

FCC RF Test Report

APPLICANT : Unitech Electronics Co., Ltd.
EQUIPMENT : Mobile terminal with barcode reader
BRAND NAME : unitech
MODEL NAME : PA690 / HC1-9892QADG
FCC ID : HLEPA690BTGGR
STANDARD : FCC Part 15 Subpart E
CLASSIFICATION : (NII) Unlicensed National Information Infrastructure TX

The product was received on Mar. 24, 2011 and completely tested on Nov. 16, 2011. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.4-2003 and shown compliance with the applicable technical standards.

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

Reviewed by:



Jones Tsai / Manager



SPORTON INTERNATIONAL INC.

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

SPORTON INTERNATIONAL INC.

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FCC ID : HLEPA690BTGGR

Page Number : 1 of 98

Report Issued Date : Nov. 17, 2011

Report Version : Rev. 01



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR132448C	Rev. 01	Initial issue of report	Nov. 17, 2011

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	$\leq 17, 24, 30$ dBm (depend on band)	Pass	-
3.3	15.407(a)	A9.2	Power Spectral Density	$\leq 4, 11, 17$ dBm (depend on band)	Pass	-
3.4	15.207	Gen 7.2.4	AC Conducted Emission	15.207(a)	Pass	Under limit 14.40 dB at 0.494 MHz
3.5	15.407(b)	A9.3	Unwanted Emissions	$\leq -17, -27$ dBm (depend on band)&15.209(a)	Pass	Under limit 6.85 dB at 182.01 MHz
3.6	15.407(b)	A9.3	Peak Excursion Ratio	≤ 13 dB	Pass	-
3.7	15.407(c)	A9.5	Automatically Discontinue Transmission	Discontinue Transmission	Pass	-
3.8	15.407(g)	A9.5	Frequency Stability	Within Operation Band	Pass	-
3.9	15.203 & 15.407(a)	A9.2	Antenna Requirement	N/A	Pass	-

1 General Description

1.1 Applicant

Unitech Electronics Co., Ltd.

5Fl., No. 136, Lane 235, Pao-Chiao Rd., Hsin-Tien Area, New Taipei City, Taiwan 231, R.O.C.

1.2 Manufacturer

Unitech Electronics Co., Ltd.

5Fl., No. 136, Lane 235, Pao-Chiao Rd., Hsin-Tien Area, New Taipei City, Taiwan 231, R.O.C.

1.3 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	Mobile terminal with barcode reader
Brand Name	unitech
Model Name	PA690 / HC1-9892QADG
FCC ID	HLEPA690BTGGR
Tx/Rx Frequency Range	5150 MHz ~ 5250 MHz 5250 MHz ~ 5350 MHz 5470 MHz ~ 5725 MHz
Maximum Output Power to Antenna	<5150 MHz ~ 5250 MHz> 802.11a : 12.58 dBm / 0.0181 W <5250 MHz ~ 5350 MHz> 802.11a : 13.15 dBm / 0.0207 W <5470 MHz ~ 5725 MHz> 802.11a : 13.73 dBm / 0.0236 W
Antenna Type	Antenna 1 <5150 MHz ~ 5250 MHz> PIFA Antenna with gain -2.20 dBi <5250 MHz ~ 5350 MHz> PIFA Antenna with gain 0.68 dBi <5470 MHz ~ 5725 MHz> PIFA Antenna with gain 1.22 dBi Antenna 2 <5150 MHz ~ 5250 MHz> PIFA Antenna with gain 1.53 dBi <5250 MHz ~ 5350 MHz> PIFA Antenna with gain 1.34 dBi <5470 MHz ~ 5725 MHz> PIFA Antenna with gain -1.68 dBi
HW Version	CPU PXA320/806MHz
Type of Modulation	OFDM (BPSK / QPSK / 16QAM / 64QAM)
EUT Stage	Production Unit

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

1.4 Testing Site

Test Site	SPORTON INTERNATIONAL INC.		
Test Site Location	No. 52, Hwa Ya 1 st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-3273456 / FAX: +886-3-3284978		
Test Site No.	Sporton Site No.		FCC/IC Registration No.
	CO05-HY	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 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.	WLAN AP	D-Link	DIR-628	KA2DIR628A2	N/A	Unshielded, 1.8 m
3.	Notebook	DELL	Vostro 1510	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
4.	LCD Monitor	Lenovo	6135-AB1	FCC DoC	Shielded, 1.6 m	Unshielded, 1.8 m
5.	Bluetooth Earphone	Nokia	BH-102	PYAHS-107W	N/A	N/A
6.	USB Dongle	Transcend	N14939	FCC DoC	N/A	N/A
7.	iPod	Apple	A1285	FCC DoC	Shielded, 1.0 m	N/A

2 Test Configuration of Equipment Under Test

2.1 Carrier Frequency Channel

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

2.2 RF Power

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

<Antenna 1>

Channel	Frequency	5GHz 802.11a RF Power (dBm)							
		At OFDM Data Rate							
		6 Mbps	9 Mbps	12 Mbps	18 Mbps	24 Mbps	36 Mbps	48 Mbps	54 Mbps
CH 36	5180 MHz	12.06	11.97	11.94	12.03	12.00	11.94	11.93	11.92
CH 44	5220 MHz	11.99	11.85	11.77	11.82	11.96	11.73	11.78	11.61
CH 48	5240 MHz	12.05	11.82	11.89	12.02	11.99	11.88	11.98	11.74
CH 52	5260 MHz	12.37	12.33	12.31	12.30	12.25	12.18	12.24	12.20
CH 60	5300 MHz	12.64	12.50	12.51	12.55	12.44	12.40	12.38	12.49
CH 64	5320 MHz	12.91	12.80	12.83	12.88	12.72	12.69	12.68	12.65
CH 100	5500 MHz	12.29	12.09	12.19	12.24	12.22	12.15	11.99	11.83
CH 116	5580 MHz	12.28	12.26	12.24	12.20	12.21	12.07	12.14	12.15
CH 140	5700 MHz	13.37	13.32	13.23	13.32	13.18	13.06	13.10	13.23

<Antenna 2>

Channel	Frequency	5GHz 802.11a RF Power (dBm)							
		At OFDM Data Rate							
		6 Mbps	9 Mbps	12 Mbps	18 Mbps	24 Mbps	36 Mbps	48 Mbps	54 Mbps
CH 36	5180 MHz	12.58	12.57	12.39	12.51	12.32	12.35	12.39	12.09
CH 44	5220 MHz	12.37	12.32	12.33	12.31	12.34	12.23	12.20	12.09
CH 48	5240 MHz	12.50	12.49	12.44	12.48	12.39	12.22	12.35	12.37
CH 52	5260 MHz	12.67	12.62	12.65	12.58	12.54	12.47	12.51	12.52
CH 60	5300 MHz	12.91	12.89	12.84	12.89	12.87	12.71	12.78	12.83
CH 64	5320 MHz	13.15	13.11	13.12	13.14	13.10	13.03	13.12	13.03
CH 100	5500 MHz	12.59	12.55	12.55	12.57	12.57	12.49	12.56	12.34
CH 116	5580 MHz	12.74	12.73	12.69	12.72	12.59	12.56	12.64	12.63
CH 140	5700 MHz	13.73	13.62	13.44	13.56	13.54	13.44	13.47	13.33

Remark:

1. The 802.11a data rate was set in 6Mbps for Antenna 2 on 5470 MHz to 5725 MHz 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.

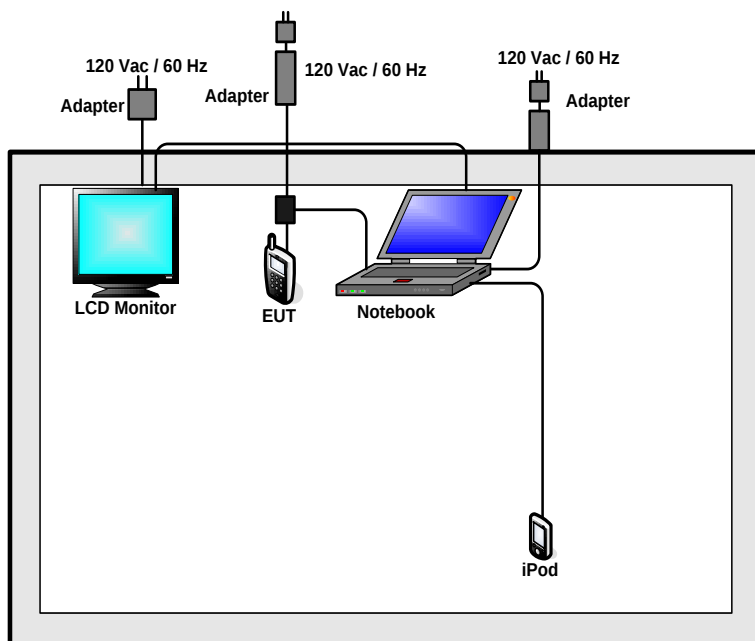
The following tables are showing the test modes as the worst cases (H plane) and recorded in this report.

Test Cases	
Test Item	802.11a (Modulation : OFDM)
Conducted TCs	■ Mode 1: CH36_5180 MHz ■ Mode 2: CH44_5220 MHz ■ Mode 3: CH48_5240 MHz ■ Mode 4: CH52_5260 MHz ■ Mode 5: CH60_5300 MHz ■ Mode 6: CH64_5320 MHz ■ Mode 7: CH100_5500 MHz ■ Mode 8: CH116_5580 MHz ■ Mode 9: CH140_5700 MHz

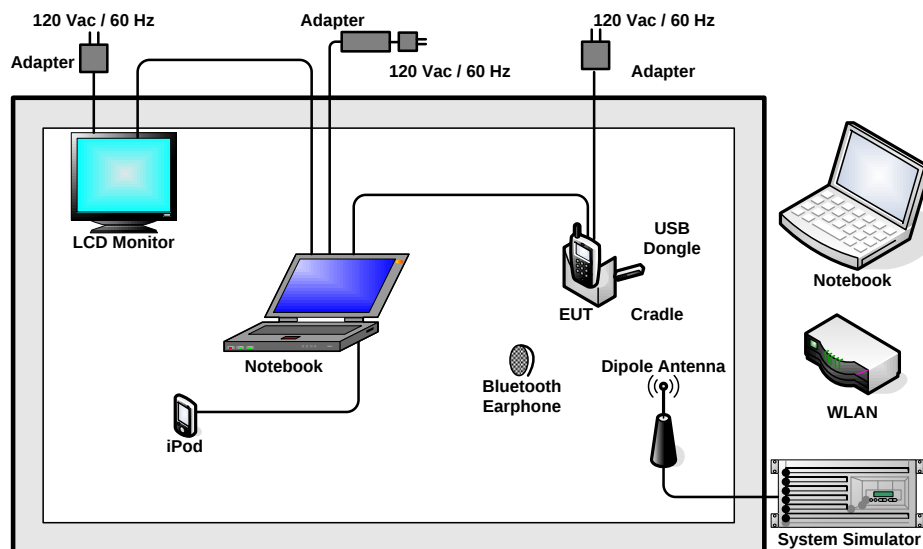
Test Cases	
Test Item	802.11a (Modulation : OFDM)
Radiated TCs	■ Mode 1: CH36_5180 MHz for ant-1 ■ Mode 2: CH44_5220 MHz for ant-1 ■ Mode 3: CH48_5240 MHz for ant-1 ■ Mode 4: CH52_5260 MHz for ant-1 ■ Mode 5: CH60_5300 MHz for ant-1 ■ Mode 6: CH64_5320 MHz for ant-1 ■ Mode 7: CH100_5500 MHz for ant-1 ■ Mode 8: CH116_5580 MHz for ant-1 ■ Mode 9: CH140_5700 MHz for ant-1 ■ Mode 10: CH36_5180 MHz for ant-2 ■ Mode 11: CH44_5220 MHz for ant-2 ■ Mode 12: CH48_5240 MHz for ant-2 ■ Mode 13: CH52_5260 MHz for ant-2 ■ Mode 14: CH60_5300 MHz for ant-2 ■ Mode 15: CH64_5320 MHz for ant-2 ■ Mode 16: CH100_5500 MHz for ant-2 ■ Mode 17: CH116_5580 MHz for ant-2 ■ Mode 18: CH140_5700 MHz for ant-2
AC Conducted Emission	WCDMA Band V Idle + WLAN (5G) Link + Bluetooth Link + MPEG4 + USB Cradle + USB Cable (Data Link with Notebook) + Adapter + Battery 1 + USB Dongle
Remark: - The conducted test was only performed with Antenna 2. - The Radiated test was performed with USB Cable, Adapter and Battery 1. - Link with Notebook means data application transferred mode between EUT and Notebook.	

2.4 Connection Diagram of Test System

<WLAN Tx Mode>



<AC Conducted Emission Mode>





2.5 RF Utility

EUT execute “SRU_30AG mode” and “WLAN RF Test” 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

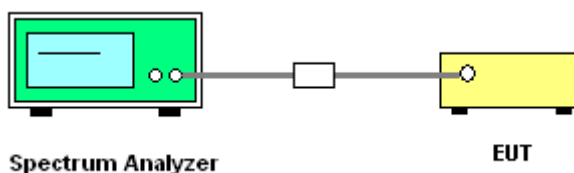
3.1.1 Measuring Instruments

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



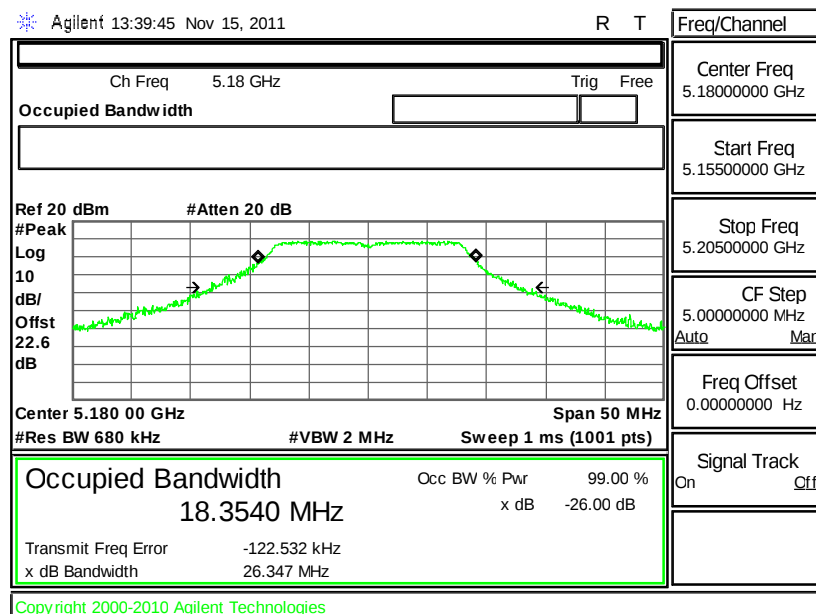


3.1.4 Test Result of 26dB Bandwidth Plots

Test Mode :	Mode 1~9	Temperature :	24~26°C
Test Engineer :	Book Lin	Relative Humidity :	40~44%

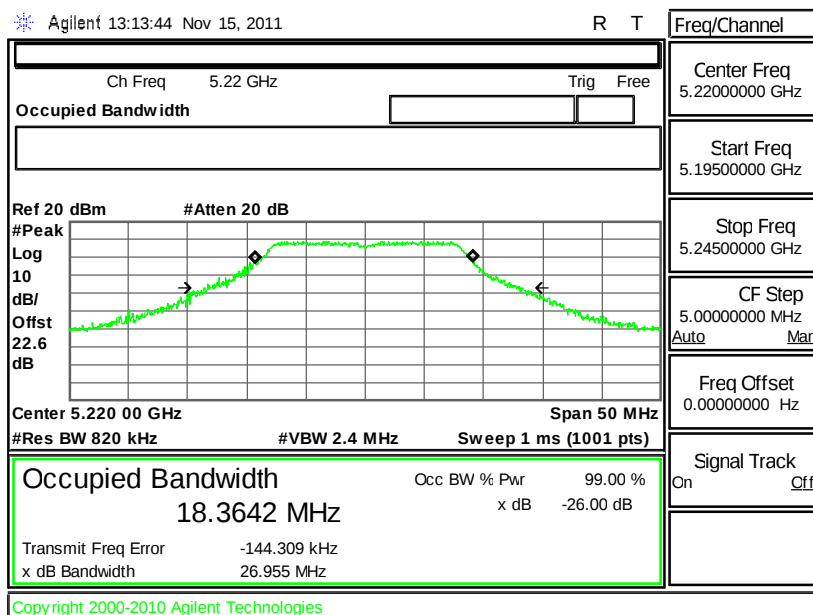
Channel	Frequency (MHz)	802.11a 26dB Bandwidth (MHz)	Pass/Fail
36	5180	26.347	N/A
44	5220	26.955	N/A
48	5240	26.516	N/A
52	5260	26.582	N/A
60	5300	26.419	N/A
64	5320	26.029	N/A
100	5500	26.619	N/A
116	5580	26.627	N/A
140	5700	26.055	N/A

Mode 1 : 26 dB Bandwidth Plot on 802.11a Channel 36

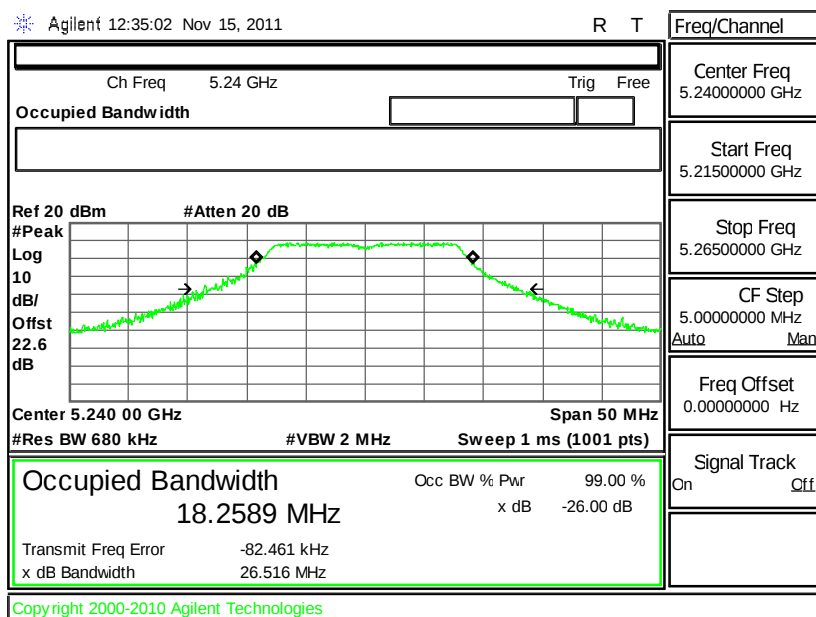




Mode 2 : 26 dB Bandwidth Plot on 802.11a Channel 44

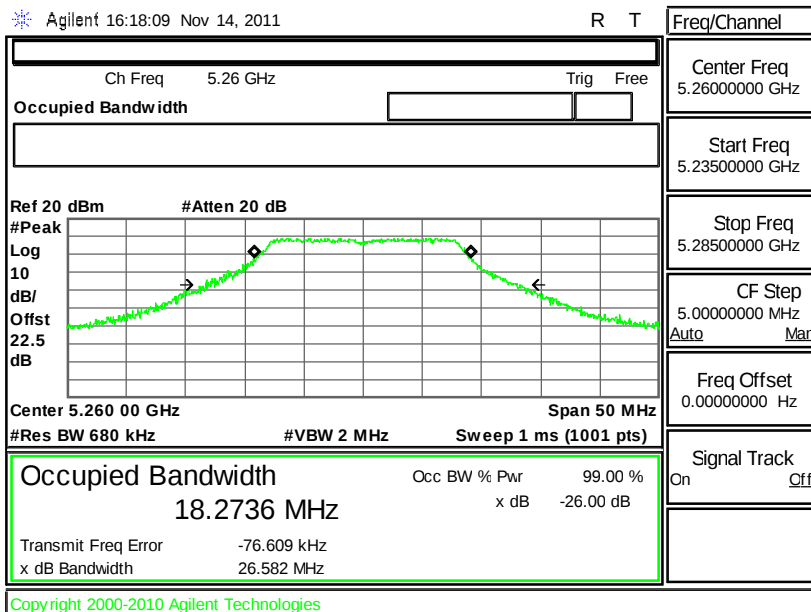


Mode 3 : 26 dB Bandwidth Plot on 802.11a Channel 48

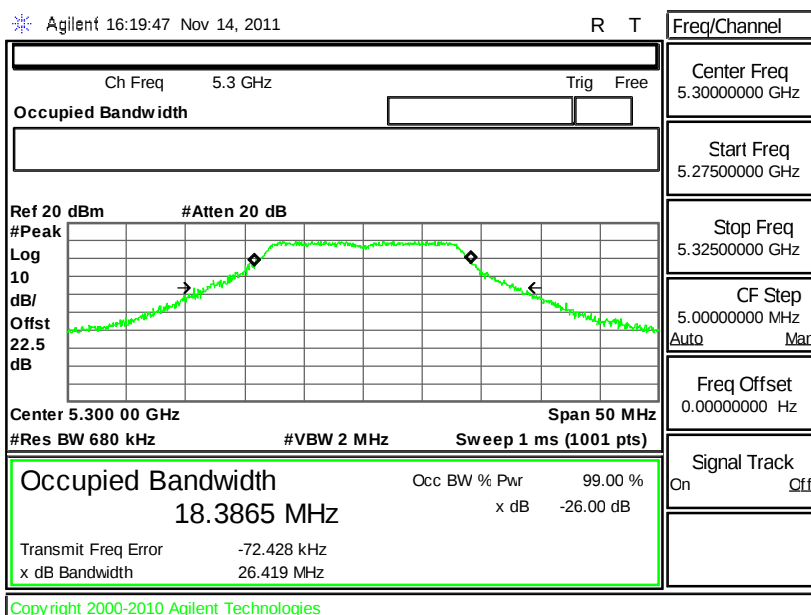




Mode 4 : 26 dB Bandwidth Plot on 802.11a Channel 52

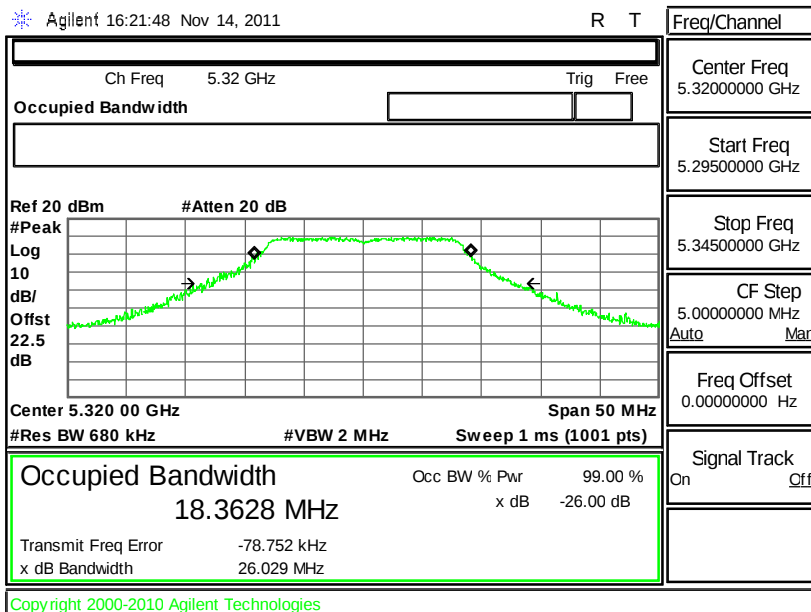


Mode 5 : 26 dB Bandwidth Plot on 802.11a Channel 60

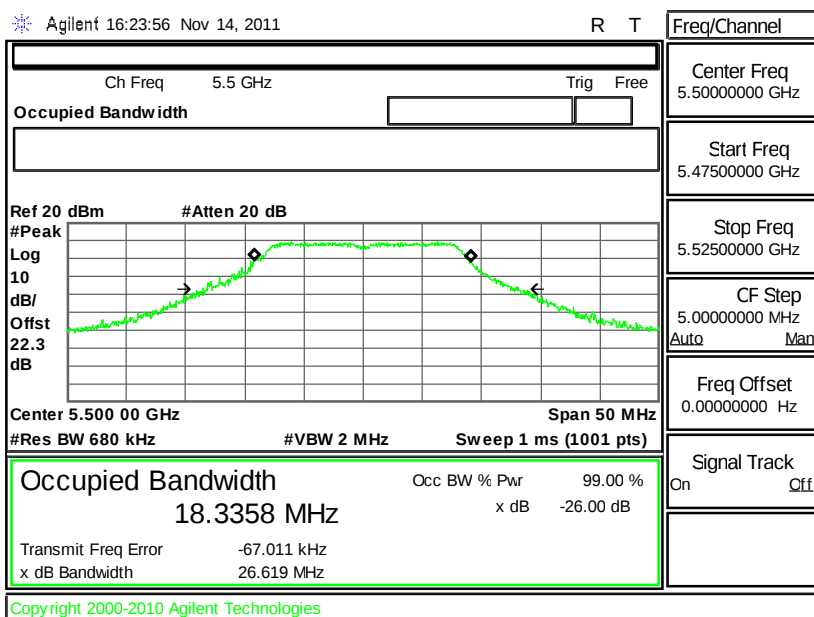




Mode 6 : 26 dB Bandwidth Plot on 802.11a Channel 64

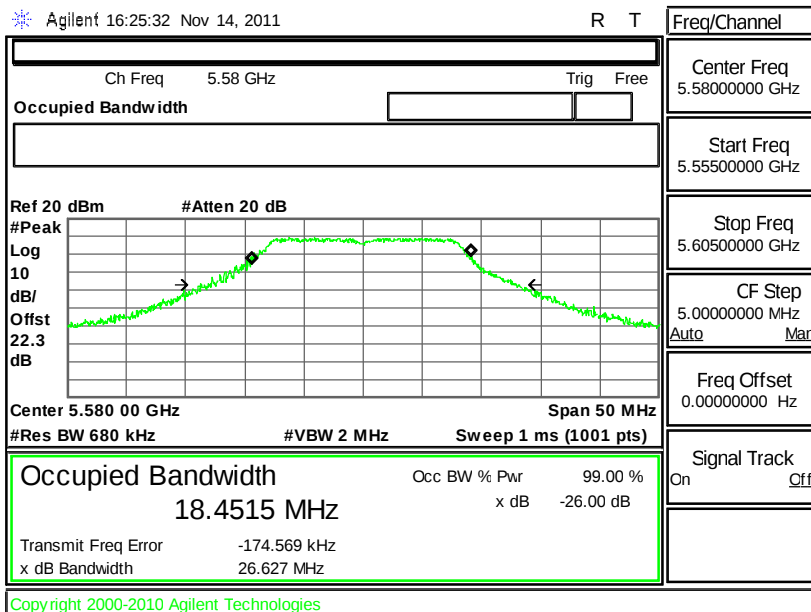


Mode 7 : 26 dB Bandwidth Plot on 802.11a Channel 100

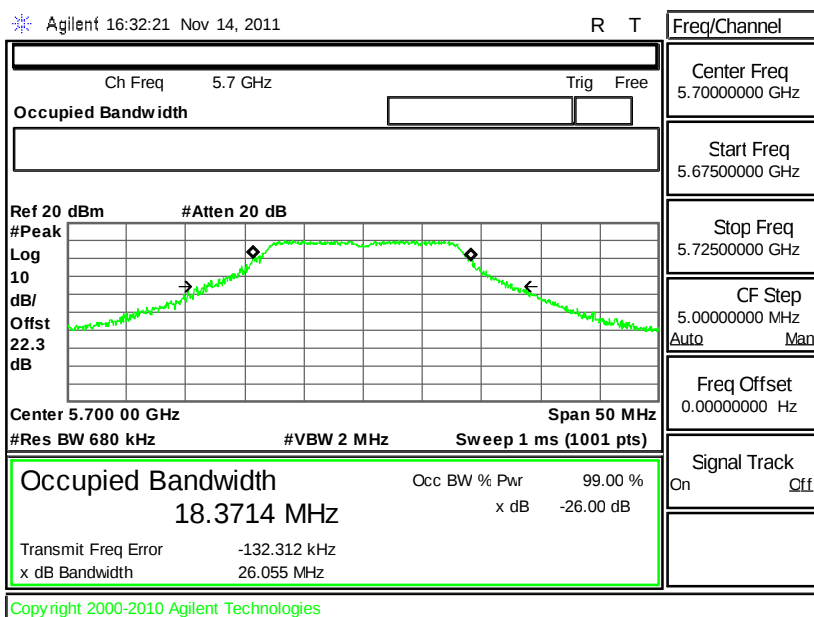




Mode 8 : 26 dB Bandwidth Plot on 802.11a Channel 116



Mode 9 : 26 dB Bandwidth Plot on 802.11a 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

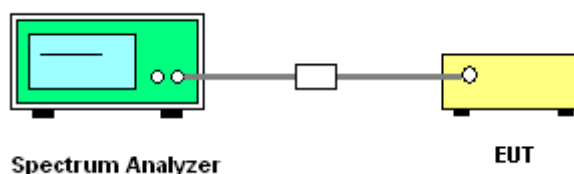
The duty cycle of WLAN 802.11a were 100 % for 802.11a

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

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

3. Measure the power and record it.

3.2.4 Test Setup



3.2.5 Test Result of Maximum Conducted Output Power

Test Mode :	Mode 1~9	Temperature :	24~26℃
Test Engineer :	Book Lin	Relative Humidity :	40~44%

Channel	Frequency (MHz)	Measured Power Output (dBm)	Max. Limits (dBm)	Pass/Fail
36	5180	12.58	17	Pass
44	5220	12.37	17	Pass
48	5240	12.50	17	Pass
52	5260	12.67	24	Pass
60	5300	12.91	24	Pass
64	5320	13.15	24	Pass
100	5500	12.59	24	Pass
116	5580	12.74	24	Pass
140	5700	13.73	24	Pass

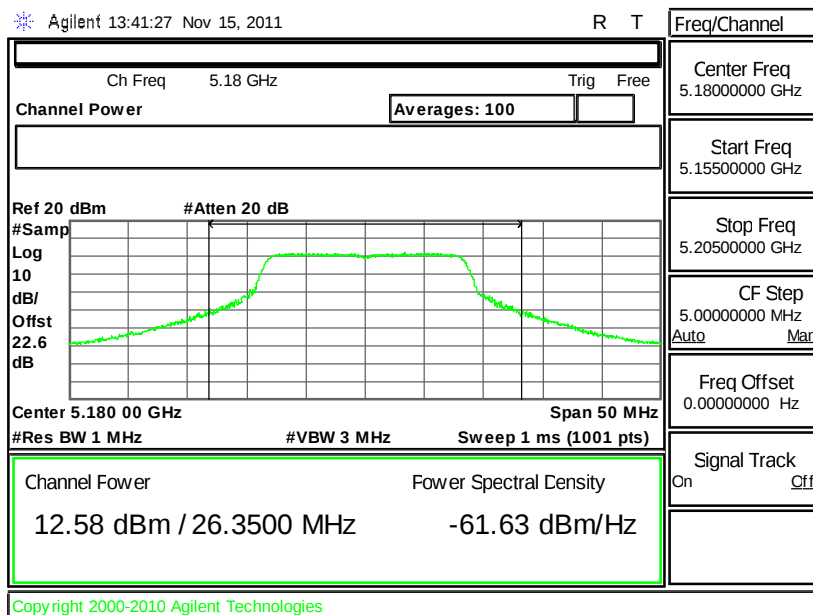
Note:

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)

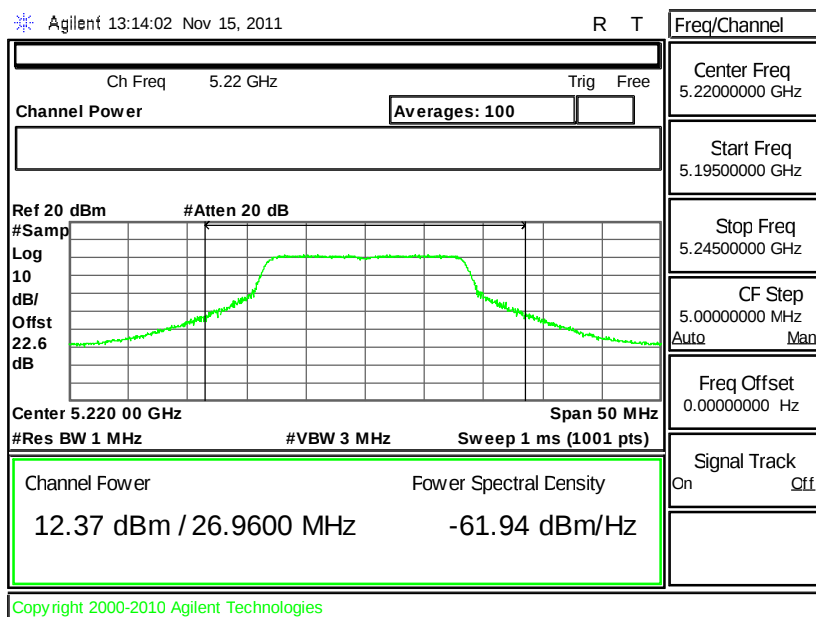


3.2.6 Test Result of Power Output Plots

Mode 1 : Output Power Plot on 802.11a Channel 36

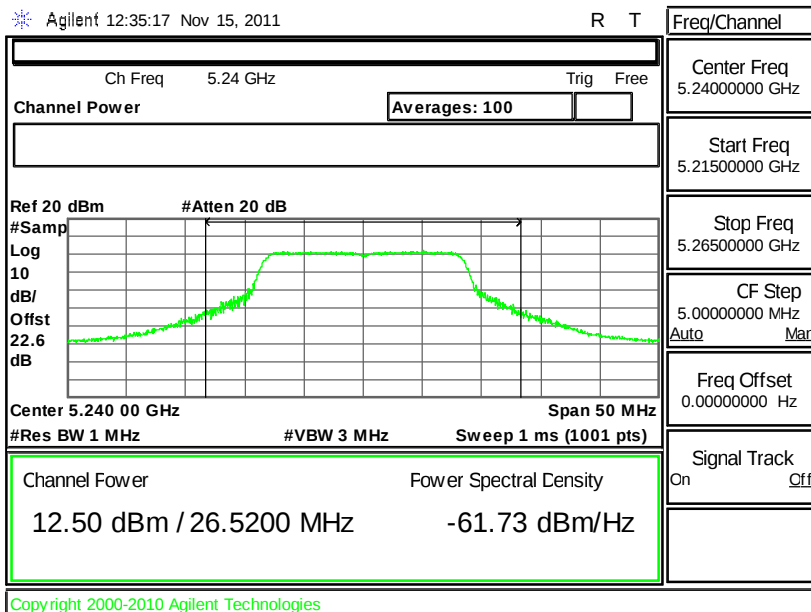


Mode 2 : Output Power Plot on 802.11a Channel 44

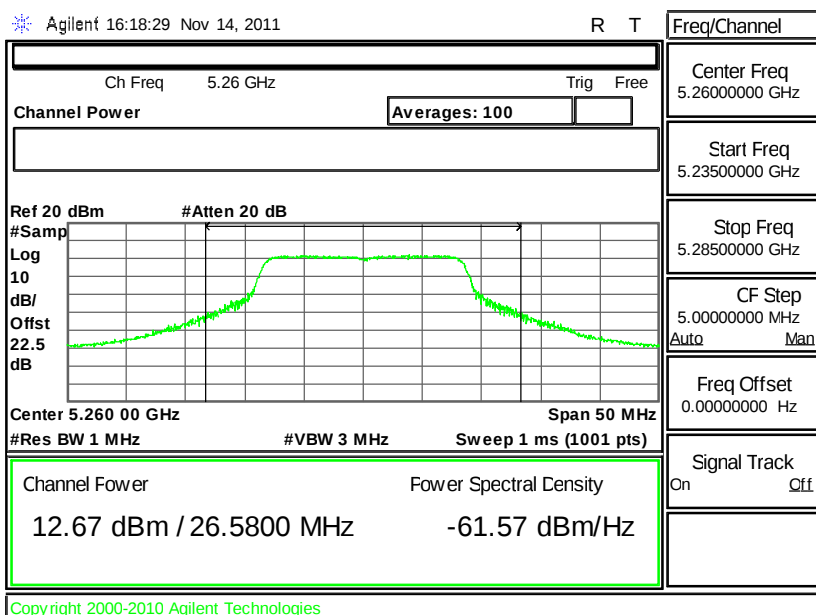


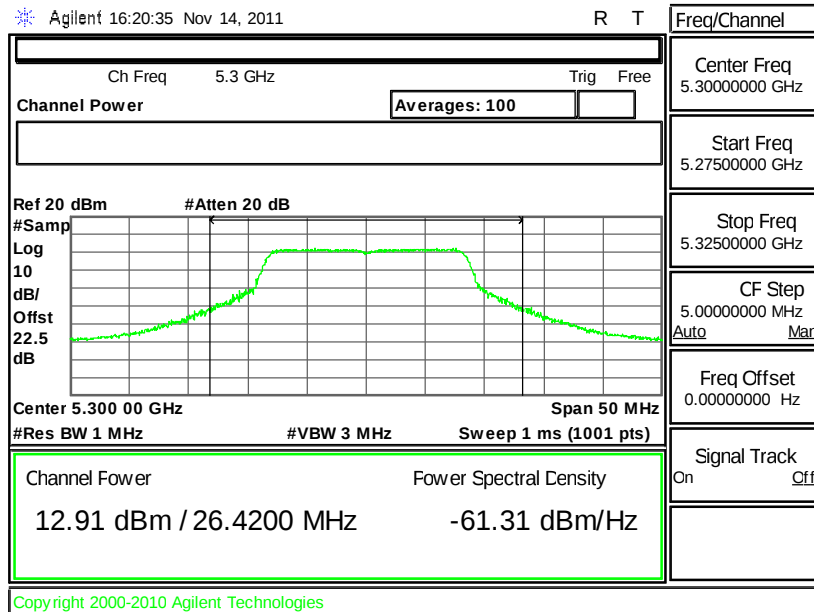
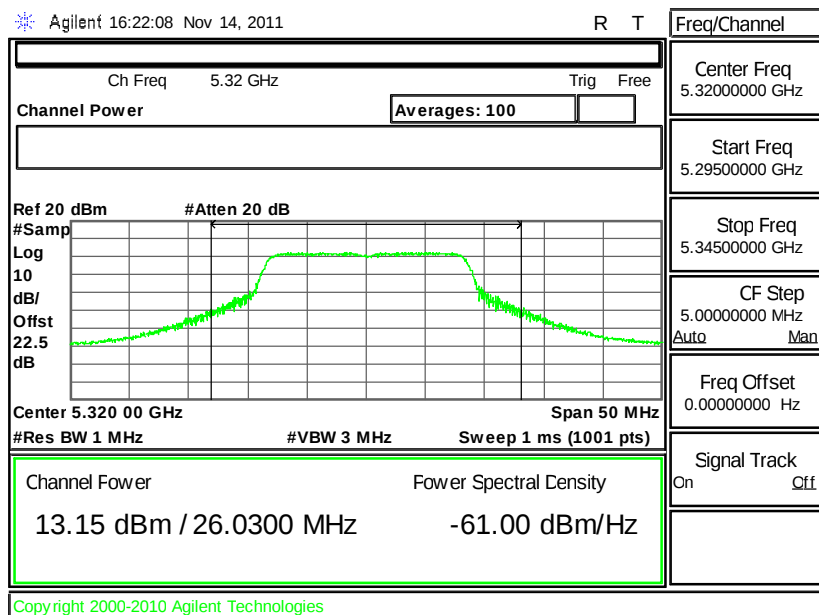


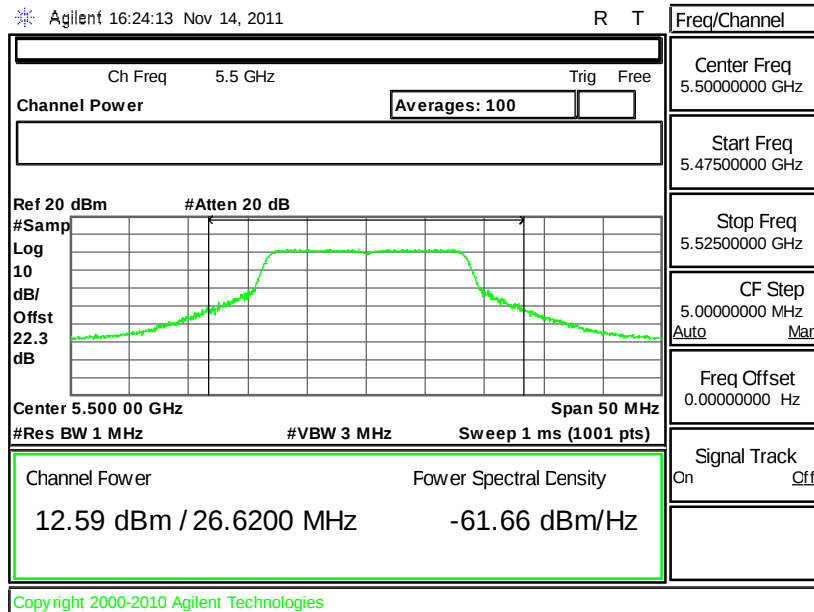
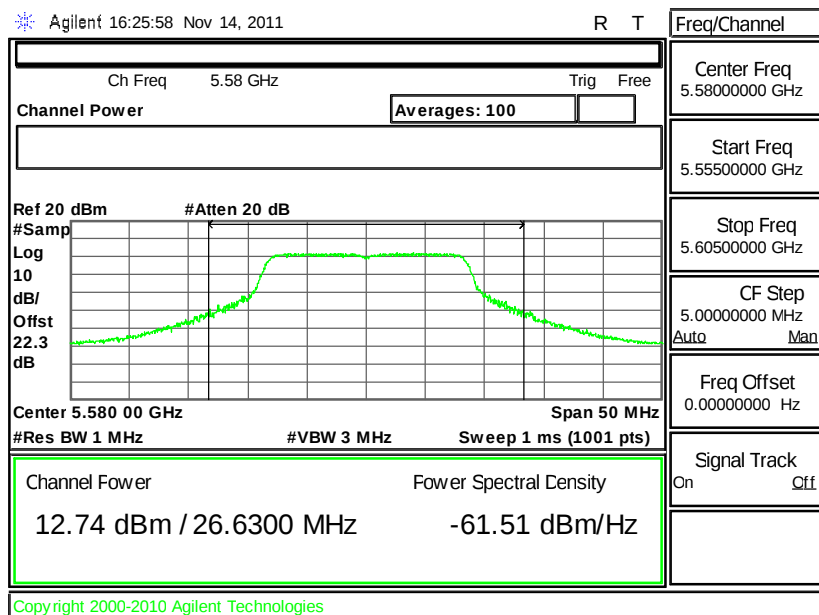
Mode 3 : Output Power Plot on 802.11a Channel 48



Mode 4 : Output Power Plot on 802.11a Channel 52

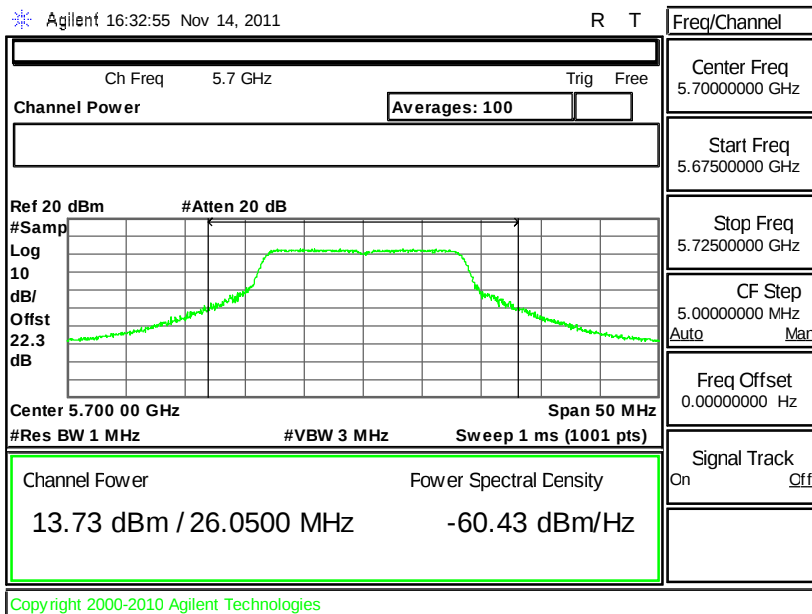


**Mode 5 : Output Power Plot on 802.11a Channel 60****Mode 6 : Output Power Plot on 802.11a Channel 64**

**Mode 7 : Output Power Plot on 802.11a Channel 100****Mode 8 : Output Power Plot on 802.11a Channel 116**



Mode 9 : Output Power Plot on 802.11a Channel 140



3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

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

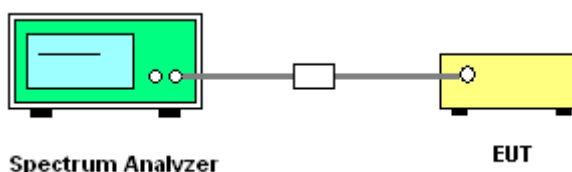
3.3.2 Measuring Instruments

See list of measuring instruments of this test report.

3.3.3 Test Procedures

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

3.3.4 Test Setup



3.3.5 Test Result of Power Spectral Density

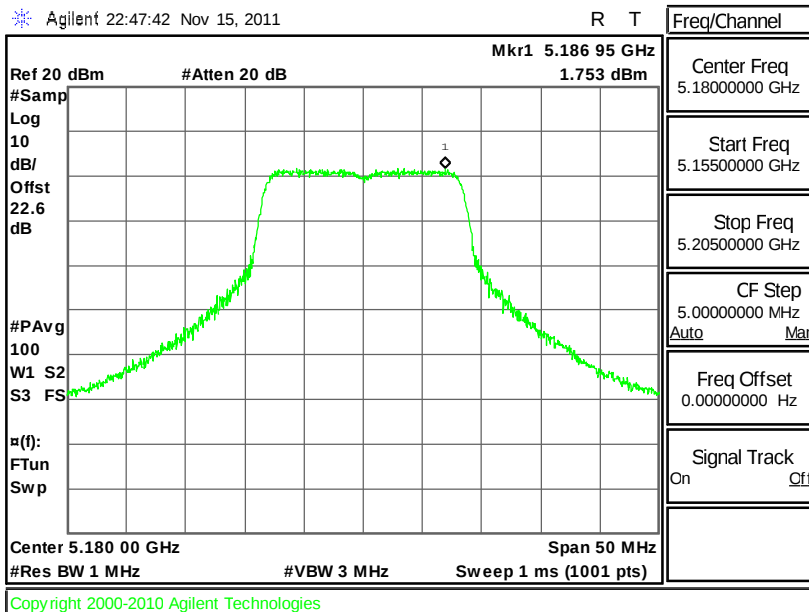
Test Mode :	Mode 1~9	Temperature :	24~26℃
Test Engineer :	Book Lin	Relative Humidity :	40~44%

Channel	Frequency (MHz)	Measured PSD (dBm)	Max. Limits (dBm)	Pass/Fail
36	5180	1.753	4	Pass
44	5220	1.560	4	Pass
48	5240	1.738	4	Pass
52	5260	1.917	11	Pass
60	5300	1.981	11	Pass
64	5320	2.006	11	Pass
100	5500	1.870	11	Pass
116	5580	2.000	11	Pass
140	5700	2.735	11	Pass

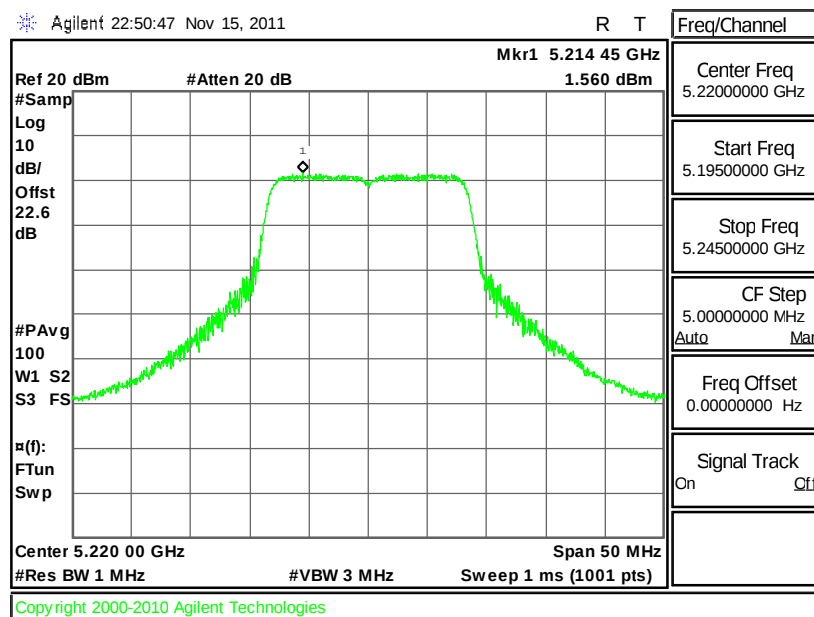


3.3.6 Test Result of Power Spectral Density Plots

Mode 1 : PSD Plot on 802.11a Channel 36

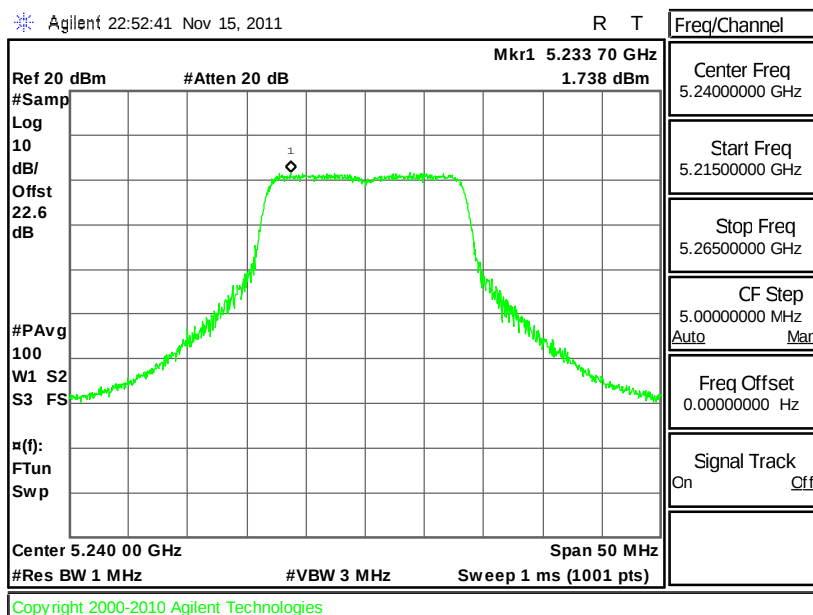


Mode 2 : PSD Plot on 802.11a Channel 44

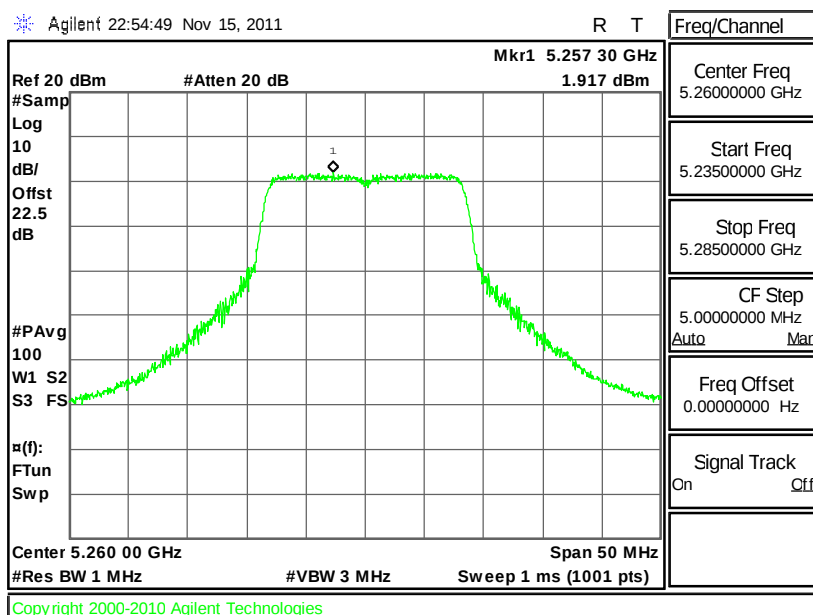




Mode 3 : PSD Plot on 802.11a Channel 48

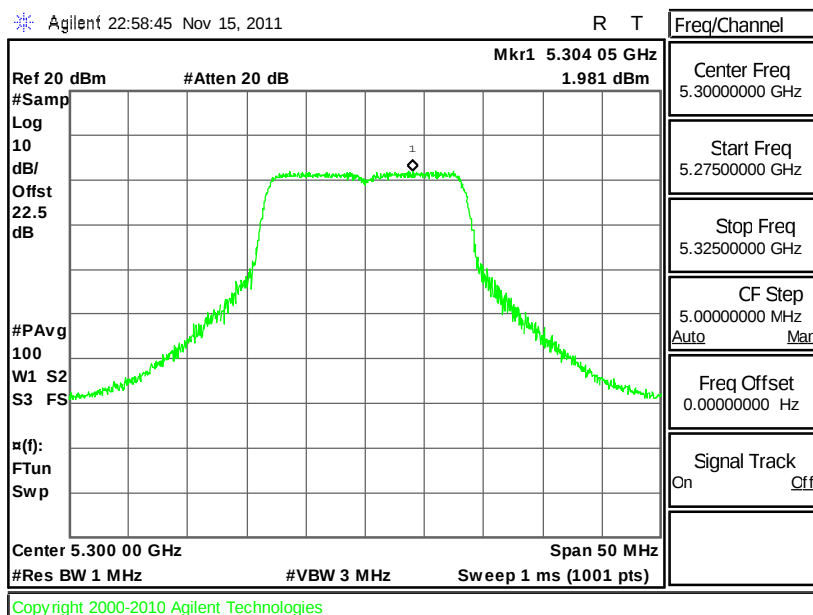


Mode 4 : PSD Plot on 802.11a Channel 52

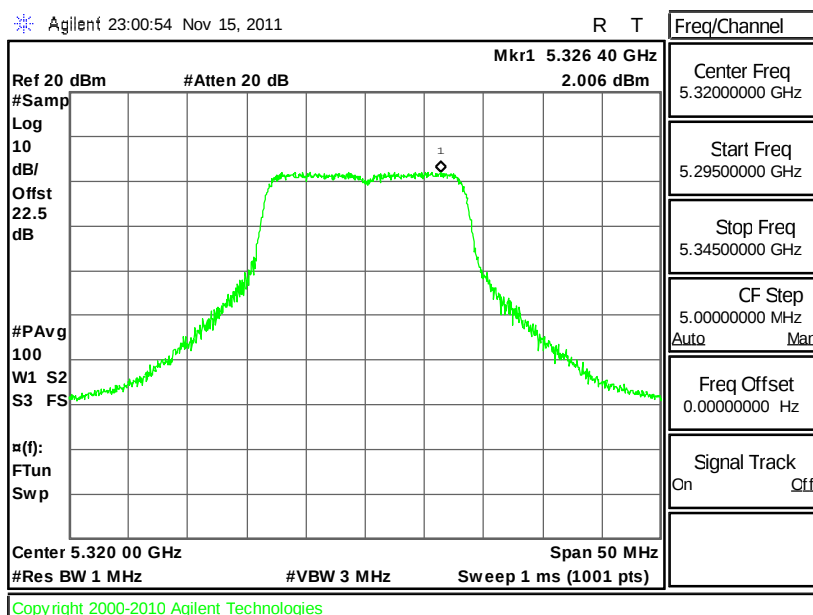




Mode 5 : PSD Plot on 802.11a Channel 60

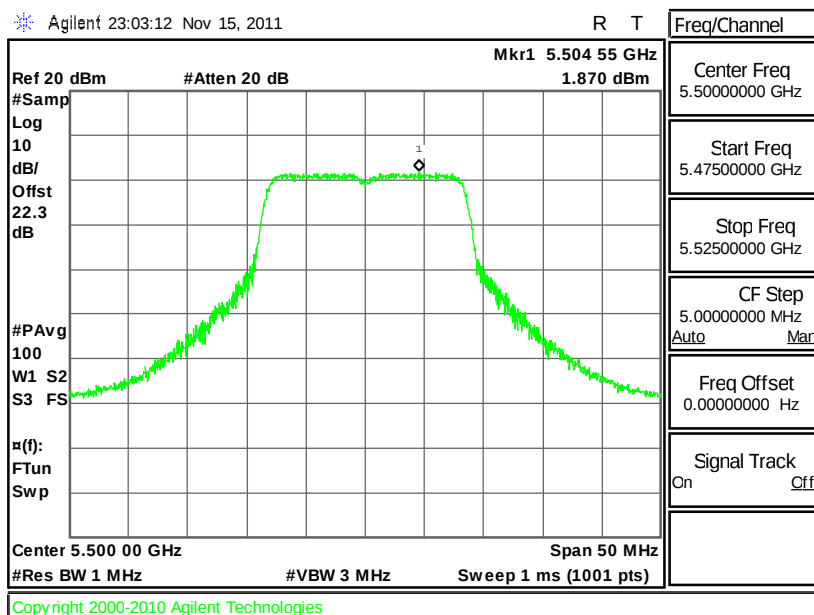


Mode 6 : PSD Plot on 802.11a Channel 64

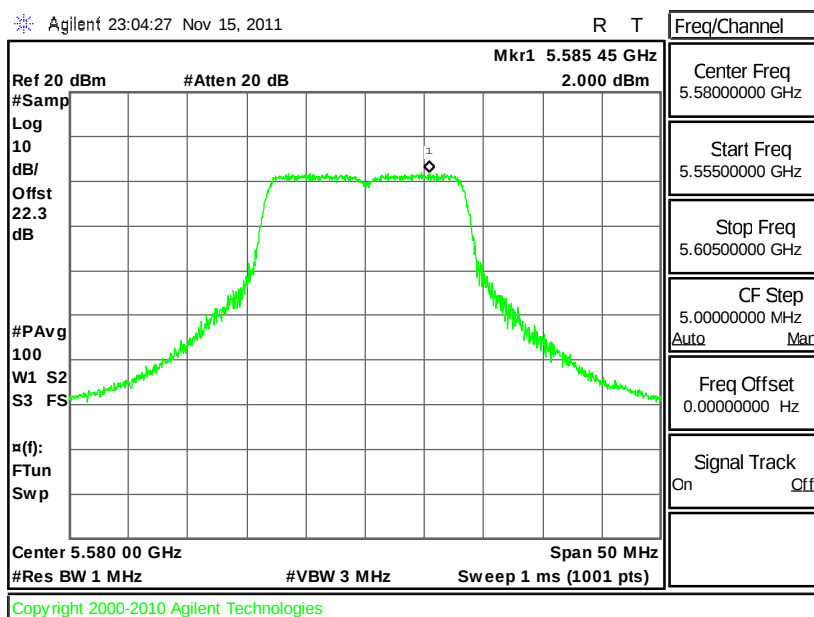




Mode 7 : PSD Plot on 802.11a Channel 100

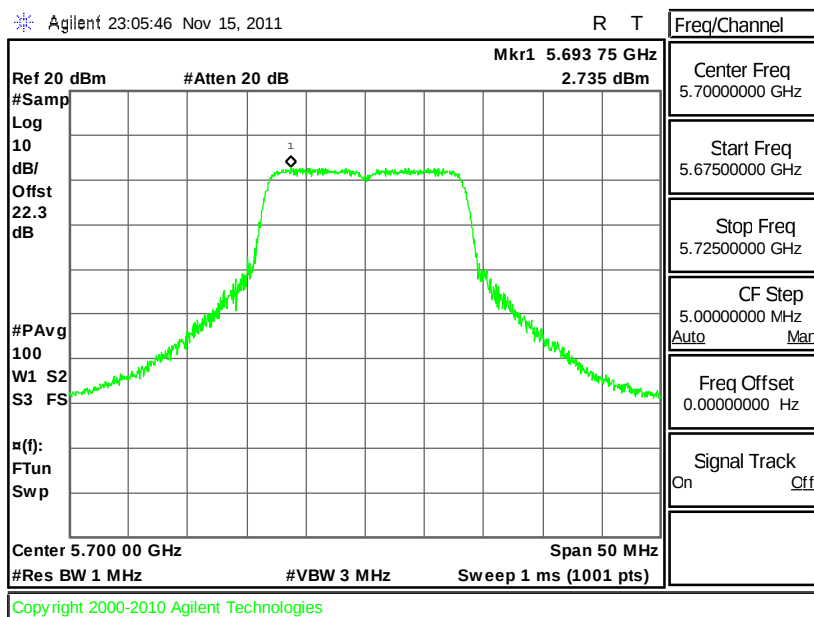


Mode 8 : PSD Plot on 802.11a Channel 116





Mode 9 : PSD Plot on 802.11a Channel 140



3.4 AC Conducted Emission Measurement

3.4.1 Limit of AC Conducted Emission

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

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

*Decreases with the logarithm of the frequency.

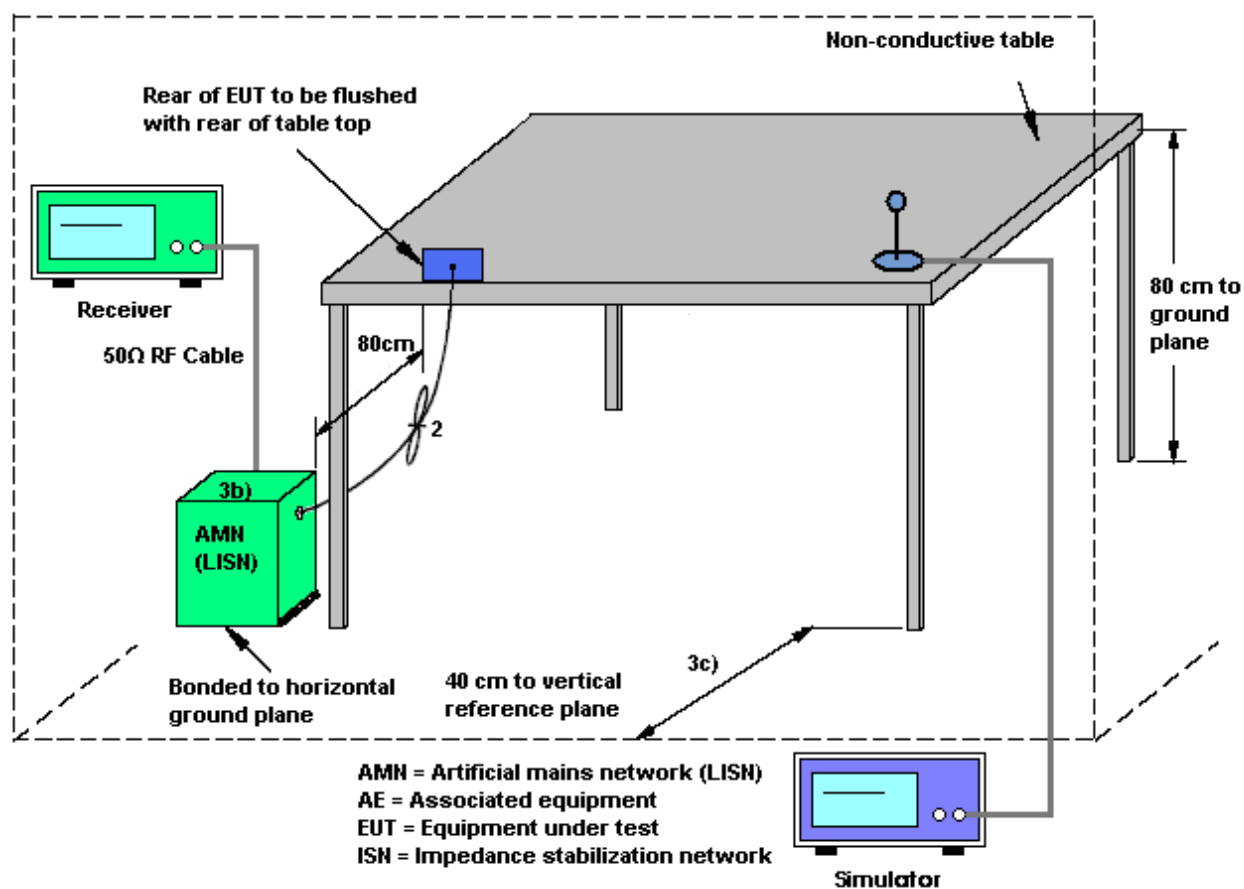
3.4.2 Measuring Instruments

See list of measuring instruments of this test report.

3.4.3 Test Procedures

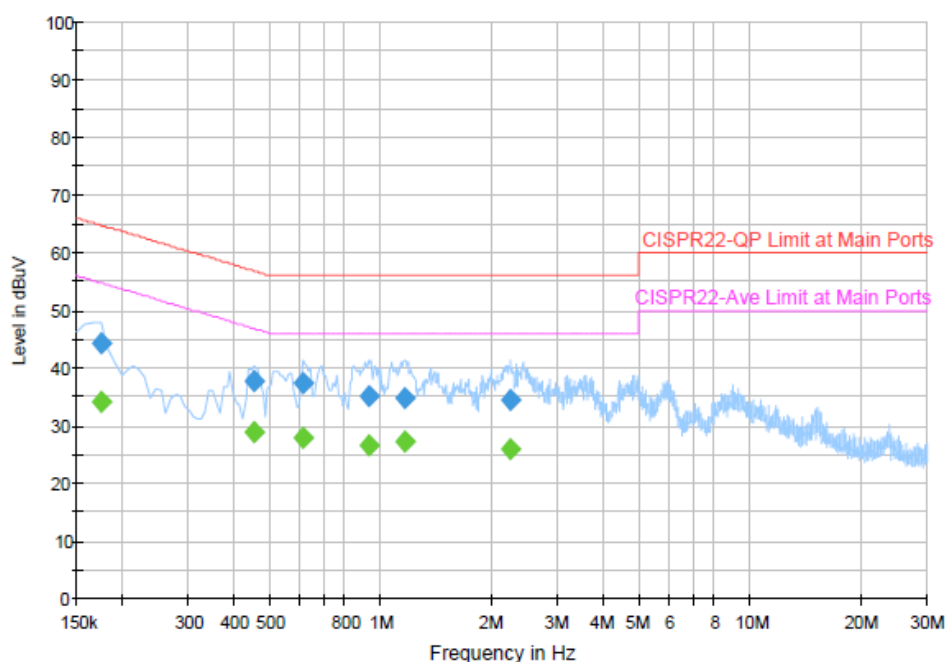
1. Please follow the guidelines in ANSI C63.4-2003.
2. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
3. Connect EUT to the power mains through a line impedance stabilization network (LISN).
4. All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

3.4.4 Test Setup



3.4.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	Temperature :	21~23℃
Test Engineer :	Novic Chiang	Relative Humidity :	41~43%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	WCDMA Band V Idle + WLAN (5G) Link + Bluetooth Link + MPEG4 + USB Cradle + USB Cable (Data Link with Notebook) + Adapter + Battery 1 + USB Dongle		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



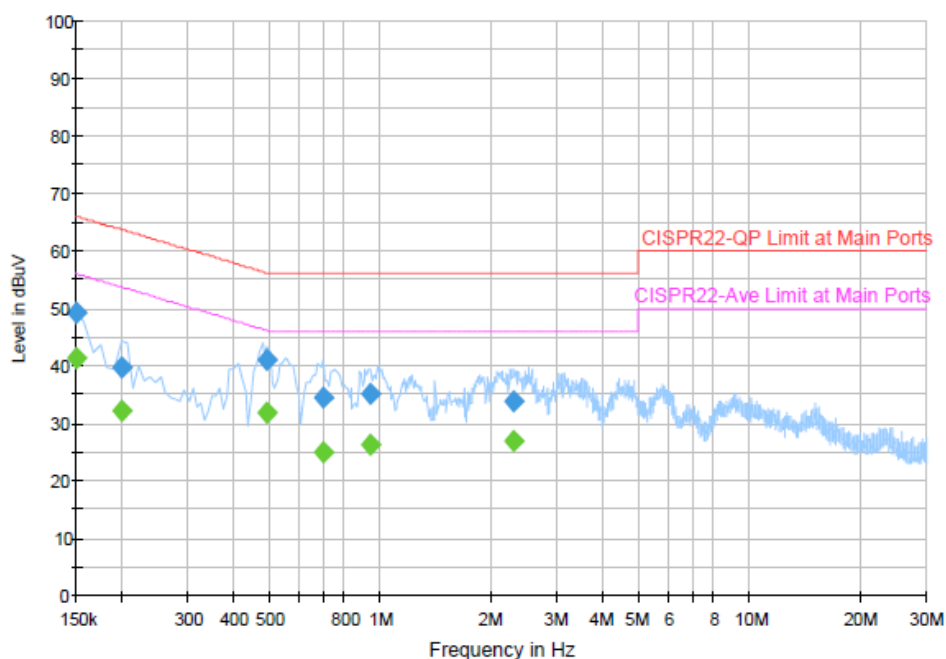
Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.174000	44.4	Off	L1	19.4	20.4	64.8
0.454000	37.7	Off	L1	19.4	19.1	56.8
0.614000	37.4	Off	L1	19.4	18.6	56.0
0.926000	35.0	Off	L1	19.4	21.0	56.0
1.158000	34.6	Off	L1	19.4	21.4	56.0
2.238000	34.4	Off	L1	19.5	21.6	56.0

Final Result 2

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.174000	34.0	Off	L1	19.4	20.8	54.8
0.454000	28.8	Off	L1	19.4	18.0	46.8
0.614000	27.8	Off	L1	19.4	18.2	46.0
0.926000	26.7	Off	L1	19.4	19.3	46.0
1.158000	27.2	Off	L1	19.4	18.8	46.0
2.238000	25.8	Off	L1	19.5	20.2	46.0

Test Mode :	Mode 1	Temperature :	21~23°C
Test Engineer :	Novic Chiang	Relative Humidity :	41~43%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	WCDMA Band V Idle + WLAN (5G) Link + Bluetooth Link + MPEG4 + USB Cradle + USB Cable (Data Link with Notebook) + Adapter + Battery 1 + USB Dongle		
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	49.2	Off	N	19.4	16.8	66.0
0.198000	39.5	Off	N	19.4	24.2	63.7
0.494000	40.9	Off	N	19.4	15.2	56.1
0.702000	34.5	Off	N	19.5	21.5	56.0
0.942000	34.9	Off	N	19.4	21.1	56.0
2.286000	33.9	Off	N	19.5	22.1	56.0

Final Result 2

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.150000	41.4	Off	N	19.4	14.6	56.0
0.198000	32.0	Off	N	19.4	21.7	53.7
0.494000	31.7	Off	N	19.4	14.4	46.1
0.702000	25.1	Off	N	19.5	20.9	46.0
0.942000	26.3	Off	N	19.4	19.7	46.0
2.286000	26.9	Off	N	19.5	19.1	46.0

3.5 Unwanted Radiated Emission Measurement

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

3.5.1 Limit of Unwanted Emissions

- (1) For transmitters operating in the 5.15–5.25 GHz band: all emissions outside of the 5.15–5.35 GHz band shall not exceed an EIRP of –27dBm/MHz. For transmitters operating in the 5.725-5.825 GHz band: all emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an EIRP of -17 dBm/MHz (78.3dBuV/m); for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an EIRP of -27 dBm/MHz (68.3dBuV/m).
- (2) Unwanted spurious emissions fallen in restricted bands per FCC Part15.205 shall comply with the general field strength limits set forth in § 15.209 as below table,

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

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

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

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

3.5.2 Measuring Instruments

See list of measuring instruments of this test report.

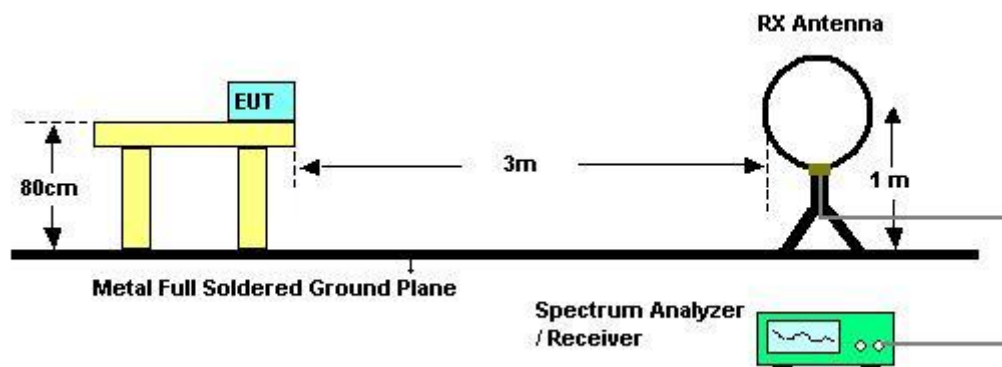
3.5.3 Test Procedures

1. The testing follows the guidelines in FCC KDB 789033 D01 General UNII Test Procedures v01.
 - (1) Procedure for Unwanted Emissions Measurements Below 1000MHz
 - RBW = 120 KHz
 - VBW = 300 KHz
 - Detector = Peak
 - Trace mode = max hold
 - (2) Procedure for Peak Unwanted Emissions Measurements Above 1000 MHz
 - The setting follows the G) 5) of FCC KDB 789033.
 - RBW = 1 MHz
 - VBW $\geq$ 3 MHz
 - Detector = Peak
 - Sweep time = auto
 - Trace mode = max hold
 - (3) Procedures for Average Unwanted Emissions Measurements Above 1000MHz
 - The setting follows G) 6) of FCC KDB 789033.
 - RBW = 1 MHz
 - VBW = 10 Hz, when duty cycle is no less than 98 percent.
 - VBW $\geq$ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.
2. The EUT was placed on a rotatable table top 0.8 meter above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The table was rotated 360 degrees to determine the position of the highest radiation.
5. The antenna is a broadband antenna and its height is adjusted between one meter and four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.

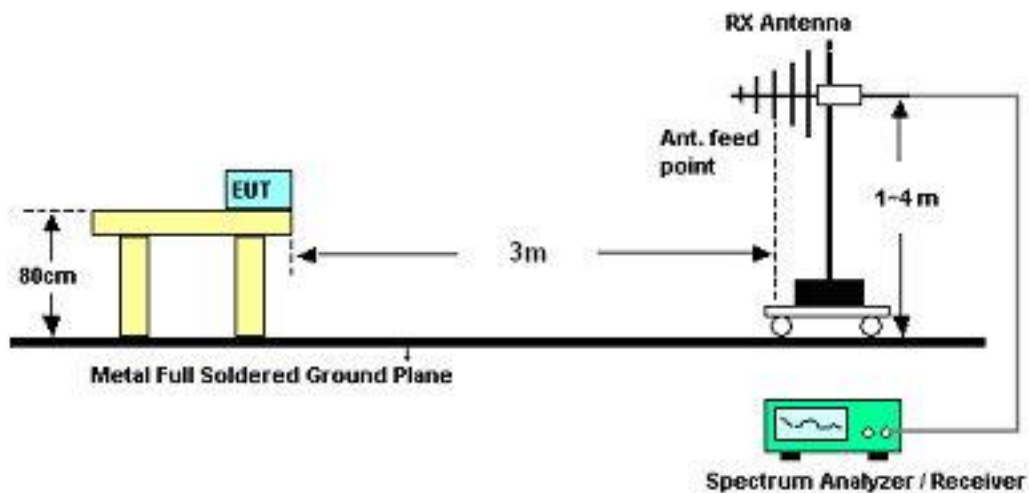
6. For each suspected emission, the EUT was arranged to its worst case and then adjust the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
7. For testing below 1GHz, if the emission level of the EUT in peak mode was 3 dB lower than the limit specified,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

3.5.4 Test Setup

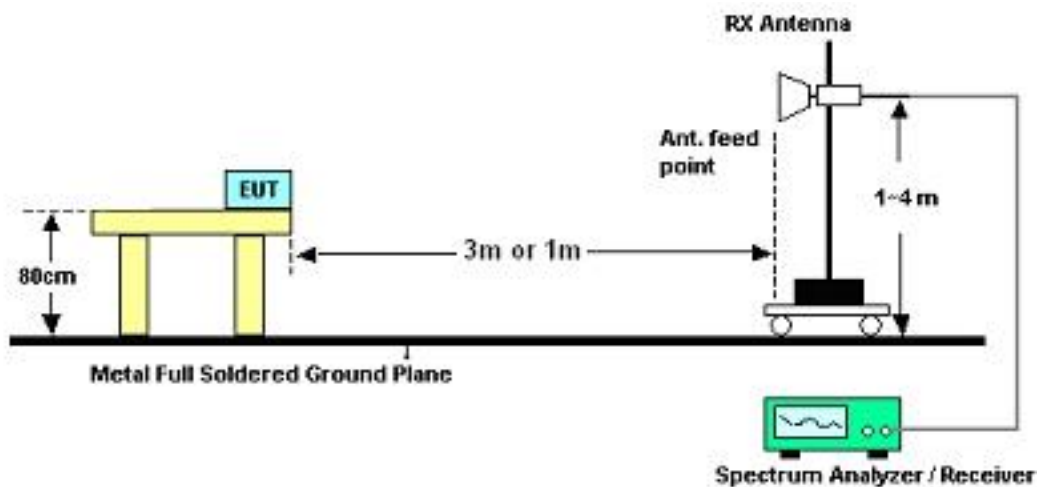
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



3.5.5 Test Result

3.5.5.1 Test Result of Radiated Band Edges

<Antenna 1>

Test Mode :	Mode 1	Temperature :	23~25°C
Test Band :	802.11a	Relative Humidity :	49~51%
Test Channel :	36	Test Engineer :	Brian 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	53.1	-20.9	74	45.82	33.92	6.69	33.33	100	307	Peak
5150	40.59	-13.41	54	33.31	33.92	6.69	33.33	100	307	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	49.74	-24.26	74	42.46	33.92	6.69	33.33	146	149	Peak
5150	37.91	-16.09	54	30.57	33.95	6.71	33.32	146	149	Average

Test Mode :	Mode 3	Temperature :	23~25°C
Test Band :	802.11a	Relative Humidity :	49~51%
Test Channel :	48	Test Engineer :	Brian 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	51.69	-22.31	74	44.02	34.08	6.83	33.24	100	307	Peak
5350	39.33	-14.67	54	31.66	34.08	6.83	33.24	100	307	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	50.01	-23.99	74	42.34	34.08	6.83	33.24	127	152	Peak
5350	38.36	-15.64	54	30.69	34.08	6.83	33.24	127	152	Average



Test Mode :	Mode 4	Temperature :	23~25°C
Test Band :	802.11a	Relative Humidity :	49~51%
Test Channel :	52	Test Engineer :	Brian 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	53.32	-20.68	74	46.04	33.92	6.69	33.33	100	308	Peak
5150	40.3	-13.7	54	33.02	33.92	6.69	33.33	100	308	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	50.31	-23.69	74	43.03	33.92	6.69	33.33	110	148	Peak
5150	37.97	-16.03	54	30.69	33.92	6.69	33.33	110	148	Average

Test Mode :	Mode 6	Temperature :	23~25°C
Test Band :	802.11a	Relative Humidity :	49~51%
Test Channel :	64	Test Engineer :	Brian 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	52.64	-21.36	74	44.97	34.08	6.83	33.24	110	310	Peak
5350	39.97	-14.03	54	32.3	34.08	6.83	33.24	110	310	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	51.29	-22.71	74	43.62	34.08	6.83	33.24	109	148	Peak
5350	39.69	-14.31	54	32.02	34.08	6.83	33.24	109	148	Average



Test Mode :	Mode 7	Temperature :	23~25°C
Test Band :	802.11a	Relative Humidity :	49~51%
Test Channel :	100	Test Engineer :	Brian 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	54.2	-14.1	68.3	46.3	34.17	6.92	33.19	126	286	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	54.37	-13.93	68.3	46.47	34.17	6.92	33.19	104	150	Peak

Test Mode :	Mode 9	Temperature :	23~25°C
Test Band :	802.11a	Relative Humidity :	49~51%
Test Channel :	140	Test Engineer :	Brian 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	60.14	-8.16	68.3	51.65	34.51	7.17	33.19	100	319	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	56.94	-11.36	68.3	48.45	34.51	7.17	33.19	100	145	Peak

<Antenna 2>

Test Mode :	Mode 10	Temperature :	23~25°C
Test Band :	802.11a	Relative Humidity :	49~51%
Test Channel :	36	Test Engineer :	Brian 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	54.15	-19.85	74	46.87	33.92	6.69	33.33	113	54	Peak
5150	41.92	-12.08	54	34.64	33.92	6.69	33.33	113	54	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	53.81	-20.19	74	46.53	33.92	6.69	33.33	103	123	Peak
5150	41.38	-12.62	54	34.1	33.92	6.69	33.33	103	123	Average

Test Mode :	Mode 12	Temperature :	23~25°C
Test Band :	802.11a	Relative Humidity :	49~51%
Test Channel :	48	Test Engineer :	Brian 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	51.99	-22.01	74	44.34	34.08	6.83	33.26	128	233	Peak
5350	40.55	-13.45	54	32.9	34.08	6.83	33.26	128	233	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	51.09	-22.91	74	43.44	34.08	6.83	33.26	116	317	Peak
5350	39.33	-14.67	54	31.68	34.08	6.83	33.26	116	317	Average



Test Mode :	Mode 13	Temperature :	23~25°C
Test Band :	802.11a	Relative Humidity :	49~51%
Test Channel :	52	Test Engineer :	Brian 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	50.74	-23.26	74	43.78	33.92	6.69	33.65	141	237	Peak
5150	39.32	-14.68	54	32.36	33.92	6.69	33.65	141	237	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5150	51.28	-22.72	74	44.32	33.92	6.69	33.65	103	311	Peak
5150	39.06	-14.94	54	32.1	33.92	6.69	33.65	103	311	Average

Test Mode :	Mode 15	Temperature :	23~25°C
Test Band :	802.11a	Relative Humidity :	49~51%
Test Channel :	64	Test Engineer :	Brian 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	53.41	-20.59	74	45.76	34.08	6.83	33.26	100	288	Peak
5350	41.16	-12.84	54	33.51	34.08	6.83	33.26	100	288	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5350	52.46	-21.54	74	44.81	34.08	6.83	33.26	114	313	Peak
5350	40.66	-13.34	54	33.01	34.08	6.83	33.26	114	313	Average



Test Mode :	Mode 16	Temperature :	23~25°C
Test Band :	802.11a	Relative Humidity :	49~51%
Test Channel :	100	Test Engineer :	Brian 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	56	-12.3	68.3	47.92	34.17	6.92	33.01	128	265	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	54.77	-13.53	68.3	46.69	34.17	6.92	33.01	136	28	Peak

Test Mode :	Mode 18	Temperature :	23~25°C
Test Band :	802.11a	Relative Humidity :	49~51%
Test Channel :	140	Test Engineer :	Brian 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	55.96	-12.34	68.3	47.46	34.51	7.17	33.18	129	257	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	54.87	-13.43	68.3	46.37	34.51	7.17	33.18	100	156	Peak

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

Temperature :	23~25°C	Relative Humidity :	49~51%
Test Engineer :	Brian 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.

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

<Antenna 1>

Test Mode :	Mode 1	Temperature :	23~25°C
Test Channel :	36	Relative Humidity :	49~51%
Test Engineer :	Brian Chang	Polarization :	Horizontal
Remark :	1. 5180 MHz is Fundamental Signals which can be ignored. 2. 10360 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
182.01	36.15	-7.35	43.5	57.74	8.5	1.41	31.5	145	249	Peak
234.12	35.2	-10.8	46	54.59	10.52	1.59	31.5	-	-	Peak
286.23	37.42	-8.58	46	54.98	12.03	1.75	31.34	-	-	Peak
311.9	35.27	-10.73	46	52.25	12.49	1.81	31.28	-	-	Peak
337.8	34.48	-11.52	46	50.77	13.14	1.87	31.3	-	-	Peak
832	31.95	-14.05	46	38.31	21.26	2.89	30.51	-	-	Peak
5150	40.59	-13.41	54	33.31	33.92	6.69	33.33	100	307	Average
5150	53.1	-20.9	74	45.82	33.92	6.69	33.33	100	307	Peak
5180	94.41	-	-	87.07	33.95	6.71	33.32	100	307	Average
5180	103.76	-	-	96.42	33.95	6.71	33.32	100	307	Peak
5350	39.21	-14.79	54	31.54	34.08	6.83	33.24	100	307	Average
5350	51.27	-22.73	74	43.6	34.08	6.83	33.24	100	307	Peak
10360	50.97	-17.33	68.3	60.19	37.32	9.71	56.25	100	0	Peak

Test Mode :	Mode 1	Temperature :	23~25°C
Test Channel :	36	Relative Humidity :	49~51%
Test Engineer :	Brian Chang	Polarization :	Vertical
Remark :	1. 5180 MHz is Fundamental Signals which can be ignored. 2. 10360 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
129.9	24.61	-18.89	43.5	44.04	10.87	1.22	31.52	-	-	Peak
182.01	27.06	-16.44	43.5	48.65	8.5	1.41	31.5	100	301	Peak
234.12	27.55	-18.45	46	46.94	10.52	1.59	31.5	-	-	Peak
545.7	26.11	-19.89	46	36.92	17.83	2.32	30.96	-	-	Peak
806.1	25.83	-20.17	46	32.47	21.06	2.84	30.54	-	-	Peak
860.7	27	-19	46	33.08	21.48	2.94	30.5	-	-	Peak
5150	37.91	-16.09	54	30.57	33.95	6.71	33.32	146	149	Average
5150	49.74	-24.26	74	42.46	33.92	6.69	33.33	146	149	Peak
5180	90.59	-	-	83.25	33.95	6.71	33.32	146	149	Average
5180	99.99	-	-	92.67	33.93	6.71	33.32	146	149	Peak
5350	37.75	-16.25	54	30.08	34.08	6.83	33.24	146	149	Average
5350	49.19	-24.81	74	41.52	34.08	6.83	33.24	146	149	Peak
10360	52.1	-16.2	68.3	61.64	37.32	9.71	56.57	112	201	Peak

Test Mode :	Mode 2	Temperature :	23~25°C
Test Channel :	44	Relative Humidity :	49~51%
Test Engineer :	Brian Chang	Polarization :	Horizontal
Remark :	1. 5220 MHz is Fundamental Signals which can be ignored. 2. 10440 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
182.01	35.95	-7.55	43.5	57.54	8.5	1.41	31.5	111	73	Peak
234.12	35.25	-10.75	46	54.64	10.52	1.59	31.5	-	-	Peak
286.23	37.19	-8.81	46	54.75	12.03	1.75	31.34	-	-	Peak
311.9	35.51	-10.49	46	52.49	12.49	1.81	31.28	-	-	Peak
363.7	32.47	-13.53	46	47.98	13.83	1.93	31.27	-	-	Peak
832	32.24	-13.76	46	38.6	21.26	2.89	30.51	-	-	Peak
5150	40.36	-13.64	54	33.08	33.92	6.69	33.33	100	308	Average
5150	52.78	-21.22	74	45.5	33.92	6.69	33.33	100	308	Peak
5220	94.81	-	-	87.4	33.97	6.74	33.3	100	308	Average
5220	104.32	-	-	96.89	33.99	6.74	33.3	100	308	Peak
5350	39.18	-14.82	54	31.51	34.08	6.83	33.24	100	308	Average
5350	50.73	-23.27	74	43.06	34.08	6.83	33.24	100	308	Peak
10440	48.23	-20.07	68.3	57.38	37.36	9.75	56.26	100	0	Peak

Test Mode :	Mode 2	Temperature :	23~25°C
Test Channel :	44	Relative Humidity :	49~51%
Test Engineer :	Brian Chang	Polarization :	Vertical
Remark :	1. 5220 MHz is Fundamental Signals which can be ignored. 2. 10440 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
129.9	25.2	-18.3	43.5	44.63	10.87	1.22	31.52	-	-	Peak
182.01	27.03	-16.47	43.5	48.62	8.5	1.41	31.5	126	256	Peak
234.12	27.77	-18.23	46	47.16	10.52	1.59	31.5	-	-	Peak
337.8	24.3	-21.7	46	40.59	13.14	1.87	31.3	-	-	Peak
545.7	25.82	-20.18	46	36.63	17.83	2.32	30.96	-	-	Peak
884.5	28.26	-17.74	46	34.11	21.66	2.98	30.49	-	-	Peak
5150	37.93	-16.07	54	30.65	33.92	6.69	33.33	110	150	Average
5150	49.24	-24.76	74	41.96	33.92	6.69	33.33	110	150	Peak
5220	90.26	-	-	82.85	33.97	6.74	33.3	110	150	Average
5220	99.75	-	-	92.34	33.97	6.74	33.3	110	150	Peak
5350	38.83	-15.17	54	31.16	34.08	6.83	33.24	110	150	Average
5350	51.27	-22.73	74	43.6	34.08	6.83	33.24	110	150	Peak
10440	53.56	-14.74	68.3	62.96	37.36	9.75	56.51	108	329	Peak

Test Mode :	Mode 3	Temperature :	23~25°C
Test Channel :	48	Relative Humidity :	49~51%
Test Engineer :	Brian Chang	Polarization :	Horizontal
Remark :	1. 5240 MHz is Fundamental Signals which can be ignored. 2. 10480 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
182.01	35.72	-7.78	43.5	57.31	8.5	1.41	31.5	164	291	Peak
234.12	35.22	-10.78	46	54.61	10.52	1.59	31.5	-	-	Peak
286.23	37.29	-8.71	46	54.85	12.03	1.75	31.34	-	-	Peak
311.9	35.31	-10.69	46	52.29	12.49	1.81	31.28	-	-	Peak
337.8	34.49	-11.51	46	50.78	13.14	1.87	31.3	-	-	Peak
832	32.06	-13.94	46	38.42	21.26	2.89	30.51	-	-	Peak
5150	39.84	-14.16	54	32.56	33.92	6.69	33.33	100	307	Average
5150	51.45	-22.55	74	44.17	33.92	6.69	33.33	100	307	Peak
5240	94.53	-	-	87.07	33.99	6.76	33.29	100	307	Average
5240	103.77	-	-	96.34	33.99	6.74	33.3	100	307	Peak
5350	39.33	-14.67	54	31.66	34.08	6.83	33.24	100	307	Average
5350	51.69	-22.31	74	44.02	34.08	6.83	33.24	100	307	Peak
10480	49.31	-18.99	68.3	58.42	37.39	9.78	56.28	100	0	Peak

Test Mode :	Mode 3	Temperature :	23~25°C
Test Channel :	48	Relative Humidity :	49~51%
Test Engineer :	Brian Chang	Polarization :	Vertical
Remark :	1. 5240 MHz is Fundamental Signals which can be ignored. 2. 10480 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
129.9	24.69	-18.81	43.5	44.12	10.87	1.22	31.52	-	-	Peak
182.01	27.61	-15.89	43.5	49.2	8.5	1.41	31.5	100	351	Peak
234.12	26.78	-19.22	46	46.17	10.52	1.59	31.5	-	-	Peak
545.7	26.11	-19.89	46	36.92	17.83	2.32	30.96	-	-	Peak
728.4	25.16	-20.84	46	33.4	19.67	2.71	30.62	-	-	Peak
860.7	26.54	-19.46	46	32.62	21.48	2.94	30.5	-	-	Peak
5150	37.81	-16.19	54	30.53	33.92	6.69	33.33	127	152	Average
5150	49.16	-24.84	74	41.88	33.92	6.69	33.33	127	152	Peak
5240	90.59	-	-	83.13	33.99	6.76	33.29	127	152	Average
5240	99.78	-	-	92.31	34	6.76	33.29	127	152	Peak
5350	38.36	-15.64	54	30.69	34.08	6.83	33.24	127	152	Average
5350	50.01	-23.99	74	42.34	34.08	6.83	33.24	127	152	Peak
10480	53.84	-14.46	68.3	63.14	37.39	9.78	56.47	100	339	Peak

Test Mode :	Mode 4	Temperature :	23~25°C
Test Channel :	52	Relative Humidity :	49~51%
Test Engineer :	Brian Chang	Polarization :	Horizontal
Remark :	1. 5260 MHz is Fundamental Signals which can be ignored. 2. 10520 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
182.01	35.73	-7.77	43.5	57.32	8.5	1.41	31.5	108	41	Peak
234.12	35.24	-10.76	46	54.63	10.52	1.59	31.5	-	-	Peak
286.23	35.09	-10.91	46	52.65	12.03	1.75	31.34	-	-	Peak
311.9	34.42	-11.58	46	51.4	12.49	1.81	31.28	-	-	Peak
337.8	34.51	-11.49	46	50.8	13.14	1.87	31.3	-	-	Peak
389.6	31.57	-14.43	46	46.28	14.51	1.99	31.21	-	-	Peak
5150	40.3	-13.7	54	33.02	33.92	6.69	33.33	100	308	Average
5150	53.32	-20.68	74	46.04	33.92	6.69	33.33	100	308	Peak
5260	94.23	-	-	86.71	34.01	6.78	33.27	100	308	Average
5260	103.75	-	-	96.28	34	6.76	33.29	100	308	Peak
5350	39.7	-14.3	54	32.03	34.08	6.83	33.24	100	308	Average
5350	51.26	-22.74	74	43.59	34.08	6.83	33.24	100	308	Peak
10520	50.23	-18.07	68.3	59.28	37.41	9.81	56.27	100	0	Peak

Test Mode :	Mode 4	Temperature :	23~25°C
Test Channel :	52	Relative Humidity :	49~51%
Test Engineer :	Brian Chang	Polarization :	Vertical
Remark :	1. 5260 MHz is Fundamental Signals which can be ignored. 2. 10520 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
129.9	26.86	-16.64	43.5	46.29	10.87	1.22	31.52	-	-	Peak
182.01	33.35	-10.15	43.5	54.94	8.5	1.41	31.5	139	114	Peak
234.12	24.05	-21.95	46	43.44	10.52	1.59	31.5	-	-	Peak
311.9	24.84	-21.16	46	41.82	12.49	1.81	31.28	-	-	Peak
754.3	26.33	-19.67	46	33.95	20.16	2.76	30.54	-	-	Peak
835.5	24.93	-21.07	46	31.26	21.29	2.89	30.51	-	-	Peak
5150	37.97	-16.03	54	30.69	33.92	6.69	33.33	110	148	Average
5150	50.31	-23.69	74	43.03	33.92	6.69	33.33	110	148	Peak
5260	91.34	-	-	83.82	34.01	6.78	33.27	110	148	Average
5260	100.84	-	-	93.32	34.01	6.78	33.27	110	148	Peak
5350	39.24	-14.76	54	31.57	34.08	6.83	33.24	110	148	Average
5350	51.23	-22.77	74	43.56	34.08	6.83	33.24	110	148	Peak
10520	51.34	-16.96	68.3	60.54	37.41	9.81	56.42	100	0	Peak



Test Mode :	Mode 5	Temperature :	23~25°C
Test Channel :	60	Relative Humidity :	49~51%
Test Engineer :	Brian 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
182.01	35.88	-7.62	43.5	57.47	8.5	1.41	31.5	121	106	Peak
234.12	35.22	-10.78	46	54.61	10.52	1.59	31.5	-	-	Peak
286.23	34.99	-11.01	46	52.55	12.03	1.75	31.34	-	-	Peak
337.8	34.46	-11.54	46	50.75	13.14	1.87	31.3	-	-	Peak
493.9	28.57	-17.43	46	40.52	16.92	2.22	31.09	-	-	Peak
835.5	30.82	-15.18	46	37.15	21.29	2.89	30.51	-	-	Peak
5150	38.98	-15.02	54	31.7	33.92	6.69	33.33	100	303	Average
5150	51.13	-22.87	74	43.85	33.92	6.69	33.33	100	303	Peak
5300	94.19	-	-	86.61	34.04	6.8	33.26	100	303	Average
5300	103.6	-	-	96.02	34.04	6.8	33.26	100	303	Peak
5350	39.41	-14.59	54	31.74	34.08	6.83	33.24	100	303	Average
5350	51.2	-22.8	74	43.53	34.08	6.83	33.24	100	303	Peak
10600	49.14	-24.86	74	58.03	37.46	9.85	56.2	100	0	Peak

Test Mode :	Mode 5	Temperature :	23~25°C
Test Channel :	60	Relative Humidity :	49~51%
Test Engineer :	Brian 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
129.9	26.54	-16.96	43.5	45.97	10.87	1.22	31.52	-	-	Peak
182.01	33.53	-9.97	43.5	55.12	8.5	1.41	31.5	103	347	Peak
234.12	24.7	-21.3	46	44.09	10.52	1.59	31.5	-	-	Peak
389.6	23.4	-22.6	46	38.11	14.51	1.99	31.21	-	-	Peak
571.6	23.3	-22.7	46	33.61	18.24	2.37	30.92	-	-	Peak
754.3	25.85	-20.15	46	33.47	20.16	2.76	30.54	-	-	Peak
5150	37.85	-16.15	54	30.57	33.92	6.69	33.33	112	150	Average
5150	50.01	-23.99	74	42.73	33.92	6.69	33.33	112	150	Peak
5300	91.75	-	-	84.17	34.04	6.8	33.26	112	150	Average
5300	101.21	-	-	93.64	34.03	6.8	33.26	112	150	Peak
5350	39.25	-14.75	54	31.58	34.08	6.83	33.24	112	150	Average
5350	52.54	-21.46	74	44.87	34.08	6.83	33.24	112	150	Peak
10600	43.4	-10.6	54	52.37	37.46	9.85	56.28	105	301	Average
10600	55.26	-18.74	74	64.23	37.46	9.85	56.28	105	301	Peak



Test Mode :	Mode 6	Temperature :	23~25°C
Test Channel :	64	Relative Humidity :	49~51%
Test Engineer :	Brian 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
182.01	36.02	-7.48	43.5	57.61	8.5	1.41	31.5	109	306	Peak
234.12	35.46	-10.54	46	54.85	10.52	1.59	31.5	-	-	Peak
286.23	34.74	-11.26	46	52.3	12.03	1.75	31.34	-	-	Peak
337.8	33.86	-12.14	46	50.15	13.14	1.87	31.3	-	-	Peak
389.6	30.69	-15.31	46	45.4	14.51	1.99	31.21	-	-	Peak
806.1	30.39	-15.61	46	37.03	21.06	2.84	30.54	-	-	Peak
5150	38.05	-15.95	54	30.77	33.92	6.69	33.33	110	310	Average
5150	49.93	-24.07	74	42.65	33.92	6.69	33.33	110	310	Peak
5320	94.09	-	-	86.48	34.05	6.81	33.25	110	310	Average
5320	103.64	-	-	96.03	34.05	6.81	33.25	110	310	Peak
5350	39.97	-14.03	54	32.3	34.08	6.83	33.24	110	310	Average
5350	52.64	-21.36	74	44.97	34.08	6.83	33.24	110	310	Peak
10640	48.99	-25.01	74	57.8	37.48	9.88	56.17	100	0	Peak



Test Mode :	Mode 6	Temperature :	23~25°C
Test Channel :	64	Relative Humidity :	49~51%
Test Engineer :	Brian 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
129.9	26.28	-17.22	43.5	45.71	10.87	1.22	31.52	-	-	Peak
182.01	33.35	-10.15	43.5	54.94	8.5	1.41	31.5	133	258	Peak
234.12	24.83	-21.17	46	44.22	10.52	1.59	31.5	-	-	Peak
311.9	23.81	-22.19	46	40.79	12.49	1.81	31.28	-	-	Peak
389.6	22.84	-23.16	46	37.55	14.51	1.99	31.21	-	-	Peak
860.7	26.45	-19.55	46	32.53	21.48	2.94	30.5	-	-	Peak
5150	37.58	-16.42	54	30.3	33.92	6.69	33.33	109	148	Average
5150	48.56	-25.44	74	41.28	33.92	6.69	33.33	109	148	Peak
5320	91.58	-	-	83.97	34.05	6.81	33.25	109	148	Average
5320	100.79	-	-	93.18	34.05	6.81	33.25	109	148	Peak
5350	39.69	-14.31	54	32.02	34.08	6.83	33.24	109	148	Average
5350	51.29	-22.71	74	43.62	34.08	6.83	33.24	109	148	Peak
10640	41.75	-12.25	54	50.61	37.48	9.88	56.22	117	28	Average
10640	53.93	-20.07	74	62.79	37.48	9.88	56.22	117	28	Peak

Test Mode :	Mode 7	Temperature :	23~25°C
Test Channel :	100	Relative Humidity :	49~51%
Test Engineer :	Brian Chang	Polarization :	Horizontal
Remark :	1. 5500 MHz is Fundamental Signals which can be ignored. 2. 5470 MHz and 5725 MHz are not within a restricted band.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
182.01	35.9	-7.6	43.5	57.49	8.5	1.41	31.5	152	248	Peak
234.12	35.39	-10.61	46	54.78	10.52	1.59	31.5	-	-	Peak
286.23	34.96	-11.04	46	52.52	12.03	1.75	31.34	-	-	Peak
311.9	34.53	-11.47	46	51.51	12.49	1.81	31.28	-	-	Peak
442.1	29.31	-16.69	46	42.6	15.74	2.12	31.15	-	-	Peak
860.7	30.44	-15.56	46	36.52	21.48	2.94	30.5	-	-	Peak
5470	54.2	-14.1	68.3	46.3	34.17	6.92	33.19	126	286	Peak
5500	95.01	-	-	87.03	34.2	6.95	33.17	126	286	Average
5500	104.35	-	-	96.37	34.2	6.95	33.17	126	286	Peak
5725	50.24	-18.06	68.3	41.75	34.51	7.17	33.19	126	286	Peak

Test Mode :	Mode 7	Temperature :	23~25°C
Test Channel :	100	Relative Humidity :	49~51%
Test Engineer :	Brian Chang	Polarization :	Vertical
Remark :	1. 5500 MHz is Fundamental Signals which can be ignored. 2. 5470 MHz and 5725 MHz are not within a restricted band.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
129.9	26.19	-17.31	43.5	45.62	10.87	1.22	31.52	-	-	Peak
182.01	33.2	-10.3	43.5	54.79	8.5	1.41	31.5	103	25	Peak
234.12	24.3	-21.7	46	43.69	10.52	1.59	31.5	-	-	Peak
311.9	24.1	-21.9	46	41.08	12.49	1.81	31.28	-	-	Peak
754.3	26.33	-19.67	46	33.95	20.16	2.76	30.54	-	-	Peak
884.5	25.87	-20.13	46	31.72	21.66	2.98	30.49	-	-	Peak
5470	54.37	-13.93	68.3	46.47	34.17	6.92	33.19	104	150	Peak
5500	93.75	-	-	85.77	34.2	6.95	33.17	104	150	Average
5500	103.19	-	-	95.21	34.2	6.95	33.17	104	150	Peak
5725	51.91	-16.39	68.3	43.42	34.51	7.17	33.19	104	150	Peak

Test Mode :	Mode 8	Temperature :	23~25°C
Test Channel :	116	Relative Humidity :	49~51%
Test Engineer :	Brian Chang	Polarization :	Horizontal
Remark :	1. 5580 MHz is Fundamental Signals which can be ignored. 2. 5470 MHz and 5725 MHz are not within a restricted band.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
182.01	36.07	-7.43	43.5	57.66	8.5	1.41	31.5	100	304	Peak
234.12	35.27	-10.73	46	54.66	10.52	1.59	31.5	-	-	Peak
286.23	34.78	-11.22	46	52.34	12.03	1.75	31.34	-	-	Peak
311.9	33.87	-12.13	46	50.85	12.49	1.81	31.28	-	-	Peak
337.8	33.44	-12.56	46	49.73	13.14	1.87	31.3	-	-	Peak
835.5	31.83	-14.17	46	38.16	21.29	2.89	30.51	-	-	Peak
5470	53.56	-14.74	68.3	45.66	34.17	6.92	33.19	102	346	Peak
5580	95.53	-	-	87.39	34.3	7.02	33.18	102	346	Average
5580	104.87	-	-	96.71	34.32	7.02	33.18	102	346	Peak
5725	52.55	-15.75	68.3	44.06	34.51	7.17	33.19	102	346	Peak

Test Mode :	Mode 8	Temperature :	23~25°C
Test Channel :	116	Relative Humidity :	49~51%
Test Engineer :	Brian Chang	Polarization :	Vertical
Remark :	1. 5580 MHz is Fundamental Signals which can be ignored. 2. 5470 MHz and 5725 MHz are not within a restricted band.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
129.9	26.38	-17.12	43.5	45.81	10.87	1.22	31.52	-	-	Peak
182.01	33.16	-10.34	43.5	54.75	8.5	1.41	31.5	111	89	Peak
234.12	24.39	-21.61	46	43.78	10.52	1.59	31.5	-	-	Peak
311.9	23.51	-22.49	46	40.49	12.49	1.81	31.28	-	-	Peak
754.3	26.19	-19.81	46	33.81	20.16	2.76	30.54	-	-	Peak
835.5	26.93	-19.07	46	33.26	21.29	2.89	30.51	-	-	Peak
5470	51.87	-16.43	68.3	43.97	34.17	6.92	33.19	117	150	Peak
5580	93.68	-	-	85.54	34.3	7.02	33.18	117	150	Average
5580	103.16	-	-	95.02	34.3	7.02	33.18	117	150	Peak
5725	51.32	-16.98	68.3	42.83	34.51	7.17	33.19	117	150	Peak

Test Mode :	Mode 9	Temperature :	23~25°C
Test Channel :	140	Relative Humidity :	49~51%
Test Engineer :	Brian Chang	Polarization :	Horizontal
Remark :	1. 5700 MHz is Fundamental Signals which can be ignored. 2. 5470 MHz and 5725 MHz are not within a restricted band.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
182.01	36.65	-6.85	43.5	58.24	8.5	1.41	31.5	102	334	Peak
234.12	34.9	-11.1	46	54.29	10.52	1.59	31.5	-	-	Peak
286.23	34.38	-11.62	46	51.94	12.03	1.75	31.34	-	-	Peak
311.9	33.77	-12.23	46	50.75	12.49	1.81	31.28	-	-	Peak
337.8	34.37	-11.63	46	50.66	13.14	1.87	31.3	-	-	Peak
806.1	30.72	-15.28	46	37.36	21.06	2.84	30.54	-	-	Peak
5470	50.42	-17.88	68.3	42.52	34.17	6.92	33.19	100	319	Peak
5700	96.64	-	-	88.21	34.47	7.15	33.19	100	319	Average
5700	105.95	-	-	97.52	34.47	7.15	33.19	100	319	Peak
5725	60.14	-8.16	68.3	51.65	34.51	7.17	33.19	100	319	Peak

Test Mode :	Mode 9	Temperature :	23~25°C
Test Channel :	140	Relative Humidity :	49~51%
Test Engineer :	Brian Chang	Polarization :	Vertical
Remark :	1. 5700 MHz is Fundamental Signals which can be ignored. 2. 5470 MHz and 5725 MHz are not within a restricted band.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
129.9	25.8	-17.7	43.5	45.23	10.87	1.22	31.52	-	-	Peak
182.01	32.75	-10.75	43.5	54.34	8.5	1.41	31.5	143	221	Peak
234.12	24.22	-21.78	46	43.61	10.52	1.59	31.5	-	-	Peak
311.9	23.17	-22.83	46	40.15	12.49	1.81	31.28	-	-	Peak
442.1	23.46	-22.54	46	36.75	15.74	2.12	31.15	-	-	Peak
860.7	26.76	-19.24	46	32.84	21.48	2.94	30.5	-	-	Peak
5470	51.6	-16.7	68.3	43.7	34.17	6.92	33.19	100	145	Peak
5700	94.12	-	-	85.69	34.47	7.15	33.19	100	145	Average
5700	103.27	-	-	94.82	34.49	7.15	33.19	100	145	Peak
5725	56.94	-11.36	68.3	48.45	34.51	7.17	33.19	100	145	Peak

<Antenna 2>

Test Mode :	Mode 10	Temperature :	23~25°C
Test Channel :	36	Relative Humidity :	49~51%
Test Engineer :	Brian Chang	Polarization :	Horizontal
Remark :	1. 5180 MHz is Fundamental Signals which can be ignored. 2. 10360 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
182.01	36.4	-7.1	43.5	57.99	8.5	1.41	31.5	104	301	Peak
234.12	35.18	-10.82	46	54.57	10.52	1.59	31.5	-	-	Peak
286.23	37.43	-8.57	46	54.99	12.03	1.75	31.34	-	-	Peak
311.9	34.83	-11.17	46	51.81	12.49	1.81	31.28	-	-	Peak
389.6	31.94	-14.06	46	46.65	14.51	1.99	31.21	-	-	Peak
832	31.91	-14.09	46	38.27	21.26	2.89	30.51	-	-	Peak
5150	41.92	-12.08	54	34.64	33.92	6.69	33.33	113	54	Average
5150	54.15	-19.85	74	46.87	33.92	6.69	33.33	113	54	Peak
5180	95.33	-	-	87.99	33.95	6.71	33.32	113	54	Average
5180	104.86	-	-	97.52	33.95	6.71	33.32	113	54	Peak
5350	41.37	-12.63	54	33.7	34.08	6.83	33.24	113	54	Average
5350	53.64	-20.36	74	45.97	34.08	6.83	33.24	113	54	Peak
10360	45.95	-22.35	68.3	55.17	37.32	9.71	56.25	100	0	Peak

Test Mode :	Mode 10	Temperature :	23~25°C
Test Channel :	36	Relative Humidity :	49~51%
Test Engineer :	Brian Chang	Polarization :	Vertical
Remark :	1. 5180 MHz is Fundamental Signals which can be ignored. 2. 10360 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
182.01	27.14	-16.36	43.5	48.73	8.5	1.41	31.5	100	179	Peak
234.12	27.09	-18.91	46	46.48	10.52	1.59	31.5	-	-	Peak
286.23	24.79	-21.21	46	42.35	12.03	1.75	31.34	-	-	Peak
311.9	24.17	-21.83	46	41.15	12.49	1.81	31.28	-	-	Peak
545.7	26.54	-19.46	46	37.35	17.83	2.32	30.96	-	-	Peak
860.7	27.07	-18.93	46	33.15	21.48	2.94	30.5	-	-	Peak
5150	41.38	-12.62	54	34.1	33.92	6.69	33.33	103	123	Average
5150	53.81	-20.19	74	46.53	33.92	6.69	33.33	103	123	Peak
5180	95.25	-	-	87.91	33.95	6.71	33.32	103	123	Average
5180	104.4	-	-	97.06	33.95	6.71	33.32	103	123	Peak
5350	38.34	-15.66	54	30.67	34.08	6.83	33.24	103	123	Average
5350	49.78	-24.22	74	42.11	34.08	6.83	33.24	103	123	Peak
10360	48.59	-19.71	68.3	58.13	37.32	9.71	56.57	100	0	Peak

Test Mode :	Mode 11	Temperature :	23~25°C
Test Channel :	44	Relative Humidity :	49~51%
Test Engineer :	Brian Chang	Polarization :	Horizontal
Remark :	1. 5220 MHz is Fundamental Signals which can be ignored. 2. 10440 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
182.01	36.25	-7.25	43.5	57.84	8.5	1.41	31.5	101	146	Peak
234.12	35.17	-10.83	46	54.56	10.52	1.59	31.5	-	-	Peak
286.23	37.28	-8.72	46	54.84	12.03	1.75	31.34	-	-	Peak
311.9	35.83	-10.17	46	52.81	12.49	1.81	31.28	-	-	Peak
337.8	34.64	-11.36	46	50.93	13.14	1.87	31.3	-	-	Peak
832	32.38	-13.62	46	38.74	21.26	2.89	30.51	-	-	Peak
5150	38.65	-15.35	54	31.37	33.92	6.69	33.33	100	295	Average
5150	50.5	-23.5	74	43.22	33.92	6.69	33.33	100	295	Peak
5220	94.62	-	-	87.21	33.97	6.74	33.3	100	295	Average
5220	104.12	-	-	96.71	33.97	6.74	33.3	100	295	Peak
5350	42.38	-11.62	54	34.71	34.08	6.83	33.24	100	295	Average
5350	55.12	-18.88	74	47.45	34.08	6.83	33.24	100	295	Peak
10440	46.34	-21.96	68.3	55.49	37.36	9.75	56.26	100	0	Peak

Test Mode :	Mode 11	Temperature :	23~25°C
Test Channel :	44	Relative Humidity :	49~51%
Test Engineer :	Brian Chang	Polarization :	Vertical
Remark :	1. 5220 MHz is Fundamental Signals which can be ignored. 2. 10440 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
129.9	24.7	-18.8	43.5	44.13	10.87	1.22	31.52	-	-	Peak
182.01	26.9	-16.6	43.5	48.49	8.5	1.41	31.5	142	206	Peak
234.12	27.16	-18.84	46	46.55	10.52	1.59	31.5	-	-	Peak
545.7	25.61	-20.39	46	36.42	17.83	2.32	30.96	-	-	Peak
754.3	25.97	-20.03	46	33.59	20.16	2.76	30.54	-	-	Peak
832	26.54	-19.46	46	32.9	21.26	2.89	30.51	-	-	Peak
5150	38.32	-15.68	54	31.04	33.92	6.69	33.33	106	313	Average
5150	52.68	-21.32	74	45.4	33.92	6.69	33.33	106	313	Peak
5220	94.22	-	-	86.81	33.97	6.74	33.3	106	313	Average
5220	103.39	-	-	95.98	33.97	6.74	33.3	106	313	Peak
5350	41.96	-12.04	54	34.29	34.08	6.83	33.24	106	313	Average
5350	51.64	-22.36	74	43.97	34.08	6.83	33.24	106	313	Peak
10440	50.61	-17.69	68.3	60.01	37.36	9.75	56.51	100	0	Peak

Test Mode :	Mode 12	Temperature :	23~25°C
Test Channel :	48	Relative Humidity :	49~51%
Test Engineer :	Brian Chang	Polarization :	Horizontal
Remark :	1. 5240 MHz is Fundamental Signals which can be ignored. 2. 10480 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
182.01	36.21	-7.29	43.5	57.8	8.5	1.41	31.5	204	317	Peak
234.12	35.09	-10.91	46	54.48	10.52	1.59	31.5	-	-	Peak
286.23	37.3	-8.7	46	54.86	12.03	1.75	31.34	-	-	Peak
311.9	35.29	-10.71	46	52.27	12.49	1.81	31.28	-	-	Peak
337.8	34.73	-11.27	46	51.02	13.14	1.87	31.3	-	-	Peak
832	32.16	-13.84	46	38.52	21.26	2.89	30.51	-	-	Peak
5150	38.98	-15.02	54	32.02	33.92	6.69	33.65	128	233	Average
5150	49.66	-24.34	74	42.7	33.92	6.69	33.65	128	233	Peak
5240	94.71	-	-	87.41	33.99	6.76	33.45	128	233	Average
5240	104.03	-	-	96.73	33.99	6.76	33.45	128	233	Peak
5350	40.55	-13.45	54	32.9	34.08	6.83	33.26	128	233	Average
5350	51.99	-22.01	74	44.34	34.08	6.83	33.26	128	233	Peak
10480	46.06	-22.24	68.3	55.17	37.39	9.78	56.28	100	0	Peak

Test Mode :	Mode 12	Temperature :	23~25°C
Test Channel :	48	Relative Humidity :	49~51%
Test Engineer :	Brian Chang	Polarization :	Vertical
Remark :	1. 5240 MHz is Fundamental Signals which can be ignored. 2. 10480 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
182.01	27.1	-16.4	43.5	48.69	8.5	1.41	31.5	100	229	Peak
234.12	27.03	-18.97	46	46.42	10.52	1.59	31.5	-	-	Peak
286.23	24.56	-21.44	46	42.12	12.03	1.75	31.34	-	-	Peak
545.7	25.69	-20.31	46	36.5	17.83	2.32	30.96	-	-	Peak
806.1	26.38	-19.62	46	33.02	21.06	2.84	30.54	-	-	Peak
884.5	25.76	-20.24	46	31.61	21.66	2.98	30.49	-	-	Peak
5150	38.83	-15.17	54	31.87	33.92	6.69	33.65	116	317	Average
5150	50.01	-23.99	74	43.05	33.92	6.69	33.65	116	317	Peak
5240	93.05	-	-	85.75	33.99	6.76	33.45	116	317	Average
5240	102.2	-	-	94.9	33.99	6.76	33.45	116	317	Peak
5350	39.33	-14.67	54	31.68	34.08	6.83	33.26	116	317	Average
5350	51.09	-22.91	74	43.44	34.08	6.83	33.26	116	317	Peak
10480	50.49	-17.81	68.3	59.79	37.39	9.78	56.47	100	0	Peak

Test Mode :	Mode 13	Temperature :	23~25°C
Test Channel :	52	Relative Humidity :	49~51%
Test Engineer :	Brian Chang	Polarization :	Horizontal
Remark :	1. 5260 MHz is Fundamental Signals which can be ignored. 2. 10520 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
182.01	36.06	-7.44	43.5	57.65	8.5	1.41	31.5	102	168	Peak
234.12	35.18	-10.82	46	54.57	10.52	1.59	31.5	-	-	Peak
286.23	37.21	-8.79	46	54.77	12.03	1.75	31.34	-	-	Peak
311.9	35.32	-10.68	46	52.3	12.49	1.81	31.28	-	-	Peak
337.8	34.49	-11.51	46	50.78	13.14	1.87	31.3	-	-	Peak
832	32.16	-13.84	46	38.52	21.26	2.89	30.51	-	-	Peak
5150	39.32	-14.68	54	32.36	33.92	6.69	33.65	141	237	Average
5150	50.74	-23.26	74	43.78	33.92	6.69	33.65	141	237	Peak
5260	95.52	-	-	88.14	34.01	6.78	33.41	141	237	Average
5260	104.93	-	-	97.55	34.01	6.78	33.41	141	237	Peak
5350	41.22	-12.78	54	33.57	34.08	6.83	33.26	141	237	Average
5350	52.91	-21.09	74	45.26	34.08	6.83	33.26	141	237	Peak
10520	44.73	-23.57	68.3	53.78	37.41	9.81	56.27	100	0	Peak

Test Mode :	Mode 13	Temperature :	23~25°C
Test Channel :	52	Relative Humidity :	49~51%
Test Engineer :	Brian Chang	Polarization :	Vertical
Remark :	1. 5260 MHz is Fundamental Signals which can be ignored. 2. 10520 MHz is not within a restricted band.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
182.01	22.2	-21.3	43.5	43.79	8.5	1.41	31.5	-	-	Peak
234.12	25.66	-20.34	46	45.05	10.52	1.59	31.5	-	-	Peak
286.23	23.41	-22.59	46	40.97	12.03	1.75	31.34	-	-	Peak
545.7	25.47	-20.53	46	36.28	17.83	2.32	30.96	-	-	Peak
806.1	26.07	-19.93	46	32.71	21.06	2.84	30.54	-	-	Peak
860.7	26.66	-19.34	46	32.74	21.48	2.94	30.5	133	201	Peak
5150	39.06	-14.94	54	32.1	33.92	6.69	33.65	103	311	Average
5150	51.28	-22.72	74	44.32	33.92	6.69	33.65	103	311	Peak
5260	94.98	-	-	87.6	34.01	6.78	33.41	103	311	Average
5260	104.07	-	-	96.69	34.01	6.78	33.41	103	311	Peak
5350	40.28	-13.72	54	32.63	34.08	6.83	33.26	103	311	Average
5350	52.19	-21.81	74	44.54	34.08	6.83	33.26	103	311	Peak
10520	48.01	-20.29	68.3	57.21	37.41	9.81	56.42	100	0	Peak



Test Mode :	Mode 14	Temperature :	23~25°C
Test Channel :	60	Relative Humidity :	49~51%
Test Engineer :	Brian 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
182.01	36.13	-7.37	43.5	57.72	8.5	1.41	31.5	107	222	Peak
234.12	35.27	-10.73	46	54.66	10.52	1.59	31.5	-	-	Peak
286.23	37.34	-8.66	46	54.9	12.03	1.75	31.34	-	-	Peak
311.9	35.26	-10.74	46	52.24	12.49	1.81	31.28	-	-	Peak
337.8	34.46	-11.54	46	50.75	13.14	1.87	31.3	-	-	Peak
806.1	31.77	-14.23	46	38.41	21.06	2.84	30.54	-	-	Peak
5150	36.98	-17.02	54	30.02	33.92	6.69	33.65	100	288	Average
5150	48.66	-25.34	74	41.7	33.92	6.69	33.65	100	288	Peak
5300	93.83	-	-	86.35	34.04	6.8	33.36	100	288	Average
5300	103.1	-	-	95.62	34.04	6.8	33.36	100	288	Peak
5350	41.09	-12.91	54	33.44	34.08	6.83	33.26	100	288	Average
5350	53.69	-20.31	74	46.04	34.08	6.83	33.26	100	288	Peak
10600	45.94	-28.06	74	54.83	37.46	9.85	56.2	100	0	Peak



Test Mode :	Mode 14	Temperature :	23~25°C
Test Channel :	60	Relative Humidity :	49~51%
Test Engineer :	Brian 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
129.9	24.72	-18.78	43.5	44.15	10.87	1.22	31.52	-	-	Peak
182.01	27.2	-16.3	43.5	48.79	8.5	1.41	31.5	147	325	Peak
234.12	27.27	-18.73	46	46.66	10.52	1.59	31.5	-	-	Peak
545.7	25.38	-20.62	46	36.19	17.83	2.32	30.96	-	-	Peak
780.2	27.02	-18.98	46	34.12	20.64	2.8	30.54	-	-	Peak
860.7	26.42	-19.58	46	32.5	21.48	2.94	30.5	-	-	Peak
5150	37.07	-16.93	54	30.11	33.92	6.69	33.65	103	310	Average
5150	50.75	-23.25	74	43.79	33.92	6.69	33.65	103	310	Peak
5300	92.92	-	-	85.44	34.04	6.8	33.36	103	310	Average
5300	102.86	-	-	95.38	34.04	6.8	33.36	103	310	Peak
5350	40.94	-13.06	54	33.29	34.08	6.83	33.26	103	310	Average
5350	54.64	-19.36	74	46.99	34.08	6.83	33.26	103	310	Peak
10600	47.64	-26.36	74	56.61	37.46	9.85	56.28	100	0	Peak

Test Mode :	Mode 15	Temperature :	23~25°C
Test Channel :	64	Relative Humidity :	49~51%
Test Engineer :	Brian 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
182.01	35.98	-7.52	43.5	57.57	8.5	1.41	31.5	105	110	Peak
234.12	35.52	-10.48	46	54.91	10.52	1.59	31.5	-	-	Peak
286.23	37.33	-8.67	46	54.89	12.03	1.75	31.34	-	-	Peak
311.9	34.58	-11.42	46	51.56	12.49	1.81	31.28	-	-	Peak
337.8	34.58	-11.42	46	50.87	13.14	1.87	31.3	-	-	Peak
832	32.15	-13.85	46	38.51	21.26	2.89	30.51	-	-	Peak
5150	37.11	-16.89	54	30.15	33.92	6.69	33.65	100	288	Average
5150	48.31	-25.69	74	41.35	33.92	6.69	33.65	100	288	Peak
5320	93.26	-	-	85.71	34.05	6.81	33.31	100	288	Average
5320	102.55	-	-	95	34.05	6.81	33.31	100	288	Peak
5350	41.16	-12.84	54	33.51	34.08	6.83	33.26	100	288	Average
5350	53.41	-20.59	74	45.76	34.08	6.83	33.26	100	288	Peak
10640	44.88	-29.12	74	53.69	37.48	9.88	56.17	100	0	Peak



Test Mode :	Mode 15	Temperature :	23~25°C
Test Channel :	64	Relative Humidity :	49~51%
Test Engineer :	Brian 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
182.01	27.52	-15.98	43.5	49.11	8.5	1.41	31.5	141	321	Peak
234.12	27.01	-18.99	46	46.4	10.52	1.59	31.5	-	-	Peak
286.23	24.26	-21.74	46	41.82	12.03	1.75	31.34	-	-	Peak
337.8	23.89	-22.11	46	40.18	13.14	1.87	31.3	-	-	Peak
545.7	25.98	-20.02	46	36.79	17.83	2.32	30.96	-	-	Peak
860.7	27.81	-18.19	46	33.89	21.48	2.94	30.5	-	-	Peak
5150	36.98	-17.02	54	30.02	33.92	6.69	33.65	114	313	Average
5150	50.5	-23.5	74	43.54	33.92	6.69	33.65	114	313	Peak
5320	92.45	-	-	84.9	34.05	6.81	33.31	114	313	Average
5320	102.01	-	-	94.46	34.05	6.81	33.31	114	313	Peak
5350	40.66	-13.34	54	33.01	34.08	6.83	33.26	114	313	Average
5350	52.46	-21.54	74	44.81	34.08	6.83	33.26	114	313	Peak
10640	47.29	-26.71	74	56.15	37.48	9.88	56.22	100	0	Peak

Test Mode :	Mode 16	Temperature :	23~25°C
Test Channel :	100	Relative Humidity :	49~51%
Test Engineer :	Brian Chang	Polarization :	Horizontal
Remark :	1. 5500 MHz is Fundamental Signals which can be ignored. 2. 5470 MHz and 5725 MHz are not within a restricted band.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
182.01	36.1	-7.4	43.5	57.69	8.5	1.41	31.5	113	94	Peak
234.12	35.4	-10.6	46	54.79	10.52	1.59	31.5	-	-	Peak
286.23	37.34	-8.66	46	54.9	12.03	1.75	31.34	-	-	Peak
311.9	35.48	-10.52	46	52.46	12.49	1.81	31.28	-	-	Peak
337.8	34.45	-11.55	46	50.74	13.14	1.87	31.3	-	-	Peak
832	32	-14	46	38.36	21.26	2.89	30.51	-	-	Peak
5470	56	-12.3	68.3	47.92	34.17	6.92	33.01	128	265	Peak
5500	96.96	-	-	88.72	34.2	6.95	32.91	128	265	Average
5500	106.33	-	-	98.09	34.2	6.95	32.91	128	265	Peak
5725	49.76	-18.54	68.3	41.26	34.51	7.17	33.18	128	265	Peak
11000	47.45	-26.55	74	55.53	37.7	10.11	55.89	100	0	Peak

Test Mode :	Mode 16	Temperature :	23~25°C
Test Channel :	100	Relative Humidity :	49~51%
Test Engineer :	Brian Chang	Polarization :	Vertical
Remark :	1. 5500 MHz is Fundamental Signals which can be ignored. 2. 5470 MHz and 5725 MHz are not within a restricted band.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
182.01	26.73	-16.77	43.5	48.32	8.5	1.41	31.5	148	253	Peak
234.12	27.17	-18.83	46	46.56	10.52	1.59	31.5	-	-	Peak
286.23	24.95	-21.05	46	42.51	12.03	1.75	31.34	-	-	Peak
545.7	26.42	-19.58	46	37.23	17.83	2.32	30.96	-	-	Peak
780.2	26.26	-19.74	46	33.36	20.64	2.8	30.54	-	-	Peak
860.7	27.06	-18.94	46	33.14	21.48	2.94	30.5	-	-	Peak
5470	54.77	-13.53	68.3	46.69	34.17	6.92	33.01	136	28	Peak
5500	94.1	-	-	85.86	34.2	6.95	32.91	136	28	Average
5500	103.78	-	-	95.54	34.2	6.95	32.91	136	28	Peak
5725	50.66	-17.64	68.3	42.16	34.51	7.17	33.18	136	28	Peak
11000	50.73	-23.27	74	58.54	37.7	10.11	55.62	100	0	Peak

Test Mode :	Mode 17	Temperature :	23~25°C
Test Channel :	116	Relative Humidity :	49~51%
Test Engineer :	Brian Chang	Polarization :	Horizontal
Remark :	1. 5580 MHz is Fundamental Signals which can be ignored. 2. 5470 MHz and 5725 MHz are not within a restricted band.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
182.01	36.13	-7.37	43.5	57.72	8.5	1.41	31.5	102	25	Peak
234.12	35.26	-10.74	46	54.65	10.52	1.59	31.5	-	-	Peak
286.23	37.14	-8.86	46	54.7	12.03	1.75	31.34	-	-	Peak
337.8	34.71	-11.29	46	51	13.14	1.87	31.3	-	-	Peak
545.7	29.18	-16.82	46	39.99	17.83	2.32	30.96	-	-	Peak
832	32.23	-13.77	46	38.59	21.26	2.89	30.51	-	-	Peak
5470	55.11	-13.19	68.3	47.03	34.17	6.92	33.01	100	260	Peak
5580	95.09	-	-	86.77	34.3	7.02	33	100	260	Average
5580	104.71	-	-	96.39	34.3	7.02	33	100	260	Peak
5725	50.8	-17.5	68.3	42.3	34.51	7.17	33.18	100	260	Peak

Test Mode :	Mode 17	Temperature :	23~25°C
Test Channel :	116	Relative Humidity :	49~51%
Test Engineer :	Brian Chang	Polarization :	Vertical
Remark :	1. 5580 MHz is Fundamental Signals which can be ignored. 2. 5470 MHz and 5725 MHz are not within a restricted band.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
42.15	26.74	-13.26	40	45.99	11.53	0.76	31.54	134	309	Peak
182.01	26.96	-16.54	43.5	48.55	8.5	1.41	31.5	-	-	Peak
234.12	27.19	-18.81	46	46.58	10.52	1.59	31.5	-	-	Peak
545.7	25.74	-20.26	46	36.55	17.83	2.32	30.96	-	-	Peak
701.8	25.26	-20.74	46	34.14	19.18	2.65	30.71	-	-	Peak
806.1	26.2	-19.8	46	32.84	21.06	2.84	30.54	-	-	Peak
5470	52.97	-15.33	68.3	44.89	34.17	6.92	33.01	100	139	Peak
5580	91.58	-	-	83.26	34.3	7.02	33	100	139	Average
5580	101.32	-	-	93	34.3	7.02	33	100	139	Peak
5725	51.68	-16.62	68.3	43.18	34.51	7.17	33.18	100	139	Peak
11160	49.38	-24.62	74	57.04	37.83	10.16	55.65	100	0	Peak

Test Mode :	Mode 18	Temperature :	23~25°C
Test Channel :	140	Relative Humidity :	49~51%
Test Engineer :	Brian Chang	Polarization :	Horizontal
Remark :	1. 5700 MHz is Fundamental Signals which can be ignored. 2. 5470 MHz and 5725 MHz are not within a restricted band.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
182.01	36.28	-7.22	43.5	57.87	8.5	1.41	31.5	105	66	Peak
234.12	35.24	-10.76	46	54.63	10.52	1.59	31.5	-	-	Peak
286.23	37.33	-8.67	46	54.89	12.03	1.75	31.34	-	-	Peak
311.9	35.25	-10.75	46	52.23	12.49	1.81	31.28	-	-	Peak
337.8	34.5	-11.5	46	50.79	13.14	1.87	31.3	-	-	Peak
832	31.9	-14.1	46	38.26	21.26	2.89	30.51	-	-	Peak
5470	53.12	-15.18	68.3	45.04	34.17	6.92	33.01	129	257	Peak
5700	92.77	-	-	84.3	34.47	7.15	33.15	129	257	Average
5700	102.44	-	-	93.97	34.47	7.15	33.15	129	257	Peak
5725	55.96	-12.34	68.3	47.46	34.51	7.17	33.18	129	257	Peak

Test Mode :	Mode 18	Temperature :	23~25°C
Test Channel :	140	Relative Humidity :	49~51%
Test Engineer :	Brian Chang	Polarization :	Vertical
Remark :	1. 5700 MHz is Fundamental Signals which can be ignored. 2. 5470 MHz and 5725 MHz are not within a restricted band.		

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
129.9	24.51	-18.99	43.5	43.94	10.87	1.22	31.52	-	-	Peak
182.01	27.62	-15.88	43.5	49.21	8.5	1.41	31.5	129	30	Peak
234.12	27.51	-18.49	46	46.9	10.52	1.59	31.5	-	-	Peak
545.7	26.26	-19.74	46	37.07	17.83	2.32	30.96	-	-	Peak
806.1	27.41	-18.59	46	34.05	21.06	2.84	30.54	-	-	Peak
860.7	26.7	-19.3	46	32.78	21.48	2.94	30.5	-	-	Peak
5470	50.18	-18.12	68.3	42.1	34.17	6.92	33.01	100	156	Peak
5700	90.14	-	-	81.67	34.47	7.15	33.15	100	156	Average
5700	99.52	-	-	91.05	34.47	7.15	33.15	100	156	Peak
5725	54.87	-13.43	68.3	46.37	34.51	7.17	33.18	100	156	Peak

3.6 Peak Excursion Ratio Measurement

3.6.1 Limit of Peak Excursion Ratio

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

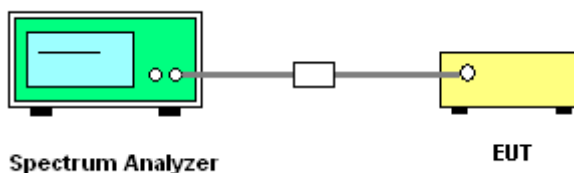
3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

3.6.3 Test Procedures

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

3.6.4 Test Setup

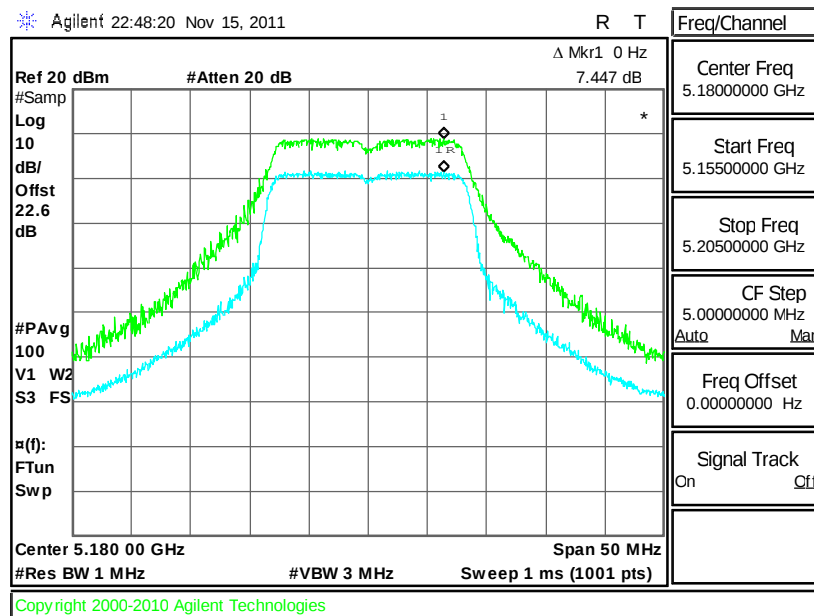




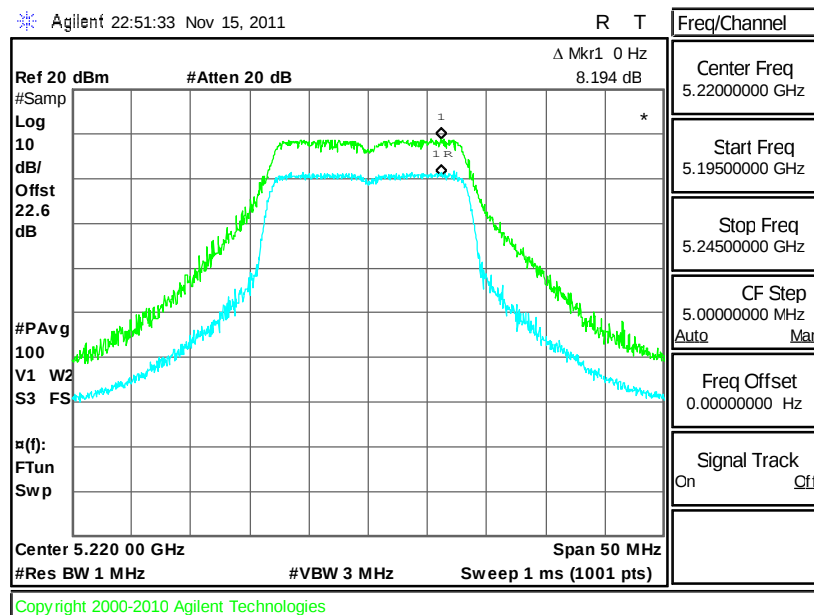
3.6.5 Test Result of Peak Excursion Ratio

Test Mode :	Mode 1~9	Temperature :	24~26°C
Test Engineer :	Book Lin	Relative Humidity :	40~44%

Peak Excursion Ratio Plot on 802.11a Channel 36

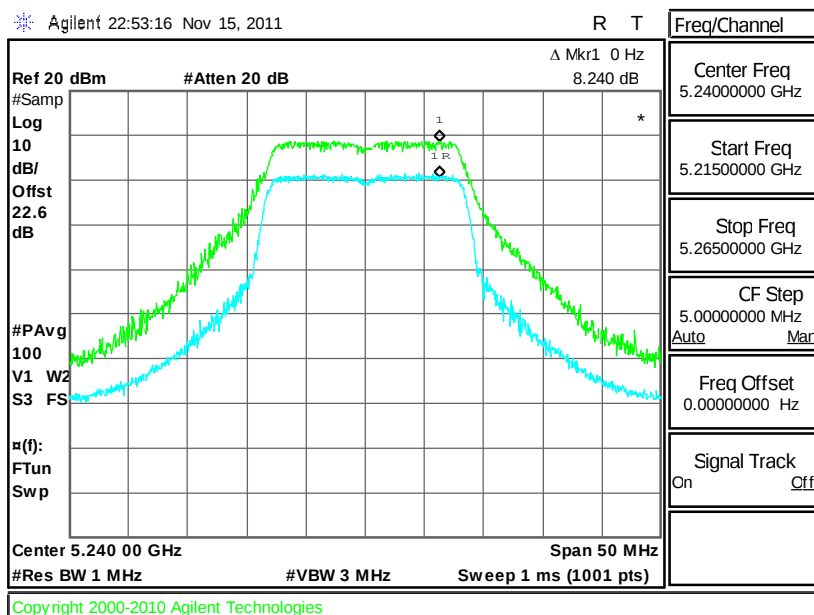


Peak Excursion Ratio Plot on 802.11a Channel 44

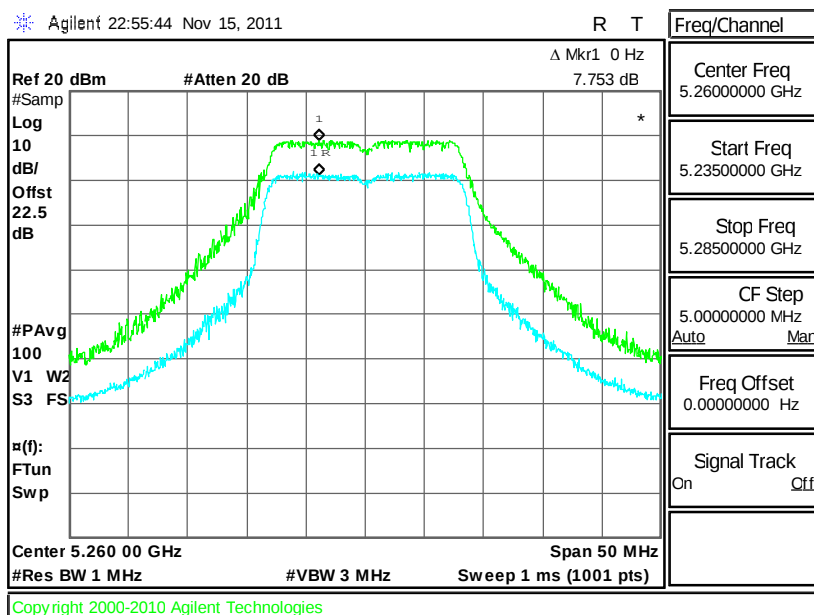




Peak Excursion Ratio Plot on 802.11a Channel 48



Peak Excursion Ratio Plot on 802.11a Channel 52

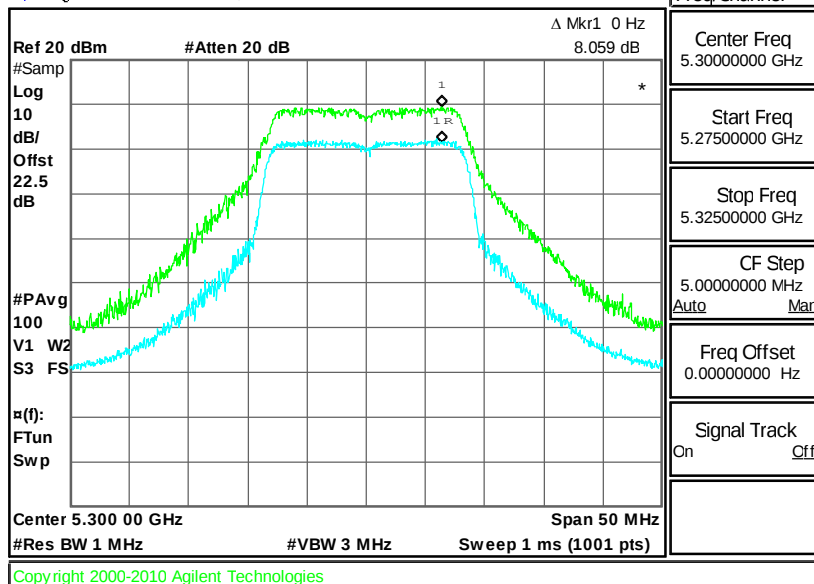




Peak Excursion Ratio Plot on 802.11a Channel 60

Agilent 22:59:24 Nov 15, 2011

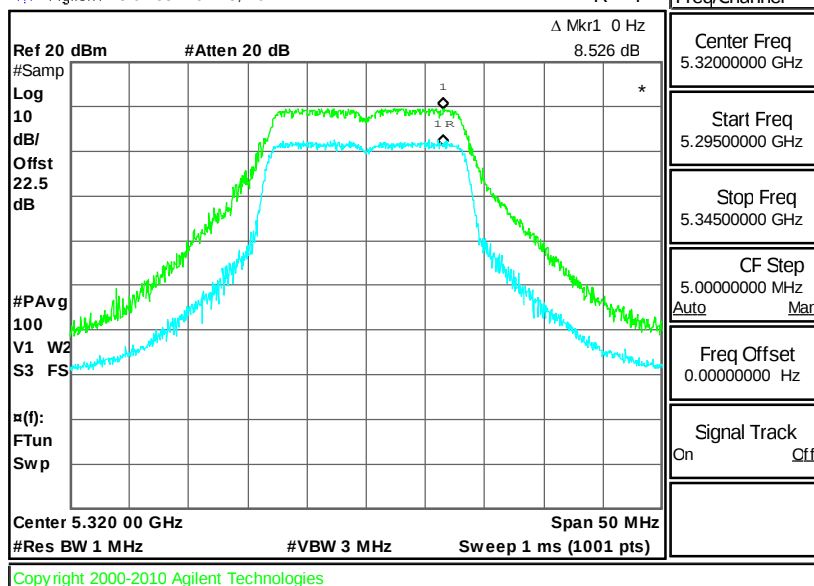
R T



Peak Excursion Ratio Plot on 802.11a Channel 64

Agilent 23:01:58 Nov 15, 2011

R T

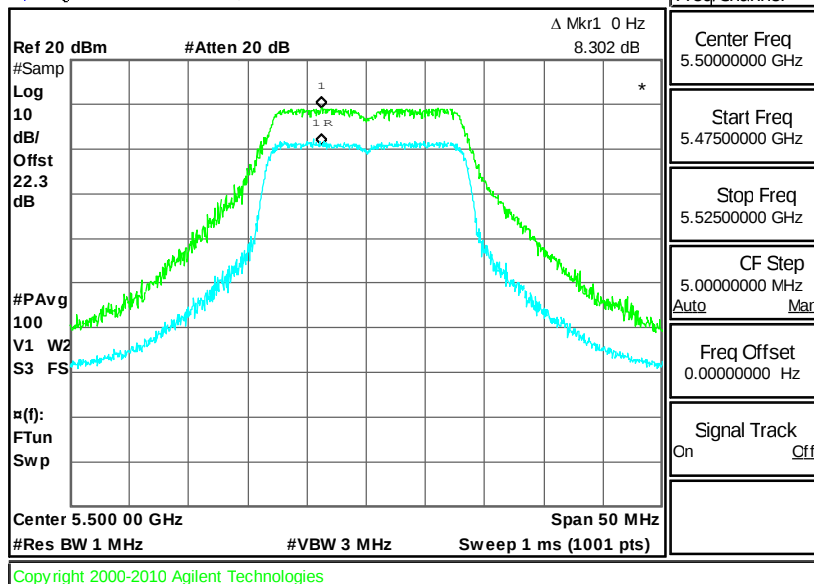




Peak Excursion Ratio Plot on 802.11a Channel 100

Agilent 23:03:41 Nov 15, 2011

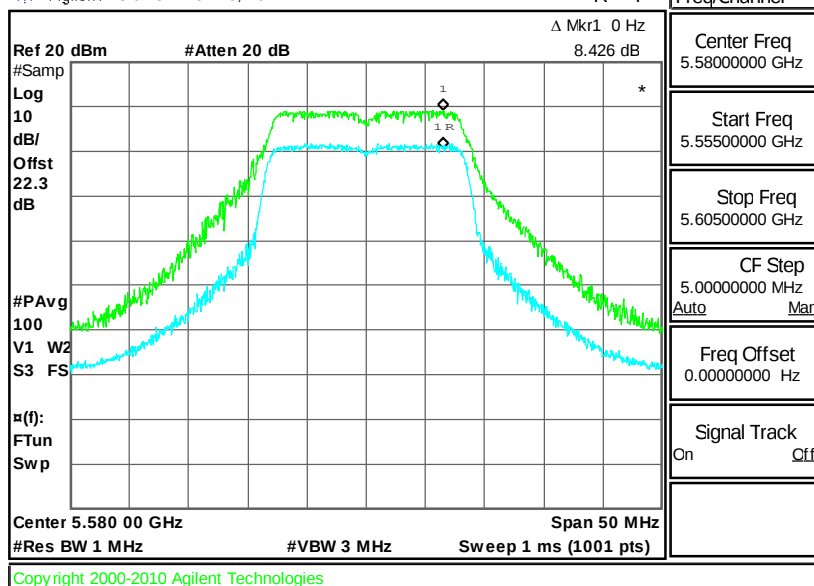
R T



Peak Excursion Ratio Plot on 802.11a Channel 116

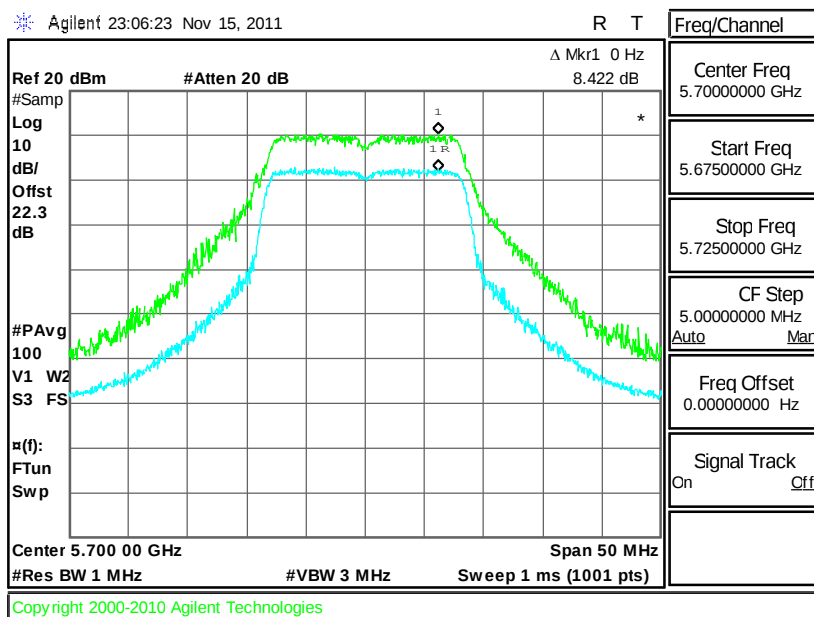
Agilent 23:04:57 Nov 15, 2011

R T





Peak Excursion Ratio Plot on 802.11a Channel 140



3.7 Automatically Discontinue Transmission

3.7.1 Limit of Automatically Discontinue Transmission

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

3.7.2 Measuring Instruments

See list of measuring instruments of this test report.

3.7.3 Test Result of Automatically Discontinue Transmission

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

3.8 Frequency Stability Measurement

3.8.1 Limit of Frequency Stability

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

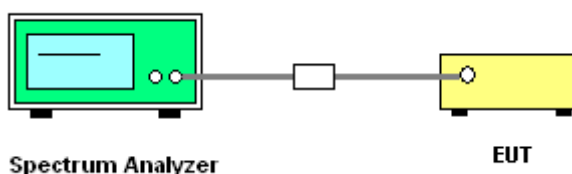
3.8.2 Measuring Instruments

See list of measuring instruments of this test report.

3.8.3 Test Procedures

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

3.8.4 Test Setup



3.8.5 Test Result of Frequency Stability

Test Mode :	Mode 1~9	Temperature :	24~26℃
Test Engineer :	Book Lin	Relative Humidity :	40~44%

Channel	Frequency (MHz)	Low Frequency (Fl)	High Frequency (Fh)	Frequency Stability (ppm)
36	5180	5171.750	5188.325	7.24
44	5220	5211.750	5228.325	7.18
48	5240	5231.750	5248.325	7.16
52	5260	5251.750	5268.325	7.13
60	5300	5291.750	5308.325	7.08
64	5320	5311.750	5328.325	7.05
100	5500	5491.750	5508.350	9.09
116	5580	5571.750	5588.325	6.72
140	5700	5691.750	5708.325	6.58

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 Equipments

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSP40	100055	9kHz~40GHz	Jun. 13, 2011	Nov. 14, 2011 ~ Nov. 16, 2011	Jun. 12, 2012	Conducted (TH02-HY)
Power Meter	Anritsu	ML2495A	0932001	N/A	Sep. 18, 2011	Nov. 14, 2011 ~ Nov. 16, 2011	Sep. 17, 2012	Conducted (TH02-HY)
Power Sensor	Anritsu	MA2411B	0846202	N/A	Sep. 18, 2011	Nov. 14, 2011 ~ Nov. 16, 2011	Sep. 17, 2012	Conducted (TH02-HY)
Power Meter	Agilent	E4416A	GB41292344	N/A	Feb. 18, 2011	Nov. 14, 2011 ~ Nov. 16, 2011	Feb. 17, 2012	Conducted (TH02-HY)
Power Sensor	Agilent	E9327A	US40441548	N/A	Feb. 18, 2011	Nov. 14, 2011 ~ Nov. 16, 2011	Feb. 17, 2012	Conducted (TH02-HY)
EMI Test Receive	R&S	ESCS 30	100356	9KHz – 2.75GHz	Aug. 16, 2010	Aug. 01, 2011	Aug. 15, 2011	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100081	9KHz – 30MHz	Dec. 03, 2010	Aug. 01, 2011	Dec. 02, 2011	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100080	9KHz – 30MHz	Dec. 01, 2010	Aug. 01, 2011	Nov. 30, 2011	Conduction (CO05-HY)
AC Power Source	APC	APC-1000W	N/A	N/A	N/A	Aug. 01, 2011	N/A	Conduction (CO05-HY)
System Simulator	R&S	CMU200	117591	N/A	Oct. 18, 2010	Aug. 01, 2011	Oct. 17, 2011	Conduction (CO05-HY)
Spectrum Analyzer	R&S	FSP30	101352	9KHz-40GHz	Nov. 03, 2010	Jul. 13, 2011	Nov. 02, 2011	Radiation (03CH05-HY)
Bilog Antenna	SCHAFFNER	CBL6111C	2725	30MHz ~ 1GHz	Nov. 06, 2010	Jul. 13, 2011	Nov. 05, 2011	Radiation (03CH05-HY)
COM-POWER	Double Ridge Horn	AH-118	701030	1HGz~18GHz	N/A	Jul. 13, 2011	N/A	Radiation (03CH05-HY)
Pre Amplifier	Agilent	8449B	3008A01917	1GHz- 26.5GHz	Apr. 14, 2011	Jul. 13, 2011	Apr. 13, 2012	Radiation (03CH05-HY)
Turn Table	HD	Deis HD 2000	420/611	0 - 360 degree	N/A	Jul. 13, 2011	N/A	Radiation (03CH05-HY)
Antenna Mast	HD	MA 240	240/666	1 m - 4 m	N/A	Jul. 13, 2011	N/A	Radiation (03CH05-HY)
Horn Antenna	ESCO	3117	00066584	1GHz ~ 18GHz	Aug. 05, 2010	Jul. 13, 2011	Aug. 04, 2011	Radiation (03CH05-HY)

5 Uncertainty of Evaluation

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

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

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

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

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

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



Appendix A. Photographs of EUT

Please refer to Sporton report number EP132448 as below.