

FCC RF Test Report

APPLICANT : HTC Coporation
EQUIPMENT : Tablet computer
MODEL NAME : PG09410
FCC ID : NM8PG09410
STANDARD : FCC Part 15 Subpart E
CLASSIFICATION : Unlicensed National Information Infrastructure (UNII)

The product was received on Mar. 29, 2011 and completely tested on Jun. 17, 2011. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.4-2003 and shown compliance with the applicable technical standards.

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

Reviewed by:



Jones Tsai / Manager



SPORTON INTERNATIONAL INC.

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



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SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.403(i)	A9.2	26dB Bandwidth	-	Pass	-
3.2	15.407(a)	A9.2	Maximum Conducted Output Power	≤ 17, 24, 30 dBm (depend on band)	Pass	-
3.3	15.407(a)	A9.2	Power Spectral Density	≤ 4, 11, 17 dBm (depend on band)	Pass	-
3.4	15.407(b)	A9.3	Frequency Band Edges	≤ -17, -27 dBm (depend on band)&15.209(a)	Pass	-
3.5	15.407(b)	A9.3	Spurious Emission	EIRP < -27 dBm/MHz	Pass	-
3.6	15.207	Gen 7.2.2	AC Conducted Emission	15.207(a)	Pass	Under limit 19.5 dB at 0.182 MHz
3.7	15.407(b)	A9.3	Transmitter Radiated Emission	≤ -17, -27 dBm (depend on band)&15.209(a)	Pass	Under limit 5.14 dB at 32.97 MHz
3.8	15.407(b)	A9.3	Peak Excursion Ratio	≤ 13dB	Pass	-
3.9	15.407(c)	A9.5	Automatically Discontinue Transmission	Discontinue Transmission	Pass	-
3.10	15.407(g)	A9.5	Frequency Stability	Within Operation Band	Pass	-
3.11	15.203 & 15.407(a)	A9.2	Antenna Requirement	N/A	Pass	-

1 General Description

1.1 Applicant

HTC Coporation

No. 6-3, Baoquang Rd., Xindian City, Taipei County, Taiwan

1.2 Manufacturer

HTC Coporation

No. 6-3, Baoquang Rd., Xindian City, Taipei County, Taiwan

1.3 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	Tablet computer
Model Name	PG09410
FCC ID	NM8PG09410
Tx/Rx Frequency Range	5150 MHz ~ 5250 MHz 5250 MHz ~ 5350 MHz 5470 MHz ~ 5725 MHz
Maximum Output Power to Antenna	<p><5150 MHz ~ 5250 MHz> 802.11a : 9.60 dBm / 0.009 W 802.11n (BW 20MHz) : 9.56 dBm / 0.009 W</p> <p><5250 MHz ~ 5350 MHz> 802.11a : 9.14 dBm / 0.008 W 802.11n (BW 20MHz) : 9.13 dBm / 0.008 W</p> <p><5470 MHz ~ 5725 MHz> 802.11a : 9.59 dBm / 0.009 W 802.11n (BW 20MHz) : 9.54 dBm / 0.009 W</p>
Antenna Type	PIFA Antenna with gain -1.0 dBi
Type of Modulation	OFDM (BPSK / QPSK / 16QAM / 64QAM)
EUT Stage	Production Unit

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 Unlicensed National Information Infrastructure (UNII).
3. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

1.4 Testing Site

Test Site	SPORTON INTERNATIONAL INC.		
Test Site Location	No. 52, Hwa Ya 1 st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-3273456 / FAX: +886-3-3284978		
Test Site No.	Sporton Site No.		FCC/IC Registration No.
	CO05-HY	03CH05-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 Public Notice DA 02-2138, (Measurement Guidelines of UNII)
- ♦ ANSI C63.4-2003
- ♦ IC RSS-210 Issued 8

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 (DoC), 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.	System Simulator (LTE)	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
3.	WLAN AP	D-Link	DIR-628	KA2DIR628A2	N/A	Unshielded, 1.8 m
4.	Notebook	DELL	Vostro 1510	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
5.	Bluetooth Earphone	Nokia	BH-102	PYAHS-107W	N/A	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)	Channel	Freq. (MHz)
36	5180	40	5200	44	5220	48	5240
52	5260	56	5280	60	5300	64	5320
100	5500	104	5520	108	5540	112	5560
120	5600	132	5660	136	5680	140	5700

802.11n (BW 20MHz) Carrier Frequency Channel							
Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
36	5180	40	5200	44	5220	48	5240
52	5260	56	5280	60	5300	64	5320
100	5500	104	5520	108	5540	112	5560
120	5600	132	5660	136	5680	140	5700

2.2 RF Power

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

Channel	Frequency	Chain	5GHz 802.11a RF Power (dBm)							
			Data Rate							
			6 Mbps	9 Mbps	12 Mbps	18 Mbps	24 Mbps	36 Mbps	48 Mbps	54 Mbps
CH 36	5180 MHz	A	9.13	-	-	-	-	-	-	-
CH 44	5220 MHz	A	9.60	9.49	9.33	8.92	9.5	8.75	9.43	9.26
CH 48	5240 MHz	A	9.18	-	-	-	-	-	-	-
CH 52	5260 MHz	A	9.10	-	-	-	-	-	-	-
CH 60	5300 MHz	A	9.14	-	-	-	-	-	-	-
CH 64	5320 MHz	A	8.89	-	-	-	-	-	-	-
CH 100	5500 MHz	A	8.96	-	-	-	-	-	-	-
CH 120	5600 MHz	A	9.48	-	-	-	-	-	-	-
CH 140	5700 MHz	A	9.59	8.59	8.51	9.27	9.09	8.52	9.22	8.98

Channel	Frequency	Chain	5GHz 802.11n (BW 20MHz) RF Power (dBm)							
			Data Rate							
			6.5 Mbps	13 Mbps	19.5 Mbps	26 Mbps	39 Mbps	52 Mbps	58.5 Mbps	65 Mbps
CH 36	5180 MHz	A	9.15	-	-	-	-	-	-	-
CH 44	5220 MHz	A	9.34	-	-	-	-	-	-	-
CH 48	5240 MHz	A	9.56	9.00	9.03	9.38	8.92	9.15	8.87	8.81
CH 52	5260 MHz	A	9.10	-	-	-	-	-	-	-
CH 60	5300 MHz	A	9.13	-	-	-	-	-	-	-
CH 64	5320 MHz	A	8.76	-	-	-	-	-	-	-
CH 100	5500 MHz	A	9.54	9.32	8.98	8.98	9.44	8.92	8.93	9.51
CH 120	5600 MHz	A	9.27	-	-	-	-	-	-	-
CH 140	5700 MHz	A	9.50	-	-	-	-	-	-	-

Remark:

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

2.3 Test Mode

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

Pre-scanned tests were conducted to determine the final configuration from all possible combinations.

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

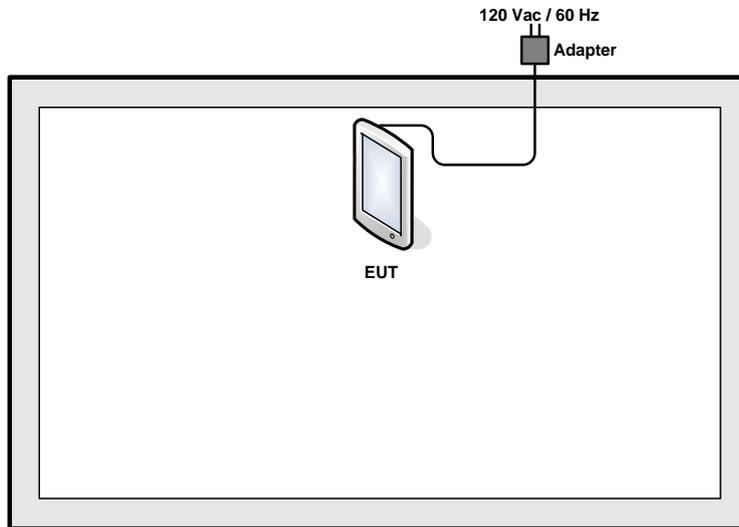
Test Cases	
Test Item	802.11a/n (Modulation : OFDM)
Conducted TCs	<ul style="list-style-type: none"> ■ Mode 1: 802.11a_CH36_5180 MHz ■ Mode 2: 802.11a_CH44_5220 MHz ■ Mode 3: 802.11a_CH48_5240 MHz ■ Mode 4: 802.11a_CH52_5260 MHz ■ Mode 5: 802.11a_CH60_5300 MHz ■ Mode 6: 802.11a_CH64_5320 MHz ■ Mode 7: 802.11a_CH100_5500 MHz ■ Mode 8: 802.11a_CH120_5600 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_CH120_5600 MHz (BW 20M) ■ Mode 18: 802.11a_CH140_5700 MHz (BW 20M)



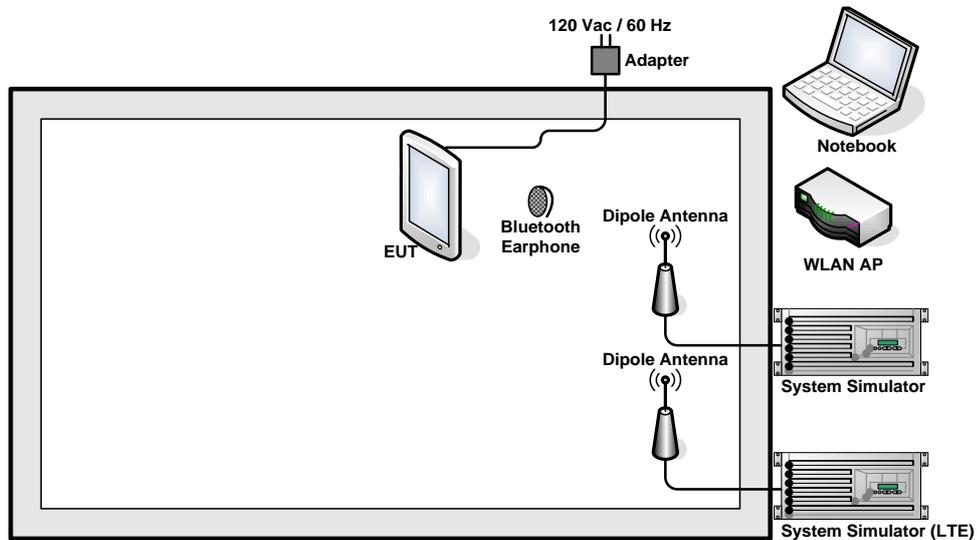
Radiated TCs	<ul style="list-style-type: none">■ Mode 1: 802.11a_CH36_5180 MHz■ Mode 2: 802.11a_CH44_5220 MHz■ Mode 3: 802.11a_CH48_5240 MHz■ Mode 4: 802.11a_CH52_5260 MHz■ Mode 5: 802.11a_CH60_5300 MHz■ Mode 6: 802.11a_CH64_5320 MHz■ Mode 7: 802.11a_CH100_5500 MHz■ Mode 8: 802.11a_CH120_5600 MHz■ Mode 9: 802.11a_CH140_5700 MHz■ Mode 10: 802.11n_CH36_5180 MHz (BW 20M)■ Mode 11: 802.11n_CH44_5220 MHz (BW 20M)■ Mode 12: 802.11n_CH48_5240 MHz (BW 20M)■ Mode 13: 802.11n_CH52_5260 MHz (BW 20M)■ Mode 14: 802.11n_CH60_5300 MHz (BW 20M)■ Mode 15: 802.11n_CH64_5320 MHz (BW 20M)■ Mode 16: 802.11n_CH100_5500 MHz (BW 20M)■ Mode 17: 802.11n_CH120_5600 MHz (BW 20M)■ Mode 18: 802.11n_CH140_5700 MHz (BW 20M)
AC Conducted Emission	Mode 1: GSM1900 Idle + LTE Idle + Bluetooth Link + WLAN (5G) Link + Camera + Adapter

2.4 Connection Diagram of Test System

<WLAN Tx Mode>



<AC Conducted Emission Mode>



2.5 RF Utility

The programmed RF Utility “ADB” 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 Bandwidth Measurement

3.1.1 Limit of 26dB Bandwidth

There is no restriction limits for bandwidth. The maximum conducted output power can be limited by measured emission bandwidth (B). For the band 5.15~5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 50 mW (17dBm) or 4 dBm + 10log B. For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW (24dBm) or 11 dBm + 10log B. For the band 5.725-5.825 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 1 W (30dBm) or 17 dBm + 10log B.

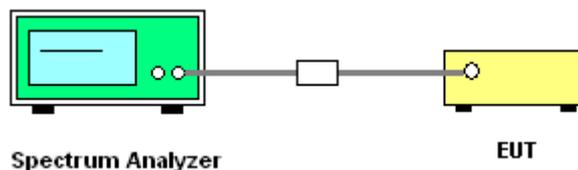
3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

3.1.3 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 spectrum analyzer by a low loss cable.
3. Read RBW and repeat measurement as needed until the RBW/BW ratio is approximately 1%.
4. Use a RBW = approximately 1% of the emission bandwidth; Set the VBW > RBW; Use a peak detector.
5. Measure the maximum width of the emission that is 26 dB relative to the peak of the emission and 99% occupied bandwidth.

3.1.4 Test Setup



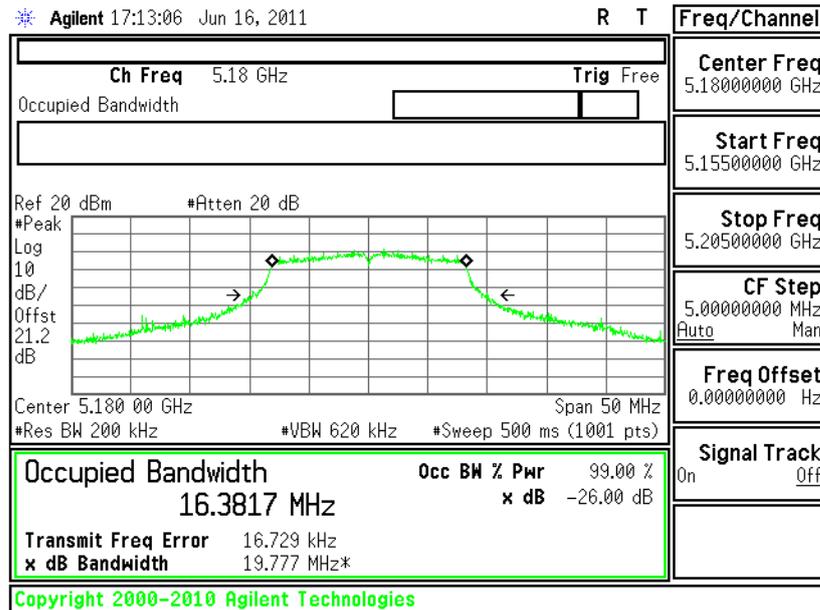


3.1.5 Test Result of 26dB Bandwidth

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

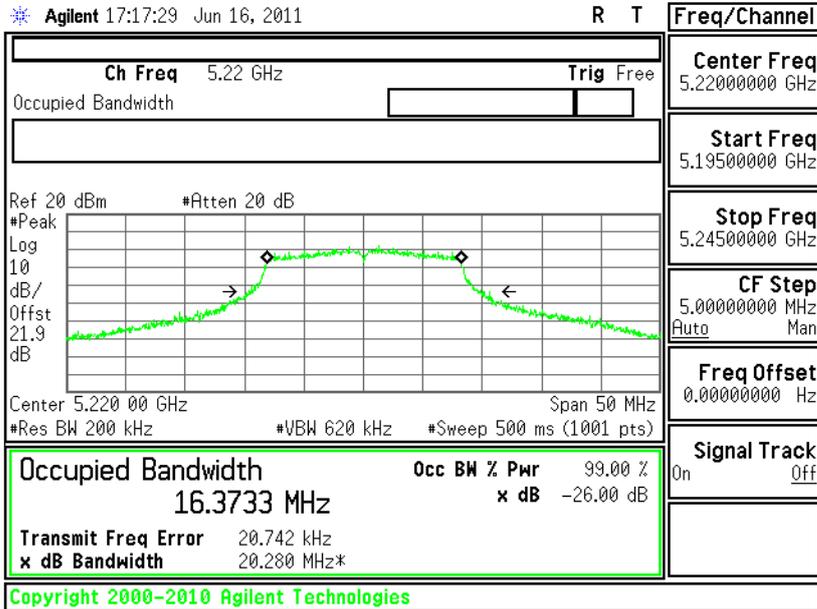
Channel	Frequency (MHz)	802.11a 26dB Bandwidth (MHz)	Pass/Fail
36	5180	19.777	Pass
44	5220	20.280	Pass
48	5240	19.654	Pass
52	5260	19.424	Pass
60	5300	19.685	Pass
64	5320	21.285	Pass
100	5500	21.220	Pass
120	5600	19.728	Pass
140	5700	19.750	Pass

26 dB Bandwidth Plot on 802.11a Channel 36

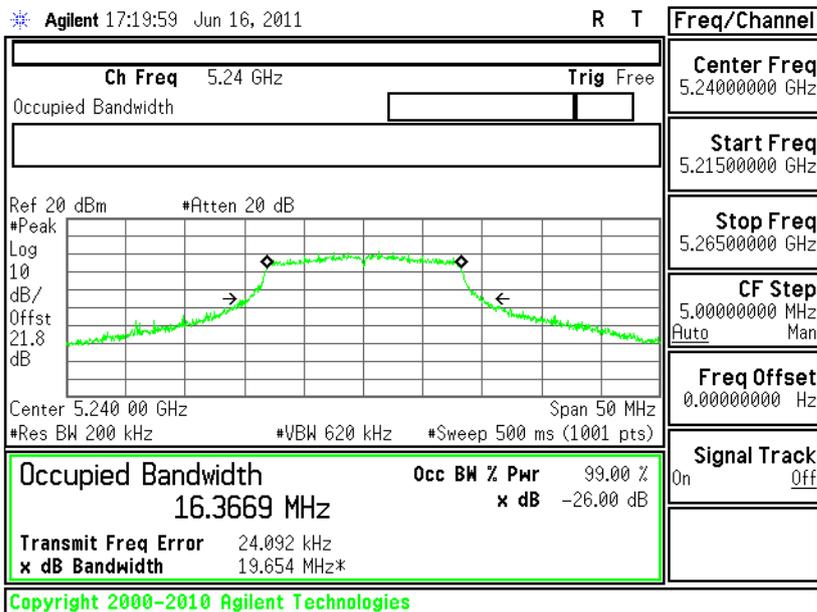




26 dB Bandwidth Plot on 802.11a Channel 44

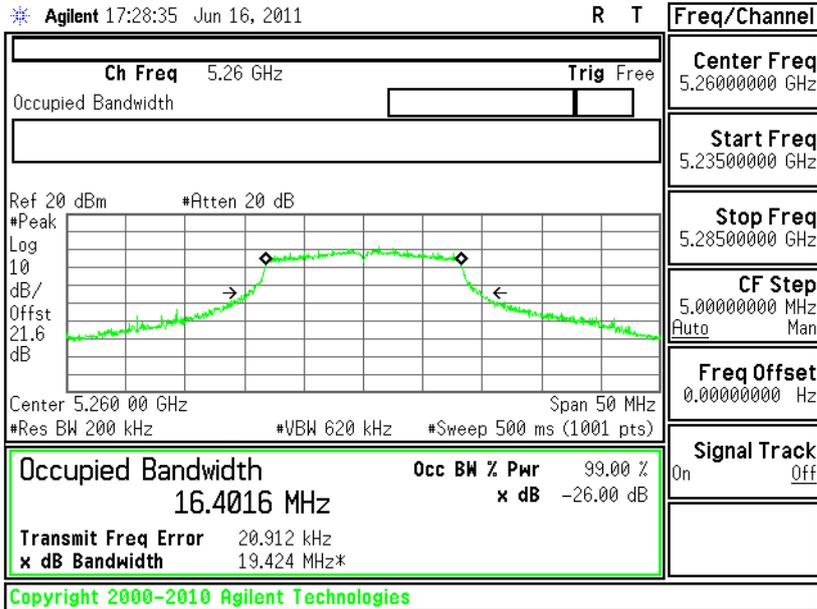


26 dB Bandwidth Plot on 802.11a Channel 48

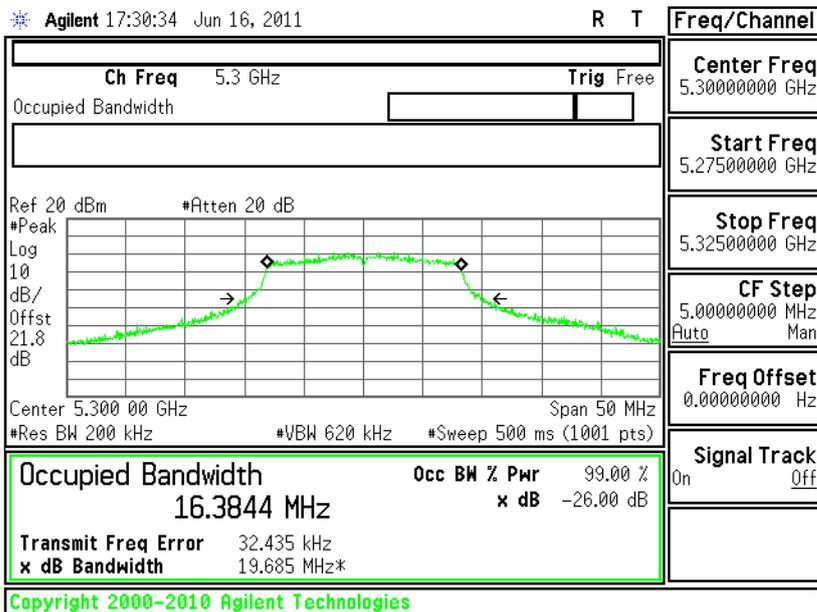




26 dB Bandwidth Plot on 802.11a Channel 52

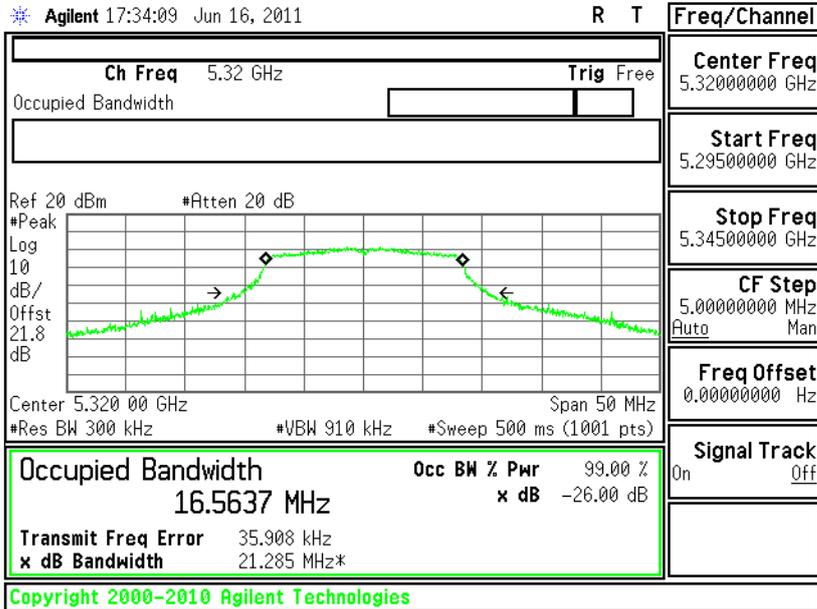


26 dB Bandwidth Plot on 802.11a Channel 60

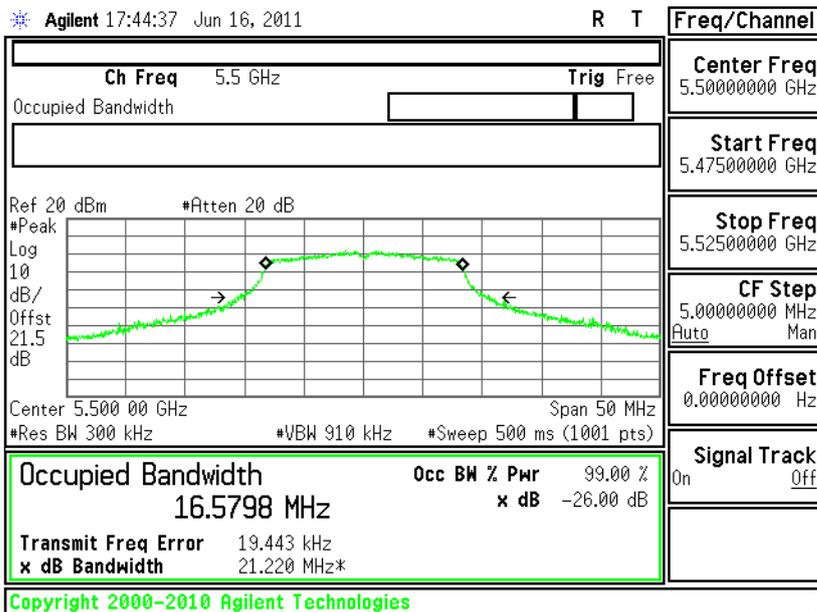




26 dB Bandwidth Plot on 802.11a Channel 64

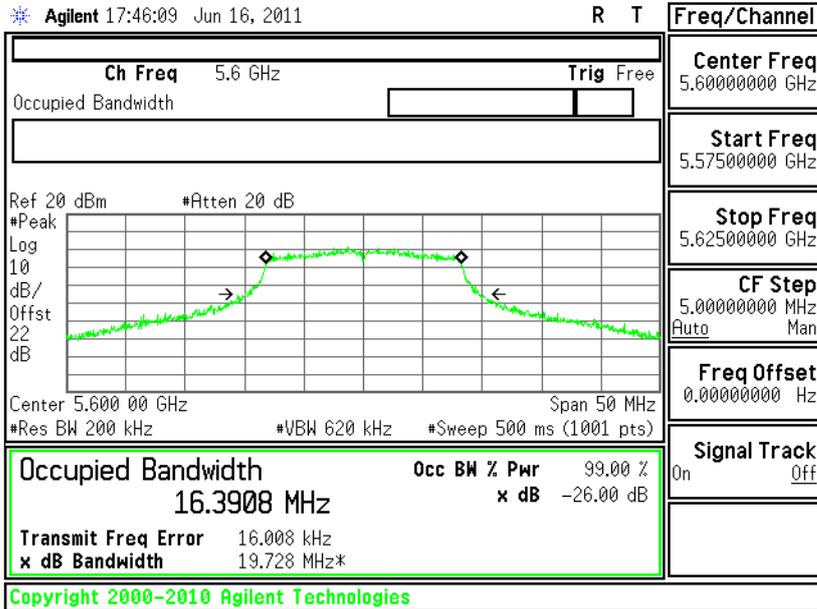


26 dB Bandwidth Plot on 802.11a Channel 100

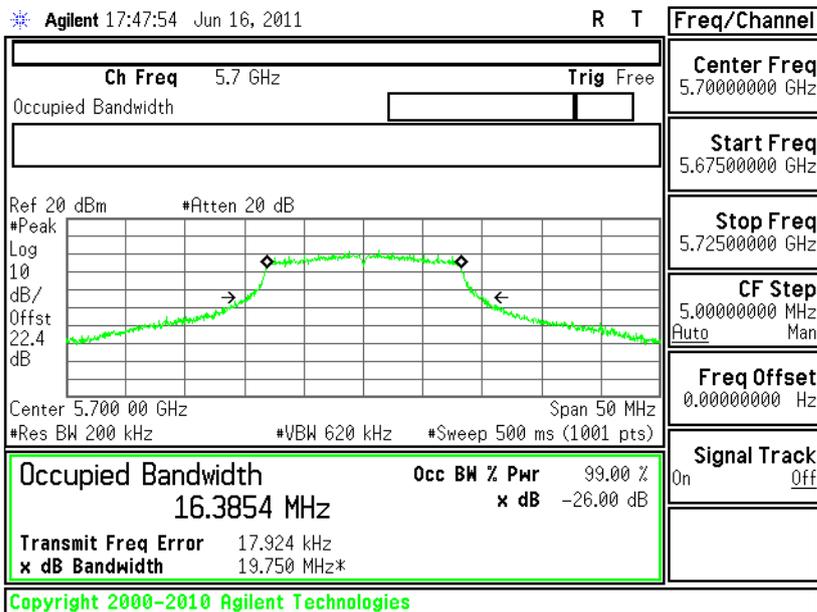




26 dB Bandwidth Plot on 802.11a Channel 120



26 dB Bandwidth Plot on 802.11a Channel 140

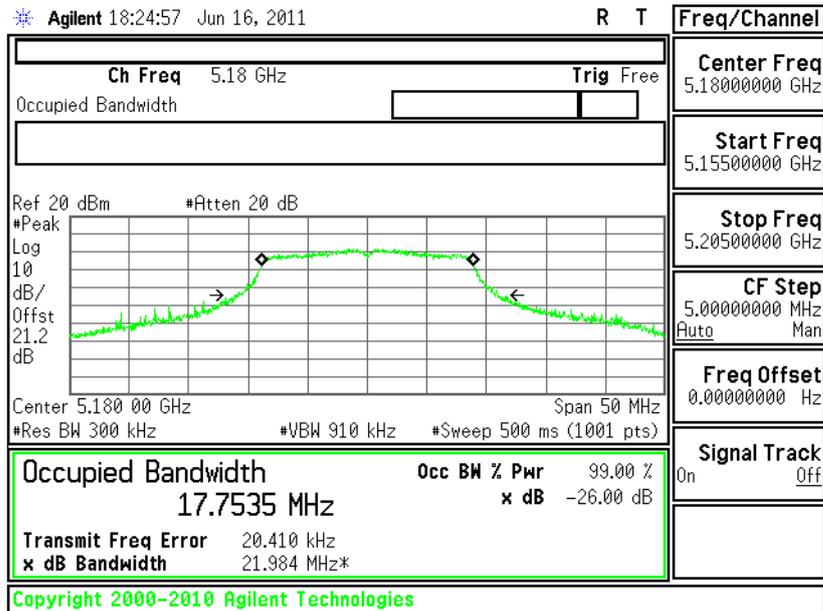




Test Mode :	Mode 10~18	Temperature :	24~26°C
Test Engineer :	Alan Liu	Relative Humidity :	45~49%

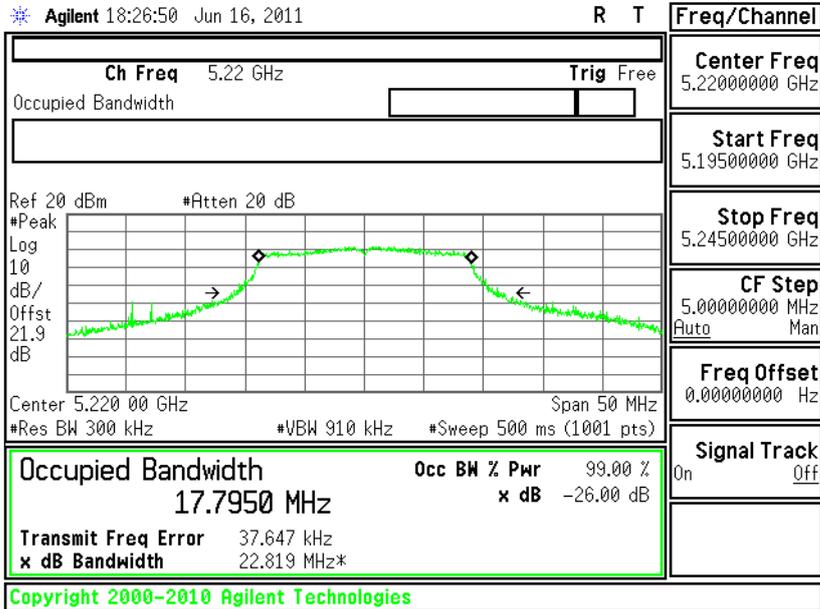
Channel	Frequency (MHz)	802.11n (BW 20MHz) 26dB Bandwidth (MHz)	Pass/Fail
36	5180	21.984	Pass
44	5220	22.819	Pass
48	5240	21.808	Pass
52	5260	22.986	Pass
60	5300	22.366	Pass
64	5320	22.577	Pass
100	5500	22.925	Pass
120	5600	22.571	Pass
140	5700	23.058	Pass

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

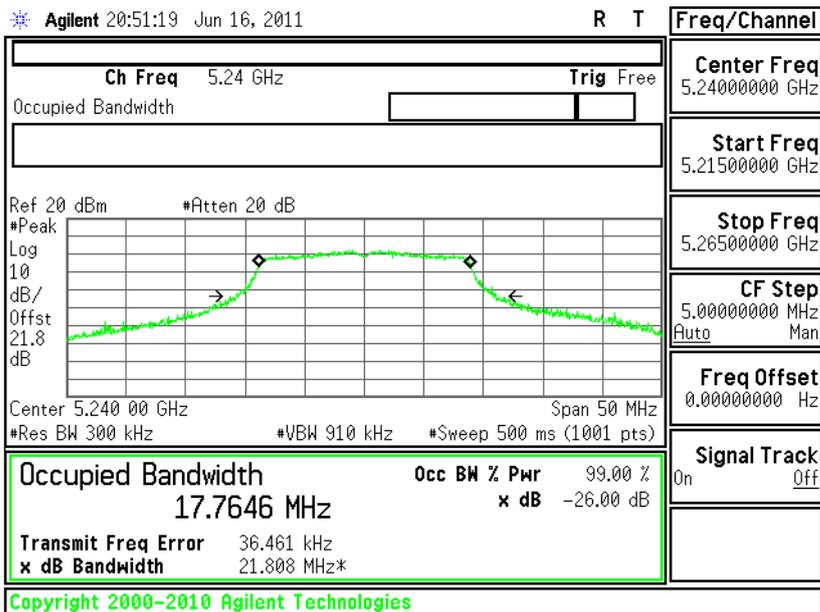




26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 44

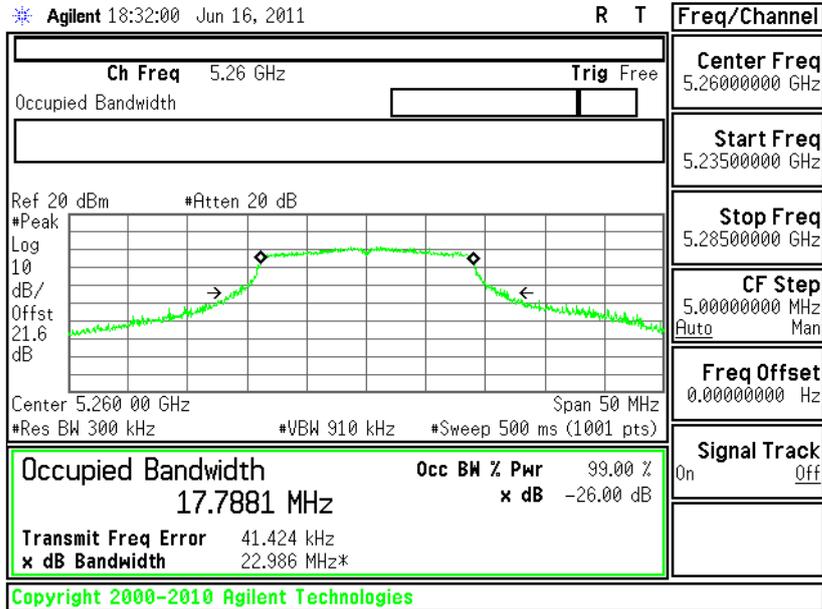


26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 48

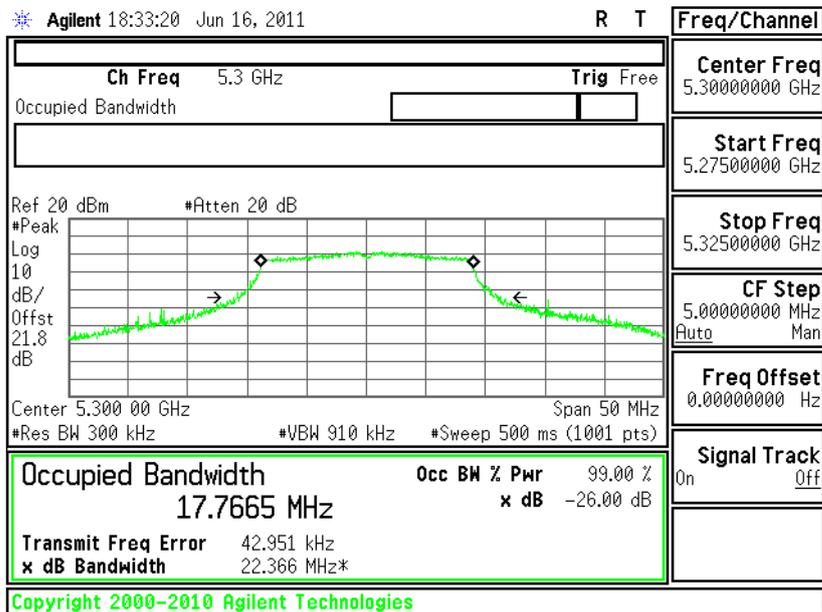




26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 52

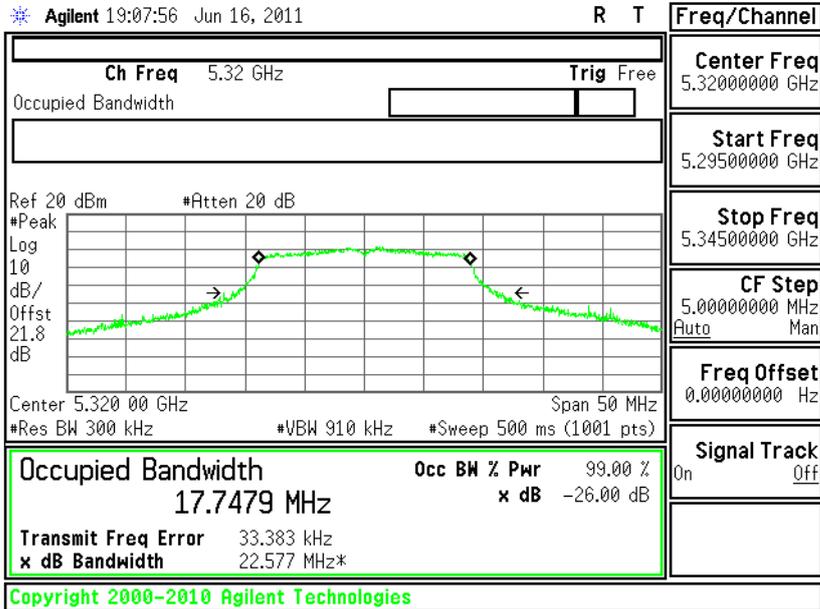


26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 60

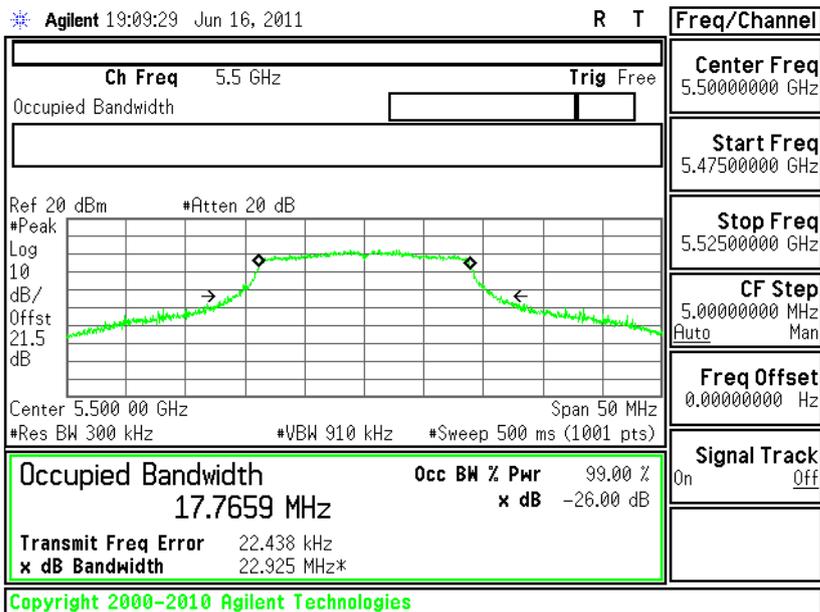




26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 64

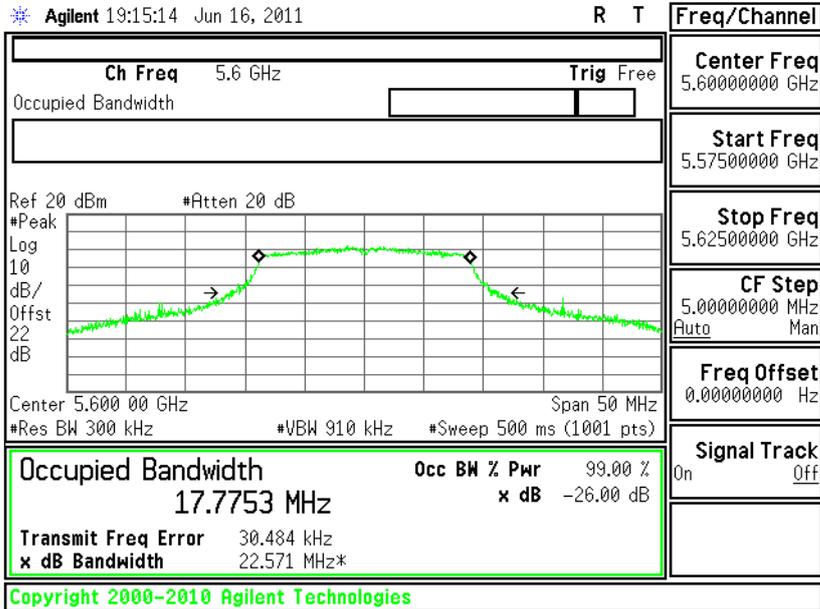


26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 100

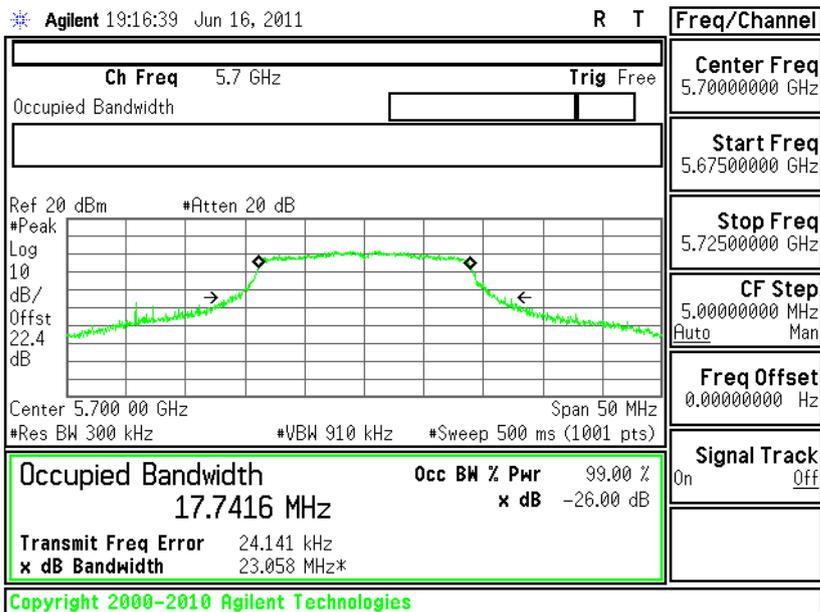




26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 120



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



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.

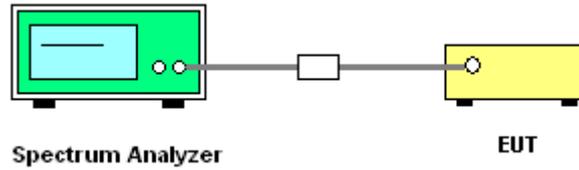
3.2.2 Measuring Instruments

See list of measuring instruments of this test report.

3.2.3 Test Procedures

1. The testing follows FCC Public Notice DA 02-2138 (Measurement Guidelines of UNII).
 - Set span to encompass the entire emission bandwidth (EBW) of the signal.
 - Set RBW = 1 MHz.
 - Set VBW \geq 3 MHz.
 - Use sample detector mode
 - Use a video trigger with the trigger level set to enable triggering only on full power pulses.
Transmitter must operate at full control power for entire sweep of every sweep.
 - Trace average 100 traces in power averaging mode.
 - Compute power by integrating the spectrum across the 26 dB EBW of the signal. The integration can be performed using the spectrum analyzer's band power measurement function with band limits set equal to the EBW band edges or by summing power levels in each 1 MHz band in linear power terms. The 1 MHz band power levels to be summed can be obtained by averaging, in linear power terms, power levels in each frequency bin across the 1 MHz.
2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
3. Measure the power and record it.

3.2.4 Test Setup





3.2.5 Test Result of Maximum Conducted Output Power

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

Channel	Frequency (MHz)	802.11a Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
36	5180	9.13	16.96	Pass
44	5220	9.60	17.00	Pass
48	5240	9.18	16.93	Pass
52	5260	9.10	23.88	Pass
60	5300	9.14	23.94	Pass
64	5320	8.89	24.00	Pass
100	5500	8.96	24.00	Pass
120	5600	9.48	23.95	Pass
140	5700	9.59	23.96	Pass

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

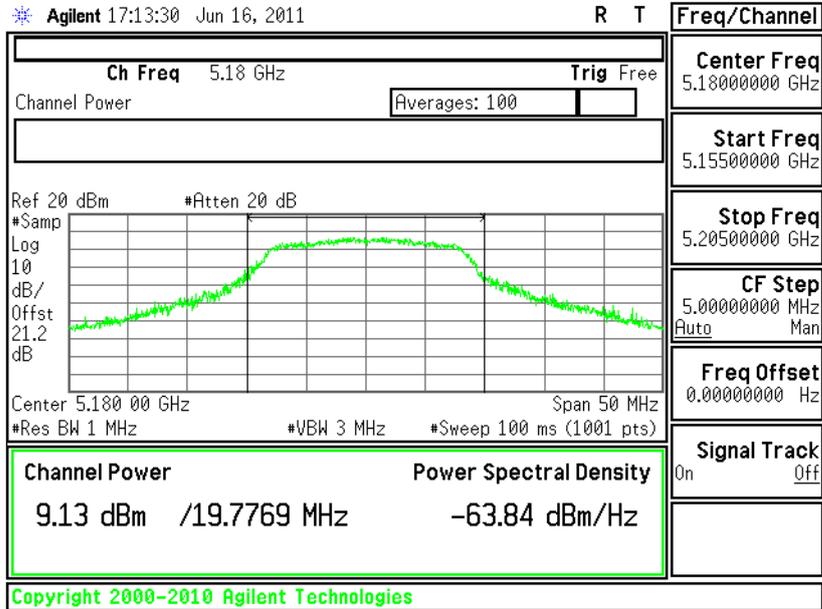
Channel	Frequency (MHz)	802.11n (BW 20MHz) Measured Output Power (dBm)	Max. Limits (dBm)	Pass/Fail
36	5180	9.15	17.00	Pass
44	5220	9.34	17.00	Pass
48	5240	9.56	17.00	Pass
52	5260	9.10	24.00	Pass
60	5300	9.13	24.00	Pass
64	5320	8.76	24.00	Pass
100	5500	9.54	24.00	Pass
120	5600	9.27	24.00	Pass
140	5700	9.50	24.00	Pass



3.2.6 Test Result of Power Output Plots

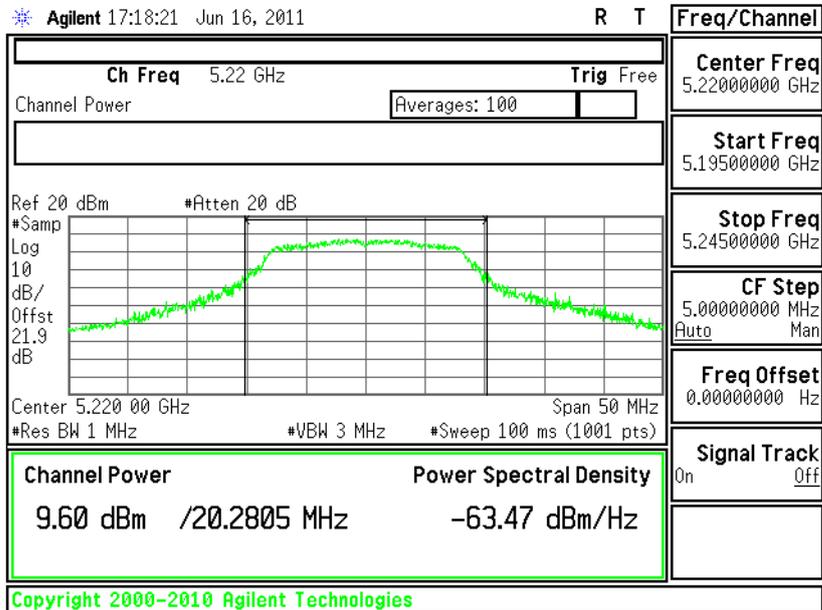
Mode 01:

Output Power Plot on 802.11a Channel 36



Mode 02:

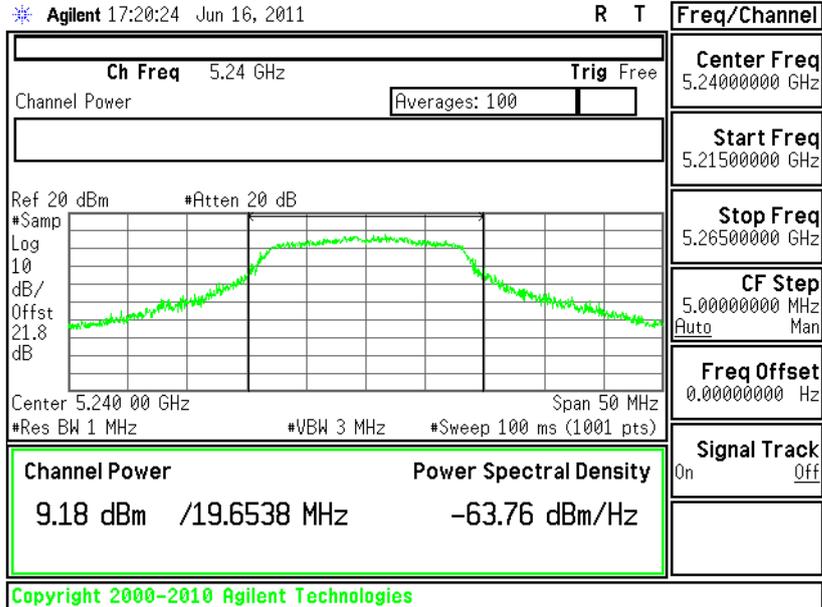
Output Power Plot on 802.11a Channel 44





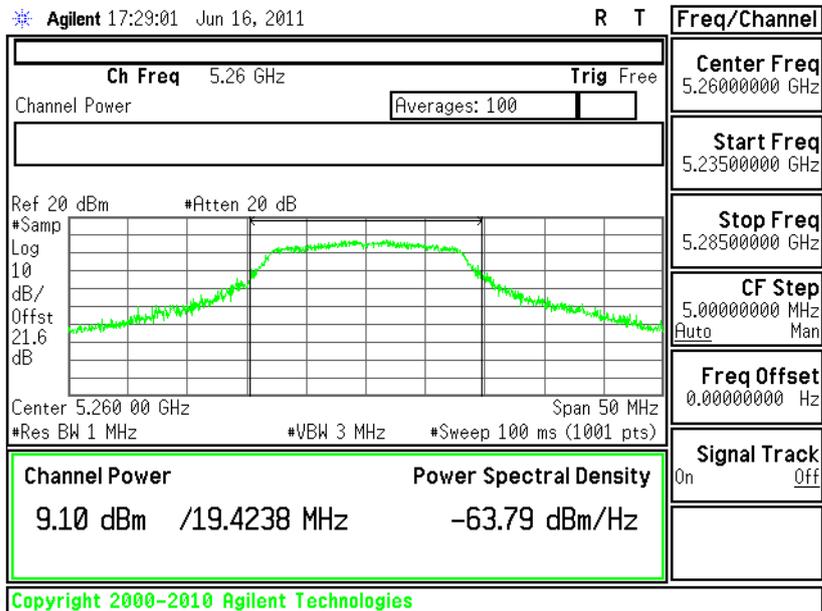
Mode 03:

Output Power Plot on 802.11a Channel 48



Mode 04:

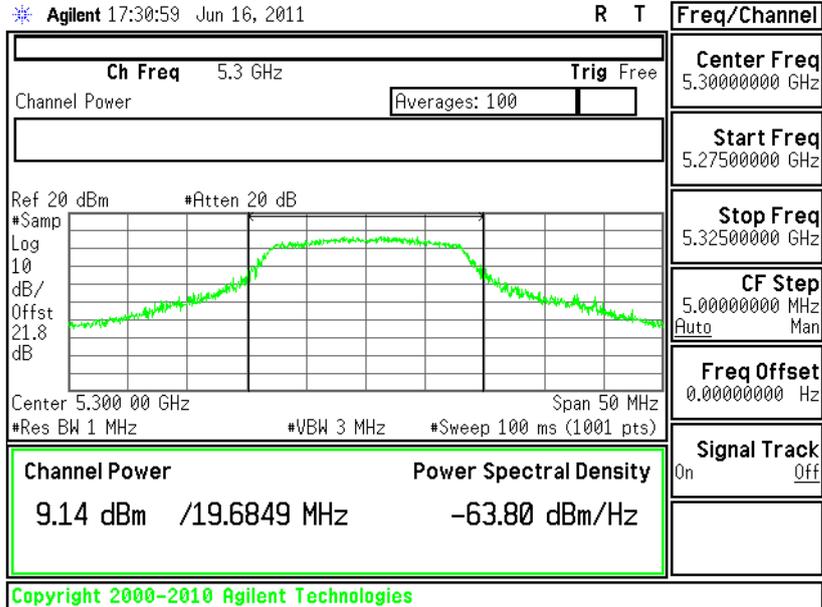
Output Power Plot on 802.11n Channel 52





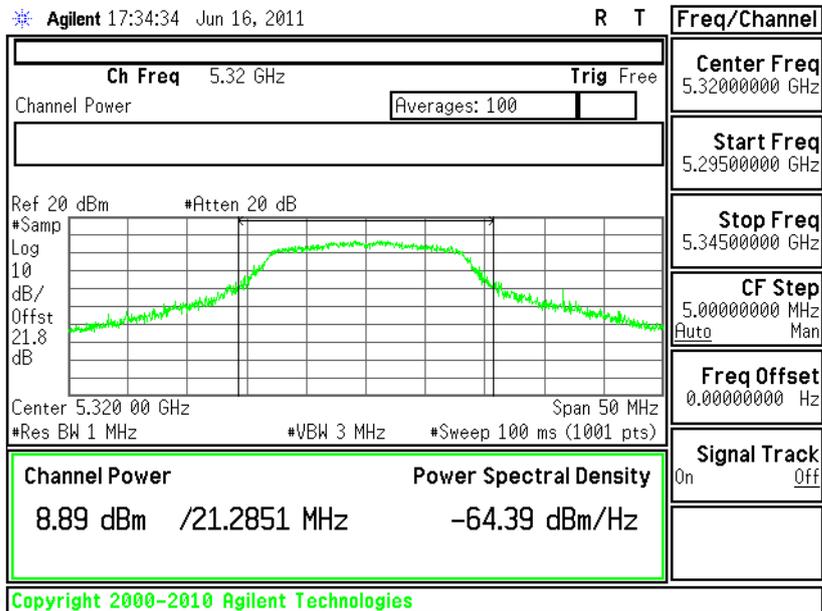
Mode 05:

Output Power Plot on 802.11n Channel 60



Mode 06:

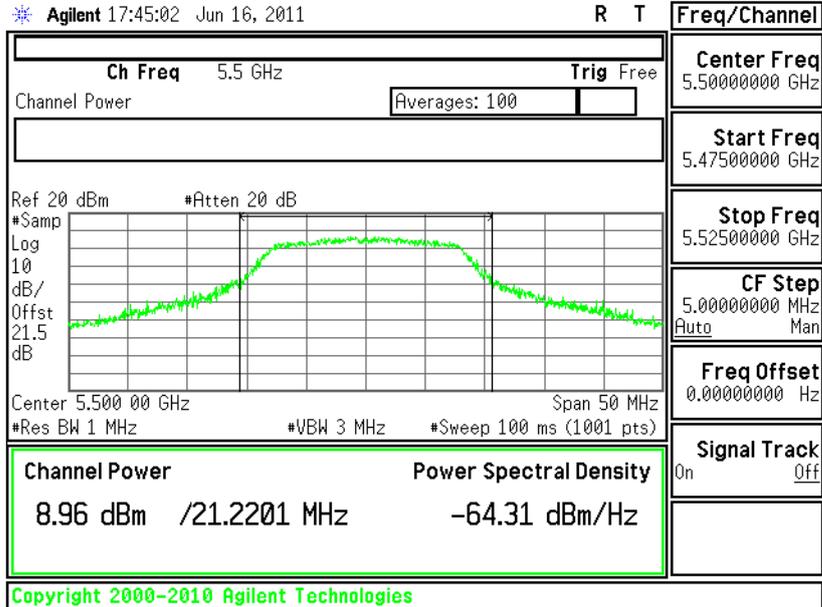
Output Power Plot on 802.11n Channel 64





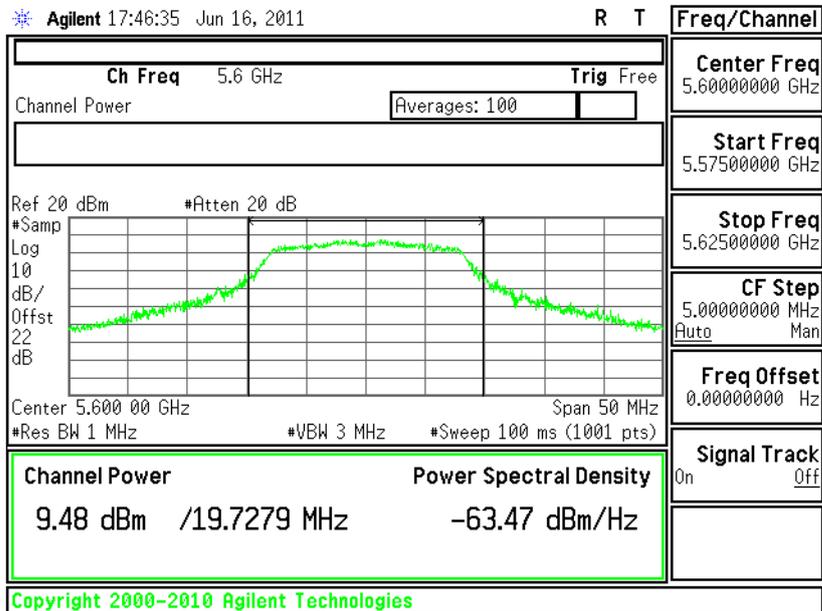
Mode 07:

Output Power Plot on 802.11n Channel 100



Mode 08:

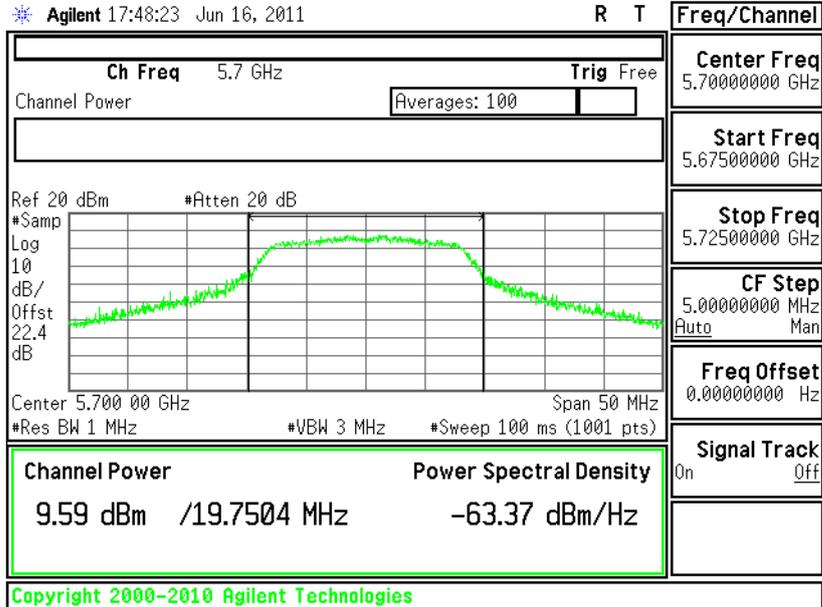
Output Power Plot on 802.11n Channel 120





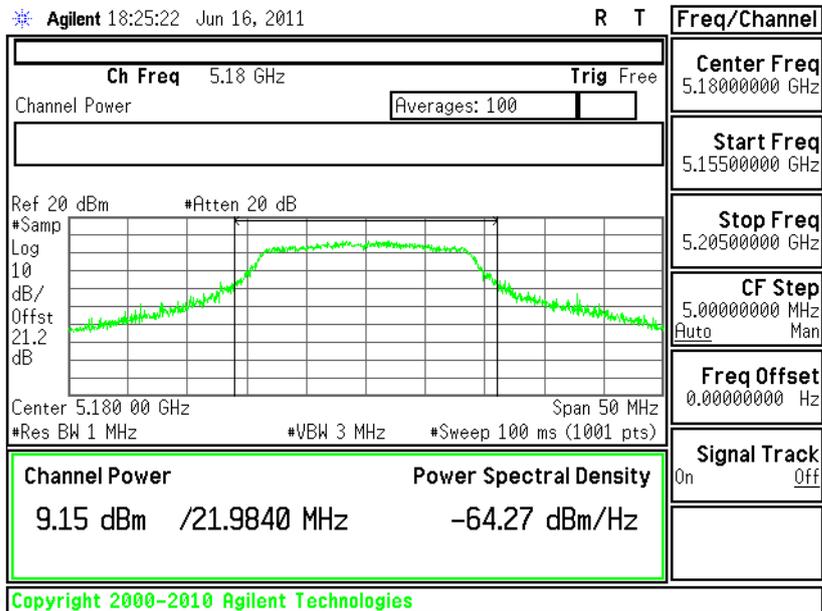
Mode 09:

Output Power Plot on 802.11n Channel 140



Mode 10:

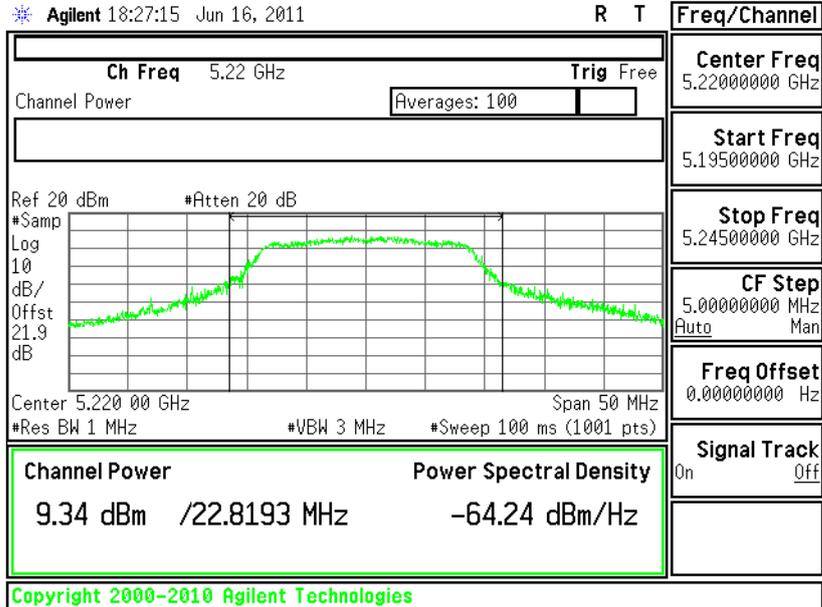
Output Power Plot on 802.11n (BW 20MHz) Channel 36





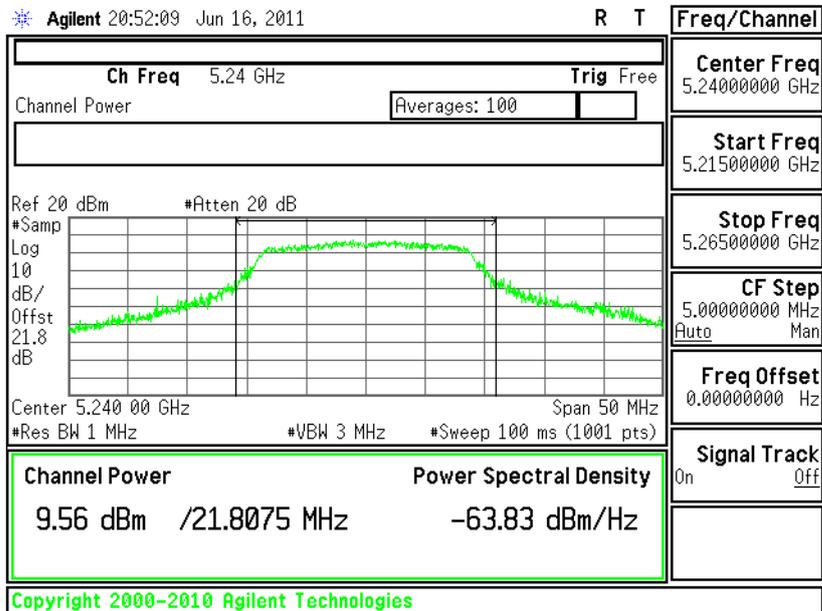
Mode 11:

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



Mode 12:

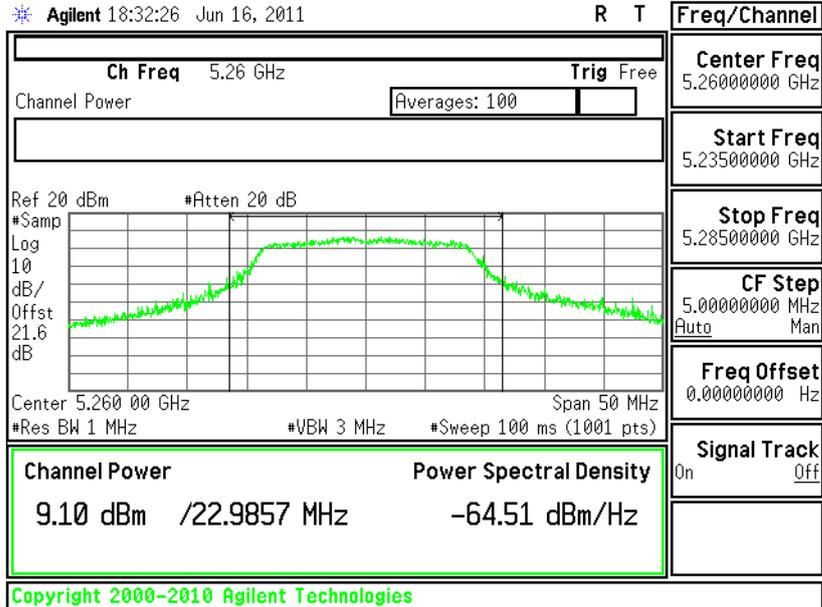
Output Power Plot on 802.11n (BW 20MHz) Channel 48





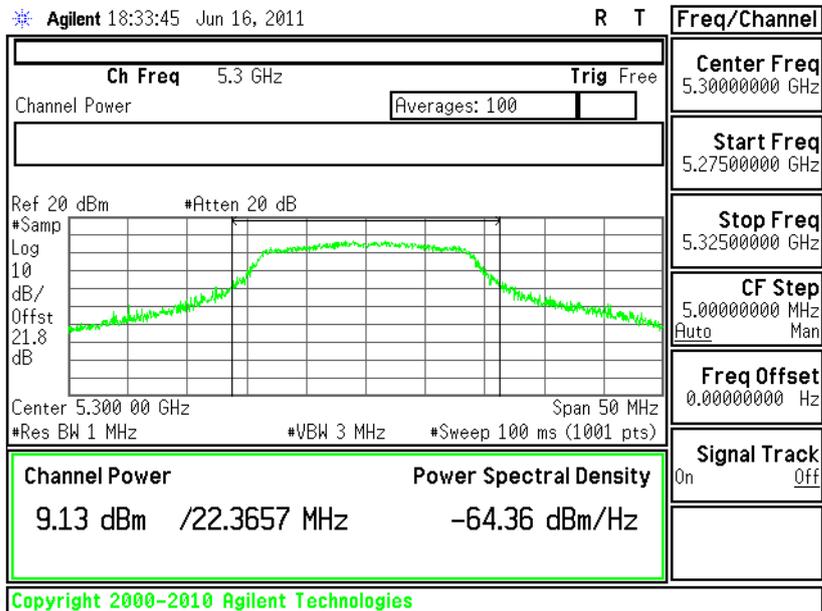
Mode 13:

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



Mode 14:

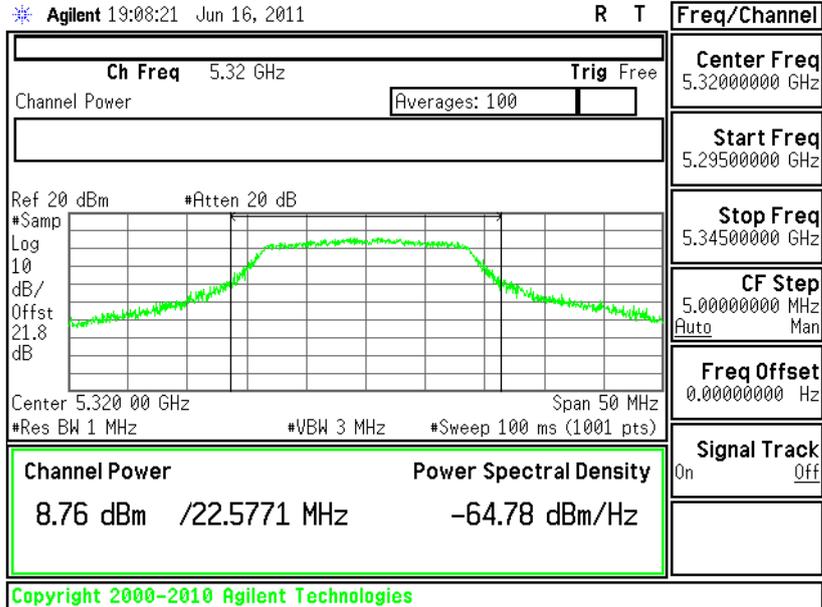
Output Power Plot on 802.11n (BW 20MHz) Channel 60





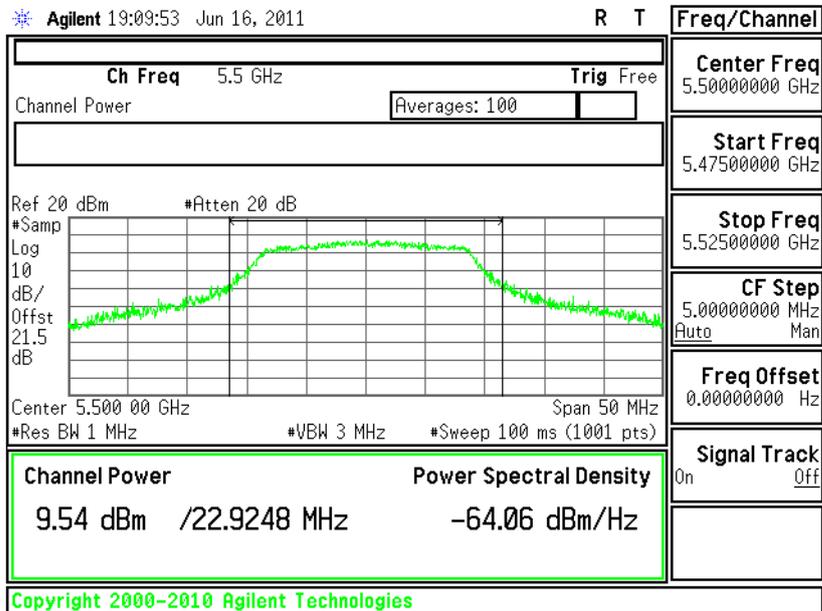
Mode 15:

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



Mode 16:

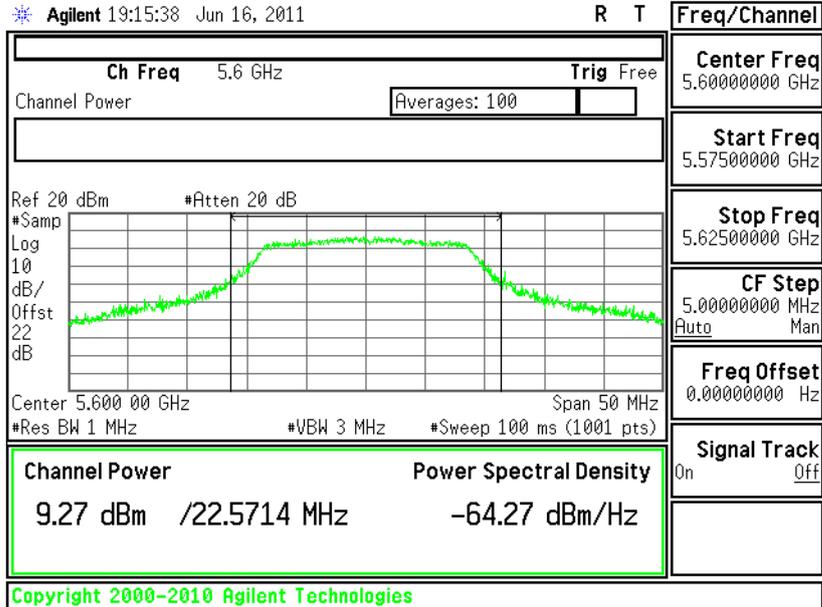
Output Power Plot on 802.11n (BW 20MHz) Channel 100





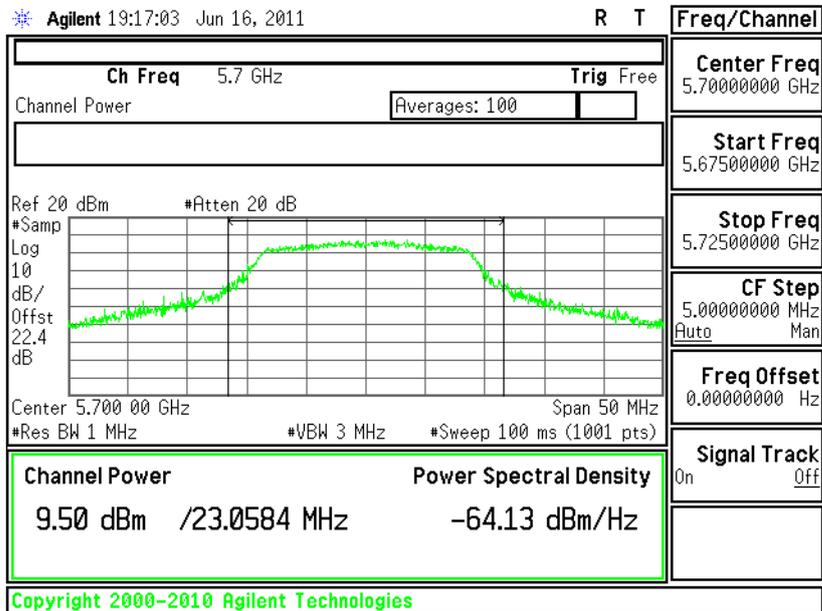
Mode 17:

Output Power Plot on 802.11n (BW 20MHz) Channel 120



Mode 18:

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



3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

For the band 5.15–5.25 GHz, the peak power spectral density shall not exceed 4 dBm in any 1MHz band. For the 5.25–5.35 GHz and 5.47–5.725 GHz bands, the peak power spectral density shall not exceed 11 dBm in any 1 MHz band. If transmitting antenna directional gain is greater than 6 dBi, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.3.2 Measuring Instruments

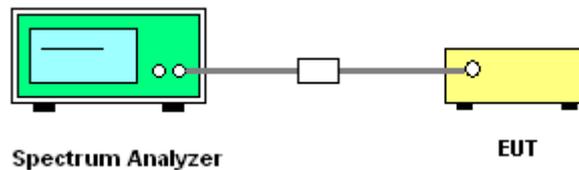
See list of measuring instruments of this test report.

3.3.3 Test Procedures

The transmitter output is connected to the spectrum analyzer. According

- Use peak detector mode and max hold. Set RBW= 1MHz and VBW > 1 MHz. The PPSD is the highest level found across the emission in any 1-MHz band.

3.3.4 Test Setup



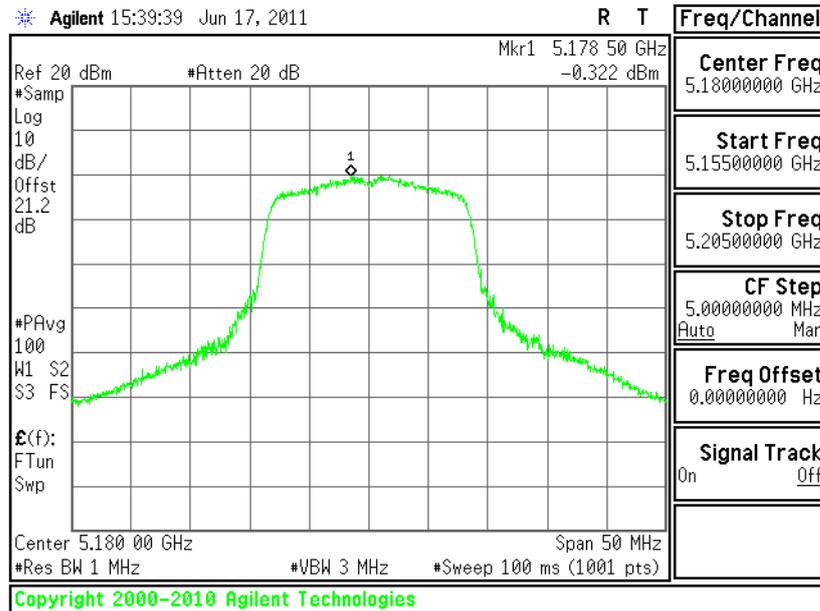


3.3.5 Test Result of Power Spectral Density

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

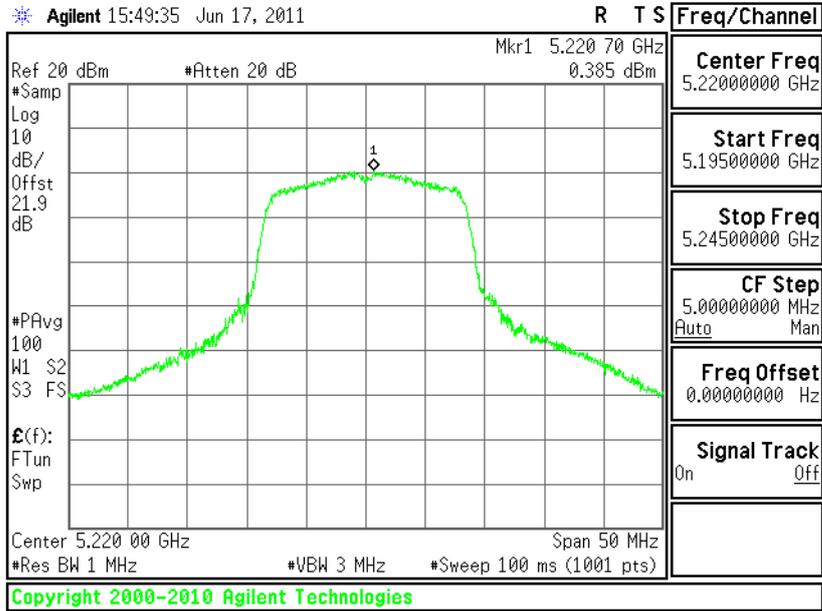
Channel	Frequency (MHz)	802.11a Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
36	5180	-0.322	4	Pass
44	5220	0.385	4	Pass
48	5240	0.051	4	Pass
52	5260	-0.449	11	Pass
60	5300	-0.328	11	Pass
64	5320	-0.625	11	Pass
100	5500	-0.728	11	Pass
120	5600	-0.042	11	Pass
140	5700	0.497	11	Pass

PSD Plot on 802.11a Channel 36

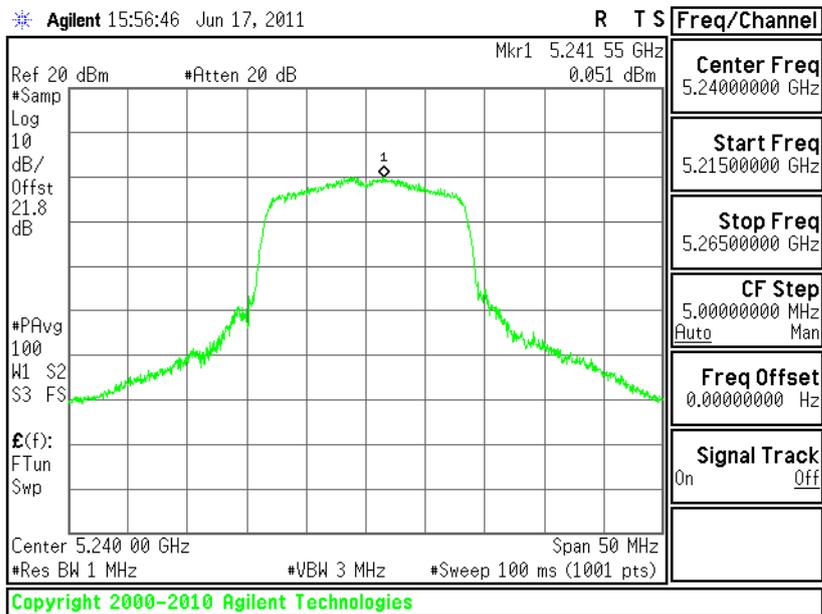




PSD Plot on 802.11a Channel 44

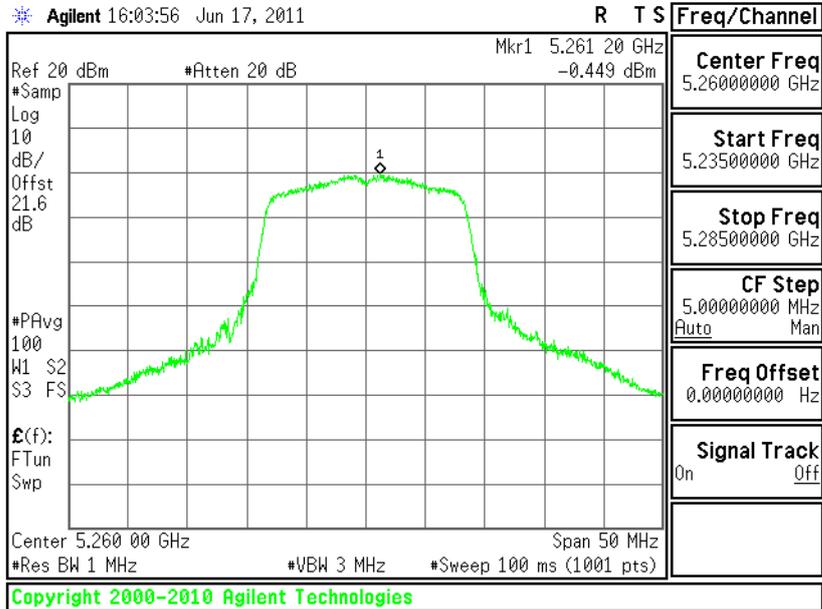


PSD Plot on 802.11a Channel 48

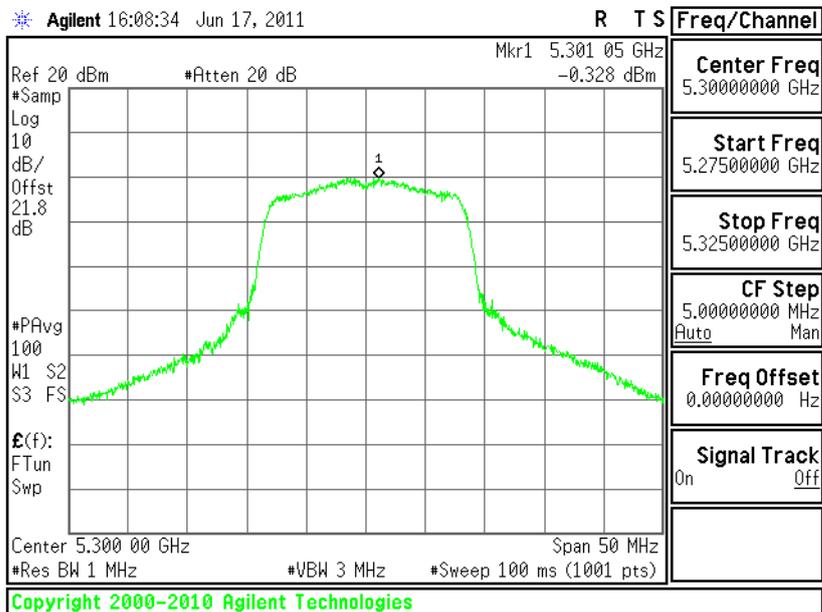




PSD Plot on 802.11a Channel 52

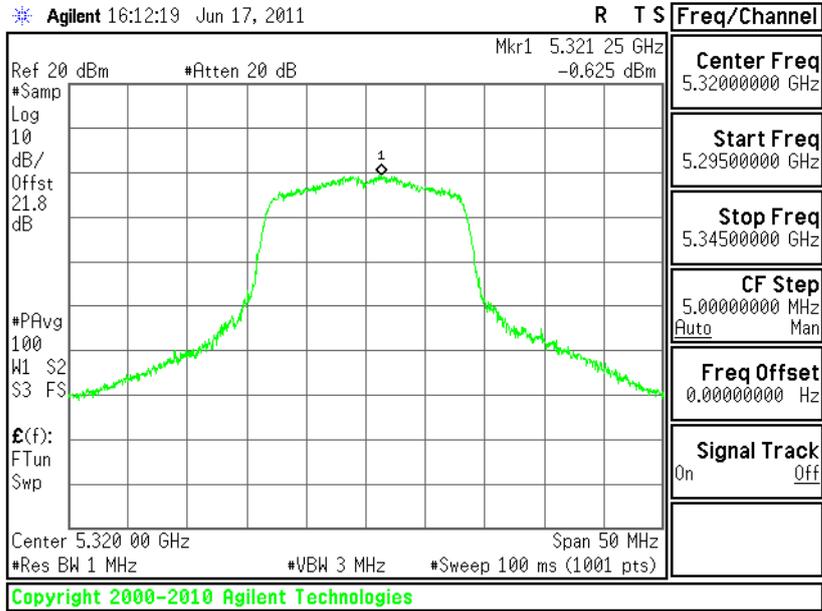


PSD Plot on 802.11a Channel 60

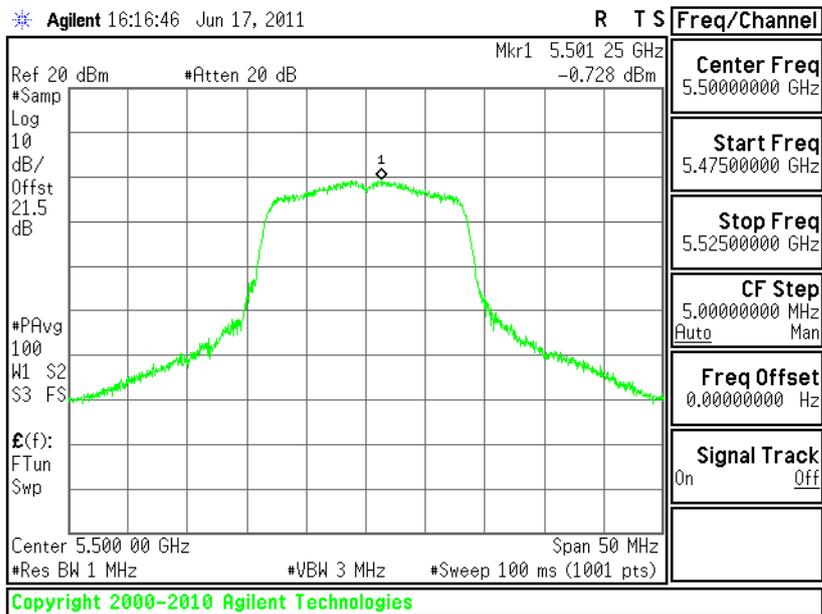




PSD Plot on 802.11a Channel 64

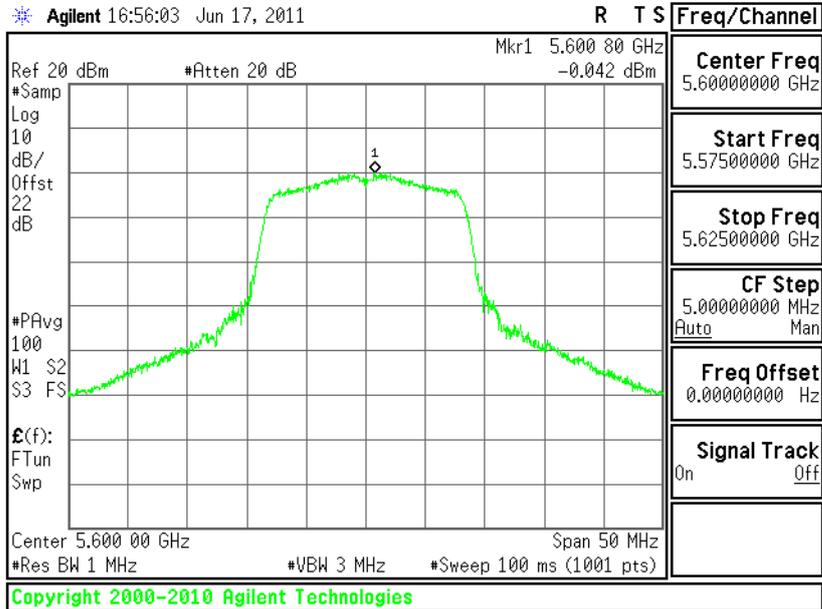


PSD Plot on 802.11a Channel 100

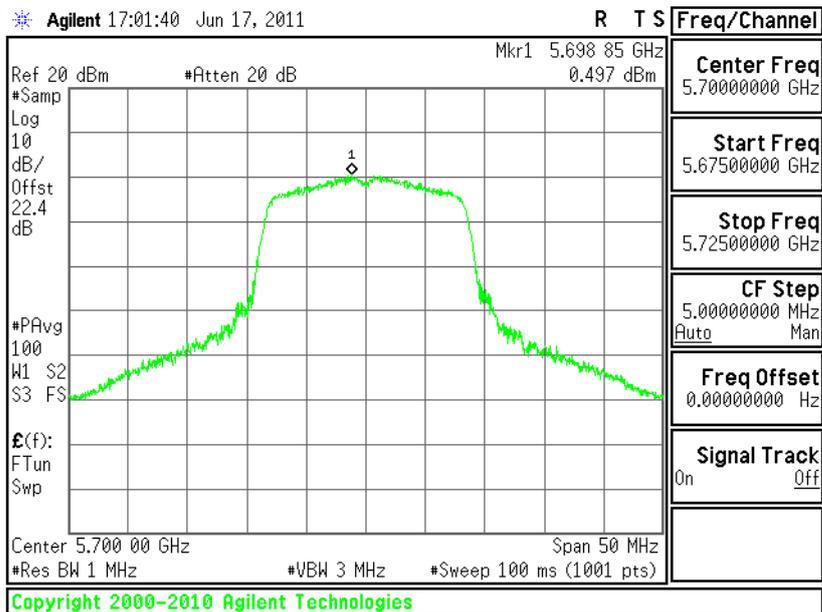




PSD Plot on 802.11a Channel 120



PSD Plot on 802.11a Channel 140

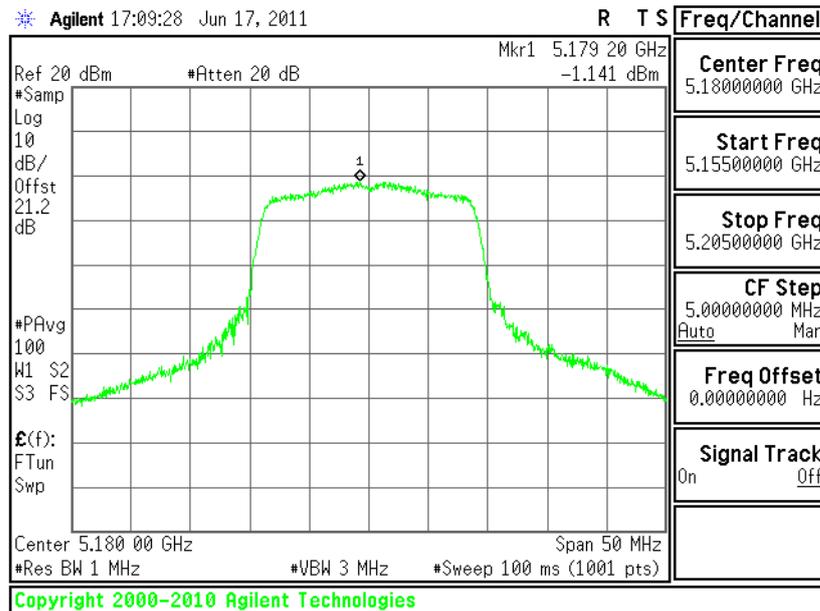




Test Mode :	Mode 10~18	Temperature :	24~26°C
Test Engineer :	Alan Liu	Relative Humidity :	45~49%

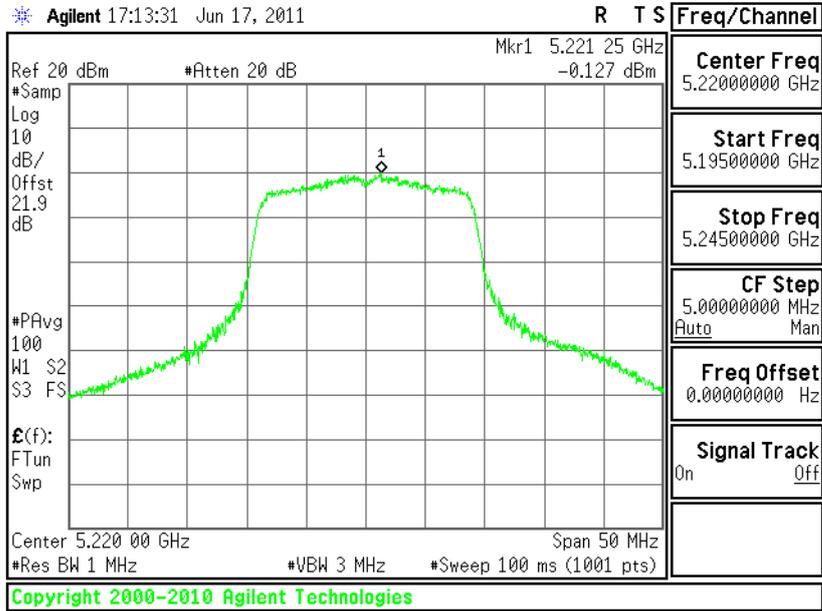
Channel	Frequency (MHz)	802.11n (BW 20MHz) Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
36	5180	-1.141	4	Pass
44	5220	-0.127	4	Pass
48	5240	-0.787	4	Pass
52	5260	-1.397	11	Pass
60	5300	-0.969	11	Pass
64	5320	-0.715	11	Pass
100	5500	0.057	11	Pass
120	5600	-0.766	11	Pass
140	5700	0.498	11	Pass

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

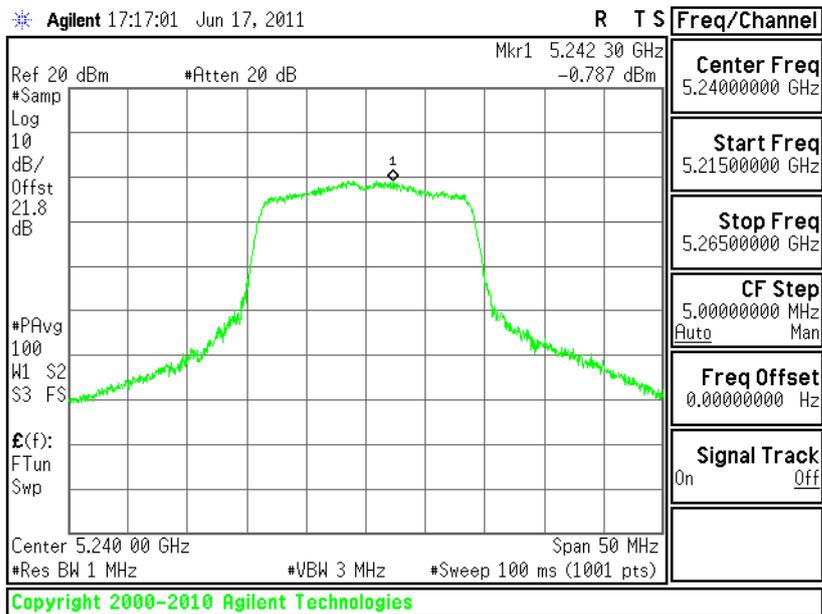




PSD Plot on 802.11n (BW 20MHz) Channel 44

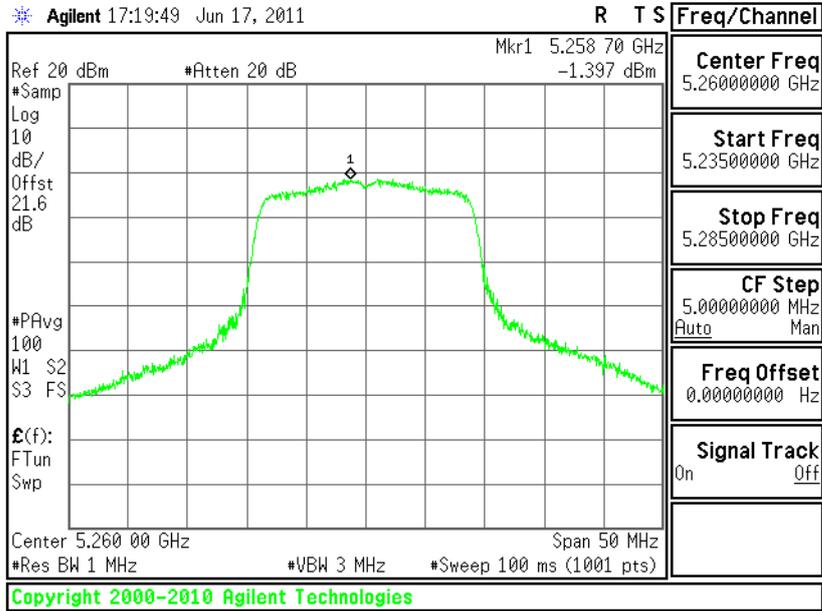


PSD Plot on 802.11n (BW 20MHz) Channel 48

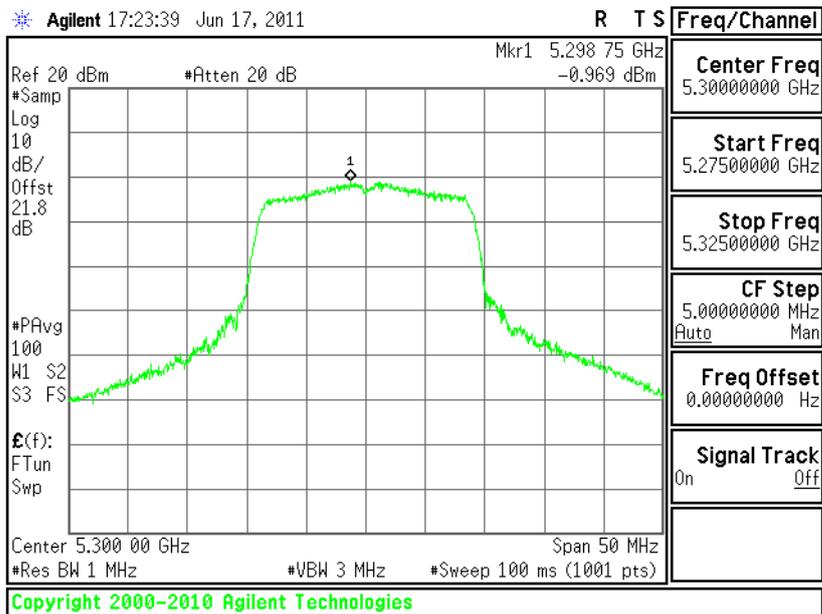




PSD Plot on 802.11n (BW 20MHz) Channel 52

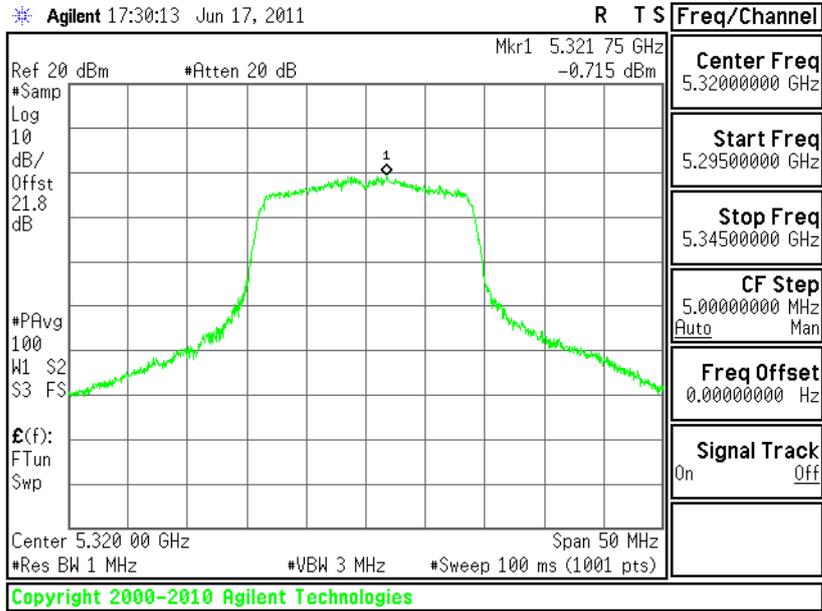


PSD Plot on 802.11n (BW 20MHz) Channel 60

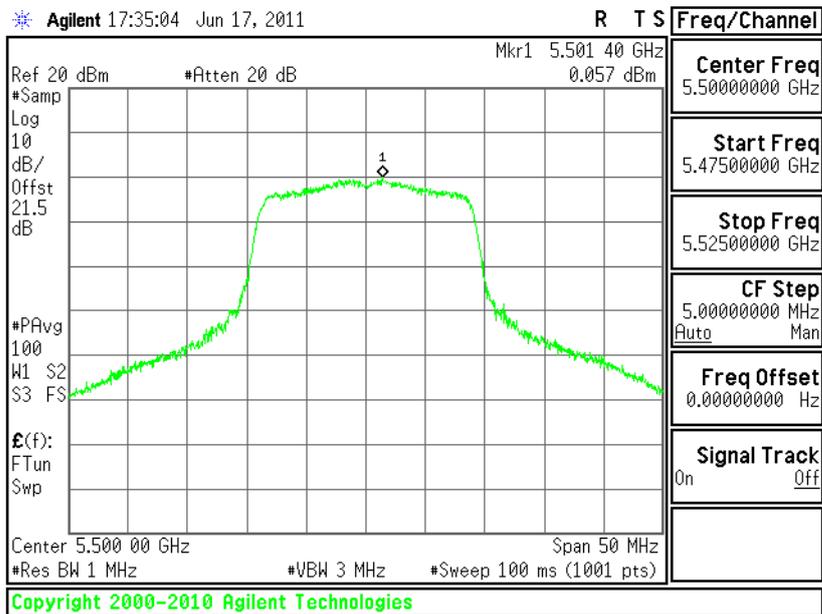




PSD Plot on 802.11n (BW 20MHz) Channel 64

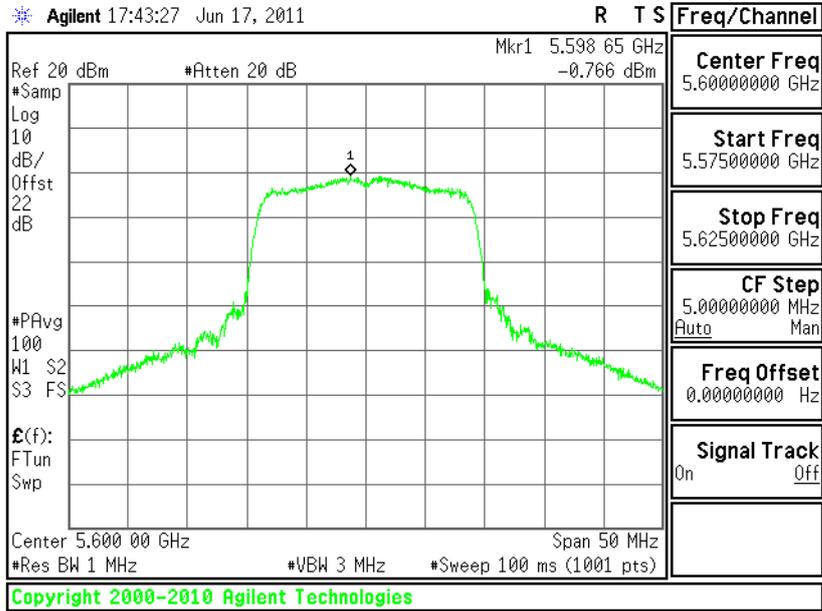


PSD Plot on 802.11n (BW 20MHz) Channel 100

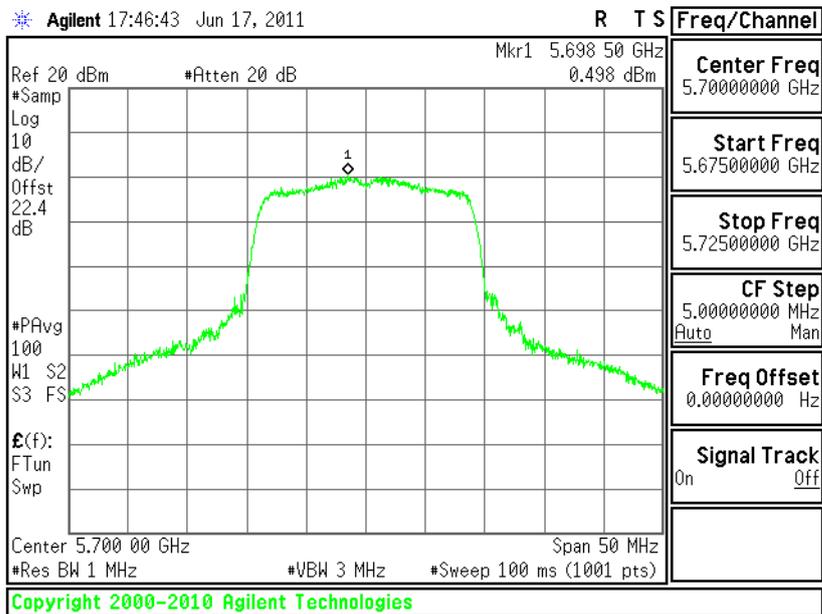




PSD Plot on 802.11n (BW 20MHz) Channel 120



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



3.4 Band Edges Measurement

3.4.1 Limit of Band Edges

- (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 –27 dBm/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) The provisions of Section 15.205 Restricted bands of operation of this part apply to intentional radiators operating under this section.

3.4.2 Measuring Instruments

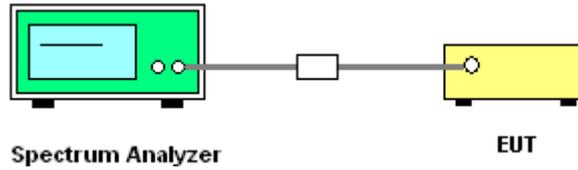
See list of measuring instruments of this test report.

3.4.3 Test Procedures

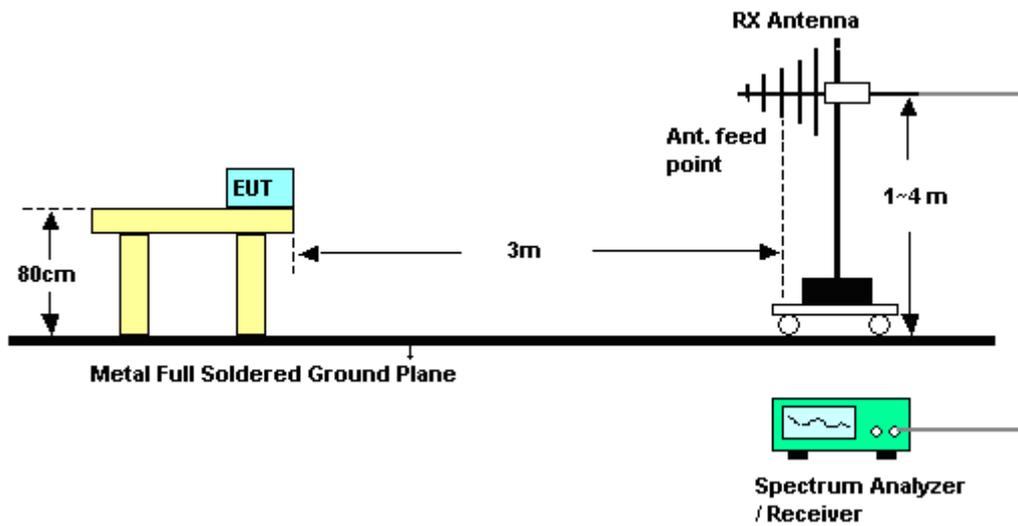
1. Set both RBW / VBW of spectrum analyzer to 1MHz / 3MHz with convenient frequency span including 1MHz bandwidth from band edge.
2. The band edges was measured and recorded.

3.4.4 Test Setup

<Conducted>



<Radiated>

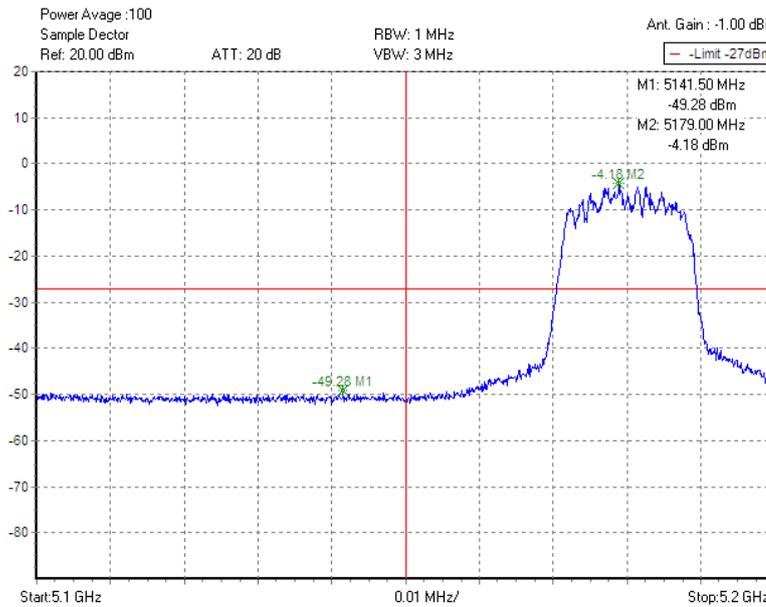




3.4.5 Test Result of Conducted Band Edges

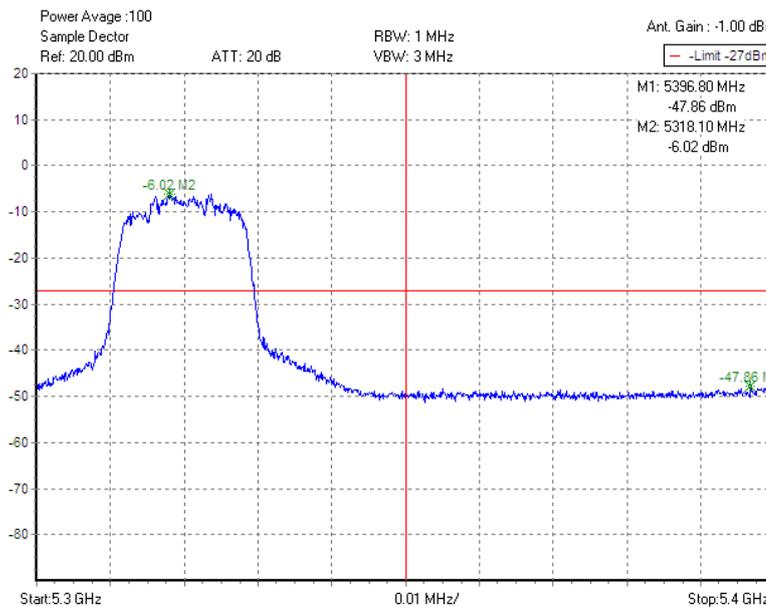
Test Mode :	Mode 1 and 6	Temperature :	24~26°C
Test Engineer :	Alan Liu	Relative Humidity :	45~49%

Low Band Edge Plot on Channel 36



Test result was offsetted with path loss, and antenna gain.

High Band Edge Plot on Channel 64

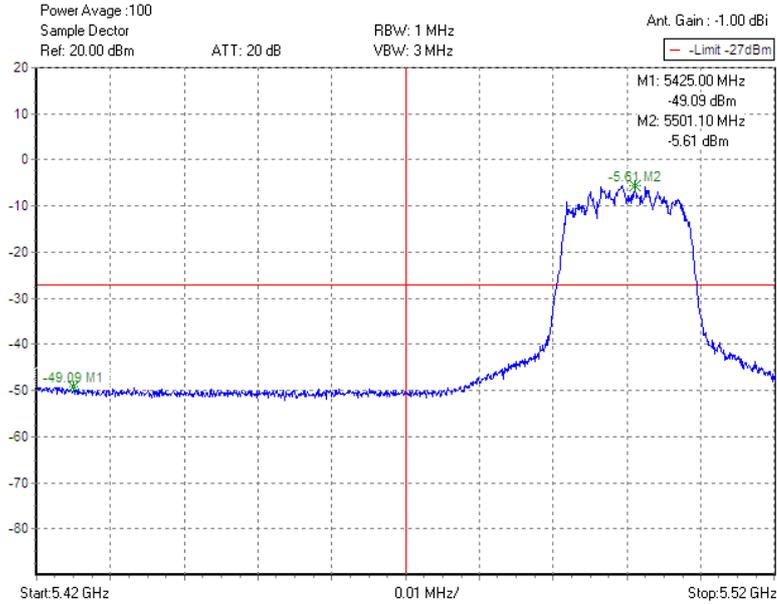


Test result was offsetted with path loss, and antenna gain.

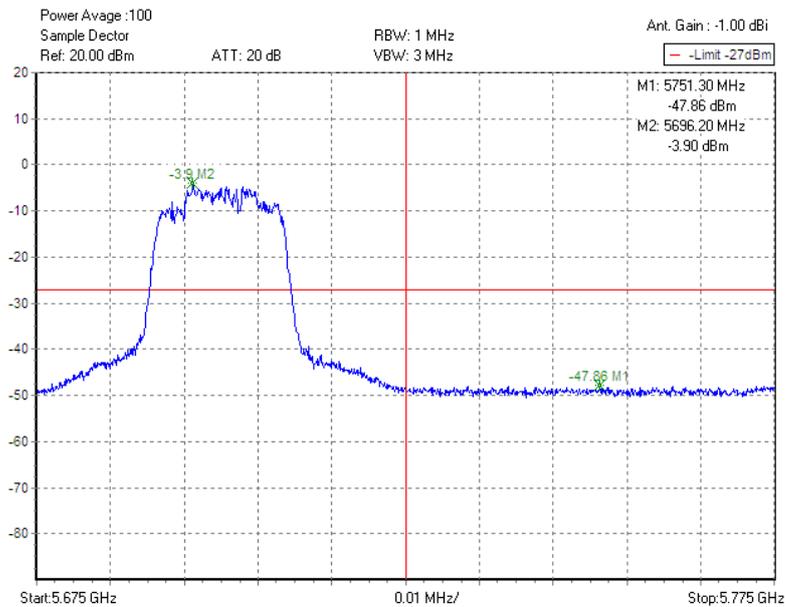


Test Mode :	Mode 7 and 9	Temperature :	24~26°C
Test Engineer :	Alan Liu	Relative Humidity :	45~49%

Low Band Edge Plot on Channel 100



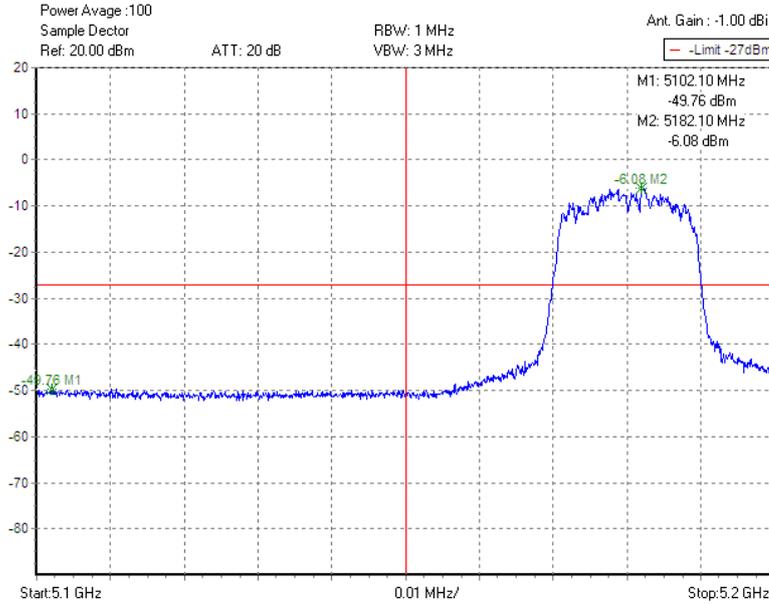
High Band Edge Plot on Channel 64



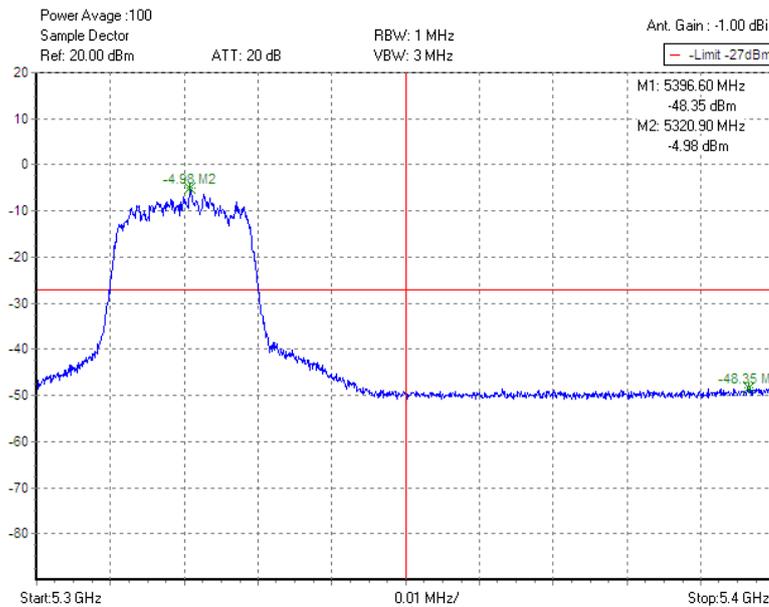


Test Mode :	Mode 10 and 15	Temperature :	24~26°C
Test Engineer :	Alan Liu	Relative Humidity :	45~49%

Low Band Edge Plot on Channel 36



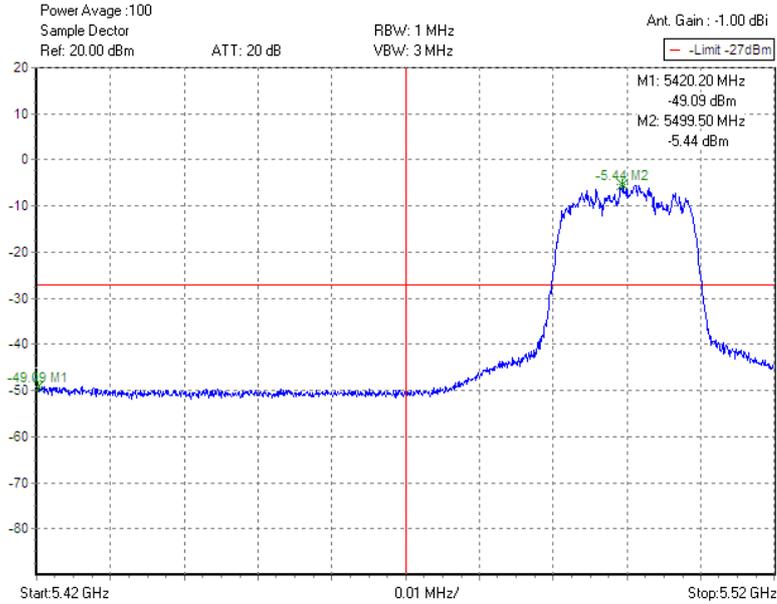
High Band Edge Plot on Channel 64



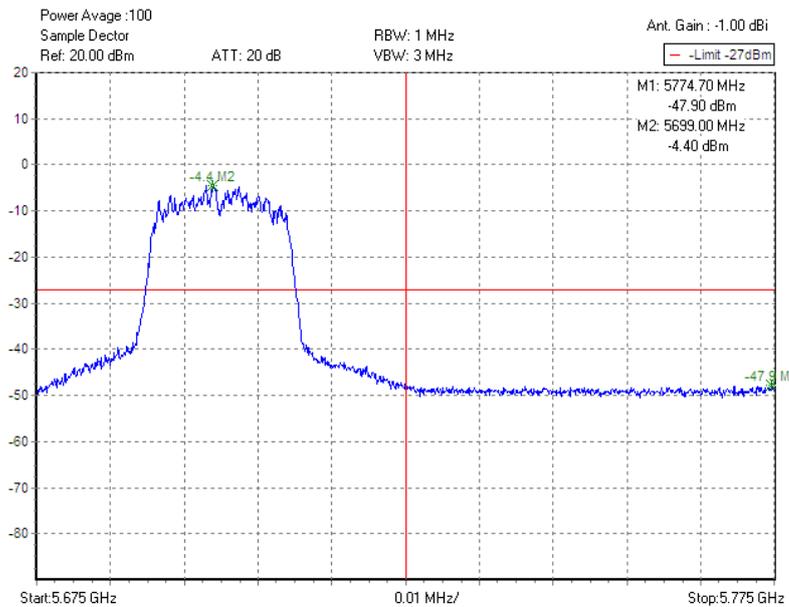


Test Mode :	Mode 16 and 18	Temperature :	24~26°C
Test Engineer :	Alan Liu	Relative Humidity :	45~49%

Low Band Edge Plot on Channel 100



High Band Edge Plot on Channel 140





3.4.6 Test Result of Radiated Band Edges

Test Mode :	Mode 1	Temperature :	23~26°C
Test Band :	802.11a	Relative Humidity :	55~62%%
Test Channel :	36	Test Engineer :	Wii Chang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5150	51.73	-22.27	74	44.45	33.92	6.69	33.33	129	0	Peak
5150	39.23	-14.77	54	31.95	33.92	6.69	33.33	129	0	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5150	50.12	-23.88	74	42.84	33.92	6.69	33.33	113	136	Peak
5150	38.85	-15.15	54	31.57	33.92	6.69	33.33	113	136	Average

Test Mode :	Mode 6	Temperature :	23~26°C
Test Band :	802.11a	Relative Humidity :	55~62%%
Test Channel :	64	Test Engineer :	Wii Chang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5350	49.71	-24.29	74	42.04	34.08	6.83	33.24	125	0	Peak
5350	38.47	-15.53	54	30.8	34.08	6.83	33.24	125	0	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5350	51.13	-22.87	74	43.46	34.08	6.83	33.24	100	122	Peak
5350	38.43	-15.57	54	30.76	34.08	6.83	33.24	100	122	Average



Test Mode :	Mode 7	Temperature :	23~26°C
Test Band :	802.11a	Relative Humidity :	55~62%%
Test Channel :	100	Test Engineer :	Wii Chang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5470	50.84	-17.46	68.3	42.94	34.17	6.92	33.19	134	0	Peak

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5470	49.26	-19.04	68.3	41.36	34.17	6.92	33.19	100	102	Peak

Test Mode :	Mode 9	Temperature :	23~26°C
Test Band :	802.11a	Relative Humidity :	55~62%%
Test Channel :	140	Test Engineer :	Wii Chang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	51.49	-16.81	68.3	43	34.51	7.17	33.19	128	5	Peak

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	51.54	-16.76	68.3	43.05	34.51	7.17	33.19	100	357	Peak



Test Mode :	Mode 10	Temperature :	23~26°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	55~62%%
Test Channel :	36	Test Engineer :	Wii Chang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5150	54.08	-19.92	74	46.8	33.92	6.69	33.33	117	5	Peak
5150	39.27	-14.73	54	31.99	33.92	6.69	33.33	117	5	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5150	49.77	-24.23	74	42.49	33.92	6.69	33.33	100	132	Peak
5150	38.88	-15.12	54	31.6	33.92	6.69	33.33	100	132	Average

Test Mode :	Mode 15	Temperature :	23~26°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	55~62%%
Test Channel :	64	Test Engineer :	Wii Chang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5350	50.15	-23.85	74	42.48	34.08	6.83	33.24	127	4	Peak
5350	38.62	-15.38	54	30.95	34.08	6.83	33.24	127	4	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5350	51.23	-22.77	74	43.56	34.08	6.83	33.24	102	151	Peak
5350	38.47	-15.53	54	30.8	34.08	6.83	33.24	102	151	Average



Test Mode :	Mode 16	Temperature :	23~26°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	55~62%%
Test Channel :	100	Test Engineer :	Wii Chang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5470	58.06	-10.24	68.3	50.16	34.17	6.92	33.19	121	8	Peak

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5470	49.88	-18.42	68.3	41.98	34.17	6.92	33.19	100	160	Peak

Test Mode :	Mode 18	Temperature :	23~26°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	55~62%%
Test Channel :	140	Test Engineer :	Wii Chang

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	56.16	-12.14	68.3	47.67	34.51	7.17	33.19	106	6	Peak

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	52.46	-15.84	68.3	43.97	34.51	7.17	33.19	102	130	Peak

3.5 Conducted Spurious Emission

3.5.1 Limit of Spurious Emission Measurement

- (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 -27 dBm/MHz.
- (2) 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.
- (3) 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.

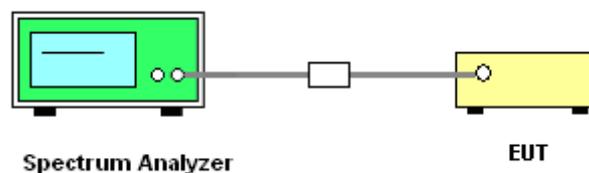
3.5.2 Measuring Instruments

See list of measuring instruments of this test report.

3.5.3 Test Procedure

1. The transmitter output was connected to the spectrum analyzer via a low lose cable.
2. Set RBW = VBW = 1 MHz, Video bandwidth (VBW), scan from 30 MHz to 40 GHz.

3.5.4 Test Setup





3.5.5 Test Result

Test Mode :	Mode 1~9	Temperature :	24~26°C
Test Band :	802.11a	Relative Humidity :	45~49%
Test Channel :	36, 44, 48, 52, 60, 64, 100, 120, 140	Test Engineer :	Alan Liu

<30 MHz ~ 3 GHz>

Channel	Frequency (MHz)	Frequency (MHz)	Level (dBm)	Antenna Gain (dBi)	EIRP Test Result (dBm)	Limit (dBm)
36	5180	2025.84	-51.17	-1	-52.17	-27
44	5220	2881.2	-49.7	-1	-50.7	-27
48	5240	3000	-49.84	-1	-50.84	-27
52	5260	2287.2	-50.7	-1	-51.7	-27
60	5300	2910.9	-50.47	-1	-51.47	-27
64	5320	2964.36	-49.47	-1	-50.47	-27
100	5500	2964.36	-50.21	-1	-51.21	-27
120	5600	2281.26	-50.45	-1	-51.45	-27
140	5700	3000	-50.11	-1	-51.11	-27

<3 GHz ~ 13.6 GHz>

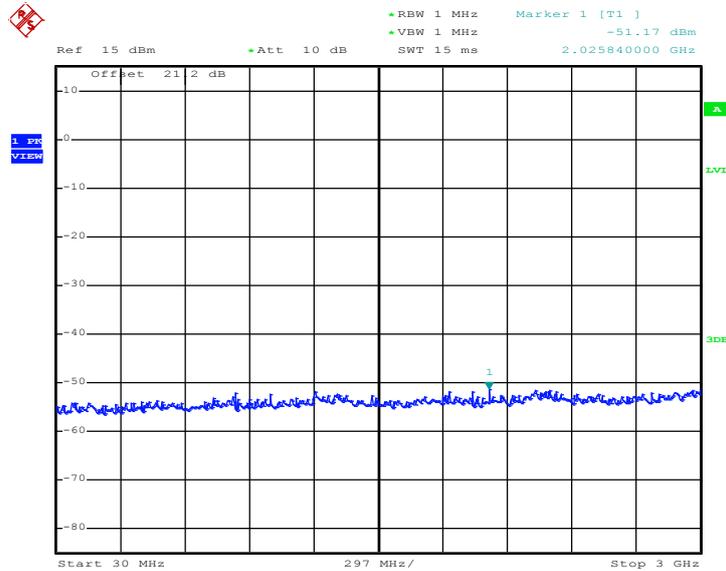
Channel	Frequency (MHz)	Frequency (MHz)	Level (dBm)	Antenna Gain (dBi)	EIRP Test Result (dBm)	Limit (dBm)
36	5180	5332	-41.58	-1	-42.58	-27
44	5220	5374.4	-40.71	-1	-41.71	-27
48	5240	5310.8	-41.78	-1	-42.78	-27
52	5260	5416.8	-42.43	-1	-43.43	-27
60	5300	5374.4	-41.55	-1	-42.55	-27
64	5320	5395.6	-42.28	-1	-43.28	-27
100	5500	5586.4	-42.7	-1	-43.7	-27
120	5600	5756	-42.71	-1	-43.71	-27
140	5700	5607.6	-41.97	-1	-42.97	-27



<13.6 GHz ~ 40 GHz>

Channel	Frequency (MHz)	Frequency (MHz)	Level (dBm)	Antenna Gain (dBi)	EIRP Test Result (dBm)	Limit (dBm)
36	5180	39947.2	-31.05	-1	-32.05	-27
44	5220	39947.2	-30.54	-1	-31.54	-27
48	5240	39947.2	-30.16	-1	-31.16	-27
52	5260	40000	-30.29	-1	-31.29	-27
60	5300	39947.2	-29.95	-1	-30.95	-27
64	5320	39947.2	-30.5	-1	-31.5	-27
100	5500	40000	-31.12	-1	-32.12	-27
120	5600	39947.2	-30.39	-1	-31.39	-27
140	5700	39894.4	-29.95	-1	-30.95	-27

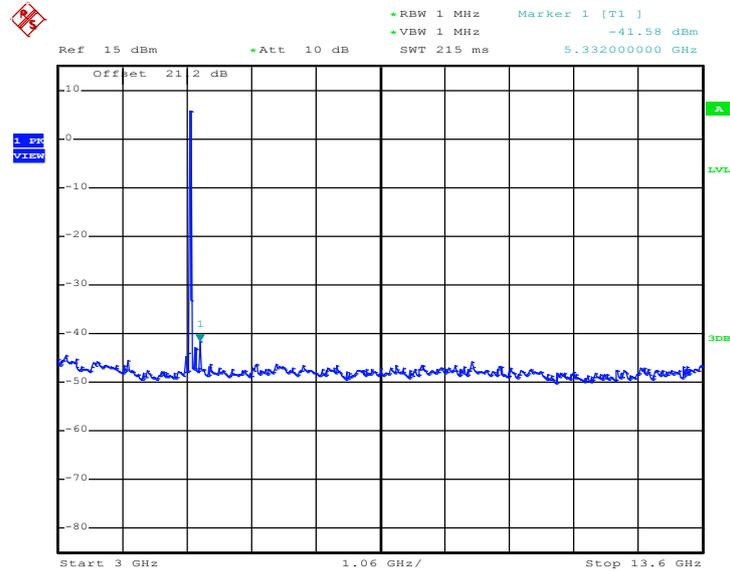
Mode 1 : Conducted Spurious Emission Plot between 802.11a 30 MHz ~ 3 GHz



Date: 14.MAY.2011 09:50:48

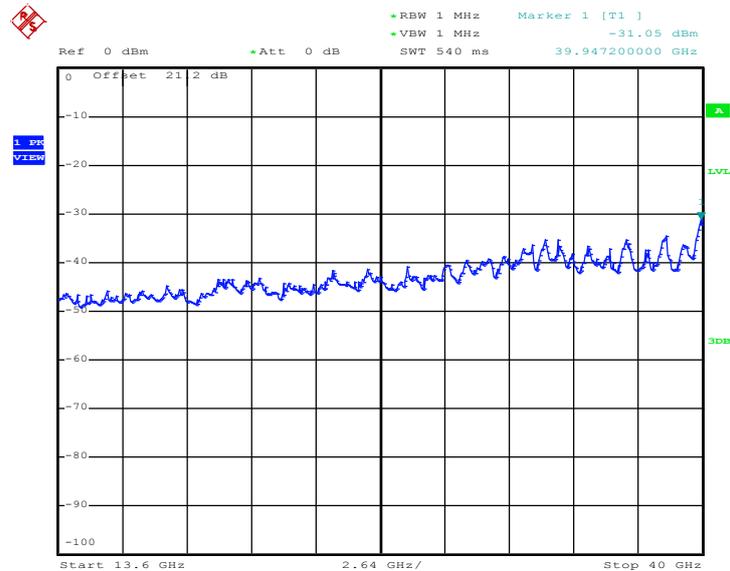


Mode 1 : Conducted Spurious Emission Plot between
802.11a 3 GHz ~ 13.6 GHz



Date: 14.MAY.2011 09:50:59

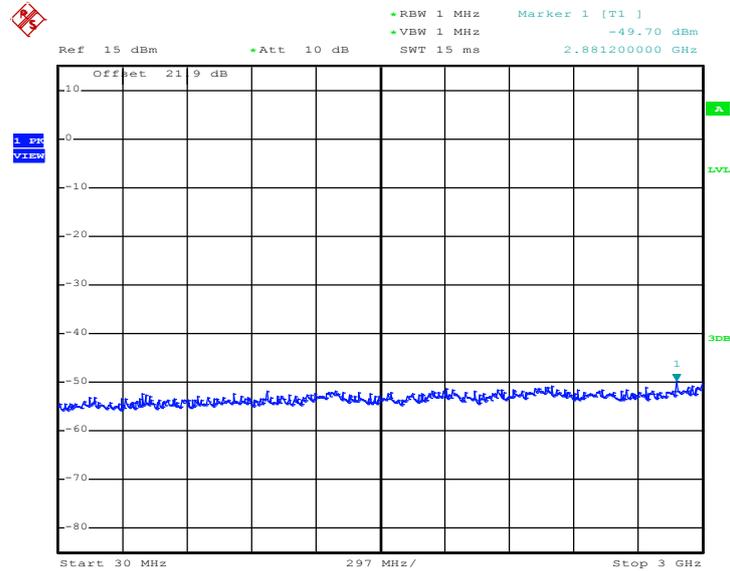
Mode 1 : Conducted Spurious Emission Plot between
802.11a 13.6 GHz ~ 40 GHz



Date: 14.MAY.2011 09:51:11

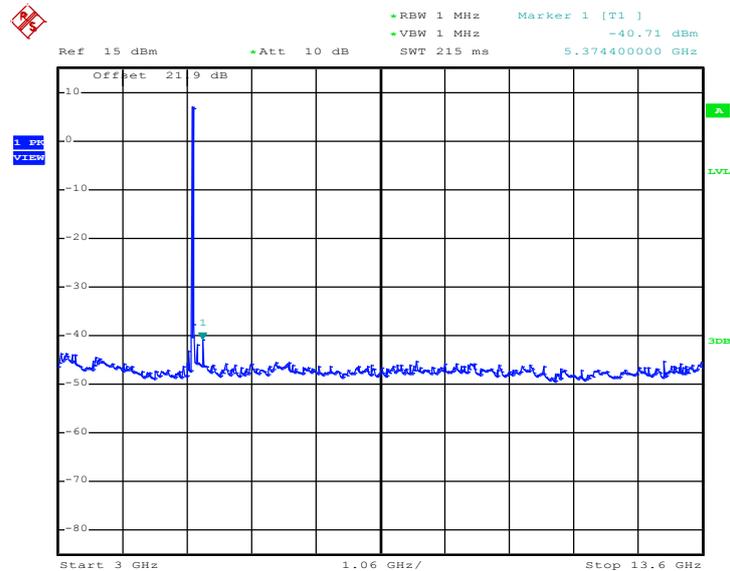


**Mode 2 : Conducted Spurious Emission Plot between
802.11a 30 MHz ~ 3 GHz**



Date: 14.MAY.2011 09:58:46

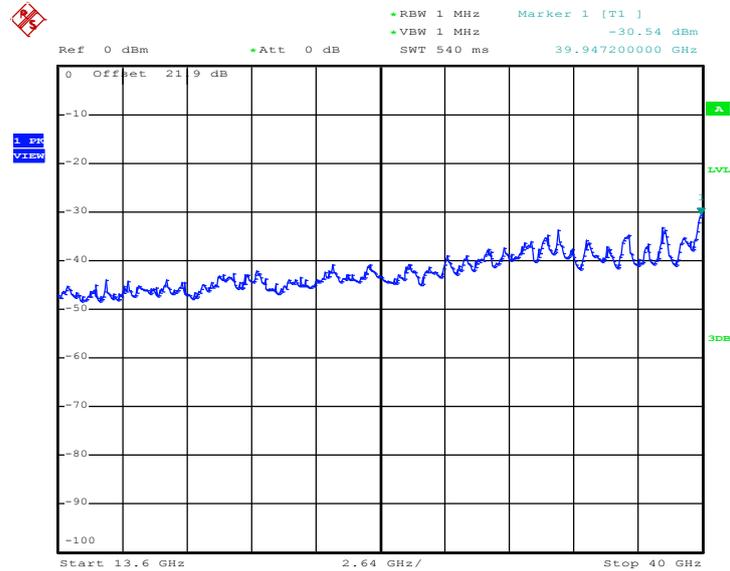
**Mode 2 : Conducted Spurious Emission Plot between
802.11a 3 GHz ~ 13.6 GHz**



Date: 14.MAY.2011 09:58:57

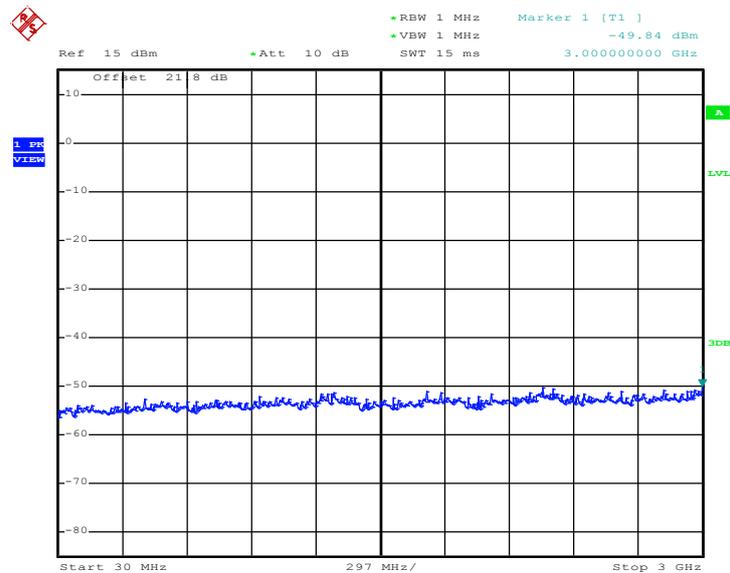


Mode 2 : Conducted Spurious Emission Plot between 802.11a 13.6 GHz ~ 40 GHz



Date: 14.MAY.2011 09:59:09

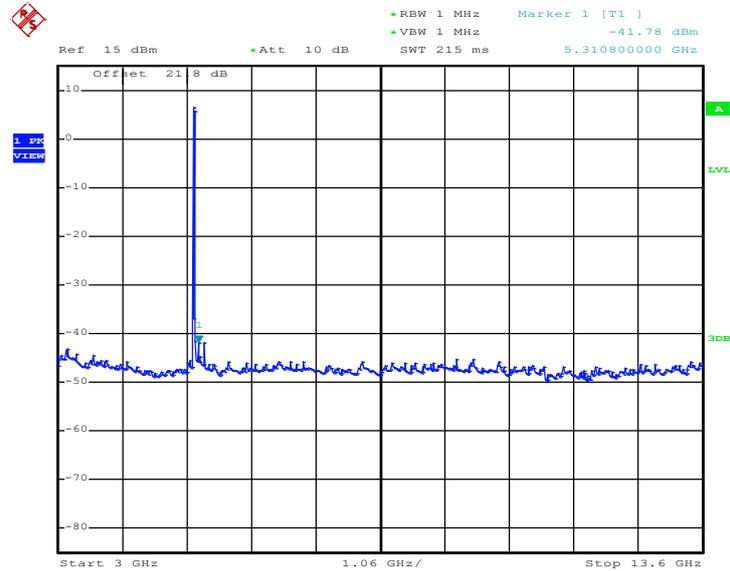
Mode 3 : Conducted Spurious Emission Plot between 802.11a 30 MHz ~ 3 GHz



Date: 14.MAY.2011 09:59:33

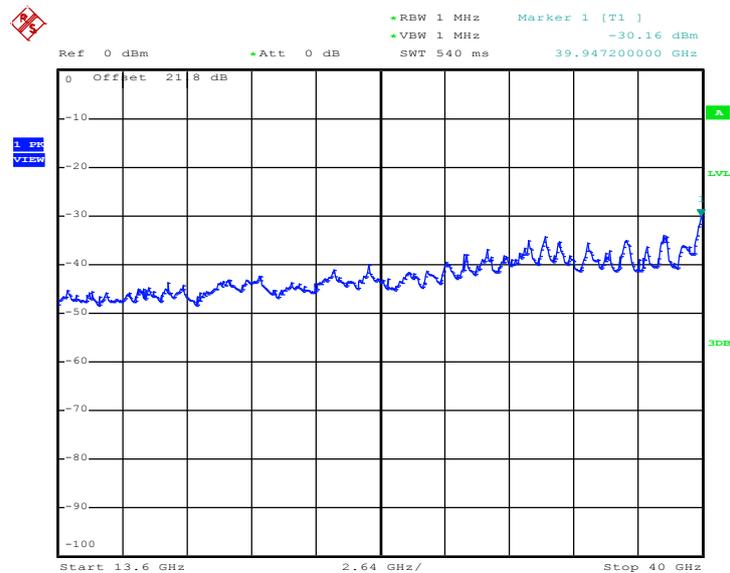


Mode 3 : Conducted Spurious Emission Plot between 802.11a 3 GHz ~ 13.6 GHz



Date: 14.MAY.2011 09:59:44

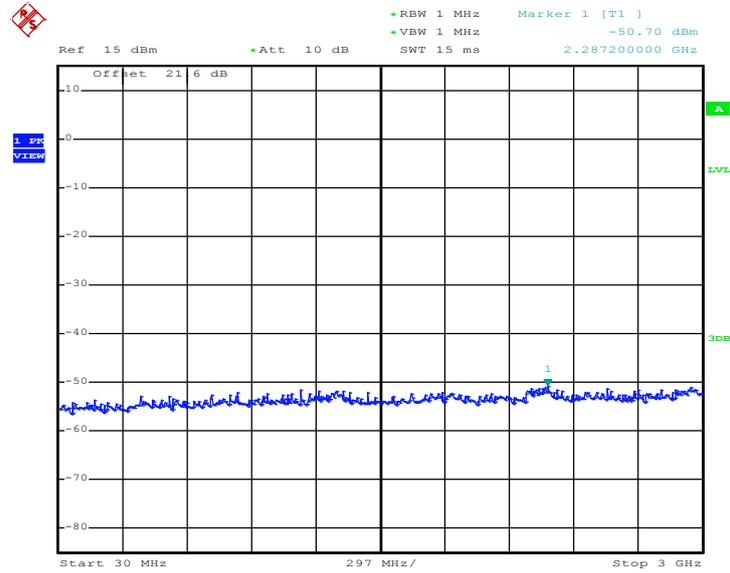
Mode 3 : Conducted Spurious Emission Plot between 802.11a 13.6 GHz ~ 40 GHz



Date: 14.MAY.2011 09:59:55

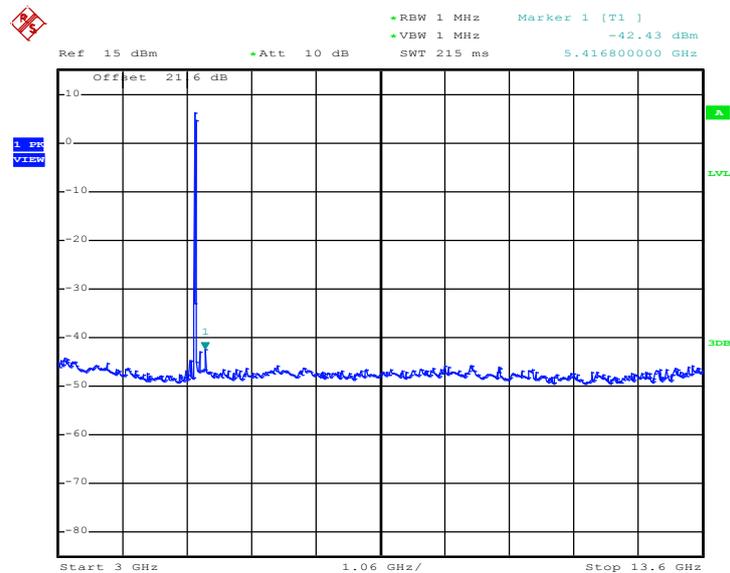


Mode 4 : Conducted Spurious Emission Plot between 802.11a 30 MHz ~ 3 GHz



Date: 14.MAY.2011 10:00:20

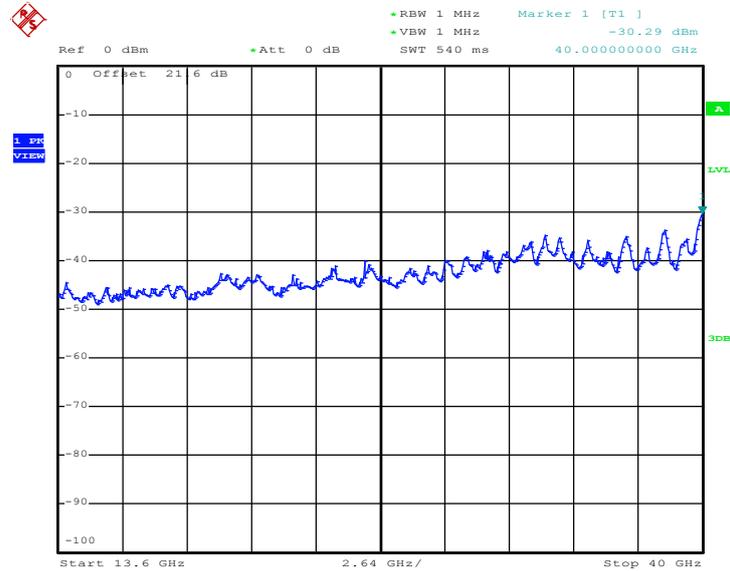
Mode 4 : Conducted Spurious Emission Plot between 802.11a 3 GHz ~ 13.6 GHz



Date: 14.MAY.2011 10:00:31

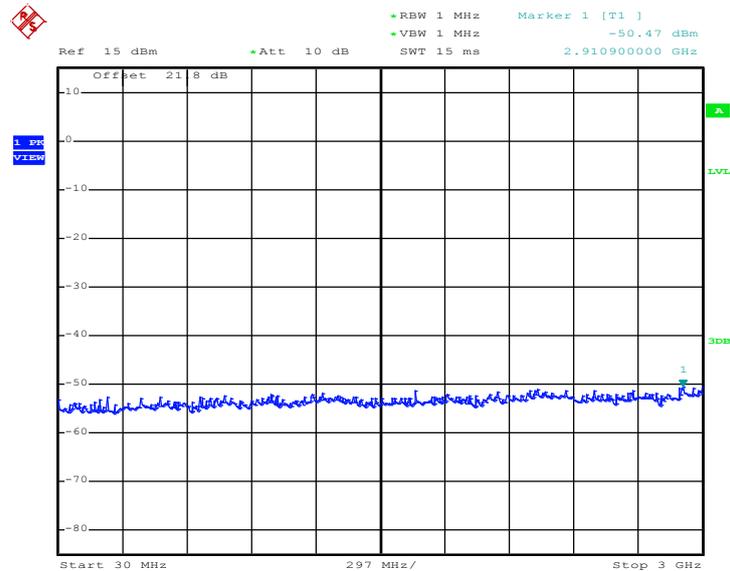


**Mode 4 : Conducted Spurious Emission Plot between
802.11a 13.6 GHz ~ 40 GHz**



Date: 14.MAY.2011 10:00:43

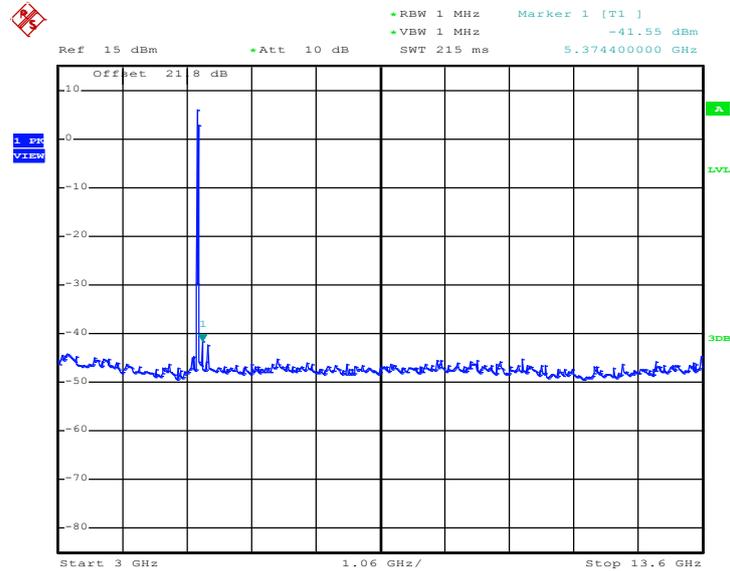
**Mode 5 : Conducted Spurious Emission Plot between
802.11a 30 MHz ~ 3 GHz**



Date: 14.MAY.2011 10:01:05

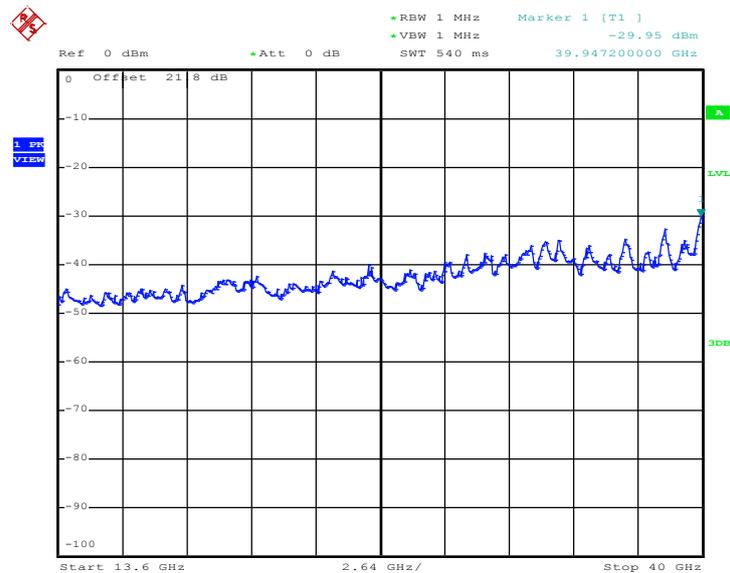


Mode 5 : Conducted Spurious Emission Plot between
802.11a 3 GHz ~ 13.6 GHz



Date: 14.MAY.2011 10:01:17

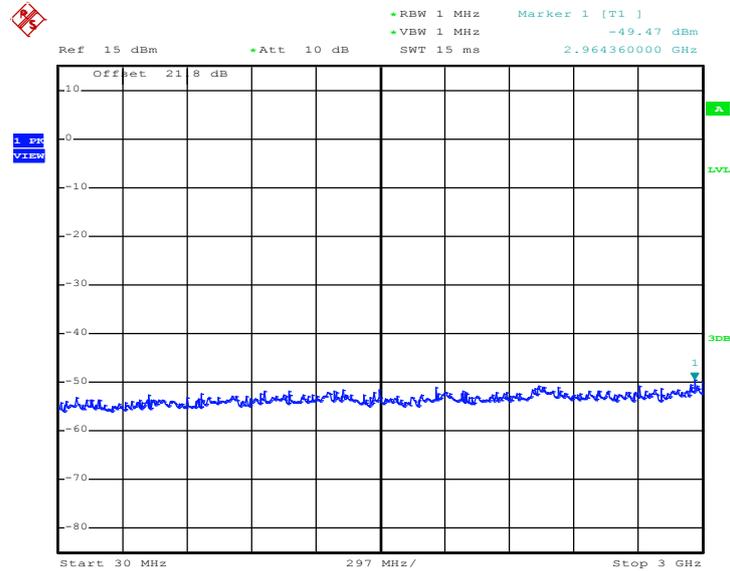
Mode 5 : Conducted Spurious Emission Plot between
802.11a 13.6 GHz ~ 40 GHz



Date: 14.MAY.2011 10:01:28

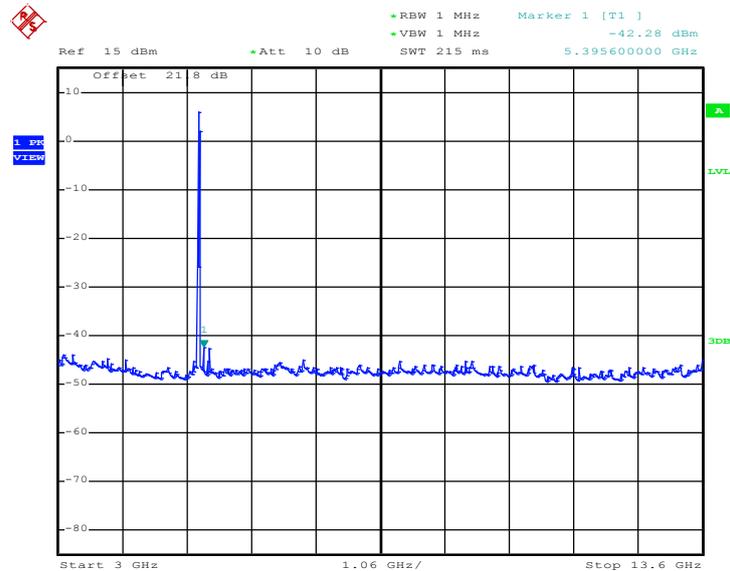


Mode 6 : Conducted Spurious Emission Plot between 802.11a 30 MHz ~ 3 GHz



Date: 14.MAY.2011 10:01:51

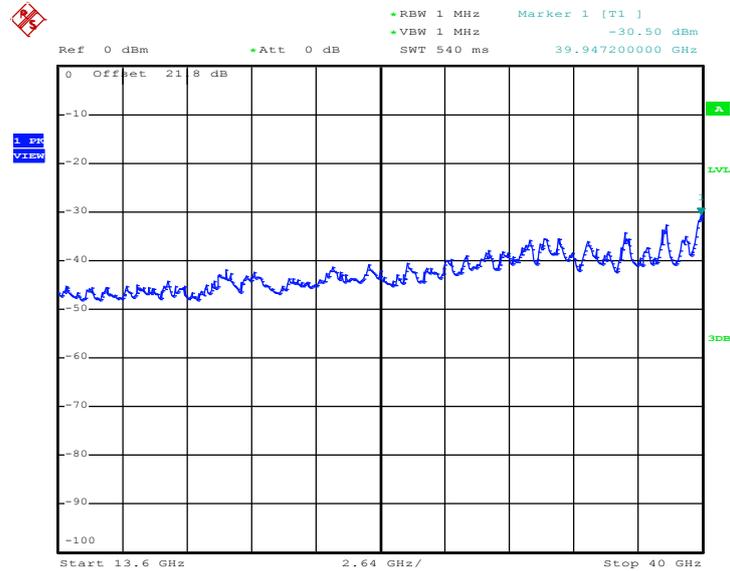
Mode 6 : Conducted Spurious Emission Plot between 802.11a 3 GHz ~ 13.6 GHz



Date: 14.MAY.2011 10:02:02

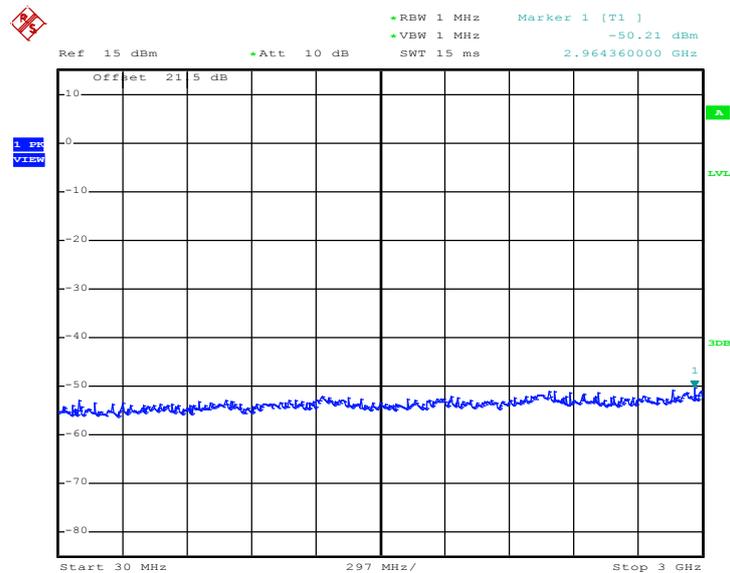


Mode 6 : Conducted Spurious Emission Plot between 802.11a 13.6 GHz ~ 40 GHz



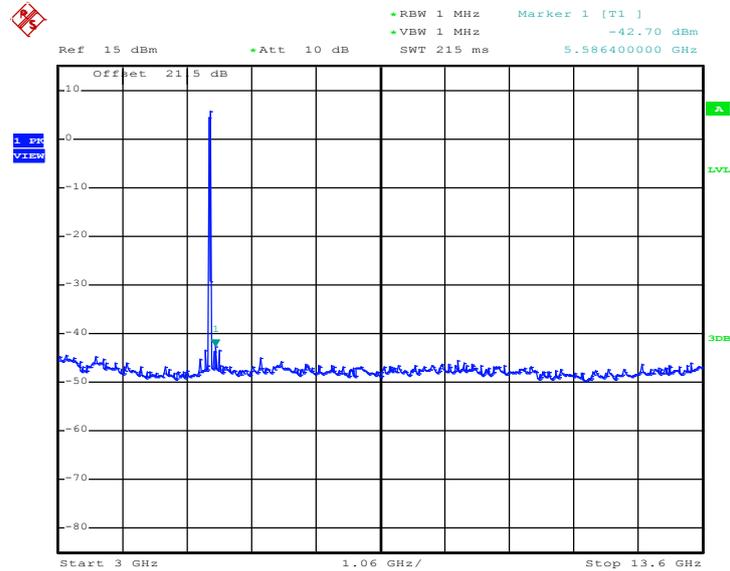
Date: 14.MAY.2011 10:02:13

Mode 7 : Conducted Spurious Emission Plot between 802.11a 30 MHz ~ 3 GHz



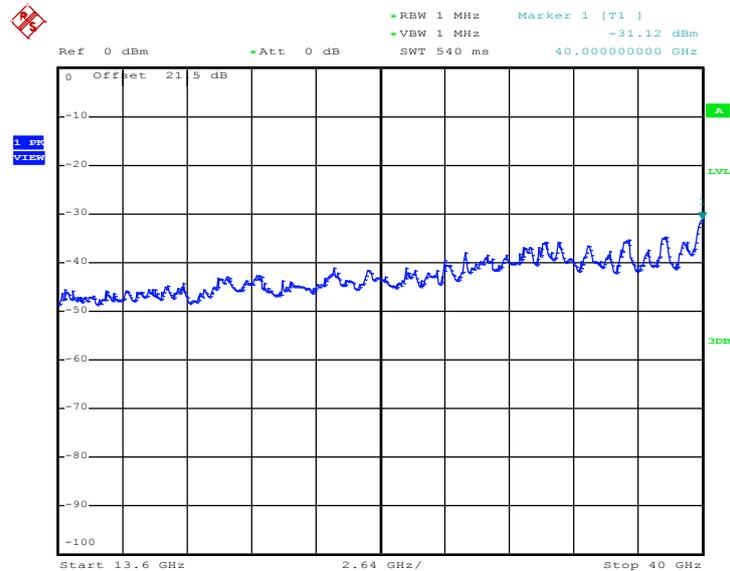
Date: 14.MAY.2011 10:03:05

**Mode 7 : Conducted Spurious Emission Plot between
802.11a 3 GHz ~ 13.6 GHz**



Date: 14.MAY.2011 10:03:16

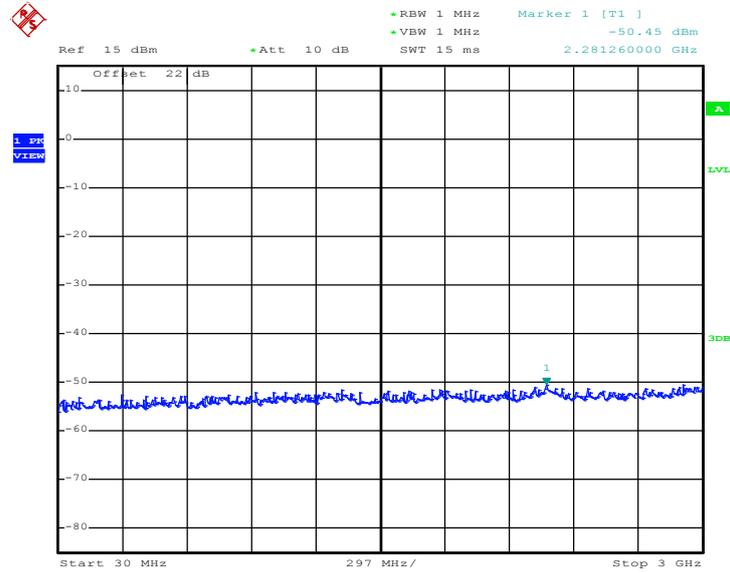
**Mode 7 : Conducted Spurious Emission Plot between
802.11a 13.6 GHz ~ 40 GHz**



Date: 14.MAY.2011 10:03:28

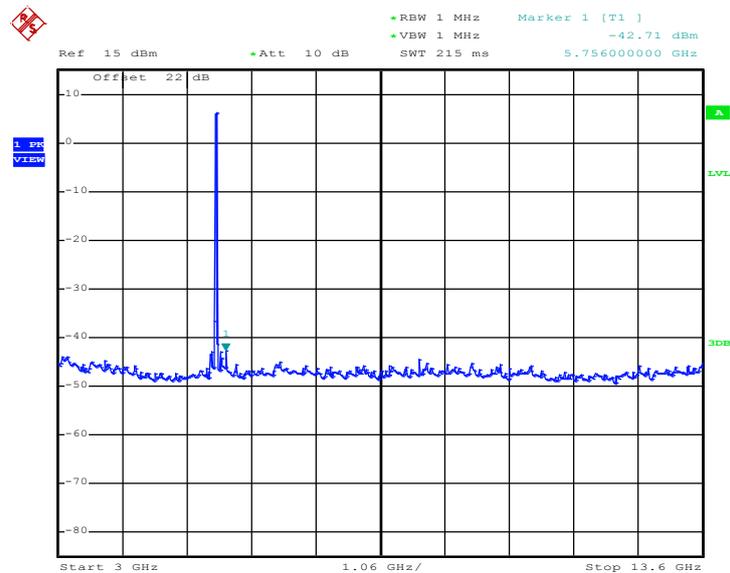


**Mode 8 : Conducted Spurious Emission Plot between
802.11a 30 MHz ~ 3 GHz**



Date: 14.MAY.2011 10:05:31

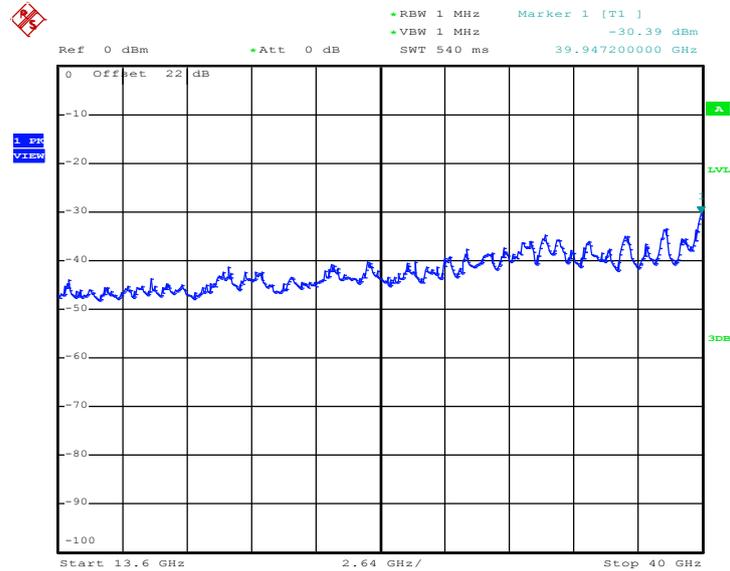
**Mode 8 : Conducted Spurious Emission Plot between
802.11a 3 GHz ~ 13.6 GHz**



Date: 14.MAY.2011 10:05:42

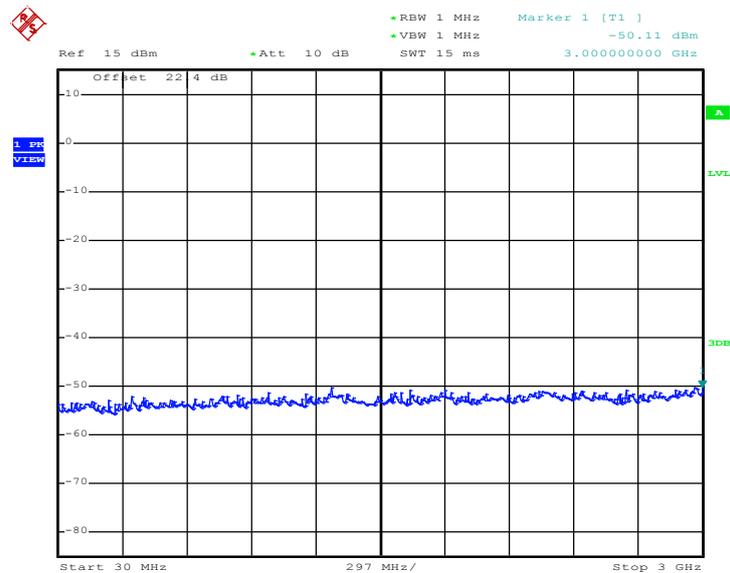


Mode 8 : Conducted Spurious Emission Plot between 802.11a 13.6 GHz ~ 40 GHz



Date: 14.MAY.2011 10:05:53

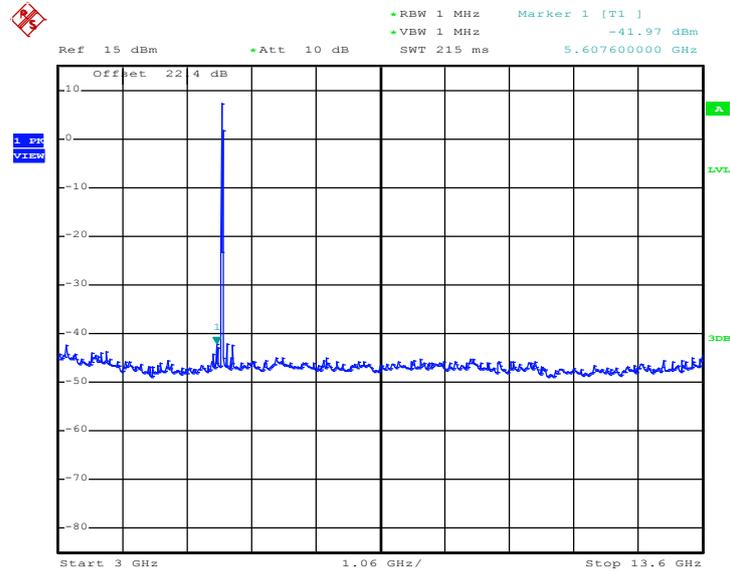
Mode 9 : Conducted Spurious Emission Plot between 802.11a 30 MHz ~ 3 GHz



Date: 14.MAY.2011 10:06:18

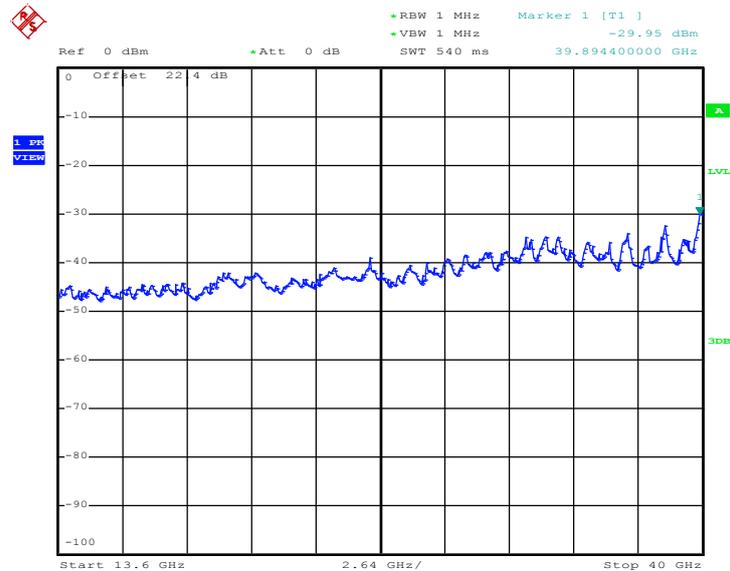


Mode 9 : Conducted Spurious Emission Plot between
802.11a 3 GHz ~ 13.6 GHz



Date: 14.MAY.2011 10:06:29

Mode 9 : Conducted Spurious Emission Plot between
802.11a 13.6 GHz ~ 40 GHz



Date: 14.MAY.2011 10:06:41



Test Mode :	Mode 10~18	Temperature :	24~26°C
Test Band :	802.11n (BW 20MHz)	Relative Humidity :	45~49%
Test Channel :	36, 44, 48, 52, 60, 64, 100, 120, 140	Test Engineer :	Alan Liu

<30 MHz ~ 3 GHz>

Channel	Frequency (MHz)	Frequency (MHz)	Level (dBm)	Antenna Gain (dBi)	EIRP Test Result (dBm)	Limit (dBm)
36	5180	2257.5	-51.18	-1	-52.18	-27
44	5220	2970.3	-50.17	-1	-51.17	-27
48	5240	2982.18	-49.71	-1	-50.71	-27
52	5260	2708.94	-51.02	-1	-52.02	-27
60	5300	2251.56	-50.14	-1	-51.14	-27
64	5320	2976.24	-49.34	-1	-50.34	-27
100	5500	2293.14	-50.22	-1	-51.22	-27
120	5600	2269.38	-49.96	-1	-50.96	-27
140	5700	2994.06	-49.38	-1	-50.38	-27

<3 GHz ~ 13.6 GHz>

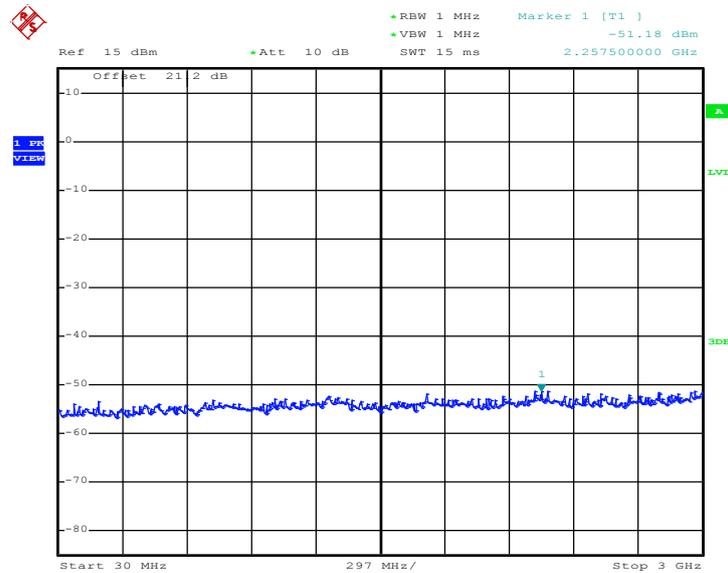
Channel	Frequency (MHz)	Frequency (MHz)	Level (dBm)	Antenna Gain (dBi)	EIRP Test Result (dBm)	Limit (dBm)
36	5180	5332	-43.21	-1	-44.21	-27
44	5220	5289.6	-41.8	-1	-42.8	-27
48	5240	5395.6	-41.73	-1	-42.73	-27
52	5260	5416.8	-42.47	-1	-43.47	-27
60	5300	5374.4	-42.06	-1	-43.06	-27
64	5320	5395.6	-43.19	-1	-44.19	-27
100	5500	5586.4	-42.9	-1	-43.9	-27
120	5600	5671.2	-42.85	-1	-43.85	-27
140	5700	5777.2	-41.16	-1	-42.16	-27



<13.6 GHz ~ 40 GHz>

Channel	Frequency (MHz)	Frequency (MHz)	Level (dBm)	Antenna Gain (dBi)	EIRP Test Result (dBm)	Limit (dBm)
36	5180	39894.4	-30.75	-1	-31.75	-27
44	5220	39947.2	-30.43	-1	-31.43	-27
48	5240	39947.2	-30.74	-1	-31.74	-27
52	5260	39947.2	-31.19	-1	-32.19	-27
60	5300	39894.4	-29.98	-1	-30.98	-27
64	5320	40000	-30.96	-1	-31.96	-27
100	5500	39947.2	-30.61	-1	-31.61	-27
120	5600	40000	-31.2	-1	-32.2	-27
140	5700	40000	-29.66	-1	-30.66	-27

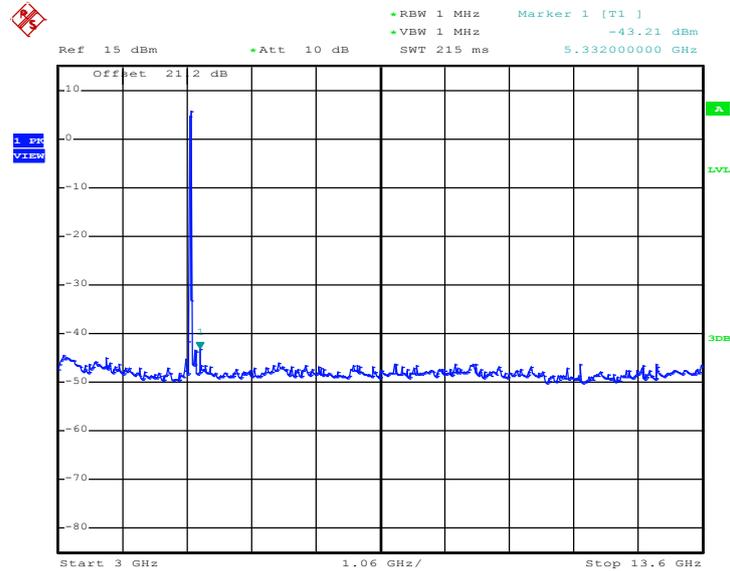
Mode 10 : Conducted Spurious Emission Plot between 802.11n 30 MHz ~ 3 GHz



Date: 14.MAY.2011 10:18:54

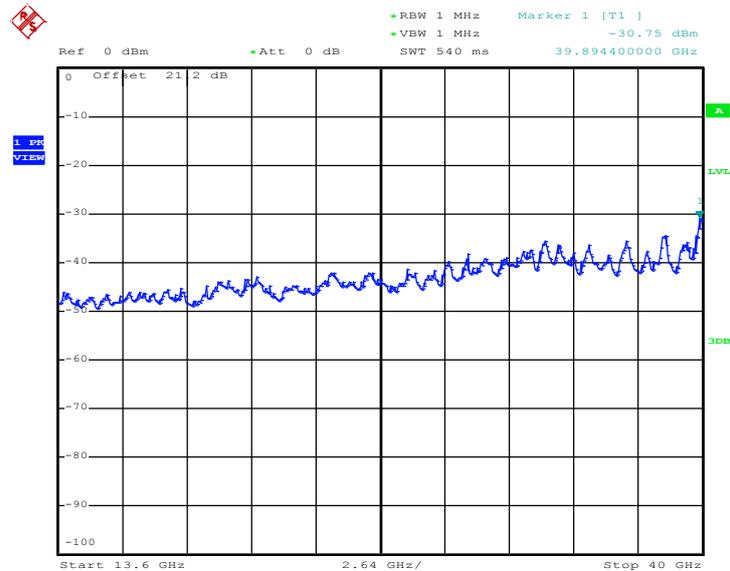


Mode 10 : Conducted Spurious Emission Plot between 802.11n 3 GHz ~ 13.6 GHz



Date: 14.MAY.2011 10:19:05

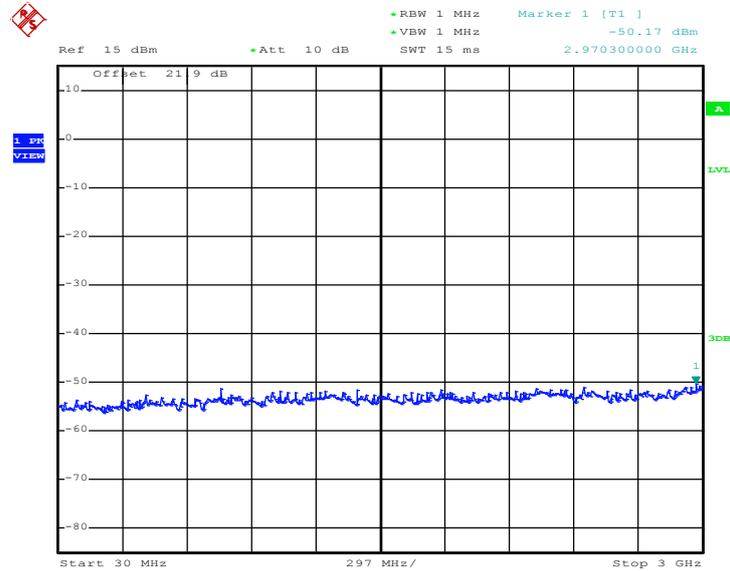
Mode 10 : Conducted Spurious Emission Plot between 802.11n 13.6 GHz ~ 40 GHz



Date: 14.MAY.2011 10:19:17

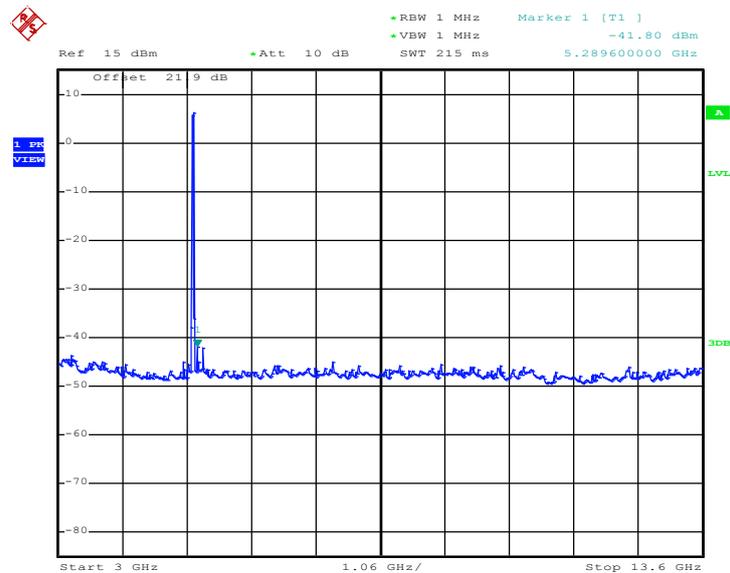


Mode 11 : Conducted Spurious Emission Plot between
802.11n 30 MHz ~ 3 GHz



Date: 14.MAY.2011 10:19:59

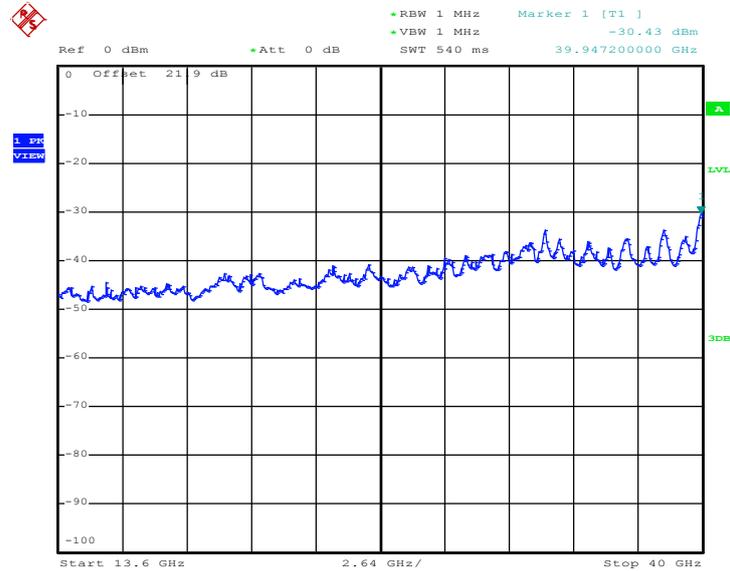
Mode 11 : Conducted Spurious Emission Plot between
802.11n 3 GHz ~ 13.6 GHz



Date: 14.MAY.2011 10:20:11

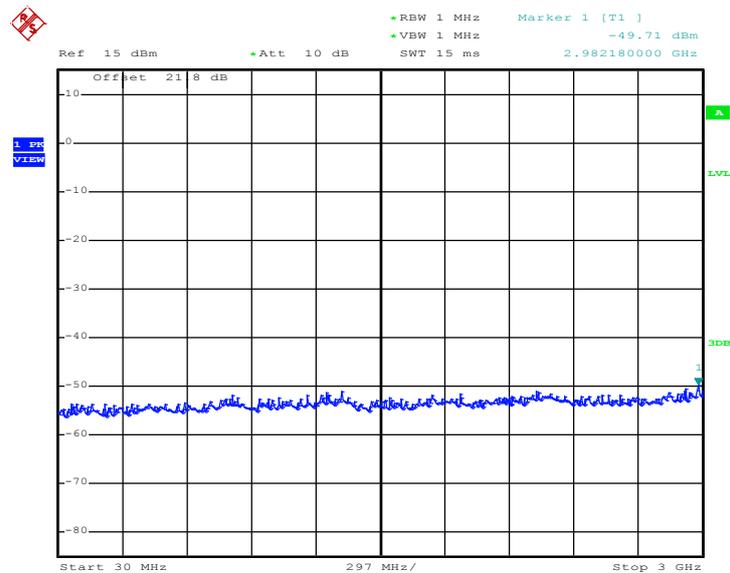


Mode 11 : Conducted Spurious Emission Plot between 802.11n 13.6 GHz ~ 40 GHz



Date: 14.MAY.2011 10:20:22

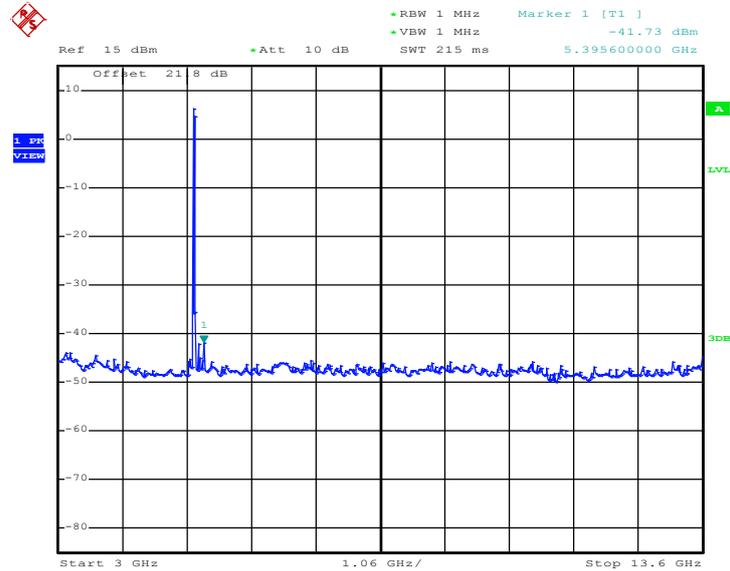
Mode 12 : Conducted Spurious Emission Plot between 802.11n 30 MHz ~ 3 GHz



Date: 14.MAY.2011 10:20:44

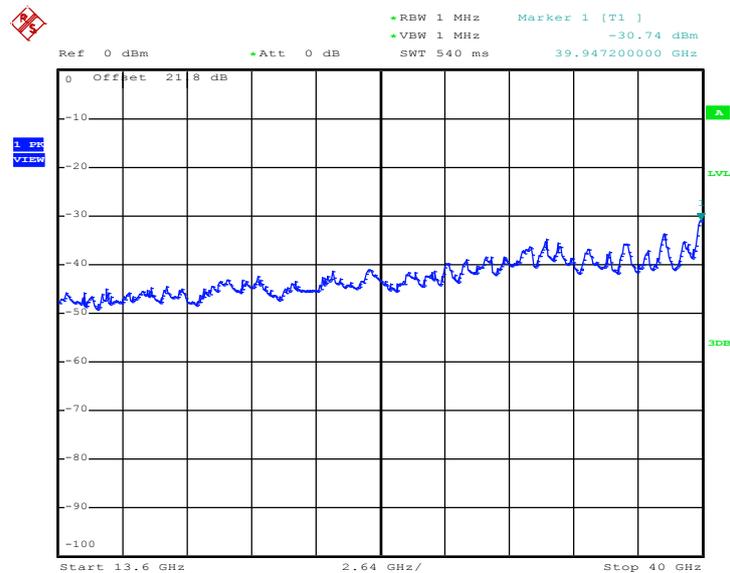


Mode 12 : Conducted Spurious Emission Plot between 802.11n 3 GHz ~ 13.6 GHz



Date: 14.MAY.2011 10:20:55

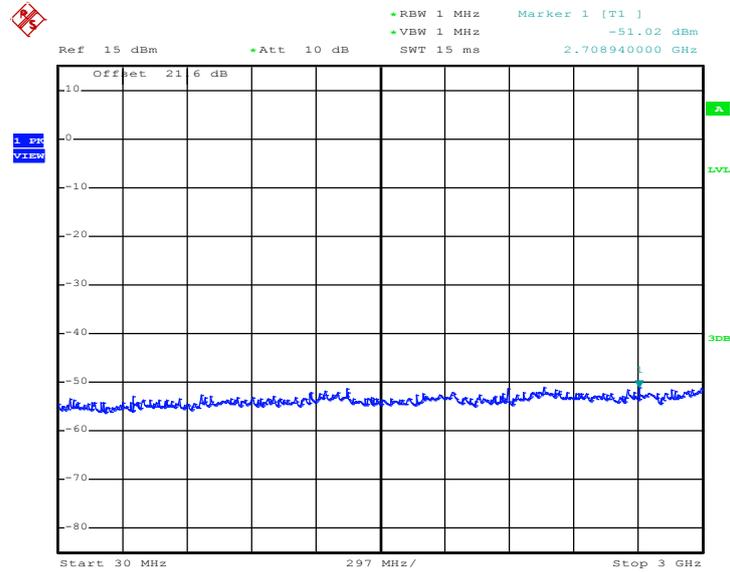
Mode 12 : Conducted Spurious Emission Plot between 802.11n 13.6 GHz ~ 40 GHz



Date: 14.MAY.2011 10:21:07

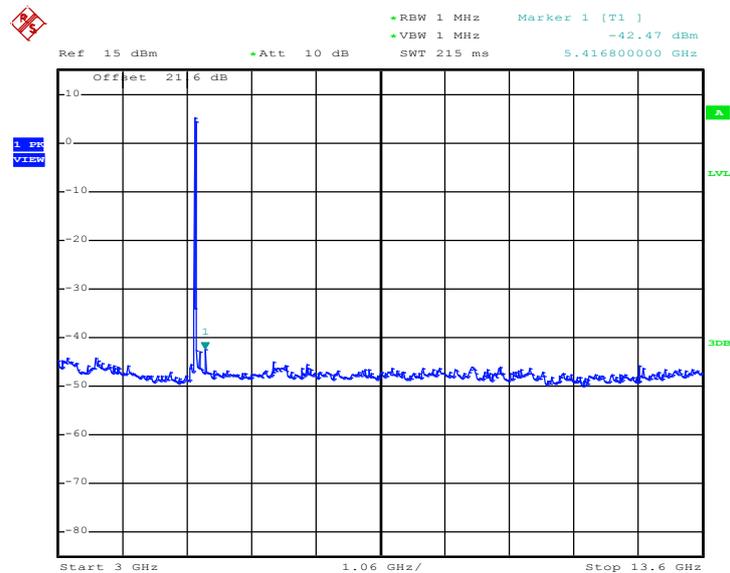


Mode 13 : Conducted Spurious Emission Plot between 802.11n 30 MHz ~ 3 GHz



Date: 14.MAY.2011 10:21:32

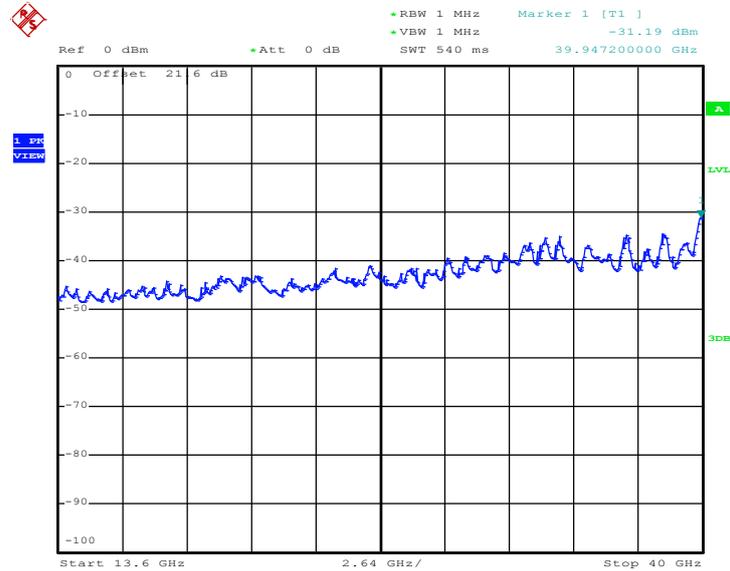
Mode 13 : Conducted Spurious Emission Plot between 802.11n 3 GHz ~ 13.6 GHz



Date: 14.MAY.2011 10:21:43

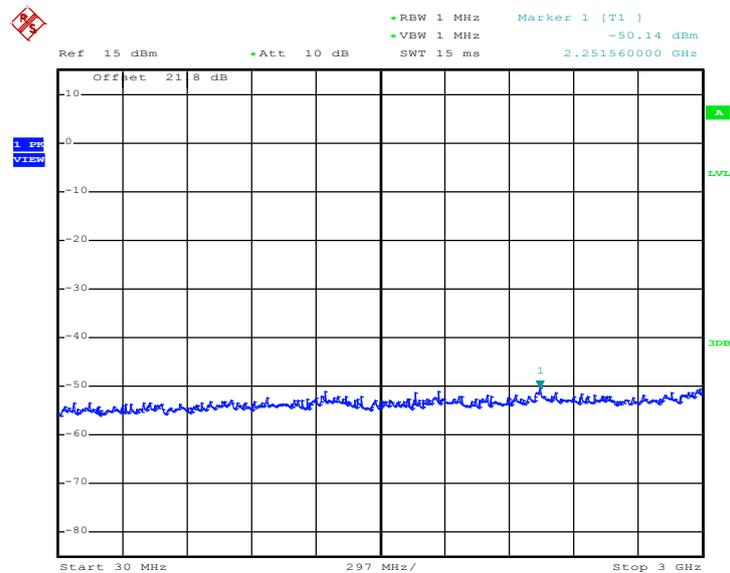


Mode 13 : Conducted Spurious Emission Plot between 802.11n 13.6 GHz ~ 40 GHz



Date: 14.MAY.2011 10:21:55

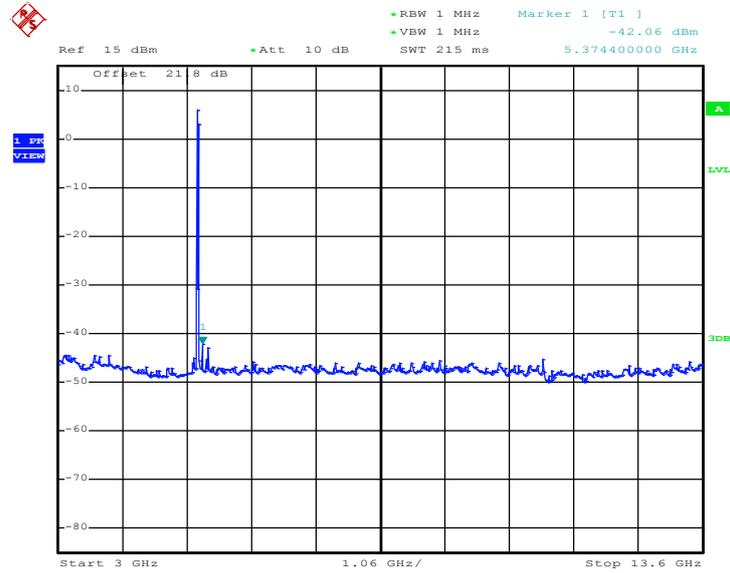
Mode 14 : Conducted Spurious Emission Plot between 802.11n 30 MHz ~ 3 GHz



Date: 14.MAY.2011 10:22:38

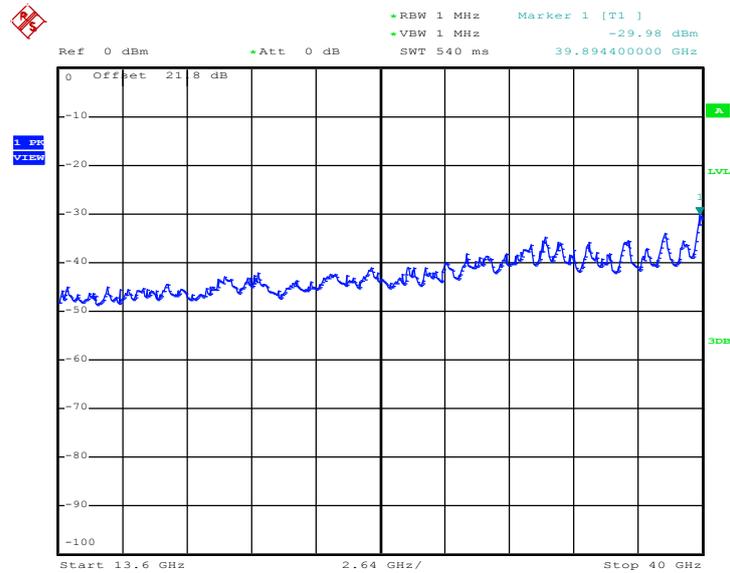


Mode 14 : Conducted Spurious Emission Plot between
802.11n 3 GHz ~ 13.6 GHz



Date: 14.MAY.2011 10:22:49

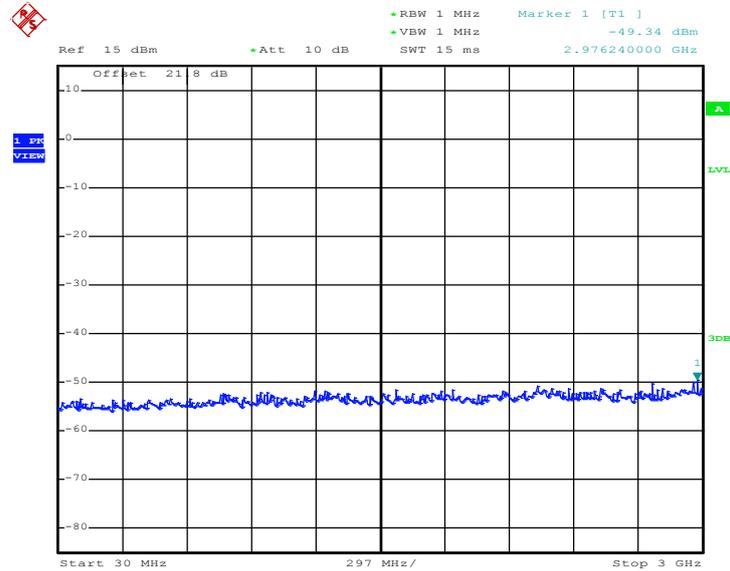
Mode 14 : Conducted Spurious Emission Plot between
802.11n 13.6 GHz ~ 40 GHz



Date: 14.MAY.2011 10:23:01

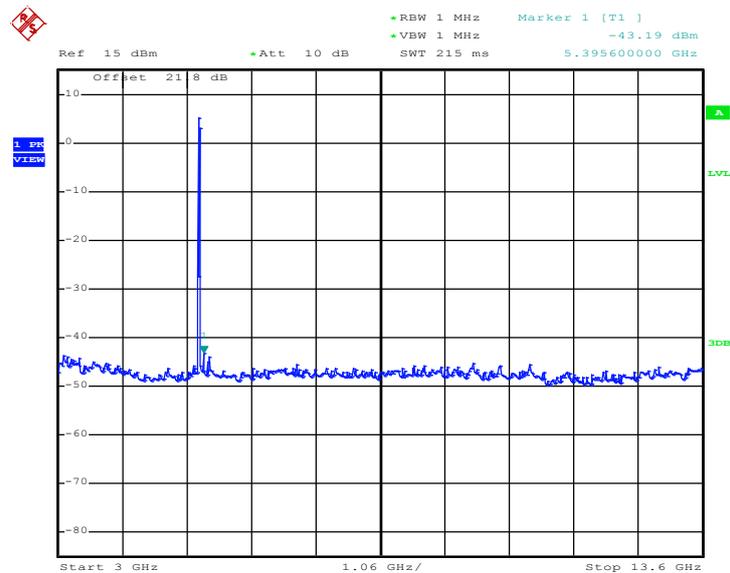


Mode 15 : Conducted Spurious Emission Plot between 802.11n 30 MHz ~ 3 GHz



Date: 14.MAY.2011 10:23:32

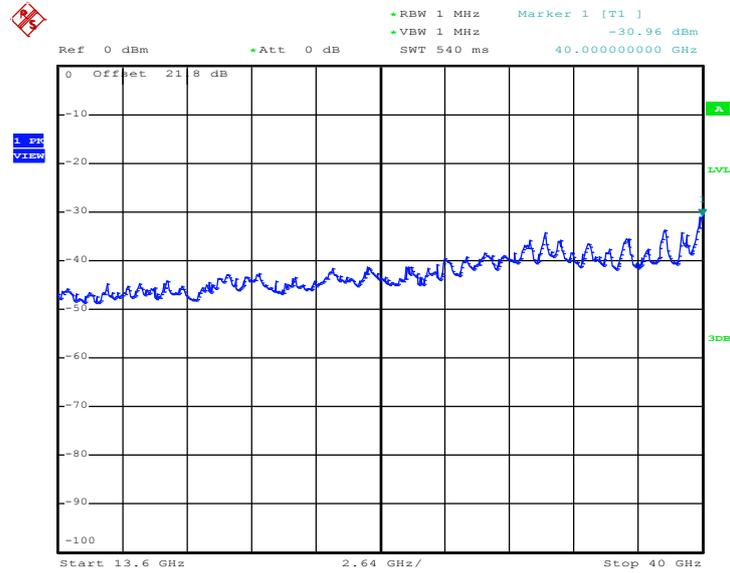
Mode 15 : Conducted Spurious Emission Plot between 802.11n 3 GHz ~ 13.6 GHz



Date: 14.MAY.2011 10:23:44

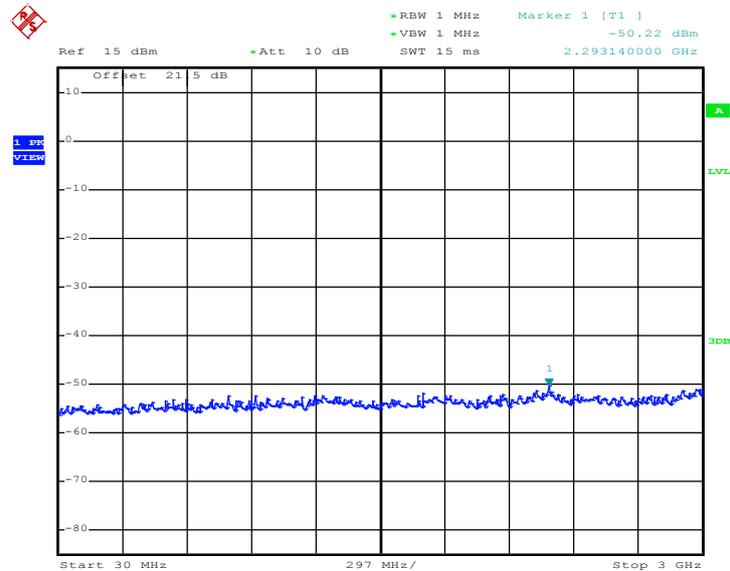


**Mode 15 : Conducted Spurious Emission Plot between
802.11n 13.6 GHz ~ 40 GHz**



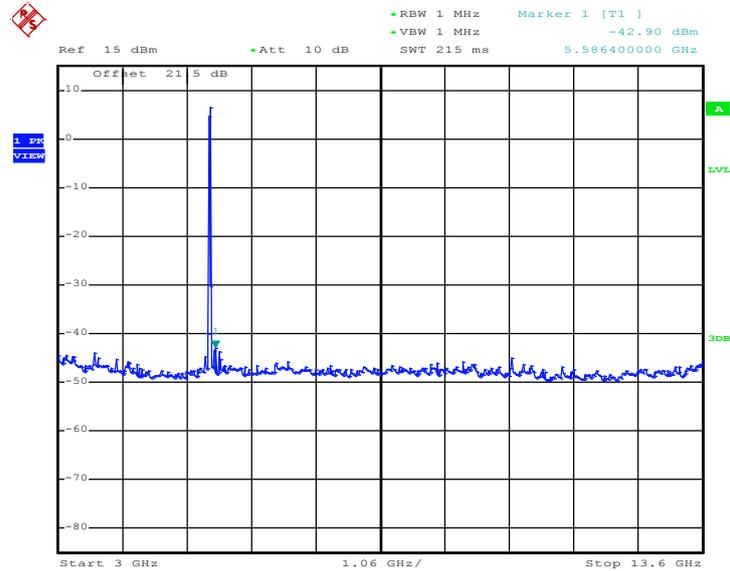
Date: 14.MAY.2011 10:23:55

**Mode 16 : Conducted Spurious Emission Plot between
802.11n 30 MHz ~ 3 GHz**



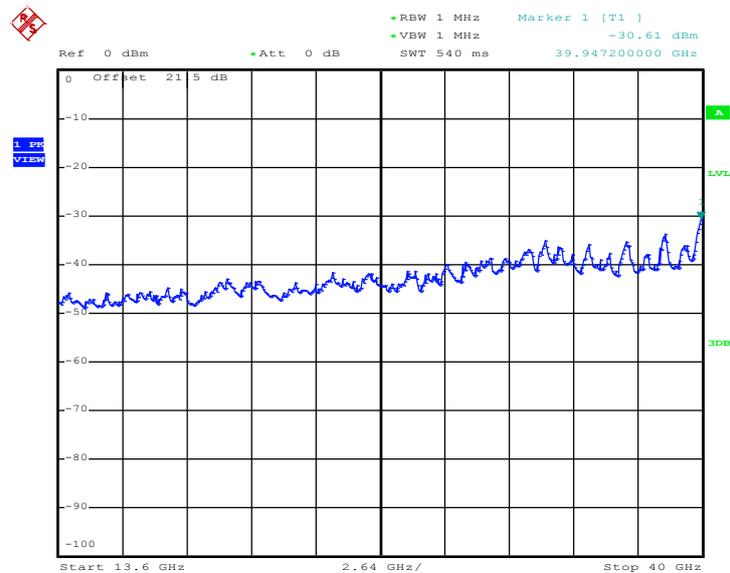
Date: 14.MAY.2011 10:24:16

**Mode 16 : Conducted Spurious Emission Plot between
802.11n 3 GHz ~ 13.6 GHz**



Date: 14.MAY.2011 10:24:27

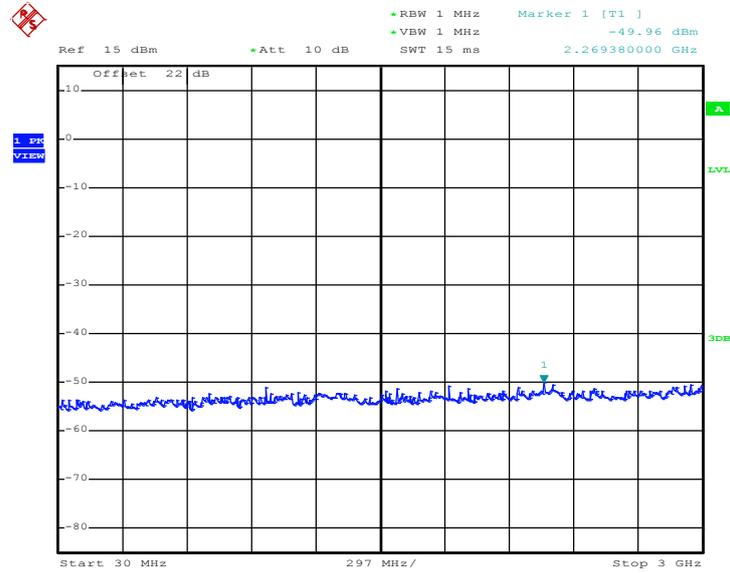
**Mode 16 : Conducted Spurious Emission Plot between
802.11n 13.6 GHz ~ 40 GHz**



Date: 14.MAY.2011 10:24:39

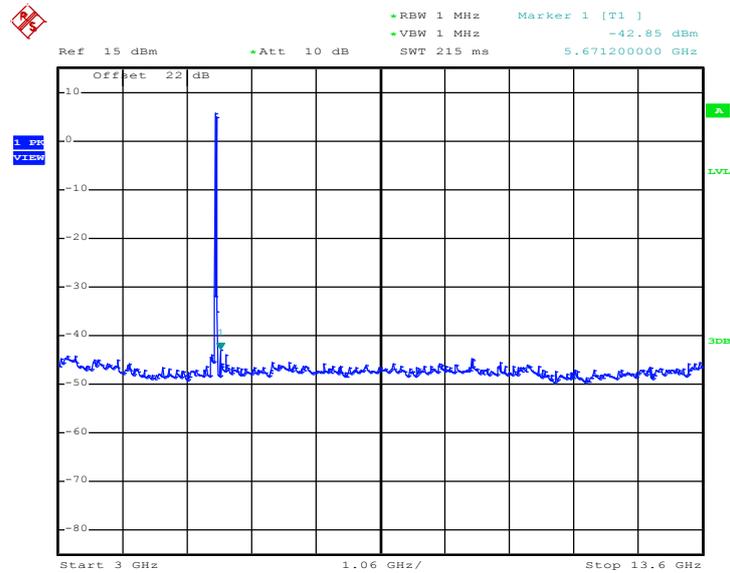


Mode 17 : Conducted Spurious Emission Plot between 802.11n 30 MHz ~ 3 GHz



Date: 14.MAY.2011 10:25:55

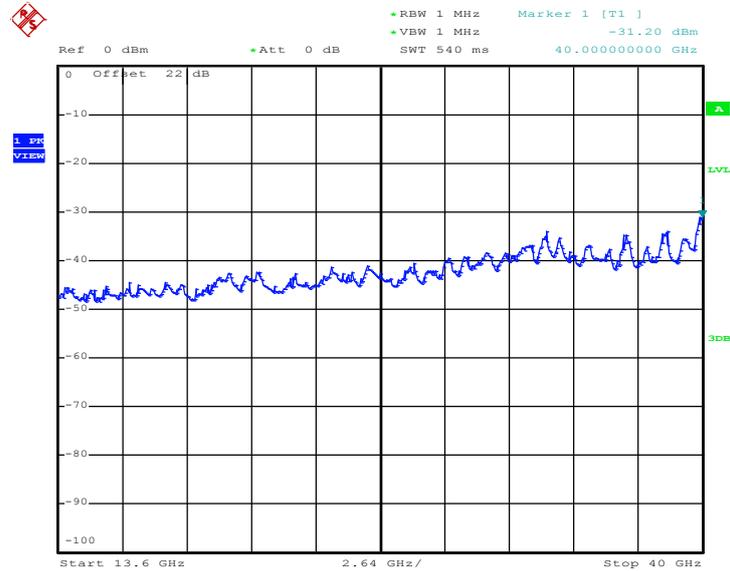
Mode 17 : Conducted Spurious Emission Plot between 802.11n 3 GHz ~ 13.6 GHz



Date: 14.MAY.2011 10:26:06

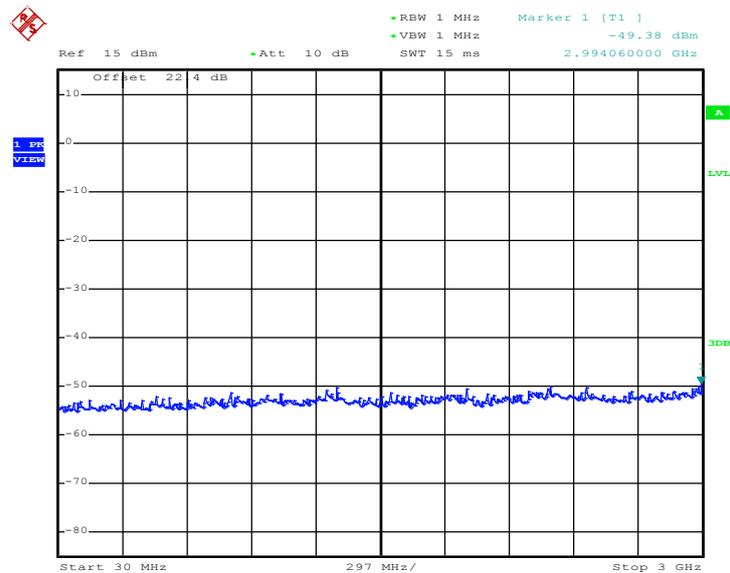


**Mode 17 : Conducted Spurious Emission Plot between
802.11n 13.6 GHz ~ 40 GHz**



Date: 14.MAY.2011 10:26:18

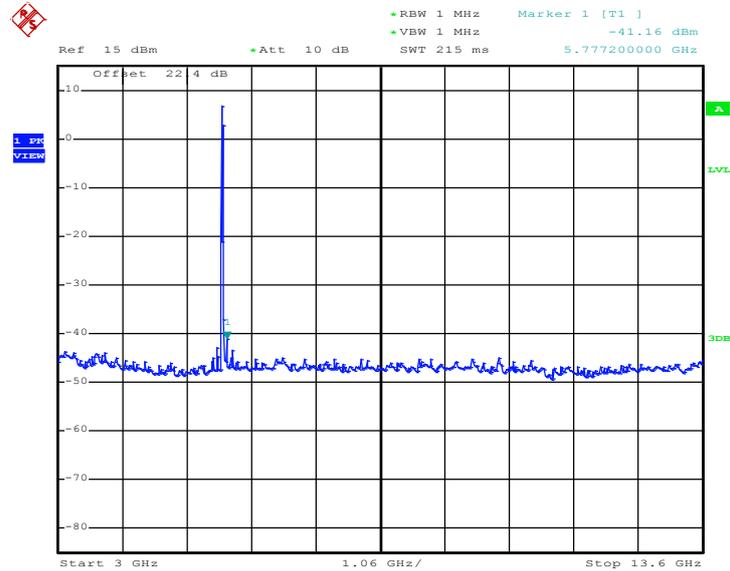
**Mode 18 : Conducted Spurious Emission Plot between
802.11n 30 MHz ~ 3 GHz**



Date: 14.MAY.2011 10:26:40

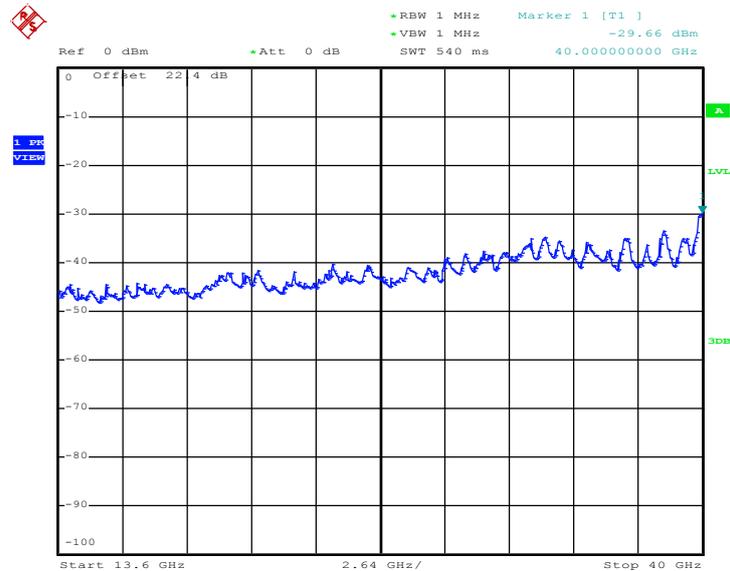


Mode 18 : Conducted Spurious Emission Plot between 802.11n 3 GHz ~ 13.6 GHz



Date: 14.MAY.2011 10:26:51

Mode 18 : Conducted Spurious Emission Plot between 802.11n 13.6 GHz ~ 40 GHz



Date: 14.MAY.2011 10:27:03

3.6 AC Conducted Emission Measurement

3.6.1 Limit of AC Conducted Emission

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

Frequency of emission (MHz)	Conducted limit (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.

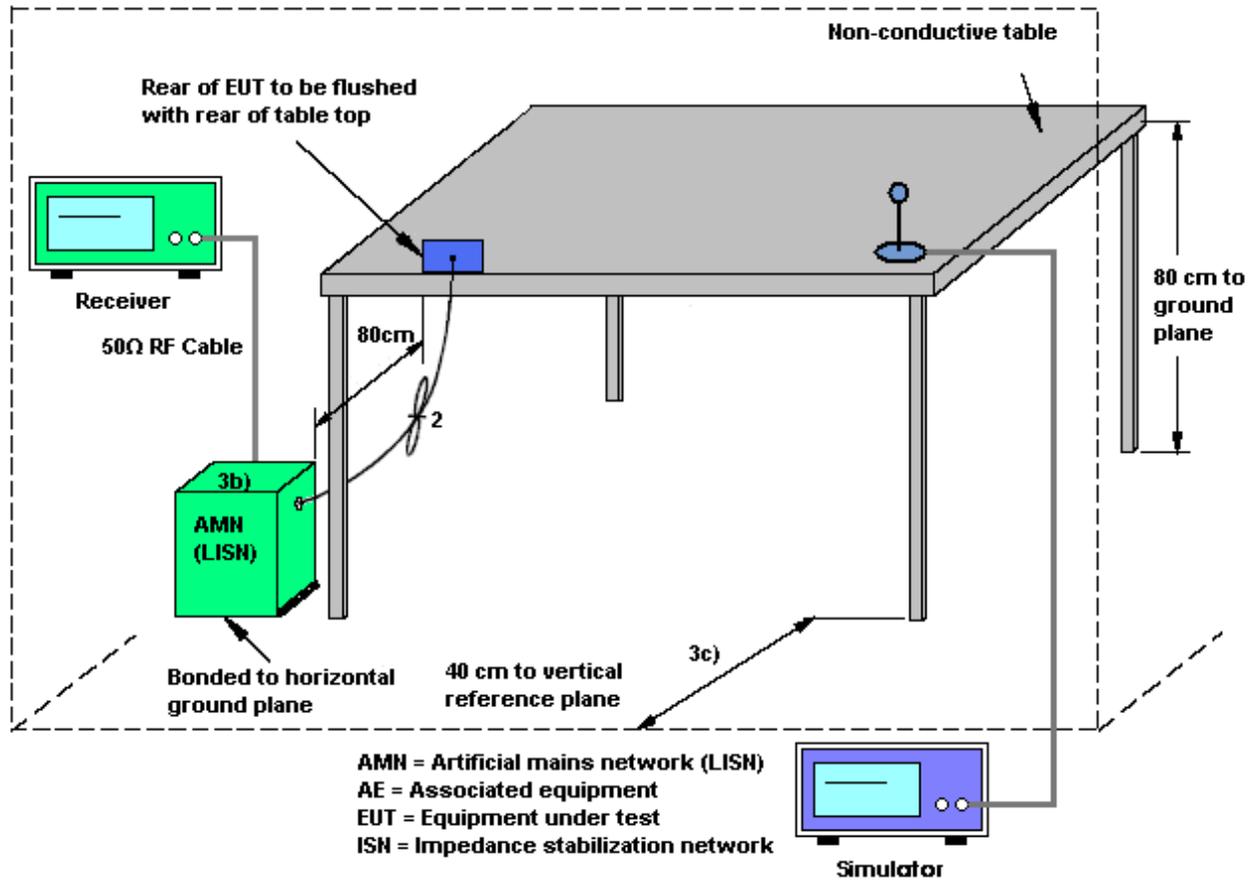
3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

3.6.3 Test Procedures

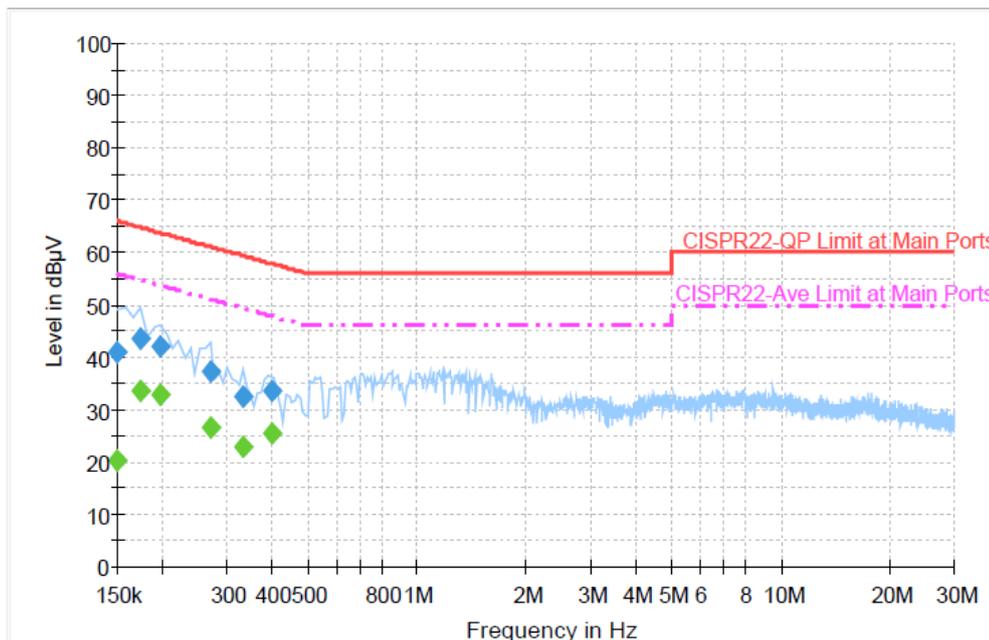
1. Please follow the guidelines in ANSI C63.4-2003.
2. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
3. Connect EUT to the power mains through a line impedance stabilization network (LISN).
4. All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

3.6.4 Test Setup



3.6.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	Temperature :	22~24°C
Test Engineer :	Novic Chiang	Relative Humidity :	42~44%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	: GSM1900 Idle + LTE Idle + Bluetooth Link + WLAN (5G) Link + Camera + Adapter		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Final Result 1

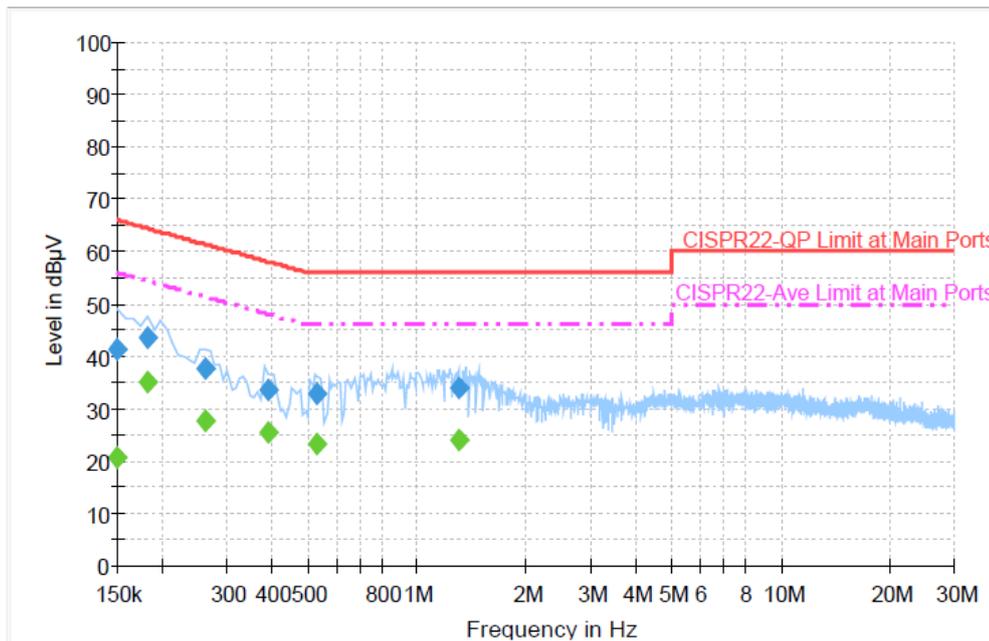
Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	41.0	Off	L1	19.4	25.0	66.0
0.174000	43.4	Off	L1	19.4	21.4	64.8
0.198000	42.2	Off	L1	19.4	21.5	63.7
0.270000	37.3	Off	L1	19.4	23.8	61.1
0.334000	32.4	Off	L1	19.4	27.0	59.4
0.398000	33.6	Off	L1	19.4	24.3	57.9

Final Result 2

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	20.3	Off	L1	19.4	35.7	56.0
0.174000	33.6	Off	L1	19.4	21.2	54.8
0.198000	32.8	Off	L1	19.4	20.9	53.7
0.270000	26.6	Off	L1	19.4	24.5	51.1
0.334000	23.0	Off	L1	19.4	26.4	49.4
0.398000	25.3	Off	L1	19.4	22.6	47.9



Test Mode :	Mode 1	Temperature :	22~24°C
Test Engineer :	Novic Chiang	Relative Humidity :	42~44%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	: GSM1900 Idle + LTE Idle + Bluetooth Link + WLAN (5G) Link + Camera + Adapter		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	41.3	Off	L1	19.4	24.7	66.0
0.182000	43.4	Off	L1	19.4	21.0	64.4
0.262000	37.6	Off	L1	19.4	23.8	61.4
0.390000	33.7	Off	L1	19.4	24.4	58.1
0.534000	32.9	Off	L1	19.4	23.1	56.0
1.302000	33.9	Off	L1	19.4	22.1	56.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	20.5	Off	L1	19.4	35.5	56.0
0.182000	34.9	Off	L1	19.4	19.5	54.4
0.262000	27.8	Off	L1	19.4	23.6	51.4
0.390000	25.6	Off	L1	19.4	22.5	48.1
0.534000	23.4	Off	L1	19.4	22.6	46.0
1.302000	24.0	Off	L1	19.4	22.0	46.0

3.7 Radiated Emission Measurement

3.7.1 Limit of Radiated Emission

Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in § 15.209.

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

- (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 –27 dBm/MHz.
- (2) 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.
- (3) 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.
- (4) The provisions of Section 15.205 Restricted bands of operation of this part apply to intentional radiators operating under this section.

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

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

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

3.7.2 Measuring Instruments

See list of measuring instruments of this test report.

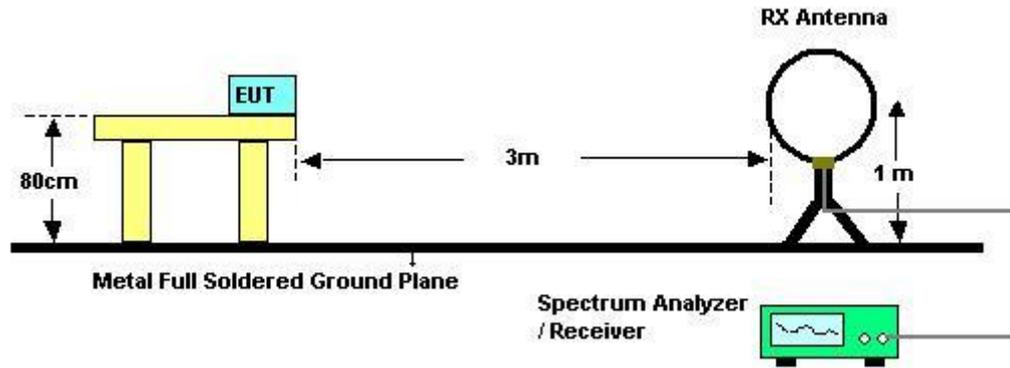


3.7.3 Test Procedures

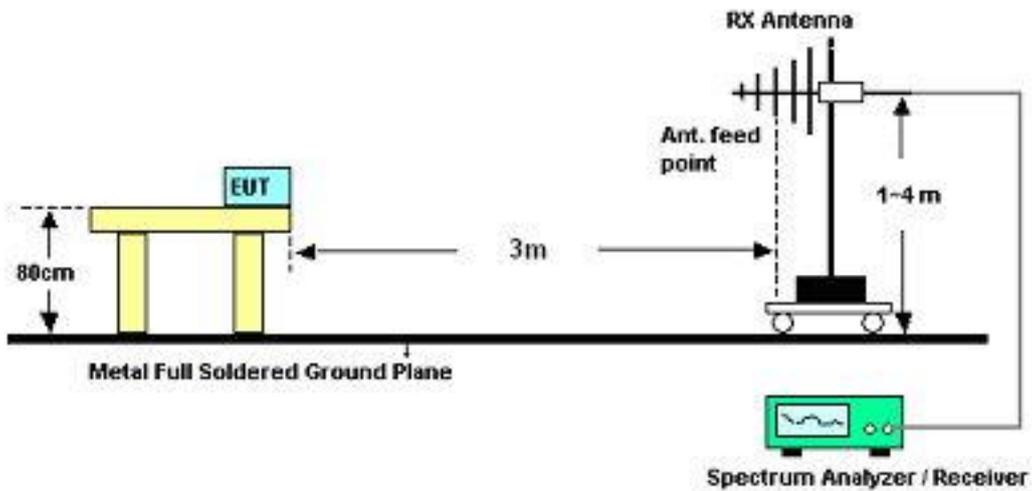
1. The testing follows the guidelines in FCC Public Notice DA 02-2138, (Measurement Guidelines of UNII)
2. The EUT was placed on a rotatable table top 0.8 meter above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna 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. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function and specified bandwidth with Maximum Hold Mode.
8. 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 quasi-peak method and reported.
9. 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.

3.7.4 Test Setup

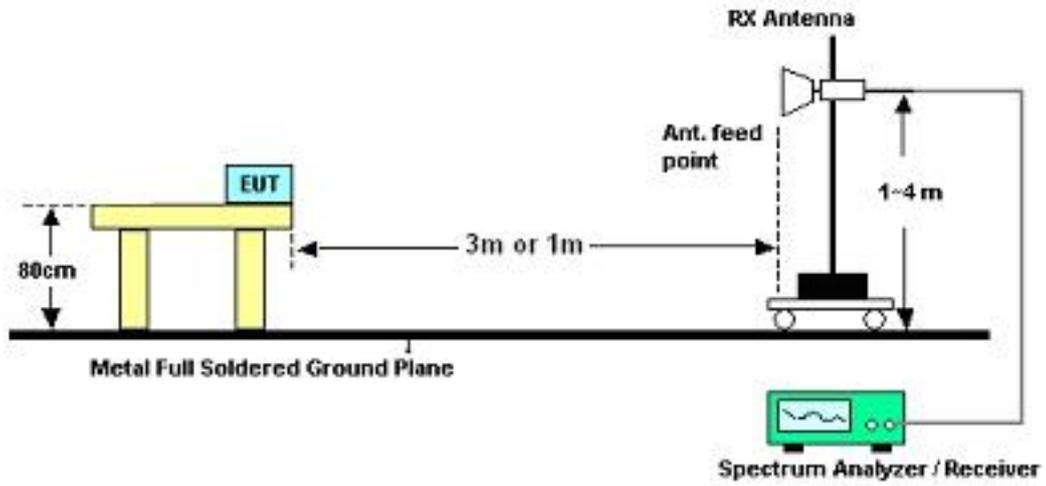
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz





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

Temperature	23~26°C	Humidity	55~62%
Test Engineer	Wii Chang		

Freq. (MHz)	Level (dBuV)	Over Limit (dB)	Limit Line (dBuV)	Remark
-	-	-	-	See Note

Note:

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

Distance extrapolation factor = $40 \log(\text{specific distance} / \text{test distance})$ (dB);

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



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

Test Mode :	Mode 1	Temperature :	23~26°C
Test Channel :	36	Relative Humidity :	55~62%
Test Engineer :	Wii Chang	Polarization :	Horizontal
Remark :	5180 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
31.35	28.17	-11.83	40	41.23	17.78	0.71	31.55	101	238	Peak
143.94	22.85	-20.65	43.5	42.55	10.54	1.27	31.51	-	-	Peak
269.49	27.75	-18.25	46	45.61	11.86	1.71	31.43	-	-	Peak
409.9	23.29	-22.71	46	37.41	15.01	2.04	31.17	-	-	Peak
743.1	22.59	-23.41	46	30.47	19.94	2.74	30.56	-	-	Peak
918.1	24.42	-21.58	46	29.63	22.21	3.03	30.45	-	-	Peak
5150	39.23	-14.77	54	31.95	33.92	6.69	33.33	129	0	Average
5150	51.73	-22.27	74	44.45	33.92	6.69	33.33	129	0	Peak
5180	88.46	-	-	81.12	33.95	6.71	33.32	129	0	Average
5180	101.58	-	-	94.24	33.95	6.71	33.32	129	0	Peak
5350	38.5	-15.5	54	30.83	34.08	6.83	33.24	129	0	Average
5350	50.26	-23.74	74	42.59	34.08	6.83	33.24	129	0	Peak



Test Mode :	Mode 1	Temperature :	23~26°C
Test Channel :	36	Relative Humidity :	55~62%
Test Engineer :	Wii Chang	Polarization :	Vertical
Remark :	5180 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
93.45	31.45	-12.05	43.5	53.19	8.72	1.08	31.54	127	12	Peak
136.38	28.08	-15.42	43.5	47.59	10.75	1.25	31.51	-	-	Peak
266.79	32.27	-13.73	46	50.18	11.83	1.7	31.44	-	-	Peak
367.2	22.78	-23.22	46	38.17	13.93	1.94	31.26	-	-	Peak
640.2	24.13	-21.87	46	33.47	18.89	2.56	30.79	-	-	Peak
835.5	23.84	-22.16	46	30.17	21.29	2.89	30.51	-	-	Peak
5150	38.85	-15.15	54	31.57	33.92	6.69	33.33	113	136	Average
5150	50.12	-23.88	74	42.84	33.92	6.69	33.33	113	136	Peak
5180	81.91	-	-	74.57	33.95	6.71	33.32	113	136	Average
5180	94.69	-	-	87.35	33.95	6.71	33.32	113	136	Peak
5350	38.42	-15.58	54	30.75	34.08	6.83	33.24	113	136	Average
5350	50.24	-23.76	74	42.57	34.08	6.83	33.24	113	136	Peak



Test Mode :	Mode 2	Temperature :	23~26°C
Test Channel :	44	Relative Humidity :	55~62%
Test Engineer :	Wii Chang	Polarization :	Horizontal
Remark :	5220 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
33.24	32.1	-7.9	40	46.29	16.63	0.72	31.54	100	314	Peak
42.42	28.29	-11.71	40	47.54	11.53	0.76	31.54	-	-	Peak
232.5	31.73	-14.27	46	51.19	10.45	1.59	31.5	-	-	Peak
374.9	20.68	-25.32	46	35.83	14.13	1.96	31.24	-	-	Peak
799.8	23.89	-22.11	46	30.58	21.02	2.83	30.54	-	-	Peak
929.3	24.89	-21.11	46	29.83	22.45	3.04	30.43	-	-	Peak
5150	38.91	-15.09	54	31.63	33.92	6.69	33.33	105	4	Average
5150	50.3	-23.7	74	43.02	33.92	6.69	33.33	105	4	Peak
5220	85.54	-	-	78.13	33.97	6.74	33.3	105	4	Average
5220	98.3	-	-	90.89	33.97	6.74	33.3	105	4	Peak
5350	38.48	-15.52	54	30.81	34.08	6.83	33.24	105	4	Average
5350	49.2	-24.8	74	41.53	34.08	6.83	33.24	105	4	Peak



Test Mode :	Mode 2	Temperature :	23~26°C
Test Channel :	44	Relative Humidity :	55~62%
Test Engineer :	Wii Chang	Polarization :	Vertical
Remark :	5220 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
55.11	29.66	-10.34	40	53.82	6.53	0.83	31.52	119	13	Peak
93.99	31.24	-12.26	43.5	52.89	8.81	1.08	31.54	-	-	Peak
237.36	29.16	-16.84	46	48.27	10.79	1.61	31.51	-	-	Peak
524	22.43	-23.57	46	33.71	17.46	2.28	31.02	-	-	Peak
640.2	23.82	-22.18	46	33.16	18.89	2.56	30.79	-	-	Peak
929.3	25.25	-20.75	46	30.19	22.45	3.04	30.43	-	-	Peak
5150	38.82	-15.18	54	31.54	33.92	6.69	33.33	114	133	Average
5150	50.65	-23.35	74	43.37	33.92	6.69	33.33	114	133	Peak
5220	80.12	-	-	72.71	33.97	6.74	33.3	114	133	Average
5220	92.35	-	-	84.94	33.97	6.74	33.3	114	133	Peak
5350	38.43	-15.57	54	30.76	34.08	6.83	33.24	114	133	Average
5350	49.32	-24.68	74	41.65	34.08	6.83	33.24	114	133	Peak



Test Mode :	Mode 3	Temperature :	23~26°C
Test Channel :	48	Relative Humidity :	55~62%
Test Engineer :	Wii Chang	Polarization :	Horizontal
Remark :	5240 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
32.97	33.38	-6.62	40	47.57	16.63	0.72	31.54	114	203	Peak
144.21	25.02	-18.48	43.5	44.76	10.5	1.27	31.51	-	-	Peak
234.12	30.8	-15.2	46	50.19	10.52	1.59	31.5	-	-	Peak
428.1	30.04	-15.96	46	43.71	15.41	2.08	31.16	-	-	Peak
739.6	21.66	-24.34	46	29.62	19.89	2.73	30.58	-	-	Peak
849.5	24.25	-21.75	46	30.43	21.4	2.92	30.5	-	-	Peak
5150	38.8	-15.2	54	31.52	33.92	6.69	33.33	126	0	Average
5150.8	49.58	-24.42	74	42.3	33.92	6.69	33.33	126	0	Peak
5240	83.38	-	-	75.92	33.99	6.76	33.29	126	0	Average
5240	95.36	-	-	87.9	33.99	6.76	33.29	126	0	Peak
5350	38.4	-15.6	54	30.73	34.08	6.83	33.24	126	0	Average
5350	49.79	-24.21	74	42.12	34.08	6.83	33.24	126	0	Peak



Test Mode :	Mode 3	Temperature :	23~26°C
Test Channel :	48	Relative Humidity :	55~62%
Test Engineer :	Wii Chang	Polarization :	Vertical
Remark :	5240 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
52.68	31.21	-8.79	40	54.69	7.25	0.82	31.55	102	44	Peak
94.53	33.54	-9.96	43.5	55.09	8.91	1.08	31.54	-	-	Peak
270.57	31.6	-14.4	46	49.44	11.87	1.71	31.42	-	-	Peak
640.2	24.07	-21.93	46	33.41	18.89	2.56	30.79	-	-	Peak
773.2	23.31	-22.69	46	30.55	20.51	2.79	30.54	-	-	Peak
881	24.34	-21.66	46	30.22	21.63	2.98	30.49	-	-	Peak
5150	38.8	-15.2	54	31.52	33.92	6.69	33.33	125	137	Average
5150	50.27	-23.73	74	42.99	33.92	6.69	33.33	125	137	Peak
5240	78	-	-	70.54	33.99	6.76	33.29	125	137	Average
5240	90.24	-	-	82.78	33.99	6.76	33.29	125	137	Peak
5350	38.41	-15.59	54	30.74	34.08	6.83	33.24	125	137	Average
5350	49.15	-24.85	74	41.48	34.08	6.83	33.24	125	137	Peak



Test Mode :	Mode 4	Temperature :	23~26°C
Test Channel :	52	Relative Humidity :	55~62%
Test Engineer :	Wii Chang	Polarization :	Horizontal
Remark :	5260 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
31.35	30.68	-9.32	40	43.74	17.78	0.71	31.55	105	241	Peak
142.32	22.95	-20.55	43.5	42.61	10.58	1.27	31.51	-	-	Peak
269.49	28.09	-17.91	46	45.95	11.86	1.71	31.43	-	-	Peak
388.2	27.84	-18.16	46	42.61	14.46	1.98	31.21	-	-	Peak
760.6	23.32	-22.68	46	30.82	20.27	2.77	30.54	-	-	Peak
921.6	24.6	-21.4	46	29.75	22.27	3.03	30.45	-	-	Peak
5150	38.79	-15.21	54	31.51	33.92	6.69	33.33	128	0	Average
5150	49.78	-24.22	74	42.5	33.92	6.69	33.33	128	0	Peak
5260	83.13	-	-	75.61	34.01	6.78	33.27	128	0	Average
5260	96.27	-	-	88.75	34.01	6.78	33.27	128	0	Peak
5350	38.53	-15.47	54	30.86	34.08	6.83	33.24	128	0	Average
5350	50.18	-23.82	74	42.51	34.08	6.83	33.24	128	0	Peak



Test Mode :	Mode 4	Temperature :	23~26°C
Test Channel :	52	Relative Humidity :	55~62%
Test Engineer :	Wii Chang	Polarization :	Vertical
Remark :	5260 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
94.8	31.11	-12.39	43.5	52.66	8.91	1.08	31.54	135	311	Peak
135.03	28	-15.5	43.5	47.47	10.79	1.25	31.51	-	-	Peak
269.22	30.41	-15.59	46	48.27	11.86	1.71	31.43	-	-	Peak
640.2	23.3	-22.7	46	32.64	18.89	2.56	30.79	-	-	Peak
807.5	21.6	-24.4	46	28.21	21.08	2.84	30.53	-	-	Peak
870.5	23.92	-22.08	46	29.9	21.55	2.96	30.49	-	-	Peak
5150	38.83	-15.17	54	31.55	33.92	6.69	33.33	100	143	Average
5150	50.52	-23.48	74	43.24	33.92	6.69	33.33	100	143	Peak
5260	77.67	-	-	70.15	34.01	6.78	33.27	100	143	Average
5260	90.51	-	-	82.99	34.01	6.78	33.27	100	143	Peak
5350	38.44	-15.56	54	30.77	34.08	6.83	33.24	100	143	Average
5350	50.63	-23.37	74	42.96	34.08	6.83	33.24	100	143	Peak



Test Mode :	Mode 5	Temperature :	23~26°C
Test Channel :	60	Relative Humidity :	55~62%
Test Engineer :	Wii Chang	Polarization :	Horizontal
Remark :	5300 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
31.35	31.99	-8.01	40	45.05	17.78	0.71	31.55	100	31	Peak
142.59	24.49	-19.01	43.5	44.15	10.58	1.27	31.51	-	-	Peak
229.26	30.42	-15.58	46	50.16	10.18	1.58	31.5	-	-	Peak
388.9	20.86	-25.14	46	35.6	14.48	1.99	31.21	-	-	Peak
733.3	22.28	-23.72	46	30.4	19.76	2.72	30.6	-	-	Peak
813.8	23.64	-22.36	46	30.2	21.12	2.85	30.53	-	-	Peak
5150	38.75	-15.25	54	31.47	33.92	6.69	33.33	104	0	Average
5150	50.54	-23.46	74	43.26	33.92	6.69	33.33	104	0	Peak
5300	82.74	-	-	75.16	34.04	6.8	33.26	104	0	Average
5300	95.26	-	-	87.68	34.04	6.8	33.26	104	0	Peak
5350	38.4	-15.6	54	30.73	34.08	6.83	33.24	104	0	Average
5350	49.57	-24.43	74	41.9	34.08	6.83	33.24	104	0	Peak



Test Mode :	Mode 5	Temperature :	23~26°C
Test Channel :	60	Relative Humidity :	55~62%
Test Engineer :	Wii Chang	Polarization :	Vertical
Remark :	5300 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
52.14	31.78	-8.22	40	55.26	7.25	0.82	31.55	133	156	Peak
93.18	31.74	-11.76	43.5	53.48	8.72	1.08	31.54	-	-	Peak
267.33	31.66	-14.34	46	49.56	11.84	1.7	31.44	-	-	Peak
640.2	23.39	-22.61	46	32.73	18.89	2.56	30.79	-	-	Peak
864.9	23.27	-22.73	46	29.3	21.51	2.95	30.49	-	-	Peak
939.8	25.24	-20.76	46	29.91	22.7	3.05	30.42	-	-	Peak
5150	38.8	-15.2	54	31.52	33.92	6.69	33.33	100	142	Average
5150	51.29	-22.71	74	44.01	33.92	6.69	33.33	100	142	Peak
5300	77.77	-	-	70.19	34.04	6.8	33.26	100	142	Average
5300	90.31	-	-	82.73	34.04	6.8	33.26	100	142	Peak
5350	38.37	-15.63	54	30.7	34.08	6.83	33.24	100	142	Average
5350	50.07	-23.93	74	42.4	34.08	6.83	33.24	100	142	Peak



Test Mode :	Mode 6	Temperature :	23~26°C
Test Channel :	64	Relative Humidity :	55~62%
Test Engineer :	Wii Chang	Polarization :	Horizontal
Remark :	5320 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
32.97	34.86	-5.14	40	49.05	16.63	0.72	31.54	100	13	Peak
142.59	24.8	-18.7	43.5	44.46	10.58	1.27	31.51	-	-	Peak
229.26	30.66	-15.34	46	50.4	10.18	1.58	31.5	-	-	Peak
497.4	19.65	-26.35	46	31.5	17.01	2.22	31.08	-	-	Peak
640.2	21.3	-24.7	46	30.64	18.89	2.56	30.79	-	-	Peak
887.3	24.64	-21.36	46	30.46	21.68	2.99	30.49	-	-	Peak
5150	38.42	-15.58	54	31.14	33.92	6.69	33.33	125	0	Average
5150	50.34	-23.66	74	43.06	33.92	6.69	33.33	125	0	Peak
5320	82.15	-	-	74.54	34.05	6.81	33.25	125	0	Average
5320	94.34	-	-	86.73	34.05	6.81	33.25	125	0	Peak
5350	38.47	-15.53	54	30.8	34.08	6.83	33.24	125	0	Average
5350	49.71	-24.29	74	42.04	34.08	6.83	33.24	125	0	Peak



Test Mode :	Mode 6	Temperature :	23~26°C
Test Channel :	64	Relative Humidity :	55~62%
Test Engineer :	Wii Chang	Polarization :	Vertical
Remark :	5320 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
52.14	30.86	-9.14	40	54.34	7.25	0.82	31.55	122	55	Peak
88.05	31.6	-11.9	43.5	54.01	8.07	1.06	31.54	-	-	Peak
267.87	31.46	-14.54	46	49.36	11.84	1.7	31.44	-	-	Peak
640.2	23.85	-22.15	46	33.19	18.89	2.56	30.79	-	-	Peak
777.4	24.07	-21.93	46	31.22	20.6	2.79	30.54	-	-	Peak
864.9	24.11	-21.89	46	30.14	21.51	2.95	30.49	-	-	Peak
5150	38.82	-15.18	54	31.54	33.92	6.69	33.33	100	122	Average
5150	50.56	-23.44	74	43.28	33.92	6.69	33.33	100	122	Peak
5320	78.12	-	-	70.51	34.05	6.81	33.25	100	122	Average
5320	90.95	-	-	83.34	34.05	6.81	33.25	100	122	Peak
5350	38.43	-15.57	54	30.76	34.08	6.83	33.24	100	122	Average
5350	51.13	-22.87	74	43.46	34.08	6.83	33.24	100	122	Peak



Test Mode :	Mode 7	Temperature :	23~26°C
Test Channel :	100	Relative Humidity :	55~62%
Test Engineer :	Wii Chang	Polarization :	Horizontal
Remark :	5500 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
33.24	34.38	-5.62	40	48.57	16.63	0.72	31.54	143	62	Peak
142.59	24.46	-19.04	43.5	44.12	10.58	1.27	31.51	-	-	Peak
232.5	30.12	-15.88	46	49.58	10.45	1.59	31.5	-	-	Peak
383.3	21.31	-24.69	46	36.23	14.33	1.97	31.22	-	-	Peak
738.2	22.19	-23.81	46	30.19	19.85	2.73	30.58	-	-	Peak
945.4	24.73	-21.27	46	29.25	22.83	3.06	30.41	-	-	Peak
5470	50.84	-17.46	68.3	42.94	34.17	6.92	33.19	134	0	Peak
5500	88.37	-	-	80.39	34.2	6.95	33.17	134	0	Average
5500	101.68	-	-	93.7	34.2	6.95	33.17	134	0	Peak
5725	50.17	-18.13	68.3	41.68	34.51	7.17	33.19	134	0	Peak



Test Mode :	Mode 7	Temperature :	23~26°C
Test Channel :	100	Relative Humidity :	55~62%
Test Engineer :	Wii Chang	Polarization :	Vertical
Remark :	5500 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
52.68	31.36	-8.64	40	54.84	7.25	0.82	31.55	106	221	Peak
88.05	31.82	-11.68	43.5	54.23	8.07	1.06	31.54	-	-	Peak
267.06	31.4	-14.6	46	49.31	11.83	1.7	31.44	-	-	Peak
640.2	22.67	-23.33	46	32.01	18.89	2.56	30.79	-	-	Peak
833.4	23.51	-22.49	46	29.86	21.27	2.89	30.51	-	-	Peak
939.1	24.43	-21.57	46	29.12	22.68	3.05	30.42	-	-	Peak
5470	49.26	-19.04	68.3	41.36	34.17	6.92	33.19	100	102	Peak
5500	79.49	-	-	71.51	34.2	6.95	33.17	100	102	Average
5500	91.45	-	-	83.47	34.2	6.95	33.17	100	102	Peak
5725	50.78	-17.52	68.3	42.29	34.51	7.17	33.19	100	102	Peak



Test Mode :	Mode 8	Temperature :	23~26°C
Test Channel :	120	Relative Humidity :	55~62%
Test Engineer :	Wii Chang	Polarization :	Horizontal
Remark :	5600 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
138	20.26	-23.24	43.5	39.78	10.73	1.26	31.51	-	-	Peak
162.03	21.84	-21.66	43.5	42.5	9.5	1.35	31.51	-	-	Peak
230.88	29.15	-16.85	46	48.75	10.32	1.58	31.5	104	227	Peak
301.4	22.9	-23.1	46	40.18	12.21	1.78	31.27	-	-	Peak
652.1	20.92	-25.08	46	30.16	18.94	2.59	30.77	-	-	Peak
812.4	23.41	-22.59	46	29.97	21.12	2.85	30.53	-	-	Peak
5470	50.45	-17.85	68.3	42.55	34.17	6.92	33.19	118	0	Peak
5600	83.01	-	-	74.8	34.34	7.05	33.18	118	0	Average
5600	95.45	-	-	87.24	34.34	7.05	33.18	118	0	Peak
5725	49.57	-18.73	68.3	41.08	34.51	7.17	33.19	118	0	Peak



Test Mode :	Mode 8	Temperature :	23~26°C
Test Channel :	120	Relative Humidity :	55~62%
Test Engineer :	Wii Chang	Polarization :	Vertical
Remark :	5600 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
88.59	31.84	-11.66	43.5	54.25	8.07	1.06	31.54	126	319	Peak
94.26	30.96	-12.54	43.5	52.61	8.81	1.08	31.54	-	-	Peak
265.44	30.61	-15.39	46	48.54	11.82	1.7	31.45	-	-	Peak
640.2	22.49	-23.51	46	31.83	18.89	2.56	30.79	-	-	Peak
770.4	23.21	-22.79	46	30.52	20.45	2.78	30.54	-	-	Peak
882.4	24.23	-21.77	46	30.09	21.65	2.98	30.49	-	-	Peak
5470	50.4	-17.9	68.3	42.5	34.17	6.92	33.19	100	353	Peak
5600	78.69	-	-	70.48	34.34	7.05	33.18	100	353	Average
5600	90.97	-	-	82.76	34.34	7.05	33.18	100	353	Peak
5725	51.09	-17.21	68.3	42.6	34.51	7.17	33.19	100	353	Peak



Test Mode :	Mode 9	Temperature :	23~26°C
Test Channel :	140	Relative Humidity :	55~62%
Test Engineer :	Wii Chang	Polarization :	Horizontal
Remark :	5700 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
162.03	21.32	-22.18	43.5	41.98	9.5	1.35	31.51	-	-	Peak
231.15	29.69	-16.31	46	49.29	10.32	1.58	31.5	104	329	Peak
268.68	28.1	-17.9	46	45.98	11.85	1.7	31.43	-	-	Peak
300	25.63	-20.37	46	42.96	12.16	1.78	31.27	-	-	Peak
553.4	19.13	-26.87	46	29.77	17.96	2.34	30.94	-	-	Peak
744.5	22.66	-23.34	46	30.5	19.98	2.74	30.56	-	-	Peak
5470	49.2	-19.1	68.3	41.3	34.17	6.92	33.19	128	5	Peak
5700	83.73	-	-	75.3	34.47	7.15	33.19	128	5	Average
5700	96.07	-	-	87.64	34.47	7.15	33.19	128	5	Peak
5725	51.49	-16.81	68.3	43	34.51	7.17	33.19	128	5	Peak



Test Mode :	Mode 9	Temperature :	23~26°C
Test Channel :	140	Relative Humidity :	55~62%
Test Engineer :	Wii Chang	Polarization :	Vertical
Remark :	5700 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
88.32	32.68	-10.82	43.5	55.09	8.07	1.06	31.54	114	33	Peak
94.53	31.32	-12.18	43.5	52.87	8.91	1.08	31.54	-	-	Peak
265.44	31.27	-14.73	46	49.2	11.82	1.7	31.45	-	-	Peak
640.2	23.18	-22.82	46	32.52	18.89	2.56	30.79	-	-	Peak
745.2	21.93	-24.07	46	29.77	19.98	2.74	30.56	-	-	Peak
829.9	24	-22	46	30.39	21.25	2.88	30.52	-	-	Peak
5470	51.01	-17.29	68.3	43.11	34.17	6.92	33.19	100	357	Peak
5700	78.66	-	-	70.23	34.47	7.15	33.19	100	357	Average
5700	90.2	-	-	81.77	34.47	7.15	33.19	100	357	Peak
5725	51.54	-16.76	68.3	43.05	34.51	7.17	33.19	100	357	Peak



Test Mode :	Mode 10	Temperature :	23~26°C
Test Channel :	36	Relative Humidity :	55~62%
Test Engineer :	Wii Chang	Polarization :	Horizontal
Remark :	5180 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
31.35	22.42	-17.58	40	35.48	17.78	0.71	31.55	112	15	Peak
162.03	21.2	-22.3	43.5	41.86	9.5	1.35	31.51	-	-	Peak
230.88	28.31	-17.69	46	47.91	10.32	1.58	31.5	-	-	Peak
300	24.85	-21.15	46	42.18	12.16	1.78	31.27	-	-	Peak
399.4	25.55	-20.45	46	39.96	14.76	2.01	31.18	-	-	Peak
490.4	18.66	-27.34	46	30.68	16.86	2.21	31.09	-	-	Peak
5150	39.27	-14.73	54	31.99	33.92	6.69	33.33	117	5	Average
5150	54.08	-19.92	74	46.8	33.92	6.69	33.33	117	5	Peak
5180	86.9	-	-	79.56	33.95	6.71	33.32	117	5	Average
5180	99.93	-	-	92.59	33.95	6.71	33.32	117	5	Peak
5350	38.64	-15.36	54	30.97	34.08	6.83	33.24	117	5	Average
5350	50.53	-23.47	74	42.86	34.08	6.83	33.24	117	5	Peak



Test Mode :	Mode 10	Temperature :	23~26°C
Test Channel :	36	Relative Humidity :	55~62%
Test Engineer :	Wii Chang	Polarization :	Vertical
Remark :	5180 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
51.06	26.11	-13.89	40	49.37	7.49	0.81	31.56	-	-	Peak
88.59	33.1	-10.4	43.5	55.51	8.07	1.06	31.54	100	21	Peak
263.55	30.83	-15.17	46	48.8	11.8	1.69	31.46	-	-	Peak
304.9	20.09	-25.91	46	37.28	12.29	1.79	31.27	-	-	Peak
450.5	19.05	-26.95	46	32.12	15.94	2.14	31.15	-	-	Peak
640.2	23.16	-22.84	46	32.5	18.89	2.56	30.79	-	-	Peak
5150	38.88	-15.12	54	31.6	33.92	6.69	33.33	100	132	Average
5150	49.77	-24.23	74	42.49	33.92	6.69	33.33	100	132	Peak
5180	79.29	-	-	71.95	33.95	6.71	33.32	100	132	Average
5180	91.66	-	-	84.32	33.95	6.71	33.32	100	132	Peak
5350	38.45	-15.55	54	30.78	34.08	6.83	33.24	100	132	Average
5350	49.27	-24.73	74	41.6	34.08	6.83	33.24	100	132	Peak



Test Mode :	Mode 11	Temperature :	23~26°C
Test Channel :	44	Relative Humidity :	55~62%
Test Engineer :	Wii Chang	Polarization :	Horizontal
Remark :	5220 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
31.35	31.83	-8.17	40	44.89	17.78	0.71	31.55	122	31	Peak
166.35	19.32	-24.18	43.5	40.31	9.18	1.36	31.53	-	-	Peak
266.79	26.22	-19.78	46	44.13	11.83	1.7	31.44	-	-	Peak
381.9	21.26	-24.74	46	36.21	14.31	1.97	31.23	-	-	Peak
502.3	24.39	-21.61	46	36.12	17.11	2.23	31.07	-	-	Peak
672.4	22.03	-23.97	46	31.14	19.02	2.62	30.75	-	-	Peak
5150	38.94	-15.06	54	31.66	33.92	6.69	33.33	130	5	Average
5150	50.48	-23.52	74	43.2	33.92	6.69	33.33	130	5	Peak
5220	85.24	-	-	77.83	33.97	6.74	33.3	130	5	Average
5220	98.11	-	-	90.7	33.97	6.74	33.3	130	5	Peak
5350	38.55	-15.45	54	30.88	34.08	6.83	33.24	130	5	Average
5350	50.94	-23.06	74	43.27	34.08	6.83	33.24	130	5	Peak



Test Mode :	Mode 11	Temperature :	23~26°C
Test Channel :	44	Relative Humidity :	55~62%
Test Engineer :	Wii Chang	Polarization :	Vertical
Remark :	5220 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
51.6	25.52	-14.48	40	48.78	7.49	0.81	31.56	-	-	Peak
88.59	30.8	-12.7	43.5	53.21	8.07	1.06	31.54	100	41	Peak
272.73	30.43	-15.57	46	48.24	11.89	1.71	31.41	-	-	Peak
302.8	20.39	-25.61	46	37.63	12.24	1.79	31.27	-	-	Peak
381.9	17.45	-28.55	46	32.4	14.31	1.97	31.23	-	-	Peak
594.7	20.82	-25.18	46	30.67	18.62	2.41	30.88	-	-	Peak
5150	38.85	-15.15	54	31.57	33.92	6.69	33.33	100	129	Average
5150	50.18	-23.82	74	42.9	33.92	6.69	33.33	100	129	Peak
5220	78.68	-	-	71.27	33.97	6.74	33.3	100	129	Average
5220	91.16	-	-	83.75	33.97	6.74	33.3	100	129	Peak
5350	38.44	-15.56	54	30.77	34.08	6.83	33.24	100	129	Average
5350	49.67	-24.33	74	42	34.08	6.83	33.24	100	129	Peak



Test Mode :	Mode 12	Temperature :	23~26°C
Test Channel :	48	Relative Humidity :	55~62%
Test Engineer :	Wii Chang	Polarization :	Horizontal
Remark :	5240 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
31.35	22.51	-17.49	40	35.57	17.78	0.71	31.55	111	78	Peak
163.38	19.3	-24.2	43.5	40.1	9.37	1.35	31.52	-	-	Peak
203.88	19.57	-23.93	43.5	41.13	8.42	1.48	31.46	-	-	Peak
304.2	22.31	-23.69	46	39.5	12.29	1.79	31.27	-	-	Peak
389.6	21.87	-24.13	46	36.58	14.51	1.99	31.21	-	-	Peak
421.1	23.73	-22.27	46	37.58	15.25	2.07	31.17	-	-	Peak
5150	38.87	-15.13	54	31.59	33.92	6.69	33.33	115	2	Average
5150	50.94	-23.06	74	43.66	33.92	6.69	33.33	115	2	Peak
5240	83.79	-	-	76.33	33.99	6.76	33.29	115	2	Average
5240	96.96	-	-	89.5	33.99	6.76	33.29	115	2	Peak
5350	38.46	-15.54	54	30.79	34.08	6.83	33.24	115	2	Average
5350	49.55	-24.45	74	41.88	34.08	6.83	33.24	115	2	Peak



Test Mode :	Mode 12	Temperature :	23~26°C
Test Channel :	48	Relative Humidity :	55~62%
Test Engineer :	Wii Chang	Polarization :	Vertical
Remark :	5240 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
34.86	25.18	-14.82	40	40.48	15.48	0.74	31.52	-	-	Peak
88.59	30.97	-12.53	43.5	53.38	8.07	1.06	31.54	100	14	Peak
266.79	29.79	-16.21	46	47.7	11.83	1.7	31.44	-	-	Peak
308.4	20	-26	46	37.09	12.39	1.8	31.28	-	-	Peak
475	18.33	-27.67	46	30.76	16.5	2.18	31.11	-	-	Peak
561.8	20.17	-25.83	46	30.67	18.08	2.35	30.93	-	-	Peak
5150	38.82	-15.18	54	31.54	33.92	6.69	33.33	100	129	Average
5150	49.86	-24.14	74	42.58	33.92	6.69	33.33	100	129	Peak
5240	78.08	-	-	70.62	33.99	6.76	33.29	100	129	Average
5240	90.35	-	-	82.89	33.99	6.76	33.29	100	129	Peak
5350	38.48	-15.52	54	30.81	34.08	6.83	33.24	100	129	Average
5350	49.23	-24.77	74	41.56	34.08	6.83	33.24	100	129	Peak



Test Mode :	Mode 13	Temperature :	23~26°C
Test Channel :	52	Relative Humidity :	55~62%
Test Engineer :	Wii Chang	Polarization :	Horizontal
Remark :	5260 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
31.35	20.82	-19.18	40	33.88	17.78	0.71	31.55	-	-	Peak
92.91	15.69	-27.81	43.5	37.43	8.72	1.08	31.54	-	-	Peak
271.11	27.35	-18.65	46	45.18	11.88	1.71	31.42	124	48	Peak
302.8	22.53	-23.47	46	39.77	12.24	1.79	31.27	-	-	Peak
379.8	20.36	-25.64	46	35.36	14.26	1.97	31.23	-	-	Peak
464.5	20.88	-25.12	46	33.59	16.25	2.17	31.13	-	-	Peak
5150	38.84	-15.16	54	31.56	33.92	6.69	33.33	126	3	Average
5150	50.27	-23.73	74	42.99	33.92	6.69	33.33	126	3	Peak
5260	83.27	-	-	75.75	34.01	6.78	33.27	126	3	Average
5260	96.52	-	-	89	34.01	6.78	33.27	126	3	Peak
5350	38.62	-15.38	54	30.95	34.08	6.83	33.24	126	3	Average
5350	49.46	-24.54	74	41.79	34.08	6.83	33.24	126	3	Peak



Test Mode :	Mode 13	Temperature :	23~26°C
Test Channel :	52	Relative Humidity :	55~62%
Test Engineer :	Wii Chang	Polarization :	Vertical
Remark :	5260 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
41.34	26.14	-13.86	40	44.81	12.1	0.76	31.53	-	-	Peak
88.59	30.68	-12.82	43.5	53.09	8.07	1.06	31.54	100	64	Peak
266.25	29.69	-16.31	46	47.6	11.83	1.7	31.44	-	-	Peak
300.7	19.84	-26.16	46	37.14	12.19	1.78	31.27	-	-	Peak
426.7	16.57	-29.43	46	30.27	15.38	2.08	31.16	-	-	Peak
524	19.04	-26.96	46	30.32	17.46	2.28	31.02	-	-	Peak
5150	38.83	-15.17	54	31.55	33.92	6.69	33.33	100	138	Average
5150	51.11	-22.89	74	43.83	33.92	6.69	33.33	100	138	Peak
5260	78.16	-	-	70.64	34.01	6.78	33.27	100	138	Average
5260	90.56	-	-	83.04	34.01	6.78	33.27	100	138	Peak
5350	38.41	-15.59	54	30.74	34.08	6.83	33.24	100	138	Average
5350	50.3	-23.7	74	42.63	34.08	6.83	33.24	100	138	Peak



Test Mode :	Mode 14	Temperature :	23~26°C
Test Channel :	60	Relative Humidity :	55~62%
Test Engineer :	Wii Chang	Polarization :	Horizontal
Remark :	5300 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
31.35	23.82	-16.18	40	36.88	17.78	0.71	31.55	-	-	Peak
162.84	21.13	-22.37	43.5	41.85	9.44	1.35	31.51	-	-	Peak
232.5	30.45	-15.55	46	49.91	10.45	1.59	31.5	100	61	Peak
300	23.06	-22.94	46	40.39	12.16	1.78	31.27	-	-	Peak
379.1	20.04	-25.96	46	35.08	14.23	1.96	31.23	-	-	Peak
621.3	21.11	-24.89	46	30.64	18.81	2.49	30.83	-	-	Peak
5150	38.81	-15.19	54	31.53	33.92	6.69	33.33	113	6	Average
5150	51.34	-22.66	74	44.06	33.92	6.69	33.33	113	6	Peak
5300	84.58	-	-	77	34.04	6.8	33.26	113	6	Average
5300	97.21	-	-	89.63	34.04	6.8	33.26	113	6	Peak
5350	38.53	-15.47	54	30.86	34.08	6.83	33.24	113	6	Average
5350	50.42	-23.58	74	42.75	34.08	6.83	33.24	113	6	Peak



Test Mode :	Mode 14	Temperature :	23~26°C
Test Channel :	60	Relative Humidity :	55~62%
Test Engineer :	Wii Chang	Polarization :	Vertical
Remark :	5300 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
40.8	26.03	-13.97	40	44.12	12.68	0.75	31.52	-	-	Peak
88.05	31.13	-12.37	43.5	53.54	8.07	1.06	31.54	115	15	Peak
270.3	30.49	-15.51	46	48.33	11.87	1.71	31.42	-	-	Peak
302.1	20.68	-25.32	46	37.92	12.24	1.79	31.27	-	-	Peak
368.6	17.8	-28.2	46	33.17	13.95	1.94	31.26	-	-	Peak
573	20.62	-25.38	46	30.89	18.27	2.37	30.91	-	-	Peak
5150	38.8	-15.2	54	31.52	33.92	6.69	33.33	100	150	Average
5150	50.34	-23.66	74	43.06	33.92	6.69	33.33	100	150	Peak
5300	78.4	-	-	70.82	34.04	6.8	33.26	100	150	Average
5300	90.43	-	-	82.85	34.04	6.8	33.26	100	150	Peak
5350	38.41	-15.59	54	30.74	34.08	6.83	33.24	100	150	Average
5350	49.43	-24.57	74	41.76	34.08	6.83	33.24	100	150	Peak



Test Mode :	Mode 15	Temperature :	23~26°C
Test Channel :	64	Relative Humidity :	55~62%
Test Engineer :	Wii Chang	Polarization :	Horizontal
Remark :	5320 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
31.08	23.88	-16.12	40	36.94	17.78	0.71	31.55	-	-	Peak
137.73	20.83	-22.67	43.5	40.35	10.73	1.26	31.51	-	-	Peak
232.5	30.77	-15.23	46	50.23	10.45	1.59	31.5	100	51	Peak
300.7	24.92	-21.08	46	42.22	12.19	1.78	31.27	-	-	Peak
384.7	20.8	-25.2	46	35.66	14.38	1.98	31.22	-	-	Peak
589.1	20.66	-25.34	46	30.62	18.53	2.4	30.89	-	-	Peak
5150	38.46	-15.54	54	31.18	33.92	6.69	33.33	127	4	Average
5150	49.63	-24.37	74	42.35	33.92	6.69	33.33	127	4	Peak
5320	83.97	-	-	76.36	34.05	6.81	33.25	127	4	Average
5320	96.48	-	-	88.87	34.05	6.81	33.25	127	4	Peak
5350	38.62	-15.38	54	30.95	34.08	6.83	33.24	127	4	Average
5350	50.15	-23.85	74	42.48	34.08	6.83	33.24	127	4	Peak



Test Mode :	Mode 15	Temperature :	23~26°C
Test Channel :	64	Relative Humidity :	55~62%
Test Engineer :	Wii Chang	Polarization :	Vertical
Remark :	5320 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
41.34	25.29	-14.71	40	43.96	12.1	0.76	31.53	-	-	Peak
88.32	32.07	-11.43	43.5	54.48	8.07	1.06	31.54	100	33	Peak
267.33	31.13	-14.87	46	49.03	11.84	1.7	31.44	-	-	Peak
304.2	20.02	-25.98	46	37.21	12.29	1.79	31.27	-	-	Peak
442.8	17.86	-28.14	46	31.13	15.76	2.12	31.15	-	-	Peak
588.4	19.97	-26.03	46	29.93	18.53	2.4	30.89	-	-	Peak
5150	38.77	-15.23	54	31.49	33.92	6.69	33.33	102	151	Average
5150	50.06	-23.94	74	42.78	33.92	6.69	33.33	102	151	Peak
5320	77.63	-	-	70.02	34.05	6.81	33.25	102	151	Average
5320	90.96	-	-	83.35	34.05	6.81	33.25	102	151	Peak
5350	38.47	-15.53	54	30.8	34.08	6.83	33.24	102	151	Average
5350	51.23	-22.77	74	43.56	34.08	6.83	33.24	102	151	Peak



Test Mode :	Mode 16	Temperature :	23~26°C
Test Channel :	100	Relative Humidity :	55~62%
Test Engineer :	Wii Chang	Polarization :	Horizontal
Remark :	5500 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
31.35	28.01	-11.99	40	41.07	17.78	0.71	31.55	100	66	Peak
206.85	21.96	-21.54	43.5	43.31	8.62	1.49	31.46	-	-	Peak
230.88	30.05	-15.95	46	49.65	10.32	1.58	31.5	-	-	Peak
302.1	24.55	-21.45	46	41.79	12.24	1.79	31.27	-	-	Peak
382.6	20.57	-25.43	46	35.49	14.33	1.97	31.22	-	-	Peak
580	20.7	-25.3	46	30.83	18.39	2.38	30.9	-	-	Peak
5470	58.06	-10.24	68.3	50.16	34.17	6.92	33.19	121	8	Peak
5500	88.44	-	-	80.46	34.2	6.95	33.17	121	8	Average
5500	102.36	-	-	94.38	34.2	6.95	33.17	121	8	Peak
5725	50.07	-18.23	68.3	41.58	34.51	7.17	33.19	121	8	Peak



Test Mode :	Mode 16	Temperature :	23~26°C
Test Channel :	100	Relative Humidity :	55~62%
Test Engineer :	Wii Chang	Polarization :	Vertical
Remark :	5500 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
40.8	25.46	-14.54	40	43.55	12.68	0.75	31.52	-	-	Peak
88.59	32.17	-11.33	43.5	54.58	8.07	1.06	31.54	100	36	Peak
267.33	30.36	-15.64	46	48.26	11.84	1.7	31.44	-	-	Peak
303.5	20.64	-25.36	46	37.86	12.26	1.79	31.27	-	-	Peak
427.4	18.46	-27.54	46	32.13	15.41	2.08	31.16	-	-	Peak
556.9	19.47	-26.53	46	30.07	18	2.34	30.94	-	-	Peak
5470	49.88	-18.42	68.3	41.98	34.17	6.92	33.19	100	160	Peak
5500	81.59	-	-	73.61	34.2	6.95	33.17	100	160	Average
5500	94.06	-	-	86.08	34.2	6.95	33.17	100	160	Peak
5725	50.77	-17.53	68.3	42.28	34.51	7.17	33.19	100	160	Peak



Test Mode :	Mode 17	Temperature :	23~26°C
Test Channel :	120	Relative Humidity :	55~62%
Test Engineer :	Wii Chang	Polarization :	Horizontal
Remark :	5600 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
31.35	28.73	-11.27	40	41.79	17.78	0.71	31.55	106	48	Peak
139.35	20.18	-23.32	43.5	39.72	10.7	1.27	31.51	-	-	Peak
229.26	29.68	-16.32	46	49.42	10.18	1.58	31.5	-	-	Peak
300	23	-23	46	40.33	12.16	1.78	31.27	-	-	Peak
469.4	23.01	-22.99	46	35.59	16.37	2.17	31.12	-	-	Peak
573	20.23	-25.77	46	30.5	18.27	2.37	30.91	-	-	Peak
5470	50.09	-18.21	68.3	42.19	34.17	6.92	33.19	118	8	Peak
5600	84.2	-	-	75.99	34.34	7.05	33.18	118	8	Average
5600	97.29	-	-	89.08	34.34	7.05	33.18	118	8	Peak
5725	49.94	-18.36	68.3	41.45	34.51	7.17	33.19	118	8	Peak



Test Mode :	Mode 17	Temperature :	23~26°C
Test Channel :	120	Relative Humidity :	55~62%
Test Engineer :	Wii Chang	Polarization :	Vertical
Remark :	5600 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
32.97	27.28	-12.72	40	41.47	16.63	0.72	31.54	-	-	Peak
88.32	32.76	-10.74	43.5	55.17	8.07	1.06	31.54	103	38	Peak
266.25	30.64	-15.36	46	48.55	11.83	1.7	31.44			Peak
302.1	18.65	-27.35	46	35.89	12.24	1.79	31.27			Peak
426.7	17.37	-28.63	46	31.07	15.38	2.08	31.16			Peak
640.2	23.93	-22.07	46	33.27	18.89	2.56	30.79			Peak
5470	51.91	-16.39	68.3	44.01	34.17	6.92	33.19	108	194	Peak
5600	78.4	-	-	70.19	34.34	7.05	33.18	108	194	Average
5600	90.29	-	-	82.08	34.34	7.05	33.18	108	194	Peak
5725	50.24	-18.06	68.3	41.75	34.51	7.17	33.19	108	194	Peak
11200	49.34	-24.66	74	56.97	37.86	10.17	55.66	100	0	Peak



Test Mode :	Mode 18	Temperature :	23~26°C
Test Channel :	140	Relative Humidity :	55~62%
Test Engineer :	Wii Chang	Polarization :	Horizontal
Remark :	5700 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
31.35	27.89	-12.11	40	40.95	17.78	0.71	31.55	126	64	Peak
162.03	19.74	-23.76	43.5	40.4	9.5	1.35	31.51	-	-	Peak
232.5	27.09	-18.91	46	46.55	10.45	1.59	31.5	-	-	Peak
301.4	18.81	-27.19	46	36.09	12.21	1.78	31.27	-	-	Peak
372.8	18.14	-27.86	46	33.39	14.05	1.95	31.25	-	-	Peak
608.7	19.87	-26.13	46	29.51	18.76	2.45	30.85	-	-	Peak
5470	51.04	-17.26	68.3	43.14	34.17	6.92	33.19	106	6	Peak
5700	83.7	-	-	75.27	34.47	7.15	33.19	106	6	Average
5700	96.82	-	-	88.39	34.47	7.15	33.19	106	6	Peak
5725	56.16	-12.14	68.3	47.67	34.51	7.17	33.19	106	6	Peak



Test Mode :	Mode 18	Temperature :	23~26°C
Test Channel :	140	Relative Humidity :	55~62%
Test Engineer :	Wii Chang	Polarization :	Vertical
Remark :	5700 MHz is Fundamental Signals which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
31.35	27.08	-12.92	40	40.14	17.78	0.71	31.55	100	59	Peak
203.61	20.64	-22.86	43.5	42.2	8.42	1.48	31.46	-	-	Peak
232.5	28.18	-17.82	46	47.64	10.45	1.59	31.5	-	-	Peak
300	24.89	-21.11	46	42.22	12.16	1.78	31.27	-	-	Peak
377.7	20.71	-25.29	46	35.81	14.18	1.96	31.24	-	-	Peak
653.5	21.04	-24.96	46	30.28	18.94	2.59	30.77	-	-	Peak
5470	48.87	-19.43	68.3	40.97	34.17	6.92	33.19	102	130	Peak
5700	78.38	-	-	69.95	34.47	7.15	33.19	102	130	Average
5700	90.8	-	-	82.37	34.47	7.15	33.19	102	130	Peak
5725	52.46	-15.84	68.3	43.97	34.51	7.17	33.19	102	130	Peak

3.8 Peak Excursion Ratio Measurement

3.8.1 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.

3.8.2 Measuring Instruments

See list of measuring instruments of this test report.

3.8.3 Test Procedures

The transmitter output of EUT is connected to the spectrum analyzer, and the cable loss is offset as shown in the test equipment.

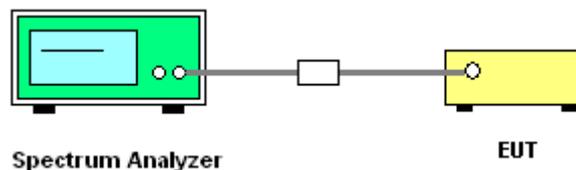
1st Trace :

- Set RBW = 1 MHz, VBW \geq 3 MHz with peak detector and max-hold settings

2nd Trace:

- Set RBW = 1 MHz, VBW \geq 3 MHz, sample detector mode, and 100 sweets of power averaging as same as method 1 of conducted power measurement.

3.8.4 Test Setup

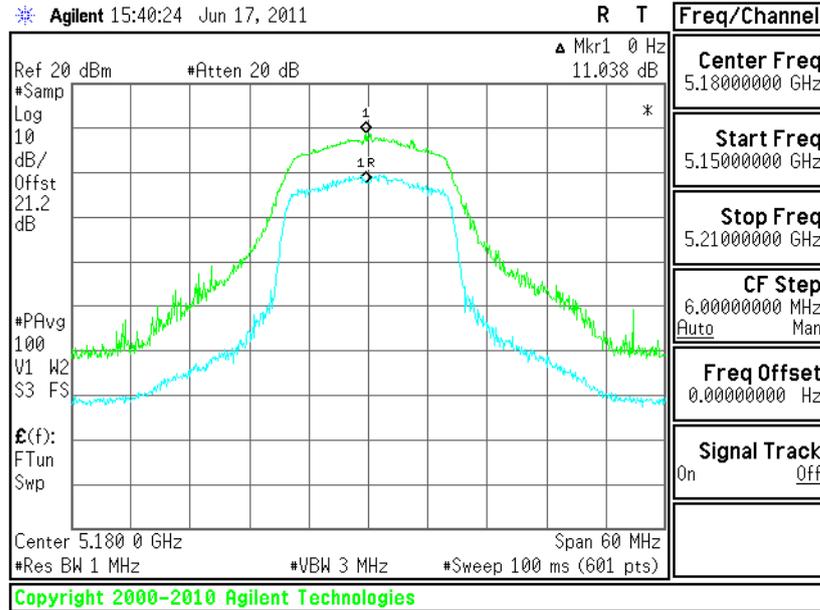




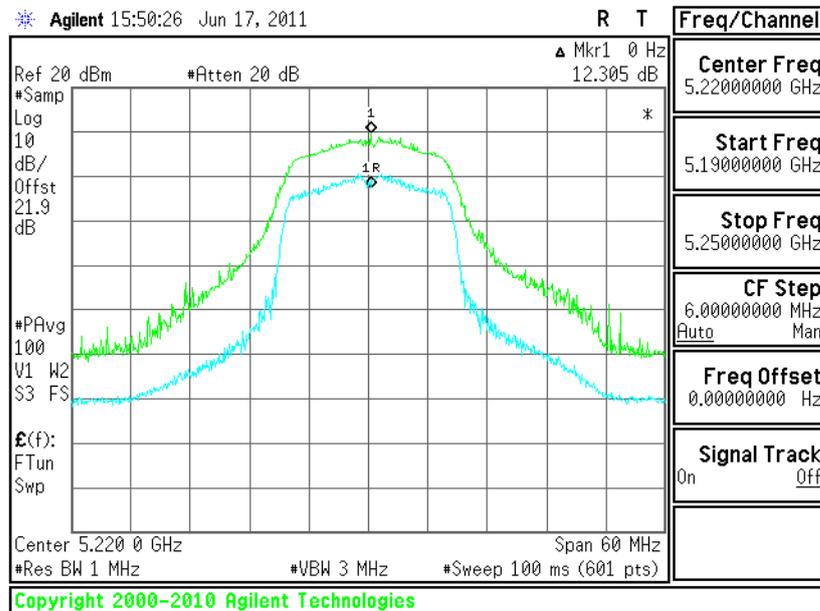
3.8.5 Test Result of Peak Excursion Ratio

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

Peak Excursion Ratio Plot on 802.11a Channel 36

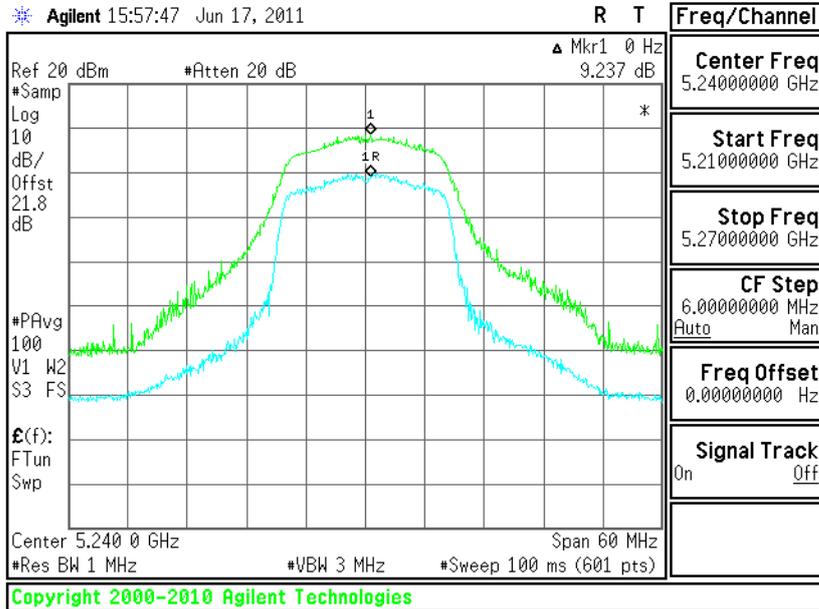


Peak Excursion Ratio Plot on 802.11a Channel 44

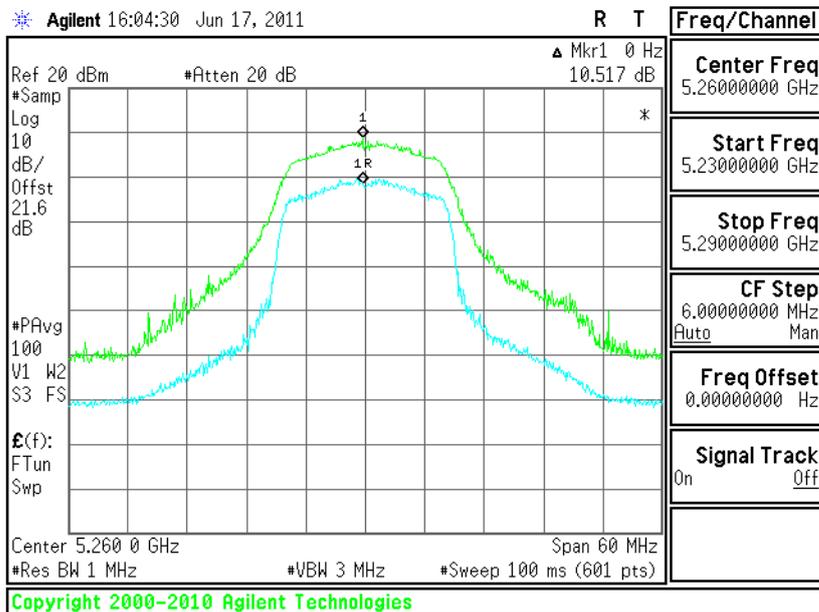




Peak Excursion Ratio Plot on 802.11a Channel 48

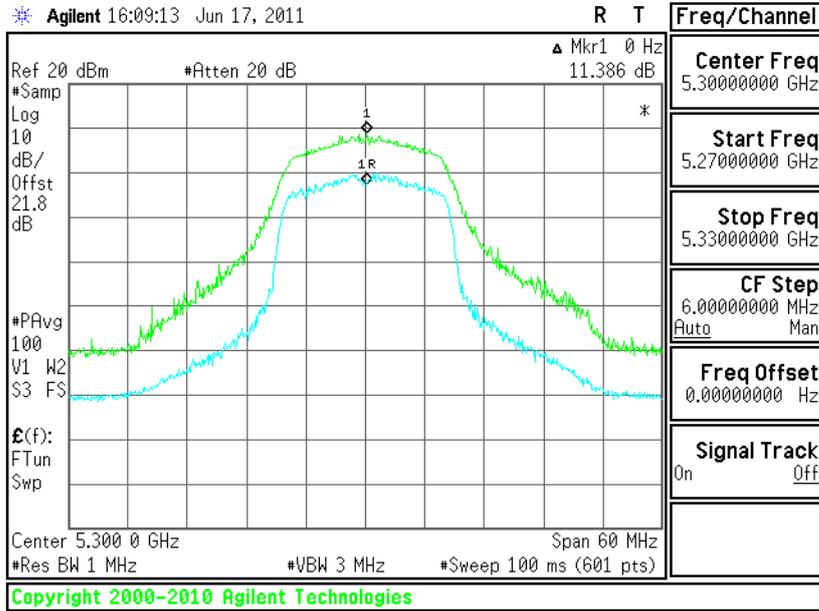


Peak Excursion Ratio Plot on 802.11a Channel 52

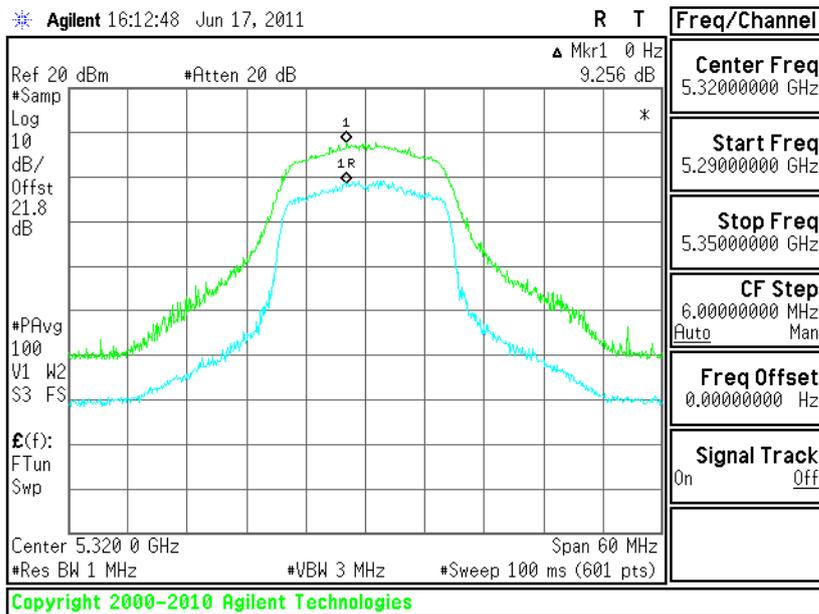




Peak Excursion Ratio Plot on 802.11a Channel 60

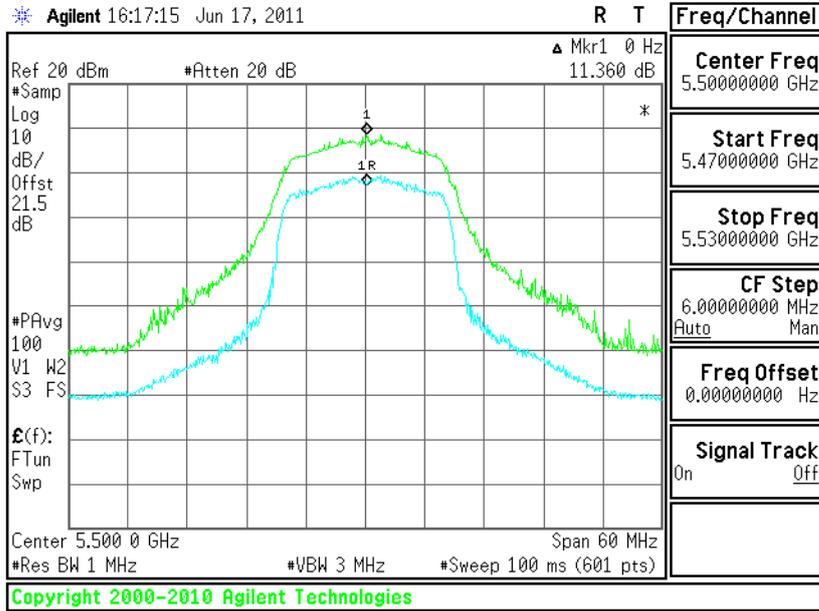


Peak Excursion Ratio Plot on 802.11a Channel 64

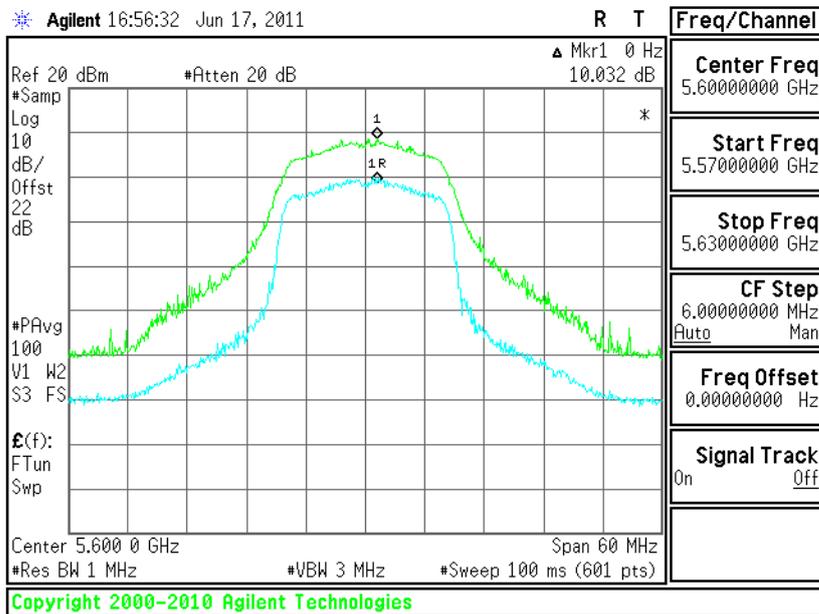




Peak Excursion Ratio Plot on 802.11a Channel 100

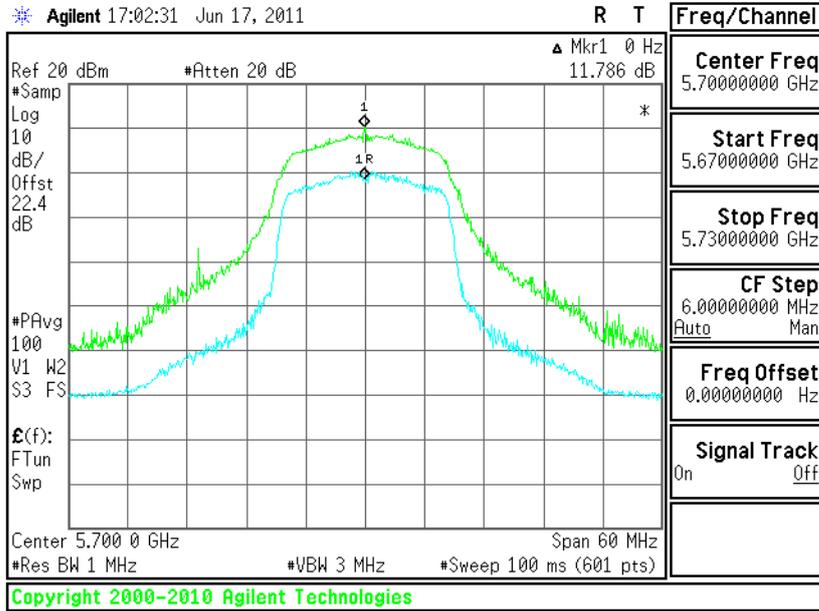


Peak Excursion Ratio Plot on 802.11a Channel 120





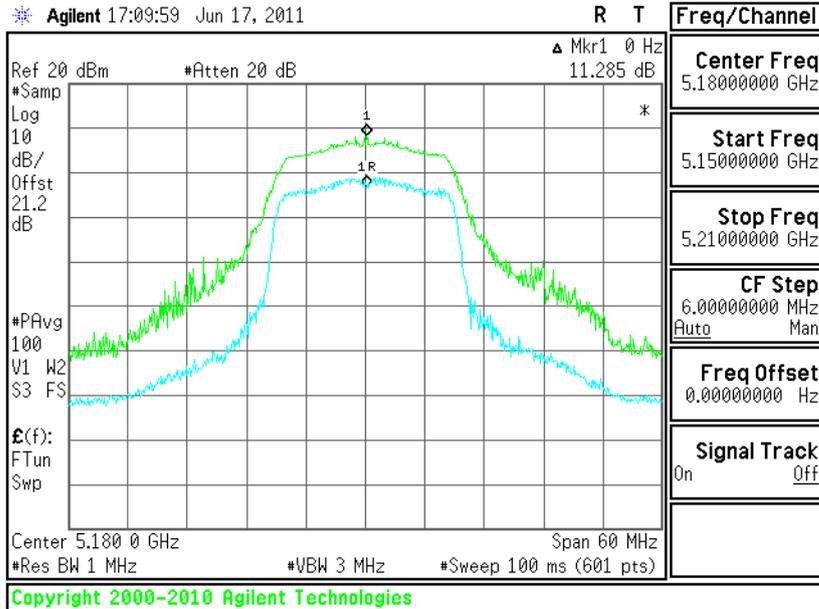
Peak Excursion Ratio Plot on 802.11a Channel 140



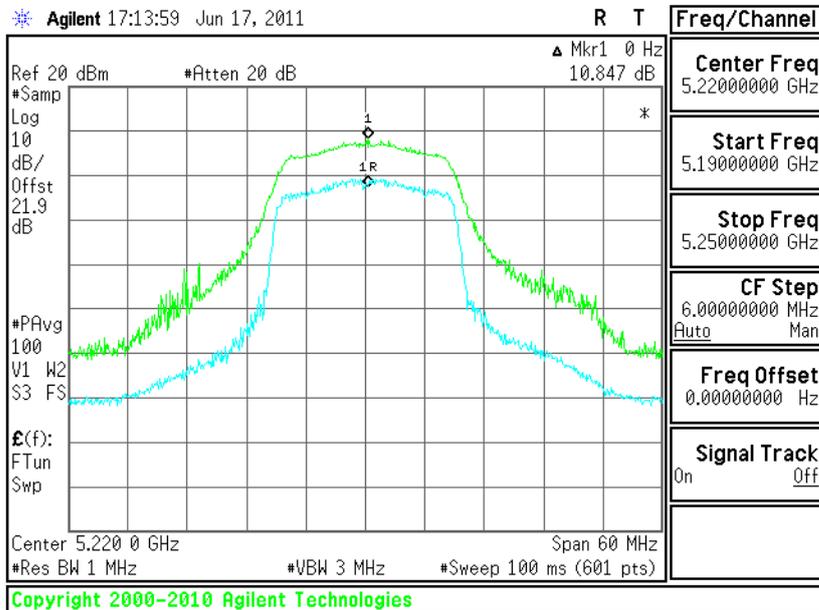


Test Mode :	Mode 10~18	Temperature :	24~26°C
Test Engineer :	Alan Liu	Relative Humidity :	45~49%

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

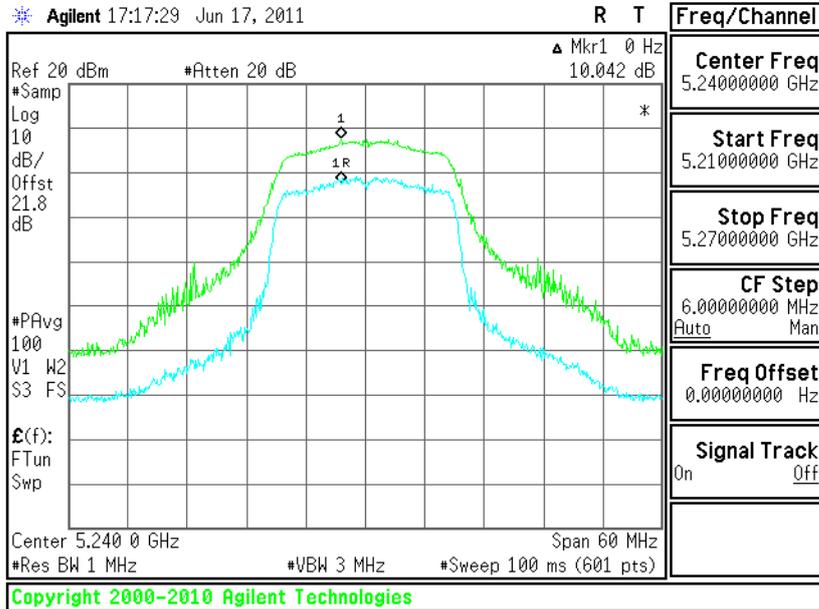


Peak Excursion Ratio Plot on 802.11n (BW 20MHz) Channel 44

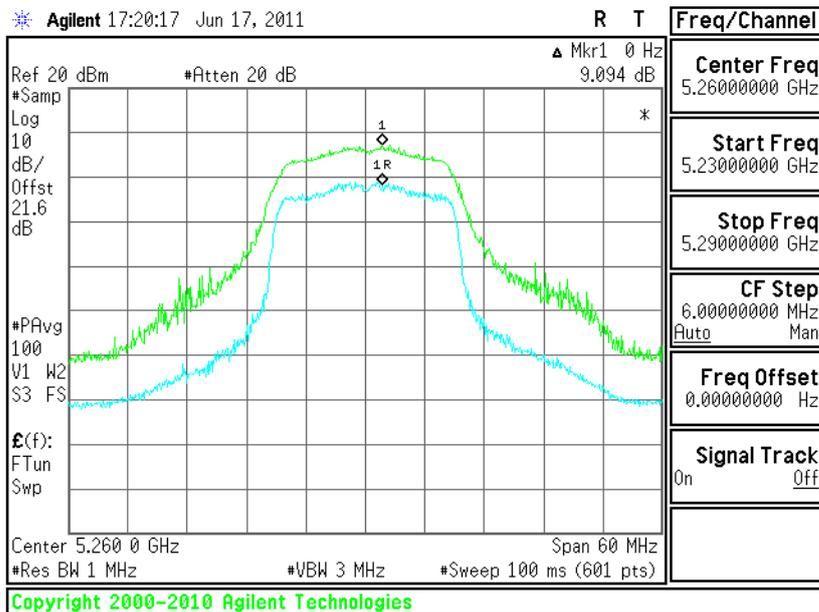




Peak Excursion Ratio Plot on 802.11n (BW 20MHz) Channel 48

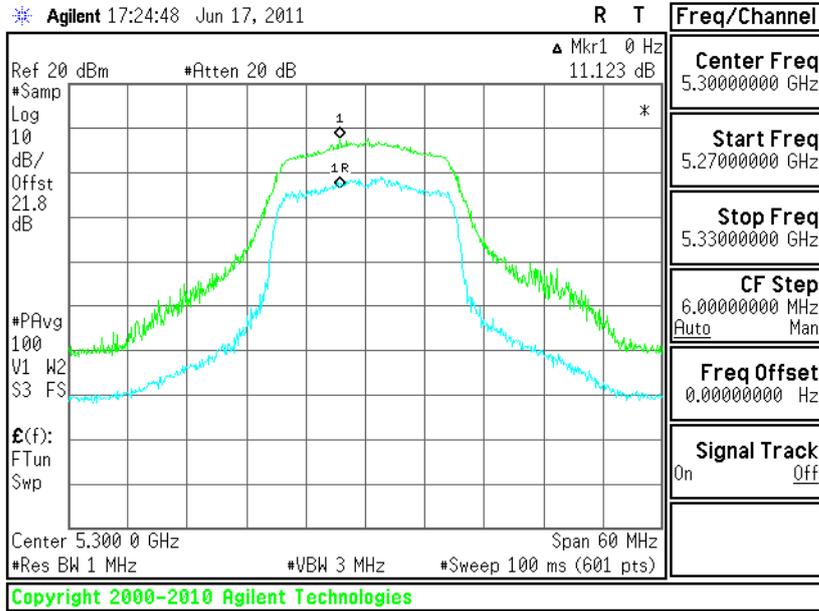


Peak Excursion Ratio Plot on 802.11n (BW 20MHz) Channel 52

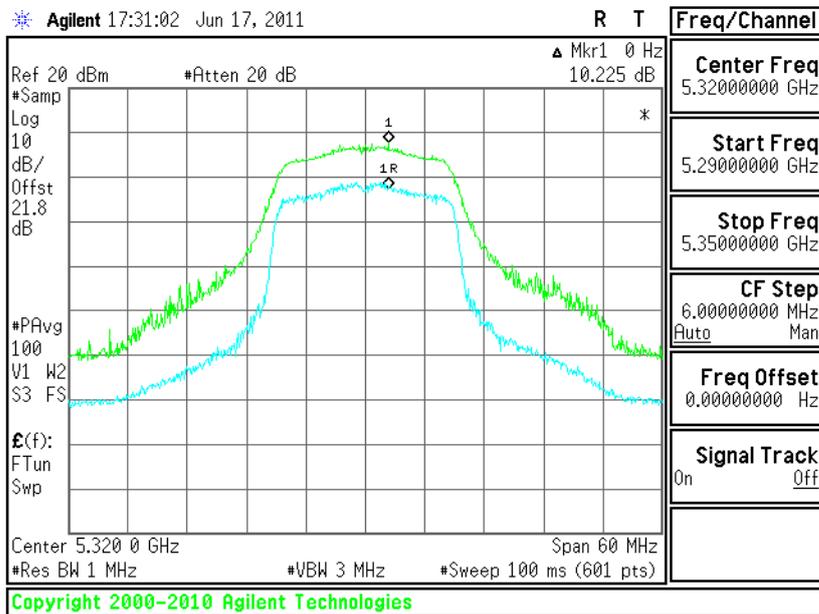




Peak Excursion Ratio Plot on 802.11n (BW 20MHz) Channel 60

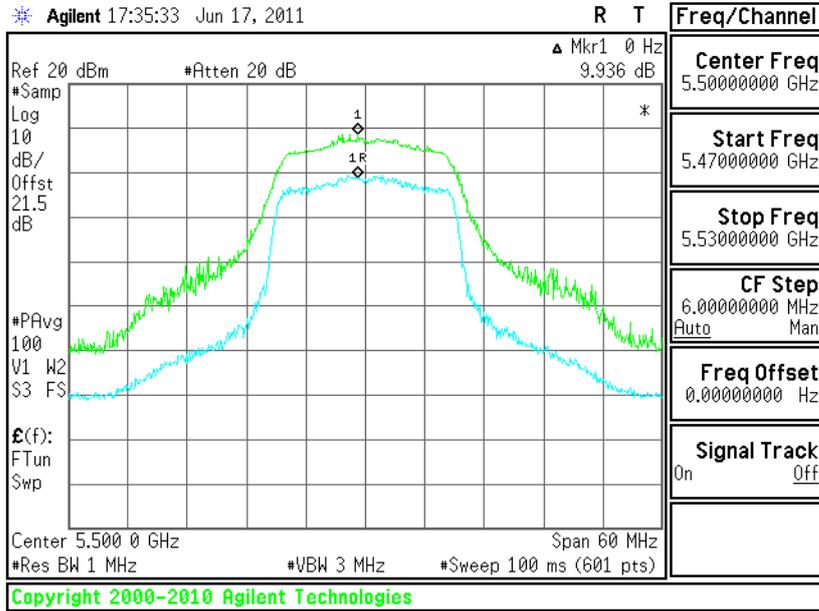


Peak Excursion Ratio Plot on 802.11n (BW 20MHz) Channel 64

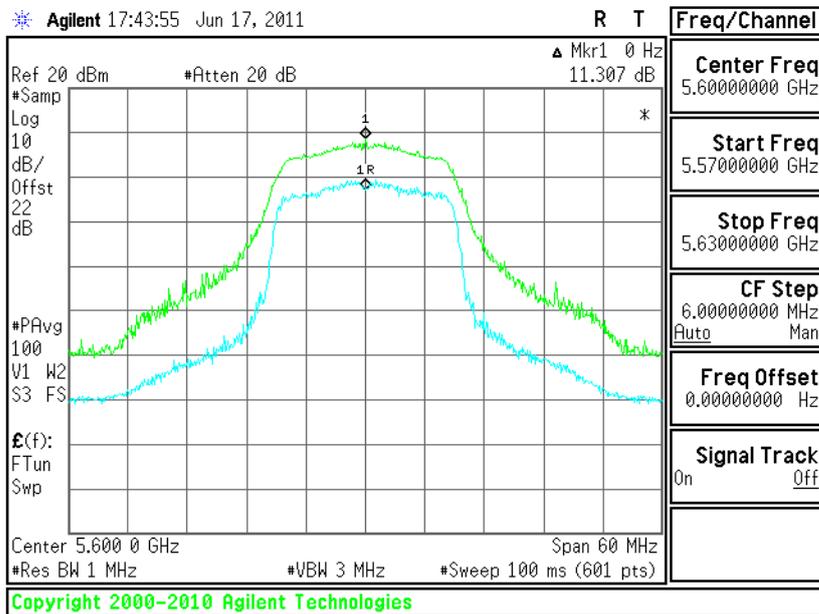




Peak Excursion Ratio Plot on 802.11n (BW 20MHz) Channel 100

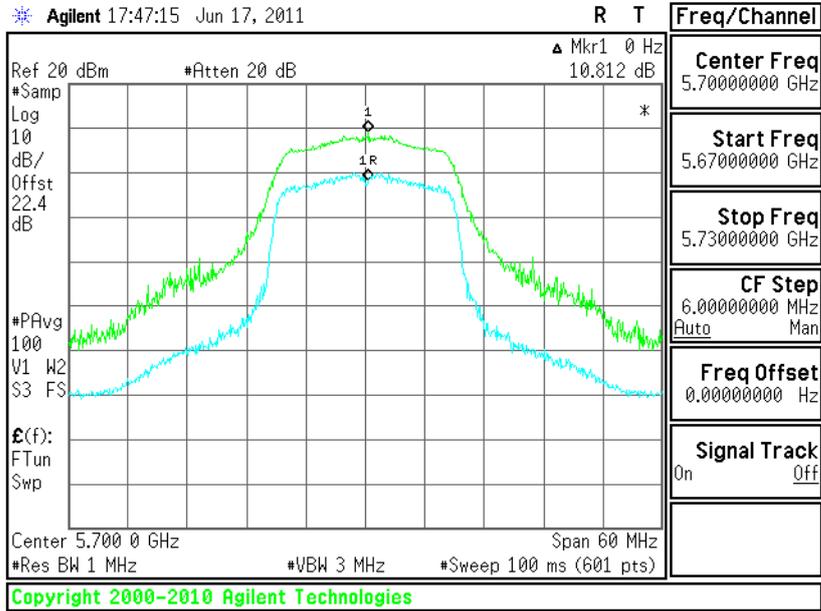


Peak Excursion Ratio Plot on 802.11n (BW 20MHz) Channel 120





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





3.9 Automatically Discontinue Transmission

3.9.1 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.

3.9.2 Measuring Instruments

See list of measuring instruments of this test report.

3.9.3 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.

3.10 Frequency Stability Measurement

3.10.1 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.

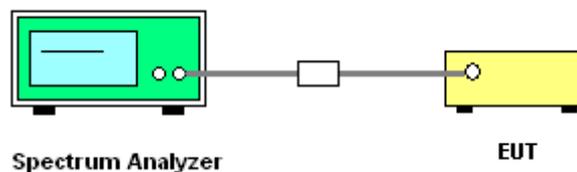
3.10.2 Measuring Instruments

See list of measuring instruments of this test report.

3.10.3 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.

3.10.4 Test Setup





3.10.5 Test Result of Frequency Stability

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

Channel	Frequency (MHz)	Low Frequency (Fl)	High Frequency (Fh)	Frequency Stability (ppm)
36	5180	5171.83	5188.17	0.00
44	5220	5211.83	5228.17	0.00
48	5240	5231.83	5248.21	3.82
52	5260	5251.79	5268.21	0.00
60	5300	5291.83	5308.21	3.77
64	5320	5311.83	5328.21	3.76
100	5500	5491.83	5508.17	0.00
120	5600	5591.83	5608.21	3.57
140	5700	5691.83	5708.21	3.51

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

Channel	Frequency (MHz)	Low Frequency (Fl)	High Frequency (Fh)	Frequency Stability (ppm)
36	5180	5171.21	5188.83	3.86
44	5220	5211.21	5228.79	0.00
48	5240	5231.25	5248.79	3.82
52	5260	5251.21	5268.79	0.00
60	5300	5291.21	5308.83	3.77
64	5320	5311.25	5328.79	3.76
100	5500	5491.21	5508.79	0.00
120	5600	5591.21	5608.83	3.57
140	5700	5691.21	5708.83	3.51



3.11 Antenna Requirements

3.11.1 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.

3.11.2 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.

3.11.3 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	Due Date	Remark
System Simulator	R&S	CMU200	117995	N/A	Aug. 11, 2010	Aug.10, 2011	Conducted (TH02-HY)
Spectrum Analyzer	R&S	FSP30	101329	9kHz~40GHz	May. 03, 2011	May. 02, 2012	Conducted (TH02-HY)
Power Meter	Anritsu	ML2495A	0932001	N/A	Sep. 13, 2010	Sep. 12, 2011	Conducted (TH02-HY)
Power Sensor	Anritsu	MA2411B	0846202	N/A	Sep. 14, 2010	Sep. 13, 2011	Conducted (TH02-HY)
Power Meter	Agilent	E4416A	GB41292344	N/A	Feb. 18, 2011	Feb. 17, 2012	Conducted (TH02-HY)
Power Sensor	Agilent	E9327A	US40441548	N/A	Feb. 18, 2011	Feb. 17, 2012	Conducted (TH02-HY)
Thermal Chamber	Ten Billion	TTH-D35P	TBN-930701	N/A	Jul. 30, 2010	Jul. 29, 2011	Conducted (TH02-HY)
EMI Test Receive	R&S	ESCS 30	100356	9KHz – 2.75GHz	Aug. 16, 2010	Aug. 15, 2011	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100081	9KHz – 30MHz	Dec. 03, 2010	Dec. 02, 2011	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100080	9KHz – 30MHz	Dec. 01, 2010	Nov. 30, 2011	Conduction (CO05-HY)
AC Power Source	APC	APC-1000W	N/A	N/A	N/A	N/A	Conduction (CO05-HY)
Spectrum Analyzer	R&S	FSP30	101352	9KHz-40GHz	Nov. 03, 2010	Nov. 02, 2011	Radiation (03CH05-HY)
Amplifier	COM-POWER	PA-103	161075	1KHz - 1GHz	Mar. 29, 2011	Mar. 28, 2012	Radiation (03CH05-HY)
Bilog Antenna	SCHAFFNER	CBL6111C	2725	30MHz ~ 1GHz	Nov. 06, 2010	Nov. 05, 2011	Radiation (03CH05-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	15GHz- 40GHz	Oct. 18, 2010	Oct. 17, 2011	Radiation (03CH05-HY)
Pre Amplifier	Agilent	8449B	3008A01917	1GHz- 26.5GHz	Apr. 14, 2011	Apr. 13, 2012	Radiation (03CH05-HY)
Turn Table	HD	Deis HD 2000	420/611	0 - 360 degree	N/A	N/A	Radiation (03CH05-HY)
Antenna Mast	HD	MA 240	240/666	1 m - 4 m	N/A	N/A	Radiation (03CH05-HY)
Horn Antenna	ESCO	3117	00066584	1GHz ~ 18GHz	Aug. 05, 2010	Aug. 04, 2011	Radiation (03CH05-HY)
Loop Antenna	R&S	HFH2-Z2	860004/001	9 kHz~30 MHz	Jul. 29, 2010	Jul. 28, 2011	Radiation (03CH05-HY)
System Simulator	R&S	CMU200	117591	N/A	Oct. 18, 2010	Oct. 17, 2011	-
LTE Base Station	Anritsu	MT8820C	6200930978	N/A	Dec. 28, 2010	Dec. 27, 2011	-

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				