



Test Report

Product Name	WLAN MODULE
Model No	CMN-727B
FCC ID	CKECMN727B

Applicant	Japan Radio Co.,Ltd.
Address	1011 SW Klickitat Way, Suite 201B, Seattle, WA 98134 U.S.A.

Date of Receipt	Oct. 26, 2012
Issued Date	Nov. 27, 2012
Report No.	12B004R-RFUSP45V01
Report Version	V1.0



The test results relate only to the samples tested.

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This report must not be used to claim product endorsement by NVLAP any agency of the U.S. Government

Test Report Certification

Issued Date: Nov. 27, 2012

Report No.: 12B004R-RFUSP45V01



Product Name	WLAN MODULE
Applicant	Japan Radio Co.,Ltd.
Address	1011 SW Klickitat Way, Suite 201B, Seattle, WA 98134 U.S.A.
Manufacturer	Japan Radio Co.,Ltd.
Model No.	CMN-727B
FCC ID.	CKECMN727B
EUT Rated Voltage	DC 3.3V
EUT Test Voltage	DC 5V (Power by DC power supply)
Trade Name	Japan Radio Co.,Ltd.
Applicable Standard	FCC CFR Title 47 Part 15 Subpart E: 2010 ANSI C63.4: 2003; FCC KDB-789033
Test Result	Complied

The Test Results relate only to the samples tested.

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This report must not be used to claim product endorsement by NVLAP any agency of the U.S. Government

Documented By : Jinn Chen
(Senior Adm. Specialist / Jinn Chen)

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(Assistant Engineer / Vincent Chu)

Approved By : [Signature]
(Manager / Vincent Lin)

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1. GENERAL INFORMATION

1.1. EUT Description

Product Name	WLAN MODULE
Trade Name	Japan Radio Co.,Ltd.
FCC ID.	CKECMN727B
Model No.	CMN-727B
Frequency Range	802.11a: 5180-5240MHz
Number of Channels	802.11a: 4
Data Rate	802.11a: 6-54Mbps
Channel Control	Auto
Type of Modulation	802.11a:OFDM, BPSK, QPSK, 16QAM, 64QAM
Antenna type	IFA, Dipole
Antenna Gain	Refer to the table “Antenna List”

Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	SANSEI ELECTRIC	NZA-606R (Main) NZA-606R (Aux)	Dipole	0.9dBi for 5 GHz
2	HOKO ELECTRONICS	7ACWN0048R (Main) 7ACWN0048R (Aux)	IFA	2.0dBi for 5 GHz

Note: The antenna of EUT is conform to FCC 15.203

802.11a Center Working Frequency of Each Channel:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 36:	5180 MHz	Channel 40:	5200 MHz	Channel 44:	5220 MHz	Channel 48:	5240 MHz

Note:

1. This device is a WLAN MODULE with a built-in 2.4GHz and 5GHz band WLAN transceiver, this report for 5GHz.
2. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
3. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test. Lowest and highest data rates are tested in each mode. Only worst case is shown in the report. (802.11a is 6Mbps)
4. At result of pretests, module supports dual-channel transmission, only the worst case is shown in the report. (802.11a is chain B)
5. These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15 Subpart E for Unlicensed National Information Infrastructure devices.

Test Mode	Mode 1: Transmitter (802.11a-6Mbps)
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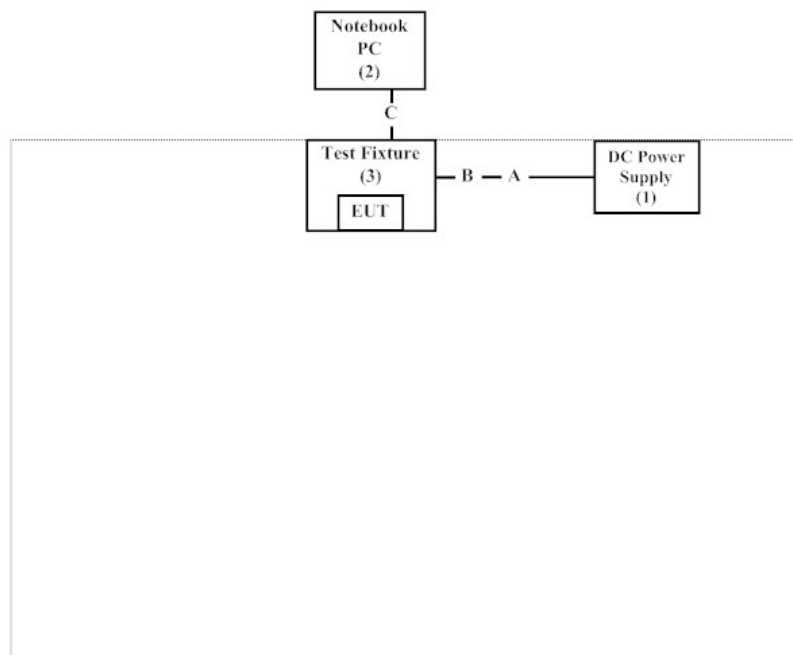
1.3. Tested System Details

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

	Product	Manufacturer	Model No.	Serial No.	Power Cord
1	DC Power Supply	Agilent	E3646A	N/A	N/A
2	Notebook PC	DELL	PPT	N/A	Non-Shielded, 0.8m
3	Test Fixture	Japan Radio	N/A	N/A	N/A

Signal Cable Type	Signal cable Description
A DC Power Cable	Non-Shielded, 1m
B DC Power Cable	Non-Shielded, 1m
C RJ45 Cable	Non-Shielded, 2m

1.4. Configuration of tested System



1.5. EUT Exercise Software

- (1) Setup the EUT as shown in Section 1.4
- (2) Execute “Art.exe v5.3” program on the Notebook
- (3) Configure the test mode, the test channel, and the data rate.
- (4) Press “OK” to start the continuous transmission.
- (5) Verify that the EUT works properly.

1.6. Test Facility

Ambient conditions in the laboratory:

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	20-35
Humidity (%RH)	25-75	50-65
Barometric pressure (mbar)	860-1060	950-1000

The related certificate for our laboratories about the test site and management system can be downloaded from Quietek Corporation's Web Site : <http://tw.quietek.com/modules/myalbum/>

The address and introduction of Quietek Corporation's laboratories can be founded in our Web site : <http://www.quietek.com/>

Site Description: File on
Federal Communications Commission
FCC Engineering Laboratory
7435 Oakland Mills Road
Columbia, MD 21046
Registration Number: 92195

Accreditation on NVLAP
NVLAP Lab Code: 200533-0

Site Name: Quietek Corporation
Site Address: No. 5-22, Ruei-Shu Valley, Ruei-Ping Tsuen,
Lin-Kou Shiang, Taipei,
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TEL: 886-2-8601-3788 / FAX : 886-2-8601-3789
E-Mail : service@quietek.com

FCC Accreditation Number: TW1014

2. Conducted Emission

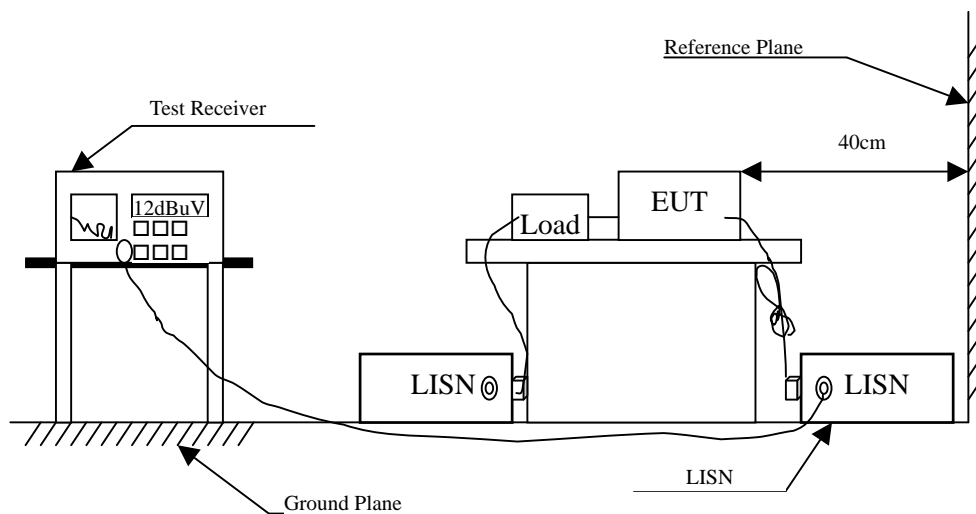
2.1. Test Equipment

	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.	Remark
X	Test Receiver	R & S	ESCS 30 / 825442/018	Sep., 2012	
X	Artificial Mains Network	R & S	ENV4200 / 848411/10	Feb., 2012	Peripherals
X	LISN	R & S	ESH3-Z5 / 825562/002	Feb., 2012	EUT
	DC LISN	Schwarzbeck	8226 / 176	Mar, 2012	EUT
X	Pulse Limiter	R & S	ESH3-Z2 / 357.8810.52	Feb., 2012	
	No.1 Shielded Room				

Note:

1. All equipments are calibrated every one year.
2. The test instruments marked by "X" are used to measure the final test results.

2.2. Test Setup



2.3. Limits

FCC Part 15 Subpart C Paragraph 15.207 (dBuV) Limit		
Frequency MHz	Limits	
	QP	AV
0.15 - 0.50	66-56	56-46
0.50-5.0	56	46
5.0 - 30	60	50

Remarks : In the above table, the tighter limit applies at the band edges.

2.4. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm /50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs.)

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2003 on conducted measurement.

Conducted emissions were invested over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

The EUT was setup to ANSI C63.4, 2003; tested to DTS test procedure of FCC KDB-789033 for compliance to FCC 47CFR Subpart E requirements.

2.5. Uncertainty

± 2.26 dB

2.6. Test Result of Conducted Emission

Product : WLAN MODULE
 Test Item : Conducted Emission Test
 Power Line : Line 1
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (5180MHz) (Ant: IFA)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV	dB	dBuV
LINE 1					
Quasi-Peak					
0.166	9.830	19.780	29.610	-35.933	65.543
0.666	9.830	18.510	28.340	-27.660	56.000
2.595	9.850	24.960	34.810	-21.190	56.000
6.150	9.894	16.770	26.664	-33.336	60.000
11.947	10.037	24.890	34.927	-25.073	60.000
23.896	10.110	28.440	38.550	-21.450	60.000
Average					
0.166	9.830	7.380	17.210	-38.333	55.543
0.666	9.830	14.070	23.900	-22.100	46.000
2.595	9.850	24.950	34.800	-11.200	46.000
6.150	9.894	10.180	20.074	-29.926	50.000
11.947	10.037	24.880	34.917	-15.083	50.000
23.896	10.110	26.450	36.560	-13.440	50.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “ ” means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : WLAN MODULE
 Test Item : Conducted Emission Test
 Power Line : Line 2
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (5180MHz) (Ant: IFA)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV	dB	dBuV
LINE 2					
Quasi-Peak					
0.232	9.830	8.330	18.160	-45.497	63.657
0.681	9.840	22.240	32.080	-23.920	56.000
2.595	9.860	23.280	33.140	-22.860	56.000
6.603	9.930	23.010	32.940	-27.060	60.000
11.951	10.117	22.710	32.827	-27.173	60.000
23.896	10.320	29.620	39.940	-20.060	60.000
Average					
0.232	9.830	-4.920	4.910	-48.747	53.657
0.681	9.840	15.290	25.130	-20.870	46.000
2.595	9.860	23.270	33.130	-12.870	46.000
6.603	9.930	20.090	30.020	-19.980	50.000
11.951	10.117	22.700	32.817	-17.183	50.000
23.896	10.320	28.510	38.830	-11.170	50.000


Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “ ” means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : WLAN MODULE
 Test Item : Conducted Emission Test
 Power Line : Line 1
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (5180MHz) (Ant: Dipole)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV	dB	dBuV
LINE 1					
Quasi-Peak					
0.158	9.830	21.650	31.480	-34.291	65.771
0.556	9.830	18.490	28.320	-27.680	56.000
2.595	9.850	24.870	34.720	-21.280	56.000
6.115	9.893	19.260	29.153	-30.847	60.000
11.951	10.037	24.710	34.747	-25.253	60.000
23.896	10.110	28.360	38.470	-21.530	60.000
Average					
0.158	9.830	7.230	17.060	-38.711	55.771
0.556	9.830	11.840	21.670	-24.330	46.000
2.595	9.850	24.860	34.710	-11.290	46.000
6.115	9.893	7.470	17.363	-32.637	50.000
11.951	10.037	24.690	34.727	-15.273	50.000
23.896	10.110	27.850	37.960	-12.040	50.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “” means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : WLAN MODULE
 Test Item : Conducted Emission Test
 Power Line : Line 2
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (5180MHz) (Ant: Dipole)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV	dB	dBuV
LINE 2					
Quasi-Peak					
0.162	9.839	20.910	30.749	-34.908	65.657
0.642	9.840	25.370	35.210	-20.790	56.000
2.595	9.860	23.110	32.970	-23.030	56.000
6.603	9.930	22.870	32.800	-27.200	60.000
11.947	10.117	23.360	33.477	-26.523	60.000
23.896	10.320	29.620	39.940	-20.060	60.000
Average					
0.162	9.839	10.040	19.879	-35.778	55.657
0.642	9.840	21.470	31.310	-14.690	46.000
2.595	9.860	23.100	32.960	-13.040	46.000
6.603	9.930	19.080	29.010	-20.990	50.000
11.947	10.117	23.350	33.467	-16.533	50.000
23.896	10.320	23.830	34.150	-15.850	50.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “ ” means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

3. Maximun conducted output power

3.1. Test Equipment

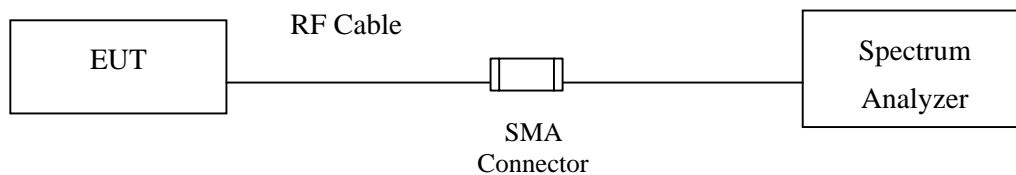
	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Power Meter	Anritsu	ML2495A/6K00003357	May, 2012
X	Power Sensor	Anritsu	MA2411B/0738448	Jun, 2012
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2012

Note:

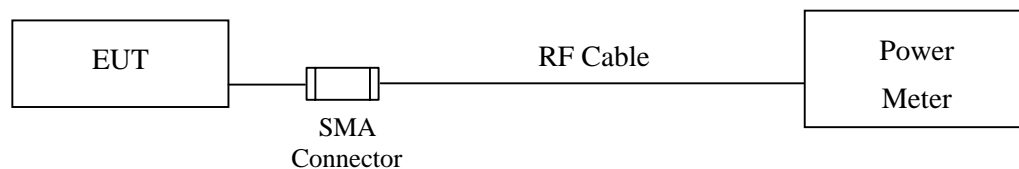
1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with “X” are used to measure the final test results.

3.2. Test Setup

26dBc Occupied Bandwidth



Conduction Power Measurement



3.3. Limits

- (1) For the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 50 mW or $4 \text{ dBm} + 10\log B$, where B is the 26-dB emission bandwidth in MHz. If transmitting antenna of directional gain greater than 6 dBi are used, the peak transmit power shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.
- (2) For the band 5.25-5.35 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10\log B$, where B is the 26-dB emission bandwidth in MHz. If transmitting antenna of directional gain greater than 6 dBi are used, the peak transmit power shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.
- (3) 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 1W or $17 \text{ dBm} + 10\log B$, where B is the 26-dB emission bandwidth in MHz. If transmitting antenna of directional gain greater than 6 dBi are used, the peak transmit power shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.

3.4. Test Procedure

As an alternative to FCC KDB-789033, the EUT maximum conducted output power was measured with an average power meter employing a video bandwidth greater than 6dB BW of the emission under test. Maximum conducted output power was read directly from the meter across all data rates, and across three channels within each sub-band. Special care was used to make sure that the EUT was transmitting in continuous mode. This method exceeds the limitations of FCC KDB-789033, and provides more accurate measurements.

3.5. Uncertainty

$\pm 1.27 \text{ dB}$

3.6. Test Result of Maximum conducted output power

Product : WLAN MODULE
Test Item : Maximum conducted output power
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter (802.11a-6Mbps)

Chain A

Cable loss=1dB		Maximum conducted output power								
Channel No.	Frequency (MHz)	Data Rate (Mbps)								Required Limit
		6	9	12	18	24	36	48	54	
		Measurement Level (dBm)								
36	5180	15.77	--	--	--	--	--	--	--	<17dBm
44	5220	15.83	15.72	15.63	15.57	15.43	15.36	15.22	15.17	<17dBm
48	5240	15.88	--	--	--	--	--	--	--	<17dBm

Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

Chain B

Cable loss=1dB		Maximum conducted output power								
Channel No.	Frequency (MHz)	Data Rate (Mbps)								Required Limit
		6	9	12	18	24	36	48	54	
		Measurement Level (dBm)								
36	5180	16.01	--	--	--	--	--	--	--	<17dBm
44	5220	16.03	15.82	15.63	15.47	15.31	15.18	15.08	14.92	<17dBm
48	5240	16.02	--	--	--	--	--	--	--	<17dBm

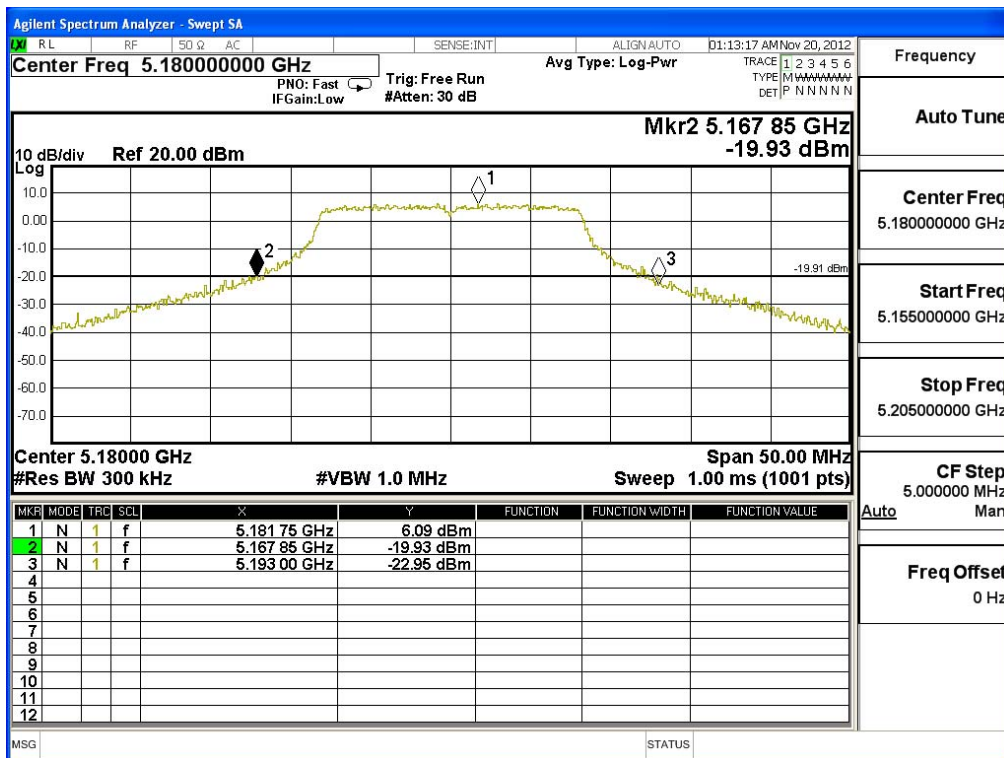
Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

Maximum conducted output power Measurement : (Chain B)

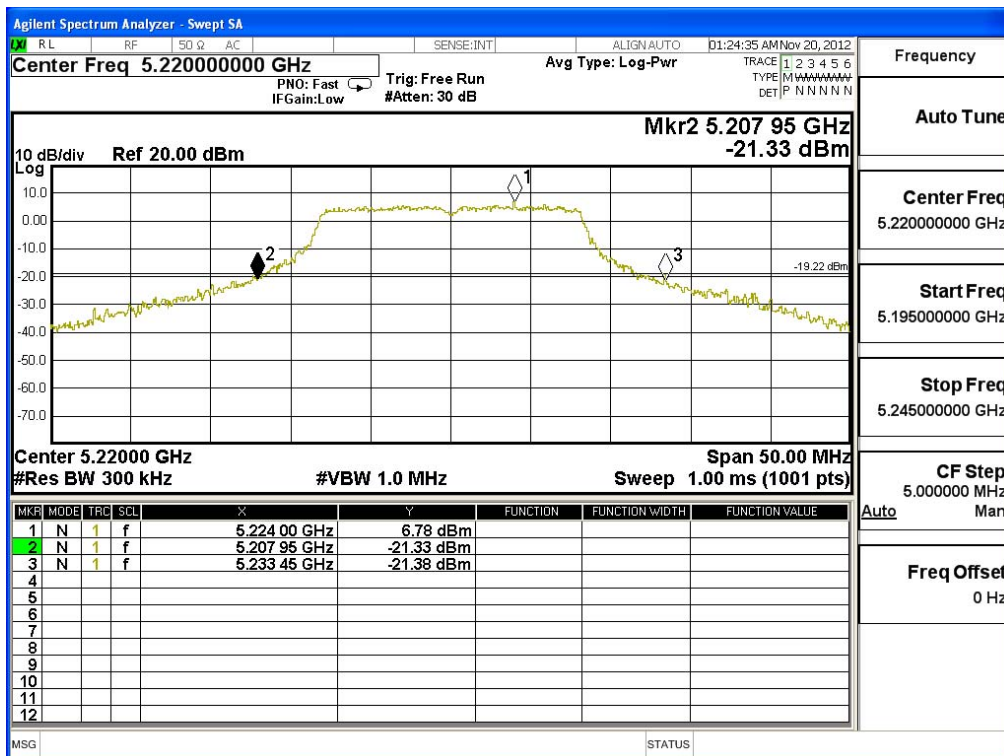
Channel No	Frequency Range (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Output Power Limit		Result
				(dBm)	dBm+10log(BW)	
36	5180	25.150	16.01	17	18.01	Pass
44	5220	25.500	16.03	17	18.07	Pass
48	5240	25.000	16.02	17	17.98	Pass

26dBc Occupied Bandwidth:

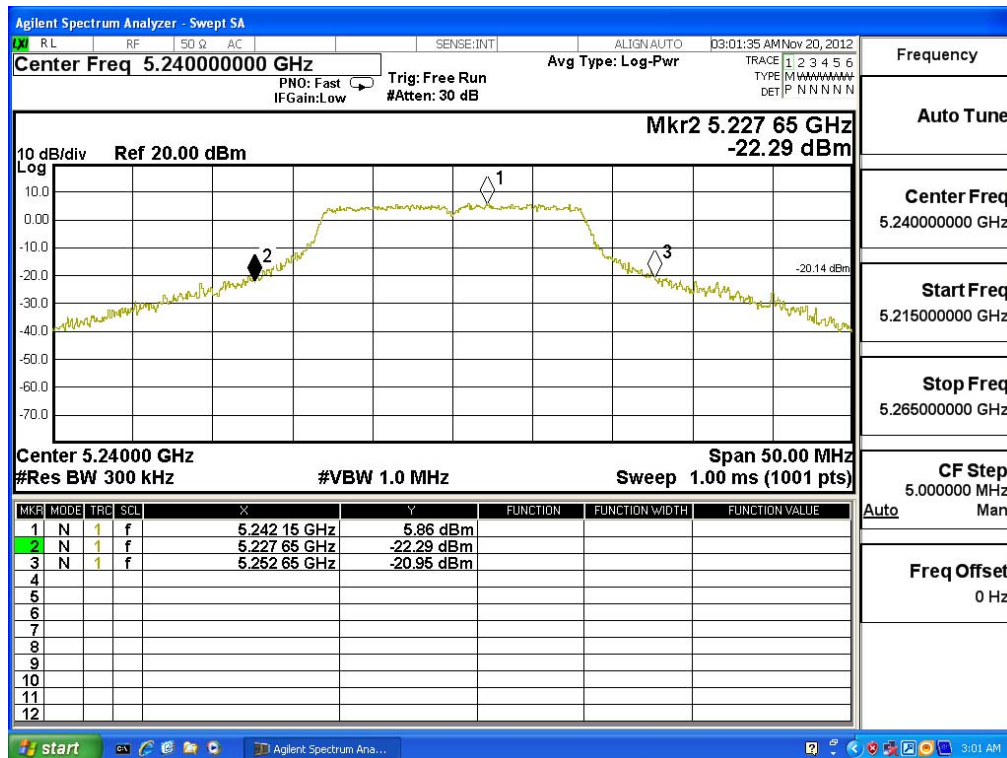
Channel 36:



Channel 44:



Channel 48:



4. Peak Power Spectral Density

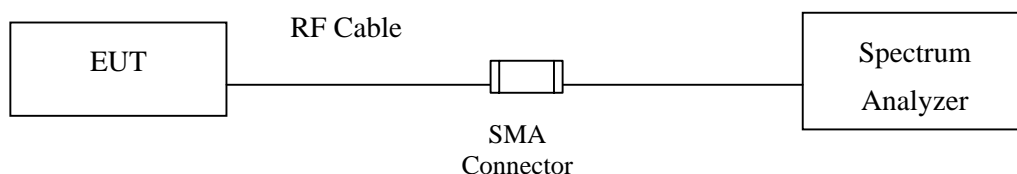
4.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2012
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2012
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr, 2012

Note:

1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with “X” are used to measure the final test results.

4.2. Test Setup



4.3. Limits

- (4) For the band 5.15-5.25 GHz, the peak power spectral density shall not exceed 4 dBm in any 1-MHz band. If transmitting antenna of directional gain greater than 6 dBi are used, the peak power spectral density shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.
- (5) For the band 5.25-5.35 GHz, the peak power spectral density shall not exceed 11 dBm in any 1-MHz band. If transmitting antenna of directional gain greater than 6 dBi are used, the peak power spectral density shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.
- (6) For the band 5.725-5.825 GHz, the peak power spectral density shall not exceed 17 dBm in any 1-MHz band. If transmitting antenna of directional gain greater than 6 dBi are used, the peak power spectral density shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.

4.4. Test Procedure

The EUT was setup to ANSI C63.4, 2003; tested to DTS test procedure of FCC KDB-789033 for compliance to FCC 47CFR Subpart E requirements.

4.5. Uncertainty

± 1.27 dB

4.6. Test Result of Peak Power Spectral Density

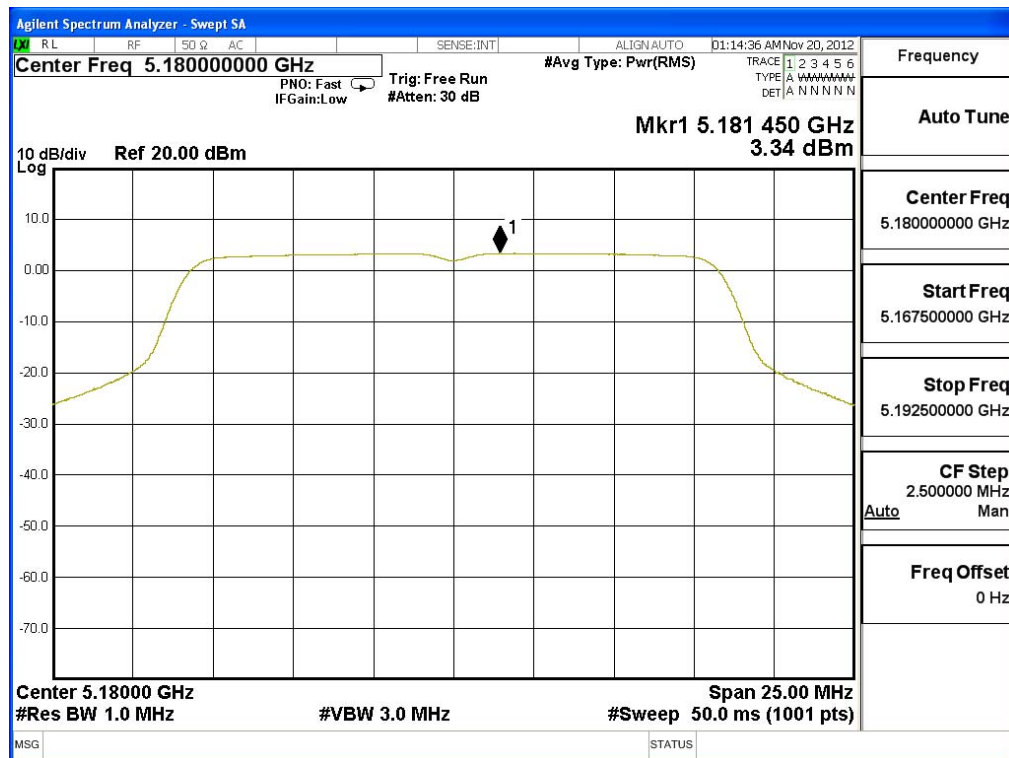
Product : WLAN MODULE
 Test Item : Peak Power Spectral Density
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps)

Channel Number	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
36	5180	3.340	<4	Pass
44	5220	3.160	<4	Pass
48	5240	3.000	<4	Pass

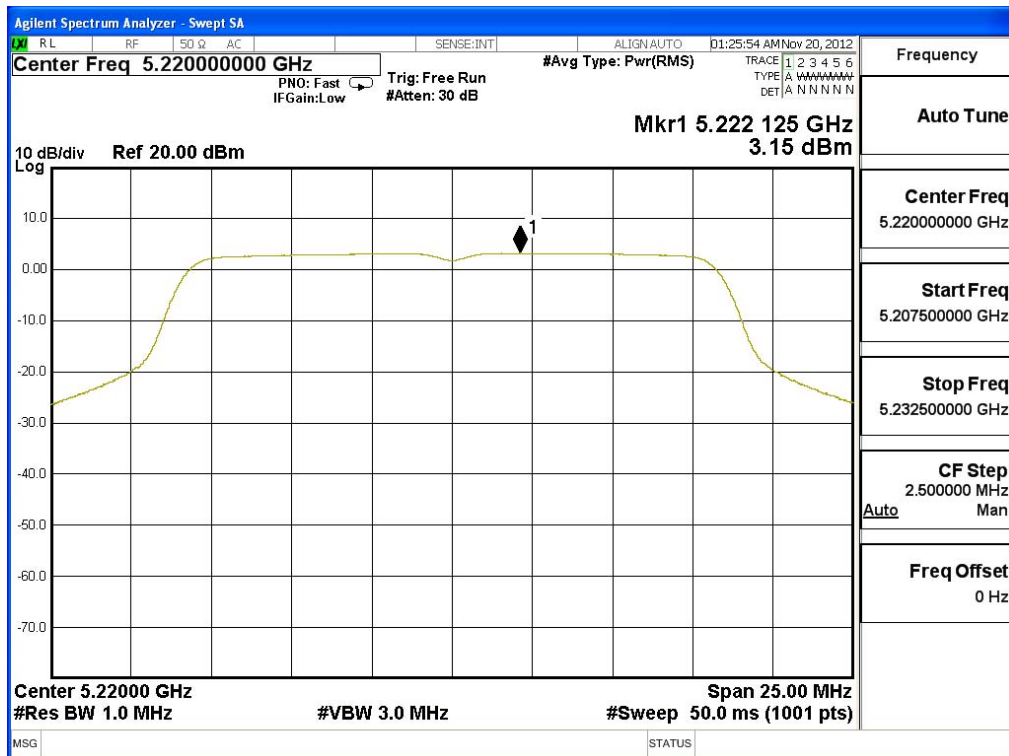
Note:

1. Measurement Level (dBm) = 10LOG (Chain A Power (mW)+ Chain B Power (mW))

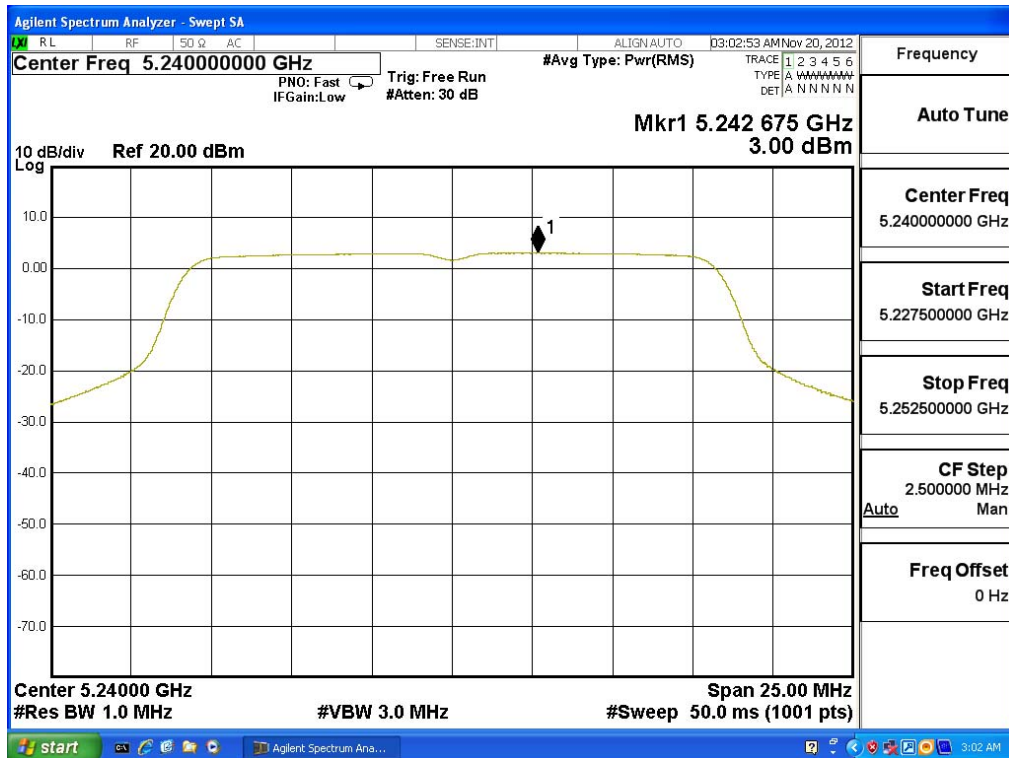
Channel 36:



Channel 44:



Channel 48:



5. Peak Excursion

5.1. Test Equipment

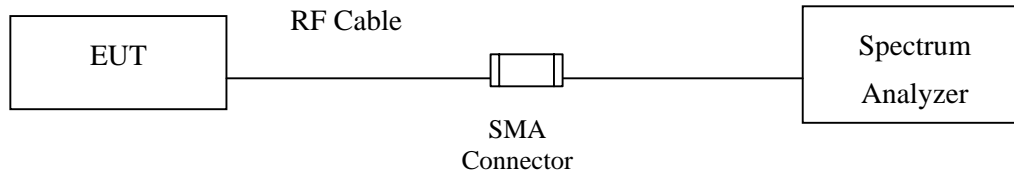
	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2012
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2012
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2012

Note:

1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with “X” are used to measure the final test results.

5.2. Test Setup

Conduction Power Measurement



5.3. Limits

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

5.4. Test Procedure

The EUT was setup to ANSI C63.4, 2003; tested to DTS test procedure of FCC KDB-789033 for compliance to FCC 47CFR Subpart E requirements.

5.5. Uncertainty

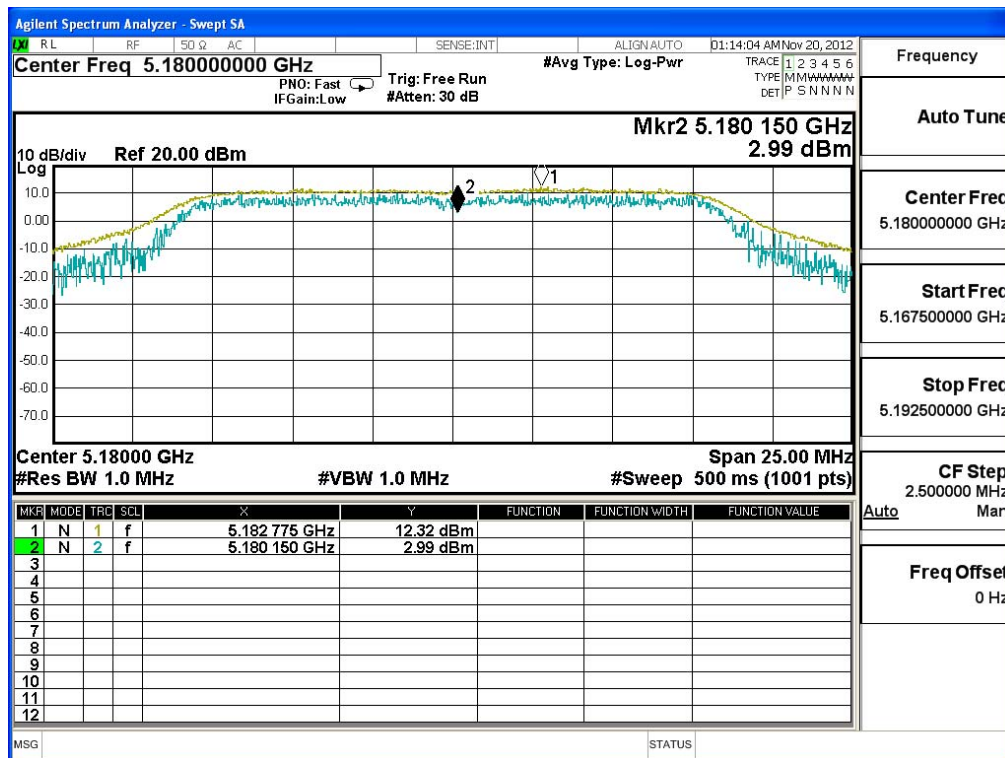
± 1.27 dB

5.6. Test Result of Peak Excursion

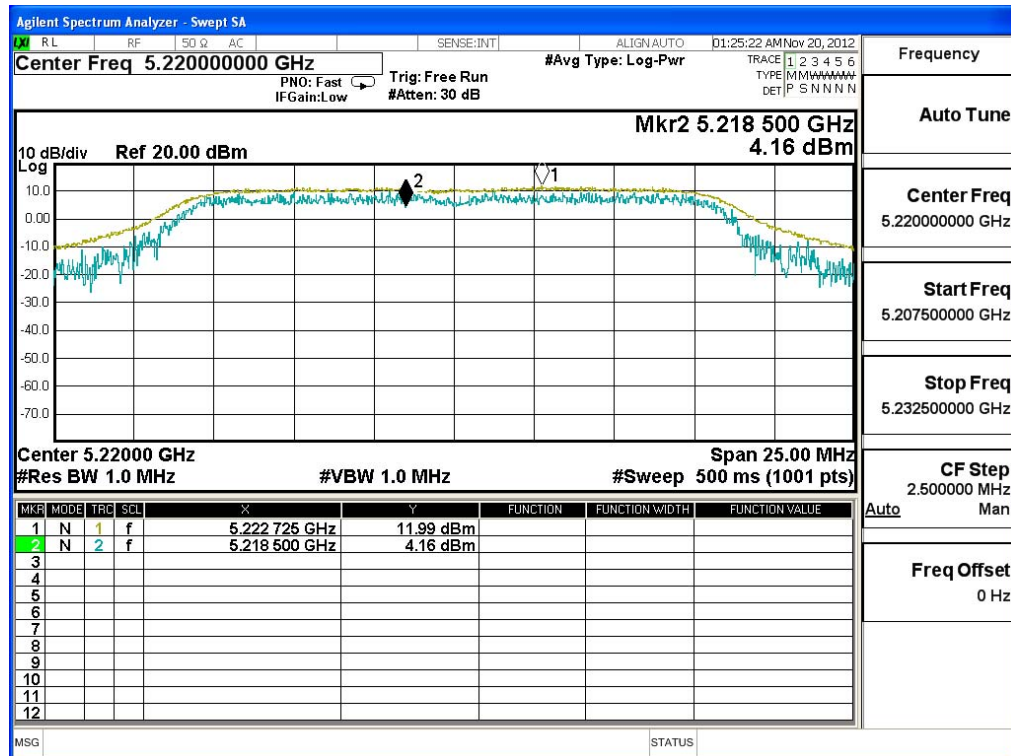
Product : WLAN MODULE
 Test Item : Peak Excursion
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps)

Channel No.	Frequency (MHz)	Measurement Level (dB)	Required Limit (dB)	Result
36	5180	9.330	<13	Pass
44	5220	7.830	<13	Pass
48	5240	8.050	<13	Pass

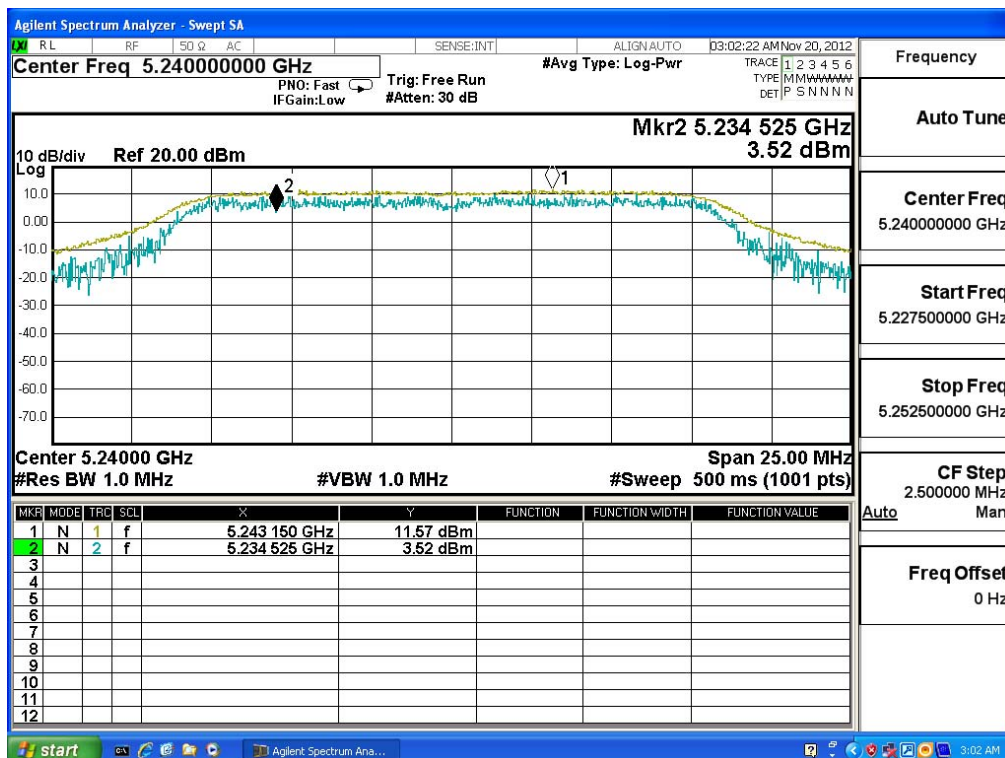
Channel 36:



Channel 44:



Channel 48:



6. Radiated Emission

6.1. Test Equipment

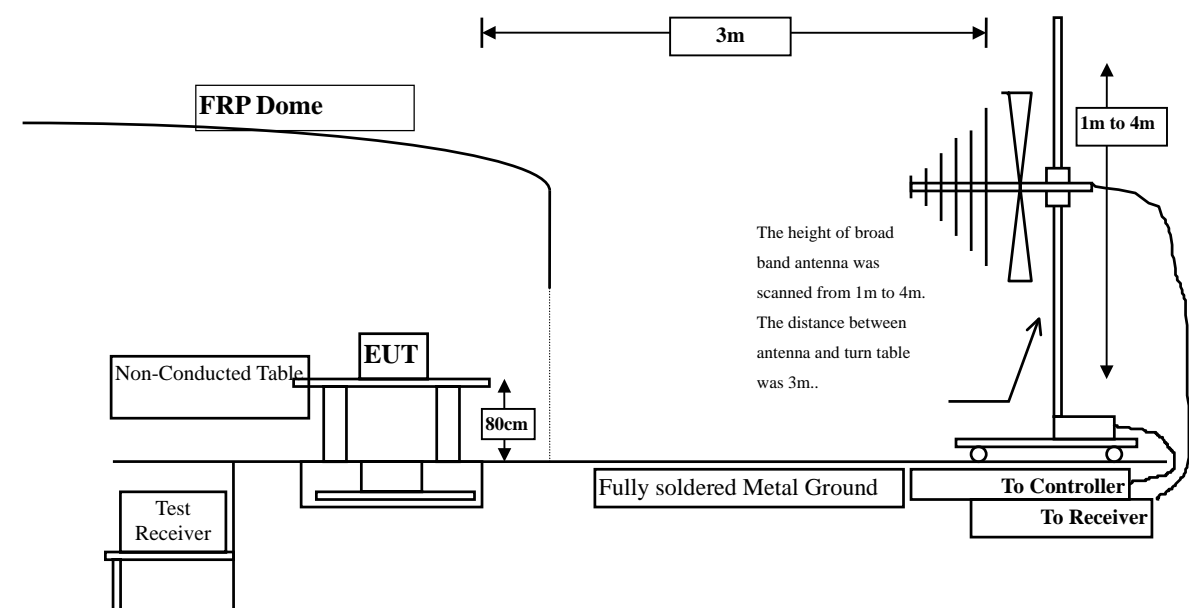
The following test equipments are used during the radiated emission test:

Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒ Site # 3	X	Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2012
	X	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2012
	X	Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2012
	X	Pre-Amplifier	QTK	QTK-AMP-03 / 0003	May, 2012
	X	Pre-Amplifier	QTK	AP-180C / CHM_0906076	Sep., 2012
	X	Pre-Amplifier	MITEQ	AMF-4D-180400-45-6P/ 925975	Mar, 2012
	X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2012
	X	Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2012
	X	Coaxial Cable	Quietek	QTK-CABLE/ CAB5	Feb., 2012
	X	Controller	Quietek	QTK-CONTROLLER/ CTRL3	N/A
	X	Coaxial Switch	Anritsu	MP59B/6200265729	N/A

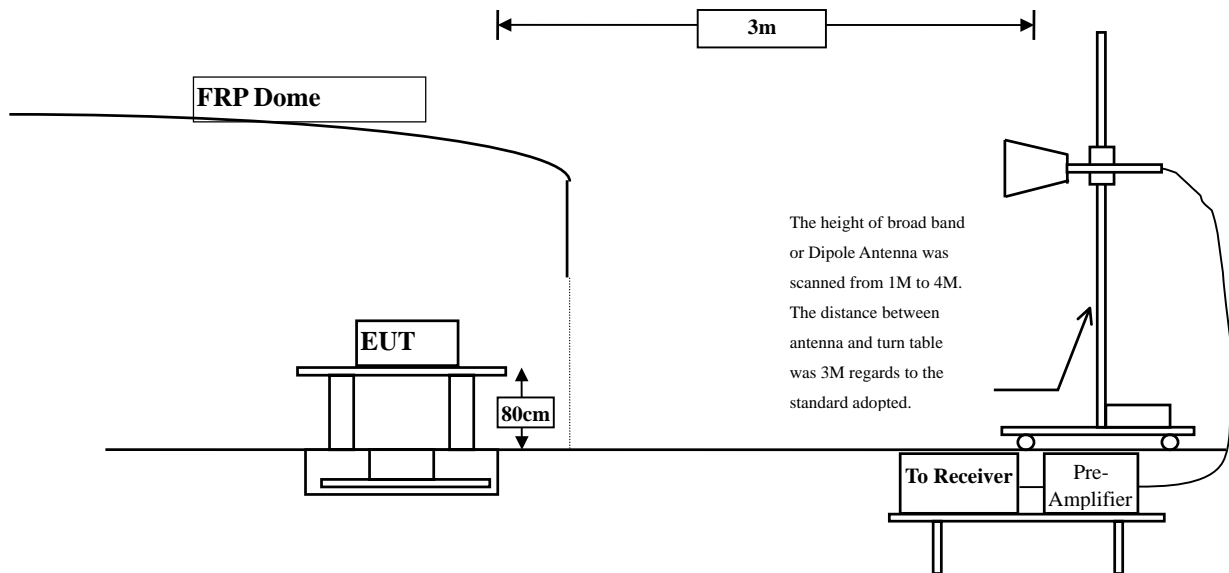
- Note:
1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
 2. The test instruments marked with "X" are used to measure the final test results.

6.2. Test Setup

Radiated Emission Below 1GHz



Radiated Emission Above 1GHz



6.3. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

FCC Part 15 Subpart C Paragraph 15.209(a) Limits		
Frequency MHz	uV/m @3m	dBuV/m@3m
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

Remarks: E field strength (dBuV/m) = 20 log E field strength (uV/m)

6.4. Test Procedure

The EUT was setup according to ANSI C63.4, 2003 and tested according to FCC KDB-789033 test procedure for compliance to FCC 47CFR 15. 407 requirements.

The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.4:2003 on radiated measurement.

The resolution bandwidth below 1GHz setting on the field strength meter is 120 kHz and above 1GHz is 1MHz.

Radiated emission measurements below 1GHz are made using broadband Bilog antenna and above 1GHz are made using Horn Antennas.

The measurement is divided into the Preliminary Measurement and the Final Measurement.

The suspected frequencies are searched for in Preliminary Measurement with the measurement antenna kept pointed at the source of the emission both in azimuth and elevation, with the polarization of the antenna oriented for maximum response. The antenna is pointed at an angle towards the source of the emission, and the EUT is rotated in both height and polarization to maximize the measured emission. The emission is kept within the illumination area of the 3 dB bandwidth of the antenna.

The worst radiated emission is measured in the Open Area Test Site on the Final Measurement.

The measurement frequency range from 30MHz - 10th Harmonic of fundamental was investigated.

6.5. Uncertainty

± 3.8 dB below 1GHz

± 3.9 dB above 1GHz

6.6. Test Result of Radiated Emission

Product : WLAN MODULE
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (5180MHz) (Ant: IFA)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
10360.000	12.930	40.280	53.210	-20.790	74.000
15540.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	74.000
Average					
Detector:					
10360.000	*	*	*	*	54.000
Vertical					
Peak Detector:					
10360.000	13.724	46.460	60.184	-13.816	74.000
15540.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	74.000
Average					
Detector:					
10360.000	13.724	32.300	46.024	-7.976	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : WLAN MODULE
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (5220MHz) (Ant: IFA)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
10440.000	13.322	39.570	52.892	-21.108	74.000
15600.000	*	*	*	*	74.000
20800.000	*	*	*	*	74.000
26000.000	*	*	*	*	74.000
31200.000	*	*	*	*	74.000
36400.000	*	*	*	*	74.000
Average					
Detector:					
10440.000	*	*	*	*	54.000
Vertical					
Peak Detector:					
10440.000	14.245	47.950	62.195	-11.805	74.000
15600.000	*	*	*	*	74.000
20800.000	*	*	*	*	74.000
26000.000	*	*	*	*	74.000
31200.000	*	*	*	*	74.000
36400.000	*	*	*	*	74.000
Average					
Detector:					
10440.000	14.245	34.340	48.585	-5.415	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : WLAN MODULE
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (5240MHz) (Ant: IFA)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
10480.000	13.693	38.260	51.954	-22.046	74.000
15720.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
31440000	*	*	*	*	74.000
36680.000	*	*	*	*	74.000
Average					
Detector:					
10480.000	*	*	*	*	54.000
Vertical					
Peak Detector:					
10480.000	14.620	47.630	62.251	-11.749	74.000
15720.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
31440000	*	*	*	*	74.000
36680.000	*	*	*	*	74.000
Average					
Detector:					
10480.000	14.620	33.940	48.561	-5.439	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : WLAN MODULE
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (5180MHz) (Ant: Dipole)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
10360.000	12.930	39.800	52.730	-21.270	74.000
15540.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	74.000
Average					
Detector:					
10360.000	*	*	*	*	54.000
Vertical					
Peak Detector:					
10360.000	13.724	44.600	58.324	-15.676	74.000
15540.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	74.000
Average					
Detector:					
10360.000	13.724	29.960	43.684	-10.316	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : WLAN MODULE
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (5220MHz) (Ant: Dipole)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
10440.000	13.322	38.090	51.412	-22.588	74.000
15600.000	*	*	*	*	74.000
20800.000	*	*	*	*	74.000
26000.000	*	*	*	*	74.000
31200.000	*	*	*	*	74.000
36400.000	*	*	*	*	74.000
Average					
Detector:					
10440.000	*	*	*	*	54.000
Vertical					
Peak Detector:					
10440.000	14.245	42.650	56.895	-17.105	74.000
15600.000	*	*	*	*	74.000
20800.000	*	*	*	*	74.000
26000.000	*	*	*	*	74.000
31200.000	*	*	*	*	74.000
36400.000	*	*	*	*	74.000
Average					
Detector:					
10440.000	14.245	27.630	41.875	-12.125	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : WLAN MODULE
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (5240MHz) (Ant: Dipole)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
10480.000	13.693	37.720	51.414	-22.586	74.000
15720.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
31440000	*	*	*	*	74.000
36680.000	*	*	*	*	74.000
Average					
Detector:					
10480.000	*	*	*	*	54.000
Vertical					
Peak Detector:					
10480.000	14.620	43.900	58.521	-15.479	74.000
15720.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
31440000	*	*	*	*	74.000
36680.000	*	*	*	*	74.000
Average					
Detector:					
10480.000	14.620	29.870	44.491	-9.509	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : WLAN MODULE
 Test Item : General Radiated Emission
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (5220MHz) (Ant: IFA)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector					
105.660	-6.673	39.437	32.764	-10.736	43.500
249.220	-6.014	42.164	36.150	-9.850	46.000
398.600	-2.268	37.665	35.397	-10.603	46.000
499.480	0.048	35.167	35.215	-10.785	46.000
625.580	1.770	30.031	31.801	-14.199	46.000
831.220	6.121	29.125	35.246	-10.754	46.000
Vertical					
Peak Detector					
125.060	-4.046	40.387	36.341	-7.159	43.500
249.220	-7.634	44.517	36.883	-9.117	46.000
375.320	-2.029	36.132	34.103	-11.897	46.000
499.480	-0.852	36.990	36.138	-9.862	46.000
697.360	1.311	36.211	37.522	-8.478	46.000
930.160	6.477	27.307	33.784	-12.216	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : WLAN MODULE
 Test Item : General Radiated Emission
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (5220MHz) (Ant: Dipole)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector					
198.780	-10.661	42.900	32.239	-11.261	43.500
266.680	-4.963	47.769	42.806	-3.194	46.000
398.600	-2.268	41.775	39.507	-6.493	46.000
497.540	-0.273	41.003	40.730	-5.270	46.000
596.480	4.017	37.765	41.782	-4.218	46.000
798.240	5.148	37.635	42.783	-3.217	46.000
Vertical					
Peak Detector					
127.000	-4.087	37.075	32.988	-10.512	43.500
297.720	-7.143	41.983	34.841	-11.159	46.000
497.540	-1.393	38.337	36.944	-9.056	46.000
697.360	1.311	39.641	40.952	-5.048	46.000
798.240	2.808	36.377	39.185	-6.815	46.000
897.180	2.332	35.606	37.938	-8.062	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

7. Band Edge

7.1. Test Equipment

RF Conducted Measurement

The following test equipments are used during the band edge tests:

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2012
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2012
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2012

Note:

1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with "X" are used to measure the final test results.

RF Radiated Measurement:

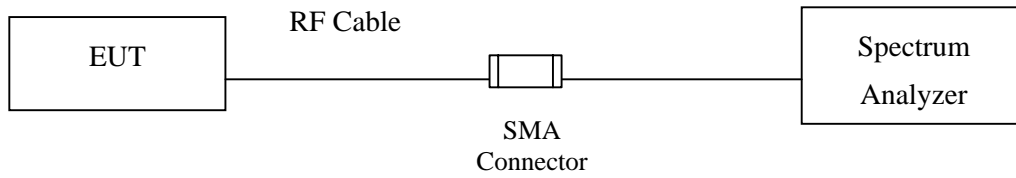
The following test equipments are used during the band edge tests:

Test Site	Equipment		Manufacturer	Model No./Serial No.	Last Cal.
☒Site # 3		Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2012
	X	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2012
		Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2012
		Pre-Amplifier	QTK	QTK-AMP-03 / 0003	May, 2012
	X	Pre-Amplifier	QTK	AP-180C / CHM_0906076	Sep., 2012
		Pre-Amplifier	MITEQ	AMF-4D-180400-45-6P/ 925975	Mar, 2012
	X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2012
		Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2012
	X	Coaxial Cable	QuieTek	QTK-CABLE/ CAB5	Feb., 2012
	X	Controller	QuieTek	QTK-CONTROLLER/ CTRL3	N/A
	X	Coaxial Switch	Anritsu	MP59B/6200265729	N/A

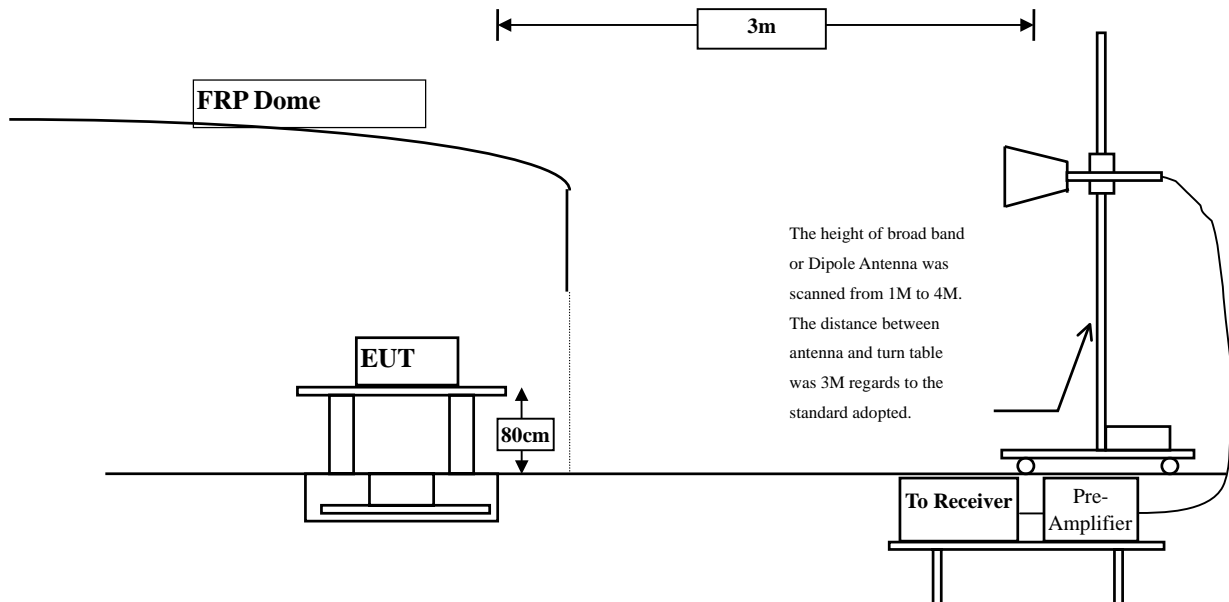
- Note:
1. All instruments are calibrated every one year.
 2. The test instruments marked by "X" are used to measure the final test results.

7.2. Test Setup

RF Conducted Measurement:



RF Radiated Measurement:



7.3. Limits

The provisions of Section 15.205 of this part apply to intentional radiators operating under this section.

Radiated emissions which fall in the restricted bands, as defined in Section 15.205, must also comply with the radiated emission limits specified in Section 15.209:

FCC Part 15 Subpart C Paragraph 15.209 Limits		
Frequency MHz	uV/m @3m	dBuV/m@3m
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

Remarks :

1. RF Voltage (dBuV) = 20 log RF Voltage (uV)
2. In the Above Table, the tighter limit applies at the band edges.
3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

7.4. Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level.

The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.4:2003 on radiated measurement.

The bandwidth below 1GHz setting on the field strength meter is 120 kHz, above 1GHz are 1 MHz.

The EUT was setup to ANSI C63.4, 2003; tested to DTS test procedure of FCC KDB-789033 for compliance to FCC 47CFR Subpart E requirements.

7.5. Uncertainty

± 3.8 dB below 1GHz

± 3.9 dB above 1GHz

7.6. Test Result of Band Edge

Product : WLAN MODULE
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (Ant: IFA)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
36 (Peak)	5148.400	3.346	54.143	57.489	74.00	54.00	Pass
36 (Peak)	5150.000	3.340	52.267	55.607	74.00	54.00	Pass
36 (Peak)	5183.000	3.224	97.525	100.748	--	--	Pass
36 (Average)	5150.000	3.340	32.485	35.825	74.00	54.00	Pass
36 (Average)	5184.800	3.218	86.189	89.406	--	--	Pass

Figure Channel 36:

Horizontal (Peak)

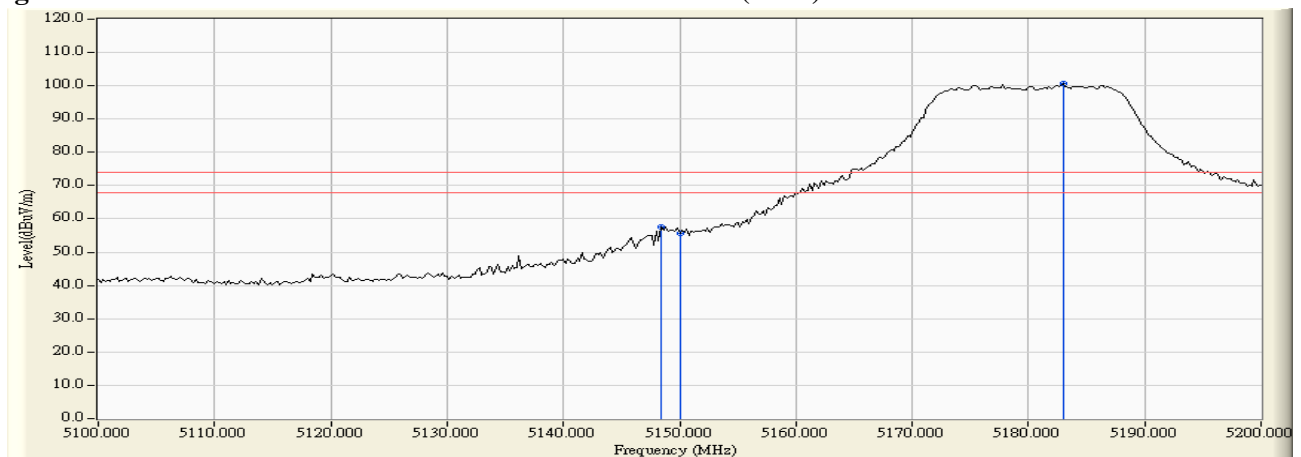
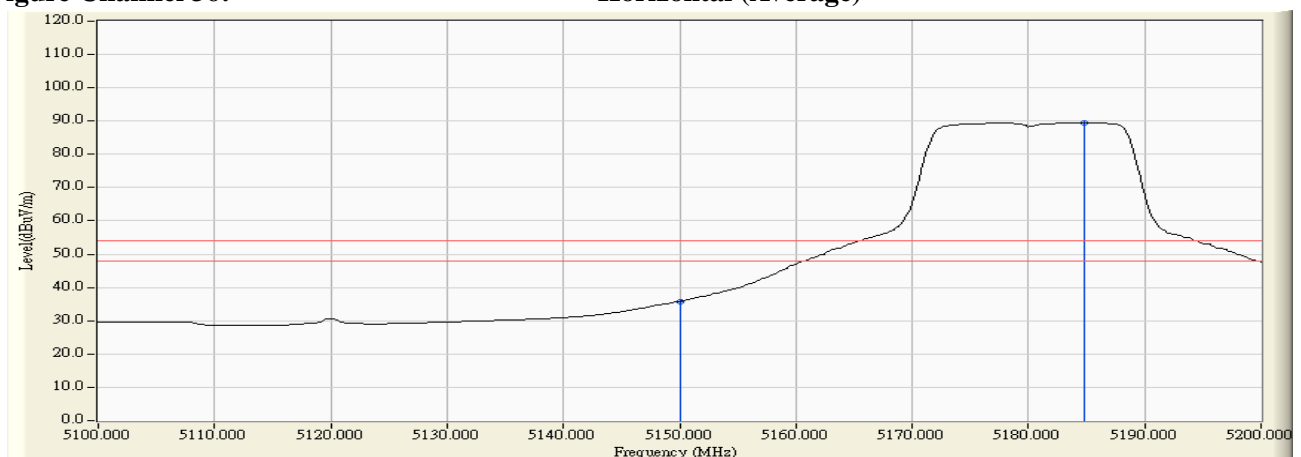


Figure Channel 36:

Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : WLAN MODULE
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (Ant: IFA)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
36 (Peak)	5149.000	5.257	59.526	64.783	74.00	54.00	Pass
36 (Peak)	5150.000	5.260	57.738	62.998	74.00	54.00	Pass
36 (Peak)	5182.800	5.349	103.121	108.470	--	--	Pass
36 (Average)	5150.000	5.260	37.603	42.863	74.00	54.00	Pass
36 (Average)	5177.600	5.336	91.739	97.074	--	--	Pass

Figure Channel 36: Vertical (Peak)

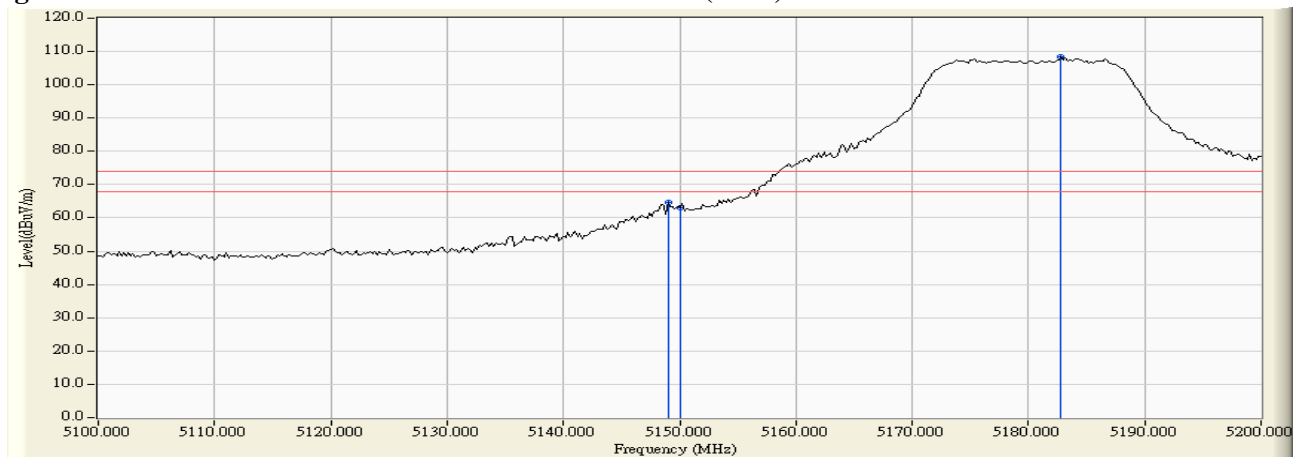
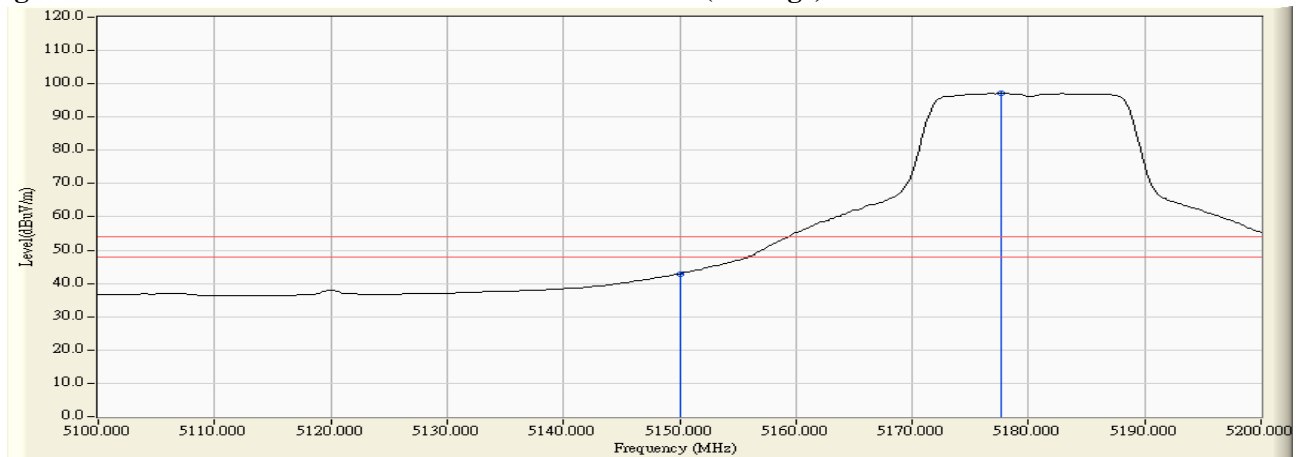


Figure Channel 36: Vertical (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : WLAN MODULE
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (Ant: Dipole)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
36 (Peak)	5149.000	3.344	52.143	55.487	74.00	54.00	Pass
36 (Peak)	5150.000	3.340	50.737	54.077	74.00	54.00	Pass
36 (Peak)	5182.600	3.224	96.021	99.246	--	--	Pass
36 (Average)	5150.000	3.340	32.933	36.273	74.00	54.00	Pass
36 (Average)	5185.200	3.216	85.385	88.601	--	--	Pass

Figure Channel 36: Horizontal (Peak)

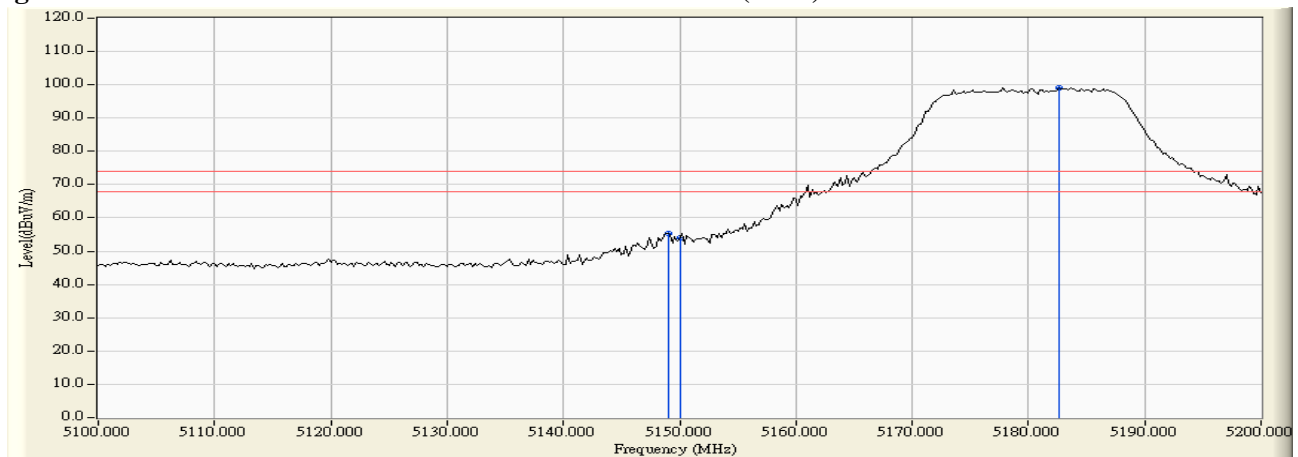
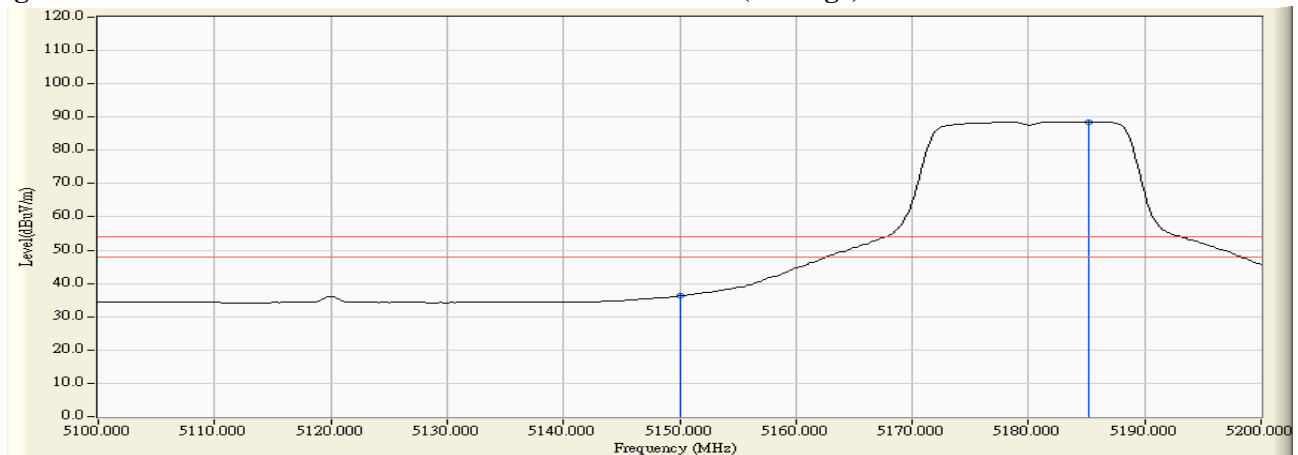


Figure Channel 36: Horizontal (Average)



Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : WLAN MODULE
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps) (Ant: Dipole)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
36 (Peak)	5149.000	5.257	59.747	65.004	74.00	54.00	Pass
36 (Peak)	5150.000	5.260	58.969	64.229	74.00	54.00	Pass
36 (Peak)	5184.000	5.352	106.172	111.524	--	--	Pass
36 (Average)	5119.800	5.177	40.686	45.863	74.00	54.00	Pass
36 (Average)	5150.000	5.260	39.797	45.057	74.00	54.00	Pass
36 (Average)	5185.800	5.358	95.635	100.993	--	--	Pass

Figure Channel 36: Vertical (Peak)

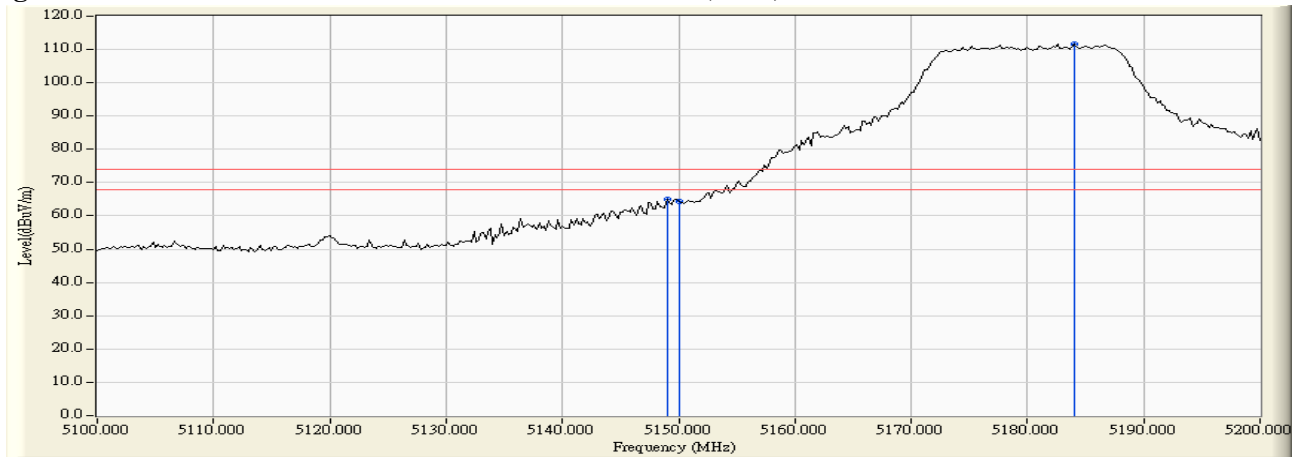
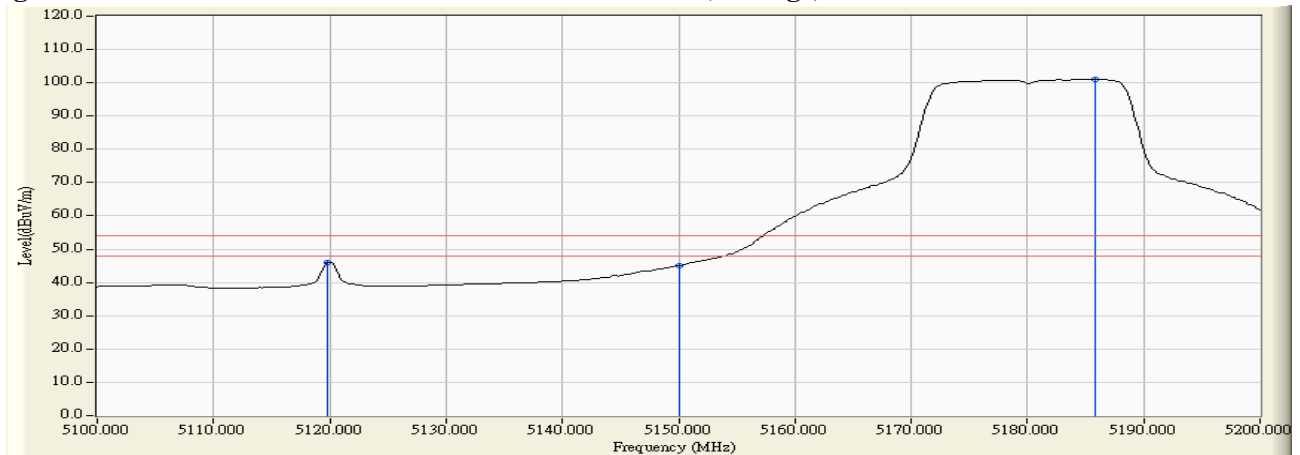


Figure Channel 36: Vertical (Average)



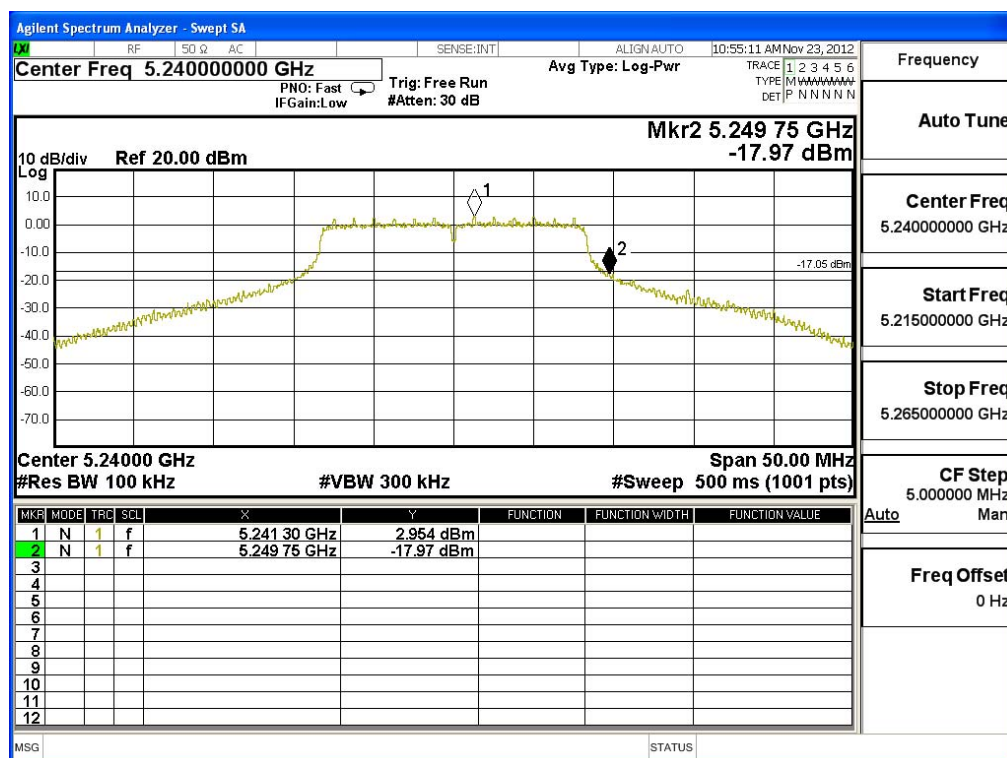
Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : WLAN MODULE
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (802.11a-6Mbps)-Channel 48

Test Frequency (MHz)	Measurement Level (20dB BW) (MHz)	Limit (MHz)	Result
5240	5249.75	<5250	PASS

NOTE: Accordance with 15.215 requirement.



8. Frequency Stability

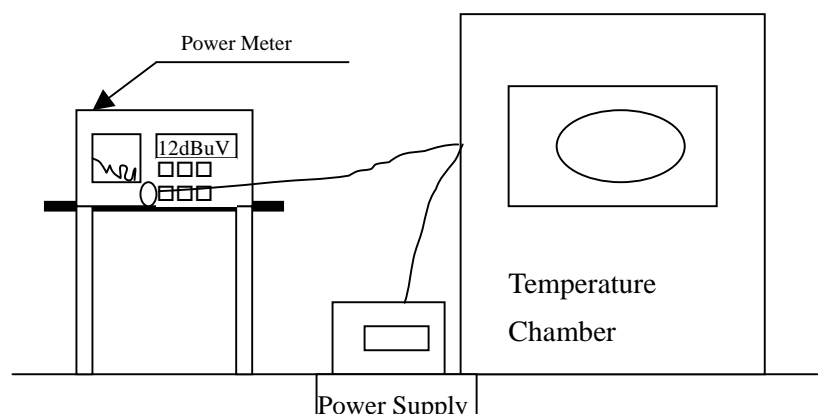
8.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2012
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2012
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2012

Note:

1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with “X” are used to measure the final test results.

8.2. Test Setup



8.3. Limits

Manufactures 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

8.4. Test Procedure

The EUT was setup to ANSI C63.4, 2003; tested to DTS test procedure of FCC KDB-789033 for compliance to FCC 47CFR Subpart E requirements.

8.5. Uncertainty

± 150 Hz

8.6. Test Result of Frequency Stability

Product : WLAN MODULE
 Test Item : Frequency Stability
 Test Site : Temperature Chamber
 Test Mode : Carrier Wave

Test Conditions		Channel	Frequency (MHz)	Frequency (MHz)	ΔF (MHz)
Tnom (20) °C	Vnom (5)V	36	5180.0000	5180.0063	-0.0063
		44	5220.0000	5220.0076	-0.0076
		48	5240.0000	5240.0093	-0.0093
Tmax (50) °C	Vmax (5.75)V	36	5180.0000	5180.0069	-0.0069
		44	5220.0000	5220.0096	-0.0096
		48	5240.0000	5240.0086	-0.0086
Tmax (50) °C	Vmin (4.25)V	36	5180.0000	5180.0069	-0.0069
		44	5220.0000	5220.0074	-0.0074
		48	5240.0000	5240.0088	-0.0088
Tmin (0) °C	Vmax (5.75)V	36	5180.0000	5180.0069	-0.0069
		44	5220.0000	5220.0086	-0.0086
		48	5240.0000	5240.0088	-0.0088
Tmin (0) °C	Vmin (4.25)V	36	5180.0000	5180.0069	-0.0069
		44	5220.0000	5220.0086	-0.0086
		48	5240.0000	5240.0088	-0.0088

9. EMI Reduction Method During Compliance Testing

No modification was made during testing.