

FCC Test Report (Class II Permissive Change)

Product Name	MOXA IEEE802.11 a/b/g mini PCI module
Model No	WAPA004
FCC ID.	SLE-WAPA004

Applicant	MOXA Inc.
Address	FL.4, NO. 135. LANE 235, BAOQIAO RD. XINDIAN DIST.,NEW TAIPEI CITY, TAIWAN

Date of Receipt	Feb. 16, 2015
Issue Date	Mar. 16, 2016
Report No.	1620260R-RFUSP02V00
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 report of the equipment and evaluated measurement uncertainty herein.
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Test Report

Issue Date: Mar. 16, 2016

Report No.: 1620260R-RFUSP02V00



Product Name	MOXA IEEE802.11 a/b/g mini PCI module
Applicant	MOXA Inc.
Address	FL.4, NO. 135. LANE 235, BAOQIAO RD. XINDIAN DIST.,NEW TAIPEI CITY, TAIWAN
Manufacturer	MOXA Inc.
Model No.	WAPA004
EUT Rated Voltage	DC 3.3V (Power by PCI-E)
EUT Test Voltage	AC 120V/60Hz
Trade Name	MOXA
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C: 2014 ANSI C63.4: 2014, ANSI C63.10: 2013 KDB 558074 D01 DTS Meas Guidance v03r04
Test Result	Complied

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Tested By : Bill Lin
(Engineer / Bill Lin)

Approved By : Vincent Lin
(Director / Vincent Lin)

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- Attachment 1: EUT Test Photographs
- Attachment 2: EUT Detailed Photographs

1. GENERAL INFORMATION

1.1. EUT Description

Product Name	MOXA IEEE802.11 a/b/g mini PCI module
Trade Name	MOXA
Model No.	WAPA004
FCC ID.	SLE-WAPA004
Frequency Range	2412-2462MHz
Number of Channels	11
Data Speed	5MHz BW:1.5-13.5Mbps, 10MHz BW:3-27Mbps
Channel separation	5 /10MHz BW: 5 MHz
Antenna Type	Dipole
Antenna Gain	Refer to the table "Antenna List"
Channel Control	Auto

Antenna List

No.	Manufacturer	Model No.	Peak Gain
1	KINSUN	ANT-WDB-O-2 BK (main) ANT-WDB-O-2 BK (aux)	2.9dBi in 2.4GHz
2	KINSUN	ANT-WDB-ANM-0502 (main) ANT-WDB-ANM-0502 (aux)	4.62 dBi in 2.4GHz

- 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.
("ANT-WDB-ANM-0502" antenna is used for 2.4GHz band testing)

5M /10M Bandwidth 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		

Note:

1. This device is an MOXA IEEE802.11 a/b/g mini PCI module with a built-in 2.4GHz OFDM transceiver.
2. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
3. The device is applied for modular approval.
4. At result of pretests, module supports dual-channel transmission, only the worst case is shown in the report. (Transmit is chain A)
5. Lowest and highest data rates are tested in each mode. Only worst case is shown in the report. (5MHz BW is 1.5Mbps, 10MHz BW is 3 Mbps).
6. These tests are conducted on a sample for the purpose of demonstrating compliance of OFDM transmitter with Part 15 Subpart C Paragraph 15.247 of spread spectrum devices.
7. The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.
8. This is requesting a Class II permissive change for FCC ID: SLE-WAPA004. originally granted on 12/22/2015

The major change filed under this application is:

Change #1: Original grant compliance bandwidth of 2.4GHz band is 20/40 MHz, this C2PC is add the 5/10 MHz bandwidth through firmware. This change can't be made by end user. All other hardware is identical with original granted.

Test Mode:	Mode 1: Transmit-5MHz BW
	Mode 2: Transmit-10MHz BW

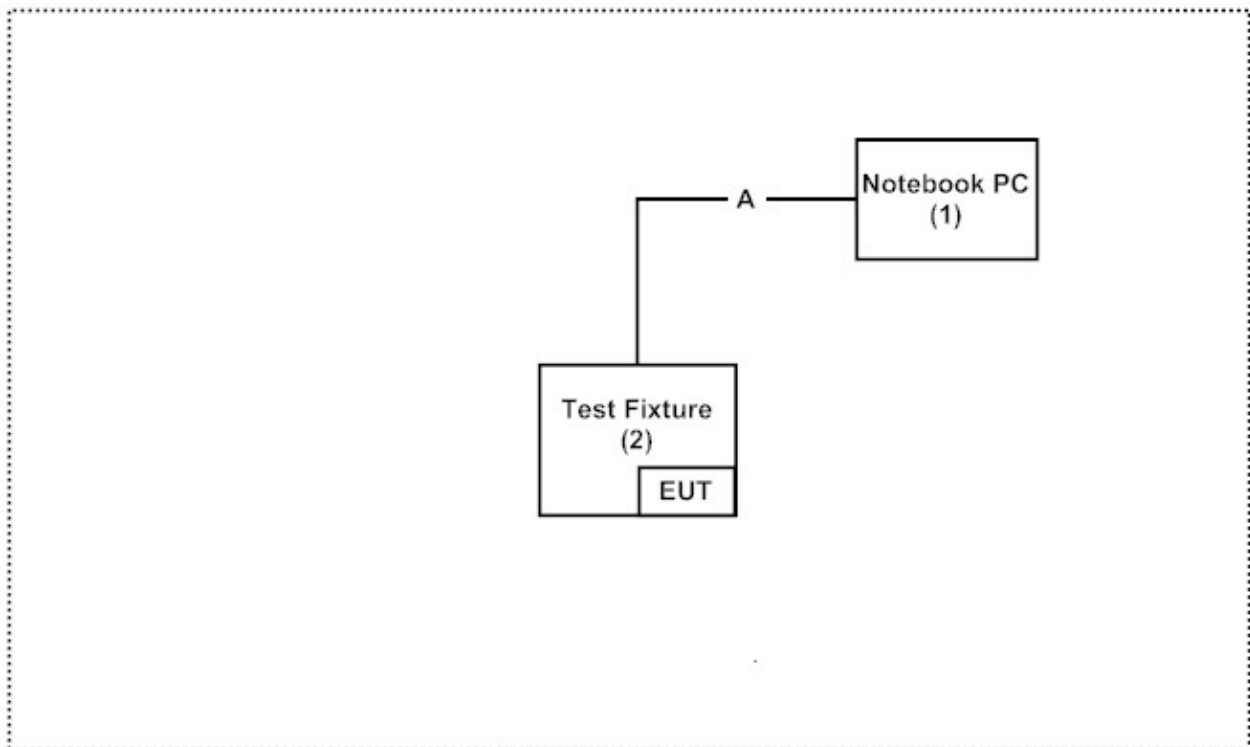
1.3. Tested System Details

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

Signal Cable Type	Signal cable Description
A LAN Cable	Shielded, 1.2m

1.4. Configuration of Tested System



1.5. EUT Exercise Software

- (1) Setup the EUT as shown in Section 1.4
- (2) Execute program Telnet on the Notebook.
- (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/chinese/about/certificates.aspx?bval=5>
 The address and introduction of QuieTek Corporation's laboratories can be founded in our Web site : <http://www.quietek.com/>

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

Accreditation on NVLAP
 NVLAP Lab Code: 200533-0

Site Name: Quietek Corporation
 Site Address: No. 5-22, Rueishu Keng, Linkou Dist.,
 New Taipei City 24451
 Taiwan, R.O.C.
 TEL: 886-2-8601-3788 / FAX : 886-2-8601-3789
 E-Mail : service@quietek.com

FCC Accreditation Number: TW1014

2. Maximum Conducted Power

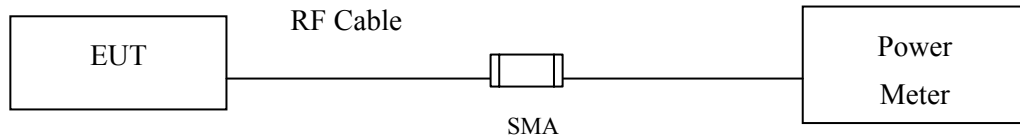
2.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Power Meter	Anritsu	ML2495A/6K00003357	May, 2015
X	Power Sensor	Anritsu	MA2411B/0738448	Jun, 2015
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2015
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2015
	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2015

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.

2.2. Test Setup



2.3. Limits

The maximum average power shall be less 1 Watt. (Section 15.247 (b)(3))

2.4. 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 D01 DTS Meas Guidance v03r04 section 9.1.2 PKPM1 Peak power meter method.

2.5. Uncertainty

± 1.27 dB

2.6. Test Result of Maximum Conducted Power

Product : MOXA IEEE802.11 a/b/g mini PCI module
 Test Item : Maximum Conducted Power
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit-5MHz BW

CHAIN A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		1.5	2	3	4.5	6	9	12	13.5			
		Measurement Level (dBm)										
01	2412	13.24	--	--	--	--	--	--	--	23.12	<30dBm	Pass
06	2437	12.97	12.92	12.9	12.87	12.85	12.83	12.81	12.8	23.09	<30dBm	Pass
11	2462	12.95	--	--	--	--	--	--	--	22.98	<30dBm	Pass

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

CHAIN B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		1.5	2	3	4.5	6	9	12	13.5			
		Measurement Level (dBm)										
01	2412	12.87	--	--	--	--	--	--	--	23.02	<30dBm	Pass
06	2437	12.96	12.85	12.83	12.81	12.79	12.77	12.75	12.72	22.75	<30dBm	Pass
11	2462	12.92	--	--	--	--	--	--	--	22.97	<30dBm	Pass

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

Product : MOXA IEEE802.11 a/b/g mini PCI module
 Test Item : Maximum Conducted Power
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit-10MHz BW

CHAIN A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		3	4.5	6	9	12	18	24	27			
		Measurement Level (dBm)										
01	2412	13.03	--	--	--	--	--	--	--	22.94	<30dBm	Pass
06	2437	12.94	12.92	12.9	12.87	12.85	12.83	12.81	12.8	22.96	<30dBm	Pass
11	2462	13.13	--	--	--	--	--	--	--	22.98	<30dBm	Pass

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

CHAIN B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		3	4.5	6	9	12	18	24	27			
		Measurement Level (dBm)										
01	2412	12.85	--	--	--	--	--	--	--	22.93	<30dBm	Pass
06	2437	12.87	12.85	12.83	12.81	12.79	12.77	12.75	12.72	22.89	<30dBm	Pass
11	2462	12.94	--	--	--	--	--	--	--	22.91	<30dBm	Pass

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

3. Radiated Emission

3.1. Test Equipment

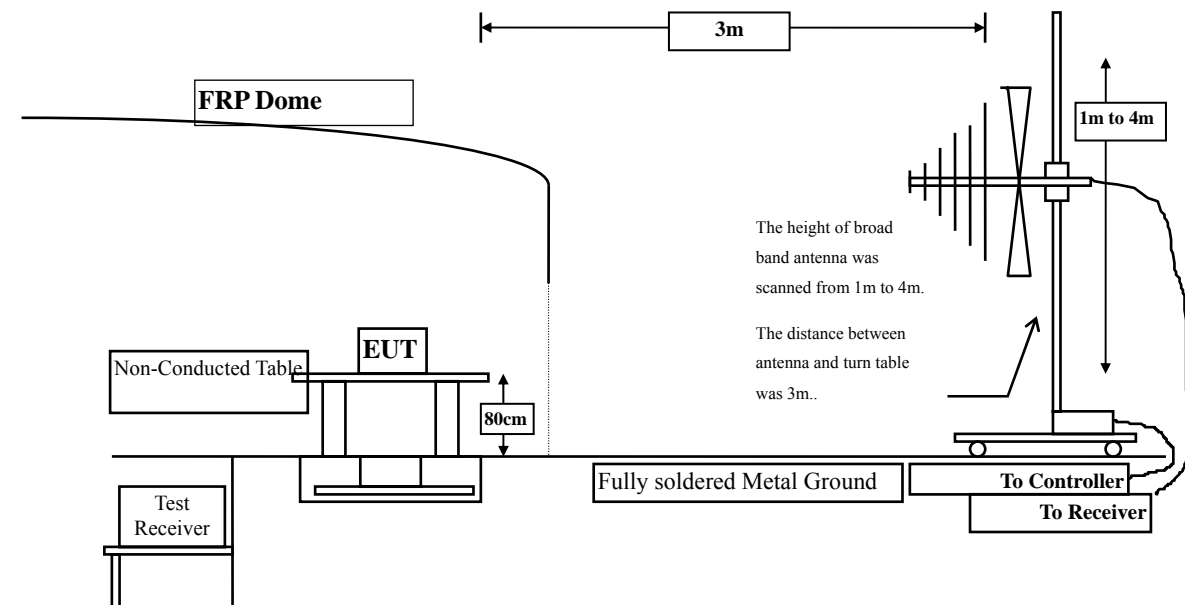
The following test equipments are used during the radiated emission test:

Test Site	Equipment	Manufacturer	Model No./Serial No.	Last Cal.	
Site # 3	X	Magnetic Loop Antenna	Teseq	HLA6121/ 37133	Sep, 2015
	X	Bilog Antenna	Schaffner Chase	CBL6112B/ 2707	Jun, 2015
	X	EMI Test Receiver	R&S	ESCS 30/838251/ 001	Jun, 2015
	X	Coaxial Cable	QTK(Armist)	RG 214/ LC003-RG	Jun, 2015
	X	Coaxial signal switch	Armist	MP59B/ 6200798682	Jun, 2015

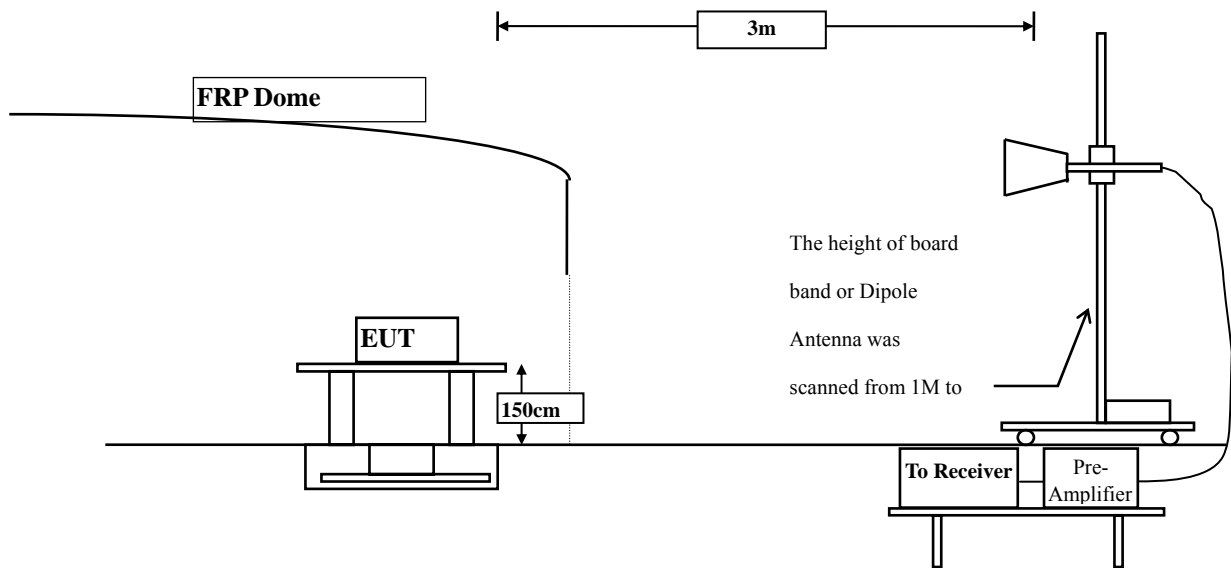
- Note:
1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
 2. The test instruments marked with “X” are used to measure the final test results.

3.2. Test Setup

Radiated Emission Below 1GHz



Radiated Emission Above 1GHz



3.3. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 30dB 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 (dBuV/m) = 20 log E field strength (uV/m)

3.4. Test Procedure

The EUT was setup according to ANSI C63.10: 2013 and tested according to DTS test procedure of KDB558074 for compliance to FCC 47CFR 15.247 requirements.

Measuring the frequency range below 1GHz, the EUT is placed on a turn table which is 0.8 meter above ground, when measuring the frequency range above 1GHz, the EUT is placed on a turn table which is 1.5 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: 2013 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 measurement frequency range from 9kHz - 10th Harmonic of fundamental was investigated.

3.5. Uncertainty

± 3.9 dB above 1GHz

± 3.8 dB below 1GHz

3.6. Test Result of Radiated Emission

Product : MOXA IEEE802.11 a/b/g mini PCI module
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit-5MHz BW (2412MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4824.000	2.428	49.430	51.859	-22.141	74.000
7236.000	9.177	40.410	49.587	-24.413	74.000
9648.000	10.019	40.470	50.490	-23.510	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4824.000	2.836	59.010	61.847	-12.153	74.000
7236.000	9.676	42.260	51.936	-22.064	74.000
9648.000	10.556	39.950	50.507	-23.493	74.000
Average Detector:					
4824.000	2.836	31.050	33.887	-20.113	54.000

Note:

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

Product : MOXA IEEE802.11 a/b/g mini PCI module
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit-5MHz BW (2437 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4874.000	2.076	46.760	48.837	-25.163	74.000
7311.000	9.512	40.100	49.612	-24.388	74.000
9748.000	9.630	39.880	49.510	-24.490	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4874.000	2.532	55.140	57.672	-16.328	74.000
7311.000	10.089	40.870	50.959	-23.041	74.000
9748.000	10.266	39.160	49.427	-24.573	74.000
Average Detector:					
4874.000	2.532	28.970	31.502	-22.498	54.000

Note:

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

Product : MOXA IEEE802.11 a/b/g mini PCI module
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit-5MHz BW (2462 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4924.000	2.191	43.500	45.691	-28.309	74.000
7386.000	10.373	39.080	49.454	-24.546	74.000
9848.000	9.964	39.790	49.754	-24.246	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4924.000	2.805	48.100	50.905	-23.095	74.000
7386.000	11.180	39.360	50.540	-23.460	74.000
9848.000	10.801	39.920	50.721	-23.279	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 : MOXA IEEE802.11 a/b/g mini PCI module
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit-10MHz BW (2412MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4824.000	2.428	42.010	44.439	-29.561	74.000
7236.000	9.177	39.820	48.997	-25.003	74.000
9648.000	10.019	39.900	49.920	-24.080	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4824.000	2.836	43.230	46.067	-27.933	74.000
7236.000	9.676	40.520	50.196	-23.804	74.000
9648.000	10.556	39.850	50.407	-23.593	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 : MOXA IEEE802.11 a/b/g mini PCI module
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit-10MHz BW (2437 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4874.000	2.076	42.800	44.877	-29.123	74.000
7311.000	9.512	40.340	49.852	-24.148	74.000
9748.000	9.630	39.120	48.750	-25.250	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4874.000	2.532	42.430	44.962	-29.038	74.000
7311.000	10.089	39.890	49.979	-24.021	74.000
9748.000	10.266	39.300	49.567	-24.433	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 : MOXA IEEE802.11 a/b/g mini PCI module
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit-10MHz BW (2462 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4924.000	2.191	43.870	46.061	-27.939	74.000
7386.000	10.373	38.880	49.254	-24.746	74.000
9848.000	9.964	39.400	49.364	-24.636	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4924.000	2.805	42.170	44.975	-29.025	74.000
7386.000	11.180	39.120	50.300	-23.700	74.000
9848.000	10.801	39.380	50.181	-23.819	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 : MOXA IEEE802.11 a/b/g mini PCI module
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit-5MHz BW (2437 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
396.660	0.771	41.572	42.343	-3.657	46.000
592.600	3.437	39.087	42.524	-3.476	46.000
660.500	1.889	37.862	39.751	-6.249	46.000
749.740	3.963	41.014	44.977	-1.023	46.000
837.040	6.016	36.620	42.636	-3.364	46.000
924.340	6.589	34.844	41.433	-4.567	46.000
Vertical					
396.660	-2.039	40.668	38.629	-7.371	46.000
549.920	-0.478	40.353	39.874	-6.126	46.000
594.540	0.175	44.704	44.879	-1.121	46.000
660.500	-1.111	38.639	37.528	-8.472	46.000
838.980	1.961	35.305	37.266	-8.734	46.000
924.340	3.149	41.788	44.937	-1.063	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 : MOXA IEEE802.11 a/b/g mini PCI module
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit-10MHz BW (2437 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
125.594	-9.965	49.307	39.342	-4.158	43.500
461.580	1.526	39.690	41.216	-4.784	46.000
529.164	1.850	41.569	43.419	-2.581	46.000
725.870	3.475	36.206	39.681	-6.319	46.000
791.942	5.212	37.029	42.241	-3.759	46.000
926.156	6.469	36.436	42.906	-3.094	46.000
Vertical					
148.087	-6.244	47.580	41.336	-2.164	43.500
395.507	-4.160	40.818	36.658	-9.342	46.000
571.232	-5.525	49.227	43.702	-2.298	46.000
659.797	-2.471	46.130	43.659	-2.341	46.000
798.167	2.809	40.146	42.955	-3.045	46.000
921.316	5.526	38.036	43.562	-2.438	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.

4. RF Antenna conducted test

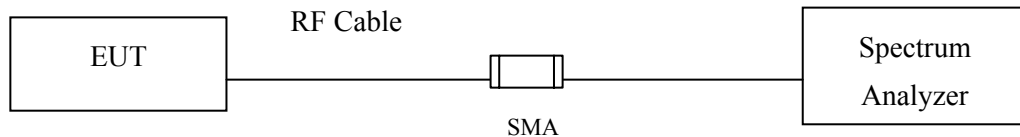
4.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2015
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2015
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2015

- 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

RF antenna Conducted Measurement:



4.3. 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 30 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)).

4.4. 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.

4.5. Uncertainty

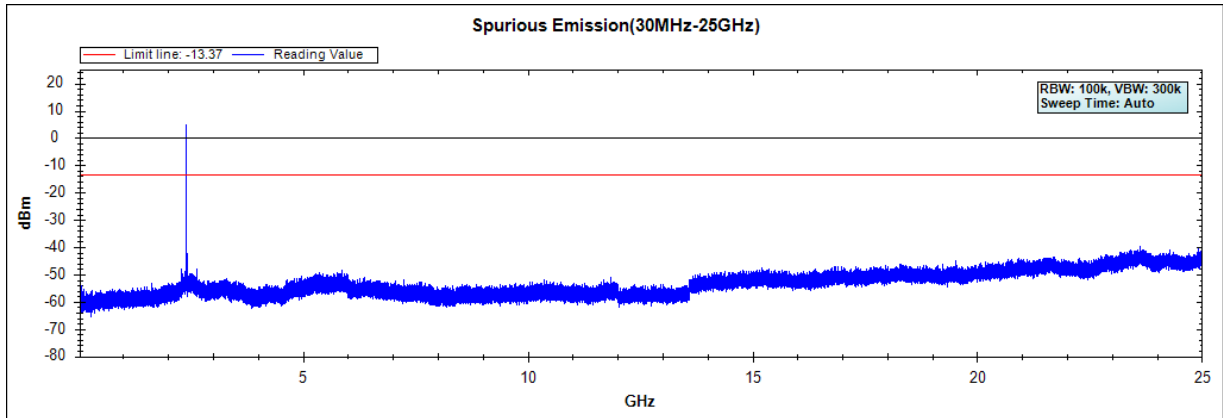
The measurement uncertainty

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

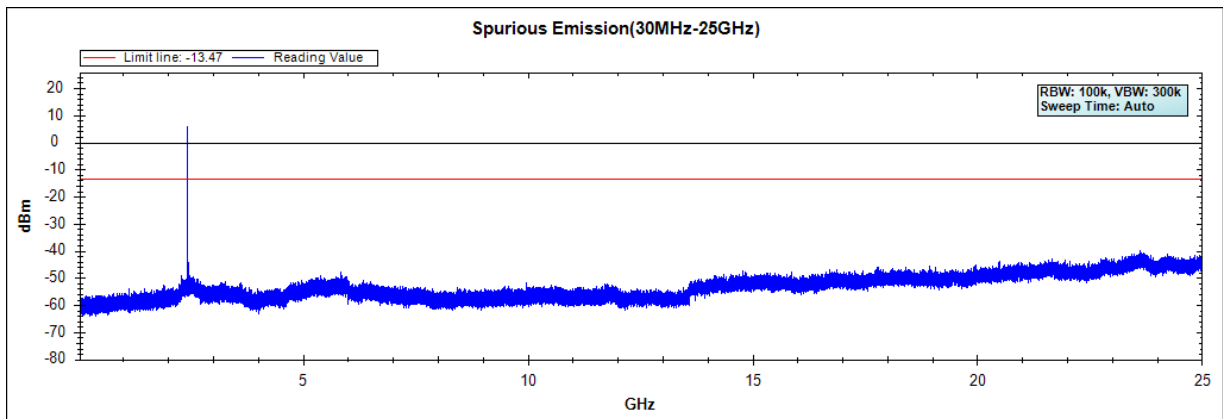
4.6. Test Result of RF antenna conducted test

Product : MOXA IEEE802.11 a/b/g mini PCI module
 Test Item : RF antenna conducted test
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit-5MHz BW

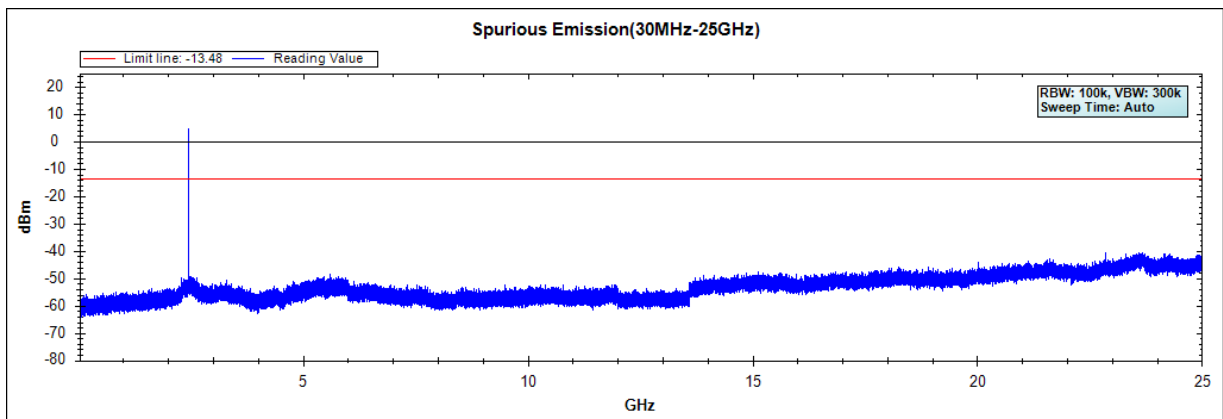
Channel 01 (2412MHz) 30MHz-25GHz



Channel 06 (2437MHz) 30MHz -25GHz



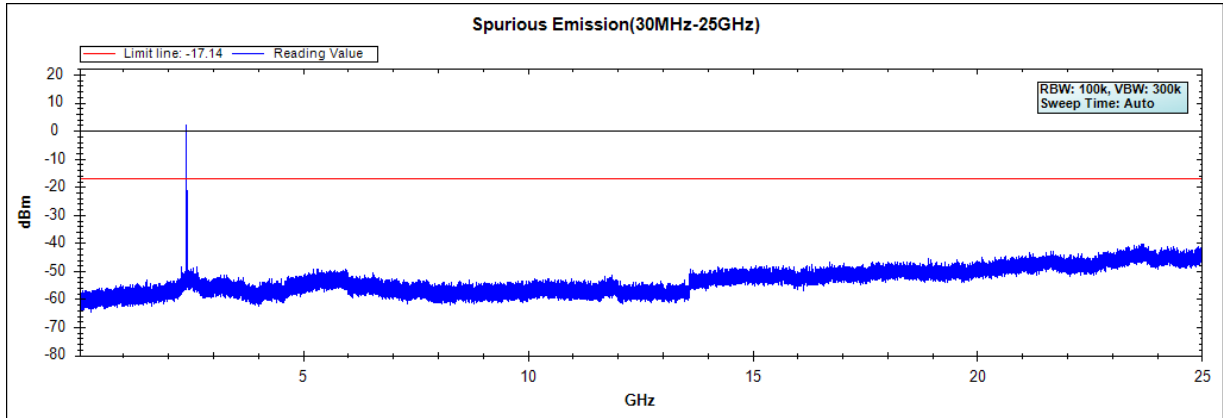
Channel 11 (2462MHz) 30MHz -25GHz



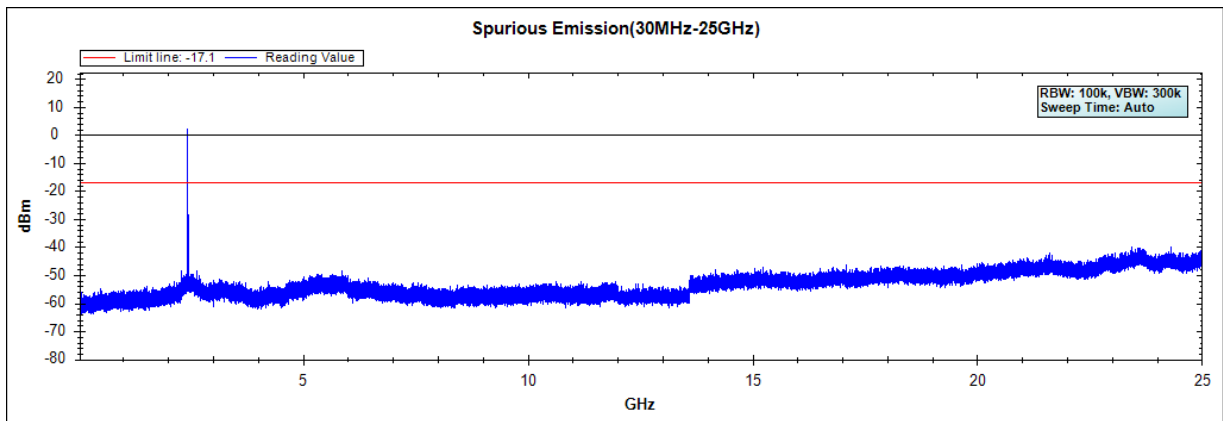
Note: The above test pattern is synthesized by multiple of the frequency range.

Product : MOXA IEEE802.11 a/b/g mini PCI module
 Test Item : RF Antenna Conducted Spurious
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit-10MHz BW

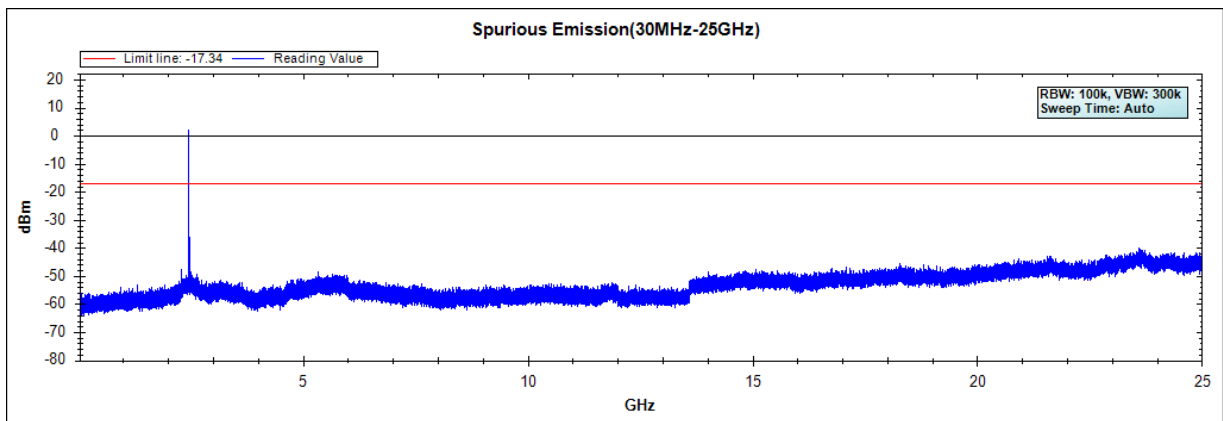
Channel 01 (2412MHz) 30MHz -25GHz



Channel 06 (2437MHz) 30MHz -25GHz



Channel 11 (2462MHz) 30MHz -25GHz



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

5. Band Edge

5.1. Test Equipment

RF Conducted Measurement

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

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2015
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2015
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2015

Note:

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

RF Radiated Measurement:

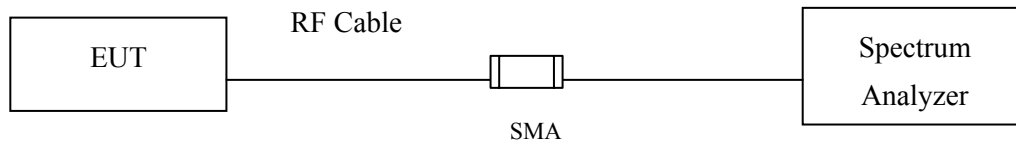
The following test equipments are used during the band edge tests:

Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒ CB # 8	X	Spectrum Analyzer	R&S	FSP40/ 100339	Oct, 2015
	X	Horn Antenna	ETS-Lindgren	3117/ 35205	Mar, 2016
	X	Horn Antenna	Schwarzbeck	BBHA9170/209	Jan, 2015
	X	Horn Antenna	TRC	AH-0801/95051	Aug, 2015
	X	Pre-Amplifier	EMCI	EMC012630SE/980210	Jan, 2015
	X	Pre-Amplifier	MITEQ	JS41-001040000-58-5P/153945	Jul, 2015
	X	Pre-Amplifier	NARDA	DBL-1840N506/013	Jul, 2015

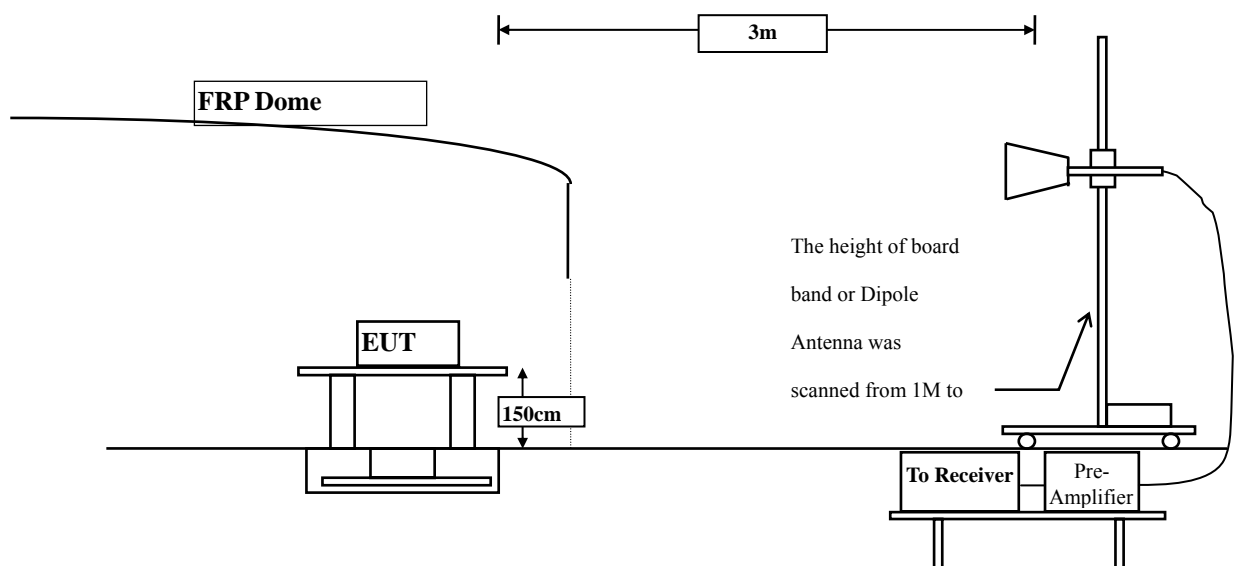
- Note:
1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
 2. The test instruments marked with “X” are used to measure the final test results.

5.2. Test Setup

RF Conducted Measurement



RF Radiated Measurement:



5.3. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 30dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

5.4. Test Procedure

The EUT was setup according to ANSI C63.10, 2013 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 1.5 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 C63.10:2013 on radiated measurement.

5.5. Uncertainty

± 3.9 dB above 1GHz

± 3.8 dB below 1GHz

5.6. Test Result of Band Edge

Product : MOXA IEEE802.11 a/b/g mini PCI module
 Test Item : Band Edge
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit-5MHz BW

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
01 (Peak)	2346.600	33.728	26.124	59.852	74.00	54.00	Pass
01 (Peak)	2390.000	33.739	23.605	57.344	74.00	54.00	Pass
01 (Peak)	2400.000	33.752	23.761	57.512	--	--	--
01 (Peak)	2413.200	33.775	73.684	107.459	--	--	--
01 (Average)	2390.000	33.739	11.413	45.152	74.00	54.00	Pass
01 (Average)	2400.000	33.752	11.802	45.553	--	--	--
01 (Average)	2412.800	33.775	59.851	93.625	--	--	--

Figure Channel 01: Horizontal (Peak)

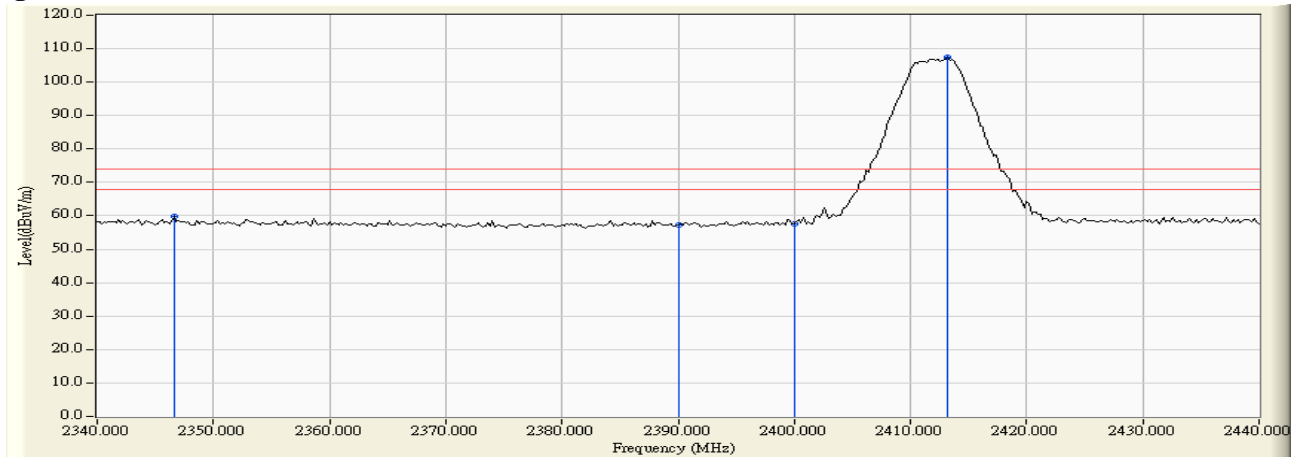
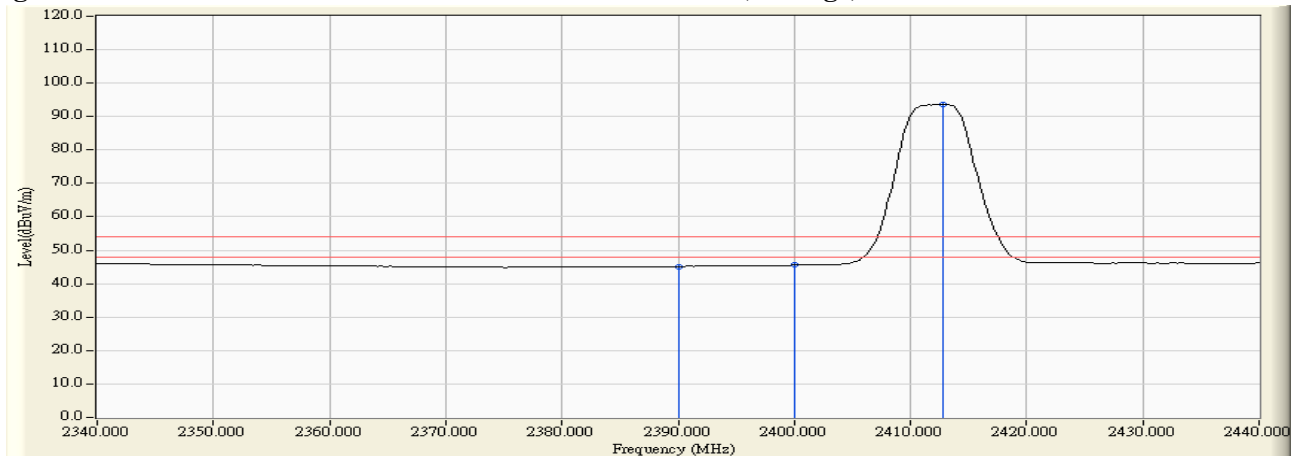


Figure Channel 01: Horizontal (Average)



- 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 : MOXA IEEE802.11 a/b/g mini PCI module
 Test Item : Band Edge
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit-5MHz BW

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
01 (Peak)	2390.000	32.267	24.710	56.977	74.00	54.00	Pass
01 (Peak)	2400.000	32.241	27.367	59.608	--	--	--
01 (Peak)	2411.800	32.248	83.213	115.461	--	--	--
01 (Average)	2390.000	32.267	12.980	45.247	74.00	54.00	Pass
01 (Average)	2400.000	32.241	14.396	46.637	--	--	--
01 (Average)	2412.800	32.253	69.644	101.897	--	--	--

Figure Channel 01: Vertical (Peak)

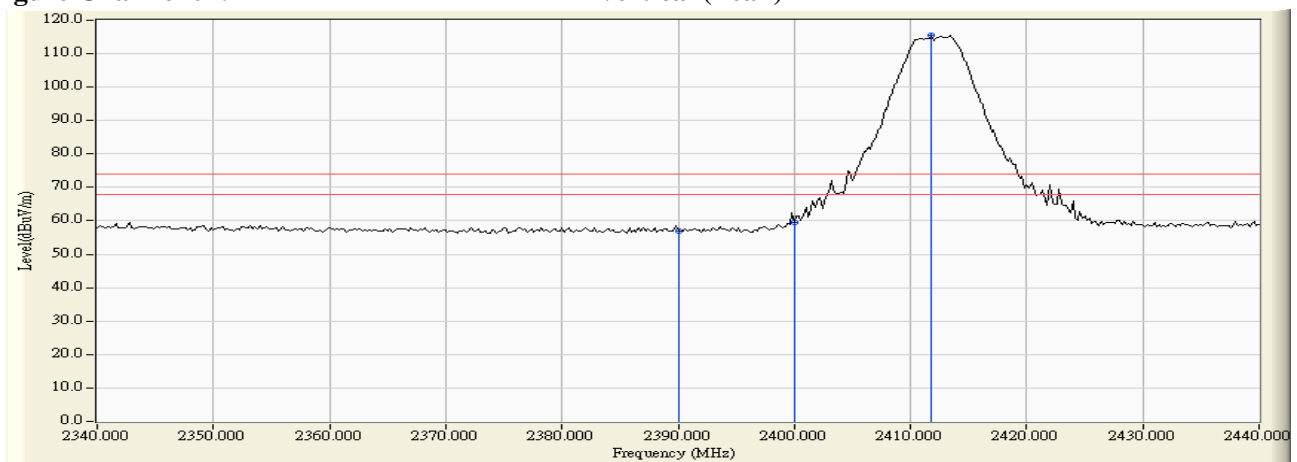
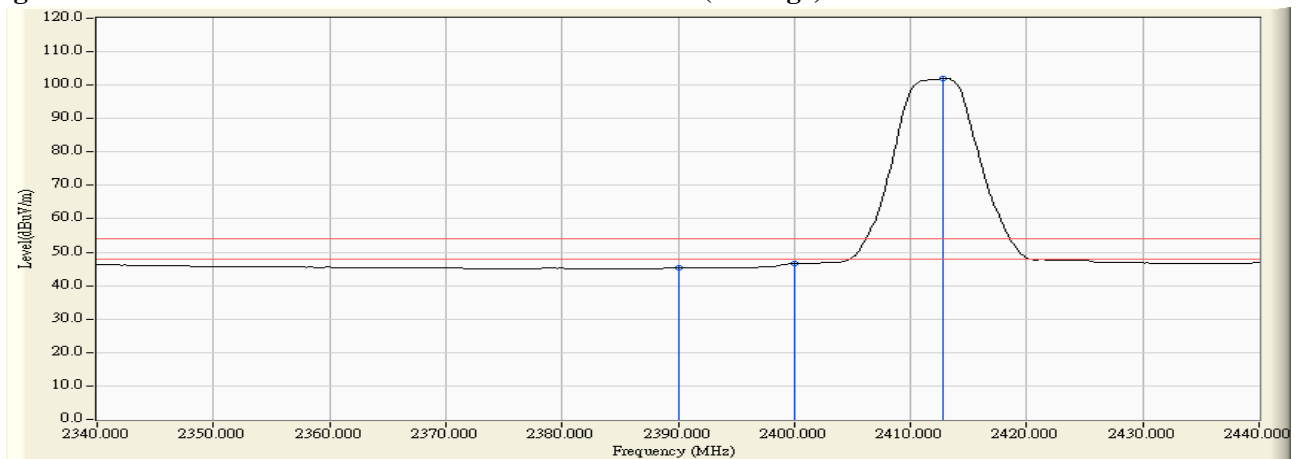


Figure Channel 01: Vertical (Average)



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 : MOXA IEEE802.11 a/b/g mini PCI module
 Test Item : Band Edge
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit-5MHz BW

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11 (Peak)	2463.100	33.895	74.271	108.166	--	--	--
11 (Peak)	2483.500	33.951	24.326	58.276	74.00	54.00	Pass
11 (Average)	2461.300	33.890	60.680	94.571	--	--	--
11 (Average)	2483.500	33.951	13.370	47.320	74.00	54.00	Pass

Figure Channel 11: Horizontal (Peak)

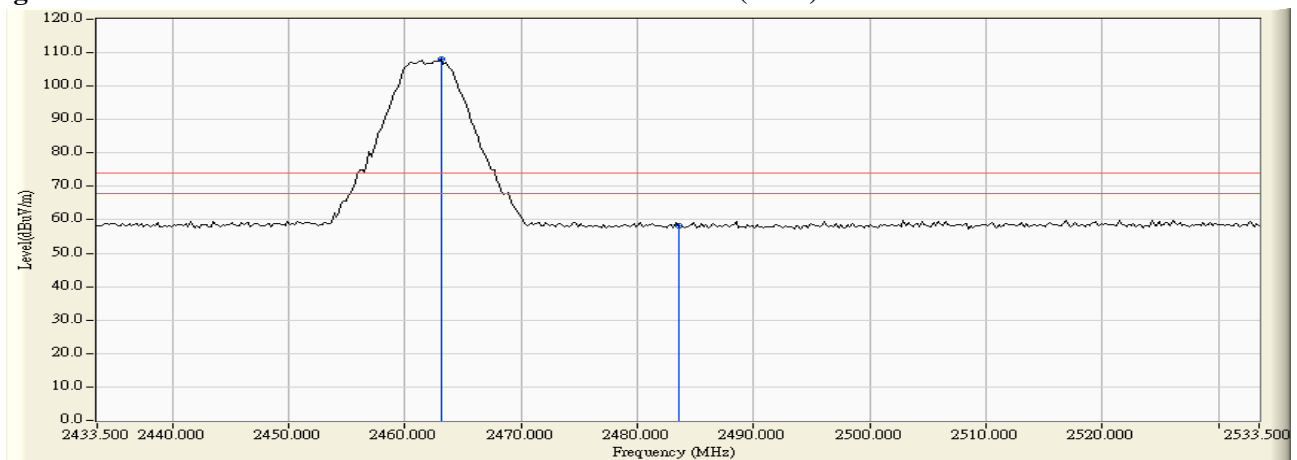
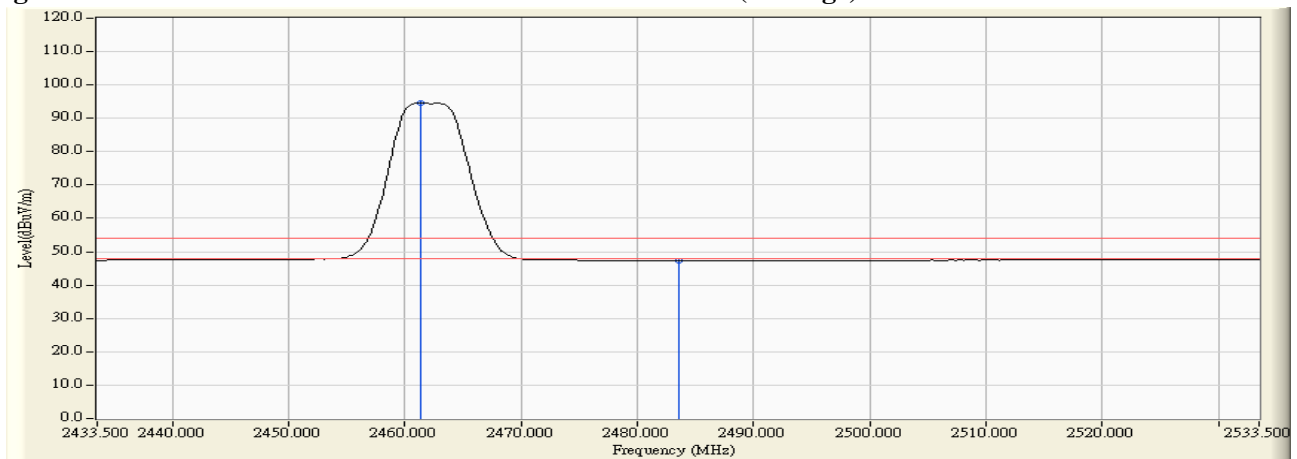


Figure Channel 11: Horizontal (Average)



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 : MOXA IEEE802.11 a/b/g mini PCI module
 Test Item : Band Edge
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit-5MHz BW

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11 (Peak)	2462.700	32.484	83.360	115.844	--	--	--
11 (Peak)	2483.500	32.586	26.562	59.147	74.00	54.00	Pass
11 (Average)	2462.700	32.484	70.011	102.495	--	--	--
11 (Average)	2483.500	32.586	15.057	47.642	74.00	54.00	Pass

Figure Channel 11: Vertical (Peak)

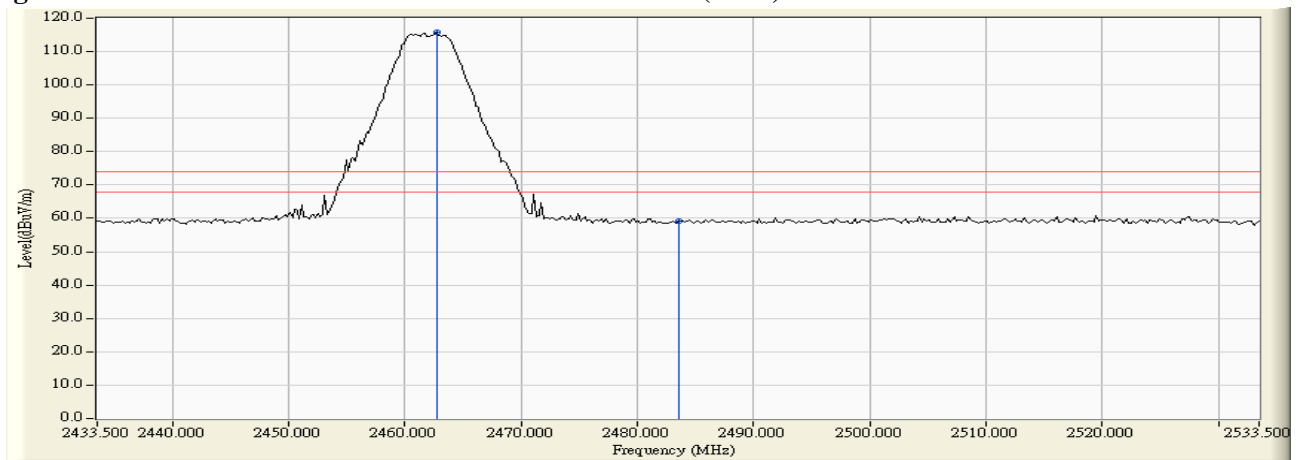
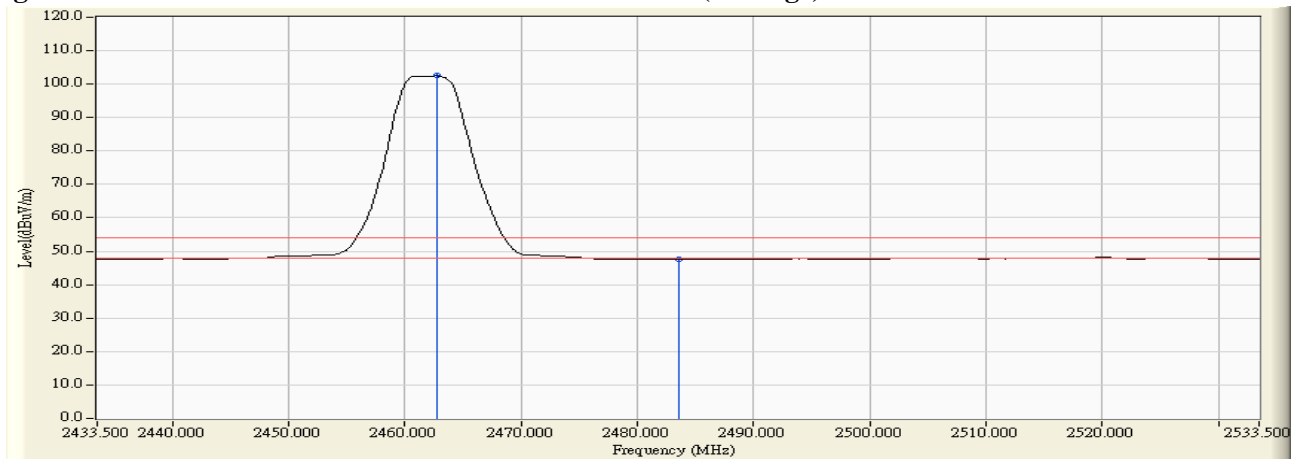


Figure Channel 11: Vertical (Average)



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 : MOXA IEEE802.11 a/b/g mini PCI module
 Test Item : Band Edge
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit-10MHz BW

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
01 (Peak)	2390.000	33.739	23.537	57.276	74.00	54.00	Pass
01 (Peak)	2400.000	33.752	32.407	66.158	--	--	--
01 (Peak)	2409.600	33.768	69.698	103.465	--	--	--
01(Average)	2390.000	33.739	11.406	45.145	74.00	54.00	Pass
01(Average)	2400.000	33.752	12.662	46.413	--	--	--
01(Average)	2413.800	33.776	57.745	91.521	--	--	--

Figure Channel 01: Horizontal (Peak)

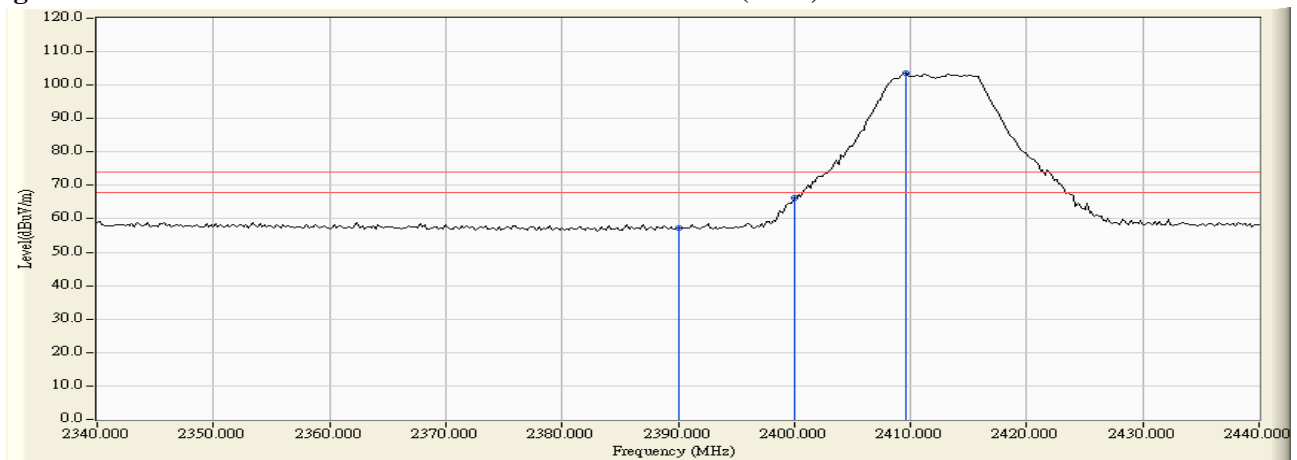
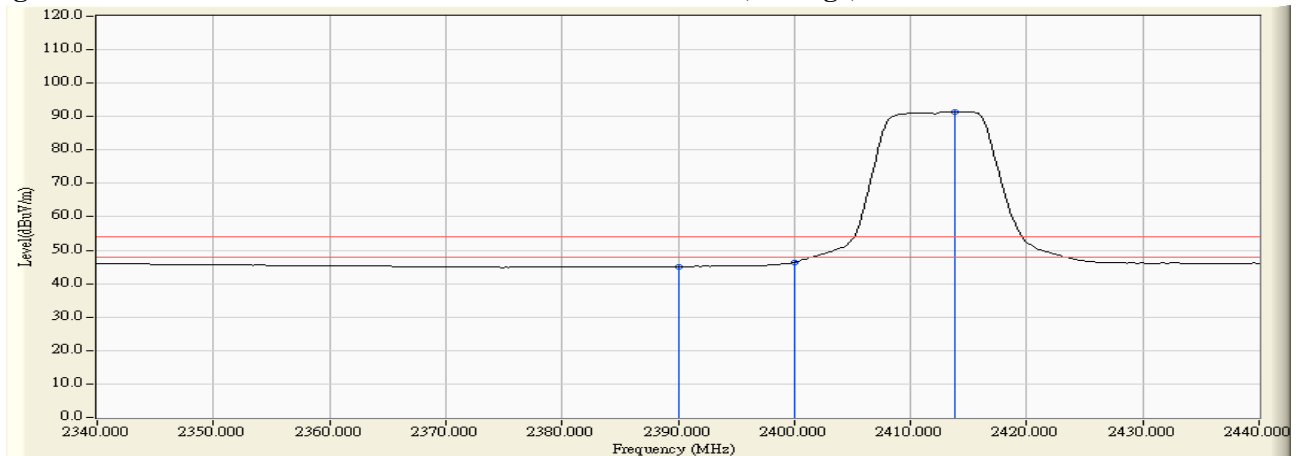


Figure Channel 01: Horizontal (Average)



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 : MOXA IEEE802.11 a/b/g mini PCI module
 Test Item : Band Edge
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit-10MHz BW

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
01 (Peak)	2343.400	32.624	27.461	60.084	74.00	54.00	Pass
01 (Peak)	2390.000	32.267	25.204	57.471	74.00	54.00	Pass
01 (Peak)	2400.000	32.241	38.701	70.942	--	--	--
01 (Peak)	2414.000	32.257	79.357	111.615	--	--	--
01 (Average)	2390.000	32.267	14.203	46.470	74.00	54.00	Pass
01 (Average)	2400.000	32.241	17.725	49.966	--	--	--
01 (Average)	2414.400	32.260	67.563	99.823	--	--	--

Figure Channel 01: Vertical (Peak)

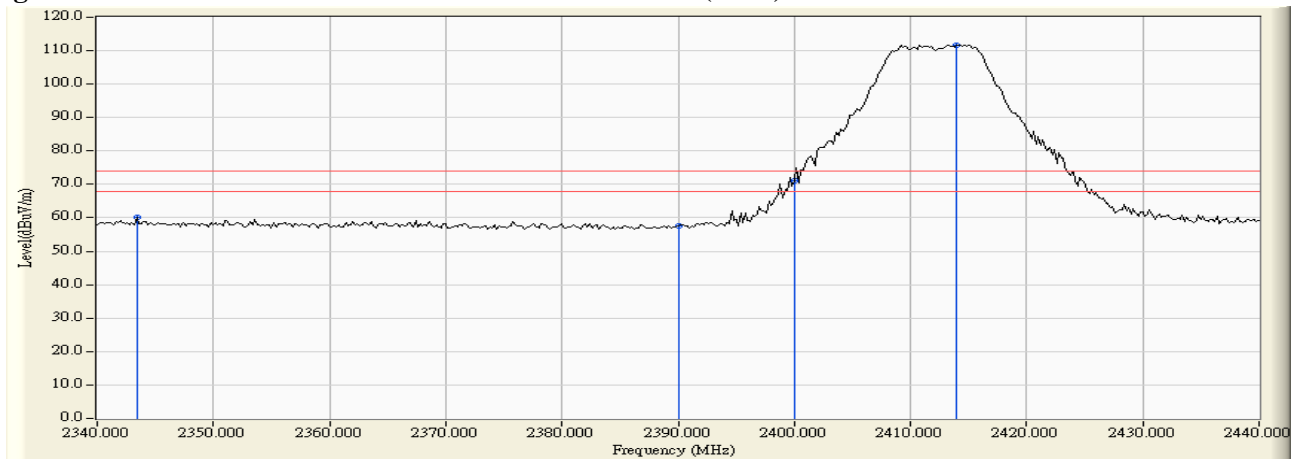
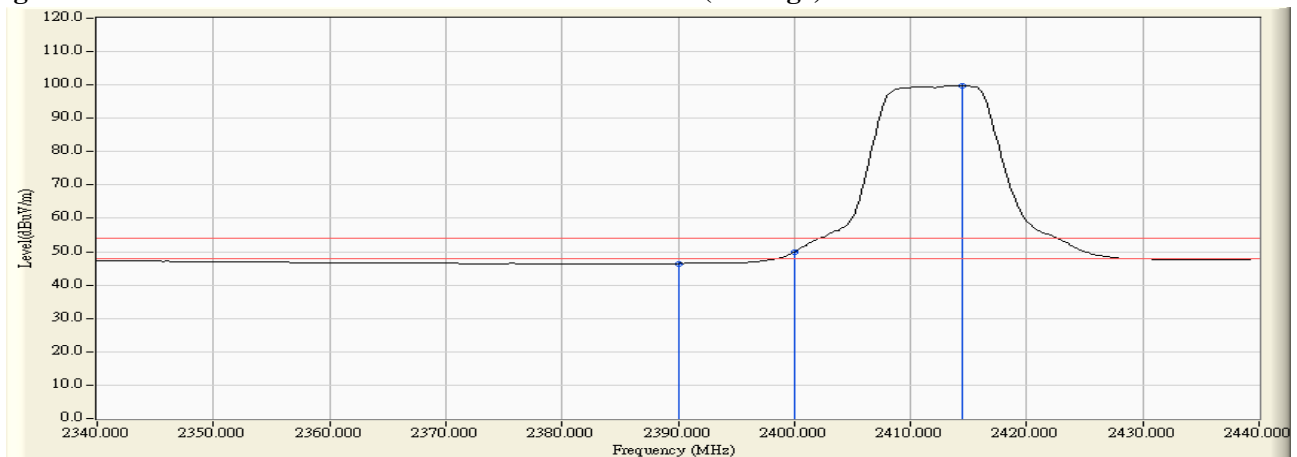


Figure Channel 01: Vertical (Average)



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 : MOXA IEEE802.11 a/b/g mini PCI module
 Test Item : Band Edge
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit-10MHz BW

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11 (Peak)	2459.300	33.886	71.388	105.274	--	--	--
11 (Peak)	2483.500	33.951	24.300	58.250	74.00	54.00	Pass
11 (Peak)	2517.700	33.864	26.573	60.437	74.00	54.00	Pass
11 (Average)	2460.900	33.890	58.589	92.479	--	--	--
11 (Average)	2483.500	33.951	13.360	47.310	74.00	54.00	Pass

Figure Channel 11: Horizontal (Peak)

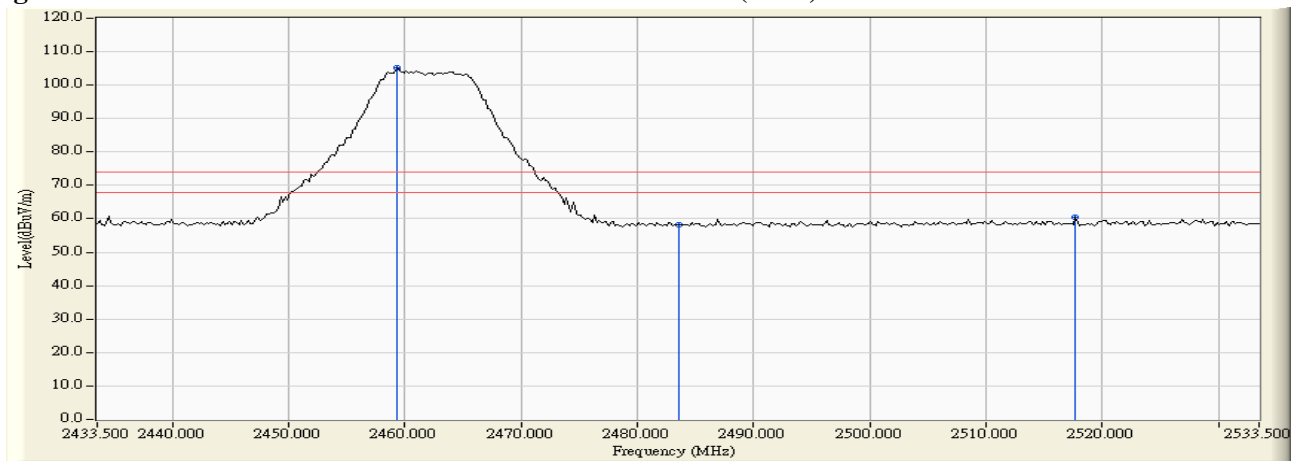
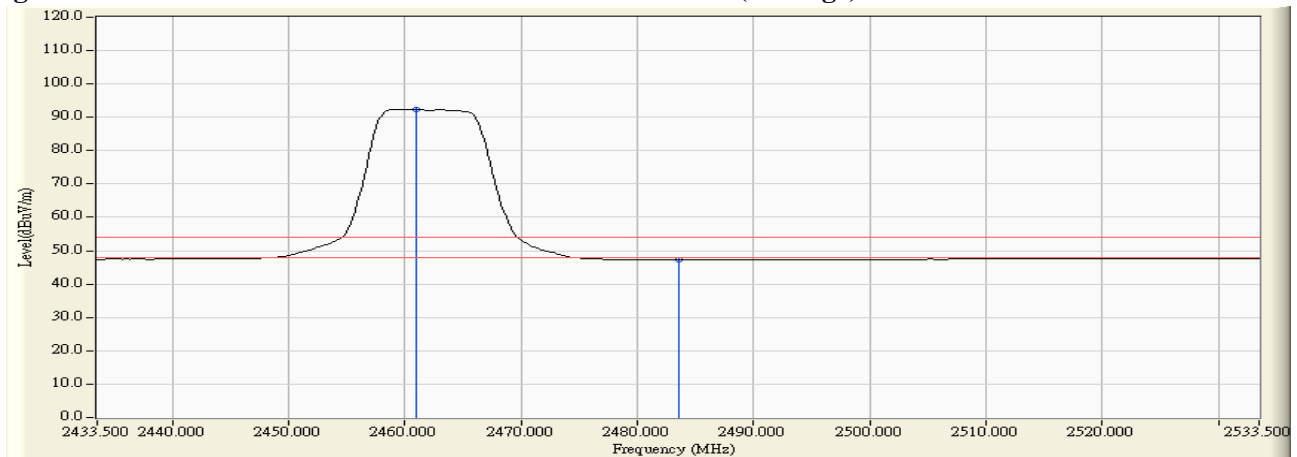


Figure Channel 11: Horizontal (Average)



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 : MOXA IEEE802.11 a/b/g mini PCI module
 Test Item : Band Edge
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit-10MHz BW

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11 (Peak)	2459.300	32.468	80.388	112.855	--	--	--
11 (Peak)	2483.500	32.586	26.942	59.527	74.00	54.00	Pass
11 (Average)	2460.700	32.475	67.802	100.276	--	--	--
11 (Average)	2483.500	32.586	15.049	47.634	74.00	54.00	Pass

Figure Channel 11: Vertical (Peak)

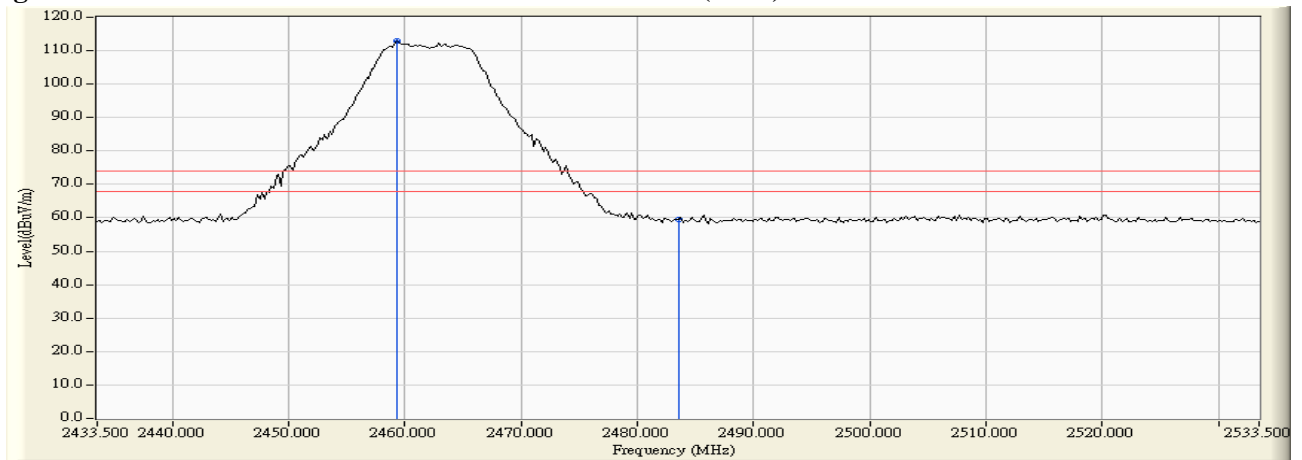
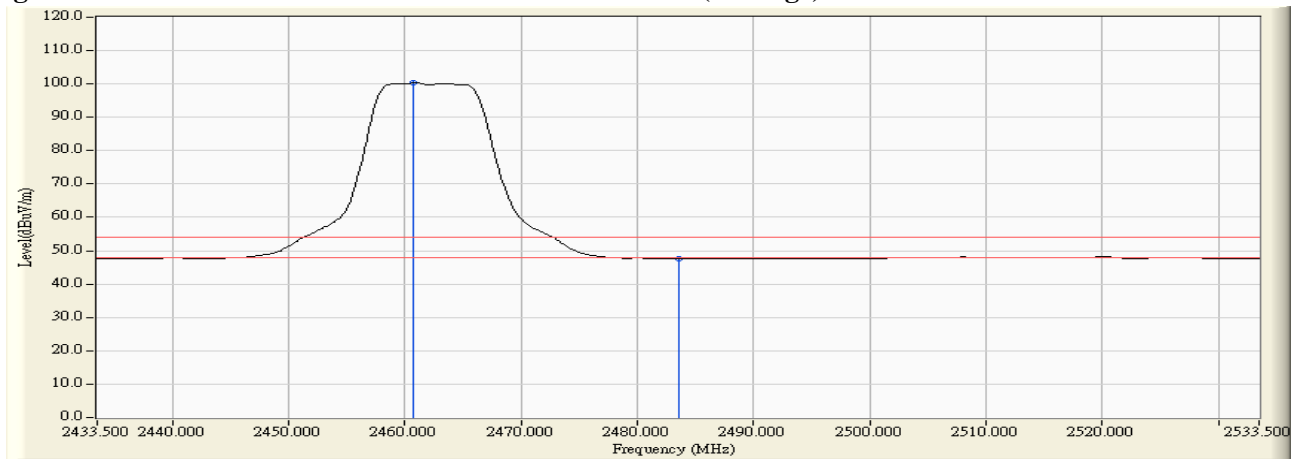


Figure Channel 11: Vertical (Average)



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.

6. 6 dB Bandwidth

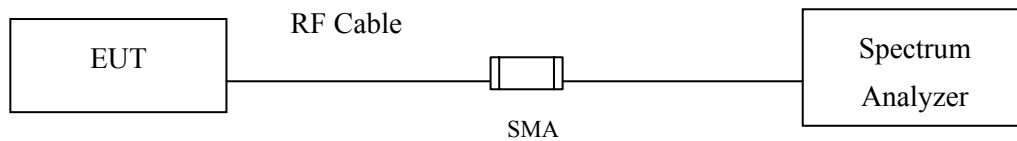
6.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2015
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2015
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2015

Note:

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

6.2. Test Setup



6.3. Limits

The minimum 6 dB bandwidth shall be at least 500 kHz.

6.4. Test Procedure

The EUT was setup according to ANSI C63.10, 2013; tested according to DTS test procedure of KDB558074 for compliance to FCC 47CFR 15.247 requirements.

Set RBW = 1-5% of the emission bandwidth, $VBW \geq 3 * RBW$

6.5. Uncertainty

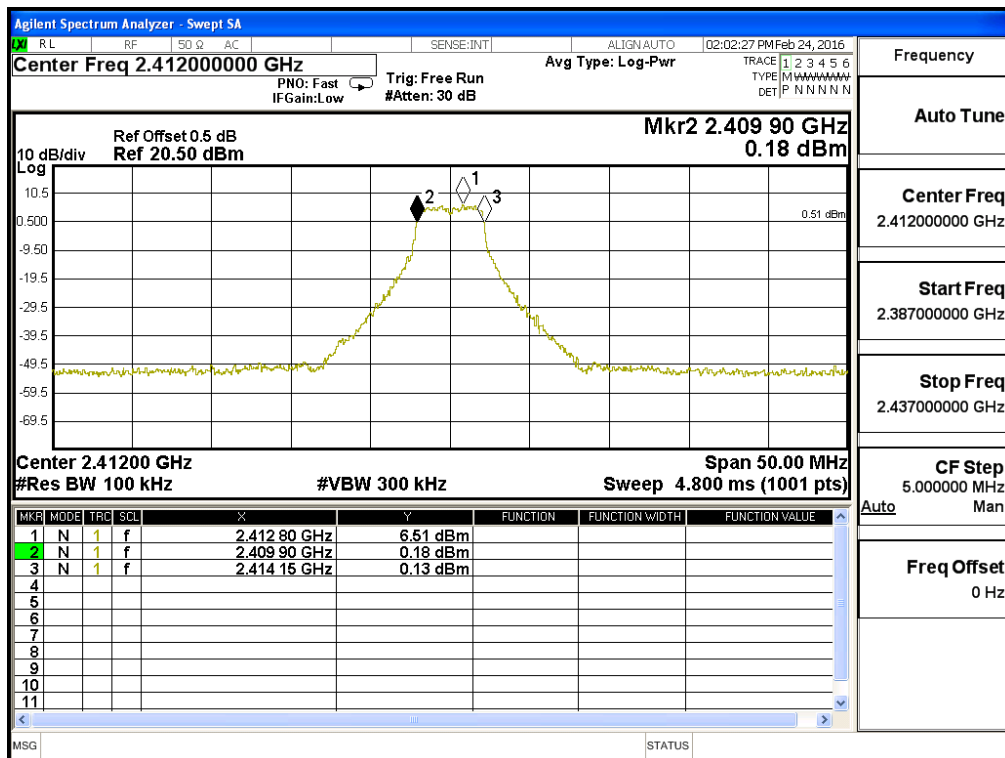
$\pm 150\text{Hz}$

6.6. Test Result of 6 dB Bandwidth

Product : MOXA IEEE802.11 a/b/g mini PCI module
 Test Item : 6 dB Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit-5MHz BW (2412MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1	2412.00	4250	>500	Pass

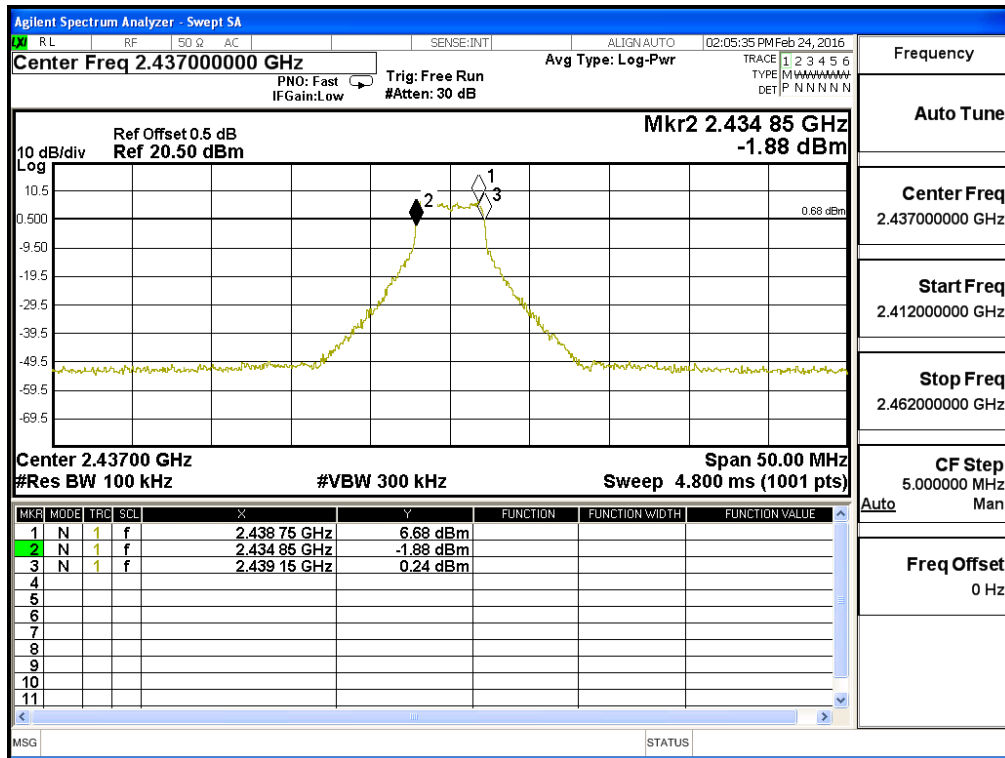
Figure Channel 1:



Product : MOXA IEEE802.11 a/b/g mini PCI module
 Test Item : 6 dB Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit-5MHz BW (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6	2437.00	4300	>500	Pass

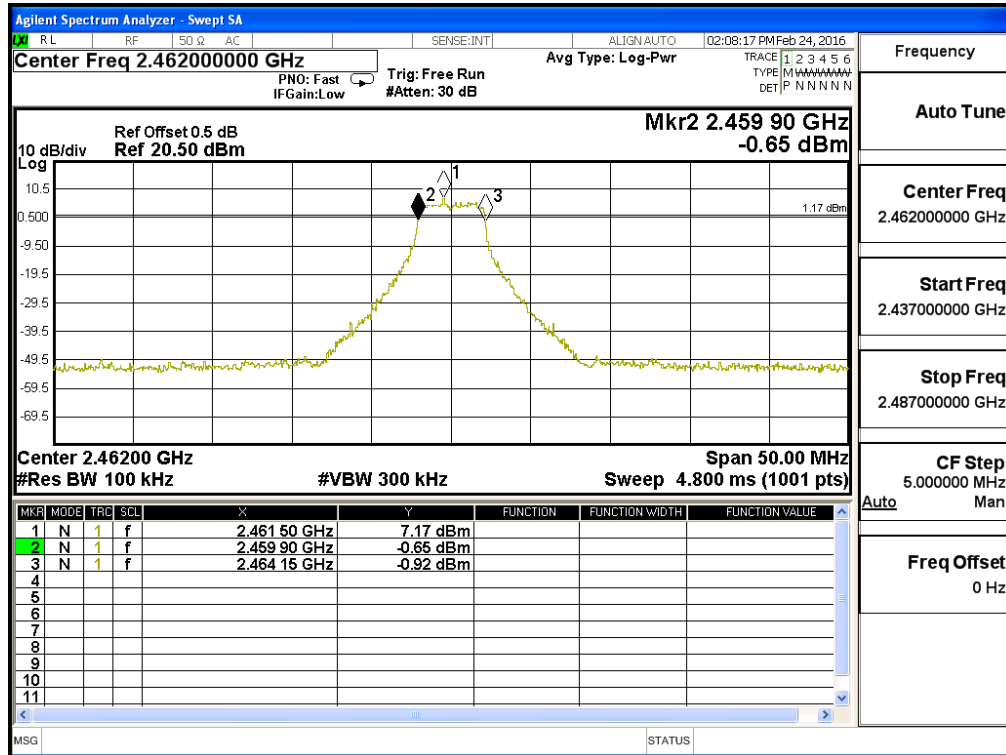
Figure Channel 6:



Product : MOXA IEEE802.11 a/b/g mini PCI module
 Test Item : 6 dB Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit-5MHz BW (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
11	2462.00	4250	>500	Pass

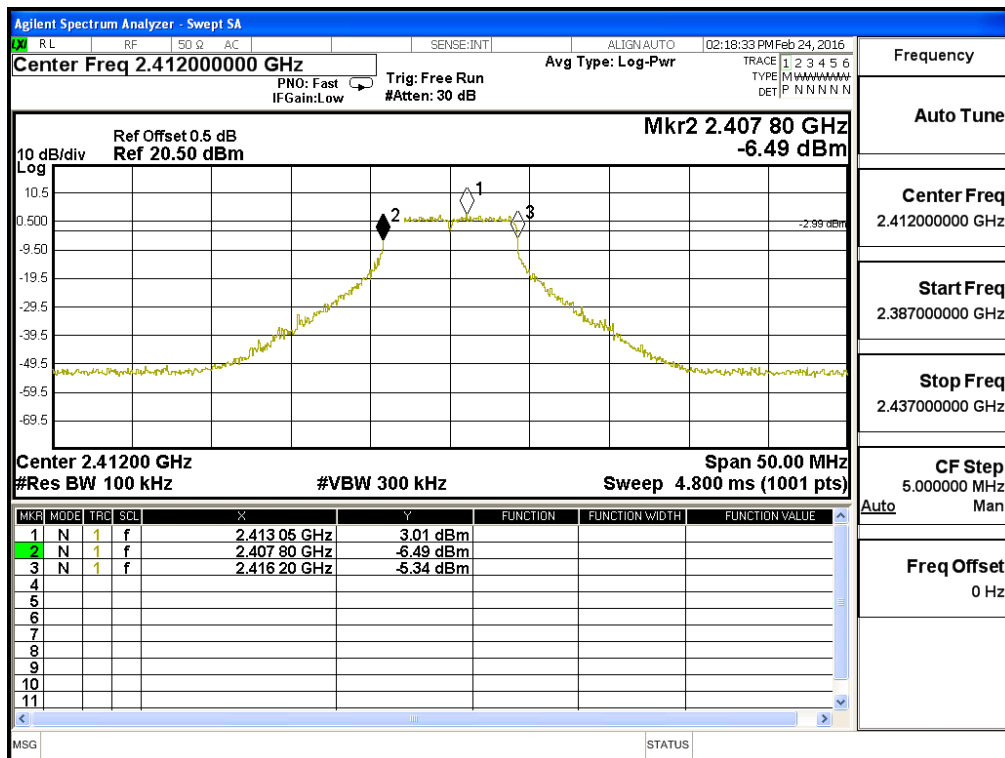
Figure Channel 11:



Product : MOXA IEEE802.11 a/b/g mini PCI module
 Test Item : 6 dB Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit-10MHz BW (2412MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1	2412.00	8400	>500	Pass

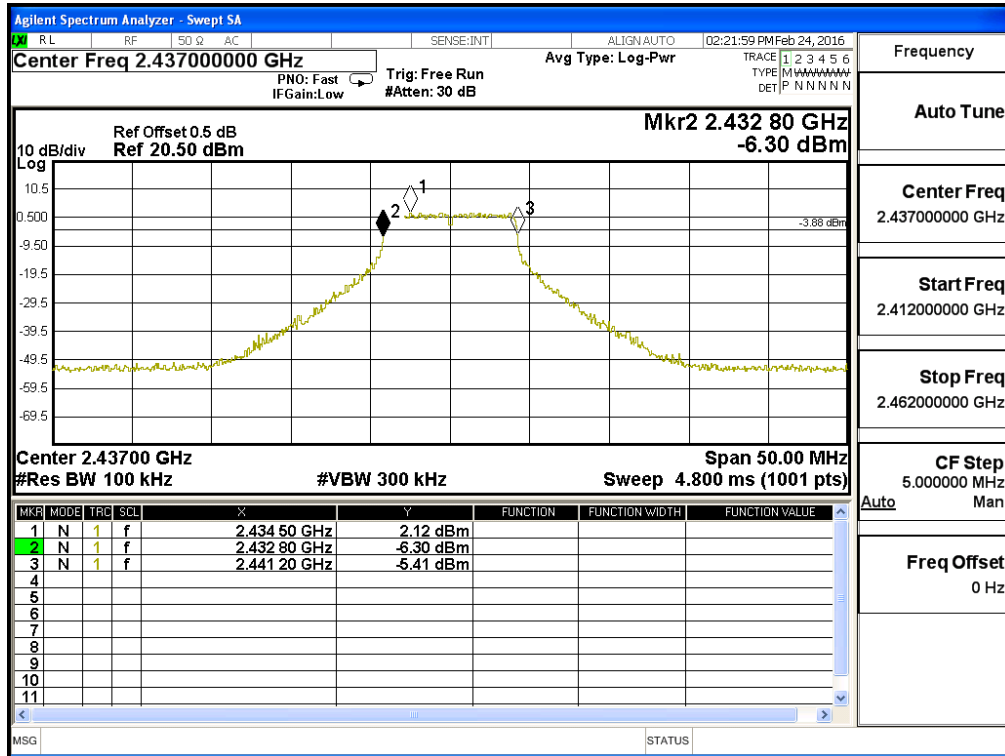
Figure Channel 1:



Product : MOXA IEEE802.11 a/b/g mini PCI module
 Test Item : 6 dB Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit-10MHz BW (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6	2437.00	8400	>500	Pass

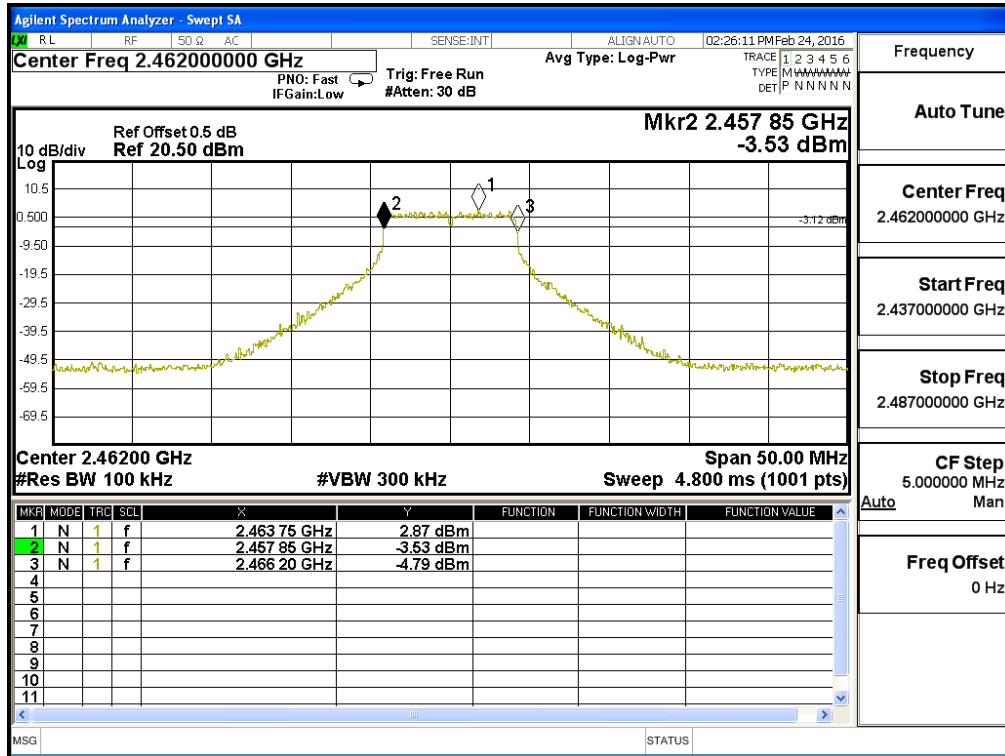
Figure Channel 6:



Product : MOXA IEEE802.11 a/b/g mini PCI module
 Test Item : 6 dB Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit-10MHz BW (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
11	2462.00	8350	>500	Pass

Figure Channel 11:



7. Power Density

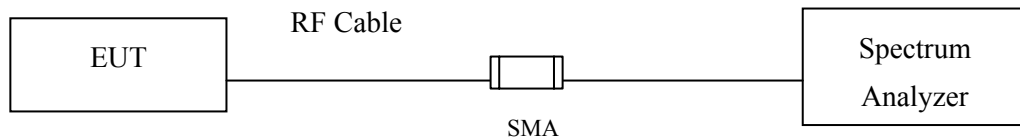
7.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2015
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2015
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2015

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

7.4. Test Procedure

The EUT was setup according to ANSI C63.10, 2013; 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.

7.5. Uncertainty

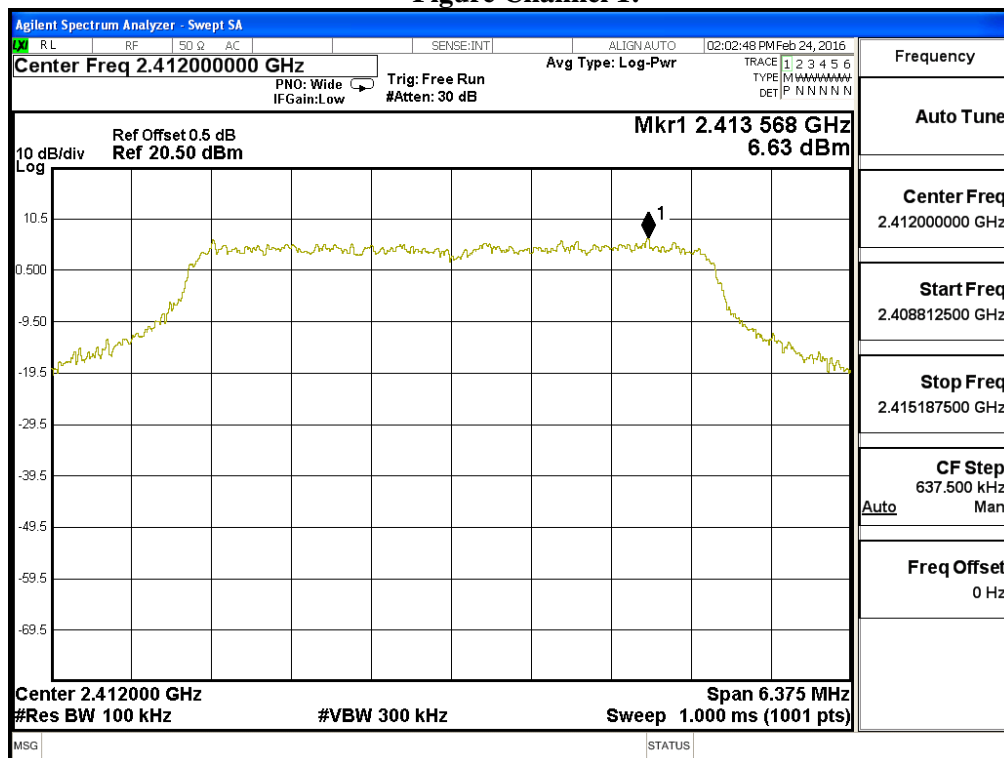
± 1.27 dB

7.6. Test Result of Power Density

Product : MOXA IEEE802.11 a/b/g mini PCI module
 Test Item : Power Density Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit-5MHz BW (2412MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1	2412	6.63	≤ 8dBm	Pass

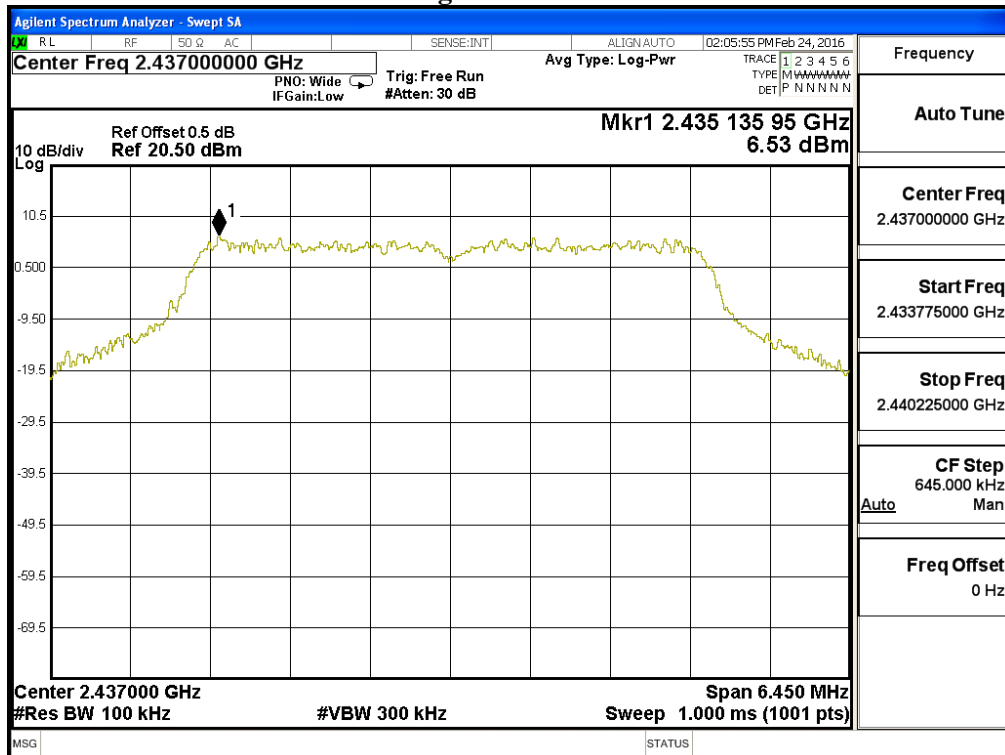
Figure Channel 1:



Product : MOXA IEEE802.11 a/b/g mini PCI module
 Test Item : Power Density Data
 Test Site : No.3OATS
 Test Mode : Mode 1: Transmit-5MHz BW (2437MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
6	2437	6.53	≤ 8dBm	Pass

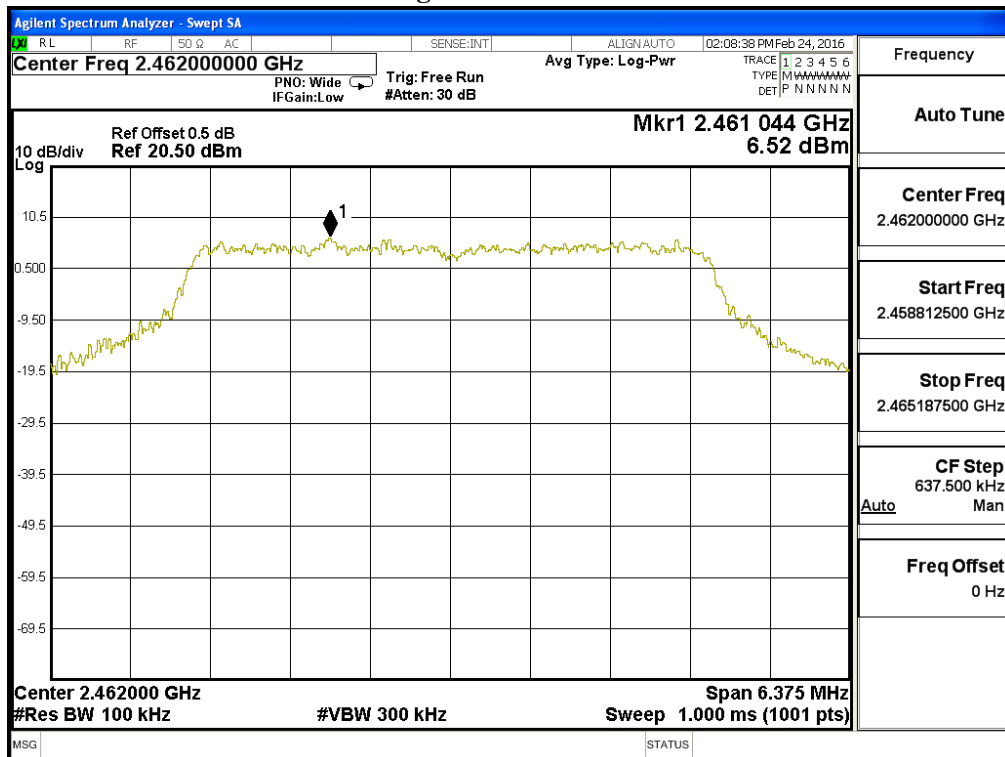
Figure Channel 6:



Product : MOXA IEEE802.11 a/b/g mini PCI module
 Test Item : Power Density Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit-5MHz BW (2462MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
11	2462	6.52	≤ 8dBm	Pass

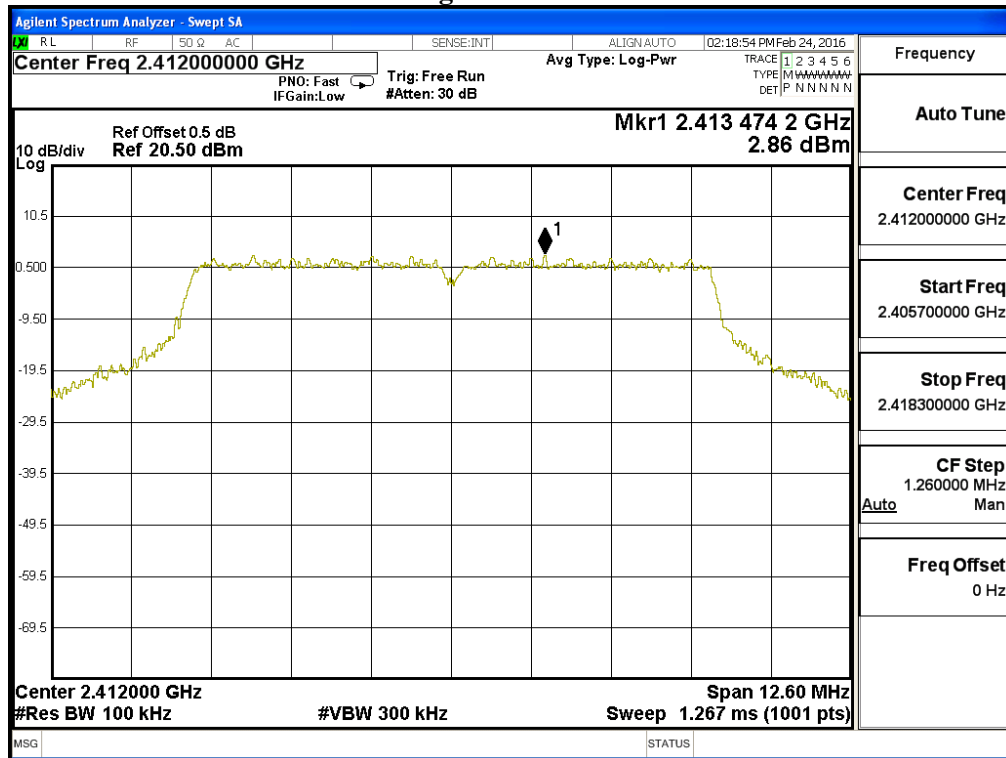
Figure Channel 11:



Product : MOXA IEEE802.11 a/b/g mini PCI module
 Test Item : Power Density Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit-10MHz BW (2412MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1	2412	2.86	≤ 8dBm	Pass

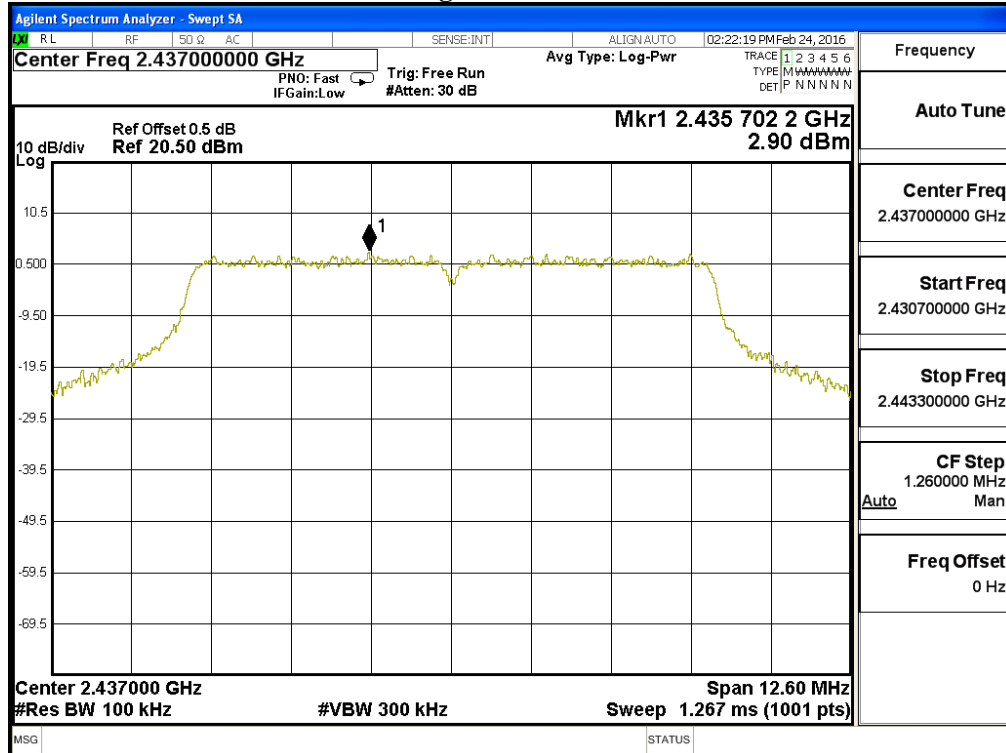
Figure Channel 1:



Product : MOXA IEEE802.11 a/b/g mini PCI module
 Test Item : Power Density Data
 Test Site : No.3OATS
 Test Mode : Mode 2: Transmit-10MHz BW (2437MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
6	2437	2.90	≤ 8dBm	Pass

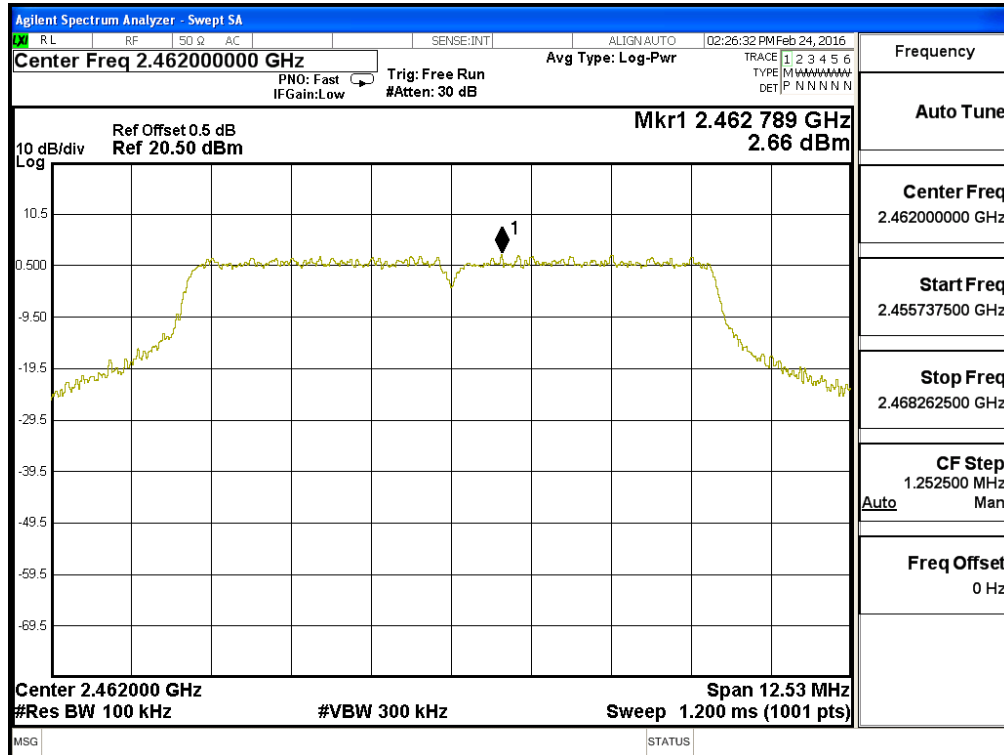
Figure Channel 6:



Product : MOXA IEEE802.11 a/b/g mini PCI module
 Test Item : Power Density Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit-10MHz BW (2462MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
11	2462	2.66	≤ 8dBm	Pass

Figure Channel 11:



8. EMI Reduction Method During Compliance Testing

No modification was made during testing.

Attachment 1: EUT Test Photographs

Attachment 2: EUT Detailed Photographs