FCC RF Test Report

APPLICANT	**:**	**ZTE CORPORATION**
EQUIPMENT	**:**	**CDMA/LTE Tablet**
BRAND NAME	**:**	**ZTE**
MODEL NAME	**:**	**V68**
FCC ID	**:**	**Q78-V68**
STANDARD	**:**	**FCC Part 15 Subpart E**
CLASSIFICATION	**:**	**(NII) Unlicensed National Information Infrastructure TX**

The product was received on Sep. 08, 2011 and completely tested on Mar. 07, 2012. We, SPORTON INTERNATIONAL (KUNSHAN) 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 (KUNSHAN) INC., the test report shall not be reproduced except in full.

Reviewed by:

Jones Tsai

Jones Tsai / Manager

Testing Laboratory 1190

SPORTON INTERNATIONAL (KUNSHAN) INC.
No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P.R.C.

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR190807C	Rev. 01	Initial issue of report	Mar. 09, 2012

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	15.207	Gen 7.2.4	AC Conducted Emission	15.207(a)	Pass	Under limit 20.75 dB at 2.93 MHz
3.5	15.407(b)	A9.3	Unwanted Emissions	≤ -17, -27 dBm (depend on band)&15.209(a)	Pass	Under limit 1.43 dB at 5725 MHz
3.6	15.407(b)	A9.3	Peak Excursion Ratio	≤ 13dB	Pass	-
3.7	15.407(c)	A9.5	Automatically Discontinue Transmission	Discontinue Transmission	Pass	-
3.8	15.407(g)	A9.5	Frequency Stability	Within Operation Band	Pass	-
3.9	15.203 & 15.407(a)	A9.2	Antenna Requirement	N/A	Pass	-

1 General Description

1.1 Applicant

ZTE CORPORATION

ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Shenzhen, Guangdong, 518057, P.R.China

1.2 Manufacturer

ZTE CORPORATION

ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Shenzhen, Guangdong, 518057, P.R.China

1.3 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	CDMA/LTE Tablet
Brand Name	ZTE
Model Name	V68
FCC ID	Q78-V68
Tx/Rx Frequency Range	5150 MHz ~ 5250 MHz 5725 MHz ~ 5825 MHz
Maximum Output Power to Antenna	**<5150 MHz ~ 5250 MHz>** 802.11a : 9.57 dBm / 0.00906 W 802.11n (BW 20MHz) : 9.22 dBm / 0.00836 W **<5725 MHz ~ 5825 MHz >** 802.11a : 9.24 dBm / 0.00839 W 802.11n (BW 20MHz) : 9.00 dBm / 0.00794 W
Antenna Type	**<5150 MHz ~ 5250 MHz>** PIFA Antenna with gain 2.00 dBi **<5725 MHz ~ 5825 MHz>** PIFA Antenna with gain 2.00 dBi
HW Version	V2.1
SW Version	V68_V1.12
Type of Modulation	OFDM (BPSK / QPSK / 16QAM / 64QAM)
EUT Stage	Identical Prototype

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

1.4 Testing Site

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

Test Site	SPORTON INTERNATIONAL (KUNSHAN) INC.		
Test Site Location	No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P.R.C. TEL: +86-0512-5790-0158 FAX: +86-0512-5790-0958		
Test Site No.	**Sporton Site No.**		**FCC/IC Registration No.**
	CO01-KS	03CH01-KS	149928/4086E-1

1.5 Applied Standards

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

- FCC Part 15 Subpart E
- FCC KDB 789033 D01 General UNII Test Procedures v01
- ANSI C63.4-2003
- IC RSS-210 Issued 8
- IC RSS-Gen Issue 3

Remark:

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

1.6 Ancillary Equipment List

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	System Simulator	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m
2.	GPS Station	T&E	GS-50	N/A	N/A	Unshielded, 1.8 m
3.	Router	D-Link	DIR-855	KA2DIR855A2	N/A	Unshielded, 1.8 m
4.	Notebook	Acer	Travelmate 2413Lci	QDS-BRCM1016	N/A	AC I/P: Unshielded, 1.84m DC O/P: Shielded, 0.9m
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
149	5745	**153**	5765	**157**	5785	**161**	5805
165	5825	**-**	-	**-**	-	**-**	-

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
149	5745	**153**	5765	**157**	5785	**161**	5805
165	5825	**-**	-	**-**	-	**-**	-

2.2 RF Power

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

Channel	Frequency	5GHz 802.11a RF Power (dBm)							
		Data Rate							
		6 Mbps	9 Mbps	12 Mbps	18 Mbps	24 Mbps	36 Mbps	48 Mbps	54 Mbps
CH 36	5180 MHz	9.18	8.48	8.79	9.04	8.87	9.15	8.63	8.87
CH 40	5200 MHz	9.49	8.82	8.79	9.11	9.22	8.77	8.75	8.79
CH 44	5220 MHz	**9.57**	9.31	9.27	9.47	9.41	9.40	9.37	9.39
CH 149	5745 MHz	8.89	8.62	8.32	8.63	8.77	8.76	8.86	8.87
CH 157	5785 MHz	**9.24**	8.98	8.96	9.18	9.19	9.16	9.20	9.22
CH 161	5805 MHz	9.18	9.12	9.01	9.02	9.06	9.06	9.15	9.08

Channel	Frequency	5GHz 802.11n (BW 20MHz) RF Power (dBm)							
		Data Rate							
		6.5 Mbps	13 Mbps	19.5 Mbps	26 Mbps	39 Mbps	52 Mbps	58.5 Mbps	65 Mbps
CH 36	5180 MHz	9.04	8.22	8.93	8.97	8.99	8.95	8.57	8.93
CH 40	5200 MHz	9.00	8.56	8.93	8.80	8.98	8.96	8.88	8.90
CH 44	5220 MHz	**9.22**	8.98	9.03	9.18	9.20	9.18	9.09	9.12
CH 149	5745 MHz	8.84	8.37	8.76	8.83	8.76	8.73	8.74	8.81
CH 157	5785 MHz	**9.00**	8.78	8.90	8.89	8.68	8.86	8.92	8.51
CH 161	5805 MHz	8.65	8.37	8.59	8.53	8.64	8.64	8.60	8.40

Remark:

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

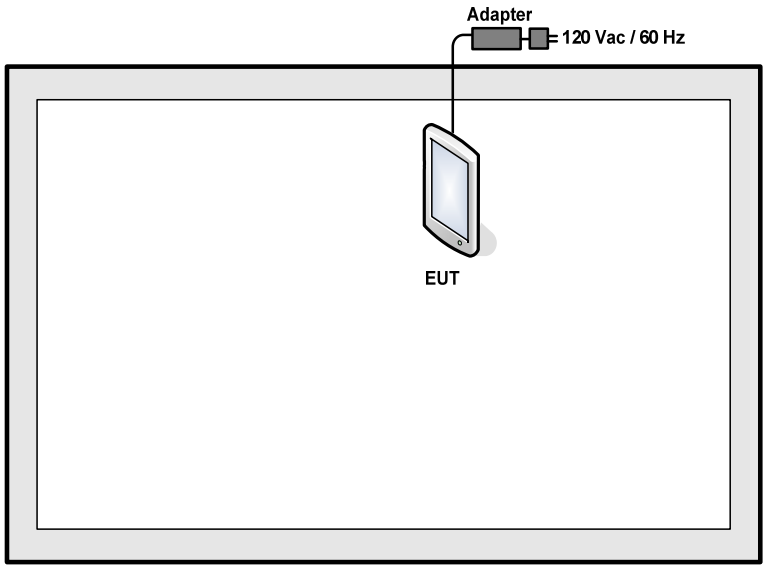
2.3 Test Mode

The EUT has been associated with peripherals pursuant to ANSI C63.4-2003 and configuration operated in a manner tended to maximize its emission characteristics in a typical application.
Frequency range investigated: conduction (150 kHz to 30 MHz), radiation (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower).
Pre-scanned tests, X, Y, Z in three orthogonal panels, were conducted to determine the final configuration from all possible combinations, laptop / tablet modes.
The following tables are showing the test modes as the worst cases (H plane) and recorded in this report.

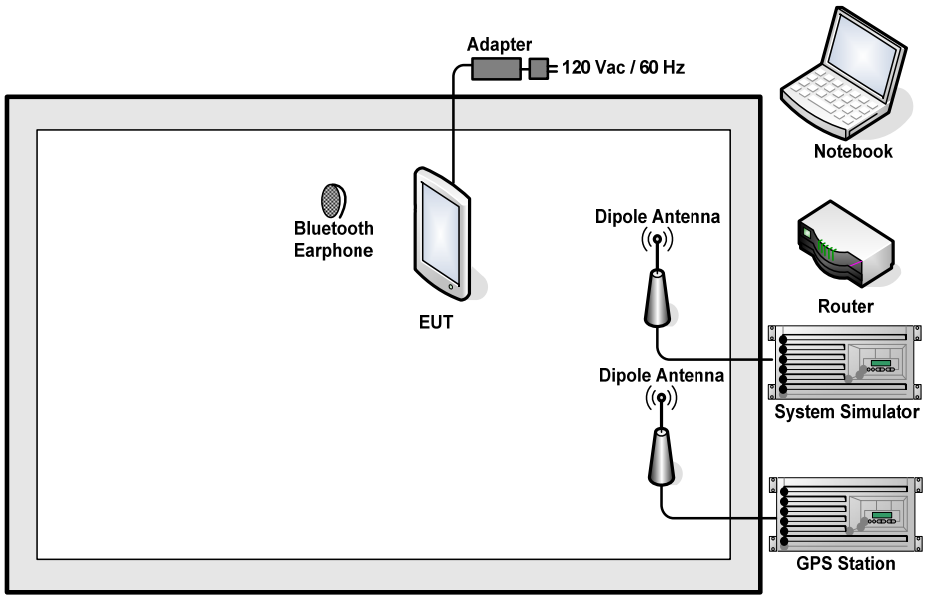
	Test Cases
Test Item	**802.11a/n (Modulation : OFDM)**
Conducted TCs	■ Mode 1: 802.11a_CH36_5180 MHz ■ Mode 2: 802.11a_CH40_5200 MHz ■ Mode 3: 802.11a_CH44_5220 MHz ■ Mode 4: 802.11a_CH149_5745 MHz ■ Mode 5: 802.11a_CH157_5765 MHz ■ Mode 6: 802.11a_CH161_5805 MHz ■ Mode 7: 802.11a_CH36_5180 MHz (BW 20M) ■ Mode 8: 802.11a_CH40_5200 MHz (BW 20M) ■ Mode 9: 802.11a_CH44_5220 MHz (BW 20M) ■ Mode 10: 802.11a_CH149_5745 MHz (BW 20M) ■ Mode 11: 802.11a_CH157_5765 MHz (BW 20M) ■ Mode 12: 802.11a_CH161_5805 MHz (BW 20M)
Radiated TCs	■ Mode 1: 802.11a_CH36_5180 MHz ■ Mode 2: 802.11a_CH40_5200 MHz ■ Mode 3: 802.11a_CH44_5220 MHz ■ Mode 4: 802.11a_CH149_5745 MHz ■ Mode 5: 802.11a_CH157_5765 MHz ■ Mode 6: 802.11a_CH161_5805 MHz ■ Mode 7: 802.11a_CH36_5180 MHz (BW 20M) ■ Mode 8: 802.11a_CH40_5200 MHz (BW 20M) ■ Mode 9: 802.11a_CH44_5220 MHz (BW 20M) ■ Mode 10: 802.11a_CH149_5745 MHz (BW 20M) ■ Mode 11: 802.11a_CH157_5765 MHz (BW 20M) ■ Mode 12: 802.11a_CH161_5805 MHz (BW 20M)
AC Conducted Emission	Mode 1 : CDMA 850 Idle + Bluetooth Link + WLAN Link + GPS Rx + Camera + USB Cable (Charging from Adapter)

2.4 Connection Diagram of Test System

<WLAN Tx Mode>



<AC Conducted Emission Mode>



2.5 RF Utility

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

3 Test Result

3.1 26dB Bandwidth Measurement

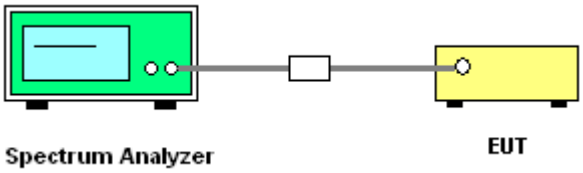
3.1.1 Measuring Instruments

See list of measuring instruments of this test report.

3.1.2 Test Procedures

1. The testing follows FCC KDB 789033 D01 General UNII Test Procedures v01.
2. Set RBW = approximately 1% of the emission bandwidth.
3. Set the VBW > RBW.
4. Detector = Peak.
5. Trace mode = max hold.
6. Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

3.1.3 Test Setup



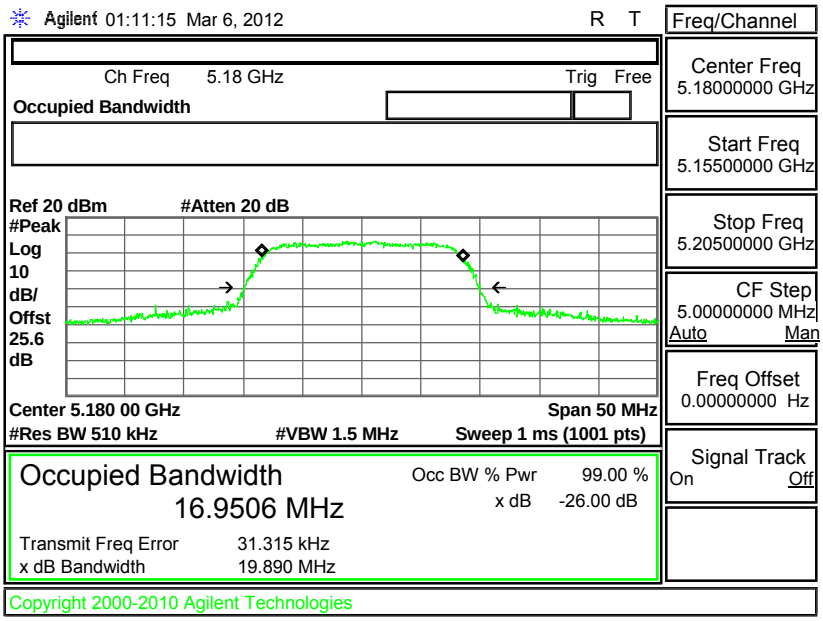
3.1.4 Test Result of 26dB Bandwidth

Test Mode :	Mode 1~6	Temperature :	24~26℃
Test Engineer :	Book Lin	Relative Humidity :	45~49%

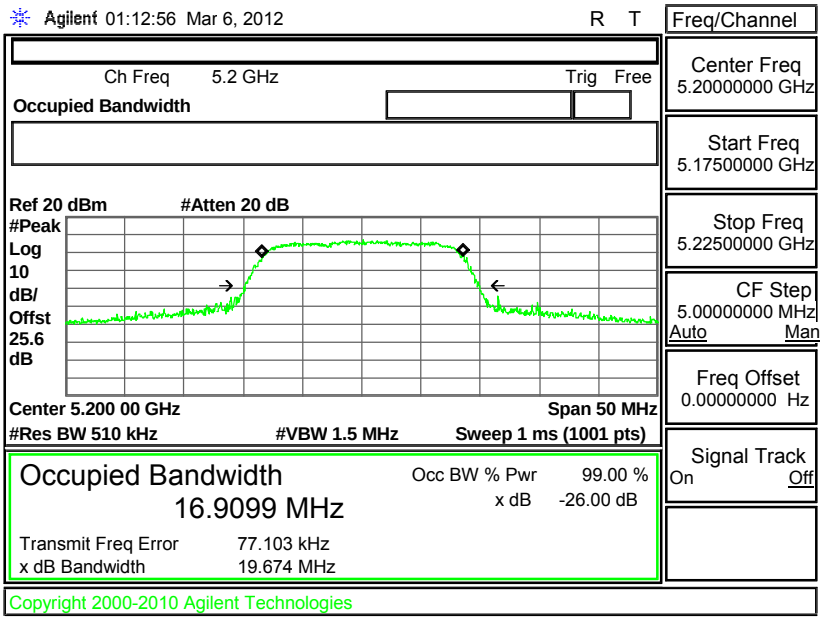
Channel	Frequency (MHz)	802.11a 26dB Bandwidth (MHz)	Pass/Fail
36	5180	19.890	N/A
40	5200	19.674	N/A
44	5220	19.792	N/A
149	5745	19.804	N/A
157	5785	20.668	N/A
161	5805	19.770	N/A

Note: N/A, 26dB bandwidth is reporting only.

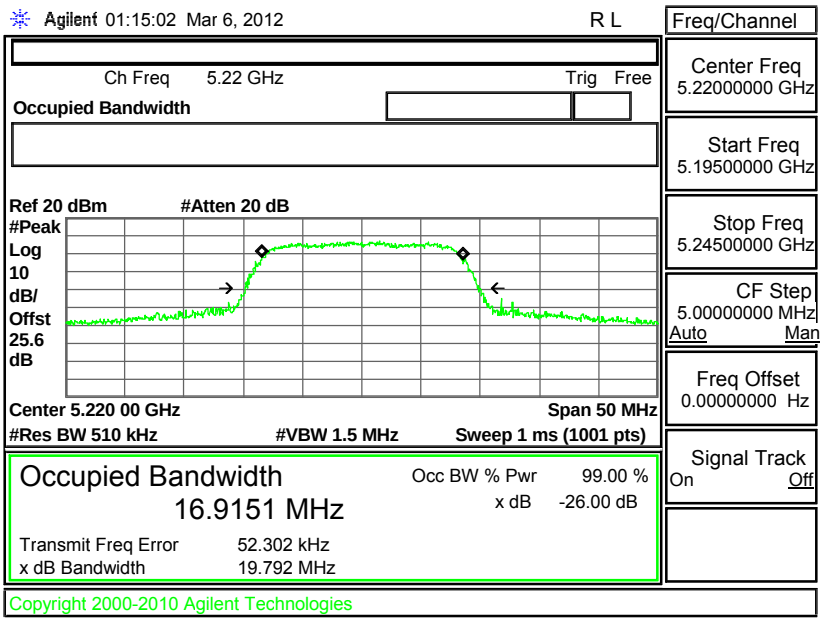
26 dB Bandwidth Plot on 802.11a Channel 36



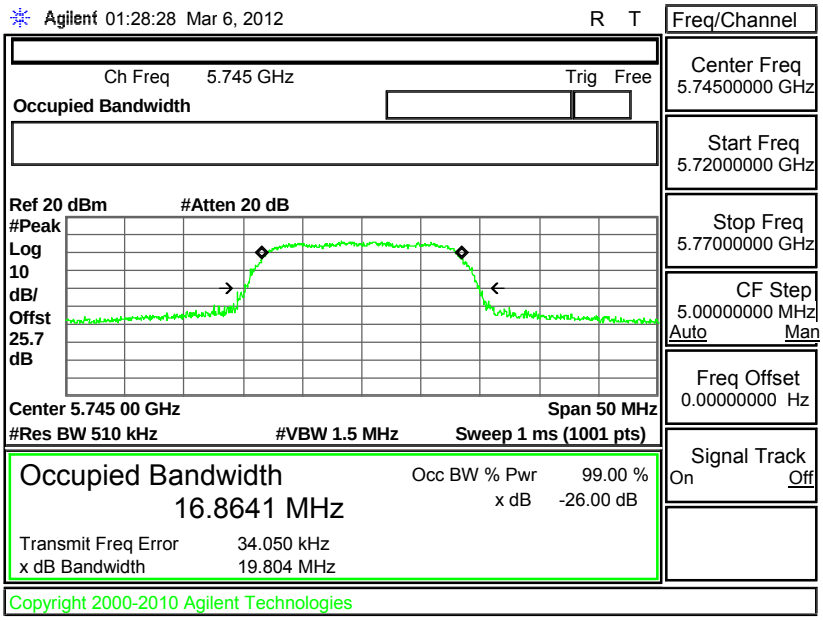
26 dB Bandwidth Plot on 802.11a Channel 40



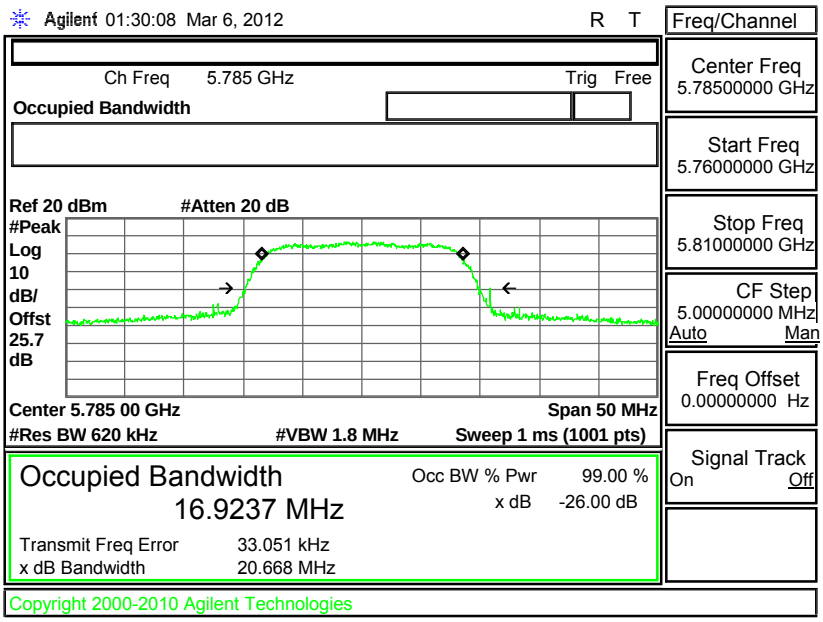
26 dB Bandwidth Plot on 802.11a Channel 44



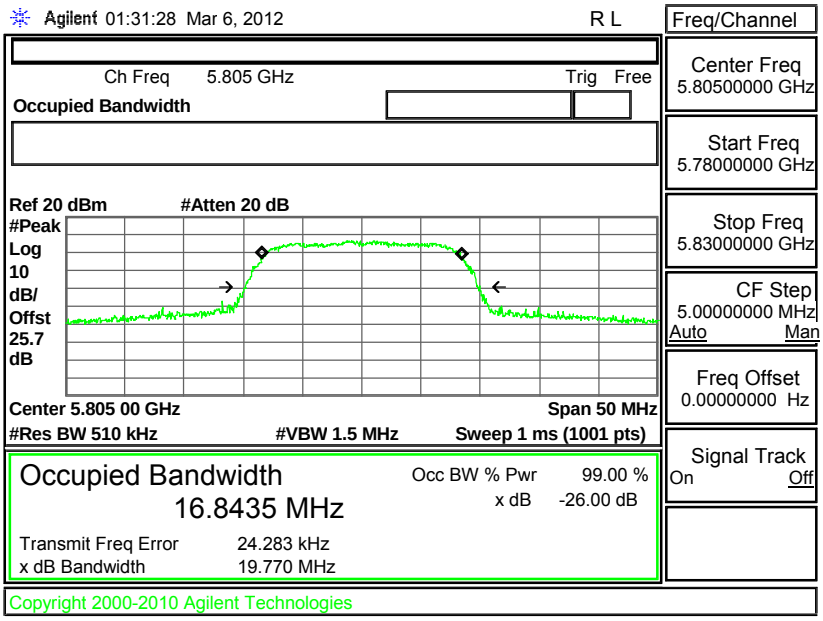
26 dB Bandwidth Plot on 802.11a Channel 149



26 dB Bandwidth Plot on 802.11a Channel 157



26 dB Bandwidth Plot on 802.11a Channel 161

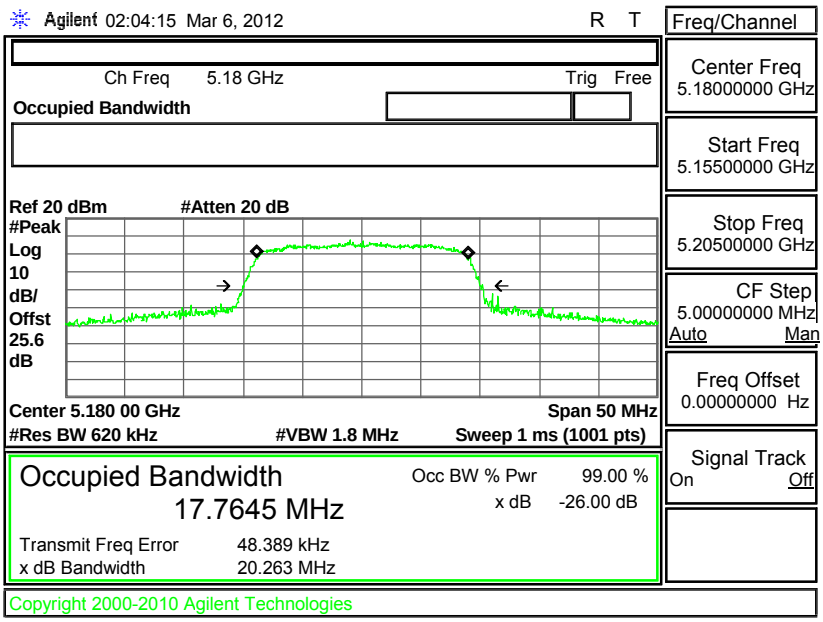


Test Mode :	Mode 7~12	Temperature :	24~26℃
Test Engineer :	Book Lin	Relative Humidity :	45~49%

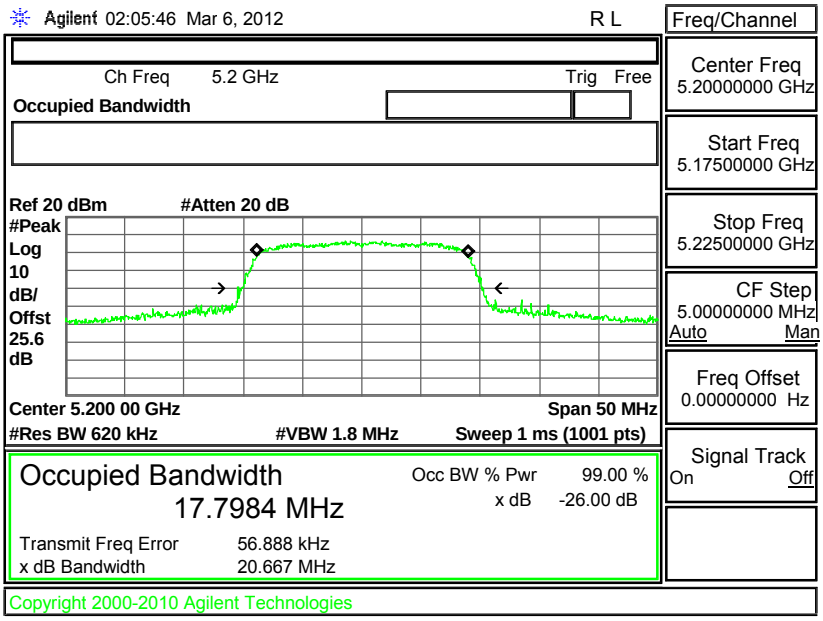
Channel	Frequency (MHz)	802.11n (BW 20MHz) 26dB Bandwidth (MHz)	Pass/Fail
36	5180	20.263	N/A
40	5200	20.667	N/A
44	5220	20.349	N/A
149	5745	20.303	N/A
157	5785	20.241	N/A
161	5805	20.387	N/A

Note: N/A, 26dB Bandwidth is reporting only.

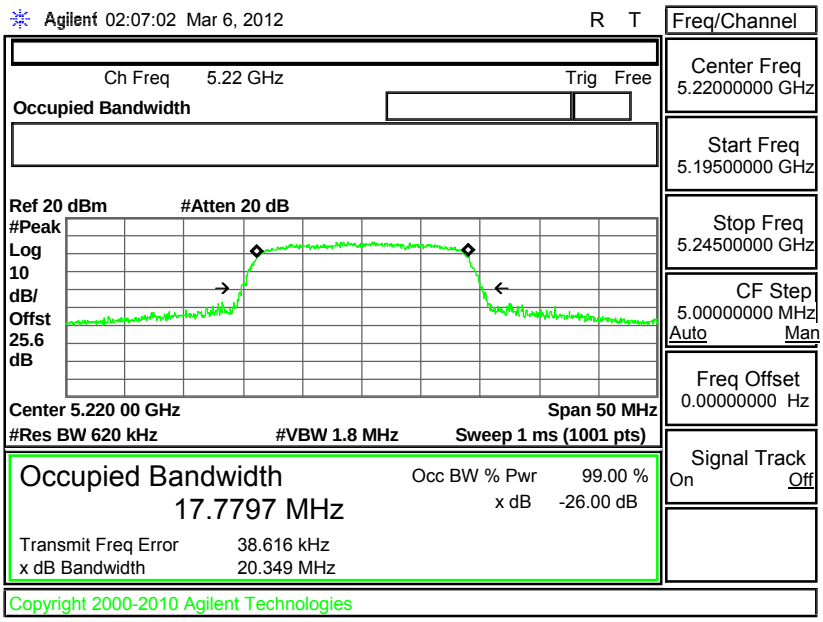
26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 36



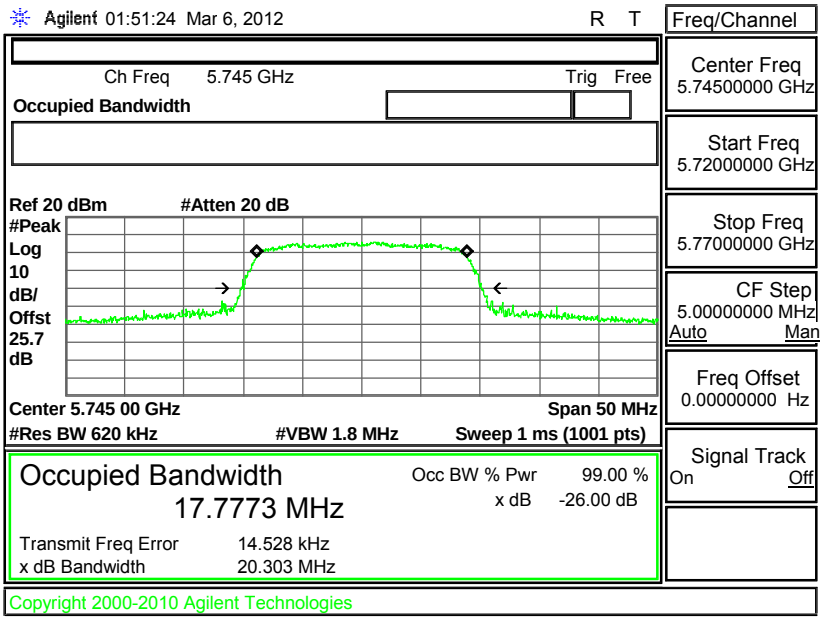
26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 40



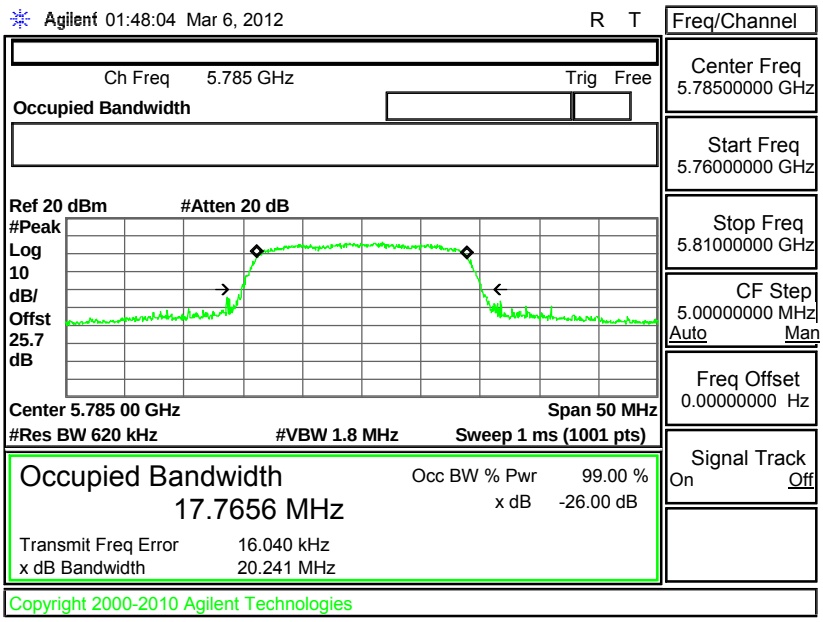
26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 44



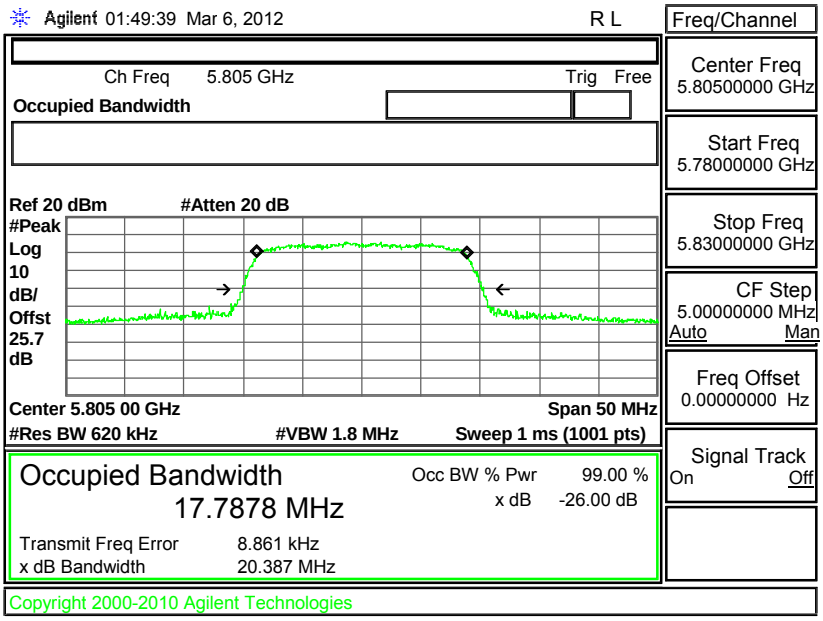
26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 149



26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 157



26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 161



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 dBm + 10log B, where B is the 26 dB emissions bandwidth in MHz. If transmitting antenna directional gain is greater than 6 dBi. 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 or 17 dBm + 10log B, where B is the 26-dB emission bandwidth in MHz. If transmitting antennas of directional gain greater than 6 dBi are used, 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.

3.2.2 Measuring Instruments

See list of measuring instruments of this test report.

3.2.3 Test Procedures

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

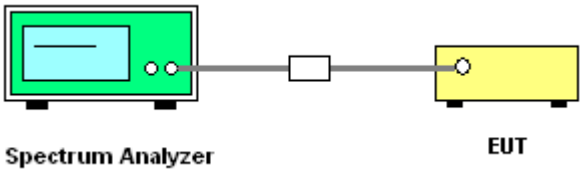
1. The testing follows Method SA-1 of FCC KDB 789033 D01 General UNII Test Procedures v01.
   - Set span to encompass the entire emission bandwidth (EBW) of the signal.
   - Set RBW = 1 MHz.
   - Set VBW ≥ 3 MHz.
   - Number of points in sweep ≥ 2 Span / RBW.
   - Sweep time = auto.
   - Detector = Sample
   - Trace average at least 100 traces in power averaging mode.
   - Compute power by integrating the spectrum across the 26 dB EBW of the signal using the spectrum analyzer's band power measurement function with band limits set equal to the EBW band edges. If the spectrum analyzer does not have a band power function, sum the spectrum levels at 1 MHz intervals extending across the 26 dB EBW of the spectrum.

2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable, as below example,

   For 802.11a Channel 44, the final power in test report is 9.57 dBm which is the reading of spectrum analyzer with offset cable loss (0.2 dB), and attenuator loss (25.4 dB).

3. Measure the power and record it.

3.2.4 Test Setup



3.2.5 Test Result of Maximum Conducted Output Power

Test Mode :	Mode 1~6	Temperature :	24~26℃
Test Engineer :	Book Lin	Relative Humidity :	45~49%

Channel	Frequency (MHz)	802.11a Measured Output Power (dBm)	26dB BW (MHz)	Max. Limits (dBm)	Pass/Fail
36	5180	9.18	19.890	16.99	Pass
40	5200	9.49	19.674	16.94	Pass
44	5220	9.57	19.792	16.96	Pass
149	5745	8.89	19.804	29.97	Pass
157	5785	9.24	20.668	30.00	Pass
161	5805	9.18	19.770	29.96	Pass

Note:
1. For the band 5.15~5.25 GHz, the maximum conducted output power shall not exceed the lesser of 50 mW (17dBm) or 4 dBm + 10log (26dB BW)
4. 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 or 17 dBm + 10log (26dB BW)

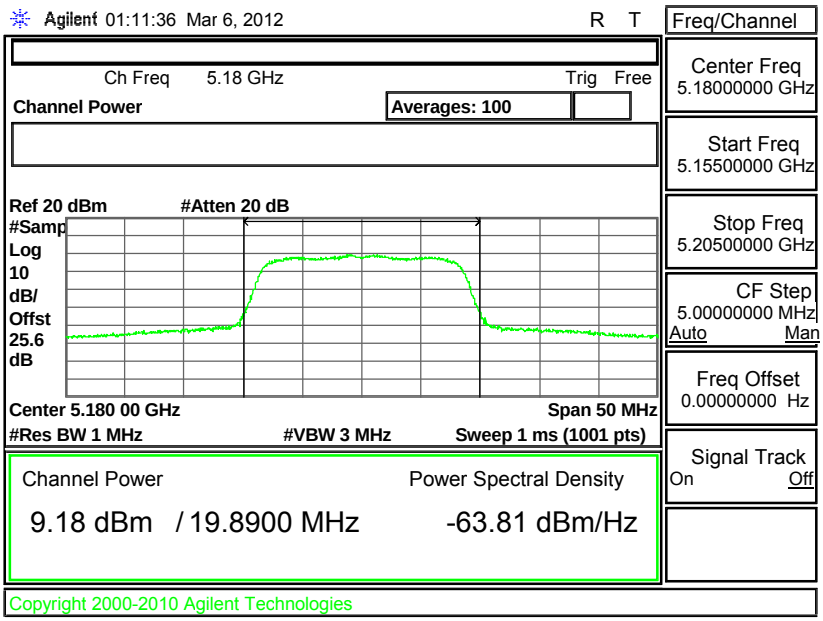
Test Mode :	Mode 7~12	Temperature :	24~26℃
Test Engineer :	Book Lin	Relative Humidity :	45~49%

Channel	Frequency (MHz)	802.11n (BW 20MHz) Measured Output Power (dBm)	26dB BW (MHz)	Max. Limits (dBm)	Pass/Fail
36	5180	9.04	20.263	17.00	Pass
40	5200	9.00	20.667	17.00	Pass
44	5220	9.22	20.349	17.00	Pass
149	5745	8.84	20.303	30.00	Pass
157	5785	9.00	20.241	30.00	Pass
161	5805	8.65	20.387	30.00	Pass

Note:
1. For the band 5.15~5.25 GHz, the maximum conducted output power shall not exceed the lesser of 50 mW (17dBm) or 4 dBm + 10log (26dB BW)
2. For the 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 or 17 dBm + 10log (26dB BW)

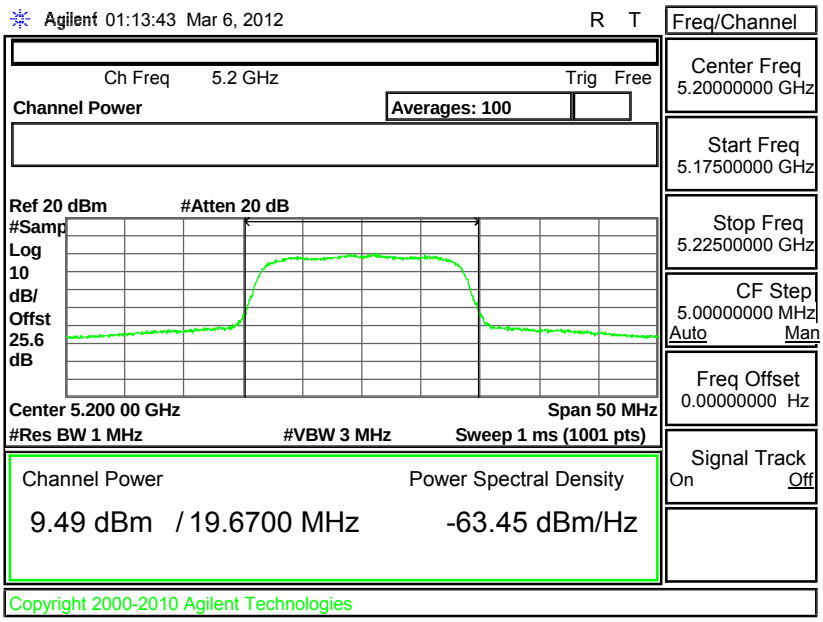
3.2.6 Test Result of Power Output Plots

Output Power Plot on 802.11a Channel 36

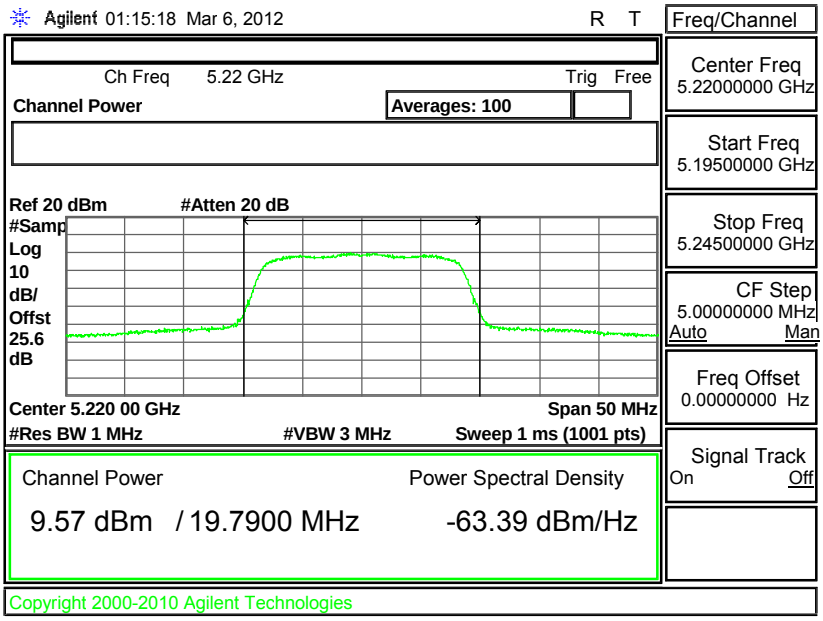


Total path loss 25.6dB (cable loss: 0.2dB, attenuator: 25.4dB)

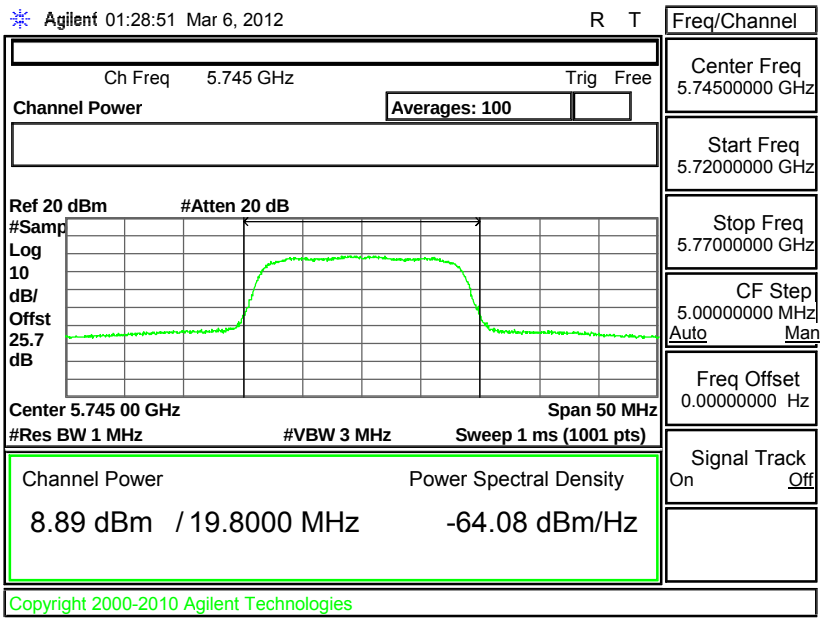
Output Power Plot on 802.11a Channel 40



Output Power Plot on 802.11a Channel 44

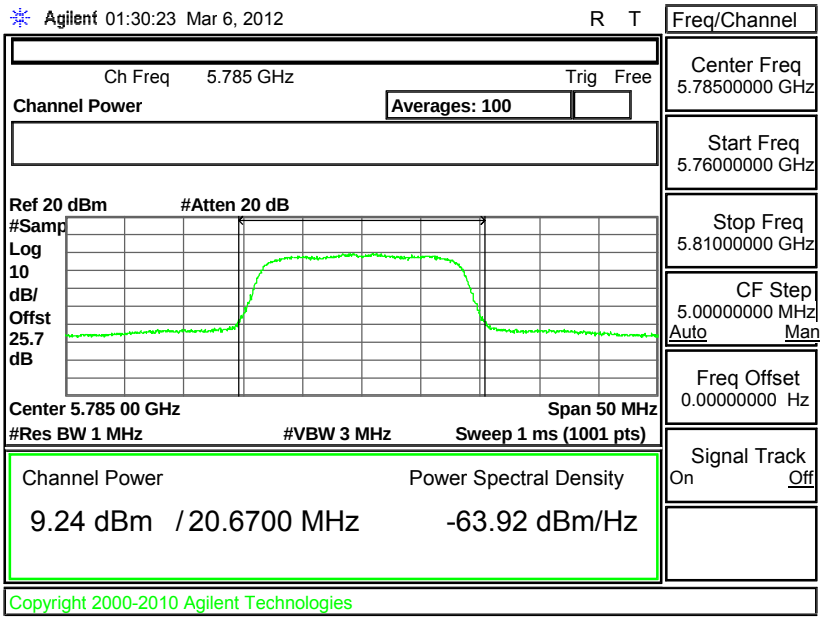


Output Power Plot on 802.11a Channel 149

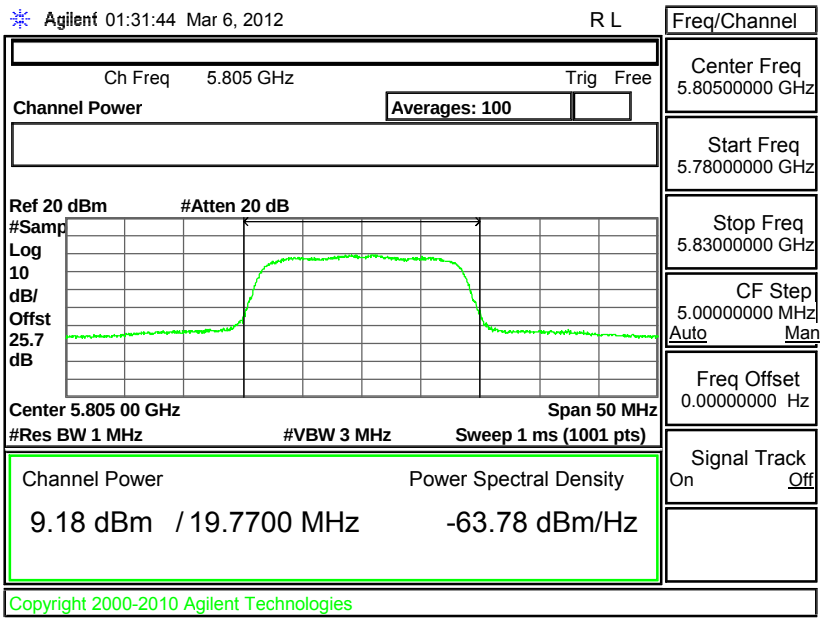


Total path loss 25.7dB (cable loss: 0.2dB, attenuator: 25.5dB)

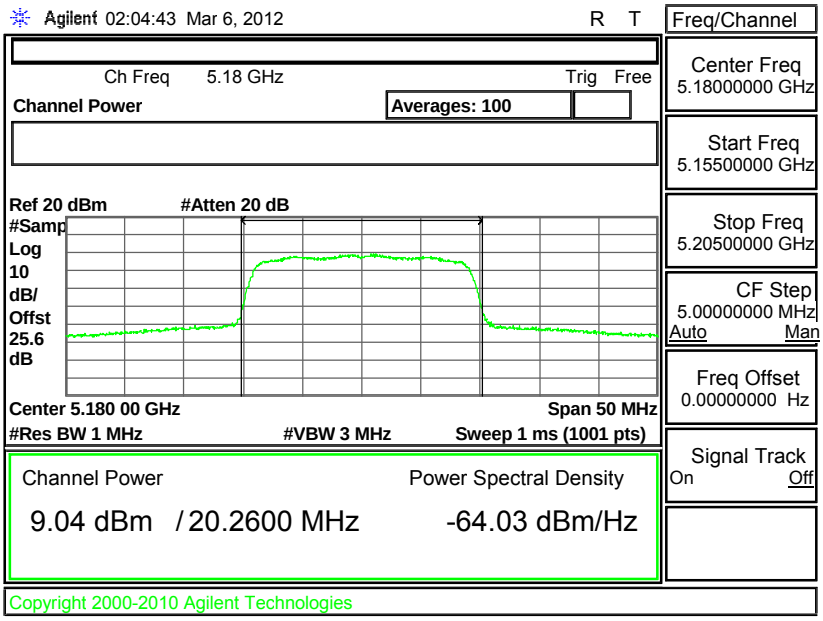
Output Power Plot on 802.11a Channel 157



Output Power Plot on 802.11a Channel 161

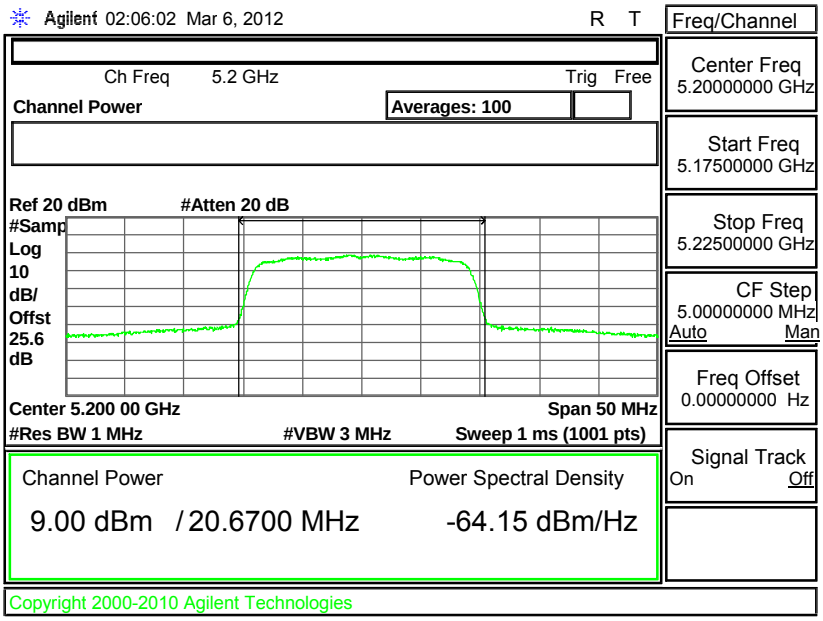


Output Power Plot on 802.11n (BW 20MHz) Channel 36

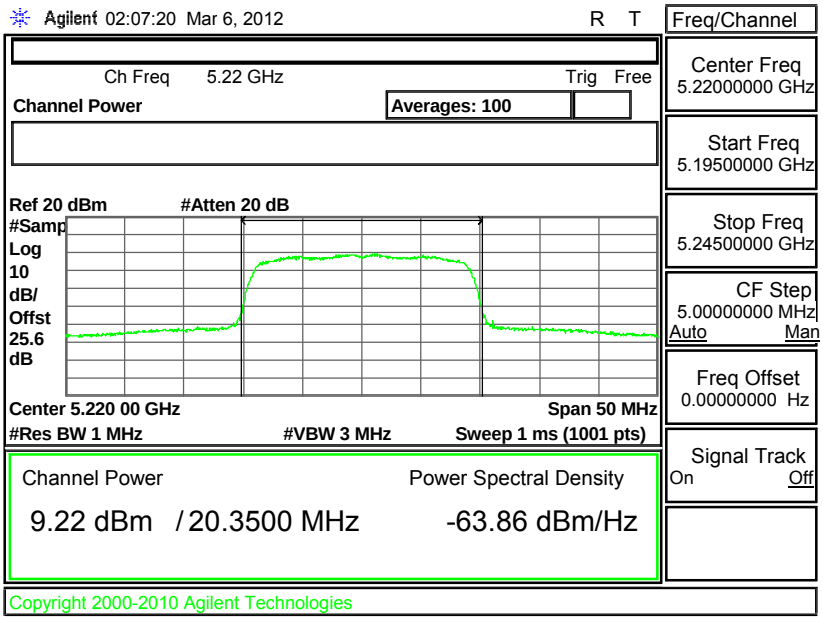


Total path loss 25.6dB (cable loss: 0.2dB, attenuator: 25.4dB)

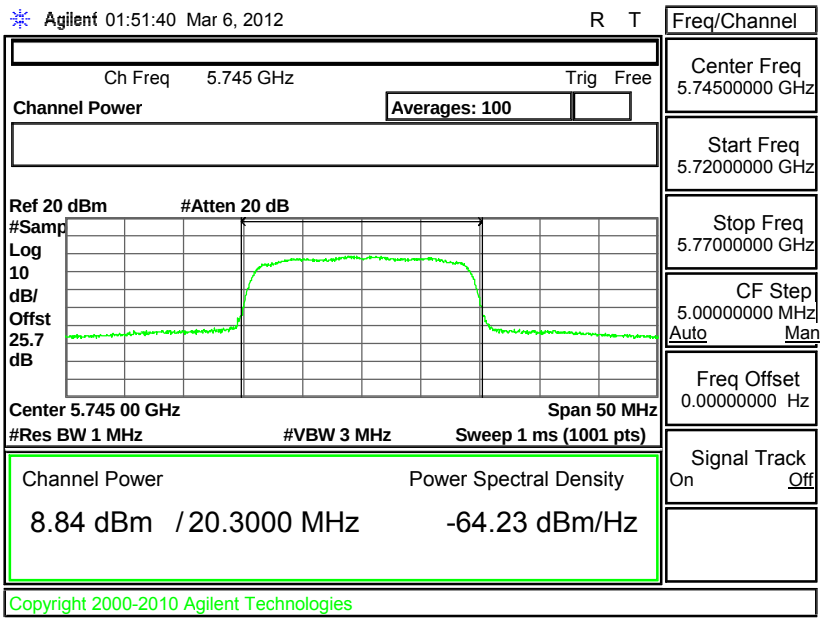
Output Power Plot on 802.11n (BW 20MHz) Channel 40



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

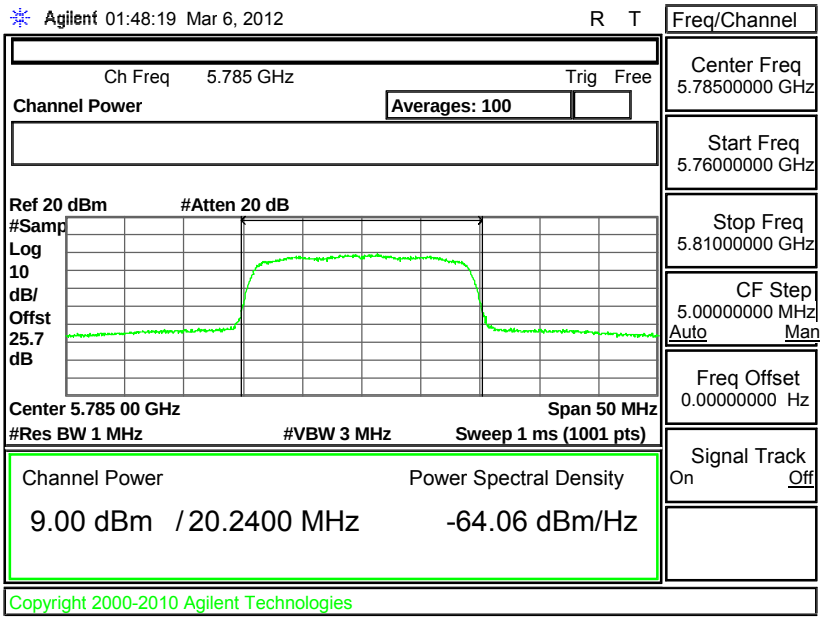


Output Power Plot on 802.11n (BW 20MHz) Channel 149

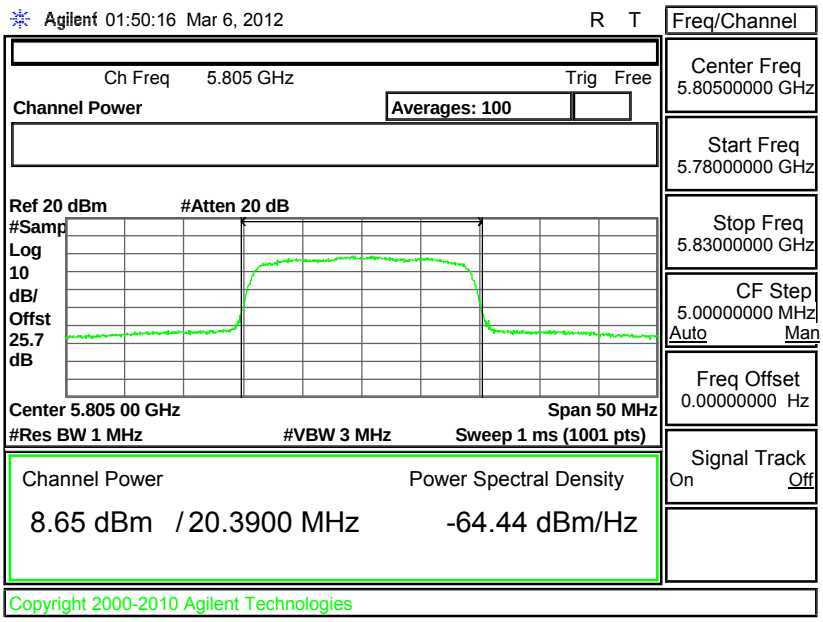


Total path loss 25.7dB (cable loss: 0.2dB, attenuator: 25.5dB)

Output Power Plot on 802.11n (BW 20MHz) Channel 157



Output Power Plot on 802.11n (BW 20MHz) Channel 161



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 band 5.725-5.825 GHz, the peak power spectral density shall not exceed 17 dBm in any 1 1MHz band. If transmitting antenna directional gain is greater than 6 dBi, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

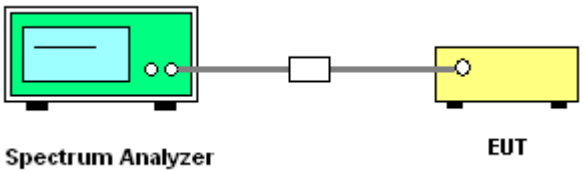
3.3.2 Measuring Instruments

See list of measuring instruments of this test report.

3.3.3 Test Procedures

1. The setting follows Method SA-1 of FCC KDB 789033 D01 General UNII Test Procedures v01.
   - Set span to encompass the entire emission bandwidth (EBW) of the signal.
   - Set RBW = 1 MHz.
   - Set VBW ≥ 3 MHz.
   - Number of points in sweep ≥ 2 Span / RBW.
   - Sweep time = auto.
   - Detector = Sample
   - Trace average at least 100 traces in power averaging mode.
2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
3. Each plot has already offset with cable loss, and attenuator loss.
4. Use the peak search to the highest PPSD and record it.

3.3.4 Test Setup

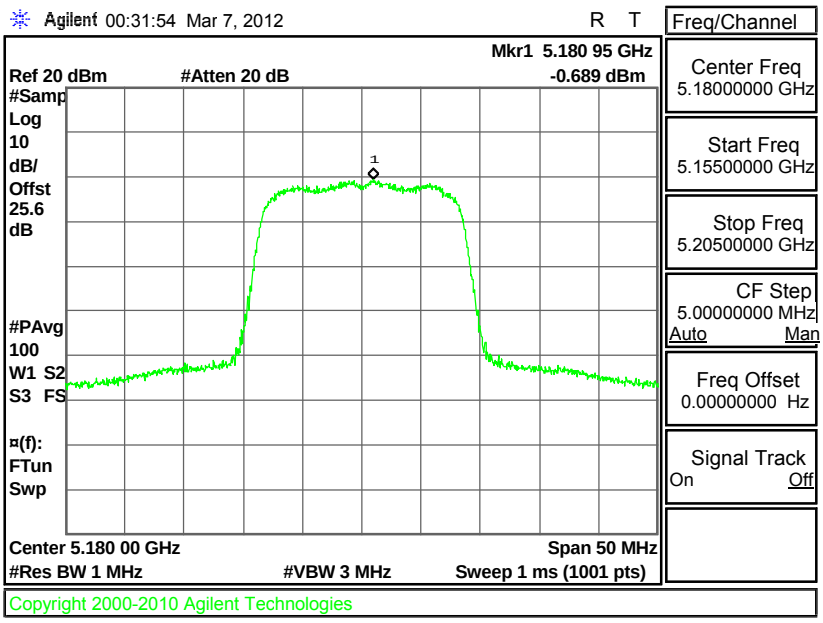


3.3.5 Test Result of Power Spectral Density

Test Mode :	Mode 1~6	Temperature :	24~26℃
Test Engineer :	Book Lin	Relative Humidity :	45~49%

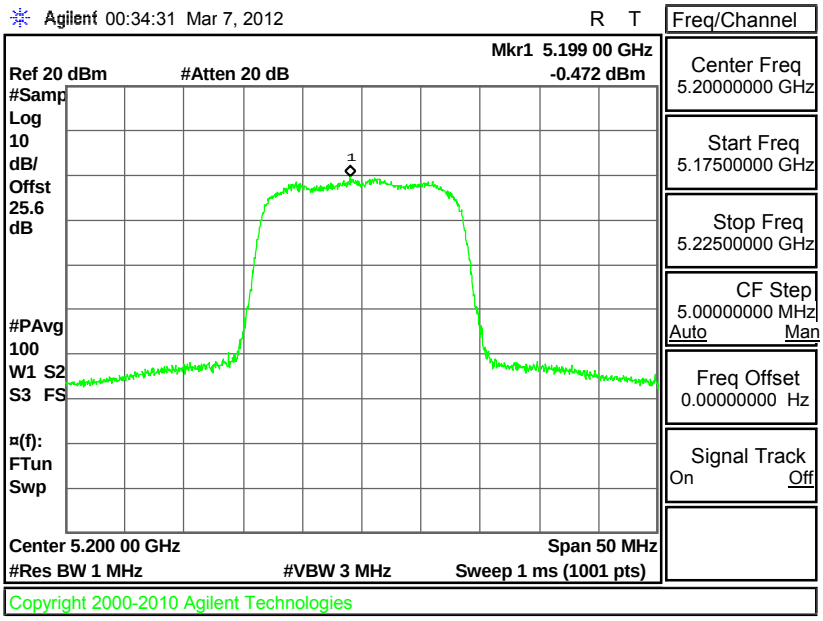
Channel	Frequency (MHz)	802.11a Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
36	5180	-0.689	4	Pass
40	5200	-0.472	4	Pass
44	5220	-0.431	4	Pass
149	5745	-1.412	17	Pass
157	5785	-0.994	17	Pass
161	5805	-0.997	17	Pass

PSD Plot on 802.11a Channel 36

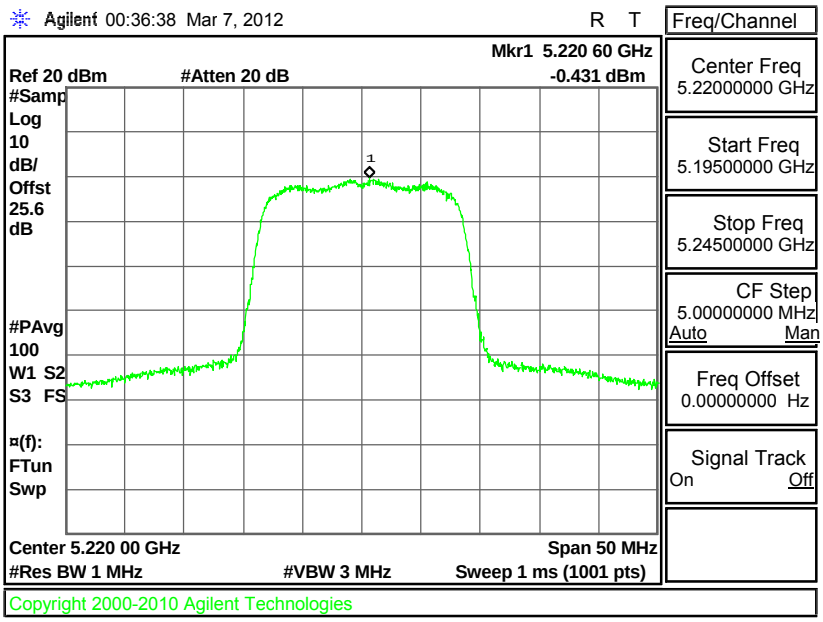


Total path loss 25.6dB (cable loss: 0.2dB, attenuator: 25.4dB)

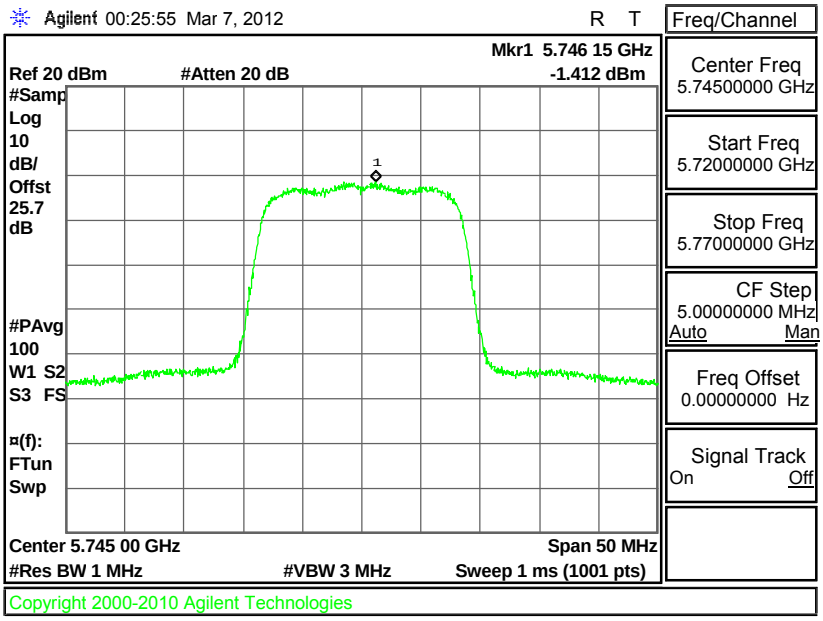
PSD Plot on 802.11a Channel 40



PSD Plot on 802.11a Channel 44

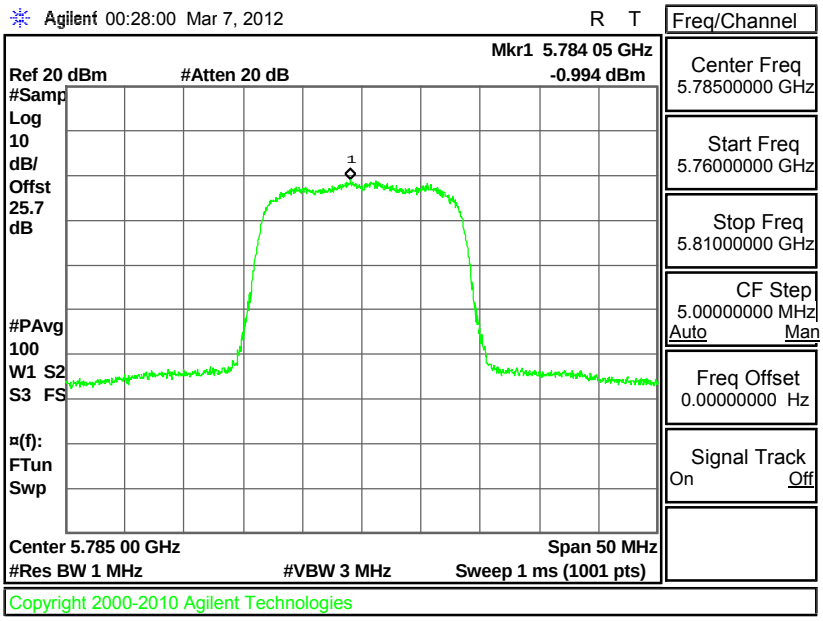


PSD Plot on 802.11a Channel 149

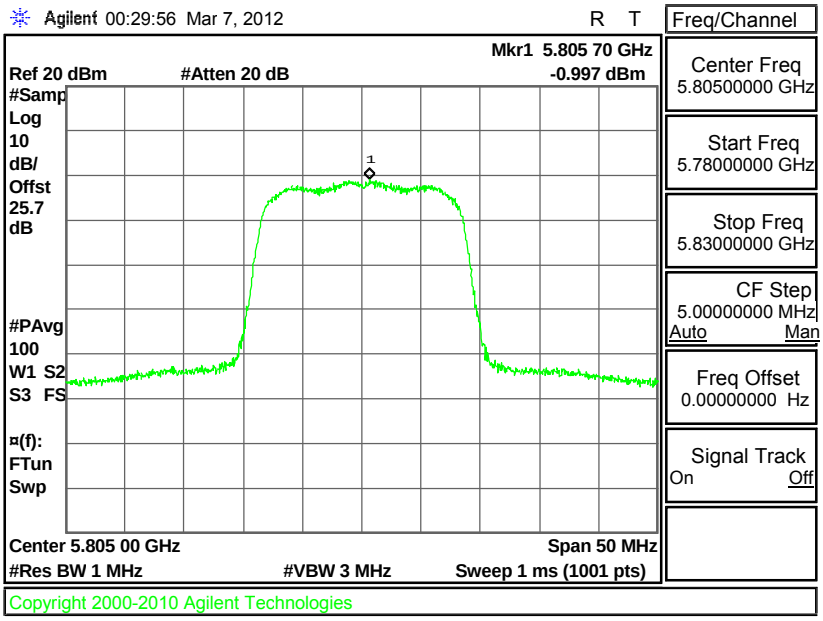


Total path loss 25.7dB (cable loss: 0.2dB, attenuator: 25.5dB)

PSD Plot on 802.11a Channel 157



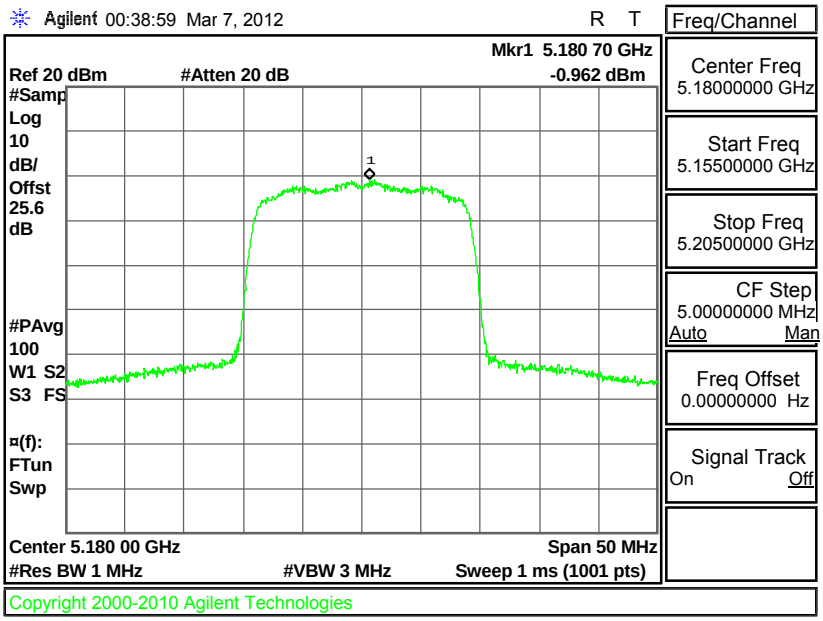
PSD Plot on 802.11a Channel 161



Test Mode :	Mode 7~12	Temperature :	24~26℃
Test Engineer :	Book Lin	Relative Humidity :	45~49%

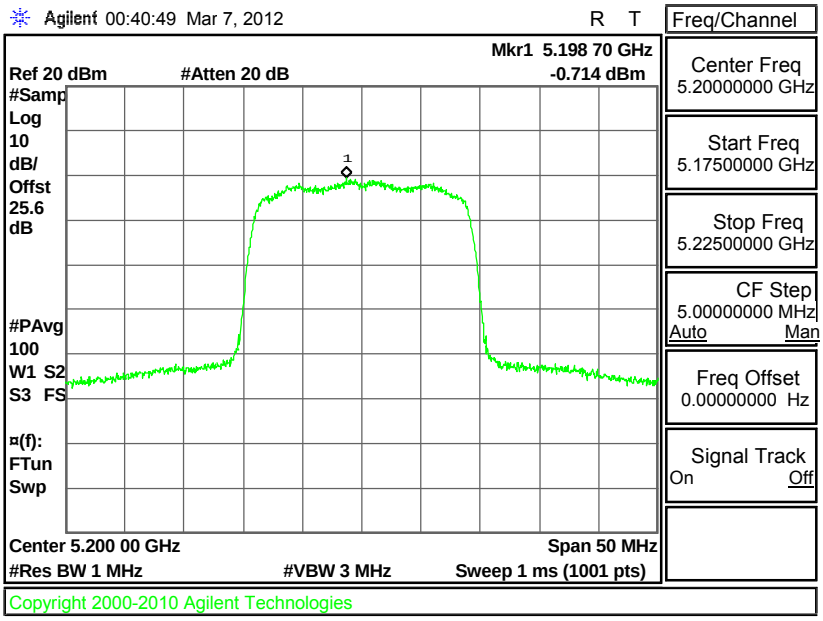
Channel	Frequency (MHz)	802.11n (BW 20MHz) Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
36	5180	-0.962	4	Pass
40	5200	-0.714	4	Pass
44	5220	-0.925	4	Pass
149	5745	-1.549	17	Pass
157	5785	-0.848	17	Pass
161	5805	-0.982	17	Pass

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

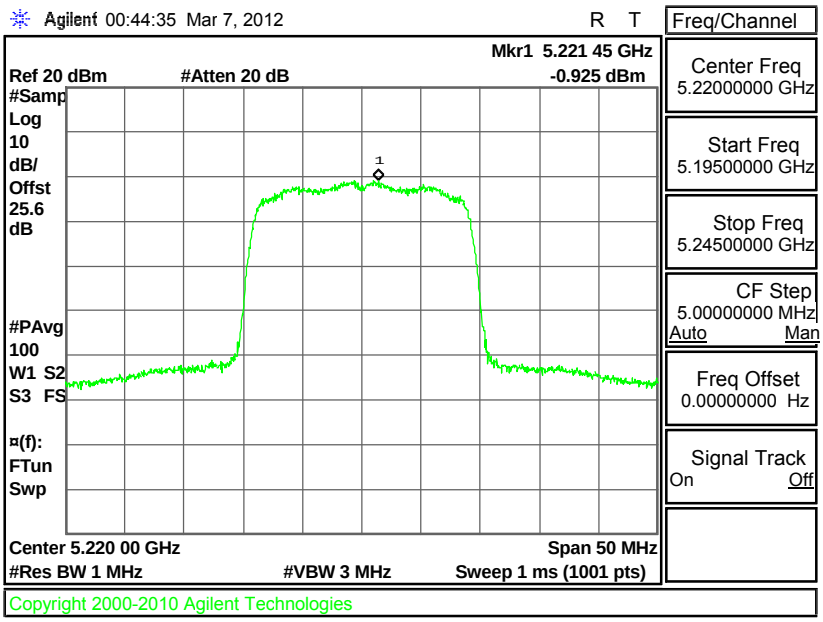


Total path loss 25.6dB (cable loss: 0.2dB, attenuator: 25.4dB)

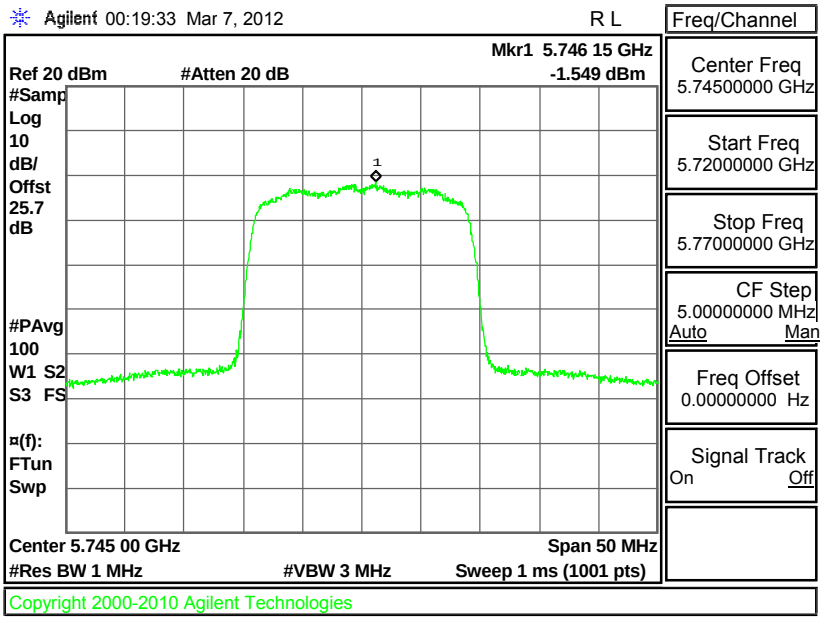
PSD Plot on 802.11n (BW 20MHz) Channel 40



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

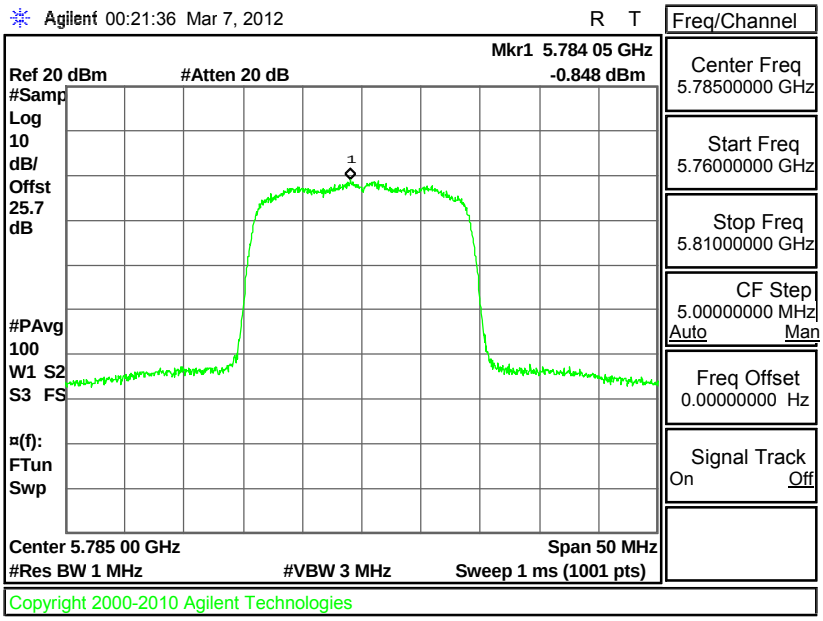


PSD Plot on 802.11n (BW 20MHz) Channel 149

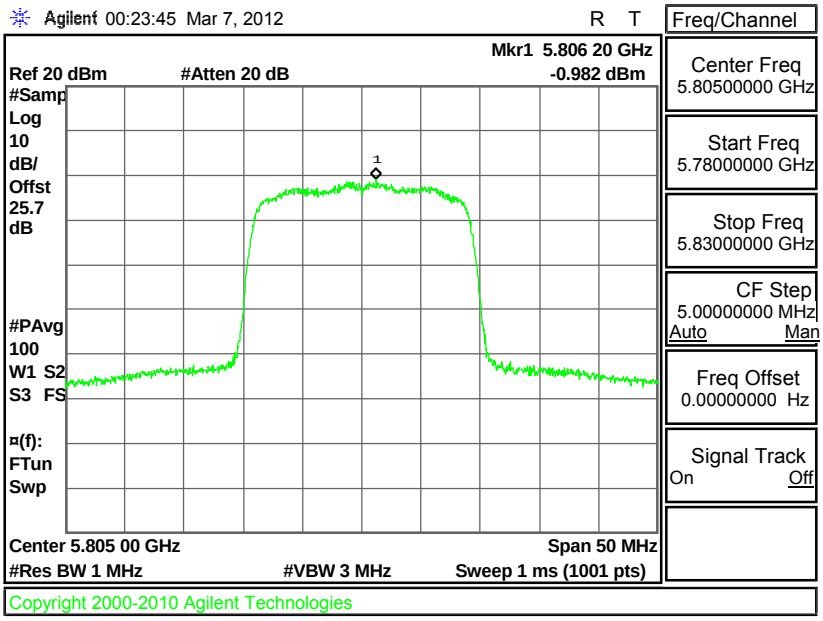


Total path loss 25.7dB (cable loss: 0.2dB, attenuator: 25.5dB)

PSD Plot on 802.11n (BW 20MHz) Channel 157



PSD Plot on 802.11n (BW 20MHz) Channel 161



3.4 AC Conducted Emission Measurement

3.4.1 Limit of AC Conducted Emission

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

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

*Decreases with the logarithm of the frequency.

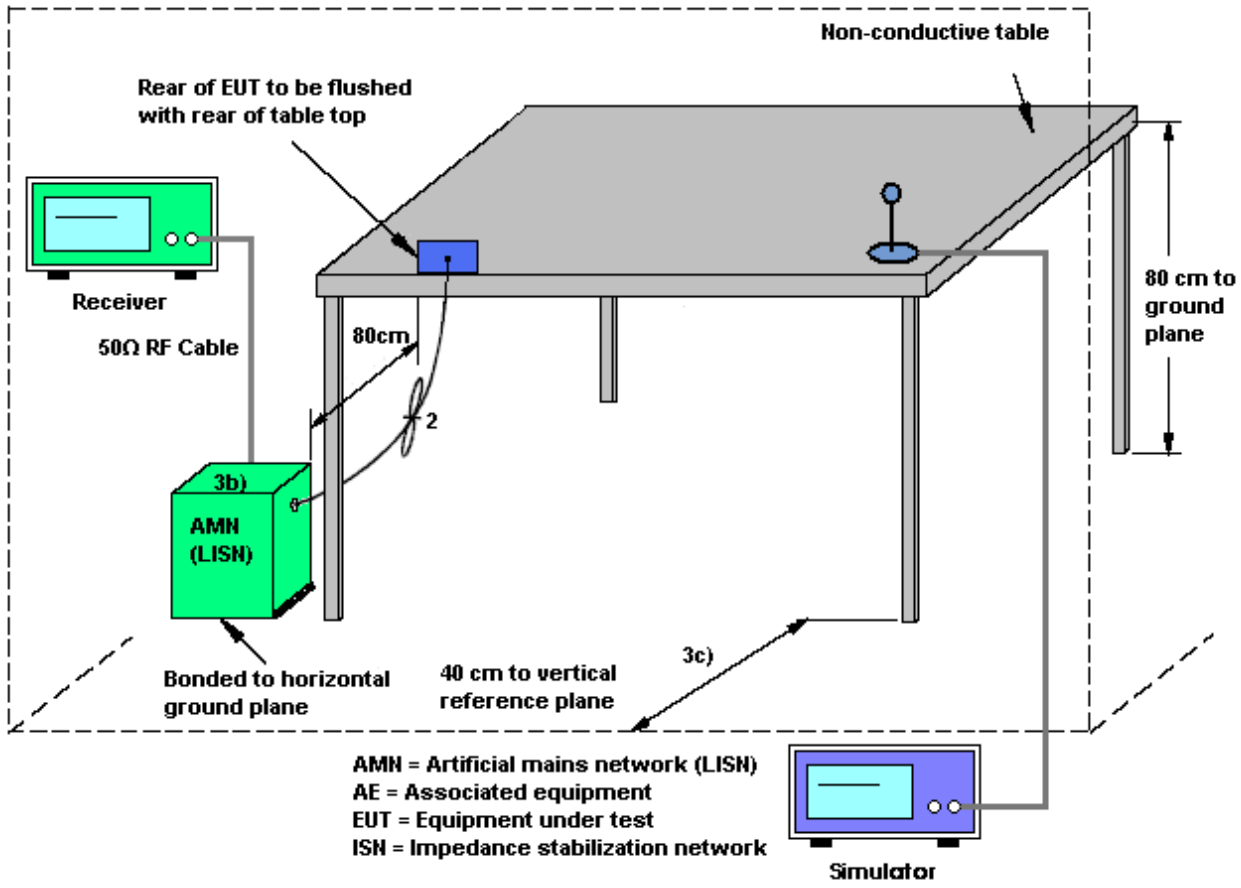
3.4.2 Measuring Instruments

See list of measuring instruments of this test report.

3.4.3 Test Procedures

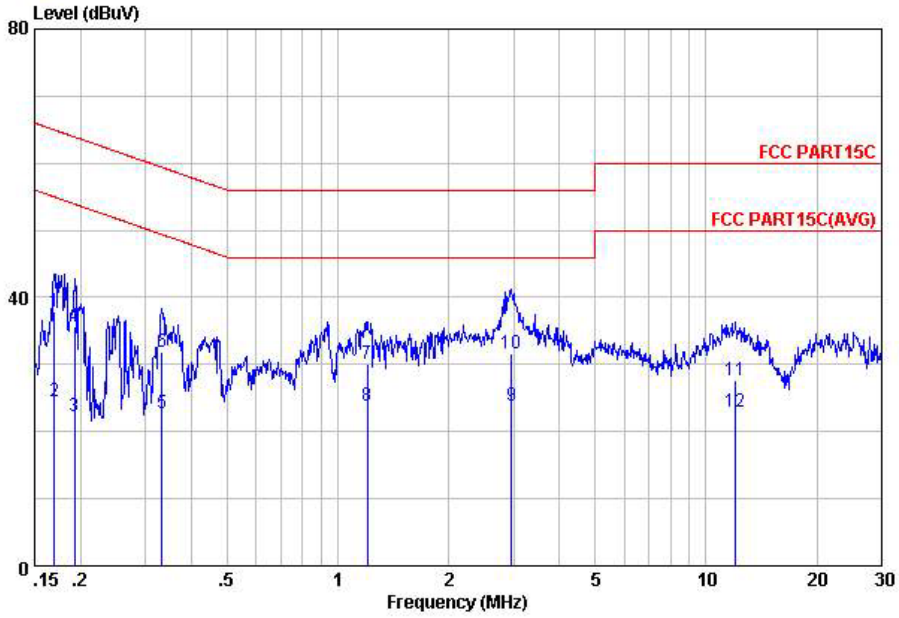
1. Please follow the guidelines in ANSI C63.4-2003.
2. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
3. Connect EUT to the power mains through a line impedance stabilization network (LISN).
4. All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

3.4.4 Test Setup



3.4.5 Test Result of AC Conducted Emission

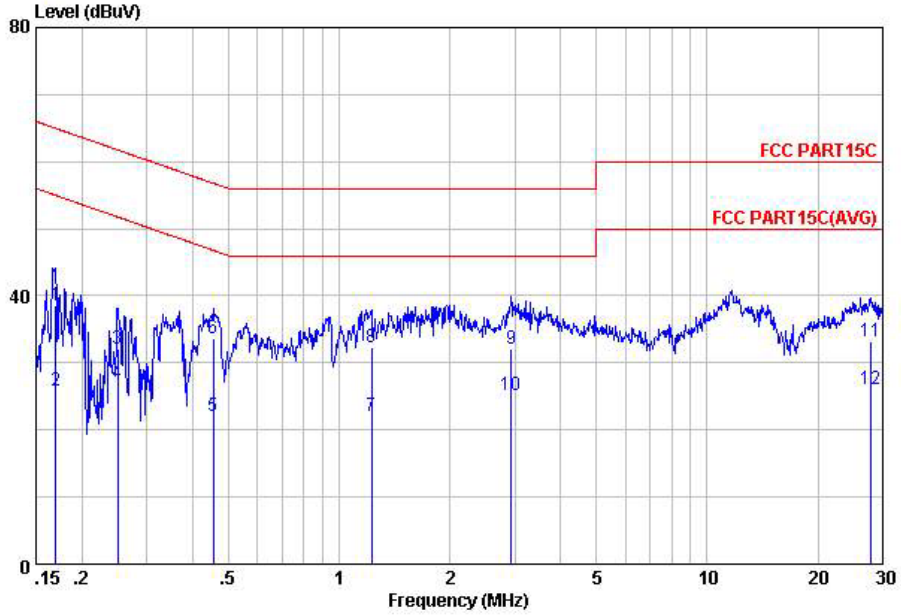
Test Mode :	Mode 1	**Temperature :**	21~22℃
Test Engineer :	Jack Li	**Relative Humidity :**	41~42%
Test Voltage :	120Vac / 60Hz	**Phase :**	Line
Function Type :	CDMA 850 Idle + Bluetooth Link + WLAN Link + GPS Rx + Camera + USB Cable (Charging from Adapter)		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Site : C001-KS
Condition: FCC PART15C LISN-100807 LINE
Project : (FR) 190807
mode : Mode 1

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.17	37.97	-27.02	64.99	27.90	-0.07	10.14	QP
2	0.17	24.57	-30.42	54.99	14.50	-0.07	10.14	Average
3	0.19	22.38	-31.55	53.93	12.30	-0.07	10.15	Average
4	0.19	35.58	-28.35	63.93	25.50	-0.07	10.15	QP
5	0.33	22.70	-26.70	49.40	12.60	-0.08	10.18	Average
6	0.33	31.90	-27.50	59.40	21.80	-0.08	10.18	QP
7	1.20	30.08	-25.92	56.00	19.90	-0.10	10.28	QP
8	1.20	23.78	-22.22	46.00	13.60	-0.10	10.28	Average
9	2.96	23.85	-22.15	46.00	13.60	-0.12	10.37	Average
10	2.96	31.75	-24.25	56.00	21.50	-0.12	10.37	QP
11	12.06	27.58	-32.42	60.00	17.20	-0.10	10.48	QP
12	12.06	22.98	-27.02	50.00	12.60	-0.10	10.48	Average

Test Mode :	Mode 1	Temperature :	21~22℃
Test Engineer :	Jack Li	Relative Humidity :	41~42%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	CDMA 850 Idle + Bluetooth Link + WLAN Link + GPS Rx + Camera + USB Cable (Charging from Adapter)		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Site : C001-KS
Condition: FCC PART15C LISN-100807 NEUTRAL
Project : (FR) 190807
mode : Mode 1

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.17	38.56	-26.43	64.99	28.50	-0.08	10.14	QP
2	0.17	25.76	-29.23	54.99	15.70	-0.08	10.14	Average
3	0.25	31.99	-29.74	61.73	21.90	-0.07	10.16	QP
4	0.25	26.99	-24.74	51.73	16.90	-0.07	10.16	Average
5	0.45	22.02	-24.78	46.80	11.90	-0.08	10.20	Average
6	0.45	33.72	-23.08	56.80	23.60	-0.08	10.20	QP
7	1.22	21.99	-24.01	46.00	11.80	-0.09	10.28	Average
8	1.22	32.39	-23.61	56.00	22.20	-0.09	10.28	QP
9	2.93	32.15	-23.85	56.00	21.90	-0.12	10.37	QP
10	2.93	25.25	-20.75	46.00	15.00	-0.12	10.37	Average
11	27.86	33.17	-26.83	60.00	22.31	0.18	10.68	QP
12	27.86	26.17	-23.83	50.00	15.31	0.18	10.68	Average

3.5 Unwanted Emissions Measurement

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

3.5.1 Limit of Unwanted Emissions

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

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

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

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

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

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

3.5.2 Measuring Instruments

See list of measuring instruments of this test report.

3.5.3 Test Procedures

1. The testing follows the guidelines in FCC KDB 789033 D01 General UNII Test Procedures v01.
   (1) Procedure for Unwanted Emissions Measurements Below 1000MHz
   - RBW = 120 KHz
   - VBW = 300 KHz
   - Detector = Peak
   - Trace mode = max hold

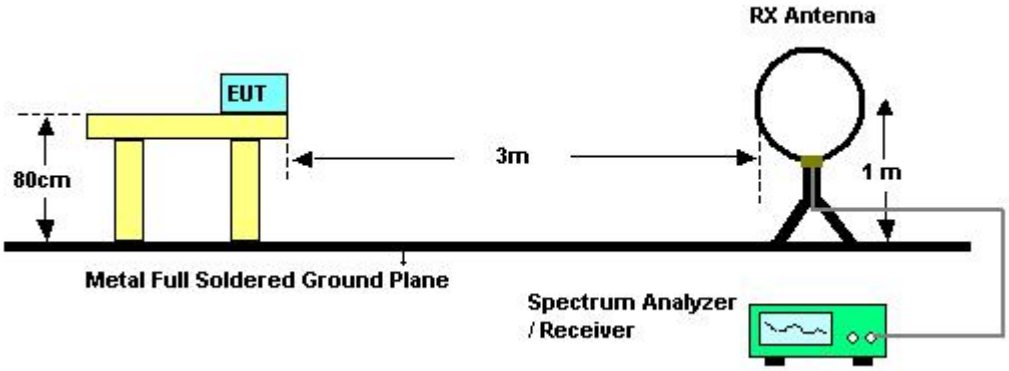
   (2) Procedure for Peak Unwanted Emissions Measurements Above 1000 MHz
   - The setting follows the G) 5) of FCC KDB 789033.
   - RBW = 1 MHz
   - VBW ≥ 3 MHz
   - Detector = Peak
   - Sweep time = auto
   - Trace mode = max hold

   (3) Procedures for Average Unwanted Emissions Measurements Above 1000MHz
   - The setting follows G) 6) of FCC KDB 789033.
   - RBW = 1 MHz
   - VBW = 10 Hz, when duty cycle is no less than 98 percent.
   - VBW ≥ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.
2. The EUT was placed on a rotatable table top 0.8 meter above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The table was rotated 360 degrees to determine the position of the highest radiation.
5. The antenna is a broadband antenna and its height is adjusted between one meter and four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.

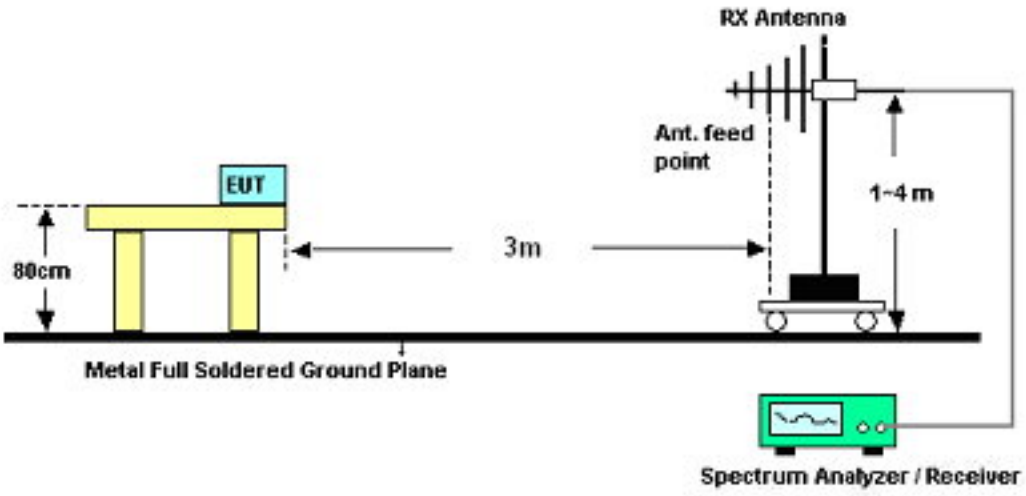
6. For each suspected emission, the EUT was arranged to its worst case and then adjust the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
7. For testing below 1GHz, if the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the CISPR quasi-peak method and reported.
8. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in average mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

3.5.4 Test Setup

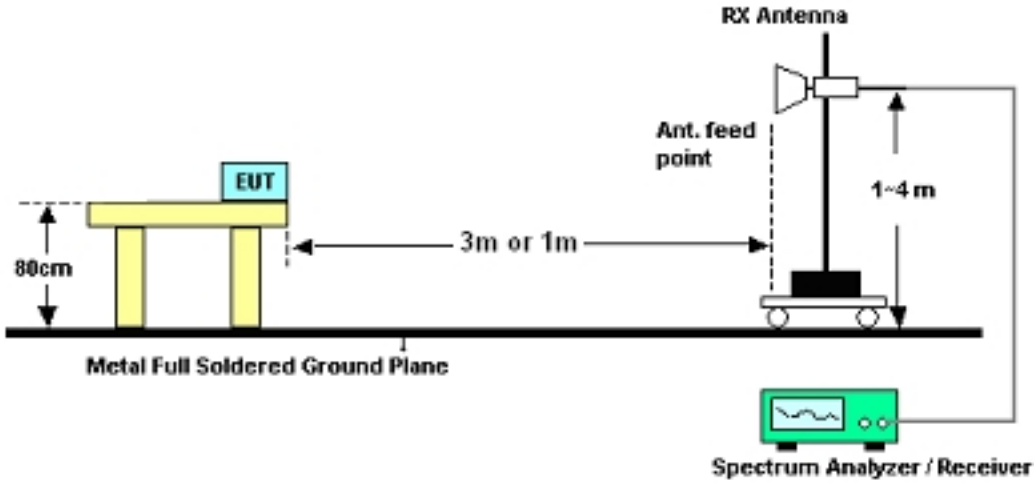
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



3.5.5 Test Result

3.5.5.1 Test Result of Radiated Band Edges

Test Mode :	Mode 1	Temperature :	21~22°C
Test Band :	802.11a	Relative Humidity :	41~42%
Test Channel :	36	Test Engineer :	Jack Li

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5150	53.28	-20.72	74	45.53	35.25	5.11	32.61	100	162	Peak
5150	40.96	-13.04	54	33.21	35.25	5.11	32.61	100	162	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	55.16	-18.84	74	47.41	35.25	5.11	32.61	100	10	Peak
5150	42.87	-11.13	54	35.12	35.25	5.11	32.61	100	10	Average

Test Mode :	Mode 3	Temperature :	21~22°C
Test Band :	802.11a	Relative Humidity :	41~42%
Test Channel :	44	Test Engineer :	Jack Li

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
5380	53.58	-20.42	74	46.21	35.34	5.34	33.31	100	0	Peak
5380	40.98	-13.02	54	33.61	35.34	5.34	33.31	100	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
5380	57.3	-16.7	74	49.93	35.34	5.34	33.31	100	300	Peak
5380	44.18	-9.82	54	36.81	35.34	5.34	33.31	100	300	Average

Test Mode :	Mode 7	Temperature :	21~22°C
Test Band :	802.11 n (BW 20MHz)	Relative Humidity :	41~42%
Test Channel :	36	Test Engineer :	Jack Li

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5150	53.29	-20.71	74	45.54	35.25	5.11	32.61	100	62	Peak
5150	41.02	-12.98	54	33.27	35.25	5.11	32.61	100	62	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5150	54.85	-19.15	74	47.1	35.25	5.11	32.61	100	106	Peak
5150	43.38	-10.62	54	35.63	35.25	5.11	32.61	100	106	Average

Test Mode :	Mode 9	Temperature :	21~22°C
Test Band :	802.11 n (BW 20MHz)	Relative Humidity :	41~42%
Test Channel :	44	Test Engineer :	Jack Li

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
5380	54.65	-19.35	74	47.28	35.34	5.34	33.31	100	126	Peak
5380	42.73	-11.27	54	35.36	35.34	5.34	33.31	100	126	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
5380	58.67	-15.33	74	51.3	35.34	5.34	33.31	100	30	Peak
5380	45.52	-8.48	54	38.15	35.34	5.34	33.31	100	30	Average

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

Temperature	21~22°C	Humidity	41~42%
Test Engineer	Jack Li		

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 (specific distance / test distance) (dB);

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

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

Test Mode :	Mode 1	**Temperature :**	21~22°C
Test Channel :	36	**Relative Humidity :**	41~42%
Test Engineer :	Jack Li	**Polarization :**	Horizontal
Remark :	5180 MHz is fundamental signal 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
221.7	32.13	-13.87	46	51.23	10.25	0.62	29.97	-	-	Peak
253.29	34.18	-11.82	46	51.32	12.04	0.67	29.85	100	10	Peak
277.59	29.99	-16.01	46	46.65	12.58	0.7	29.94	-	-	Peak
332.2	26.18	-19.82	46	41.28	14.05	0.79	29.94	-	-	Peak
575.8	32.41	-13.59	46	42.47	18.55	1.04	29.65	-	-	Peak
806.8	29.64	-16.36	46	38.07	19.92	1.25	29.6	-		Peak
5150	53.28	-20.72	74	45.53	35.25	5.11	32.61	100	162	Peak
5150	40.96	-13.04	54	33.21	35.25	5.11	32.61	100	162	Average
5180	100.32	-	-	92.62	35.26	5.14	32.7	100	181	Peak
5180	86.39	-	-	78.69	35.26	5.14	32.7	100	181	Average
5250	52.91	-15.29	68.2	45.34	35.28	5.21	32.92	100	16	Peak
5350	53.57	-20.43	74	46.16	35.32	5.31	33.22	100	0	Peak
5350	41.76	-12.24	54	34.35	35.32	5.31	33.22	100	0	Average

Test Mode :	Mode 1	Temperature :	21~22°C
Test Channel :	36	Relative Humidity :	41~42%
Test Engineer :	Jack Li	Polarization :	Vertical
Remark :	5180 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
119.1	32.07	-11.43	43.5	49.79	11.8	0.45	29.97	-	-	Peak
159.87	30.53	-12.97	43.5	50.34	9.6	0.53	29.94	-	-	Peak
221.43	29.71	-16.29	46	48.89	10.17	0.62	29.97	-	-	Peak
575.8	31.68	-14.32	46	41.74	18.55	1.04	29.65	-	-	Peak
897.8	38.83	-7.17	46	46.56	20.45	1.3	29.48	100	102	Peak
960.1	28.85	-25.15	54	36.26	20.79	1.34	29.54	-	-	Peak
5150	55.16	-18.84	74	47.41	35.25	5.11	32.61	100	10	Peak
5150	42.87	-11.13	54	35.12	35.25	5.11	32.61	100	10	Average
5180	104.13	-	-	96.43	35.26	5.14	32.7	100	332	Peak
5180	90.59	-	-	82.89	35.26	5.14	32.7	100	332	Average
5250	55.35	-12.85	68.2	47.78	35.28	5.21	32.92	100	30	Peak
5350	54.45	-19.55	74	47.04	35.32	5.31	33.22	100	20	Peak
5350	41.69	-12.31	54	34.28	35.32	5.31	33.22	100	20	Average

Test Mode :	Mode 2	Temperature :	21~22°C
Test Channel :	40	Relative Humidity :	41~42%
Test Engineer :	Jack Li	Polarization :	Horizontal
Remark :	5200 MHz is fundamental signal 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
221.7	31.88	-14.12	46	50.98	10.25	0.62	29.97	-	-	Peak
253.02	33.92	-12.08	46	51.06	12.04	0.67	29.85	100	311	Peak
284.88	30.06	-15.94	46	46.54	12.76	0.71	29.95	-	-	Peak
575.8	32.51	-13.49	46	42.57	18.55	1.04	29.65	-	-	Peak
806.8	31.01	-14.99	46	39.44	19.92	1.25	29.6	-	-	Peak
960.1	28.25	-25.75	54	35.66	20.79	1.34	29.54	-	-	Peak
5150	53.09	-20.91	74	45.34	35.25	5.11	32.61	100	16	Peak
5150	40.93	-13.07	54	33.18	35.25	5.11	32.61	100	16	Average
5200	99.79	-	-	92.12	35.26	5.16	32.75	100	36	Peak
5200	86.34	-	-	78.67	35.26	5.16	32.75	100	36	Average
5250	52.96	-15.24	68.2	45.39	35.28	5.21	32.92	100	31	Peak
5360	53.77	-20.23	74	46.36	35.32	5.31	33.22	100	20	Peak
5360	41.22	-12.78	54	33.81	35.32	5.31	33.22	100	20	Average

Test Mode :	Mode 2	Temperature :	21~22°C
Test Channel :	40	Relative Humidity :	41~42%
Test Engineer :	Jack Li	Polarization :	Vertical
Remark :	5200 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
119.37	32.17	-11.33	43.5	49.89	11.8	0.45	29.97	100	188	Peak
158.79	31.28	-12.22	43.5	51.05	9.64	0.53	29.94	-	-	Peak
221.43	29.24	-16.76	46	48.42	10.17	0.62	29.97	-	-	Peak
575.8	30.82	-15.18	46	40.88	18.55	1.04	29.65	-	-	Peak
806.8	26.43	-19.57	46	34.86	19.92	1.25	29.6	-	-	Peak
960.1	28.27	-25.73	54	35.68	20.79	1.34	29.54	-	-	Peak
5150	55.46	-18.54	74	47.71	35.25	5.11	32.61	100	336	Peak
5150	43.37	-10.63	54	35.62	35.25	5.11	32.61	100	336	Average
5200	105.55	-	-	97.88	35.26	5.16	32.75	100	332	Peak
5200	91.23	-	-	83.56	35.26	5.16	32.75	100	332	Average
5250	54.48	-13.72	68.2	46.91	35.28	5.21	32.92	100	0	Peak
5360	58.44	-15.56	74	51.03	35.32	5.31	33.22	100	301	Peak
5360	50.5	-3.5	54	43.09	35.32	5.31	33.22	100	301	Average

Test Mode :	Mode 3	Temperature :	21~22°C
Test Channel :	44	Relative Humidity :	41~42%
Test Engineer :	Jack Li	Polarization :	Horizontal
Remark :	5220 MHz is fundamental signal 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
221.7	30.2	-15.8	46	49.3	10.25	0.62	29.97	-	-	Peak
253.29	32.12	-13.88	46	49.26	12.04	0.67	29.85	-	-	Peak
276.51	28.73	-17.27	46	45.4	12.56	0.7	29.93	-	-	Peak
575.8	32.77	-13.23	46	42.83	18.55	1.04	29.65	100	10	Peak
806.8	31.4	-14.6	46	39.83	19.92	1.25	29.6	-	-	Peak
957.3	28.67	-25.33	54	36.1	20.77	1.34	29.54	-	-	Peak
5102	54.69	-19.31	74	46.87	35.23	5.07	32.48	100	116	Peak
5102	41.38	-12.62	54	33.56	35.23	5.07	32.48	100	116	Average
5220	87.25	-	-	79.61	35.27	5.17	32.8	100	20	Average
5220	101.12	-	-	93.48	35.27	5.17	32.8	100	20	Peak
5250	53.93	-14.27	68.2	46.36	35.28	5.21	32.92	100	0	Peak
5380	53.58	-20.42	74	46.21	35.34	5.34	33.31	100	0	Peak
5380	40.98	-13.02	54	33.61	35.34	5.34	33.31	100	0	Average

Test Mode :	Mode 3	Temperature :	21~22°C
Test Channel :	44	Relative Humidity :	41~42%
Test Engineer :	Jack Li	Polarization :	Vertical
Remark :	5220 MHz is fundamental signal 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
115.05	30.21	-13.29	43.5	47.94	11.8	0.44	29.97	100	0	Peak
157.98	28.49	-15.01	43.5	48.24	9.67	0.53	29.95	-	-	Peak
221.7	28.43	-17.57	46	47.53	10.25	0.62	29.97	-	-	Peak
575.8	30.3	-15.7	46	40.36	18.55	1.04	29.65	-	-	Peak
806.8	27.17	-18.83	46	35.6	19.92	1.25	29.6	-	-	Peak
960.1	28.98	-25.02	54	36.39	20.79	1.34	29.54	-	-	Peak
5140	56.03	-17.97	74	48.28	35.25	5.11	32.61	100	12	Peak
5140	43.35	-10.65	54	35.6	35.25	5.11	32.61	100	12	Average
5220	106.04	-	-	98.4	35.27	5.17	32.8	100	331	Peak
5220	92.26	-	-	84.62	35.27	5.17	32.8	100	331	Average
5250	55.12	-13.08	68.2	47.55	35.28	5.21	32.92	100	0	Peak
5380	57.3	-16.7	74	49.93	35.34	5.34	33.31	100	300	Peak
5380	44.18	-9.82	54	36.81	35.34	5.34	33.31	100	300	Average

Test Mode :	Mode 4	Temperature :	21~22°C
Test Channel :	149	Relative Humidity :	41~42%
Test Engineer :	Jack Li	Polarization :	Horizontal
Remark :	5745 MHz is fundamental signal 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
161.22	25.18	-18.32	43.5	45.03	9.56	0.53	29.94	-	-	Peak
221.7	32.44	-13.56	46	51.54	10.25	0.62	29.97	-	-	Peak
253.29	35.05	-10.95	46	52.19	12.04	0.67	29.85	100	226	Peak
308.4	26.62	-19.38	46	42.64	13.2	0.73	29.95	-	-	Peak
575.8	32.67	-13.33	46	42.73	18.55	1.04	29.65	-	-	Peak
806.8	31.56	-14.44	46	39.99	19.92	1.25	29.6	-	-	Peak
5725	64.19	-4.01	68.2	56.67	35.52	5.55	33.55	100	316	Peak
5745	100.09	-	-	92.59	35.52	5.56	33.58	100	31	Peak
5745	86.42	-	-	78.92	35.52	5.56	33.58	100	31	Average
5825	52.19	-16.01	68.2	44.75	35.55	5.63	33.74	100	10	Peak

Test Mode :	Mode 4	Temperature :	21~22°C
Test Channel :	149	Relative Humidity :	41~42%
Test Engineer :	Jack Li	Polarization :	Vertical
Remark :	5745 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
118.56	31.4	-12.1	43.5	49.12	11.8	0.45	29.97	100	352	Peak
162.03	30.76	-12.74	43.5	50.63	9.53	0.53	29.93	-	-	Peak
221.7	28.36	-17.64	46	47.46	10.25	0.62	29.97	-	-	Peak
575.8	31.21	-14.79	46	41.27	18.55	1.04	29.65	-	-	Peak
806.8	26.08	-19.92	46	34.51	19.92	1.25	29.6	-	-	Peak
960.1	29.16	-24.84	54	36.57	20.79	1.34	29.54	-	-	Peak
5725	62.86	-5.34	68.2	55.34	35.52	5.55	33.55	100	186	Peak
5745	101.66	-	-	94.16	35.52	5.56	33.58	100	221	Peak
5745	89.19	-	-	81.69	35.52	5.56	33.58	100	221	Average
5825	52.89	-15.31	68.2	45.45	35.55	5.63	33.74	100	0	Peak

Test Mode :	Mode 5	Temperature :	21~22°C
Test Channel :	157	Relative Humidity :	41~42%
Test Engineer :	Jack Li	Polarization :	Horizontal
Remark :	5785 MHz is fundamental signal 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
221.97	29.73	-16.27	46	48.83	10.25	0.62	29.97	-	-	Peak
253.29	34.49	-11.51	46	51.63	12.04	0.67	29.85	100	128	Peak
280.83	28.95	-17.05	46	45.52	12.68	0.7	29.95	-	-	Peak
575.8	32.58	-13.42	46	42.64	18.55	1.04	29.65	-	-	Peak
806.8	31.25	-14.75	46	39.68	19.92	1.25	29.6	-	-	Peak
960.1	28.99	-25.01	54	36.4	20.79	1.34	29.54	-	-	Peak
5725	51.82	-16.38	68.2	44.3	35.52	5.55	33.55	100	0	Peak
5785	98.44	-	-	90.96	35.53	5.59	33.64	100	32	Peak
5785	84.1	-	-	76.62	35.53	5.59	33.64	100	32	Average
5825	51.43	-16.77	68.2	43.99	35.55	5.63	33.74	100	121	Peak

Test Mode :	Mode 5	Temperature :	21~22°C
Test Channel :	157	Relative Humidity :	41~42%
Test Engineer :	Jack Li	Polarization :	Vertical
Remark :	5785 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
118.56	31.84	-11.66	43.5	49.56	11.8	0.45	29.97	100	0	Peak
159.87	29.36	-14.14	43.5	49.17	9.6	0.53	29.94	-	-	Peak
221.7	29.55	-16.45	46	48.65	10.25	0.62	29.97	-	-	Peak
537.3	26.76	-19.24	46	37.22	18.24	0.99	29.69	-	-	Peak
575.8	30.55	-15.45	46	40.61	18.55	1.04	29.65	-	-	Peak
960.1	28.96	-25.04	54	36.37	20.79	1.34	29.54	-	-	Peak
5725	52.38	-15.82	68.2	44.86	35.52	5.55	33.55	100	62	Peak
5785	103.48	-	-	96	35.53	5.59	33.64	100	31	Peak
5785	91.24	-	-	83.76	35.53	5.59	33.64	100	31	Average
5825	51.97	-16.23	68.2	44.53	35.55	5.63	33.74	100	216	Peak

Test Mode :	Mode 6	Temperature :	21~22°C
Test Channel :	161	Relative Humidity :	41~42%
Test Engineer :	Jack Li	Polarization :	Horizontal
Remark :	5805 MHz is fundamental signal 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
221.97	29.17	-16.83	46	48.27	10.25	0.62	29.97	-	-	Peak
253.56	32.39	-13.61	46	49.53	12.04	0.67	29.85	-	-	Peak
284.88	27.68	-18.32	46	44.16	12.76	0.71	29.95	-	-	Peak
575.8	32.57	-13.43	46	42.63	18.55	1.04	29.65	100	81	Peak
806.8	30.91	-15.09	46	39.34	19.92	1.25	29.6	-	-	Peak
960.1	28.87	-25.13	54	36.28	20.79	1.34	29.54	-	-	Peak
5725	51.93	-16.27	68.2	44.41	35.52	5.55	33.55	100	0	Peak
5805	98.06	-	-	90.6	35.55	5.62	33.71	100	188	Peak
5805	84.66	-	-	77.2	35.55	5.62	33.71	100	188	Average
5825	65.3	-2.9	68.2	57.86	35.55	5.63	33.74	100	0	Peak

Test Mode :	Mode 6	Temperature :	21~22°C
Test Channel :	161	Relative Humidity :	41~42%
Test Engineer :	Jack Li	Polarization :	Vertical
Remark :	5805 MHz is fundamental signal 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
122.61	31.49	-12.01	43.5	49.23	11.78	0.45	29.97	100	30	Peak
158.79	28.78	-14.72	43.5	48.55	9.64	0.53	29.94	-	-	Peak
222.24	28.44	-17.56	46	47.54	10.25	0.62	29.97	-	-	Peak
575.8	30.73	-15.27	46	40.79	18.55	1.04	29.65	-	-	Peak
806.8	26.89	-19.11	46	35.32	19.92	1.25	29.6	-	-	Peak
957.3	28.69	-25.31	54	36.12	20.77	1.34	29.54	-	-	Peak
5725	52.69	-15.51	68.2	45.17	35.52	5.55	33.55	100	30	Peak
5805	100	-	-	92.54	35.55	5.62	33.71	100	29	Peak
5805	86.3	-	-	78.84	35.55	5.62	33.71	100	29	Average
5825	65.58	-2.62	68.2	58.14	35.55	5.63	33.74	100	61	Peak

Test Mode :	Mode 7	Temperature :	21~22°C
Test Channel :	36	Relative Humidity :	41~42%
Test Engineer :	Jack Li	Polarization :	Horizontal
Remark :	5180 MHz is fundamental signal 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
221.97	30.39	-15.61	46	49.49	10.25	0.62	29.97	-	-	Peak
253.83	32.44	-13.56	46	49.56	12.06	0.67	29.85	-	-	Peak
285.15	27.11	-18.89	46	43.59	12.76	0.71	29.95	-	-	Peak
575.8	32.57	-13.43	46	42.63	18.55	1.04	29.65	100	116	Peak
806.8	30.41	-15.59	46	38.84	19.92	1.25	29.6	-	-	Peak
957.3	28.24	-25.76	54	35.67	20.77	1.34	29.54	-	-	Peak
5150	53.29	-20.71	74	45.54	35.25	5.11	32.61	100	62	Peak
5150	41.02	-12.98	54	33.27	35.25	5.11	32.61	100	62	Average
5180	97.83	-	-	90.13	35.26	5.14	32.7	100	26	Peak
5180	84.55	-	-	76.85	35.26	5.14	32.7	100	26	Average
5250	51.2	-17	68.2	43.63	35.28	5.21	32.92	100	0	Peak
5350	53.09	-20.91	74	45.68	35.32	5.31	33.22	100	102	Peak
5350	40.97	-13.03	54	33.56	35.32	5.31	33.22	100	102	Average

Test Mode :	Mode 7	Temperature :	21~22°C
Test Channel :	36	Relative Humidity :	41~42%
Test Engineer :	Jack Li	Polarization :	Vertical
Remark :	5180 MHz is fundamental signal 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
123.42	31.1	-12.4	43.5	48.84	11.77	0.46	29.97	100	331	Peak
160.14	27.49	-16.01	43.5	47.3	9.6	0.53	29.94	-	-	Peak
222.24	27.15	-18.85	46	46.25	10.25	0.62	29.97	-	-	Peak
575.8	31.23	-14.77	46	41.29	18.55	1.04	29.65	-	-	Peak
806.8	26.93	-19.07	46	35.36	19.92	1.25	29.6	-	-	Peak
960.1	29.38	-24.62	54	36.79	20.79	1.34	29.54	-	-	Peak
5150	54.85	-19.15	74	47.1	35.25	5.11	32.61	100	106	Peak
5150	43.38	-10.62	54	35.63	35.25	5.11	32.61	100	106	Average
5180	103.83	-	-	96.13	35.26	5.14	32.7	100	62	Peak
5180	91.36	-	-	83.66	35.26	5.14	32.7	100	62	Average
5250	55.12	-13.08	68.2	47.55	35.28	5.21	32.92	100	0	Peak
5350	53.83	-20.17	74	46.42	35.32	5.31	33.22	100	200	Peak
5350	41.57	-12.43	54	34.16	35.32	5.31	33.22	100	200	Average

Test Mode :	Mode 8	Temperature :	21~22°C
Test Channel :	40	Relative Humidity :	41~42%
Test Engineer :	Jack Li	Polarization :	Horizontal
Remark :	5200 MHz is fundamental signal 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
215.22	27.51	-15.99	43.5	47.12	9.77	0.61	29.99	-	-	Peak
222.51	28.78	-17.22	46	47.88	10.25	0.62	29.97	-	-	Peak
252.21	29.24	-16.76	46	46.39	12.03	0.67	29.85	-	-	Peak
575.8	32.24	-13.76	46	42.3	18.55	1.04	29.65	100	166	Peak
831.3	30.96	-15.04	46	39.04	20.29	1.27	29.64	-	-	Peak
960.1	29.08	-24.92	54	36.49	20.79	1.34	29.54	-	-	Peak
5150	53.82	-20.18	74	46.07	35.25	5.11	32.61	100	10	Peak
5150	41.66	-12.34	54	33.91	35.25	5.11	32.61	100	10	Average
5200	97.89	-	-	90.22	35.26	5.16	32.75	100	326	Peak
5200	84.9	-	-	77.23	35.26	5.16	32.75	100	326	Average
5250	52.33	-15.87	68.2	44.76	35.28	5.21	32.92	100	0	Peak
5360	54.88	-19.12	74	47.47	35.32	5.31	33.22	100	16	Peak
5360	45.79	-8.21	54	38.38	35.32	5.31	33.22	100	16	Average

Test Mode :	Mode 8	Temperature :	21~22°C
Test Channel :	40	Relative Humidity :	41~42%
Test Engineer :	Jack Li	Polarization :	Vertical
Remark :	5200 MHz is fundamental signal 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
115.05	29.95	-13.55	43.5	47.68	11.8	0.44	29.97	-	-	Peak
123.42	30.63	-12.87	43.5	48.37	11.77	0.46	29.97	100	320	Peak
221.97	28.2	-17.8	46	47.3	10.25	0.62	29.97	-	-	Peak
575.8	31.93	-14.07	46	41.99	18.55	1.04	29.65	-	-	Peak
806.8	26.71	-19.29	46	35.14	19.92	1.25	29.6	-	-	Peak
957.3	28.68	-25.32	54	36.11	20.77	1.34	29.54	-	-	Peak
5118	55.25	-18.75	74	47.46	35.23	5.08	32.52	100	85	Peak
5118	43	-11	54	35.21	35.23	5.08	32.52	100	85	Average
5200	103.99	-	-	96.32	35.26	5.16	32.75	100	39	Peak
5200	91.2	-	-	83.53	35.26	5.16	32.75	100	39	Average
5250	54.05	-14.15	68.2	46.48	35.28	5.21	32.92	100	0	Peak
5360	57.72	-16.28	74	50.31	35.32	5.31	33.22	100	32	Peak
5360	49.22	-4.78	54	41.81	35.32	5.31	33.22	100	32	Average

Test Mode :	Mode 9	Temperature :	21~22°C
Test Channel :	44	Relative Humidity :	41~42%
Test Engineer :	Jack Li	Polarization :	Horizontal
Remark :	5220 MHz is fundamental signal 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
102.36	24	-19.5	43.5	42.67	10.87	0.42	29.96	-	-	Peak
222.24	29.77	-16.23	46	48.87	10.25	0.62	29.97	-	-	Peak
254.1	29.74	-16.26	46	46.86	12.06	0.67	29.85	-	-	Peak
575.8	32.82	-13.18	46	42.88	18.55	1.04	29.65	100	66	Peak
806.8	32	-14	46	40.43	19.92	1.25	29.6	-	-	Peak
960.1	28.78	-25.22	54	36.19	20.79	1.34	29.54	-	-	Peak
5150	53.3	-20.7	74	45.55	35.25	5.11	32.61	100	0	Peak
5150	40.98	-13.02	54	33.23	35.25	5.11	32.61	100	0	Average
5220	97.71	-	-	90.07	35.27	5.17	32.8	100	36	Peak
5220	85.32	-	-	77.68	35.27	5.17	32.8	100	36	Average
5250	53.07	-15.13	68.2	45.5	35.28	5.21	32.92	100	20	Peak
5380	54.65	-19.35	74	47.28	35.34	5.34	33.31	100	126	Peak
5380	42.73	-11.27	54	35.36	35.34	5.34	33.31	100	126	Average

Test Mode :	Mode 9	Temperature :	21~22°C
Test Channel :	44	Relative Humidity :	41~42%
Test Engineer :	Jack Li	Polarization :	Vertical
Remark :	5220 MHz is fundamental signal 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
111.27	28.27	-15.23	43.5	46.01	11.8	0.43	29.97	-	-	Peak
124.5	31.21	-12.29	43.5	48.97	11.76	0.46	29.98	100	0	Peak
222.24	26.71	-19.29	46	45.81	10.25	0.62	29.97	-	-	Peak
575.8	30.51	-15.49	46	40.57	18.55	1.04	29.65	-	-	Peak
806.8	27.21	-18.79	46	35.64	19.92	1.25	29.6	-	-	Peak
960.1	28.7	-25.3	54	36.11	20.79	1.34	29.54	-	-	Peak
5150	55.62	-18.38	74	47.87	35.25	5.11	32.61	100	51	Peak
5150	42.91	-11.09	54	35.16	35.25	5.11	32.61	100	51	Average
5220	105.46	-	-	97.82	35.27	5.17	32.8	100	81	Peak
5220	92.2	-	-	84.56	35.27	5.17	32.8	100	81	Average
5250	55.92	-12.28	68.2	48.35	35.28	5.21	32.92	100	0	Peak
5380	58.67	-15.33	74	51.3	35.34	5.34	33.31	100	30	Peak
5380	45.52	-8.48	54	38.15	35.34	5.34	33.31	100	30	Average

Test Mode :	Mode 10	Temperature :	21~22°C
Test Channel :	149	Relative Humidity :	41~42%
Test Engineer :	Jack Li	Polarization :	Horizontal
Remark :	5745 MHz is fundamental signal 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
222.24	29.07	-16.93	46	48.17	10.25	0.62	29.97	-	-	Peak
254.1	27.53	-18.47	46	44.65	12.06	0.67	29.85	-	-	Peak
266.79	26.45	-19.55	46	43.37	12.29	0.68	29.89	-	-	Peak
575.8	32.53	-13.47	46	42.59	18.55	1.04	29.65	100	106	Peak
806.8	30.12	-15.88	46	38.55	19.92	1.25	29.6	-	-	Peak
960.1	28.85	-25.15	54	36.26	20.79	1.34	29.54	-	-	Peak
5725	65.54	-2.66	68.2	58.02	35.52	5.55	33.55	100	102	Peak
5745	99.11	-	-	91.61	35.52	5.56	33.58	100	336	Peak
5745	85.82	-	-	78.32	35.52	5.56	33.58	100	336	Average
5825	52.3	-15.9	68.2	44.86	35.55	5.63	33.74	100	10	Peak

Test Mode :	Mode 10	Temperature :	21~22°C
Test Channel :	149	Relative Humidity :	41~42%
Test Engineer :	Jack Li	Polarization :	Vertical
Remark :	5745 MHz is fundamental signal 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
113.7	26.35	-17.15	43.5	44.08	11.8	0.44	29.97	-	-	Peak
123.96	30.41	-13.09	43.5	48.17	11.76	0.46	29.98	100	0	Peak
222.24	26.27	-19.73	46	45.37	10.25	0.62	29.97	-	-	Peak
575.8	31.48	-14.52	46	41.54	18.55	1.04	29.65	-	-	Peak
806.8	26.77	-19.23	46	35.2	19.92	1.25	29.6	-	-	Peak
960.1	29.24	-24.76	54	36.65	20.79	1.34	29.54	-	-	Peak
5725	66.77	-1.43	68.2	59.25	35.52	5.55	33.55	100	0	Peak
5745	104.53	-	-	97.03	35.52	5.56	33.58	100	26	Peak
5745	92.36	-	-	84.86	35.52	5.56	33.58	100	26	Average
5825	54.07	-14.13	68.2	46.63	35.55	5.63	33.74	100	108	Peak

Test Mode :	Mode 11	Temperature :	21~22°C
Test Channel :	157	Relative Humidity :	41~42%
Test Engineer :	Jack Li	Polarization :	Horizontal
Remark :	5785 MHz is fundamental signal 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
102.09	24.59	-18.91	43.5	43.4	10.74	0.41	29.96	-	-	Peak
222.51	28.8	-17.2	46	47.9	10.25	0.62	29.97	-	-	Peak
254.1	28.15	-17.85	46	45.27	12.06	0.67	29.85	-	-	Peak
575.8	32.59	-13.41	46	42.65	18.55	1.04	29.65	100	196	Peak
806.8	30.48	-15.52	46	38.91	19.92	1.25	29.6	-	-	Peak
957.3	28.87	-25.13	54	36.3	20.77	1.34	29.54	-	-	Peak
5725	52.15	-16.05	68.2	44.63	35.52	5.55	33.55	100	191	Peak
5785	99.37	-	-	91.89	35.53	5.59	33.64	100	278	Peak
5785	86.09	-	-	78.61	35.53	5.59	33.64	100	278	Average
5825	52.47	-15.73	68.2	45.03	35.55	5.63	33.74	100	306	Peak

Test Mode :	Mode 11	Temperature :	21~22°C
Test Channel :	157	Relative Humidity :	41~42%
Test Engineer :	Jack Li	Polarization :	Vertical
Remark :	5785 MHz is fundamental signal 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
125.04	28.85	-14.65	43.5	46.62	11.75	0.46	29.98	-	-	Peak
156.63	23.95	-19.55	43.5	43.67	9.71	0.52	29.95	-	-	Peak
222.51	26.35	-19.65	46	45.45	10.25	0.62	29.97	-	-	Peak
575.8	31.72	-14.28	46	41.78	18.55	1.04	29.65	100	360	Peak
876.1	26.78	-19.22	46	34.57	20.48	1.29	29.56	-	-	Peak
960.1	29.2	-24.8	54	36.61	20.79	1.34	29.54	-	-	Peak
5725	52.74	-15.46	68.2	45.22	35.52	5.55	33.55	100	0	Peak
5785	101.54	-	-	94.06	35.53	5.59	33.64	100	181	Peak
5785	89.01	-	-	81.53	35.53	5.59	33.64	100	181	Average
5825	53.73	-14.47	68.2	46.29	35.55	5.63	33.74	100	32	Peak

Test Mode :	Mode 12	Temperature :	21~22°C
Test Channel :	161	Relative Humidity :	41~42%
Test Engineer :	Jack Li	Polarization :	Horizontal
Remark :	5805 MHz is fundamental signal 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
222.51	27.64	-18.36	46	46.74	10.25	0.62	29.97	-	-	Peak
254.1	26.56	-19.44	46	43.68	12.06	0.67	29.85	-	-	Peak
266.79	26.04	-19.96	46	42.96	12.29	0.68	29.89	-	-	Peak
575.8	32.54	-13.46	46	42.6	18.55	1.04	29.65	100	88	Peak
806.8	30.44	-15.56	46	38.87	19.92	1.25	29.6	-	-	Peak
957.3	29.04	-24.96	54	36.47	20.77	1.34	29.54	-	-	Peak
5725	53.5	-14.7	68.2	45.98	35.52	5.55	33.55	100	201	Peak
5805	98.21	-	-	90.75	35.55	5.62	33.71	100	30	Peak
5805	85.08	-	-	77.62	35.55	5.62	33.71	100	30	Average
5825	64.63	-3.57	68.2	57.19	35.55	5.63	33.74	100	0	Peak

Test Mode :	Mode 12	Temperature :	21~22°C
Test Channel :	161	Relative Humidity :	41~42%
Test Engineer :	Jack Li	Polarization :	Vertical
Remark :	5805 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
118.29	26.57	-16.93	43.5	44.29	11.8	0.45	29.97	-	-	Peak
126.12	26.28	-17.22	43.5	44.06	11.74	0.46	29.98	-	-	Peak
222.51	25.24	-20.76	46	44.34	10.25	0.62	29.97	-	-	Peak
575.8	31.59	-14.41	46	41.65	18.55	1.04	29.65	100	66	Peak
806.8	27.41	-18.59	46	35.84	19.92	1.25	29.6	-	-	Peak
957.3	29.29	-24.71	54	36.72	20.77	1.34	29.54	-	-	Peak
5725	54.45	-13.75	68.2	46.93	35.52	5.55	33.55	100	66	Peak
5805	99.74	-	-	92.28	35.55	5.62	33.71	100	353	Peak
5805	87.6	-	-	80.14	35.55	5.62	33.71	100	353	Average
5825	63.62	-4.58	68.2	56.18	35.55	5.63	33.74	100	21	Peak

3.6 Peak Excursion Ratio Measurement

3.6.1 Limit of Peak Excursion Ratio

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

3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

3.6.3 Test Procedures

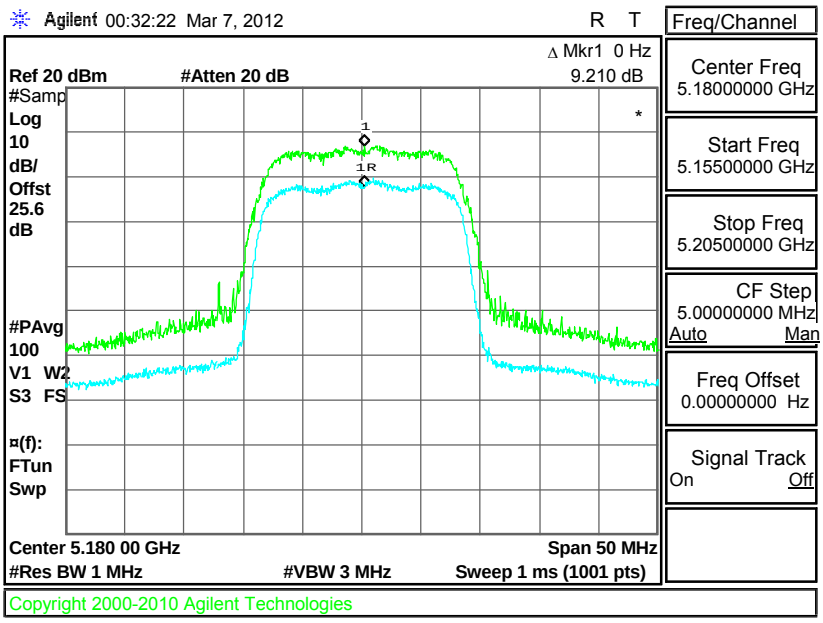
1. The transmitter output is connected to the spectrum analyzer.
2. Set the spectrum analyzer span to view the entire emission bandwidth.
3. Find the maximum of the peak-max-hold spectrum.
   * Set RBW = 1 MHz.
   *Set VBW ≤ 3 MHz.
   *Detector = peak.
   *Trace mode = max-hold.
   *Allow the sweeps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

3.6.4 Test Setup

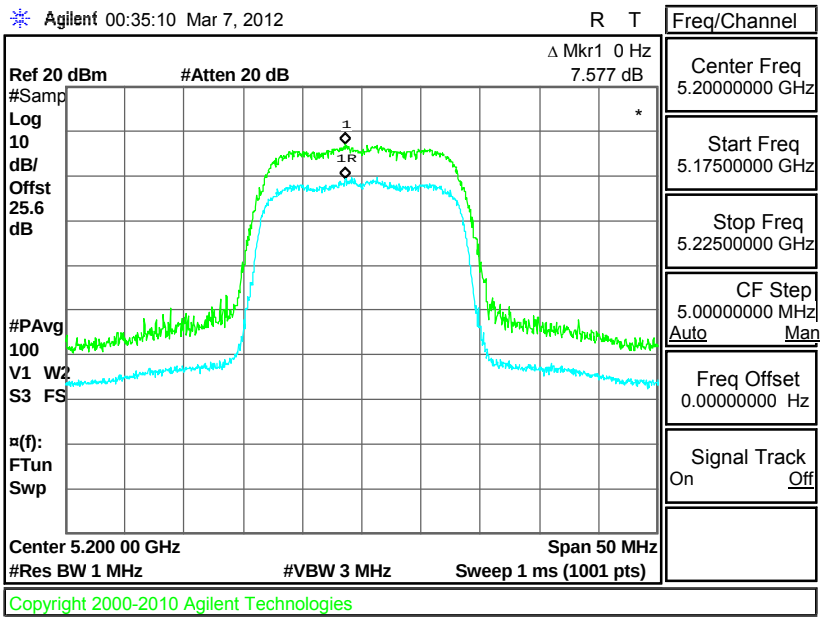
3.6.5 Test Result of Peak Excursion Ratio

Test Mode :	Mode 1~6	Temperature :	24~26℃
Test Engineer :	Book Lin	Relative Humidity :	45~49%

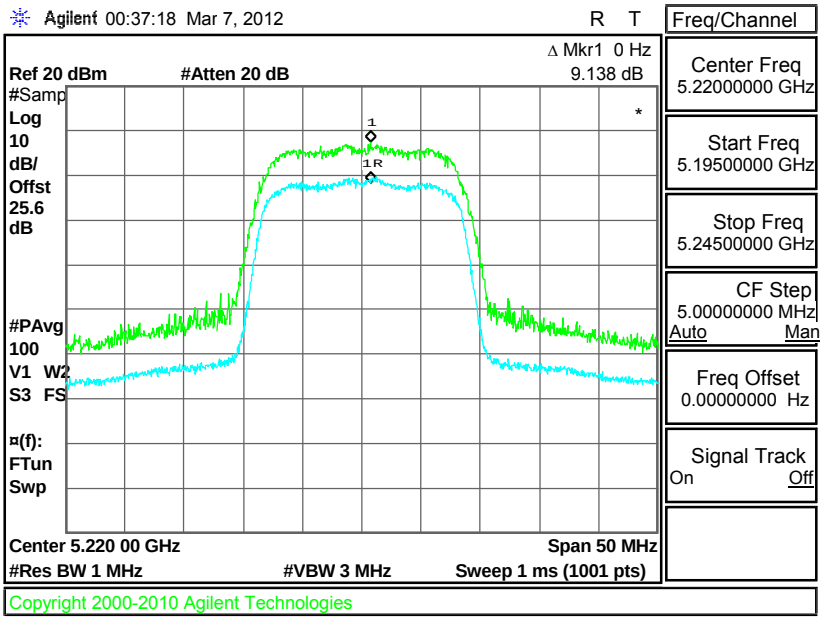
Peak Excursion Ratio Plot on 802.11a Channel 36



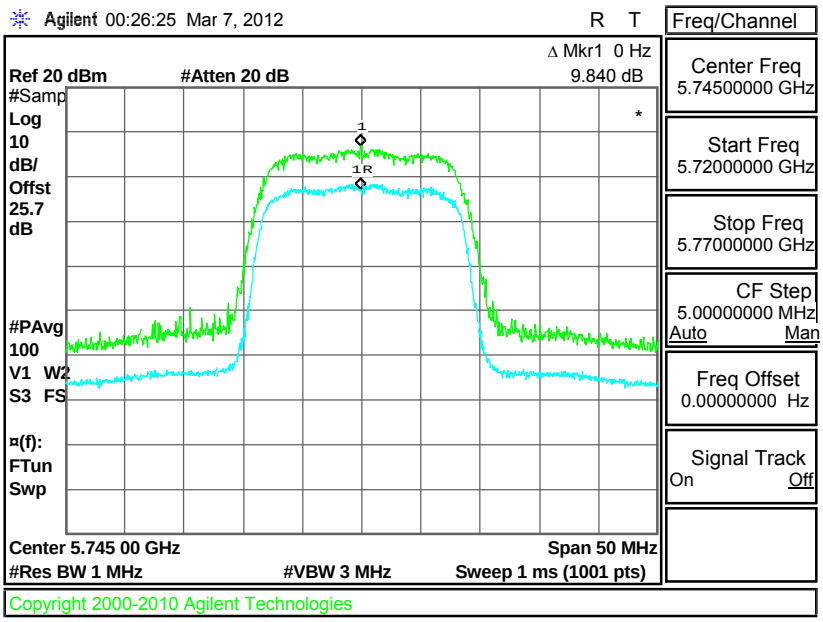
Peak Excursion Ratio Plot on 802.11a Channel 40



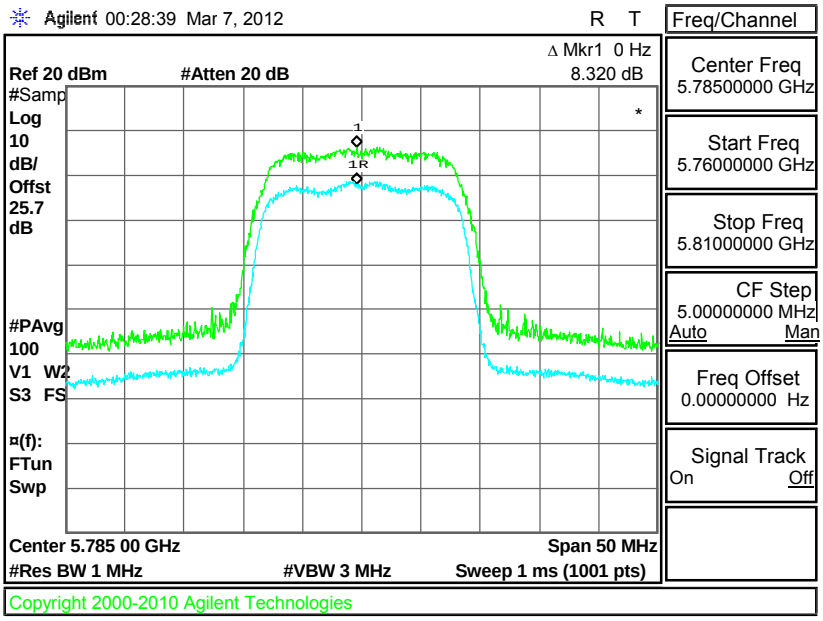
Peak Excursion Ratio Plot on 802.11a Channel 44



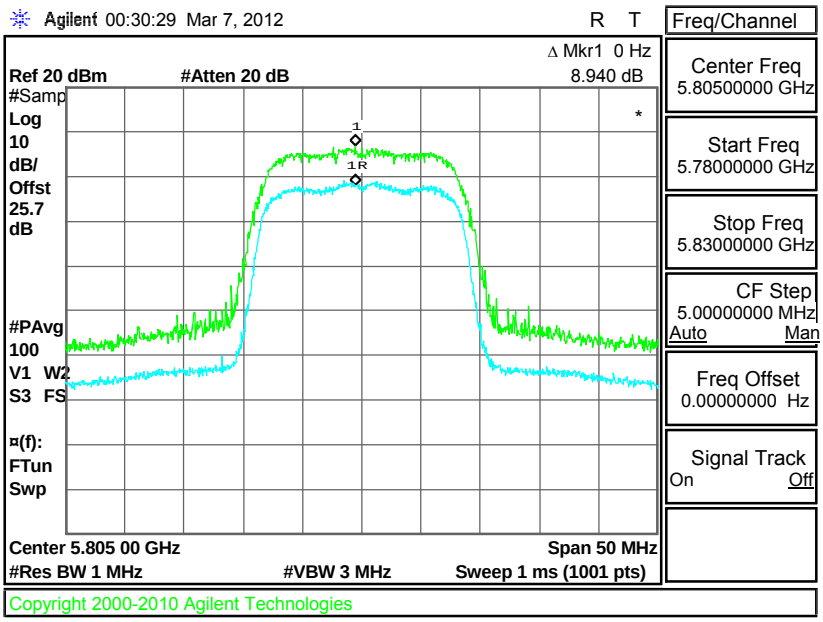
Peak Excursion Ratio Plot on 802.11a Channel 149



Peak Excursion Ratio Plot on 802.11a Channel 157

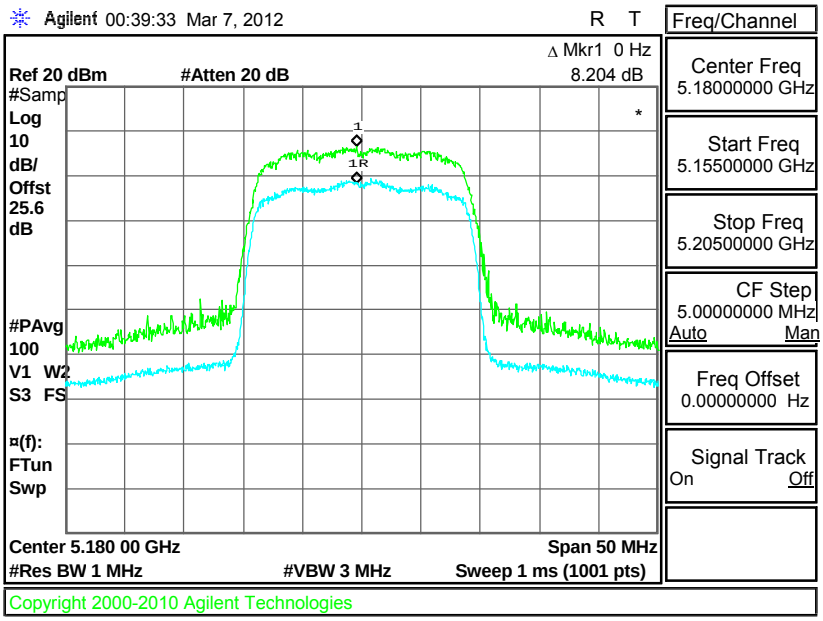


Peak Excursion Ratio Plot on 802.11a Channel 161

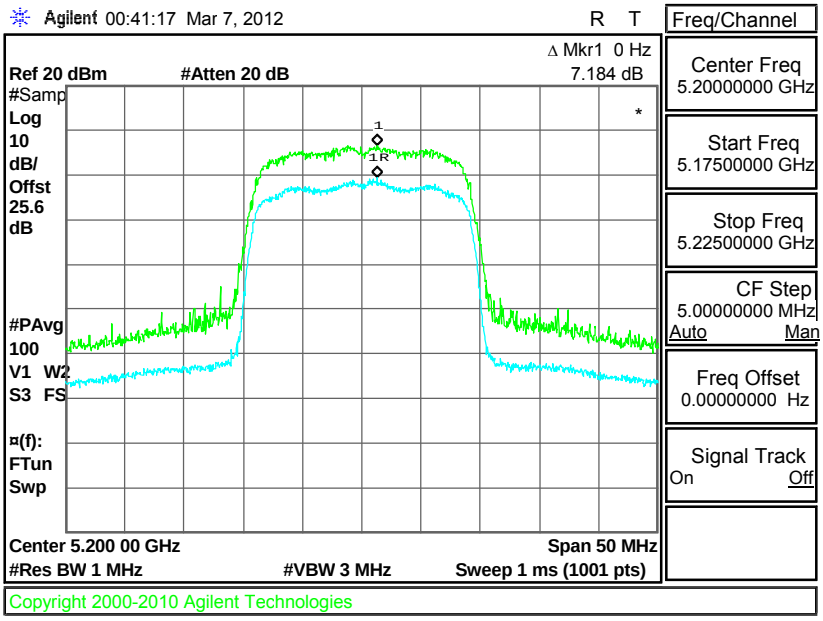


Test Mode :	Mode 7~12	Temperature :	24~26℃
Test Engineer :	Book Lin	Relative Humidity :	45~49%

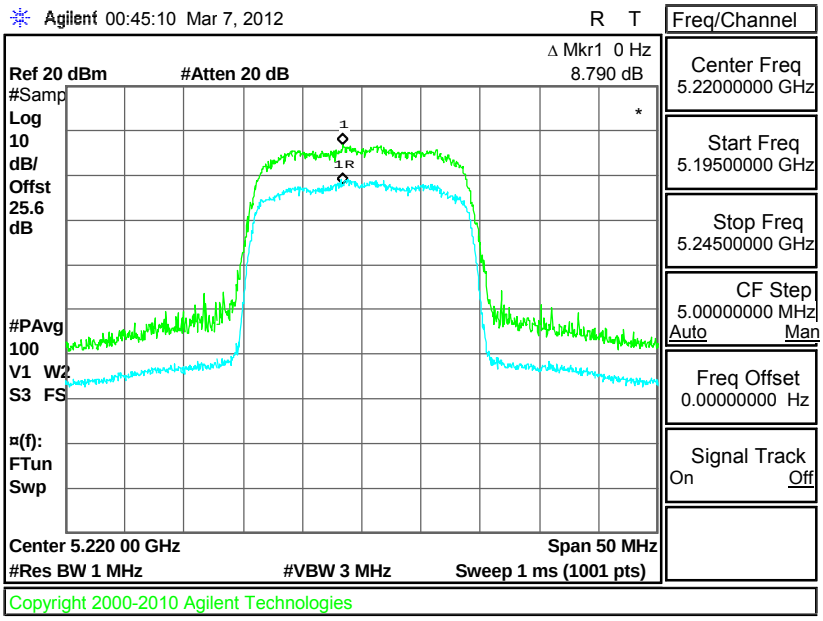
Peak Excursion Ratio Plot on 802.11n (BW 20MHz) Channel 36



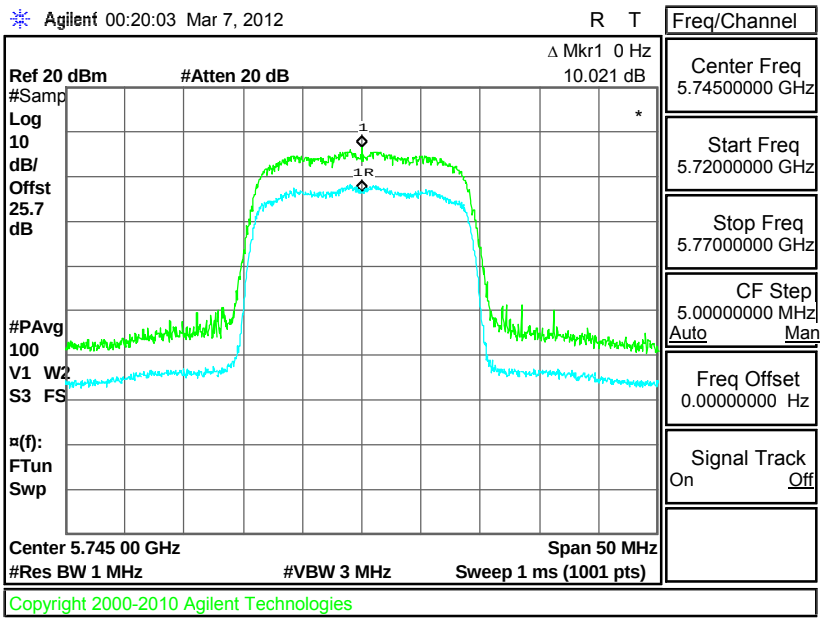
Peak Excursion Ratio Plot on 802.11n (BW 20MHz) Channel 40



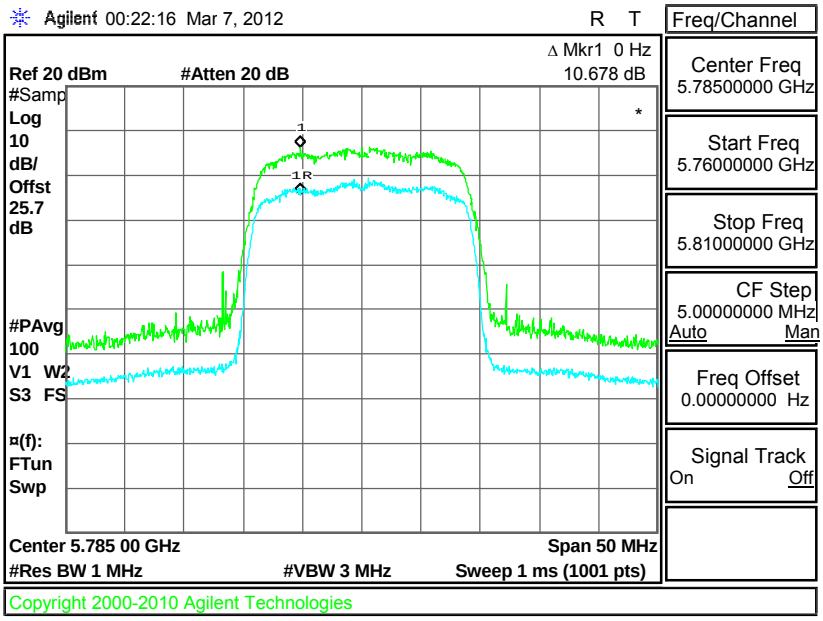
Peak Excursion Ratio Plot on 802.11n (BW 20MHz) Channel 44



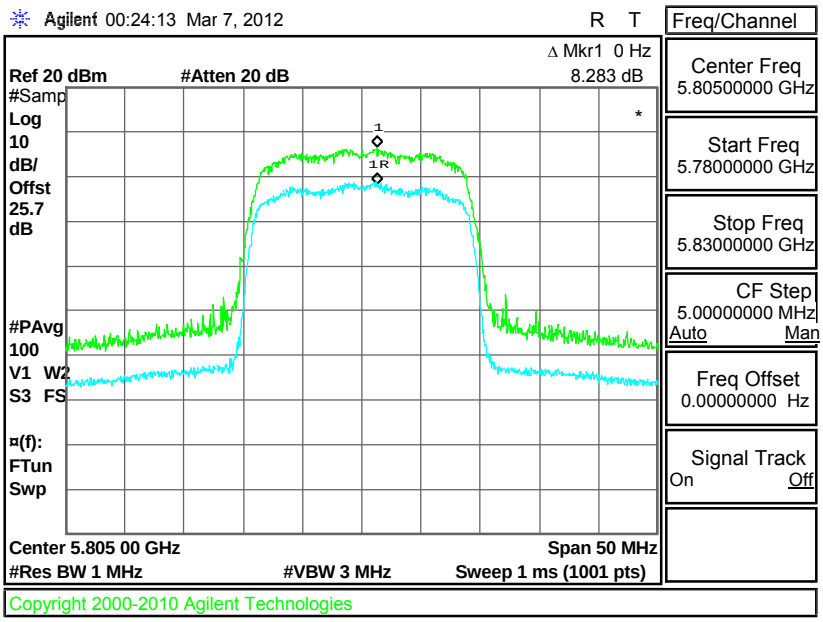
Peak Excursion Ratio Plot on 802.11n (BW 20MHz) Channel 149



Peak Excursion Ratio Plot on 802.11n (BW 20MHz) Channel 157



Peak Excursion Ratio Plot on 802.11n (BW 20MHz) Channel 161



3.7 Automatically Discontinue Transmission

3.7.1 Limit of Automatically Discontinue Transmission

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

3.7.2 Measuring Instruments

See list of measuring instruments of this test report.

3.7.3 Test Result of Automatically Discontinue Transmission

During no any information transmission, the EUT can automatically discontinue transmission and become standby mode for power saving. The EUT can detect the controlling signal of ACK message transmitting from remote device and verify whether it shall resend or discontinue transmission.

3.8 Frequency Stability Measurement

3.8.1 Limit of Frequency Stability

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

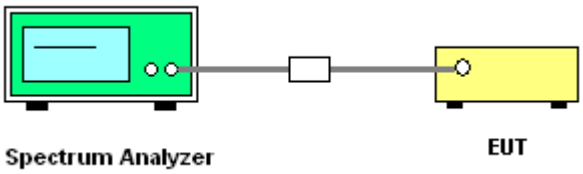
3.8.2 Measuring Instruments

See list of measuring instruments of this test report.

3.8.3 Test Procedures

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

3.8.4 Test Setup



3.8.5 Test Result of Frequency Stability

Test Mode :	Mode 1~6	Temperature :	24~26℃
Test Engineer :	Book Lin	Relative Humidity :	45~49%

Channel	Frequency (MHz)	Low Frequency (Fl)	High Frequency (Fh)	Frequency Stability (ppm)
36	5180	5171.76	5188.28	3.86
40	5200	5191.74	5208.28	1.92
44	5220	5211.76	5228.28	3.83
149	5745	5736.74	5753.28	1.74
157	5785	5776.74	5793.26	0.00
161	5805	5796.72	5813.30	1.72

Test Mode :	Mode 7~12	Temperature :	24~26℃
Test Engineer :	Book Lin	Relative Humidity :	45~49%

Channel	Frequency (MHz)	Low Frequency (Fl)	High Frequency (Fh)	Frequency Stability (ppm)
36	5180	5171.10	5188.92	1.93
40	5200	5191.12	5208.90	1.92
44	5220	5211.12	5228.90	1.92
149	5745	5736.14	5753.90	3.48
157	5785	5776.16	5793.86	1.73
161	5805	5796.14	5813.88	1.72

3.9 Antenna Requirements

3.9.1 Standard Applicable

According to FCC 47 CFR Section 15.407(a)(1)(2) ,if transmitting antenna directional gain is greater than 6 dBi, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.9.2 Antenna Connected Construction

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

3.9.3 Antenna Gain

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

4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSP40	100055	9kHz~40GHz	Jun. 13, 2011	Mar. 07, 2012	Jun. 12, 2012	Conducted (TH02-HY)
Power Meter	Anritsu	ML2495A	0932001	N/A	Sep. 18, 2011	Mar. 07, 2012	Sep. 17, 2012	Conducted (TH02-HY)
Power Sensor	Anritsu	MA2411B	0846202	N/A	Sep. 18, 2011	Mar. 07, 2012	Sep. 17, 2012	Conducted (TH02-HY)
Power Meter	Agilent	E4416A	GB41292344	N/A	Jan. 10, 2012	Mar. 07, 2012	Jan. 09, 2013	Conducted (TH02-HY)
Power Sensor	Agilent	E9327A	US40441548	N/A	Jan. 10, 2012	Mar. 07, 2012	Jan. 09, 2013	Conducted (TH02-HY)
EMI Test Receiver	R&S	ESCI7	100768	9kHz~7GHz	Jun. 02, 2011	Feb. 27, 2012	Jun. 01, 2012	Conduction (CO01-KS)
LISN	MessTec	AN3016	60103	9kHz~30MHz	Dec. 30, 2011	Feb. 27, 2012	Dec. 29, 2012	Conduction (CO01-KS)
LISN	MessTec	AN3016	60105	9kHz~30MHz	Dec. 30, 2011	Feb. 27, 2012	Dec. 29, 2012	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP000000811	N/A	Nov. 16, 2011	Feb. 27, 2012	Nov. 15, 2012	Conduction (CO01-KS)
System Simulator	R&S	CMU200	837587/066	2G Full-Band	Dec. 30, 2011	Feb. 27, 2012	Dec. 29, 2012	Conduction (CO01-KS)
GPS Station	T&E	GS-50	N/A	N/A	N/A	Feb. 27, 2012	N/A	Conduction (CO01-KS)
EMI Test Receiver	R&S	ESCI	100534	9kHz~3GHz	Nov. 09, 2011	Feb. 13, 2012	Nov. 08, 2012	Radiation (03CH01-KS)
Spectrum Analyzer	R&S	FSP40	100319	9kHz~40GHz	Dec. 30, 2011	Feb. 13, 2012	Dec. 29, 2012	Radiation (03CH01-KS)
Spectrum Analyzer	R&S	FSP30	101400	9kHz~30GHz	Jun. 02, 2011	Feb. 13, 2012	Jun. 01, 2012	Radiation (03CH01-KS)
Loop Antenna	R&S	HFH2-Z2	860004/00	9 kHz~30 MHz	Jul. 28, 2011	Feb. 13, 2012	Jul. 27, 2012	Radiation (03CH01-KS)
Bilog Antenna	SCHAFFNER	CBL6112D	23182	25MHz~2GHz	Dec. 08, 2011	Feb. 13, 2012	Dec. 07, 2012	Radiation (03CH01-KS)
Double Ridge Horn Antenna	EMCO	3117	00075959	1GHz~18GHz	Jan. 06, 2012	Feb. 13, 2012	Jan. 05, 2013	Radiation (03CH01-KS)
Amplifier	Wireless	FPA-6592G	060029	9KHz~2GHz	Jan. 06, 2012	Feb. 13, 2012	Jan. 05, 2013	Radiation (03CH01-KS)
Amplifier	Agilent	8449B	3008A02370	1GHz~26.5GHz	Dec. 30, 2011	Feb. 13, 2012	Dec. 29, 2012	Radiation (03CH01-KS)
Active Horn Antenna	com-power	AHA-118	701023	1G-18GHz	Nov. 07, 2011	Feb. 13, 2012	Nov. 05, 2012	Radiation (03CH01-KS)
SHF-EHF Horn	Schwarzbeck	BBHA 9170	BBHA170249	15GHz~40GHz	Oct. 11, 2011	Feb. 13, 2012	Oct. 10, 2012	Radiation (03CH01-KS)

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 Uc(y)	**1.13**		
Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(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 Uc(y)	**1.27**		
Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(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 Γ1 = 0.197 Antenna VSWR Γ2 = 0.194 Uncertainty = 20Log(1-Γ1*Γ2)	+0.34 / -0.35	U-Shape	0.244	1	0.244
Combined Standard Uncertainty Uc(y)	**2.36**				
Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.72**				

Appendix A. Photographs of EUT

Please refer to Sporton report number EP190807 as below.