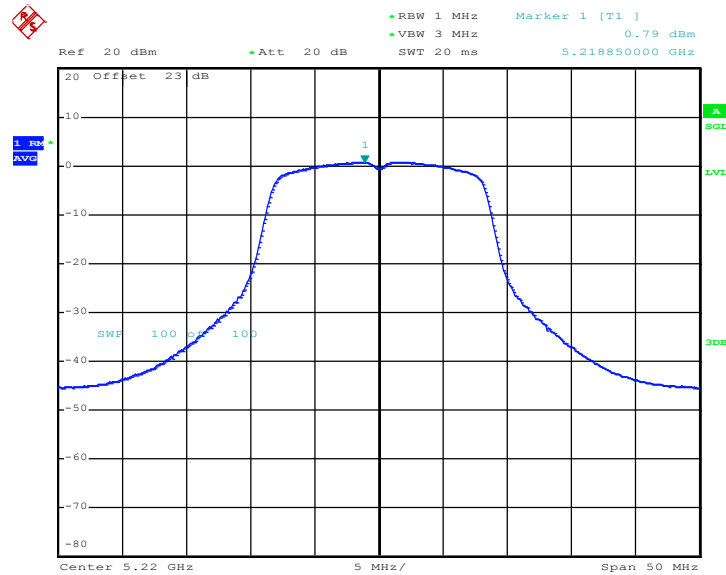


PSD Plot on 802.11a Channel 36



Date: 20.APR.2012 16:56:13

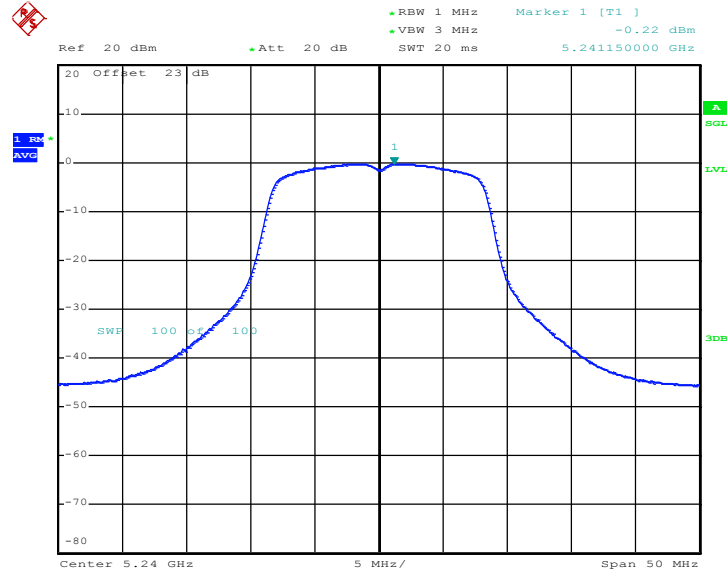
PSD Plot on 802.11a Channel 44



Date: 20.APR.2012 17:04:50

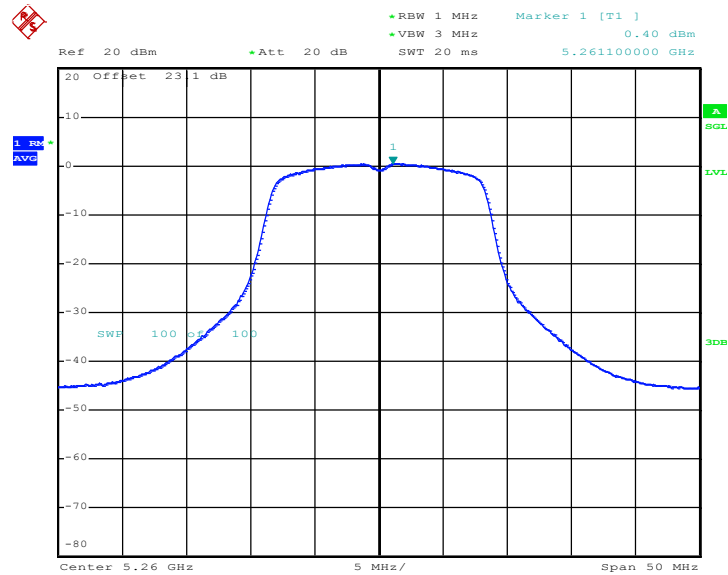


PSD Plot on 802.11a Channel 48



Date: 20.APR.2012 17:03:10

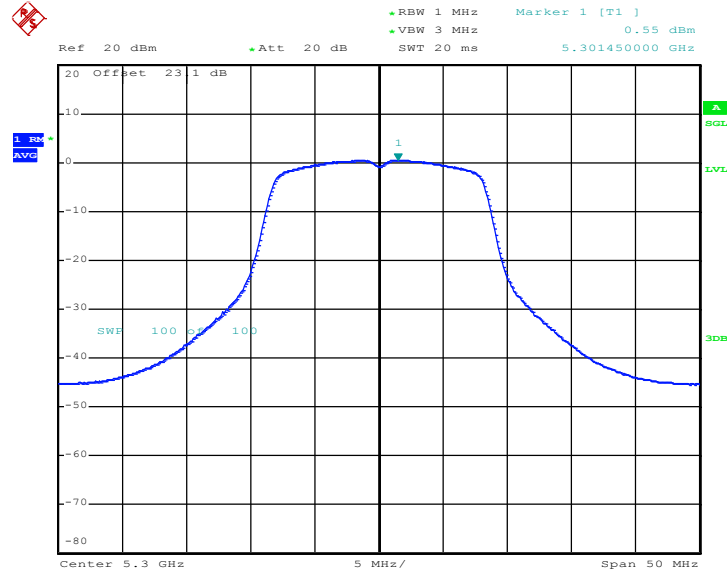
PSD Plot on 802.11a Channel 52



Date: 20.APR.2012 17:05:55

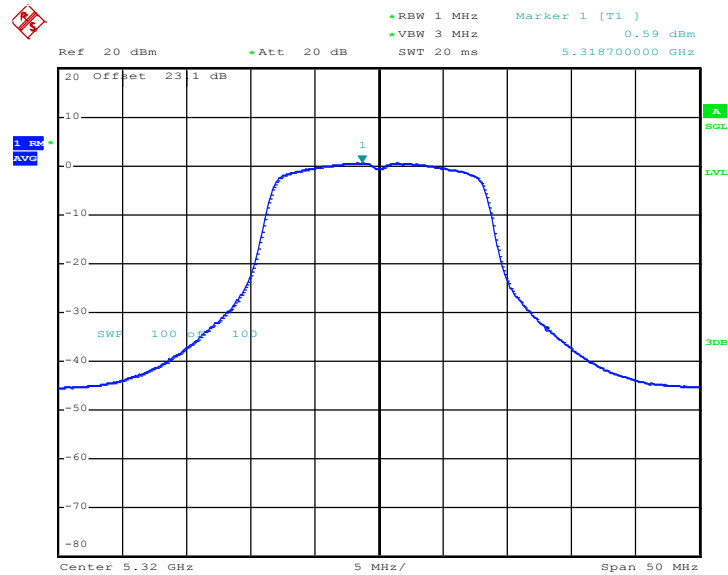


PSD Plot on 802.11a Channel 60



Date: 20.APR.2012 17:09:02

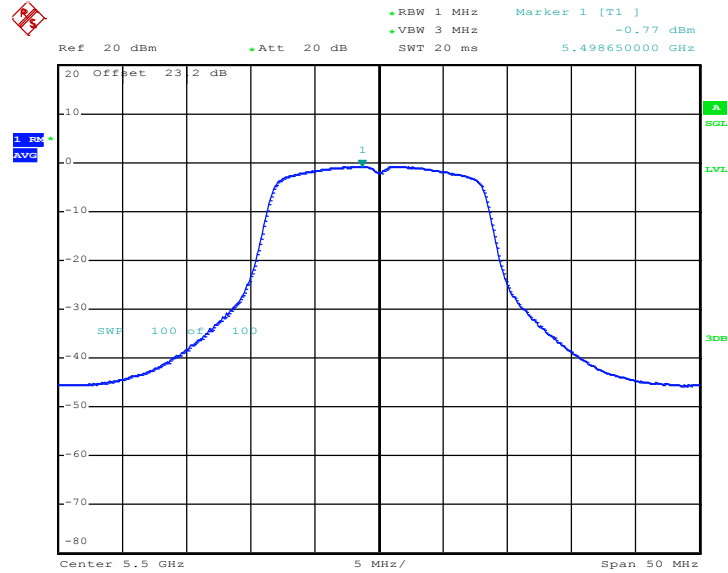
PSD Plot on 802.11a Channel 64



Date: 20.APR.2012 17:11:00

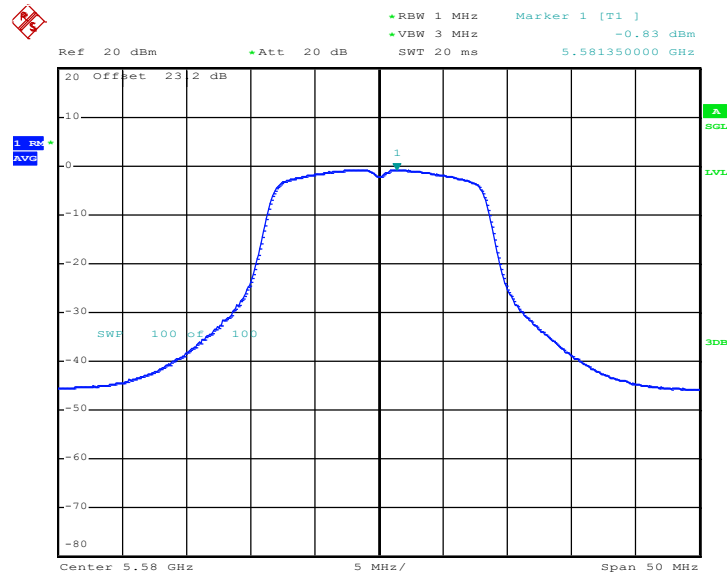


PSD Plot on 802.11a Channel 100



Date: 20.APR.2012 17:16:23

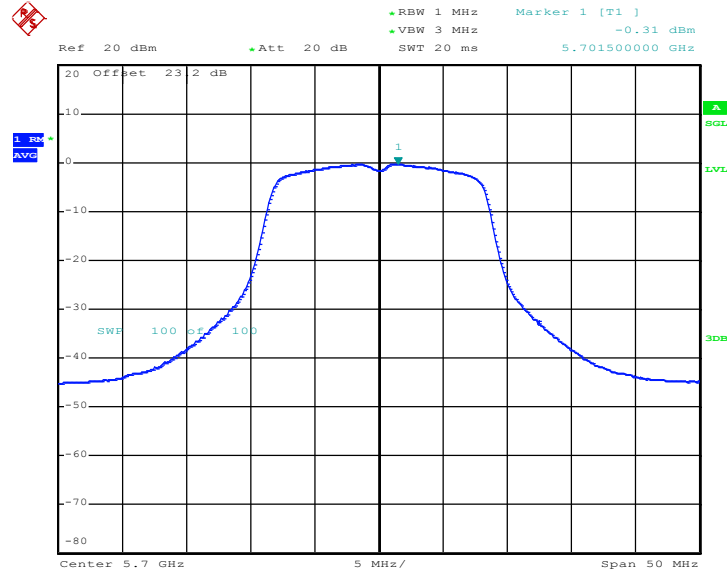
PSD Plot on 802.11a Channel 116



Date: 20.APR.2012 17:21:16



PSD Plot on 802.11a Channel 140



Date: 20.APR.2012 17:22:44



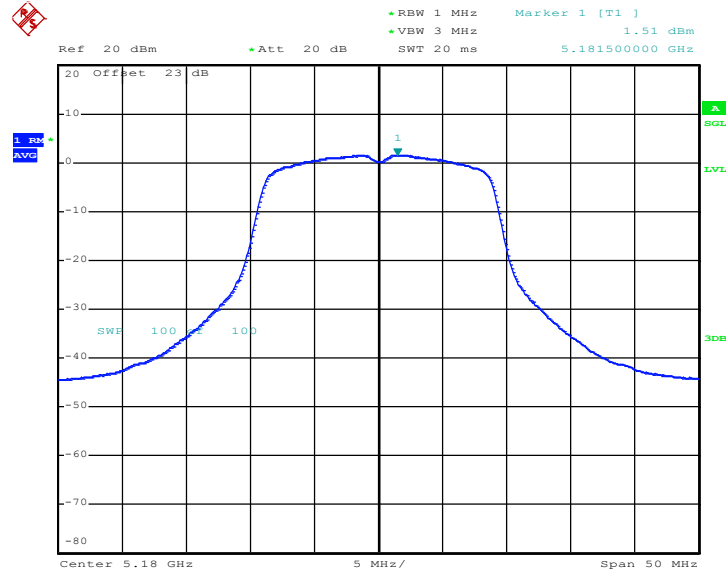
Test Mode :	Mode 10~18	Temperature :	24~26°C
Test Engineer :	Hank Yu	Relative Humidity :	45~49%

Channel	Frequency (MHz)	Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
36	5180	1.51	4	Pass
44	5220	1.59	4	Pass
48	5240	0.86	4	Pass
52	5260	1.29	11	Pass
60	5300	1.25	11	Pass
64	5320	0.35	11	Pass
100	5500	-0.15	11	Pass
116	5580	-0.80	11	Pass
140	5700	0.62	11	Pass

Channel	Frequency (MHz)	Measured e.i.r.p. PSD (dBm)	IC Max. Limits (dBm)	Pass/Fail
36	5180	6.36	10	Pass
44	5220	6.44	10	Pass
48	5240	5.71	10	Pass

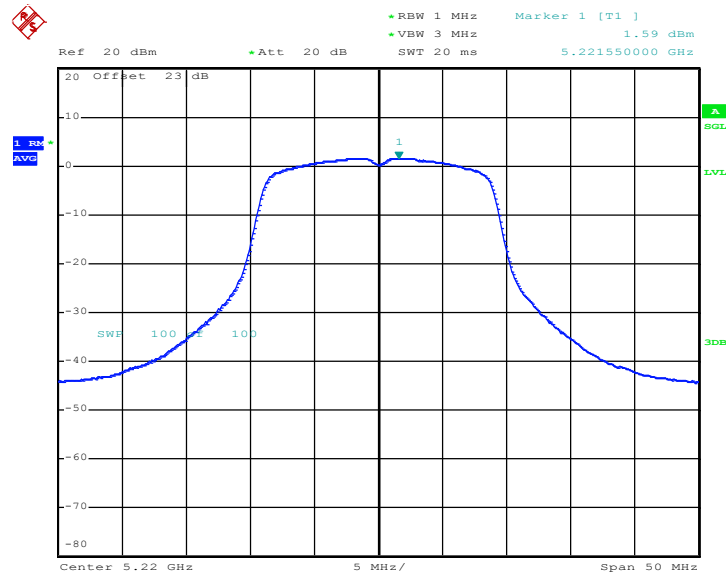


PSD Plot on 802.11n (BW 20MHz) Channel 36



Date: 20.APR.2012 19:14:03

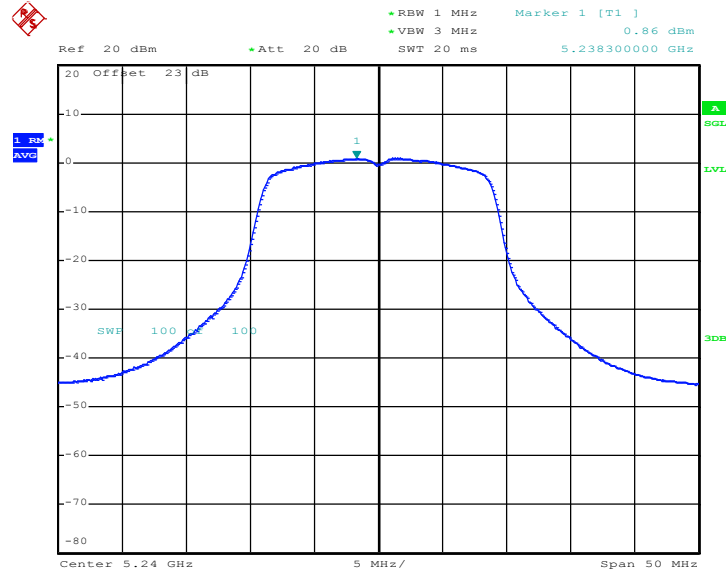
PSD Plot on 802.11n (BW 20MHz) Channel 44



Date: 20.APR.2012 19:17:33

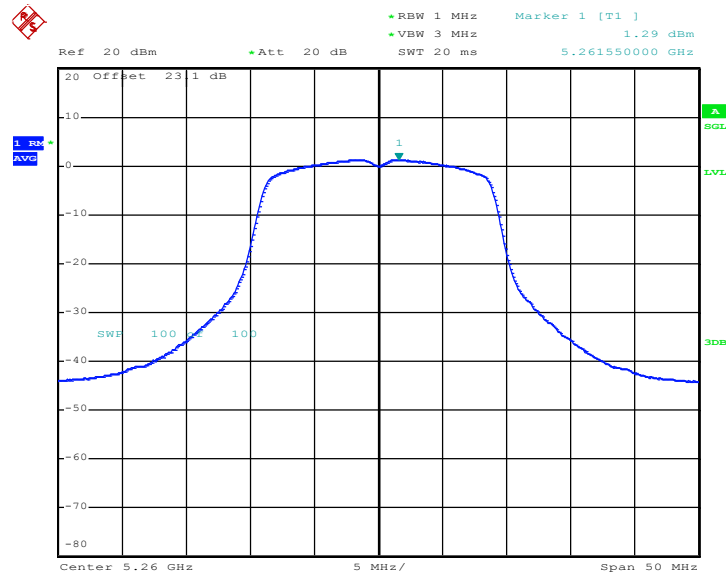


PSD Plot on 802.11n (BW 20MHz) Channel 48



Date: 20.APR.2012 19:20:17

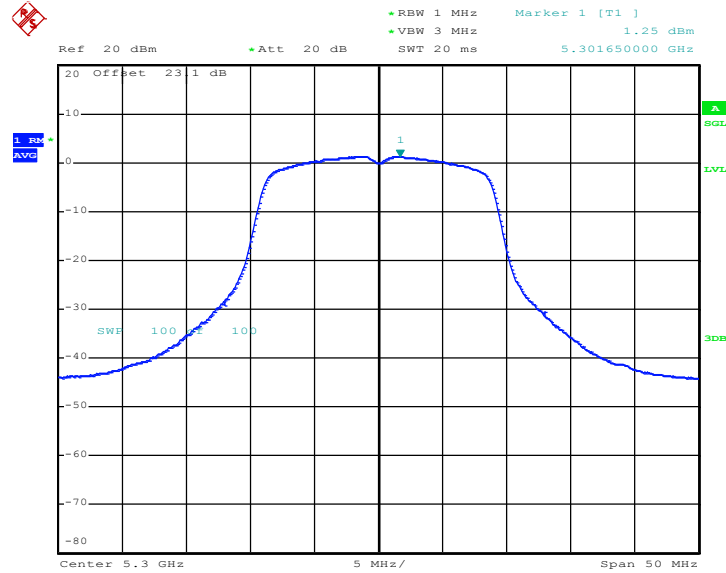
PSD Plot on 802.11n (BW 20MHz) Channel 52



Date: 20.APR.2012 19:22:40

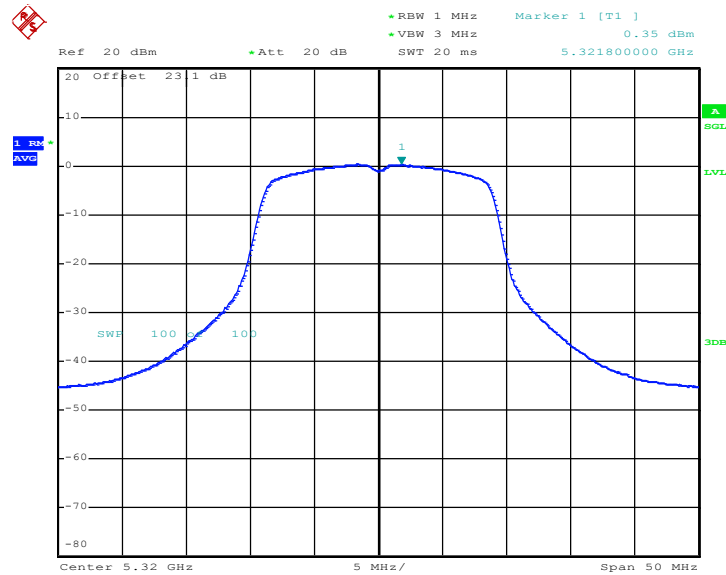


PSD Plot on 802.11n (BW 20MHz) Channel 60



Date: 20.APR.2012 19:24:13

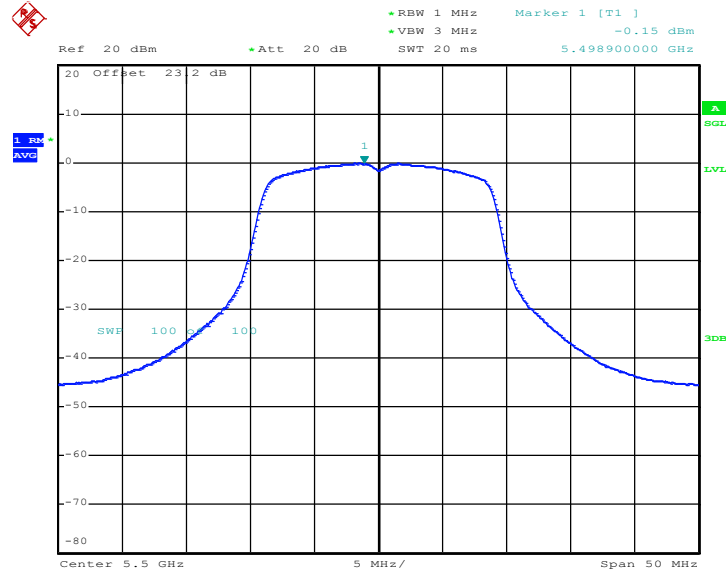
PSD Plot on 802.11n (BW 20MHz) Channel 64



Date: 20.APR.2012 19:25:30

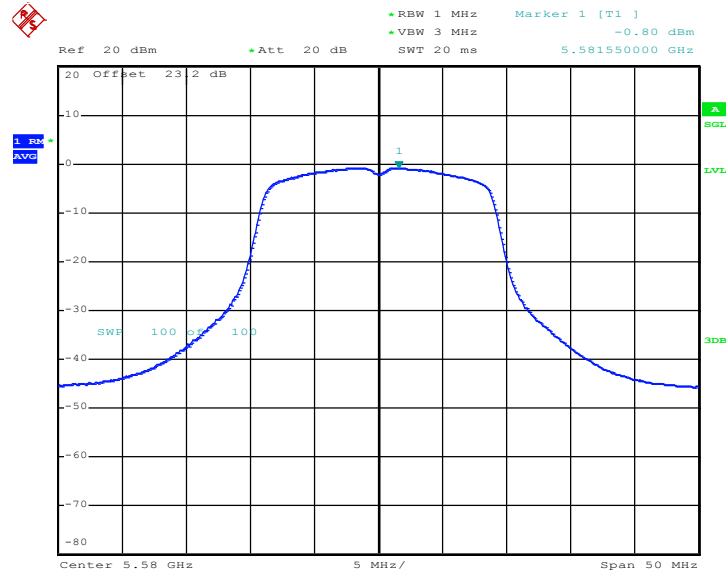


PSD Plot on 802.11n (BW 20MHz) Channel 100



Date: 20.APR.2012 19:27:16

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



Date: 20.APR.2012 19:28:45

3.5 AC Conducted Emission Measurement

3.5.1 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.

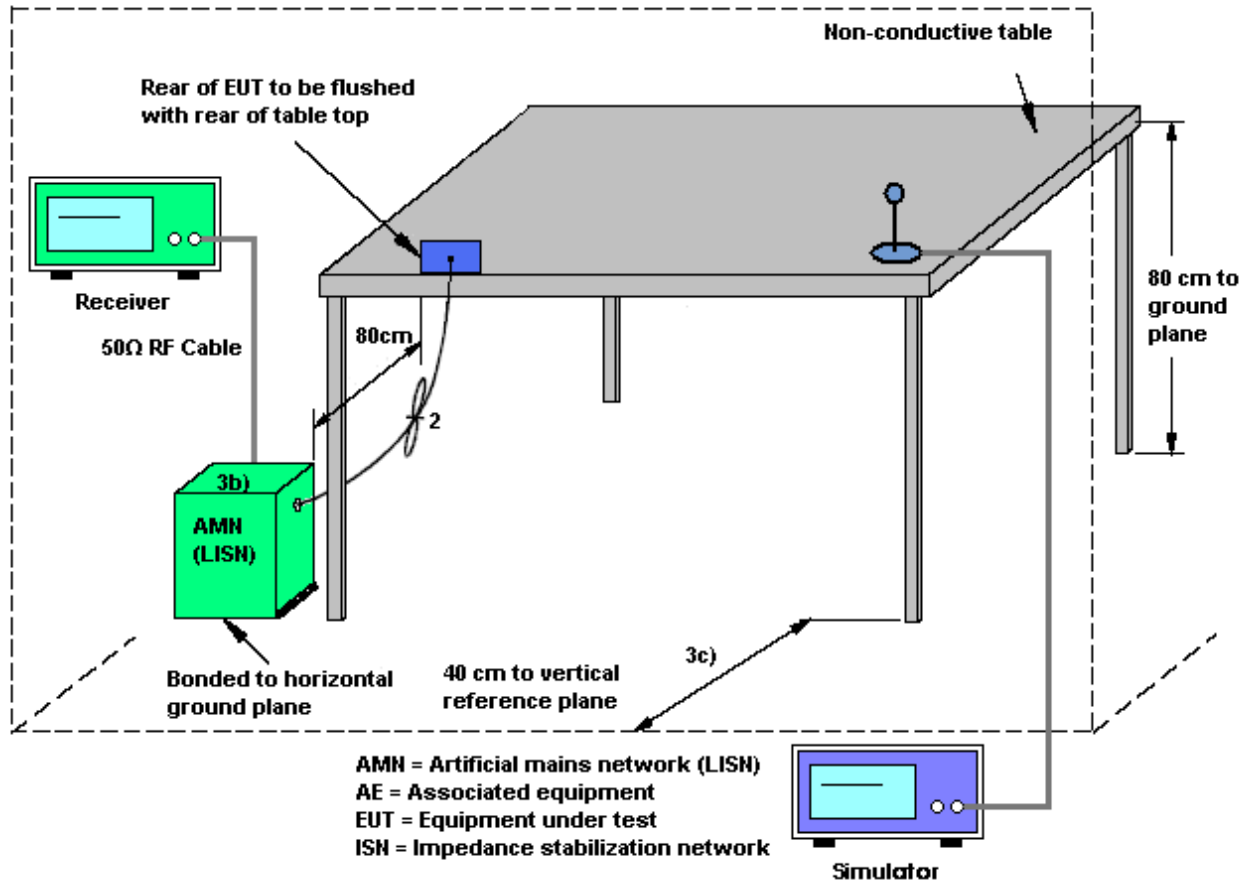
3.5.2 Measuring Instruments

See list of measuring instruments of this test report.

3.5.3 Test Procedures

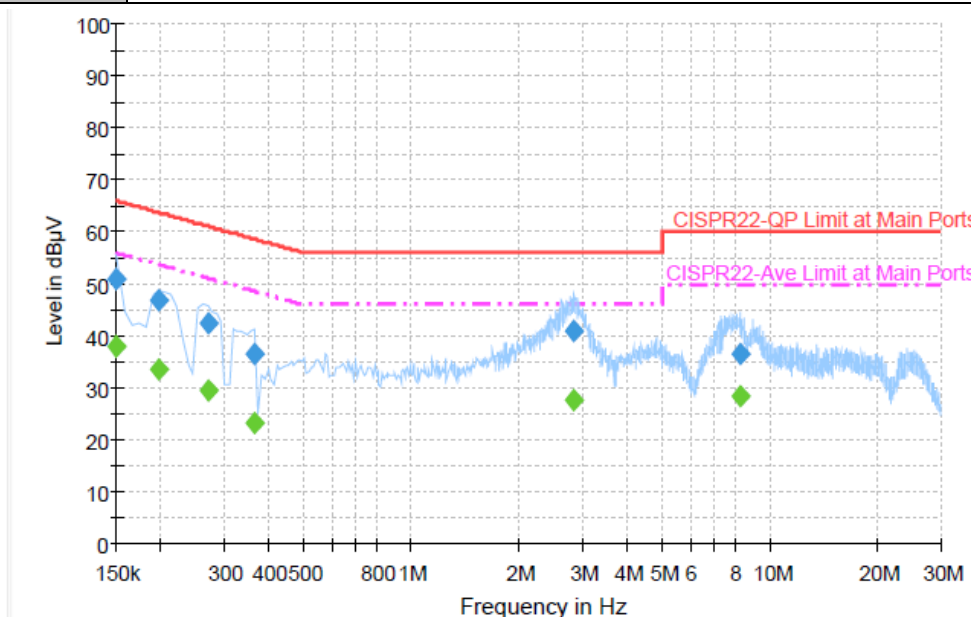
1. Please follow the guidelines in ANSI C63.4-2003.
2. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
3. Connect EUT to the power mains through a line impedance stabilization network (LISN).
4. All 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.

3.5.4 Test Setup



3.5.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	Temperature :	22~23°C
Test Engineer :	Kai-Chun Chu	Relative Humidity :	48~49%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	WCDMA Band V Idle + WLAN (5G) Link + Bluetooth Link + MP3 + Camera + Battery + Sleeve (USB Port + DC Jack) + USB Cable (Link with Notebook) + Adapter 1		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Final Result : QuasiPeak

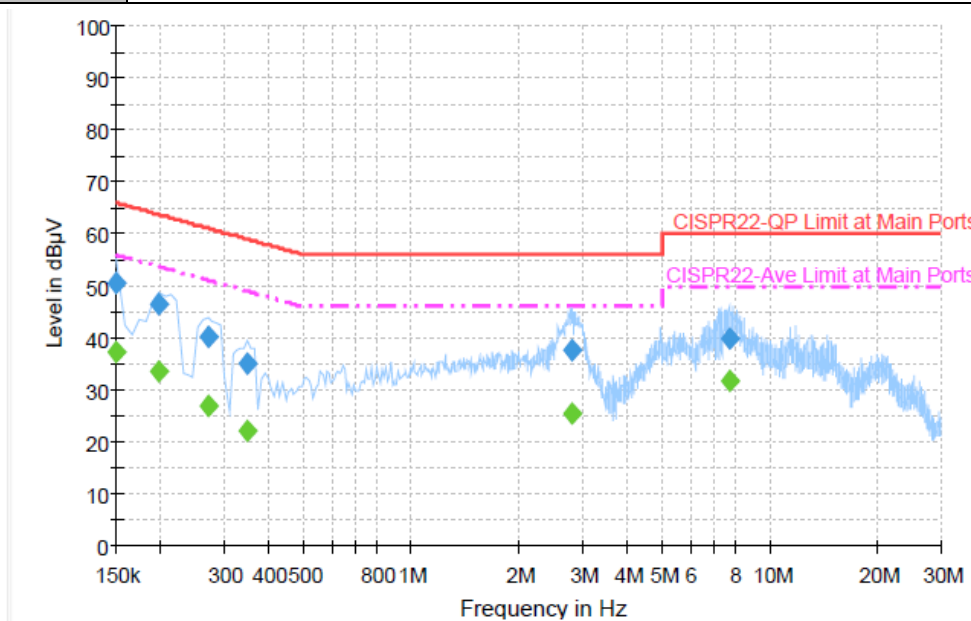
Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	51.0	Off	L1	19.4	15.0	66.0
0.198000	46.7	Off	L1	19.4	17.0	63.7
0.270000	42.6	Off	L1	19.4	18.5	61.1
0.366000	36.5	Off	L1	19.4	22.1	58.6
2.846000	40.8	Off	L1	19.4	15.2	56.0
8.286000	36.4	Off	L1	19.5	23.6	60.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	38.1	Off	L1	19.4	17.9	56.0
0.198000	33.5	Off	L1	19.4	20.2	53.7
0.270000	29.7	Off	L1	19.4	21.4	51.1
0.366000	23.4	Off	L1	19.4	25.2	48.6
2.846000	27.6	Off	L1	19.4	18.4	46.0
8.286000	28.3	Off	L1	19.5	21.7	50.0



Test Mode :	Mode 1	Temperature :	22~23°C
Test Engineer :	Kai-Chun Chu	Relative Humidity :	48~49%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	WCDMA Band V Idle + WLAN (5G) Link + Bluetooth Link + MP3 + Camera + Battery + Sleeve (USB Port + DC Jack) + USB Cable (Link with Notebook) + Adapter 1		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Final Result : QuasiPeak

Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	50.5	Off	N	19.4	15.5	66.0
0.198000	46.4	Off	N	19.4	17.3	63.7
0.270000	40.1	Off	N	19.4	21.0	61.1
0.350000	34.9	Off	N	19.4	24.1	59.0
2.806000	37.5	Off	N	19.5	18.5	56.0
7.694000	40.0	Off	N	19.6	20.0	60.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	37.4	Off	N	19.4	18.6	56.0
0.198000	33.5	Off	N	19.4	20.2	53.7
0.270000	27.0	Off	N	19.4	24.1	51.1
0.350000	22.0	Off	N	19.4	27.0	49.0
2.806000	25.3	Off	N	19.5	20.7	46.0
7.694000	31.9	Off	N	19.6	18.1	50.0

3.6 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.

3.6.1 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 5.25-5.35 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz. Devices operating in the 5.25-5.35 GHz band that generate emissions in the 5.15-5.25 GHz band must meet all applicable technical requirements for operation in the 5.15-5.25 GHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of -27 dBm/MHz in the 5.15-5.25 GHz band.

For transmitters operating in the 5.47-5.725 GHz band: all emissions outside of the 5.47-5.725 GHz band shall not exceed an EIRP of -27 dBm/MHz.

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

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

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

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

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

3.6.2 Measuring Instruments

See list of measuring instruments of this test report.



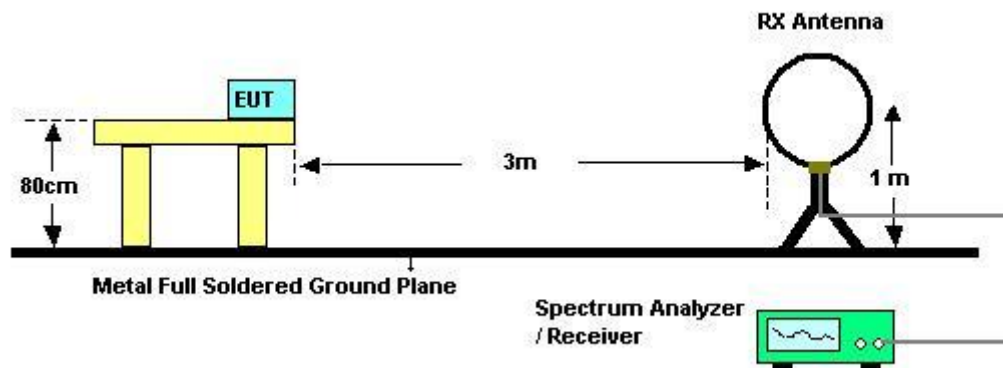
3.6.3 Test Procedures

1. The testing follows the guidelines in FCC KDB 789033 D01 General UNII Test Procedures v01r01.
 - (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.

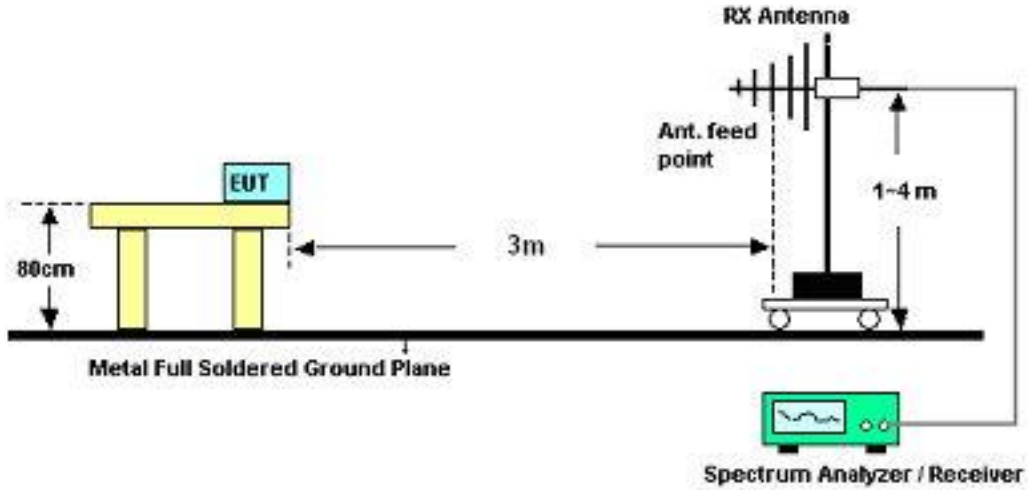
6. For each suspected emission, the EUT was arranged to its worst case and then adjust the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
7. For testing below 1GHz, if the emission level of the EUT in peak mode was 3 dB lower than the limit specified, 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.

3.6.4 Test Setup

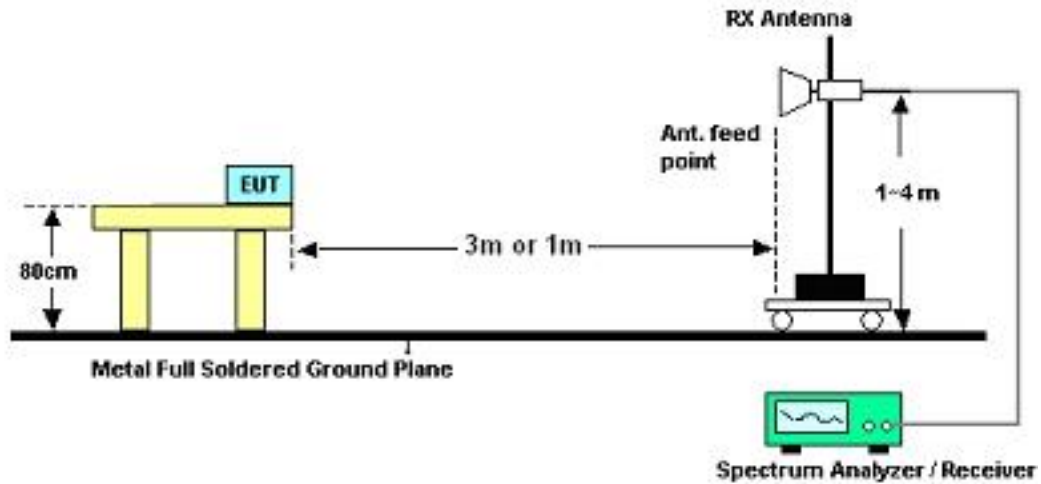
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



3.6.5 Test Results of Radiated Emissions (9 KHz ~ 30 MHz)

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



3.6.6 Test Result

3.6.7 Test Result of Radiated Band Edges

Test Mode :	Mode 1	Temperature :	21~26°C
Test Band :	802.11a	Relative Humidity :	47~54%
Test Channel :	36	Test Engineer :	David Yang / Kyle Jhuang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5150	58.44	-15.56	74	48.43	34.25	9.41	33.65	100	16	Peak
5150	42.55	-11.45	54	32.54	34.25	9.41	33.65	100	16	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5150	59.22	-14.78	74	49.21	34.25	9.41	33.65	100	265	Peak
5150	42.77	-11.23	54	32.76	34.25	9.41	33.65	100	265	Average

Test Mode :	Mode 3	Temperature :	21~26°C
Test Band :	802.11a	Relative Humidity :	47~54%
Test Channel :	48	Test Engineer :	David Yang / Kyle Jhuang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5396	55.64	-18.36	74	44.48	34.5	9.82	33.16	125	20	Peak
5396	41.08	-12.92	54	29.92	34.5	9.82	33.16	125	20	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5396	53.61	-20.39	74	42.45	34.5	9.82	33.16	110	272	Peak
5396	41.58	-12.42	54	30.42	34.5	9.82	33.16	110	272	Average



Test Mode :	Mode 4	Temperature :	21~26°C
Test Band :	802.11a	Relative Humidity :	47~54%
Test Channel :	52	Test Engineer :	David Yang / Kyle Jhuang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5100	53.19	-20.81	74	43.41	34.2	9.33	33.75	100	17	Peak
5100	39.98	-14.02	54	30.2	34.2	9.33	33.75	100	17	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5142	52.93	-21.07	74	42.92	34.25	9.41	33.65	110	274	Peak
5142	39.7	-14.3	54	29.69	34.25	9.41	33.65	110	274	Average

Test Mode :	Mode 6	Temperature :	21~26°C
Test Band :	802.11a	Relative Humidity :	47~54%
Test Channel :	64	Test Engineer :	David Yang / Kyle Jhuang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5350	58.77	-15.23	74	47.84	34.45	9.74	33.26	102	174	Peak
5350	42.29	-11.71	54	31.36	34.45	9.74	33.26	102	174	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5350	58.4	-15.6	74	47.47	34.45	9.74	33.26	100	259	Peak
5350	43.25	-10.75	54	32.32	34.45	9.74	33.26	100	259	Average



Test Mode :	Mode 7	Temperature :	21~26°C
Test Band :	802.11a	Relative Humidity :	47~54%
Test Channel :	100	Test Engineer :	David Yang / Kyle Jhuang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5470	67.35	-0.95	68.3	55.85	34.47	9.94	32.91	112	53	Peak

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5470	66.38	-1.92	68.3	54.88	34.47	9.94	32.91	100	294	Peak

Test Mode :	Mode 9	Temperature :	21~26°C
Test Band :	802.11a	Relative Humidity :	47~54%
Test Channel :	140	Test Engineer :	David Yang / Kyle Jhuang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	46.42	-21.88	68.3	34.86	34.82	9.92	33.18	100	326	Peak

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	49.89	-18.41	68.3	38.33	34.82	9.92	33.18	100	269	Peak



Test Mode :	Mode 10	Temperature :	21~26°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	47~54%
Test Channel :	36	Test Engineer :	David Yang / Kyle Jhuang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5150	55.89	-18.11	74	45.88	34.25	9.41	33.65	100	317	Peak
5150	41.66	-12.34	54	31.65	34.25	9.41	33.65	100	317	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5150	57.09	-16.91	74	47.08	34.25	9.41	33.65	100	265	Peak
5150	42.08	-11.92	54	32.07	34.25	9.41	33.65	100	265	Average

Test Mode :	Mode 12	Temperature :	21~26°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	47~54%
Test Channel :	48	Test Engineer :	David Yang / Kyle Jhuang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5436	53.14	-20.86	74	41.77	34.53	9.9	33.06	100	315	Peak
5436	40.86	-13.14	54	29.49	34.53	9.9	33.06	100	315	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5356	53.81	-20.19	74	42.79	34.45	9.78	33.21	125	273	Peak
5356	40.88	-13.12	54	29.86	34.45	9.78	33.21	125	273	Average



Test Mode :	Mode 13	Temperature :	21~26°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	47~54%
Test Channel :	52	Test Engineer :	David Yang / Kyle Jhuang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5150	51.33	-22.67	74	41.32	34.25	9.41	33.65	131	177	Peak
5150	39.82	-14.18	54	29.81	34.25	9.41	33.65	131	177	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5150	52.03	-21.97	74	42.02	34.25	9.41	33.65	100	256	Peak
5150	39.75	-14.25	54	29.74	34.25	9.41	33.65	100	256	Average

Test Mode :	Mode 15	Temperature :	21~26°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	47~54%
Test Channel :	64	Test Engineer :	David Yang / Kyle Jhuang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5350	57.25	-16.75	74	46.32	34.45	9.74	33.26	100	174	Peak
5350	42.58	-11.42	54	31.65	34.45	9.74	33.26	100	174	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5350	57.94	-16.06	74	47.01	34.45	9.74	33.26	100	253	Peak
5350	43.15	-10.85	54	32.22	34.45	9.74	33.26	100	253	Average



Test Mode :	Mode 16	Temperature :	21~26°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	47~54%
Test Channel :	100	Test Engineer :	David Yang / Kyle Jhuang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5470	46.45	-21.85	68.3	34.95	34.57	9.94	33.01	125	176	Peak

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5470	51.34	-16.96	68.3	39.84	34.57	9.94	33.01	102	278	Peak

Test Mode :	Mode 18	Temperature :	21~26°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	47~54%
Test Channel :	140	Test Engineer :	David Yang / Kyle Jhuang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	48.27	-20.03	68.3	36.71	34.82	9.92	33.18	100	322	Peak

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	50.83	-17.47	68.3	39.27	34.82	9.92	33.18	100	268	Peak



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

Test Mode :	Mode 1	Temperature :	21~26°C
Test Channel :	36	Relative Humidity :	47~54%
Test Engineer :	David Yang / Kyle Jhuang	Polarization :	Horizontal
Remark :	5180 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30.81	19.79	-20.21	40	34.44	16.27	0.54	31.46	-	-	Peak
240.06	25.72	-20.28	46	43.63	11.98	1.53	31.42	-	-	Peak
287.85	32.43	-13.57	46	48.81	13.27	1.68	31.33	-	-	Peak
335	33.13	-12.87	46	48.03	14.54	1.87	31.31	147	185	Peak
358.1	32.65	-13.35	46	46.61	15.27	2.04	31.27	-	-	Peak
407.8	29.8	-16.2	46	42.11	16.69	2.17	31.17	-	-	Peak
5150	42.55	-11.45	54	32.54	34.25	9.41	33.65	100	16	Average
5150	58.44	-15.56	74	48.43	34.25	9.41	33.65	100	16	Peak
5180	96.42	-	-	86.29	34.28	9.45	33.6	100	16	Average
5180	108	-	-	97.87	34.28	9.45	33.6	100	16	Peak
5350	52.64	-21.36	74	41.71	34.45	9.74	33.26	100	16	Peak
5350	40.64	-13.36	54	29.71	34.45	9.74	33.26	100	16	Average



Test Mode :	Mode 1	Temperature :	21~26°C
Test Channel :	36	Relative Humidity :	47~54%
Test Engineer :	David Yang / Kyle Jhuang	Polarization :	Vertical
Remark :	1. 5180 MHz is fundamental signal which can be ignored. 2. 6902 MHz is not within a restricted band, and its limit line is 68.3dBuV/m.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
32.97	30.56	-9.44	40	45.67	15.8	0.56	31.47	108	223	Peak
106.41	23.07	-20.43	43.5	43.22	10.37	1.03	31.55	-	-	Peak
180.66	21.85	-21.65	43.5	43.09	9.04	1.25	31.53	-	-	Peak
358.1	21.29	-24.71	46	35.25	15.27	2.04	31.27	-	-	Peak
598.9	21.91	-24.09	46	30.41	19.74	2.68	30.92	-	-	Peak
659.8	24.75	-21.25	46	32.32	20.43	2.86	30.86	-	-	Peak
5150	59.22	-14.78	74	49.21	34.25	9.41	33.65	100	265	Peak
5150	42.77	-11.23	54	32.76	34.25	9.41	33.65	100	265	Average
5180	98.25	-	-	88.12	34.28	9.45	33.6	100	265	Average
5180	108.85	-	-	98.72	34.28	9.45	33.6	100	265	Peak
5350	51.95	-22.05	74	41.02	34.45	9.74	33.26	100	265	Peak
5350	40.78	-13.22	54	29.85	34.45	9.74	33.26	100	265	Average
6902	58.51	-9.79	68.3	47.21	35.66	9.89	34.25	100	0	Peak



Test Mode :	Mode 2	Temperature :	21~26°C
Test Channel :	44	Relative Humidity :	47~54%
Test Engineer :	David Yang / Kyle Jhuang	Polarization :	Horizontal
Remark :	5220 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
31.89	20.35	-19.65	40	35.22	16.04	0.55	31.46	-	-	Peak
216.3	24.04	-21.96	46	43.83	10.27	1.4	31.46	-	-	Peak
287.85	32.54	-13.46	46	48.92	13.27	1.68	31.33	-	-	Peak
310.5	34.7	-11.3	46	50.44	13.79	1.79	31.32	142	176	Peak
358.1	33.31	-12.69	46	47.27	15.27	2.04	31.27	-	-	Peak
407.8	28.64	-17.36	46	40.95	16.69	2.17	31.17	-	-	Peak
5014	52.61	-21.39	74	43.27	34.12	9.17	33.95	100	17	Peak
5014	39.32	-14.68	54	29.98	34.12	9.17	33.95	100	17	Average
5220	96.33	-	-	85.98	34.32	9.53	33.5	100	17	Average
5220	106.68	-	-	96.33	34.32	9.53	33.5	100	17	Peak
5374	53.93	-20.07	74	42.89	34.47	9.78	33.21	100	17	Peak
5374	40.8	-13.2	54	29.76	34.47	9.78	33.21	100	17	Average



Test Mode :	Mode 2	Temperature :	21~26°C
Test Channel :	44	Relative Humidity :	47~54%
Test Engineer :	David Yang / Kyle Jhuang	Polarization :	Vertical
Remark :	1. 5220 MHz is fundamental signal which can be ignored. 2. 6900 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
32.97	29.77	-10.23	40	44.88	15.8	0.56	31.47	103	229	Peak
65.37	24.17	-15.83	40	48.93	5.98	0.8	31.54	-	-	Peak
183.9	21.68	-21.82	43.5	42.89	9.05	1.26	31.52	-	-	Peak
407.8	20.25	-25.75	46	32.56	16.69	2.17	31.17	-	-	Peak
598.9	22.25	-23.75	46	30.75	19.74	2.68	30.92	-	-	Peak
831.3	24.9	-21.1	46	29.56	22.83	3.22	30.71	-	-	Peak
5124	52.33	-21.67	74	42.43	34.23	9.37	33.7	100	266	Peak
5124	40.1	-13.9	54	30.2	34.23	9.37	33.7	100	266	Average
5220	109.19	-	-	98.84	34.32	9.53	33.5	100	266	Peak
5220	97.97	-	-	87.62	34.32	9.53	33.5	100	266	Average
5372	53.67	-20.33	74	42.63	34.47	9.78	33.21	100	266	Peak
5372	40.83	-13.17	54	29.79	34.47	9.78	33.21	100	266	Average
6900	58.5	-9.8	68.3	47.2	35.66	9.89	34.25	100	0	Peak



Test Mode :	Mode 3	Temperature :	21~26°C
Test Channel :	48	Relative Humidity :	47~54%
Test Engineer :	David Yang / Kyle Jhuang	Polarization :	Horizontal
Remark :	1. 5240 MHz is fundamental signal which can be ignored. 2. 6908 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30.54	20.17	-19.83	40	34.82	16.27	0.54	31.46	-	-	Peak
216.3	23.81	-22.19	46	43.6	10.27	1.4	31.46	-	-	Peak
287.85	32.24	-13.76	46	48.62	13.27	1.68	31.33	153	241	Peak
335	29.37	-16.63	46	44.27	14.54	1.87	31.31	-	-	Peak
383.3	31.9	-14.1	46	44.97	16.05	2.11	31.23	-	-	Peak
407.8	31.62	-14.38	46	43.93	16.69	2.17	31.17	-	-	Peak
5036	52.3	-21.7	74	42.86	34.13	9.21	33.9	125	20	Peak
5036	39.4	-14.6	54	29.96	34.13	9.21	33.9	125	20	Average
5240	106.76	-	-	96.31	34.33	9.57	33.45	125	20	Peak
5240	95.72	-	-	85.27	34.33	9.57	33.45	125	20	Average
5396	55.64	-18.36	74	44.48	34.5	9.82	33.16	125	20	Peak
5396	41.08	-12.92	54	29.92	34.5	9.82	33.16	125	20	Average
6908	59.97	-8.33	68.3	48.66	35.67	9.89	34.25	100	0	Peak



Test Mode :	Mode 3	Temperature :	21~26°C
Test Channel :	48	Relative Humidity :	47~54%
Test Engineer :	David Yang / Kyle Jhuang	Polarization :	Vertical
Remark :	1. 5240 MHz is fundamental signal which can be ignored. 2. 5318 MHz and 6910 are not within the restricted bands.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
32.97	30.01	-9.99	40	45.12	15.8	0.56	31.47	112	57	Peak
184.17	21.88	-21.62	43.5	43.09	9.05	1.26	31.52	-	-	Peak
232.5	23.82	-22.18	46	42.32	11.43	1.5	31.43	-	-	Peak
312.6	21.9	-24.1	46	37.58	13.85	1.79	31.32	-	-	Peak
478.5	20.82	-25.18	46	31.65	17.86	2.37	31.06	-	-	Peak
780.2	24.4	-21.6	46	29.83	22.15	3.11	30.69	-	-	Peak
5078	52.58	-21.42	74	42.91	34.18	9.29	33.8	110	272	Peak
5078	39.72	-14.28	54	30.05	34.18	9.29	33.8	110	272	Average
5240	99.72	-	-	89.27	34.33	9.57	33.45	110	272	Average
5240	110.27	-	-	99.91	34.33	9.53	33.5	110	272	Peak
5318	59.56	-8.74	68.3	48.75	34.42	9.7	33.31	100	0	Peak
5396	41.58	-12.42	54	30.42	34.5	9.82	33.16	110	272	Average
5396	53.61	-20.39	74	42.45	34.5	9.82	33.16	110	272	Peak
6910	61.67	-6.63	68.3	50.36	35.67	9.89	34.25	100	0	Peak



Test Mode :	Mode 4	Temperature :	21~26°C
Test Channel :	52	Relative Humidity :	47~54%
Test Engineer :	David Yang / Kyle Jhuang	Polarization :	Horizontal
Remark :	5260 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30.81	20.15	-19.85	40	34.8	16.27	0.54	31.46	-	-	Peak
215.49	24	-19.5	43.5	43.88	10.2	1.39	31.47	-	-	Peak
287.85	30.72	-15.28	46	47.1	13.27	1.68	31.33	-	-	Peak
335	32.5	-13.5	46	47.4	14.54	1.87	31.31	-	-	Peak
358.1	35.33	-10.67	46	49.29	15.27	2.04	31.27	142	248	Peak
407.8	29.05	-16.95	46	41.36	16.69	2.17	31.17	-	-	Peak
5100	53.19	-20.81	74	43.41	34.2	9.33	33.75	100	17	Peak
5100	39.98	-14.02	54	30.2	34.2	9.33	33.75	100	17	Average
5260	106.12	-	-	95.65	34.35	9.57	33.45	100	17	Peak
5260	95.65	-	-	85.07	34.37	9.62	33.41	100	17	Average
5428	53.31	-20.69	74	42.04	34.52	9.86	33.11	100	17	Peak
5428	41.09	-12.91	54	29.82	34.52	9.86	33.11	100	17	Average



Test Mode :	Mode 4	Temperature :	21~26°C
Test Channel :	52	Relative Humidity :	47~54%
Test Engineer :	David Yang / Kyle Jhuang	Polarization :	Vertical
Remark :	1. 5260 MHz is fundamental signal which can be ignored. 2. 6900 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
32.97	30.11	-9.89	40	45.22	15.8	0.56	31.47	115	336	Peak
54.3	21.23	-18.77	40	44.82	7.24	0.72	31.55	-	-	Peak
180.93	21.75	-21.75	43.5	42.99	9.04	1.25	31.53	-	-	Peak
346.9	21.48	-24.52	46	35.89	14.93	1.95	31.29	-	-	Peak
539.4	21.86	-24.14	46	31.5	18.83	2.53	31	-	-	Peak
780.2	24.51	-21.49	46	29.94	22.15	3.11	30.69	-	-	Peak
5142	52.93	-21.07	74	42.92	34.25	9.41	33.65	110	274	Peak
5142	39.7	-14.3	54	29.69	34.25	9.41	33.65	110	274	Average
5260	109.73	-	-	99.15	34.37	9.62	33.41	110	274	Peak
5260	99.34	-	-	88.76	34.37	9.62	33.41	110	274	Average
5420	55.77	-18.23	74	44.5	34.52	9.86	33.11	110	274	Peak
5420	41.99	-12.01	54	30.72	34.52	9.86	33.11	110	274	Average
6900	61.84	-6.46	68.3	50.54	35.66	9.89	34.25	100	0	Peak



Test Mode :	Mode 5	Temperature :	21~26°C
Test Channel :	60	Relative Humidity :	47~54%
Test Engineer :	David Yang / Kyle Jhuang	Polarization :	Horizontal
Remark :	1. 5300 MHz is fundamental signal which can be ignored. 2. 6908 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30.54	25.11	-14.89	40	39.76	16.27	0.54	31.46	-	-	Peak
215.49	24.92	-18.58	43.5	44.8	10.2	1.39	31.47	-	-	Peak
287.85	31.37	-14.63	46	47.75	13.27	1.68	31.33	-	-	Peak
310.5	34.75	-11.25	46	50.49	13.79	1.79	31.32	-	-	Peak
358.1	35.05	-10.95	46	49.01	15.27	2.04	31.27	127	252	Peak
419	25.38	-20.62	46	37.44	16.88	2.21	31.15	-	-	Peak
5134	54.44	-19.56	74	44.54	34.23	9.37	33.7	107	18	Peak
5134	40.02	-13.98	54	30.12	34.23	9.37	33.7	107	18	Average
5300	105.86	-	-	95.16	34.4	9.66	33.36	107	18	Peak
5300	95.25	-	-	84.55	34.4	9.66	33.36	107	18	Average
5460	56.31	-17.69	74	44.83	34.55	9.94	33.01	107	18	Peak
5460	42.69	-11.31	54	31.21	34.55	9.94	33.01	107	18	Average
6908	56.89	-11.41	68.3	45.58	35.67	9.89	34.25	100	0	Peak



Test Mode :	Mode 5	Temperature :	21~26°C
Test Channel :	60	Relative Humidity :	47~54%
Test Engineer :	David Yang / Kyle Jhuang	Polarization :	Vertical
Remark :	1. 5300 MHz is fundamental signal which can be ignored. 2. 6902 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
31.89	30.2	-9.8	40	45.07	16.04	0.55	31.46	100	21	Peak
54.3	21.36	-18.64	40	44.95	7.24	0.72	31.55	-	-	Peak
183.09	22.11	-21.39	43.5	43.32	9.05	1.26	31.52	-	-	Peak
346.9	21.7	-24.3	46	36.11	14.93	1.95	31.29	-	-	Peak
539.4	22.03	-23.97	46	31.67	18.83	2.53	31	-	-	Peak
780.2	24.72	-21.28	46	30.15	22.15	3.11	30.69	-	-	Peak
5150	51.66	-22.34	74	41.65	34.25	9.41	33.65	100	251	Peak
5150	39.55	-14.45	54	29.54	34.25	9.41	33.65	100	251	Average
5300	108.4	-	-	97.7	34.4	9.66	33.36	100	251	Peak
5300	97.37	-	-	86.67	34.4	9.66	33.36	100	251	Average
5454	57.39	-16.61	74	45.91	34.55	9.94	33.01	100	251	Peak
5454	43.37	-10.63	54	31.89	34.55	9.94	33.01	100	251	Average
6902	56.98	-11.32	68.3	45.68	35.66	9.89	34.25	100	0	Peak



Test Mode :	Mode 6	Temperature :	21~26°C
Test Channel :	64	Relative Humidity :	47~54%
Test Engineer :	David Yang / Kyle Jhuang	Polarization :	Horizontal
Remark :	5320 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
216.3	22.87	-23.13	46	42.66	10.27	1.4	31.46	-	-	Peak
264.09	31.42	-14.58	46	48.32	12.89	1.61	31.4	-	-	Peak
287.85	30.54	-15.46	46	46.92	13.27	1.68	31.33	-	-	Peak
310.5	35.26	-10.74	46	51	13.79	1.79	31.32	125	163	Peak
358.1	33.71	-12.29	46	47.67	15.27	2.04	31.27	-	-	Peak
407.8	31.72	-14.28	46	44.03	16.69	2.17	31.17	-	-	Peak
5062	52.2	-21.8	74	42.63	34.17	9.25	33.85	102	174	Peak
5062	39.13	-14.87	54	29.56	34.17	9.25	33.85	102	174	Average
5320	105.66	-	-	94.85	34.42	9.7	33.31	102	174	Peak
5320	95.19	-	-	84.38	34.42	9.7	33.31	102	174	Average
5350	58.77	-15.23	74	47.84	34.45	9.74	33.26	102	174	Peak
5350	42.29	-11.71	54	31.36	34.45	9.74	33.26	102	174	Average



Test Mode :	Mode 6	Temperature :	21~26°C
Test Channel :	64	Relative Humidity :	47~54%
Test Engineer :	David Yang / Kyle Jhuang	Polarization :	Vertical
Remark :	5320 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
32.97	30.58	-9.42	40	45.69	15.8	0.56	31.47	103	97	Peak
106.41	21.26	-22.24	43.5	41.41	10.37	1.03	31.55	-	-	Peak
180.93	22.35	-21.15	43.5	43.59	9.04	1.25	31.53	-	-	Peak
358.1	20.13	-25.87	46	34.09	15.27	2.04	31.27	-	-	Peak
478.5	20.79	-25.21	46	31.62	17.86	2.37	31.06	-	-	Peak
724.9	22.33	-23.67	46	28.82	21.27	3	30.76	-	-	Peak
5134	39.66	-14.34	54	29.76	34.23	9.37	33.7	100	259	Average
5134	51.81	-22.19	74	41.91	34.23	9.37	33.7	100	259	Peak
5320	97.36	-	-	86.55	34.42	9.7	33.31	100	259	Average
5320	108.86	-	-	98.05	34.42	9.7	33.31	100	259	Peak
5350	58.4	-15.6	74	47.47	34.45	9.74	33.26	100	259	Peak
5350	43.25	-10.75	54	32.32	34.45	9.74	33.26	100	259	Average



Test Mode :	Mode 7	Temperature :	21~26°C
Test Channel :	100	Relative Humidity :	47~54%
Test Engineer :	David Yang / Kyle Jhuang	Polarization :	Horizontal
Remark :	1. 5500 MHz is fundamental signal which can be ignored. 2. 5470 MHz, 5725 MHz, 6960 MHz and 7000 MHz are not within the restricted bands.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30	29.31	-10.69	40	40.65	20	0.53	31.87	113	168	Peak
48.9	27.19	-12.81	40	49.24	8.9	0.68	31.63	-	-	Peak
120.72	19.05	-24.45	43.5	37.86	11.7	1.11	31.62	-	-	Peak
359.5	24.03	-21.97	46	38.45	14.93	2.06	31.41	-	-	Peak
419.7	23.14	-22.86	46	35.76	16.42	2.21	31.25	-	-	Peak
540.1	23.77	-22.23	46	33.65	18.78	2.53	31.19	-	-	Peak
5470	67.35	-0.95	68.3	55.85	34.47	9.94	32.91	112	53	Peak
5500	104.08	-	-	92.46	34.5	10.02	32.9	112	53	Average
5500	115.1	-	-	103.52	34.5	9.98	32.9	112	53	Peak
5725	51.01	-17.29	68.3	39.54	34.81	9.92	33.26	112	53	Peak
6960	67.82	-0.48	68.3	56.2	35.69	9.91	33.98	100	0	Peak
7000	49.16	-19.14	68.3	62.74	35.7	9.92	59.2	100	0	Peak



Test Mode :	Mode 7	Temperature :	21~26°C
Test Channel :	100	Relative Humidity :	47~54%
Test Engineer :	David Yang / Kyle Jhuang	Polarization :	Vertical
Remark :	1. 5500 MHz is fundamental signal which can be ignored. 2. 5470 MHz, 5725 MHz, 6964 MHz and 7000 MHz are not within the restricted bands.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30.81	33.02	-6.98	40	44.84	19.28	0.54	31.64	-	-	Peak
43.77	36.09	-3.91	40	55.89	11.1	0.64	31.54	105	135	Peak
49.71	34.11	-5.89	40	56.35	8.5	0.69	31.43	-	-	Peak
479.9	28.72	-17.28	46	39.36	17.68	2.38	30.7	-	-	Peak
540.1	29.89	-16.11	46	39.55	18.78	2.53	30.97	-	-	Peak
660.5	29.61	-16.39	46	36.6	20.28	2.86	30.13	-	-	Peak
5470	66.38	-1.92	68.3	54.88	34.47	9.94	32.91	100	294	Peak
5500	100.53	-	-	88.91	34.5	10.02	32.9	100	294	Average
5500	110.19	-	-	98.57	34.5	10.02	32.9	100	294	Peak
5725	50.89	-17.41	68.3	39.42	34.81	9.92	33.26	100	294	Peak
6964	59.66	-8.64	68.3	48.04	35.69	9.91	33.98	100	0	Peak
7000	50.76	-17.54	68.3	64.34	35.7	9.92	59.2	100	0	Peak



Test Mode :	Mode 8	Temperature :	21~26°C
Test Channel :	116	Relative Humidity :	47~54%
Test Engineer :	David Yang / Kyle Jhuang	Polarization :	Horizontal
Remark :	1. 5580 MHz is fundamental signal which can be ignored. 2. 5470 MHz, 5725 MHz and 6902 MHz are not within the restricted bands.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
240.06	27.7	-18.3	46	45.61	11.98	1.53	31.42	-	-	Peak
275.97	24.29	-21.71	46	40.92	13.09	1.64	31.36	-	-	Peak
287.85	31.06	-14.94	46	47.44	13.27	1.68	31.33	-	-	Peak
310.5	33.5	-12.5	46	49.24	13.79	1.79	31.32	123	156	Peak
419	25.65	-20.35	46	37.71	16.88	2.21	31.15	-	-	Peak
659.8	23.21	-22.79	46	30.78	20.43	2.86	30.86	-	-	Peak
5470	52.72	-15.58	68.3	41.22	34.57	9.94	33.01	100	324	Peak
5580	96.38	-	-	84.72	34.67	9.99	33	100	324	Average
5580	106.69	-	-	95.03	34.67	9.99	33	100	324	Peak
5725	51.69	-16.61	68.3	40.13	34.82	9.92	33.18	100	324	Peak
6902	57.64	-10.66	68.3	46.34	35.66	9.89	34.25	100	0	Peak



Test Mode :	Mode 8	Temperature :	21~26°C
Test Channel :	116	Relative Humidity :	47~54%
Test Engineer :	David Yang / Kyle Jhuang	Polarization :	Vertical
Remark :	1. 5580 MHz is fundamental signal which can be ignored. 2. 5470 MHz, 5725 MHz and 6910 MHz are not within the restricted bands.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
33.78	29.73	-10.27	40	45.06	15.57	0.57	31.47	109	235	Peak
53.76	21.09	-18.91	40	44.42	7.5	0.72	31.55	-	-	Peak
171.21	21.16	-22.34	43.5	41.8	9.65	1.23	31.52	-	-	Peak
335	21.51	-24.49	46	36.41	14.54	1.87	31.31	-	-	Peak
478.5	21.24	-24.76	46	32.07	17.86	2.37	31.06	-	-	Peak
853	24.87	-21.13	46	29.25	23.08	3.27	30.73	-	-	Peak
5470	54.33	-13.97	68.3	42.83	34.57	9.94	33.01	102	273	Peak
5580	103.28	-	-	91.62	34.67	9.99	33	102	273	Average
5580	113.81	-	-	102.15	34.67	9.99	33	102	273	Peak
5725	52.29	-16.01	68.3	40.73	34.82	9.92	33.18	102	273	Peak
6910	60.31	-7.99	68.3	49	35.67	9.89	34.25	100	0	Peak



Test Mode :	Mode 9	Temperature :	21~26°C
Test Channel :	140	Relative Humidity :	47~54%
Test Engineer :	David Yang / Kyle Jhuang	Polarization :	Horizontal
Remark :	1. 5700 MHz is fundamental signal which can be ignored. 2. 5470 MHz, 5725 MHz and 6902 MHz are not within a restricted band.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
215.49	25.01	-18.49	43.5	44.89	10.2	1.39	31.47	-	-	Peak
240.06	26.4	-19.6	46	44.31	11.98	1.53	31.42	-	-	Peak
275.97	24.81	-21.19	46	41.44	13.09	1.64	31.36	-	-	Peak
335	33.86	-12.14	46	48.76	14.54	1.87	31.31	142	257	Peak
358.1	33.06	-12.94	46	47.02	15.27	2.04	31.27	-	-	Peak
780.2	26.24	-19.76	46	31.67	22.15	3.11	30.69	-	-	Peak
5470	51.14	-17.16	68.3	39.64	34.57	9.94	33.01	100	326	Peak
5700	95.45	-	-	83.88	34.79	9.93	33.15	100	326	Average
5700	106.08	-	-	94.51	34.79	9.93	33.15	100	326	Peak
5725	46.42	-21.88	68.3	34.86	34.82	9.92	33.18	100	326	Peak
6902	55.82	-12.48	68.3	44.52	35.66	9.89	34.25	100	0	Peak



Test Mode :	Mode 9	Temperature :	21~26°C
Test Channel :	140	Relative Humidity :	47~54%
Test Engineer :	David Yang / Kyle Jhuang	Polarization :	Vertical
Remark :	1. 5700 MHz is fundamental signal which can be ignored. 2. 5470 MHz, 5725 MHz and 6908 MHz are not within the restricted bands.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
31.62	30.3	-9.7	40	45.17	16.04	0.55	31.46	104	57	Peak
106.41	21.73	-21.77	43.5	41.88	10.37	1.03	31.55	-	-	Peak
231.42	22.37	-23.63	46	40.95	11.37	1.49	31.44	-	-	Peak
346.9	21.91	-24.09	46	36.32	14.93	1.95	31.29	-	-	Peak
659.8	25	-21	46	32.57	20.43	2.86	30.86	-	-	Peak
988.1	26.57	-27.43	54	28.91	24.74	3.5	30.58	-	-	Peak
5470	51.13	-17.17	68.3	39.63	34.57	9.94	33.01	100	269	Peak
5700	112.31	-	-	100.74	34.79	9.93	33.15	100	269	Peak
5700	101.32	-	-	89.75	34.79	9.93	33.15	100	269	Average
5725	49.89	-18.41	68.3	38.33	34.82	9.92	33.18	100	269	Peak
6908	57.56	-10.74	68.3	46.25	35.67	9.89	34.25	100	0	Peak



Test Mode :	Mode 10	Temperature :	21~26°C
Test Channel :	36	Relative Humidity :	47~54%
Test Engineer :	David Yang / Kyle Jhuang	Polarization :	Horizontal
Remark :	1. 5180 MHz is fundamental signal which can be ignored. 2. 6910 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
215.49	24.65	-18.85	43.5	44.53	10.2	1.39	31.47	-	-	Peak
287.85	33.63	-12.37	46	50.01	13.27	1.68	31.33	-	-	Peak
299.73	26.35	-19.65	46	42.45	13.46	1.77	31.33	-	-	Peak
310.5	35.32	-10.68	46	51.06	13.79	1.79	31.32	125	110	Peak
346.9	32.39	-13.61	46	46.8	14.93	1.95	31.29	-	-	Peak
478.5	24.52	-21.48	46	35.35	17.86	2.37	31.06	-	-	Peak
5150	55.89	-18.11	74	45.88	34.25	9.41	33.65	100	317	Peak
5150	41.66	-12.34	54	31.65	34.25	9.41	33.65	100	317	Average
5180	106.48	-	-	96.35	34.28	9.45	33.6	100	317	Peak
5180	95.4	-	-	85.27	34.28	9.45	33.6	100	317	Average
5406	40.67	-13.33	54	29.42	34.5	9.86	33.11	100	317	Average
5406	52.68	-21.32	74	41.43	34.5	9.86	33.11	100	317	Peak
6910	59.02	-9.28	68.3	47.71	35.67	9.89	34.25	100	0	Peak



Test Mode :	Mode 10	Temperature :	21~26°C
Test Channel :	36	Relative Humidity :	47~54%
Test Engineer :	David Yang / Kyle Jhuang	Polarization :	Vertical
Remark :	1. 5180 MHz is fundamental signal which can be ignored. 2. 6900 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
32.97	30.57	-9.43	40	45.68	15.8	0.56	31.47	100	325	Peak
54.3	21.43	-18.57	40	45.02	7.24	0.72	31.55	-	-	Peak
183.09	22.19	-21.31	43.5	43.4	9.05	1.26	31.52	-	-	Peak
419	20.47	-25.53	46	32.53	16.88	2.21	31.15	-	-	Peak
539.4	22.23	-23.77	46	31.87	18.83	2.53	31	-	-	Peak
956.6	26.44	-19.56	46	29.2	24.34	3.47	30.57	-	-	Peak
5150	57.09	-16.91	74	47.08	34.25	9.41	33.65	100	265	Peak
5150	42.08	-11.92	54	32.07	34.25	9.41	33.65	100	265	Average
5180	107.13	-	-	97	34.28	9.45	33.6	100	265	Peak
5180	96.39	-	-	86.26	34.28	9.45	33.6	100	265	Average
5358	40.54	-13.46	54	29.52	34.45	9.78	33.21	100	265	Average
5358	52.65	-21.35	74	41.63	34.45	9.78	33.21	100	265	Peak
6900	56.63	-11.67	68.3	45.33	35.66	9.89	34.25	100	0	Peak



Test Mode :	Mode 11	Temperature :	21~26°C
Test Channel :	44	Relative Humidity :	47~54%
Test Engineer :	David Yang / Kyle Jhuang	Polarization :	Horizontal
Remark :	1. 5220 MHz is fundamental signal which can be ignored. 2. 6900 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30.54	21.08	-18.92	40	35.73	16.27	0.54	31.46	-	-	Peak
251.94	23.34	-22.66	46	40.51	12.7	1.54	31.41	-	-	Peak
275.97	24.83	-21.17	46	41.46	13.09	1.64	31.36	-	-	Peak
310.5	32.07	-13.93	46	47.81	13.79	1.79	31.32	-	-	Peak
358.1	35.42	-10.58	46	49.38	15.27	2.04	31.27	123	174	Peak
407.8	29.21	-16.79	46	41.52	16.69	2.17	31.17	-	-	Peak
5134	51.9	-22.1	74	42	34.23	9.37	33.7	100	315	Peak
5134	39.47	-14.53	54	29.57	34.23	9.37	33.7	100	315	Average
5220	94.76	-	-	84.41	34.32	9.53	33.5	100	315	Average
5220	105.84	-	-	95.49	34.32	9.53	33.5	100	315	Peak
5390	52.97	-21.03	74	41.83	34.48	9.82	33.16	100	315	Peak
5390	40.61	-13.39	54	29.47	34.48	9.82	33.16	100	315	Average
6900	59.31	-8.99	68.3	48.01	35.66	9.89	34.25	100	0	Peak



Test Mode :	Mode 11	Temperature :	21~26°C
Test Channel :	44	Relative Humidity :	47~54%
Test Engineer :	David Yang / Kyle Jhuang	Polarization :	Vertical
Remark :	1. 5220 MHz is fundamental signal which can be ignored. 2. 6900 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
32.7	30.02	-9.98	40	45.13	15.8	0.56	31.47	109	307	Peak
271.38	23.55	-22.45	46	40.27	13.01	1.64	31.37	-	-	Peak
285.42	21.74	-24.26	46	38.18	13.23	1.66	31.33	-	-	Peak
659.8	24.21	-21.79	46	31.78	20.43	2.86	30.86	-	-	Peak
791.4	24.38	-21.62	46	29.6	22.33	3.13	30.68	-	-	Peak
976.2	27.16	-26.84	54	29.67	24.58	3.49	30.58	-	-	Peak
5054	53.87	-20.13	74	44.32	34.15	9.25	33.85	100	266	Peak
5054	39.77	-14.23	54	30.22	34.15	9.25	33.85	100	266	Average
5220	106.89	-	-	96.54	34.32	9.53	33.5	100	266	Peak
5220	95.55	-	-	85.2	34.32	9.53	33.5	100	266	Average
5398	52.65	-21.35	74	41.49	34.5	9.82	33.16	100	266	Peak
5398	40.72	-13.28	54	29.56	34.5	9.82	33.16	100	266	Average
6900	56.47	-11.83	68.3	45.17	35.66	9.89	34.25	100	0	Peak



Test Mode :	Mode 12	Temperature :	21~26°C
Test Channel :	48	Relative Humidity :	47~54%
Test Engineer :	David Yang / Kyle Jhuang	Polarization :	Horizontal
Remark :	1. 5240 MHz is fundamental signal which can be ignored. 2. 6894 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
215.49	25.03	-18.47	43.5	44.91	10.2	1.39	31.47	-	-	Peak
264.09	29.66	-16.34	46	46.56	12.89	1.61	31.4	-	-	Peak
287.85	32.35	-13.65	46	48.73	13.27	1.68	31.33	-	-	Peak
335	32.63	-13.37	46	47.53	14.54	1.87	31.31	155	276	Peak
371.4	28.93	-17.07	46	42.41	15.69	2.08	31.25	-	-	Peak
430.9	24.95	-21.05	46	36.76	17.07	2.25	31.13	-	-	Peak
5078	53.11	-20.89	74	43.44	34.18	9.29	33.8	100	315	Peak
5078	39.3	-14.7	54	29.63	34.18	9.29	33.8	100	315	Average
5240	105.6	-	-	95.13	34.35	9.57	33.45	100	315	Peak
5240	93.77	-	-	83.32	34.33	9.57	33.45	100	315	Average
5436	53.14	-20.86	74	41.77	34.53	9.9	33.06	100	315	Peak
5436	40.86	-13.14	54	29.49	34.53	9.9	33.06	100	315	Average
6894	59.79	-8.51	68.3	48.49	35.66	9.89	34.25	100	0	Peak



Test Mode :	Mode 12	Temperature :	21~26°C
Test Channel :	48	Relative Humidity :	47~54%
Test Engineer :	David Yang / Kyle Jhuang	Polarization :	Vertical
Remark :	1. 5240 MHz is fundamental signal which can be ignored. 2. 6892 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
32.97	30.22	-9.78	40	45.33	15.8	0.56	31.47	104	82	Peak
183.09	22.5	-21	43.5	43.71	9.05	1.26	31.52	-	-	Peak
272.46	26.87	-19.13	46	43.56	13.03	1.64	31.36	-	-	Peak
313.3	20.45	-25.55	46	36.09	13.88	1.8	31.32	-	-	Peak
539.4	21.9	-24.1	46	31.54	18.83	2.53	31	-	-	Peak
780.2	24.04	-21.96	46	29.47	22.15	3.11	30.69	-	-	Peak
5076	54.78	-19.22	74	45.11	34.18	9.29	33.8	125	273	Peak
5076	40.07	-13.93	54	30.4	34.18	9.29	33.8	125	273	Average
5240	108.74	-	-	98.38	34.33	9.53	33.5	125	273	Peak
5240	97.75	-	-	87.3	34.33	9.57	33.45	125	273	Average
5356	53.81	-20.19	74	42.79	34.45	9.78	33.21	125	273	Peak
5356	40.88	-13.12	54	29.86	34.45	9.78	33.21	125	273	Average
6892	54.71	-13.59	68.3	43.41	35.66	9.89	34.25	100	0	Peak



Test Mode :	Mode 13	Temperature :	21~26°C
Test Channel :	52	Relative Humidity :	47~54%
Test Engineer :	David Yang / Kyle Jhuang	Polarization :	Horizontal
Remark :	1. 5260 MHz is fundamental signal which can be ignored. 2. 6902 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
216.3	22.42	-23.58	46	42.21	10.27	1.4	31.46	-	-	Peak
264.09	29.43	-16.57	46	46.33	12.89	1.61	31.4	-	-	Peak
287.85	32.6	-13.4	46	48.98	13.27	1.68	31.33	-	-	Peak
310.5	32.7	-13.3	46	48.44	13.79	1.79	31.32	-	-	Peak
358.1	33.93	-12.07	46	47.89	15.27	2.04	31.27	155	261	Peak
407.8	27.54	-18.46	46	39.85	16.69	2.17	31.17	-	-	Peak
5150	39.82	-14.18	54	29.81	34.25	9.41	33.65	131	177	Average
5150	51.33	-22.67	74	41.32	34.25	9.41	33.65	131	177	Peak
5260	93.51	-	-	82.93	34.37	9.62	33.41	131	177	Average
5260	107.56	-	-	96.98	34.37	9.62	33.41	131	177	Peak
5350	52.01	-21.99	74	41.08	34.45	9.74	33.26	131	177	Peak
5350	40.65	-13.35	54	29.72	34.45	9.74	33.26	131	177	Average
6902	56.74	-11.56	68.3	45.44	35.66	9.89	34.25	131	177	Peak



Test Mode :	Mode 13	Temperature :	21~26°C
Test Channel :	52	Relative Humidity :	47~54%
Test Engineer :	David Yang / Kyle Jhuang	Polarization :	Vertical
Remark :	1. 5260 MHz is fundamental signal which can be ignored. 2. 6908 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
32.97	30.52	-9.48	40	45.63	15.8	0.56	31.47	121	193	Peak
180.66	22.01	-21.49	43.5	43.25	9.04	1.25	31.53	-	-	Peak
250.05	23.19	-22.81	46	40.4	12.67	1.53	31.41	-	-	Peak
407.8	19.43	-26.57	46	31.74	16.69	2.17	31.17	-	-	Peak
635.3	21.92	-24.08	46	29.84	20.16	2.8	30.88	-	-	Peak
780.2	24.06	-21.94	46	29.49	22.15	3.11	30.69	-	-	Peak
5150	39.75	-14.25	54	29.74	34.25	9.41	33.65	100	256	Average
5150	52.03	-21.97	74	42.02	34.25	9.41	33.65	100	256	Peak
5260	94.14	-	-	83.56	34.37	9.62	33.41	100	256	Average
5260	108.17	-	-	97.59	34.37	9.62	33.41	100	256	Peak
5350	52.77	-21.23	74	41.84	34.45	9.74	33.26	100	256	Peak
5350	40.78	-13.22	54	29.85	34.45	9.74	33.26	100	256	Average
6908	59.07	-9.23	68.3	47.76	35.67	9.89	34.25	100	256	Peak



Test Mode :	Mode 14	Temperature :	21~26°C
Test Channel :	60	Relative Humidity :	47~54%
Test Engineer :	David Yang / Kyle Jhuang	Polarization :	Horizontal
Remark :	1. 5300 MHz is fundamental signal which can be ignored. 2. 6918 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
240.06	27.56	-18.44	46	45.47	11.98	1.53	31.42	-	-	Peak
263.82	28.42	-17.58	46	45.32	12.89	1.61	31.4	-	-	Peak
287.85	32.71	-13.29	46	49.09	13.27	1.68	31.33	-	-	Peak
358.1	35.59	-10.41	46	49.55	15.27	2.04	31.27	126	317	Peak
407.8	29.95	-16.05	46	42.26	16.69	2.17	31.17	-	-	Peak
659.8	23.39	-22.61	46	30.96	20.43	2.86	30.86	-	-	Peak
5150	51.32	-22.68	74	41.31	34.25	9.41	33.65	101	172	Peak
5150	39.59	-14.41	54	29.58	34.25	9.41	33.65	101	172	Average
5300	93.31	-	-	82.61	34.4	9.66	33.36	101	172	Average
5300	107.64	-	-	96.94	34.4	9.66	33.36	101	172	Peak
5350	53.15	-20.85	74	42.22	34.45	9.74	33.26	101	172	Peak
5350	41.12	-12.88	54	30.19	34.45	9.74	33.26	101	172	Average
6918	56.34	-11.96	68.3	45.03	35.67	9.9	34.26	101	172	Peak



Test Mode :	Mode 14	Temperature :	21~26°C
Test Channel :	60	Relative Humidity :	47~54%
Test Engineer :	David Yang / Kyle Jhuang	Polarization :	Vertical
Remark :	1. 5300 MHz is fundamental signal which can be ignored. 2. 6916 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
32.97	30.19	-9.81	40	45.3	15.8	0.56	31.47	109	36	Peak
177.69	22.21	-21.29	43.5	43.24	9.26	1.24	31.53	-	-	Peak
221.97	30.58	-15.42	46	49.93	10.68	1.43	31.46	-	-	Peak
346.9	20.62	-25.38	46	35.03	14.93	1.95	31.29	-	-	Peak
539.4	21.29	-24.71	46	30.93	18.83	2.53	31	-	-	Peak
797.7	24.41	-21.59	46	29.53	22.42	3.14	30.68	-	-	Peak
5150	39.63	-14.37	54	29.62	34.25	9.41	33.65	100	251	Average
5150	51.07	-22.93	74	41.06	34.25	9.41	33.65	100	251	Peak
5300	95.08	-	-	84.38	34.4	9.66	33.36	100	251	Average
5300	109.29	-	-	98.59	34.4	9.66	33.36	100	251	Peak
5350	53.39	-20.61	74	42.46	34.45	9.74	33.26	100	251	Peak
5350	41.79	-12.21	54	30.86	34.45	9.74	33.26	100	251	Average
6916	58.15	-10.15	68.3	46.84	35.67	9.89	34.25	100	251	Peak



Test Mode :	Mode 15	Temperature :	21~26°C
Test Channel :	64	Relative Humidity :	47~54%
Test Engineer :	David Yang / Kyle Jhuang	Polarization :	Horizontal
Remark :	5320 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
240.06	28.69	-17.31	46	46.6	11.98	1.53	31.42	-	-	Peak
264.09	29.77	-16.23	46	46.67	12.89	1.61	31.4	-	-	Peak
287.85	31.66	-14.34	46	48.04	13.27	1.68	31.33	-	-	Peak
358.1	34.69	-11.31	46	48.65	15.27	2.04	31.27	145	223	Peak
383.3	30.54	-15.46	46	43.61	16.05	2.11	31.23	-	-	Peak
626.2	21.54	-24.46	46	29.6	20.06	2.77	30.89	-	-	Peak
5150	39.64	-14.36	54	29.63	34.25	9.41	33.65	100	174	Average
5150	52.24	-21.76	74	42.23	34.25	9.41	33.65	100	174	Peak
5320	93.85	-	-	83.04	34.42	9.7	33.31	100	174	Average
5320	107.77	-	-	96.96	34.42	9.7	33.31	100	174	Peak
5350	57.25	-16.75	74	46.32	34.45	9.74	33.26	100	174	Peak
5350	42.58	-11.42	54	31.65	34.45	9.74	33.26	100	174	Average



Test Mode :	Mode 15	Temperature :	21~26°C
Test Channel :	64	Relative Humidity :	47~54%
Test Engineer :	David Yang / Kyle Jhuang	Polarization :	Vertical
Remark :	1. 5320 MHz is fundamental signal which can be ignored. 2. 6908 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
32.97	30.56	-9.44	40	45.67	15.8	0.56	31.47	111	87	Peak
106.41	21.13	-22.37	43.5	41.28	10.37	1.03	31.55	-	-	Peak
184.17	22.26	-21.24	43.5	43.47	9.05	1.26	31.52	-	-	Peak
346.9	21.88	-24.12	46	36.29	14.93	1.95	31.29	-	-	Peak
539.4	22.23	-23.77	46	31.87	18.83	2.53	31	-	-	Peak
792.1	24.41	-21.59	46	29.61	22.35	3.13	30.68	-	-	Peak
5150	51.46	-22.54	74	41.45	34.25	9.41	33.65	100	253	Peak
5150	39.62	-14.38	54	29.61	34.25	9.41	33.65	100	253	Average
5320	94.72	-	-	83.91	34.42	9.7	33.31	100	253	Average
5320	108.92	-	-	98.11	34.42	9.7	33.31	100	253	Peak
5350	57.94	-16.06	74	47.01	34.45	9.74	33.26	100	253	Peak
5350	43.15	-10.85	54	32.22	34.45	9.74	33.26	100	253	Average
6908	58.48	-9.82	68.3	47.17	35.67	9.89	34.25	100	253	Peak



Test Mode :	Mode 16	Temperature :	21~26°C
Test Channel :	100	Relative Humidity :	47~54%
Test Engineer :	David Yang / Kyle Jhuang	Polarization :	Horizontal
Remark :	1. 5500 MHz is fundamental signal which can be ignored. 2. 5470 MHz and 5725 MHz are not within the restricted bands.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
215.49	23.43	-20.07	43.5	43.31	10.2	1.39	31.47	-	-	Peak
263.82	29.68	-16.32	46	46.58	12.89	1.61	31.4	-	-	Peak
287.85	29.48	-16.52	46	45.86	13.27	1.68	31.33	-	-	Peak
310.5	31.44	-14.56	46	47.18	13.79	1.79	31.32	-	-	Peak
358.1	34.97	-11.03	46	48.93	15.27	2.04	31.27	145	231	Peak
478.5	24.58	-21.42	46	35.41	17.86	2.37	31.06	-	-	Peak
5470	46.45	-21.85	68.3	34.95	34.57	9.94	33.01	125	176	Peak
5500	94.73	-	-	83.02	34.6	10.02	32.91	125	176	Average
5500	108.52	-	-	96.81	34.6	10.02	32.91	125	176	Peak
5725	52.01	-16.29	68.3	40.45	34.82	9.92	33.18	125	176	Peak



Test Mode :	Mode 16	Temperature :	21~26°C
Test Channel :	100	Relative Humidity :	47~54%
Test Engineer :	David Yang / Kyle Jhuang	Polarization :	Vertical
Remark :	1. 5500 MHz is fundamental signal which can be ignored. 2. 5470 MHz, 5725 MHz and 6902 MHz are not within the restricted bands.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
32.97	30.76	-9.24	40	45.87	15.8	0.56	31.47	100	221	Peak
106.41	21.3	-22.2	43.5	41.45	10.37	1.03	31.55	-	-	Peak
168.78	21.2	-22.3	43.5	41.66	9.83	1.23	31.52	-	-	Peak
419	21.32	-24.68	46	33.38	16.88	2.21	31.15	-	-	Peak
659.8	23.84	-22.16	46	31.41	20.43	2.86	30.86	-	-	Peak
783.7	24.43	-21.57	46	29.8	22.21	3.11	30.69	-	-	Peak
5470	51.34	-16.96	68.3	39.84	34.57	9.94	33.01	102	278	Peak
5500	99.29	-	-	87.58	34.6	10.02	32.91	102	278	Average
5500	114.9	-	-	103.19	34.6	10.02	32.91	102	278	Peak
5725	52.81	-15.49	68.3	41.25	34.82	9.92	33.18	102	278	Peak
6902	57.12	-11.18	68.3	45.82	35.66	9.89	34.25	102	278	Peak



Test Mode :	Mode 17	Temperature :	21~26°C
Test Channel :	116	Relative Humidity :	47~54%
Test Engineer :	David Yang / Kyle Jhuang	Polarization :	Horizontal
Remark :	1. 5580 MHz is fundamental signal which can be ignored. 2. 5470 MHz and 5725 MHz are not within the restricted bands.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
228.18	20.96	-25.04	46	39.84	11.09	1.47	31.44	-	-	Peak
251.94	24.75	-21.25	46	41.92	12.7	1.54	31.41	-	-	Peak
275.97	25.59	-20.41	46	42.22	13.09	1.64	31.36	-	-	Peak
310.5	30.63	-15.37	46	46.37	13.79	1.79	31.32	-	-	Peak
383.3	31.13	-14.87	46	44.2	16.05	2.11	31.23	116	203	Peak
478.5	24.07	-21.93	46	34.9	17.86	2.37	31.06	-	-	Peak
5470	53.45	-14.85	68.3	41.95	34.57	9.94	33.01	100	330	Peak
5580	106.33	-	-	94.67	34.67	9.99	33	100	330	Peak
5580	96	-	-	84.34	34.67	9.99	33	100	330	Average
5725	52.64	-15.66	68.3	41.08	34.82	9.92	33.18	100	330	Peak



Test Mode :	Mode 17	Temperature :	21~26°C
Test Channel :	116	Relative Humidity :	47~54%
Test Engineer :	David Yang / Kyle Jhuang	Polarization :	Vertical
Remark :	1. 5580 MHz is fundamental signal which can be ignored. 2. 5470 MHz, 5725 MHz and 6916 MHz are not within the restricted bands.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
33.24	29.67	-10.33	40	44.78	15.8	0.56	31.47	103	248	Peak
54.03	20.96	-19.04	40	44.55	7.24	0.72	31.55	-	-	Peak
175.26	21.77	-21.73	43.5	42.66	9.4	1.24	31.53	-	-	Peak
419	20.34	-25.66	46	32.4	16.88	2.21	31.15	-	-	Peak
539.4	21.65	-24.35	46	31.29	18.83	2.53	31	-	-	Peak
780.2	25.04	-20.96	46	30.47	22.15	3.11	30.69	-	-	Peak
5470	53.47	-14.83	68.3	41.97	34.57	9.94	33.01	102	269	Peak
5580	102.83	-	-	91.17	34.67	9.99	33	102	269	Average
5580	113.98	-	-	102.32	34.67	9.99	33	102	269	Peak
5725	52.99	-15.31	68.3	41.43	34.82	9.92	33.18	102	269	Peak
6916	61.32	-6.98	68.3	50.01	35.67	9.89	34.25	100	0	Peak



Test Mode :	Mode 18	Temperature :	21~26°C
Test Channel :	140	Relative Humidity :	47~54%
Test Engineer :	David Yang / Kyle Jhuang	Polarization :	Horizontal
Remark :	1. 5700 MHz is fundamental signal which can be ignored. 2. 5470 MHz, 5725 MHz and 6924 MHz are not within the restricted bands.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
216.3	23.27	-22.73	46	43.06	10.27	1.4	31.46	-	-	Peak
251.94	23.67	-22.33	46	40.84	12.7	1.54	31.41	-	-	Peak
264.09	31.37	-14.63	46	48.27	12.89	1.61	31.4	-	-	Peak
310.5	32.57	-13.43	46	48.31	13.79	1.79	31.32	-	-	Peak
358.1	34.24	-11.76	46	48.2	15.27	2.04	31.27	100	141	Peak
912.5	26.65	-19.35	46	30.16	23.79	3.37	30.67	-	-	Peak
5470	51.54	-16.76	68.3	40.04	34.57	9.94	33.01	100	322	Peak
5700	94.52	-	-	82.95	34.79	9.93	33.15	100	322	Average
5700	108.53	-	-	96.96	34.79	9.93	33.15	100	322	Peak
5725	48.27	-20.03	68.3	36.71	34.82	9.92	33.18	100	322	Peak
6924	61.95	-6.35	68.3	50.64	35.67	9.9	34.26	100	322	Peak



Test Mode :	Mode 18	Temperature :	21~26°C
Test Channel :	140	Relative Humidity :	47~54%
Test Engineer :	David Yang / Kyle Jhuang	Polarization :	Vertical
Remark :	1. 5700 MHz is fundamental signal which can be ignored. 2. 5470 MHz, 5725 MHz and 6916 MHz are not within the restricted bands.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
32.7	29.87	-10.13	40	44.98	15.8	0.56	31.47	110	251	Peak
177.69	22.35	-21.15	43.5	43.38	9.26	1.24	31.53	-	-	Peak
240.06	21.48	-24.52	46	39.39	11.98	1.53	31.42	-	-	Peak
601	21.39	-24.61	46	29.84	19.78	2.69	30.92	-	-	Peak
783.7	24.62	-21.38	46	29.99	22.21	3.11	30.69	-	-	Peak
984.6	26.94	-27.06	54	29.34	24.69	3.49	30.58	-	-	Peak
5470	52.63	-15.67	68.3	41.13	34.57	9.94	33.01	100	268	Peak
5700	98.7	-	-	87.13	34.79	9.93	33.15	100	268	Average
5700	113.5	-	-	101.93	34.79	9.93	33.15	100	268	Peak
5725	50.83	-17.47	68.3	39.27	34.82	9.92	33.18	100	268	Peak
6916	62.04	-6.26	68.3	50.73	35.67	9.89	34.25	100	268	Peak

3.7 Peak Excursion Ratio Measurement

3.7.1 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.

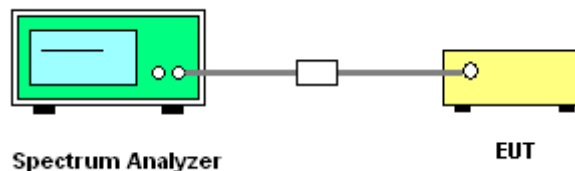
3.7.2 Measuring Instruments

See list of measuring instruments of this test report.

3.7.3 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 \geq 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.

3.7.4 Test Setup

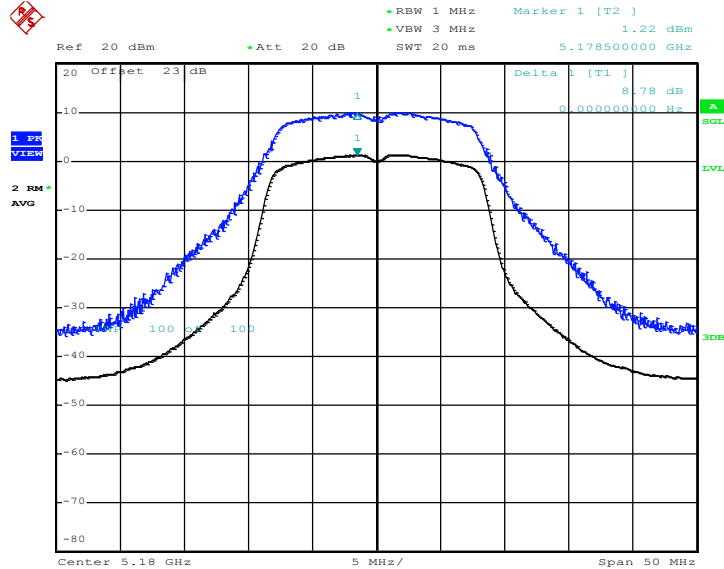




3.7.5 Test Result of Peak Excursion Ratio

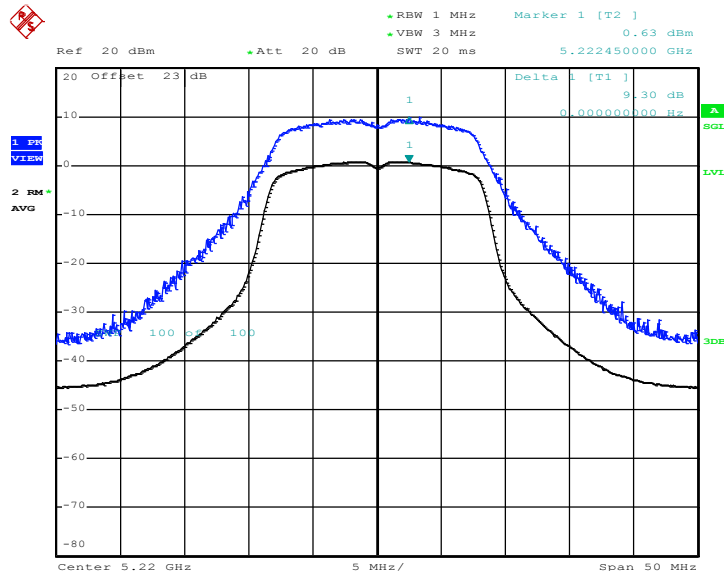
Test Mode :	Mode 1~9	Temperature :	24~26°C
Test Engineer :	Hank Yu	Relative Humidity :	45~49%

Peak Excursion Ratio Plot on 802.11a Channel 36



Date: 20.APR.2012 16:56:50

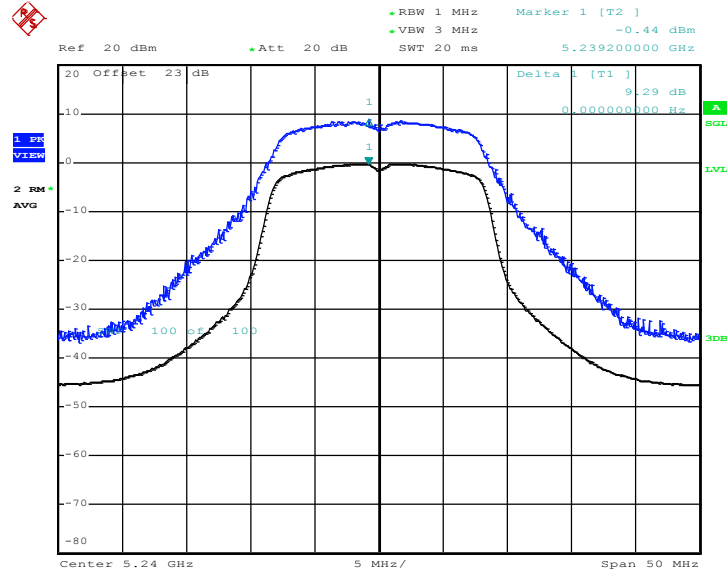
Peak Excursion Ratio Plot on 802.11a Channel 44



Date: 20.APR.2012 17:01:27

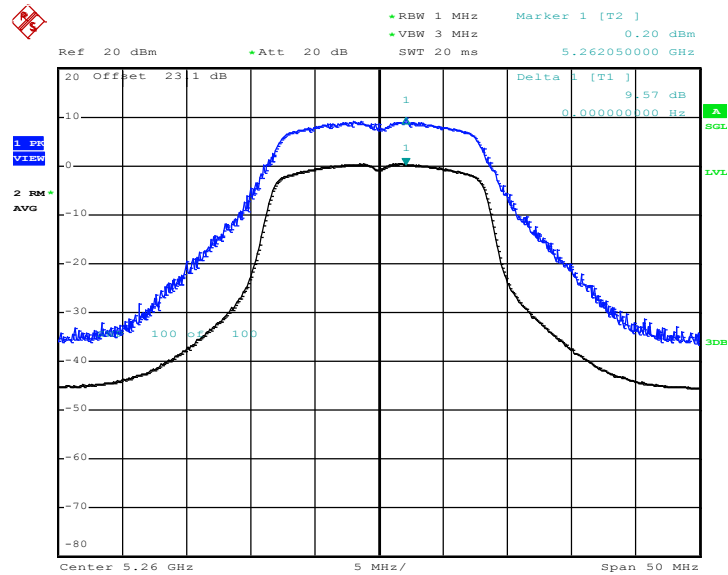


Peak Excursion Ratio Plot on 802.11a Channel 48



Date: 20.APR.2012 17:03:33

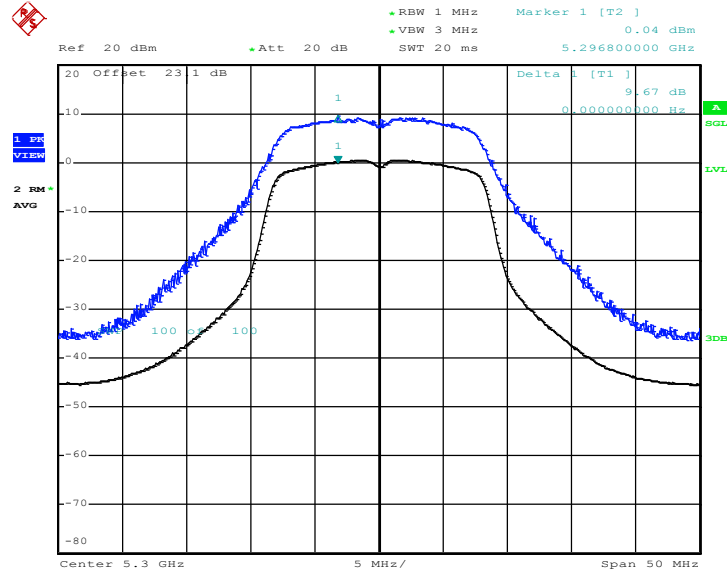
Peak Excursion Ratio Plot on 802.11a Channel 52



Date: 20.APR.2012 17:07:06

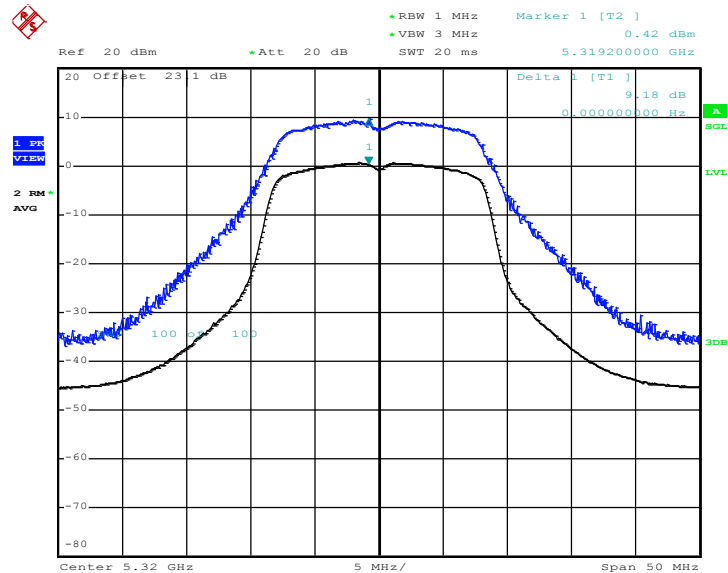


Peak Excursion Ratio Plot on 802.11a Channel 60



Date: 20.APR.2012 17:10:11

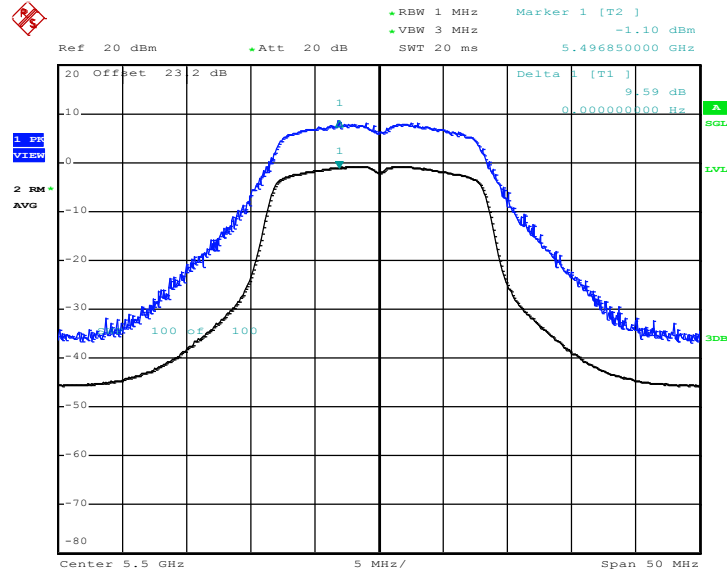
Peak Excursion Ratio Plot on 802.11a Channel 64



Date: 20.APR.2012 17:11:20

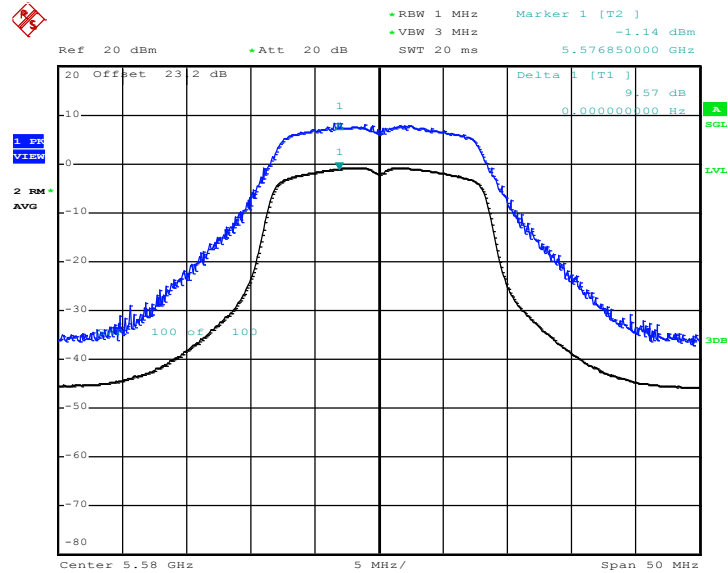


Peak Excursion Ratio Plot on 802.11a Channel 100



Date: 20.APR.2012 17:17:22

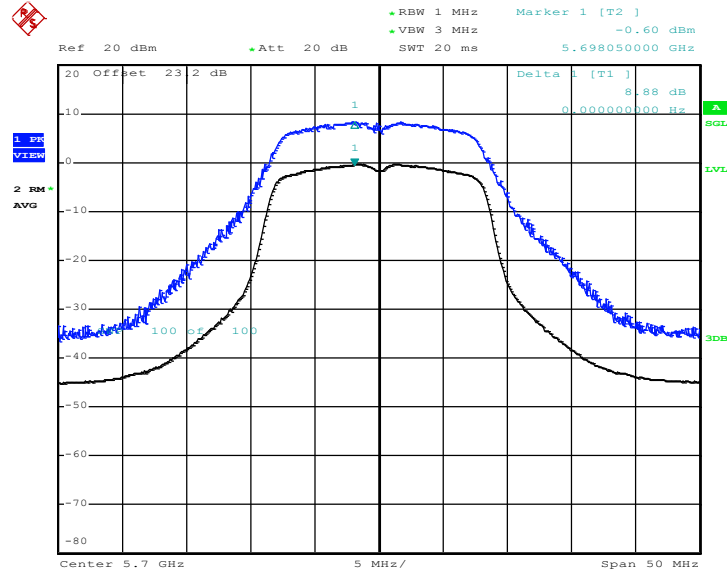
Peak Excursion Ratio Plot on 802.11a Channel 116



Date: 20.APR.2012 17:21:37



Peak Excursion Ratio Plot on 802.11a Channel 140

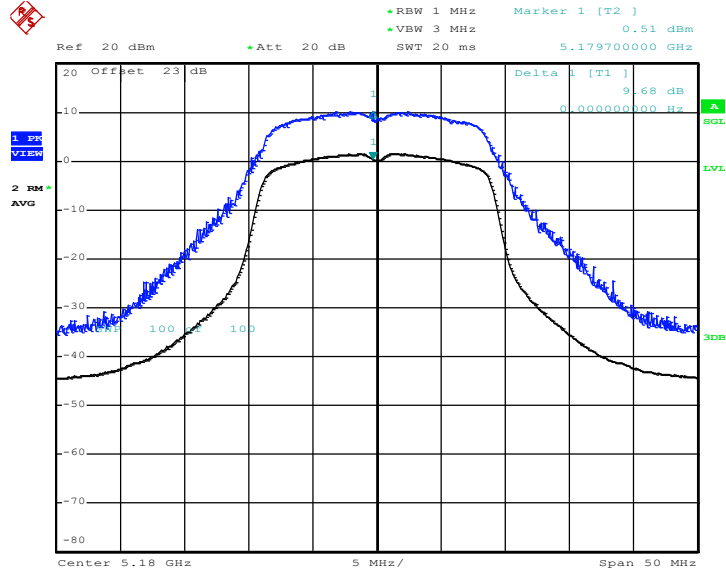


Date : 20.APR.2012 17:23:50



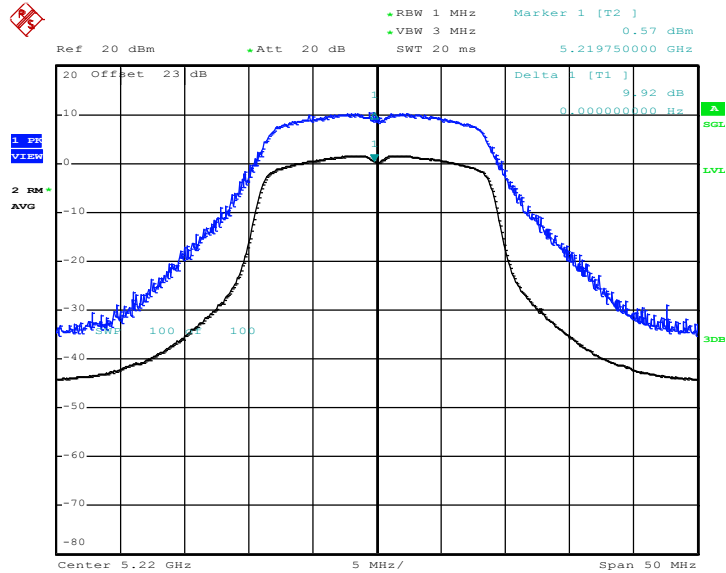
Test Mode :	Mode 10~18	Temperature :	24~26°C
Test Engineer :	Hank Yu	Relative Humidity :	45~49%

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



Date: 20.APR.2012 19:14:31

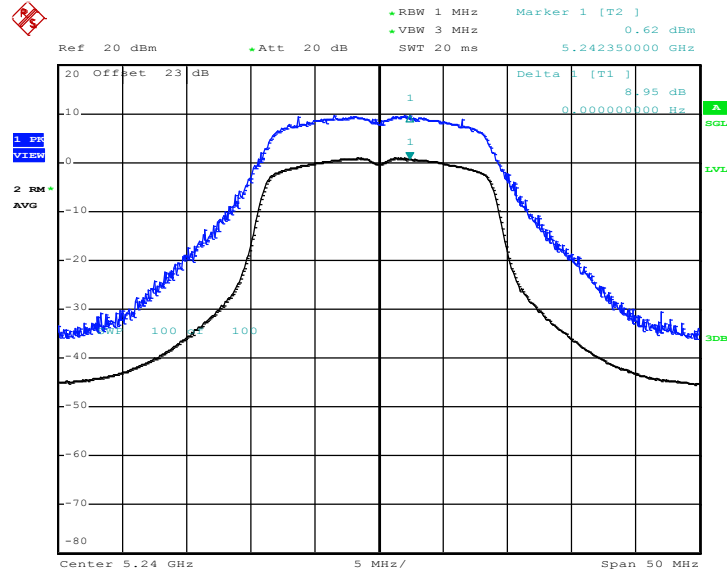
Peak Excursion Ratio Plot on 802.11n (BW 20MHz) Channel 44



Date: 20.APR.2012 19:17:54

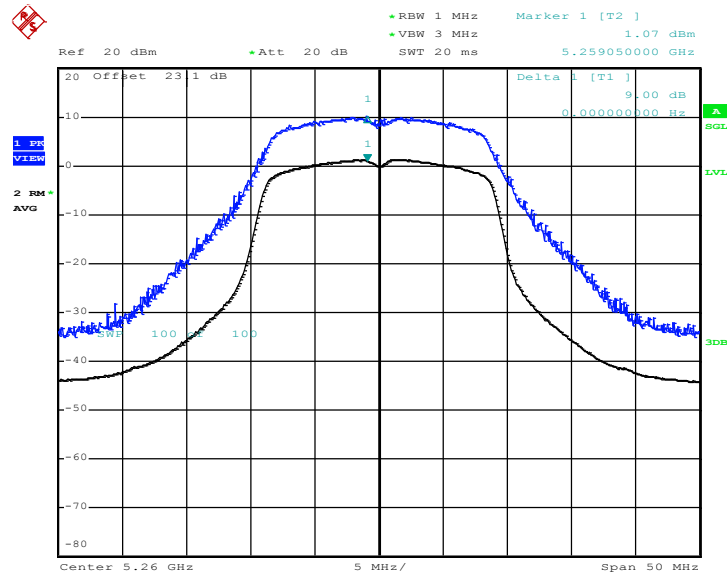


Peak Excursion Ratio Plot on 802.11n (BW 20MHz) Channel 48



Date: 20.APR.2012 19:20:47

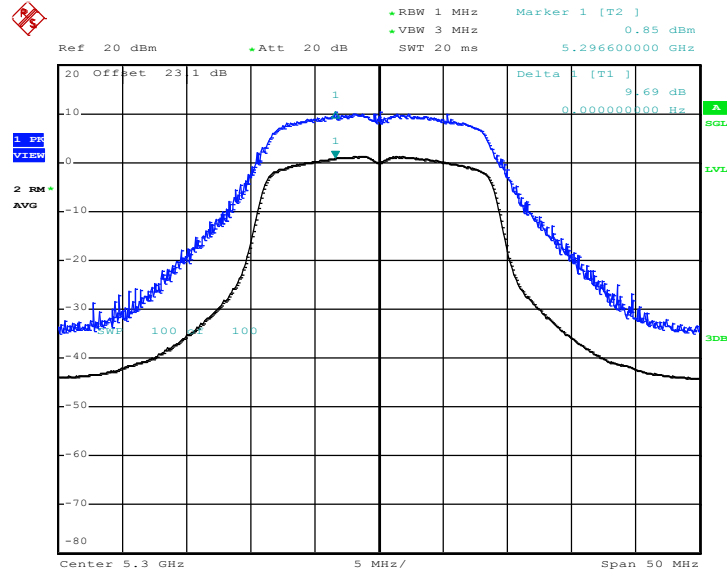
Peak Excursion Ratio Plot on 802.11n (BW 20MHz) Channel 52



Date: 20.APR.2012 19:23:01

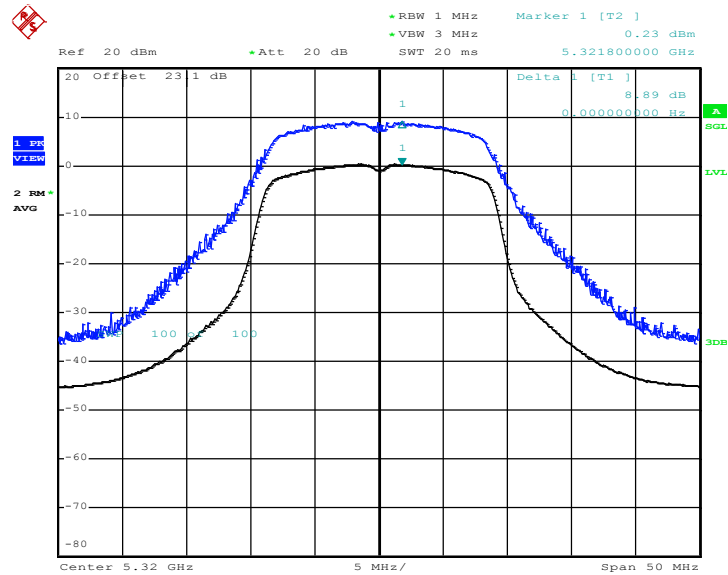


Peak Excursion Ratio Plot on 802.11n (BW 20MHz) Channel 60



Date: 20.APR.2012 19:24:33

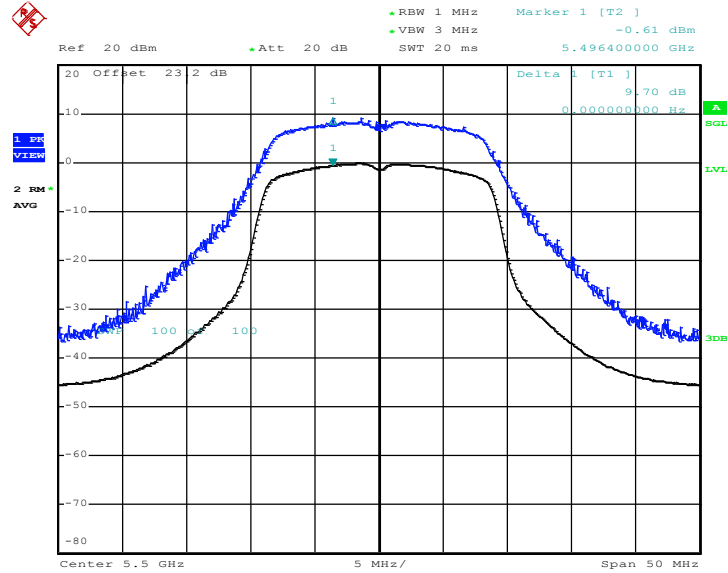
Peak Excursion Ratio Plot on 802.11n (BW 20MHz) Channel 64



Date: 20.APR.2012 19:26:00

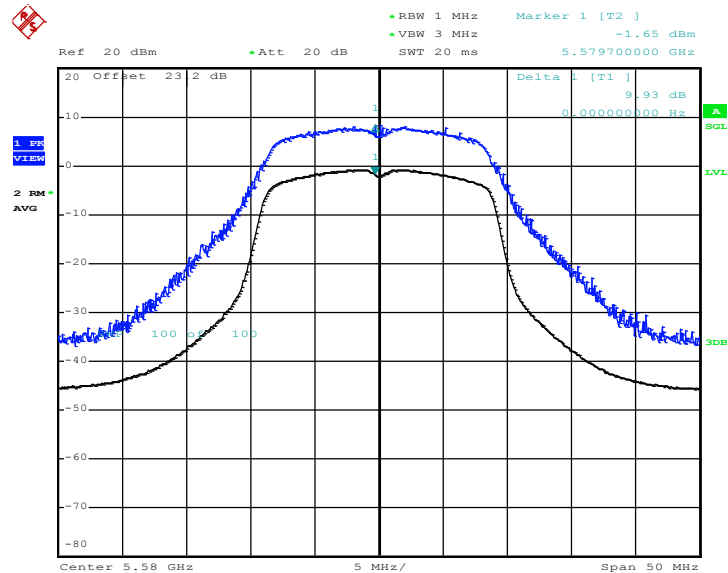


Peak Excursion Ratio Plot on 802.11n (BW 20MHz) Channel 100



Date: 20.APR.2012 19:27:36

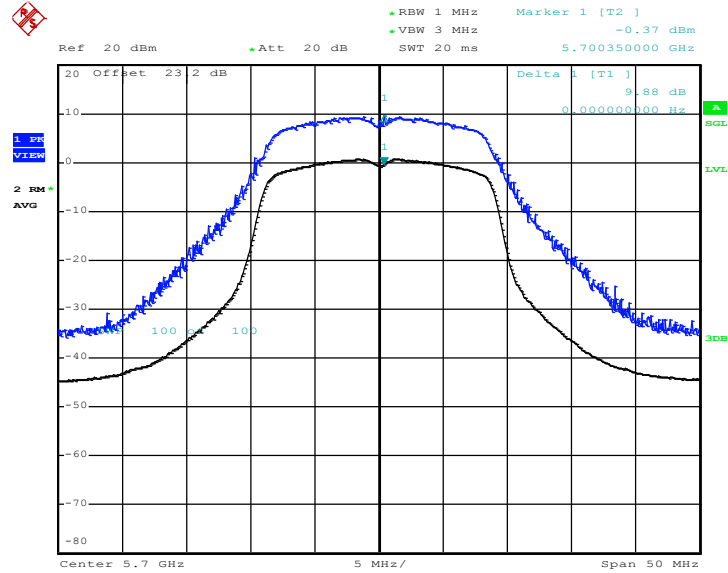
Peak Excursion Ratio Plot on 802.11n (BW 20MHz) Channel 116



Date: 20.APR.2012 19:29:05



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



Date : 20.APR.2012 19:31:10



3.8 Automatically Discontinue Transmission

3.8.1 Limit of Automatically Discontinue Transmission

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

3.8.2 Measuring Instruments

See list of measuring instruments of this test report.

3.8.3 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.

3.9 Frequency Stability Measurement

3.9.1 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.

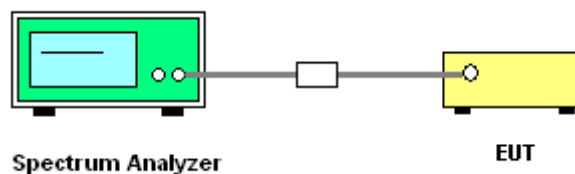
3.9.2 Measuring Instruments

See list of measuring instruments of this test report.

3.9.3 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.

3.9.4 Test Setup





3.9.5 Test Result of Frequency Stability

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

Channel	Frequency (MHz)	Low Frequency (Fl)	High Frequency (Fh)	Frequency Stability (ppm)
36	5180	5171.70	5188.25	-4.83
44	5220	5211.65	5228.25	-9.58
48	5240	5231.65	5248.25	-9.54
52	5260	5251.70	5268.25	-4.75
60	5300	5291.70	5308.25	-4.72
64	5320	5311.70	5328.25	-4.70
100	5500	5491.70	5508.30	0.00
116	5580	5571.70	5588.25	-4.48
140	5700	5691.70	5708.25	-4.39

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

Channel	Frequency (MHz)	Low Frequency (Fl)	High Frequency (Fh)	Frequency Stability (ppm)
36	5180	5171.10	5188.90	0.00
44	5220	5211.10	5228.80	-9.58
48	5240	5231.10	5248.80	-9.54
52	5260	5251.15	5268.90	4.75
60	5300	5291.05	5308.80	-14.15
64	5320	5311.10	5328.85	-4.70
100	5500	5491.05	5508.85	-9.09
116	5580	5571.05	5588.80	-13.44
140	5700	5691.05	5708.80	-13.16



3.10 Antenna Requirements

3.10.1 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.

3.10.2 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.

3.10.3 Antenna Gain

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

4 List of Measuring Equipments

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSP40	100055	9kHz~40GHz	Jun. 13, 2011	Mar. 30, 2012 ~ Apr. 23, 2012	Jun. 12, 2012	Conducted (TH02-HY)
Spectrum Analyzer	Agilent	E4446A	MY50180136	3Hz~44GHz	Apr. 03, 2011	Mar. 30, 2012 ~ Apr. 23, 2012	Apr. 02, 2012	Conducted (TH02-HY)
Spectrum Analyzer	Agilent	E4446A	MY50180136	3Hz~44GHz	Apr. 17, 2012	Mar. 30, 2012 ~ Apr. 23, 2012	Apr. 16, 2013	Conducted (TH02-HY)
EMI Test Receive	R&S	ESCS 30	100356	9KHz ~ 2.75GHz	Oct. 27, 2011	Mar. 27, 2012	Oct. 26, 2012	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100081	9KHz ~ 30MHz	Dec. 09, 2011	Mar. 27, 2012	Dec. 08, 2012	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100080	9KHz ~ 30MHz	Dec. 06, 2011	Mar. 27, 2012	Dec. 05, 2012	Conduction (CO05-HY)
AC Power Source	APC	APC-1000W	N/A	N/A	N/A	Mar. 27, 2012	N/A	Conduction (CO05-HY)
System Simulator	R&S	CMU200	116457	N/A	Jun. 24, 2011	Mar. 27, 2012	Jun. 23, 2012	Conduction (CO05-HY)
Bilog Antenna	SCHAFFNER	CBL6111C	2726	30MHz ~ 1GHz	Oct. 31, 2010	Jun. 13, 2011 ~ Apr. 21, 2012	Oct. 30, 2011	Radiation (03CH07-HY)
Bilog Antenna	SCHAFFNER	CBL6111C	2726	30MHz ~ 1GHz	Oct. 22, 2011	Jun. 13, 2011 ~ Apr. 21, 2012	Oct. 21, 2012	Radiation (03CH07-HY)
Spectrum Analyzer	R&S	FSP	101067	9KHz ~ 30GHz	Dec. 03, 2010	Jun. 13, 2011 ~ Apr. 21, 2012	Dec. 02, 2011	Radiation (03CH07-HY)
Spectrum Analyzer	R&S	FSP30	101067	9KHz ~ 30GHz	Dec. 06, 2011	Jun. 13, 2011 ~ Apr. 21, 2012	Dec. 05, 2012	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	00075962	1GHz ~ 18GHz	Aug. 19, 2010	Jun. 13, 2011 ~ Apr. 21, 2012	Aug. 18, 2011	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	00075962	1GHz ~ 18GHz	Aug. 10, 2011	Jun. 13, 2011 ~ Apr. 21, 2012	Aug. 09, 2012	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	15GHz- 40GHz	Oct. 18, 2010	Jun. 13, 2011 ~ Apr. 21, 2012	Oct. 17, 2011	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	15GHz- 40GHz	Oct. 20, 2011	Jun. 13, 2011 ~ Apr. 21, 2012	Oct. 19, 2012	Radiation (03CH07-HY)
Pre Amplifier	Agilent	8449B	3008A02362	1GHz~ 26.5GHz	Dec. 06, 2010	Jun. 13, 2011 ~ Apr. 21, 2012	Dec. 05, 2011	Radiation (03CH07-HY)
Pre Amplifier	Agilent	8449B	3008A02362	1GHz ~ 26.5GHz	Dec. 05, 2011	Jun. 13, 2011 ~ Apr. 21, 2012	Dec. 04, 2012	Radiation (03CH07-HY)
Pre Amplifier	COM-POWER	PA-103A	161241	10-1000MHz.32 dB.GAIN	Mar. 29, 2011	Jun. 13, 2011 ~ Apr. 21, 2012	Mar. 28, 2012	Radiation (03CH07-HY)
Pre Amplifier	COM-POWER	PA-103A	161241	10-1000MHz.32 dB.GAIN	Feb. 27, 2012	Jun. 13, 2011 ~ Apr. 21, 2012	Feb. 26, 2013	Radiation (03CH07-HY)
Loop Antenna	R&S	HFH2-Z2	860004/001	9 kHz~30 MHz	Jul. 29, 2010	Jun. 13, 2011 ~ Apr. 21, 2012	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 $U_c(y)$	2.36				
Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	4.72				



Appendix A. Photographs of EUT

Please refer to Sporton report number EP1D0814 as below.