

FCC Test Report

Product Name	Network Media Module
Model No	CY920-24C
FCC ID.	ZQO-CY92024C

Applicant	MICROCHIP TECHNOLOGY INC.
Address	2355 West Chandler Blvd.Chandler, Arizona, USA 85224-6199

Date of Receipt	Jun. 04, 2014
Issue Date	Jun. 26, 2014
Report No.	1460175R-RFUSP26V00
Report Version	V1.0



The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration of the equipment and evaluated measurement uncertainty herein.

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Test Report

Issue Date: Jun. 26, 2014

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Product Name	Network Media Module
Applicant	MICROCHIP TECHNOLOGY INC.
Address	2355 West Chandler Blvd.Chandler, Arizona, USA 85224-6199
Manufacturer	(1) Lite-On Technology (Changzhou) Co., Ltd. (2) Lite-On Network Communication (Dongguan) Limited
Model No.	CY920-24C
FCC ID.	ZQO-CY92024C
EUT Rated Voltage	DC 3.3V
EUT Test Voltage	AC 120V/60Hz
Trade Name	Network Media Module
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C: 2014 ANSI C63.10: 2009, KDB 558074
Test Result	Complied

Documented By : 
(Senior Adm. Specialist / Leven Huang)

Tested By : 
(Engineer / Jack Hsu)


Approved By : 
(Director / Vincent Lin)

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1. GENERAL INFORMATION

1.1. EUT Description

Product Name	Network Media Module
Trade Name	Network Media Module
Model No.	CY920-24C
FCC ID.	ZQO-CY92024C
Frequency Range	2412-2462MHz for 802.11b/g/n-20BW, 2422-2452MHz for 802.11n-40BW
Number of Channels	802.11b/g/n-20MHz: 11, n-40MHz: 7
Data Speed	802.11b: 1-11Mbps, 802.11g: 6-54Mbps, 802.11n: up to 150Mbps
Type of Modulation	802.11b:DSSS (DBPSK, DQPSK, CCK) 802.11g/n:OFDM (BPSK, QPSK, 16QAM, 64QAM)
Antenna Type	Dipole Antenna
Antenna Gain	Refer to the table "Antenna List"
Channel Control	Auto

Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	WALSIN	PI_RFDPA870920IMLB301_V01	Dipole Antenna	1.84dBi for 2.4 GHz
2	WALSIN	PI_RFDPA870930IMLB301_V01	Dipole Antenna	1.10dBi for 2.4 GHz
3	WALSIN	RFDPA870930IMAB301	Dipole Antenna	1.20dBi for 2.4 GHz
4	WALSIN	RFDPA870945IMAB301	Dipole Antenna	1.16dBi for 2.4 GHz
5	WALSIN	RFDPA870900SBAB801 + RFCBA100630SA6B301	Dipole Antenna	0.7dBi for 2.4 GHz
6	WALSIN	RFDPA870900SBAB801 + RFCBA100645SA6B301	Dipole Antenna	0.1dBi for 2.4 GHz

Note:

1. The antenna of EUT is conform to FCC 15.203.
2. Only the higher gain antenna was tested and recorded in this report.

802.11b/g/n-20MHz Center Frequency of Each Channel:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 01:	2412 MHz	Channel 02:	2417 MHz	Channel 03:	2422 MHz	Channel 04:	2427 MHz
Channel 05:	2432 MHz	Channel 06:	2437 MHz	Channel 07:	2442 MHz	Channel 08:	2447 MHz
Channel 09:	2452 MHz	Channel 10:	2457 MHz	Channel 11:	2462 MHz		

802.11n-40MHz Center Frequency of Each Channel:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 03:	2422 MHz	Channel 04:	2427 MHz	Channel 05:	2432 MHz	Channel 06:	2437 MHz
Channel 07:	2442 MHz	Channel 08:	2447 MHz	Channel 09:	2452 MHz		

Note:

1. The EUT is a Network Media Module with a built-in WLAN Transceiver and Bluetooth Transceiver, this report is for WLAN.
2. Module contains a diversity function, only worst case is shown in the report.
3. Antenna no.1 and no.2 has divided into with core / without core, only worst case is shown in the report.
4. Module's DDR / FLASH/antenna connector/64 pin connector includes 2nd Source, the test item conducted emission and 30MHz – 1GHz radiated emission are tested at two modules (see report attachment 3) , brand differences are as follows:

	main source	2nd source
Flash	Macronix	WINBOND
DDR	ESMT	ERTON
64pin connector	Xinya	Xisheng
u.fl	IPEX	ELECTRIC CONNECTOR

5. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
6. Lowest and highest data rates are tested in each mode. Only worst case is shown in the report. (802.11b is 1Mbps 、802.11g is 6Mbps 、802.11n(20M-BW) is 7.2Mbps and 、802.11n(40M-BW) is 15Mbps)
7. These tests are conducted on a sample for the purpose of demonstrating compliance of 802.11b/g/n transmitter with Part 15 Subpart C Paragraph 15.247 of spread spectrum devices.

Test Mode:	Mode 1: Transmit (802.11b 1Mbps)
	Mode 2: Transmit (802.11g 6Mbps)
	Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)
	Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)

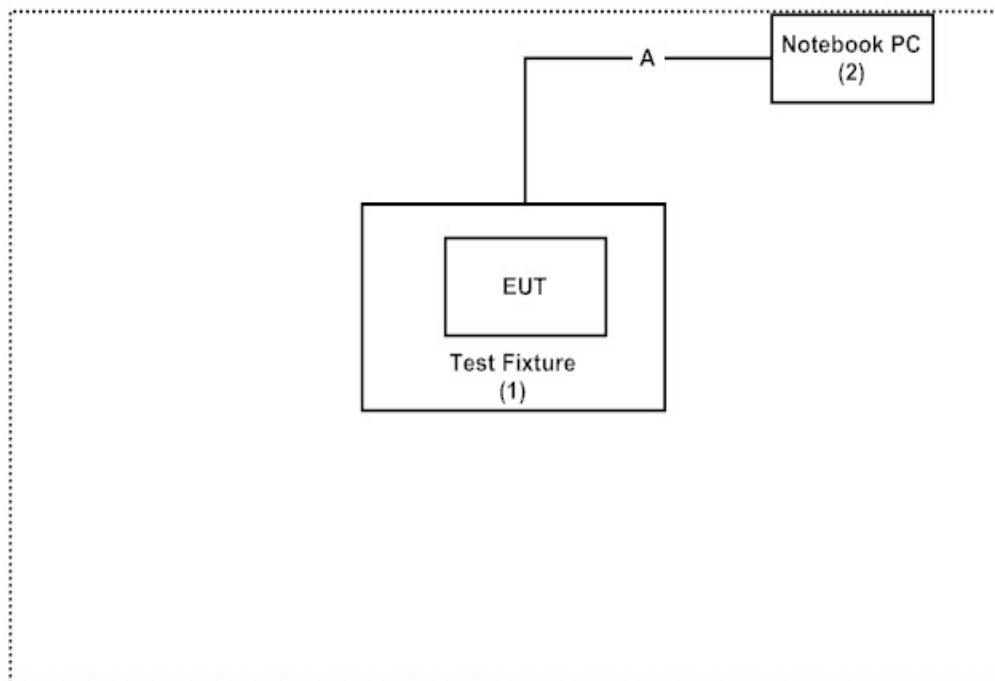
1.3. Tested System Details

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	Test Fixture	Liteon	N/A	N/A
2	Notebook PC	DELL	PPT	N/A
				Non-Shielded, 0.8m

Signal Cable Type	Signal cable Description
A	USB to RS-232 Cable
	Shielded, 1.5m

1.4. Configuration of Tested System



1.5. EUT Exercise Software

- (1) Setup the EUT as shown in Section 1.4
- (2) Execute “Hyper Terminal v5.1” program on the Notebook PC.
- (3) Configure the test mode, the test channel, and the data rate.
- (4) Press “OK” to start the continuous Transmit.
- (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://www.quietek.com/tw/ctg/cts/accreditations.htm>

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
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Registration Number: 92195

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Taiwan, R.O.C.
TEL: 886-2-8601-3788 / FAX : 886-2-8601-3789
E-Mail : service@quietek.com

FCC Accreditation Number: TW1014

2. Conducted Emission

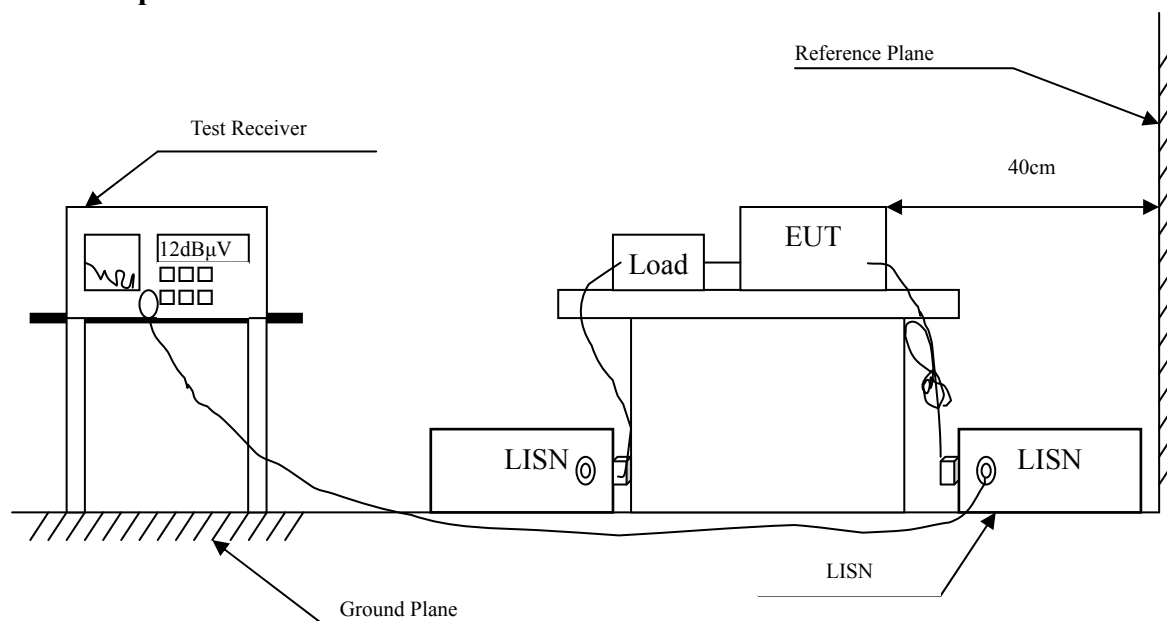
2.1. Test Equipment

	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.	Remark
X	Test Receiver	R & S	ESCS 30 / 825442/018	Sep., 2013	
X	Artificial Mains Network	R & S	ENV4200 / 848411/10	Feb., 2014	Peripherals
X	LISN	R & S	ESH3-Z5 / 825562/002	Feb., 2014	EUT
	DC LISN	Schwarzbeck	8226 / 176	Mar., 2014	EUT
X	Pulse Limiter	R & S	ESH3-Z2 / 357.8810.52	Feb., 2014	
	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 (dBμV) Limit		
Frequency MHz	Limits	
	QP	AVG
0.15 - 0.50	66-56	56-46
0.50-5.0	56	46
5.0 - 30	60	50

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 C63.10: 2009 on conducted measurement.

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

2.5. Uncertainty

± 2.26 dB

2.6. Test Result of Conducted Emission

Product : Network Media Module
 Test Item : Conducted Emission Test
 Power Line : Line 1
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2437MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV	Margin dB	Limit dBμV
Line 1					
Quasi-Peak					
0.158	9.747	40.700	50.447	-15.324	65.771
0.173	9.742	37.330	47.073	-18.270	65.343
0.205	9.739	32.380	42.119	-22.310	64.429
0.470	9.751	23.660	33.411	-23.446	56.857
2.771	9.850	21.910	31.760	-24.240	56.000
16.572	10.000	24.230	34.230	-25.770	60.000
Average					
0.158	9.747	30.880	40.627	-15.144	55.771
0.173	9.742	30.200	39.943	-15.400	55.343
0.205	9.739	23.850	33.589	-20.840	54.429
0.470	9.751	15.210	24.961	-21.896	46.857
2.771	9.850	14.910	24.760	-21.240	46.000
16.572	10.000	18.630	28.630	-21.370	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 : Network Media Module
 Test Item : Conducted Emission Test
 Power Line : Line 2
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2437MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level	dB	dBμV
	dB	dBμV	dBμV		
Line 2					
Quasi-Peak					
0.162	9.747	41.100	50.847	-14.810	65.657
0.201	9.749	32.940	42.689	-21.854	64.543
0.255	9.751	26.270	36.021	-26.979	63.000
0.451	9.750	22.980	32.730	-24.670	57.400
2.787	9.850	21.420	31.270	-24.730	56.000
16.736	10.030	23.780	33.810	-26.190	60.000
Average					
0.162	9.747	31.590	41.337	-14.320	55.657
0.201	9.749	22.590	32.339	-22.204	54.543
0.255	9.751	17.320	27.071	-25.929	53.000
0.451	9.750	17.350	27.100	-20.300	47.400
2.787	9.850	13.090	22.940	-23.060	46.000
16.736	10.030	18.390	28.420	-21.580	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. Peak Power Output

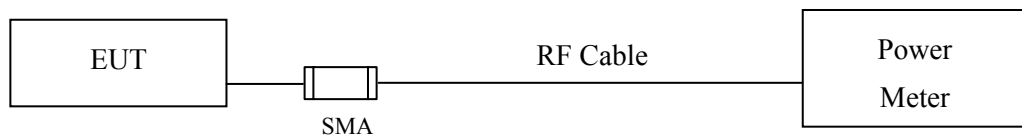
3.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Power Meter	Anritsu	ML2495A/6K00003357	May, 2014
X	Power Sensor	Anritsu	MA2411B/0738448	Jun., 2014

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



3.3. Limits

The maximum peak power shall be less 1 Watt.

3.4. Test Procedure

The EUT was tested according to DTS test procedure of KDB 558074 for compliance to FCC 47CFR 15.247 requirements. The maximum peak conducted output power using KDB 558074 section 9.1.3 PKPM1 Peak power meter method.

3.5. Uncertainty

± 1.27 dB

3.6. Test Result of Peak Power Output

Product : Network Media Module
 Test Item : Peak Power Output Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps)

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)				Peak Power	Required Limit	Result
		1	2	5.5	11	1		
		Measurement Level (dBm)						
01	2412	18.52	--	--	--	20.19	<30dBm	Pass
06	2437	18.81	17.78	17.68	17.59	20.39	<30dBm	Pass
11	2462	17.98	--	--	--	19.68	<30dBm	Pass

Note: Peak Power Output Value = Reading value on power meter + cable loss

Product : Network Media Module
 Test Item : Peak Power Output Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps)

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		6	9	12	18	24	36	48	54	6		
		Measurement Level (dBm)										
01	2412	14.45	--	--	--	--	--	--	--	21.98	<30dBm	Pass
06	2437	14.31	14.26	14.21	14.16	14.11	14.06	14.01	13.96	21.74	<30dBm	Pass
11	2462	13.58	--	--	--	--	--	--	--	21.68	<30dBm	Pass

Note: Peak Power Output Value =Reading value on power meter + cable loss

Product : Network Media Module
 Test Item : Peak Power Output Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		7.2	14.4	21.7	28.9	43.3	57.8	65	72.2	7.2		
		Measurement Level (dBm)										
01	2412	14.24	--	--	--	--	--	--	--	21.84	<30dBm	Pass
06	2437	14.16	14.09	14.02	13.95	13.88	13.81	13.74	13.67	21.45	<30dBm	Pass
11	2462	13.16	--	--	--	--	--	--	--	21.71	<30dBm	Pass

Note: Peak Power Output Value =Reading value on power meter + cable loss

Product : Network Media Module
 Test Item : Peak Power Output Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		15	30	45	60	90	120	135	150			
		Measurement Level (dBm)										
03	2422	12.46	--	--	--	--	--	--	--	20.74	<30dBm	Pass
06	2437	13.19	13.01	12.83	12.65	12.47	12.29	12.11	11.93	21.12	<30dBm	Pass
09	2452	8.98	--	--	--	--	--	--	--	19.14	<30dBm	Pass

Note: Peak Power Output Value = Reading value on power meter + cable loss

4. Radiated Emission

4.1. Test Equipment

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

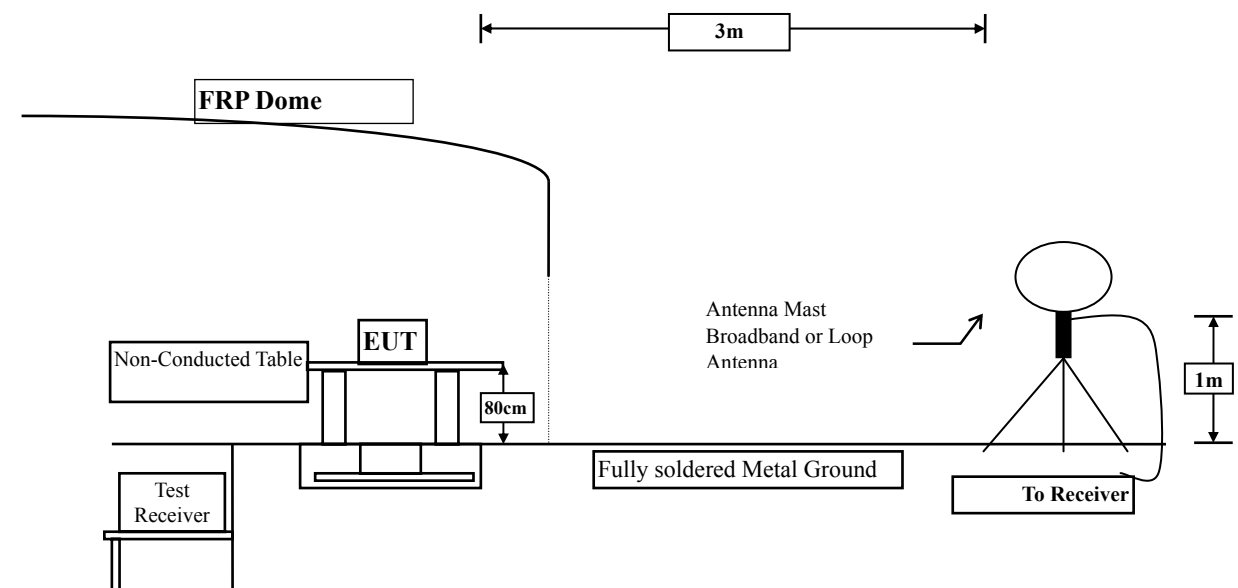
Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
Site # 3	X	Loop Antenna	Teseq	HLA6120 / 26739	Jul., 2013
	X	Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2013
	X	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2013
	X	Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2013
	X	Pre-Amplifier	Agilent	8447D/2944A09549	Sep., 2013
	X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2014
	X	Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2013
	X	Coaxial Cable	QuietTek	QTK-CABLE/ CAB5	Feb., 2014
	X	Controller	QuietTek	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.

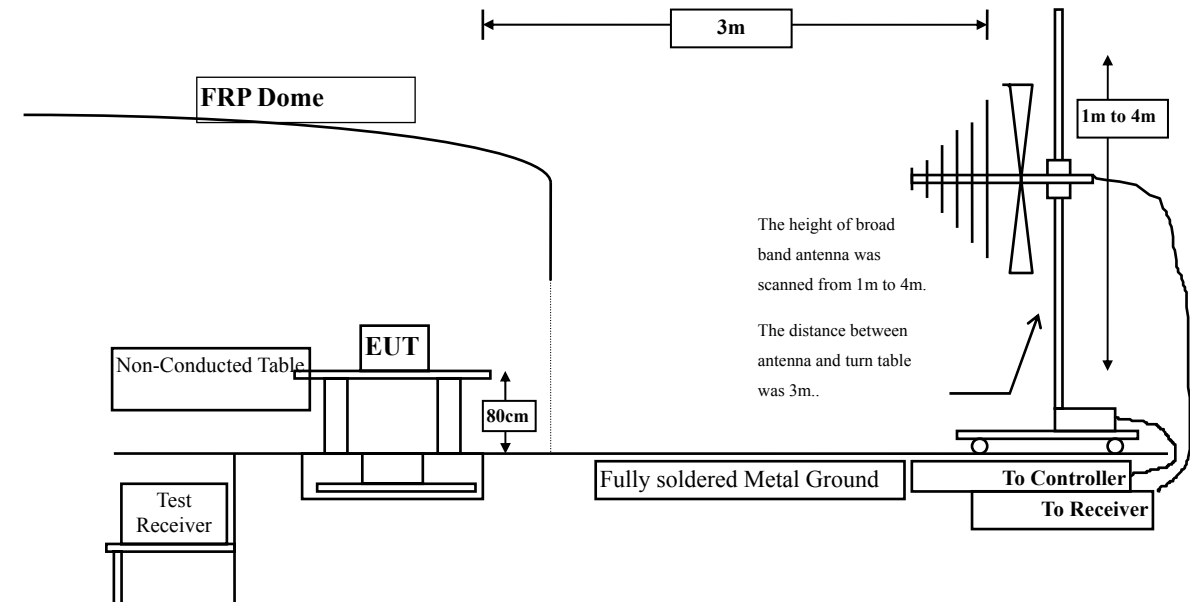
2. The test instruments marked with "X" are used to measure the final test results.

4.2. Test Setup

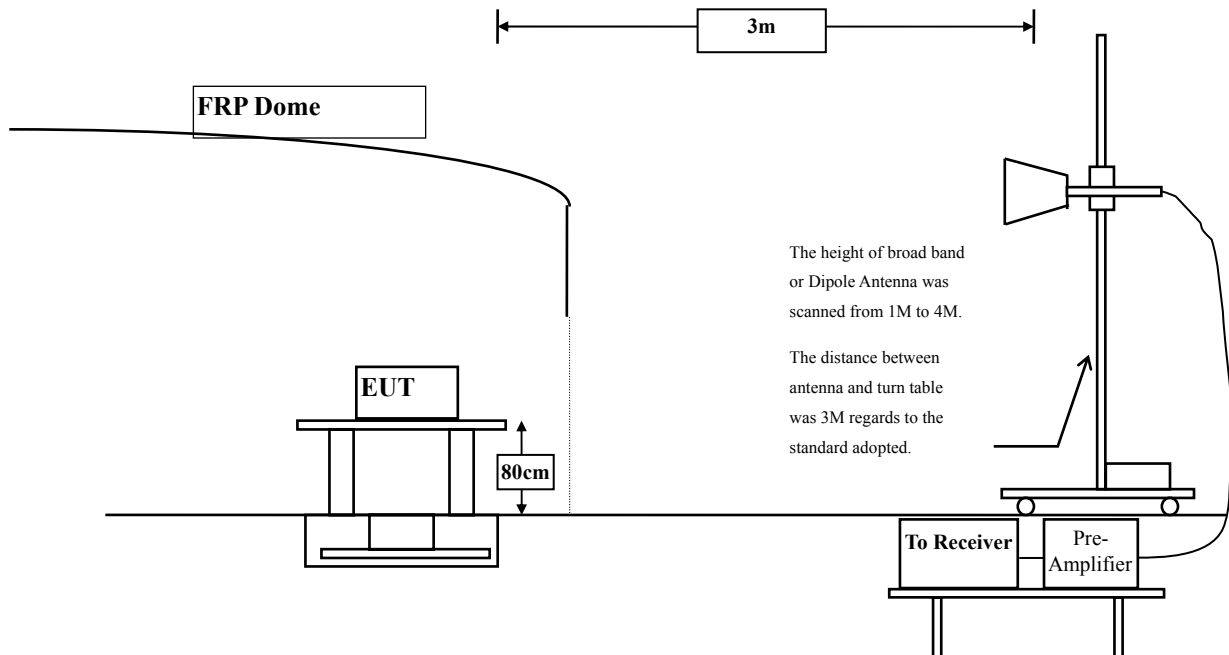
Radiated Emission 9kHz~30MHz



Radiated Emission Below 1GHz



Radiated Emission Above 1GHz



4.3. 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	Field strength (microvolts/meter)	Measurement distance (meter)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

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

4.4. Test Procedure

The EUT was setup according to ANSI C63.10: 2009 and tested according to DTS test procedure of KDB558074 for compliance to FCC 47CFR 15.247 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 between 1 meter and 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 C63.10: 2009 on radiated measurement.

The resolution bandwidth below 30MHz setting on the field strength meter is 9kHz and 30MHz~1GHz is 120kHz and above 1GHz is 1MHz.

Radiated emission measurements below 30MHz are made using Loop Antenna and 30MHz~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 frequency range from 9kHz to 10th harmonics is checked.

4.5. Uncertainty

± 3.9 dB above 1GHz

± 3.8 dB below 1GHz

4.6. Test Result of Radiated Emission

Product : Network Media Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2412MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector:					
4824.000	3.261	39.580	42.841	-31.159	74.000
7236.000	10.650	36.710	47.360	-26.640	74.000
9648.000	13.337	36.080	49.416	-24.584	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4824.000	6.421	43.300	49.721	-24.279	74.000
7236.000	11.495	36.380	47.875	-26.125	74.000
9648.000	13.807	36.170	49.976	-24.024	74.000
Average Detector:					
--					

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 : Network Media Module
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2437 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dB μ V	dB μ V/m	dB	dB μ V/m
Horizontal					
Peak Detector:					
4874.000	3.038	41.370	44.407	-29.593	74.000
7311.000	11.795	35.950	47.744	-26.256	74.000
9748.000	12.635	37.290	49.925	-24.075	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4874.000	5.812	46.610	52.421	-21.579	74.000
7311.000	12.630	36.040	48.669	-25.331	74.000
9748.000	13.126	36.970	50.096	-23.904	74.000
Average Detector:					
--					

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 : Network Media Module
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2462 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBμV	dBμV/m	dB	dBμV/m

Horizontal

Peak Detector:

4924.000	2.858	40.340	43.197	-30.803	74.000
7386.000	12.127	36.130	48.258	-25.742	74.000
9848.000	12.852	36.500	49.353	-24.647	74.000

Average Detector:

--

Vertical

Peak Detector:

4924.000	5.521	45.300	50.820	-23.180	74.000
7386.000	13.254	36.280	49.534	-24.466	74.000
9848.000	13.367	36.010	49.377	-24.623	74.000

Average Detector:

--

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 : Network Media Module
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dB μ V	dB μ V/m	dB	dB μ V/m

Horizontal

Peak Detector:

4824.000	3.261	38.360	41.621	-32.379	74.000
7236.000	10.650	38.800	49.450	-24.550	74.000
9648.000	13.337	36.090	49.426	-24.574	74.000

Average Detector:

--

Vertical

Peak Detector:

4824.000	6.421	41.690	48.111	-25.889	74.000
7236.000	11.495	36.850	48.345	-25.655	74.000
9648.000	13.807	36.630	50.436	-23.564	74.000

Average Detector:

--

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 : Network Media Module
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2437 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBμV	dBμV/m	dB	dBμV/m

Horizontal

Peak Detector:

4874.000	3.038	37.260	40.297	-33.703	74.000
7311.000	11.795	35.310	47.104	-26.896	74.000
9748.000	12.635	36.910	49.545	-24.455	74.000

Average Detector:

--

Peak Detector:

4874.000	5.812	41.230	47.041	-26.959	74.000
7311.000	12.630	35.860	48.489	-25.511	74.000
9748.000	13.126	36.400	49.526	-24.474	74.000

Average Detector:

--

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 : Network Media Module
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
4924.000	2.858	37.750	40.607	-33.393	74.000
7386.000	12.127	34.720	46.848	-27.152	74.000
9848.000	12.852	36.450	49.303	-24.697	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4924.000	5.521	41.850	47.370	-26.630	74.000
7386.000	13.254	35.290	48.544	-25.456	74.000
9848.000	13.367	36.370	49.737	-24.263	74.000

Average Detector:

--

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 : Network Media Module
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)(2412MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dB μ V	dB μ V/m	dB	dB μ V/m

Horizontal

Peak Detector:

4824.000	3.261	38.190	41.451	-32.549	74.000
7236.000	10.650	36.480	47.130	-26.870	74.000
9648.000	13.337	35.700	49.036	-24.964	74.000

Average Detector:

--

Vertical

Peak Detector:

4824.000	6.421	39.800	46.221	-27.779	74.000
7236.000	11.495	36.290	47.785	-26.215	74.000
9648.000	13.807	36.290	50.096	-23.904	74.000

Average Detector:

--

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 : Network Media Module
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2437 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBμV	dBμV/m	dB	dBμV/m

Horizontal

Peak Detector:

4874.000	3.038	37.890	40.927	-33.073	74.000
7311.000	11.795	36.360	48.154	-25.846	74.000
9748.000	12.635	37.120	49.755	-24.245	74.000

Average Detector:

--

Vertical

Peak Detector:

4874.000	5.812	41.800	47.611	-26.389	74.000
7311.000	12.630	35.840	48.469	-25.531	74.000
9748.000	13.126	37.060	50.186	-23.814	74.000

Average Detector:

--

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 : Network Media Module
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2462 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector:					
4924.000	2.858	37.540	40.397	-33.603	74.000
7386.000	12.127	35.220	47.348	-26.652	74.000
9848.000	12.852	36.340	49.193	-24.807	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4924.000	5.521	41.500	47.020	-26.980	74.000
7386.000	13.254	35.090	48.344	-25.656	74.000
9848.000	13.367	36.960	50.327	-23.673	74.000
Average Detector:					
--					

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 : Network Media Module
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)(2422MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dB μ V	dB μ V/m	dB	dB μ V/m

Horizontal

Peak Detector:

4844.000	3.171	37.690	40.861	-33.139	74.000
7266.000	11.162	35.990	47.152	-26.848	74.000
9688.000	12.964	36.920	49.885	-24.115	74.000

Average Detector:

--

Vertical

Peak Detector:

4844.000	6.178	37.850	44.028	-29.972	74.000
7266.000	11.982	36.380	48.362	-25.638	74.000
9688.000	13.507	36.890	50.398	-23.602	74.000

Average Detector:

--

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 : Network Media Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2437 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dB μ V	dB μ V/m	dB	dB μ V/m
Horizontal					
Peak Detector:					
4874.000	3.038	37.760	40.797	-33.203	74.000
7311.000	11.795	35.640	47.434	-26.566	74.000
9748.000	12.635	37.510	50.145	-23.855	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4874.000	5.812	37.380	43.191	-30.809	74.000
7311.000	12.630	35.370	47.999	-26.001	74.000
9748.000	13.126	37.380	50.506	-23.494	74.000
Average Detector:					
--					

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 : Network Media Module
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)(2452 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBμV	dBμV/m	dB	dBμV/m

Horizontal

Peak Detector:

4904.000	2.914	37.970	40.885	-33.115	74.000
7356.000	11.995	35.300	47.294	-26.706	74.000
9808.000	12.475	37.060	49.535	-24.465	74.000

Average Detector:

--

Vertical

Peak Detector:

4904.000	5.530	38.100	43.631	-30.369	74.000
7356.000	13.005	35.610	48.614	-25.386	74.000
9808.000	12.901	37.020	49.921	-24.079	74.000

Average Detector:

--

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 : Network Media Module
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps)(2437 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
113.420	-7.449	40.814	33.365	-10.135	43.500
198.780	-9.958	46.381	36.423	-7.077	43.500
301.600	-4.465	39.806	35.341	-10.659	46.000
480.080	1.870	36.724	38.594	-7.406	46.000
689.600	3.642	35.602	39.244	-6.756	46.000
932.100	7.270	30.481	37.751	-8.249	46.000
Vertical					
113.420	-3.709	40.814	37.105	-6.395	43.500
165.800	-4.665	43.874	39.209	-4.291	43.500
301.600	-3.985	40.333	36.348	-9.652	46.000
540.220	2.169	34.846	37.015	-8.985	46.000
829.280	2.376	32.963	35.339	-10.661	46.000
961.200	3.310	33.239	36.549	-17.451	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.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product : Network Media Module
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps)(2437 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dB μ V	dB μ V/m	dB	dB μ V/m
Horizontal					
165.800	-9.915	43.874	33.959	-9.541	43.500
293.840	-4.940	40.907	35.967	-10.033	46.000
480.080	1.870	36.724	38.594	-7.406	46.000
648.860	1.744	34.614	36.358	-9.642	46.000
864.200	6.329	32.423	38.752	-7.248	46.000
961.200	6.810	33.239	40.049	-13.951	54.000
Vertical					
113.420	-3.709	40.814	37.105	-6.395	43.500
198.780	-5.708	46.381	40.673	-2.827	43.500
383.080	0.195	31.311	31.506	-14.494	46.000
602.300	1.704	35.880	37.584	-8.416	46.000
800.180	2.637	32.657	35.294	-10.706	46.000
961.200	3.310	33.239	36.549	-17.451	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.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product : Network Media Module
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)(2437 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
165.800	-9.915	43.874	33.959	-9.541	43.500
288.020	-5.557	42.468	36.911	-9.089	46.000
398.600	0.879	33.792	34.671	-11.329	46.000
480.080	1.870	38.047	39.917	-6.083	46.000
658.560	1.892	37.005	38.897	-7.103	46.000
906.880	6.149	30.902	37.051	-8.949	46.000
Vertical					
107.600	-4.027	38.317	34.290	-9.210	43.500
179.380	-0.824	39.747	38.923	-4.577	43.500
383.080	0.195	31.311	31.506	-14.494	46.000
540.220	2.169	34.846	37.015	-8.985	46.000
687.660	2.292	36.121	38.413	-7.587	46.000
870.020	-0.398	40.422	40.024	-5.976	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.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product : Network Media Module
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)(2437 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
113.420	-7.449	40.814	33.365	-10.135	43.500
288.020	-5.557	42.468	36.911	-9.089	46.000
462.620	3.589	34.646	38.235	-7.765	46.000
610.060	3.657	35.054	38.711	-7.289	46.000
827.340	7.361	32.943	40.304	-5.696	46.000
961.200	6.810	33.239	40.049	-13.951	54.000
Vertical					
113.420	-3.709	40.814	37.105	-6.395	43.500
231.760	-6.457	42.263	35.806	-10.194	46.000
375.320	0.388	30.079	30.467	-15.533	46.000
540.220	2.169	34.846	37.015	-8.985	46.000
749.740	2.023	34.176	36.199	-9.801	46.000
961.200	3.310	33.239	36.549	-17.451	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.
8. No emission found between lowest internal used/generated frequency to 30MHz.

5. RF antenna conducted test

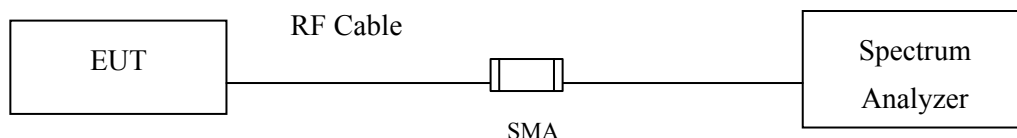
5.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun., 2014
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun., 2014
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2014

- 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

RF antenna Conducted Measurement:



5.3. Limits

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

5.4. Test Procedure

The EUT was tested according to DTS test procedure of KDB558074 for compliance to FCC 47CFR 15.247 requirements.

Set RBW = 100 kHz, Set VBW > RBW, scan up through 10th harmonic.

5.5. Uncertainty

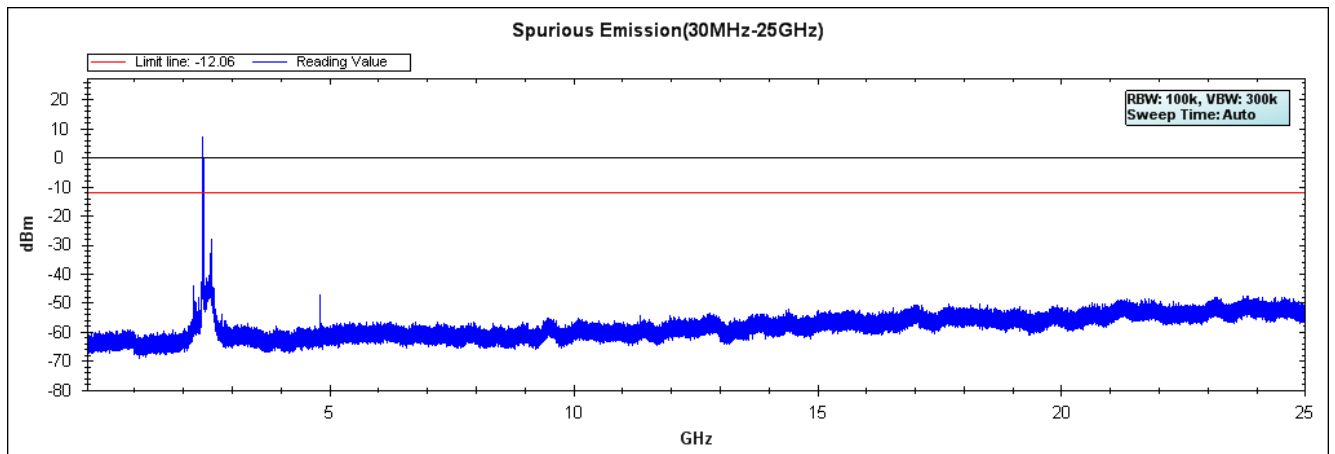
The measurement uncertainty

Conducted is defined as $\pm 1.27\text{dB}$

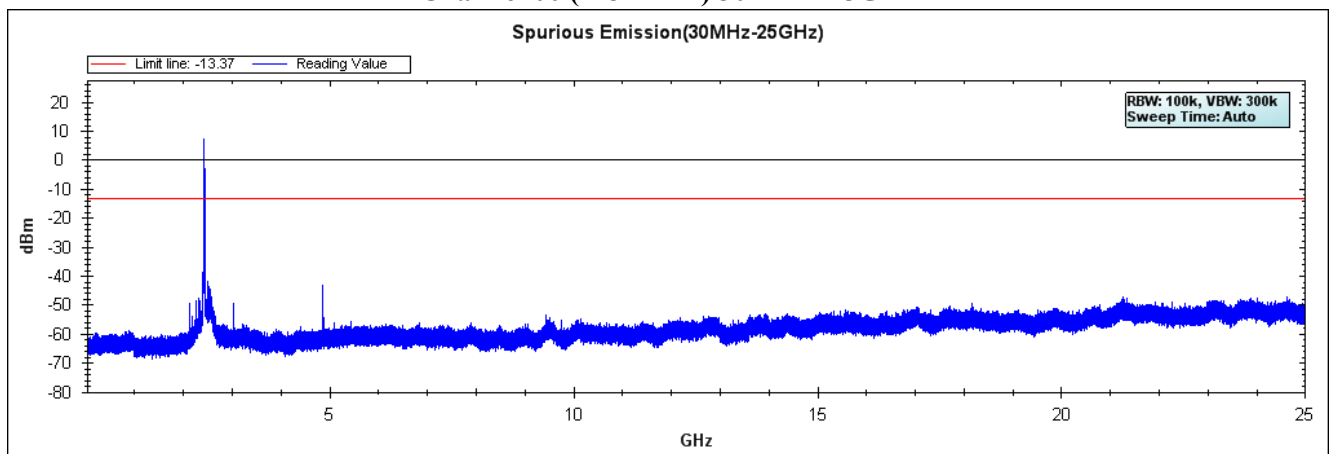
5.6. Test Result of RF antenna conducted test

Product : Network Media Module
 Test Item : RF antenna conducted test
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps)

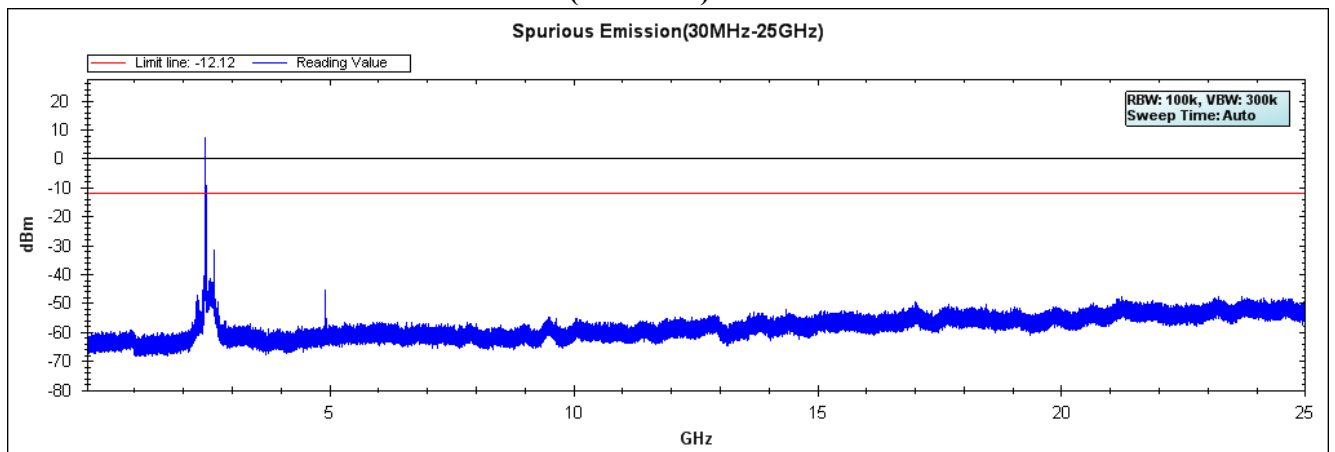
Channel 01 (2412MHz) 30MHz-25GHz



Channel 06 (2437MHz) 30MHz -25GHz



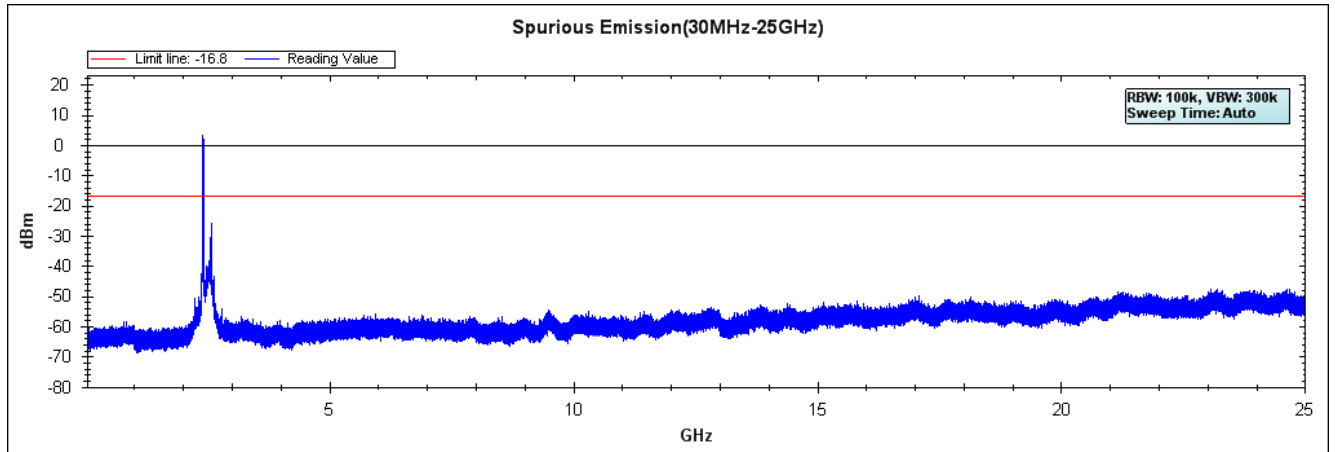
Channel 11 (2462MHz) 30MHz -25GHz



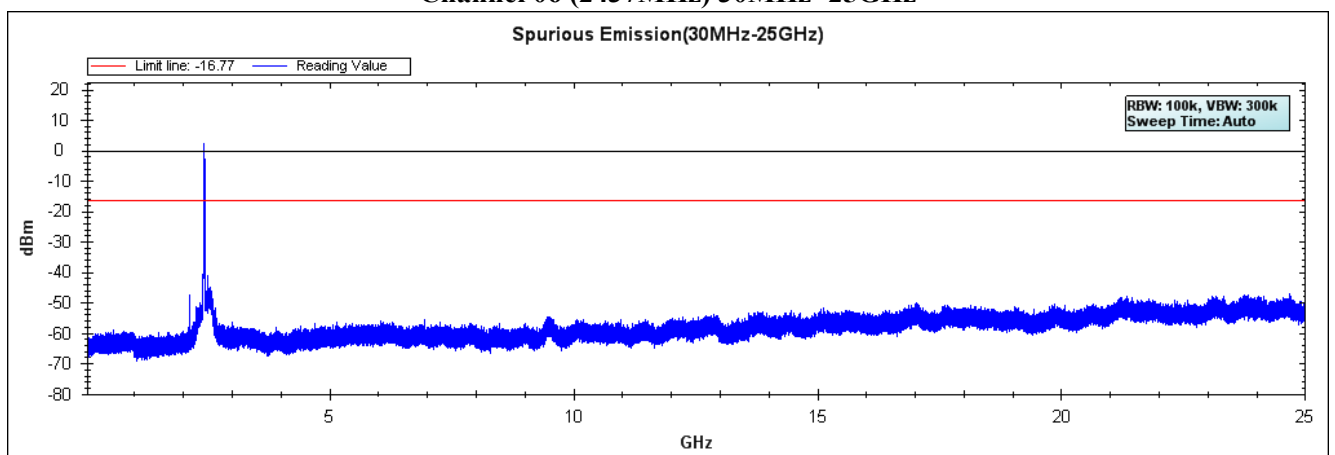
Note: The above test pattern is synthesized by multiple of the frequency range.

Product : Network Media Module
 Test Item : RF Antenna Conducted Spurious
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps)

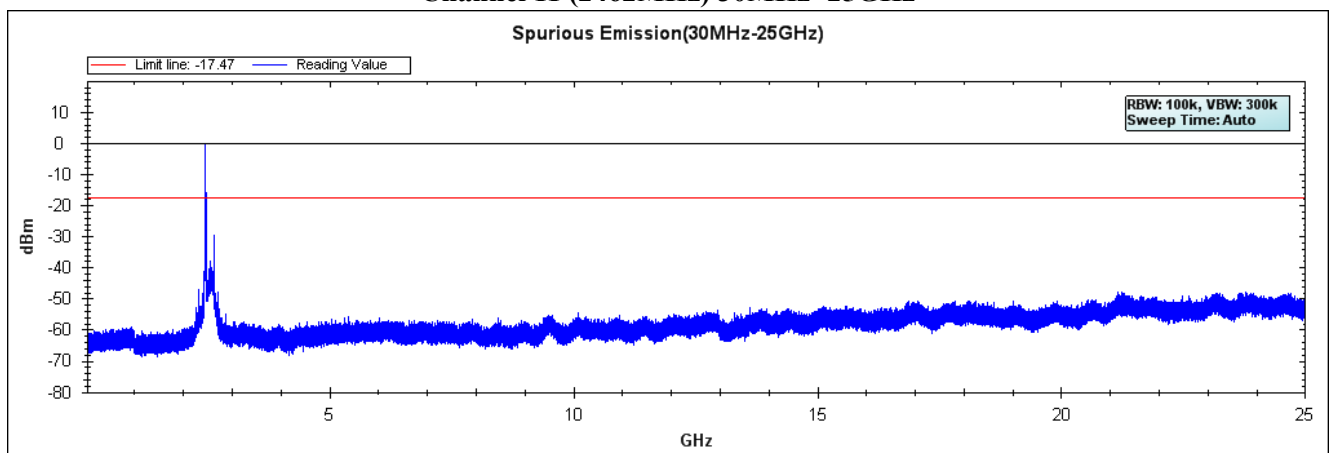
Channel 01 (2412MHz) 30MHz-25GHz



Channel 06 (2437MHz) 30MHz -25GHz



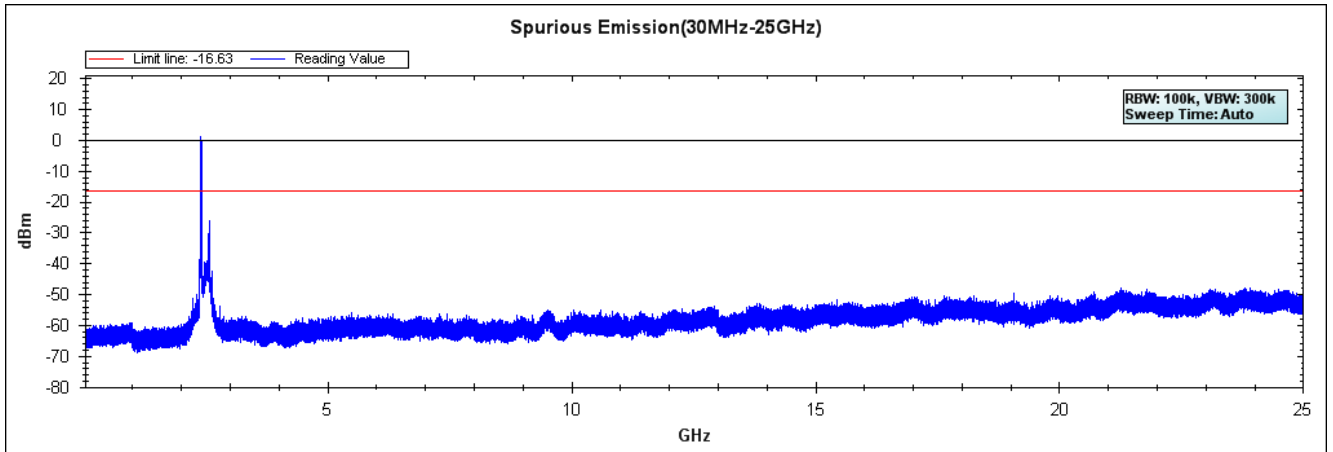
Channel 11 (2462MHz) 30MHz -25GHz



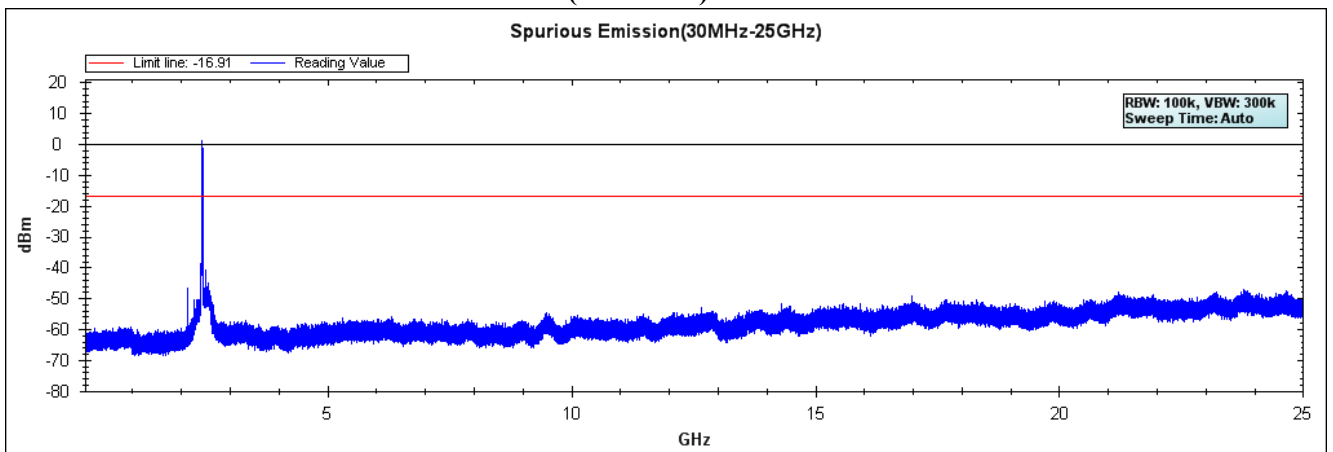
Note: The above test pattern is synthesized by multiple of the frequency range.

Product : Network Media Module
 Test Item : RF Antenna Conducted Spurious
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)

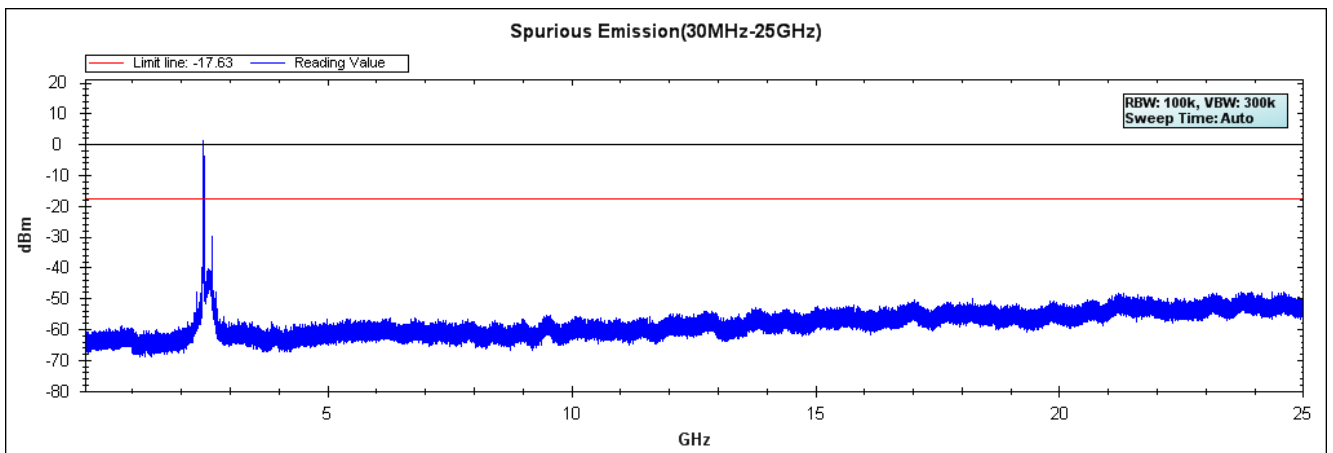
Channel 01 (2412MHz) 30MHz-25GHz



Channel 06 (2437MHz) 30MHz -25GHz



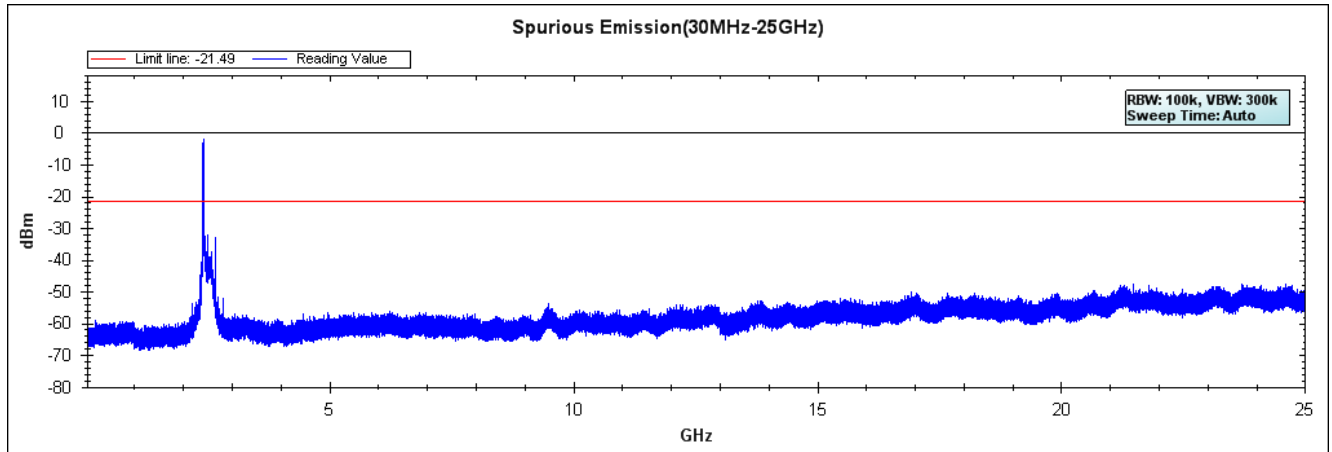
Channel 11 (2462MHz) 30MHz -25GHz



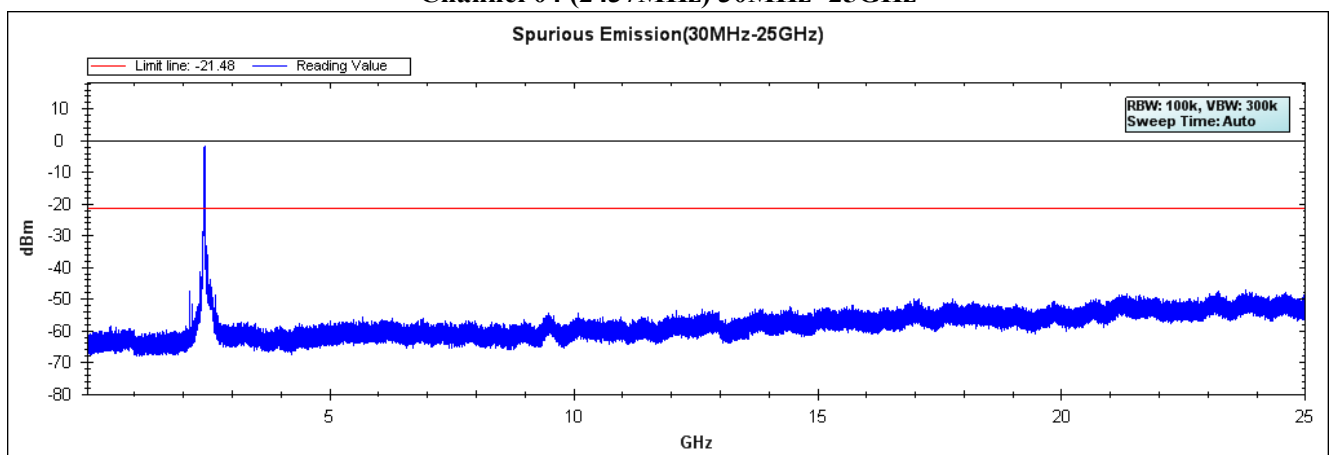
Note: The above test pattern is synthesized by multiple of the frequency range.

Product : Network Media Module
 Test Item : RF Antenna Conducted Spurious
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)

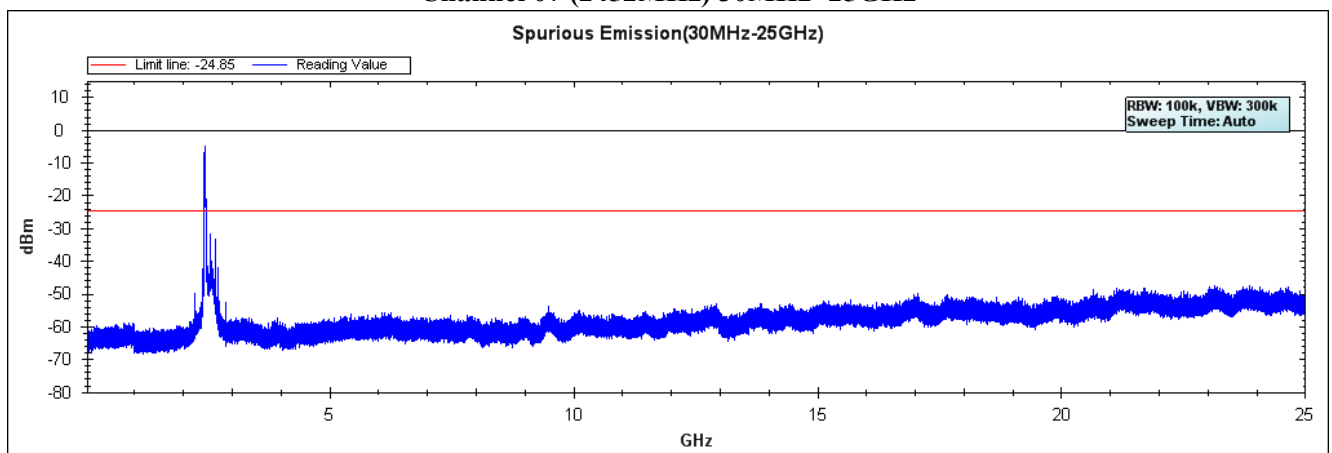
Channel 01 (2422MHz) 30MHz-25GHz



Channel 04 (2437MHz) 30MHz -25GHz



Channel 07 (2452MHz) 30MHz -25GHz



Note: The above test pattern is synthesized by multiple of the frequency range.

6. Band Edge

6.1. Test Equipment

RF Radiated Measurement:

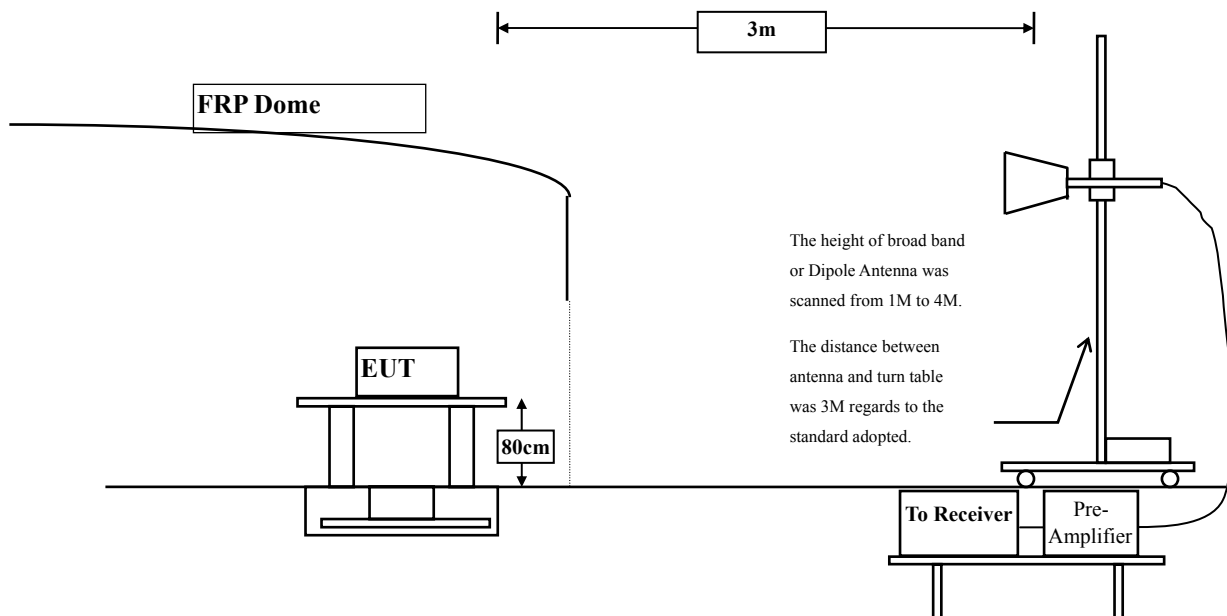
The following test equipments are used during the band edge tests:

Test Site	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒ Site # 3	Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2013
	X Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2013
	Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2013
	X Pre-Amplifier	Agilent	8447D/2944A09549	Sep., 2013
	X Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2014
	Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2013
	X Coaxial Cable	QuieTek	QTK-CABLE/ CAB5	Feb., 2014
	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.

6.2. Test Setup

RF Radiated Measurement:



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.

6.4. Test Procedure

The EUT was setup according to ANSI C63.10: 2009 and tested according to DTS test procedure of KDB558074 for compliance to FCC 47CFR 15.247 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 C63.10: 2009 on radiated measurement.

6.5. Uncertainty

± 3.9 dB above 1GHz

± 3.8 dB below 1GHz

6.6. Test Result of Band Edge

Product : Network Media Module
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
01 (Peak)	2388.400	31.503	25.795	57.298	74.00	54.00	Pass
01 (Peak)	2390.000	31.509	24.129	55.638	74.00	54.00	Pass
01 (Peak)	2400.000	31.561	33.986	65.547	--	--	--
01 (Peak)	2413.000	31.646	65.669	97.315	--	--	--
01 (Average)	2386.200	31.494	13.813	45.307	74.00	54.00	Pass
01 (Average)	2390.000	31.509	12.627	44.136	74.00	54.00	Pass
01 (Average)	2400.000	31.561	25.751	57.312	--	--	--
01 (Average)	2412.800	31.645	61.711	93.355	--	--	--

Figure Channel 01: Horizontal (Peak)

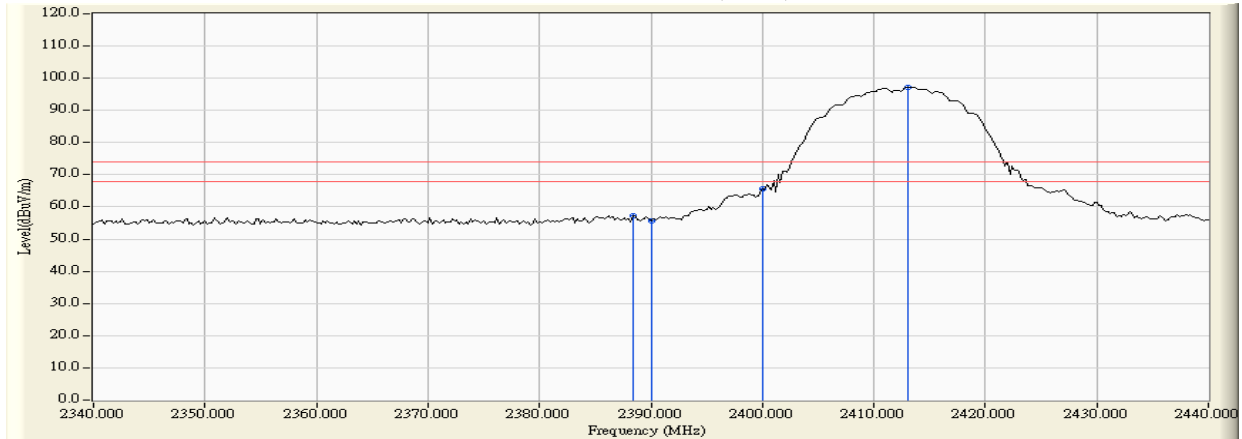
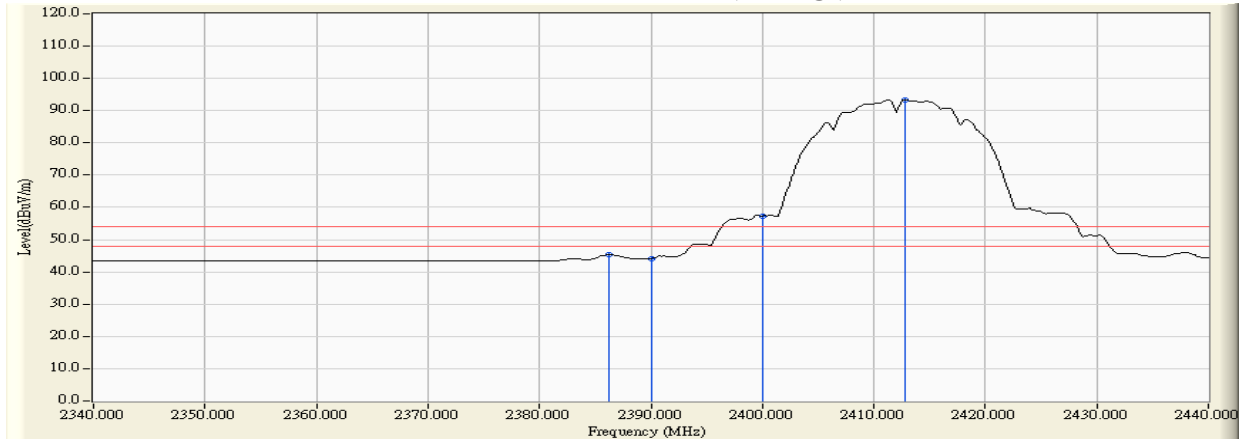


Figure Channel 01: Horizontal (Average)



- 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 : Network Media Module
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
01 (Peak)	2386.000	30.934	30.132	61.066	74.00	54.00	Pass
01 (Peak)	2390.000	30.915	28.089	59.004	74.00	54.00	Pass
01 (Peak)	2400.000	30.912	43.160	74.072	--	--	--
01 (Peak)	2413.000	30.956	76.461	107.417	--	--	--
01 (Average)	2386.200	30.933	20.711	51.644	74.00	54.00	Pass
01 (Average)	2390.000	30.915	17.011	47.926	74.00	54.00	Pass
01 (Average)	2400.000	30.912	36.015	66.927	--	--	--
01 (Average)	2412.800	30.955	72.355	103.310	--	--	--

Figure Channel 01: Vertical (Peak)

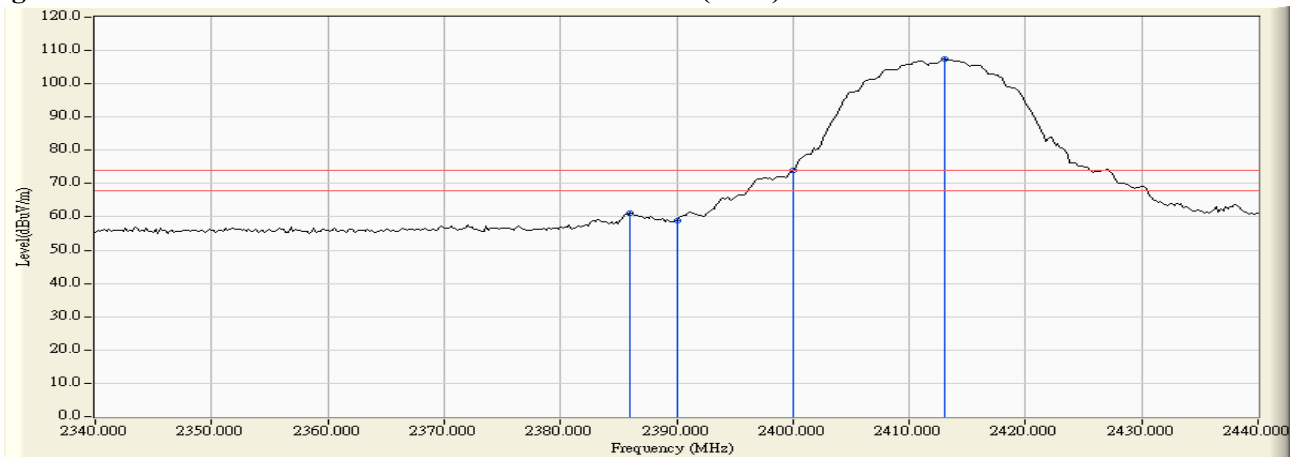
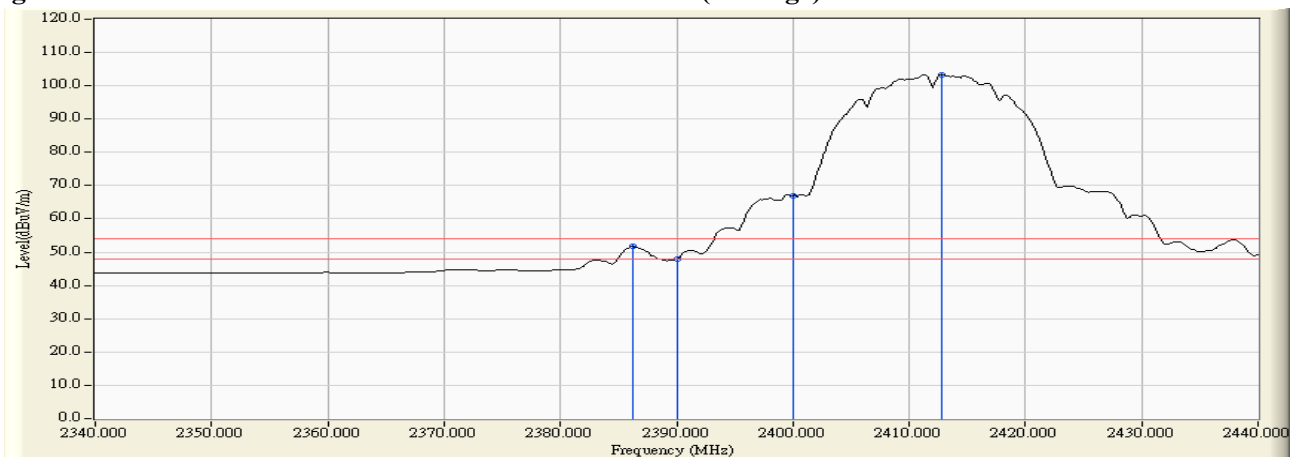


Figure Channel 01: Vertical (Average)



- 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 : Network Media Module
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
11 (Peak)	2462.900	32.026	62.896	94.922	--	--	--
11 (Peak)	2483.500	32.182	24.380	56.562	74.00	54.00	Pass
11 (Peak)	2487.500	32.212	25.571	57.783	74.00	54.00	Pass
11 (Average)	2461.300	32.014	59.158	91.172	--	--	--
11 (Average)	2483.500	32.182	12.448	44.630	74.00	54.00	Pass
11 (Average)	2487.700	32.213	12.579	44.793	74.00	54.00	Pass

Figure Channel 11: Horizontal (Peak)

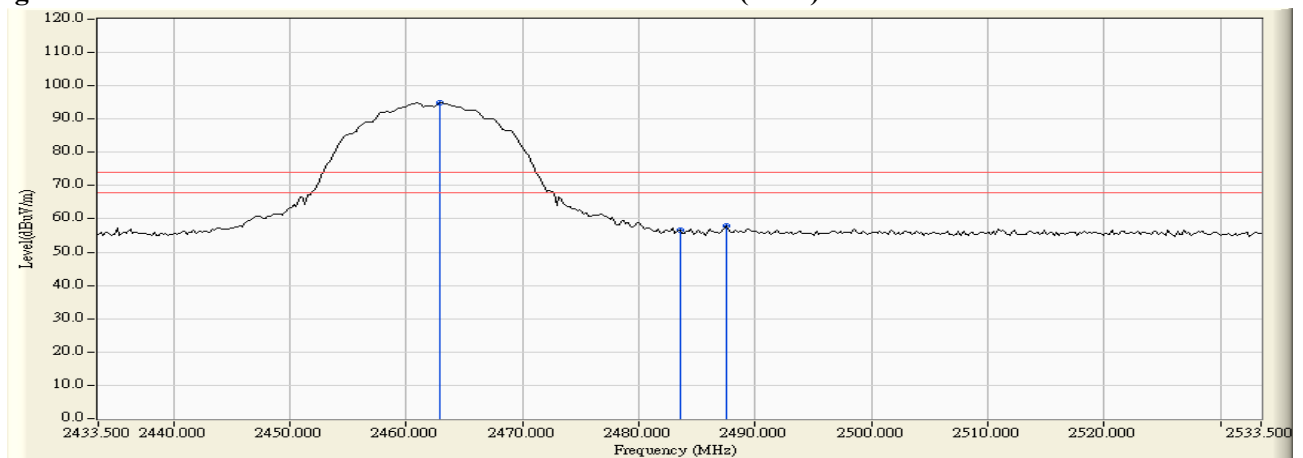
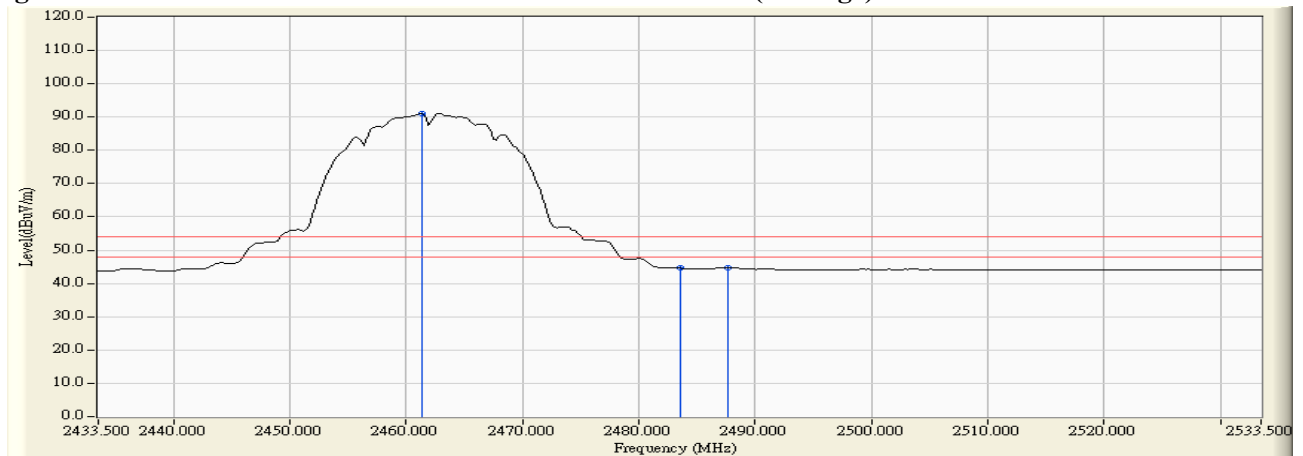


Figure Channel 11: Horizontal (Average)



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 : Network Media Module
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
11 (Peak)	2462.900	31.296	75.692	106.988	--	--	--
11 (Peak)	2483.500	31.435	30.628	62.063	74.00	54.00	Pass
11 (Average)	2461.100	31.285	71.877	103.161	--	--	--
11 (Average)	2483.500	31.435	19.416	50.851	74.00	54.00	Pass
11 (Average)	2487.700	31.463	20.900	52.364	74.00	54.00	Pass

Figure Channel 11: Vertical (Peak)

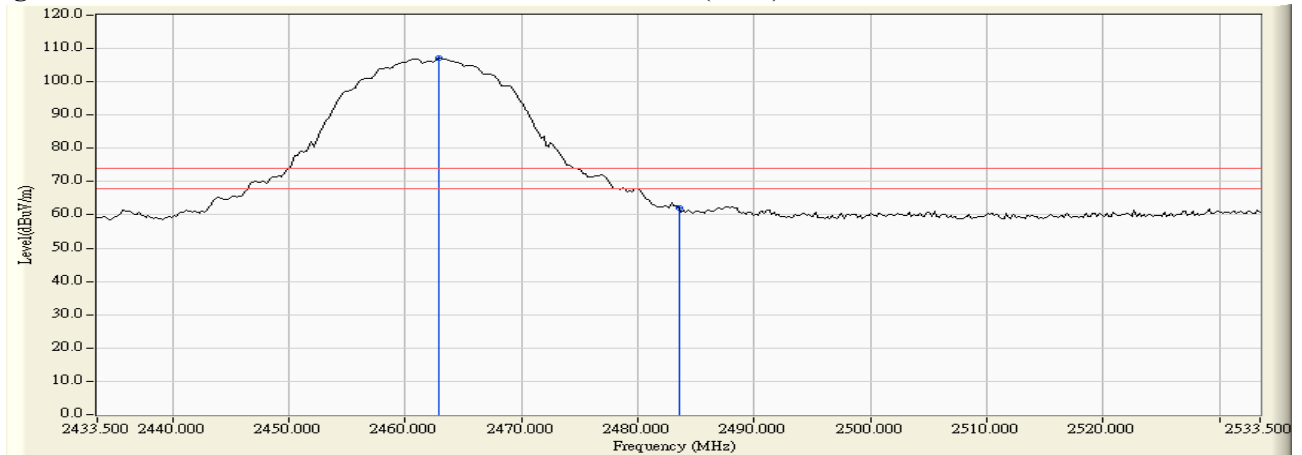
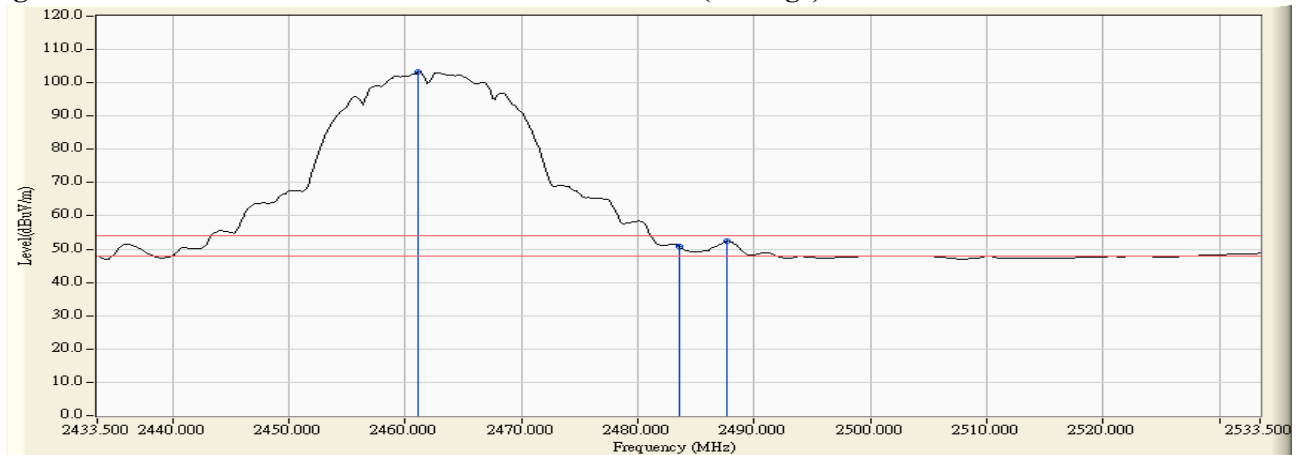


Figure Channel 11: Vertical (Average)



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 : Network Media Module
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
01 (Peak)	2389.400	31.507	27.187	58.694	74.00	54.00	Pass
01 (Peak)	2390.000	31.509	26.213	57.722	74.00	54.00	Pass
01 (Peak)	2400.000	31.561	39.116	70.677	--	--	--
01 (Peak)	2415.200	31.662	63.454	95.117	--	--	--
01 (Average)	2390.000	31.509	12.609	44.118	74.00	54.00	Pass
01 (Average)	2400.000	31.561	17.438	48.999	--	--	--
01 (Average)	2415.800	31.667	51.130	82.797	--	--	--

Figure Channel 01: Horizontal (Peak)

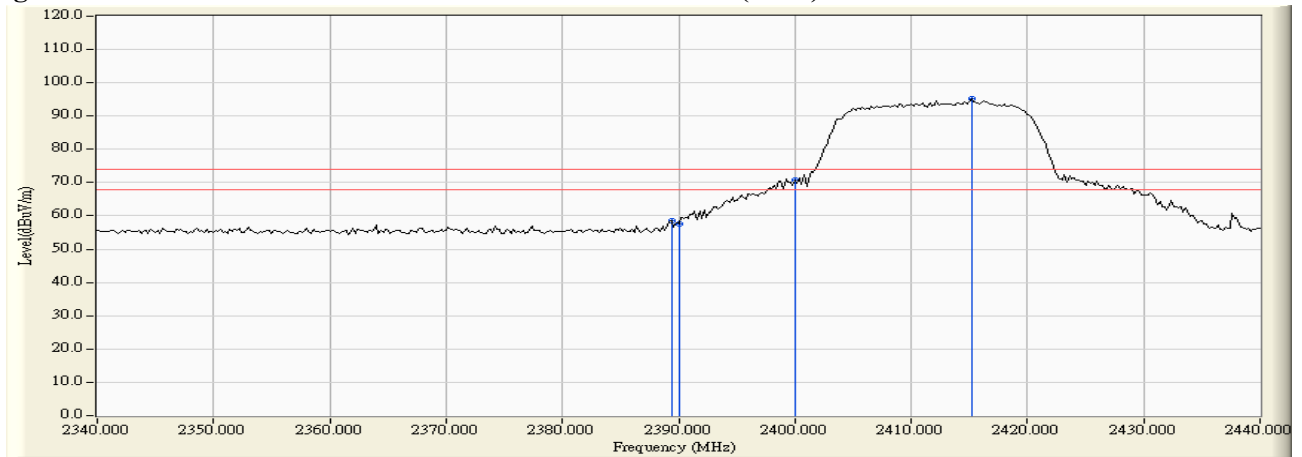
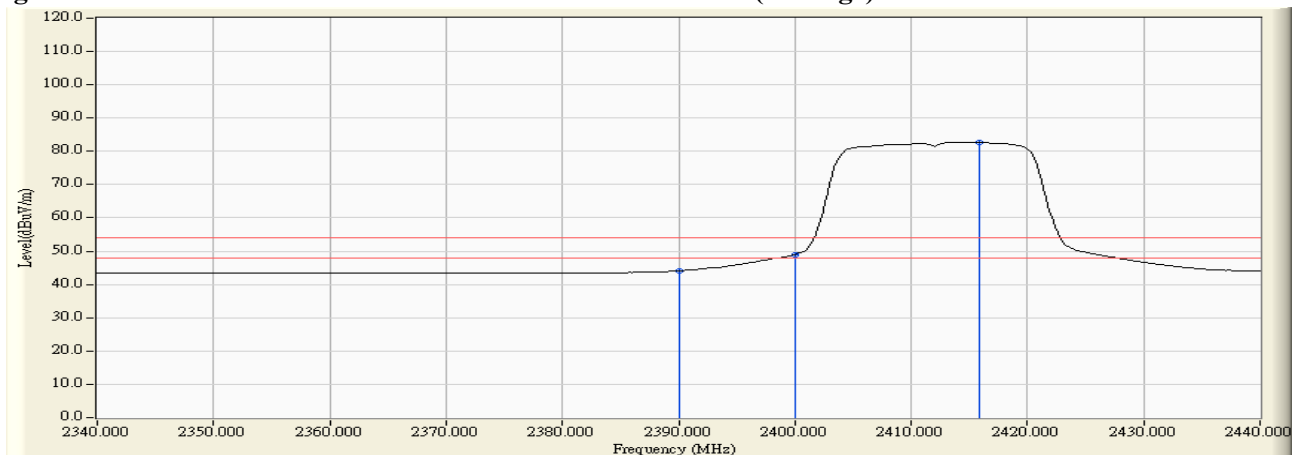


Figure Channel 01: Horizontal (Average)



- 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 : Network Media Module
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
01 (Peak)	2390.000	30.915	39.543	70.458	74.00	54.00	Pass
01 (Peak)	2400.000	30.912	51.580	82.492	--	--	--
01 (Peak)	2415.400	30.972	76.243	107.215	--	--	--
01 (Average)	2390.000	30.915	18.401	49.316	74.00	54.00	Pass
01 (Average)	2400.000	30.912	28.403	59.315	--	--	--
01 (Average)	2413.800	30.961	63.798	94.759	--	--	--

Figure Channel 01: Vertical (Peak)

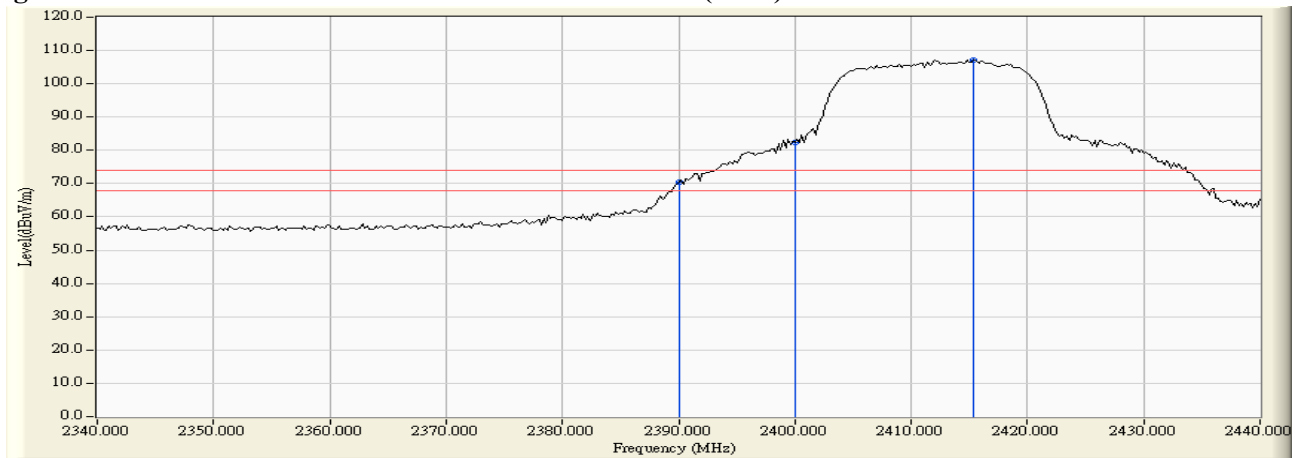
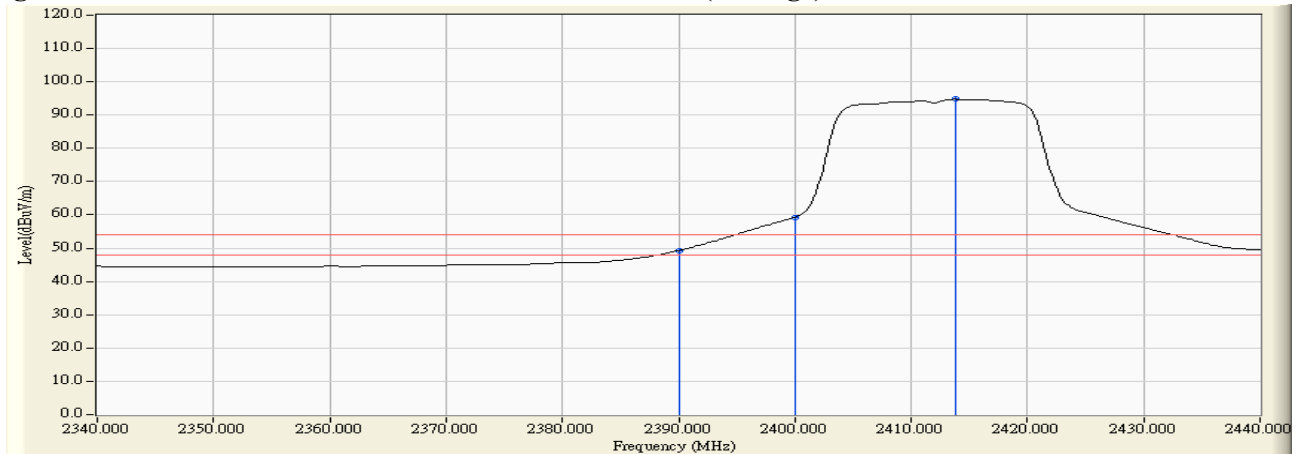


Figure Channel 01: Vertical (Average)



- 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 : Network Media Module
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
11 (Peak)	2461.700	32.017	61.723	93.740	--	--	--
11 (Peak)	2483.500	32.182	27.749	59.931	74.00	54.00	Pass
11 (Average)	2463.500	32.031	49.685	81.716	--	--	--
11 (Average)	2483.500	32.182	12.628	44.810	74.00	54.00	Pass

Figure Channel 11: Horizontal (Peak)

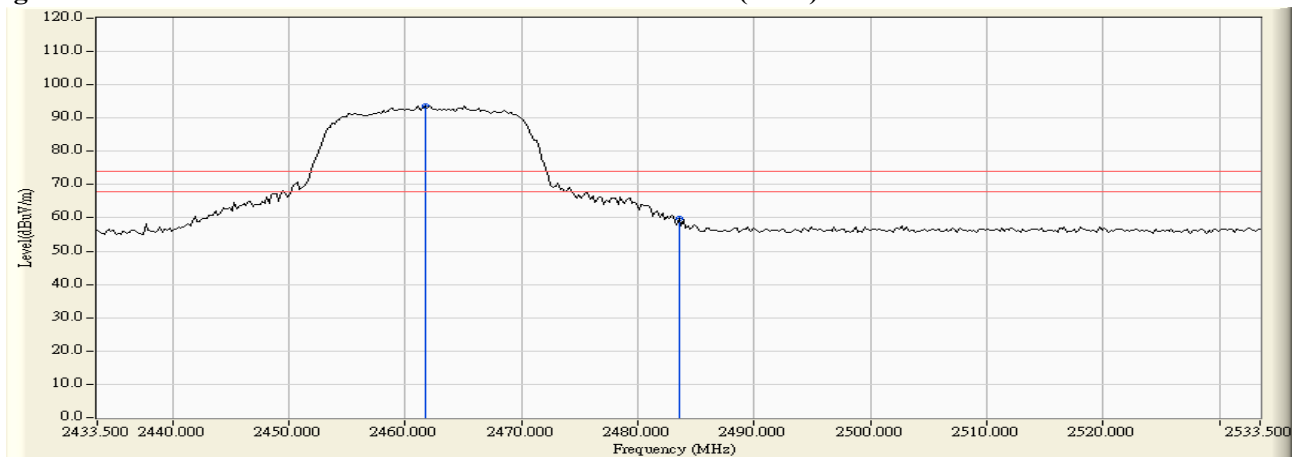
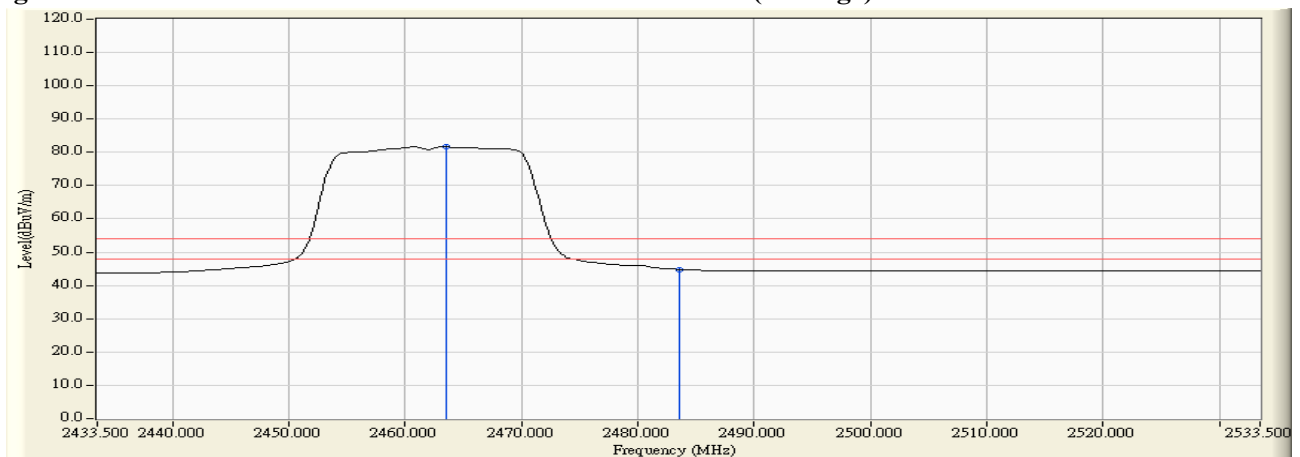


Figure Channel 11: Horizontal (Average)



- 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 : Network Media Module
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
11 (Peak)	2461.700	31.288	75.446	106.734	--	--	--
11 (Peak)	2483.500	31.435	40.020	71.455	74.00	54.00	Pass
11 (Average)	2463.300	31.299	62.910	94.209	--	--	--
11 (Average)	2483.500	31.435	19.235	50.670	74.00	54.00	Pass

Figure Channel 11: Vertical (Peak)

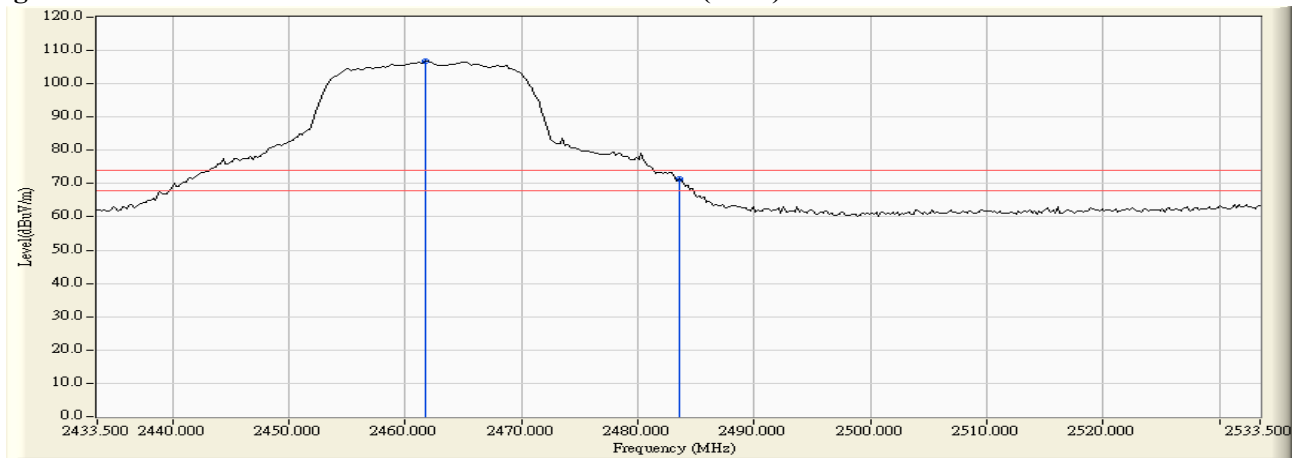
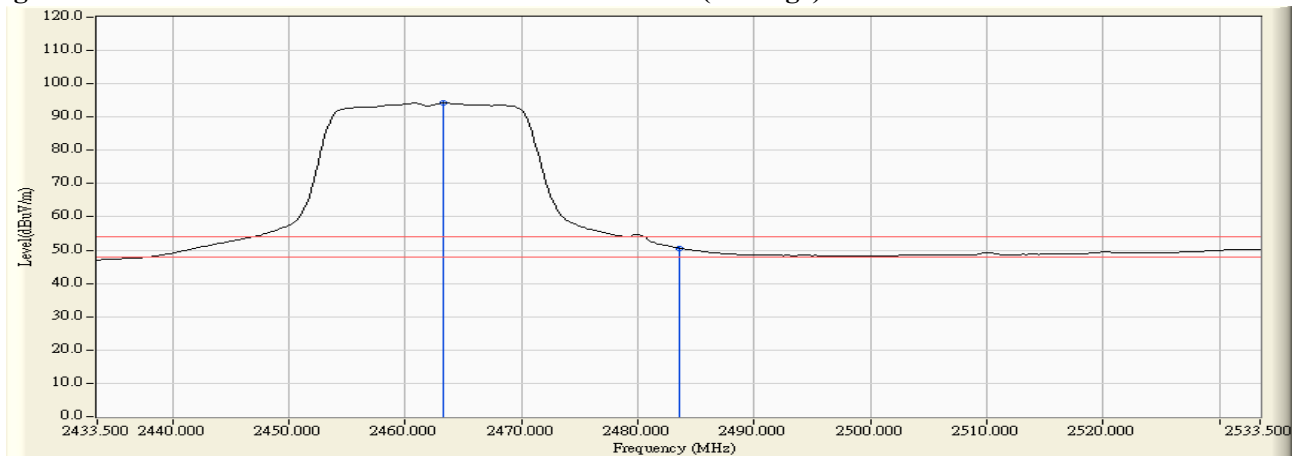


Figure Channel 11: Vertical (Average)



- 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 : Network Media Module
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
01 (Peak)	2389.400	31.507	27.595	59.102	74.00	54.00	Pass
01 (Peak)	2390.000	31.509	26.671	58.180	74.00	54.00	Pass
01 (Peak)	2400.000	31.561	38.282	69.843	--	--	--
01 (Peak)	2413.800	31.651	60.126	91.778	--	--	--
01 (Average)	2390.000	31.509	12.671	44.180	74.00	54.00	Pass
01 (Average)	2400.000	31.561	16.288	47.849	--	--	--
01 (Average)	2415.800	31.667	48.019	79.686	--	--	--

Figure Channel 01: Horizontal (Peak)

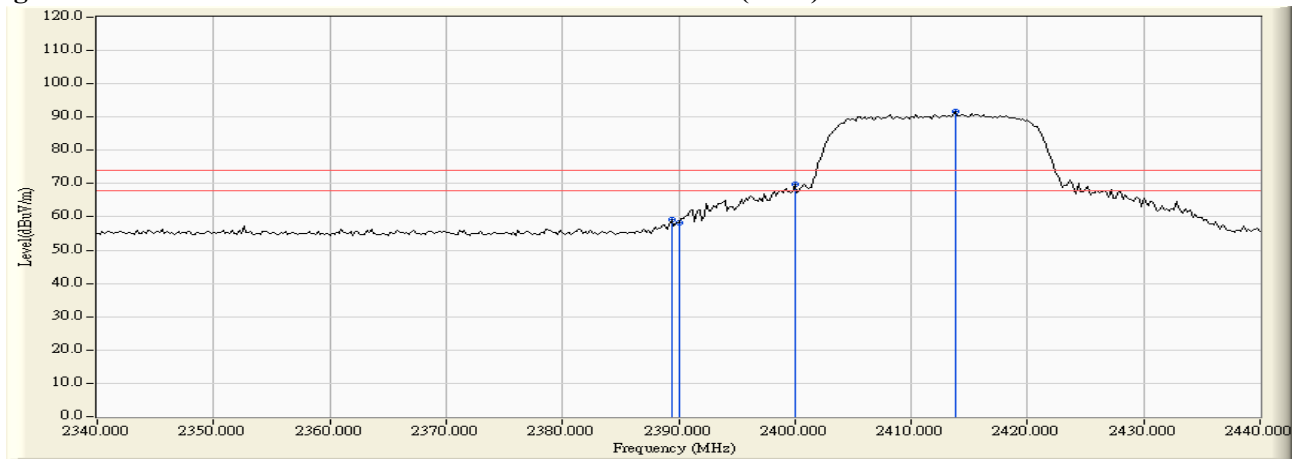
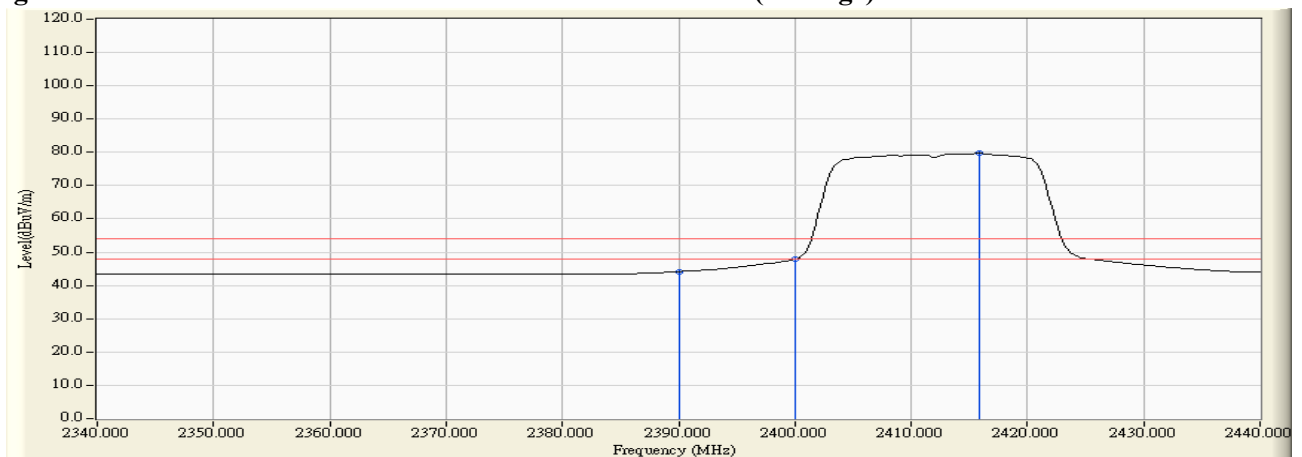


Figure Channel 01: Horizontal (Average)



- 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 : Network Media Module
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
01 (Peak)	2390.000	30.915	42.514	73.429	74.00	54.00	Pass
01 (Peak)	2400.000	30.912	54.112	85.024	--	--	--
01 (Peak)	2413.800	30.961	76.630	107.591	--	--	--
01 (Average)	2390.000	30.915	19.952	50.867	74.00	54.00	Pass
01 (Average)	2400.000	30.912	29.747	60.659	--	--	--
01 (Average)	2415.600	30.973	63.871	94.845	--	--	--

Figure Channel 01: Vertical (Peak)

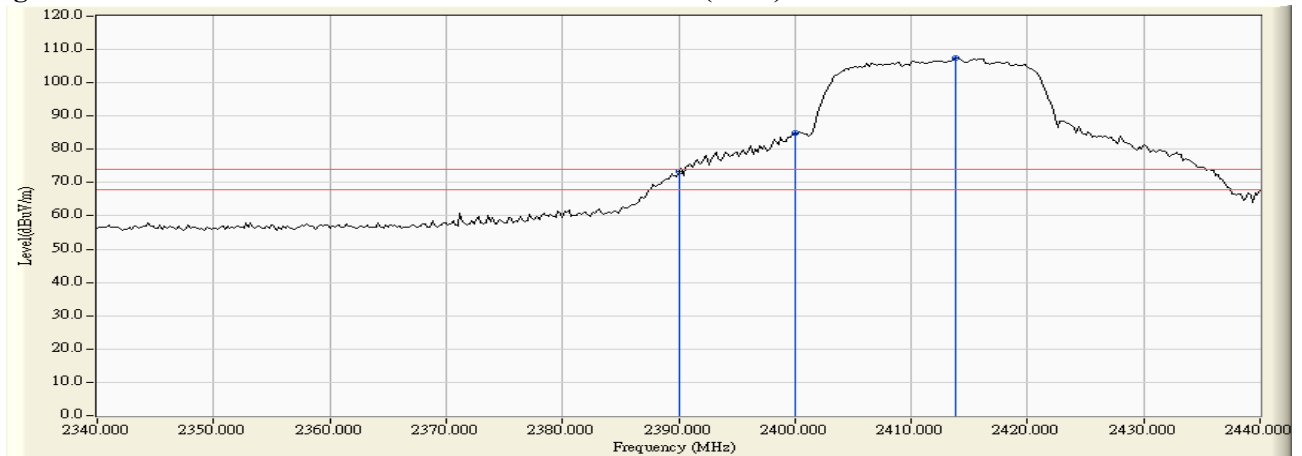
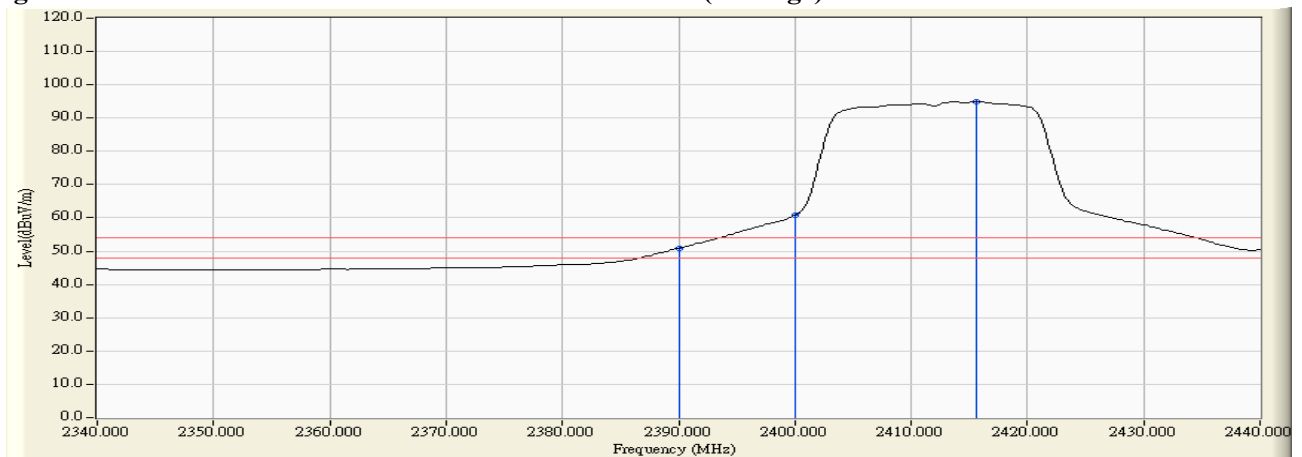


Figure Channel 01: Vertical (Average)



- 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 : Network Media Module
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
11 (Peak)	2463.500	32.031	60.832	92.863	--	--	--
11 (Peak)	2483.500	32.182	27.266	59.448	74.00	54.00	Pass
11 (Average)	2463.500	32.031	49.372	81.403	--	--	--
11 (Average)	2483.500	32.182	12.820	45.002	74.00	54.00	Pass

Figure Channel 11: Horizontal (Peak)

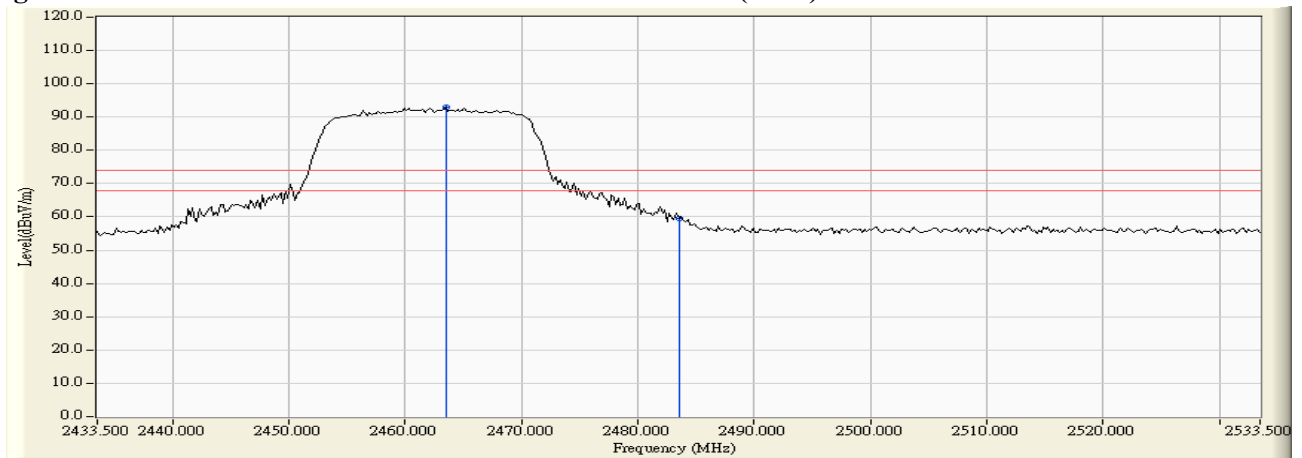
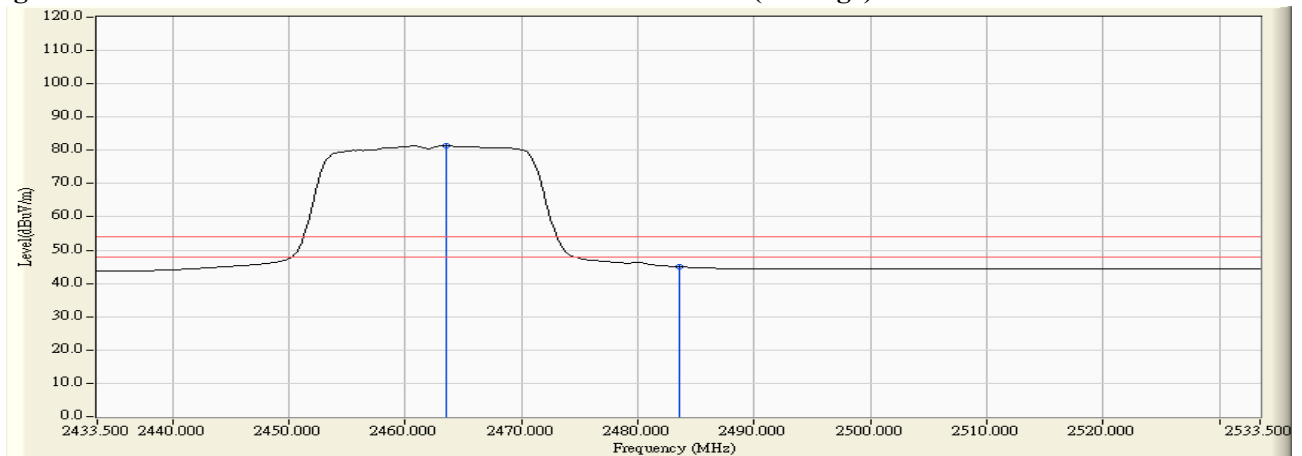


Figure Channel 11: Horizontal (Average)



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 : Network Media Module
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
11 (Peak)	2463.700	31.302	75.217	106.519	--	--	--
11 (Peak)	2483.500	31.435	39.869	71.304	74.00	54.00	Pass
11 (Average)	2463.300	31.299	62.505	93.804	--	--	--
11 (Average)	2483.500	31.435	19.716	51.151	74.00	54.00	Pass

Figure Channel 11: Vertical (Peak)

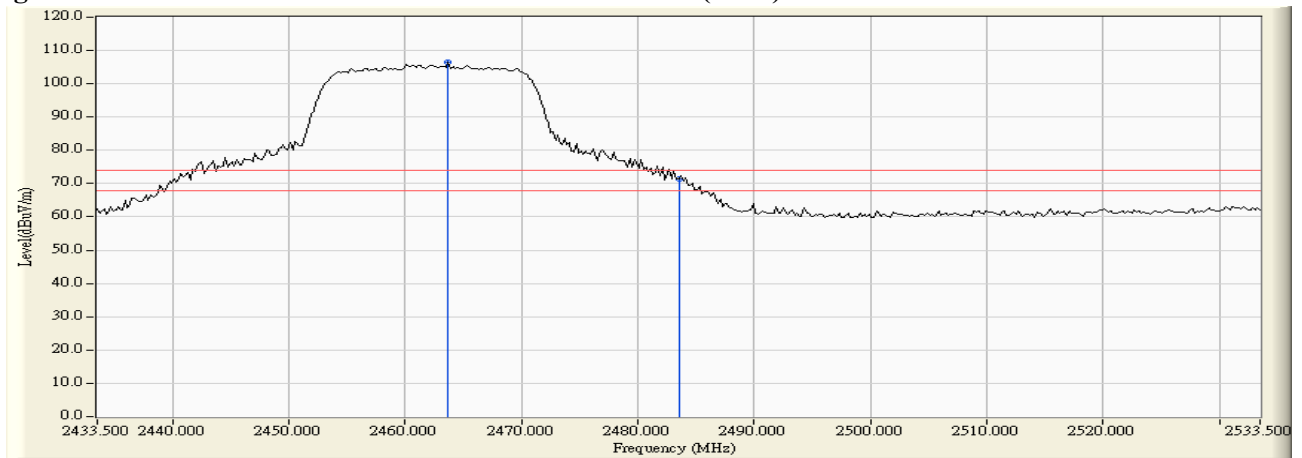
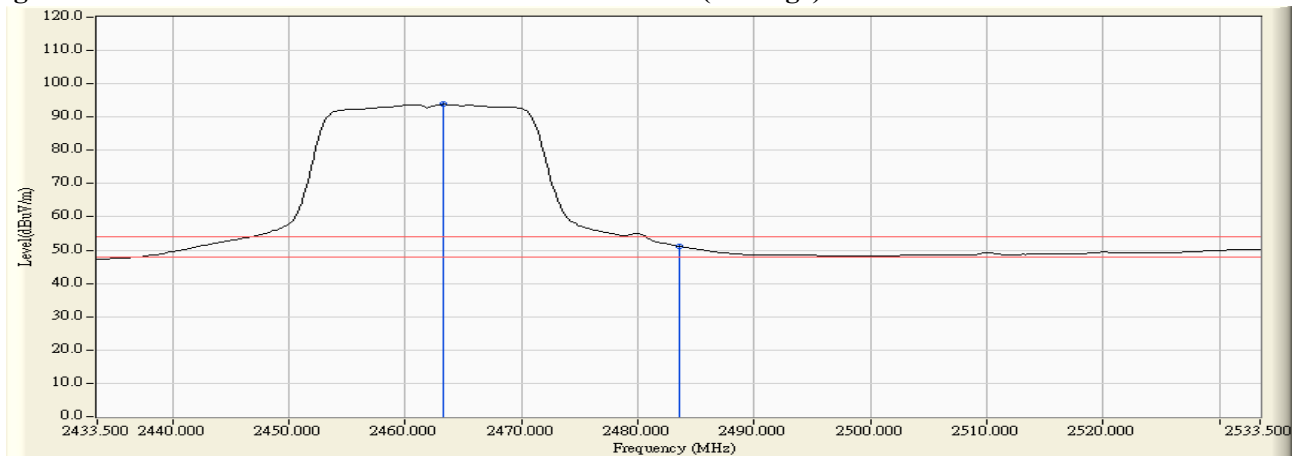


Figure Channel 11: Vertical (Average)



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 : Network Media Module
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
03 (Peak)	2390.000	31.509	26.389	57.898	74.00	54.00	Pass
03 (Peak)	2400.000	31.561	28.974	60.535	--	--	--
03 (Peak)	2438.800	31.844	56.243	88.086	--	--	--
03 (Average)	2390.000	31.509	13.092	44.601	74.00	54.00	Pass
03 (Average)	2400.000	31.561	14.353	45.914	--	--	--
03 (Average)	2439.200	31.846	44.063	75.909	--	--	--

Figure Channel 03: Horizontal (Peak)

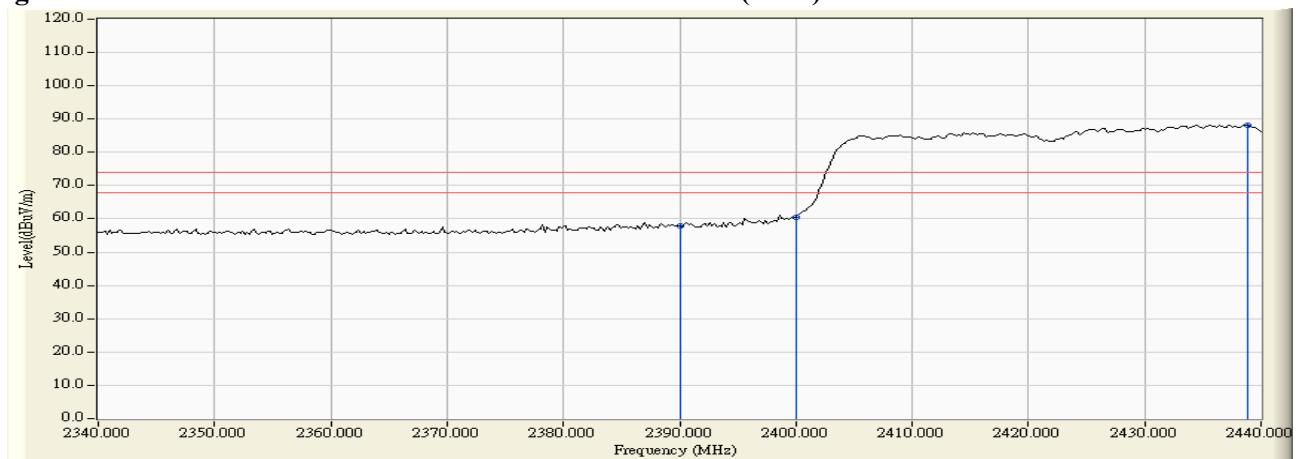
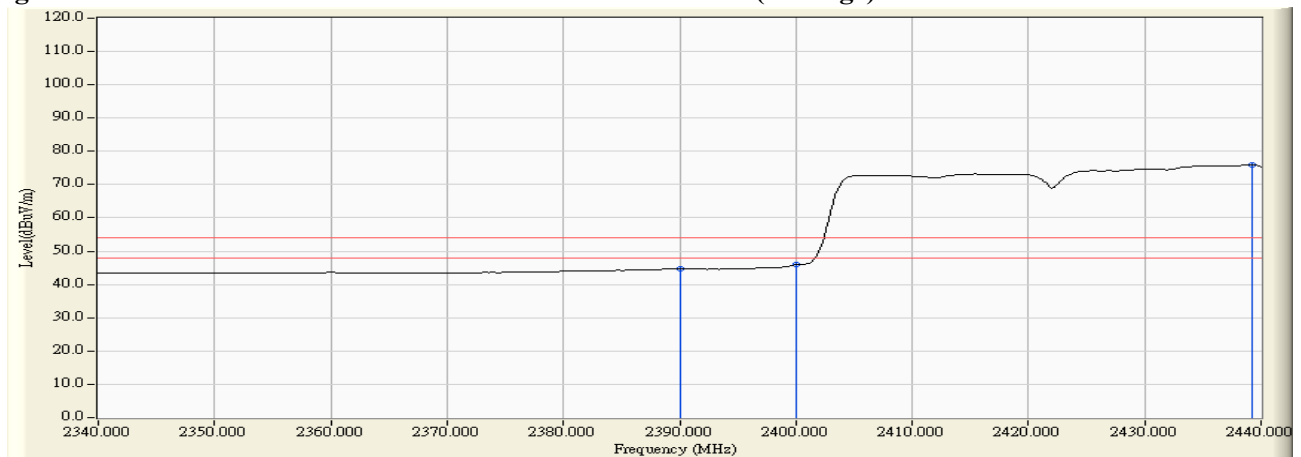


Figure Channel 01: Horizontal (Average)



- 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 : Network Media Module
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
03 (Peak)	2389.000	30.920	39.480	70.400	74.00	54.00	Pass
03 (Peak)	2390.000	30.915	37.539	68.454	74.00	54.00	Pass
03 (Peak)	2400.000	30.912	42.596	73.508	--	--	--
03 (Peak)	2426.200	31.046	71.791	102.837	--	--	--
03 (Average)	2390.000	30.915	21.691	52.606	74.00	54.00	Pass
03 (Average)	2400.000	30.912	25.436	56.348	--	--	--
03 (Average)	2435.200	31.107	58.267	89.374	--	--	--

Figure Channel 01: Vertical (Peak)

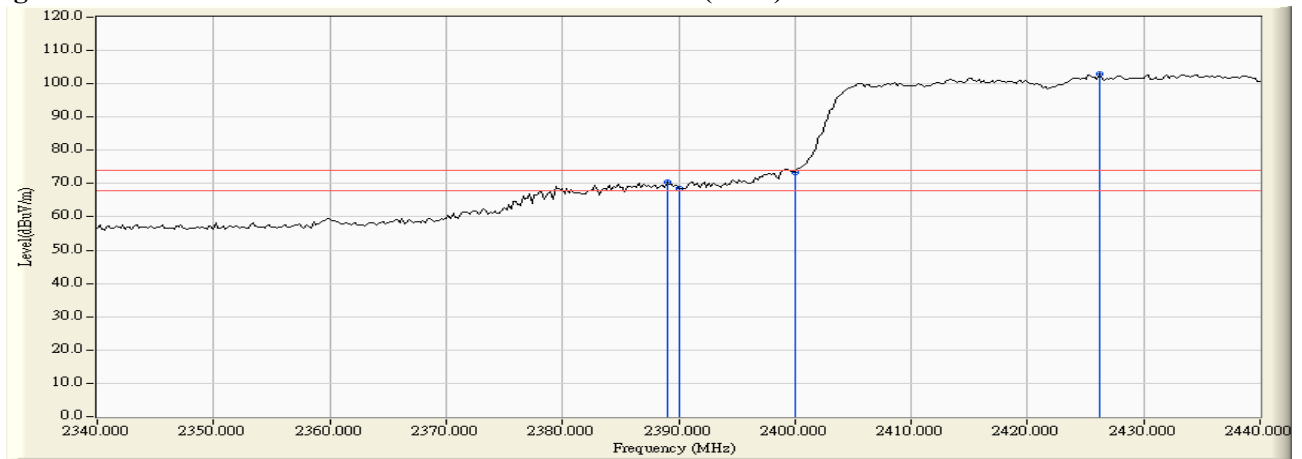
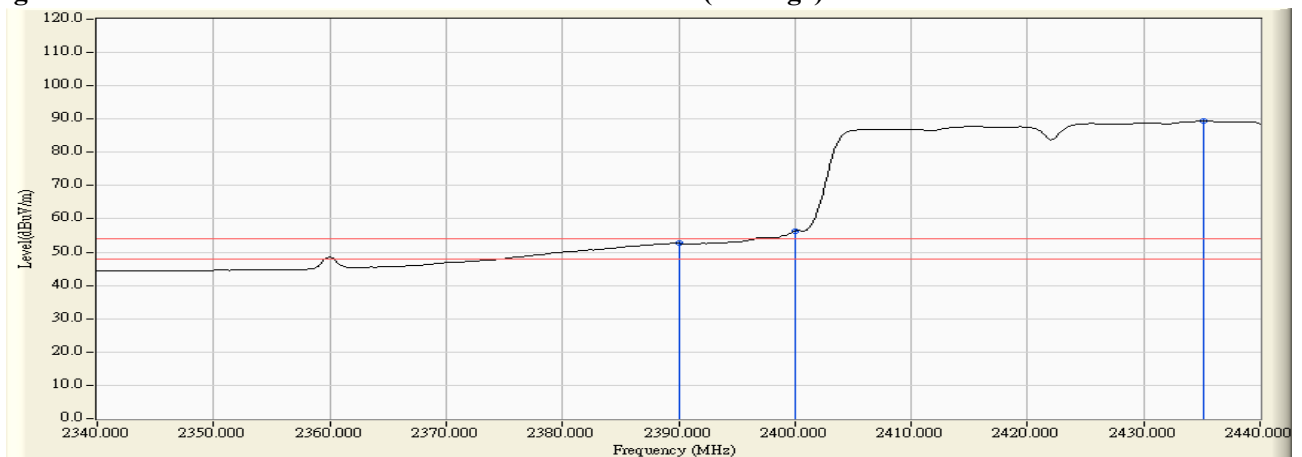


Figure Channel 01: Vertical (Average)



- 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 : Network Media Module
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
09 (Peak)	2460.100	32.005	54.288	86.293	--	--	--
09 (Peak)	2483.500	32.182	25.753	57.935	74.00	54.00	Pass
09 (Average)	2469.100	32.073	42.044	74.117	--	--	--
09 (Average)	2483.500	32.182	13.214	45.396	74.00	54.00	Pass

Figure Channel 09: Horizontal (Peak)

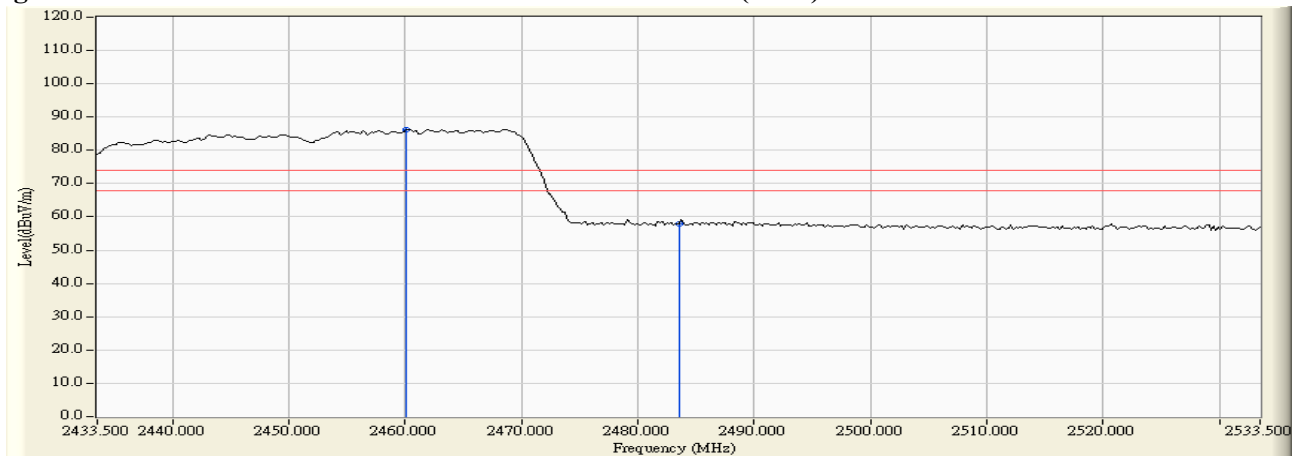
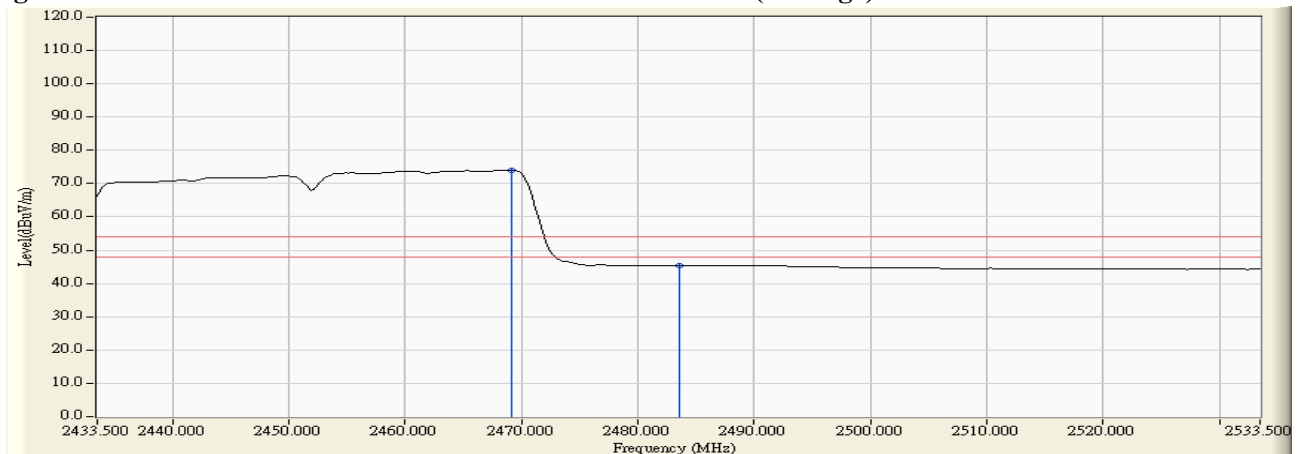


Figure Channel 09: Horizontal (Average)



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 : Network Media Module
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
09 (Peak)	2460.300	31.278	67.852	99.131	--	--	--
09 (Peak)	2483.500	31.435	34.401	65.836	74.00	54.00	Pass
09 (Peak)	2488.900	31.472	35.300	66.772	74.00	54.00	Pass
09 (Average)	2469.100	31.338	54.734	86.072	--	--	--
09 (Average)	2483.500	31.435	21.366	52.801	74.00	54.00	Pass
09 (Average)	2485.500	31.449	21.401	52.850	74.00	54.00	Pass

Figure Channel 09: Vertical (Peak)

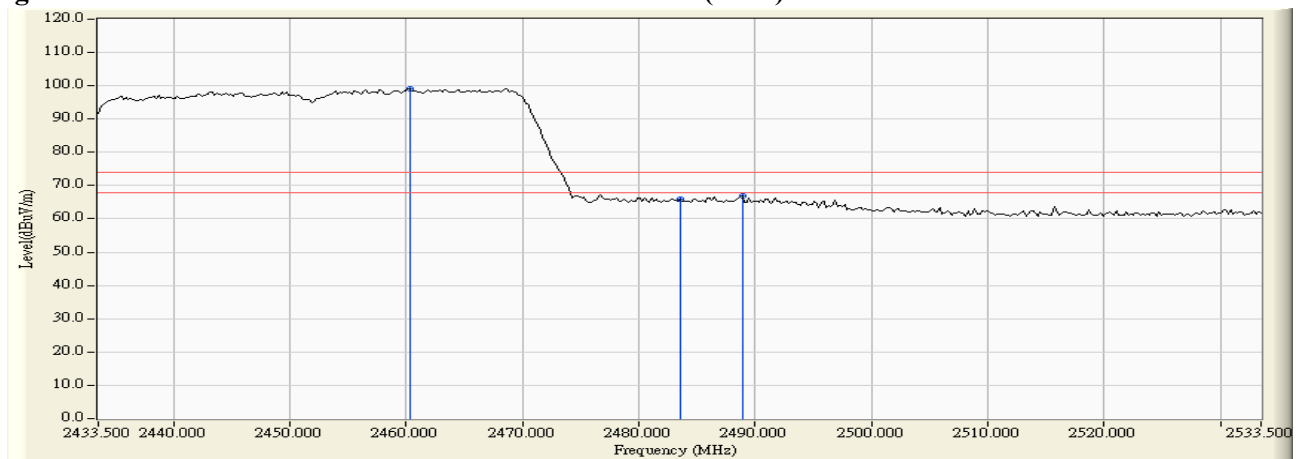
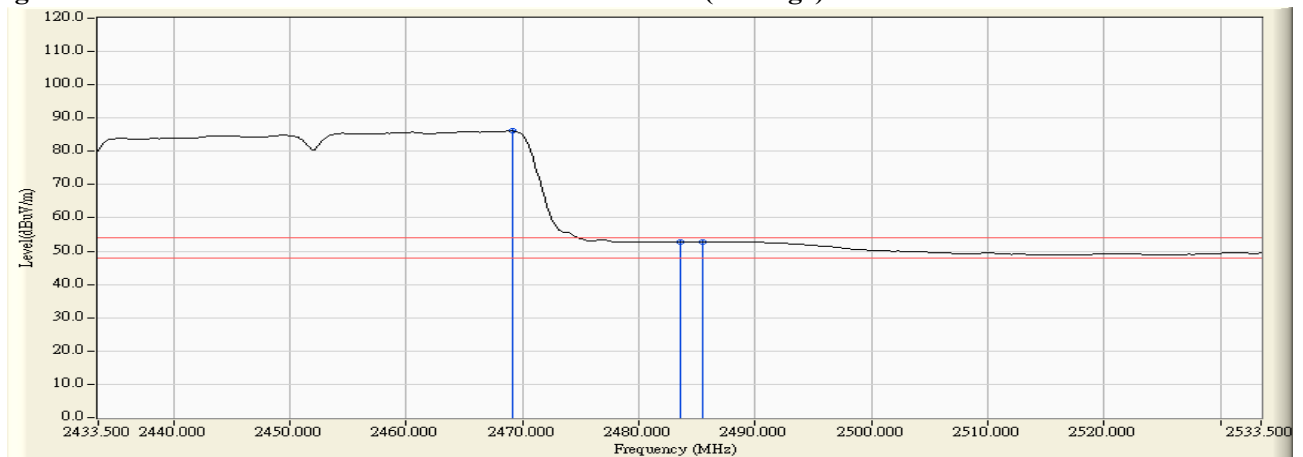


Figure Channel 09: Vertical (Average)



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.

7. Occupied Bandwidth

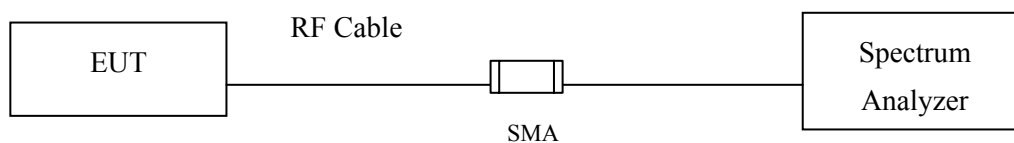
7.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun., 2014
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun., 2014
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2014

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.

7.2. Test Setup



7.3. Limits

The minimum bandwidth shall be at least 500 kHz.

7.4. Test Procedure

The EUT was setup according to ANSI C63.10: 2009; tested according to DTS test procedure of Jan KDB558074 for compliance to FCC 47CFR 15.247 requirements.

7.5. Uncertainty

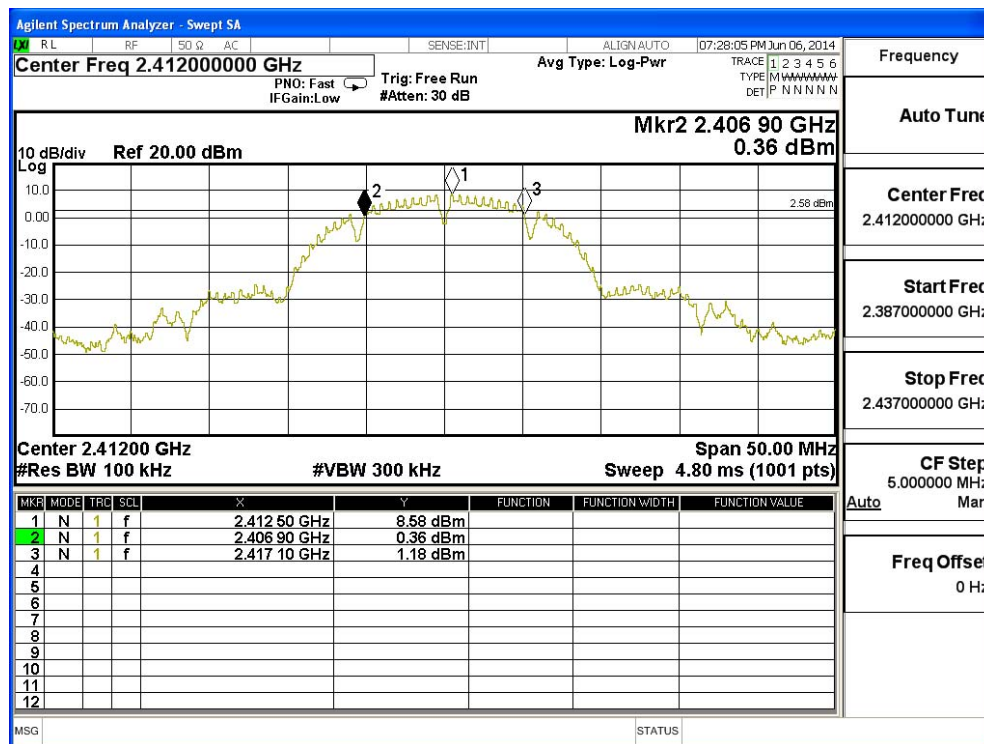
$\pm 150\text{Hz}$

7.6. Test Result of Occupied Bandwidth

Product : Network Media Module
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2412MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1	2412	10200	>500	Pass

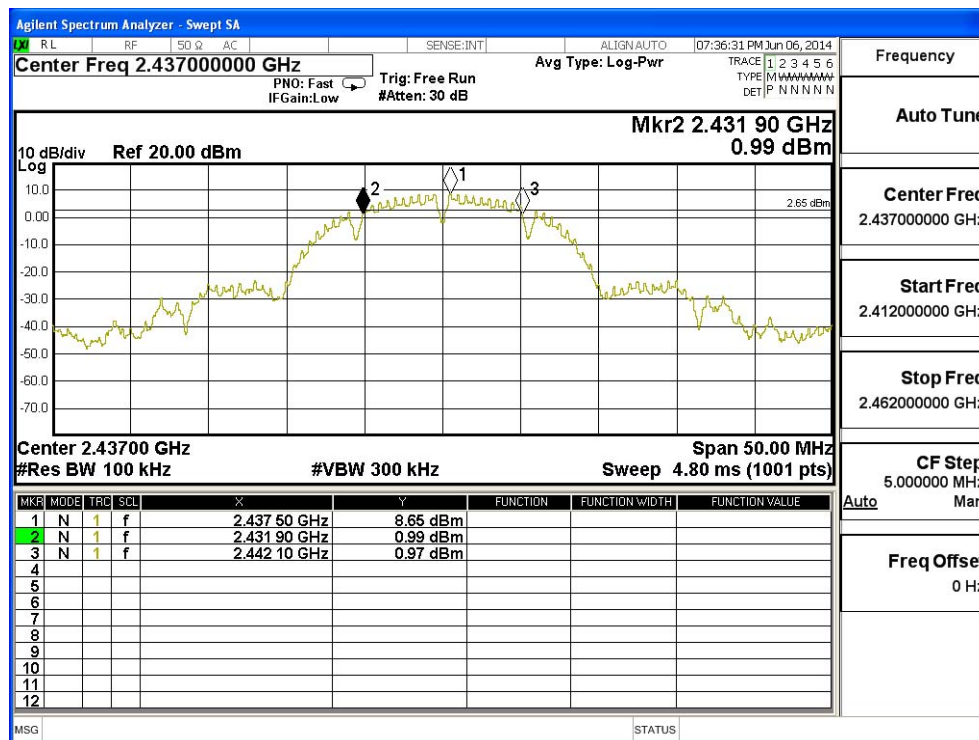
Figure Channel 1:



Product : Network Media Module
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6	2437	10200	>500	Pass

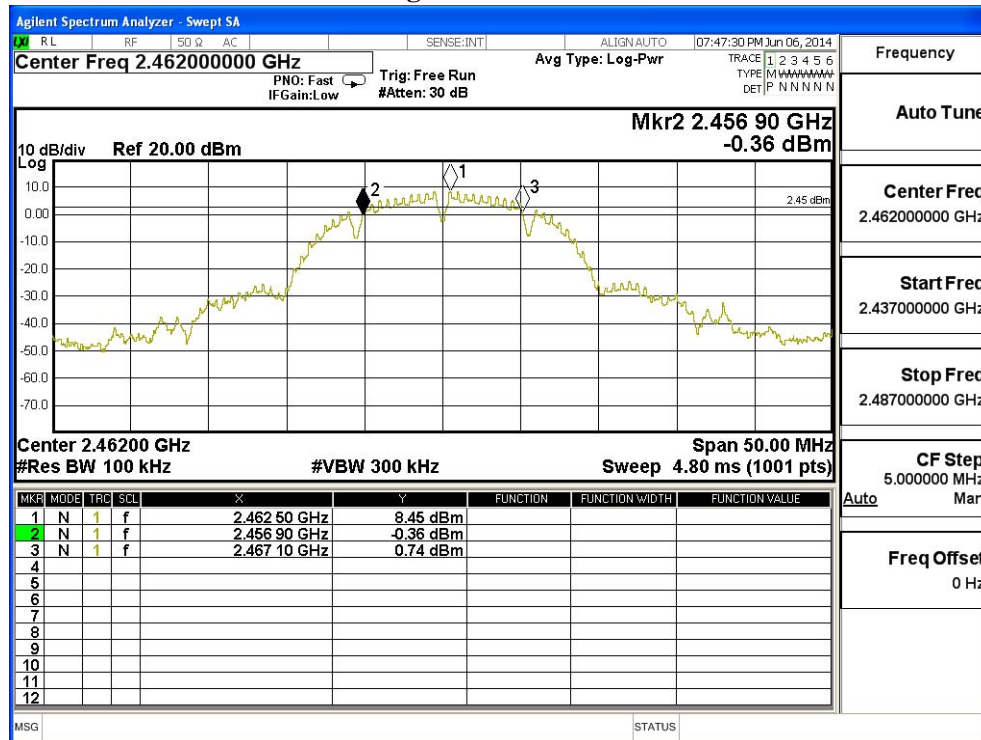
Figure Channel 6:



Product : Network Media Module
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
11	2462	10200	>500	Pass

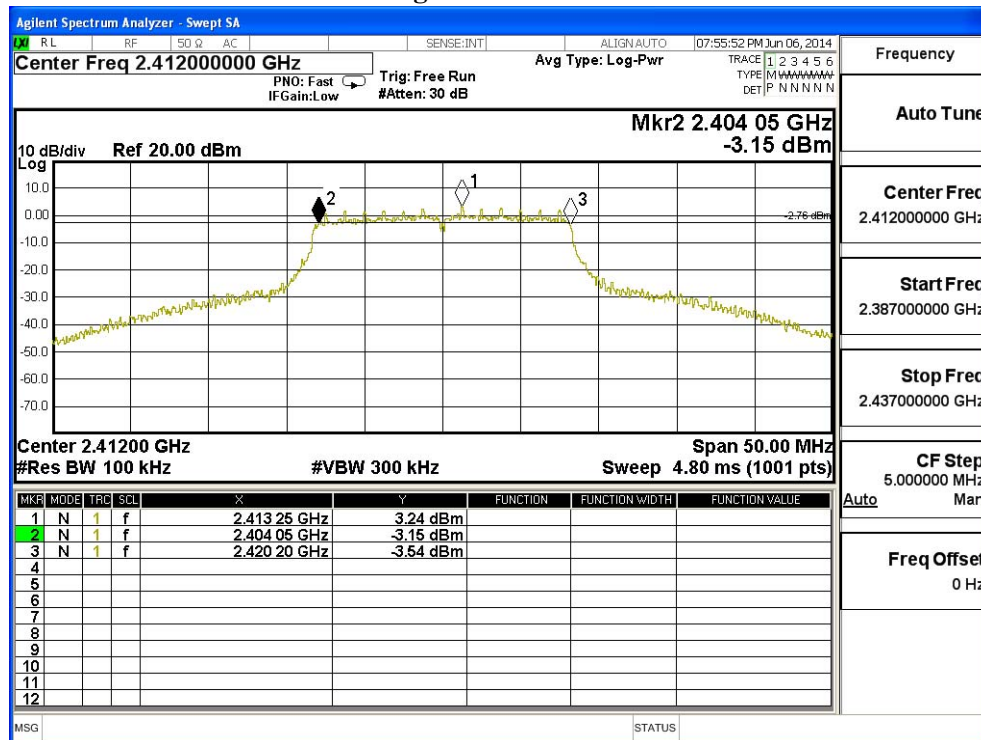
Figure Channel 11:



Product : Network Media Module
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1	2412	16150	>500	Pass

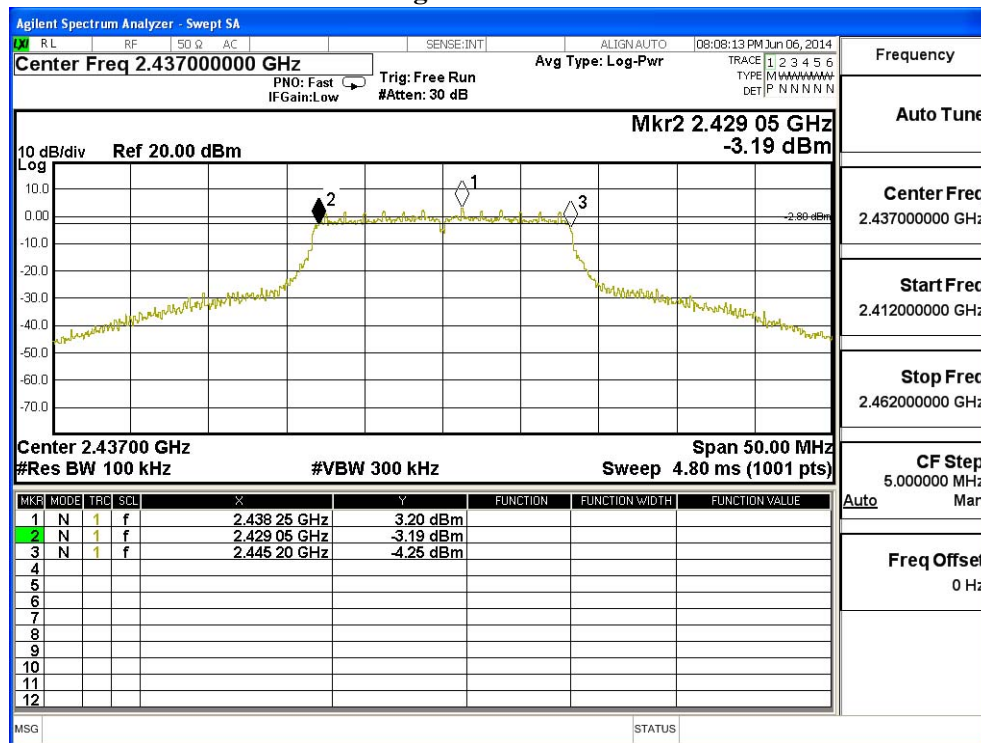
Figure Channel 1:



Product : Network Media Module
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6	2437	16150	>500	Pass

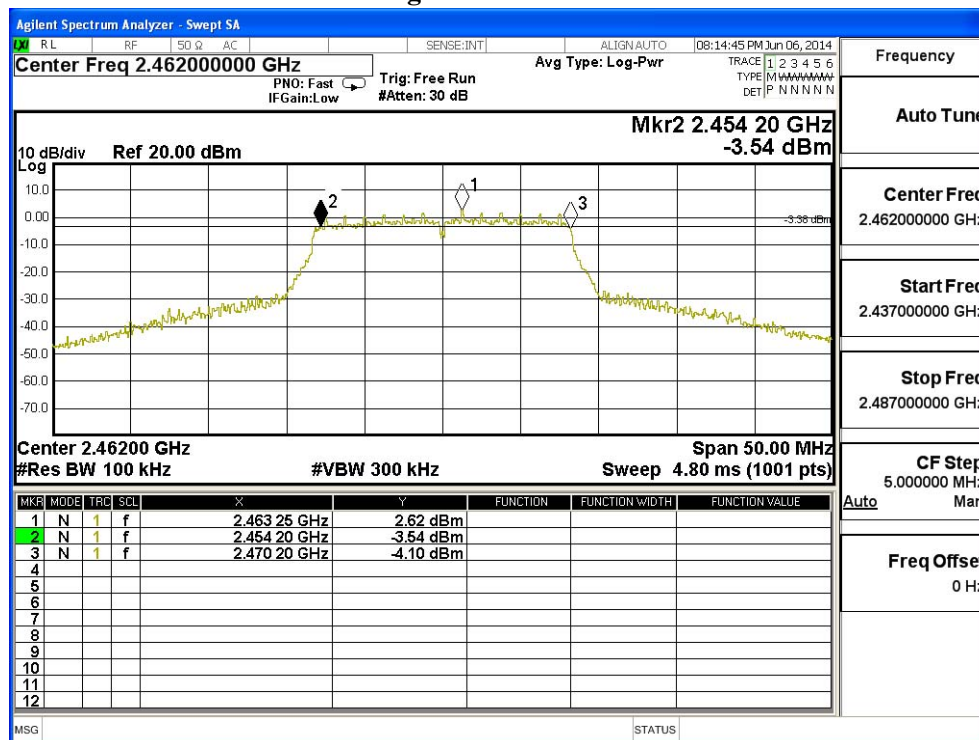
Figure Channel 6:



Product : Network Media Module
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
11	2462	16000	>500	Pass

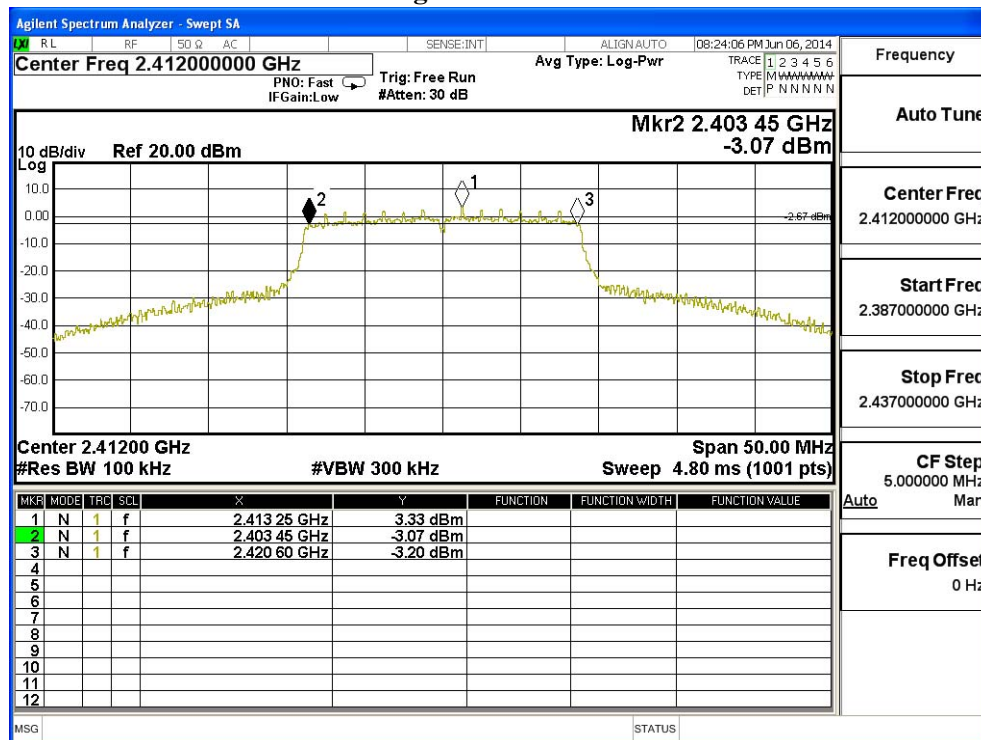
Figure Channel 11:



Product : Network Media Module
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2412MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1	2412	17150	>500	Pass

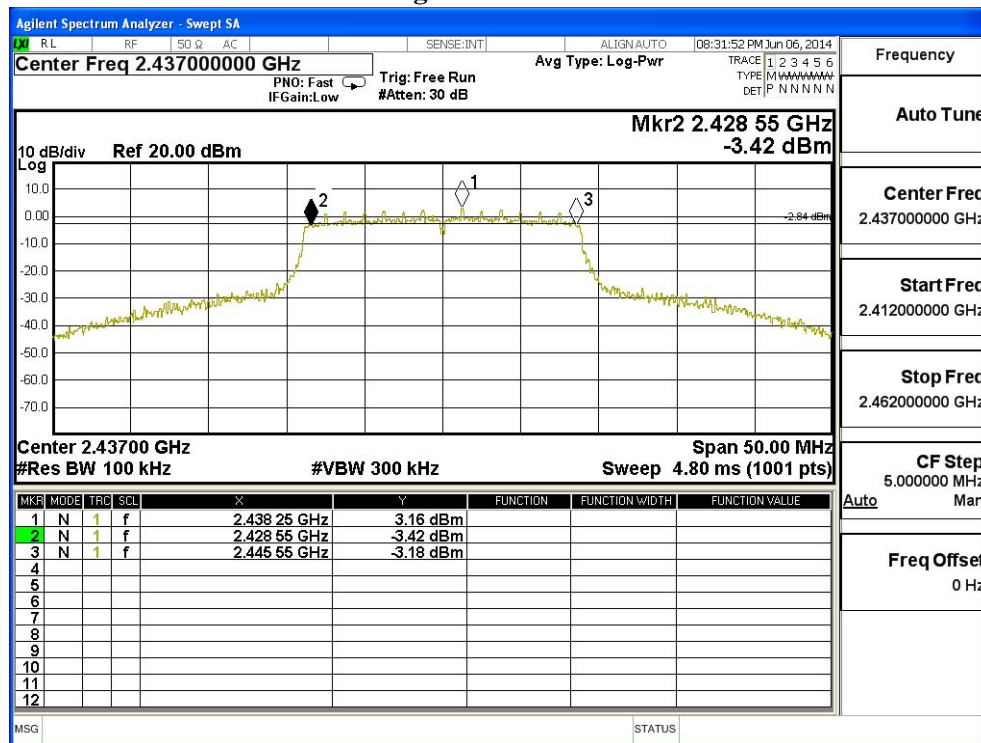
Figure Channel 1:



Product : Network Media Module
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6	2437	17000	>500	Pass

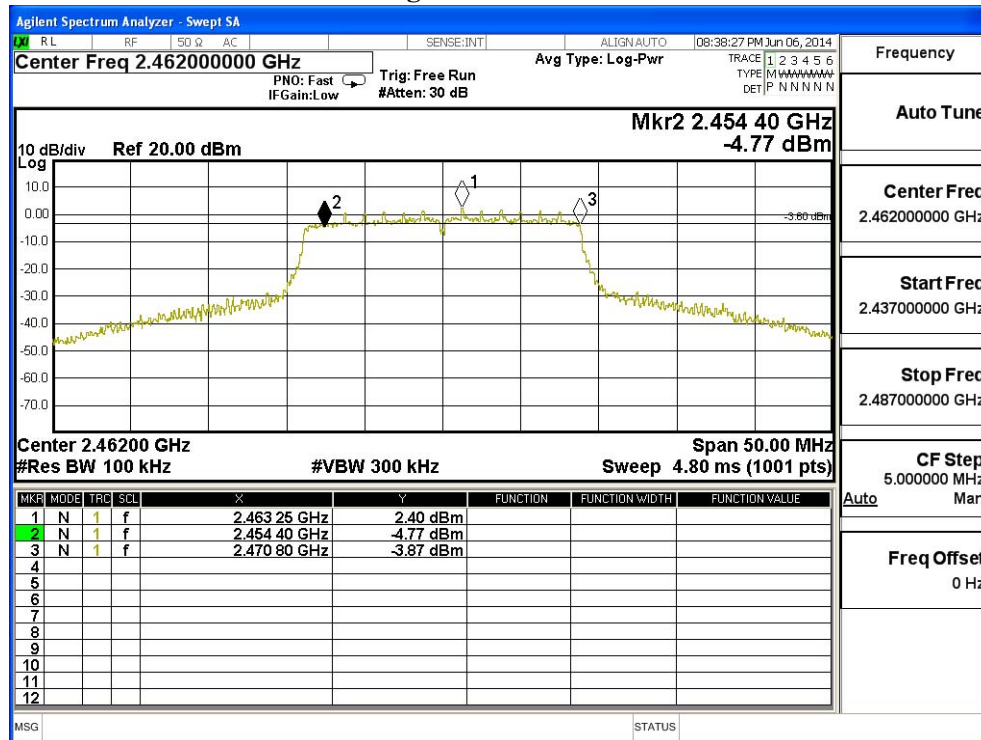
Figure Channel 6:



Product : Network Media Module
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
11	2462	16400	>500	Pass

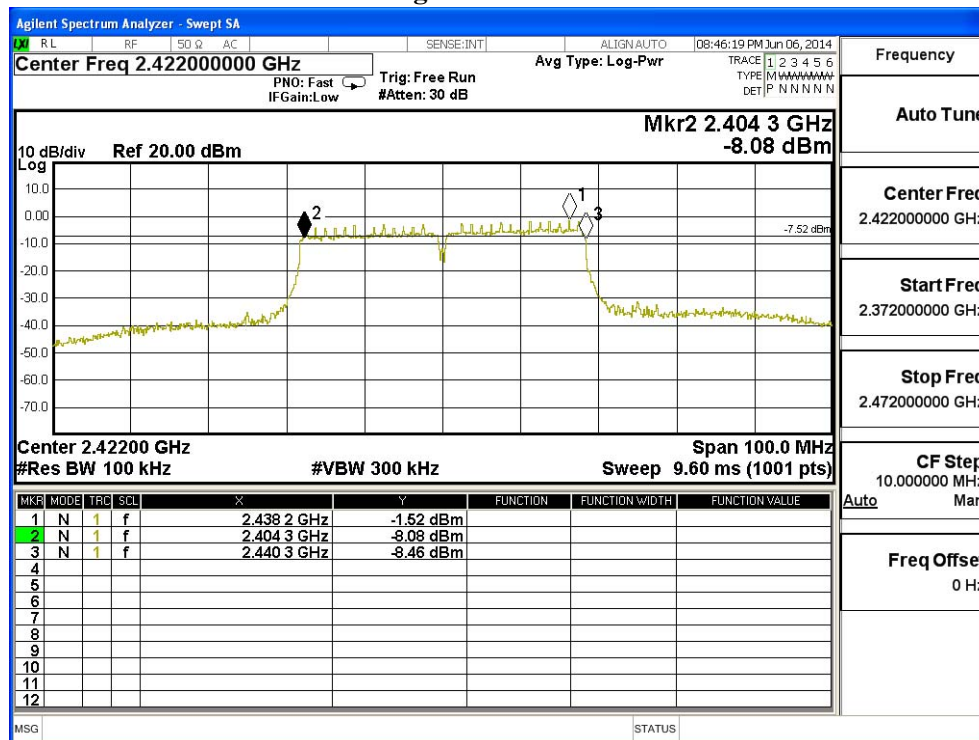
Figure Channel 11:



Product : Network Media Module
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2422MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
3	2422	36000	>500	Pass

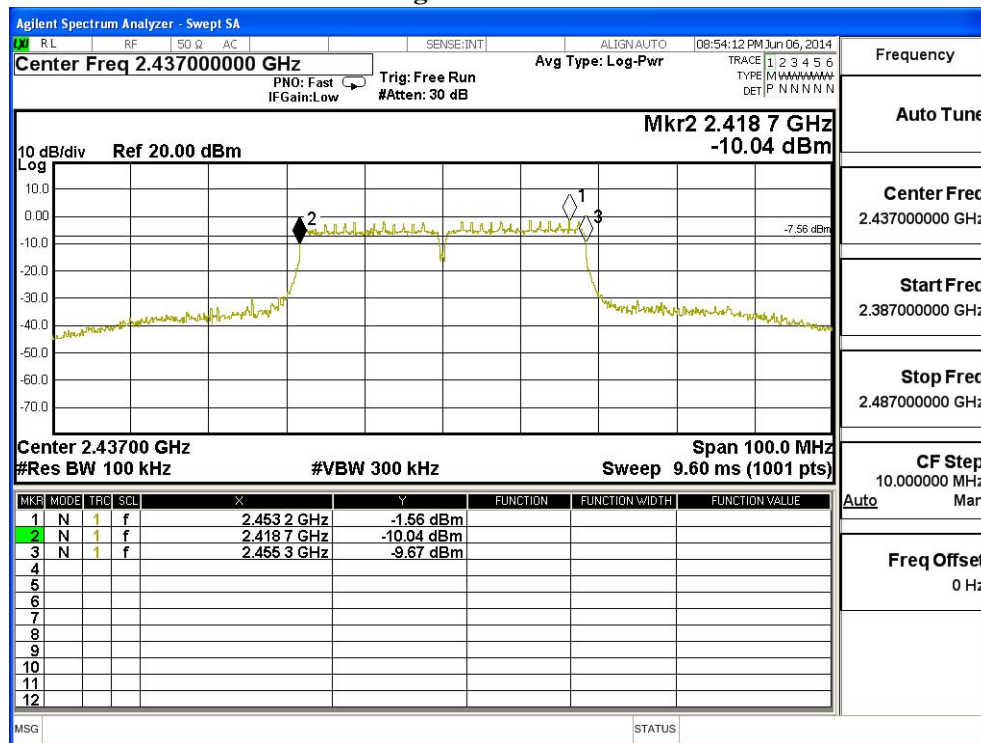
Figure Channel 1:



Product : Network Media Module
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6	2437	36600	>500	Pass

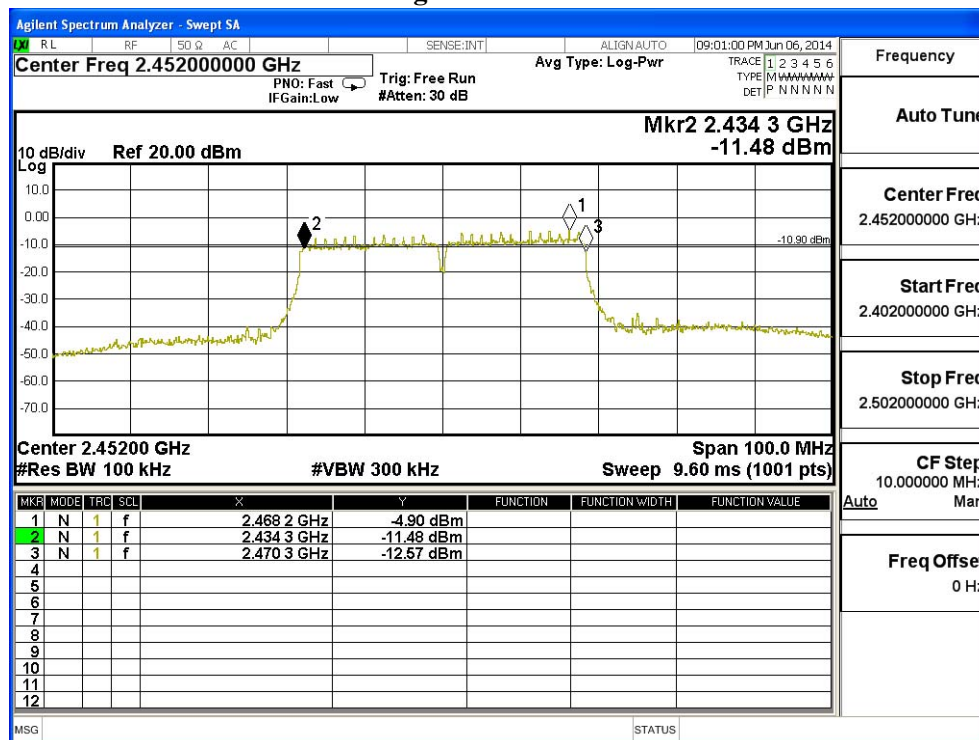
Figure Channel 4:



Product : Network Media Module
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2452MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
9	2452	36000	>500	Pass

Figure Channel 7:



8. Power Density

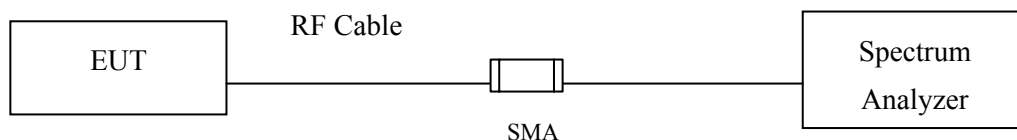
8.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun., 2014
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun., 2014
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2014

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

The transmitted power density averaged over any 1 second interval shall not be greater +8dBm in any 3kHz bandwidth.

8.4. Test Procedure

The EUT was setup according to ANSI C63.10, 2009; tested according to DTS test procedure of KDB 558074 for compliance to FCC 47CFR 15.247 requirements.

The maximum power spectral density using KDB 558074 section 10.2 PKPSD (peak PSD) method.

8.5. Uncertainty

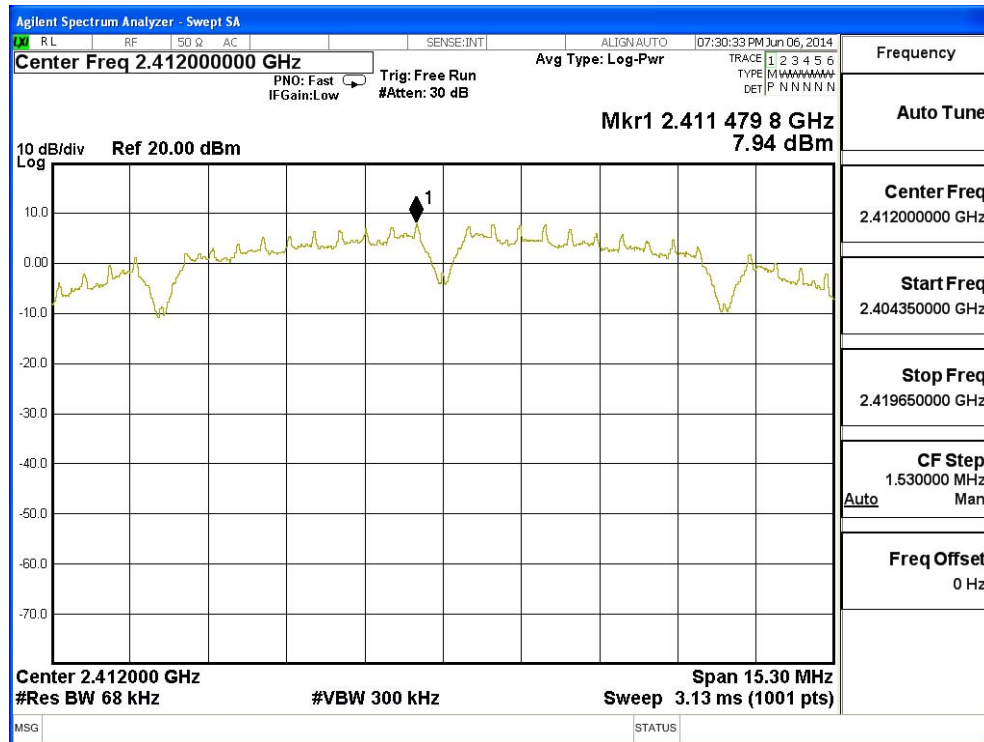
± 1.27 dB

8.6. Test Result of Power Density

Product : Network Media Module
 Test Item : Power Density Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2412MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1	2412	7.940	< 8dBm	Pass

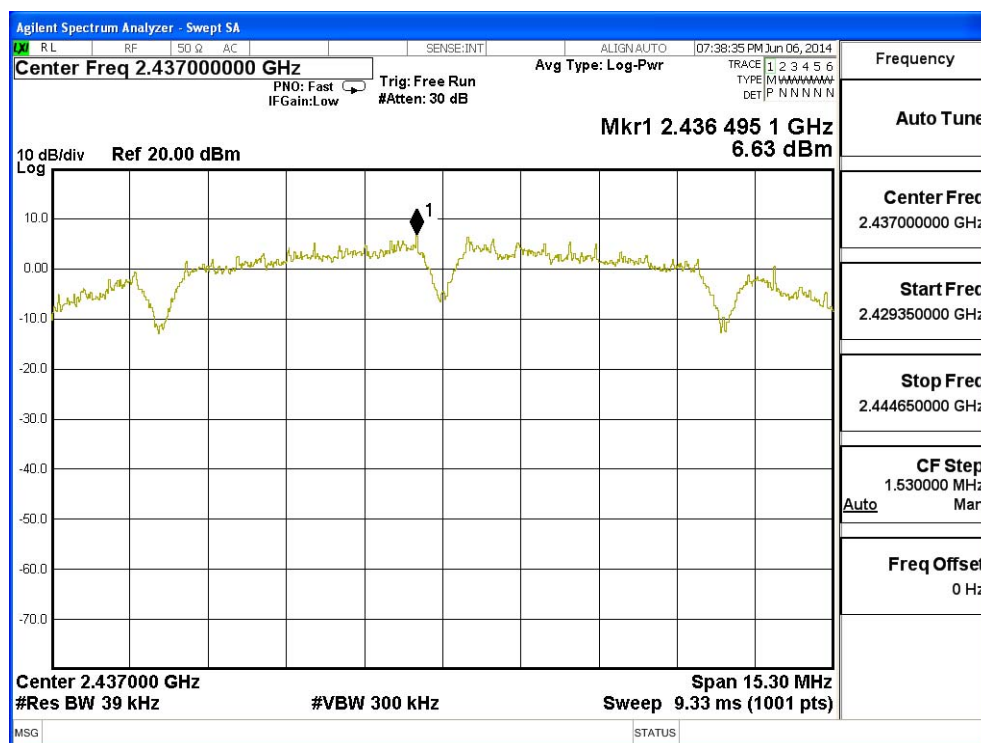
Figure Channel 1:



Product : Network Media Module
 Test Item : Power Density Data
 Test Site : No.3OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
6	2437	6.630	< 8dBm	Pass

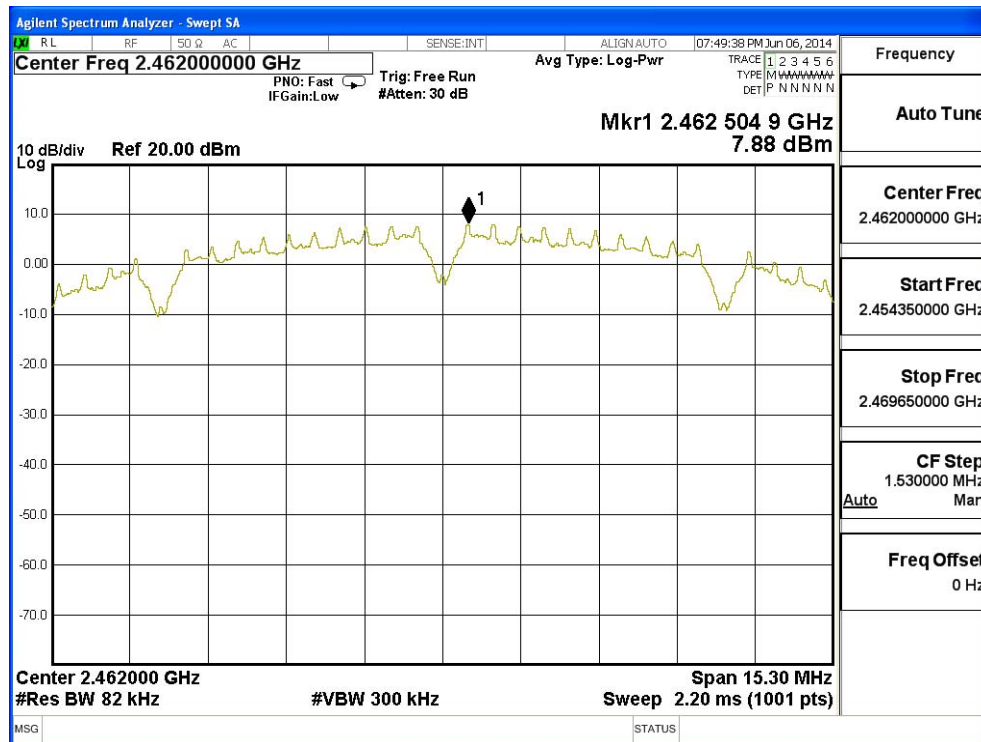
Figure Channel 6:



Product : Network Media Module
 Test Item : Power Density Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
11	2462	7.880	< 8dBm	Pass

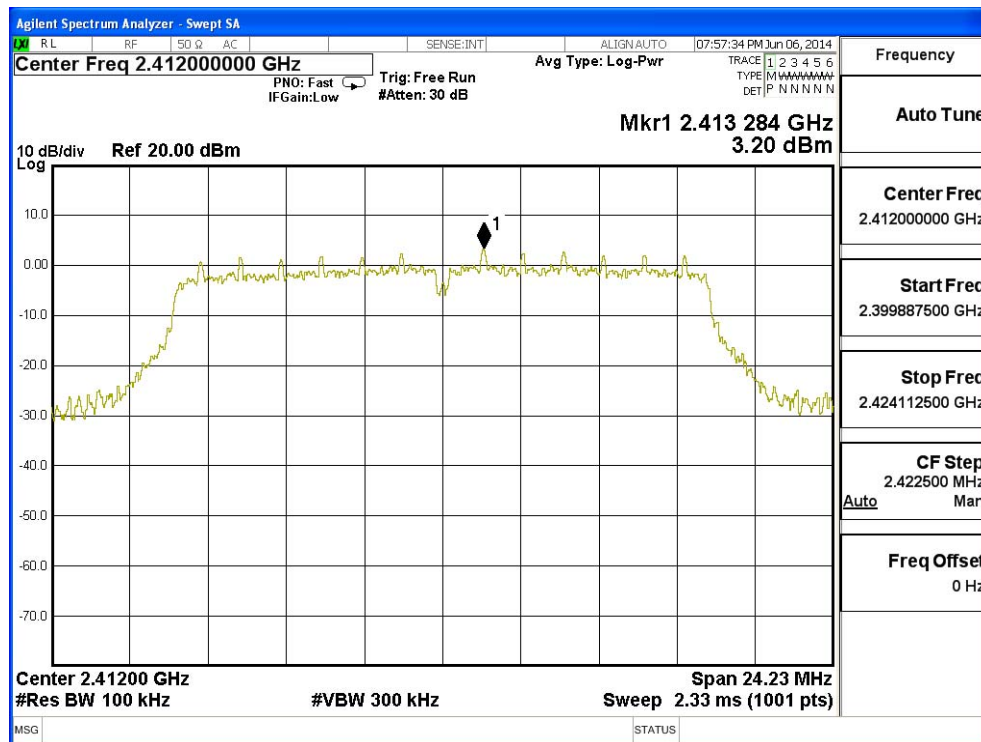
Figure Channel 11:



Product : Network Media Module
 Test Item : Power Density Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1	2412	3.200	< 8dBm	Pass

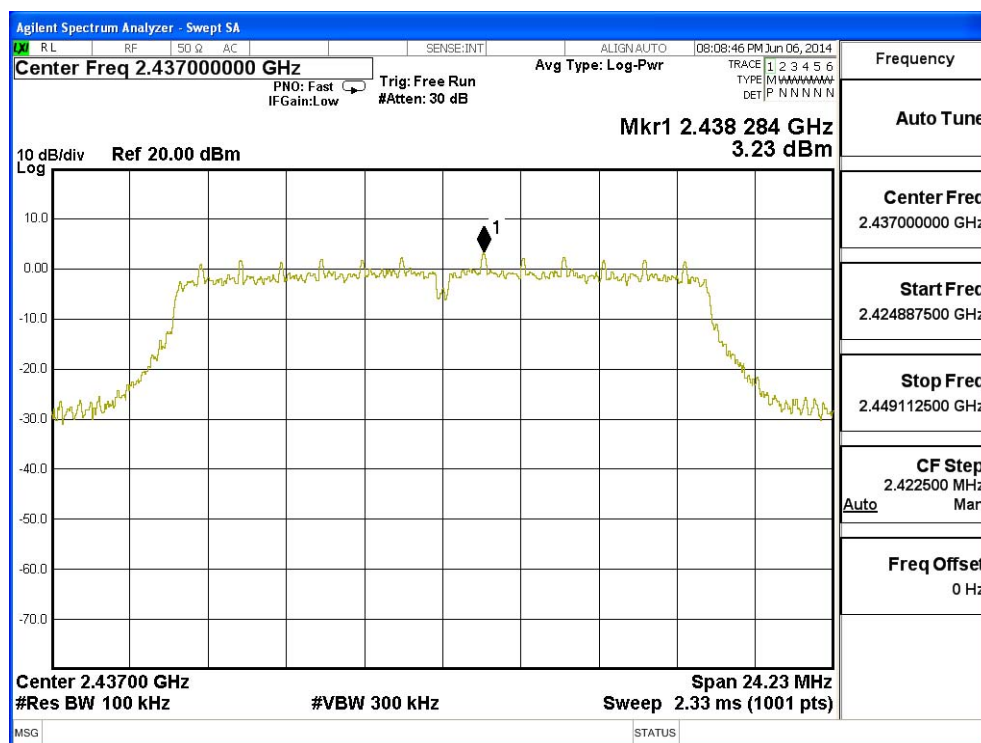
Figure Channel 1:



Product : Network Media Module
 Test Item : Power Density Data
 Test Site : No.3OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
6	2437	3.230	< 8dBm	Pass

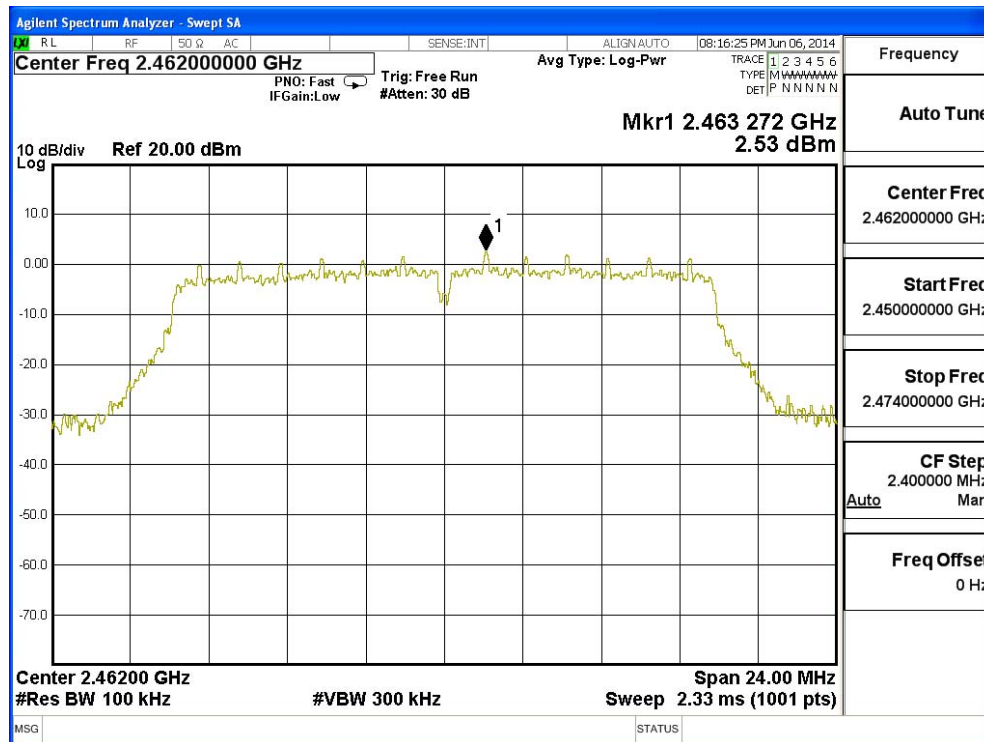
Figure Channel 6:



Product : Network Media Module
 Test Item : Power Density Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
11	2462	2.530	< 8dBm	Pass

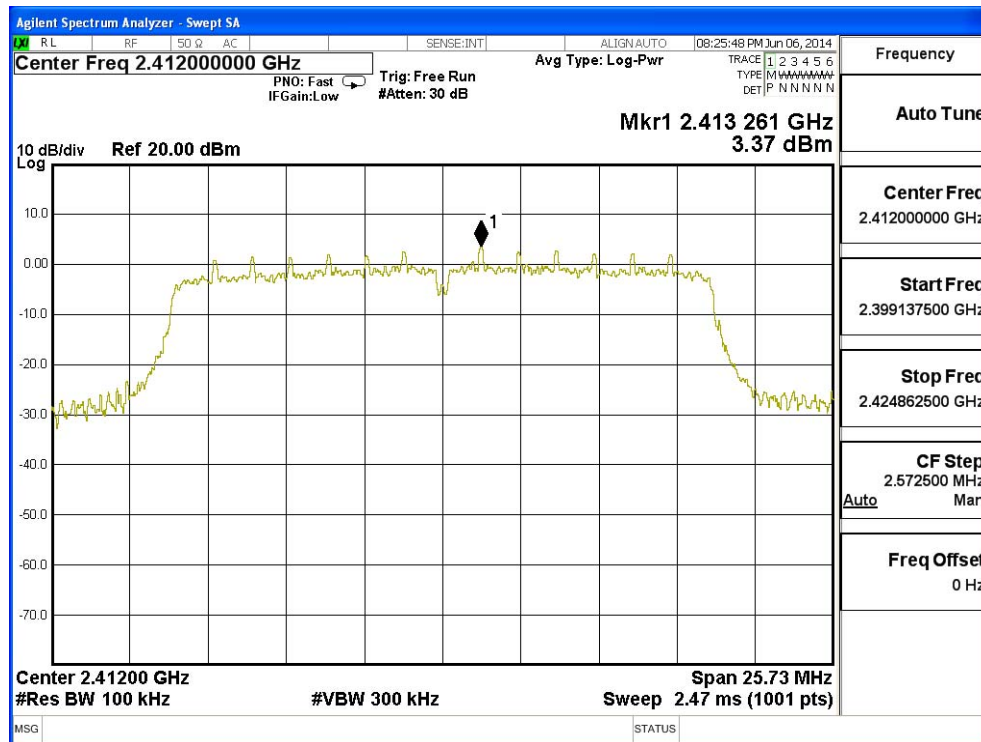
Figure Channel 11:



Product : Network Media Module
 Test Item : Power Density Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2412MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1	2412	3.370	< 8dBm	Pass

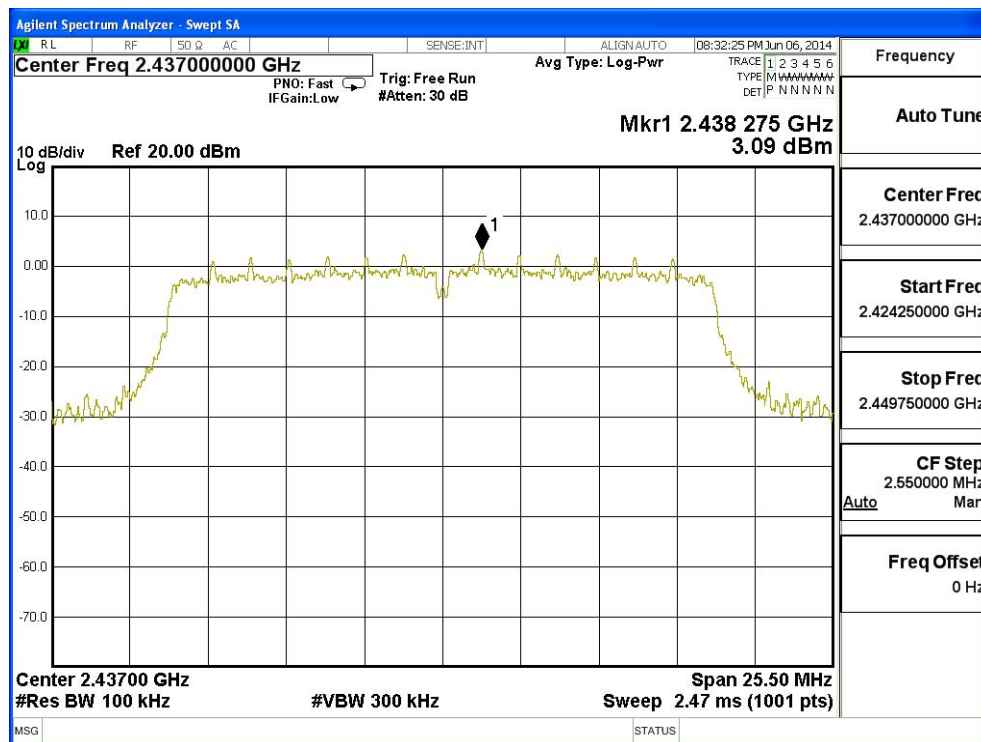
Figure Channel 1:



Product : Network Media Module
 Test Item : Power Density Data
 Test Site : No.3OATS
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2437MHz)

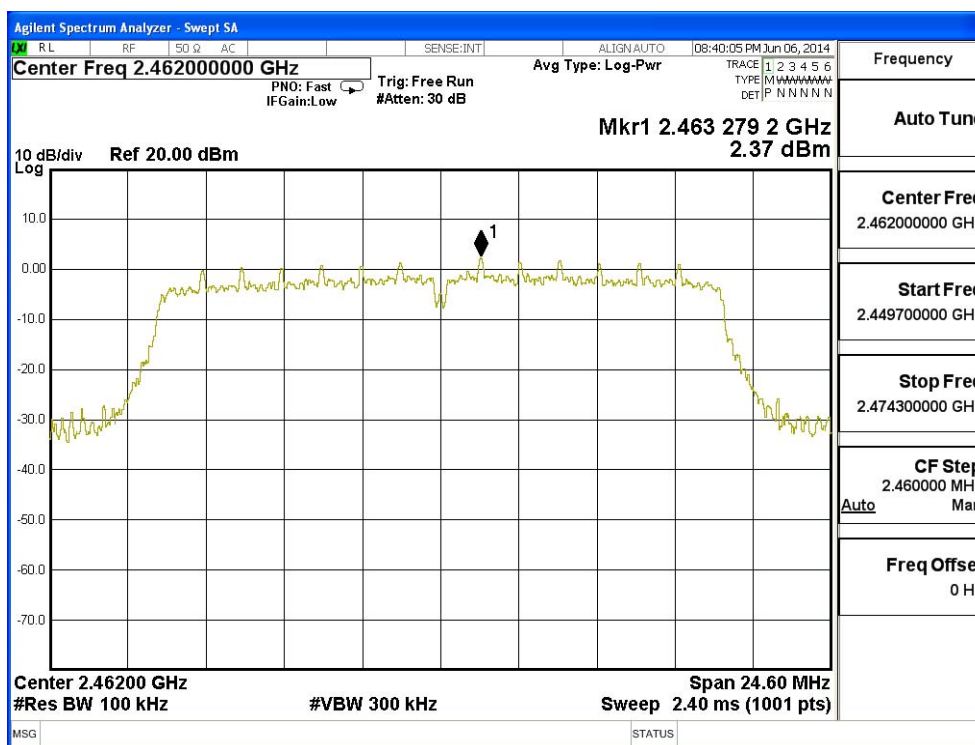
Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
6	2437	3.090	< 8dBm	Pass

Figure Channel 6:



Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
11	2462	2.370	< 8dBm	Pass

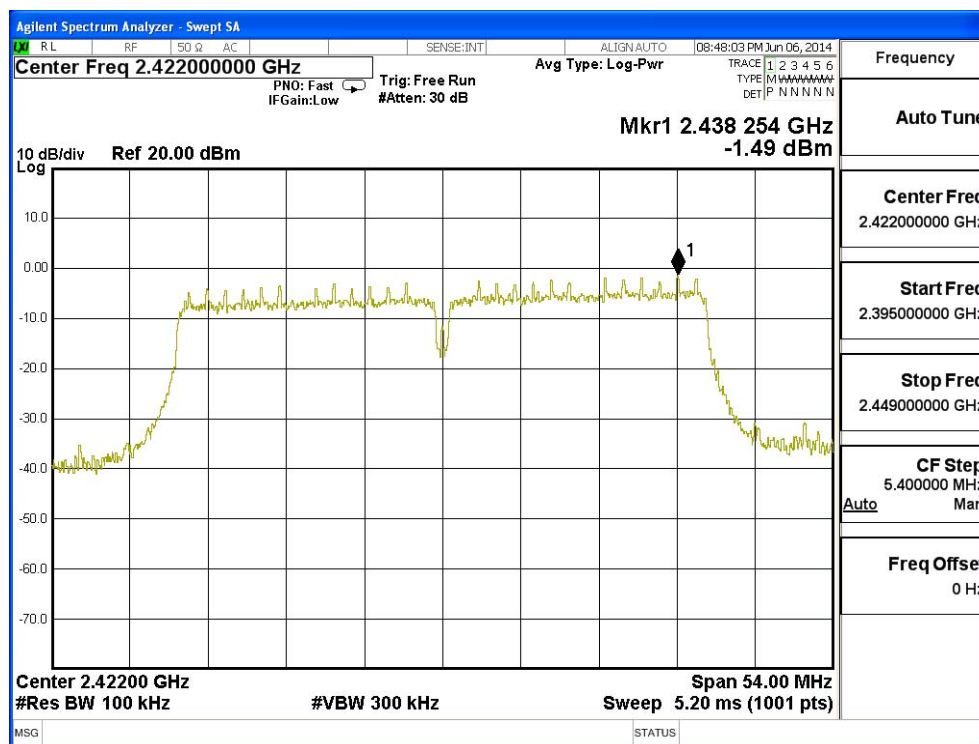
Figure Channel 11:



Product : Network Media Module
 Test Item : Power Density Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2422MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
3	2422	-1.490	< 8dBm	Pass

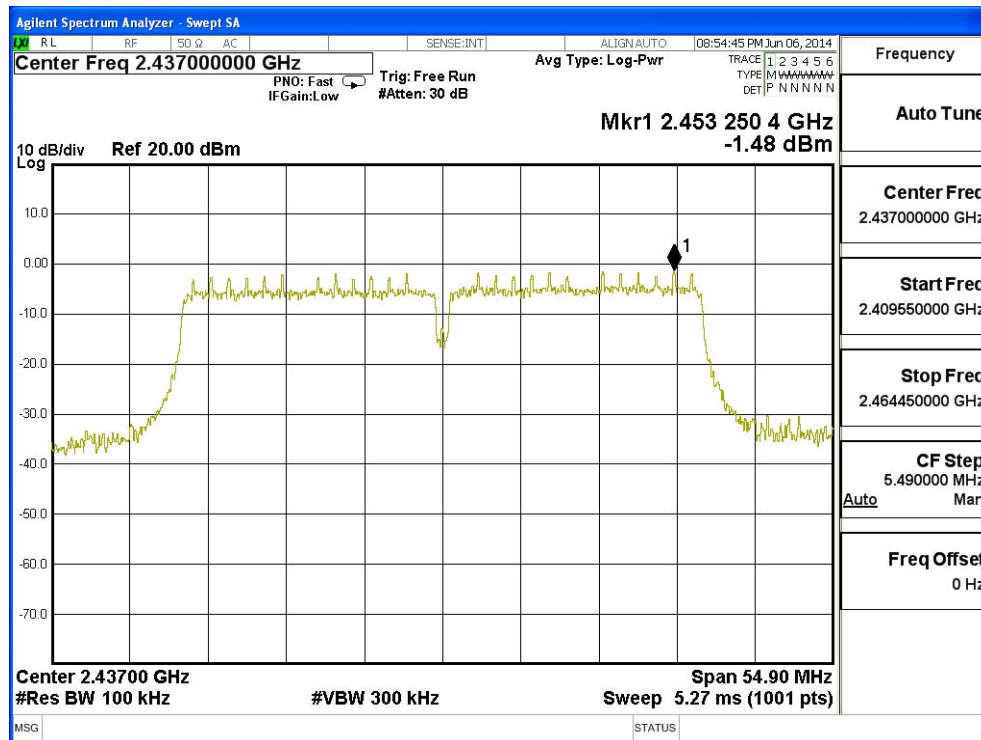
Figure Channel 1:



Product : Network Media Module
 Test Item : Power Density Data
 Test Site : No.3OATS
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
6	2437	-1.480	< 8dBm	Pass

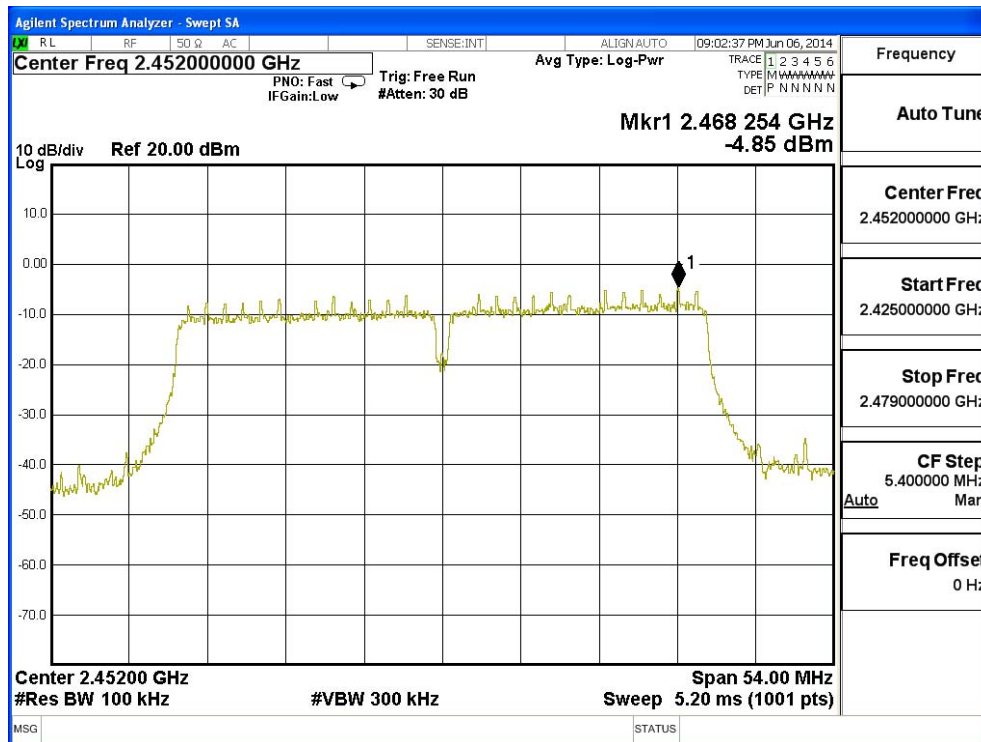
Figure Channel 4:



Product : Network Media Module
 Test Item : Power Density Data
 Test Site : No.3 OATS
 Test Mode : Mode 4: Transmit (802.11n MCS0 15Mbps 40M-BW) (2452MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
9	2452	-4.850	< 8dBm	Pass

Figure Channel 7:



9. EMI Reduction Method During Compliance Testing

No modification was made during testing.

Attachment 3: Pretest Data

Attachment 3 : Pretest Data

Product : Network Media Module
 Test Item : Conducted Emission Test
 Power Line : Line 1
 Test Mode : Transmit (802.11n MCS0 15Mbps 40M-BW) (2437MHz)
 (DDR / ESMT ; FLASH/ MXIC)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBμV	dBμV	dB	dBμV
Line 1					
Quasi-Peak					
0.158	9.747	40.700	50.447	-15.324	65.771
0.173	9.742	37.330	47.073	-18.270	65.343
0.205	9.739	32.380	42.119	-22.310	64.429
0.470	9.751	23.660	33.411	-23.446	56.857
2.771	9.850	21.910	31.760	-24.240	56.000
16.572	10.000	24.230	34.230	-25.770	60.000
Average					
0.158	9.747	30.880	40.627	-15.144	55.771
0.173	9.742	30.200	39.943	-15.400	55.343
0.205	9.739	23.850	33.589	-20.840	54.429
0.470	9.751	15.210	24.961	-21.896	46.857
2.771	9.850	14.910	24.760	-21.240	46.000
16.572	10.000	18.630	28.630	-21.370	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 : Network Media Module
 Test Item : Conducted Emission Test
 Power Line : Line 2
 Test Mode : Transmit (802.11n MCS0 15Mbps 40M-BW) (2437MHz)
 (DDR / ESMT ; FLASH/ MXIC)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBμV	dBμV	dB	dBμV
Line 2					
Quasi-Peak					
0.162	9.747	41.100	50.847	-14.810	65.657
0.201	9.749	32.940	42.689	-21.854	64.543
0.255	9.751	26.270	36.021	-26.979	63.000
0.451	9.750	22.980	32.730	-24.670	57.400
2.787	9.850	21.420	31.270	-24.730	56.000
16.736	10.030	23.780	33.810	-26.190	60.000
Average					
0.162	9.747	31.590	41.337	-14.320	55.657
0.201	9.749	22.590	32.339	-22.204	54.543
0.255	9.751	17.320	27.071	-25.929	53.000
0.451	9.750	17.350	27.100	-20.300	47.400
2.787	9.850	13.090	22.940	-23.060	46.000
16.736	10.030	18.390	28.420	-21.580	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 : Network Media Module
 Test Item : Conducted Emission Test
 Power Line : Line 1
 Test Mode : Transmit (802.11n MCS0 15Mbps 40M-BW) (2437MHz)
 (DDR / EtronTech ; FLASH/ Winbond)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBμV	dBμV	dB	dBμV
Line 1					
Quasi-Peak					
0.170	9.743	34.220	43.964	-21.465	65.429
0.216	9.739	30.030	39.769	-24.345	64.114
0.334	9.745	27.380	37.125	-23.618	60.743
0.490	9.752	32.180	41.932	-14.354	56.286
0.779	9.765	28.600	38.365	-17.635	56.000
7.920	9.910	27.320	37.230	-22.770	60.000
Average					
0.170	9.743	18.800	28.544	-26.885	55.429
0.216	9.739	22.700	32.439	-21.675	54.114
0.334	9.745	24.340	34.085	-16.658	50.743
0.490	9.752	20.580	30.332	-15.954	46.286
0.779	9.765	20.320	30.085	-15.915	46.000
7.920	9.910	21.530	31.440	-18.560	50.000

Note:

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

Product : Network Media Module
 Test Item : Conducted Emission Test
 Power Line : Line 2
 Test Mode : Transmit (802.11n MCS0 15Mbps 40M-BW) (2437MHz)
 (DDR / EtronTech ; FLASH/ Winbond)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBμV	dBμV	dB	dBμV
Line 2					
Quasi-Peak					
0.173	9.747	31.650	41.397	-23.946	65.343
0.509	9.753	31.100	40.853	-15.147	56.000
0.771	9.775	28.660	38.435	-17.565	56.000
1.974	9.839	19.840	29.679	-26.321	56.000
6.685	9.900	23.990	33.890	-26.110	60.000
20.920	10.100	24.460	34.560	-25.440	60.000
Average					
0.173	9.747	12.100	21.847	-33.496	55.343
0.509	9.753	21.120	30.873	-15.127	46.000
0.771	9.775	18.660	28.435	-17.565	46.000
1.974	9.839	6.030	15.869	-30.131	46.000
6.685	9.900	16.290	26.190	-23.810	50.000
20.920	10.100	19.050	29.150	-20.850	50.000

Note:

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

Product : Network Media Module
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Transmit (802.11n MCS0 15Mbps 40M-BW) (2437 MHz)
 (DDR / ESMT ; FLASH/ MXIC)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
113.420	-7.449	40.814	33.365	-10.135	43.500
288.020	-5.557	42.468	36.911	-9.089	46.000
462.620	3.589	34.646	38.235	-7.765	46.000
610.060	3.657	35.054	38.711	-7.289	46.000
827.340	7.361	32.943	40.304	-5.696	46.000
961.200	6.810	33.239	40.049	-13.951	54.000
Vertical					
113.420	-3.709	40.814	37.105	-6.395	43.500
231.760	-6.457	42.263	35.806	-10.194	46.000
375.320	0.388	30.079	30.467	-15.533	46.000
540.220	2.169	34.846	37.015	-8.985	46.000
749.740	2.023	34.176	36.199	-9.801	46.000
961.200	3.310	33.239	36.549	-17.451	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.
8. No emission found between lowest internal used/generated frequency to 30MHz.

Product : Network Media Module
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Transmit (802.11n MCS0 15Mbps 40M-BW) (2437 MHz)
 (DDR / EtronTech ; FLASH/ Winbond)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
124.090	-9.923	42.467	32.543	-10.957	43.500
293.840	-3.868	40.894	37.027	-8.973	46.000
432.550	-2.036	38.987	36.951	-9.049	46.000
527.610	1.832	35.825	37.657	-8.343	46.000
689.600	3.628	32.550	36.178	-9.822	46.000
854.500	6.626	31.281	37.907	-8.093	46.000
Vertical					
97.900	-1.400	35.278	33.877	-9.623	43.500
288.020	-8.189	44.442	36.253	-9.747	46.000
472.320	-4.613	42.026	37.413	-8.587	46.000
558.650	-5.227	40.010	34.783	-11.217	46.000
690.570	2.519	32.678	35.197	-10.803	46.000
897.180	2.332	33.116	35.448	-10.552	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.
8. No emission found between lowest internal used/generated frequency to 30MHz