FCC Test Report
(Class II Permissive Change)

Product Name	MOXA IEEE 802.11 a/b/g/n
Model No	WAPN008
FCC ID.	SLE-WAPN008

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

Date of Receipt	Apr. 16, 2019
Issue Date	May 14, 2019
Report No.	1940228R-RFUSP26V00
Report Version	V1.0

Testing Laboratory
3023

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.

This report must not be used to claim product endorsement by TAF or any agency of the government.

Test Report

Issue Date: May 14, 2019
Report No.: 1940228R-RFUSP26V00

Product Name	MOXA IEEE 802.11 a/b/g/n
Applicant	Moxa Inc.
Address	FL.4, NO. 135. LANE 235, BAOQIAO RD. XINDIAN DIST.,NEW TAIPEI CITY, TAIWAN
Manufacturer	Moxa Inc.
Model No.	WAPN008
FCC ID.	SLE-WAPN008
EUT Rated Voltage	DC 3.3V
EUT Test Voltage	AC 120V/60Hz
Trade Name	MOXA
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C: 2018 ANSI C63.4: 2014, ANSI C63.10: 2013 KDB 558074 D01 15.247 Meas Guidance v05
Test Result	Complied

Documented By : Anita Chou

(Senior Engineering Adm. Specialist / Anita Chou)

Tested By : Sam Hsu

(Engineer / Sam Hsu)

Approved By :

(Director / Vincent Lin)

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1. GENERAL INFORMATION

1.1. EUT Description

Product Name	MOXA IEEE 802.11 a/b/g/n
Trade Name	MOXA
Model No.	WAPN008
FCC ID.	SLE-WAPN008
Frequency Range	802.11b/g/n-20MHz:2412-2462MHz, 802.11n-40MHz:2422-2452MHz
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 300Mbps
Channel separation	802.11b/g/n-20(40)MHz: 5 MHz
Type of Modulation	802.11b:DSSS, DBPSK, DQPSK, CCK 802.11g/n: OFDM, BPSK, QPSK, 16QAM, 64QAM
Antenna Type	Patch Antenna
Channel Control	Auto
Antenna Gain	Refer to the table “Antenna List”

Antenna List:

No.	Manufacturer	Part No.	Antenna Type	Peak Gain	Peak gain with cable loss
1	ANTONICS	100-57-61-02.4	Patch Antenna	8.4dBi For 2.4GHz	3.85 dBi For 2.4GHz

Note: 1. The antenna of EUT is conform to FCC 15.203

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 Working Frequency of Each Channel:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 3:	2422 MHz	Channel 4:	2427 MHz	Channel 5:	2432 MHz	Channel 6:	2437 MHz
Channel 7:	2442 MHz	Channel 8:	2447 MHz	Channel 9:	2452 MHz		

Note:

1. This device is a MOXA IEEE 802.11 a/b/g/n built-in 2.4GHz and 5GHz transceiver, this report for 2.4G WLAN.
2. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
3. Lowest and highest data rates are tested in each mode. Only worst case is shown in the report.
4. 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.
5. This is to request a Class II permissive change for FCC ID: SLE-WAPN008, originally granted on 08/01/2018.
   The major change filed under this application is:
   Change #1: Addition one Patch antenna, antenna type is different with the original application.
   Change #2: Reduce the Output Power through firmware filing to demonstrate compliance.

Test Mode:	Mode 1: Transmit (802.11b 1Mbps)
	Mode 1: Transmit (802.11g 6Mbps)
	Mode 1: Transmit (802.11n-20BW)_14.4Mbps
	Mode 1: Transmit (802.11n-40BW)_30Mbps

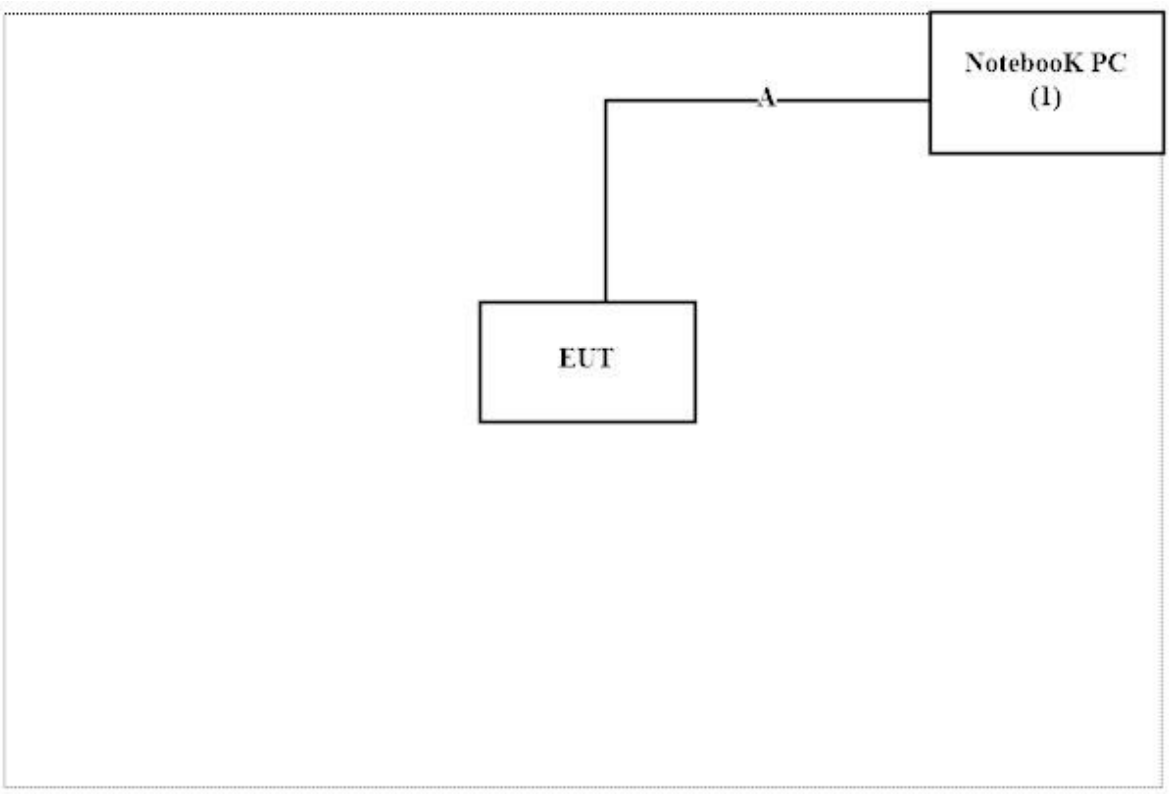
1.3. Tested System Details

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	Latitude E5440	HG26TZ1	Non-Shielded, 0.8m

Signal Cable Type		Signal cable Description
A	LAN Cable	Shielded, 1.1m

1.4. Configuration of Tested System



1.5. EUT Exercise Software

(1) Setup the EUT as shown on 1.4

(2) Execute software “ART2-GUI 2.3” on the Notebook PC.

(3) Configure the test mode, the test channel, and the data rate.

(4) Start the continuous transmission.

(5) Verify that the EUT works properly.

1.6. Test Facility

Ambient conditions in the laboratory:

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

The related certificate for our laboratories about the test site and management system can be downloaded from DEKRA Testing and Certification Co., Ltd. Web Site:
http://www.dekra.com.tw/english/about/certificates.aspx?bval=5
The address and introduction of DEKRA Testing and Certification Co., Ltd. laboratories can be founded in our Web site: http://www.dekra.com.tw/index_en.aspx

Site Description: Accredited by TAF
Accredited Number: 3023

Site Name: DEKRA Testing and Certification Co., Ltd
Site Address: No.5-22, Ruishukeng, Linkou Dist., New Taipei City 24451, Taiwan, R.O.C.
TEL : 886-2-8601-3788 / FAX : 886-2-8601-3789
E-Mail : info.tw@dekra.com

FCC Accreditation Number: TW3023

1.7. List of Test Equipment

For Conducted measurements /CB3/SR8

	Equipment	Manufacturer	Model No.	Serial No.	Cali. Date	Due. Date
	Temperature Chamber	WIT GROUP	TH-1S-B	EQ-201-00146	2019/02/26	2020/02/25
X	Spectrum Analyzer	Agilent	N9010A	MY53470892	2018/09/27	2019/09/26
X	Peak Power Analyzer	Keysight	8990B	MY51000410	2018/08/01	2019/07/31
X	Wideband Power Sensor	Keysight	N1923A	MY56080003	2018/07/25	2019/07/24
X	Wideband Power Sensor	Keysight	N1923A	MY56080004	2018/07/25	2019/07/24
X	EMI Test Receiver	R&S	ESCS 30	100369	2018/11/19	2019/11/18
X	LISN	R&S	ENV216	101105	2019/03/30	2020/03/29
X	LISN	R&S	ESH3-Z5	836679/014	2019/04/02	2020/04/01
X	Coaxial Cable	DEKRA	RG 400	LC018-RG	2018/06/21	2019/06/20

For Radiated measurements /Site3/CB8

	Equipment	Manufacturer	Model No.	Serial No.	Cali. Date	Due. Date
X	Spectrum Analyzer	R&S	FSP40	100170	2019/03/11	2020/03/10
X	Loop Antenna	Teseq	HLA6121	37133	2017/10/13	2019/10/12
X	Bilog Antenna	Schaffner Chase	CBL6112B	2707	2018/06/24	2019/06/23
X	Coaxial Cable	DEKRA	RG 214	LC003-RG	2018/06/14	2019/06/13
X	Pre-Amplifier	Jet-Power	JPA-10M1G33	170101000330010	2018/06/14	2019/06/13
X	Horn Antenna	ETS-Lindgren	3117	00135205	2019/04/30	2020/04/29
X	Horn Antenna	SCHWARZBECK	9120D	576	2018/12/18	2019/12/17
X	Pre-Amplifier	EMCI	EMC012630SE	980210	2019/04/16	2020/04/15
X	Horn Antenna	Com-Power	AH-840	101043	2019/01/19	2020/01/18
X	Amplifier + Cable	EMCI	EMC184045SE	980370	2019/03/27	2020/03/26
X	Filter	MICRO-TRONICS	BRM50702	G270	2018/08/06	2019/08/05
X	Filter	MICRO-TRONICS	BRM50716	G196	2018/08/06	2019/08/05

Note:
1. All equipments are calibrated every one year.
2. The test instruments marked with “X” are used to measure the final test results.
3. Test Software version :QuieTek EMI 2.0 V2.1.113.

2. Peak Power Output

2.1. Test Setup

2.2. Limits

The maximum peak power shall be less 1 Watt.

2.3. Test Procedure

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 8.3.1.3 PKPM1 Peak power meter method. The maximum average conducted output power using KDB 558074 section 8.3.2.3 Method (Measurement using a gated RF average-reading power meter)

2.4. Uncertainty

± 1.27 dB

2.5. Test Result of Peak Power Output

Product : MOXA IEEE 802.11 a/b/g/n
Test Item : Peak Power Output Data
Test Site : No.3 OATS
Test date : 2019/04/26
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	19.82	--	--	--	22.27	<30dBm	Pass
06	2437	19.15	19.08	19.02	18.9	21.56	<30dBm	Pass
11	2462	18.95	--	--	--	21.48	<30dBm	Pass

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

Product : MOXA IEEE 802.11 a/b/g/n
Test Item : Peak Power Output Data
Test Site : No.3 OATS
Test date : 2019/04/26
Test Mode : Mode 1: 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	18.44	--	--	--	--	--	--	--	27.12	<30dBm	Pass
06	2437	18.22	18.14	18.08	17.99	17.91	17.8	17.68	17.57	26.89	<30dBm	Pass
11	2462	17.35	--	--	--	--	--	--	--	25.99	<30dBm	Pass

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

Product : MOXA IEEE 802.11 a/b/g/n
Test Item : Peak Power Output Data
Test Site : No.3 OATS
Test date : 2019/04/26
Test Mode : Mode 1: Transmit (802.11n-20BW)_14.4Mbps

CHAIN A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		HT0	HT1	HT2	HT3	HT4	HT5	HT6	HT7	HT0		
		Measurement Level (dBm)										
01	2412	13.94	--	--	--	--	--	--	--	22.57	<30dBm	Pass
06	2437	14.52	14.44	14.35	14.24	14.12	14.07	13.97	13.92	24.41	<30dBm	Pass
11	2462	15.09	--	--	--	--	--	--	--	24.61	<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
		HT0	HT1	HT2	HT3	HT4	HT5	HT6	HT7	HT0		
		Measurement Level (dBm)										
01	2412	14.23	--	--	--	--	--	--	--	23.22	<30dBm	Pass
06	2437	15.79	15.68	15.6	15.54	15.49	15.42	15.35	15.3	24.25	<30dBm	Pass
11	2462	16.49	--	--	--	--	--	--	--	24.49	<30dBm	Pass

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

CHAIN A+B

Channel	Frequency (MHz)	Data Rate (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
01	2412	14.4	22.57	23.22	25.92	<30dBm	Pass
06	2437	14.4	24.41	24.25	27.34	<30dBm	Pass
11	2462	14.4	24.61	24.49	27.56	<30dBm	Pass

Note: Peak Power Output Value (dBm) = 10*LOG (Chain A (mW)+ Chain B (mW))

Product : MOXA IEEE 802.11 a/b/g/n
Test Item : Peak Power Output Data
Test Site : No.3 OATS
Test date : 2019/04/26
Test Mode : Mode 1: Transmit (802.11n-40BW)_30Mbps

CHAIN A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		HT0	HT1	HT2	HT3	HT4	HT5	HT6	HT7	HT0		
		Measurement Level (dBm)										
03	2422	13.48	--	--	--	--	--	--	--	22.26	<30dBm	Pass
06	2437	18.97	18.88	18.8	18.69	18.57	18.48	18.39	18.34	26.9	<30dBm	Pass
09	2452	15.05	--	--	--	--	--	--	--	25.6	<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
		HT0	HT1	HT2	HT3	HT4	HT5	HT6	HT7	HT0		
		Measurement Level (dBm)										
03	2422	13.76	--	--	--	--	--	--	--	22.69	<30dBm	Pass
06	2437	20.02	19.94	19.84	19.72	19.67	19.55	19.45	19.36	26.78	<30dBm	Pass
09	2452	16.55	--	--	--	--	--	--	--	25.74	<30dBm	Pass

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

CHAIN A+B

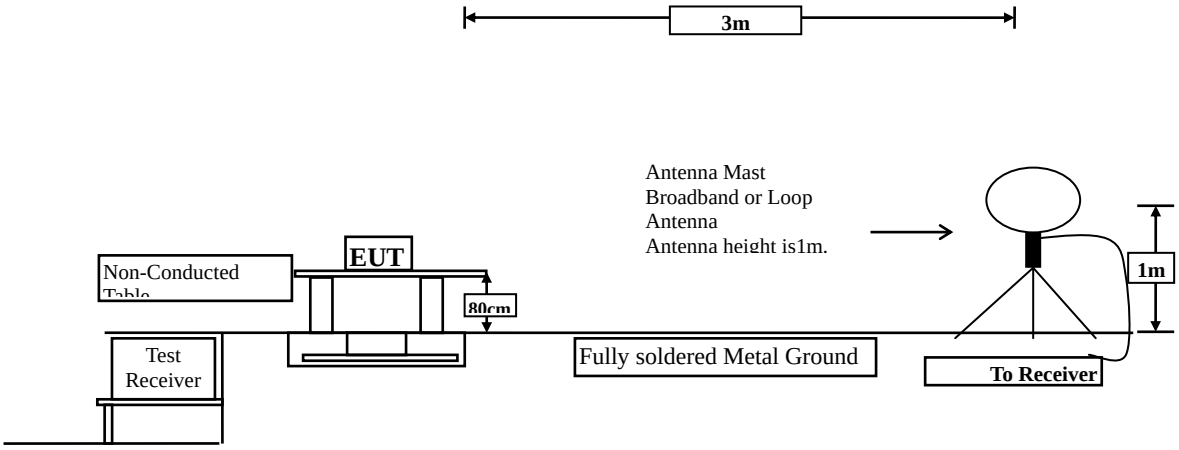
Channel	Frequency (MHz)	Data Rate (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
03	2422	30	22.26	22.69	25.49	<30dBm	Pass
06	2437	30	26.90	26.78	29.85	<30dBm	Pass
09	2452	30	25.60	25.74	28.68	<30dBm	Pass

Note: Peak Power Output Value (dBm) = 10*LOG (Chain A (mW)+ Chain B (mW))

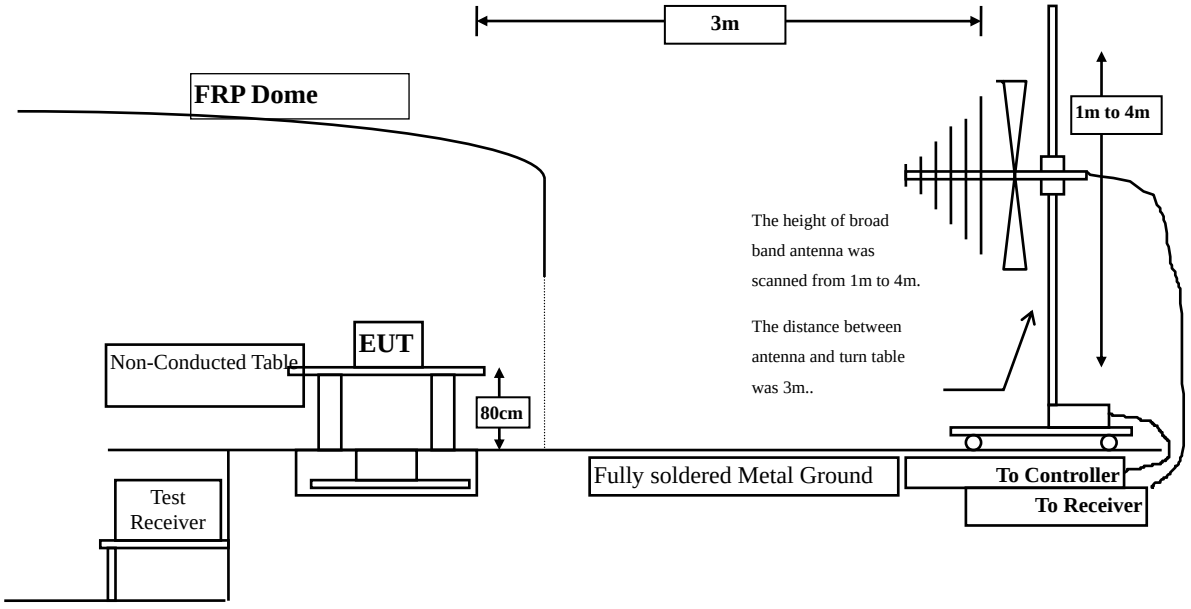
3. Radiated Emission

3.1. Test Setup

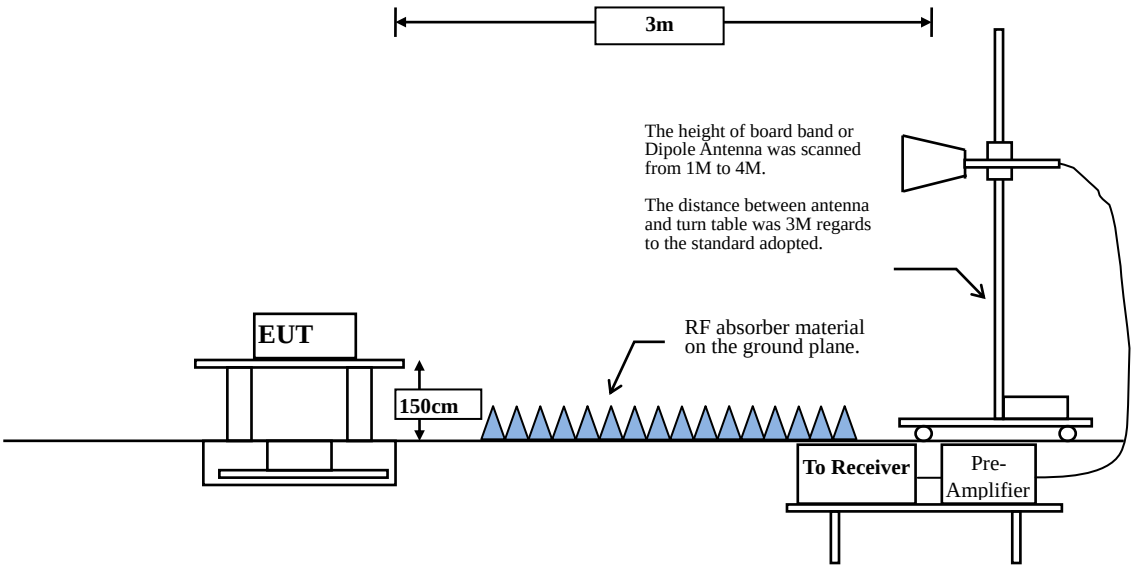
Under 30MHz



Below 1GHz



Above 1GHz



3.2. 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 (dBuV/m) = 20 log E field strength (uV/m)

3.3. 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 form 9kHz - 10th Harmonic of fundamental was investigated.

3.4. Uncertainty

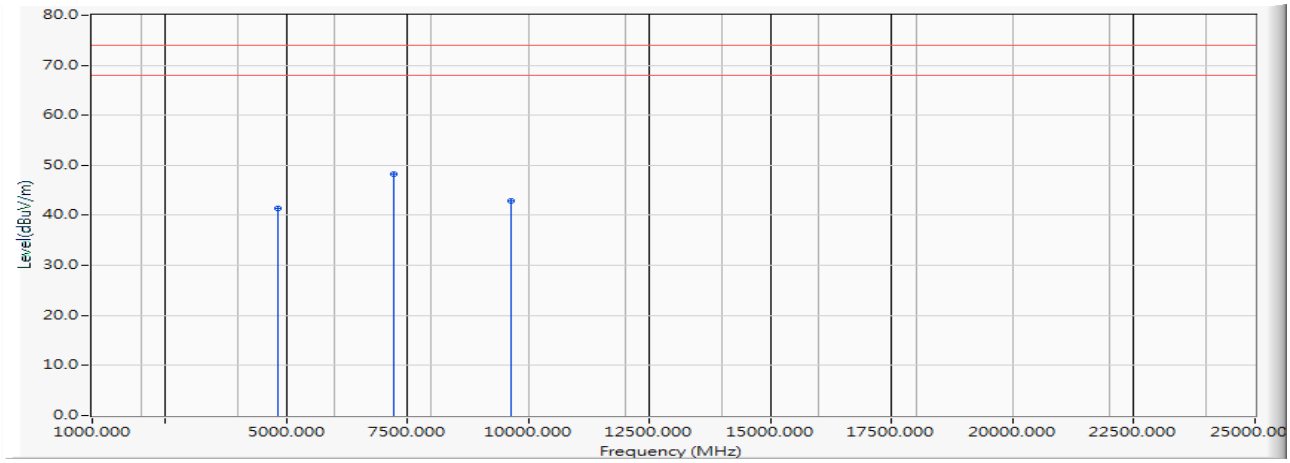
± 4.08 dB above 1GHz

± 4.22 dB below 1GHz

3.5. Test Result of Radiated Emission

Product : MOXA IEEE 802.11 a/b/g/n
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test date : 2019/04/30
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2412 MHz)

Horizontal



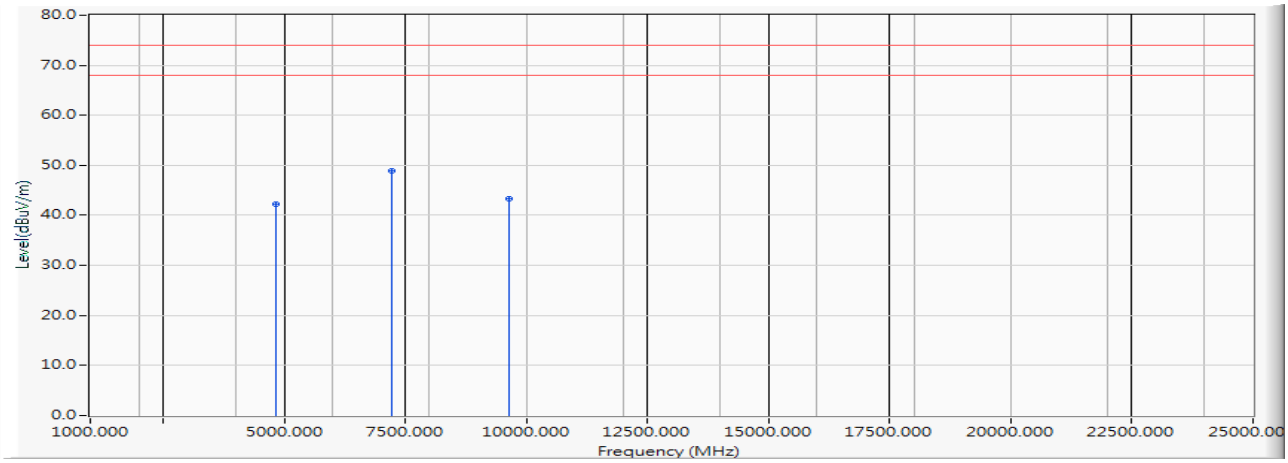
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4824.000	5.858	35.524	41.382	-32.618	74.000	PEAK
2	*	7236.000	10.502	37.700	48.202	-25.798	74.000	PEAK
3		9648.000	13.752	29.244	42.997	-31.003	74.000	PEAK

Note:

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

Product	:	MOXA IEEE 802.11 a/b/g/n
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test date	:	2019/04/30
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps) (2412 MHz)

Vertical



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4824.000	5.858	36.455	42.313	-31.687	74.000	PEAK
2	*	7236.000	10.502	38.424	48.926	-25.074	74.000	PEAK
3		9648.000	13.752	29.484	43.237	-30.763	74.000	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
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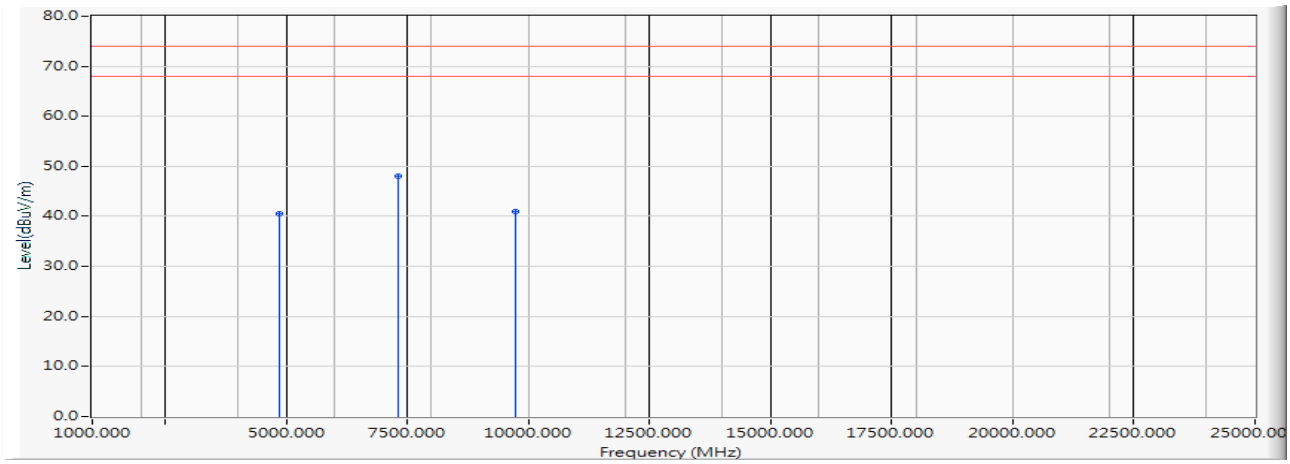
Product	:	MOXA IEEE 802.11 a/b/g/n
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test date	:	2019/04/30
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps) (2437 MHz)

Horizontal



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4874.000	5.921	34.557	40.478	-33.522	74.000	PEAK
2	*	7311.000	10.462	37.489	47.951	-26.049	74.000	PEAK
3		9748.000	14.194	26.682	40.876	-33.124	74.000	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
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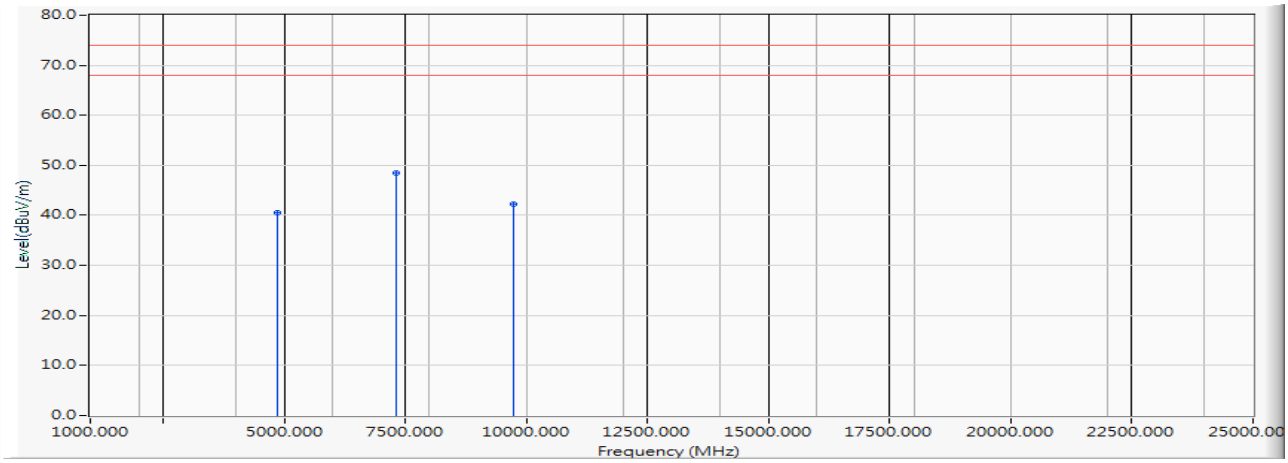
Product	:	MOXA IEEE 802.11 a/b/g/n
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test date	:	2019/04/30
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps) (2437 MHz)

Vertical



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4874.000	5.921	34.692	40.613	-33.387	74.000	PEAK
2	*	7311.000	10.462	38.044	48.506	-25.494	74.000	PEAK
3		9748.000	14.194	27.992	42.186	-31.814	74.000	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
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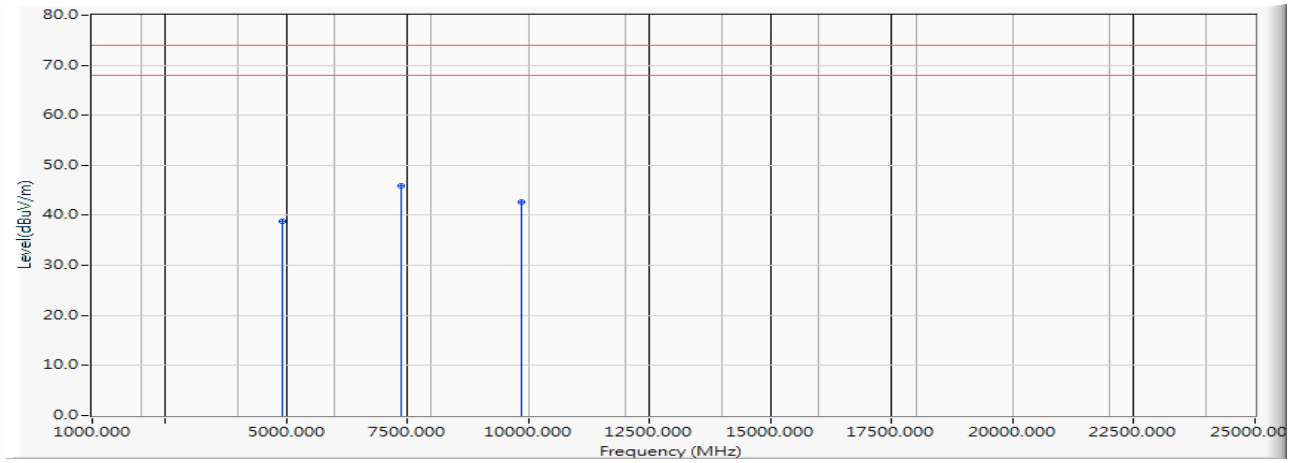
Product	:	MOXA IEEE 802.11 a/b/g/n
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test date	:	2019/04/30
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps) (2462 MHz)

Horizontal



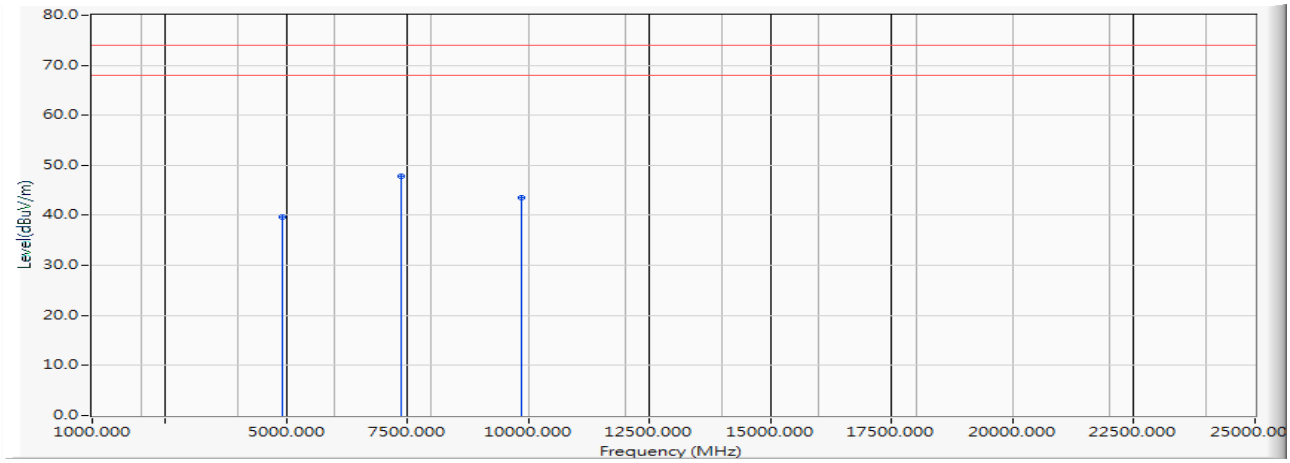
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4924.000	5.982	32.796	38.778	-35.222	74.000	PEAK
2	*	7386.000	10.436	35.525	45.961	-28.039	74.000	PEAK
3		9848.000	14.087	28.656	42.743	-31.257	74.000	PEAK

Note:

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

Product	:	MOXA IEEE 802.11 a/b/g/n
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test date	:	2019/04/30
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps) (2462 MHz)

Vertical



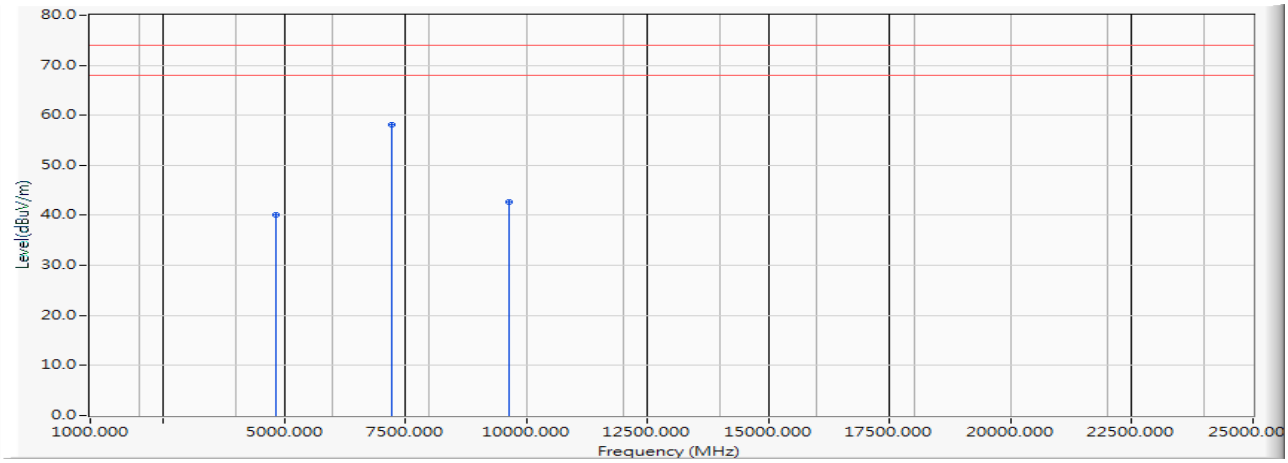
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4924.000	5.982	33.789	39.771	-34.229	74.000	PEAK
2	*	7386.000	10.436	37.382	47.818	-26.182	74.000	PEAK
3		9848.000	14.087	29.541	43.628	-30.372	74.000	PEAK

Note:

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

Product	:	MOXA IEEE 802.11 a/b/g/n
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test date	:	2019/04/30
Test Mode	:	Mode 1: Transmit (802.11g 6Mbps)(2412MHz)

Horizontal



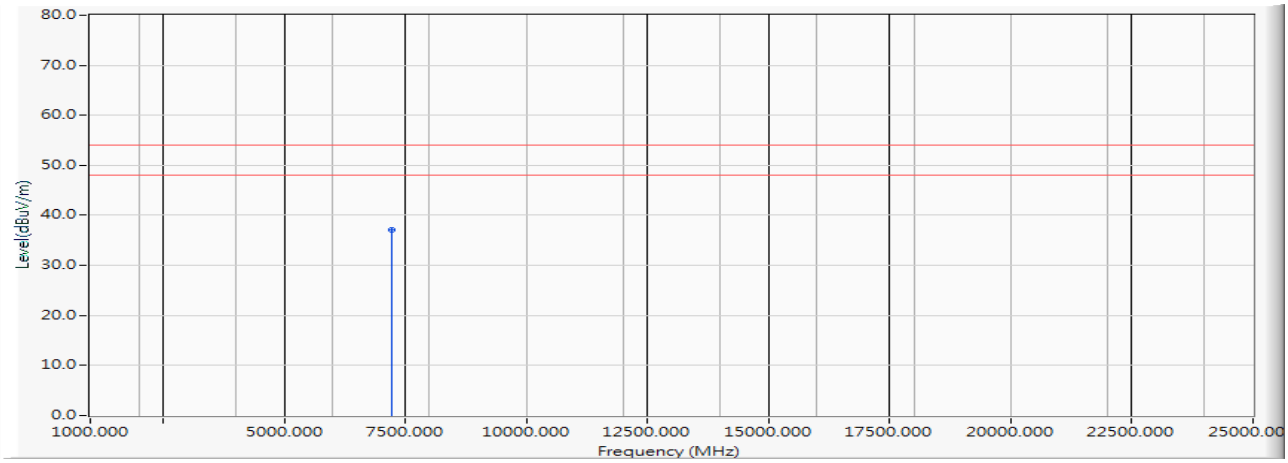
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4824.000	5.858	34.234	40.092	-33.908	74.000	PEAK
2	*	7236.000	10.502	47.570	58.072	-15.928	74.000	PEAK
3		9648.000	13.752	29.014	42.767	-31.233	74.000	PEAK

Note:

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

Product	:	MOXA IEEE 802.11 a/b/g/n
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test date	:	2019/04/30
Test Mode	:	Mode 1: Transmit (802.11g 6Mbps)(2412MHz)

Horizontal



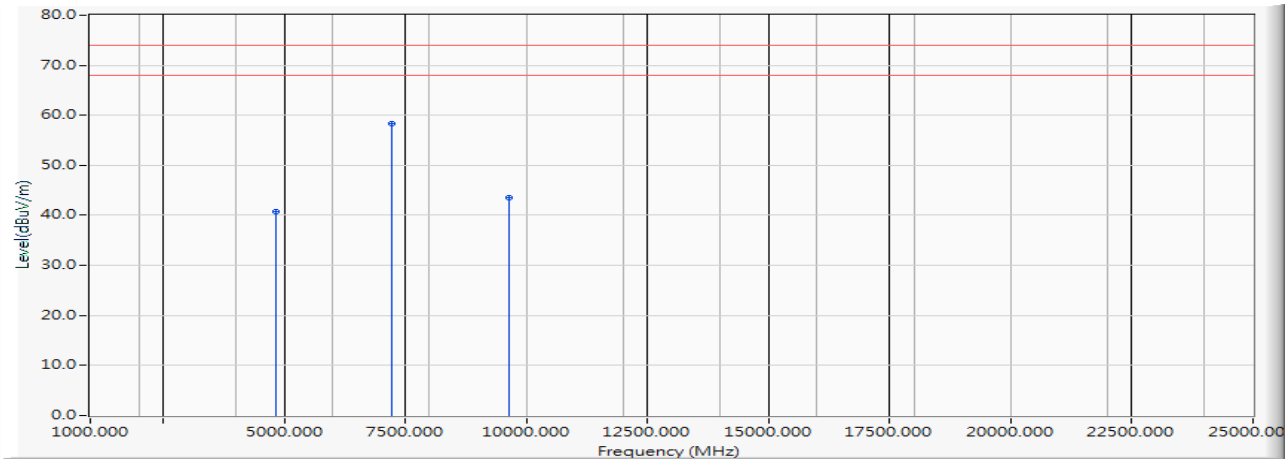
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	7236.000	10.502	26.640	37.142	-16.858	54.000	AVERAGE

Note:

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

Product : MOXA IEEE 802.11 a/b/g/n
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test date : 2019/04/30
Test Mode : Mode 1: Transmit (802.11g 6Mbps)(2412MHz)

Vertical



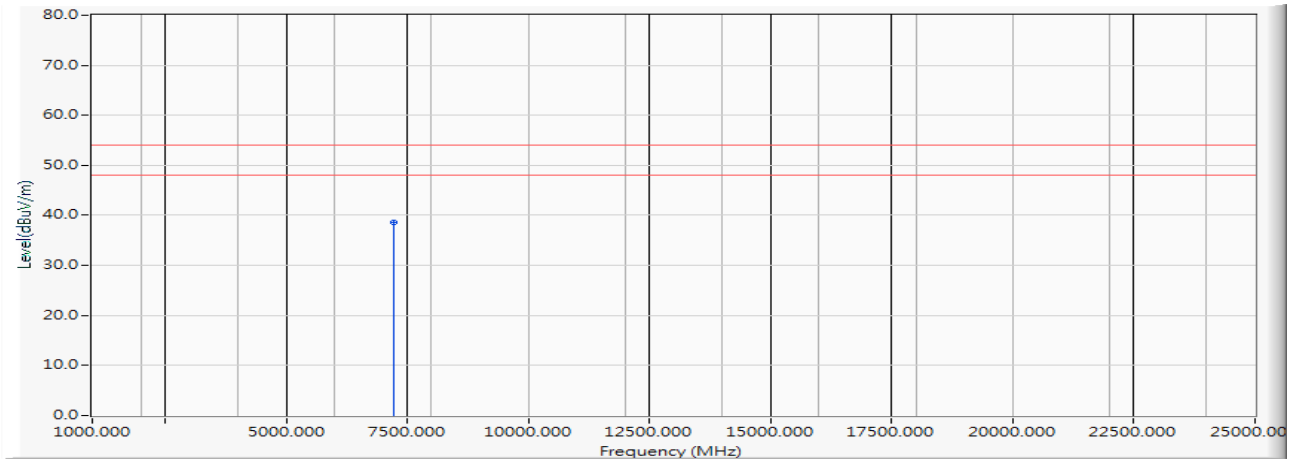
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4824.000	5.858	34.885	40.743	-33.257	74.000	PEAK
2	*	7236.000	10.502	47.794	58.296	-15.704	74.000	PEAK
3		9648.000	13.752	29.794	43.547	-30.453	74.000	PEAK

Note:

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

Product	:	MOXA IEEE 802.11 a/b/g/n
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test date	:	2019/04/30
Test Mode	:	Mode 1: Transmit (802.11g 6Mbps)(2412MHz)

Vertical



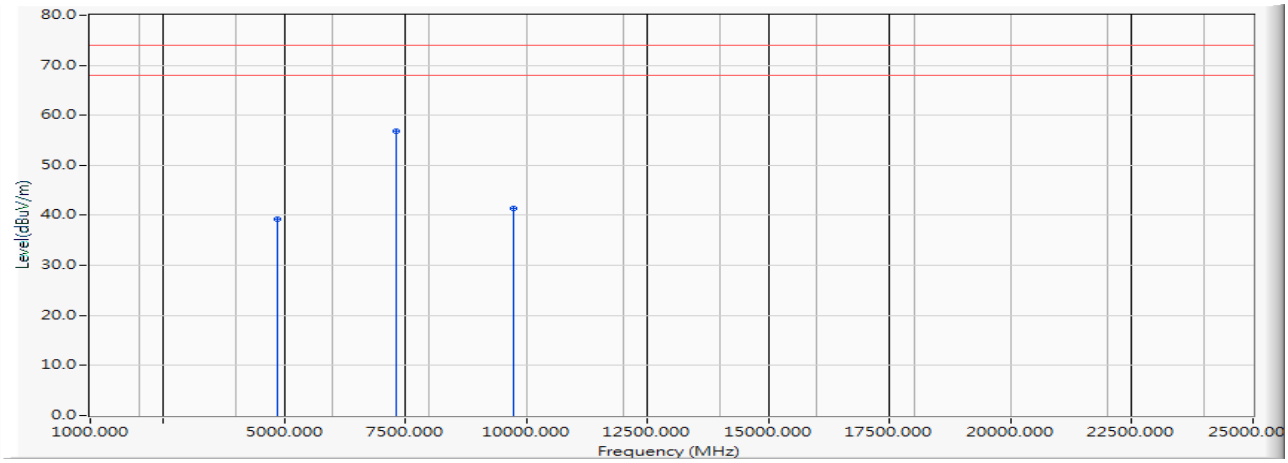
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	7236.000	10.502	28.134	38.636	-15.364	54.000	AVERAGE

Note:

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

Product	:	MOXA IEEE 802.11 a/b/g/n
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test date	:	2019/04/30
Test Mode	:	Mode 1: Transmit (802.11g 6Mbps) (2437 MHz)

Horizontal



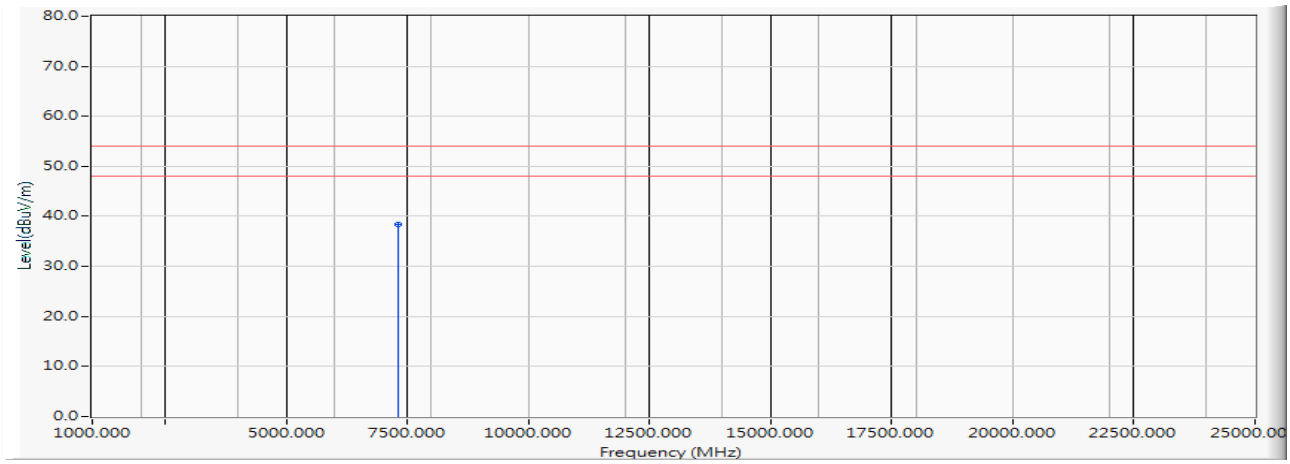
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4874.000	5.921	33.347	39.268	-34.732	74.000	PEAK
2	*	7311.000	10.462	46.279	56.741	-17.259	74.000	PEAK
3		9748.000	14.194	27.302	41.496	-32.504	74.000	PEAK

Note:

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

Product	:	MOXA IEEE 802.11 a/b/g/n
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test date	:	2019/04/30
Test Mode	:	Mode 1: Transmit (802.11g 6Mbps) (2437 MHz)

Horizontal



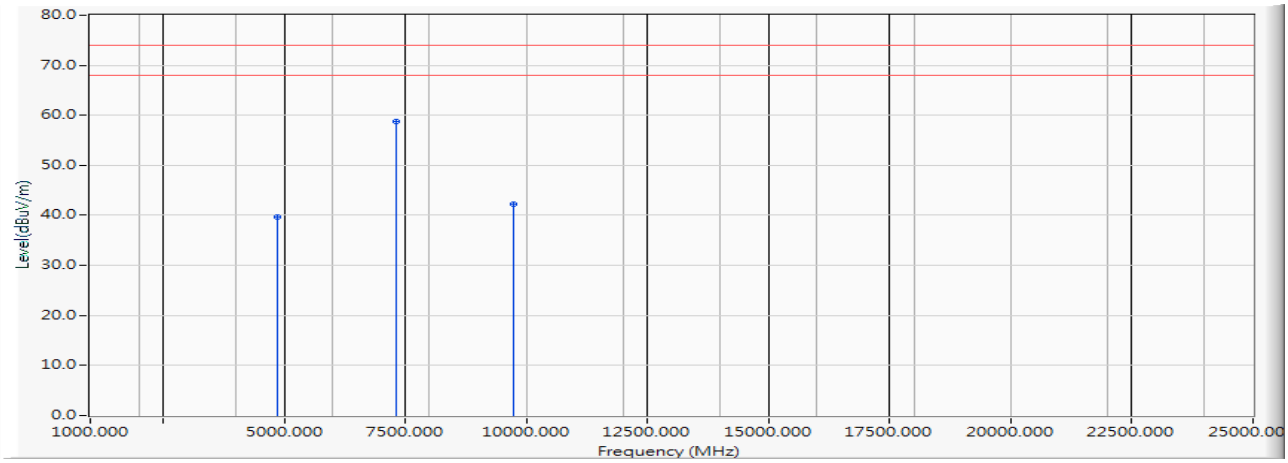
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	7311.000	10.462	27.969	38.431	-15.569	54.000	AVERAGE

Note:

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

Product	:	MOXA IEEE 802.11 a/b/g/n
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test date	:	2019/04/30
Test Mode	:	Mode 1: Transmit (802.11g 6Mbps) (2437 MHz)

Vertical



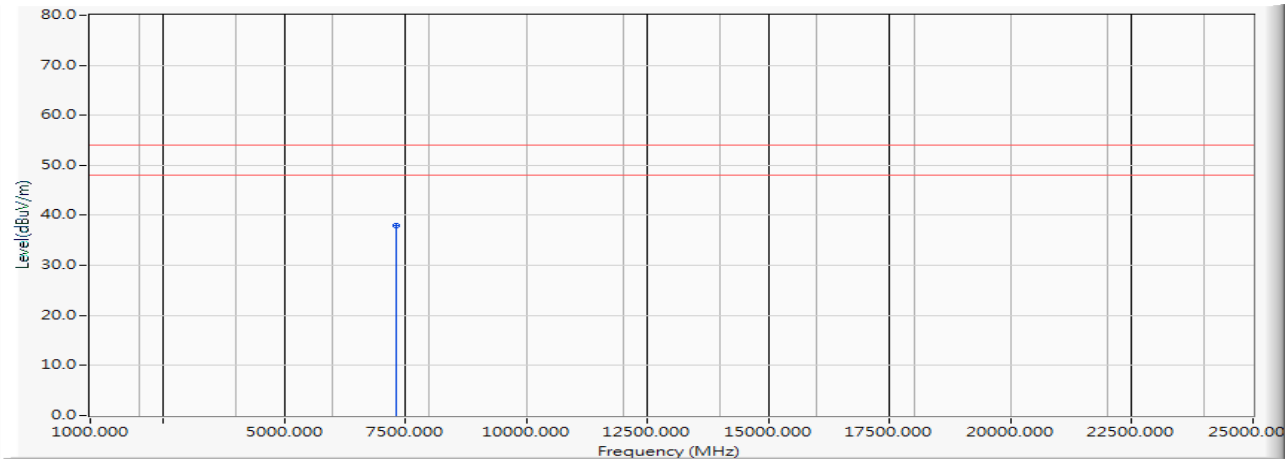
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4874.000	5.921	33.742	39.663	-34.337	74.000	PEAK
2	*	7311.000	10.462	48.284	58.746	-15.254	74.000	PEAK
3		9748.000	14.194	28.112	42.306	-31.694	74.000	PEAK

Note:

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

Product	:	MOXA IEEE 802.11 a/b/g/n
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test date	:	2019/04/30
Test Mode	:	Mode 1: Transmit (802.11g 6Mbps) (2437 MHz)

Vertical



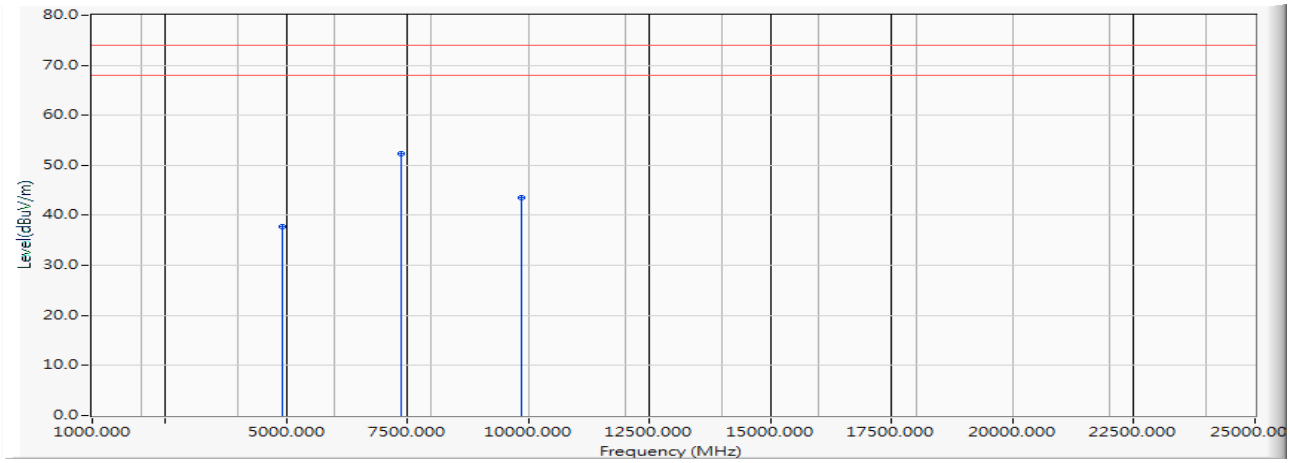
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	7311.000	10.462	27.424	37.886	-16.114	54.000	AVERAGE

Note:

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

Product : MOXA IEEE 802.11 a/b/g/n
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test date : 2019/04/30
Test Mode : Mode 1: Transmit (802.11g 6Mbps) (2462 MHz)

Horizontal



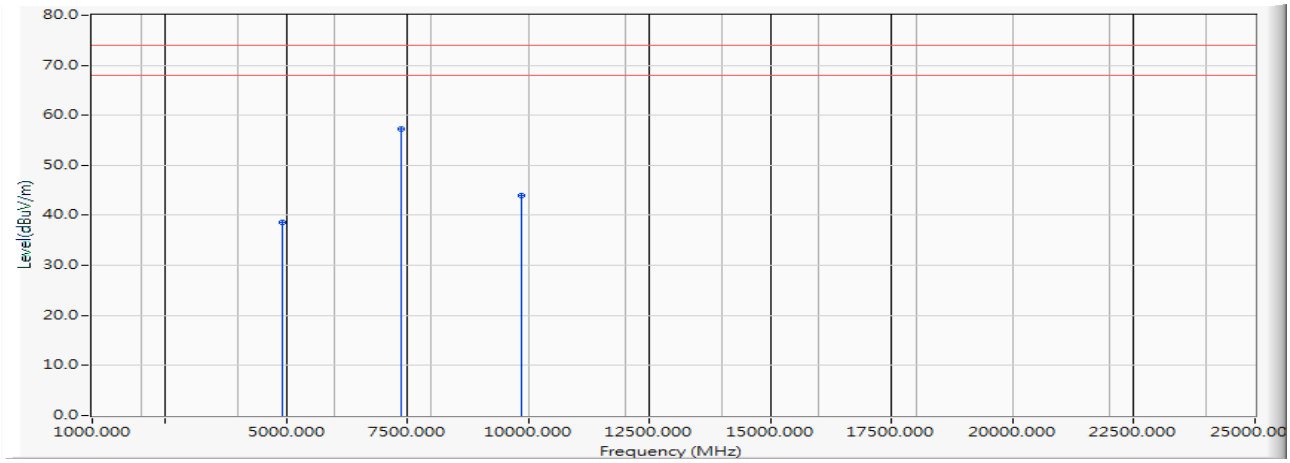
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4924.000	5.982	31.816	37.798	-36.202	74.000	PEAK
2	*	7386.000	10.436	41.875	52.311	-21.689	74.000	PEAK
3		9848.000	14.087	29.366	43.453	-30.547	74.000	PEAK

Note:

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

Product	:	MOXA IEEE 802.11 a/b/g/n
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test date	:	2019/04/30
Test Mode	:	Mode 1: Transmit (802.11g 6Mbps) (2462 MHz)

Vertical



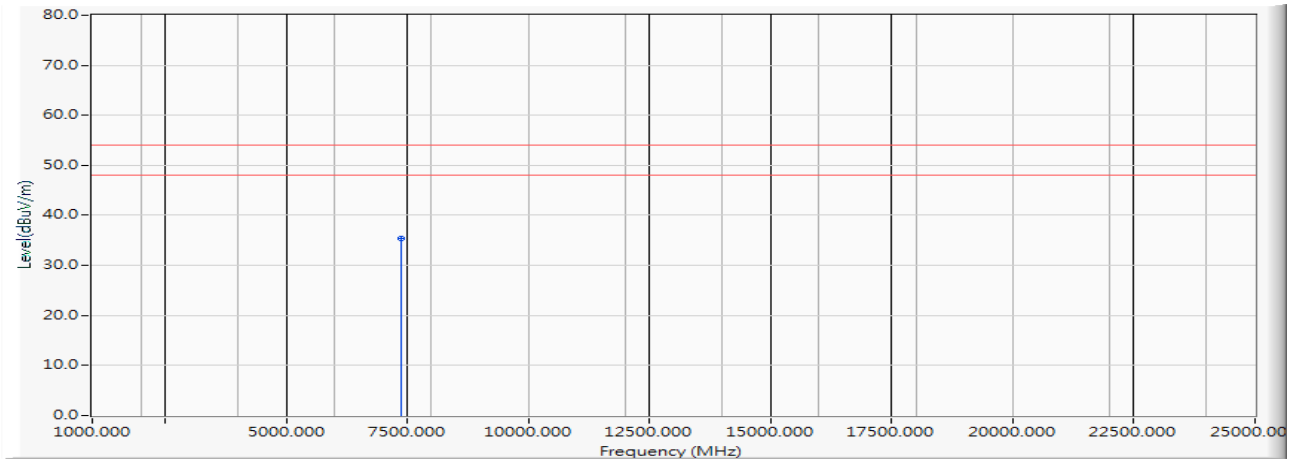
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4924.000	5.982	32.519	38.501	-35.499	74.000	PEAK
2	*	7386.000	10.436	46.812	57.248	-16.752	74.000	PEAK
3		9848.000	14.087	29.941	44.028	-29.972	74.000	PEAK

Note:

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

Product	:	MOXA IEEE 802.11 a/b/g/n
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test date	:	2019/04/30
Test Mode	:	Mode 1: Transmit (802.11g 6Mbps) (2462 MHz)

Vertical



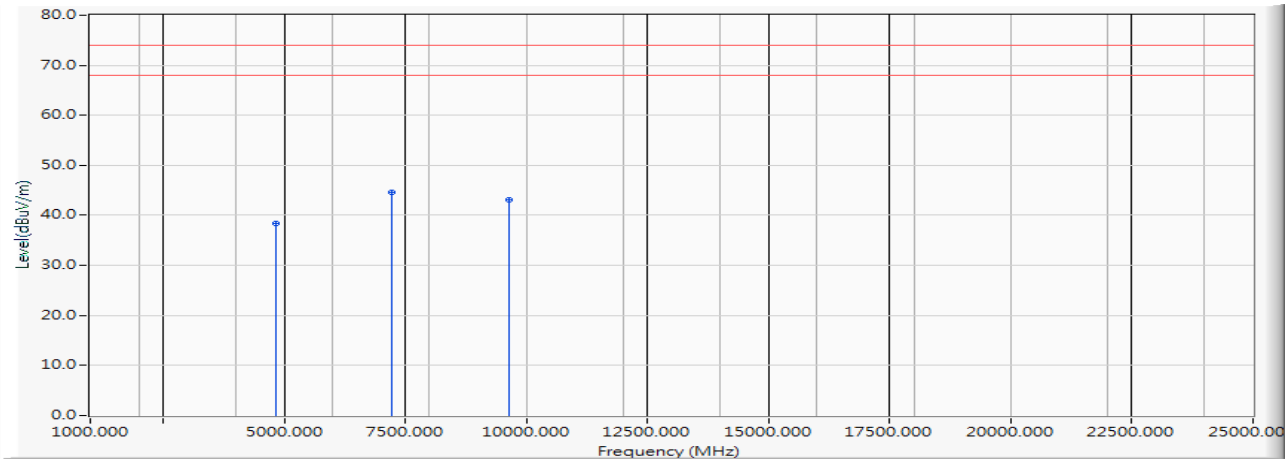
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	7386.000	10.436	25.002	35.438	-18.562	54.000	AVERAGE

Note:

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

Product	:	MOXA IEEE 802.11 a/b/g/n
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test date	:	2019/04/30
Test Mode	:	Mode 1: Transmit (802.11n-20BW)_14.4Mbps (2412MHz)

Horizontal



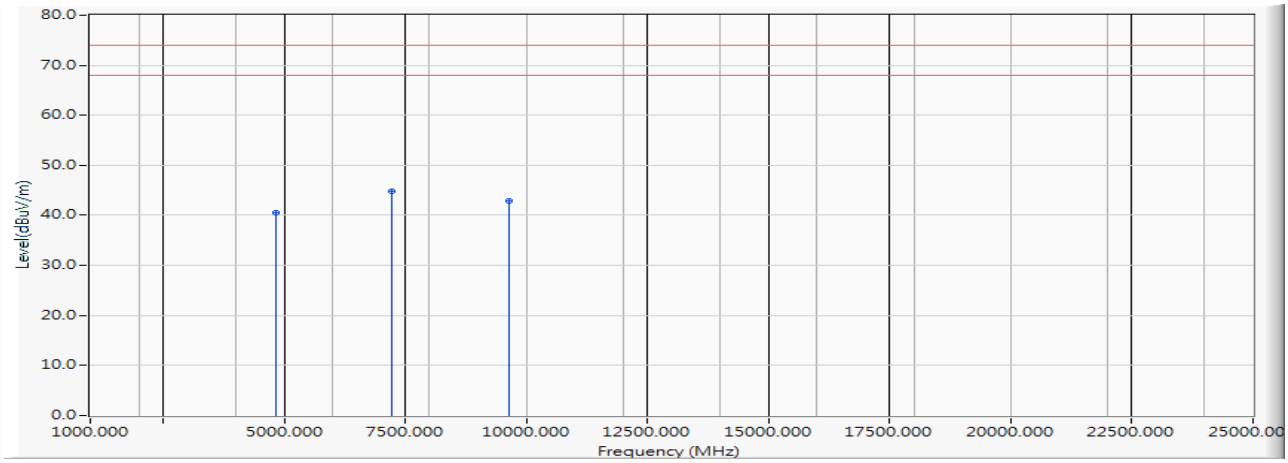
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4824.000	5.858	32.634	38.492	-35.508	74.000	PEAK
2	*	7236.000	10.502	34.190	44.692	-29.308	74.000	PEAK
3		9648.000	13.752	29.414	43.167	-30.833	74.000	PEAK

Note:

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

Product	:	MOXA IEEE 802.11 a/b/g/n
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test date	:	2019/04/30
Test Mode	:	Mode 1: Transmit (802.11n-20BW)_14.4Mbps (2412MHz)

Vertical



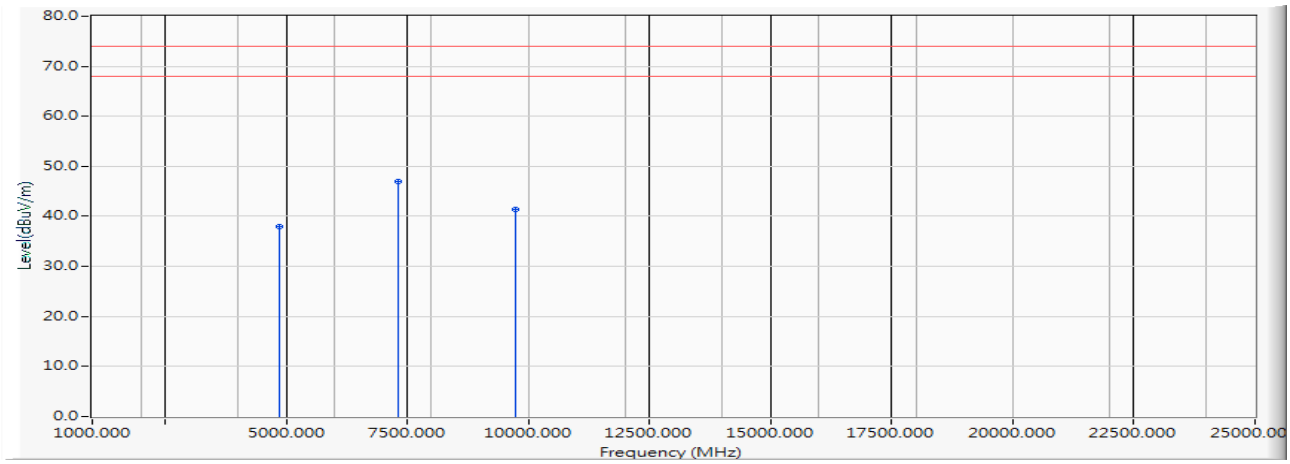
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4824.000	5.858	34.615	40.473	-33.527	74.000	PEAK
2	*	7236.000	10.502	34.414	44.916	-29.084	74.000	PEAK
3		9648.000	13.752	29.174	42.927	-31.073	74.000	PEAK

Note:

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

Product	:	MOXA IEEE 802.11 a/b/g/n
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test date	:	2019/04/30
Test Mode	:	Mode 1: Transmit (802.11n-20BW)_14.4Mbps (2437 MHz)

Horizontal



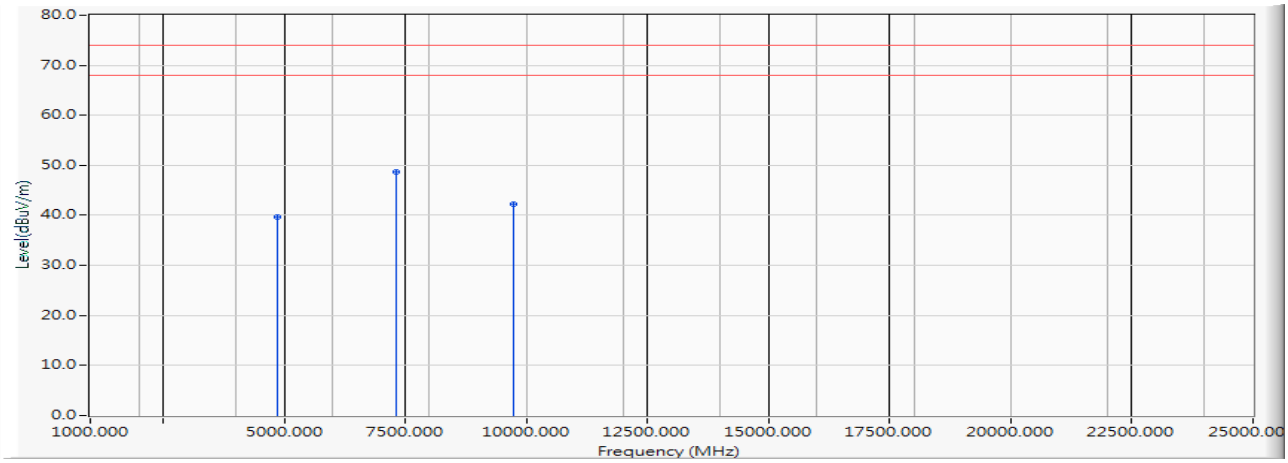
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4874.000	5.921	32.007	37.928	-36.072	74.000	PEAK
2	*	7311.000	10.462	36.559	47.021	-26.979	74.000	PEAK
3		9748.000	14.194	27.252	41.446	-32.554	74.000	PEAK

Note:

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

Product	:	MOXA IEEE 802.11 a/b/g/n
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test date	:	2019/04/30
Test Mode	:	Mode 1: Transmit (802.11n-20BW)_14.4Mbps(2437 MHz)

Vertical



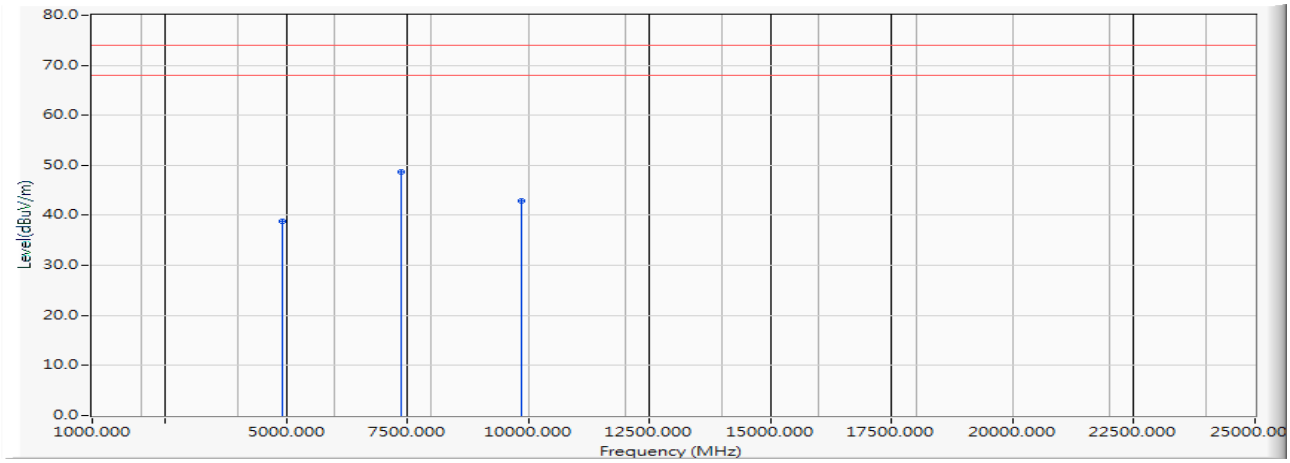
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4874.000	5.921	33.762	39.683	-34.317	74.000	PEAK
2	*	7311.000	10.462	38.174	48.636	-25.364	74.000	PEAK
3		9748.000	14.194	27.972	42.166	-31.834	74.000	PEAK

Note:

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

Product : MOXA IEEE 802.11 a/b/g/n
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test date : 2019/04/30
Test Mode : Mode 1: Transmit (802.11n-20BW)_14.4Mbps (2462 MHz)

Horizontal



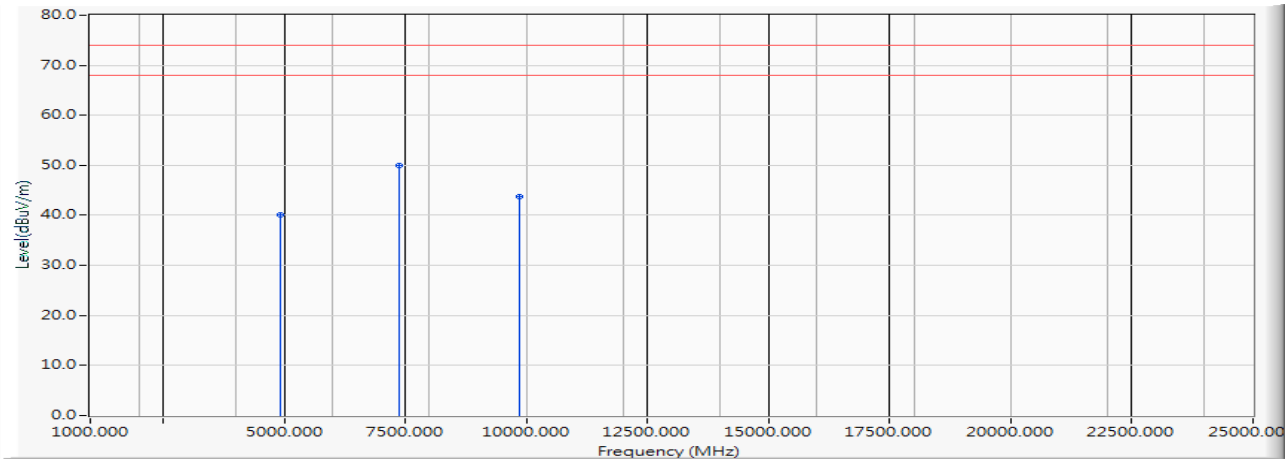
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4924.000	5.982	32.786	38.768	-35.232	74.000	PEAK
2	*	7386.000	10.436	38.145	48.581	-25.419	74.000	PEAK
3		9848.000	14.087	28.856	42.943	-31.057	74.000	PEAK

Note:

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

Product : MOXA IEEE 802.11 a/b/g/n
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test date : 2019/04/30
Test Mode : Mode 1: Transmit (802.11n-20BW)_14.4Mbps (2462 MHz)

Vertical



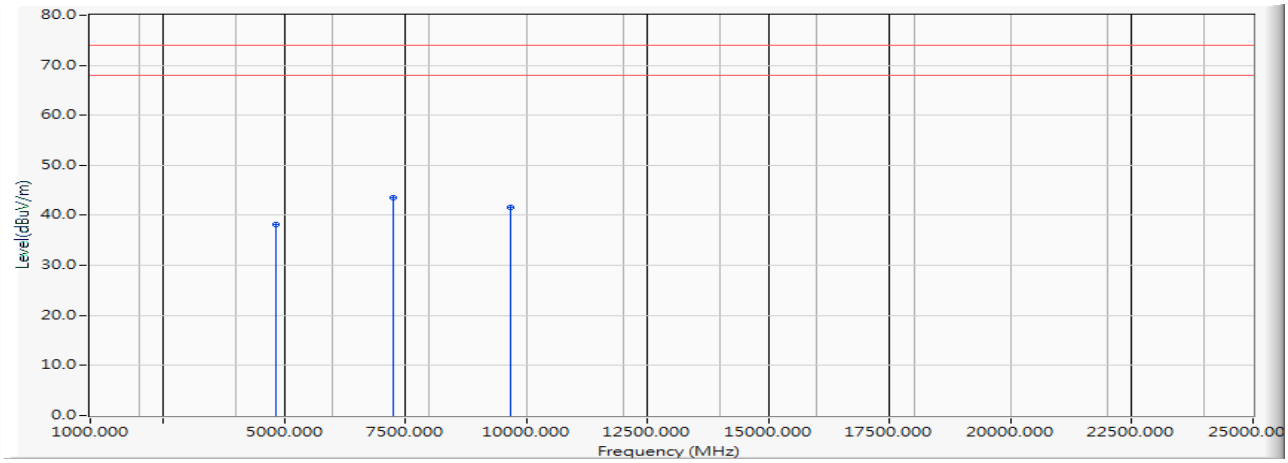
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4924.000	5.982	34.189	40.171	-33.829	74.000	PEAK
2	*	7386.000	10.436	39.432	49.868	-24.132	74.000	PEAK
3		9848.000	14.087	29.721	43.808	-30.192	74.000	PEAK

Note:

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

Product	:	MOXA IEEE 802.11 a/b/g/n
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test date	:	2019/04/30
Test Mode	:	Mode 1: Transmit (802.11n-40BW)_30Mbps (2422MHz)

Horizontal



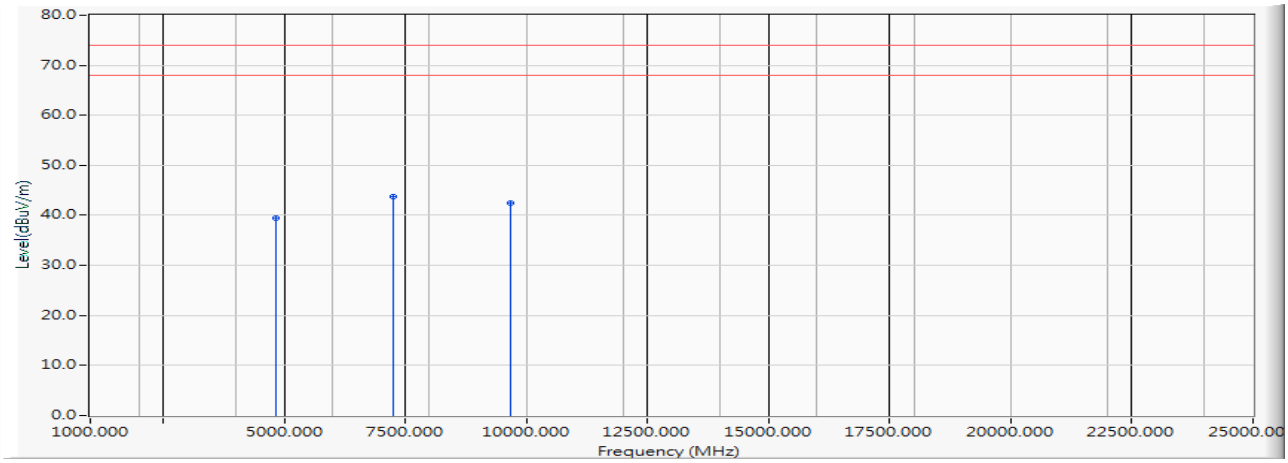
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4844.000	5.891	32.190	38.081	-35.919	74.000	PEAK
2	*	7266.000	10.410	33.075	43.486	-30.514	74.000	PEAK
3		9688.000	13.884	27.775	41.659	-32.341	74.000	PEAK

Note:

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

Product	:	MOXA IEEE 802.11 a/b/g/n
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test date	:	2019/04/30
Test Mode	:	Mode 1: Transmit (802.11n-40BW)_30Mbps (2422MHz)

Vertical



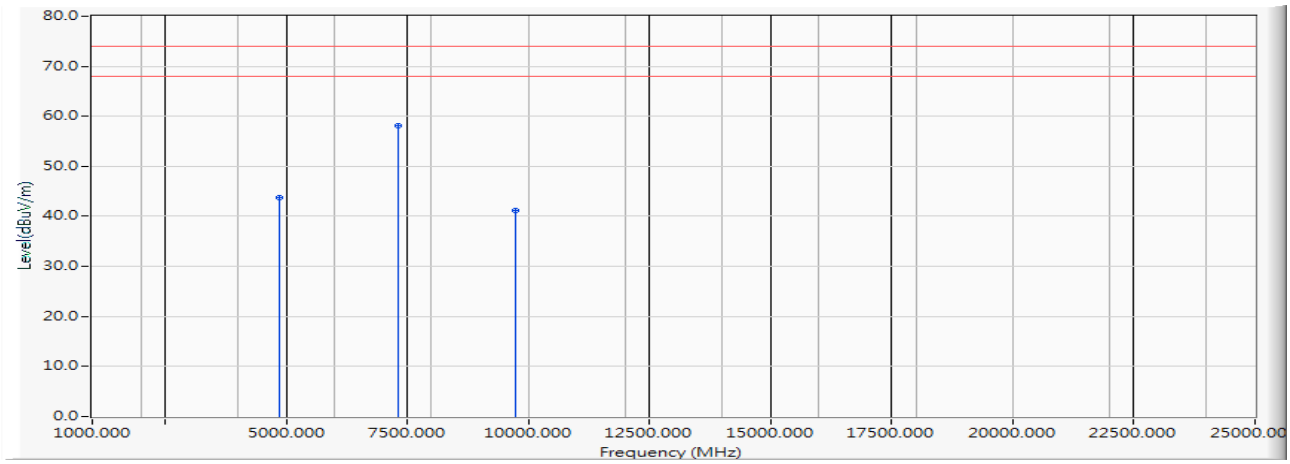
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4844.000	5.891	33.656	39.547	-34.453	74.000	PEAK
2	*	7266.000	10.410	33.365	43.776	-30.224	74.000	PEAK
3		9688.000	13.884	28.559	42.443	-31.557	74.000	PEAK

Note:

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

Product	:	MOXA IEEE 802.11 a/b/g/n
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test date	:	2019/04/30
Test Mode	:	Mode 1: Transmit (802.11n-40BW)_30Mbps (2437 MHz)

Horizontal



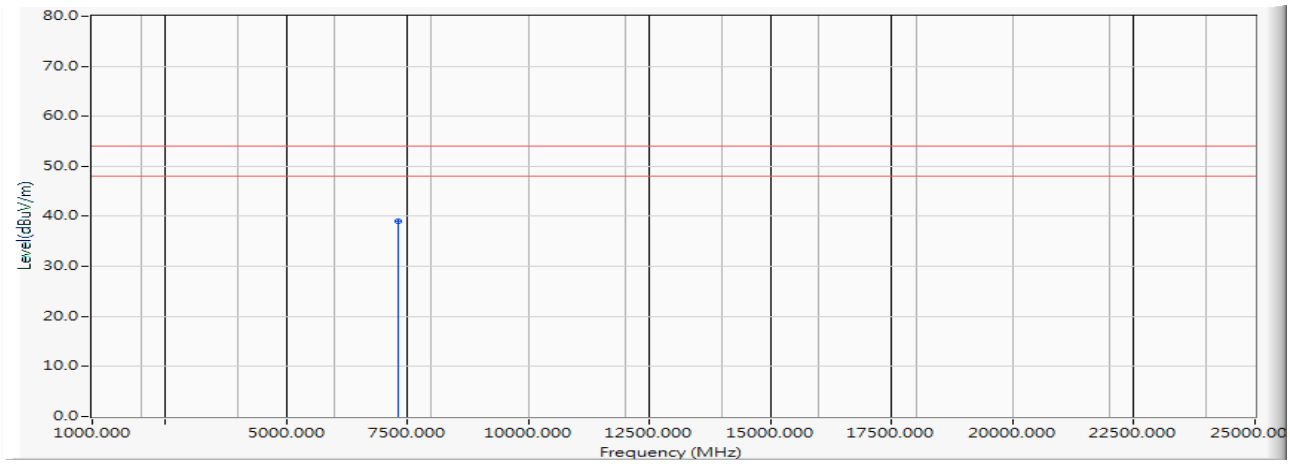
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4874.000	5.921	37.917	43.838	-30.162	74.000	PEAK
2	*	7311.000	10.462	47.739	58.201	-15.799	74.000	PEAK
3		9748.000	14.194	27.002	41.196	-32.804	74.000	PEAK

Note:

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

Product	:	MOXA IEEE 802.11 a/b/g/n
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test date	:	2019/04/30
Test Mode	:	Mode 1: Transmit (802.11n-40BW)_30Mbps (2437 MHz)

Horizontal



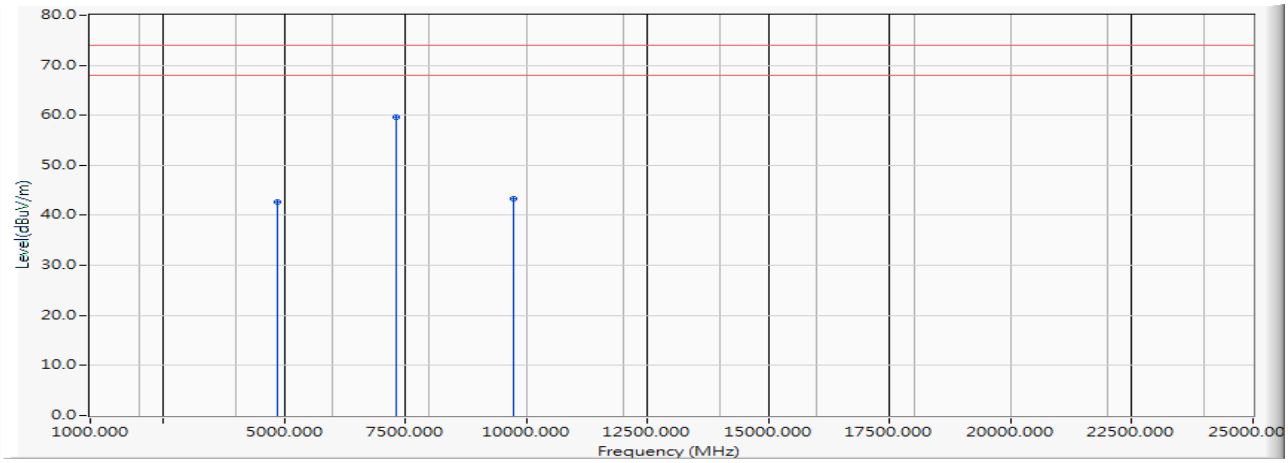
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	7311.000	10.462	28.479	38.941	-15.059	54.000	AVERAGE

Note:

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

Product	:	MOXA IEEE 802.11 a/b/g/n
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test date	:	2019/04/30
Test Mode	:	Mode 1: Transmit (802.11n-40BW)_30Mbps (2437 MHz)

Vertical



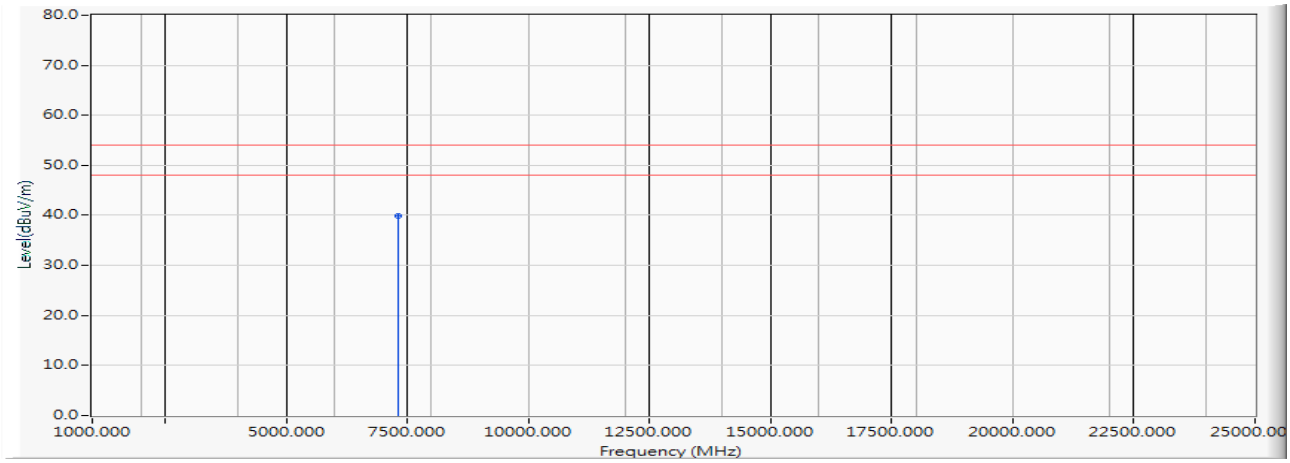
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4874.000	5.921	36.842	42.763	-31.237	74.000	PEAK
2	*	7311.000	10.462	49.244	59.706	-14.294	74.000	PEAK
3		9748.000	14.194	29.102	43.296	-30.704	74.000	PEAK

Note:

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

Product	:	MOXA IEEE 802.11 a/b/g/n
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test date	:	2019/04/30
Test Mode	:	Mode 1: Transmit (802.11n-40BW)_30Mbps (2437 MHz)

Vertical



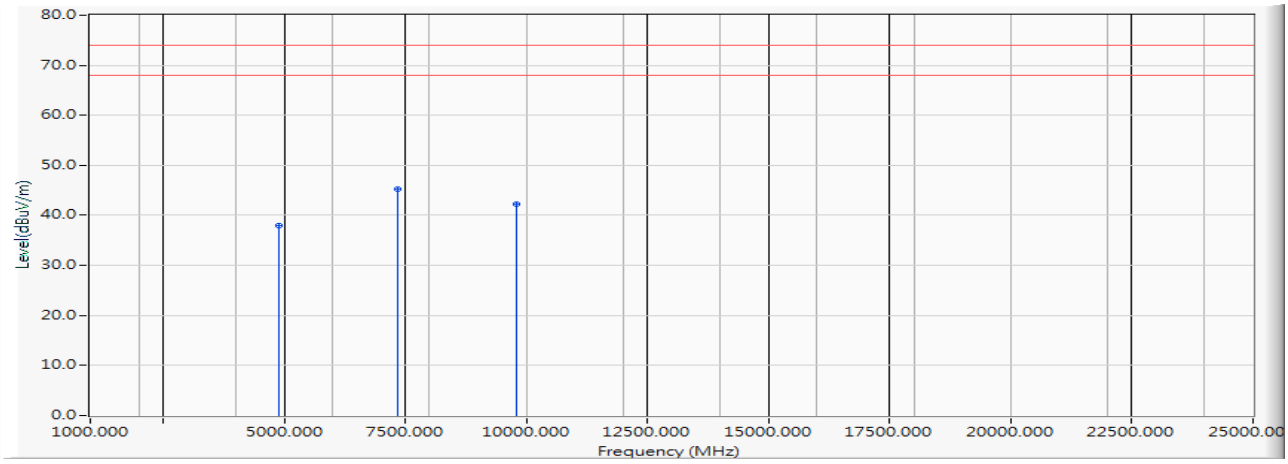
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	7311.000	10.462	29.444	39.906	-14.094	54.000	AVERAGE

Note:

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

Product	:	MOXA IEEE 802.11 a/b/g/n
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test date	:	2019/04/30
Test Mode	:	Mode 1: Transmit (802.11n-40BW)_30Mbps (2452 MHz)

Horizontal



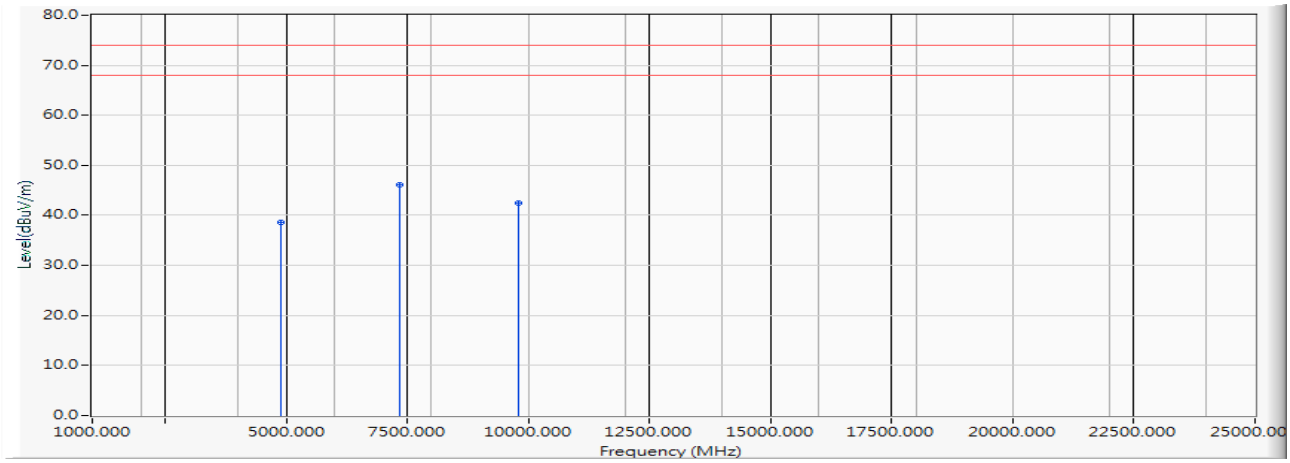
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4904.000	5.965	32.073	38.038	-35.962	74.000	PEAK
2	*	7356.000	10.345	34.930	45.275	-28.725	74.000	PEAK
3		9808.000	13.971	28.283	42.254	-31.746	74.000	PEAK

Note:

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

Product	:	MOXA IEEE 802.11 a/b/g/n
Test Item	:	Harmonic Radiated Emission Data
Test Site	:	No.3 OATS
Test date	:	2019/04/30
Test Mode	:	Mode 1: Transmit (802.11n-40BW)_30Mbps (2452 MHz)

Vertical



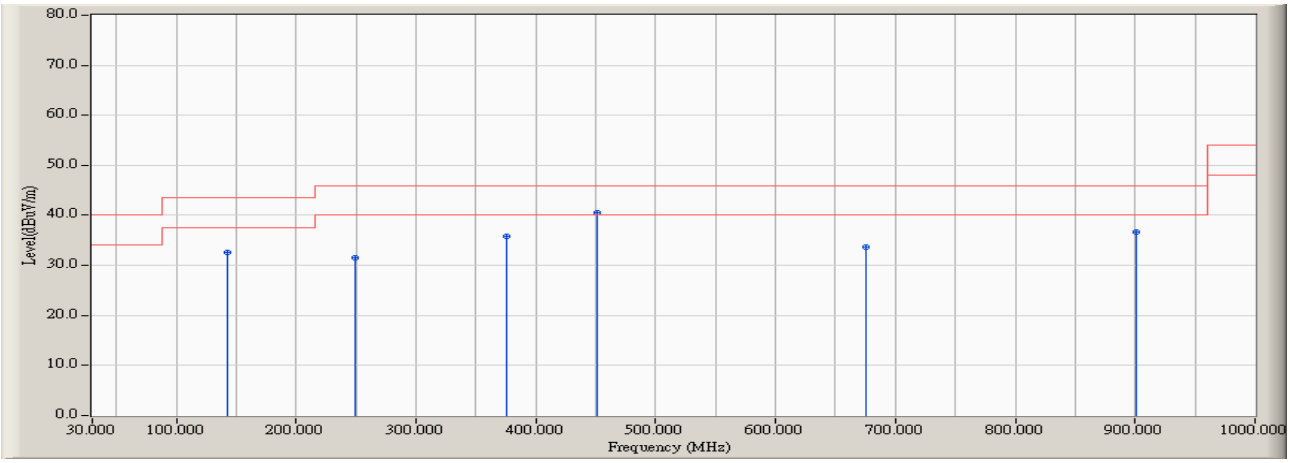
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4904.000	5.965	32.629	38.594	-35.406	74.000	PEAK
2	*	7356.000	10.345	35.790	46.135	-27.865	74.000	PEAK
3		9808.000	13.971	28.479	42.450	-31.550	74.000	PEAK

Note:

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

Product : MOXA IEEE 802.11 a/b/g/n
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test date : 2019/05/08
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2437 MHz)

Horizontal



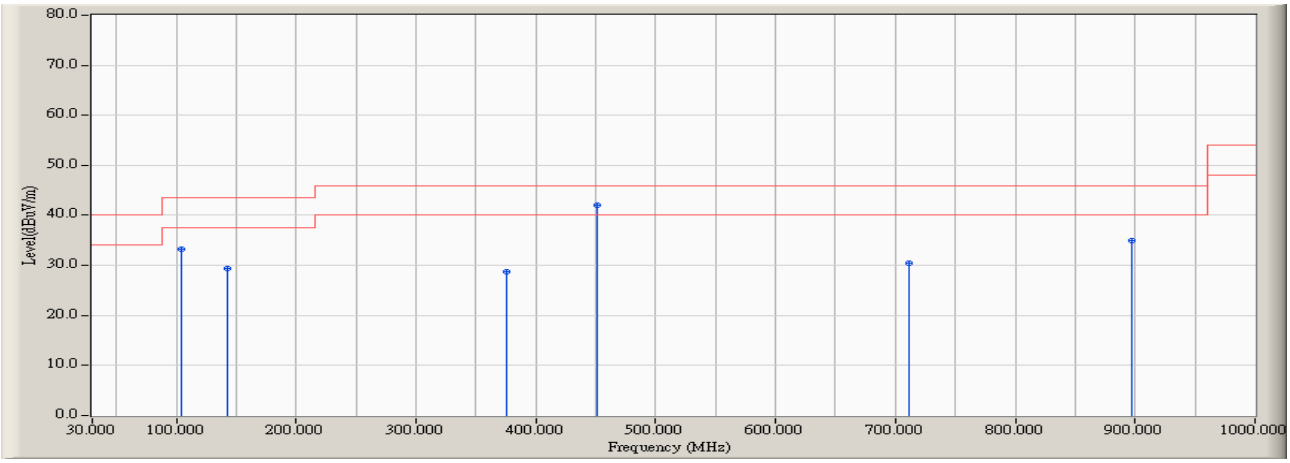
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		142.520	19.008	13.540	32.548	-10.952	43.500	QUASIPEAK
2		249.220	20.618	10.960	31.578	-14.422	46.000	QUASIPEAK
3		375.320	24.046	11.770	35.816	-10.184	46.000	QUASIPEAK
4	*	450.980	25.466	15.101	40.567	-5.433	46.000	QUASIPEAK
5		676.020	28.518	5.247	33.765	-12.235	46.000	QUASIPEAK
6		901.060	30.814	5.764	36.578	-9.422	46.000	QUASIPEAK

Note:

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

Product : MOXA IEEE 802.11 a/b/g/n
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test date : 2019/05/08
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2437 MHz)

Vertical



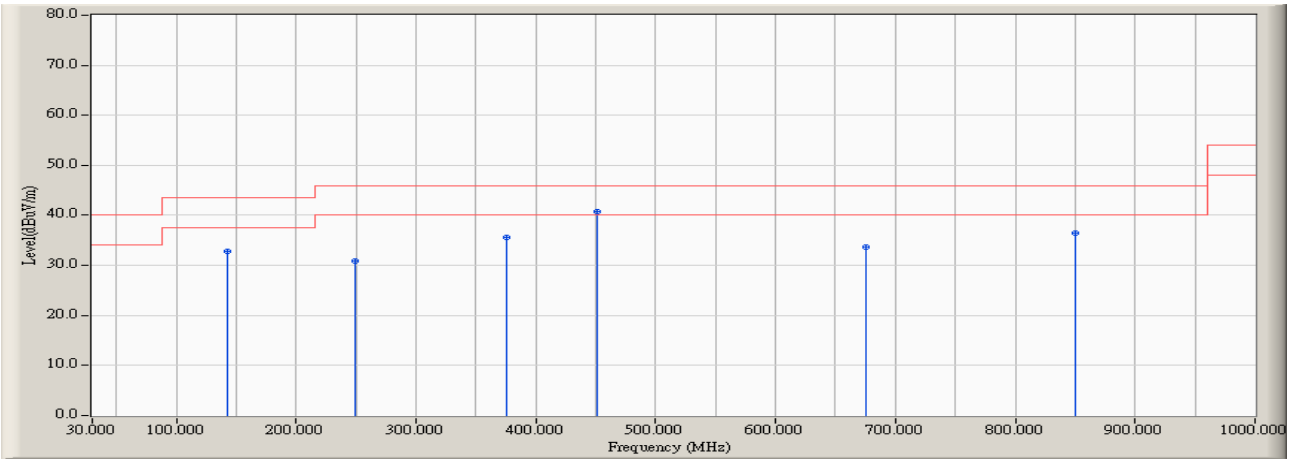
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		103.720	18.501	14.737	33.238	-10.262	43.500	QUASIPEAK
2		142.520	19.008	10.432	29.440	-14.060	43.500	QUASIPEAK
3		375.320	24.046	4.630	28.676	-17.324	46.000	QUASIPEAK
4	*	450.980	25.466	16.617	42.083	-3.917	46.000	QUASIPEAK
5		710.940	28.708	1.681	30.389	-15.611	46.000	QUASIPEAK
6		897.080	30.787	4.143	34.930	-11.070	46.000	QUASIPEAK

Note:

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

Product	:	MOXA IEEE 802.11 a/b/g/n
Test Item	:	General Radiated Emission Data
Test Site	:	No.3 OATS
Test date	:	2019/05/08
Test Mode	:	Mode 1: Transmit (802.11g 6Mbps) (2437 MHz)

Horizontal



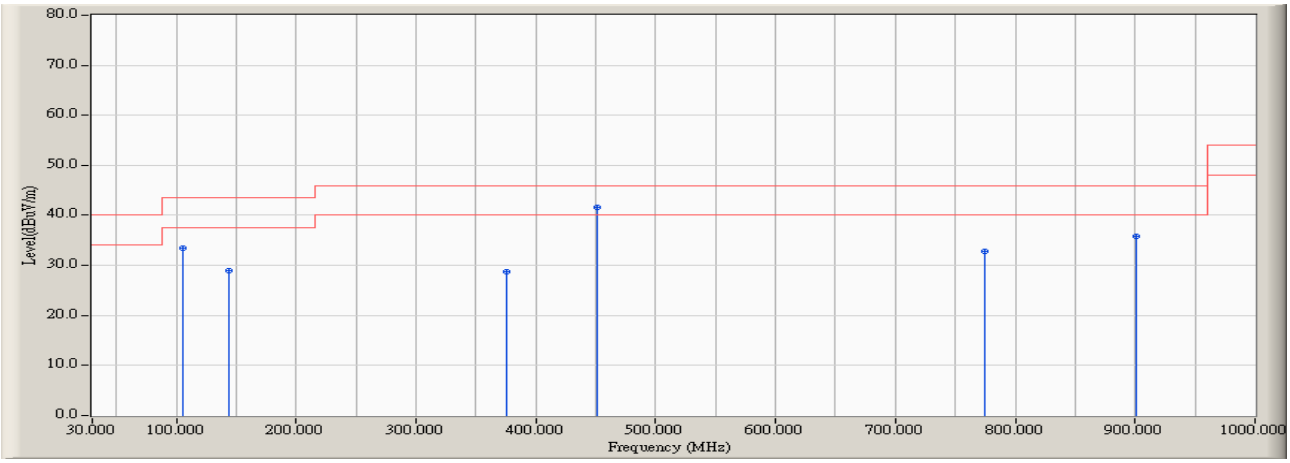
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		142.520	19.008	13.758	32.766	-10.734	43.500	QUASIPEAK
2		249.220	20.618	10.177	30.795	-15.205	46.000	QUASIPEAK
3		375.320	24.046	11.592	35.638	-10.362	46.000	QUASIPEAK
4	*	450.980	25.466	15.341	40.807	-5.193	46.000	QUASIPEAK
5		676.020	28.518	5.258	33.776	-12.224	46.000	QUASIPEAK
6		850.620	30.533	6.003	36.536	-9.464	46.000	QUASIPEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.
6. No emission found between lowest internal used/generated frequency to 30MHz.

Product : MOXA IEEE 802.11 a/b/g/n
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test date : 2019/05/08
Test Mode : Mode 1: Transmit (802.11g 6Mbps) (2437 MHz)

Vertical



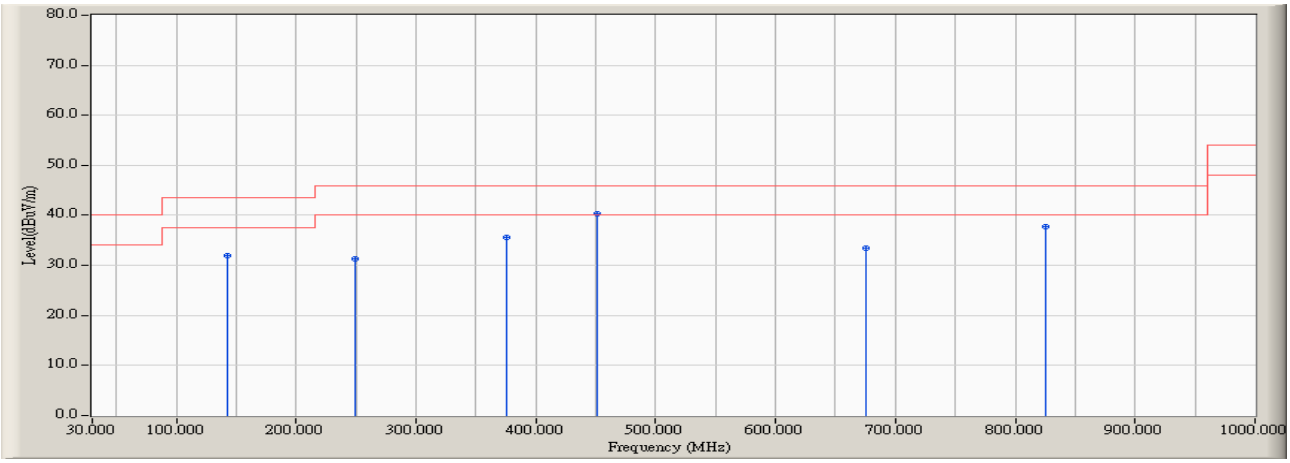
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		105.660	18.773	14.781	33.554	-9.946	43.500	QUASIPEAK
2		144.460	18.856	10.157	29.013	-14.487	43.500	QUASIPEAK
3		375.320	24.046	4.675	28.721	-17.279	46.000	QUASIPEAK
4	*	450.980	25.466	16.159	41.625	-4.375	46.000	QUASIPEAK
5		774.960	29.443	3.430	32.873	-13.127	46.000	QUASIPEAK
6		901.060	30.814	4.917	35.731	-10.269	46.000	QUASIPEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.
6. No emission found between lowest internal used/generated frequency to 30MHz.

Product	:	MOXA IEEE 802.11 a/b/g/n
Test Item	:	General Radiated Emission Data
Test Site	:	No.3 OATS
Test date	:	2019/05/08
Test Mode	:	Mode 1: Transmit (802.11n-20BW)_14.4Mbps (2437 MHz)

Horizontal



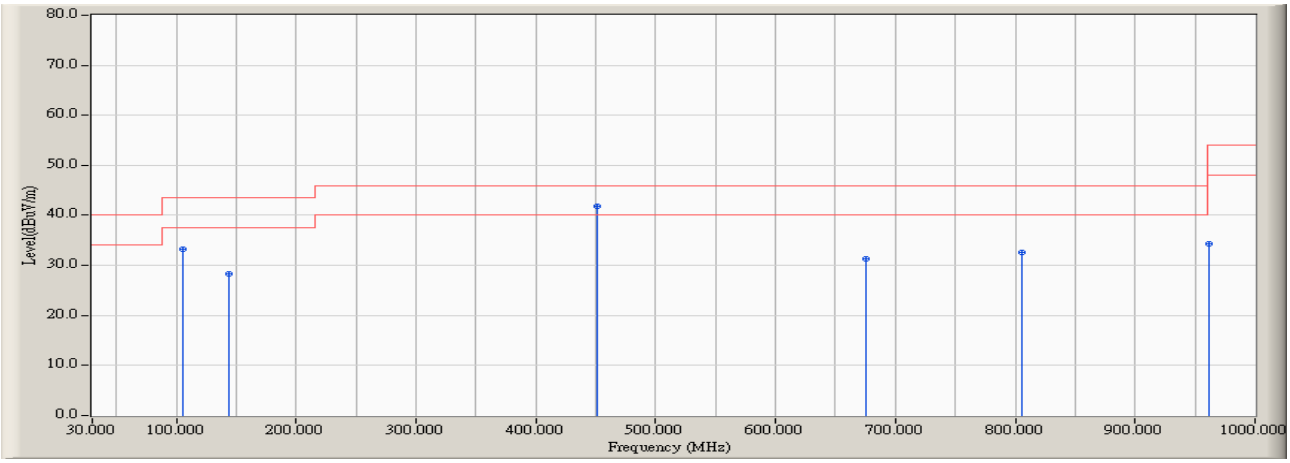
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		142.520	19.008	13.050	32.058	-11.442	43.500	QUASIPEAK
2		249.220	20.618	10.590	31.208	-14.792	46.000	QUASIPEAK
3		375.320	24.046	11.610	35.656	-10.344	46.000	QUASIPEAK
4	*	450.980	25.466	14.794	40.260	-5.740	46.000	QUASIPEAK
5		676.020	28.518	5.017	33.535	-12.465	46.000	QUASIPEAK
6		825.400	30.095	7.553	37.648	-8.352	46.000	QUASIPEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.
6. No emission found between lowest internal used/generated frequency to 30MHz.

Product : MOXA IEEE 802.11 a/b/g/n
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test date : 2019/05/08
Test Mode : Mode 1: Transmit (802.11n-20BW)_14.4Mbps (2437 MHz)

Vertical



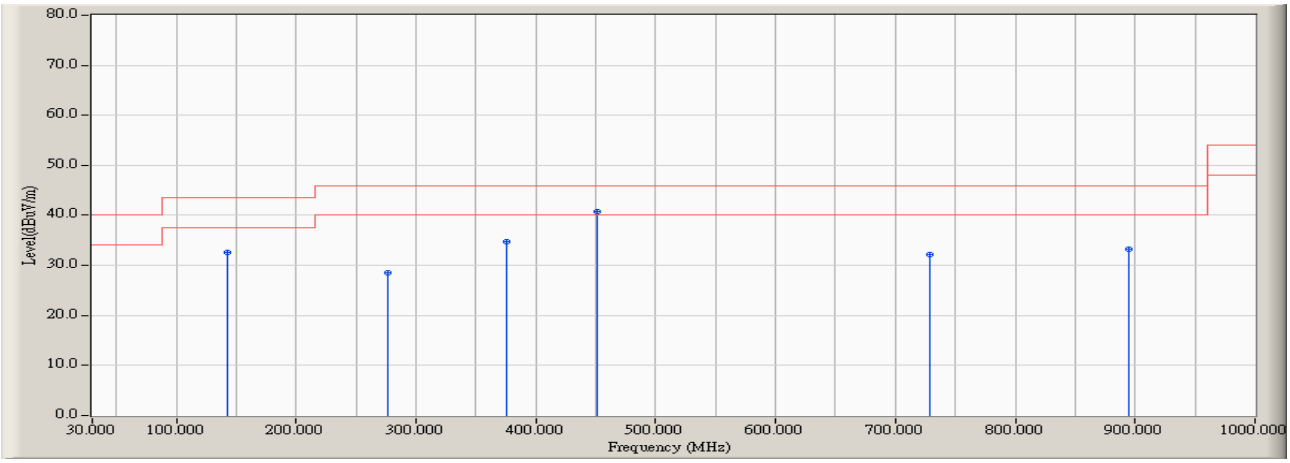
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		105.660	18.773	14.494	33.267	-10.233	43.500	QUASIPEAK
2		144.460	18.856	9.445	28.301	-15.199	43.500	QUASIPEAK
3	*	450.980	25.466	16.298	41.764	-4.236	46.000	QUASIPEAK
4		676.020	28.518	2.860	31.378	-14.622	46.000	QUASIPEAK
5		806.000	29.755	2.917	32.672	-13.328	46.000	QUASIPEAK
6		961.200	31.683	2.562	34.245	-19.755	54.000	QUASIPEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.
6. No emission found between lowest internal used/generated frequency to 30MHz.

Product : MOXA IEEE 802.11 a/b/g/n
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test date : 2019/05/08
Test Mode : Mode 1: Transmit (802.11n-40BW)_30Mbps (2437 MHz)

Horizontal



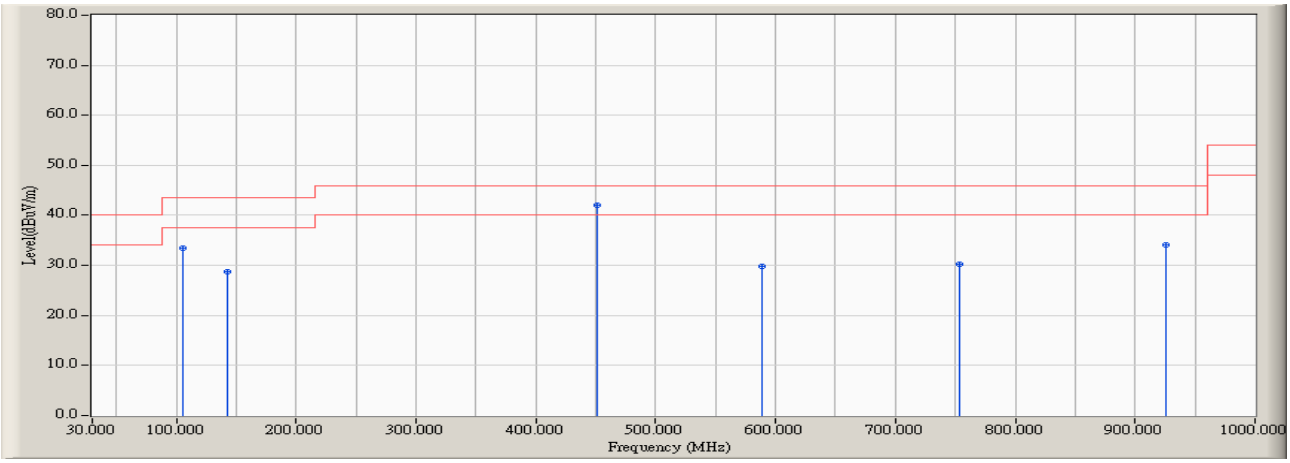
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		142.520	19.008	13.590	32.598	-10.902	43.500	QUASIPEAK
2		276.380	21.210	7.341	28.551	-17.449	46.000	QUASIPEAK
3		375.320	24.046	10.679	34.725	-11.275	46.000	QUASIPEAK
4	*	450.980	25.466	15.307	40.773	-5.227	46.000	QUASIPEAK
5		728.400	28.955	3.166	32.121	-13.879	46.000	QUASIPEAK
6		895.240	30.774	2.399	33.173	-12.827	46.000	QUASIPEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.
6. No emission found between lowest internal used/generated frequency to 30MHz.

Product	:	MOXA IEEE 802.11 a/b/g/n
Test Item	:	General Radiated Emission Data
Test Site	:	No.3 OATS
Test date	:	2019/05/08
Test Mode	:	Mode 1: Transmit (802.11n-40BW)_30Mbps (2437 MHz)

Vertical



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		105.660	18.773	14.777	33.550	-9.950	43.500	QUASIPEAK
2		142.520	19.008	9.812	28.820	-14.680	43.500	QUASIPEAK
3	*	450.980	25.466	16.482	41.948	-4.052	46.000	QUASIPEAK
4		588.720	27.673	2.037	29.710	-16.290	46.000	QUASIPEAK
5		753.620	29.283	0.954	30.237	-15.763	46.000	QUASIPEAK
6		926.280	31.216	2.934	34.150	-11.850	46.000	QUASIPEAK

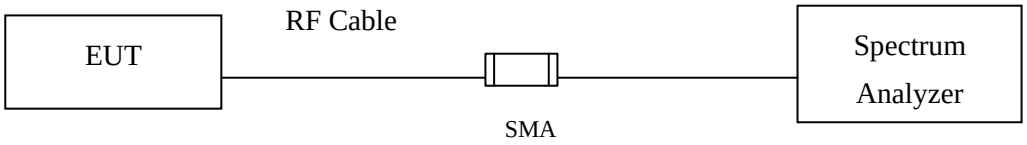
Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
4. The average measurement was not performed when the peak measured data under the limit of average detection.
5. The emission levels of other frequencies are very lower than the limit and not show in test report.
6. No emission found between lowest internal used/generated frequency to 30MHz.

4. Band Edge

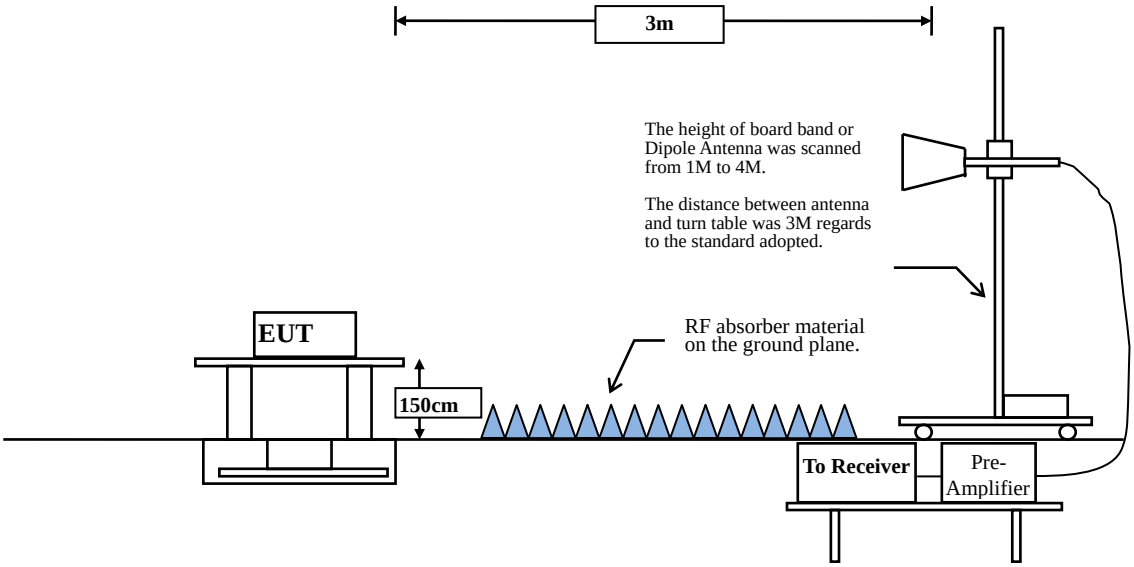
4.1. Test Setup

RF Conducted Measurement



RF Radiated Measurement:

Above 1GHz



4.2. 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.

4.3. 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.

According to KDB 558074 section 12.2.5. Average power measurement procedure
RBW = 1MHz.
VBW = 10Hz, when duty cycle ≥ 98 %
VBW ≥ 1/T, when duty cycle < 98 %
(T refers to the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.)

2.4GHz band	Duty Cycle (%)	T (ms)	1/T (Hz)	VBW (Hz)
802.11 b	100.00	--	--	10
802.11 g	98.61	5.3400	187	200
802.11 n20	97.65	2.4900	402	500
802.11 n40	94.12	1.2000	833	1000

Note: Duty Cycle Refer to Section 6

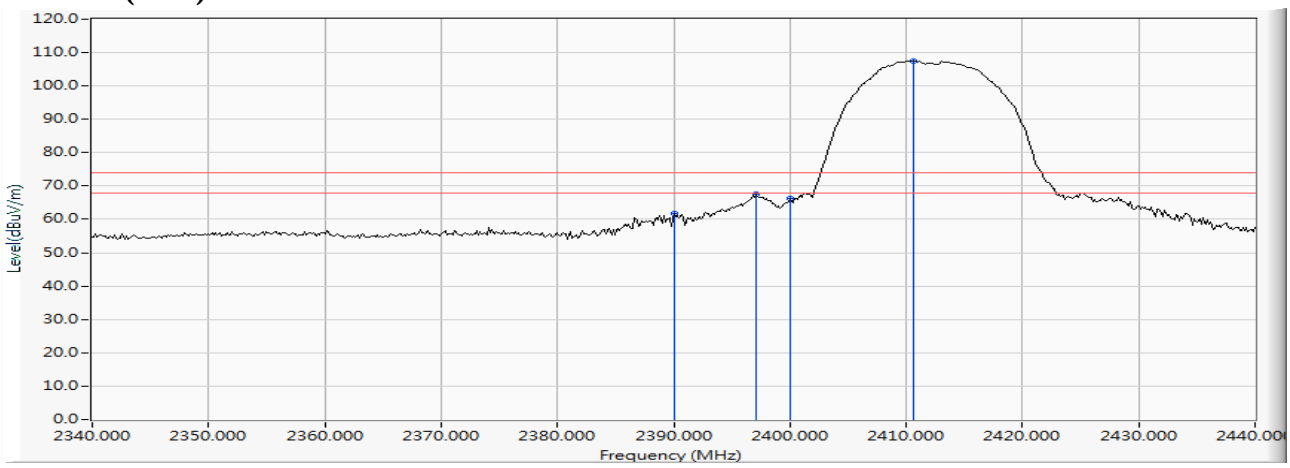
4.4. Uncertainty

± 4.08 dB above 1GHz
± 4.22 dB below 1GHz

4.5. Test Result of Band Edge

Product	:	MOXA IEEE 802.11 a/b/g/n
Test Item	:	Band Edge
Test Site	:	No.3 OATS
Test date	:	2019/04/24
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps) (2412MHz)

Horizontal (Peak)



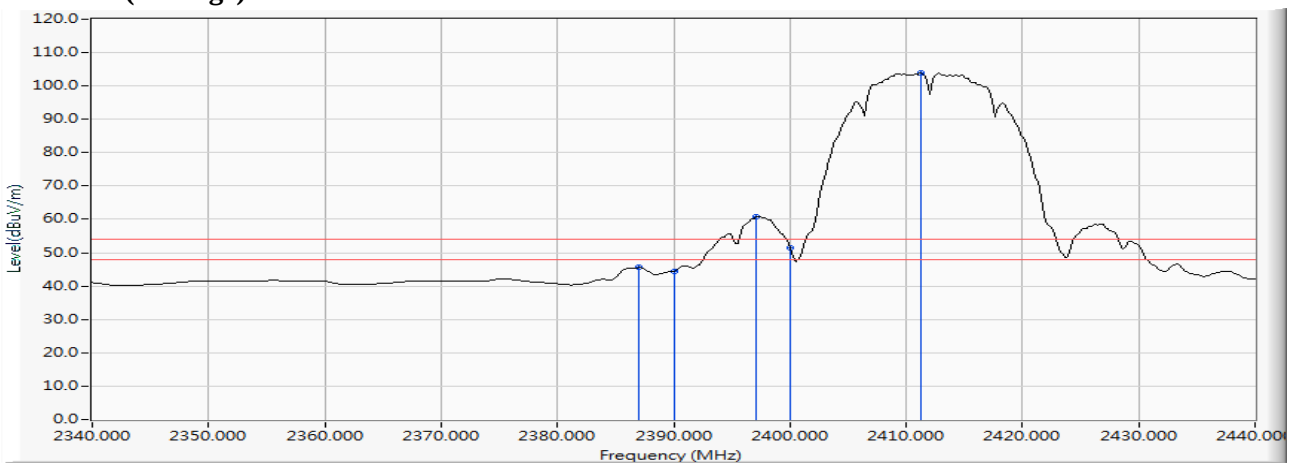
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2390.000	6.474	55.160	61.635	-12.365	74.000	PEAK
2		2397.102	6.511	61.112	67.623	-6.377	74.000	PEAK
3		2400.000	6.528	59.674	66.202	-7.798	74.000	PEAK
4	*	2410.580	6.593	100.974	107.567	--	--	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : MOXA IEEE 802.11 a/b/g/n
Test Item : Band Edge
Test Site : No.3 OATS
Test date : 2019/04/24
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2412MHz)

Horizontal (Average)

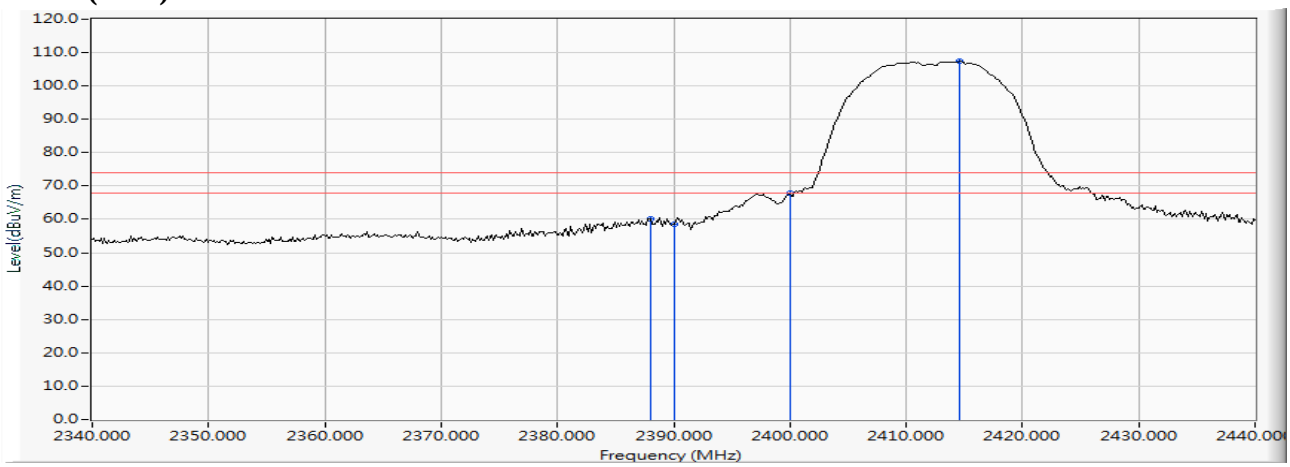


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2386.957	6.461	39.076	45.537	-8.463	54.000	AVERAGE
2		2390.000	6.474	38.019	44.494	-9.506	54.000	AVERAGE
3		2397.101	6.511	54.266	60.777	6.777	54.000	AVERAGE
4		2400.000	6.528	44.966	51.494	-2.506	54.000	AVERAGE
5	*	2411.304	6.598	97.306	103.904	--	--	AVERAGE

Note:
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product	:	MOXA IEEE 802.11 a/b/g/n
Test Item	:	Band Edge
Test Site	:	No.3 OATS
Test date	:	2019/04/24
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps) (2412MHz)

Vertical (Peak)



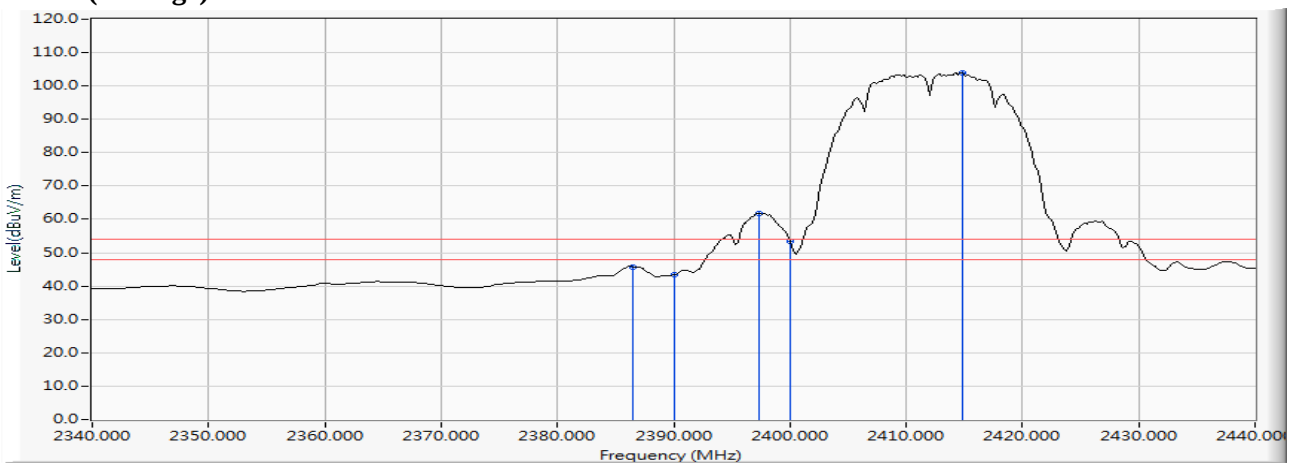
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2387.971	5.890	54.397	60.286	-13.714	74.000	PEAK
2		2390.000	5.880	52.639	58.520	-15.480	74.000	PEAK
3		2400.000	5.879	62.044	67.923	-6.077	74.000	PEAK
4	*	2414.638	5.931	101.400	107.330	--	--	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product	:	MOXA IEEE 802.11 a/b/g/n
Test Item	:	Band Edge
Test Site	:	No.3 OATS
Test date	:	2019/04/24
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps) (2412MHz)

Vertical (Average)



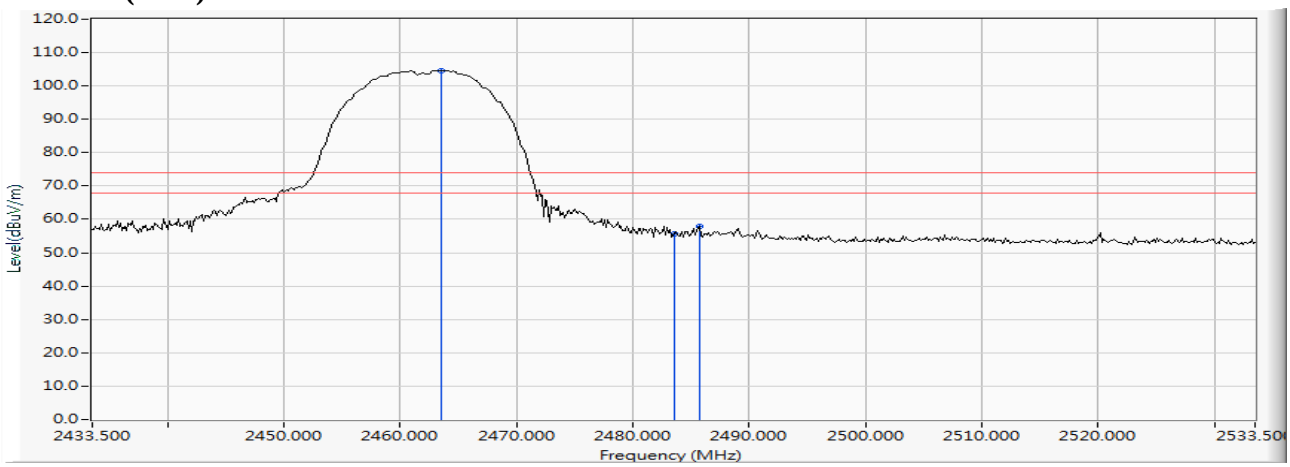
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2386.522	5.895	39.943	45.838	-8.162	54.000	AVERAGE
2		2390.000	5.880	37.401	43.282	-10.718	54.000	AVERAGE
3		2397.391	5.873	55.932	61.805	7.805	54.000	AVERAGE
4		2400.000	5.879	47.456	53.335	-0.665	54.000	AVERAGE
5	*	2414.783	5.931	97.974	103.905	--	--	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product	:	MOXA IEEE 802.11 a/b/g/n
Test Item	:	Band Edge
Test Site	:	No.3 OATS
Test date	:	2019/04/24
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps) (2462MHz)

Horizontal (Peak)



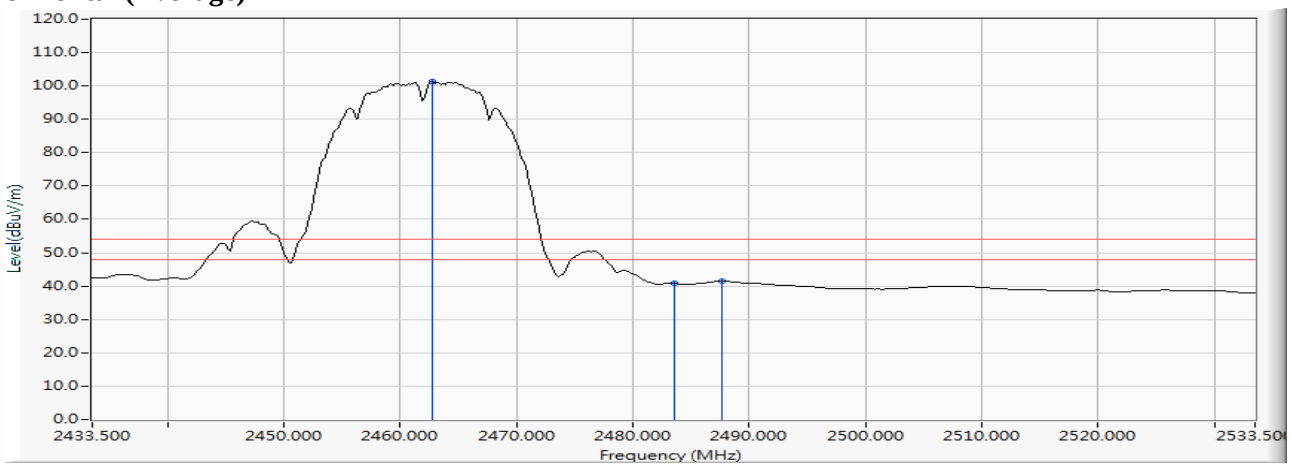
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2463.500	6.969	97.725	104.694	--	--	PEAK
2		2483.500	7.110	48.690	55.800	-18.200	74.000	PEAK
3		2485.674	7.125	50.839	57.964	-16.036	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product	:	MOXA IEEE 802.11 a/b/g/n
Test Item	:	Band Edge
Test Site	:	No.3 OATS
Test date	:	2019/04/24
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps) (2462MHz)

Horizontal (Average)



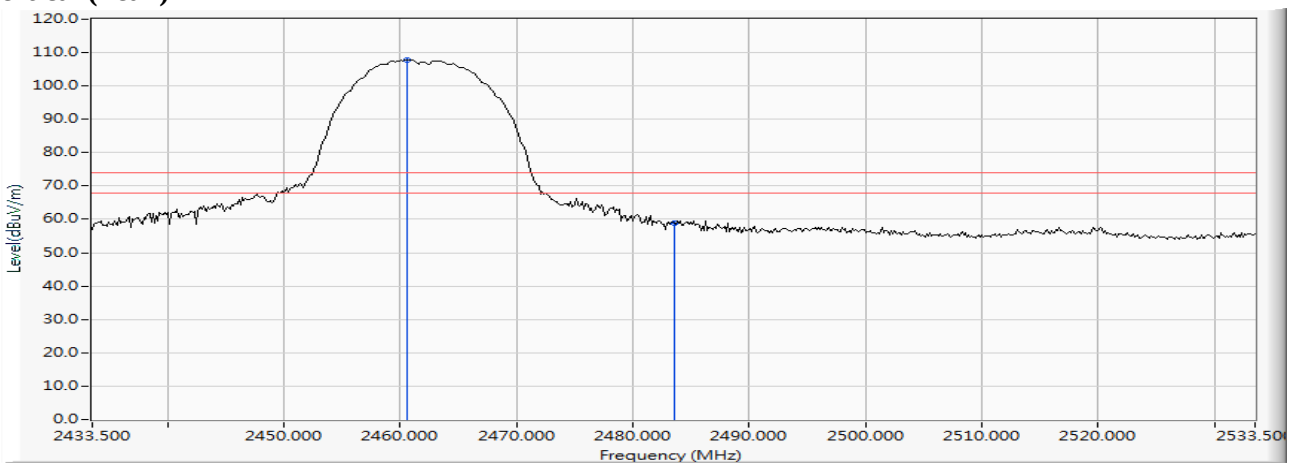
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2462.775	6.964	94.307	101.271	--	--	AVERAGE
2		2483.500	7.110	33.825	40.935	-13.065	54.000	AVERAGE
3		2487.703	7.139	34.428	41.568	-12.432	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product	:	MOXA IEEE 802.11 a/b/g/n
Test Item	:	Band Edge
Test Site	:	No.3 OATS
Test date	:	2019/04/24
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps) (2462MHz)

Vertical (Peak)

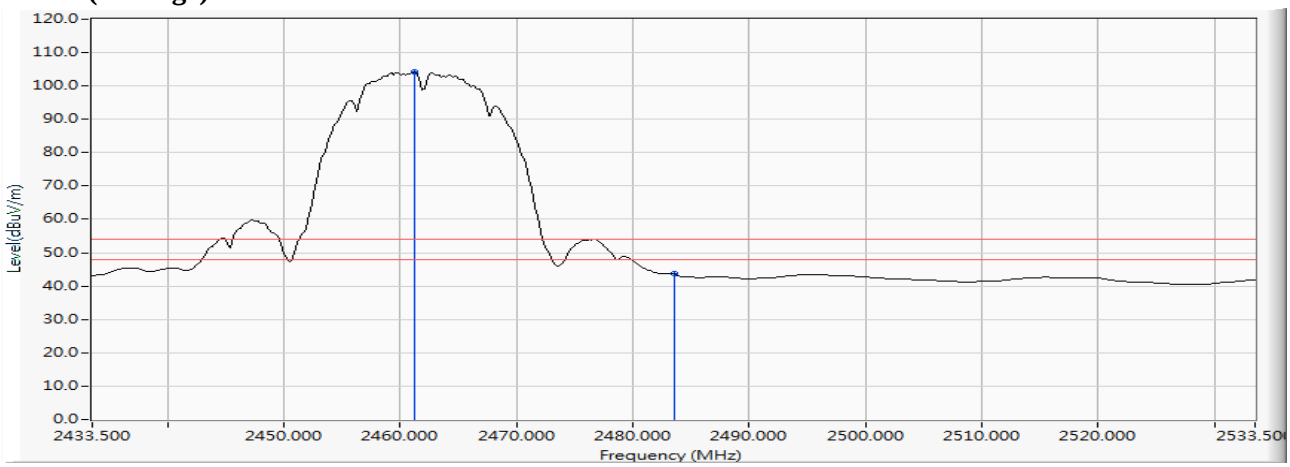


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2460.601	6.221	101.706	107.926	--	--	PEAK
2		2483.500	6.363	52.596	58.959	-15.041	74.000	PEAK

Note:
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product	:	MOXA IEEE 802.11 a/b/g/n
Test Item	:	Band Edge
Test Site	:	No.3 OATS
Test date	:	2019/04/24
Test Mode	:	Mode 1: Transmit (802.11b 1Mbps) (2462MHz)

Vertical (Average)



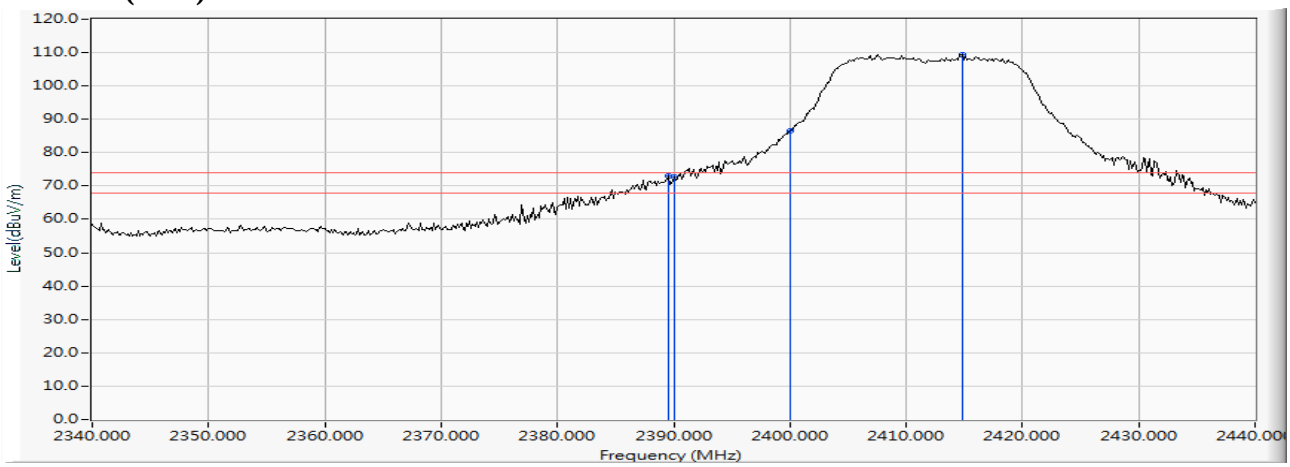
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2461.181	6.224	97.855	104.079	--	--	AVERAGE
2		2483.500	6.363	37.252	43.615	-10.385	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : MOXA IEEE 802.11 a/b/g/n
Test Item : Band Edge
Test Site : No.3 OATS
Test date : 2019/04/24
Test Mode : Mode 1: Transmit (802.11g 6Mbps) (2412MHz)

Horizontal (Peak)

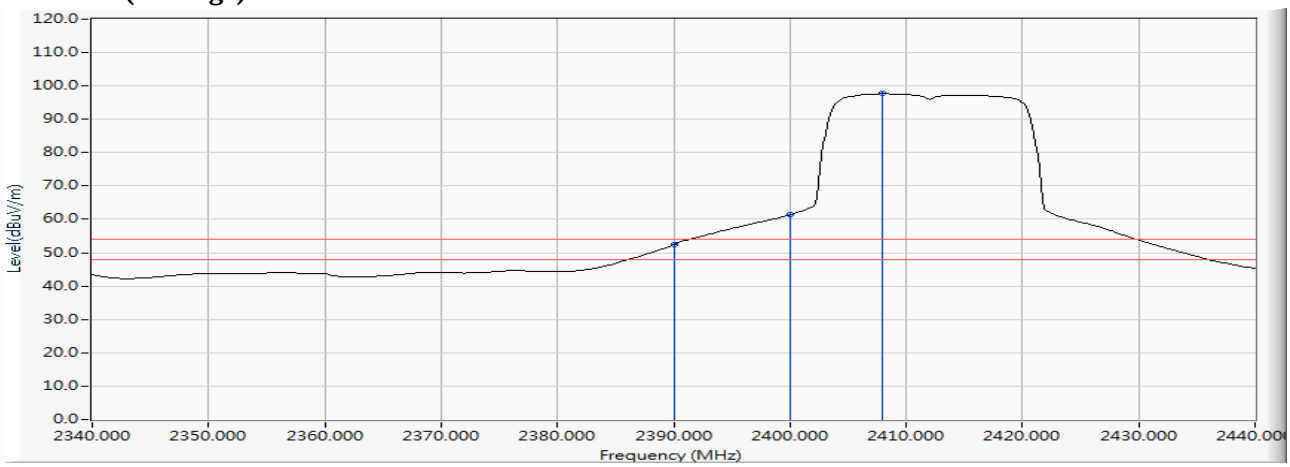


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2389.565	6.473	66.617	73.090	-0.910	74.000	PEAK
2		2390.000	6.474	66.158	72.633	-1.367	74.000	PEAK
3		2400.000	6.528	79.959	86.487	--	--	PEAK
4	*	2414.783	6.623	102.864	109.487	--	--	PEAK

Note:
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product	:	MOXA IEEE 802.11 a/b/g/n
Test Item	:	Band Edge
Test Site	:	No.3 OATS
Test date	:	2019/04/24
Test Mode	:	Mode 1: Transmit (802.11g 6Mbps) (2412MHz)

Horizontal (Average)



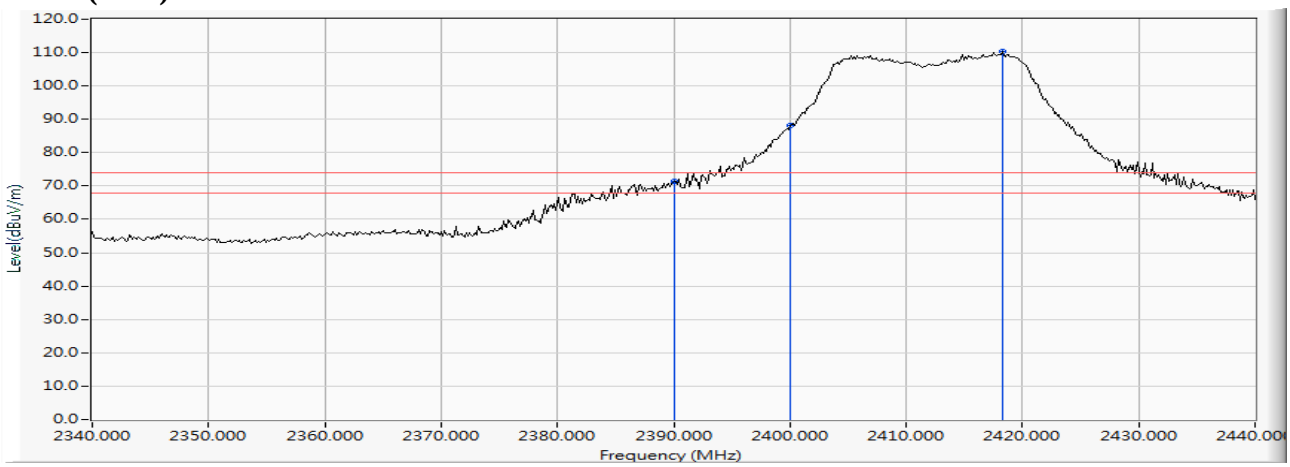
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2390.000	6.474	45.980	52.455	-1.545	54.000	AVERAGE
2		2400.000	6.528	54.891	61.419	--	--	AVERAGE
3	*	2407.971	6.577	91.104	97.681	--	--	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product	:	MOXA IEEE 802.11 a/b/g/n
Test Item	:	Band Edge
Test Site	:	No.3 OATS
Test date	:	2019/04/24
Test Mode	:	Mode 1: Transmit (802.11g 6Mbps) (2412MHz)

Vertical (Peak)



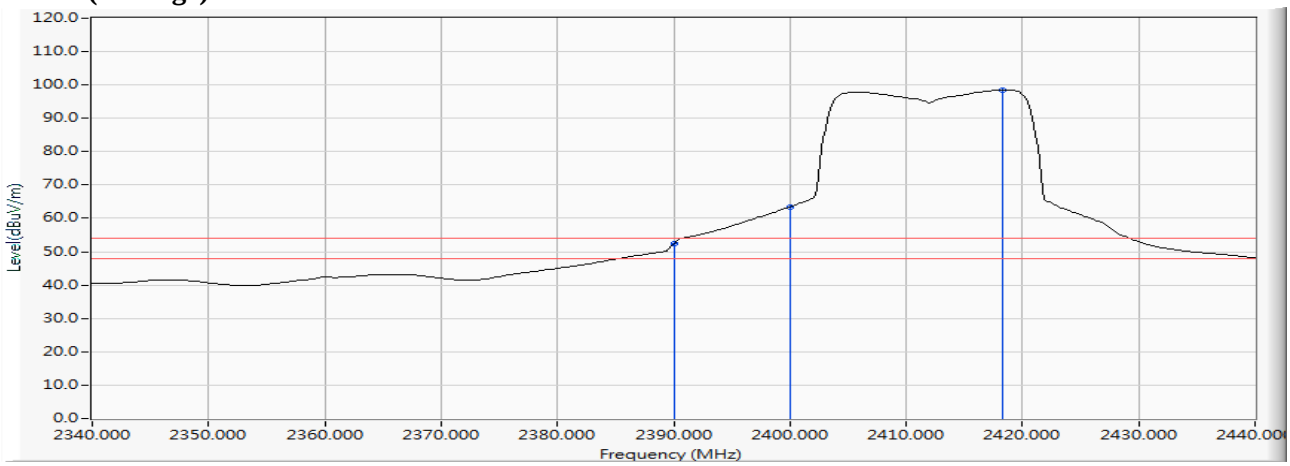
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2390.000	5.880	65.486	71.367	-2.633	74.000	PEAK
2		2400.000	5.879	82.189	88.068	--	--	PEAK
3	*	2418.261	5.953	104.424	110.377	--	--	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : MOXA IEEE 802.11 a/b/g/n
Test Item : Band Edge
Test Site : No.3 OATS
Test date : 2019/04/24
Test Mode : Mode 1: Transmit (802.11g 6Mbps) (2412MHz)

Vertical (Average)

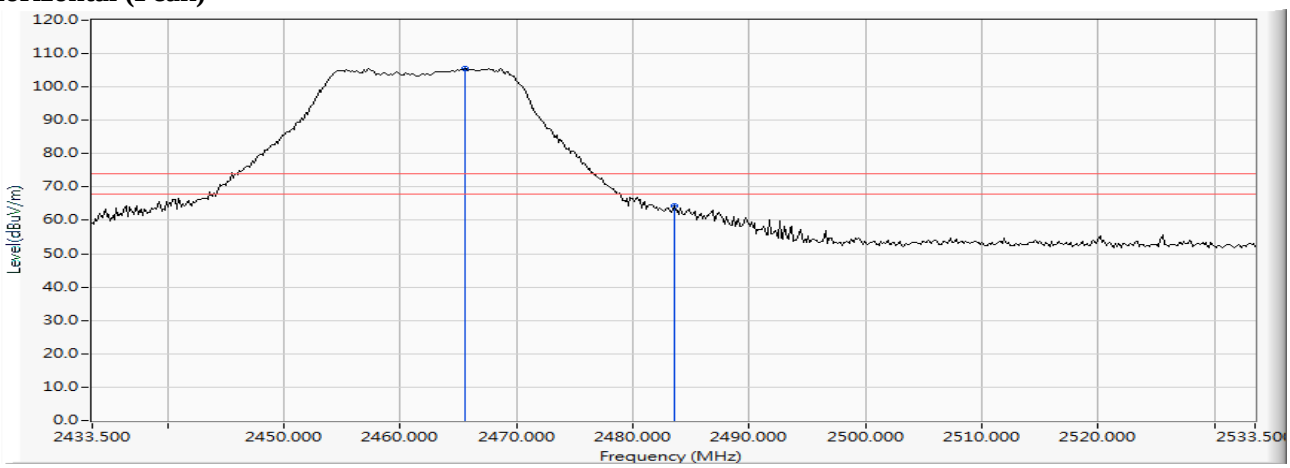


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2390.000	5.880	46.465	52.346	-1.654	54.000	AVERAGE
2		2400.000	5.879	57.605	63.484	--	--	AVERAGE
3	*	2418.261	5.953	92.501	98.454	--	--	AVERAGE

Note:
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product	:	MOXA IEEE 802.11 a/b/g/n
Test Item	:	Band Edge
Test Site	:	No.3 OATS
Test date	:	2019/04/24
Test Mode	:	Mode 1: Transmit (802.11g 6Mbps) (2462MHz)

Horizontal (Peak)

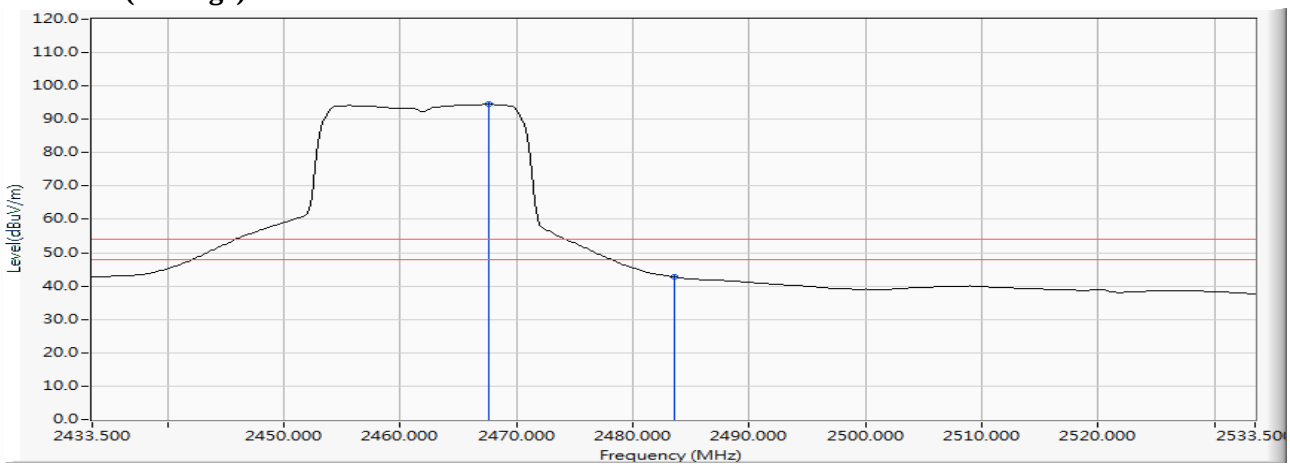


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2465.529	6.983	98.700	105.683	--	--	PEAK
2		2483.500	7.110	57.278	64.388	-9.612	74.000	PEAK

Note:
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product	:	MOXA IEEE 802.11 a/b/g/n
Test Item	:	Band Edge
Test Site	:	No.3 OATS
Test date	:	2019/04/24
Test Mode	:	Mode 1: Transmit (802.11g 6Mbps) (2462MHz)

Horizontal (Average)



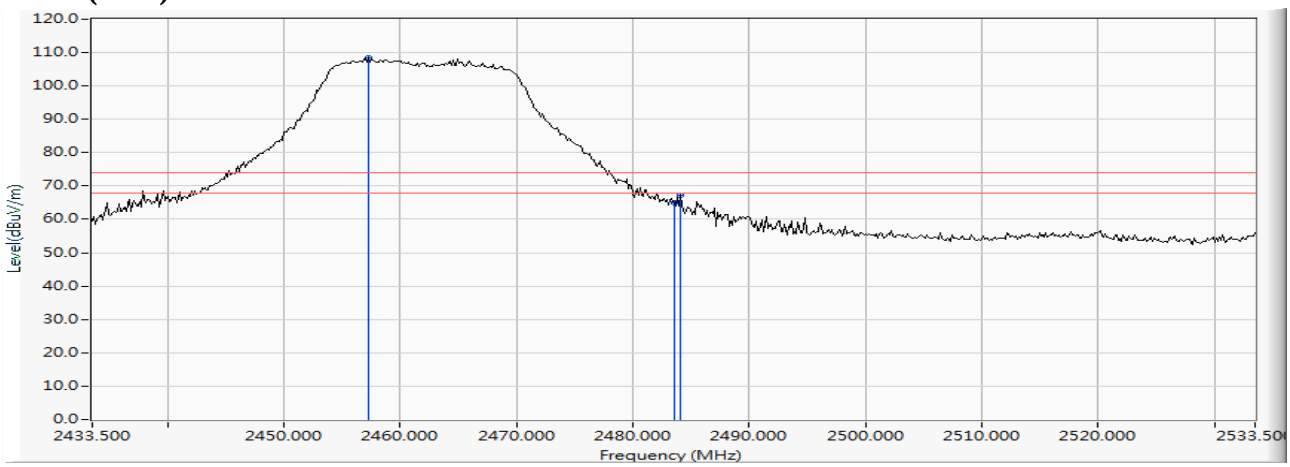
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2467.558	6.997	87.459	94.456	--	--	AVERAGE
2		2483.500	7.110	35.605	42.715	-11.285	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product	:	MOXA IEEE 802.11 a/b/g/n
Test Item	:	Band Edge
Test Site	:	No.3 OATS
Test date	:	2019/04/24
Test Mode	:	Mode 1: Transmit (802.11g 6Mbps)(2462MHz)

Vertical (Peak)



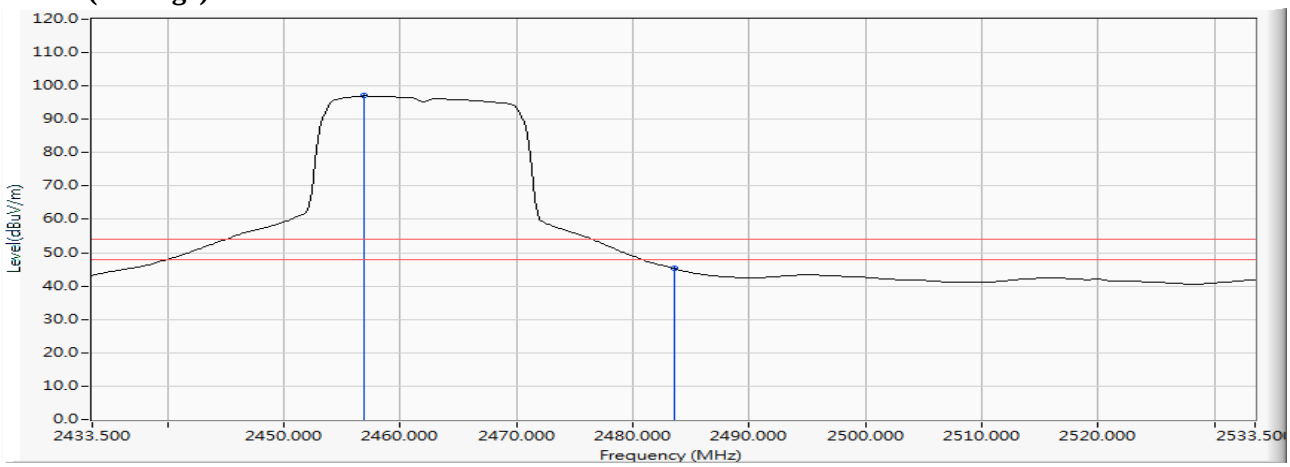
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2457.268	6.199	102.173	108.372	--	--	PEAK
2		2483.500	6.363	58.468	64.831	-9.169	74.000	PEAK
3		2484.080	6.367	60.955	67.322	-6.678	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product	:	MOXA IEEE 802.11 a/b/g/n
Test Item	:	Band Edge
Test Site	:	No.3 OATS
Test date	:	2019/04/24
Test Mode	:	Mode 1: Transmit (802.11g 6Mbps)(2462MHz)

Vertical (Average)



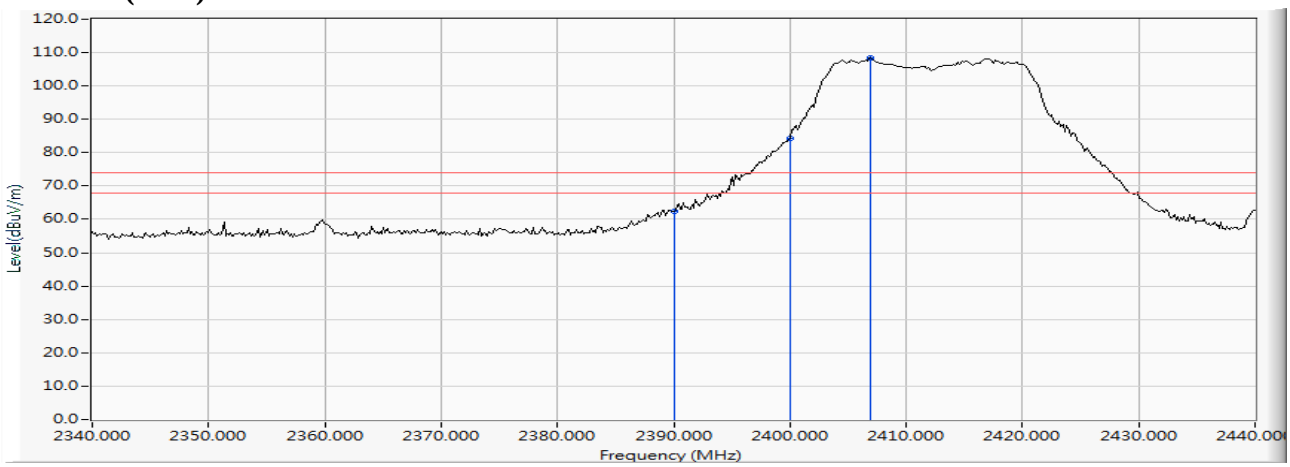
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2456.833	6.196	90.809	97.005	--	--	AVERAGE
2		2483.500	6.363	38.883	45.246	-8.754	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product	:	MOXA IEEE 802.11 a/b/g/n
Test Item	:	Band Edge
Test Site	:	No.3 OATS
Test date	:	2019/04/24
Test Mode	:	Mode 1: Transmit (802.11n-20BW)_14.4Mbps (2412MHz)

Horizontal (Peak)



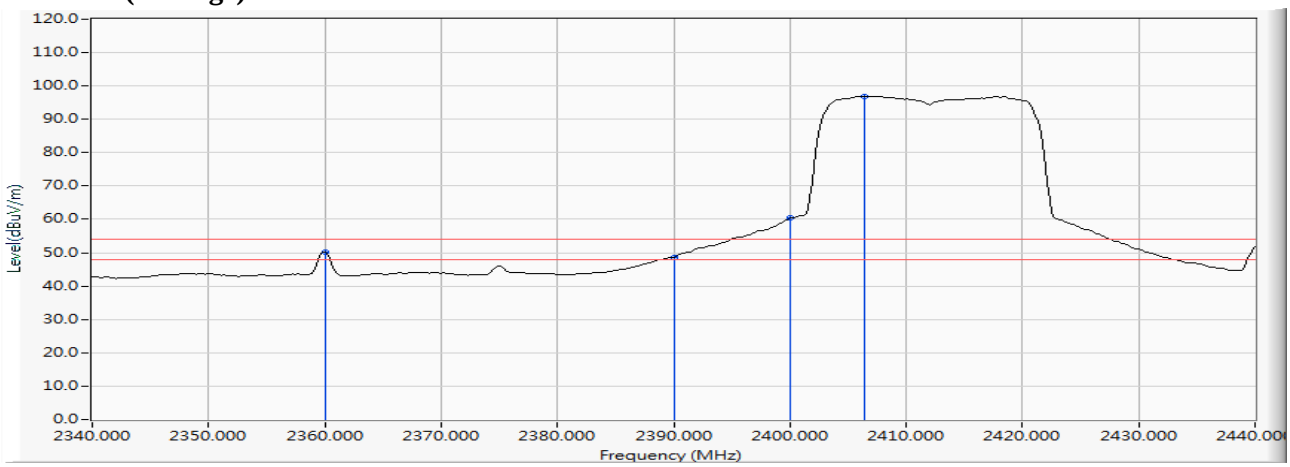
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2390.000	6.474	55.984	62.459	-11.541	74.000	PEAK
2		2400.000	6.528	77.647	84.175	--	--	PEAK
3	*	2406.957	6.571	101.796	108.367	--	--	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product	:	MOXA IEEE 802.11 a/b/g/n
Test Item	:	Band Edge
Test Site	:	No.3 OATS
Test date	:	2019/04/24
Test Mode	:	Mode 1: Transmit (802.11n-20BW)_14.4Mbps (2412MHz)

Horizontal (Average)



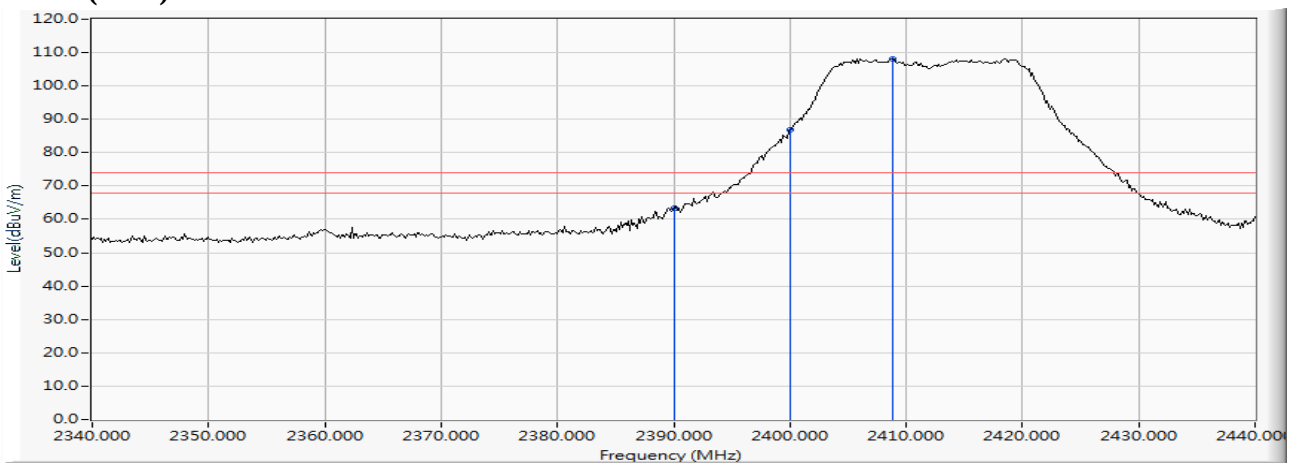
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2360.000	6.341	43.810	50.151	-3.849	54.000	AVERAGE
2		2390.000	6.474	42.185	48.660	-5.340	54.000	AVERAGE
3		2400.000	6.528	53.905	60.433	--	--	AVERAGE
4	*	2406.377	6.567	90.259	96.826	--	--	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product	:	MOXA IEEE 802.11 a/b/g/n
Test Item	:	Band Edge
Test Site	:	No.3 OATS
Test date	:	2019/04/24
Test Mode	:	Mode 1: Transmit (802.11n-20BW)_14.4Mbps (2412MHz)

Vertical (Peak)



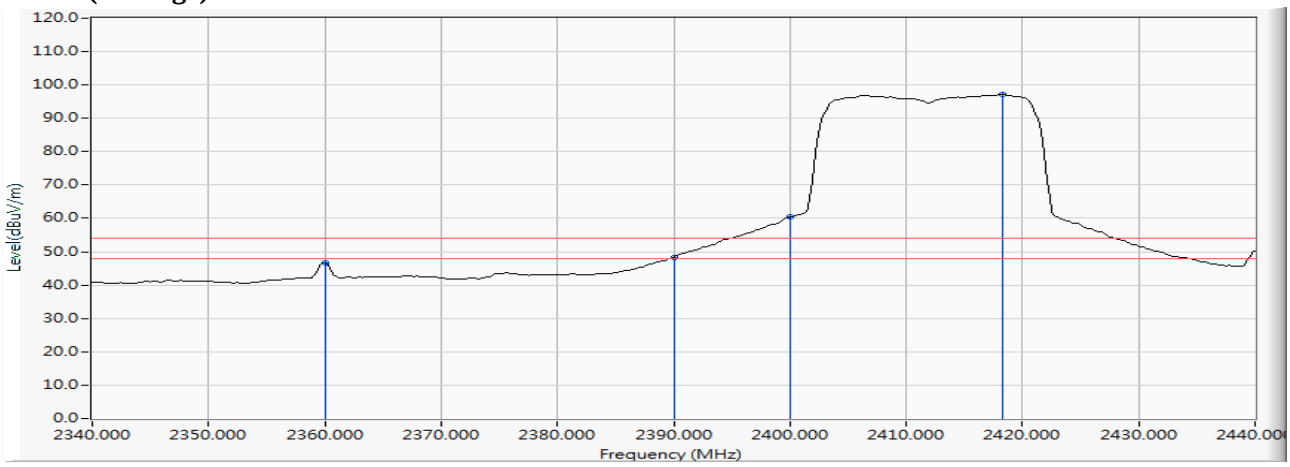
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2390.000	5.880	57.638	63.519	-10.481	74.000	PEAK
2		2400.000	5.879	81.117	86.996	--	--	PEAK
3	*	2408.841	5.902	102.326	108.228	--	--	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product	:	MOXA IEEE 802.11 a/b/g/n
Test Item	:	Band Edge
Test Site	:	No.3 OATS
Test date	:	2019/04/24
Test Mode	:	Mode 1: Transmit (802.11n-20BW)_14.4Mbps (2412MHz)

Vertical (Average)



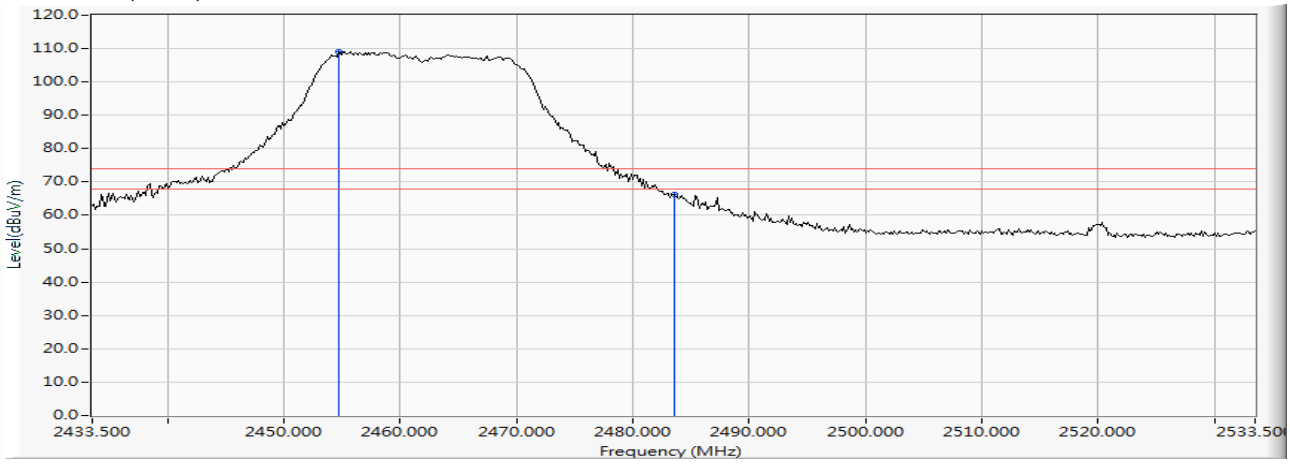
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2360.000	6.004	40.704	46.708	-7.292	54.000	AVERAGE
2		2390.000	5.880	42.512	48.393	-5.607	54.000	AVERAGE
3		2400.000	5.879	54.475	60.354	--	--	AVERAGE
4	*	2418.261	5.953	91.188	97.141	--	--	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : MOXA IEEE 802.11 a/b/g/n
Test Item : Band Edge
Test Site : No.3 OATS
Test date : 2019/04/24
Test Mode : Mode 1: Transmit (802.11n-20BW)_14.4Mbps (2462MHz)

Horizontal (Peak)

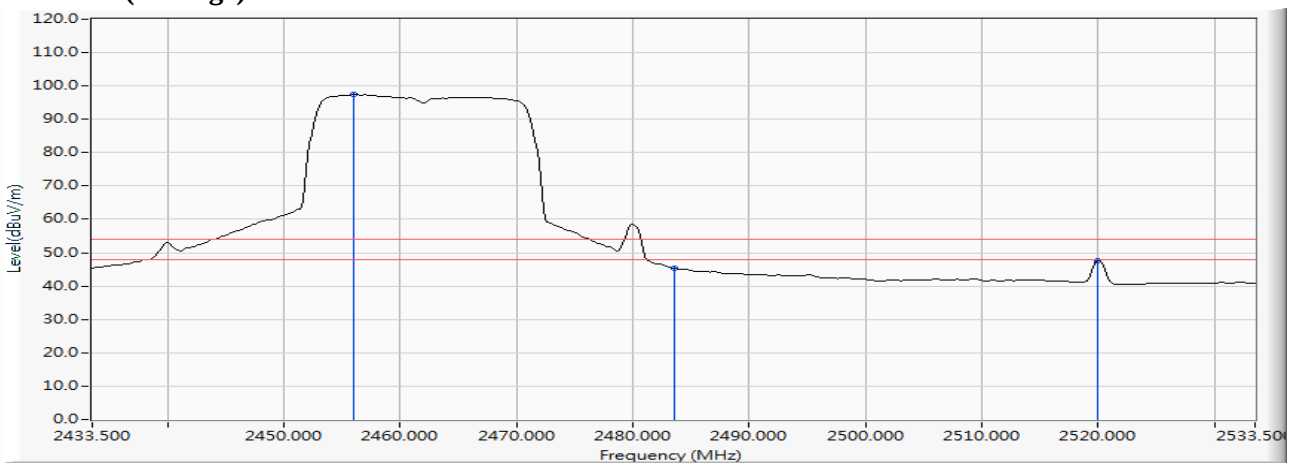


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2454.659	6.906	102.122	109.028	--	--	PEAK
2		2483.500	7.110	59.082	66.192	-7.808	74.000	PEAK

Note:
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : MOXA IEEE 802.11 a/b/g/n
Test Item : Band Edge
Test Site : No.3 OATS
Test date : 2019/04/24
Test Mode : Mode 1: Transmit (802.11n-20BW)_14.4Mbps (2462MHz)

Horizontal (Average)

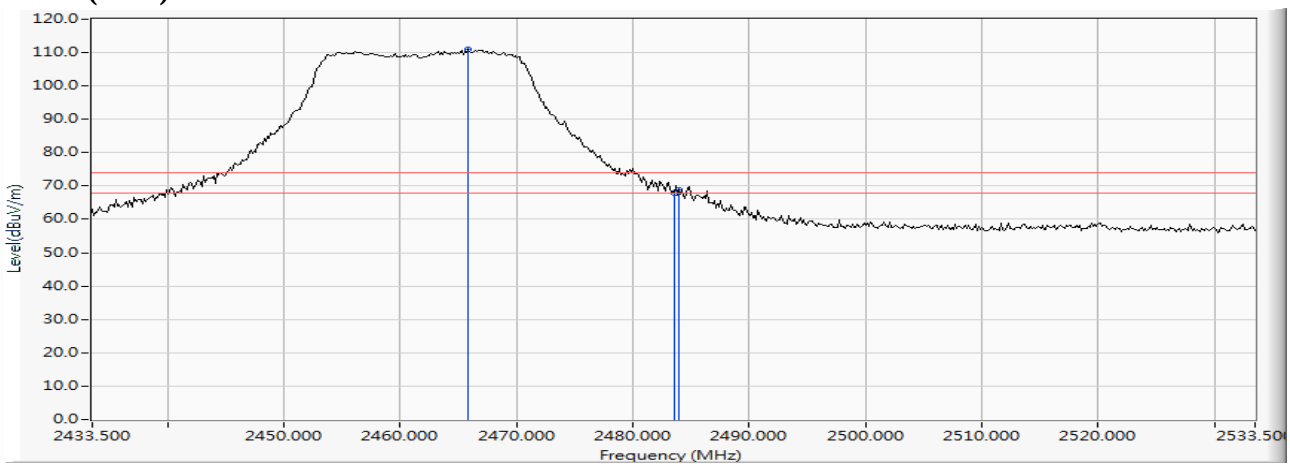


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2455.964	6.916	90.546	97.462	--	--	AVERAGE
2		2483.500	7.110	38.233	45.343	-8.657	54.000	AVERAGE
3		2520.022	7.125	40.384	47.509	-6.491	54.000	AVERAGE

Note:
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : MOXA IEEE 802.11 a/b/g/n
Test Item : Band Edge
Test Site : No.3 OATS
Test date : 2019/04/24
Test Mode : Mode 1: Transmit (802.11n-20BW)_14.4Mbps (2462MHz)

Vertical (Peak)

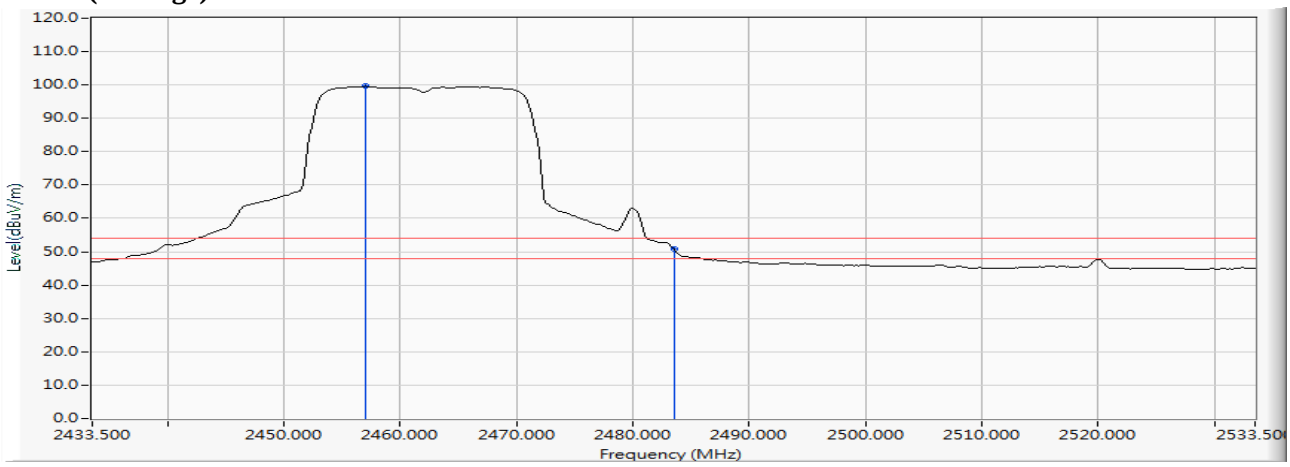


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2465.819	6.253	104.624	110.877	--	--	PEAK
2		2483.500	6.363	61.469	67.832	-6.168	74.000	PEAK
3		2483.935	6.366	62.390	68.756	-5.244	74.000	PEAK

Note:
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product	:	MOXA IEEE 802.11 a/b/g/n
Test Item	:	Band Edge
Test Site	:	No.3 OATS
Test date	:	2019/04/24
Test Mode	:	Mode 1: Transmit (802.11n-20BW)_14.4Mbps (2462MHz)

Vertical (Average)



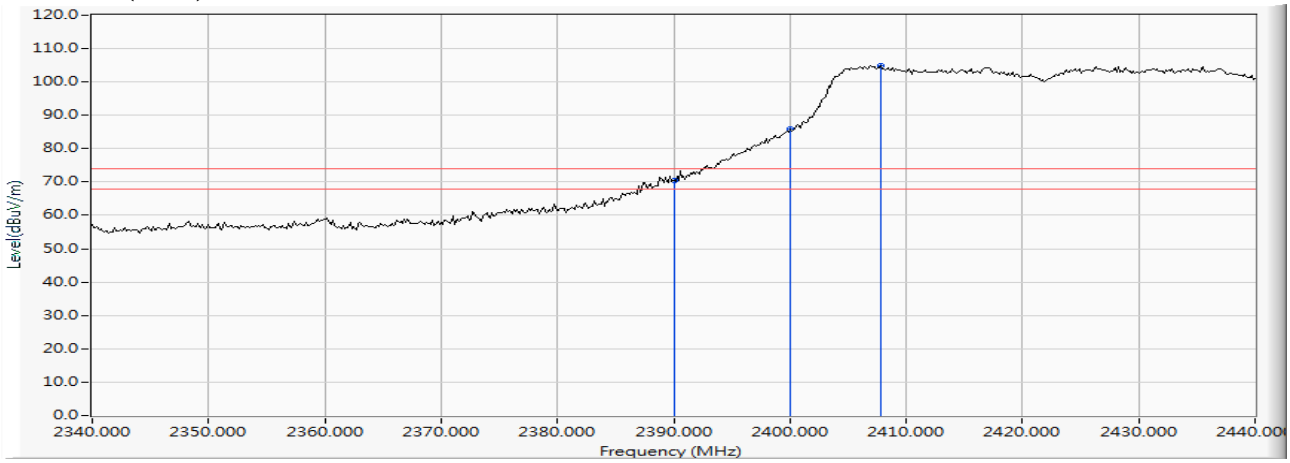
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2456.978	6.198	93.389	99.586	--	--	AVERAGE
2		2483.500	6.363	44.452	50.815	-3.185	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product	:	MOXA IEEE 802.11 a/b/g/n
Test Item	:	Band Edge
Test Site	:	No.3 OATS
Test date	:	2019/04/24
Test Mode	:	Mode 1: Transmit (802.11n-40BW)_30Mbps (2422MHz)

Horizontal (Peak)



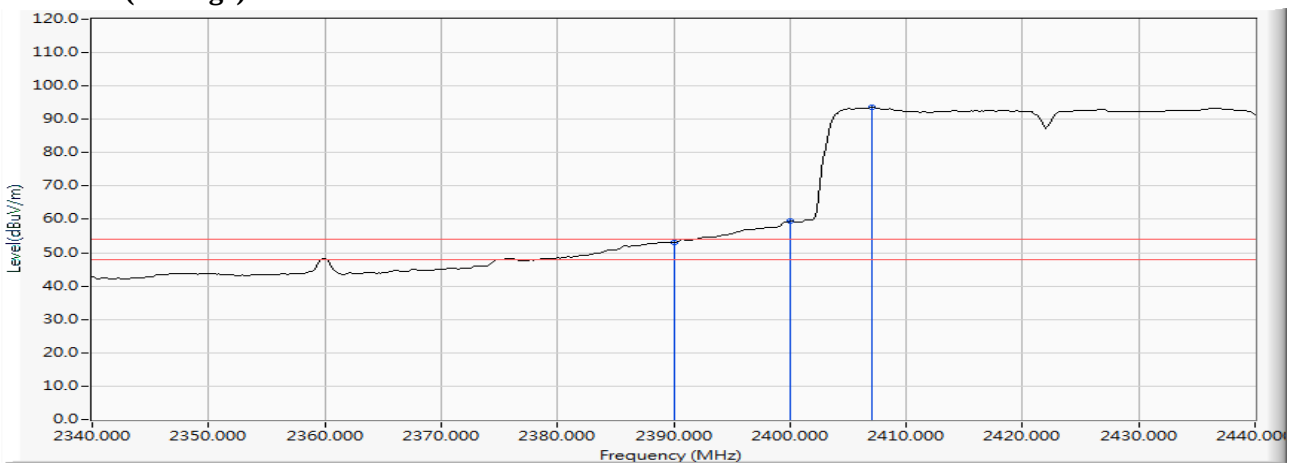
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2390.000	6.474	64.023	70.498	-3.502	74.000	PEAK
2		2400.000	6.528	79.211	85.739	--	--	PEAK
3	*	2407.826	6.576	98.307	104.883	--	--	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product	:	MOXA IEEE 802.11 a/b/g/n
Test Item	:	Band Edge
Test Site	:	No.3 OATS
Test date	:	2019/04/24
Test Mode	:	Mode 1: Transmit (802.11n-40BW)_30Mbps (2422MHz)

Horizontal (Average)



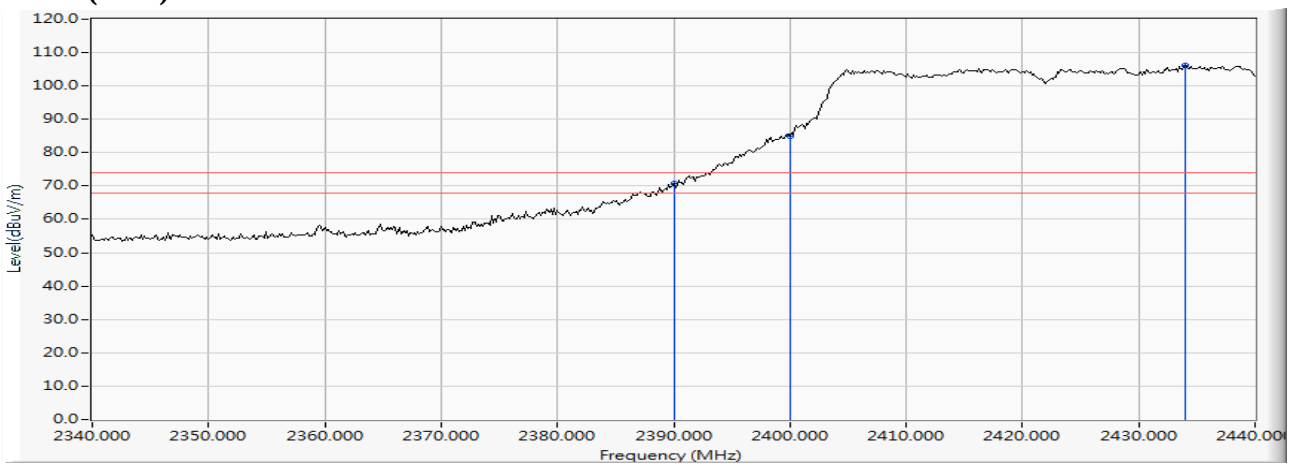
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2390.000	6.474	46.692	53.167	-0.833	54.000	AVERAGE
2		2400.000	6.528	52.884	59.412	--	--	AVERAGE
3	*	2407.102	6.571	86.958	93.530	--	--	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : MOXA IEEE 802.11 a/b/g/n
Test Item : Band Edge
Test Site : No.3 OATS
Test date : 2019/04/24
Test Mode : Mode 1: Transmit (802.11n-40BW)_30Mbps (2422MHz)

Vertical (Peak)

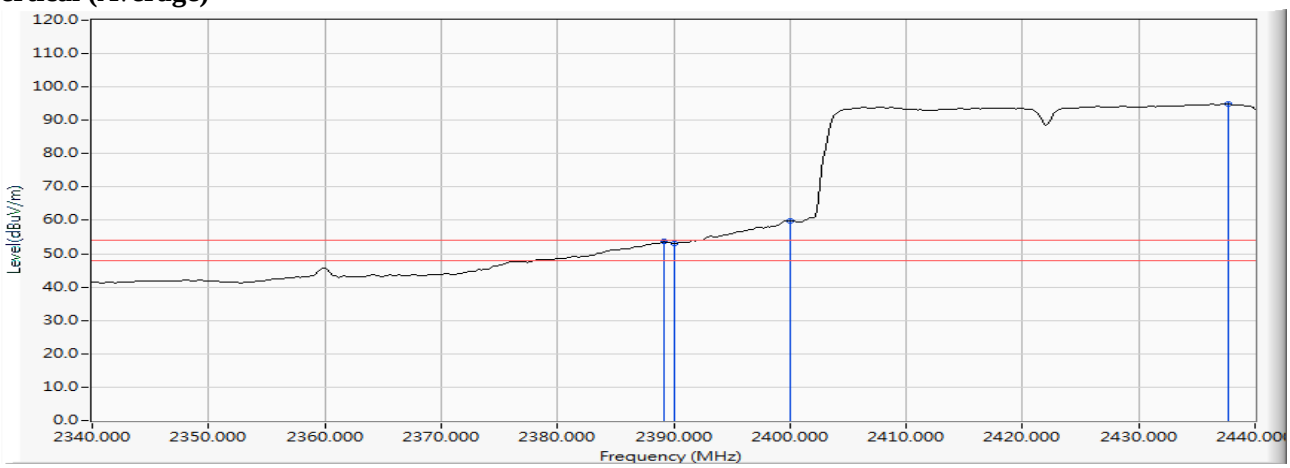


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2390.000	5.880	64.814	70.695	-3.305	74.000	PEAK
2		2400.000	5.879	78.941	84.820	--	--	PEAK
3	*	2434.058	6.052	99.972	106.024	--	--	PEAK

Note:
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : MOXA IEEE 802.11 a/b/g/n
Test Item : Band Edge
Test Site : No.3 OATS
Test date : 2019/04/24
Test Mode : Mode 1: Transmit (802.11n-40BW)_30Mbps (2422MHz)

Vertical (Average)

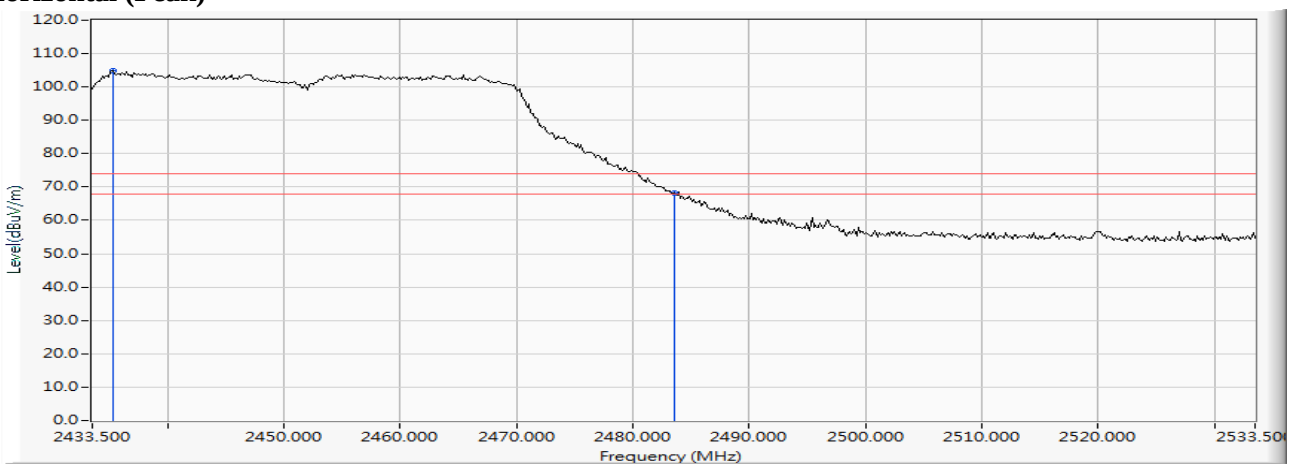


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2389.130	5.884	47.712	53.596	-0.404	54.000	AVERAGE
2		2390.000	5.880	47.062	52.943	-1.057	54.000	AVERAGE
3		2400.000	5.879	53.969	59.848	--	--	AVERAGE
4	*	2437.681	6.075	88.786	94.860	--	--	AVERAGE

Note:
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : MOXA IEEE 802.11 a/b/g/n
Test Item : Band Edge
Test Site : No.3 OATS
Test date : 2019/04/24
Test Mode : Mode 1: Transmit (802.11n-40BW)_30Mbps (2452MHz)

Horizontal (Peak)

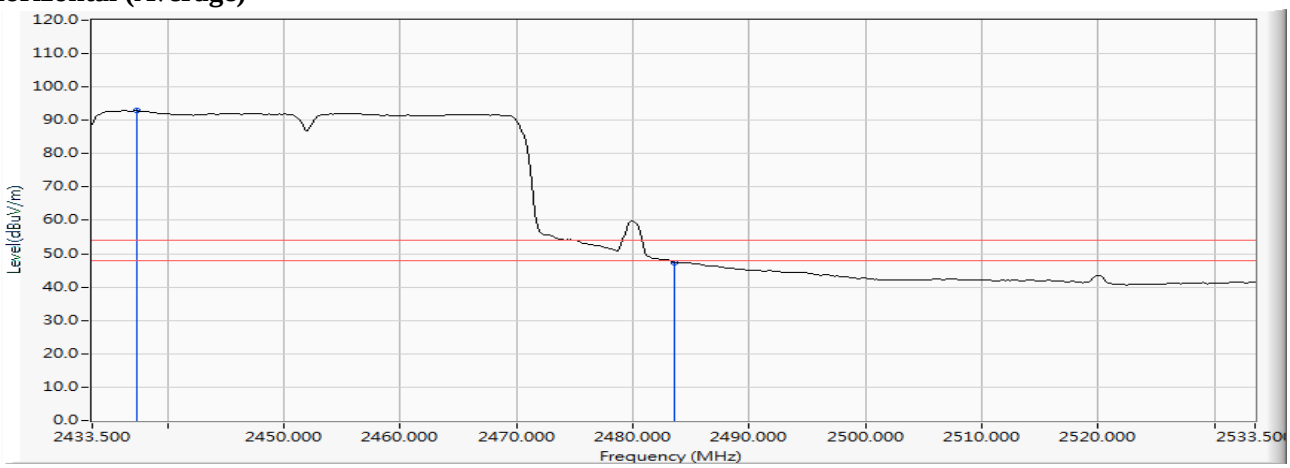


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2435.239	6.768	98.004	104.772	--	--	PEAK
2		2483.500	7.110	61.192	68.302	-5.698	74.000	PEAK

Note:
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : MOXA IEEE 802.11 a/b/g/n
Test Item : Band Edge
Test Site : No.3 OATS
Test date : 2019/04/24
Test Mode : Mode 1: Transmit (802.11n-40BW)_30Mbps (2452MHz)

Horizontal (Average)

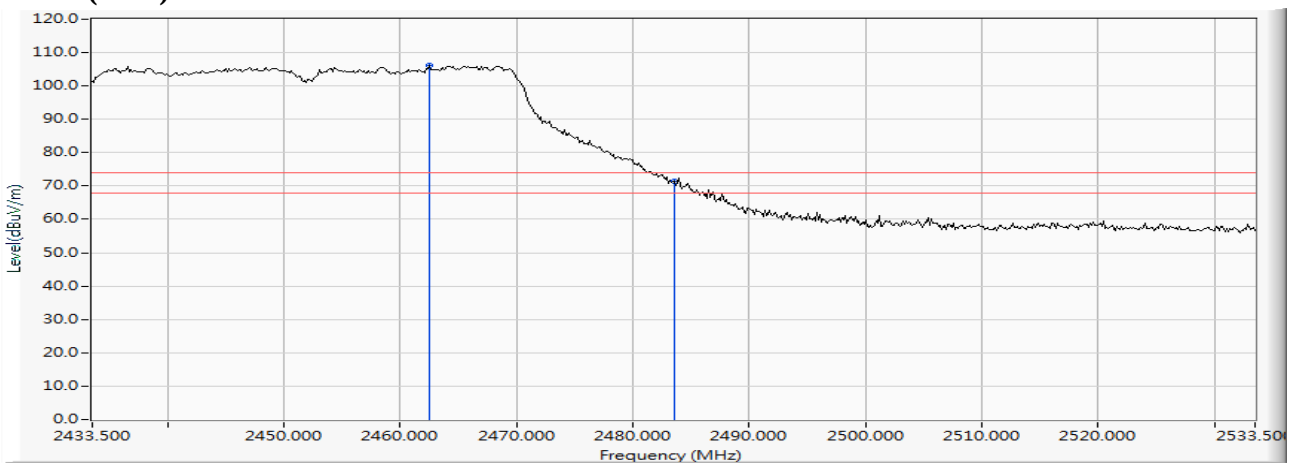


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2437.268	6.783	86.099	92.882	--	--	AVERAGE
2		2483.500	7.110	40.334	47.444	-6.556	54.000	AVERAGE

Note:
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : MOXA IEEE 802.11 a/b/g/n
Test Item : Band Edge
Test Site : No.3 OATS
Test date : 2019/04/24
Test Mode : Mode 1: Transmit (802.11n-40BW)_30Mbps (2452MHz)

Vertical (Peak)

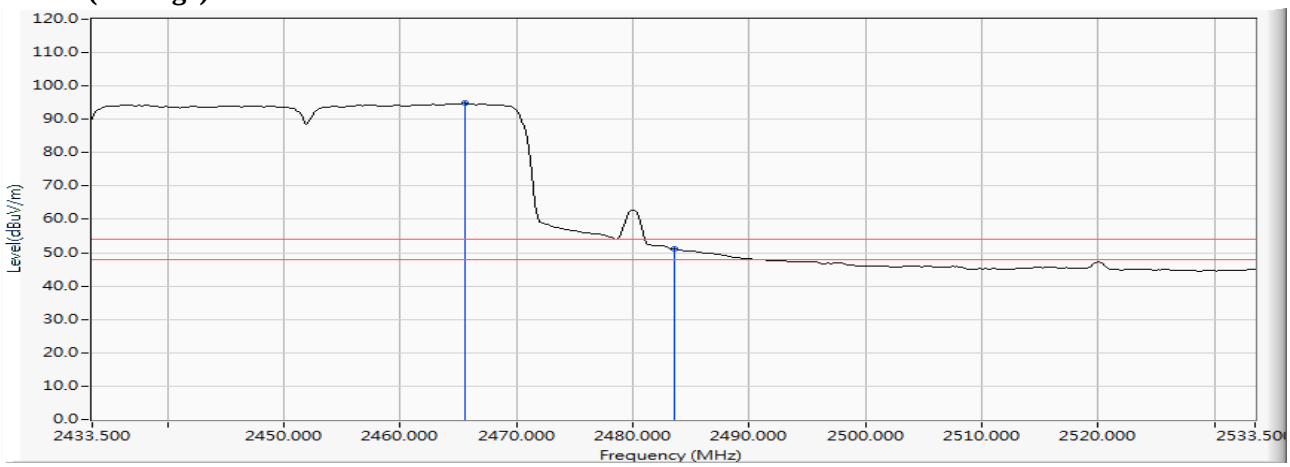


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2462.486	6.233	99.821	106.053	--	--	PEAK
2		2483.500	6.363	65.087	71.450	-2.550	74.000	PEAK

Note:
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : MOXA IEEE 802.11 a/b/g/n
Test Item : Band Edge
Test Site : No.3 OATS
Test date : 2019/04/24
Test Mode : Mode 1: Transmit (802.11n-40BW)_30Mbps (2452MHz)

Vertical (Average)

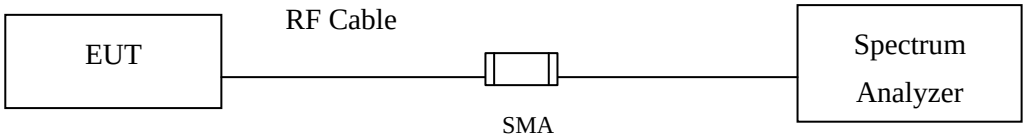


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2465.529	6.251	88.533	94.784	--	--	AVERAGE
2		2483.500	6.363	44.791	51.154	-2.846	54.000	AVERAGE

Note:
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor.
3. The average measurement was not performed when the peak measured data under the limit of average detection.

5. Duty Cycle

5.1. Test Setup



5.2. 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.

5.3. Uncertainty

± 2.31msec

5.4. Test Result of Duty Cycle

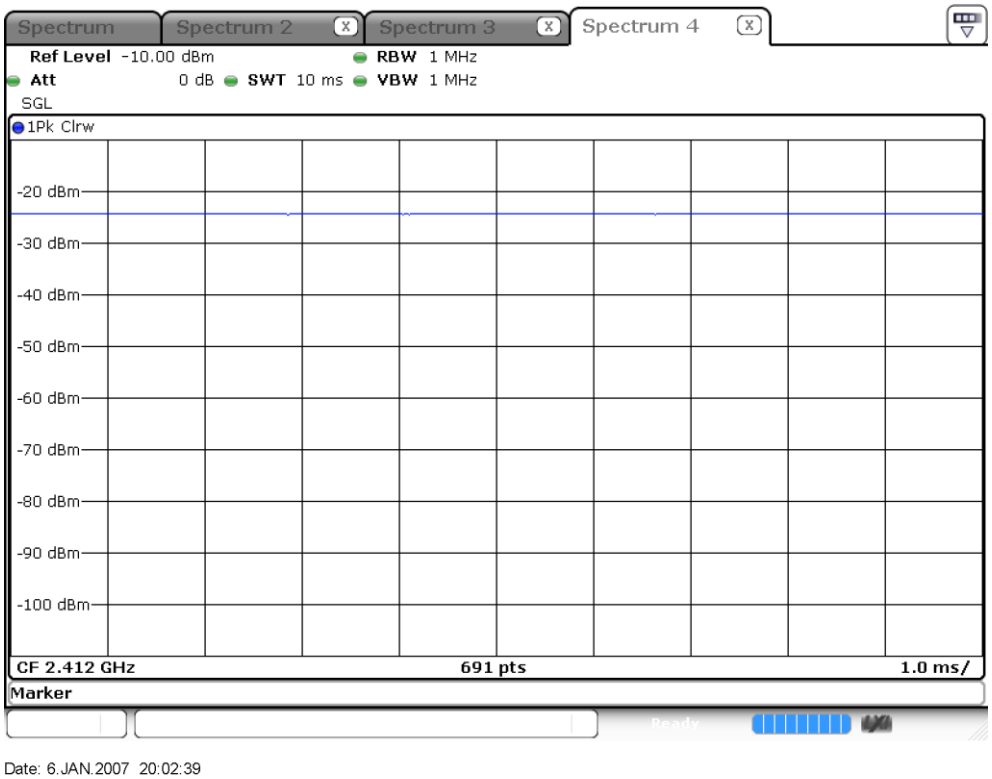
Product : MOXA IEEE 802.11 a/b/g/n
Test Item : Duty Cycle
Test Mode : Transmit

Duty Cycle Formula:
Duty Cycle = Ton / (Ton + Toff)
Duty Factor = 10 Log (1/Duty Cycle)

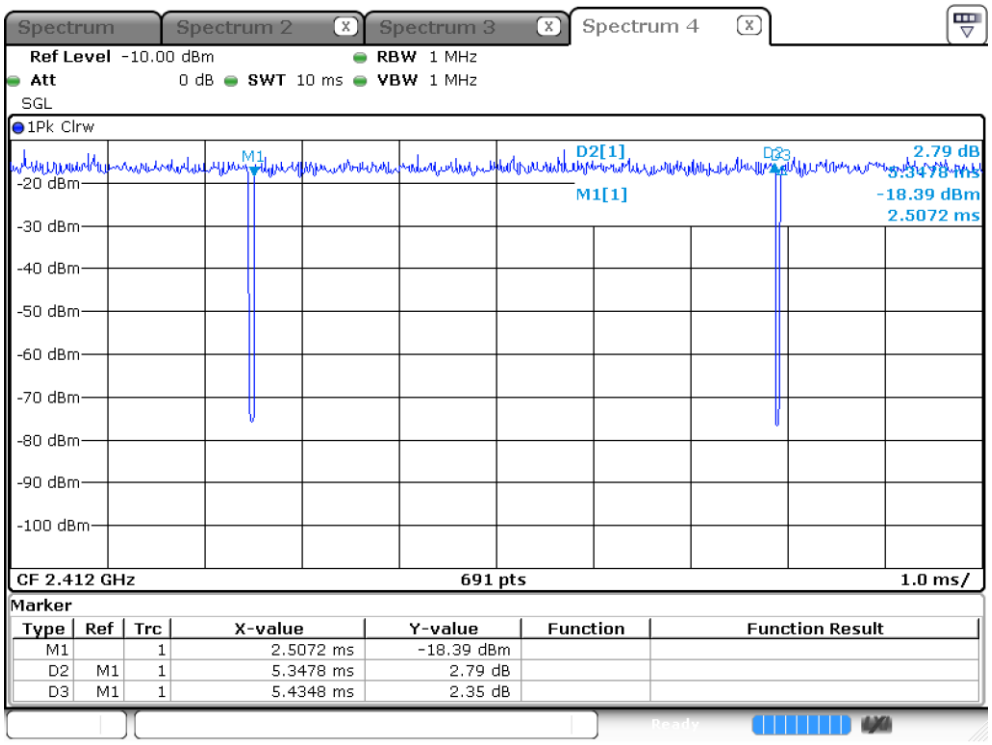
Results:

2.4GHz band	Ton (ms)	Ton + Toff (ms)	Duty Cycle (%)	Duty Factor (dB)
802.11 b	1.0000	1.0000	100.00	0.00
802.11 g	5.3478	5.4348	98.40	0.07
802.11 n20	2.4928	2.5507	97.73	0.10
802.11 n40	1.1971	1.2696	94.29	0.26

802.11b

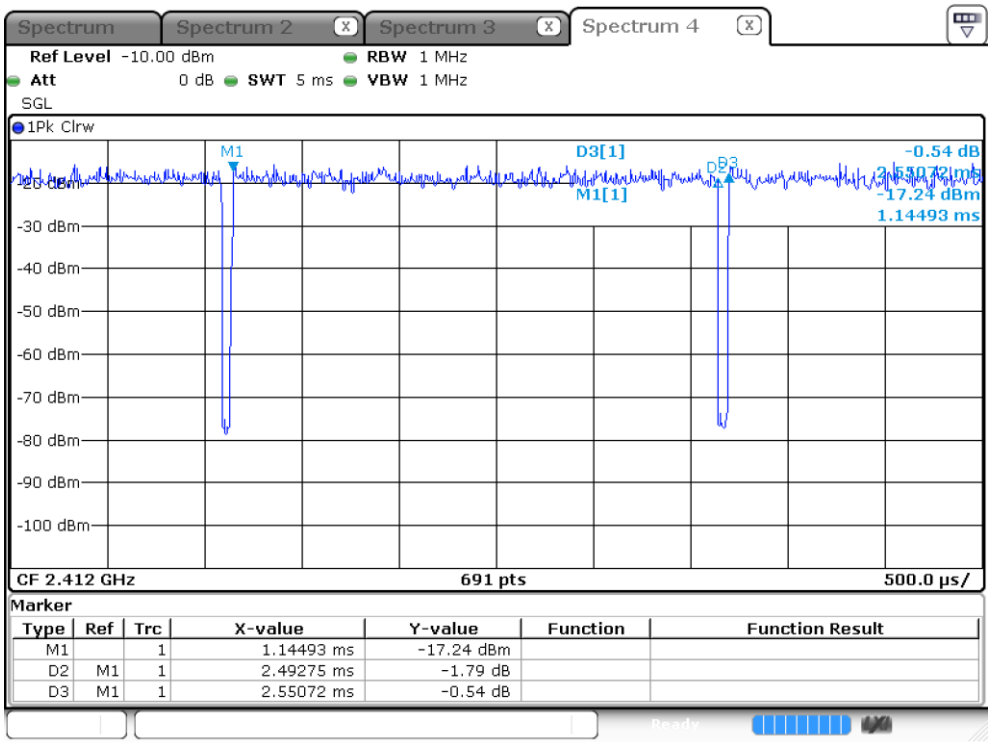


802.11g



Date: 6.JAN.2007 20:53:33

802.11n20



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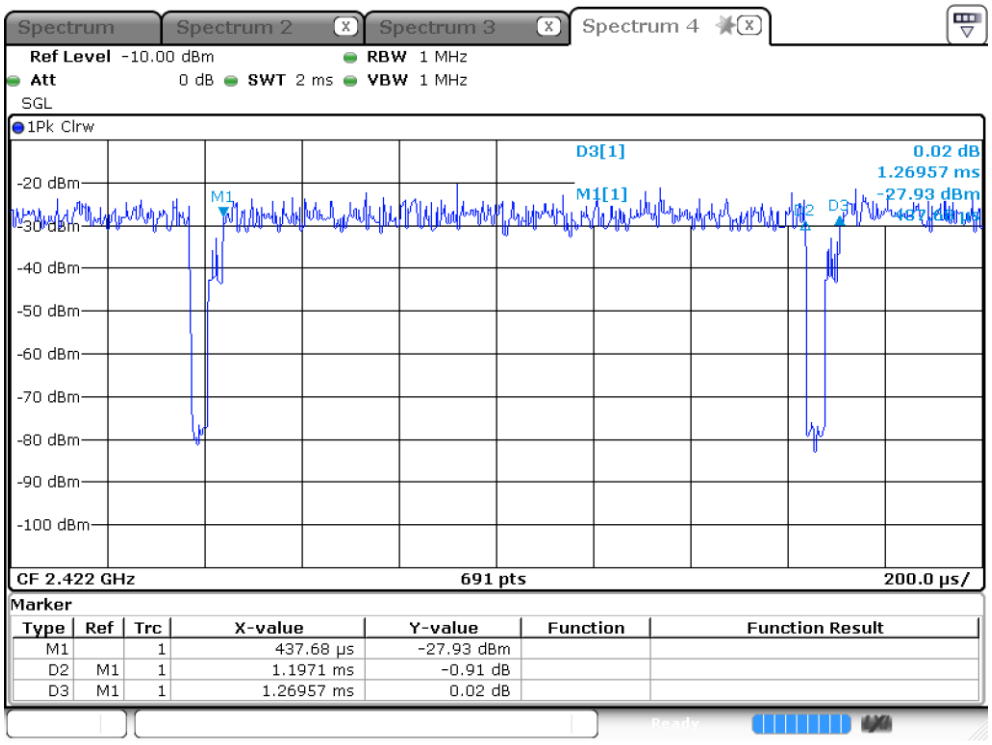
802.11n40


Spectrum
Spectrum 2
Spectrum 3
Spectrum 4
Ref Level -10.00 dBm
RBW 1 MHz
Att 0 dB SWT 2 ms VBW 1 MHz
SGL
1Pk Clrw
D3[1]
0.02 dB
1.26957 ms
M1[1]
-27.93 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
-90 dBm
-100 dBm
CF 2.422 GHz
691 pts
200.0 µs/
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 437.68 µs -27.93 dBm
D2 M1 1 1.1971 ms -0.91 dB
D3 M1 1 1.26957 ms 0.02 dB
Ready
Date: 6.JAN.2007 21:15:15

6. EMI Reduction Method During Compliance Testing

No modification was made during testing.