

# NORTHWEST EMC

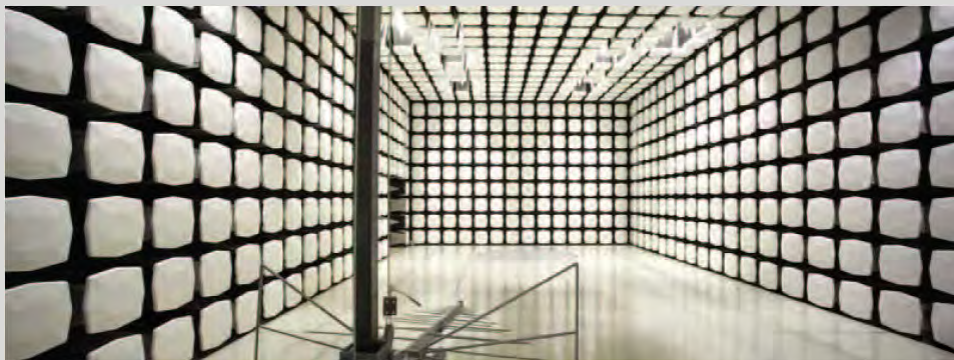
**Electric Imp, Inc.**

**IMP003-FCC**

**FCC 15.207:2015**

**FCC 15.247:2015**

**Report # ELIM0007.1**



NVLAP Lab Code: 200630-0

*This report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government of the United States of America. This Report may only be duplicated in its entirety*

# CERTIFICATE OF TEST

Last Date of Test: January 16, 2015  
Electric Imp, Inc.  
Model: IMP003-FCC

## Radio Equipment Testing

### Standards

Specification	Method
FCC 15.207:2015	ANSI C63.10:2009
FCC 15.247:2015	ANSI C63.10:2009, KDB 558074 V3

### Results

Method Clause	Test Description	Applied	Results	Comments
6.2	AC Powerline Conducted Emissions	Yes	Pass	
6.5, 6.6	Spurious Radiated Emissions	Yes	Pass	
6.7	Spurious Conducted Emissions	Yes	Pass	
6.7	Band Edge Compliance	Yes	Pass	
6.9.1	Occupied Bandwidth	Yes	Pass	
6.10.2	Output Power	Yes	Pass	
6.11.2	Power Spectral Density	Yes	Pass	
7.5	Duty Cycle	Yes	Pass	

### Deviations From Test Standards

None

### Approved By:



Kyle Holgate, Operations Manager

*Product compliance is the responsibility of the client; therefore, the tests and equipment modes of operation represented in this report were agreed upon by the client, prior to testing. The results of this test pertain only to the sample(s) tested. The specific description is noted in each of the individual sections of the test report supporting this certificate of test.*

# REVISION HISTORY

Revision Number	Description	Date	Page Number
00	None		

# ACCREDITATIONS AND AUTHORIZATIONS

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## United States

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**FCC** - Designated by the FCC as a Telecommunications Certification Body (TCB). Certification chambers, Open Area Test Sites, and conducted measurement facilities are listed with the FCC.

**A2LA** - Accredited by A2LA to ISO / IEC Guide 65 as a product certifier. This allows Northwest EMC to certify transmitters to FCC and IC specifications.

**NVLAP** - Each laboratory is accredited by NVLAP to ISO 17025

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## Canada

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**IC** - Recognized by Industry Canada as a Certification Body (CB). Certification chambers and Open Area Test Sites are filed with IC.

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## European Union

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**European Commission** – Validated by the European Commission as a Conformity Assessment Body (CAB) under the EMC directive and as a Notified Body under the R&TTE Directive.

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## Australia/New Zealand

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**ACMA** - Recognized by ACMA as a CAB for the acceptance of test data.

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## Korea

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**MSIP / RRA** - Recognized by KCC's RRA as a CAB for the acceptance of test data.

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## Japan

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**VCCI** - Associate Member of the VCCI. Conducted and radiated measurement facilities are registered.

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## Taiwan

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**BSMI** – Recognized by BSMI as a CAB for the acceptance of test data.

**NCC** - Recognized by NCC as a CAB for the acceptance of test data.

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## Singapore

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**IDA** – Recognized by IDA as a CAB for the acceptance of test data.

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## Israel

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**MOC** – Recognized by MOC as a CAB for the acceptance of test data.

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## Hong Kong

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**OFTA** – Recognized by OFTA as a CAB for the acceptance of test data.

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## Vietnam

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**MIC** – Recognized by MIC as a CAB for the acceptance of test data.

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## SCOPE

For details on the Scopes of our Accreditations, please visit:

<http://www.nwemc.com/accreditations/>

# MEASUREMENT UNCERTAINTY

## Measurement Uncertainty

When a measurement is made, the result will be different from the true or theoretically correct value. The difference is the result of tolerances in the measurement system that cannot be completely eliminated. To the extent that technology allows us, it has been our aim to minimize this error. Measurement uncertainty is a statistical expression of measurement error qualified by a probability distribution.

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty (K=2) for each test is on each data sheet. Our measurement data meets or exceeds the measurement uncertainty requirements of the applicable specification; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for estimating measurement uncertainty are based upon ETSI TR 100 028 (or CISPR 16-4-2 as applicable), and are available upon request.

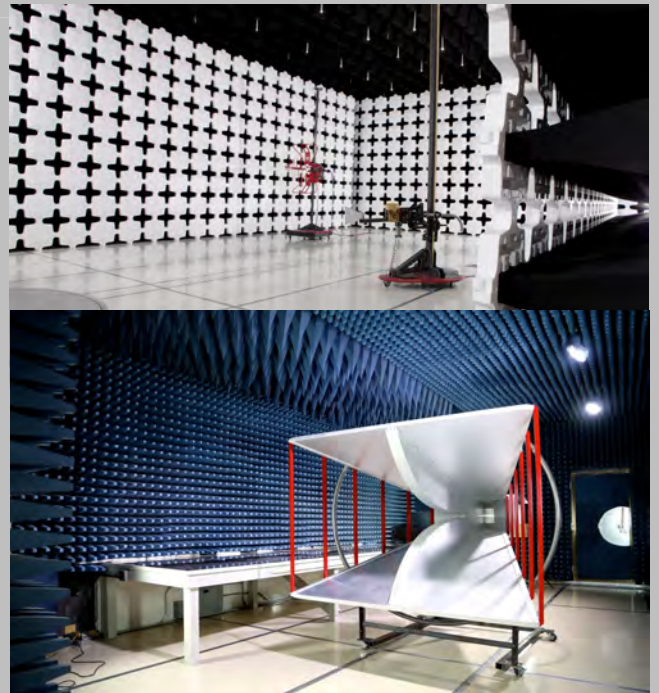
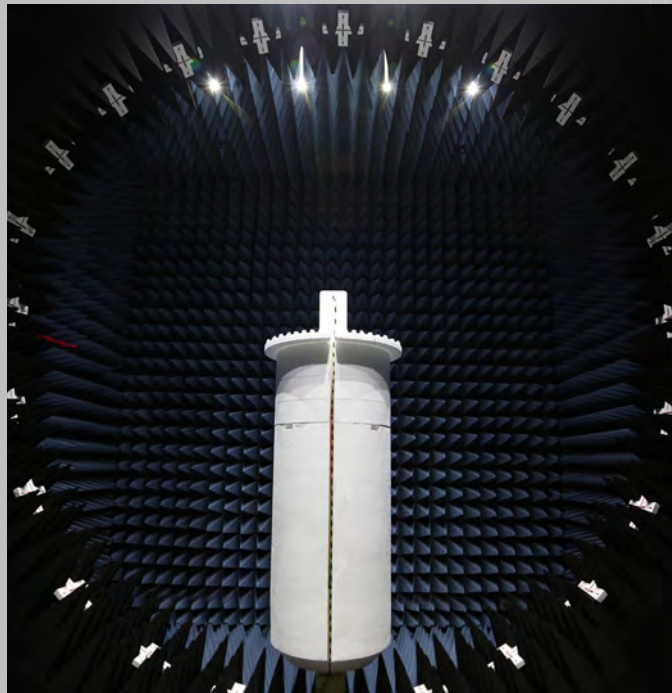
The following table represents the Measurement Uncertainty (MU) budgets for each of the tests that may be contained in this report.

<b>Test</b>	<b>+ MU</b>	<b>- MU</b>
Frequency Accuracy (Hz)	0.0007%	-0.0007%
Amplitude Accuracy (dB)	1.2 dB	-1.2 dB
Conducted Power (dB)	0.3 dB	-0.3 dB
Radiated Power via Substitution (dB)	0.7 dB	-0.7 dB
Temperature (degrees C)	0.7°C	-0.7°C
Humidity (% RH)	2.5% RH	-2.5% RH
Voltage (AC)	1.0%	-1.0%
Voltage (DC)	0.7%	-0.7%
Field Strength (dB)	5.2 dB	-5.2 dB
AC Powerline Conducted Emissions (dB)	2.9 dB	-2.9 dB

# FACILITIES



<b>California</b> Labs OC01-13 41 Tesla Irvine, CA 92618 (949) 861-8918	<b>Minnesota</b> Labs MN01-08, MN10 9349 W Broadway Ave. Brooklyn Park, MN 55445 (612)-638-5136	<b>New York</b> Labs NY01-04 4939 Jordan Rd. Elbridge, NY 13060 (315) 685-0796	<b>Oregon</b> Labs EV01-12 22975 NW Evergreen Pkwy Hillsboro, OR 97124 (503) 844-4066	<b>Texas</b> Labs TX01-09 3801 E Plano Pkwy Plano, TX 75074 (469) 304-5255	<b>Washington</b> Labs NC01-05 19201 120 <sup>th</sup> Ave NE Bothell, WA 9801 (425)984-6600
<b>NVLAP</b>					
NVLAP Lab Code: 200676-0	NVLAP Lab Code: 200881-0	NVLAP Lab Code: 200761-0	NVLAP Lab Code: 200630-0	NVLAP Lab Code:201049-0	NVLAP Lab Code: 200629-0
<b>Industry Canada</b>					
2834B-1, 2834B-3	2834E-1	N/A	2834D-1, 2834D-2	2834G-1	2834F-1
<b>BSMI</b>					
SL2-IN-E-1154R	SL2-IN-E-1152R	N/A	SL2-IN-E-1017	In Process	SL2-IN-E-1153R
<b>VCCI</b>					
A-0029	A-0109	N/A	A-0108	A-0201	A-0110



# PRODUCT DESCRIPTIONS

## Client and Equipment Under Test (EUT) Information

<b>Company Name:</b>	Electric Imp, Inc.
<b>Address:</b>	5150 El Camino Real, Ste C-31
<b>City, State, Zip:</b>	Los Altos, CA 94022
<b>Test Requested By:</b>	Lolo Fong
<b>Model:</b>	IMP003-FCC
<b>First Date of Test:</b>	December 08, 2014
<b>Last Date of Test:</b>	January 16, 2015
<b>Receipt Date of Samples:</b>	December 08, 2014
<b>Equipment Design Stage:</b>	Production
<b>Equipment Condition:</b>	No Damage

## Information Provided by the Party Requesting the Test

<b>Functional Description of the EUT:</b>
802.11bgn SISO radio module with 2 antenna types (PIFA and Chip Antennas).
<b>Testing Objective:</b>
To demonstrate compliance under FCC 15.247 for operation in the 2.4 GHz band.

# CONFIGURATIONS

## Configuration ELIM0007- 1

Software/Firmware Running during test					
Description				Version	
wl.exe				5.9 RC153.39	

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Radio Module 2.4GHz (PIFA Antenna)	Electric Imp. Inc.	1CD	OC2A690BDC4E

Peripherals in test setup boundary			
Description	Manufacturer	Model/Part Number	Serial Number
Laptop (Apple)	Apple	None	None
AC/DC Power Adapter(Apple)	Apple	None	None

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
USB Power and I/O Cable	No	1.5m	No	Radio Module	Laptop
DC Power Cable (Apple)	Unknown	1.5m	Unknown	AC/DC Power Adapter	Laptop
AC Power Cable (Apple)	No	1.5m	No	AC mains	AC/DC Power Adapter



# CONFIGURATIONS

## Configuration ELIM0007- 2

Software/Firmware Running during test	
Description	Version
wl.exe	5.9 RC153.39

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Radio Module 2.4GHz (PIFA Antenna)	Electric Imp. Inc.	1CD	OC2A690BDC4E

Remote Equipment Outside of Test Setup Boundary			
Description	Manufacturer	Model/Part Number	Serial Number
AC/DC Power Adapter (DELL)	DELL	ADP-65JB	CN-0F8834-48661-562-25AX
Laptop (Dell)	DELL	PP11L	None

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
USB Power and I/O Cable	No	1.5m	No	Radio Module	Laptop
DC Power Cable (Dell)	Unknown	2m	Unknown	AC/DC Power Adapter	Laptop DELL
AC Power Cable (Dell)	No	1m	No	AC mains	AC/DC Power Adapter
USB Extension	Yes	5m	No	USB Power and I/O Cable	Laptop

# CONFIGURATIONS

## Configuration ELIM0007- 3

Software/Firmware Running during test	
Description	Version
wl.exe	5.9 RC153.39

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Radio Module 2.4GHz (Chip Antenna)	Electric Imp. Inc.	1CD	OC2A690BDC49

Remote Equipment Outside of Test Setup Boundary			
Description	Manufacturer	Model/Part Number	Serial Number
AC/DC Power Adapter (DELL)	DELL	ADP-65JB	CN-0F8834-48661-562-25AX
Laptop (Dell)	DELL	PP11L	None

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
USB Power and I/O Cable	No	1.5m	No	Radio Module	Laptop
DC Power Cable (Dell)	Unknown	2m	Unknown	AC/DC Power Adapter	Laptop DELL
AC Power Cable (Dell)	No	1m	No	AC mains	AC/DC Power Adapter
USB Extension	Yes	5m	No	USB Power and I/O Cable	Laptop

# CONFIGURATIONS

## Configuration ELIM0007- 5

Software/Firmware Running during test	
Description	Version
wl.exe	5.9 RC153.39

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Radio Module 2.4GHz (PIFA Antenna)	Electric Imp. Inc.	1CD	OC2A690BDC4E

Peripherals in test setup boundary			
Description	Manufacturer	Model/Part Number	Serial Number
AC/DC Power Adapter (DELL)	DELL	ADP-65JB	CN-0F8834-48661-562-25AX
Laptop (Dell)	DELL	PP11L	None
DC Power Supply	Topward Electronics Instruments Co.	TPS-2000	946425

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
USB Power and I/O Cable	No	1.5m	No	Radio Module	Laptop
DC Power Cable (Dell)	Unknown	2m	Unknown	AC/DC Power Adapter	Laptop DELL
AC Power Cable (Dell)	No	1m	No	AC mains	AC/DC Power Adapter
AC Power	No	1.8m	No	AC Mains	Radio Module 2.4GHz (PIFA Antenna)
DC Power	No	0.8m	No	DC Power Supply	Radio Module 2.4GHz (PIFA Antenna)

# CONFIGURATIONS

## Configuration ELIM0010- 1

EUT					
Description		Manufacturer	Model/Part Number	Serial Number	
Radio Module 2.4GHz (PIFA Antenna)		Electric Imp. Inc.	1CD	OC2A690BDC4E	

Remote Equipment Outside of Test Setup Boundary			
Description	Manufacturer	Model/Part Number	Serial Number
Laptop (Dell)	DELL	PP11L	None

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
USB Power and I/O Cable	No	1.5m	No	Radion Module	Laptop/USB Extension

# CONFIGURATIONS

## Configuration ELIM0010- 2

EUT					
Description		Manufacturer	Model/Part Number	Serial Number	
Radio Module 2.4GHz (Chip Antenna)		Electric Imp. Inc.	1CD	OC2A690BDC49	

Remote Equipment Outside of Test Setup Boundary			
Description	Manufacturer	Model/Part Number	Serial Number
Laptop (Dell)	DELL	PP11L	None

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
USB Power and I/O Cable	No	1.5m	No	Radion Module	Laptop/USB Extension

# MODIFICATIONS

## Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	12/08/2014	Duty Cycle	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
2	12/08/2014	Occupied Bandwidth	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
3	12/08/2014	Output Power	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
4	12/08/2014	Power Spectral Density	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
5	12/08/2014	Band Edge Compliance	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
6	12/08/2014	Spurious Conducted Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
7	12/10/2014	Power line Conducted Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.
8	1/16/2014	Spurious Radiated Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

# AC POWER LINE CONDUCTED EMISSIONS



WTD 2014.10.14  
PSA-ESCI 2014.09.10, EmiR5 2014.10.01.1

## TEST DESCRIPTION

Using the mode of operation and configuration noted within this report, conducted emissions tests were performed. The frequency range investigated (scanned), is also noted in this report. Conducted power line measurements are made, unless otherwise specified, over the frequency range from 150 kHz to 30 MHz to determine the line-to-ground radio-noise voltage that is conducted from the EUT power-input terminals that are directly (or indirectly via separate transformer or power supplies) connected to a public power network. Equipment is tested with power cords that are normally used or that have electrical or shielding characteristics that are the same as those cords normally used. Typically those measurements are made using a LISN (Line Impedance Stabilization Network), the 50  $\Omega$  measuring port is terminated by a 50  $\Omega$  EMI meter or a 50  $\Omega$  resistive load. All 50  $\Omega$  measuring ports of the LISN are terminated by 50 $\Omega$ .

## TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Receiver	Rohde & Schwarz	ESCI	ARH	02/05/2014	12 mo
High Pass Filter	TTE	H97-100K-50-720B	HHH	01/22/2014	12 mo
EV07 Cables	N/A	Conducted Cables	EVG	03/07/2014	12 mo
Attenuator, BNC 10 Watt	Fairview Microwave	SA6B10W-20	TQQ	11/20/2014	12 mo
LISN	Solar	9252-50-R-24-BNC	LIN	02/03/2014	12 mo
LISN	Solar	9252-50-R-24-BNC	LIP	02/16/2014	12 mo

## MEASUREMENT UNCERTAINTY

Description		
Expanded k=2	2.4 dB	-2.4 dB

## CONFIGURATIONS INVESTIGATED

ELIM0007-5

## MODES INVESTIGATED

Continuous Tx of 802.11 wifi, 1 Mbps, Ch.1 (2412MHz)  
Continuous Tx of 802.11 wifi, 1 Mbps, Ch.11 (2462MHz)  
Continuous Tx of 802.11 wifi, 1 Mbps, Ch.6 (2437MHz)

# AC POWER LINE CONDUCTED EMISSIONS

EUT:	IMP003-FCC	Work Order:	ELIM0007
Serial Number:	OC2690BDC4E	Date:	12/10/2014
Customer:	Electric Imp, Inc.	Temperature:	22.4°C
Attendees:	None	Relative Humidity:	47.1%
Customer Project:	None	Bar. Pressure:	997.9 mb
Tested By:	Cole Ghizzone	Job Site:	EV07
Power:	110VAC/60Hz	Configuration:	ELIM0007-5

## TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2014	ANSI C63.10:2009

## TEST PARAMETERS

Run #:	3	Line:	High Line	Ext. Attenuation (dB):	20
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## COMMENTS

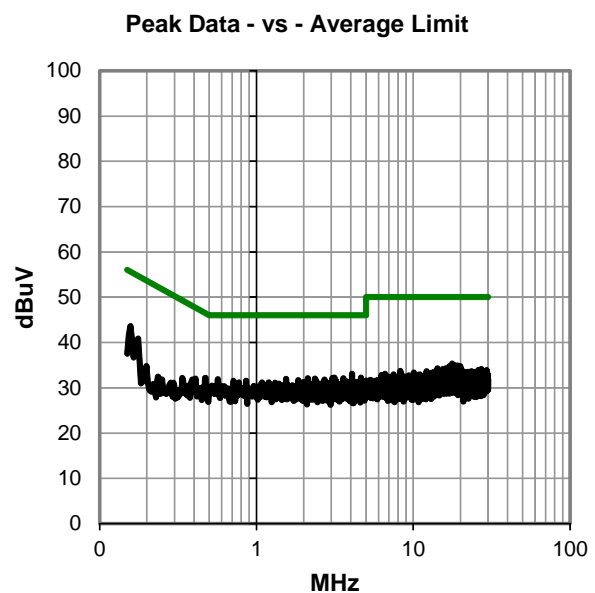
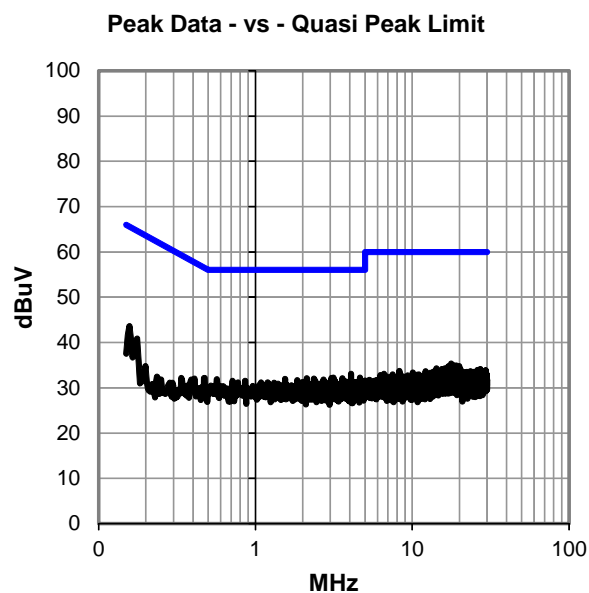
EUT powered by DC power supply plugged into the AC mains.

## EUT OPERATING MODES

Continuous Tx of 802.11 wifi, 1 Mbps, Ch.1 (2412MHz)

## DEVIATIONS FROM TEST STANDARD

None





# AC POWER LINE CONDUCTED EMISSIONS



WTD: 2014.10.14  
PSA-ESCI 2014.09.10, Emir5 2014.10.01.1

## RESULTS - Run #3

Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.157	23.0	20.6	43.6	65.6	-22.0
4.067	12.3	20.8	33.1	56.0	-22.9
3.138	11.5	20.8	32.3	56.0	-23.7
4.653	11.3	20.9	32.2	56.0	-23.8
0.176	20.3	20.6	40.9	64.7	-23.8
3.060	11.4	20.7	32.1	56.0	-23.9
2.124	11.4	20.7	32.1	56.0	-23.9
3.579	11.3	20.8	32.1	56.0	-23.9
2.359	11.3	20.7	32.0	56.0	-24.0
1.542	11.3	20.6	31.9	56.0	-24.1
0.568	11.4	20.5	31.9	56.0	-24.1
2.717	11.1	20.7	31.8	56.0	-24.2
0.475	11.7	20.5	32.2	56.4	-24.2
4.619	10.8	20.9	31.7	56.0	-24.3
1.851	11.0	20.7	31.7	56.0	-24.3
3.194	10.9	20.8	31.7	56.0	-24.3
2.407	10.9	20.7	31.6	56.0	-24.4
0.863	11.0	20.6	31.6	56.0	-24.4
0.713	11.0	20.5	31.5	56.0	-24.5
4.869	10.5	20.9	31.4	56.0	-24.6
4.545	10.5	20.9	31.4	56.0	-24.6
3.780	10.6	20.8	31.4	56.0	-24.6
3.239	10.6	20.8	31.4	56.0	-24.6
17.770	13.6	21.7	35.3	60.0	-24.7
4.205	10.5	20.8	31.3	56.0	-24.7
4.705	10.4	20.9	31.3	56.0	-24.7

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.157	23.0	20.6	43.6	55.6	-12.0
4.067	12.3	20.8	33.1	46.0	-12.9
3.138	11.5	20.8	32.3	46.0	-13.7
4.653	11.3	20.9	32.2	46.0	-13.8
0.176	20.3	20.6	40.9	54.7	-13.8
3.060	11.4	20.7	32.1	46.0	-13.9
2.124	11.4	20.7	32.1	46.0	-13.9
3.579	11.3	20.8	32.1	46.0	-13.9
2.359	11.3	20.7	32.0	46.0	-14.0
1.542	11.3	20.6	31.9	46.0	-14.1
0.568	11.4	20.5	31.9	46.0	-14.1
2.717	11.1	20.7	31.8	46.0	-14.2
0.475	11.7	20.5	32.2	46.4	-14.2
4.619	10.8	20.9	31.7	46.0	-14.3
1.851	11.0	20.7	31.7	46.0	-14.3
3.194	10.9	20.8	31.7	46.0	-14.3
2.407	10.9	20.7	31.6	46.0	-14.4
0.863	11.0	20.6	31.6	46.0	-14.4
0.713	11.0	20.5	31.5	46.0	-14.5
4.869	10.5	20.9	31.4	46.0	-14.6
4.545	10.5	20.9	31.4	46.0	-14.6
3.780	10.6	20.8	31.4	46.0	-14.6
3.239	10.6	20.8	31.4	46.0	-14.6
17.770	13.6	21.7	35.3	50.0	-14.7
4.205	10.5	20.8	31.3	46.0	-14.7
4.705	10.4	20.9	31.3	46.0	-14.7

## CONCLUSION

Pass

Tested By

# AC POWER LINE CONDUCTED EMISSIONS

**NORTHWEST  
EMC**

WTD:2014.10.14  
PSA-ESCI 2014.09.10, EmiR5 2014.10.01.1

EUT:	IMP003-FCC	Work Order:	ELIM0007
Serial Number:	OC2690BDC4E	Date:	12/10/2014
Customer:	Electric Imp, Inc.	Temperature:	22.4°C
Attendees:	None	Relative Humidity:	47.1%
Customer Project:	None	Bar. Pressure:	997.9 mb
Tested By:	Cole Ghizzone	Job Site:	EV07
Power:	110VAC/60Hz	Configuration:	ELIM0007-5

## TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2014	ANSI C63.10:2009

## TEST PARAMETERS

Run #:	4	Line:	Neutral	Ext. Attenuation (dB):	20
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## COMMENTS

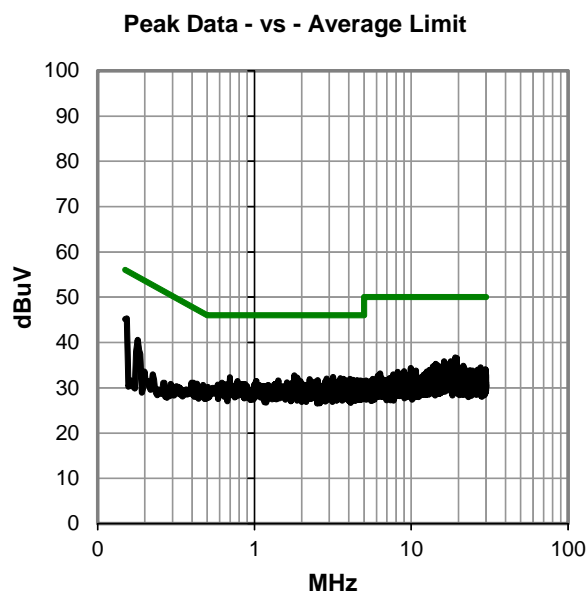
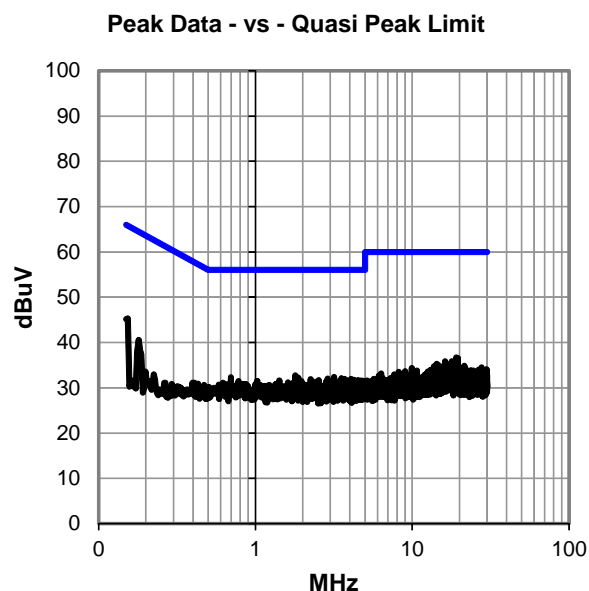
EUT powered by DC power supply plugged into the AC mains.

## EUT OPERATING MODES

Continuous Tx of 802.11 wifi, 1 Mbps, Ch.1 (2412MHz)

## DEVIATIONS FROM TEST STANDARD

None



# AC POWER LINE CONDUCTED EMISSIONS

**NORTHWEST  
EMC**

WTD: 2014.10.14  
PSA-ESCI 2014.09.10, Emir5 2014.10.01.1

## RESULTS - Run #4

Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.154	24.7	20.6	45.3	65.8	-20.5
1.795	12.1	20.7	32.8	56.0	-23.2
19.129	14.9	21.8	36.7	60.0	-23.3
19.543	14.7	21.8	36.5	60.0	-23.5
3.176	11.6	20.8	32.4	56.0	-23.6
0.698	11.8	20.5	32.3	56.0	-23.7
1.877	11.6	20.7	32.3	56.0	-23.7
3.541	11.3	20.8	32.1	56.0	-23.9
0.180	20.0	20.6	40.6	64.5	-23.9
2.888	11.3	20.7	32.0	56.0	-24.0
4.071	11.2	20.8	32.0	56.0	-24.0
3.694	11.2	20.8	32.0	56.0	-24.0
2.247	11.2	20.7	31.9	56.0	-24.1
17.931	14.1	21.7	35.8	60.0	-24.2
19.531	14.0	21.8	35.8	60.0	-24.2
16.204	14.2	21.6	35.8	60.0	-24.2
3.784	11.0	20.8	31.8	56.0	-24.2
4.243	10.9	20.8	31.7	56.0	-24.3
2.530	11.0	20.7	31.7	56.0	-24.3
4.504	10.8	20.9	31.7	56.0	-24.3
4.261	10.8	20.8	31.6	56.0	-24.4
1.418	11.0	20.6	31.6	56.0	-24.4
4.720	10.7	20.9	31.6	56.0	-24.4
18.457	13.8	21.8	35.6	60.0	-24.4
3.508	10.8	20.8	31.6	56.0	-24.4
18.300	13.8	21.8	35.6	60.0	-24.4

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.154	24.7	20.6	45.3	55.8	-10.5
1.795	12.1	20.7	32.8	46.0	-13.2
19.129	14.9	21.8	36.7	50.0	-13.3
19.543	14.7	21.8	36.5	50.0	-13.5
3.176	11.6	20.8	32.4	46.0	-13.6
0.698	11.8	20.5	32.3	46.0	-13.7
1.877	11.6	20.7	32.3	46.0	-13.7
3.541	11.3	20.8	32.1	46.0	-13.9
0.180	20.0	20.6	40.6	54.5	-13.9
2.888	11.3	20.7	32.0	46.0	-14.0
4.071	11.2	20.8	32.0	46.0	-14.0
3.694	11.2	20.8	32.0	46.0	-14.0
2.247	11.2	20.7	31.9	46.0	-14.1
17.931	14.1	21.7	35.8	50.0	-14.2
19.531	14.0	21.8	35.8	50.0	-14.2
16.204	14.2	21.6	35.8	50.0	-14.2
3.784	11.0	20.8	31.8	46.0	-14.2
4.243	10.9	20.8	31.7	46.0	-14.3
2.530	11.0	20.7	31.7	46.0	-14.3
4.504	10.8	20.9	31.7	46.0	-14.3
4.261	10.8	20.8	31.6	46.0	-14.4
1.418	11.0	20.6	31.6	46.0	-14.4
4.720	10.7	20.9	31.6	46.0	-14.4
18.457	13.8	21.8	35.6	50.0	-14.4
3.508	10.8	20.8	31.6	46.0	-14.4
18.300	13.8	21.8	35.6	50.0	-14.4

## CONCLUSION

Pass



Tested By

# AC POWER LINE CONDUCTED EMISSIONS

**NORTHWEST  
EMC**

WTD:2014.10.14  
PSA-ESCI 2014.09.10, EmiR5 2014.10.01.1

EUT:	IMP003-FCC	Work Order:	ELIM0007
Serial Number:	OC2690BDC4E	Date:	12/10/2014
Customer:	Electric Imp, Inc.	Temperature:	22.4°C
Attendees:	None	Relative Humidity:	47.1%
Customer Project:	None	Bar. Pressure:	997.9 mb
Tested By:	Cole Ghizzone	Job Site:	EV07
Power:	110VAC/60Hz	Configuration:	ELIM0007-5

## TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2014	ANSI C63.10:2009

## TEST PARAMETERS

Run #:	5	Line:	Neutral	Ext. Attenuation (dB):	20
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## COMMENTS

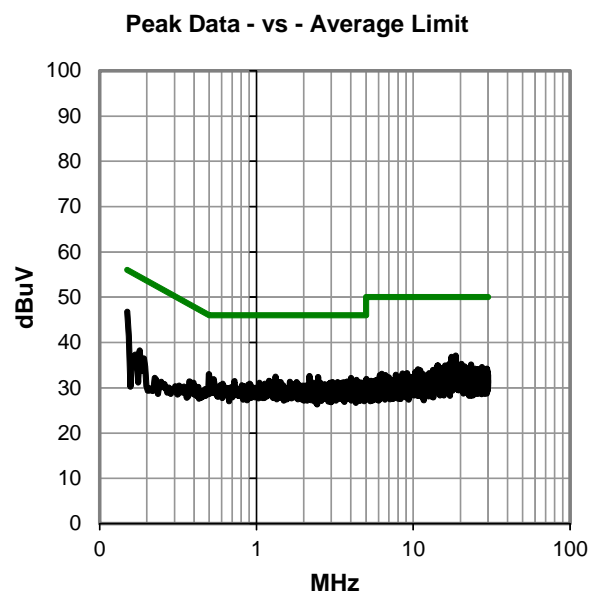
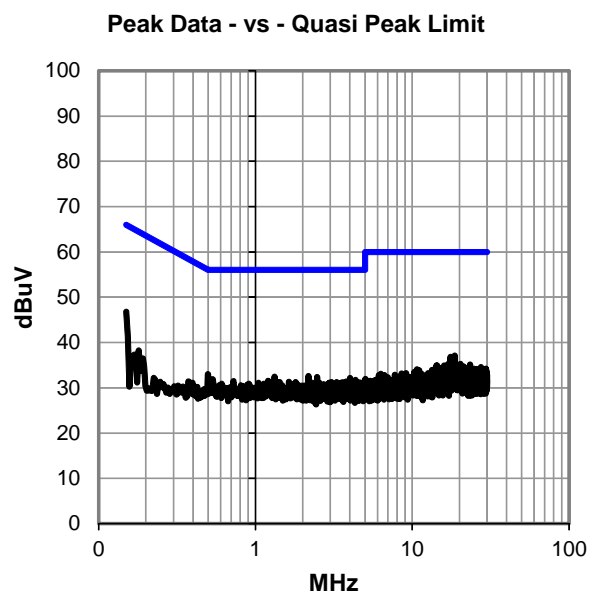
EUT powered by DC power supply plugged into the AC mains.

## EUT OPERATING MODES

Continuous Tx of 802.11 wifi, 1 Mbps, Ch.6 (2437MHz)

## DEVIATIONS FROM TEST STANDARD

None



# AC POWER LINE CONDUCTED EMISSIONS

**NORTHWEST  
EMC**

WTD: 2014.10.14  
PSA-ESCI 2014.09.10, Emir5 2014.10.01.1

## RESULTS - Run #5

Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.150	26.1	20.7	46.8	66.0	-19.2
18.718	15.3	21.8	37.1	60.0	-22.9
0.497	12.5	20.5	33.0	56.1	-23.0
17.565	15.1	21.7	36.8	60.0	-23.2
2.180	11.9	20.7	32.6	56.0	-23.4
17.912	14.8	21.7	36.5	60.0	-23.5
1.325	11.8	20.6	32.4	56.0	-23.6
2.478	11.7	20.7	32.4	56.0	-23.6
4.023	11.4	20.8	32.2	56.0	-23.8
0.534	11.4	20.5	31.9	56.0	-24.1
4.343	10.9	20.9	31.8	56.0	-24.2
18.211	13.8	21.8	35.6	60.0	-24.4
4.955	10.6	20.9	31.5	56.0	-24.5
1.202	10.9	20.6	31.5	56.0	-24.5
2.217	10.8	20.7	31.5	56.0	-24.5
0.725	10.9	20.5	31.4	56.0	-24.6
17.595	13.7	21.7	35.4	60.0	-24.6
4.056	10.6	20.8	31.4	56.0	-24.6
3.795	10.6	20.8	31.4	56.0	-24.6
4.351	10.5	20.9	31.4	56.0	-24.6
1.631	10.7	20.7	31.4	56.0	-24.6
4.246	10.5	20.8	31.3	56.0	-24.7
1.370	10.7	20.6	31.3	56.0	-24.7
17.009	13.6	21.7	35.3	60.0	-24.7
20.330	13.4	21.9	35.3	60.0	-24.7
1.803	10.6	20.7	31.3	56.0	-24.7

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.150	26.1	20.7	46.8	56.0	-9.2
18.718	15.3	21.8	37.1	50.0	-12.9
0.497	12.5	20.5	33.0	46.1	-13.0
17.565	15.1	21.7	36.8	50.0	-13.2
2.180	11.9	20.7	32.6	46.0	-13.4
17.912	14.8	21.7	36.5	50.0	-13.5
1.325	11.8	20.6	32.4	46.0	-13.6
2.478	11.7	20.7	32.4	46.0	-13.6
4.023	11.4	20.8	32.2	46.0	-13.8
0.534	11.4	20.5	31.9	46.0	-14.1
4.343	10.9	20.9	31.8	46.0	-14.2
18.211	13.8	21.8	35.6	50.0	-14.4
4.955	10.6	20.9	31.5	46.0	-14.5
1.202	10.9	20.6	31.5	46.0	-14.5
2.217	10.8	20.7	31.5	46.0	-14.5
0.725	10.9	20.5	31.4	46.0	-14.6
17.595	13.7	21.7	35.4	50.0	-14.6
4.056	10.6	20.8	31.4	46.0	-14.6
3.795	10.6	20.8	31.4	46.0	-14.6
4.351	10.5	20.9	31.4	46.0	-14.6
1.631	10.7	20.7	31.4	46.0	-14.6
4.246	10.5	20.8	31.3	46.0	-14.7
1.370	10.7	20.6	31.3	46.0	-14.7
17.009	13.6	21.7	35.3	50.0	-14.7
20.330	13.4	21.9	35.3	50.0	-14.7
1.803	10.6	20.7	31.3	46.0	-14.7

## CONCLUSION

Pass



Tested By

# AC POWER LINE CONDUCTED EMISSIONS

**NORTHWEST  
EMC**

WTD:2014.10.14  
PSA-ESCI 2014.09.10, EmiR5 2014.10.01.1

EUT:	IMP003-FCC	Work Order:	ELIM0007
Serial Number:	OC2690BDC4E	Date:	12/10/2014
Customer:	Electric Imp, Inc.	Temperature:	22.4°C
Attendees:	None	Relative Humidity:	47.1%
Customer Project:	None	Bar. Pressure:	997.9 mb
Tested By:	Cole Ghizzone	Job Site:	EV07
Power:	110VAC/60Hz	Configuration:	ELIM0007-5

## TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2014	ANSI C63.10:2009

## TEST PARAMETERS

Run #:	6	Line:	High Line	Ext. Attenuation (dB):	20
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## COMMENTS

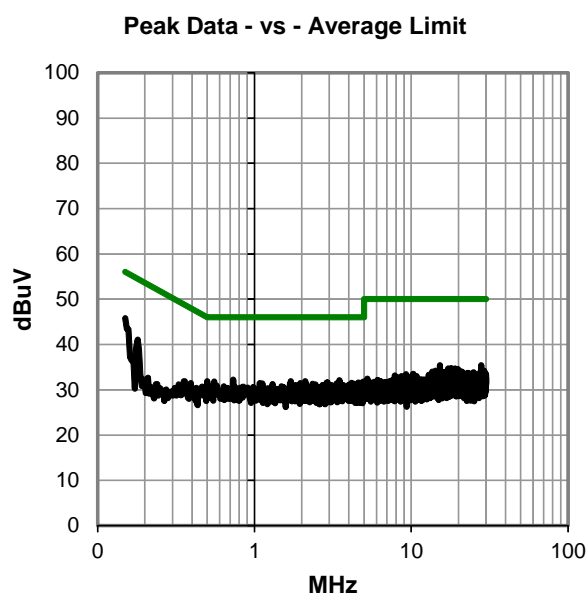
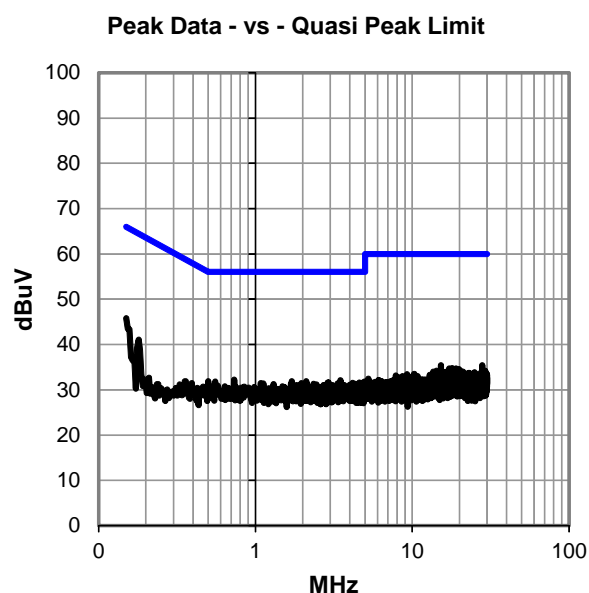
EUT powered by DC power supply plugged into the AC mains.

## EUT OPERATING MODES

Continuous Tx of 802.11 wifi, 1 Mbps, Ch.6 (2437MHz)

## DEVIATIONS FROM TEST STANDARD

None



# AC POWER LINE CONDUCTED EMISSIONS



WTD: 2014.10.14  
PSA-ESCI 2014.09.10, Emir5 2014.10.01.1

## RESULTS - Run #6

Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.150	25.1	20.7	45.8	66.0	-20.2
0.180	20.5	20.6	41.1	64.5	-23.4
0.732	11.7	20.5	32.2	56.0	-23.8
3.482	11.3	20.8	32.1	56.0	-23.9
0.501	11.4	20.5	31.9	56.0	-24.1
2.109	11.2	20.7	31.9	56.0	-24.1
1.702	11.2	20.7	31.9	56.0	-24.1
4.959	10.9	20.9	31.8	56.0	-24.2
0.553	11.3	20.5	31.8	56.0	-24.2
2.922	10.9	20.7	31.6	56.0	-24.4
2.896	10.9	20.7	31.6	56.0	-24.4
4.601	10.7	20.9	31.6	56.0	-24.4
3.414	10.8	20.8	31.6	56.0	-24.4
4.765	10.6	20.9	31.5	56.0	-24.5
4.176	10.7	20.8	31.5	56.0	-24.5
1.083	10.9	20.6	31.5	56.0	-24.5
1.967	10.8	20.7	31.5	56.0	-24.5
15.260	13.9	21.5	35.4	60.0	-24.6
28.000	13.0	22.4	35.4	60.0	-24.6
1.124	10.8	20.6	31.4	56.0	-24.6
3.347	10.6	20.8	31.4	56.0	-24.6
4.321	10.5	20.9	31.4	56.0	-24.6
2.351	10.6	20.7	31.3	56.0	-24.7
3.564	10.5	20.8	31.3	56.0	-24.7
1.683	10.6	20.7	31.3	56.0	-24.7
1.303	10.6	20.6	31.2	56.0	-24.8

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.150	25.1	20.7	45.8	56.0	-10.2
0.180	20.5	20.6	41.1	54.5	-13.4
0.732	11.7	20.5	32.2	46.0	-13.8
3.482	11.3	20.8	32.1	46.0	-13.9
0.501	11.4	20.5	31.9	46.0	-14.1
2.109	11.2	20.7	31.9	46.0	-14.1
1.702	11.2	20.7	31.9	46.0	-14.1
4.959	10.9	20.9	31.8	46.0	-14.2
0.553	11.3	20.5	31.8	46.0	-14.2
2.922	10.9	20.7	31.6	46.0	-14.4
2.896	10.9	20.7	31.6	46.0	-14.4
4.601	10.7	20.9	31.6	46.0	-14.4
3.414	10.8	20.8	31.6	46.0	-14.4
4.765	10.6	20.9	31.5	46.0	-14.5
4.176	10.7	20.8	31.5	46.0	-14.5
1.083	10.9	20.6	31.5	46.0	-14.5
1.967	10.8	20.7	31.5	46.0	-14.5
15.260	13.9	21.5	35.4	50.0	-14.6
28.000	13.0	22.4	35.4	50.0	-14.6
1.124	10.8	20.6	31.4	46.0	-14.6
3.347	10.6	20.8	31.4	46.0	-14.6
4.321	10.5	20.9	31.4	46.0	-14.6
2.351	10.6	20.7	31.3	46.0	-14.7
3.564	10.5	20.8	31.3	46.0	-14.7
1.683	10.6	20.7	31.3	46.0	-14.7
1.303	10.6	20.6	31.2	46.0	-14.8

## CONCLUSION

Pass

Tested By

# AC POWER LINE CONDUCTED EMISSIONS

EUT:	IMP003-FCC	Work Order:	ELIM0007
Serial Number:	OC2690BDC4E	Date:	12/10/2014
Customer:	Electric Imp, Inc.	Temperature:	22.4°C
Attendees:	None	Relative Humidity:	47.1%
Customer Project:	None	Bar. Pressure:	997.9 mb
Tested By:	Cole Ghizzone	Job Site:	EV07
Power:	110VAC/60Hz	Configuration:	ELIM0007-5

## TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2014	ANSI C63.10:2009

## TEST PARAMETERS

Run #:	7	Line:	High Line	Ext. Attenuation (dB):	20
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## COMMENTS

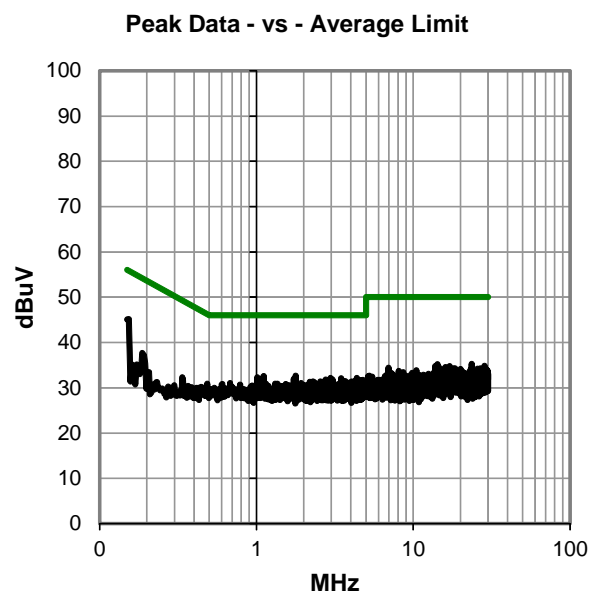
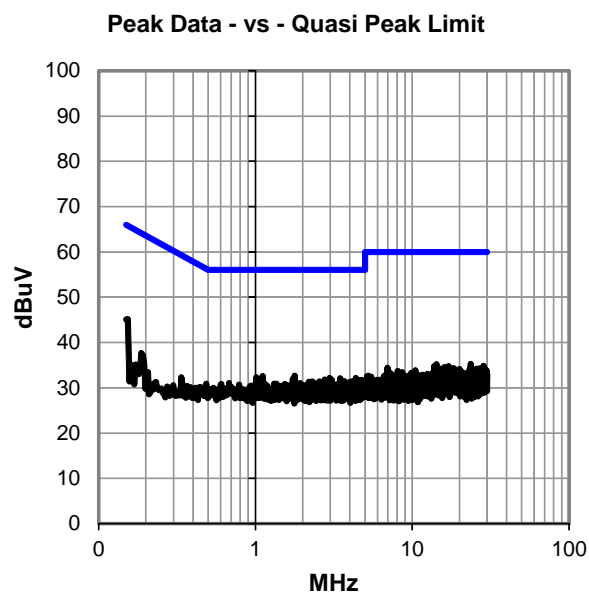
EUT powered by DC power supply plugged into the AC mains.

## EUT OPERATING MODES

Continuous Tx of 802.11 wifi, 1 Mbps, Ch.11 (2462MHz)

## DEVIATIONS FROM TEST STANDARD

None





# AC POWER LINE CONDUCTED EMISSIONS



WTD: 2014.10.14  
PSA-ESCI 2014.09.10, Emir5 2014.10.01.1

## RESULTS - Run #7

Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.154	24.5	20.6	45.1	65.8	-20.7
1.777	12.0	20.7	32.7	56.0	-23.3
1.109	12.0	20.6	32.6	56.0	-23.4
1.012	11.7	20.6	32.3	56.0	-23.7
4.377	11.3	20.9	32.2	56.0	-23.8
2.974	11.4	20.7	32.1	56.0	-23.9
3.467	11.3	20.8	32.1	56.0	-23.9
1.732	11.3	20.7	32.0	56.0	-24.0
3.060	11.1	20.7	31.8	56.0	-24.2
2.762	11.1	20.7	31.8	56.0	-24.2
4.772	10.8	20.9	31.7	56.0	-24.3
4.549	10.8	20.9	31.7	56.0	-24.3
4.668	10.6	20.9	31.5	56.0	-24.5
3.679	10.7	20.8	31.5	56.0	-24.5
4.370	10.6	20.9	31.5	56.0	-24.5
4.243	10.6	20.8	31.4	56.0	-24.6
2.691	10.7	20.7	31.4	56.0	-24.6
2.560	10.7	20.7	31.4	56.0	-24.6
2.295	10.7	20.7	31.4	56.0	-24.6
4.049	10.6	20.8	31.4	56.0	-24.6
3.564	10.6	20.8	31.4	56.0	-24.6
2.187	10.6	20.7	31.3	56.0	-24.7
23.605	13.2	22.1	35.3	60.0	-24.7
2.877	10.5	20.7	31.2	56.0	-24.8
4.153	10.4	20.8	31.2	56.0	-24.8
2.347	10.5	20.7	31.2	56.0	-24.8

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.154	24.5	20.6	45.1	55.8	-10.7
1.777	12.0	20.7	32.7	46.0	-13.3
1.109	12.0	20.6	32.6	46.0	-13.4
1.012	11.7	20.6	32.3	46.0	-13.7
4.377	11.3	20.9	32.2	46.0	-13.8
2.974	11.4	20.7	32.1	46.0	-13.9
3.467	11.3	20.8	32.1	46.0	-13.9
1.732	11.3	20.7	32.0	46.0	-14.0
3.060	11.1	20.7	31.8	46.0	-14.2
2.762	11.1	20.7	31.8	46.0	-14.2
4.772	10.8	20.9	31.7	46.0	-14.3
4.549	10.8	20.9	31.7	46.0	-14.3
4.668	10.6	20.9	31.5	46.0	-14.5
3.679	10.7	20.8	31.5	46.0	-14.5
4.370	10.6	20.9	31.5	46.0	-14.5
4.243	10.6	20.8	31.4	46.0	-14.6
2.691	10.7	20.7	31.4	46.0	-14.6
2.560	10.7	20.7	31.4	46.0	-14.6
2.295	10.7	20.7	31.4	46.0	-14.6
4.049	10.6	20.8	31.4	46.0	-14.6
3.564	10.6	20.8	31.4	46.0	-14.6
2.187	10.6	20.7	31.3	46.0	-14.7
23.605	13.2	22.1	35.3	50.0	-14.7
2.877	10.5	20.7	31.2	46.0	-14.8
4.153	10.4	20.8	31.2	46.0	-14.8
2.347	10.5	20.7	31.2	46.0	-14.8

## CONCLUSION

Pass

Tested By

# AC POWER LINE CONDUCTED EMISSIONS

**NORTHWEST  
EMC**

WTD:2014.10.14  
PSA-ESCI 2014.09.10, EmiR5 2014.10.01.1

EUT:	IMP003-FCC	Work Order:	ELIM0007
Serial Number:	OC2690BDC4E	Date:	12/10/2014
Customer:	Electric Imp, Inc.	Temperature:	22.4°C
Attendees:	None	Relative Humidity:	47.1%
Customer Project:	None	Bar. Pressure:	997.9 mb
Tested By:	Cole Ghizzone	Job Site:	EV07
Power:	110VAC/60Hz	Configuration:	ELIM0007-5

## TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2014	ANSI C63.10:2009

## TEST PARAMETERS

Run #:	8	Line:	Neutral	Ext. Attenuation (dB):	20
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## COMMENTS

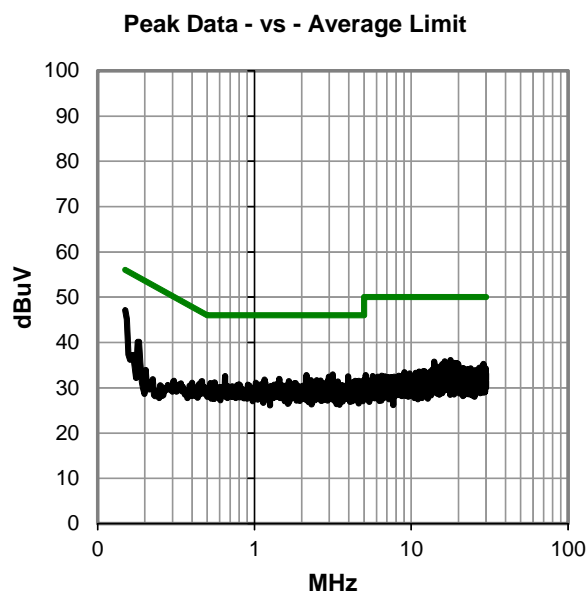
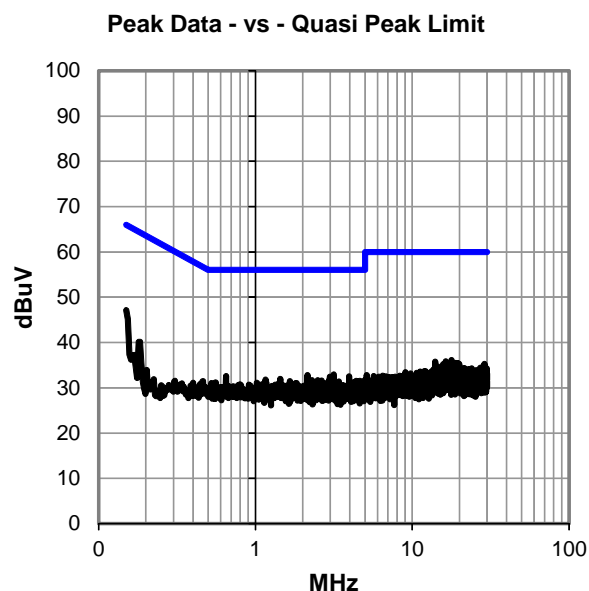
EUT powered by DC power supply plugged into the AC mains.

## EUT OPERATING MODES

Continuous Tx of 802.11 wifi, 1 Mbps, Ch.11 (2462MHz)

## DEVIATIONS FROM TEST STANDARD

None



# AC POWER LINE CONDUCTED EMISSIONS

## RESULTS - Run #8

Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.150	26.5	20.7	47.2	66.0	-18.8
3.153	12.2	20.8	33.0	56.0	-23.0
2.150	12.1	20.7	32.8	56.0	-23.2
0.650	12.1	20.5	32.6	56.0	-23.4
3.955	11.7	20.8	32.5	56.0	-23.5
2.978	11.7	20.7	32.4	56.0	-23.6
17.834	14.4	21.7	36.1	60.0	-23.9
1.437	11.3	20.6	31.9	56.0	-24.1
0.184	19.6	20.6	40.2	64.3	-24.2
16.345	14.2	21.6	35.8	60.0	-24.2
1.161	11.2	20.6	31.8	56.0	-24.2
14.051	14.3	21.5	35.8	60.0	-24.2
2.497	11.0	20.7	31.7	56.0	-24.3
2.295	11.0	20.7	31.7	56.0	-24.3
3.127	10.9	20.8	31.7	56.0	-24.3
2.948	10.9	20.7	31.6	56.0	-24.4
4.948	10.7	20.9	31.6	56.0	-24.4
2.642	10.9	20.7	31.6	56.0	-24.4
3.982	10.8	20.8	31.6	56.0	-24.4
4.388	10.7	20.9	31.6	56.0	-24.4
18.117	13.8	21.8	35.6	60.0	-24.4
4.634	10.6	20.9	31.5	56.0	-24.5
18.912	13.7	21.8	35.5	60.0	-24.5
1.657	10.8	20.7	31.5	56.0	-24.5
19.587	13.6	21.8	35.4	60.0	-24.6
19.449	13.6	21.8	35.4	60.0	-24.6

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.150	26.5	20.7	47.2	56.0	-8.8
3.153	12.2	20.8	33.0	46.0	-13.0
2.150	12.1	20.7	32.8	46.0	-13.2
0.650	12.1	20.5	32.6	46.0	-13.4
3.955	11.7	20.8	32.5	46.0	-13.5
2.978	11.7	20.7	32.4	46.0	-13.6
17.834	14.4	21.7	36.1	50.0	-13.9
1.437	11.3	20.6	31.9	46.0	-14.1
0.184	19.6	20.6	40.2	54.3	-14.2
16.345	14.2	21.6	35.8	50.0	-14.2
1.161	11.2	20.6	31.8	46.0	-14.2
14.051	14.3	21.5	35.8	50.0	-14.2
2.497	11.0	20.7	31.7	46.0	-14.3
2.295	11.0	20.7	31.7	46.0	-14.3
3.127	10.9	20.8	31.7	46.0	-14.3
2.948	10.9	20.7	31.6	46.0	-14.4
4.948	10.7	20.9	31.6	46.0	-14.4
2.642	10.9	20.7	31.6	46.0	-14.4
3.982	10.8	20.8	31.6	46.0	-14.4
4.388	10.7	20.9	31.6	46.0	-14.4
18.117	13.8	21.8	35.6	50.0	-14.4
4.634	10.6	20.9	31.5	46.0	-14.5
18.912	13.7	21.8	35.5	50.0	-14.5
1.657	10.8	20.7	31.5	46.0	-14.5
19.587	13.6	21.8	35.4	50.0	-14.6
19.449	13.6	21.8	35.4	50.0	-14.6

## CONCLUSION

Pass



Tested By

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data. The test data represents the configuration / operating mode/ model that produced the highest emission levels as compared to the specification limit.

## MODES OF OPERATION

802.11(b) 1Mbps
802.11(b) 11Mbps
802.11(g) 6Mbps
802.11(g) 36Mbps
802.11(g) 54Mbps
802.11(n) MCS0
802.11(n) MCS7

## CHANNEL OF OPERATION

Ch.1, 2412MHz
Ch. 6, 2437MHz
Ch. 11, 2462MHz

## POWER SETTINGS INVESTIGATED

5 VDC
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## CONFIGURATIONS INVESTIGATED

ELIM0010 - 1
ELIM0010 - 2

## FREQUENCY RANGE INVESTIGATED

Start Frequency	30 MHz	Stop Frequency	26.5 GHz
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## SAMPLE CALCULATIONS

Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation

## TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Spectrum Analyzer	Agilent	E4446A	AAQ	1/21/2014	12 mo
HP Filter	Micro-Tronics	HPM50111	HFO	7/6/2013	24 mo
LP Filter	Micro-Tronics	LPM50004	LFD	6/18/2014	12 mo
Attenuator - 20dB, HF (1000MHz - 18000MHz)	Coaxicom	3910-20	AXZ	6/19/2014	12 mo
Cable	ESM Cable Corp.	KMKM-72	EVY	11/9/2014	12 mo
Pre-Amplifier	Miteq	AMF-6F-18002650-25-10P	AVU	11/9/2014	12 mo
Antenna, Horn	ETS Lindgren	3160-09	AIV	NCR	0 mo
Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	AVD	2/18/2014	12 mo
Antenna, Horn	ETS	3160-08	AHV	NCR	0 mo
EV01 Cables	N/A	Standard Gain Horns Cables	EVF	2/18/2014	12 mo
Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AVC	2/18/2014	12 mo
Antenna, Horn	ETS	3160-07	AHU	NCR	0 mo
EV01 Cables	N/A	Double Ridge Horn Cables	EVB	8/26/2014	12 mo
Antenna, Horn	ETS	3115	AIZ	1/24/2014	24 mo
Pre-Amplifier	Miteq	AM-1616-1000	AOL	2/18/2014	12 mo
Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	PAG	8/26/2014	12 mo
EV01 Cables	N/A	Bilog Cables	EVA	2/18/2014	12 mo
Antenna, Biconilog	EMCO	3141	AXE	8/29/2014	24 mo


## TEST DESCRIPTION

The highest gain of each type of antenna to be used with the EUT was tested. The EUT was configured for low, mid, and high band transmit frequencies. For each configuration, the spectrum was scanned throughout the specified range. In addition, measurements were made in the restricted bands to verify compliance. While scanning, emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and the EUT antenna in three orthogonal axis, and adjusting measurement antenna height and polarization. A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.



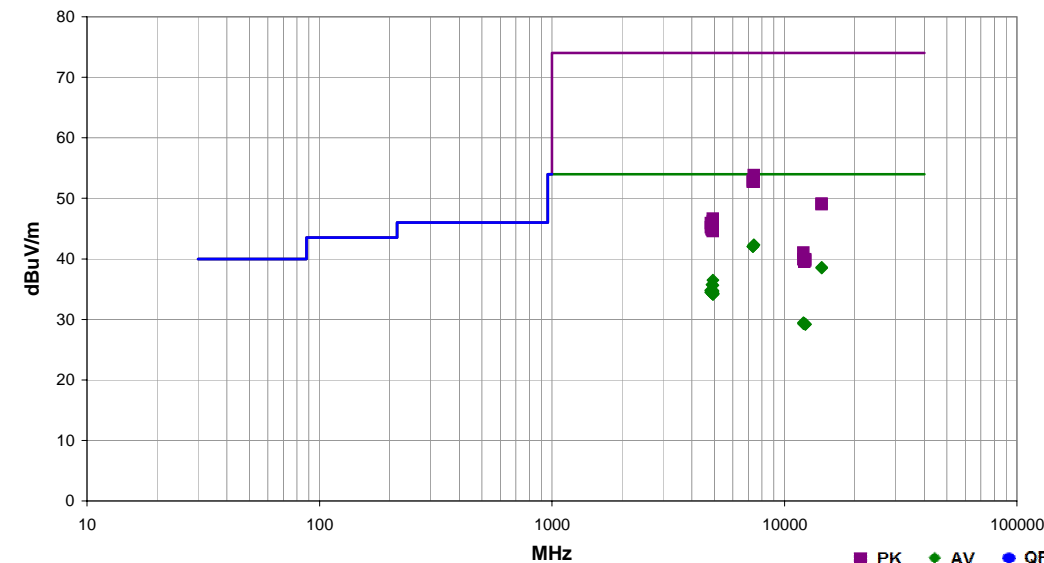
# SPURIOUS RADIATED EMISSIONS

PSA-ESCI 2014.11.19.1  
EmiRS 2014.11.19.2

Work Order:	ELIM0010	Date:	01/16/15	
Project:	None	Temperature:	23.6 °C	
Job Site:	EV01	Humidity:	39.7% RH	
Serial Number:	0C2690BDC49	Barometric Pres.:	1022 mbar	
EUT:		IMP003		
Configuration:	2			
Customer:	Electric Imp, Inc.			
Attendees:	None			
EUT Power:	5 VDC			
Operating Mode:	Continuously transmitting with a Chip antenna			
Deviations:	None			
Comments:	Please reference the data comments for EUT orientation, frequency, modulation and channel.			

Test Specifications	Test Method
FCC 15.247:2015	ANSI C63.10:2009

Run #	28	Test Distance (m)	3	Antenna Height(s)	1 to 4(m)	Results	Pass
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Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
7384.000	27.8	14.5	1.0	110.0	3.0	0.0	Horz	AV	0.0	42.3	54.0	-11.7	High Ch.11 2462MHz, 1Mbps, EUT Vert
7383.600	27.8	14.5	1.0	82.0	3.0	0.0	Vert	AV	0.0	42.3	54.0	-11.7	High Ch.11 2462MHz, 1Mbps, EUT On Side
7313.067	28.0	14.1	1.0	82.0	3.0	0.0	Vert	AV	0.0	42.1	54.0	-11.9	Mid Ch.6 2437MHz, 1Mbps, EUT On Side
7309.050	28.0	14.0	1.0	110.0	3.0	0.0	Horz	AV	0.0	42.0	54.0	-12.0	Mid Ch.6 2437MHz, 1Mbps, EUT Vert
14470.830	27.8	10.8	1.4	268.0	3.0	0.0	Horz	AV	0.0	38.6	54.0	-15.4	Low Ch.1 2412MHz, 1Mbps, EUT Vert
14473.150	27.7	10.8	1.0	46.0	3.0	0.0	Vert	AV	0.0	38.5	54.0	-15.5	Low Ch.1 2412MHz, 1Mbps, EUT On Side
4924.000	30.3	6.2	1.0	65.0	3.0	0.0	Horz	AV	0.0	36.5	54.0	-17.5	High Ch.11 2462MHz, 1Mbps, EUT Vert
4873.908	29.8	6.0	1.0	89.0	3.0	0.0	Horz	AV	0.0	35.8	54.0	-18.2	Mid Ch.6 2437MHz, 1Mbps, EUT Vert
4924.000	29.5	6.2	1.7	99.0	3.0	0.0	Vert	AV	0.0	35.7	54.0	-18.3	High Ch.11 2462MHz, 1Mbps, EUT On Side
4873.833	28.9	6.0	1.0	117.0	3.0	0.0	Vert	AV	0.0	34.9	54.0	-19.1	Mid Ch.6 2437MHz, 1Mbps, EUT On Side
4823.945	29.0	5.8	1.8	315.0	3.0	0.0	Horz	AV	0.0	34.8	54.0	-19.2	Low Ch.1 2412MHz, 1Mbps, EUT Vert
4923.815	28.6	6.2	1.0	66.0	3.0	0.0	Horz	AV	0.0	34.8	54.0	-19.2	High Ch.11 2462MHz, 1Mbps, EUT Vert
4923.925	28.4	6.2	1.2	186.0	3.0	0.0	Vert	AV	0.0	34.6	54.0	-19.4	High Ch.11 2462MHz, 1Mbps, EUT Vert
4823.765	28.7	5.8	1.0	110.0	3.0	0.0	Vert	AV	0.0	34.5	54.0	-19.5	Low Ch.1 2412MHz, 1Mbps, EUT On Side
4923.040	28.2	6.2	1.0	66.0	3.0	0.0	Horz	AV	0.0	34.4	54.0	-19.6	High Ch.11 2462MHz, MCS7, EUT Horz
4923.780	28.1	6.2	1.0	73.0	3.0	0.0	Horz	AV	0.0	34.3	54.0	-19.7	High Ch.11 2462MHz, 1Mbps, EUT Horz
4922.685	28.1	6.2	1.0	66.0	3.0	0.0	Horz	AV	0.0	34.3	54.0	-19.7	High Ch.11 2462MHz, 6Mbps, EUT Horz
4922.640	28.1	6.2	1.0	66.0	3.0	0.0	Horz	AV	0.0	34.3	54.0	-19.7	High Ch.11 2462MHz, MCS0, EUT Horz
4922.590	28.1	6.2	1.0	66.0	3.0	0.0	Horz	AV	0.0	34.3	54.0	-19.7	High Ch.11 2462MHz, 54Mbps, EUT Horz
4924.225	28.0	6.2	1.0	93.0	3.0	0.0	Vert	AV	0.0	34.2	54.0	-19.8	High Ch.11 2462MHz, 1Mbps, EUT Horz
4923.350	28.0	6.2	1.0	117.0	3.0	0.0	Horz	AV	0.0	34.2	54.0	-19.8	High Ch.11 2462MHz, 1Mbps, EUT On Side
4922.565	28.0	6.2	1.0	66.0	3.0	0.0	Horz	AV	0.0	34.2	54.0	-19.8	High Ch.11 2462MHz, 36Mbps, EUT Vert
7386.583	39.3	14.5	1.0	110.0	3.0	0.0	Horz	PK	0.0	53.8	74.0	-20.2	High Ch.11 2462MHz, 1Mbps, EUT Vert
7312.433	38.9	14.0	1.0	82.0	3.0	0.0	Vert	PK	0.0	52.9	74.0	-21.1	Mid Ch.6 2437MHz, 1Mbps, EUT On Side
7310.025	38.7	14.0	1.0	110.0	3.0	0.0	Horz	PK	0.0	52.7	74.0	-21.3	Mid Ch.6 2437MHz, 1Mbps, EUT Vert
7383.508	38.2	14.5	1.0	82.0	3.0	0.0	Vert	PK	0.0	52.7	74.0	-21.3	High Ch.11 2462MHz, 1Mbps, EUT On Side
12062.000	31.3	-1.9	1.0	40.0	3.0	0.0	Horz	AV	0.0	29.4	54.0	-24.6	Low Ch.1 2412MHz, 1Mbps, EUT Vert
12059.990	31.2	-1.9	1.4	268.0	3.0	0.0	Vert	AV	0.0	29.3	54.0	-24.7	Low Ch.1 2412MHz, 1Mbps, EUT On Side
12183.150	30.1	-0.8	1.0	35.0	3.0	0.0	Horz	AV	0.0	29.3	54.0	-24.7	Mid Ch.6 2437MHz, 1Mbps, EUT Vert
12183.020	30.1	-0.8	1.4	268.0	3.0	0.0	Vert	AV	0.0	29.3	54.0	-24.7	Mid Ch.6 2437MHz, 1Mbps, EUT On Side
12308.940	29.6	-0.4	3.2	204.0	3.0	0.0	Horz	AV	0.0	29.2	54.0	-24.8	High Ch.11 2462MHz, 1Mbps, EUT Vert
12311.200	29.6	-0.4	1.0	50.0	3.0	0.0	Vert	AV	0.0	29.2	54.0	-24.8	High Ch.11 2462MHz, 1Mbps, EUT On Side
14471.120	38.3	10.8	1.4	268.0	3.0	0.0	Horz	PK	0.0	49.1	74.0	-24.9	Low Ch.1 2412MHz, 1Mbps, EUT Vert
14472.630	38.2	10.8	1.0	46.0	3.0	0.0	Vert	PK	0.0	49.0	74.0	-25.0	Low Ch.1 2412MHz, 1Mbps, EUT On Side

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
4924.035	40.5	6.2	1.0	66.0	3.0	0.0	Horz	PK	0.0	46.7	74.0	-27.3	High Ch.11 2462MHz, 11Mbps, EUT Vert
4924.400	40.0	6.2	1.7	99.0	3.0	0.0	Vert	PK	0.0	46.2	74.0	-27.8	High Ch.11 2462MHz, 1Mbps, EUT On Side
4825.410	40.1	5.8	1.8	315.0	3.0	0.0	Horz	PK	0.0	45.9	74.0	-28.1	Low Ch.1 2412MHz, 1Mbps, EUT Vert
4924.125	39.7	6.2	1.0	65.0	3.0	0.0	Horz	PK	0.0	45.9	74.0	-28.1	High Ch.11 2462MHz, 1Mbps, EUT Vert
4925.380	39.4	6.2	1.0	66.0	3.0	0.0	Horz	PK	0.0	45.6	74.0	-28.4	High Ch.11 2462MHz, 54Mbps, EUT Horz
4923.515	39.3	6.2	1.2	186.0	3.0	0.0	Vert	PK	0.0	45.5	74.0	-28.5	High Ch.11 2462MHz, 1Mbps, EUT Vert
4923.400	39.2	6.2	1.0	66.0	3.0	0.0	Horz	PK	0.0	45.4	74.0	-28.6	High Ch.11 2462MHz, 36Mbps, EUT Vert
4923.935	39.1	6.2	1.0	66.0	3.0	0.0	Horz	PK	0.0	45.3	74.0	-28.7	High Ch.11 2462MHz, MCS7, EUT Horz
4824.145	39.4	5.8	1.0	110.0	3.0	0.0	Vert	PK	0.0	45.2	74.0	-28.8	Low Ch.1 2412MHz, 1Mbps, EUT On Side
4923.745	39.0	6.2	1.0	73.0	3.0	0.0	Horz	PK	0.0	45.2	74.0	-28.8	High Ch.11 2462MHz, 1Mbps, EUT Horz
4923.605	38.9	6.2	1.0	66.0	3.0	0.0	Horz	PK	0.0	45.1	74.0	-28.9	High Ch.11 2462MHz, 6Mbps, EUT Horz
4873.608	39.0	6.0	1.0	89.0	3.0	0.0	Horz	PK	0.0	45.0	74.0	-29.0	Mid Ch.6 2437MHz, 1Mbps, EUT Vert
4924.145	38.7	6.2	1.0	93.0	3.0	0.0	Vert	PK	0.0	44.9	74.0	-29.1	High Ch.11 2462MHz, 1Mbps, EUT Horz
4873.958	38.9	6.0	1.0	117.0	3.0	0.0	Vert	PK	0.0	44.9	74.0	-29.1	Mid Ch.6 2437MHz, 1Mbps, EUT On Side
4923.490	38.6	6.2	1.0	66.0	3.0	0.0	Horz	PK	0.0	44.8	74.0	-29.2	High Ch.11 2462MHz, MCS0, EUT Horz
4925.040	38.4	6.2	1.0	117.0	3.0	0.0	Horz	PK	0.0	44.6	74.0	-29.4	High Ch.11 2462MHz, 1Mbps, EUT On Side
12059.950	42.9	-1.9	1.0	40.0	3.0	0.0	Horz	PK	0.0	41.0	74.0	-33.0	Low Ch.1 2412MHz, 1Mbps, EUT Vert
12062.090	41.8	-1.9	1.4	268.0	3.0	0.0	Vert	PK	0.0	39.9	74.0	-34.1	Low Ch.1 2412MHz, 1Mbps, EUT On Side
12184.520	40.7	-0.8	1.0	35.0	3.0	0.0	Horz	PK	0.0	39.9	74.0	-34.1	Mid Ch.6 2437MHz, 1Mbps, EUT Vert
12309.330	40.3	-0.4	3.2	204.0	3.0	0.0	Horz	PK	0.0	39.9	74.0	-34.1	High Ch.11 2462MHz, 1Mbps, EUT Vert
12309.710	40.1	-0.4	1.0	50.0	3.0	0.0	Vert	PK	0.0	39.7	74.0	-34.3	High Ch.11 2462MHz, 1Mbps, EUT On Side
12184.320	40.3	-0.8	1.4	268.0	3.0	0.0	Vert	PK	0.0	39.5	74.0	-34.5	Mid Ch.6 2437MHz, 1Mbps, EUT On Side



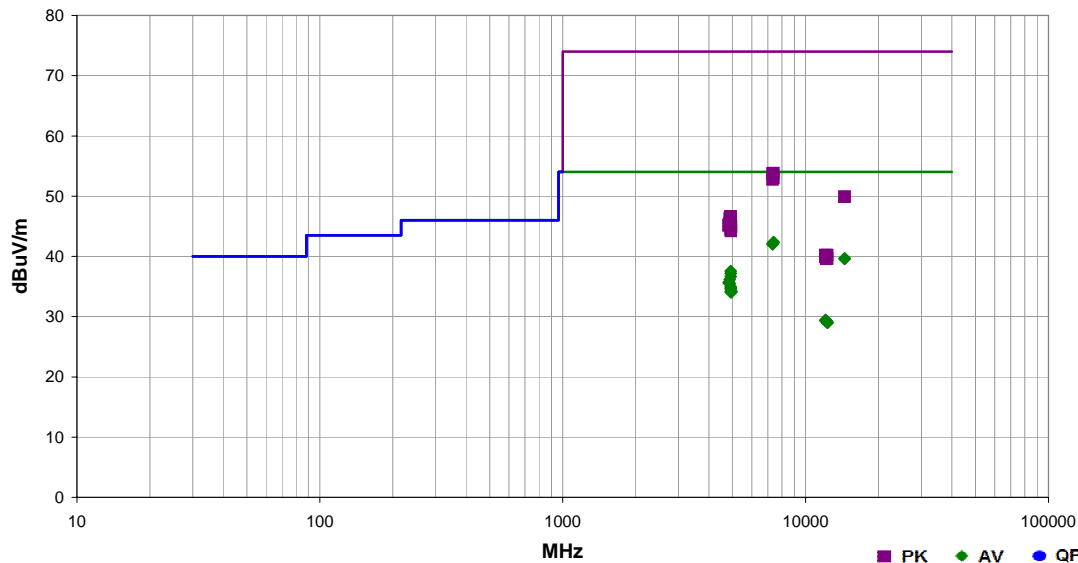
# SPURIOUS RADIATED EMISSIONS

PSA-ESCI 2014.11.19.1  
EmiR5 2014.11.19.2

Work Order:	ELIM0010	Date:	01/15/15	
Project:	None	Temperature:	22 °C	
Job Site:	EV01	Humidity:	34.1% RH	
Serial Number:	0C2690BDC4E	Barometric Pres.:	1022 mbar	
EUT: IMP003				
Configuration: 1				
Customer: Electric Imp, Inc.				
Attendees: None				
EUT Power: 5 VDC				
Operating Mode:		Continuously transmitting with the PIFA antenna		
Deviations:		None		
Comments:		Please reference the data comments for EUT reinitiation, frequency, modulation and channel.		

Test Specifications	Test Method
FCC 15.247:2015	ANSI C63.10:2009

Run #	12	Test Distance (m)	3	Antenna Height(s)	1 to 4(m)	Results	Pass
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Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
7387.433	27.8	14.5	1.0	126.0	3.0	0.0	Vert	AV	0.0	42.3	54.0	-11.7	High Ch.11 2462MHz, 1Mbps, EUT On Side
7386.458	27.8	14.5	2.1	303.0	3.0	0.0	Horz	AV	0.0	42.3	54.0	-11.7	High Ch.11 2462MHz, 1Mbps, EUT Horz
7312.442	28.0	14.0	1.0	0.0	3.0	0.0	Vert	AV	0.0	42.0	54.0	-12.0	Mid Ch.6 2437MHz, 1Mbps, EUT On Side
7310.042	28.0	14.0	3.7	192.0	3.0	0.0	Horz	AV	0.0	42.0	54.0	-12.0	Mid Ch.6 2437MHz, 1Mbps, EUT Horz
14472.300	28.9	10.8	2.9	335.0	3.0	0.0	Vert	AV	0.0	39.7	54.0	-14.3	Low Ch.1 2412MHz, 1Mbps, EUT On Side
14469.580	28.8	10.8	1.0	0.0	3.0	0.0	Horz	AV	0.0	39.6	54.0	-14.4	Low Ch.1 2412MHz, 1Mbps, EUT Horz
4924.025	31.4	6.2	1.0	24.0	3.0	0.0	Horz	AV	0.0	37.6	54.0	-16.4	High Ch.11 2462MHz, 1Mbps, EUT Horz
4923.950	31.0	6.2	1.0	206.0	3.0	0.0	Vert	AV	0.0	37.2	54.0	-16.8	High Ch.11 2462MHz, 1Mbps, EUT On Side
4923.967	30.5	6.2	1.0	79.0	3.0	0.0	Horz	AV	0.0	36.7	54.0	-17.3	High Ch.11 2462MHz, 1Mbps, EUT Vert
4874.008	30.2	6.0	1.0	38.0	3.0	0.0	Horz	AV	0.0	36.2	54.0	-17.8	Mid Ch.6 2437MHz, 1Mbps, EUT Horz
4823.942	29.9	5.8	1.0	20.0	3.0	0.0	Horz	AV	0.0	35.7	54.0	-18.3	Low Ch.1 2412MHz, 1Mbps, EUT Horz
4823.908	29.8	5.8	1.2	99.0	3.0	0.0	Vert	AV	0.0	35.6	54.0	-18.4	Low Ch.1 2412MHz, 1Mbps, EUT On Side
4874.083	29.5	6.0	1.0	340.0	3.0	0.0	Vert	AV	0.0	35.5	54.0	-18.5	Mid Ch.6 2437MHz, 1Mbps, EUT On Side
4924.000	28.8	6.2	1.0	40.0	3.0	0.0	Horz	AV	0.0	35.0	54.0	-19.0	High Ch.11 2462MHz, 1Mbps, EUT Horz
4923.883	28.6	6.2	1.0	345.0	3.0	0.0	Vert	AV	0.0	34.8	54.0	-19.2	High Ch.11 2462MHz, 1Mbps, EUT Vert
4924.050	28.4	6.2	1.0	350.0	3.0	0.0	Horz	AV	0.0	34.6	54.0	-19.4	High Ch.11 2462MHz, 1Mbps, EUT On Side
4926.383	28.1	6.2	1.0	40.0	3.0	0.0	Horz	AV	0.0	34.3	54.0	-19.7	High Ch.11 2462MHz, MCS0, EUT Horz
4926.242	28.0	6.2	1.0	40.0	3.0	0.0	Horz	AV	0.0	34.2	54.0	-19.8	High Ch.11 2462MHz, 6Mbps, EUT Horz
4925.558	28.0	6.2	1.0	40.0	3.0	0.0	Horz	AV	0.0	34.2	54.0	-19.8	High Ch.11 2462MHz, 54Mbps, EUT Horz
4924.775	28.0	6.2	1.0	40.0	3.0	0.0	Horz	AV	0.0	34.2	54.0	-19.8	High Ch.11 2462MHz, 36Mbps, EUT Horz
4925.025	27.9	6.2	1.0	40.0	3.0	0.0	Horz	AV	0.0	34.1	54.0	-19.9	High Ch.11 2462MHz, MCS7, EUT Horz
4924.667	27.9	6.2	1.1	3.0	3.0	0.0	Vert	AV	0.0	34.1	54.0	-19.9	High Ch.11 2462MHz, 1Mbps, EUT Horz
7387.083	39.3	14.5	1.0	126.0	3.0	0.0	Vert	PK	0.0	53.8	74.0	-20.2	High Ch.11 2462MHz, 1Mbps, EUT On Side
7312.217	39.7	14.0	3.7	192.0	3.0	0.0	Horz	PK	0.0	53.7	74.0	-20.3	Mid Ch.6 2437MHz, 1Mbps, EUT Horz
7385.175	38.5	14.5	2.1	303.0	3.0	0.0	Horz	PK	0.0	53.0	74.0	-21.0	High Ch.11 2462MHz, 1Mbps, EUT Horz
7311.325	38.7	14.0	1.0	0.0	3.0	0.0	Vert	PK	0.0	52.7	74.0	-21.3	Mid Ch.6 2437MHz, 1Mbps, EUT On Side
14472.530	39.1	10.8	1.0	0.0	3.0	0.0	Horz	PK	0.0	49.9	74.0	-24.1	Low Ch.1 2412MHz, 1Mbps, EUT Horz
14472.140	39.1	10.8	2.9	335.0	3.0	0.0	Vert	PK	0.0	49.9	74.0	-24.1	Low Ch.1 2412MHz, 1Mbps, EUT On Side
12061.650	31.3	-1.9	1.1	91.0	3.0	0.0	Horz	AV	0.0	29.4	54.0	-24.6	Low Ch.1 2412MHz, 1Mbps, EUT Horz
12062.370	31.2	-1.9	2.2	64.0	3.0	0.0	Vert	AV	0.0	29.3	54.0	-24.7	Low Ch.1 2412MHz, 1Mbps, EUT On Side
12182.630	30.1	-0.8	1.0	319.0	3.0	0.0	Vert	AV	0.0	29.3	54.0	-24.7	Mid Ch.6 2437MHz, 1Mbps, EUT On Side
12183.790	30.0	-0.8	1.0	329.0	3.0	0.0	Horz	AV	0.0	29.2	54.0	-24.8	Mid Ch.6 2437MHz, 1Mbps, EUT Horz
12308.170	29.4	-0.4	1.0	280.0	3.0	0.0	Vert	AV	0.0	29.0	54.0	-25.0	High Ch.11 2462MHz, 1Mbps, EUT On Side
12310.850	29.4	-0.4	3.3	271.0	3.0	0.0	Horz	AV	0.0	29.0	54.0	-25.0	High Ch.11 2462MHz, 1Mbps, EUT Horz

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
4924.058	40.5	6.2	1.0	206.0	3.0	0.0	Vert	PK	0.0	46.7	74.0	-27.3	High Ch.11 2462MHz, 1Mbps, EUT On Side
4924.217	40.4	6.2	1.0	79.0	3.0	0.0	Horz	PK	0.0	46.6	74.0	-27.4	High Ch.11 2462MHz, 1Mbps, EUT Vert
4923.842	40.3	6.2	1.0	24.0	3.0	0.0	Horz	PK	0.0	46.5	74.0	-27.5	High Ch.11 2462MHz, 1Mbps, EUT Horz
4874.258	40.3	6.0	1.0	340.0	3.0	0.0	Vert	PK	0.0	46.3	74.0	-27.7	Mid Ch.6 2437MHz, 1Mbps, EUT On Side
4921.742	39.5	6.2	1.0	40.0	3.0	0.0	Horz	PK	0.0	45.7	74.0	-28.4	High Ch.11 2462MHz, 1Mbps, EUT Horz
4874.300	39.5	6.0	1.0	38.0	3.0	0.0	Horz	PK	0.0	45.5	74.0	-28.5	Mid Ch.6 2437MHz, 1Mbps, EUT Horz
4923.992	39.2	6.2	1.0	345.0	3.0	0.0	Vert	PK	0.0	45.4	74.0	-28.6	High Ch.11 2462MHz, 1Mbps, EUT Vert
4922.725	39.1	6.2	1.0	40.0	3.0	0.0	Horz	PK	0.0	45.3	74.0	-28.7	High Ch.11 2462MHz, 6Mbps, EUT Horz
4824.192	39.4	5.8	1.2	99.0	3.0	0.0	Vert	PK	0.0	45.2	74.0	-28.8	Low Ch.1 2412MHz, 1Mbps, EUT On Side
4925.758	39.0	6.2	1.0	350.0	3.0	0.0	Horz	PK	0.0	45.2	74.0	-28.8	High Ch.11 2462MHz, 1Mbps, EUT On Side
4824.350	39.3	5.8	1.0	20.0	3.0	0.0	Horz	PK	0.0	45.1	74.0	-28.9	Low Ch.1 2412MHz, 1Mbps, EUT Horz
4923.325	38.9	6.2	1.0	40.0	3.0	0.0	Horz	PK	0.0	45.1	74.0	-28.9	High Ch.11 2462MHz, MCS0, EUT Horz
4925.933	38.8	6.2	1.0	40.0	3.0	0.0	Horz	PK	0.0	45.0	74.0	-29.0	High Ch.11 2462MHz, MCS7, EUT Horz
4926.333	38.7	6.2	1.0	40.0	3.0	0.0	Horz	PK	0.0	44.9	74.0	-29.1	High Ch.11 2462MHz, 54Mbps, EUT Horz
4923.867	38.3	6.2	1.0	40.0	3.0	0.0	Horz	PK	0.0	44.5	74.0	-29.5	High Ch.11 2462MHz, 36Mbps, EUT Horz
4926.400	38.0	6.2	1.1	3.0	3.0	0.0	Vert	PK	0.0	44.2	74.0	-29.8	High Ch.11 2462MHz, 1Mbps, EUT Horz
12059.840	42.1	-1.9	2.2	64.0	3.0	0.0	Vert	PK	0.0	40.2	74.0	-33.8	Low Ch.1 2412MHz, 1Mbps, EUT On Side
12308.660	40.6	-0.4	3.3	271.0	3.0	0.0	Horz	PK	0.0	40.2	74.0	-33.8	High Ch.11 2462MHz, 1Mbps, EUT Horz
12060.280	41.8	-1.9	1.1	91.0	3.0	0.0	Horz	PK	0.0	39.9	74.0	-34.1	Low Ch.1 2412MHz, 1Mbps, EUT Horz
12183.400	40.7	-0.8	1.0	319.0	3.0	0.0	Vert	PK	0.0	39.9	74.0	-34.1	Mid Ch.6 2437MHz, 1Mbps, EUT On Side
12309.030	40.0	-0.4	1.0	280.0	3.0	0.0	Vert	PK	0.0	39.6	74.0	-34.4	High Ch.11 2462MHz, 1Mbps, EUT On Side
12182.780	40.4	-0.8	1.0	329.0	3.0	0.0	Horz	PK	0.0	39.6	74.0	-34.4	Mid Ch.6 2437MHz, 1Mbps, EUT Horz





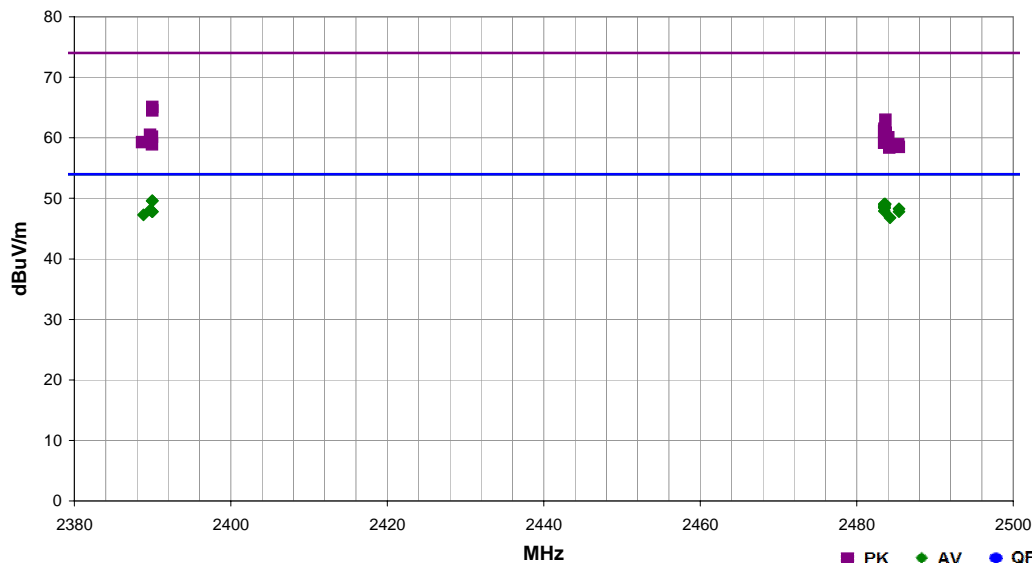
# SPURIOUS RADIATED EMISSIONS

PSA-ESCI 2014.11.19.1  
EmiR5 2014.11.19.2

Work Order:	ELIM0010	Date:	01/16/15	
Project:	None	Temperature:	23.6 °C	
Job Site:	EV01	Humidity:	39.7% RH	
Serial Number:	0C2690BDC49	Barometric Pres.:	1022 mbar	
EUT:		IMP003		
Configuration:		2		
Customer:		Electric Imp, Inc.		
Attendees:		None		
EUT Power:		5 VDC		
Operating Mode:		Continuously transmitting with a Chip antenna		
Deviations:		None		
Comments:		Please reference the data comments for EUT orientation, frequency, modulation and channel.		

Test Specifications	Test Method
FCC 15.247:2015	ANSI C63.10:2009

Run #	27	Test Distance (m)	3	Antenna Height(s)	1 to 4(m)	Results	Pass
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Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
2389.930	34.2	-4.6	1.0	293.0	3.0	20.0	Horz	AV	0.0	49.6	54.0	-4.4	Low Ch.1 2412MHz, 6Mbps, EUT Horz
2389.980	34.2	-4.6	1.0	293.0	3.0	20.0	Horz	AV	0.0	49.6	54.0	-4.4	Low Ch.1 2412MHz, MCS0, EUT Horz
2483.633	33.5	-4.4	1.0	290.0	3.0	20.0	Horz	AV	0.0	49.1	54.0	-4.9	High Ch.11 2462MHz, MCS0, EUT Horz
2483.500	33.5	-4.4	1.0	290.0	3.0	20.0	Horz	AV	0.0	49.1	54.0	-4.9	High Ch.11 2462MHz, 36Mbps, EUT Horz
2483.597	33.4	-4.4	1.0	290.0	3.0	20.0	Horz	AV	0.0	49.0	54.0	-5.0	High Ch.11 2462MHz, 54Mbps, EUT Horz
2483.510	33.3	-4.4	1.0	290.0	3.0	20.0	Horz	AV	0.0	48.9	54.0	-5.1	High Ch.11 2462MHz, MCS7, EUT Horz
2483.503	33.0	-4.4	1.0	205.0	3.0	20.0	Horz	AV	0.0	48.6	54.0	-5.4	High Ch.11 2462MHz, 6Mbps, EUT Horz
2483.523	33.0	-4.4	1.0	48.0	3.0	20.0	Vert	AV	0.0	48.6	54.0	-5.4	High Ch.11 2462MHz, 6Mbps, EUT Vert
2483.510	32.9	-4.4	1.0	287.0	3.0	20.0	Horz	AV	0.0	48.5	54.0	-5.5	High Ch.11 2462MHz, 6Mbps, EUT On Side
2483.540	32.8	-4.4	1.0	97.0	3.0	20.0	Vert	AV	0.0	48.4	54.0	-5.6	High Ch.11 2462MHz, 6Mbps, EUT On Side
2485.413	32.7	-4.4	1.0	290.0	3.0	20.0	Horz	AV	0.0	48.3	54.0	-5.7	High Ch.11 2462MHz, 1Mbps, EUT Horz
2389.677	32.7	-4.6	1.0	293.0	3.0	20.0	Horz	AV	0.0	48.1	54.0	-5.9	Low Ch.1 2412MHz, 1Mbps, EUT Horz
2483.533	32.3	-4.4	1.0	287.0	3.0	20.0	Horz	AV	0.0	47.9	54.0	-6.1	High Ch.11 2462MHz, 6Mbps, EUT Vert
2485.393	32.2	-4.4	1.0	316.0	3.0	20.0	Horz	AV	0.0	47.8	54.0	-6.2	High Ch.11 2462MHz, 11Mbps, EUT Horz
2389.927	32.4	-4.6	1.0	345.0	3.0	20.0	Vert	AV	0.0	47.8	54.0	-6.2	Low Ch.1 2412MHz, 6Mbps, EUT Vert
2389.973	32.4	-4.6	1.0	345.0	3.0	20.0	Vert	AV	0.0	47.8	54.0	-6.2	Low Ch.1 2412MHz, MCS0, EUT Vert
2388.843	31.9	-4.6	1.0	345.0	3.0	20.0	Vert	AV	0.0	47.3	54.0	-6.7	Low Ch.1 2412MHz, 1Mbps, EUT Vert
2484.270	31.2	-4.4	1.0	171.0	3.0	20.0	Vert	AV	0.0	46.8	54.0	-7.2	High Ch.11 2462MHz, 6Mbps, EUT Horz
2389.967	49.7	-4.6	1.0	293.0	3.0	20.0	Horz	PK	0.0	65.1	74.0	-8.9	Low Ch.1 2412MHz, 6Mbps, EUT Horz
2389.963	49.1	-4.6	1.0	293.0	3.0	20.0	Horz	PK	0.0	64.5	74.0	-9.5	Low Ch.1 2412MHz, 6Mbps, EUT Horz
2483.677	47.4	-4.4	1.0	290.0	3.0	20.0	Horz	PK	0.0	63.0	74.0	-11.0	High Ch.11 2462MHz, MCS0, EUT Horz
2483.550	45.9	-4.4	1.0	48.0	3.0	20.0	Vert	PK	0.0	61.5	74.0	-12.5	High Ch.11 2462MHz, 6Mbps, EUT Vert
2483.557	45.6	-4.4	1.0	205.0	3.0	20.0	Horz	PK	0.0	61.2	74.0	-12.8	High Ch.11 2462MHz, 6Mbps, EUT Horz
2483.523	45.5	-4.4	1.0	290.0	3.0	20.0	Horz	PK	0.0	61.1	74.0	-12.9	High Ch.11 2462MHz, MCS7, EUT Horz
2483.737	45.3	-4.4	1.0	290.0	3.0	20.0	Horz	PK	0.0	60.9	74.0	-13.1	High Ch.11 2462MHz, 54Mbps, EUT Horz
2483.683	45.2	-4.4	1.0	290.0	3.0	20.0	Horz	PK	0.0	60.8	74.0	-13.2	High Ch.11 2462MHz, 36Mbps, EUT Horz
2389.697	45.1	-4.6	1.0	345.0	3.0	20.0	Vert	PK	0.0	60.5	74.0	-13.5	Low Ch.1 2412MHz, MCS0, EUT Vert
2389.943	44.8	-4.6	1.0	345.0	3.0	20.0	Vert	PK	0.0	60.2	74.0	-13.8	Low Ch.1 2412MHz, 6Mbps, EUT Vert
2484.063	44.5	-4.4	1.0	287.0	3.0	20.0	Horz	PK	0.0	60.1	74.0	-13.9	High Ch.11 2462MHz, 6Mbps, EUT On Side
2483.813	44.3	-4.4	1.0	97.0	3.0	20.0	Vert	PK	0.0	59.9	74.0	-14.1	High Ch.11 2462MHz, 6Mbps, EUT On Side
2388.653	43.9	-4.6	1.0	345.0	3.0	20.0	Vert	PK	0.0	59.3	74.0	-14.7	Low Ch.1 2412MHz, 1Mbps, EUT Vert
2483.523	43.6	-4.4	1.0	287.0	3.0	20.0	Horz	PK	0.0	59.2	74.0	-14.8	High Ch.11 2462MHz, 6Mbps, EUT Vert
2485.307	43.3	-4.4	1.0	290.0	3.0	20.0	Horz	PK	0.0	58.9	74.0	-15.1	High Ch.11 2462MHz, 1Mbps, EUT Horz
2389.947	43.5	-4.6	1.0	293.0	3.0	20.0	Horz	PK	0.0	58.9	74.0	-15.1	Low Ch.1 2412MHz, 1Mbps, EUT Horz

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
2485.387	42.9	-4.4	1.0	171.0	3.0	20.0	Vert	PK	0.0	58.5	74.0	-15.5	High Ch.11 2462MHz, 6Mbps, EUT Horz
2484.180	42.8	-4.4	1.0	316.0	3.0	20.0	Horz	PK	0.0	58.4	74.0	-15.6	High Ch.11 2462MHz, 11Mbps, EUT Horz



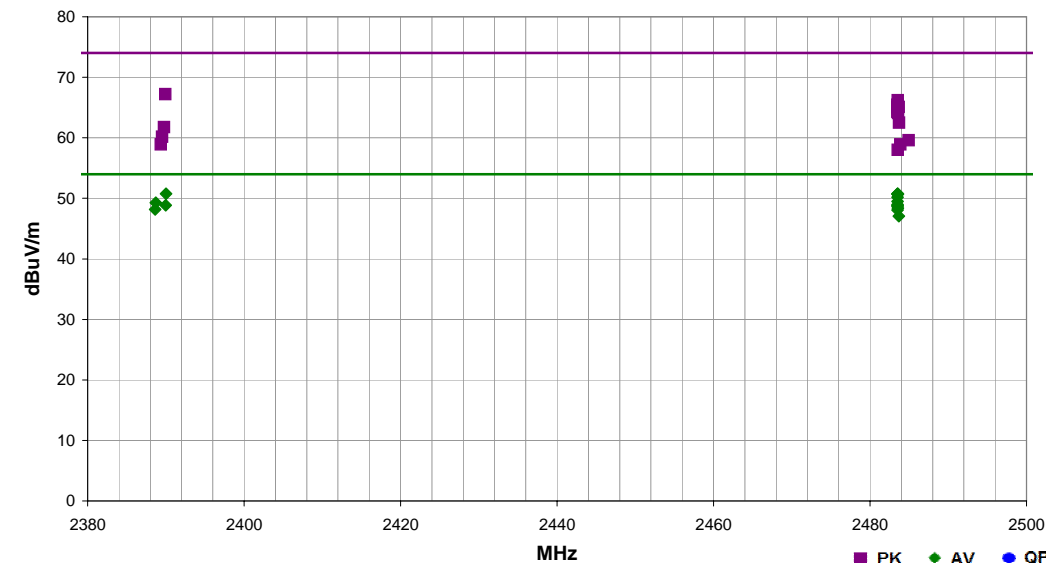
# SPURIOUS RADIATED EMISSIONS

PSA-ESCI 2014.11.19.1  
EmiR5 2014.11.19.2

Work Order:	ELIM0010	Date:	01/16/15	
Project:	None	Temperature:	22 °C	
Job Site:	EV01	Humidity:	34.1% RH	
Serial Number:	0C2690BDC4E	Barometric Pres.:	1022 mbar	
EUT:		IMP003		
Configuration:	1			
Customer:	Electric Imp, Inc.			
Attendees:	None			
EUT Power:	5 VDC			
Operating Mode:	Continuously transmitting with the PIFA antenna			
Deviations:	None			
Comments:	Please reference the data comments for EUT reinitiation, frequency, modulation and channel.			

Test Specifications	Test Method
FCC 15.247:2015	ANSI C63.10:2009

Run #	13	Test Distance (m)	3	Antenna Height(s)	1 to 4(m)	Results	Pass
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Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
2483.503	35.2	-4.4	1.0	285.0	3.0	20.0	Horz	AV	0.0	50.8	54.0	-3.2	High Ch.11 2462MHz, 6Mbps, EUT Horz
2390.000	35.4	-4.6	1.0	286.0	3.0	20.0	Horz	AV	0.0	50.8	54.0	-3.2	Low Ch.1 2412MHz, 6Mbps, EUT Horz
2483.557	35.1	-4.4	1.0	288.0	3.0	20.0	Horz	AV	0.0	50.7	54.0	-3.3	High Ch.11 2462MHz, 36Mbps, EUT Horz
2483.553	35.1	-4.4	1.0	288.0	3.0	20.0	Horz	AV	0.0	50.7	54.0	-3.3	High Ch.11 2462MHz, 54Mbps, EUT Horz
2483.527	35.1	-4.4	1.0	285.0	3.0	20.0	Horz	AV	0.0	50.7	54.0	-3.3	High Ch.11 2462MHz, MCS0, EUT Horz
2483.513	34.6	-4.4	1.0	285.0	3.0	20.0	Horz	AV	0.0	50.2	54.0	-3.8	High Ch.11 2462MHz, MCS7, EUT Horz
2483.520	33.9	-4.4	1.0	359.0	3.0	20.0	Vert	AV	0.0	49.5	54.0	-4.5	High Ch.11 2462MHz, 6Mbps, EUT Vert
2388.697	33.9	-4.6	1.0	286.0	3.0	20.0	Horz	AV	0.0	49.3	54.0	-4.7	Low Ch.1 2412MHz, 1Mbps, EUT Horz
2483.513	33.4	-4.4	1.0	285.0	3.0	20.0	Horz	AV	0.0	49.0	54.0	-5.0	High Ch.11 2462MHz, 6Mbps, EUT On Side
2389.973	33.5	-4.6	1.0	331.0	3.0	20.0	Vert	AV	0.0	48.9	54.0	-5.1	Low Ch.1 2412MHz, 6Mbps, EUT Vert
2483.507	33.2	-4.4	1.0	272.0	3.0	20.0	Vert	AV	0.0	48.8	54.0	-5.2	High Ch.11 2462MHz, 6Mbps, EUT On Side
2483.510	33.1	-4.4	1.0	271.0	3.0	20.0	Horz	AV	0.0	48.7	54.0	-5.3	High Ch.11 2462MHz, 6Mbps, EUT Vert
2483.563	32.8	-4.4	1.0	289.0	3.0	20.0	Horz	AV	0.0	48.4	54.0	-5.6	High Ch.11 2462MHz, 11Mbps, EUT Horz
2388.633	32.8	-4.6	1.0	339.0	3.0	20.0	Vert	AV	0.0	48.2	54.0	-5.8	Low Ch.1 2412MHz, 1Mbps, EUT Vert
2483.503	32.5	-4.4	1.0	285.0	3.0	20.0	Horz	AV	0.0	48.1	54.0	-5.9	High Ch.11 2462MHz, 1Mbps, EUT Horz
2389.920	51.8	-4.6	1.0	286.0	3.0	20.0	Horz	PK	0.0	67.2	74.0	-6.8	Low Ch.1 2412MHz, 6Mbps, EUT Horz
2483.680	31.5	-4.4	2.0	81.0	3.0	20.0	Vert	AV	0.0	47.1	54.0	-6.9	High Ch.11 2462MHz, 6Mbps, EUT Horz
2483.540	50.6	-4.4	1.0	285.0	3.0	20.0	Horz	PK	0.0	66.2	74.0	-7.8	High Ch.11 2462MHz, 6Mbps, EUT Horz
2483.510	49.9	-4.4	1.0	359.0	3.0	20.0	Vert	PK	0.0	65.5	74.0	-8.5	High Ch.11 2462MHz, 6Mbps, EUT Vert
2483.690	49.5	-4.4	1.0	285.0	3.0	20.0	Horz	PK	0.0	65.1	74.0	-8.9	High Ch.11 2462MHz, MCS0, EUT Horz
2483.503	49.5	-4.4	1.0	288.0	3.0	20.0	Horz	PK	0.0	65.1	74.0	-8.9	High Ch.11 2462MHz, 36Mbps, EUT Horz
2483.543	49.3	-4.4	1.0	288.0	3.0	20.0	Horz	PK	0.0	64.9	74.0	-9.1	High Ch.11 2462MHz, 54Mbps, EUT Horz
2483.543	48.7	-4.4	1.0	285.0	3.0	20.0	Horz	PK	0.0	64.3	74.0	-9.7	High Ch.11 2462MHz, MCS7, EUT Horz
2483.503	48.7	-4.4	1.0	285.0	3.0	20.0	Horz	PK	0.0	64.3	74.0	-9.7	High Ch.11 2462MHz, 6Mbps, EUT On Side
2483.600	48.5	-4.4	1.0	272.0	3.0	20.0	Vert	PK	0.0	64.1	74.0	-9.9	High Ch.11 2462MHz, 6Mbps, EUT On Side
2483.713	46.9	-4.4	1.0	271.0	3.0	20.0	Horz	PK	0.0	62.5	74.0	-11.5	High Ch.11 2462MHz, 6Mbps, EUT Vert
2389.790	46.4	-4.6	1.0	331.0	3.0	20.0	Vert	PK	0.0	61.8	74.0	-12.2	Low Ch.1 2412MHz, 6Mbps, EUT Vert
2389.527	44.8	-4.6	1.0	286.0	3.0	20.0	Horz	PK	0.0	60.2	74.0	-13.8	Low Ch.1 2412MHz, 1Mbps, EUT Horz
2484.943	44.0	-4.4	1.0	289.0	3.0	20.0	Horz	PK	0.0	59.6	74.0	-14.4	High Ch.11 2462MHz, 11Mbps, EUT Horz
2483.900	43.3	-4.4	1.0	285.0	3.0	20.0	Horz	PK	0.0	58.9	74.0	-15.1	High Ch.11 2462MHz, 1Mbps, EUT Horz
2389.367	43.5	-4.6	1.0	339.0	3.0	20.0	Vert	PK	0.0	58.9	74.0	-15.1	Low Ch.1 2412MHz, 1Mbps, EUT Vert
2483.570	42.4	-4.4	2.0	81.0	3.0	20.0	Vert	PK	0.0	58.0	74.0	-16.0	High Ch.11 2462MHz, 6Mbps, EUT Horz

## SPURIOUS CONDUCTED EMISSIONS

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

### TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	2/3/2014	12
MXG Analog Signal Generator	Agilent	N5181A	TIG	3/28/2014	36
Power Meter	Gigatronics	8651A	SPM	9/17/2014	12
Power Sensor	Gigatronics	80701A	SPL	5/28/2014	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2014	12
Spectrum Analyzer	Agilent	E4440A	AFD	7/14/2014	24


### TEST DESCRIPTION

The spurious RF conducted emissions were measured with the EUT set to low, medium and high transmit frequencies. The measurements were made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at the data rate(s) listed in the datasheet. For each transmit frequency, the spectrum was scanned throughout the specified frequency range.

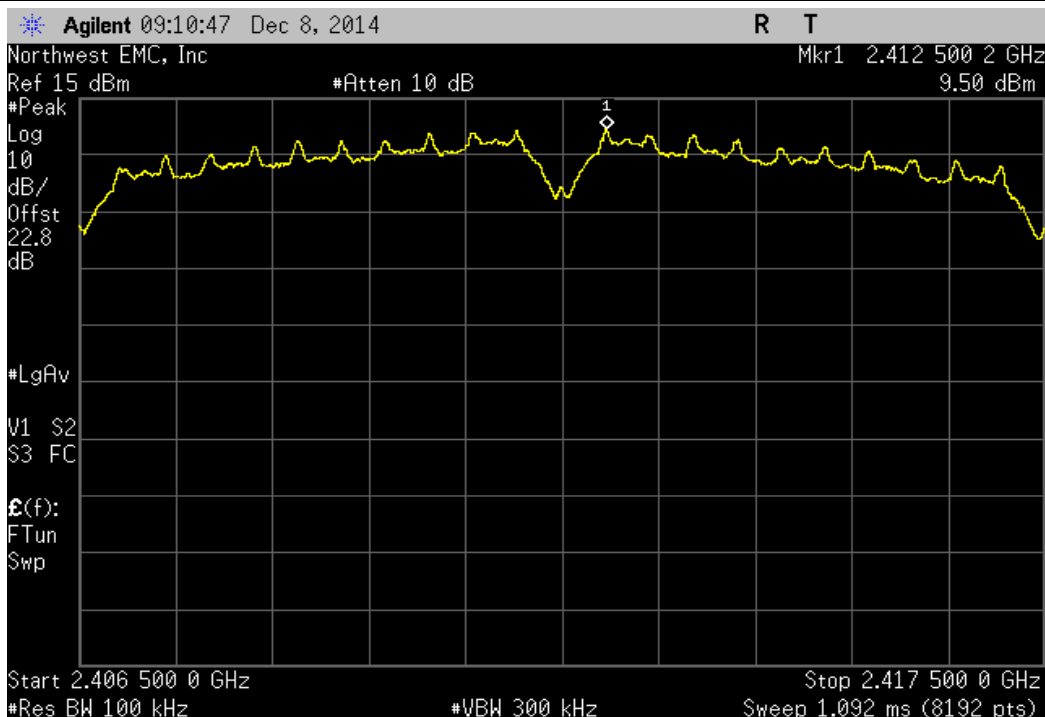


# SPURIOUS CONDUCTED EMISSIONS

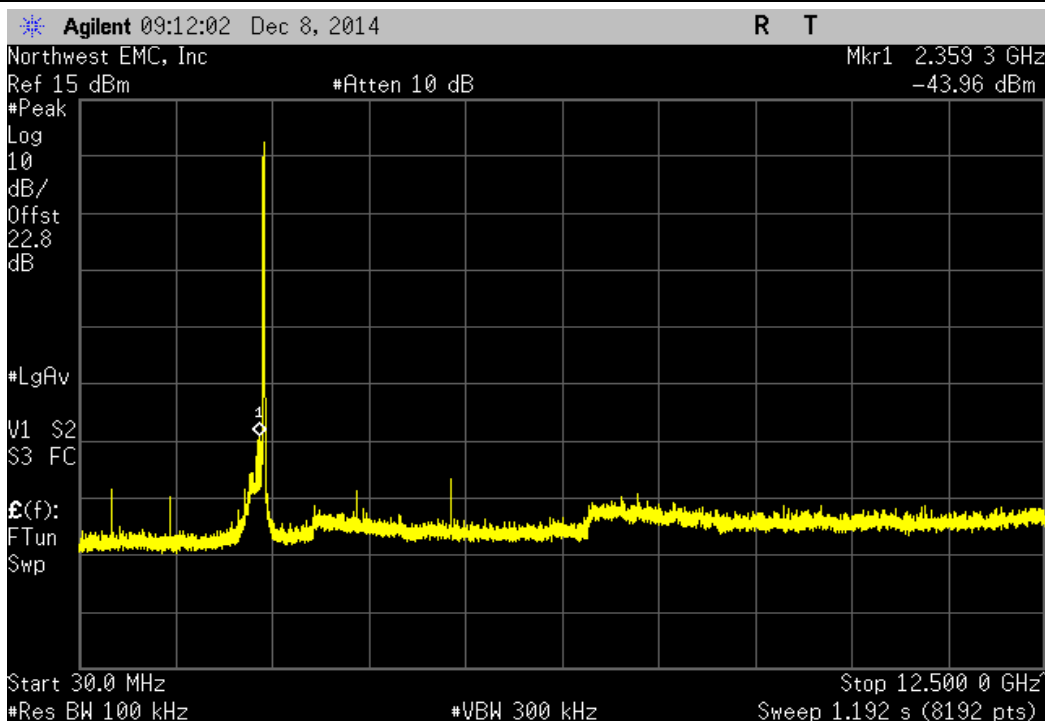
XMit 2014.02.07  
NweTx 2014.11.06

EUT: IMP003-FCC		Work Order: ELIM0007			
Serial Number: 0C2A690BDC4E		Date: 12/08/14			
Customer: Electric Imp, Inc.		Temperature: 21°C			
Attendees: Brandon Harris		Humidity: 38%			
Project: None		Barometric Pres.: 1017.6			
Tested by: Brandon Hobbs		Power: 5 VDC Nominal			
Job Site: EV06		Test Method			
FCC 15.247:2014		ANSI C63.10:2009			
COMMENTS					
EUT was running module scripts in WL.exe. A DC block was used in front of the analyzer.					
DEVIATIONS FROM TEST STANDARD					
None					
Configuration #	1	Signature 			
		Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result
2400 MHz - 2483.5 MHz Band					
802.11(b) 1 Mbps					
	Low Channel 1, 2412 MHz	Fundamental	N/A	N/A	N/A
	Low Channel 1, 2412 MHz	30 MHz - 12.5 GHz	-53.46	-20	Pass
	Low Channel 1, 2412 MHz	12.5 GHz - 25 GHz	-61.08	-20	Pass
	Mid Channel 6, 2437 MHz	Fundamental	N/A	N/A	N/A
	Mid Channel 6, 2437 MHz	30 MHz - 12.5 GHz	-47.04	-20	Pass
	Mid Channel 6, 2437 MHz	12.5 GHz - 25 GHz	-61.9	-20	Pass
	High Channel 11, 2462 MHz	Fundamental	N/A	N/A	N/A
	High Channel 11, 2462 MHz	30 MHz - 12.5 GHz	-54.6	-20	Pass
	High Channel 11, 2462 MHz	12.5 GHz - 25 GHz	-60.86	-20	Pass
802.11(b) 11 Mbps					
	Low Channel 1, 2412 MHz	Fundamental	N/A	N/A	N/A
	Low Channel 1, 2412 MHz	30 MHz - 12.5 GHz	-53.02	-20	Pass
	Low Channel 1, 2412 MHz	12.5 GHz - 25 GHz	-59.93	-20	Pass
	Mid Channel 6, 2437 MHz	Fundamental	N/A	N/A	N/A
	Mid Channel 6, 2437 MHz	30 MHz - 12.5 GHz	-46.97	-20	Pass
	Mid Channel 6, 2437 MHz	12.5 GHz - 25 GHz	-61.46	-20	Pass
	High Channel 11, 2462 MHz	Fundamental	N/A	N/A	N/A
	High Channel 11, 2462 MHz	30 MHz - 12.5 GHz	-53.99	-20	Pass
	High Channel 11, 2462 MHz	12.5 GHz - 25 GHz	-62.04	-20	Pass
802.11(g) 6 Mbps					
	Low Channel 1, 2412 MHz	Fundamental	N/A	N/A	N/A
	Low Channel 1, 2412 MHz	30 MHz - 12.5 GHz	-50.56	-20	Pass
	Low Channel 1, 2412 MHz	12.5 GHz - 25 GHz	-55.6	-20	Pass
	Mid Channel 6, 2437 MHz	Fundamental	N/A	N/A	N/A
	Mid Channel 6, 2437 MHz	30 MHz - 12.5 GHz	-52.65	-20	Pass
	Mid Channel 6, 2437 MHz	12.5 GHz - 25 GHz	-55.16	-20	Pass
	High Channel 11, 2462 MHz	Fundamental	N/A	N/A	N/A
	High Channel 11, 2462 MHz	30 MHz - 12.5 GHz	-52.09	-20	Pass
	High Channel 11, 2462 MHz	12.5 GHz - 25 GHz	-55.08	-20	Pass
802.11(g) 36 Mbps					
	Low Channel 1, 2412 MHz	Fundamental	N/A	N/A	N/A
	Low Channel 1, 2412 MHz	30 MHz - 12.5 GHz	-52.19	-20	Pass
	Low Channel 1, 2412 MHz	12.5 GHz - 25 GHz	-55.76	-20	Pass
	Mid Channel 6, 2437 MHz	Fundamental	N/A	N/A	N/A
	Mid Channel 6, 2437 MHz	30 MHz - 12.5 GHz	-51.79	-20	Pass
	Mid Channel 6, 2437 MHz	12.5 GHz - 25 GHz	-55.32	-20	Pass
	High Channel 11, 2462 MHz	Fundamental	N/A	N/A	N/A
	High Channel 11, 2462 MHz	30 MHz - 12.5 GHz	-53.23	-20	Pass
	High Channel 11, 2462 MHz	12.5 GHz - 25 GHz	-55.79	-20	Pass
802.11(g) 54 Mbps					
	Low Channel 1, 2412 MHz	Fundamental	N/A	N/A	N/A
	Low Channel 1, 2412 MHz	30 MHz - 12.5 GHz	-51.97	-20	Pass
	Low Channel 1, 2412 MHz	12.5 GHz - 25 GHz	-55.57	-20	Pass
	Mid Channel 6, 2437 MHz	Fundamental	N/A	N/A	N/A
	Mid Channel 6, 2437 MHz	30 MHz - 12.5 GHz	-52.04	-20	Pass
	Mid Channel 6, 2437 MHz	12.5 GHz - 25 GHz	-55.32	-20	Pass
	High Channel 11, 2462 MHz	Fundamental	N/A	N/A	N/A
	High Channel 11, 2462 MHz	30 MHz - 12.5 GHz	-52.8	-20	Pass
	High Channel 11, 2462 MHz	12.5 GHz - 25 GHz	-55.9	-20	Pass
802.11(n) MCS0					
	Low Channel 1, 2412 MHz	Fundamental	N/A	N/A	N/A
	Low Channel 1, 2412 MHz	30 MHz - 12.5 GHz	-51.52	-20	Pass
	Low Channel 1, 2412 MHz	12.5 GHz - 25 GHz	-54.64	-20	Pass
	Mid Channel 6, 2437 MHz	Fundamental	N/A	N/A	N/A
	Mid Channel 6, 2437 MHz	30 MHz - 12.5 GHz	-52.18	-20	Pass
	Mid Channel 6, 2437 MHz	12.5 GHz - 25 GHz	-54.41	-20	Pass
	High Channel 11, 2462 MHz	Fundamental	N/A	N/A	N/A
	High Channel 11, 2462 MHz	30 MHz - 12.5 GHz	-51.64	-20	Pass
	High Channel 11, 2462 MHz	12.5 GHz - 25 GHz	-53.67	-20	Pass
802.11(n) MCS7					
	Low Channel 1, 2412 MHz	Fundamental	N/A	N/A	N/A
	Low Channel 1, 2412 MHz	30 MHz - 12.5 GHz	-51.77	-20	Pass
	Low Channel 1, 2412 MHz	12.5 GHz - 25 GHz	-53.97	-20	Pass
	Mid Channel 6, 2437 MHz	Fundamental	N/A	N/A	N/A
	Mid Channel 6, 2437 MHz	30 MHz - 12.5 GHz	-50.58	-20	Pass
	Mid Channel 6, 2437 MHz	12.5 GHz - 25 GHz	-54.69	-20	Pass
	High Channel 11, 2462 MHz	Fundamental	N/A	N/A	N/A
	High Channel 11, 2462 MHz	30 MHz - 12.5 GHz	-51.59	-20	Pass
	High Channel 11, 2462 MHz	12.5 GHz - 25 GHz	-54.66	-20	Pass

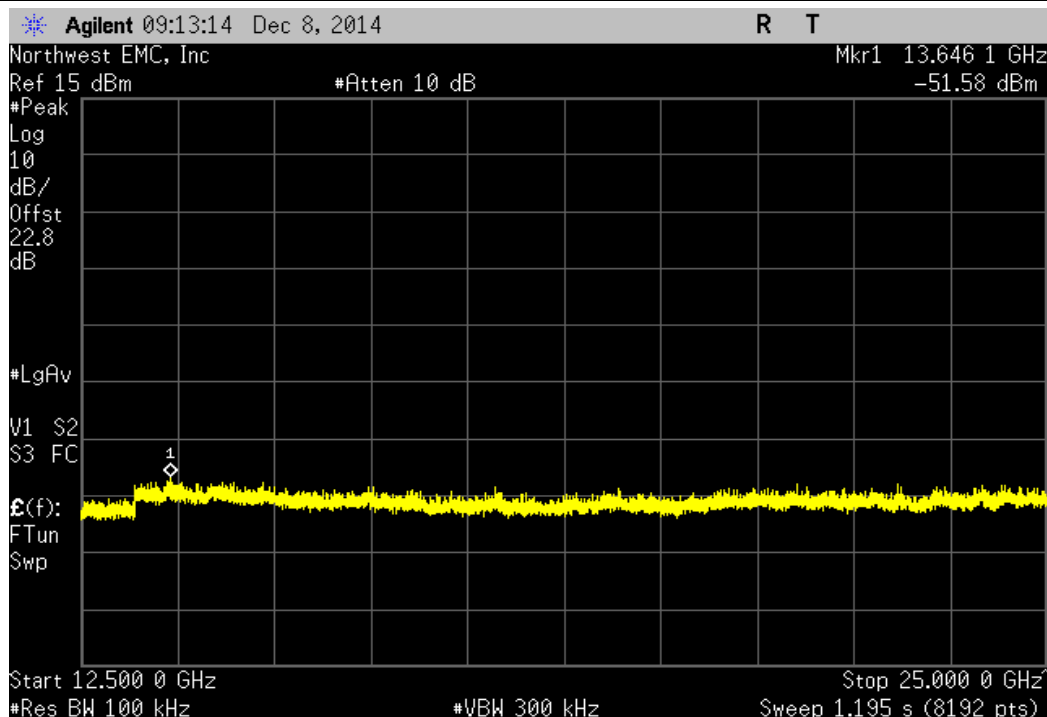
2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	N/A	N/A	N/A	



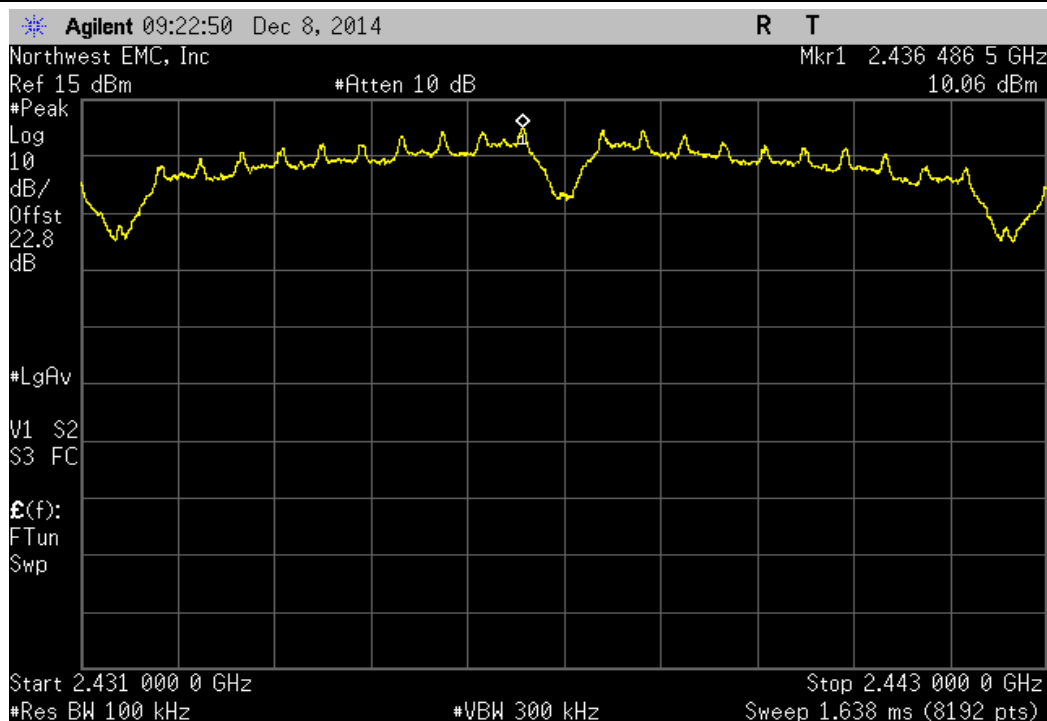
2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz	-53.46	-20	Pass	



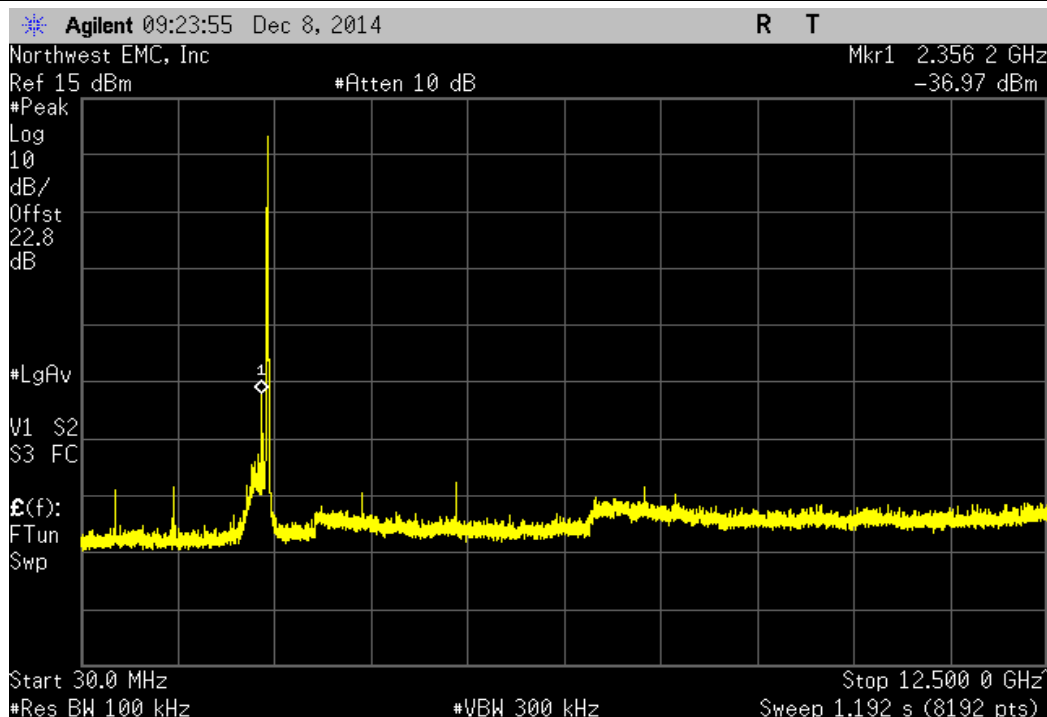
2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	-61.08	-20	Pass	



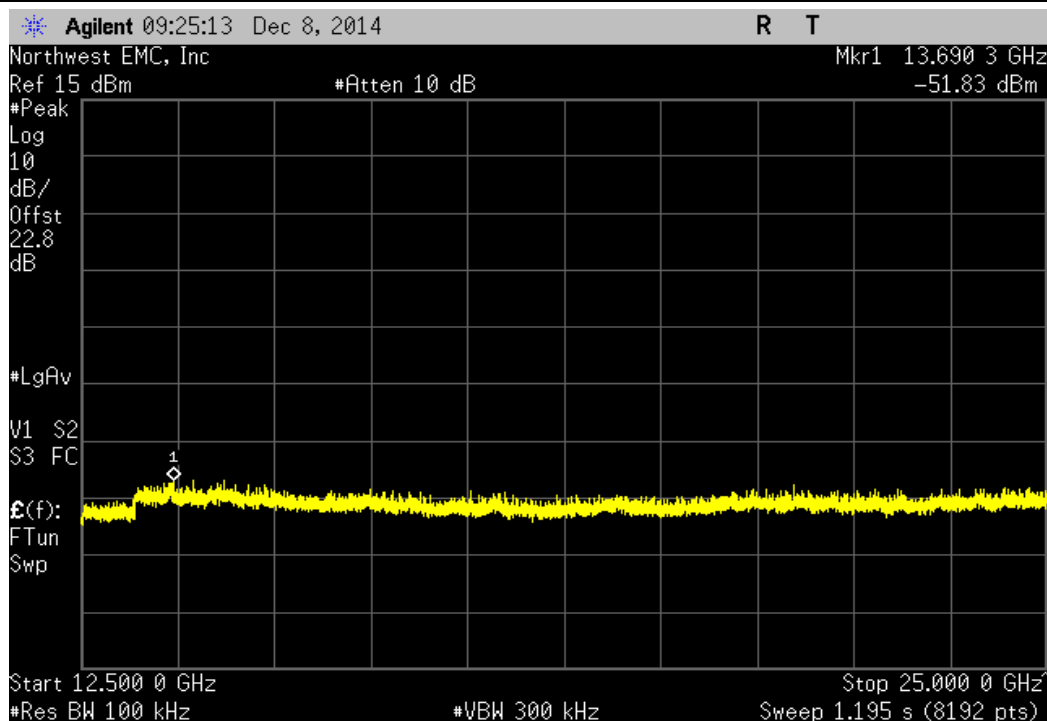
2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	N/A	N/A	N/A	



2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz	-47.04	-20	Pass	

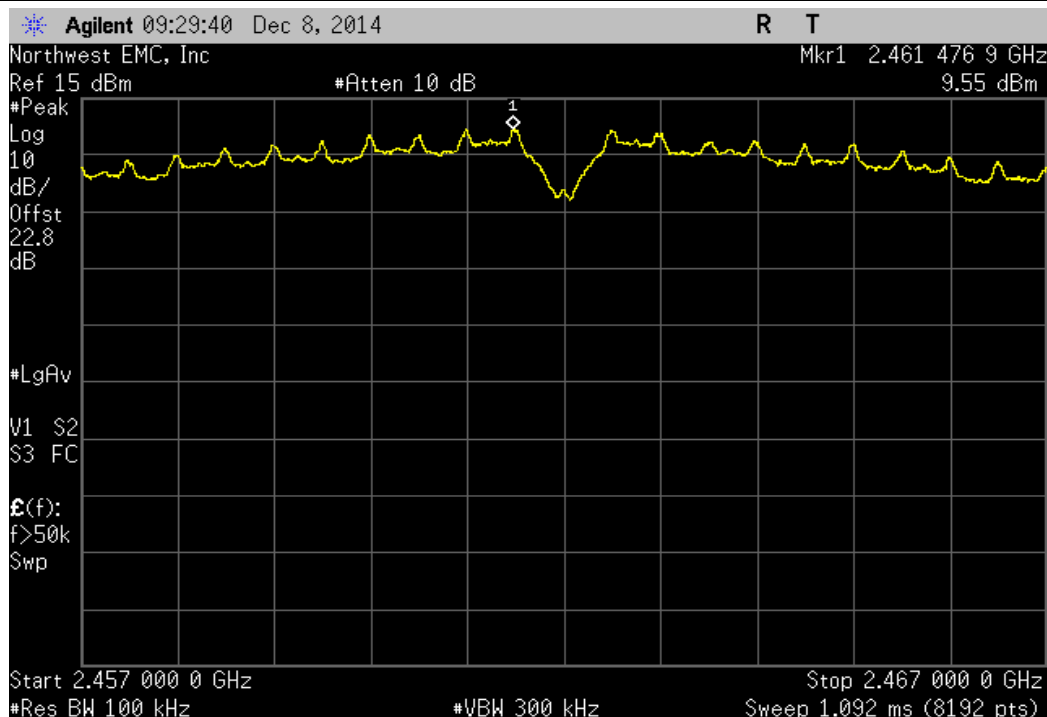


2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	-61.9	-20	Pass	

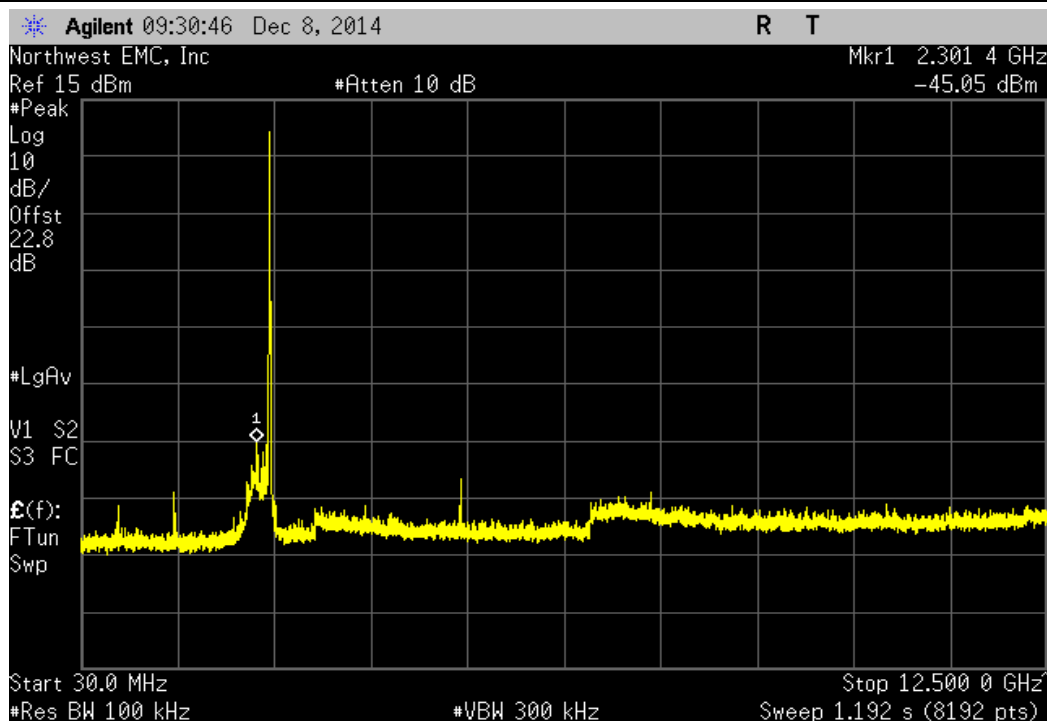




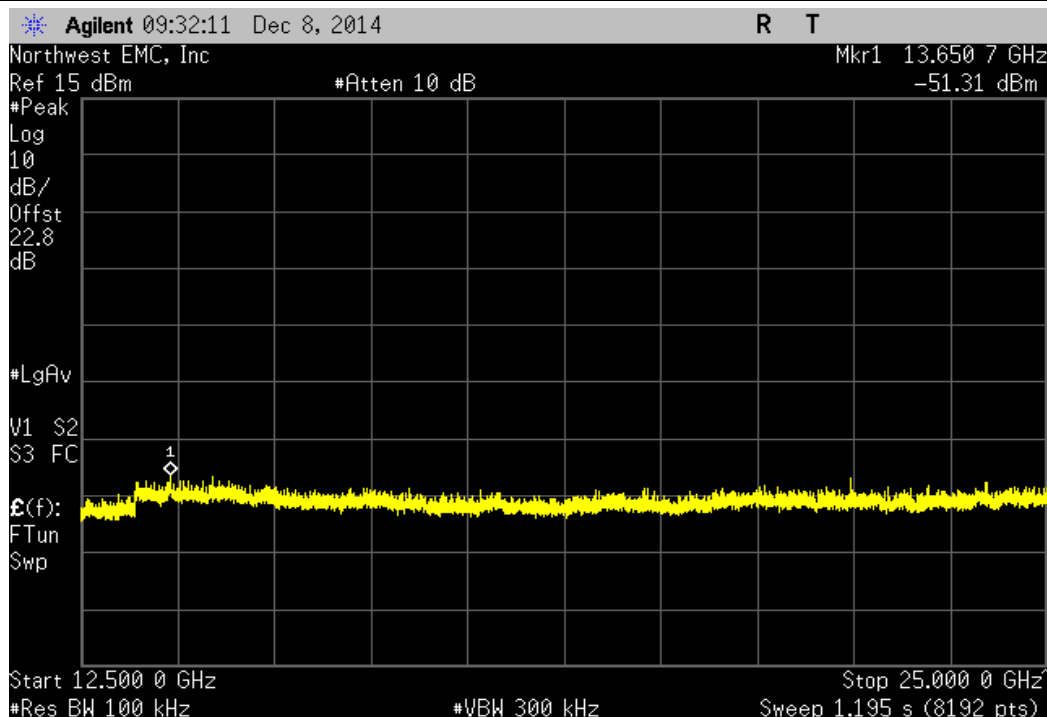
2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	N/A	N/A	N/A	



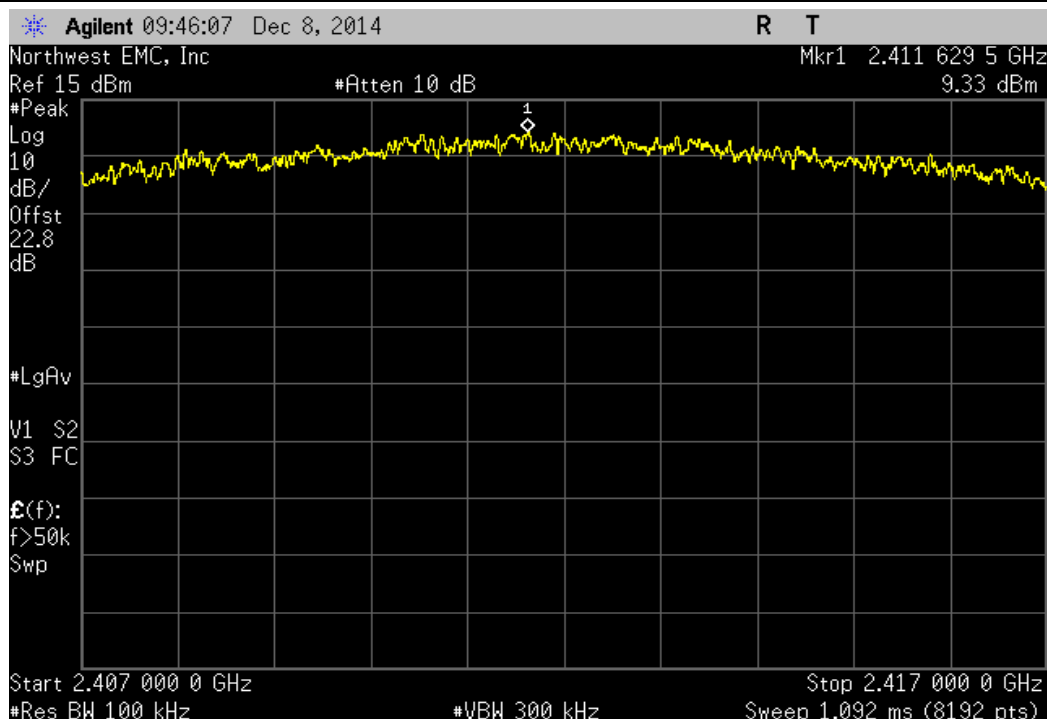
2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz	-54.6	-20	Pass	



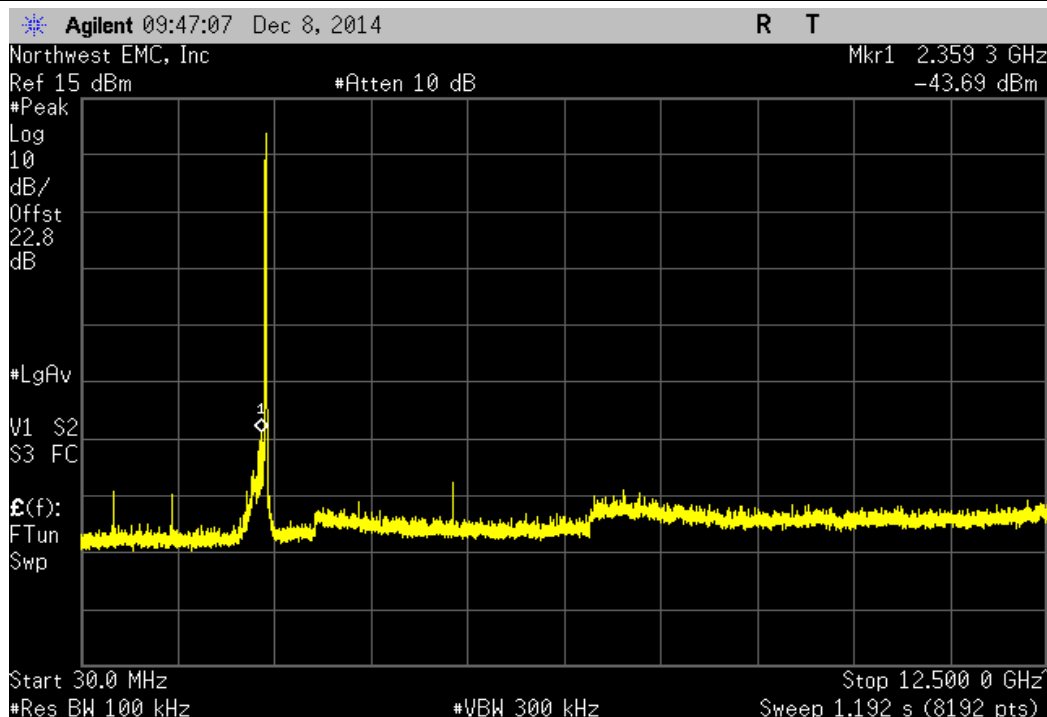
2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	-60.86	-20	Pass	



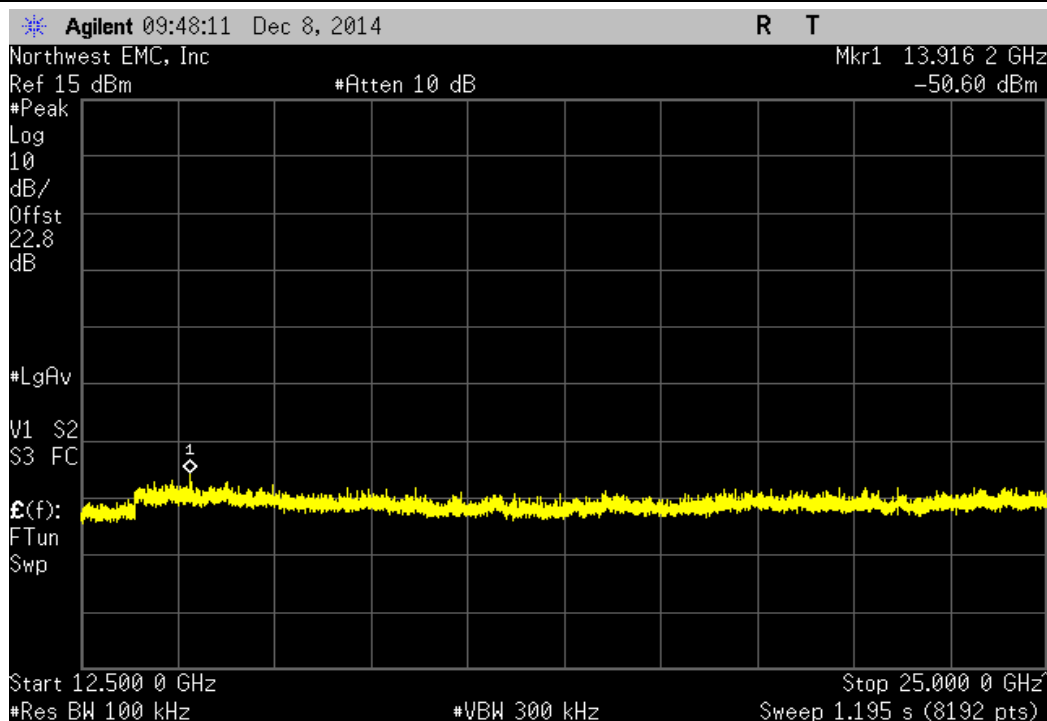
2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	N/A	N/A	N/A	



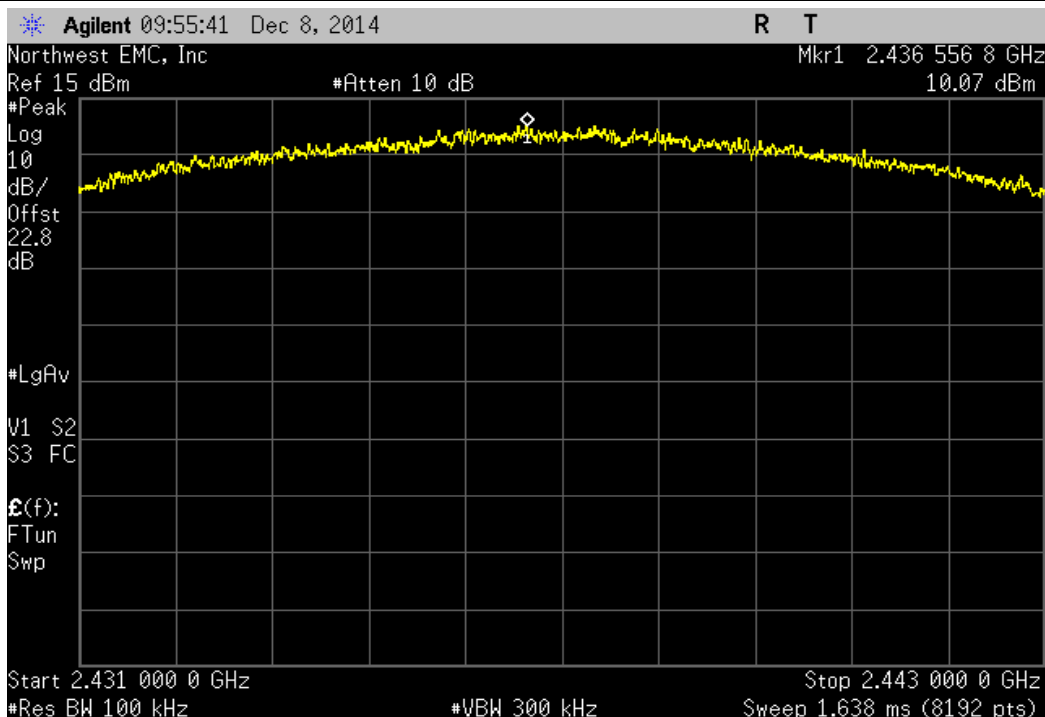
2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz	-53.02	-20	Pass	



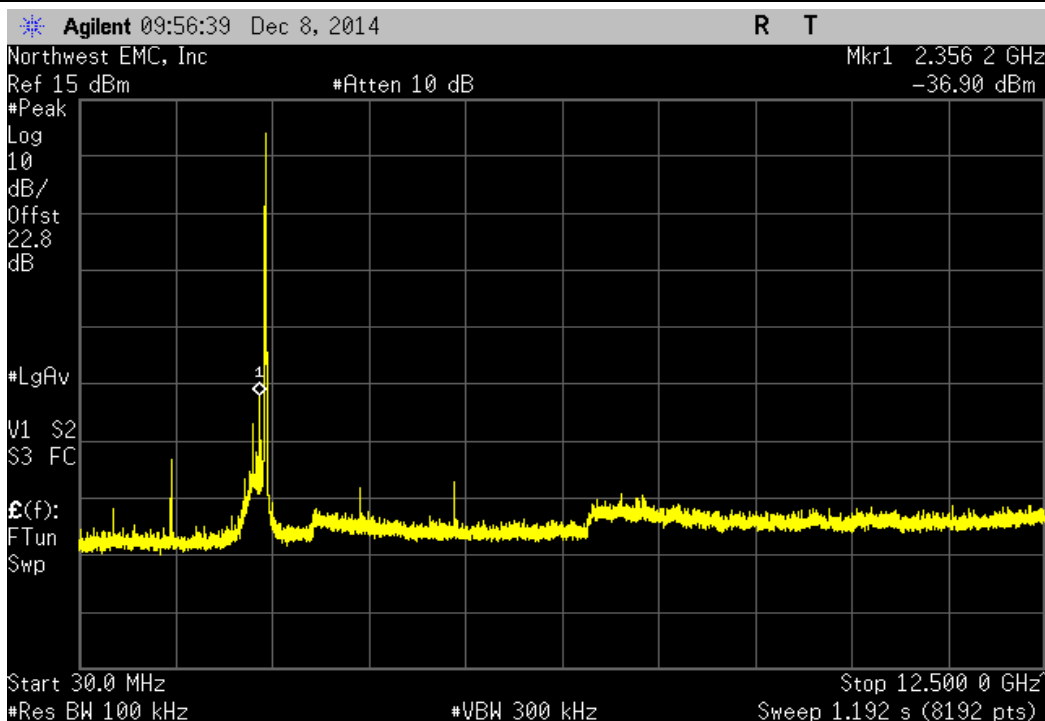
2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	-59.93	-20	Pass	



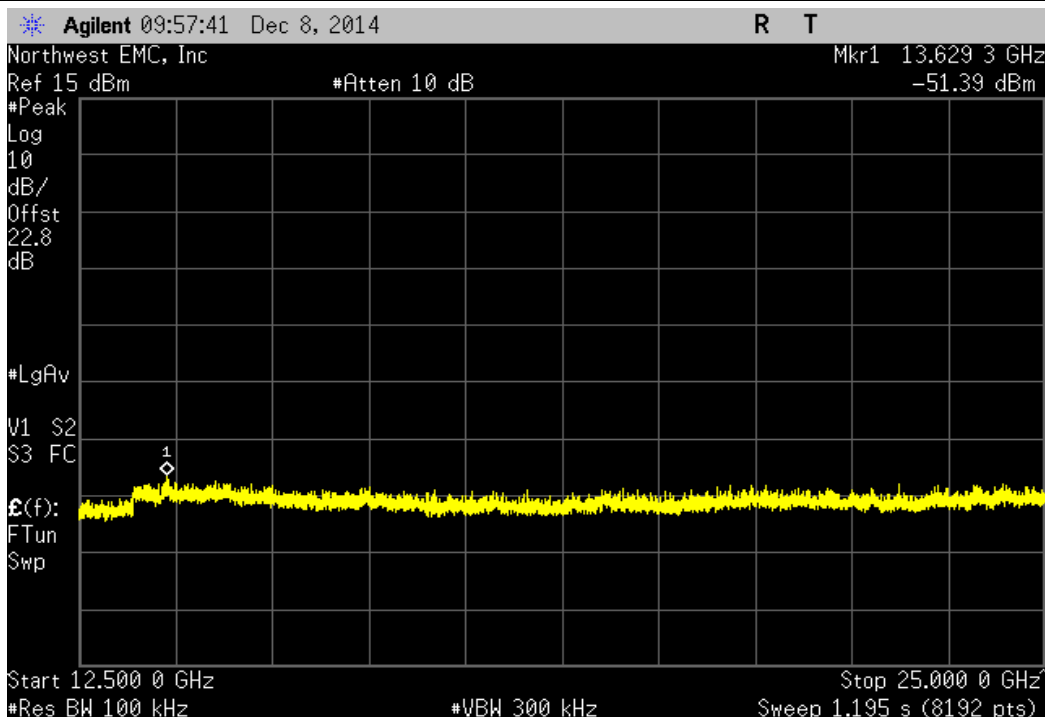
2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Mid Channel 6, 2437 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	N/A	N/A	N/A	



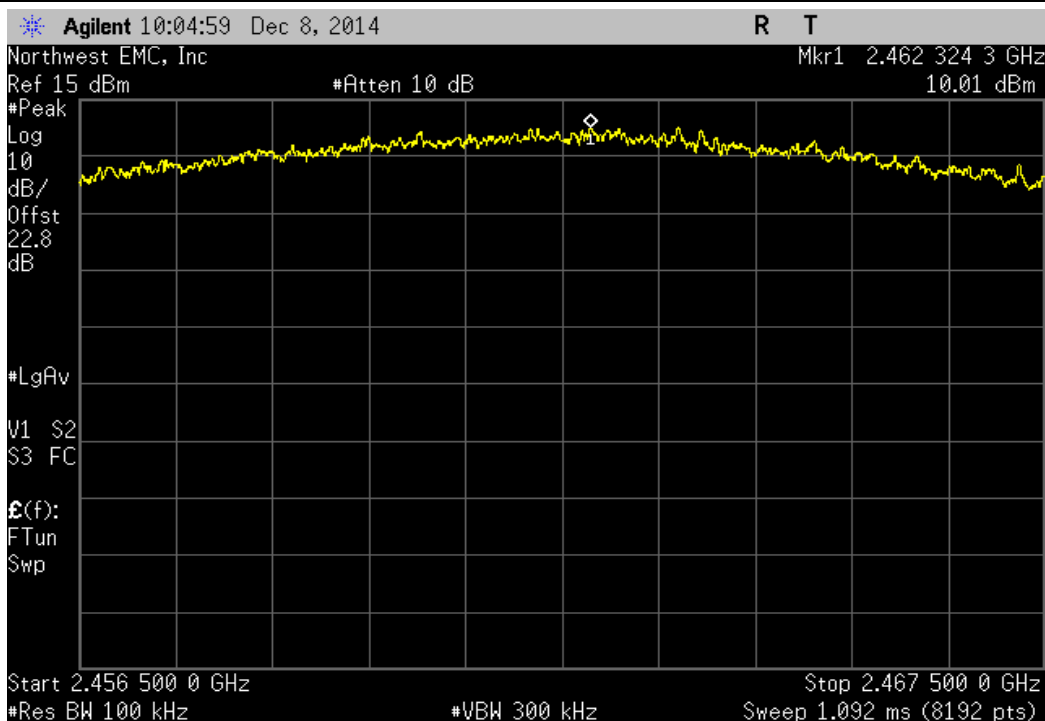
2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Mid Channel 6, 2437 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz	-46.97	-20	Pass	



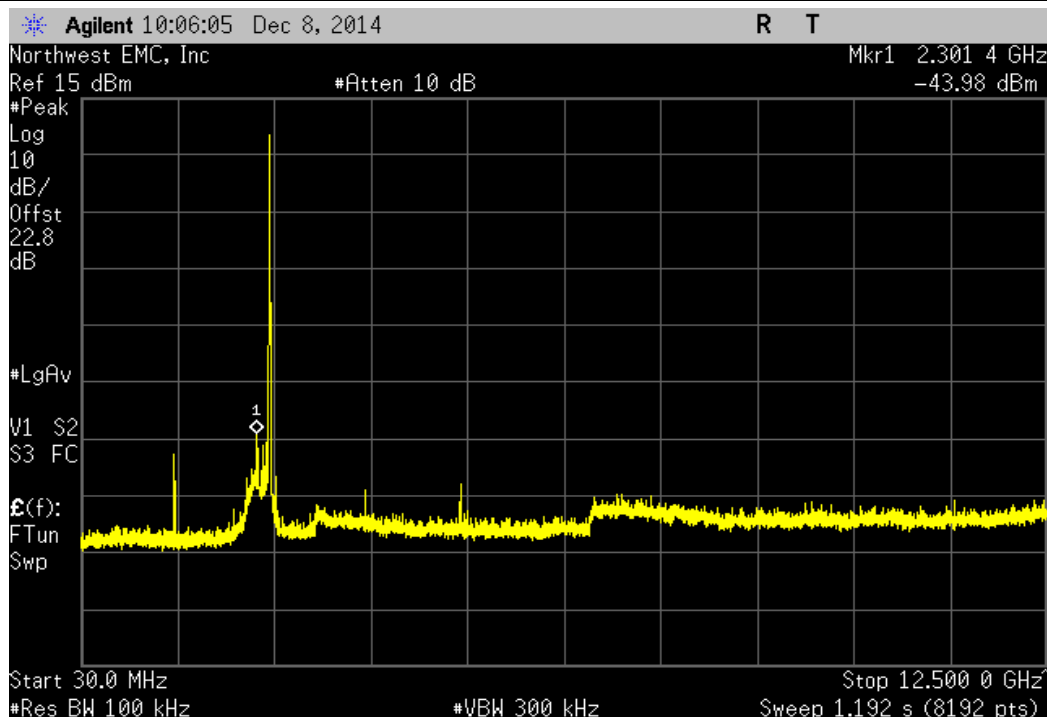
2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Mid Channel 6, 2437 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	-61.46	-20	Pass	



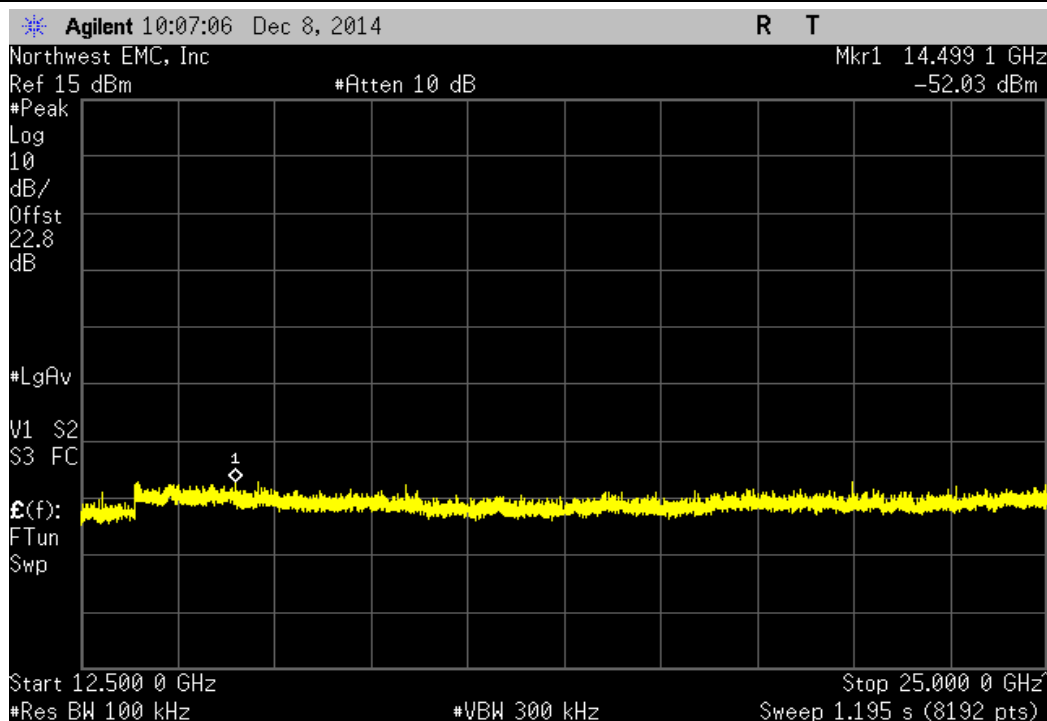
2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	N/A	N/A	N/A	



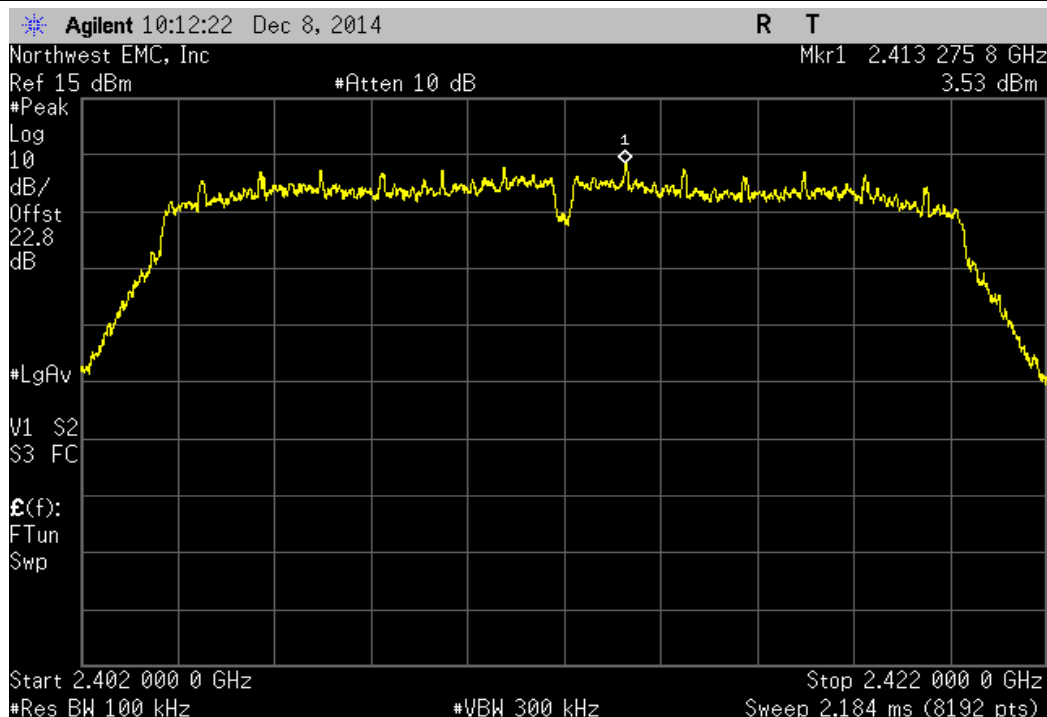
2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz	-53.99	-20	Pass	



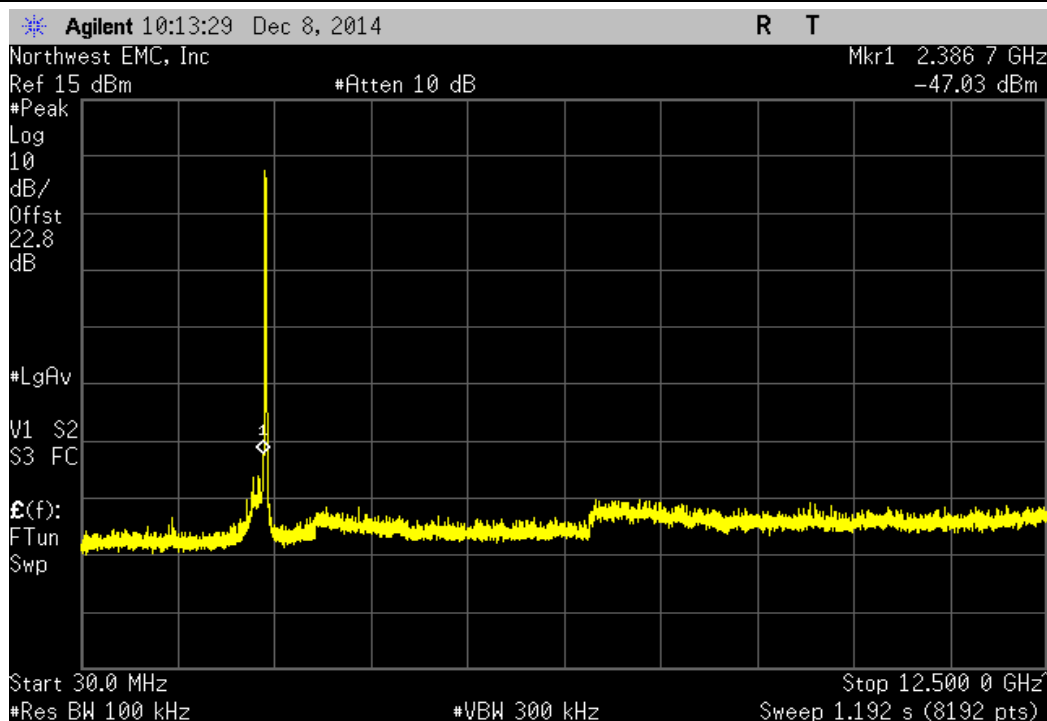
2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	-62.04	-20	Pass	



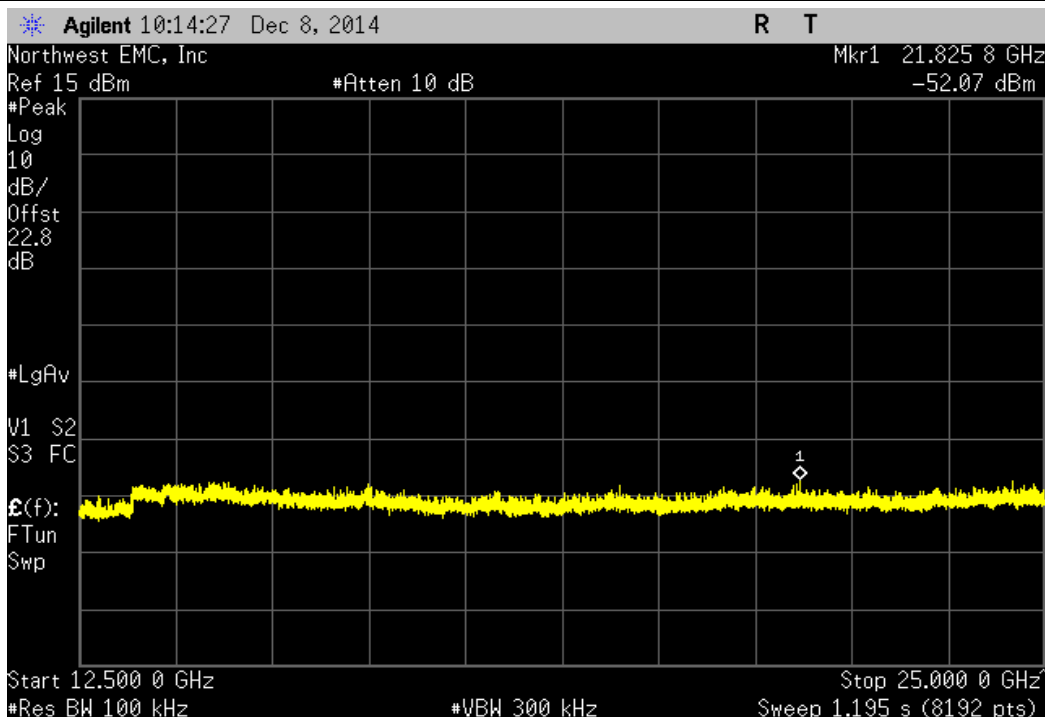
2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	N/A	N/A	N/A	



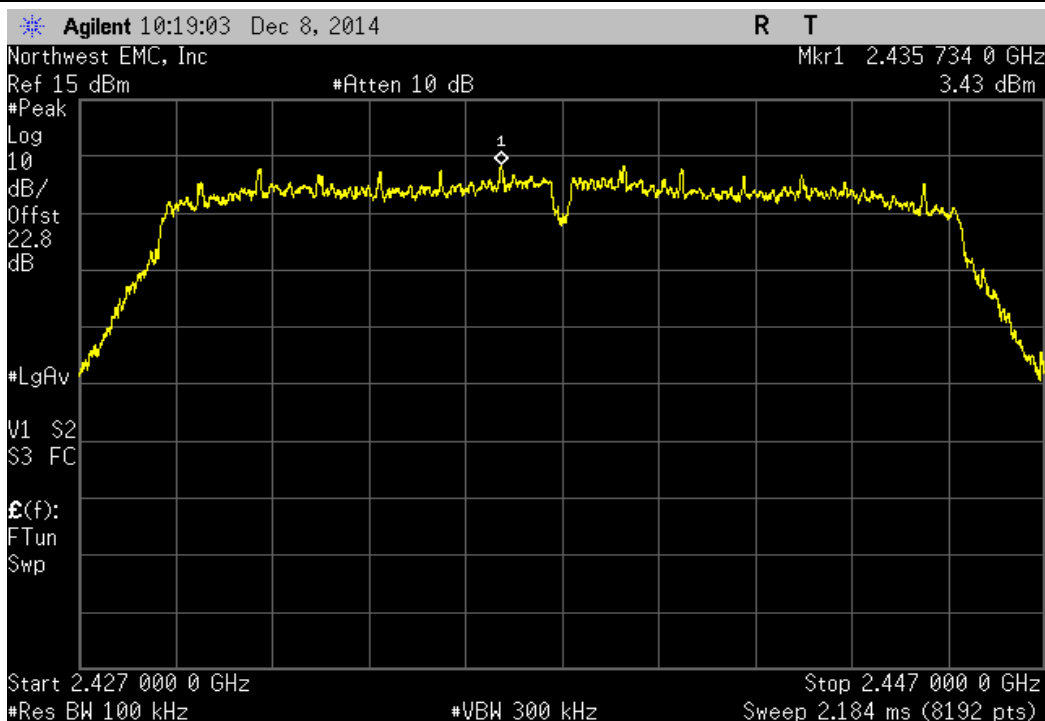
2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz	-50.56	-20	Pass	



2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	-55.6	-20	Pass	

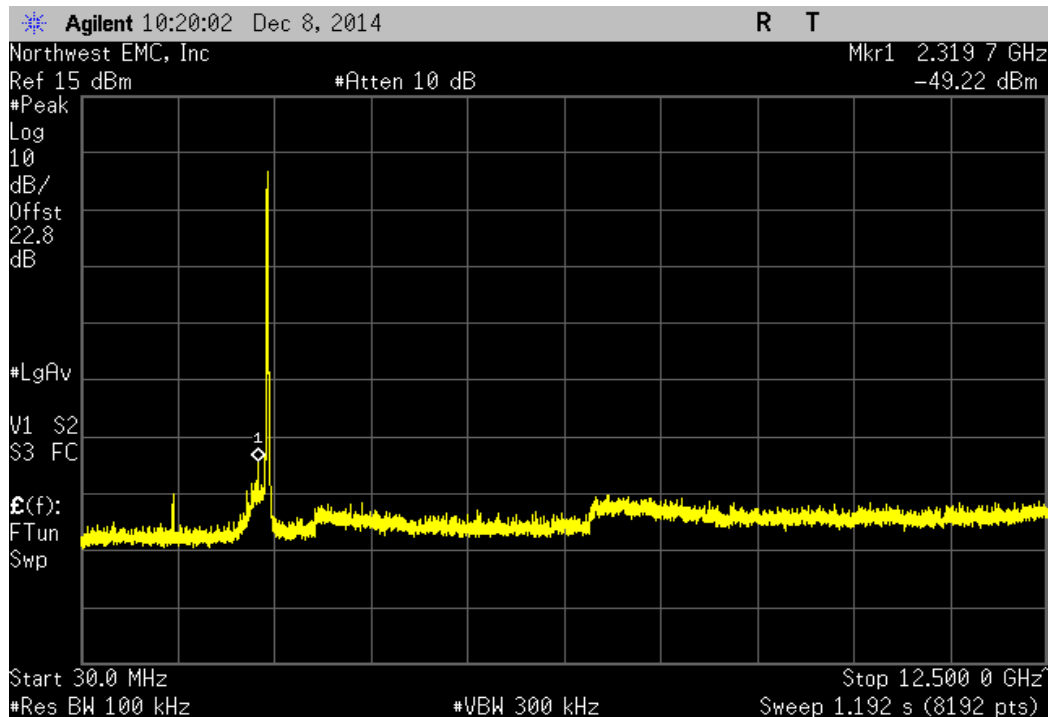


2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	N/A	N/A	N/A	

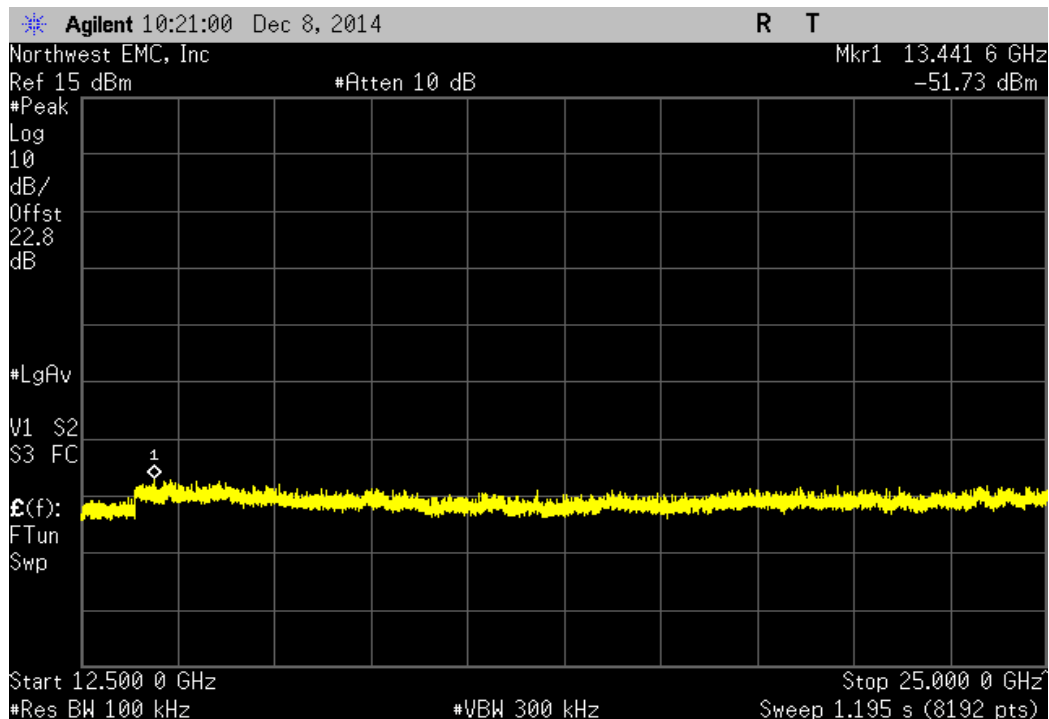




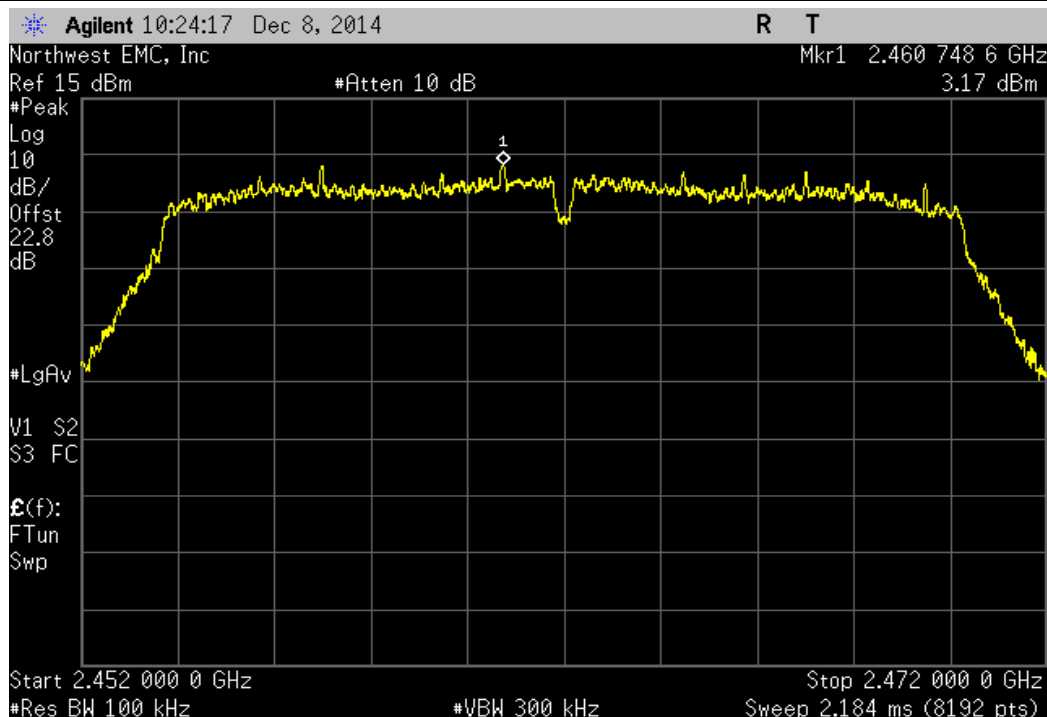
2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz	-52.65	-20	Pass	



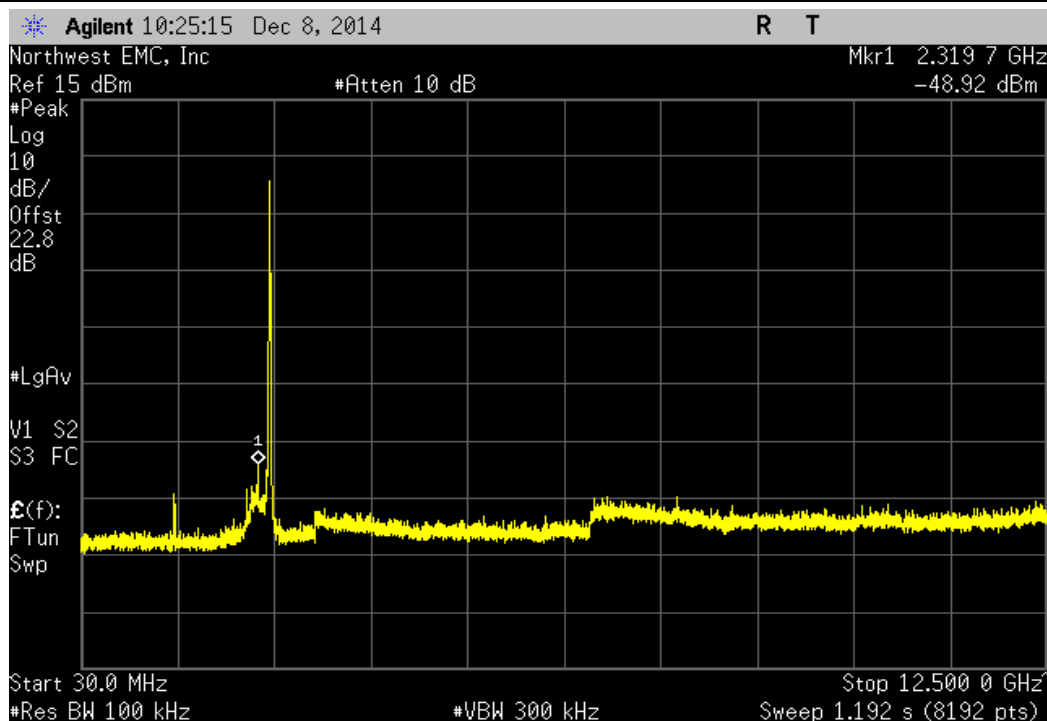
2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	-55.16	-20	Pass	



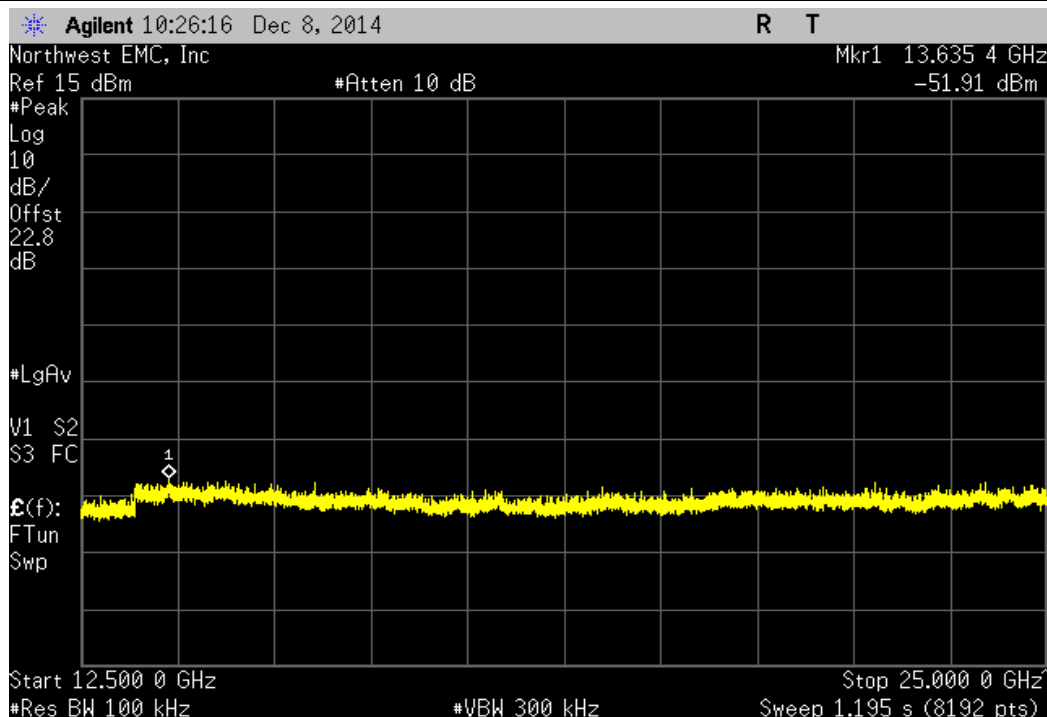
2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	N/A	N/A	N/A	



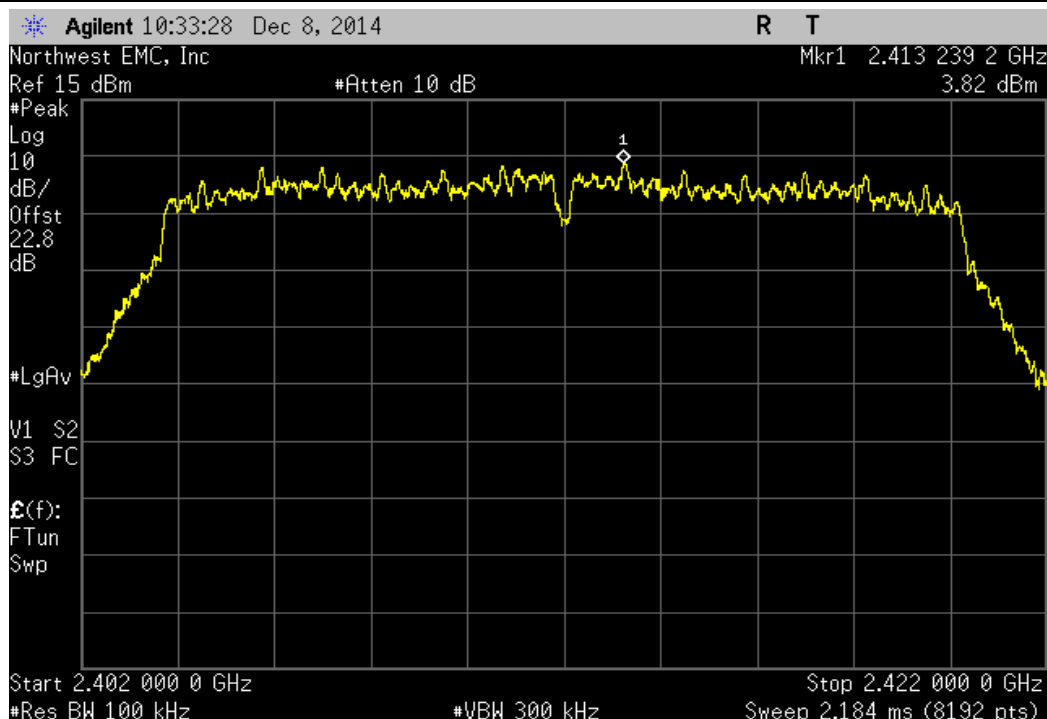
2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz	-52.09	-20	Pass	



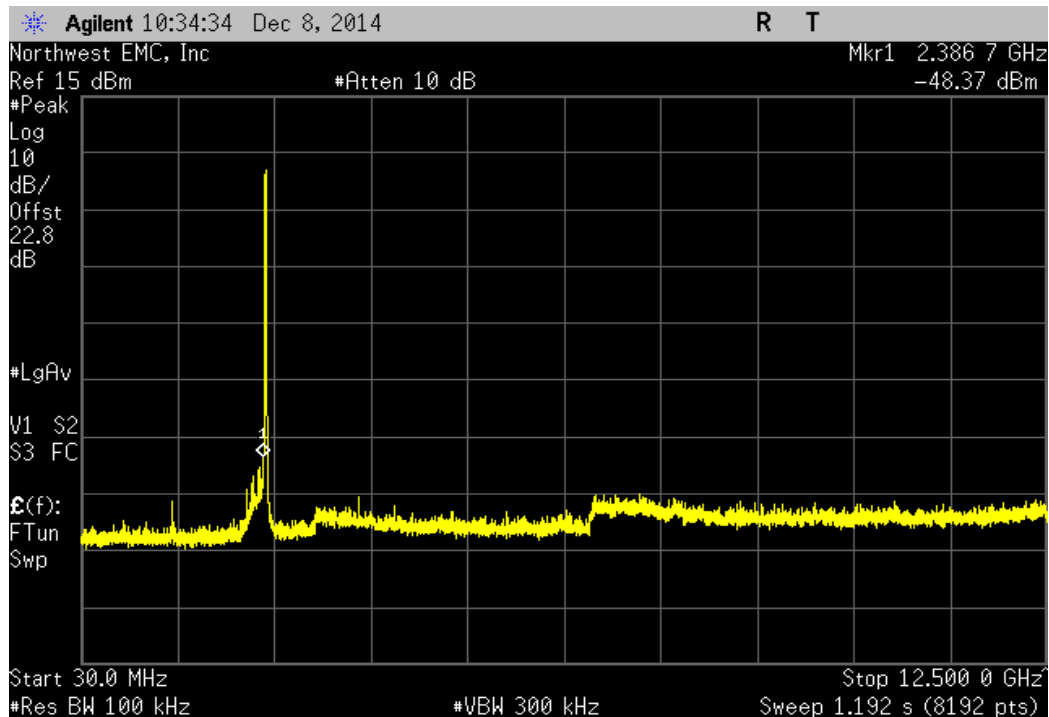
2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	-55.08	-20	Pass	



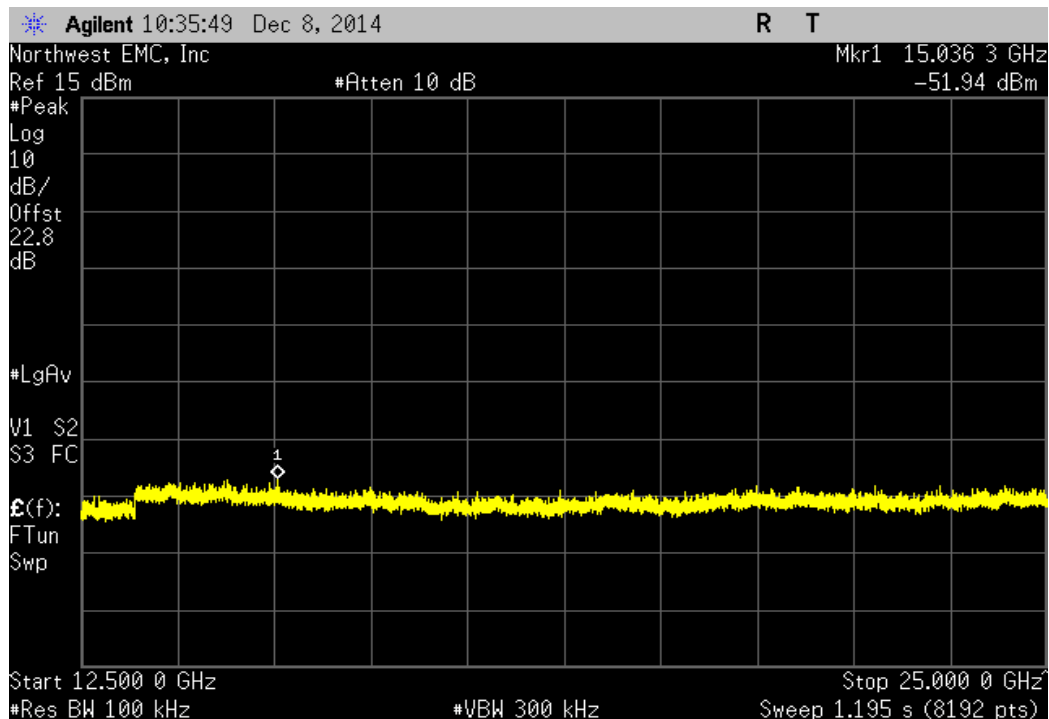
2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	N/A	N/A	N/A	



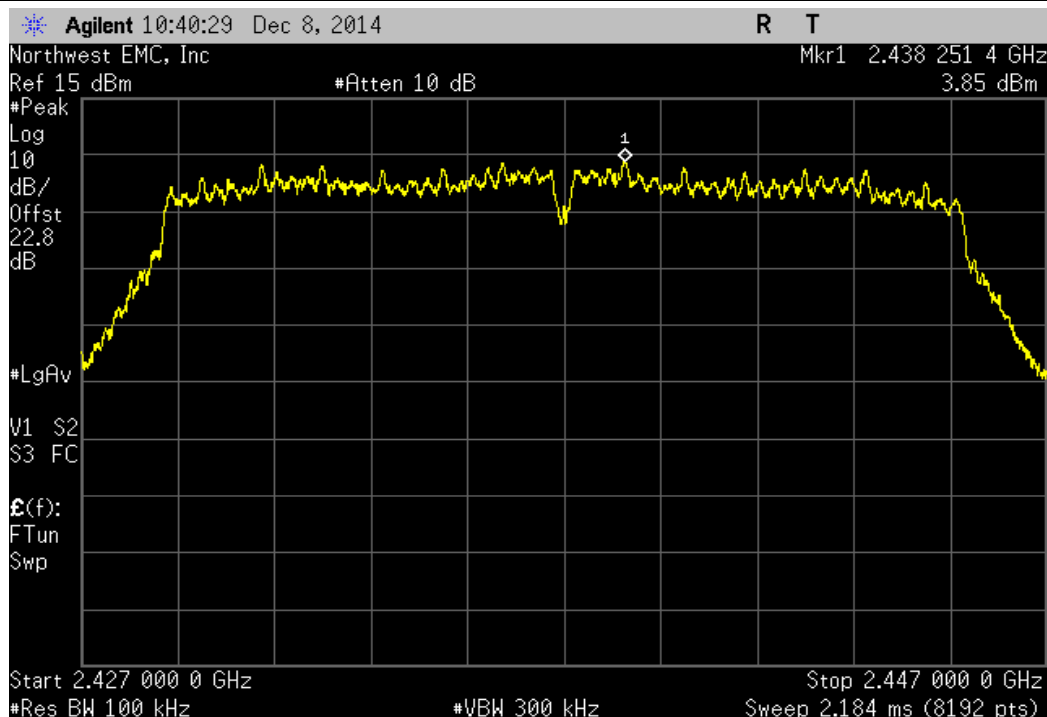
2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz	-52.19	-20	Pass	



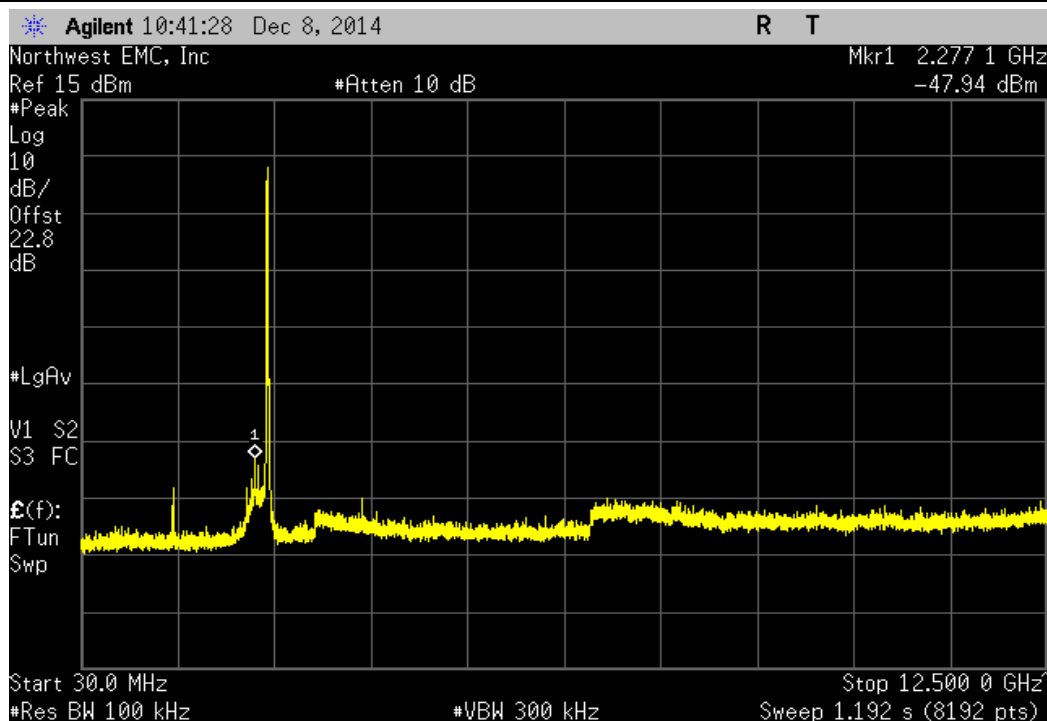
2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	-55.76	-20	Pass	



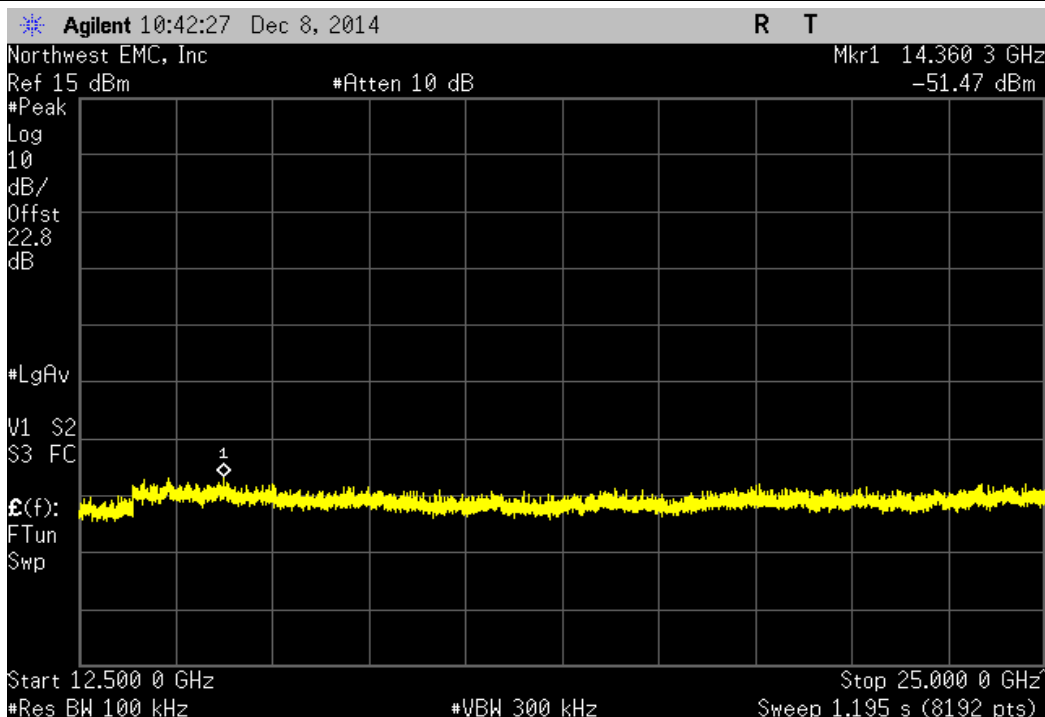
2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Mid Channel 6, 2437 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	N/A	N/A	N/A	



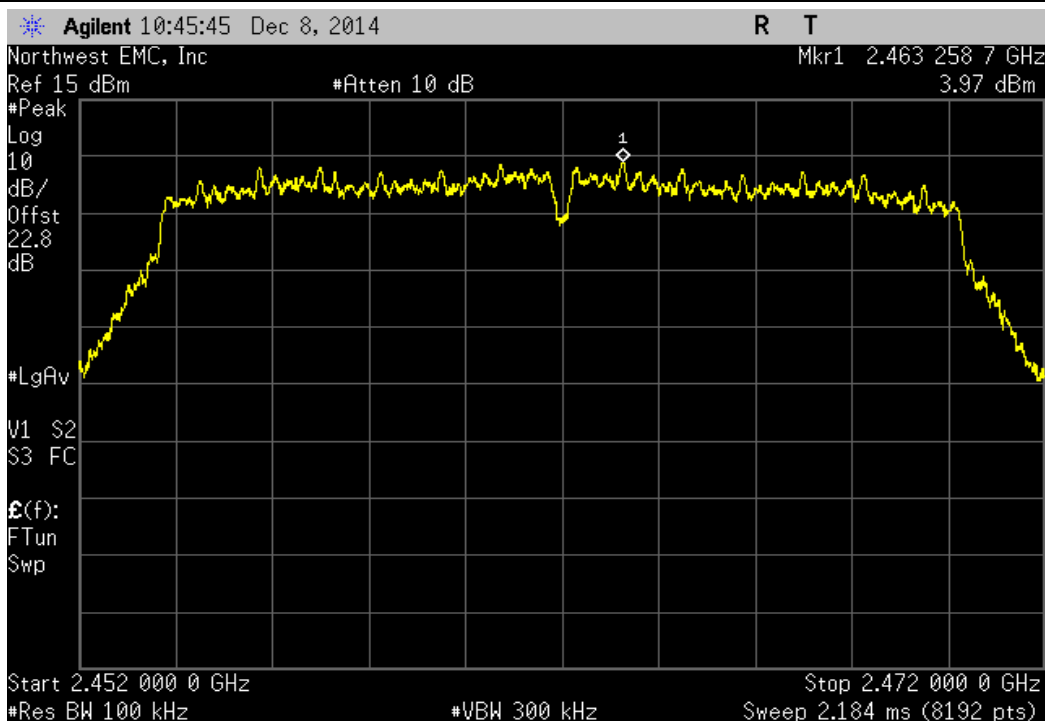
2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Mid Channel 6, 2437 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz	-51.79	-20	Pass	



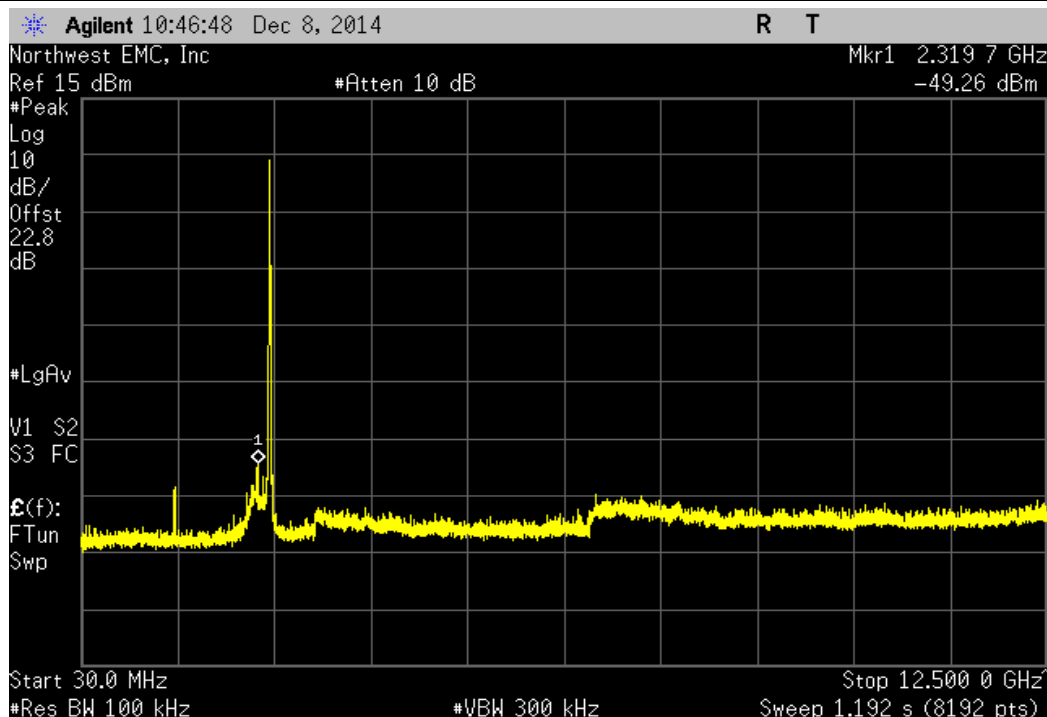
2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Mid Channel 6, 2437 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	-55.32	-20	Pass	



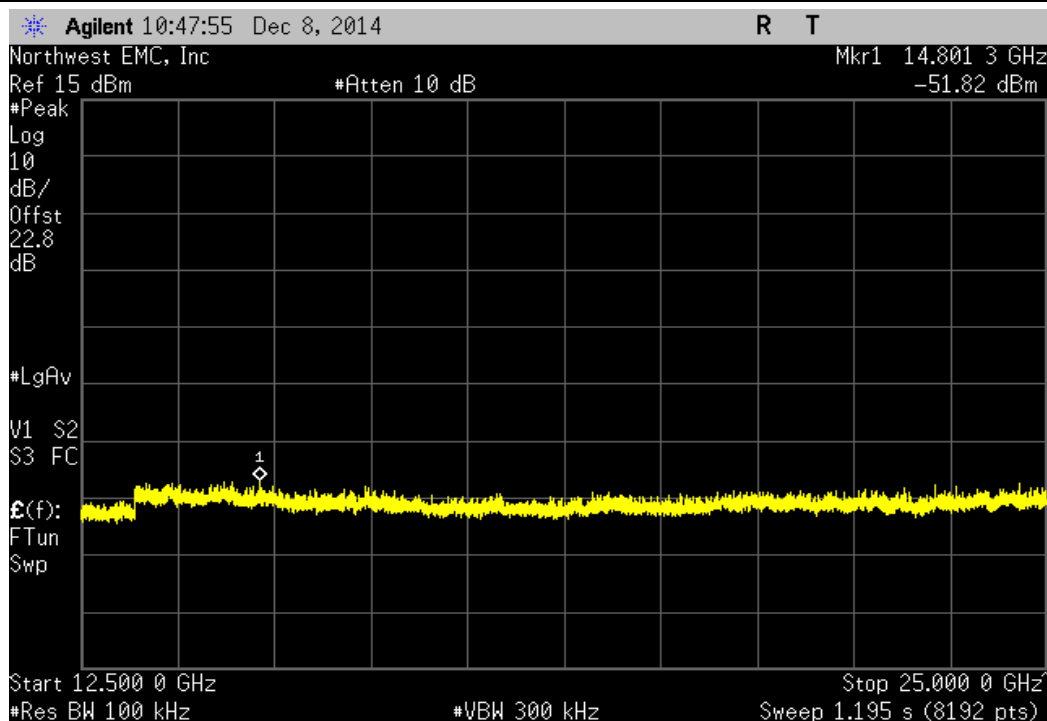
2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	N/A	N/A	N/A	



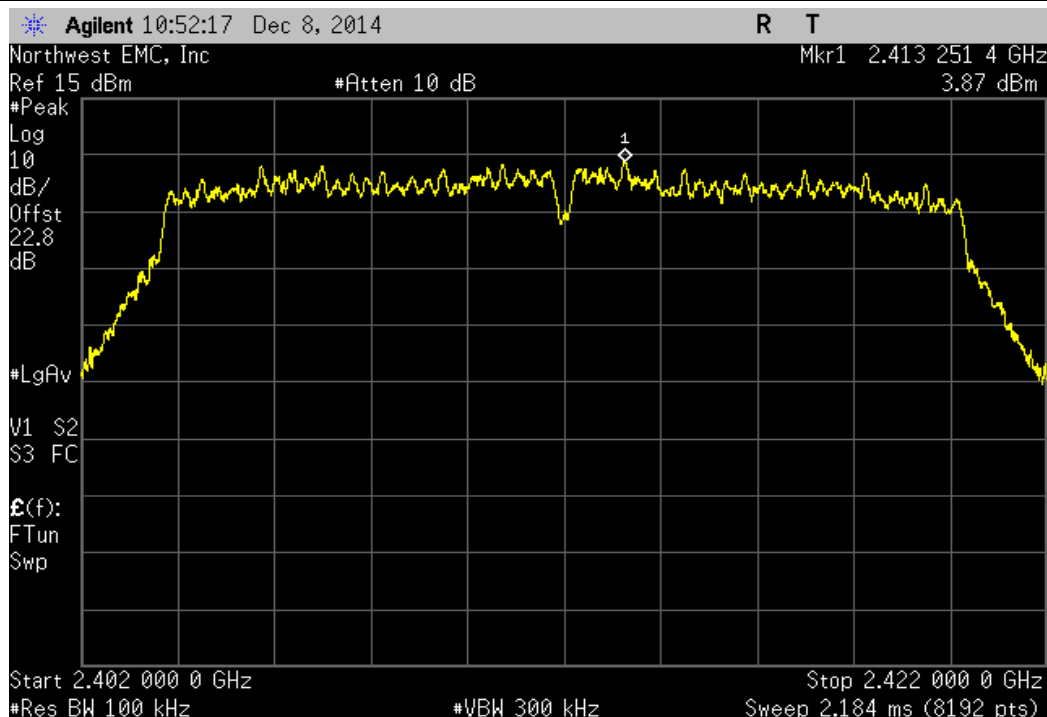
2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz	-53.23	-20	Pass	



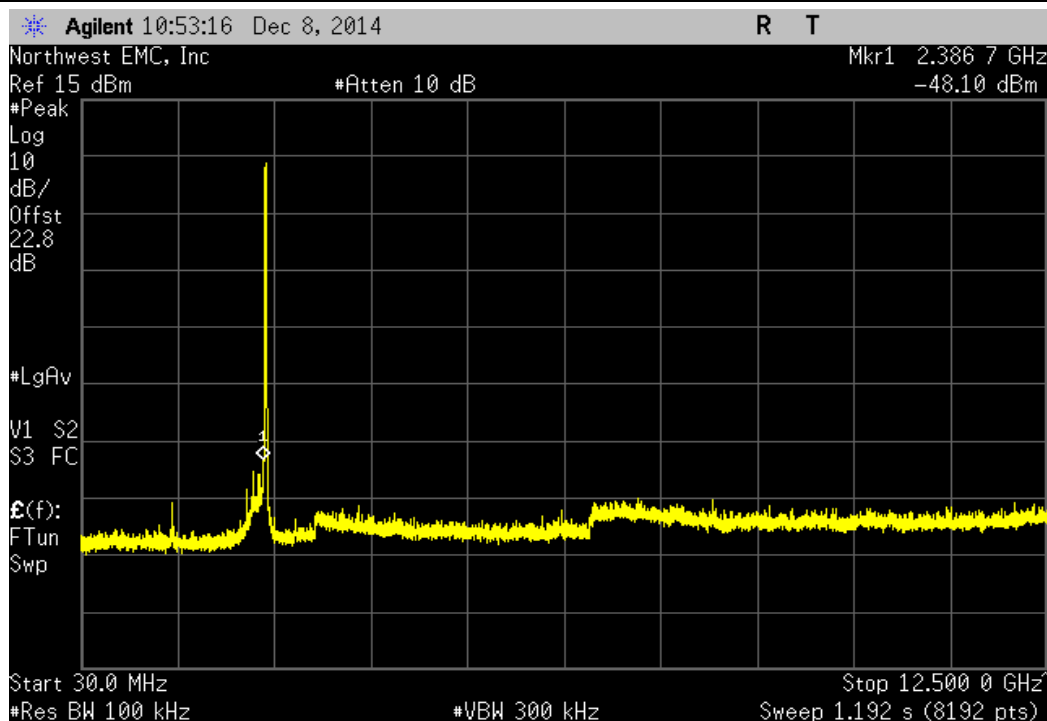
2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	-55.79	-20	Pass	



2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	N/A	N/A	N/A	

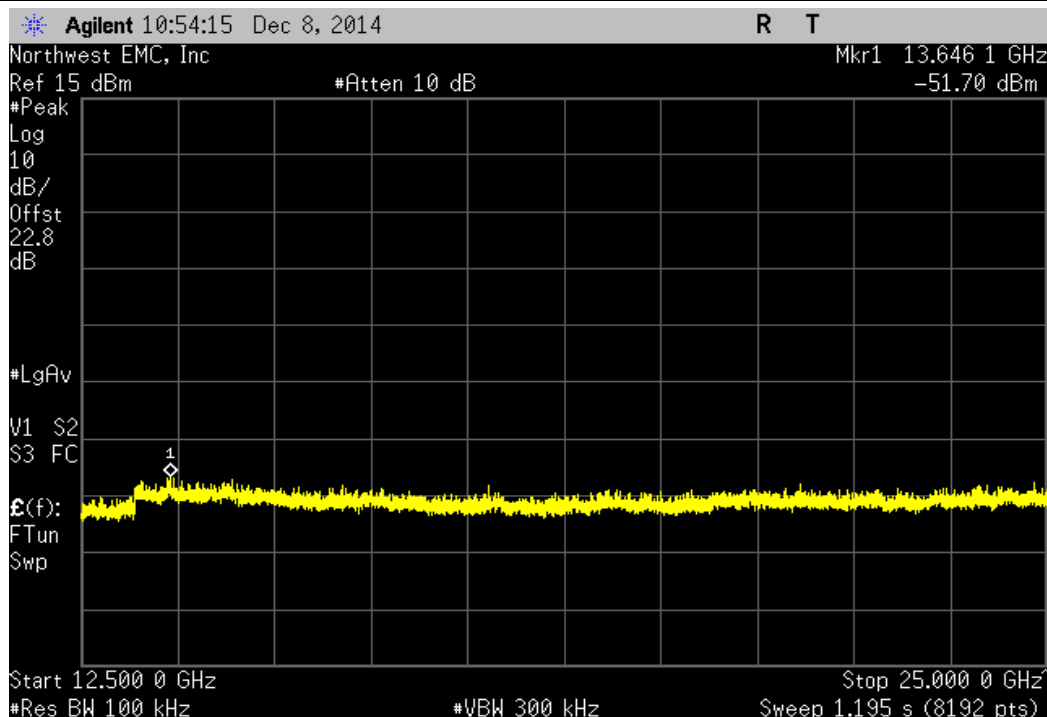


2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz	-51.97	-20	Pass	

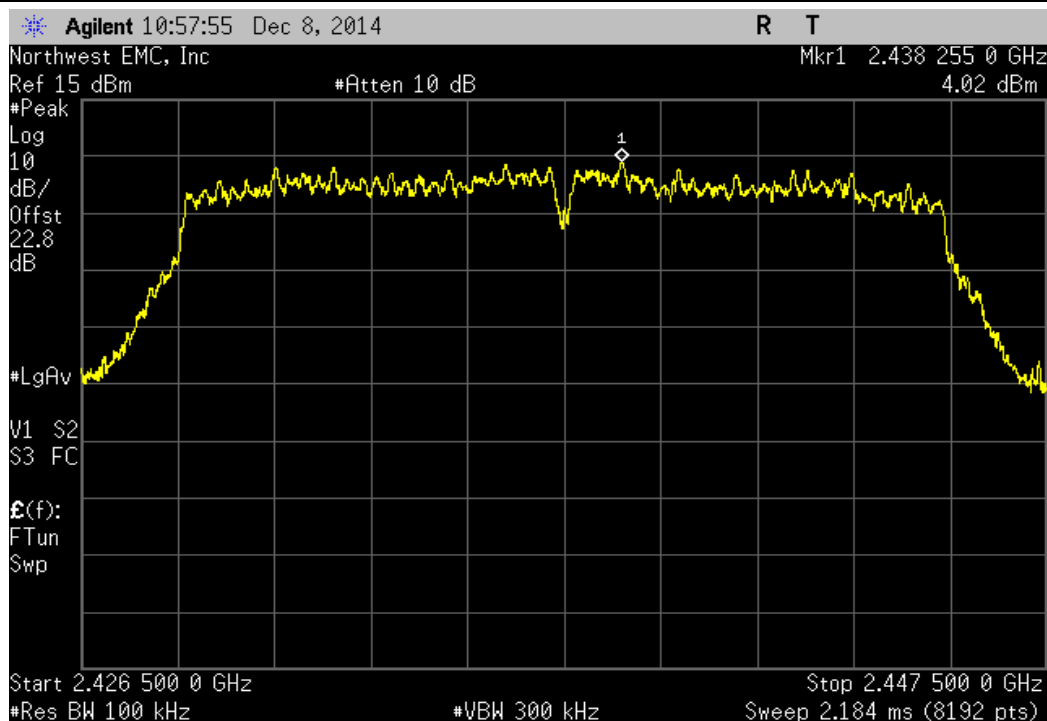




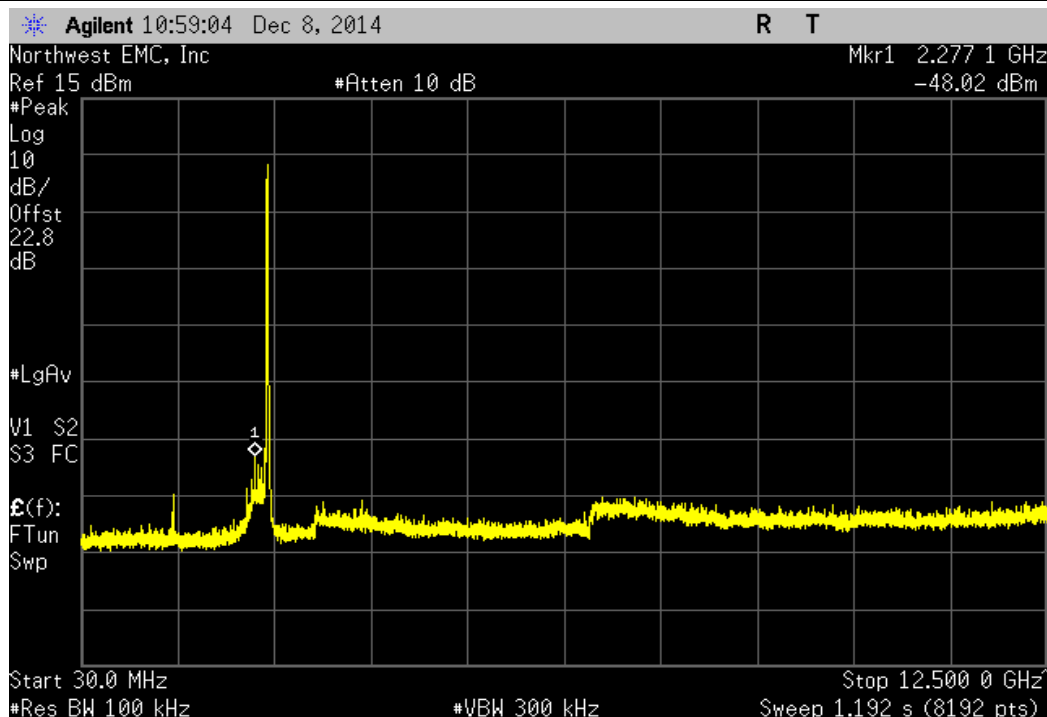
2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	-55.57	-20	Pass	



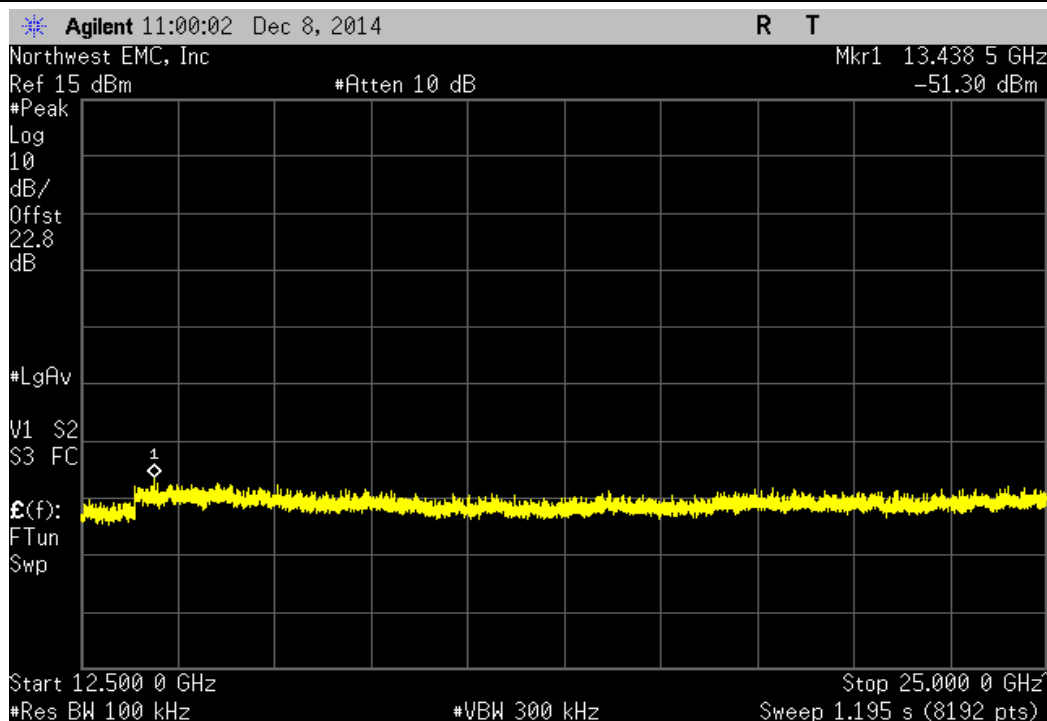
2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	N/A	N/A	N/A	



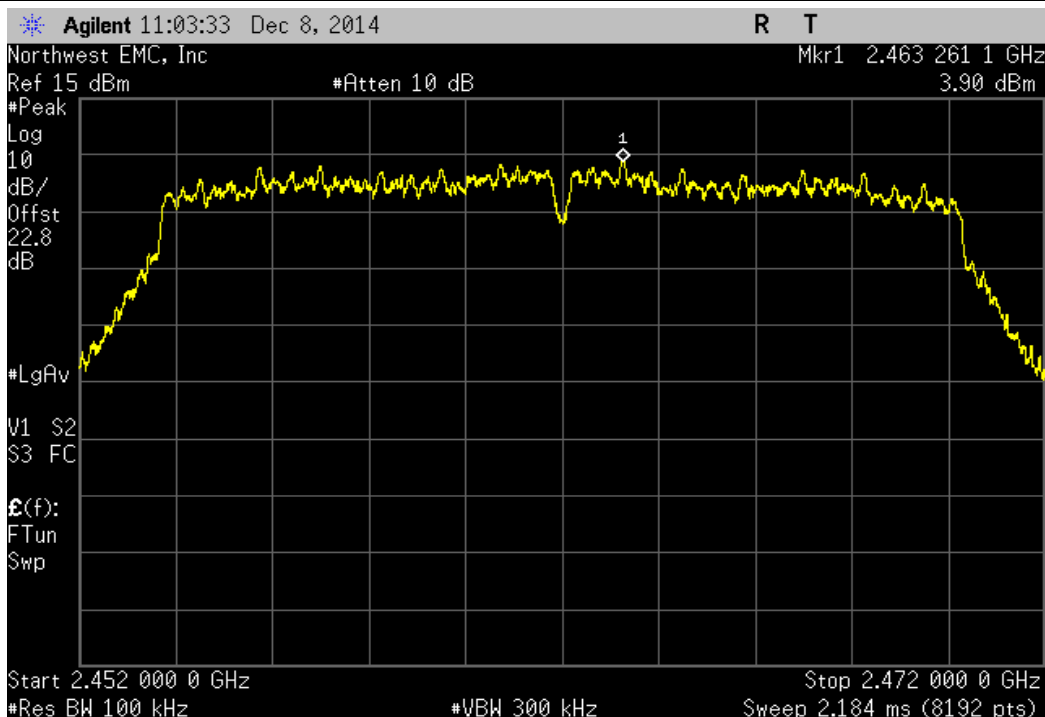
2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz	-52.04	-20	Pass	



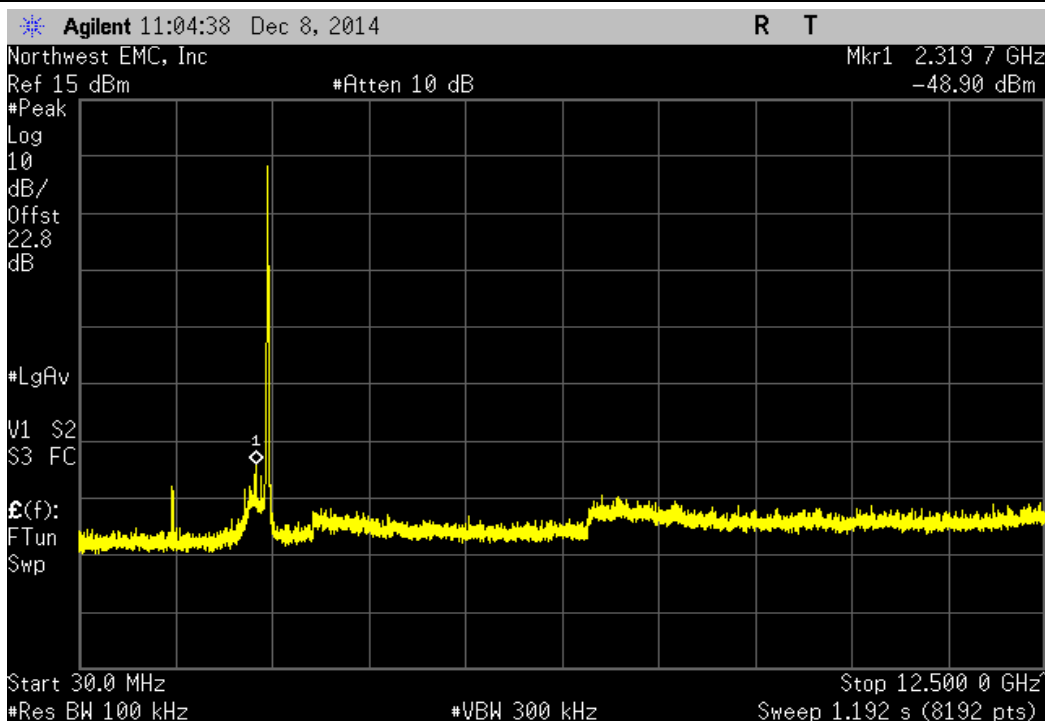
2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	-55.32	-20	Pass	



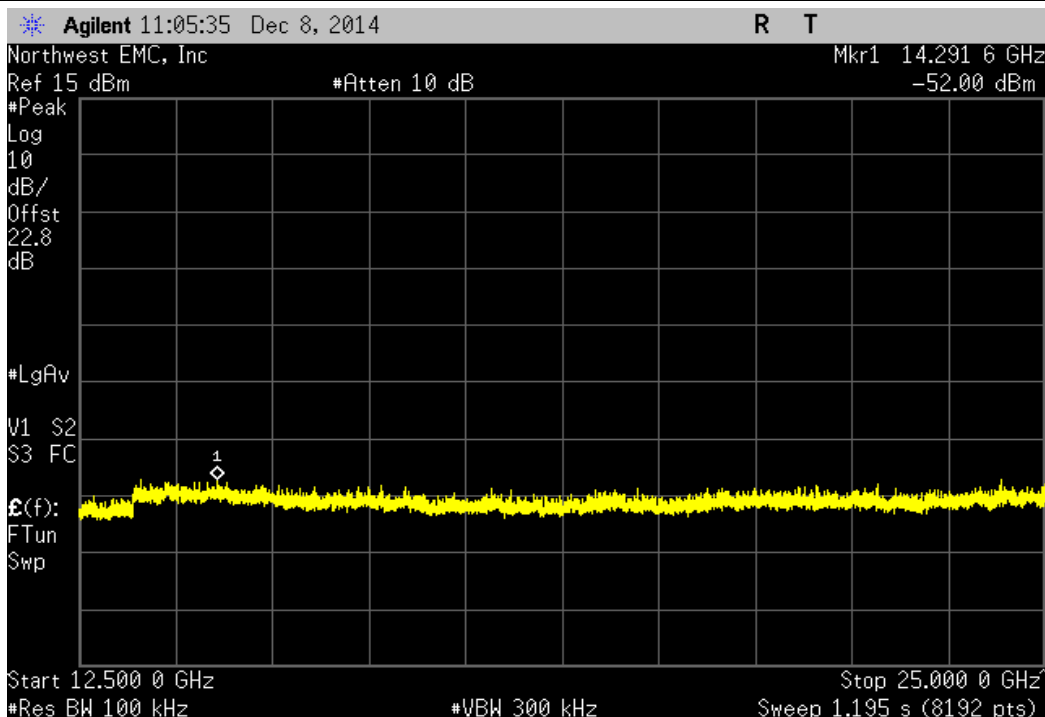
2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	N/A	N/A	N/A	



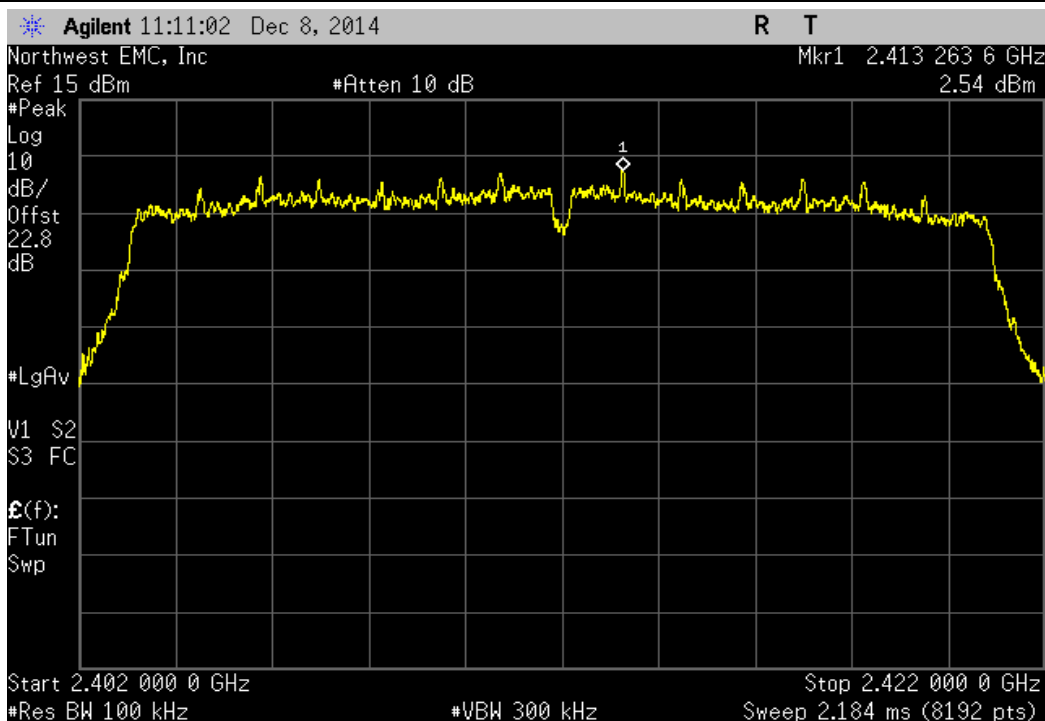
2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz	-52.8	-20	Pass	



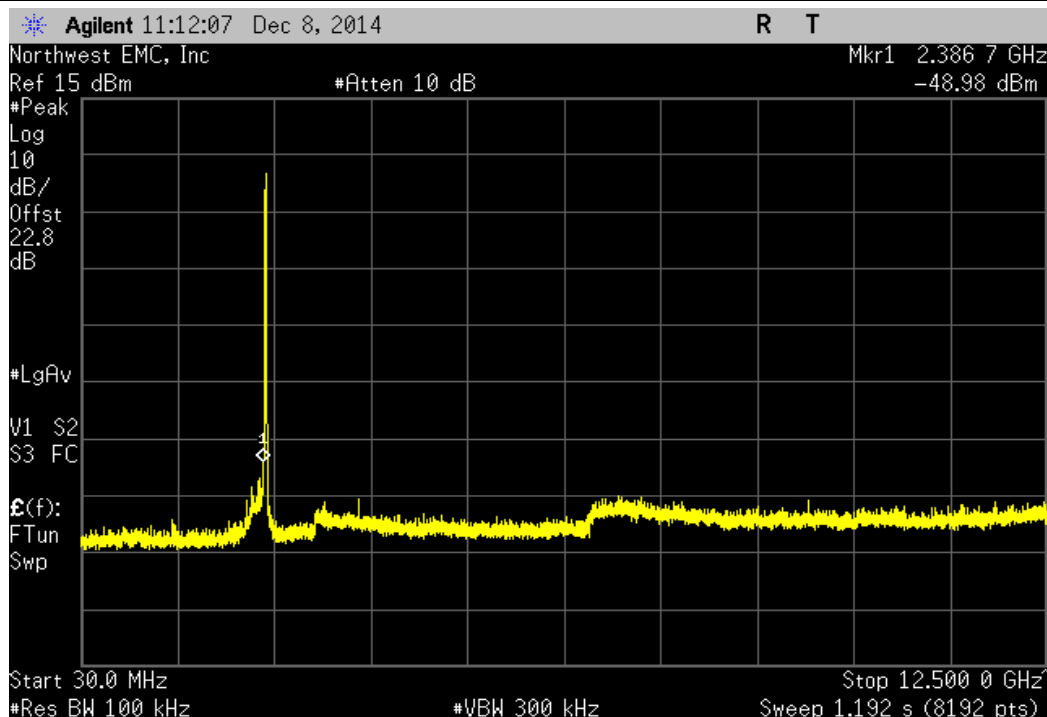
2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	-55.9	-20	Pass	



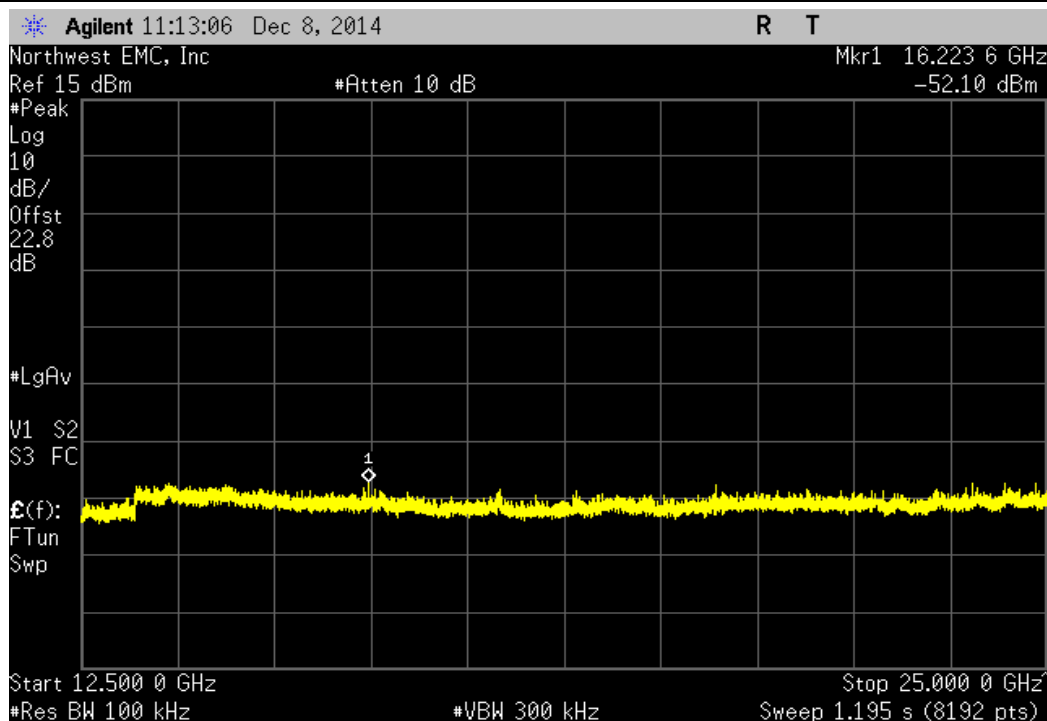
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1, 2412 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	N/A	N/A	N/A	



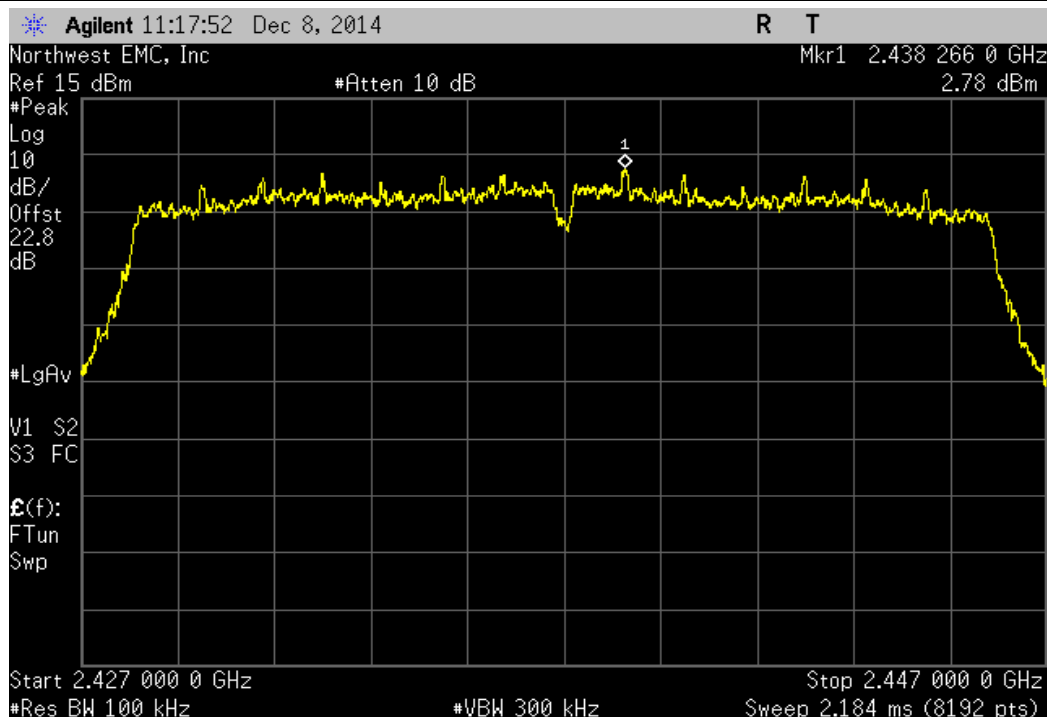
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1, 2412 MHz			
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz	-51.52	-20	Pass



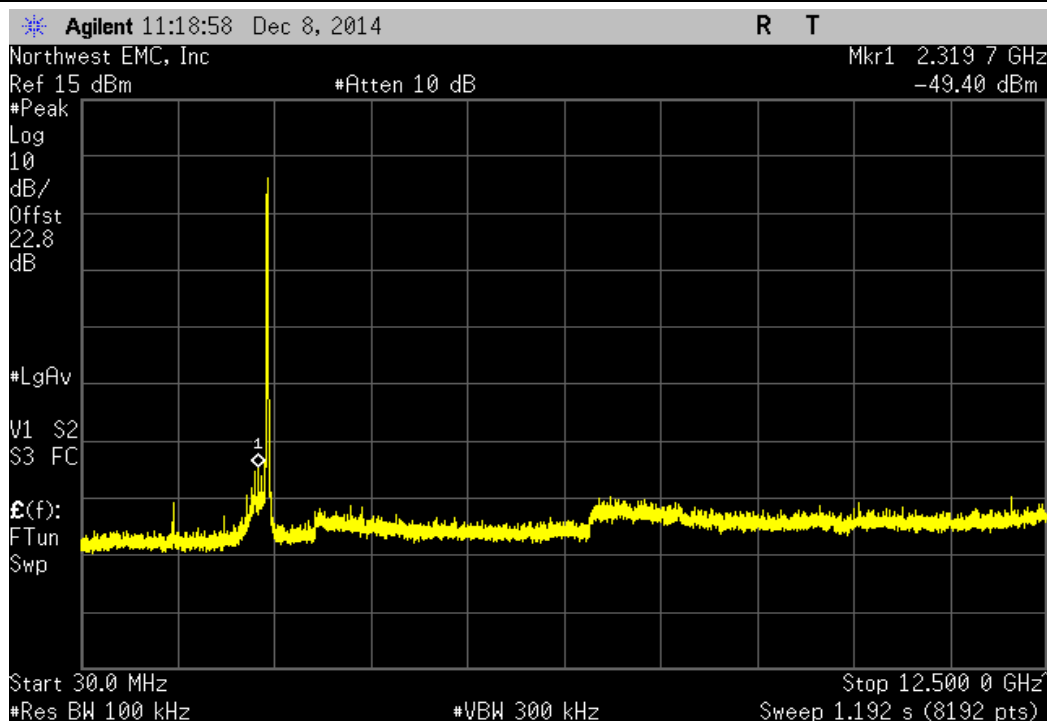
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1, 2412 MHz			
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz	-54.64	-20	Pass



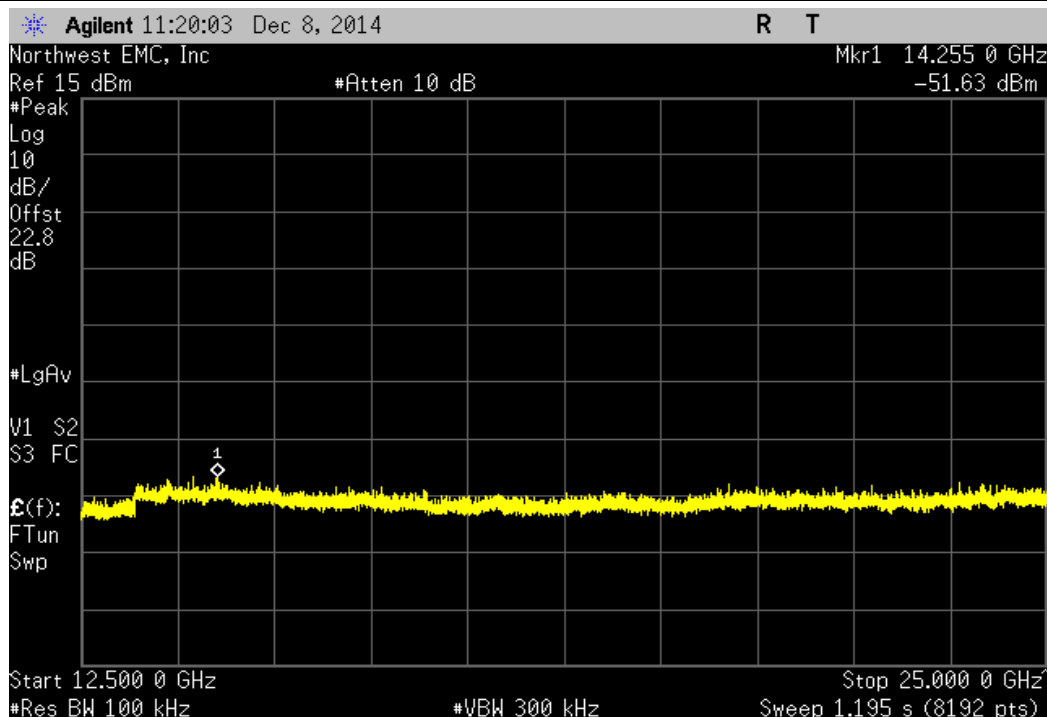
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Mid Channel 6, 2437 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	N/A	N/A	N/A	



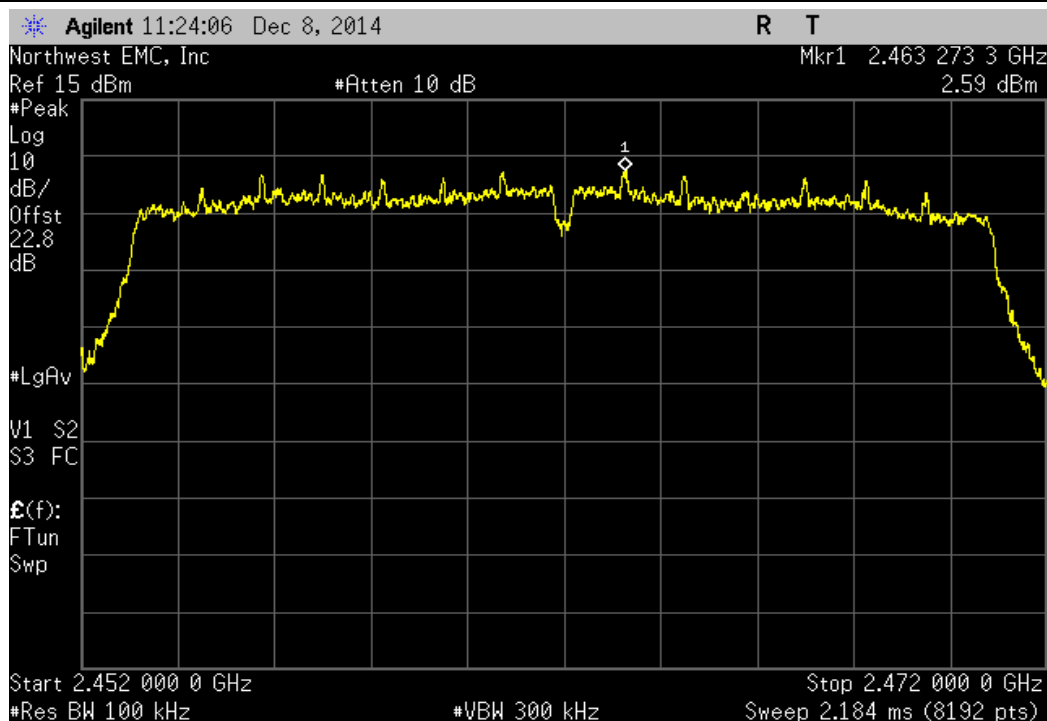
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Mid Channel 6, 2437 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz	-52.18	-20	Pass	



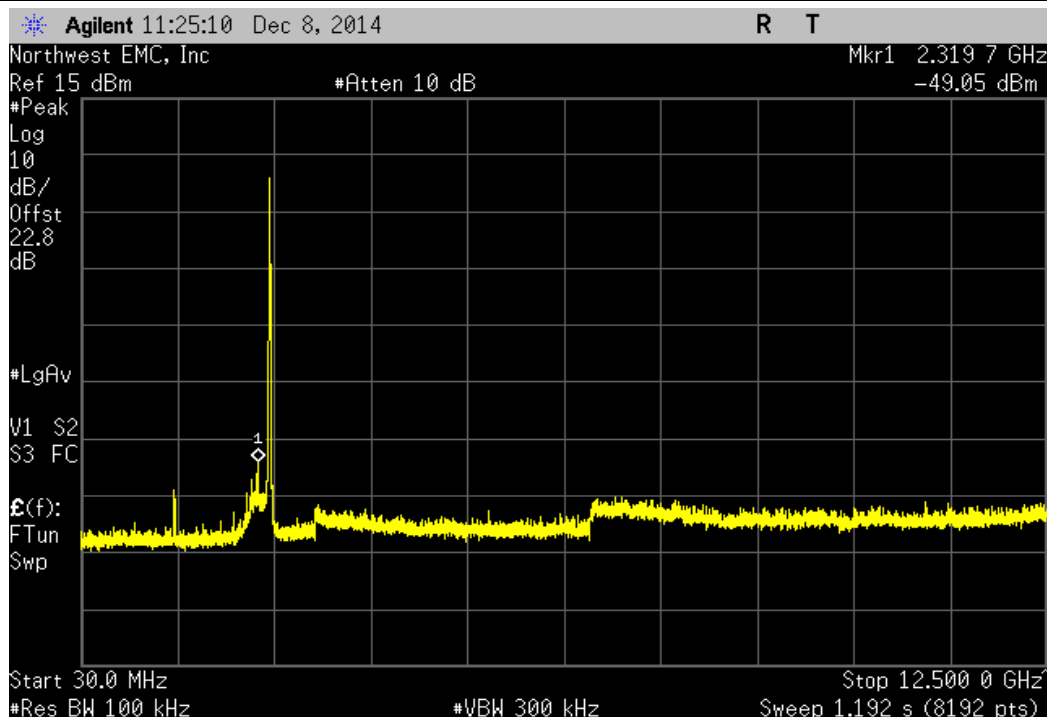
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Mid Channel 6, 2437 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	-54.41	-20	Pass	



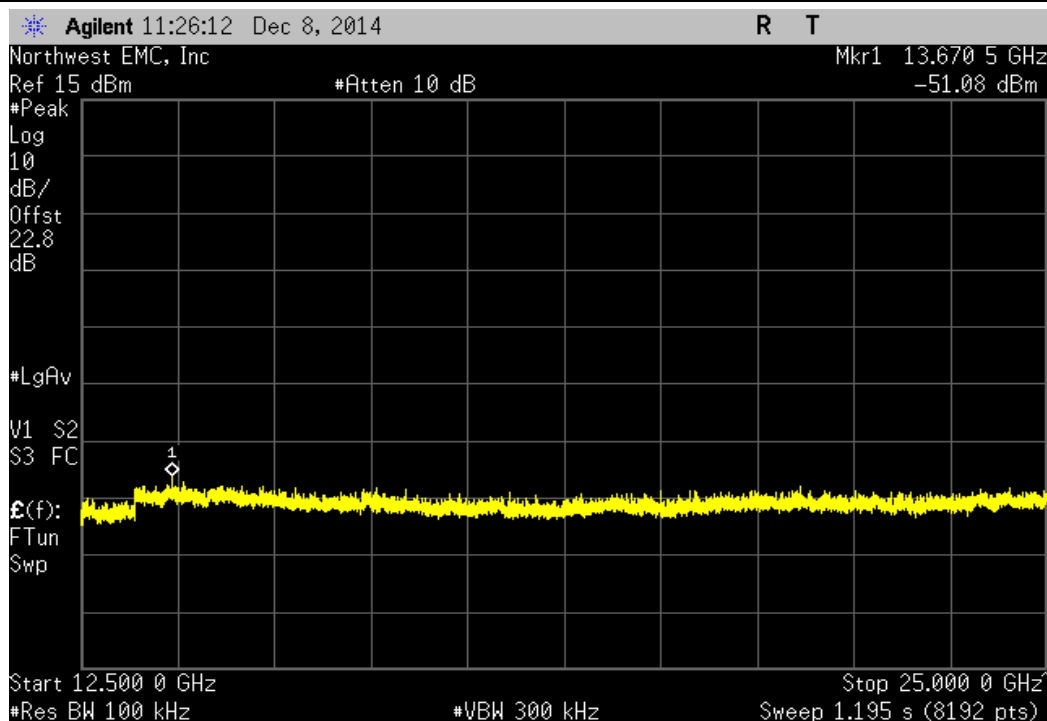
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 11, 2462 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	N/A	N/A	N/A	



2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 11, 2462 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz	-51.64	-20	Pass	

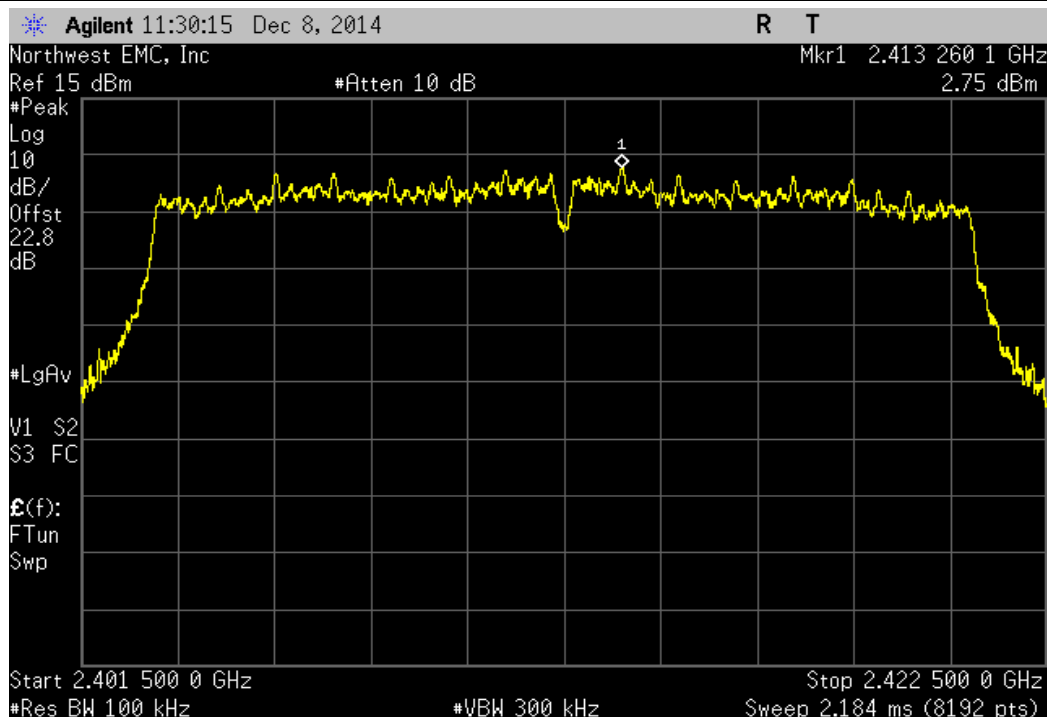


2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 11, 2462 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	-53.67	-20	Pass	

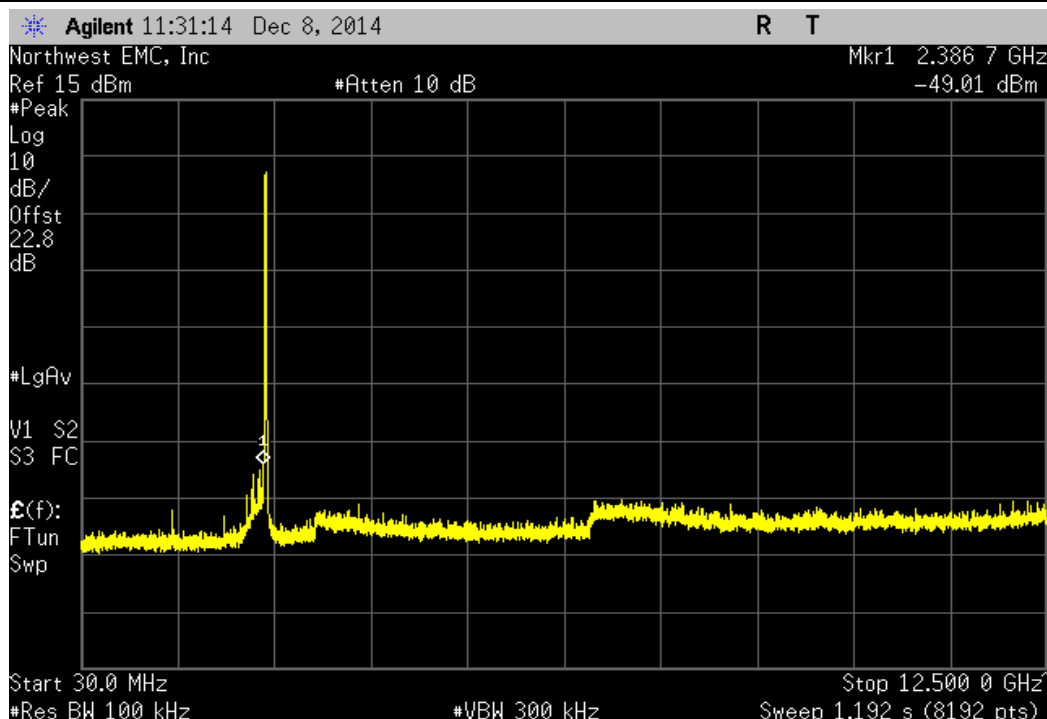




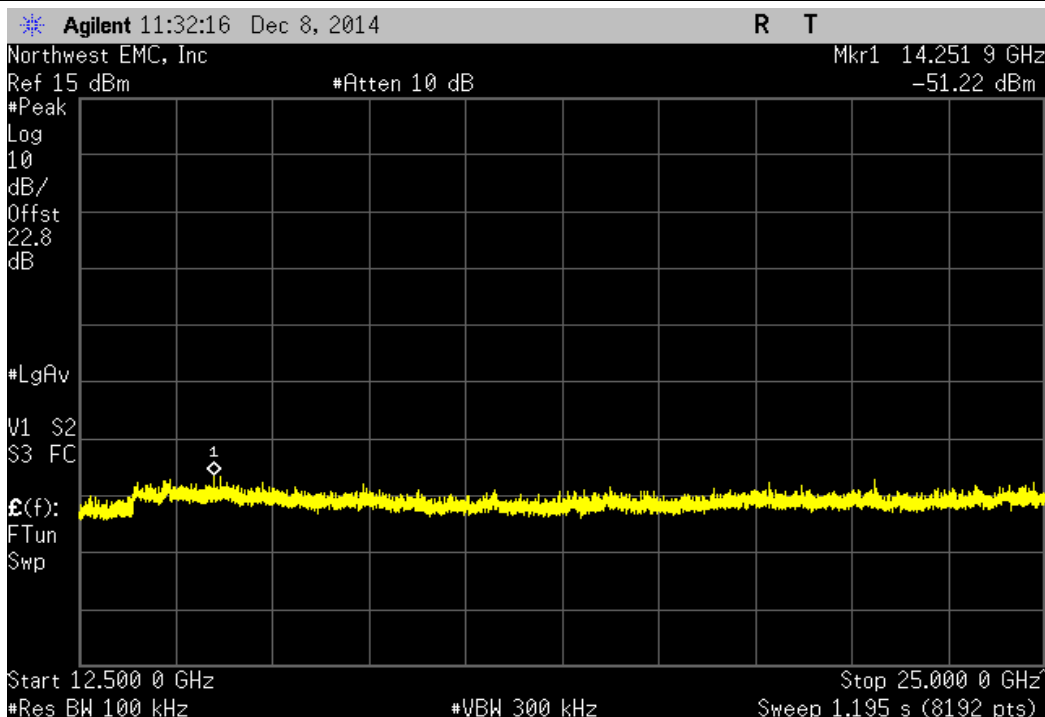
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1, 2412 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	N/A	N/A	N/A	



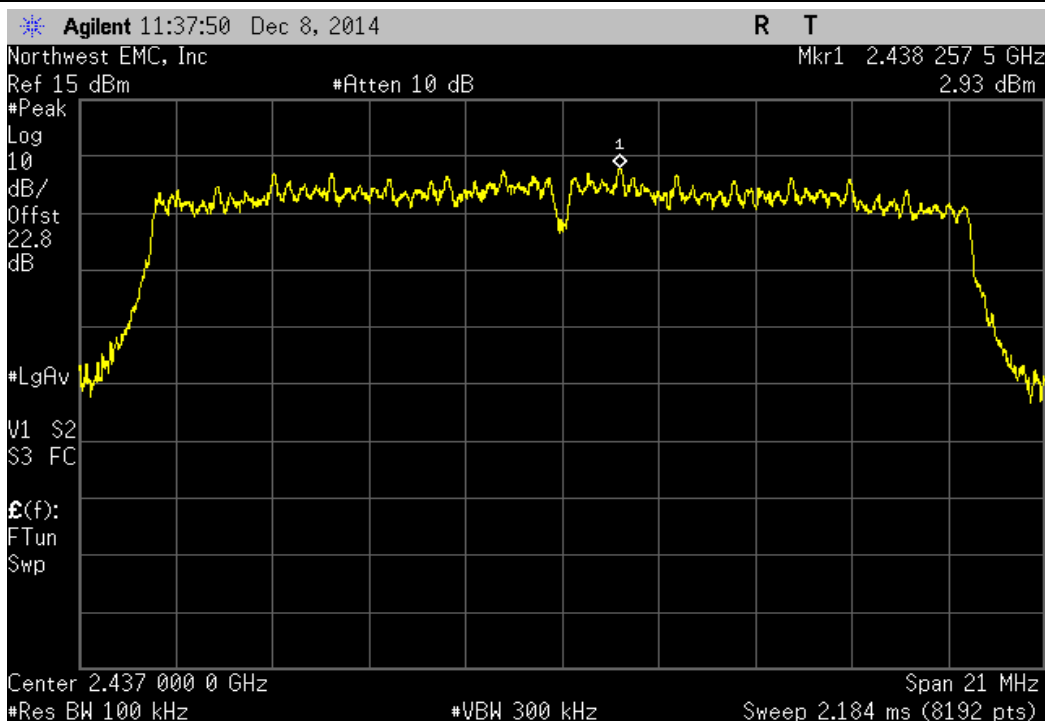
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1, 2412 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz	-51.77	-20	Pass	



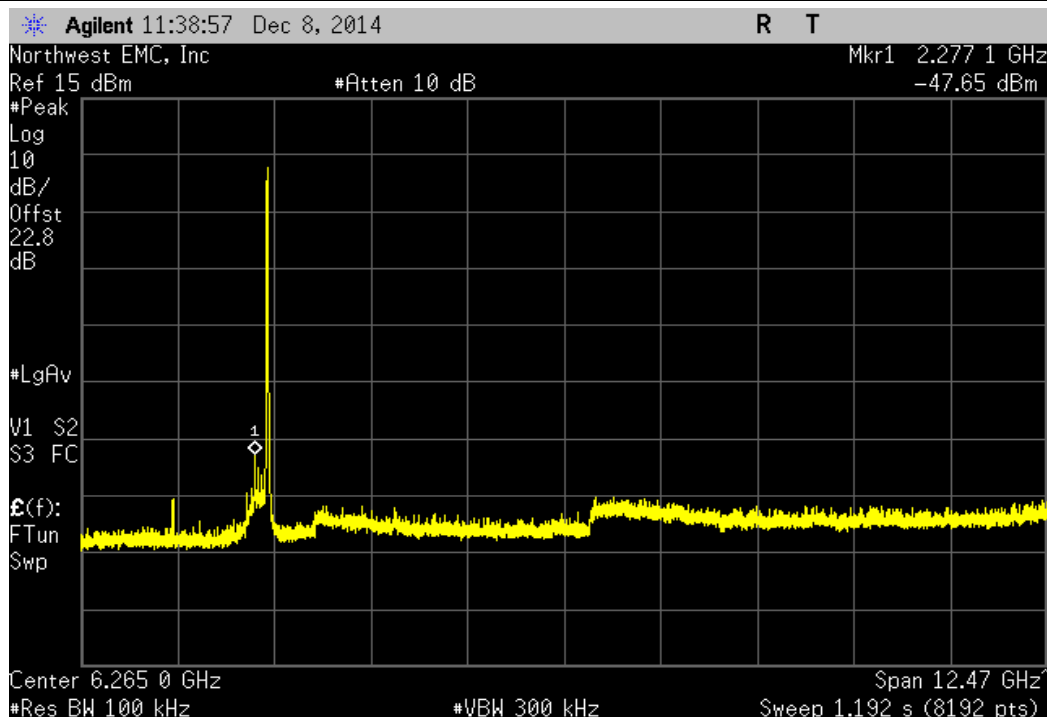
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1, 2412 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	-53.97	-20	Pass	



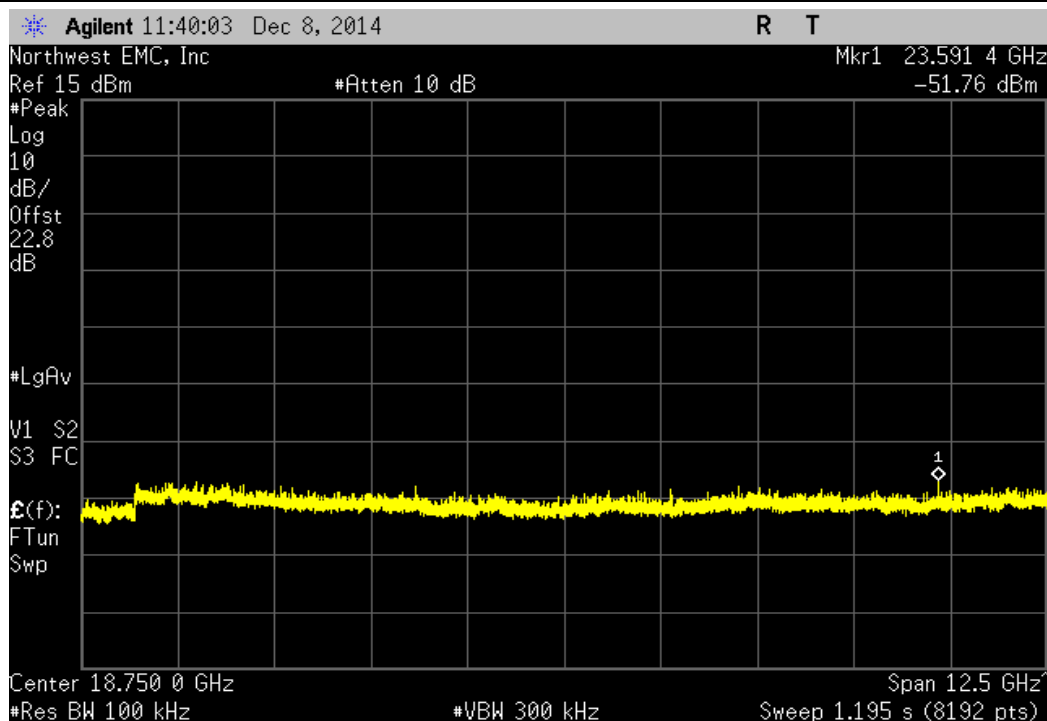
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Mid Channel 6, 2437 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	N/A	N/A	N/A	



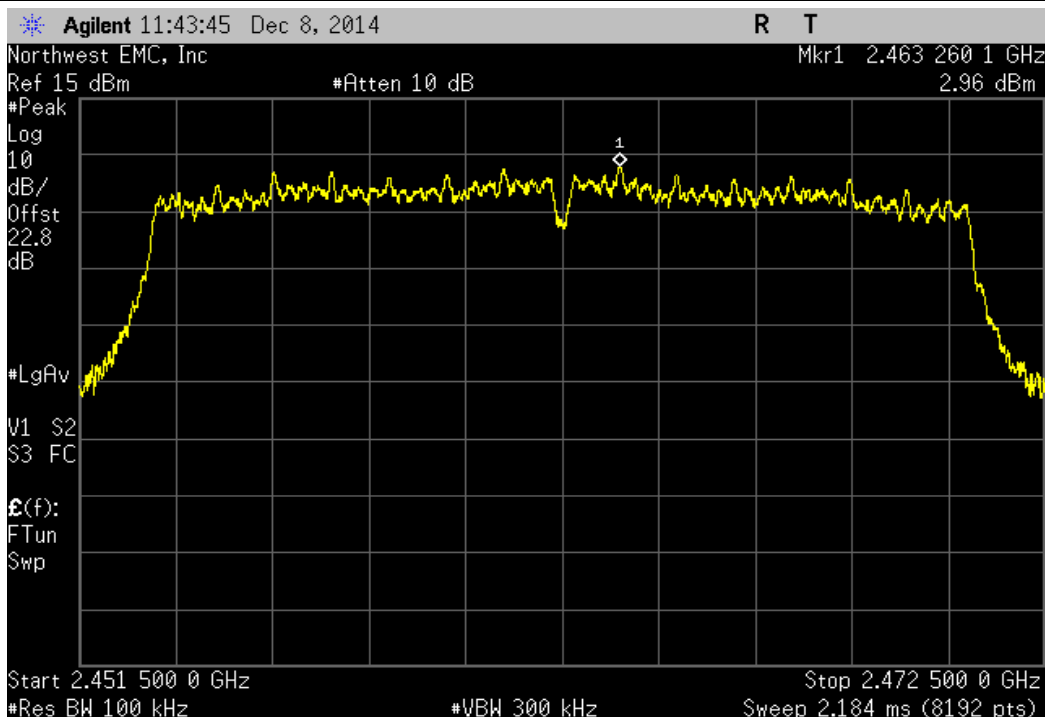
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Mid Channel 6, 2437 MHz			
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz	-50.58	-20	Pass



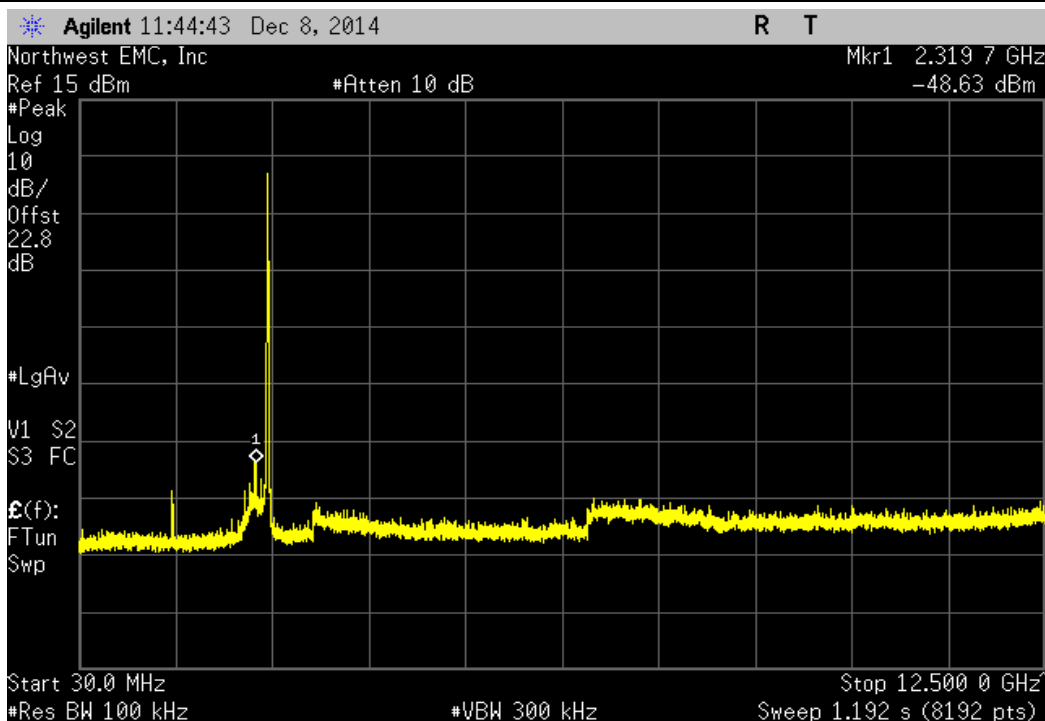
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Mid Channel 6, 2437 MHz			
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz	-54.69	-20	Pass



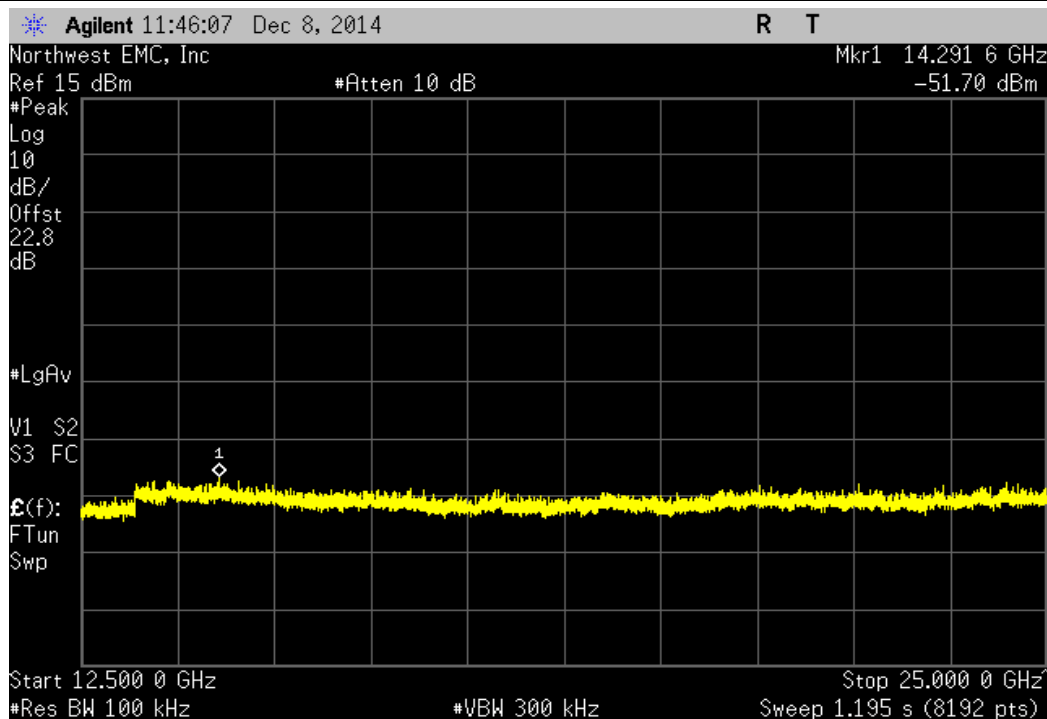
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, High Channel 11, 2462 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	N/A	N/A	N/A	



2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, High Channel 11, 2462 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz	-51.59	-20	Pass	



2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, High Channel 11, 2462 MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	-54.66	-20	Pass	



## BAND EDGE COMPLIANCE

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

### TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	2/3/2014	12
MXG Analog Signal Generator	Agilent	N5181A	TIG	3/28/2014	36
Power Meter	Gigatronics	8651A	SPM	9/17/2014	12
Power Sensor	Gigatronics	80701A	SPL	5/28/2014	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2014	12
Spectrum Analyzer	Agilent	E4440A	AFD	7/14/2014	24

### TEST DESCRIPTION


The spurious RF conducted emissions at the edges of the authorized bands were measured with the EUT set to low and high transmit frequencies in each available band. The channels closest to the band edges were selected. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at the data rate(s) listed in the datasheet.

The spectrum was scanned below the lower band edge and above the higher band edge.



# BAND EDGE COMPLIANCE

XMit 2014.02.07  
NweTx 2014.11.06

EUT: IMP003-FCC		Work Order: ELIM0007	
Serial Number: 0C2A690BDC4E		Date: 12/08/14	
Customer: Electric Imp, Inc.		Temperature: 21°C	
Attendees: Brandon Harris		Humidity: 38%	
Project: None		Barometric Pres.: 1017.6	
Tested by: Brandon Hobbs		Power: 5 VDC Nominal	
		Job Site: EV06	
TEST SPECIFICATIONS		Test Method	
FCC 15.247:2014		ANSI C63.10:2009	
COMMENTS			
EUT was running module scripts in WL.exe. A DC block was used in front of the analyzer.			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	1	Signature 	
		Value (dBc)	Limit ≤ (dBc)
2400 MHz - 2483.5 MHz Band			
802.11(b) 1 Mbps			
Low Channel 1, 2412 MHz		-37.78	-20
High Channel 11, 2462 MHz		-56.68	-20
802.11(b) 11 Mbps			
Low Channel 1, 2412 MHz		-38.79	-20
High Channel 11, 2462 MHz		-58.85	-20
802.11(g) 6 Mbps			
Low Channel 1, 2412 MHz		-33.84	-20
High Channel 11, 2462 MHz		-48.32	-20
802.11(g) 36 Mbps			
Low Channel 1, 2412 MHz		-34.25	-20
High Channel 11, 2462 MHz		-49.01	-20
802.11(g) 54 Mbps			
Low Channel 1, 2412 MHz		-36.68	-20
High Channel 11, 2462 MHz		-48.96	-20
802.11(n) MCS0			
Low Channel 1, 2412 MHz		-36.57	-20
High Channel 11, 2462 MHz		-47.45	-20
802.11(n) MCS7			
Low Channel 1, 2412 MHz		-37.43	-20
High Channel 11, 2462 MHz		-48.02	-20

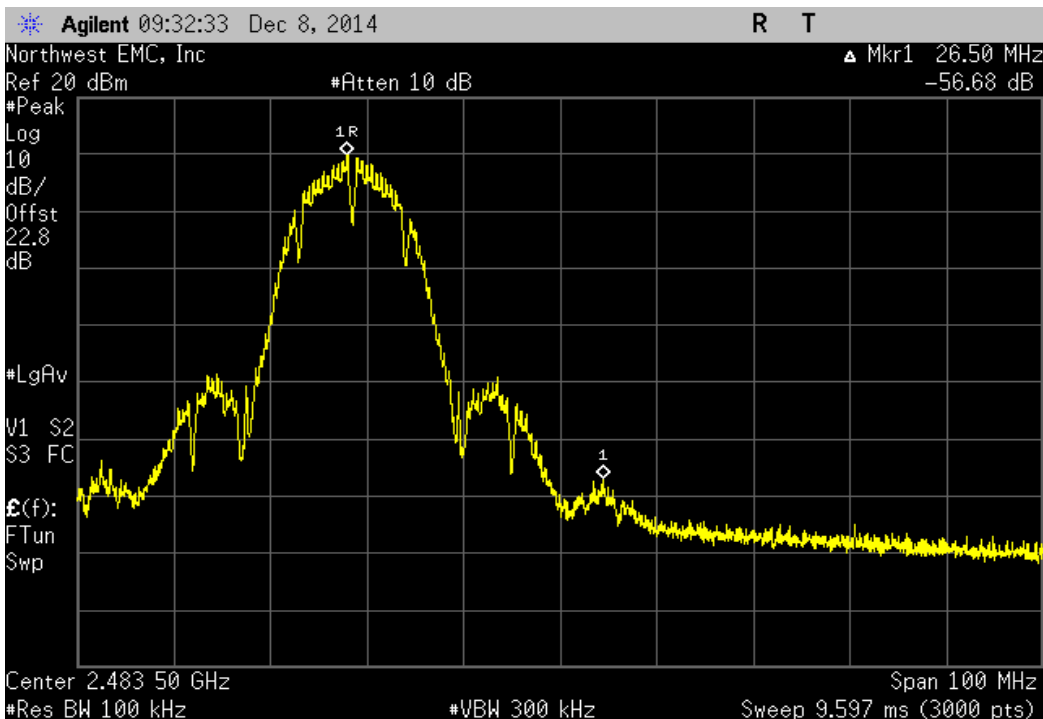
2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz

Value (dBc)	Limit ≤ (dBc)	Result
-37.78	-20	Pass



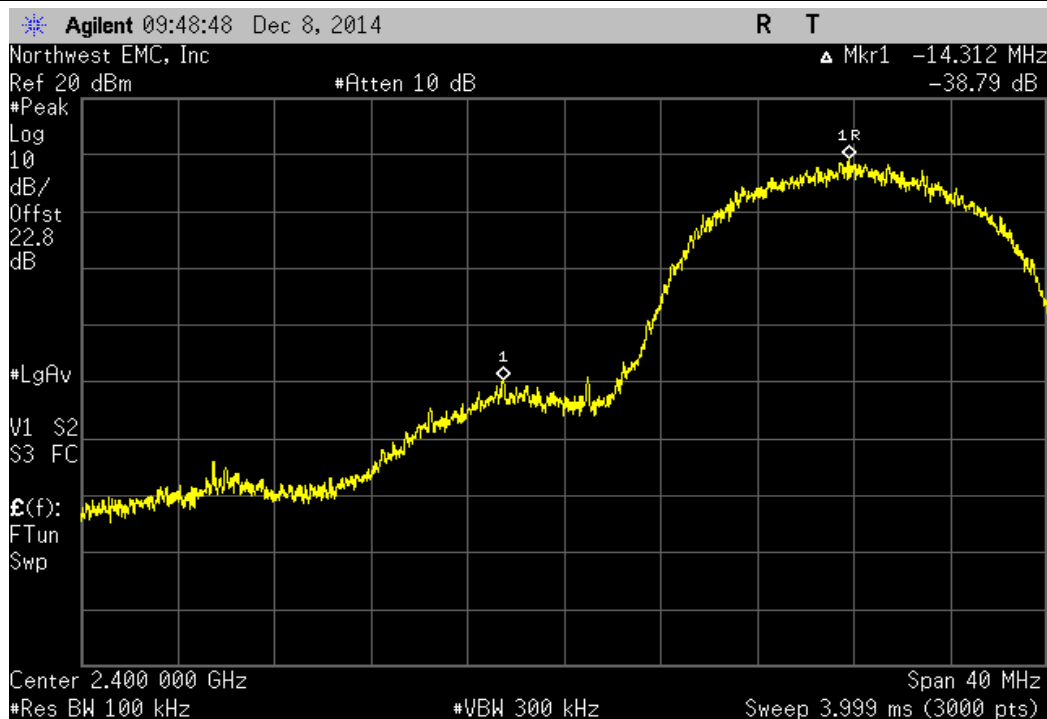
2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz

Value (dBc)	Limit ≤ (dBc)	Result
-56.68	-20	Pass

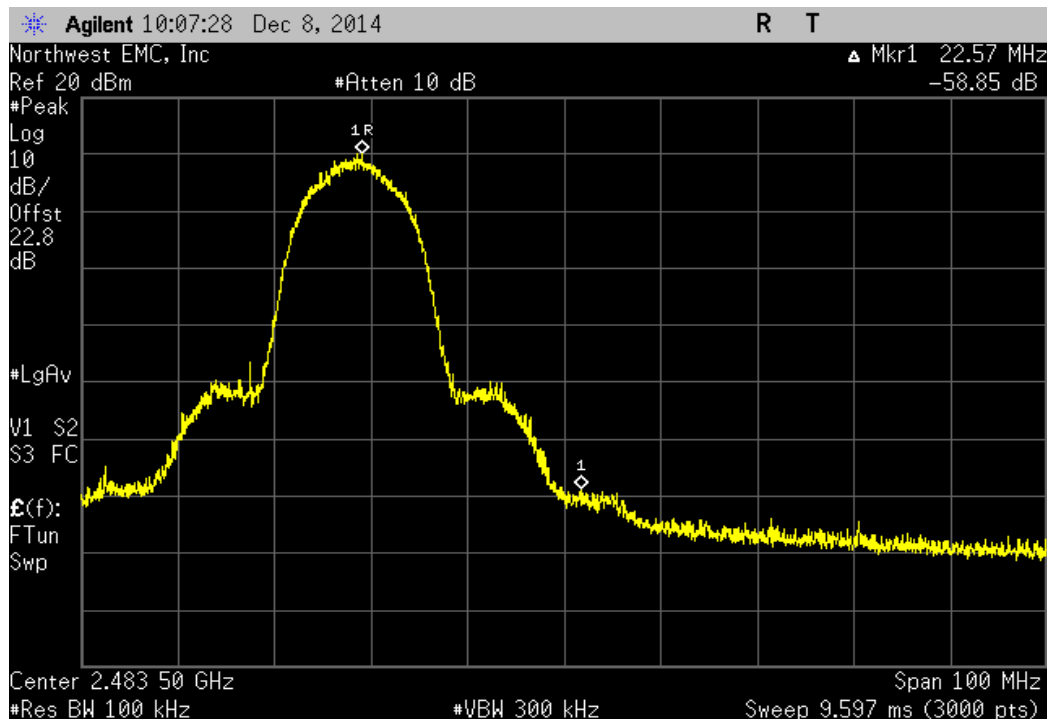




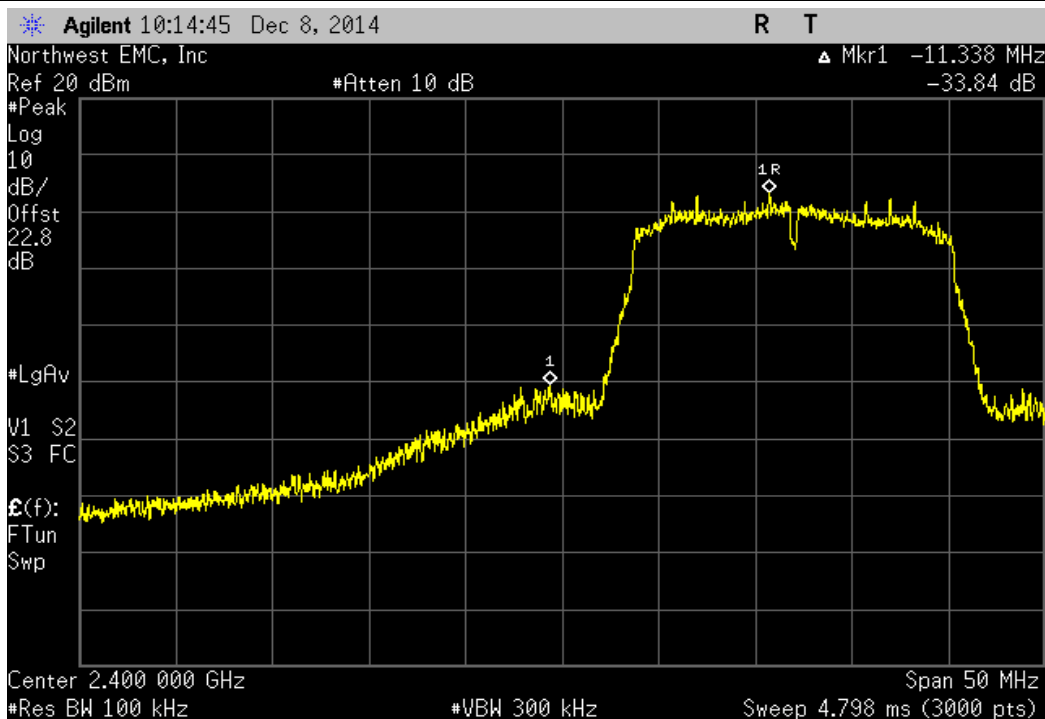
2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz					Value (dBc)	Limit ≤ (dBc)	Result
					-38.79	-20	Pass



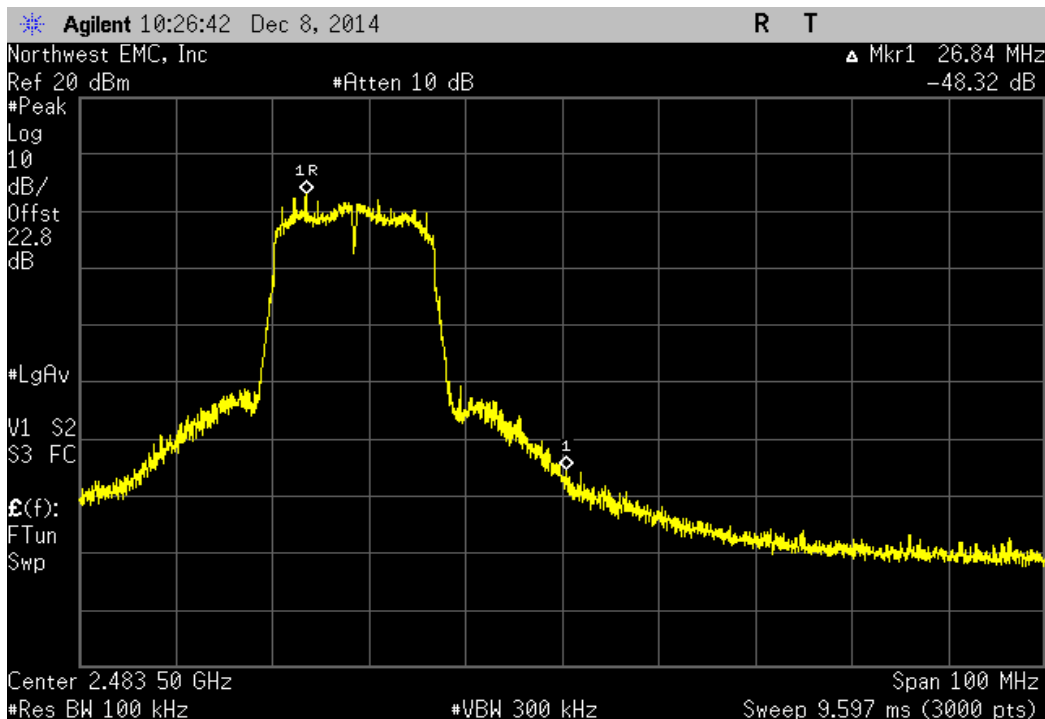
2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz					Value (dBc)	Limit ≤ (dBc)	Result
					-58.85	-20	Pass



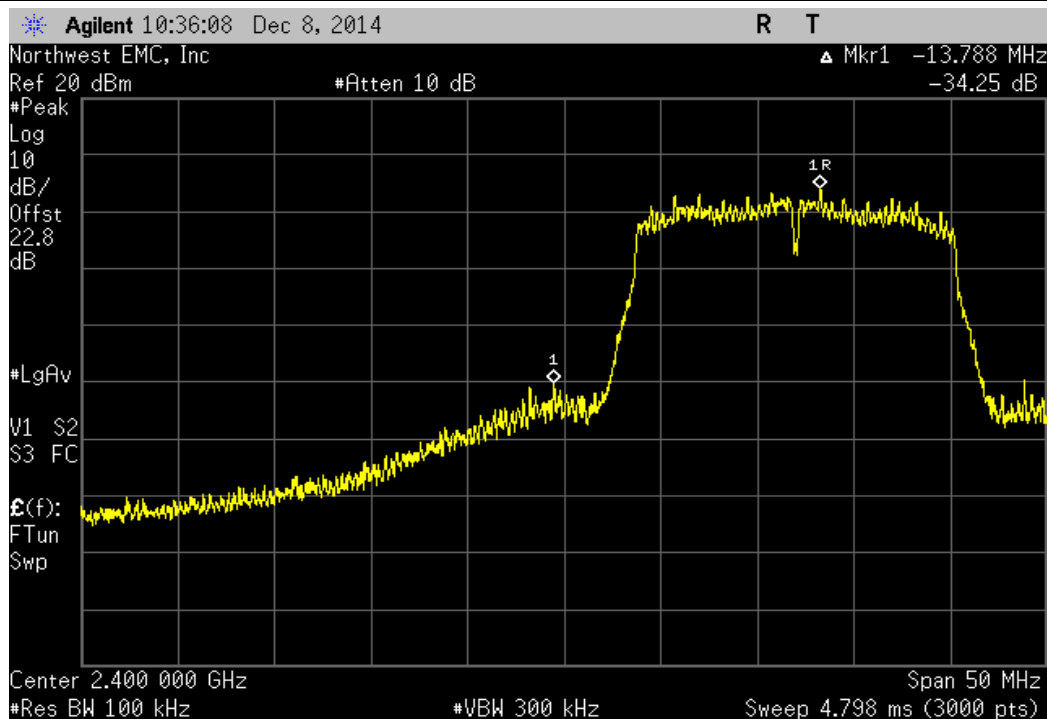
2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-33.84	-20	Pass



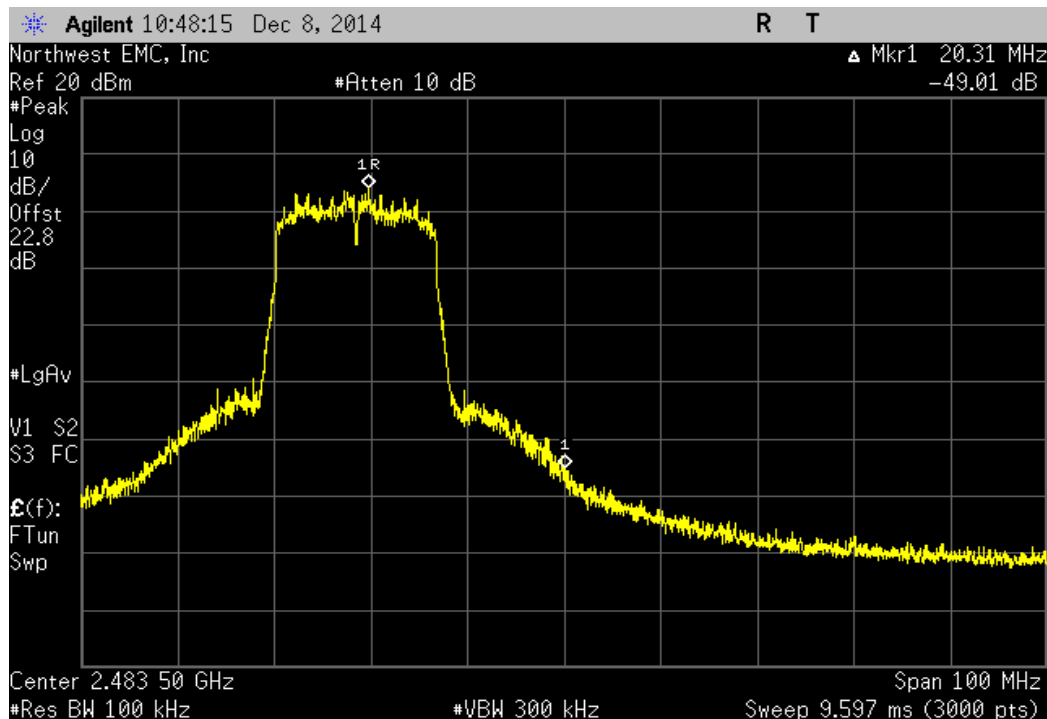
2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-48.32	-20	Pass



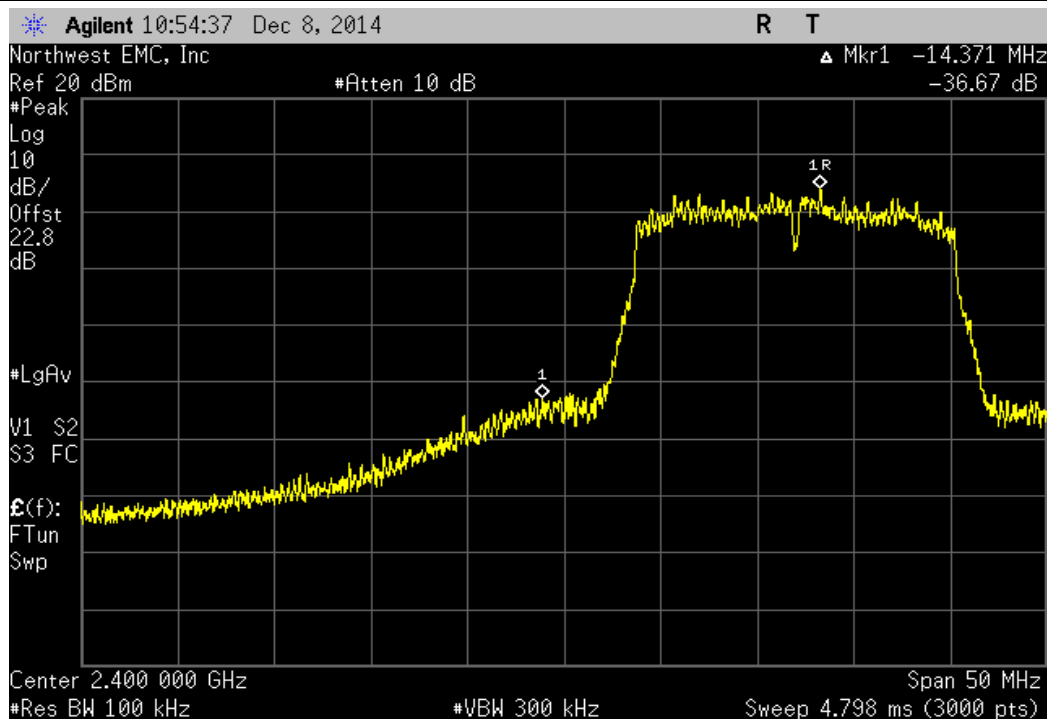
2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz					Value	Limit	Result
					(dBc)	≤ (dBc)	
					-34.25	-20	Pass



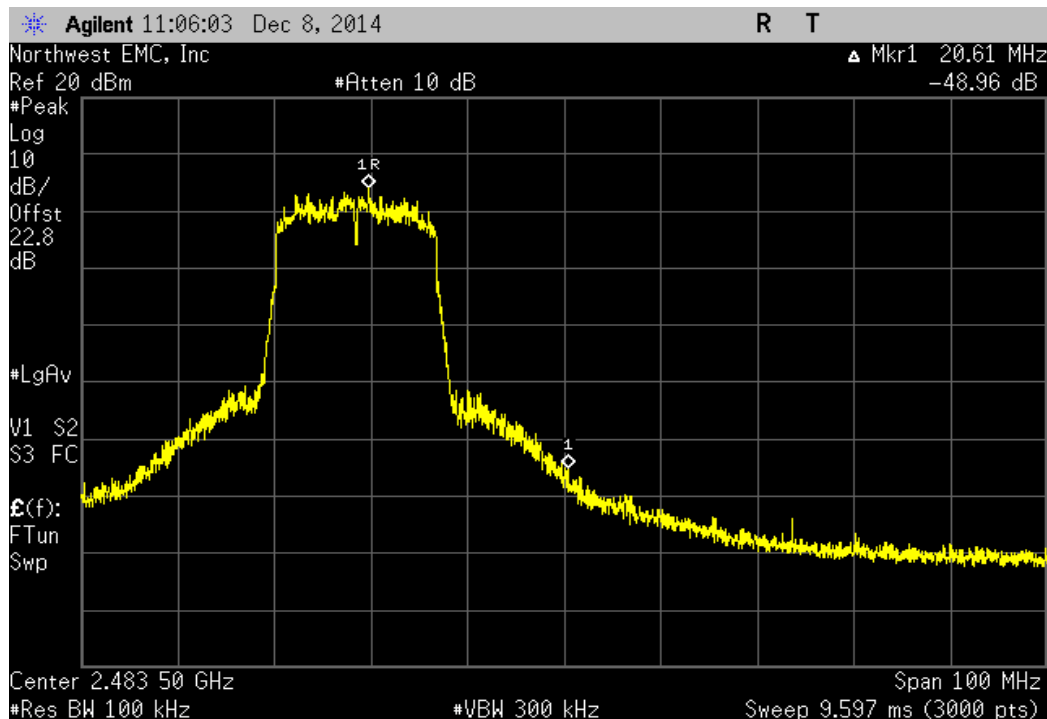
2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz					Value	Limit	Result
					(dBc)	≤ (dBc)	
					-49.01	-20	Pass



2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz					Value (dBc)	Limit ≤ (dBc)	Result
					-36.68	-20	Pass

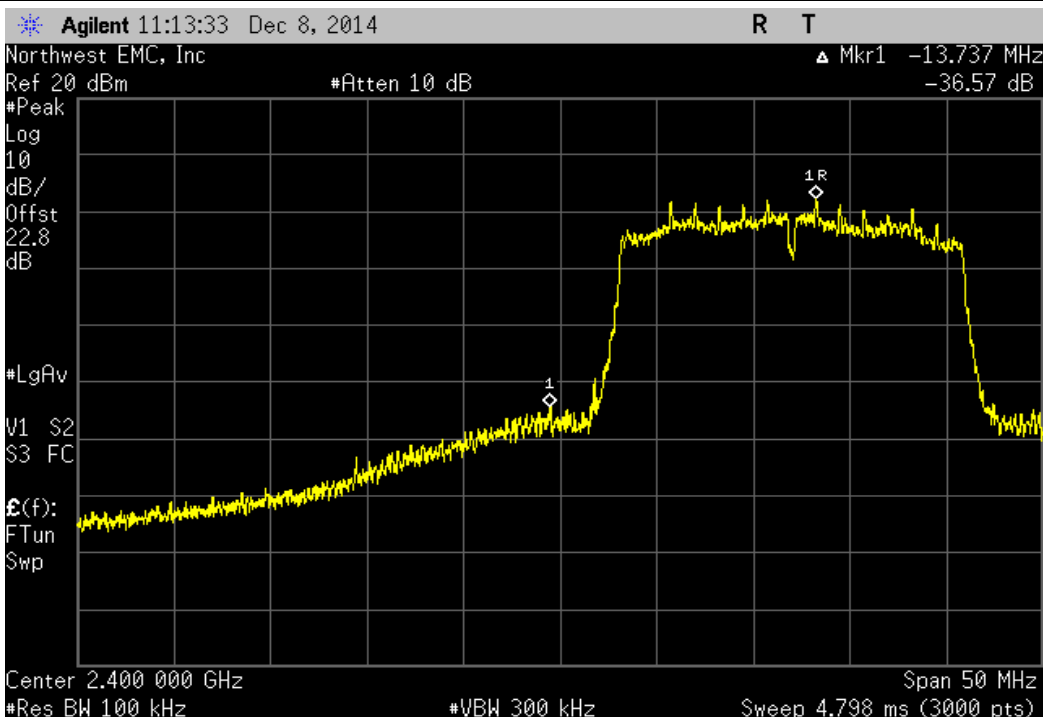


2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz					Value (dBc)	Limit ≤ (dBc)	Result
					-48.96	-20	Pass



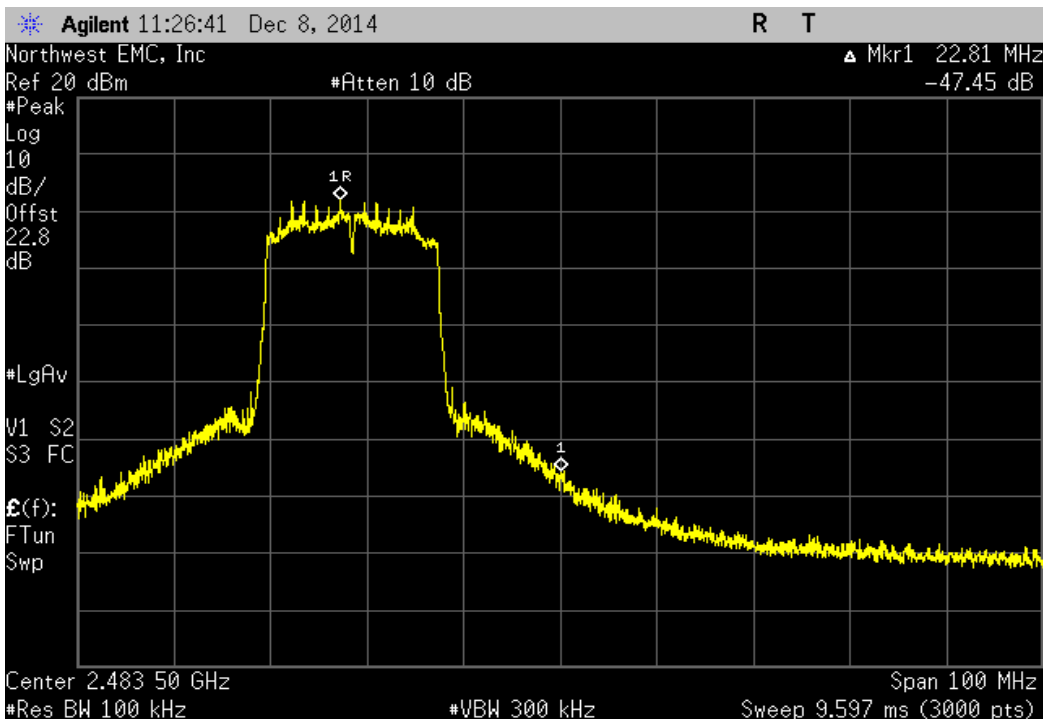
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1, 2412 MHz

Value (dBc)	Limit ≤ (dBc)	Result
-36.57	-20	Pass



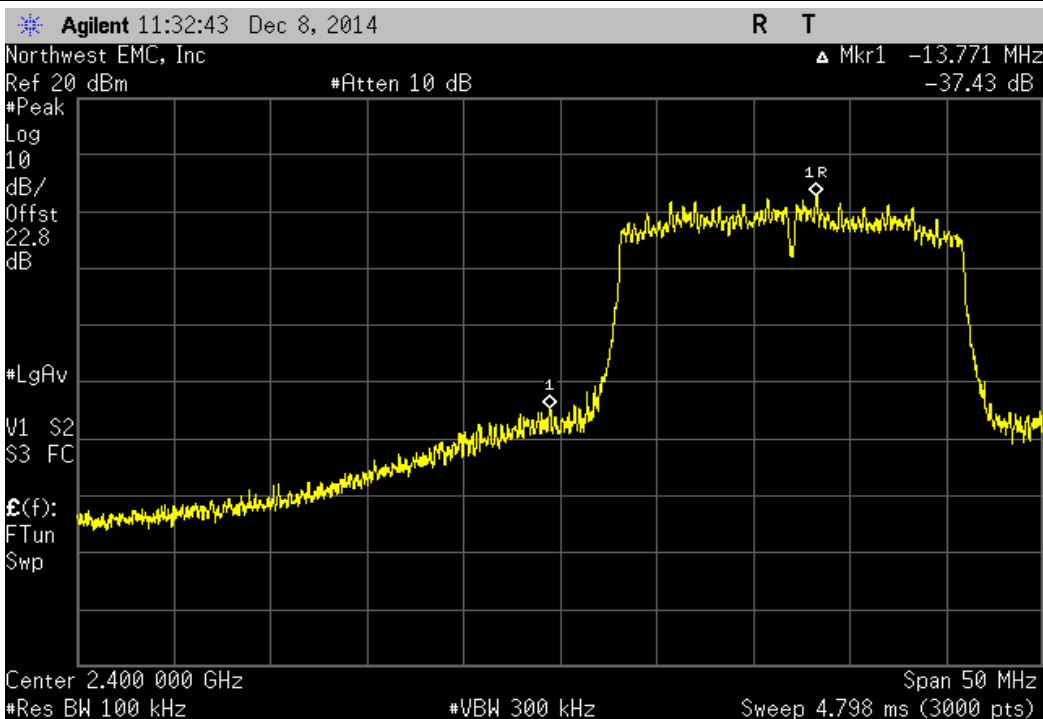
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 11, 2462 MHz

Value (dBc)	Limit ≤ (dBc)	Result
-47.45	-20	Pass



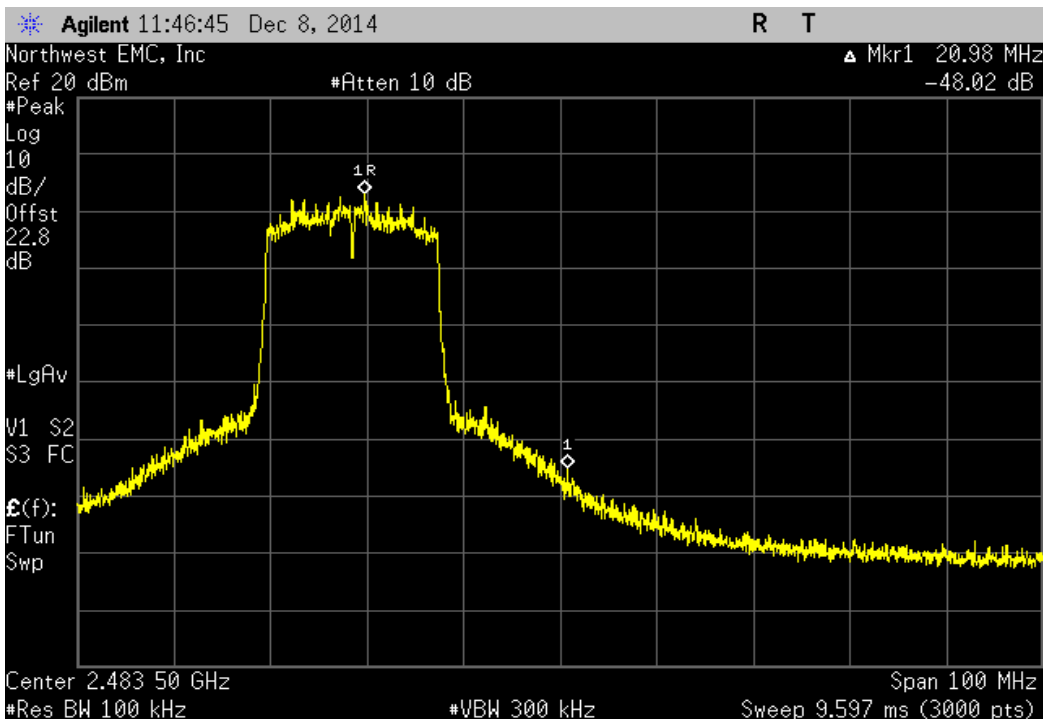
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1, 2412 MHz

Value (dBc)	Limit ≤ (dBc)	Result
-37.43	-20	Pass



2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, High Channel 11, 2462 MHz

Value (dBc)	Limit ≤ (dBc)	Result
-48.02	-20	Pass



## OCCUPIED BANDWIDTH

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

### TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	2/3/2014	12
MXG Analog Signal Generator	Agilent	N5181A	TIG	3/28/2014	36
Power Meter	Gigatronics	8651A	SPM	9/17/2014	12
Power Sensor	Gigatronics	80701A	SPL	5/28/2014	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2014	12
Spectrum Analyzer	Agilent	E4440A	AFD	7/14/2014	24

### TEST DESCRIPTION


The 6dB occupied bandwidth was measured using 100 kHz resolution bandwidth and 300 kHz video bandwidth. The 99.9% (approximate 26 dB) emission bandwidth (EBW) was also measured at the same time.

The EUT was set to low, medium and high transmit frequencies. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at the data rate(s) listed in the datasheet.



# OCCUPIED BANDWIDTH

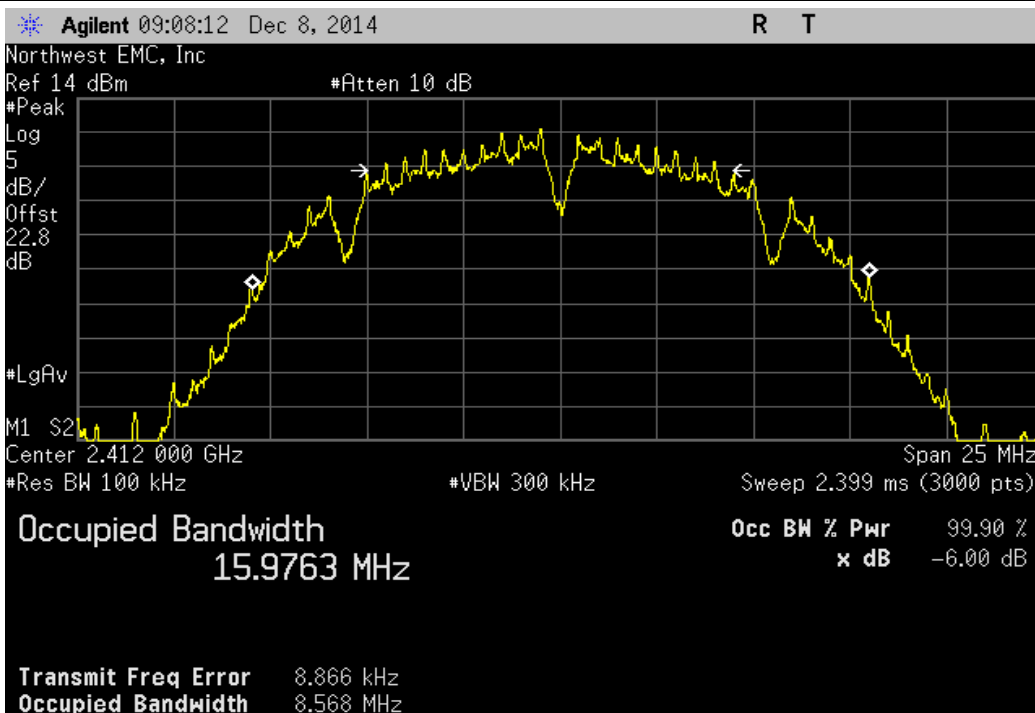
XMit 2014.02.07  
NweTx 2014.11.06

EUT: IMP003-FCC		Work Order: ELIM0007	
Serial Number: 0C2A690BDC4E		Date: 12/08/14	
Customer: Electric Imp, Inc.		Temperature: 21°C	
Attendees: Brandon Harris		Humidity: 38%	
Project: None		Barometric Pres.: 1017.6	
Tested by: Brandon Hobbs		Power: 5 VDC Nominal	
		Job Site: EV06	
TEST SPECIFICATIONS		Test Method	
FCC 15.247:2014		ANSI C63.10:2009	
COMMENTS			
EUT was running module scripts in WL.exe. A DC block was used in front of the analyzer.			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	1	Signature 	
		Value	Limit (>)
2400 MHz - 2483.5 MHz Band			Result
802.11(b) 1 Mbps			
Low Channel 1, 2412 MHz		8.568 MHz	500 kHz Pass
Mid Channel 6, 2437 MHz		9.531 MHz	500 kHz Pass
High Channel 11, 2462 MHz		8.071 MHz	500 kHz Pass
802.11(b) 11 Mbps			
Low Channel 1, 2412 MHz		9.48 MHz	500 kHz Pass
Mid Channel 6, 2437 MHz		9.304 MHz	500 kHz Pass
High Channel 11, 2462 MHz		8.284 MHz	500 kHz Pass
802.11(g) 6 Mbps			
Low Channel 1, 2412 MHz		15.424 MHz	500 kHz Pass
Mid Channel 6, 2437 MHz		15.171 MHz	500 kHz Pass
High Channel 11, 2462 MHz		15.647 MHz	500 kHz Pass
802.11(g) 36 Mbps			
Low Channel 1, 2412 MHz		15.738 MHz	500 kHz Pass
Mid Channel 6, 2437 MHz		15.65 MHz	500 kHz Pass
High Channel 11, 2462 MHz		15.366 MHz	500 kHz Pass
802.11(g) 54 Mbps			
Low Channel 1, 2412 MHz		15.663 MHz	500 kHz Pass
Mid Channel 6, 2437 MHz		15.906 MHz	500 kHz Pass
High Channel 11, 2462 MHz		15.644 MHz	500 kHz Pass
802.11(n) MCS0			
Low Channel 1, 2412 MHz		15.144 MHz	500 kHz Pass
Mid Channel 6, 2437 MHz		15.189 MHz	500 kHz Pass
High Channel 11, 2462 MHz		15.279 MHz	500 kHz Pass
802.11(n) MCS7			
Low Channel 1, 2412 MHz		16.334 MHz	500 kHz Pass
Mid Channel 6, 2437 MHz		16.349 MHz	500 kHz Pass
High Channel 11, 2462 MHz		16.021 MHz	500 kHz Pass



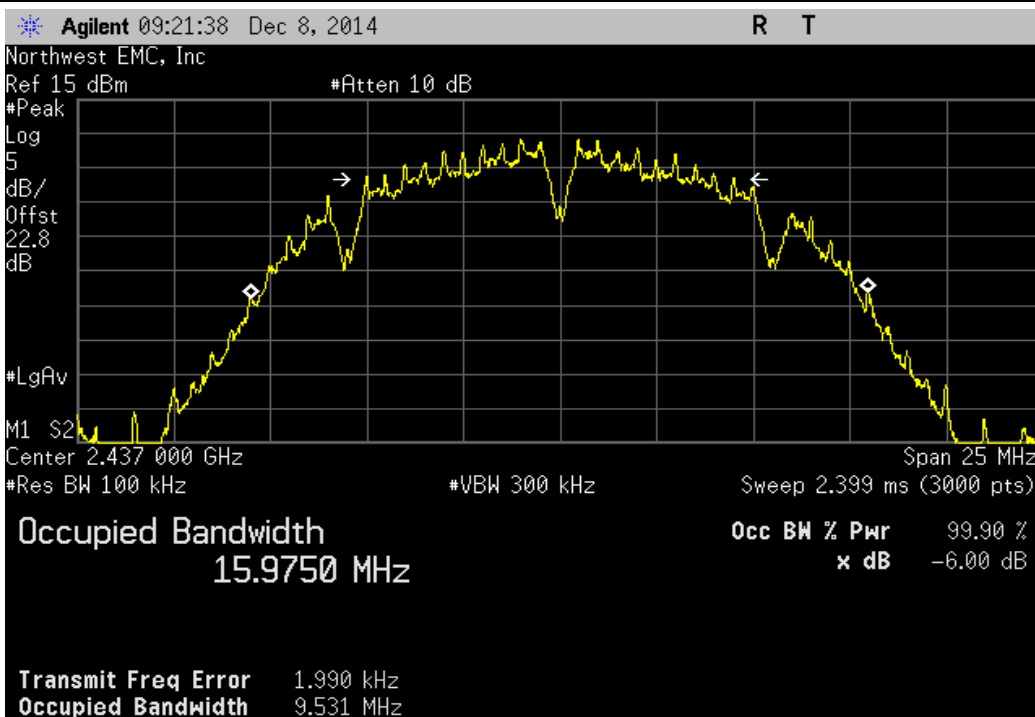
2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz

	Value	Limit (>)	Result
	8.568 MHz	500 kHz	Pass

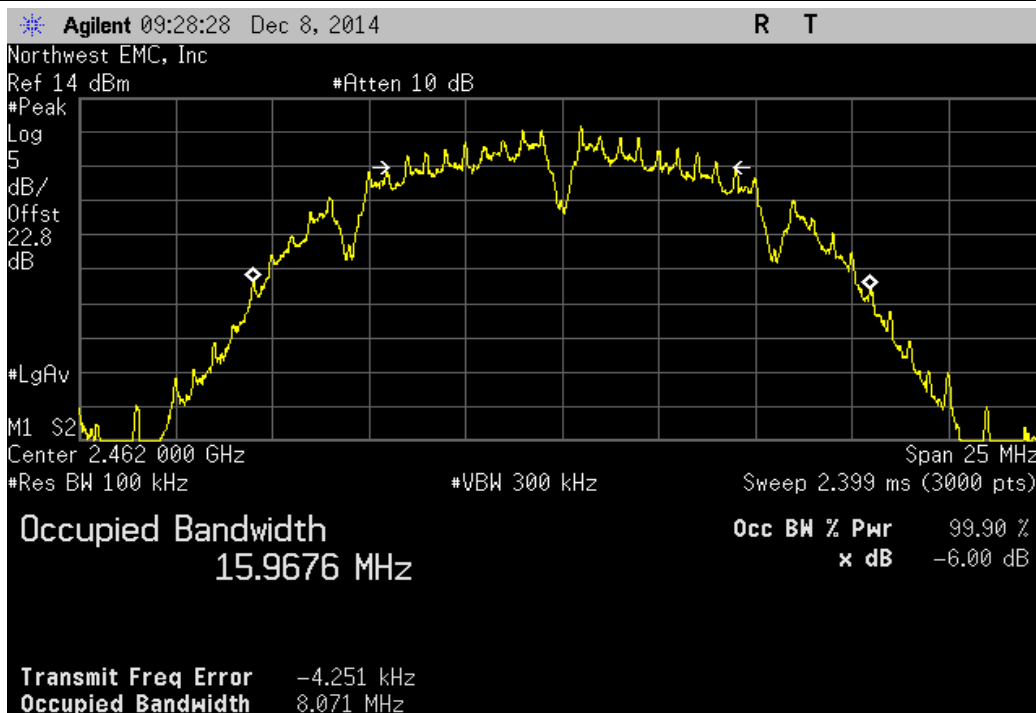


2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz

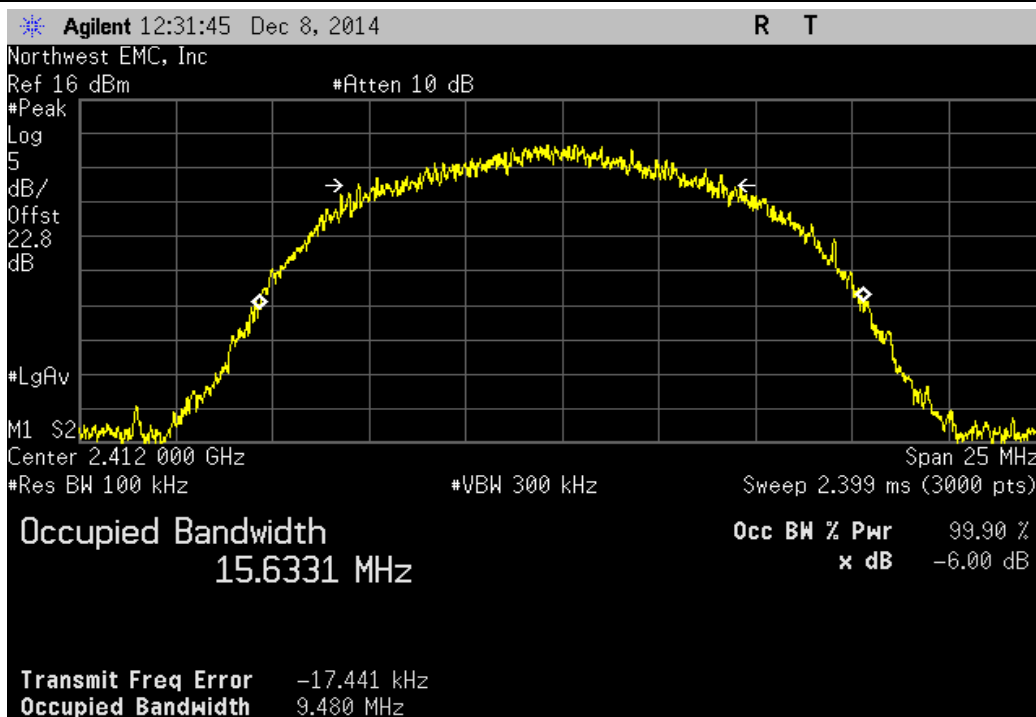
	Value	Limit (>)	Result
	9.531 MHz	500 kHz	Pass



2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz				Limit	Result
				(>)	
			Value		
			8.071 MHz	500 kHz	Pass

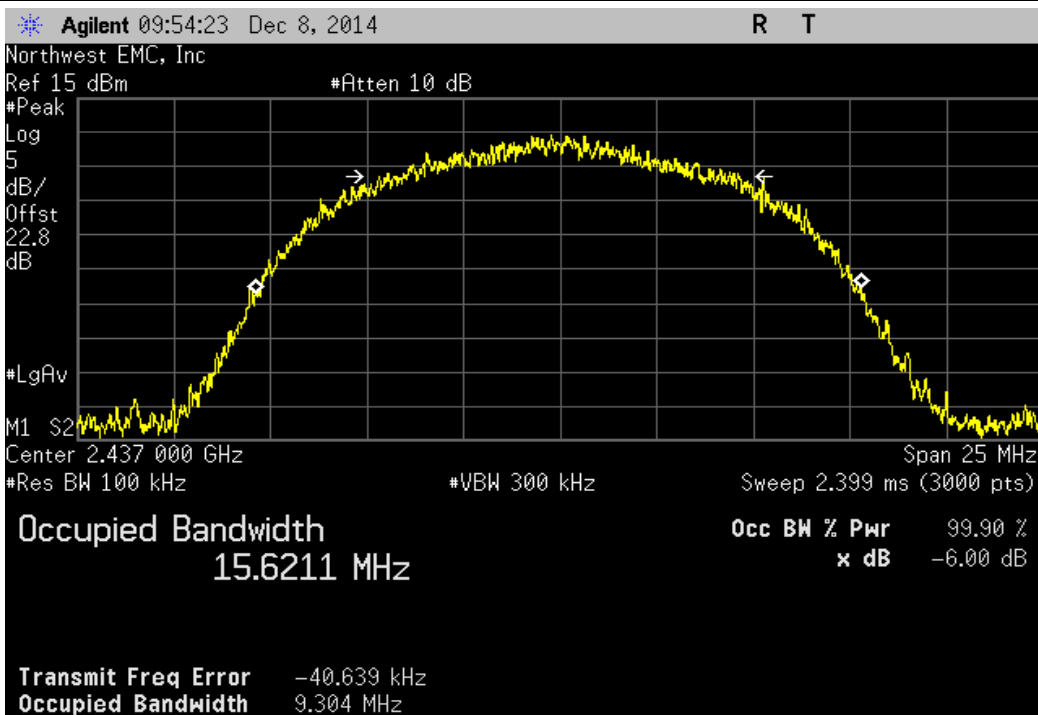


2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz				Limit	Result
				(>)	
			Value		
			9.48 MHz	500 kHz	Pass



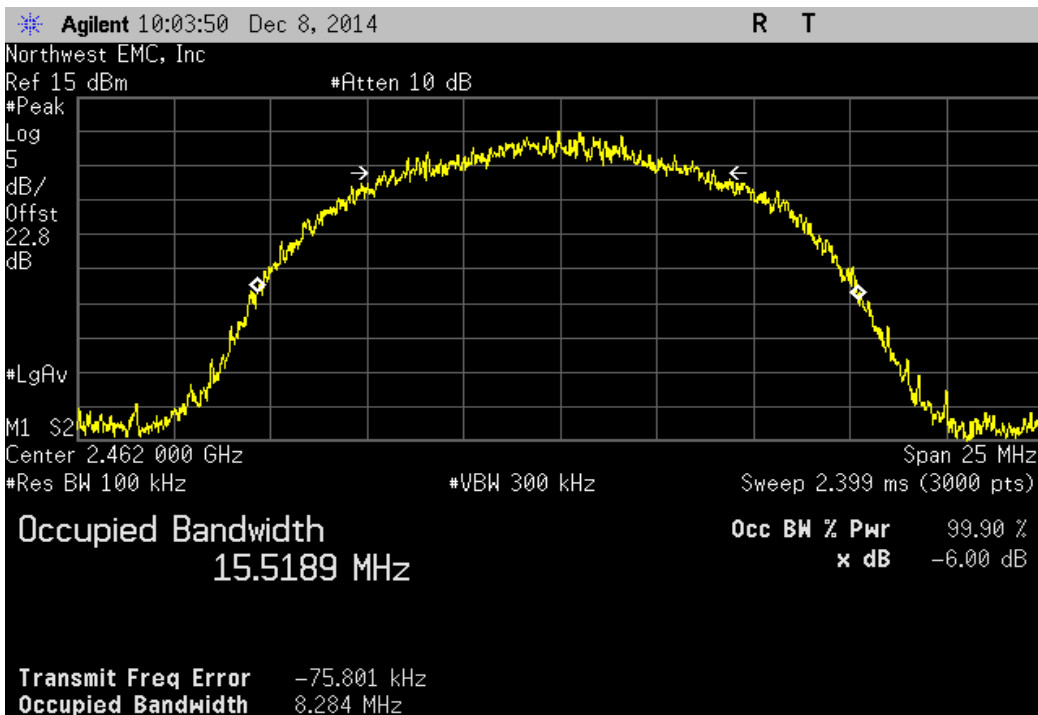
2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Mid Channel 6, 2437 MHz

	Value	Limit (>)	Result
	9.304 MHz	500 kHz	Pass



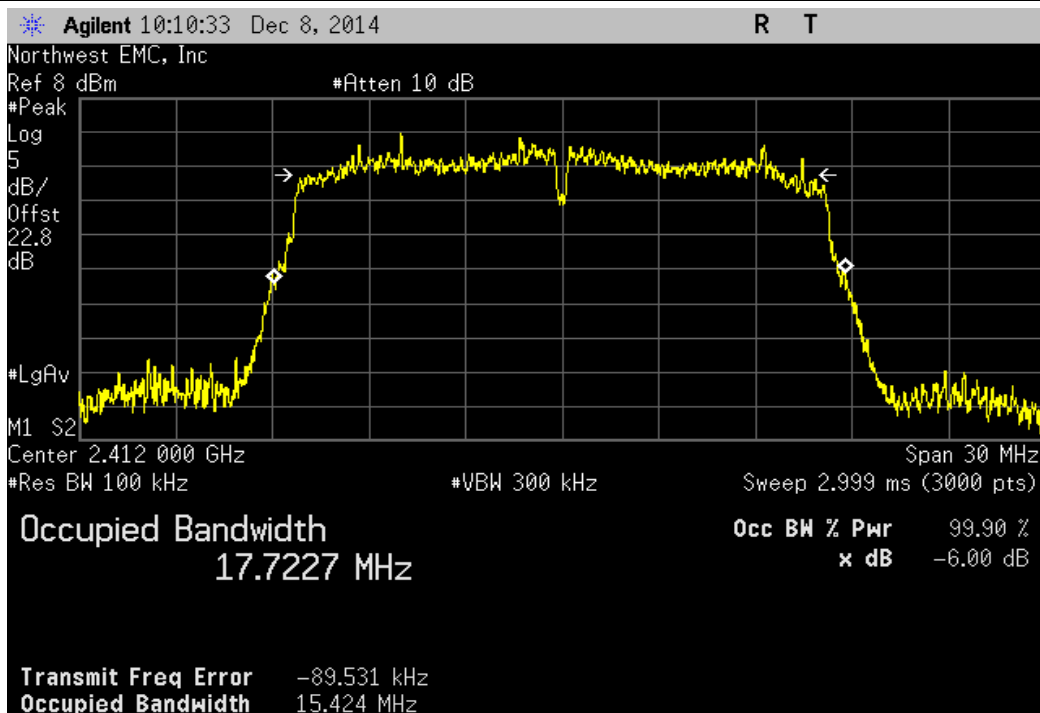
2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz

	Value	Limit (>)	Result
	8.284 MHz	500 kHz	Pass



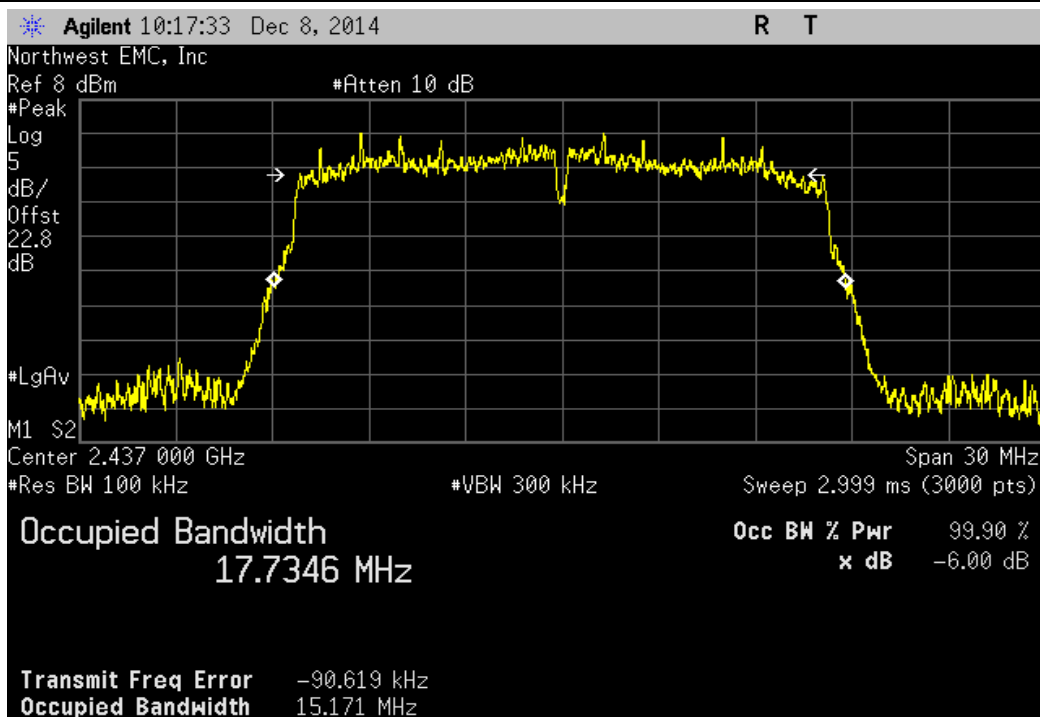
2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz

	Value	Limit (>)	Result
	15.424 MHz	500 kHz	Pass

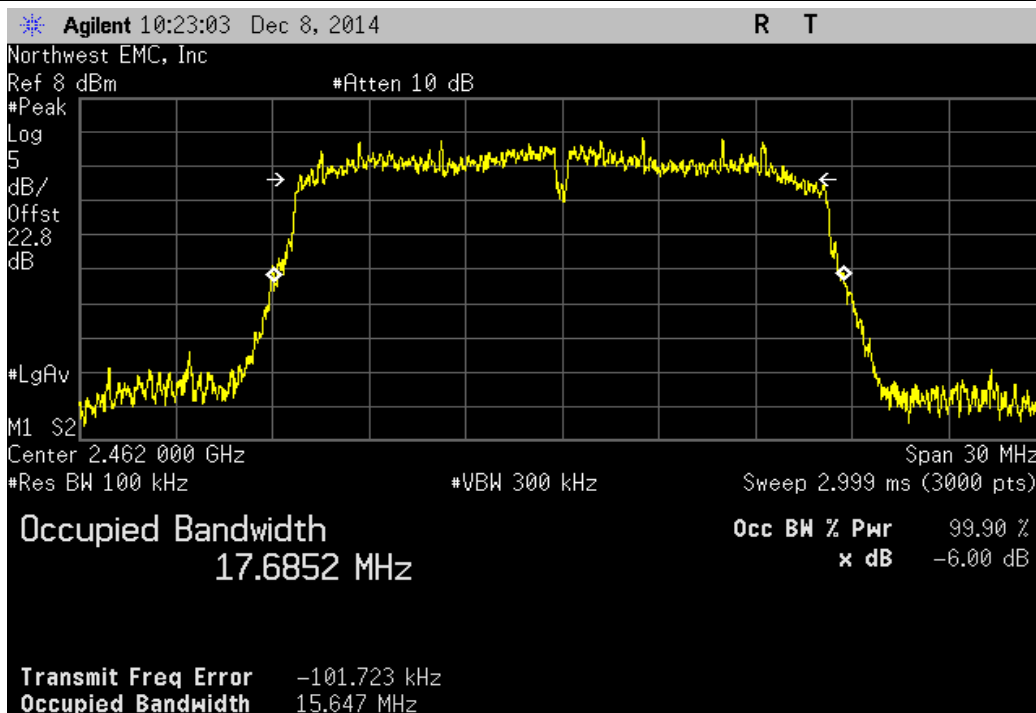


2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz

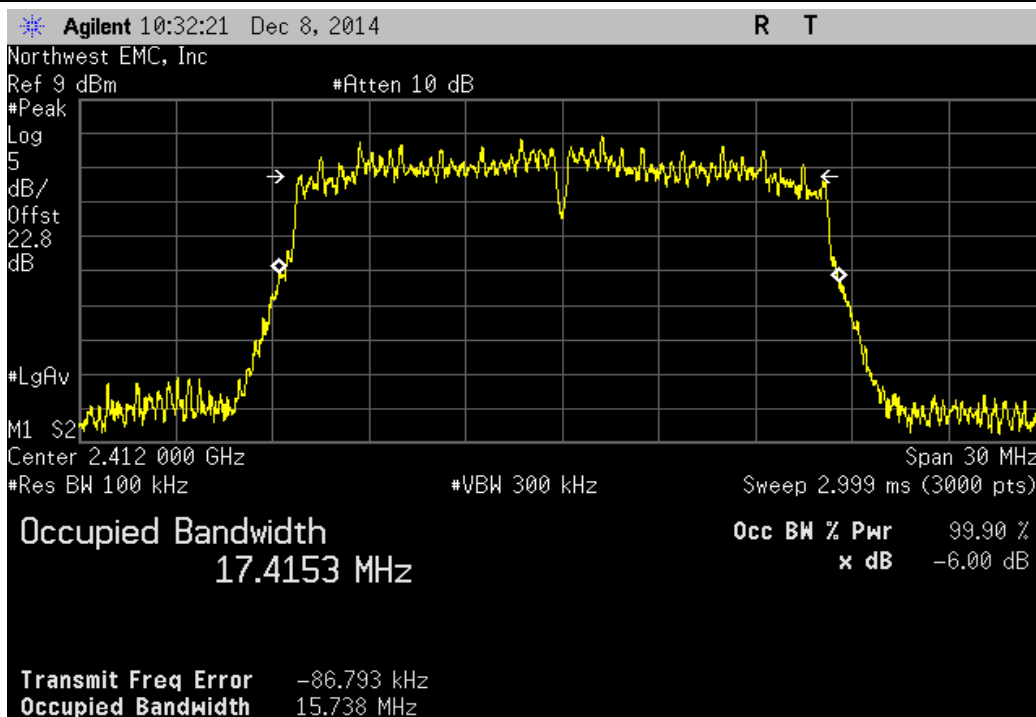
	Value	Limit (>)	Result
	15.171 MHz	500 kHz	Pass



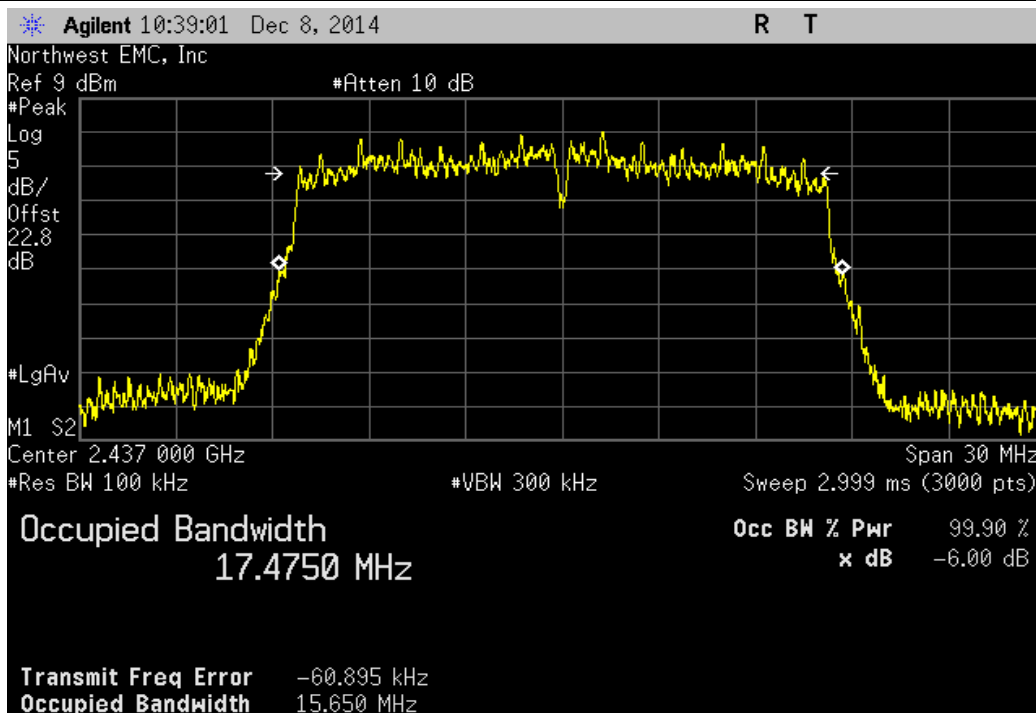
2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz			
	Value	Limit (>)	Result
	15.647 MHz	500 kHz	Pass



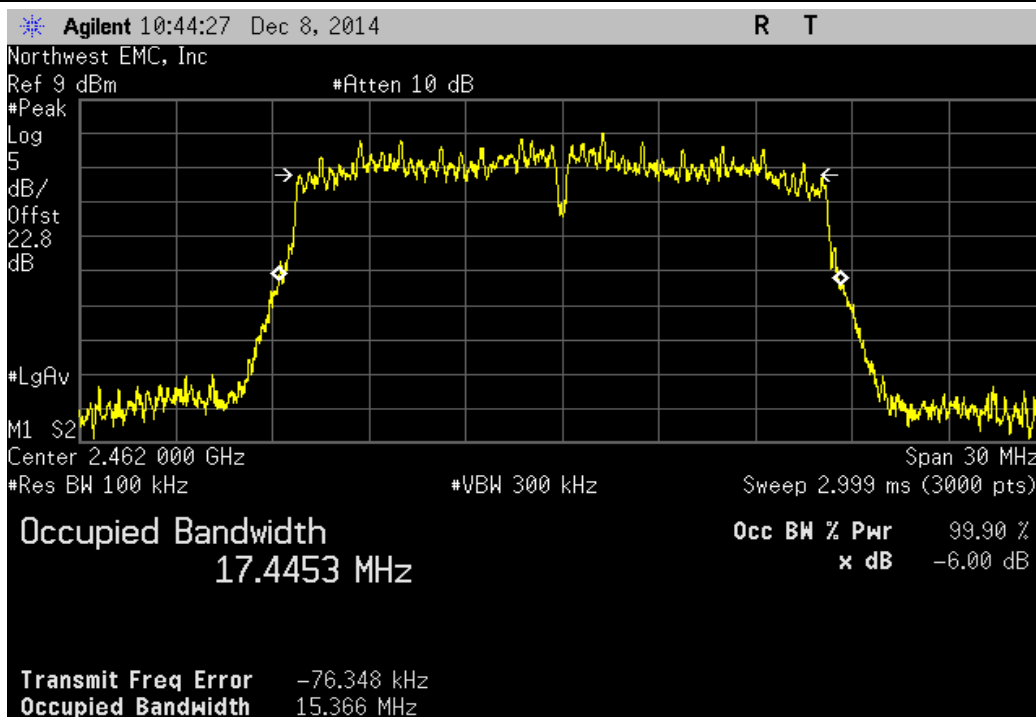
2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz			
	Value	Limit (>)	Result
	15.738 MHz	500 kHz	Pass



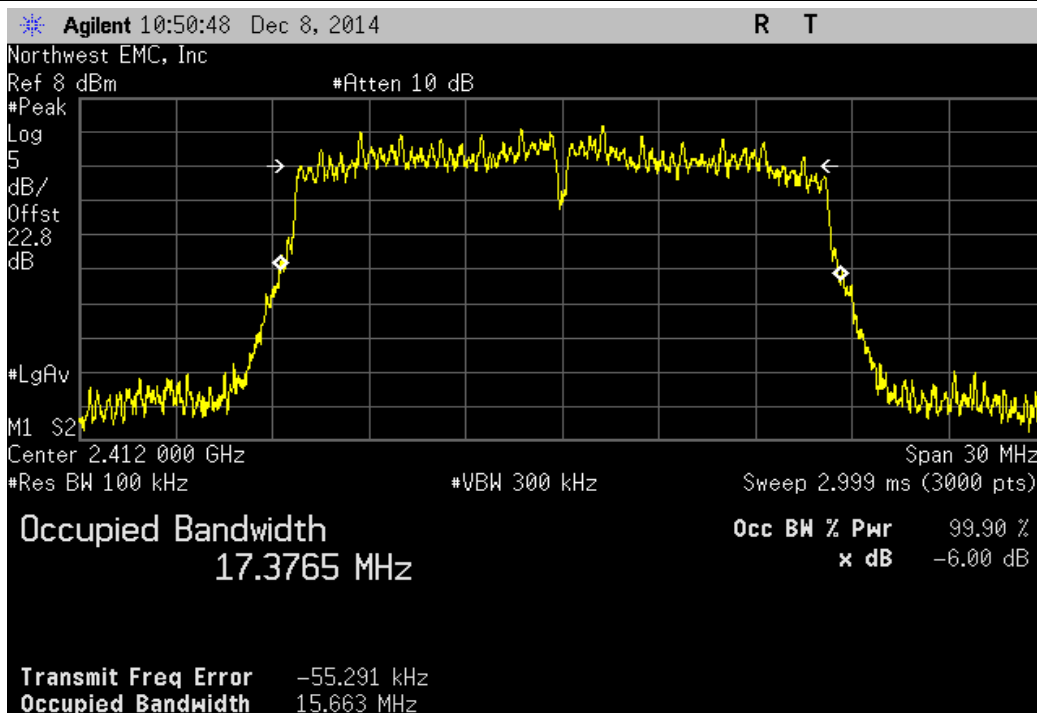
2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Mid Channel 6, 2437 MHz						
				Value	Limit (>)	Result
				15.65 MHz	500 kHz	Pass



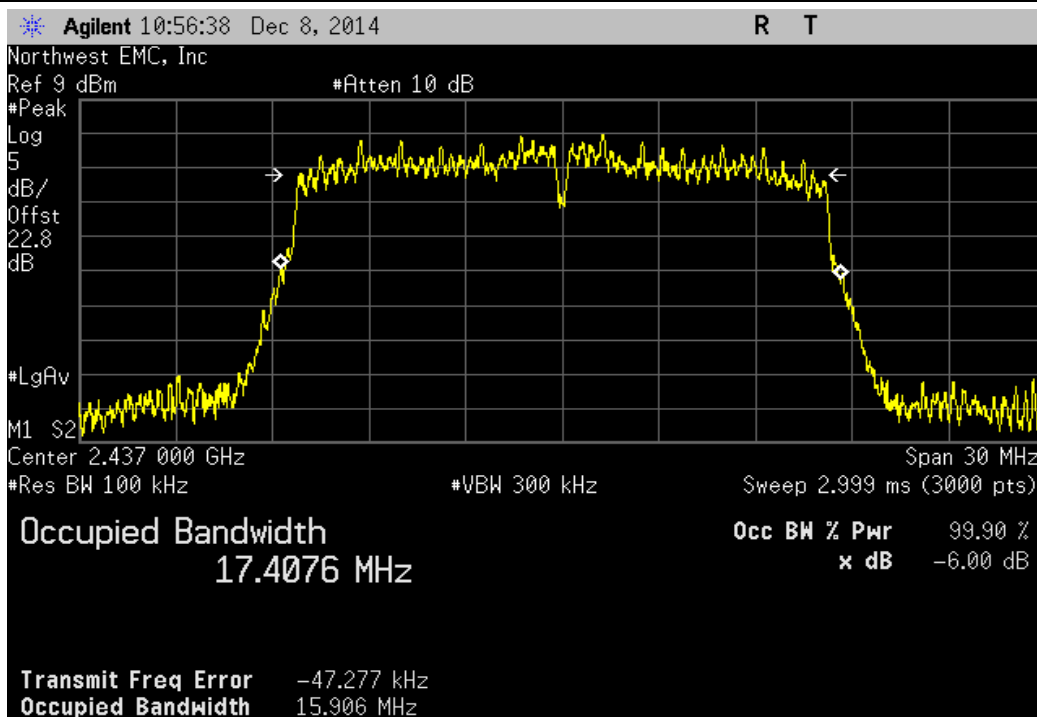
2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz						
				Value	Limit (>)	Result
				15.366 MHz	500 kHz	Pass



2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz			
	Value	Limit (>)	Result
	15.663 MHz	500 kHz	Pass

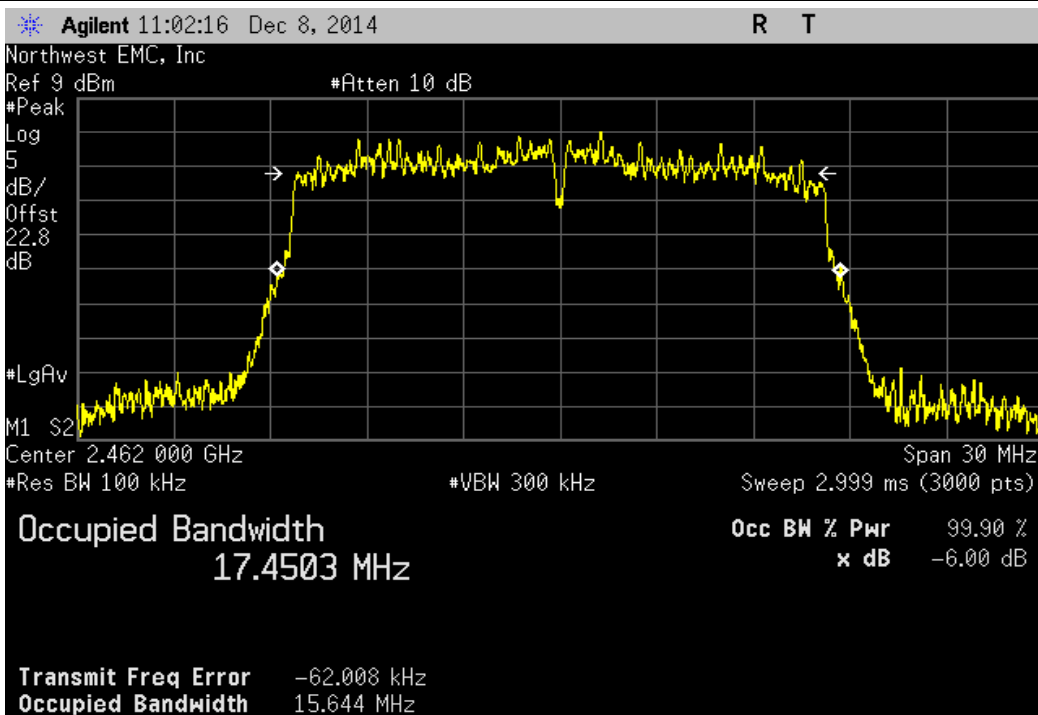


2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz			
	Value	Limit (>)	Result
	15.906 MHz	500 kHz	Pass



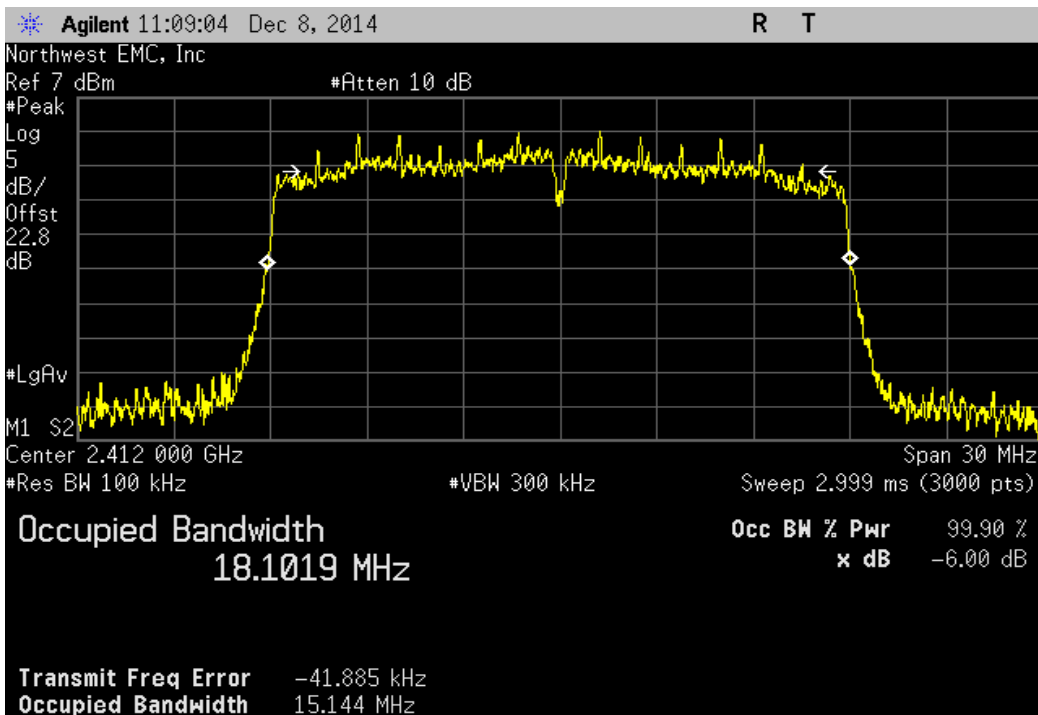
2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz

	Value	Limit (>)	Result
	15.644 MHz	500 kHz	Pass



2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1, 2412 MHz

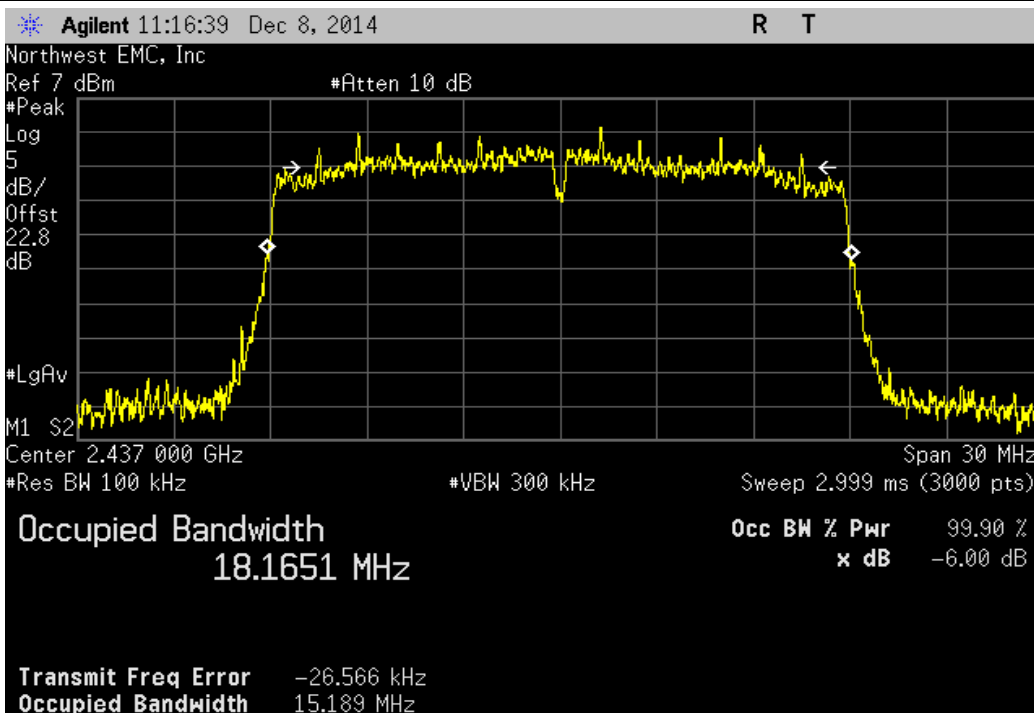
	Value	Limit (>)	Result
	15.144 MHz	500 kHz	Pass





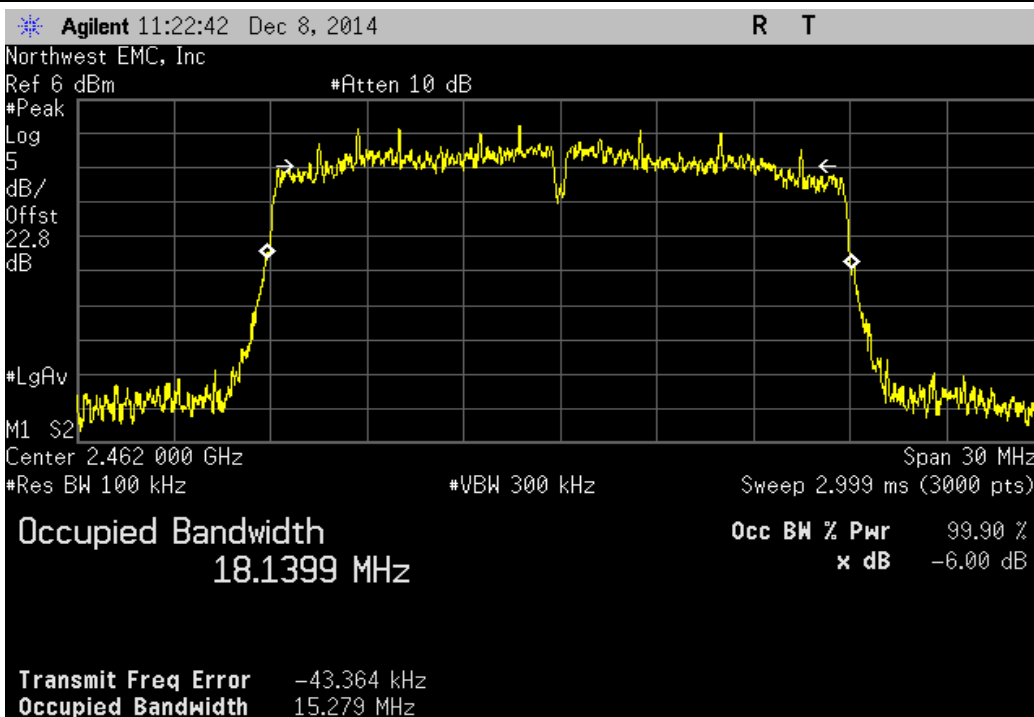
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Mid Channel 6, 2437 MHz

	Value	Limit (>)	Result
	15.189 MHz	500 kHz	Pass



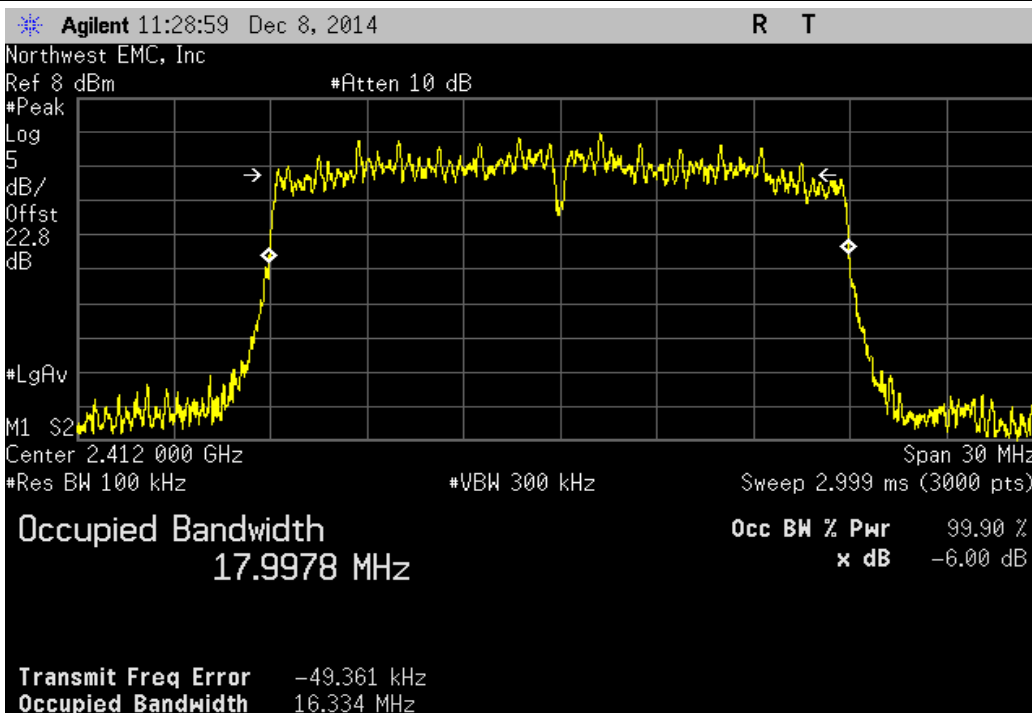
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 11, 2462 MHz

	Value	Limit (>)	Result
	15.279 MHz	500 kHz	Pass



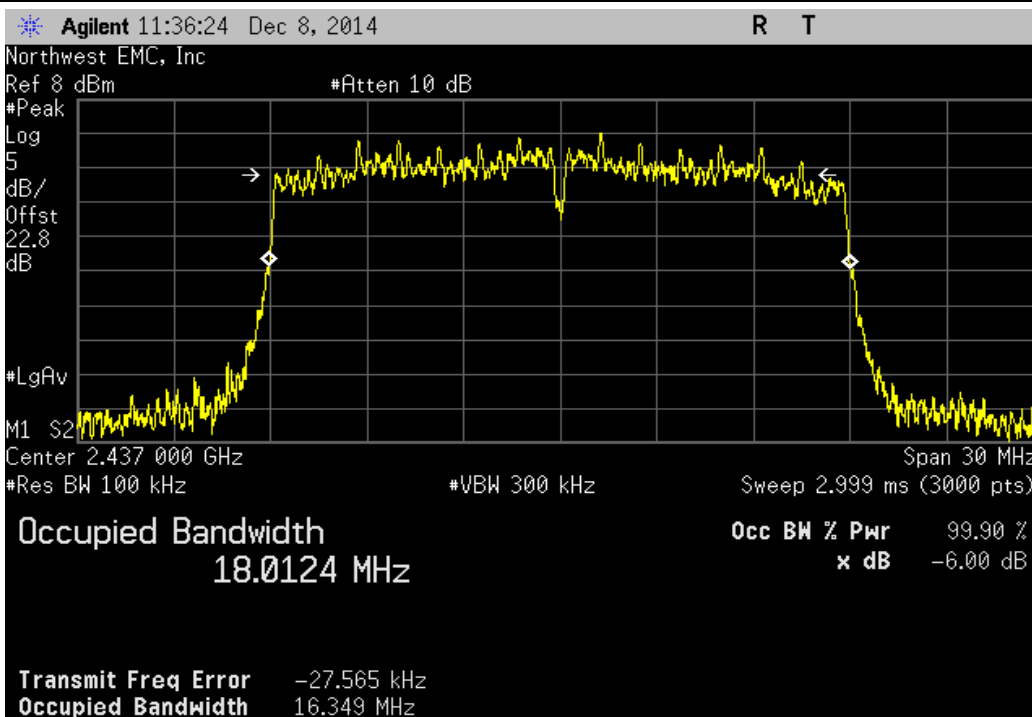
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1, 2412 MHz

	Value	Limit (>)	Result
	16.334 MHz	500 kHz	Pass



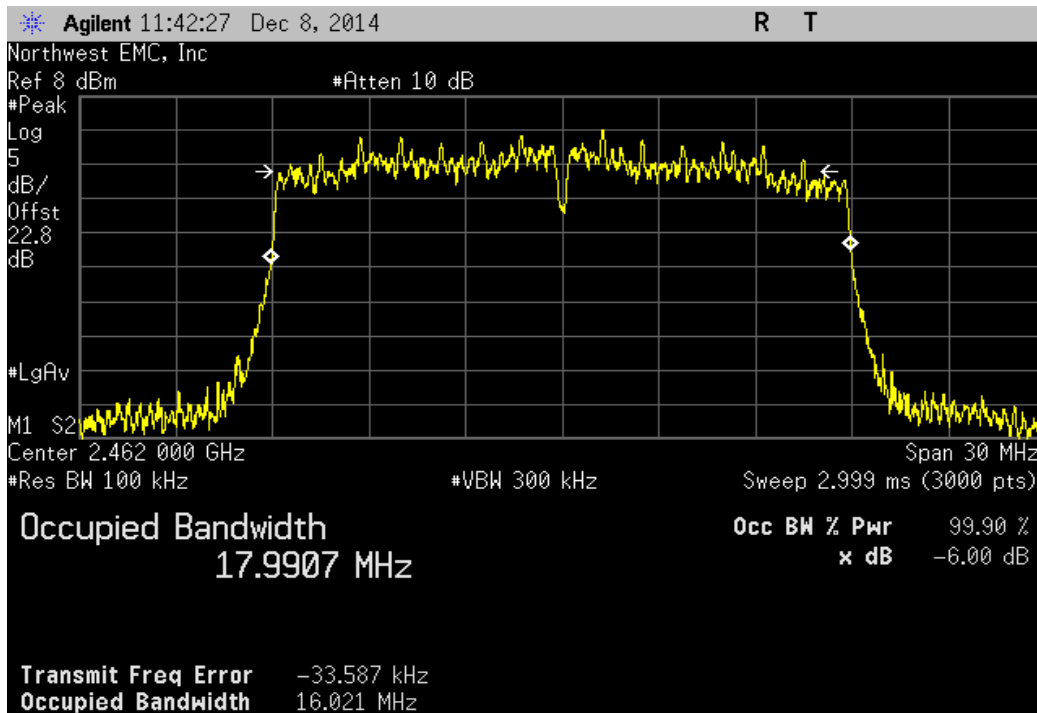
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Mid Channel 6, 2437 MHz

	Value	Limit (>)	Result
	16.349 MHz	500 kHz	Pass



2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, High Channel 11, 2462 MHz

			Value	Limit (>)	Result
			16.021 MHz	500 kHz	Pass



## OUTPUT POWER

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

### TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	2/3/2014	12
MXG Analog Signal Generator	Agilent	N5181A	TIG	3/28/2014	36
Power Meter	Gigatronics	8651A	SPM	9/17/2014	12
Power Sensor	Gigatronics	80701A	SPL	5/28/2014	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2014	12
Spectrum Analyzer	Agilent	E4440A	AFD	7/14/2014	24

### TEST DESCRIPTION

The transmit frequency was set to the required channels in each band. The transmit power was set to its default maximum. A direct connection was made between the RF output of the EUT and a spectrum analyzer. Attenuation and a DC block were used. The reference level offset on the spectrum analyzer was adjusted to compensate for cable loss and the external attenuation used between the RF output and the spectrum analyzer input.

Prior to measuring peak transmit power; the emission bandwidth (B) and the transmission pulse duration (T) were measured. Both are required to determine the method of measuring Maximum Conducted Output Power. The transmission pulse duration (T) was measured using a zero span on the spectrum analyzer to see the pulses in the time domain.


The channel power integration method found in KDB 558074 DTS D01 was used because the DTS Bandwidth of the radio was greater than the RBW on the analyzer.

**De Facto EIRP Limit:** Per 47 CFR 15.247 (b)(1-3), the EUT meets the de facto EIRP limit of +36 dBm.



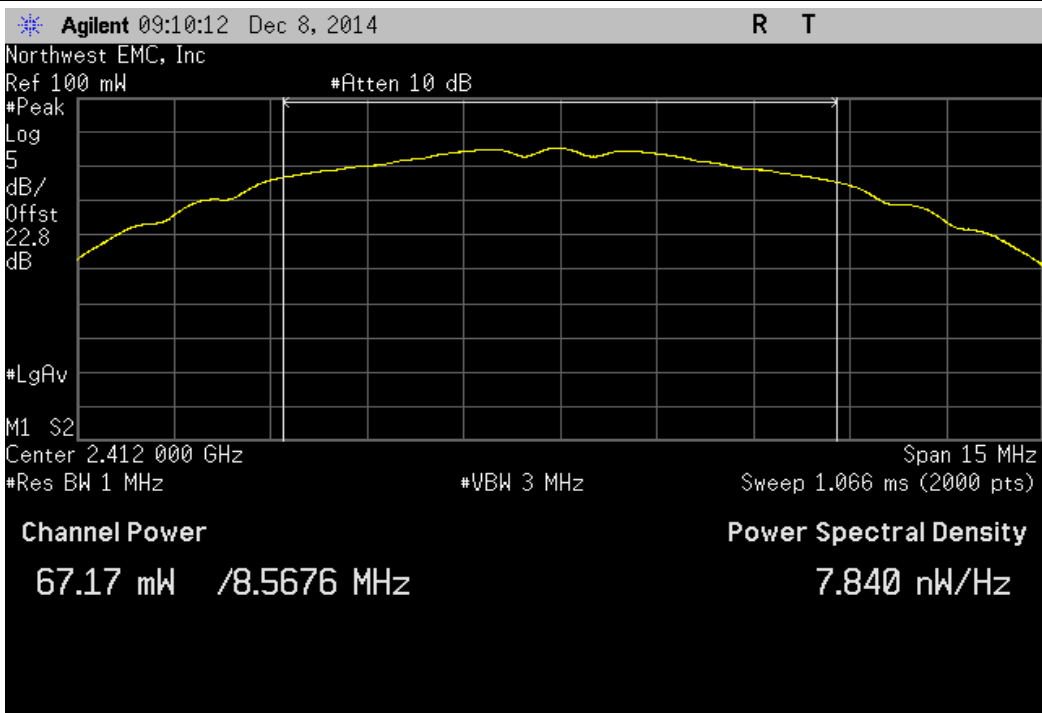
## OUTPUT POWER

XMit 2014.02.07  
NweTx 2014.11.06

EUT: IMP003-FCC		Work Order: ELIM0007	
Serial Number: 0C2A690BDC4E		Date: 12/08/14	
Customer: Electric Imp, Inc.		Temperature: 21°C	
Attendees: Brandon Harris		Humidity: 38%	
Project: None		Barometric Pres.: 1017.6	
Tested by: Brandon Hobbs		Power: 5 VDC Nominal	
		Job Site: EV06	
TEST SPECIFICATIONS		Test Method	
FCC 15.247:2014		ANSI C63.10:2009	
COMMENTS			
EUT was running module scripts in WL.exe. A DC block was used in front of the analyzer.			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	1	Signature 	
		Value	Limit (<)
2400 MHz - 2483.5 MHz Band			
802.11(b) 1 Mbps			
Low Channel 1, 2412 MHz		67.172 mW	1 W
Mid Channel 6, 2437 MHz		69.832 mW	1 W
High Channel 11, 2462 MHz		59.3 mW	1 W
802.11(b) 11 Mbps			
Low Channel 1, 2412 MHz		85.909 mW	1 W
Mid Channel 6, 2437 MHz		88.325 mW	1 W
High Channel 11, 2462 MHz		80.852 mW	1 W
802.11(g) 6 Mbps			
Low Channel 1, 2412 MHz		36.942 mW	1 W
Mid Channel 6, 2437 MHz		37.974 mW	1 W
High Channel 11, 2462 MHz		36.8 mW	1 W
802.11(g) 36 Mbps			
Low Channel 1, 2412 MHz		34.977 mW	1 W
Mid Channel 6, 2437 MHz		37.772 mW	1 W
High Channel 11, 2462 MHz		36.363 mW	1 W
802.11(g) 54 Mbps			
Low Channel 1, 2412 MHz		33.522 mW	1 W
Mid Channel 6, 2437 MHz		36.082 mW	1 W
High Channel 11, 2462 MHz		35.209 mW	1 W
802.11(n) MCS0			
Low Channel 1, 2412 MHz		25.451 mW	1 W
Mid Channel 6, 2437 MHz		27.669 mW	1 W
High Channel 11, 2462 MHz		27.007 mW	1 W
802.11(n) MCS7			
Low Channel 1, 2412 MHz		25.254 mW	1 W
Mid Channel 6, 2437 MHz		26.765 mW	1 W
High Channel 11, 2462 MHz		26.619 mW	1 W

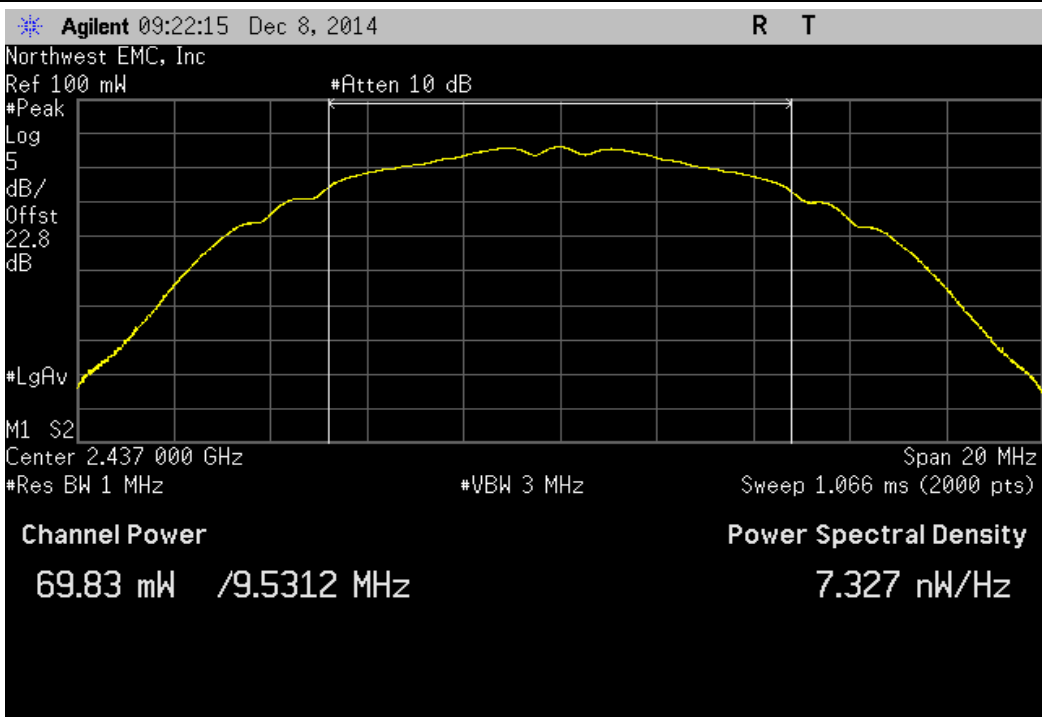
2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz

	Value	Limit (<)	Result
	67.172 mW	1 W	Pass

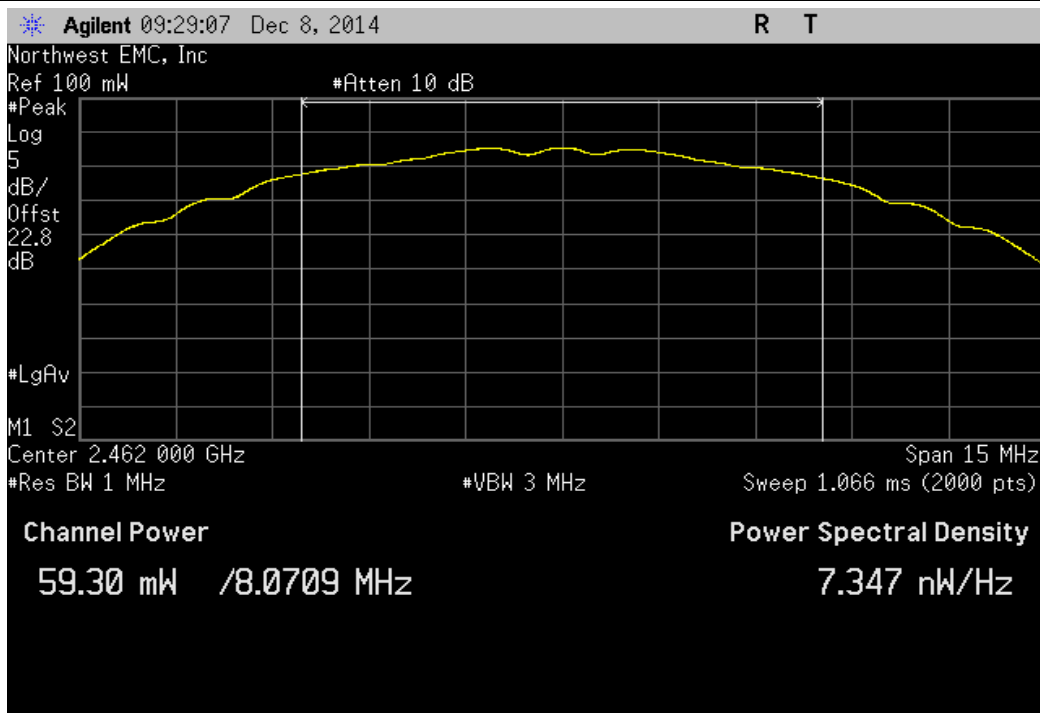


2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz

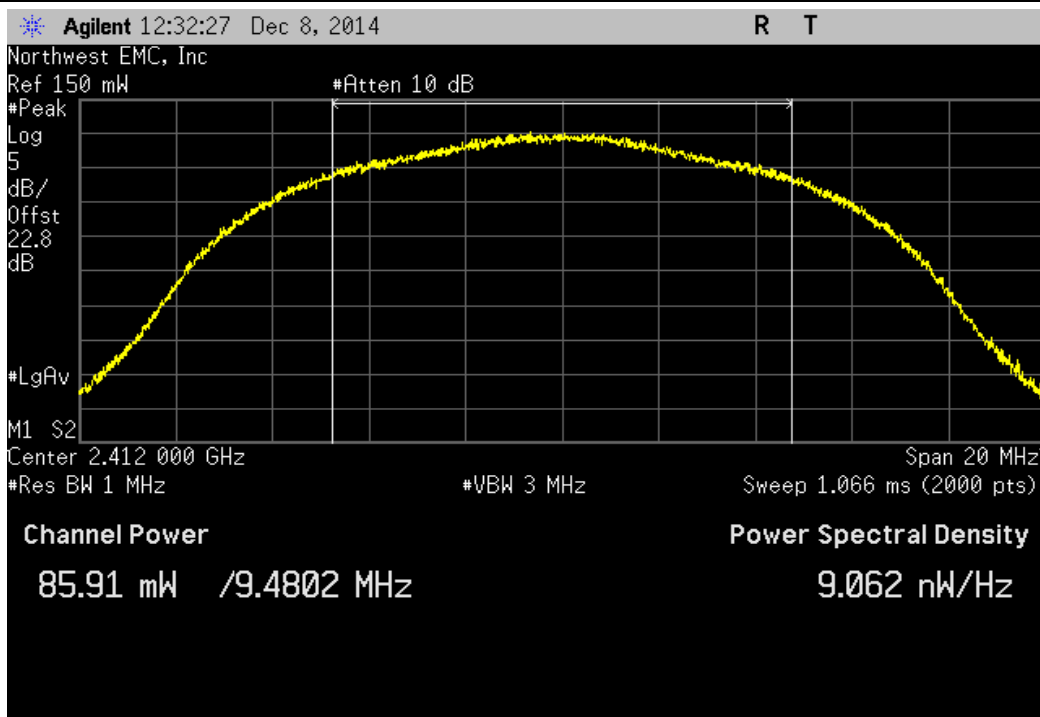
	Value	Limit (<)	Result
	69.832 mW	1 W	Pass



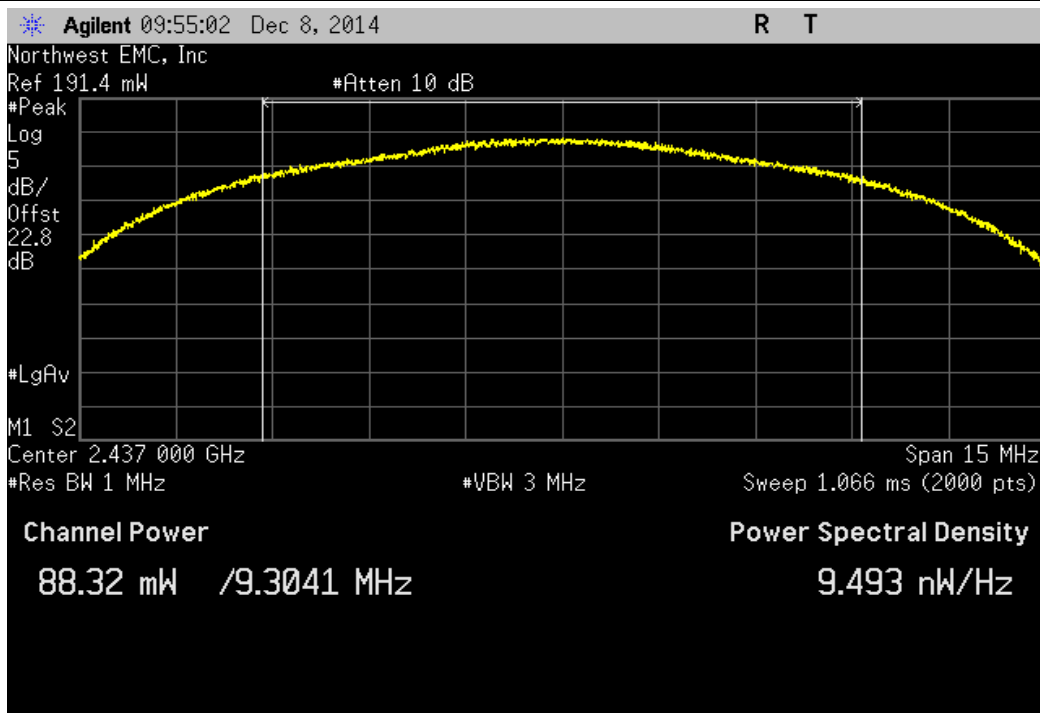
2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz						
				Value	Limit (<)	Result
				59.3 mW	1 W	Pass



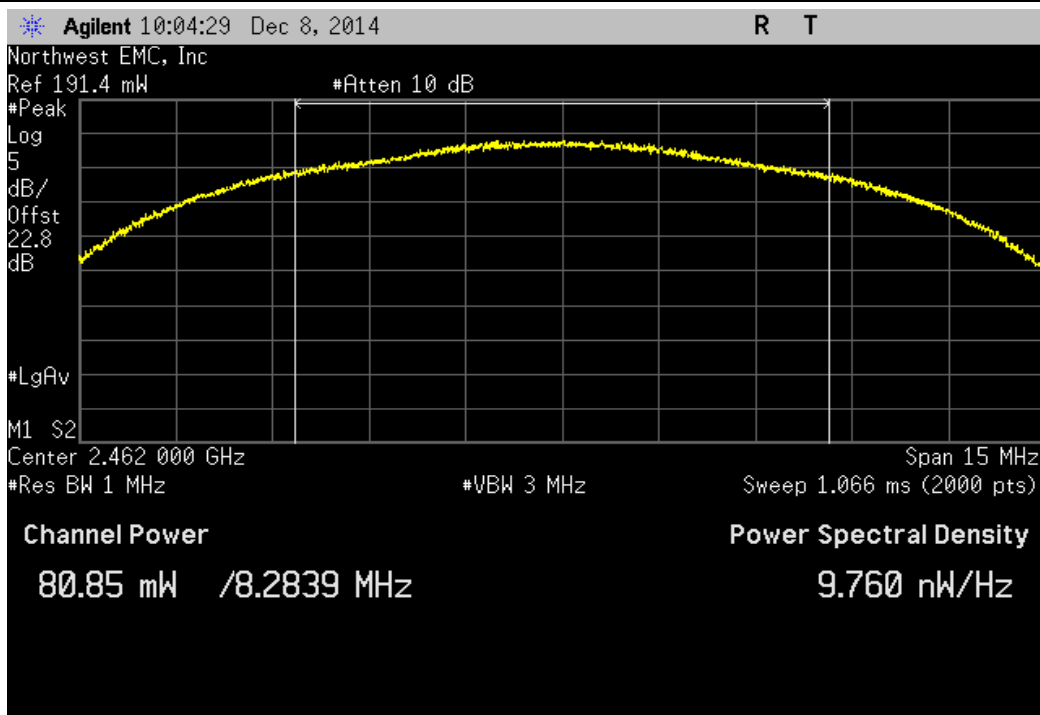
2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz						
				Value	Limit (<)	Result
				85.909 mW	1 W	Pass



2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Mid Channel 6, 2437 MHz						
				Value	Limit (<)	Result
				88.325 mW	1 W	Pass



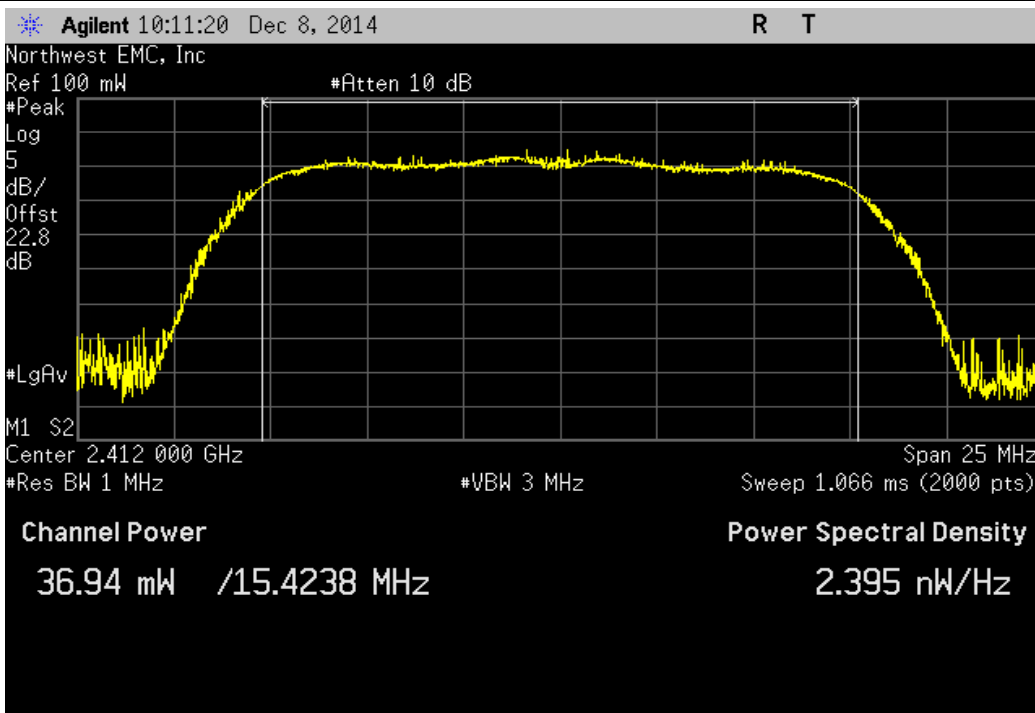
2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz						
				Value	Limit (<)	Result
				80.852 mW	1 W	Pass





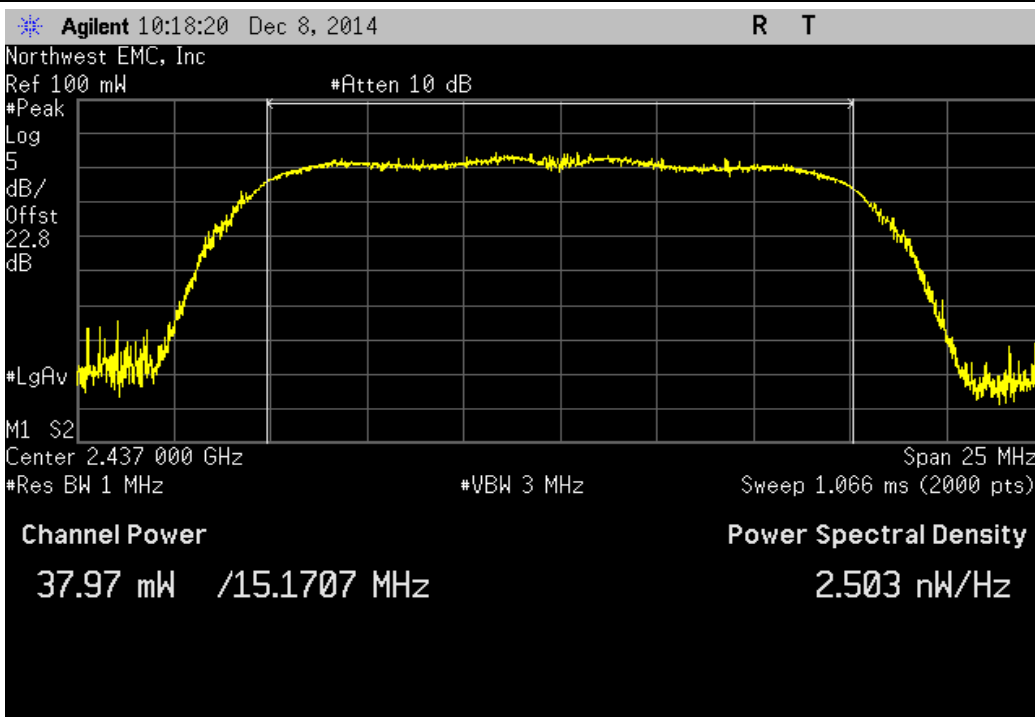
2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz

	Value	Limit (<)	Result
	36.942 mW	1 W	Pass

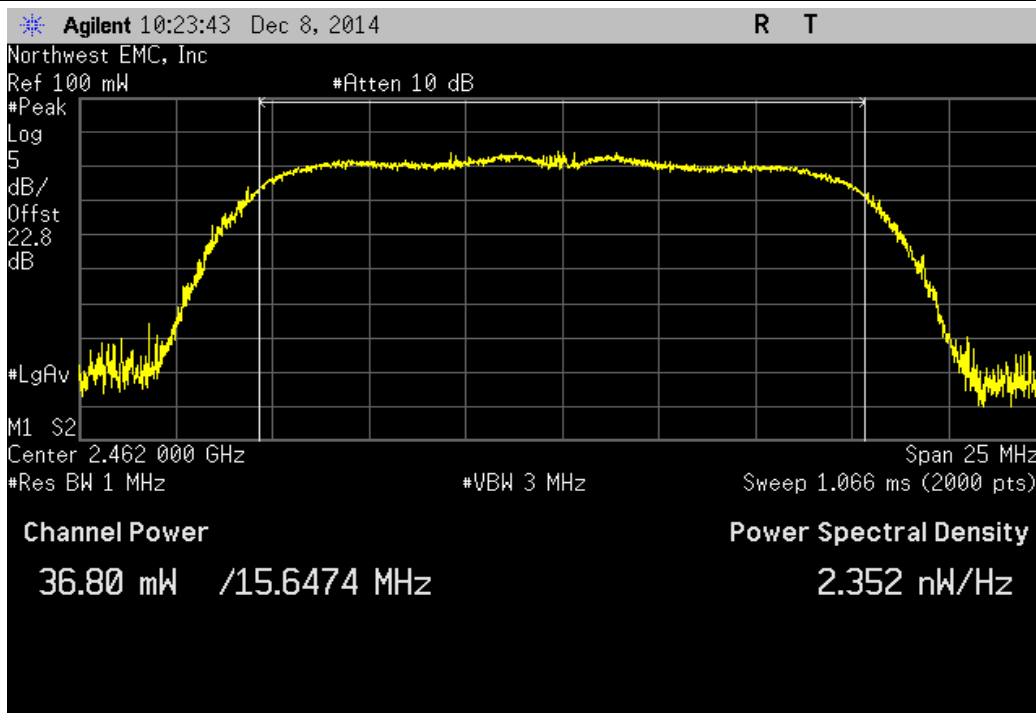


2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz

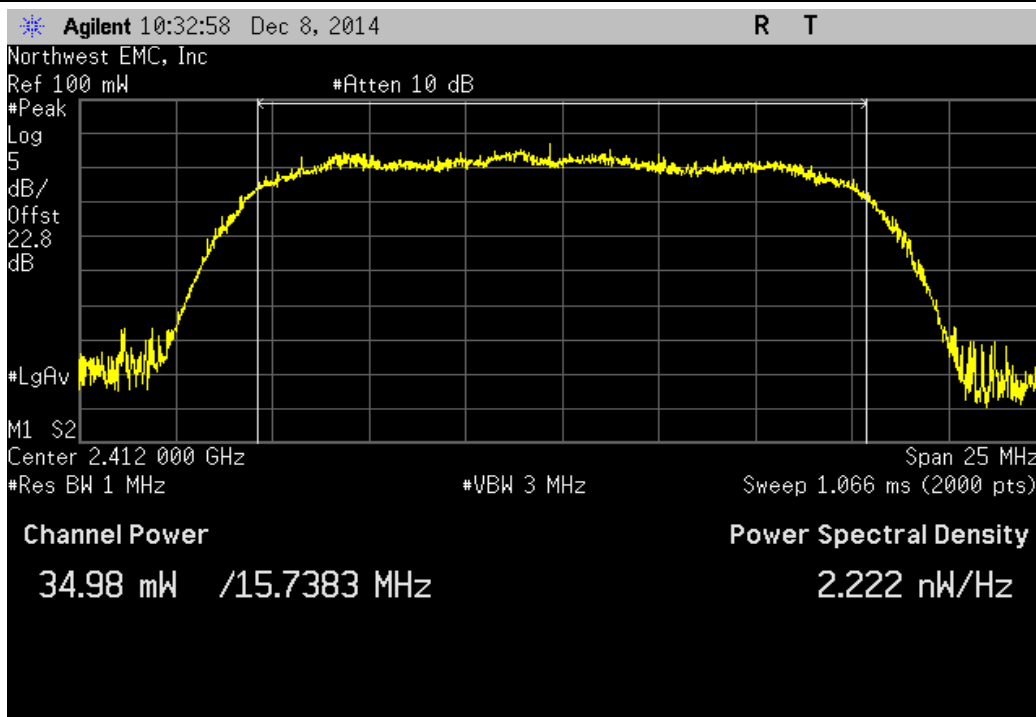
	Value	Limit (<)	Result
	37.974 mW	1 W	Pass



2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz						
				Value	Limit (<)	Result
				36.8 mW	1 W	Pass

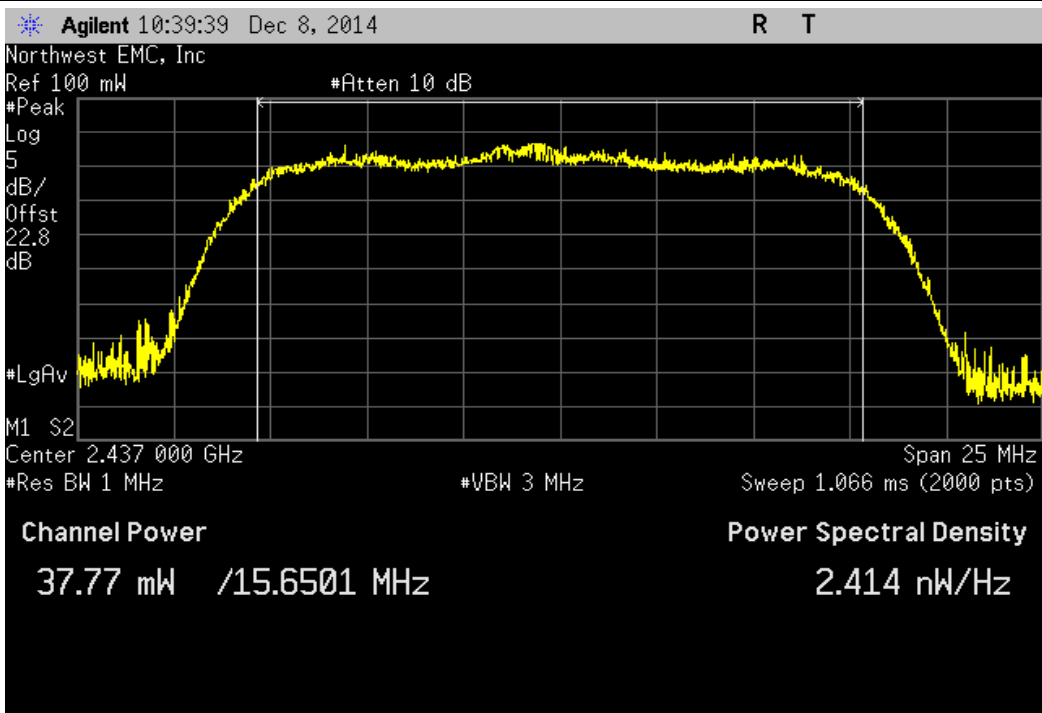


2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz						
				Value	Limit (<)	Result
				34.977 mW	1 W	Pass



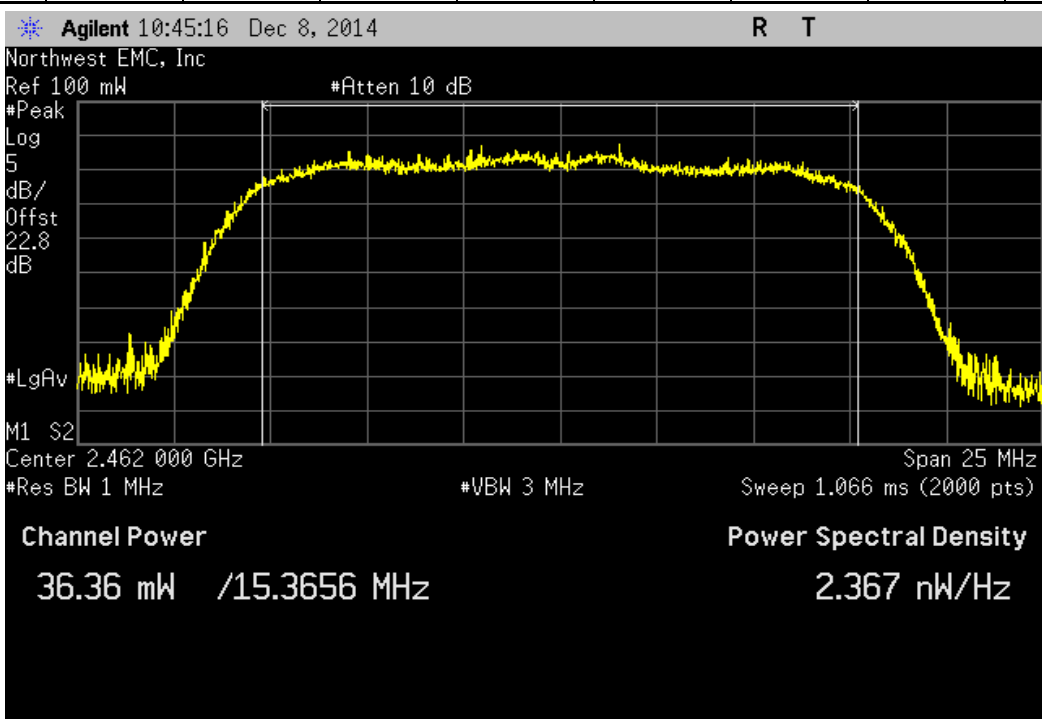
2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Mid Channel 6, 2437 MHz

	Value	Limit (<)	Result
	37.772 mW	1 W	Pass



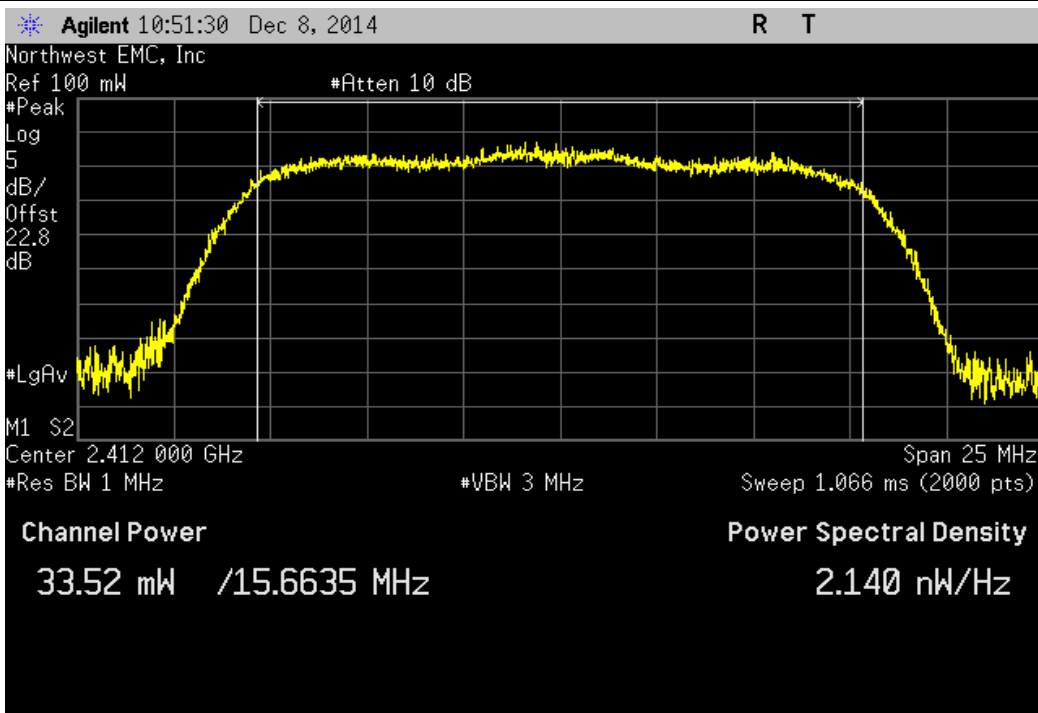
2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz

	Value	Limit (<)	Result
	36.363 mW	1 W	Pass



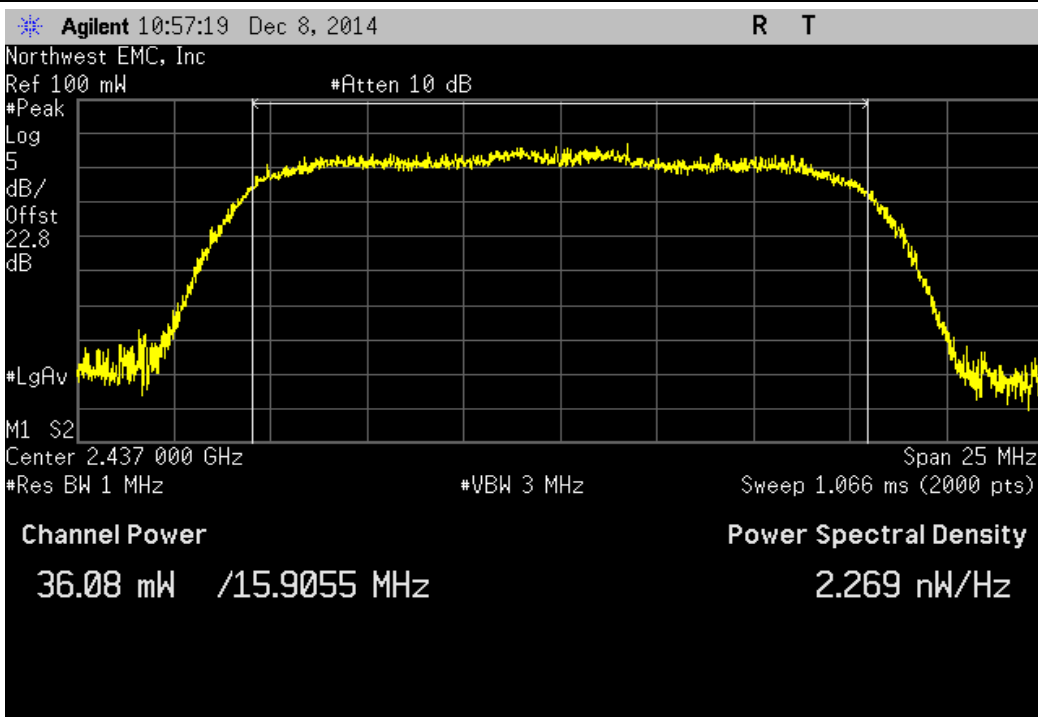
2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz

	Value	Limit (<)	Result
	33.522 mW	1 W	Pass



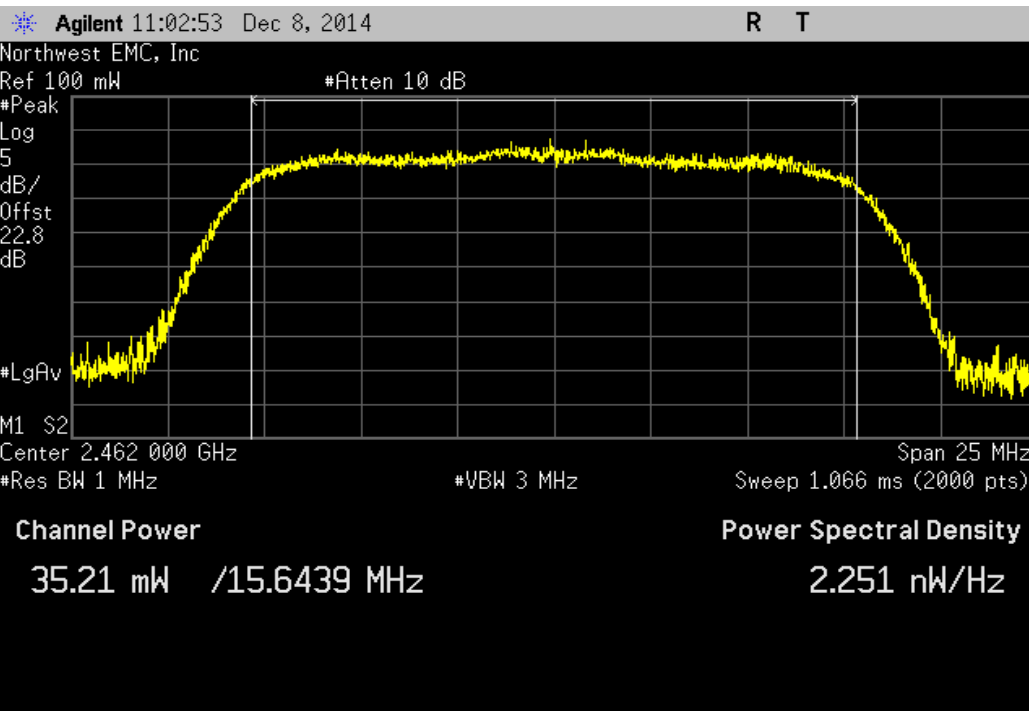
2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz

	Value	Limit (<)	Result
	36.082 mW	1 W	Pass



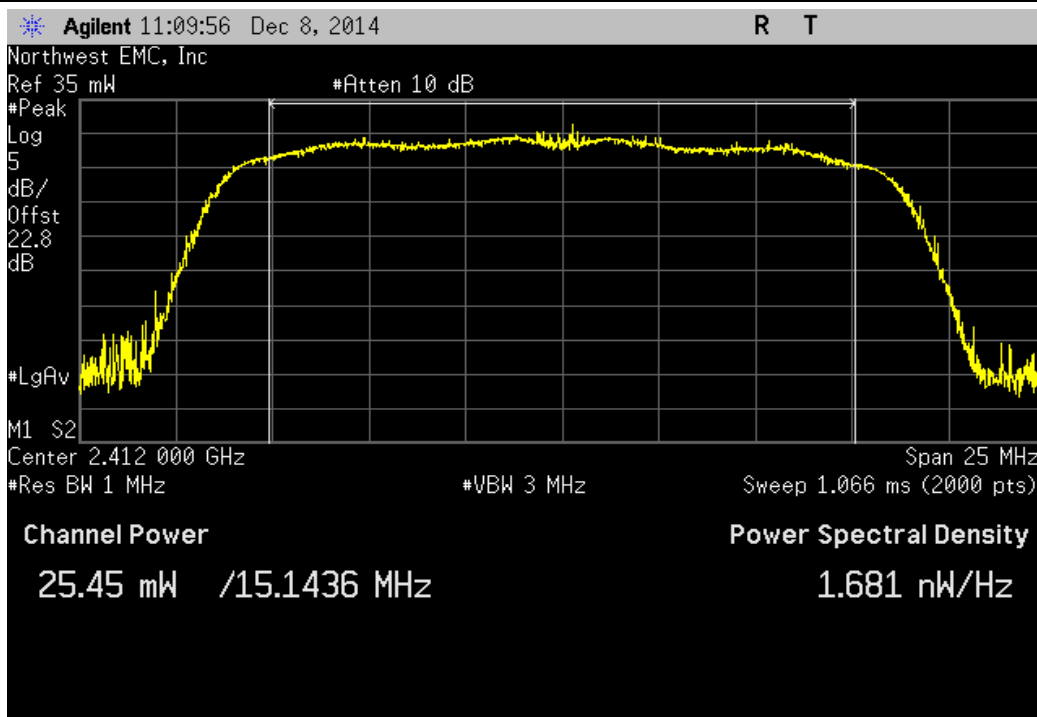
2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz

	Value	Limit (<)	Result
	35.209 mW	1 W	Pass



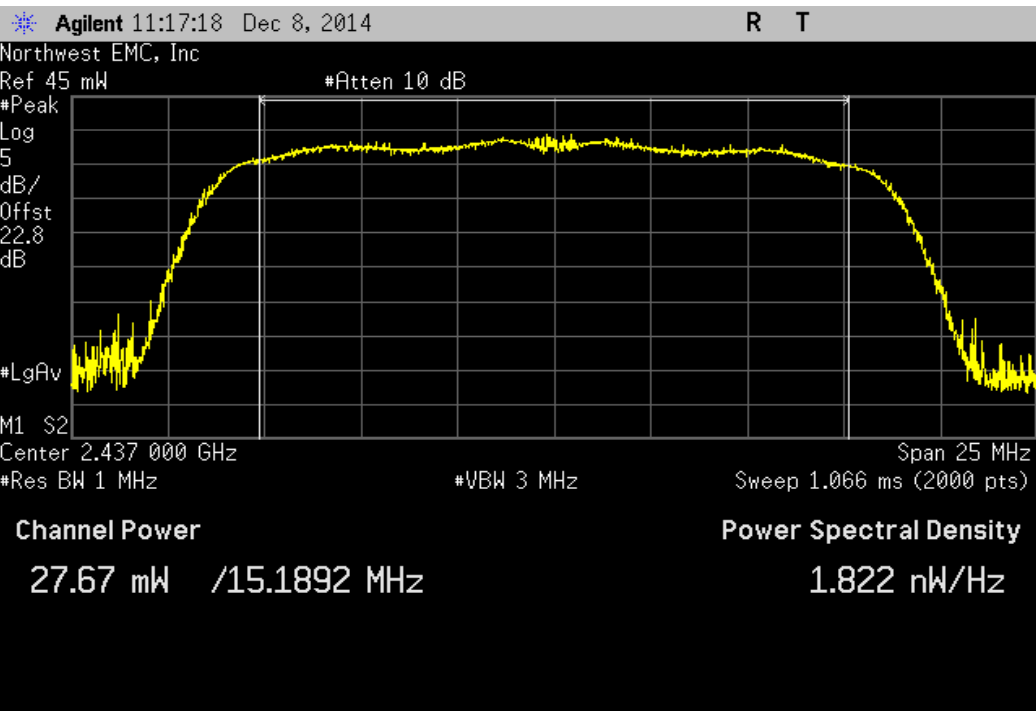
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1, 2412 MHz

	Value	Limit (<)	Result
	25.451 mW	1 W	Pass



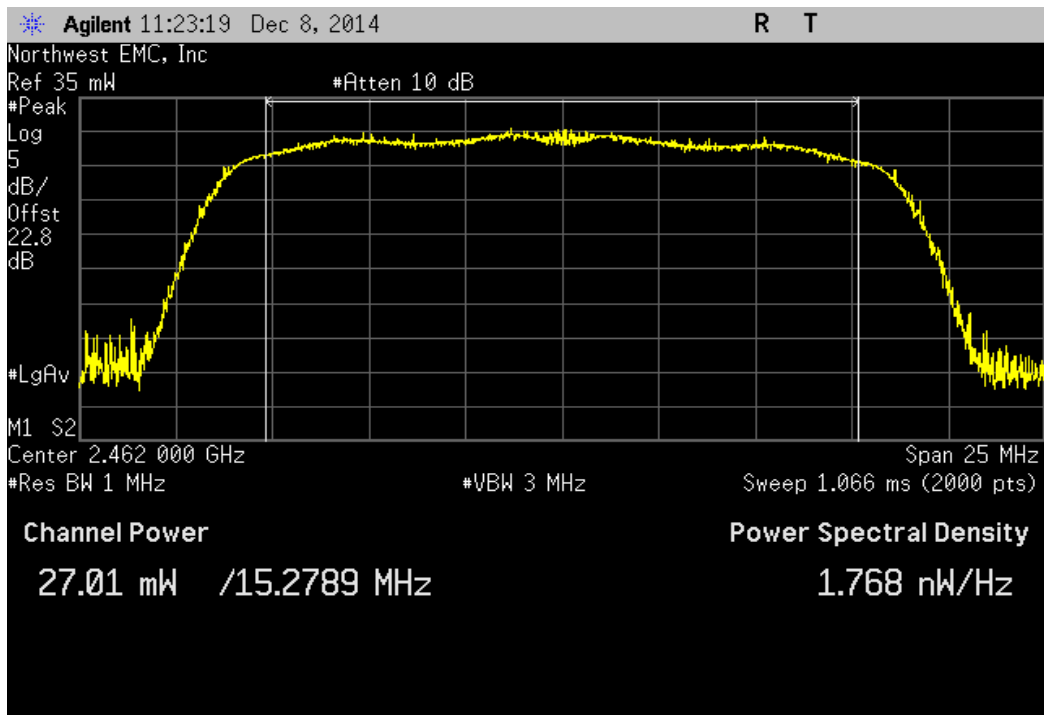
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Mid Channel 6, 2437 MHz

	Value	Limit (<)	Result
	27.669 mW	1 W	Pass



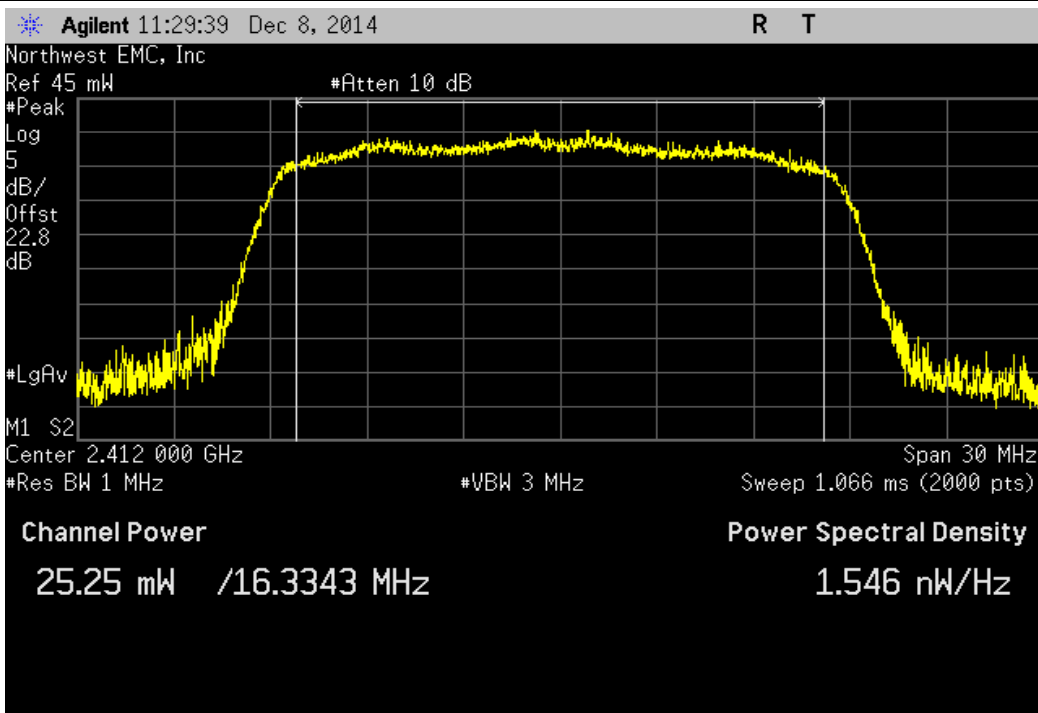
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 11, 2462 MHz

	Value	Limit (<)	Result
	27.007 mW	1 W	Pass



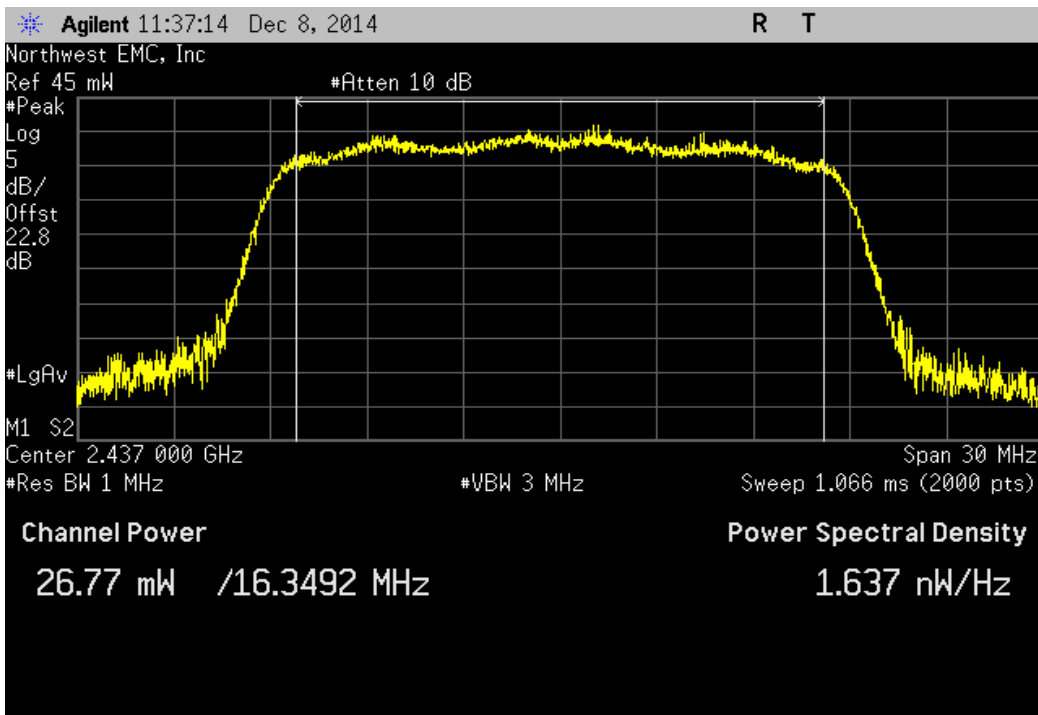
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1, 2412 MHz

	Value	Limit (<)	Result
	25.254 mW	1 W	Pass



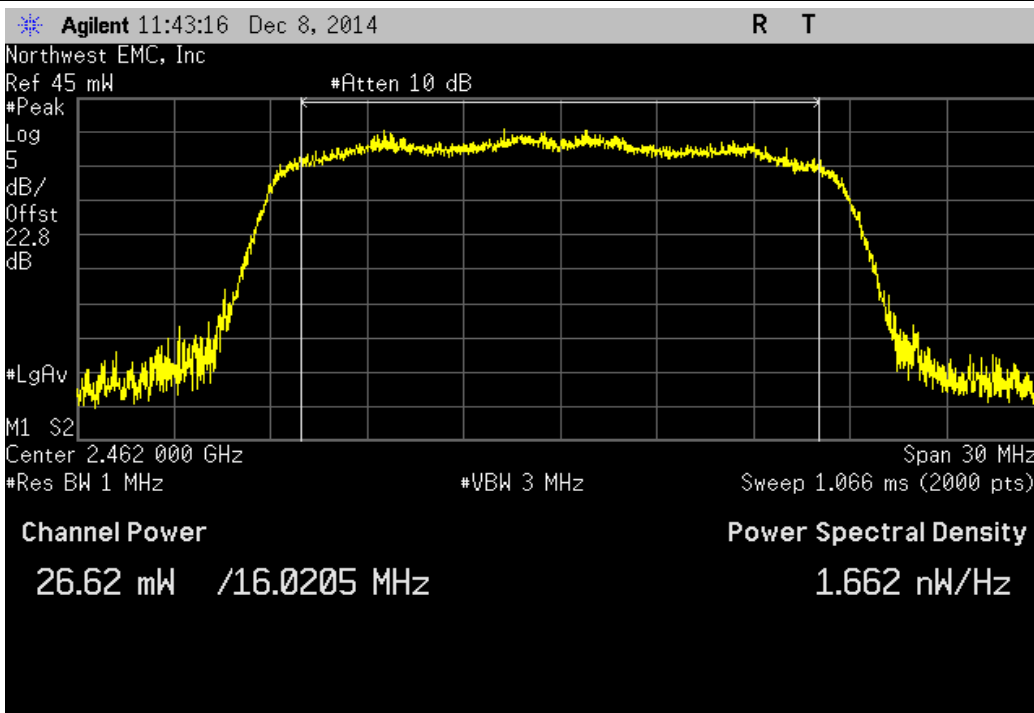
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Mid Channel 6, 2437 MHz

	Value	Limit (<)	Result
	26.765 mW	1 W	Pass



2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, High Channel 11, 2462 MHz

	Value	Limit (<)	Result
	26.619 mW	1 W	Pass





## POWER SPECTRAL DENSITY

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

### TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	2/3/2014	12
MXG Analog Signal Generator	Agilent	N5181A	TIG	3/28/2014	36
Power Meter	Gigatronics	8651A	SPM	9/17/2014	12
Power Sensor	Gigatronics	80701A	SPL	5/28/2014	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2014	12
Spectrum Analyzer	Agilent	E4440A	AFD	7/14/2014	24

### TEST DESCRIPTION

The maximum power spectral density measurements were measured with the EUT set to the required transmit frequencies in each band. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at the lowest, middle, and maximum data rate for each modulation type available.

Per the procedure outlined in FCC KDB 558074 D01 DTS Measurement, the spectrum analyzer was used as follows:

- RBW = 100 kHz
- VBW = 300 kHz
- Detector = Peak (to match method used for power measurement)
- Trace = Max hold


The observed power level is then scaled to an equivalent value in 3 kHz by adding a Bandwidth Correction Factor (BWCF) where:

$$BWCF = 10 \cdot \log(3 \text{ kHz} / 100 \text{ kHz}) = -15.2 \text{ dB}$$

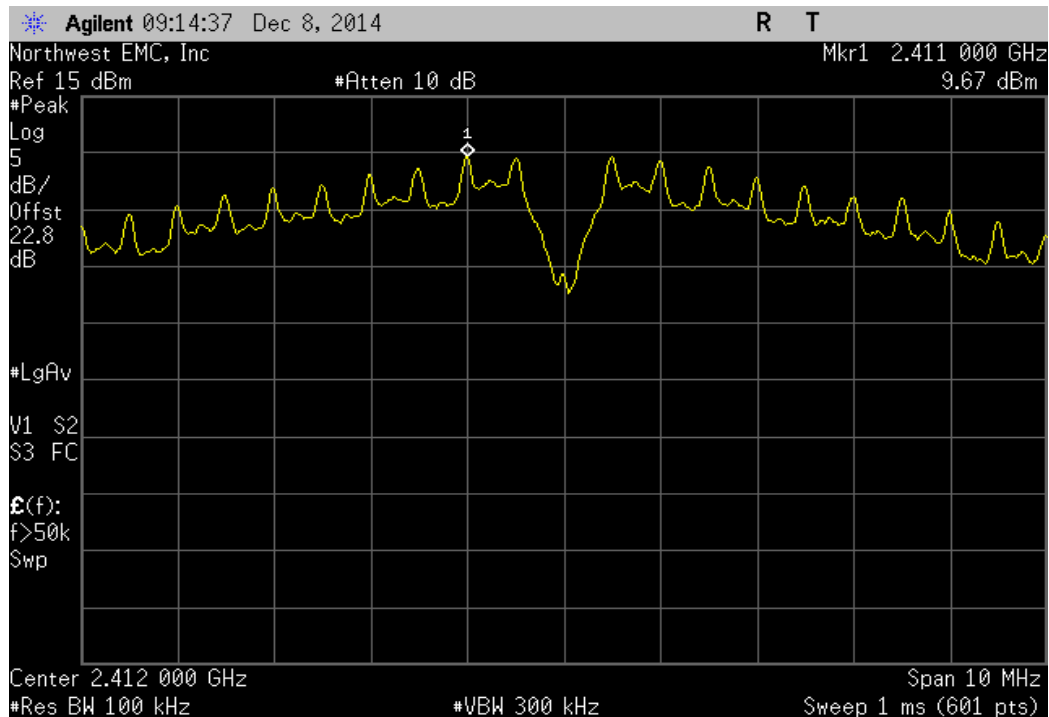


# POWER SPECTRAL DENSITY

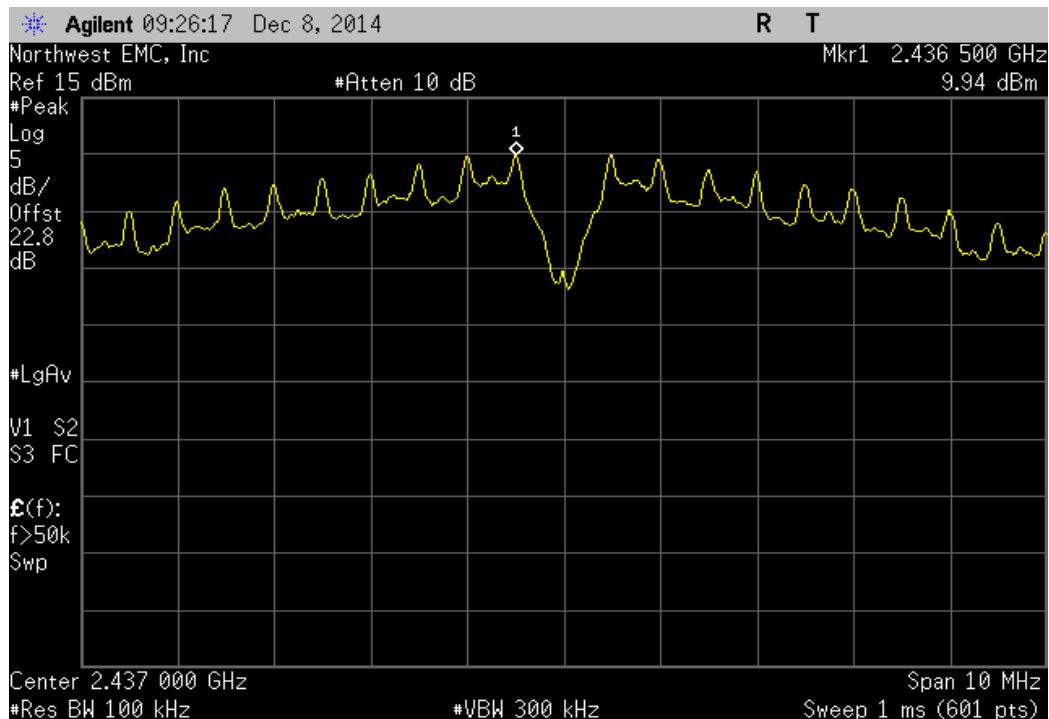
XMit 2014.02.07  
NweTx 2014.11.06

EUT: IMP003-FCC		Work Order: ELIM0007	
Serial Number: 0C2A690BDC4E		Date: 12/08/14	
Customer: Electric Imp, Inc.		Temperature: 21°C	
Attendees: Brandon Harris		Humidity: 38%	
Project: None		Barometric Pres.: 1017.6	
Tested by: Brandon Hobbs		Power: 5 VDC Nominal	
		Job Site: EV06	
TEST SPECIFICATIONS		Test Method	
FCC 15.247:2014		ANSI C63.10:2009	
COMMENTS			
EUT was running module scripts in WL.exe. A DC block was used in front of the analyzer.			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	1	Signature 	
		Value dBm/100kHz	Limit dBm/3kHz
2400 MHz - 2483.5 MHz Band			
802.11(b) 1 Mbps			
	Low Channel 1, 2412 MHz	9.668	8
	Mid Channel 6, 2437 MHz	9.936	8
	High Channel 11, 2462 MHz	9.794	8
802.11(b) 11 Mbps			
	Low Channel 1, 2412 MHz	9.951	8
	Mid Channel 6, 2437 MHz	10.532	8
	High Channel 11, 2462 MHz	10.473	8
802.11(g) 6 Mbps			
	Low Channel 1, 2412 MHz	3.909	8
	Mid Channel 6, 2437 MHz	4.091	8
	High Channel 11, 2462 MHz	3.861	8
802.11(g) 36 Mbps			
	Low Channel 1, 2412 MHz	4.058	8
	Mid Channel 6, 2437 MHz	4.276	8
	High Channel 11, 2462 MHz	4.054	8
802.11(g) 54 Mbps			
	Low Channel 1, 2412 MHz	4.006	8
	Mid Channel 6, 2437 MHz	4.072	8
	High Channel 11, 2462 MHz	3.991	8
802.11(n) MCS0			
	Low Channel 1, 2412 MHz	2.81	8
	Mid Channel 6, 2437 MHz	2.935	8
	High Channel 11, 2462 MHz	2.881	8
802.11(n) MCS7			
	Low Channel 1, 2412 MHz	2.835	8
	Mid Channel 6, 2437 MHz	3.017	8
	High Channel 11, 2462 MHz	3.015	8

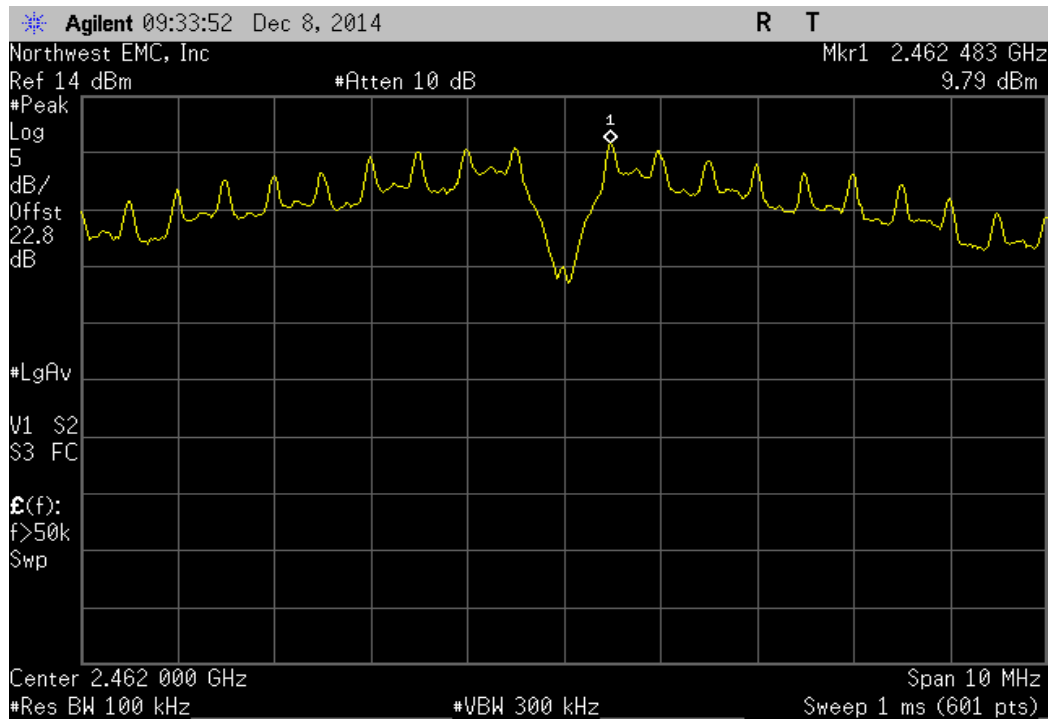
2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz						
	Value	dBm/100kHz	Value	Limit		
		To dBm/3kHz	dBm/3kHz	dBm/3kHz	Results	
	9.668	-15.2	-5.532	8	Pass	



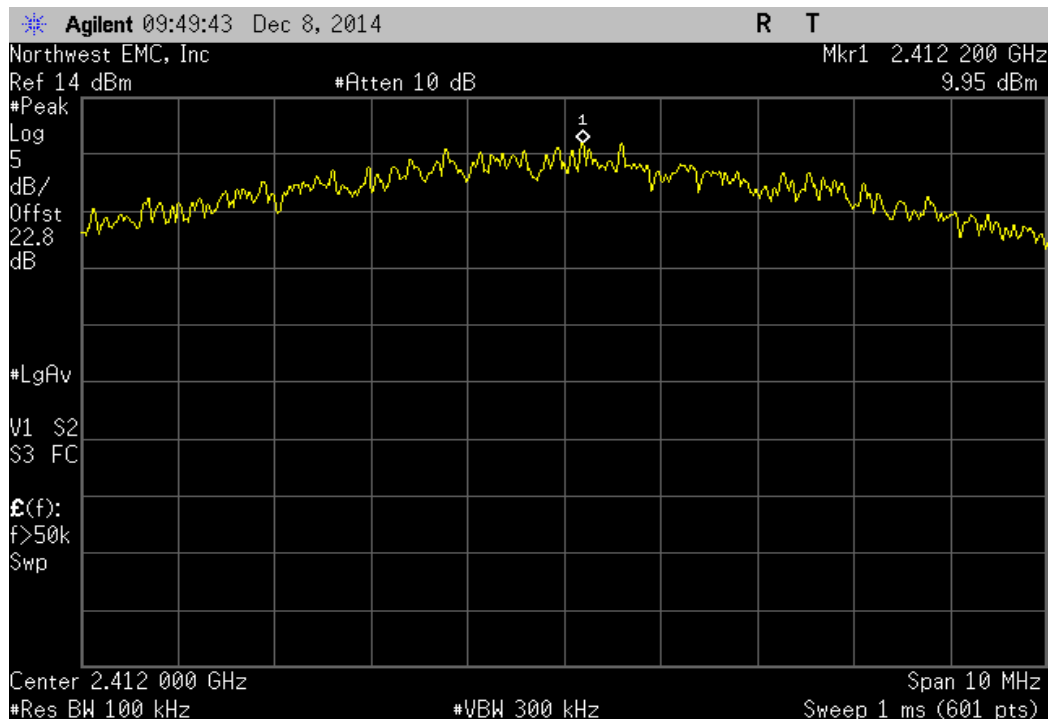
2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz						
	Value	dBm/100kHz	Value	Limit		
		To dBm/3kHz	dBm/3kHz	dBm/3kHz	Results	
	9.936	-15.2	-5.264	8	Pass	



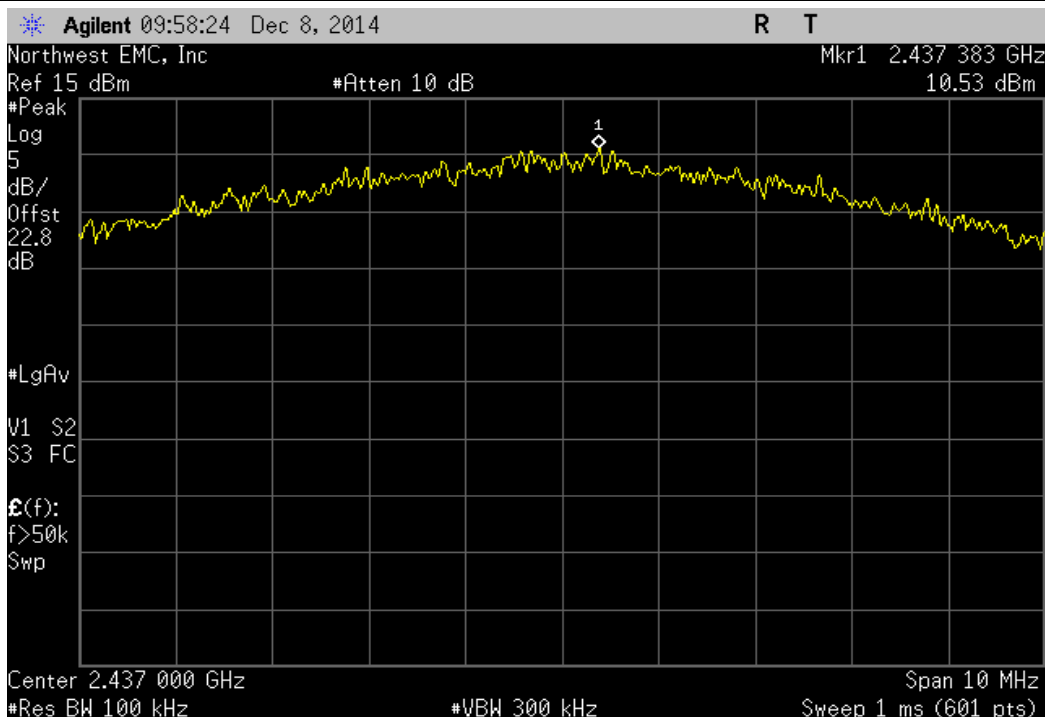
2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz						
Value		dBm/100kHz	Value		Limit	Results
dBm/100kHz		To dBm/3kHz	dBm/3kHz			
	9.794	-15.2	-5.406		8	Pass



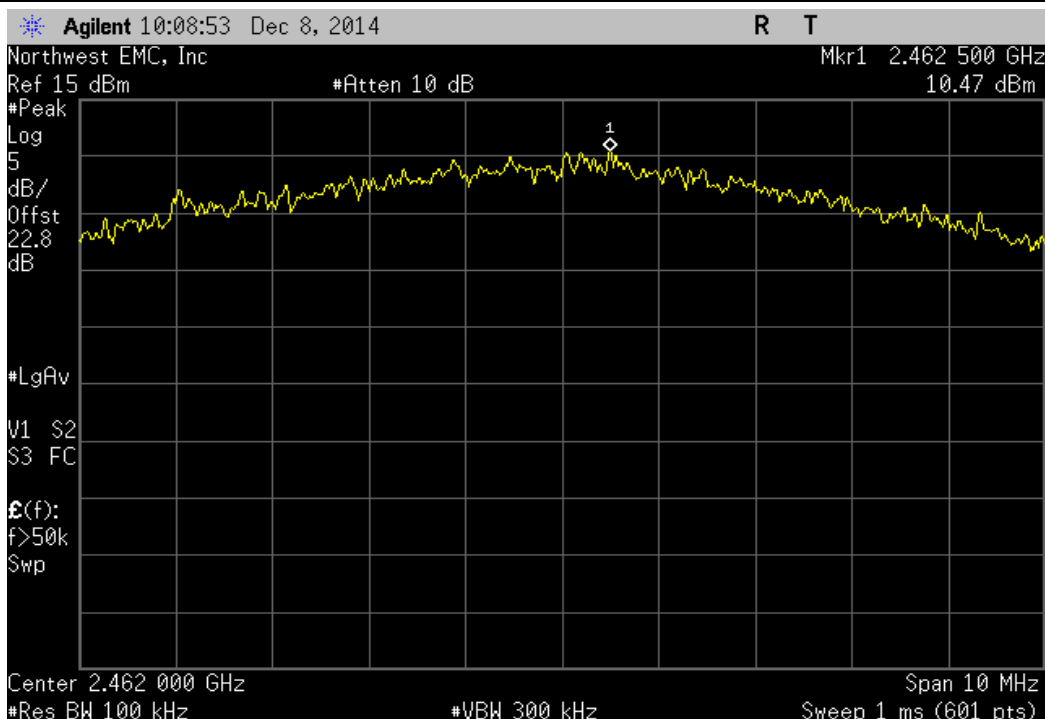
2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz						
		Value	dBm/100kHz	Value	Limit	Results
		dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
		9.951	-15.2	-5.249	8	Pass



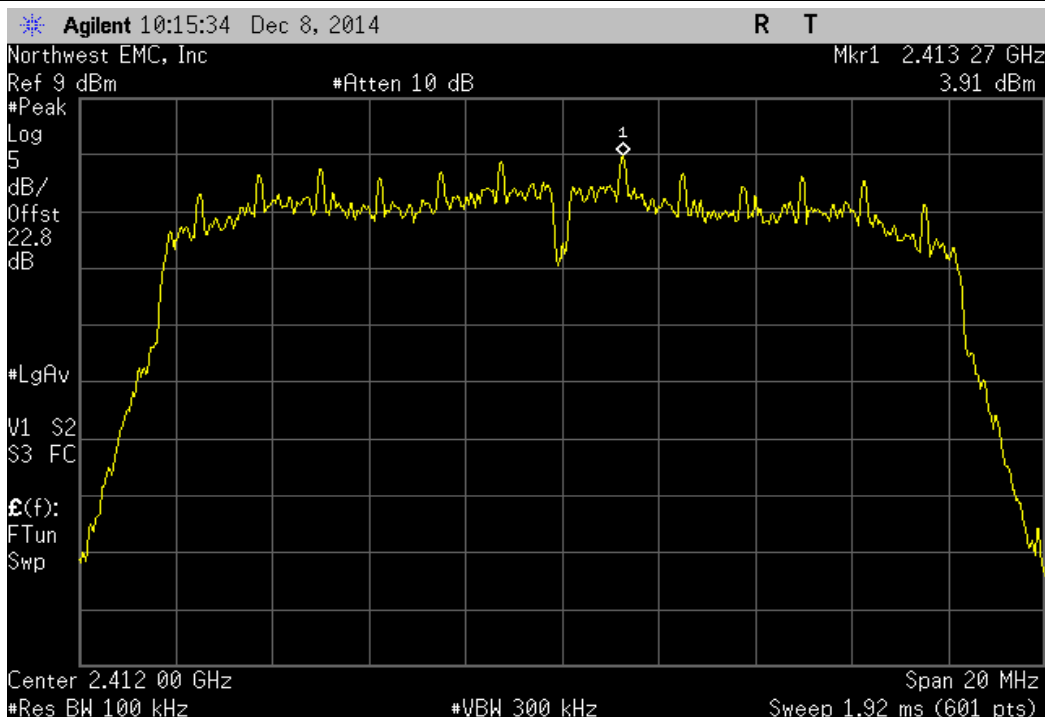
2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Mid Channel 6, 2437 MHz					
	Value	dBm/100kHz	Value	Limit	Results
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
	10.532	-15.2	-4.668	8	Pass



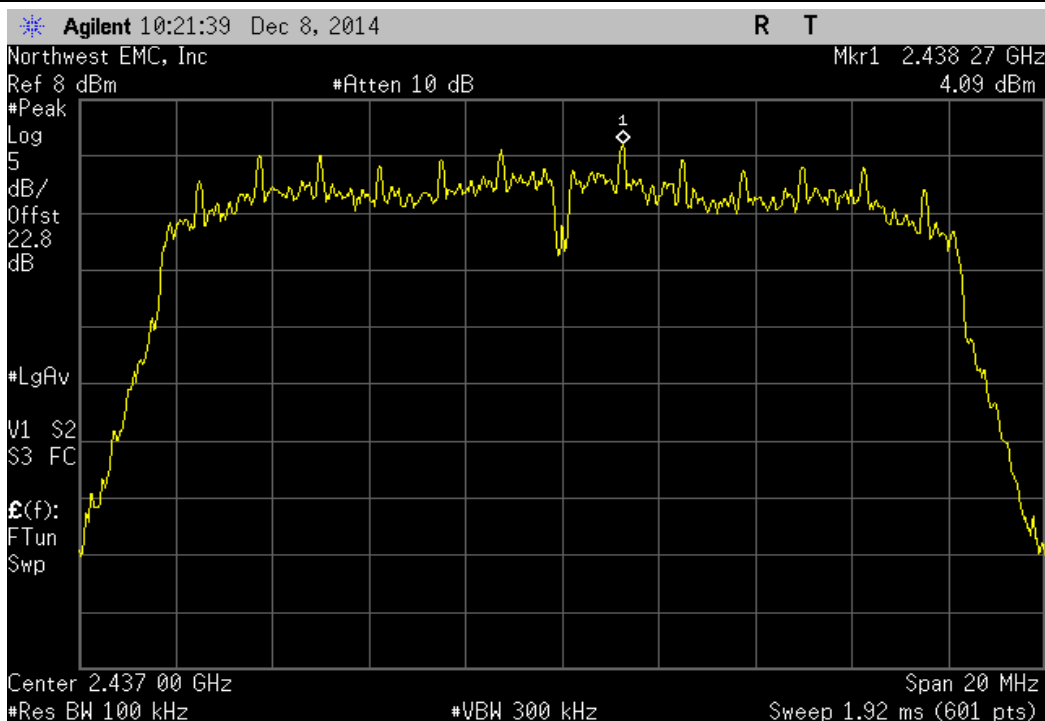
2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz					
	Value	dBm/100kHz	Value	Limit	Results
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
	10.473	-15.2	-4.727	8	Pass



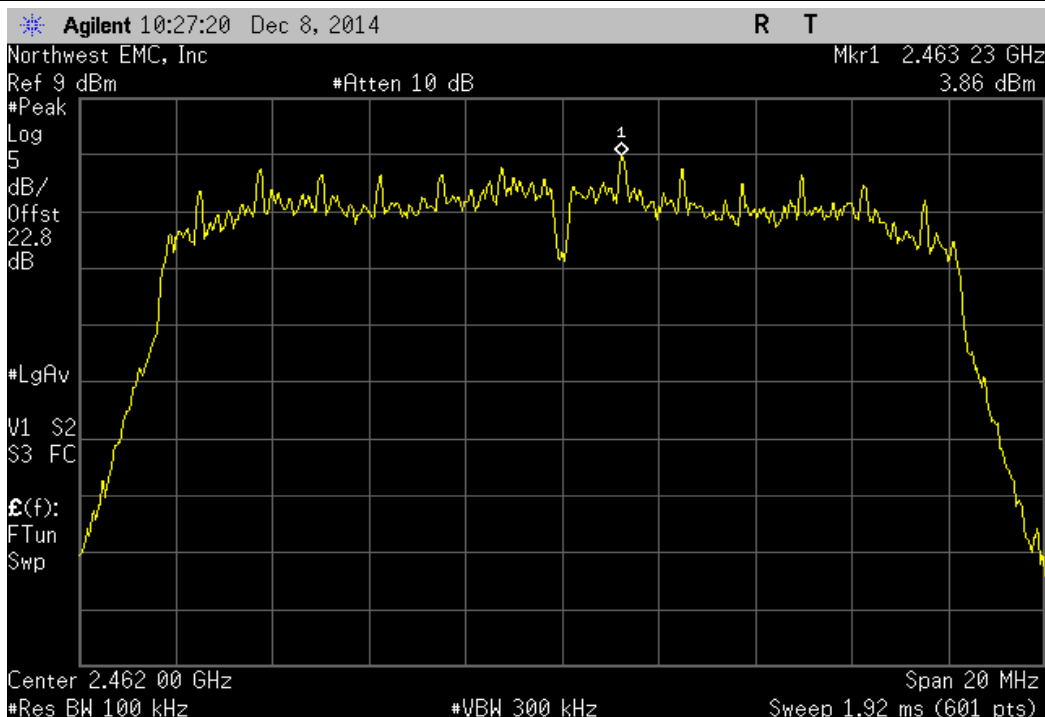
2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz					
	Value	dBm/100kHz	Value	Limit	Results
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
	3.909	-15.2	-11.291	8	Pass



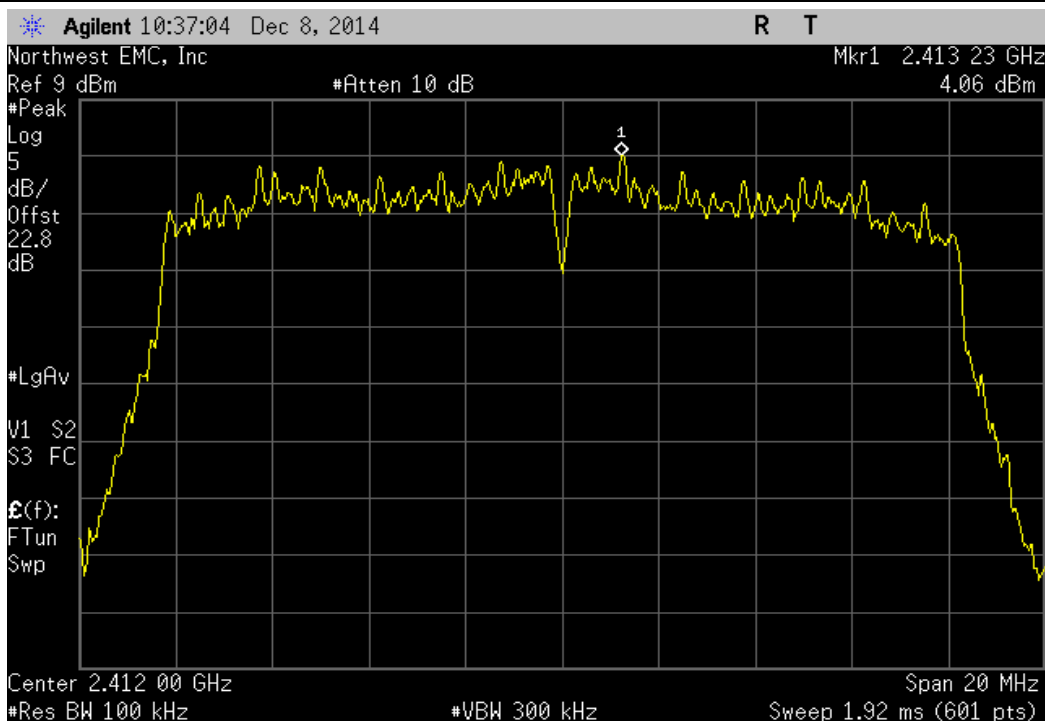
2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz					
	Value	dBm/100kHz	Value	Limit	Results
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
	4.091	-15.2	-11.109	8	Pass



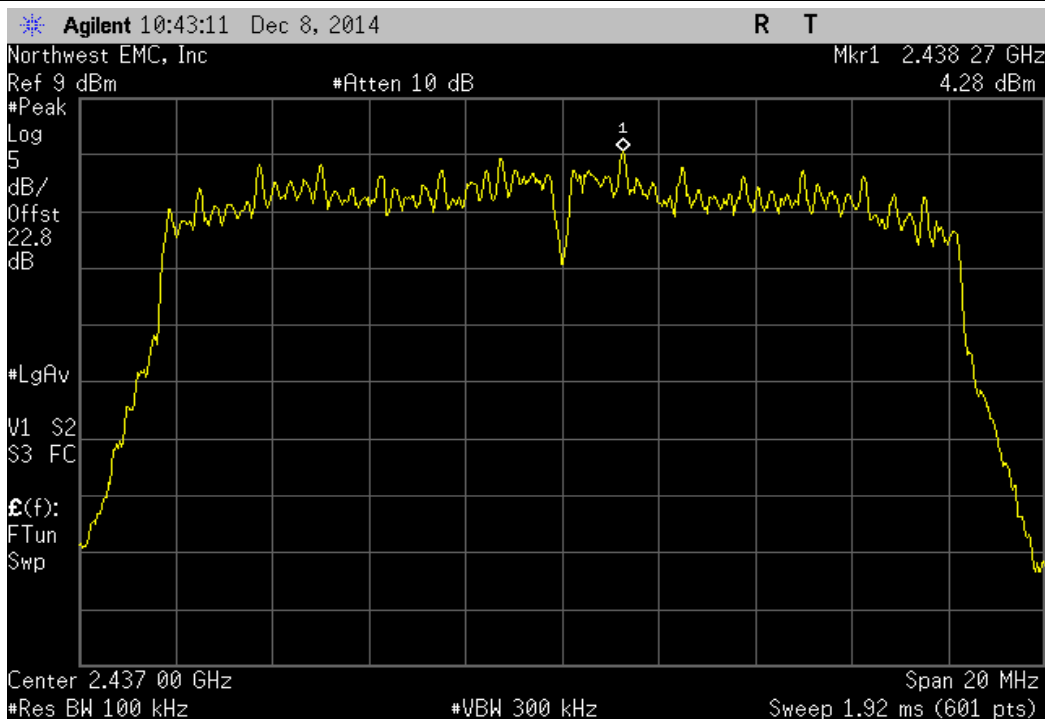
2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz					
	Value	dBm/100kHz	Value	Limit	Results
		To dBm/3kHz	dBm/3kHz		
	3.861	-15.2	-11.339	8	Pass



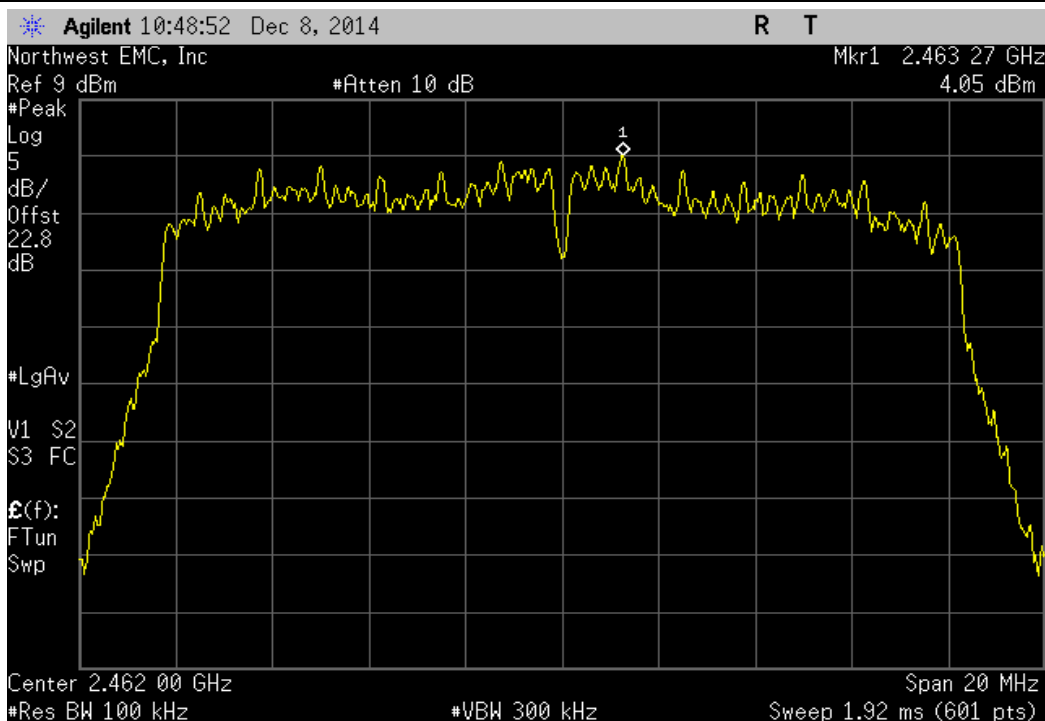
2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz					
	Value	dBm/100kHz	Value	Limit	Results
		To dBm/3kHz	dBm/3kHz		
	4.058	-15.2	-11.142	8	Pass



2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Mid Channel 6, 2437 MHz					
	Value	dBm/100kHz	Value	Limit	Results
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
	4.276	-15.2	-10.924	8	Pass

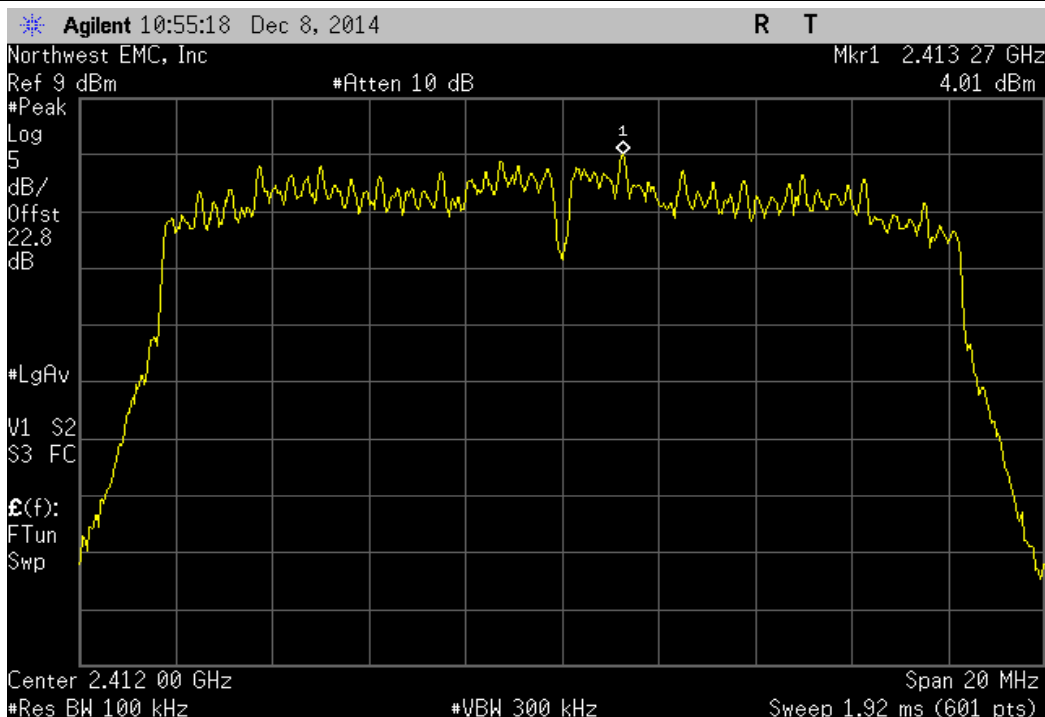


2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz					
	Value	dBm/100kHz	Value	Limit	Results
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
	4.054	-15.2	-11.146	8	Pass

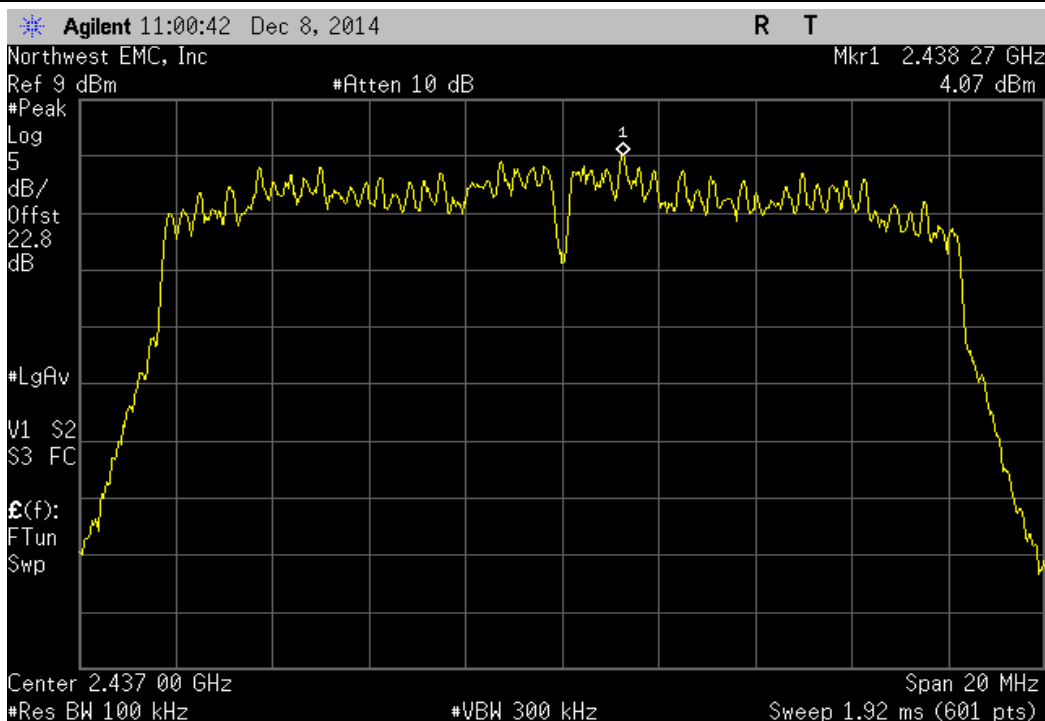




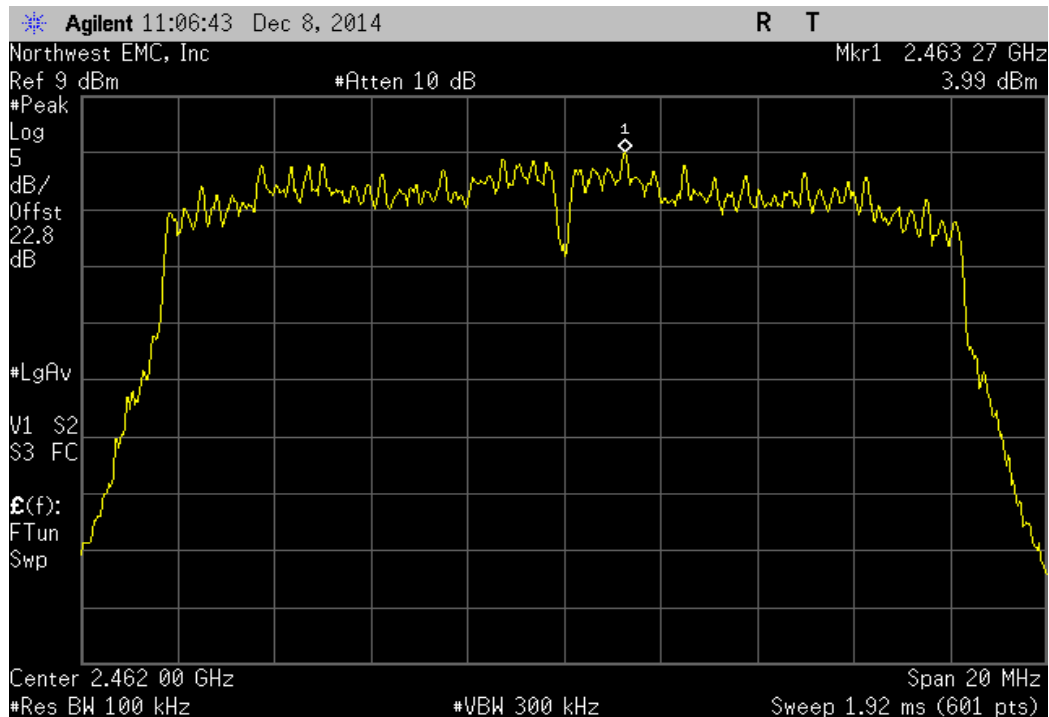
2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz					
	Value	dBm/100kHz	Value	Limit	Results
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
	4.006	-15.2	-11.194	8	Pass



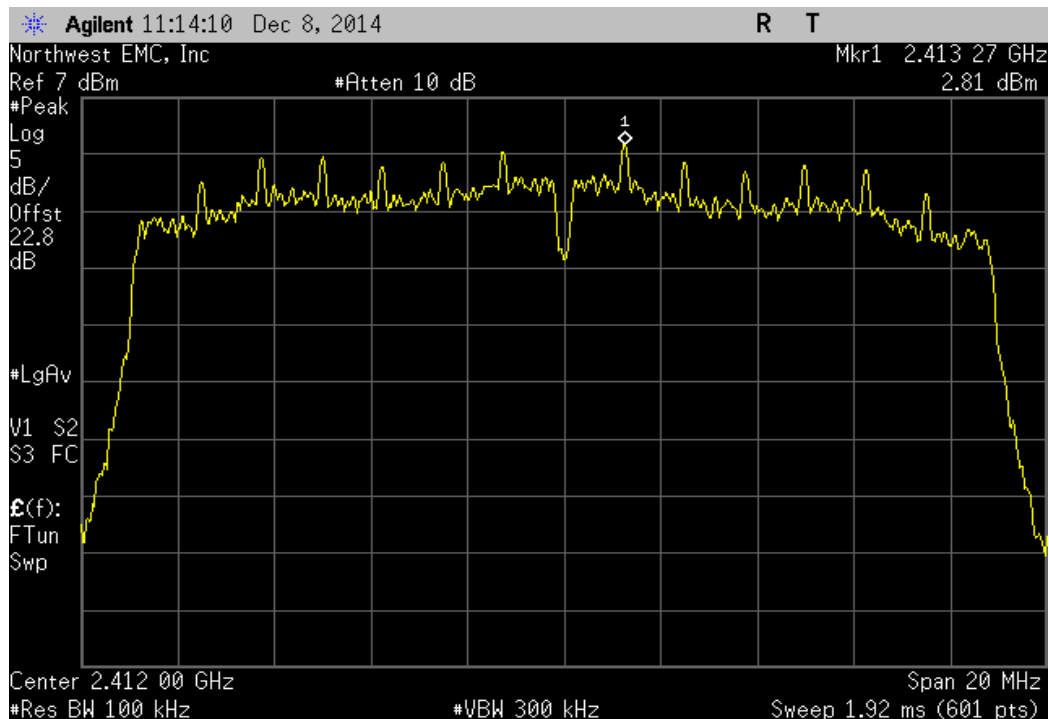
2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz					
	Value	dBm/100kHz	Value	Limit	Results
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
	4.072	-15.2	-11.128	8	Pass



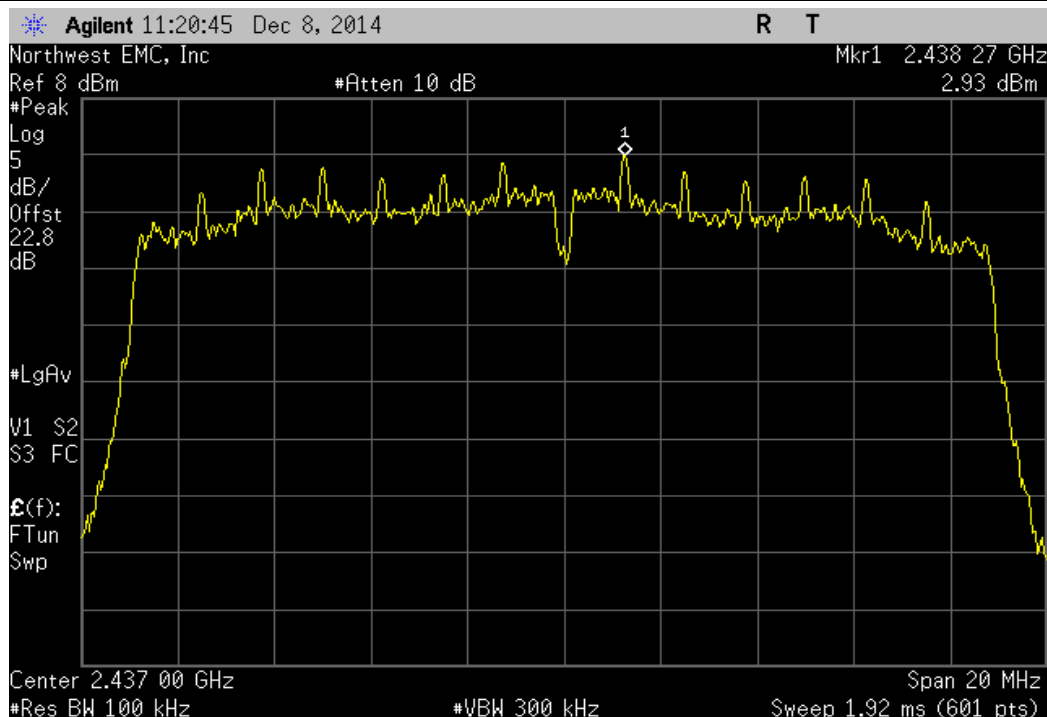
2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz					
	Value	dBm/100kHz	Value	Limit	Results
		To dBm/3kHz	dBm/3kHz		
	3.991	-15.2	-11.209	8	Pass



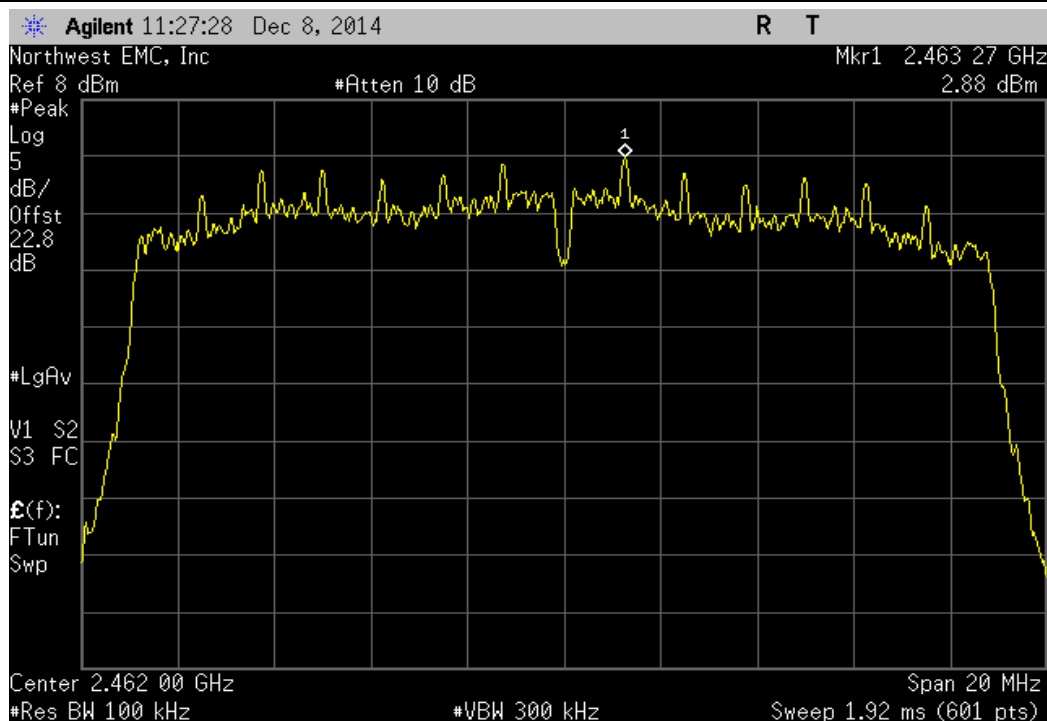
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1, 2412 MHz					
	Value	dBm/100kHz	Value	Limit	Results
		To dBm/3kHz	dBm/3kHz		
	2.81	-15.2	-12.39	8	Pass



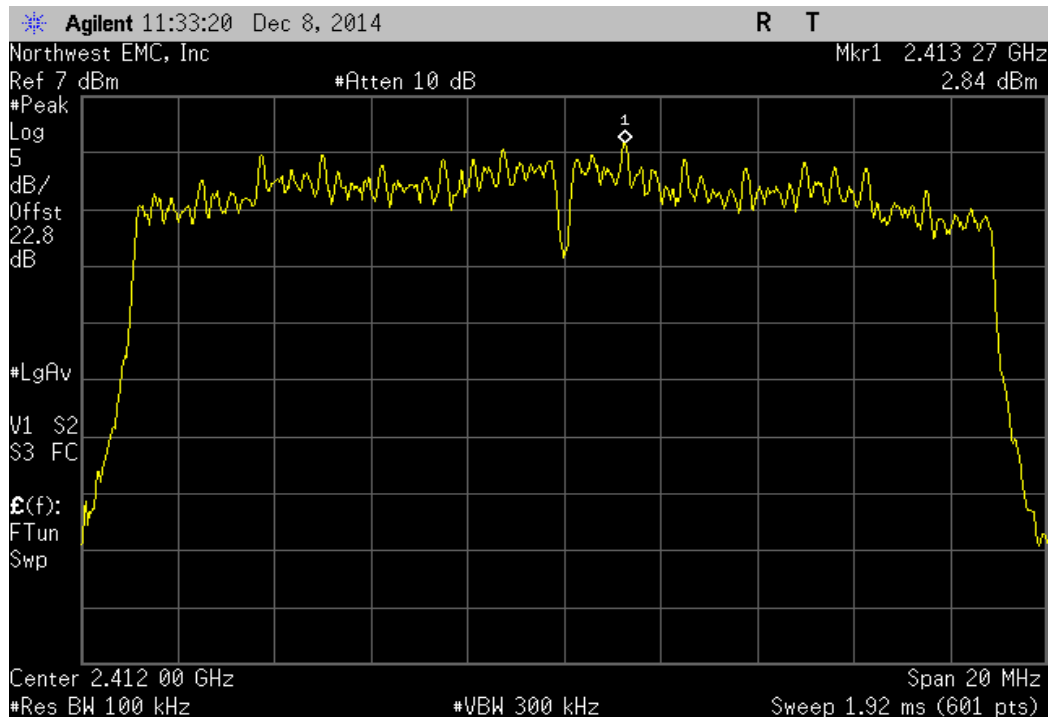
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Mid Channel 6, 2437 MHz					
	Value	dBm/100kHz	Value	Limit	Results
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
	2.935	-15.2	-12.265	8	Pass



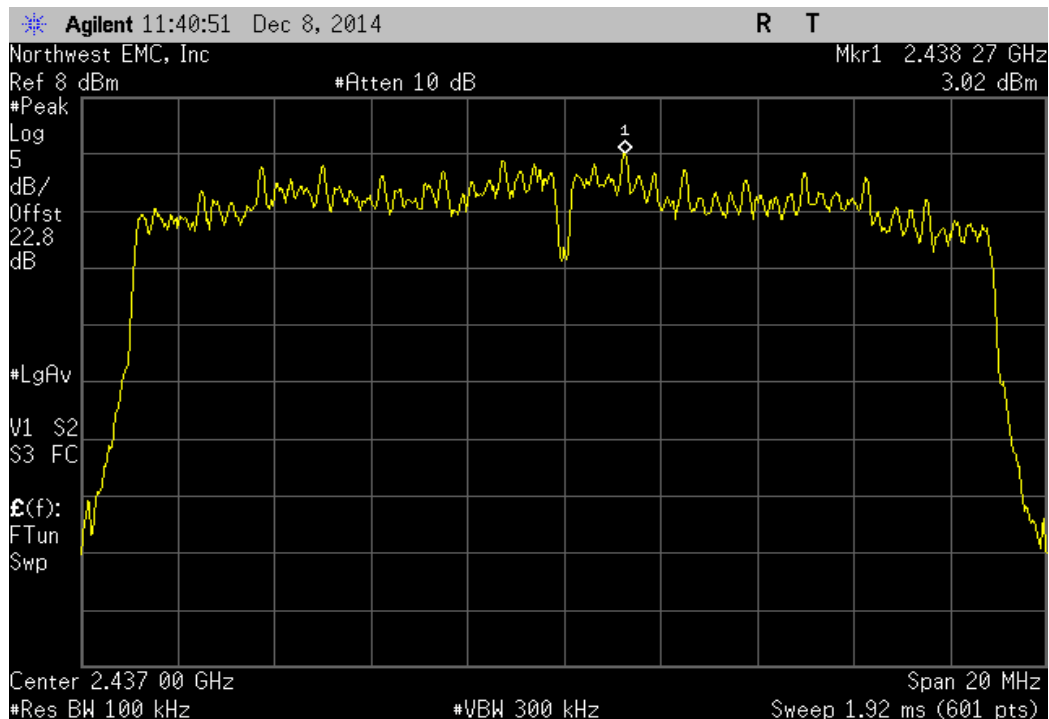
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 11, 2462 MHz					
	Value	dBm/100kHz	Value	Limit	Results
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
	2.881	-15.2	-12.319	8	Pass



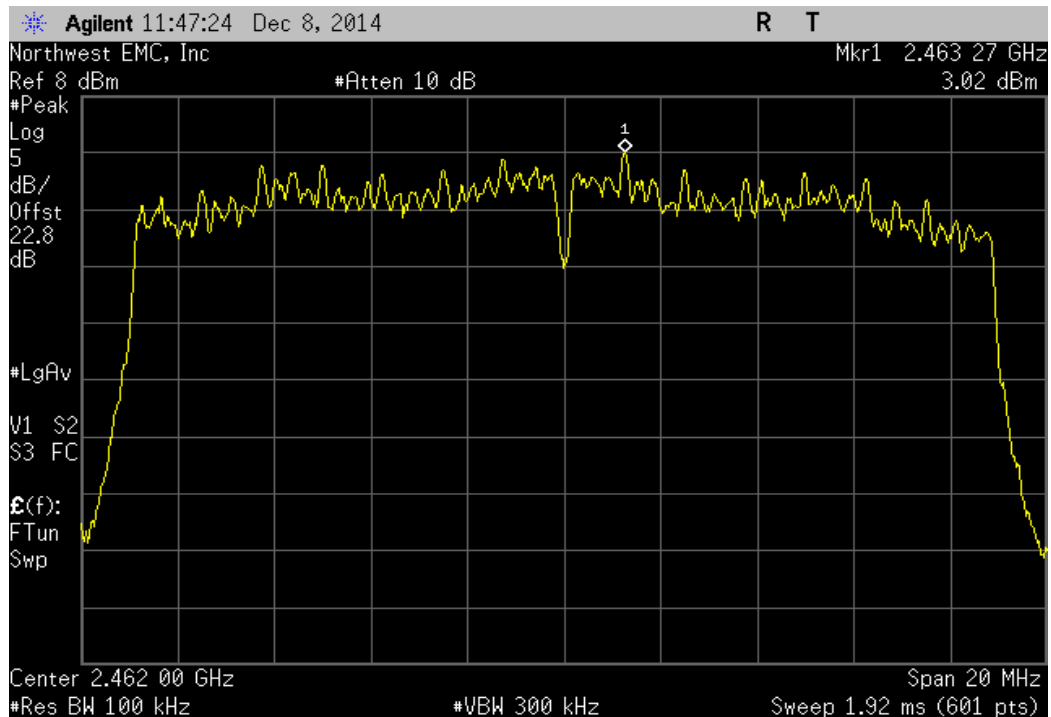
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1, 2412 MHz					
	Value	dBm/100kHz	Value	Limit	Results
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
	2.835	-15.2	-12.365	8	Pass



2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Mid Channel 6, 2437 MHz					
	Value	dBm/100kHz	Value	Limit	Results
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
	3.017	-15.2	-12.183	8	Pass



2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, High Channel 11, 2462 MHz					
	Value	dBm/100kHz	Value	Limit	Results
		To dBm/3kHz			
	3.015	-15.2	-12.185	8	Pass



## DUTY CYCLE

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

### TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	2/3/2014	12
MXG Analog Signal Generator	Agilent	N5181A	TIG	3/28/2014	36
Power Meter	Gigatronics	8651A	SPM	9/17/2014	12
Power Sensor	Gigatronics	80701A	SPL	5/28/2014	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2014	12
Spectrum Analyzer	Agilent	E4440A	AFD	7/14/2014	24

### TEST DESCRIPTION

The Duty Cycle (x) of the single channel operation of the radio as controlled by the provided test software was measured for each of the EUT operating modes.

The measurements were made using a zero span on the spectrum analyzer to see the pulses in the time domain. The transmit power was set to its default maximum. A direct connection was made between the RF output of the EUT and a spectrum analyzer. Attenuation and a DC block were used.


The duty cycle was calculated by dividing the transmission pulse duration (T) by the total period of a single on and total off time.

If the transmit duty cycle < 98 percent, burst gating was used during some of the other tests in this report to only measure during the burst duration.

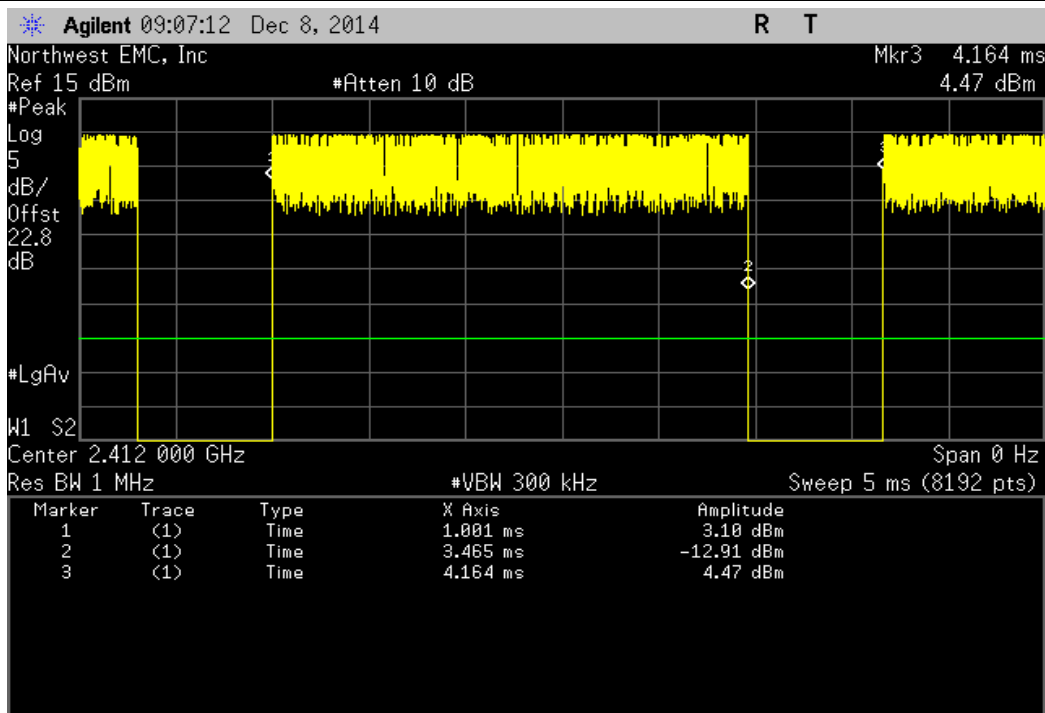


## DUTY CYCLE

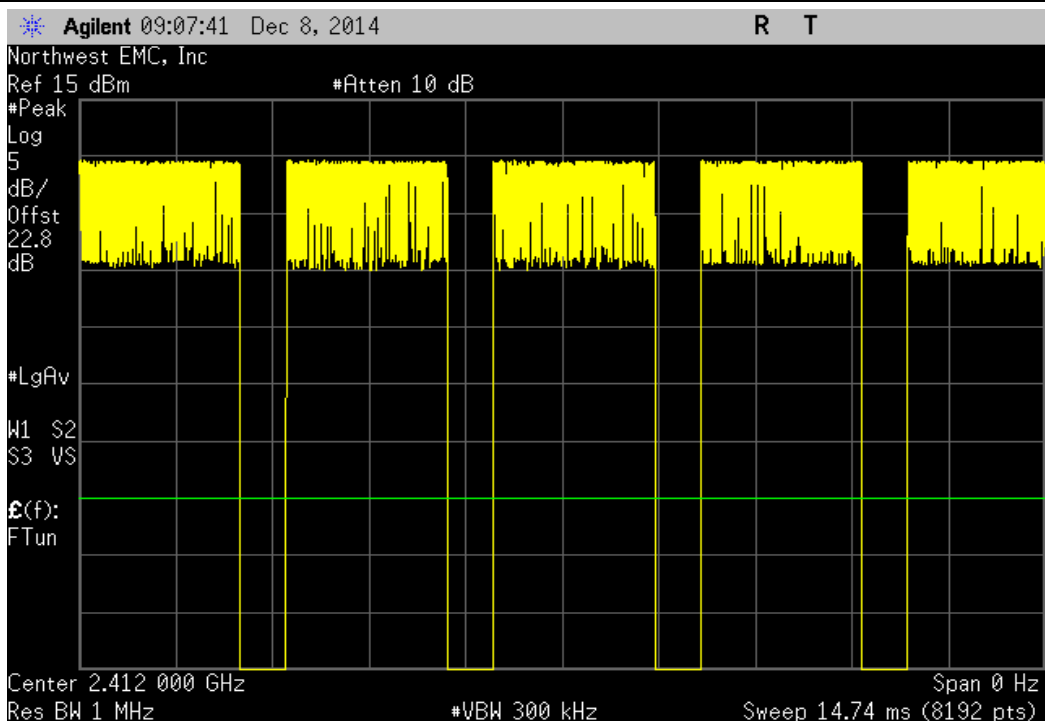
XMit 2014.02.07  
NweTx 2014.11.06

EUT: IMP003-FCC		Work Order: ELIM0007					
Serial Number: 0C2A690BDC4E		Date: 12/08/14					
Customer: Electric Imp, Inc.		Temperature: 21°C					
Attendees: Brandon Harris		Humidity: 38%					
Project: None		Barometric Pres.: 1017.6					
Tested by: Brandon Hobbs		Power: 5 VDC Nominal					
		Job Site: EV06					
TEST SPECIFICATIONS		Test Method					
FCC 15.247:2014		ANSI C63.10:2009					
COMMENTS							
EUT was running module scripts in WL.exe. A DC block was used in front of the analyzer.							
DEVIATIONS FROM TEST STANDARD							
None							
Configuration #	1	Signature 					
		Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
2400 MHz - 2483.5 MHz Band							
802.11(b) 1 Mbps							
	Low Channel 1, 2412 MHz	2.465 ms	3.164 ms	1	77.9	N/A	N/A
	Low Channel 1, 2412 MHz	N/A	N/A	5	N/A	N/A	N/A
	Mid Channel 6, 2437 MHz	2.465 ms	3.164 ms	1	77.9	N/A	N/A
	Mid Channel 6, 2437 MHz	N/A	N/A	5	N/A	N/A	N/A
	High Channel 11, 2462 MHz	2.465 ms	3.164 ms	1	77.9	N/A	N/A
	High Channel 11, 2462 MHz	N/A	N/A	5	N/A	N/A	N/A
802.11(b) 11 Mbps							
	Low Channel 1, 2412 MHz	859.9 us	877.1 us	1	98	N/A	N/A
	Low Channel 1, 2412 MHz	N/A	N/A	5	N/A	N/A	N/A
	Mid Channel 6, 2437 MHz	1.604 ms	1.631 ms	1	98.4	N/A	N/A
	Mid Channel 6, 2437 MHz	N/A	N/A	5	N/A	N/A	N/A
	High Channel 11, 2462 MHz	1.604 ms	1.631 ms	1	98.4	N/A	N/A
	High Channel 11, 2462 MHz	N/A	N/A	5	N/A	N/A	N/A
802.11(g) 6 Mbps							
	Low Channel 1, 2412 MHz	2.785 ms	2.823 ms	1	98.7	N/A	N/A
	Low Channel 1, 2412 MHz	N/A	N/A	5	N/A	N/A	N/A
	Mid Channel 6, 2437 MHz	2.785 ms	2.823 ms	1	98.7	N/A	N/A
	Mid Channel 6, 2437 MHz	N/A	N/A	5	N/A	N/A	N/A
	High Channel 11, 2462 MHz	2.785 ms	2.823 ms	1	98.7	N/A	N/A
	High Channel 11, 2462 MHz	N/A	N/A	5	N/A	N/A	N/A
802.11(g) 36 Mbps							
	Low Channel 1, 2412 MHz	248.5 us	276.1 us	1	90	N/A	N/A
	Low Channel 1, 2412 MHz	N/A	N/A	5	N/A	N/A	N/A
	Mid Channel 6, 2437 MHz	248.5 us	276.1 us	1	90	N/A	N/A
	Mid Channel 6, 2437 MHz	N/A	N/A	5	N/A	N/A	N/A
	High Channel 11, 2462 MHz	248.3 us	276.9 us	1	89.7	N/A	N/A
	High Channel 11, 2462 MHz	N/A	N/A	5	N/A	N/A	N/A
802.11(g) 54 Mbps							
	Low Channel 1, 2412 MHz	172.6 us	200.2 us	1	86.2	N/A	N/A
	Low Channel 1, 2412 MHz	N/A	N/A	6	N/A	N/A	N/A
	Mid Channel 6, 2437 MHz	172.9 us	200.2 us	1	86.4	N/A	N/A
	Mid Channel 6, 2437 MHz	N/A	N/A	5	N/A	N/A	N/A
	High Channel 11, 2462 MHz	172.8 us	200.2 us	1	86.3	N/A	N/A
	High Channel 11, 2462 MHz	N/A	N/A	6	N/A	N/A	N/A
802.11(n) MCS0							
	Low Channel 1, 2412 MHz	1.329 ms	1.357 ms	1	98	N/A	N/A
	Low Channel 1, 2412 MHz	N/A	N/A	5	N/A	N/A	N/A
	Mid Channel 6, 2437 MHz	1.329 ms	1.357 ms	1	98	N/A	N/A
	Mid Channel 6, 2437 MHz	N/A	N/A	5	N/A	N/A	N/A
	High Channel 11, 2462 MHz	1.329 ms	1.357 ms	1	98	N/A	N/A
	High Channel 11, 2462 MHz	N/A	N/A	5	N/A	N/A	N/A
802.11(n) MCS7							
	Low Channel 1, 2412 MHz	160.6 us	188.2 us	1	85.3	N/A	N/A
	Low Channel 1, 2412 MHz	N/A	N/A	6	N/A	N/A	N/A
	Mid Channel 6, 2437 MHz	160.6 us	188.2 us	1	85.3	N/A	N/A
	Mid Channel 6, 2437 MHz	N/A	N/A	6	N/A	N/A	N/A
	High Channel 11, 2462 MHz	160.7 us	188 us	1	85.5	N/A	N/A
	High Channel 11, 2462 MHz	N/A	N/A	5	N/A	N/A	N/A

2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	2.465 ms	3.164 ms	1	77.9	N/A	N/A

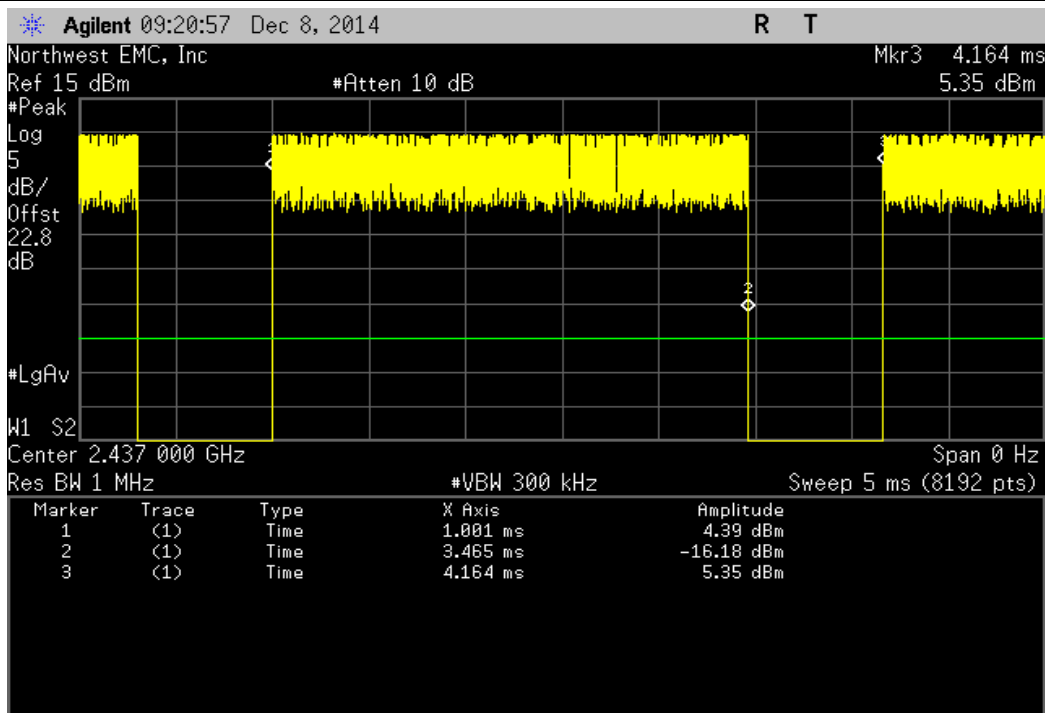


2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A

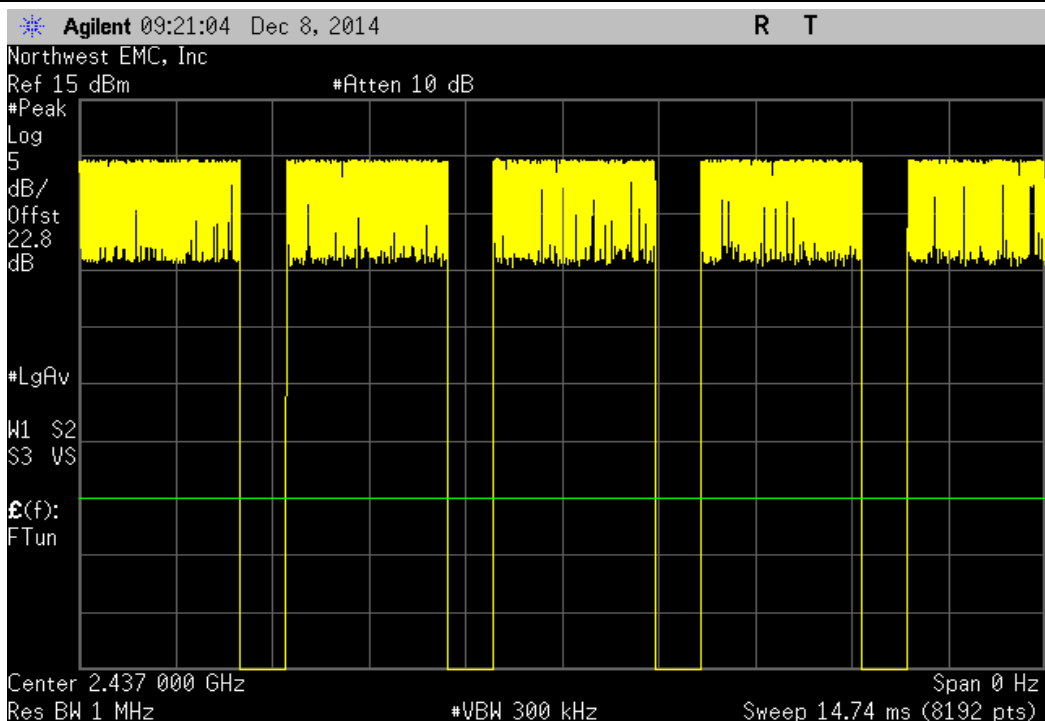




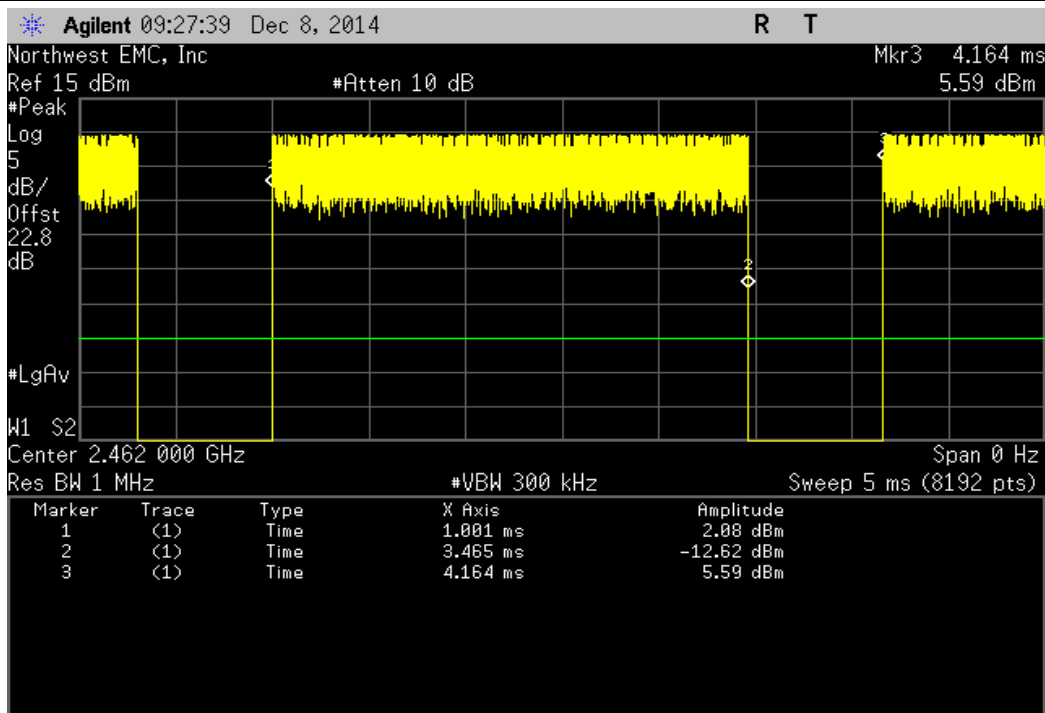
2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	2.465 ms	3.164 ms	1	77.9	N/A	N/A



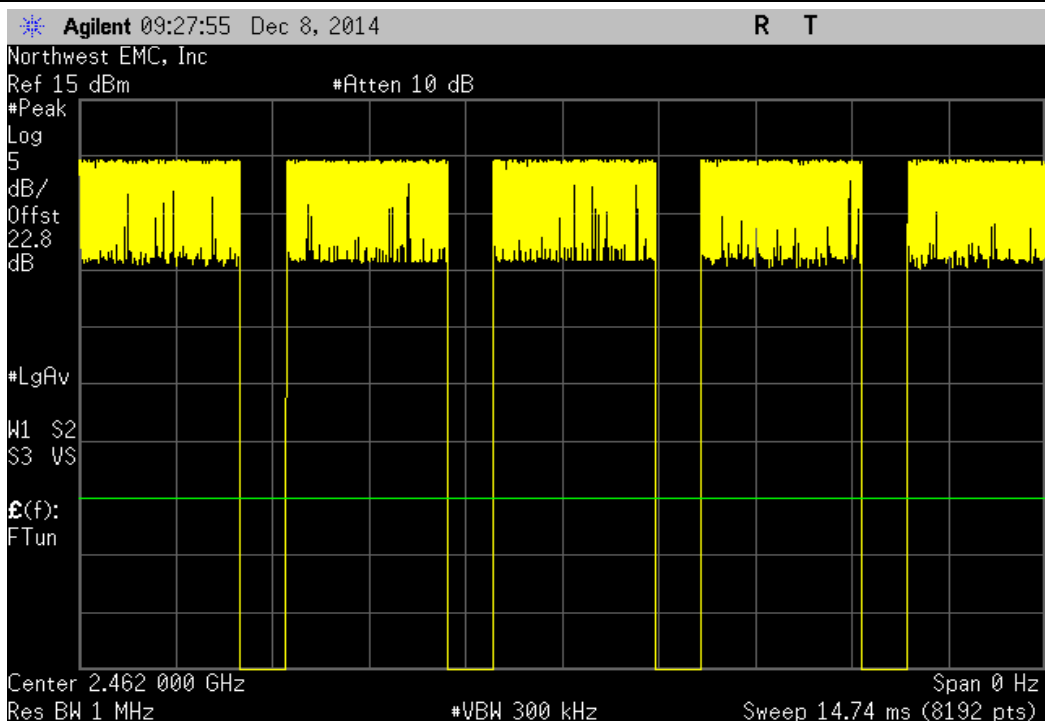
2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A



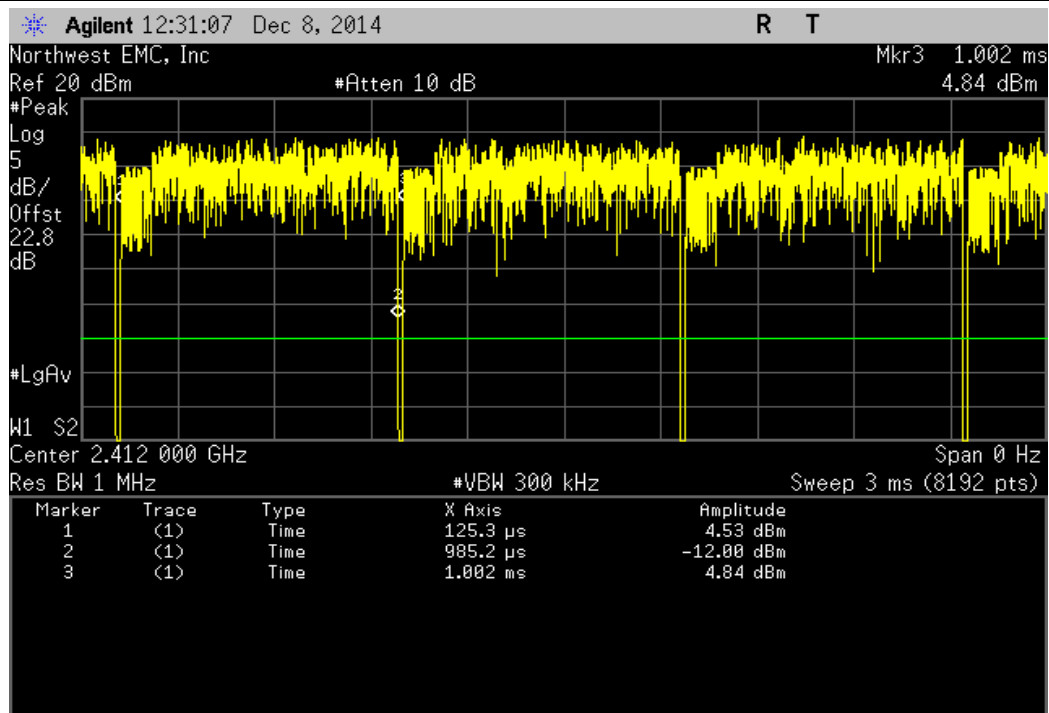
2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	2.465 ms	3.164 ms	1	77.9	N/A	N/A



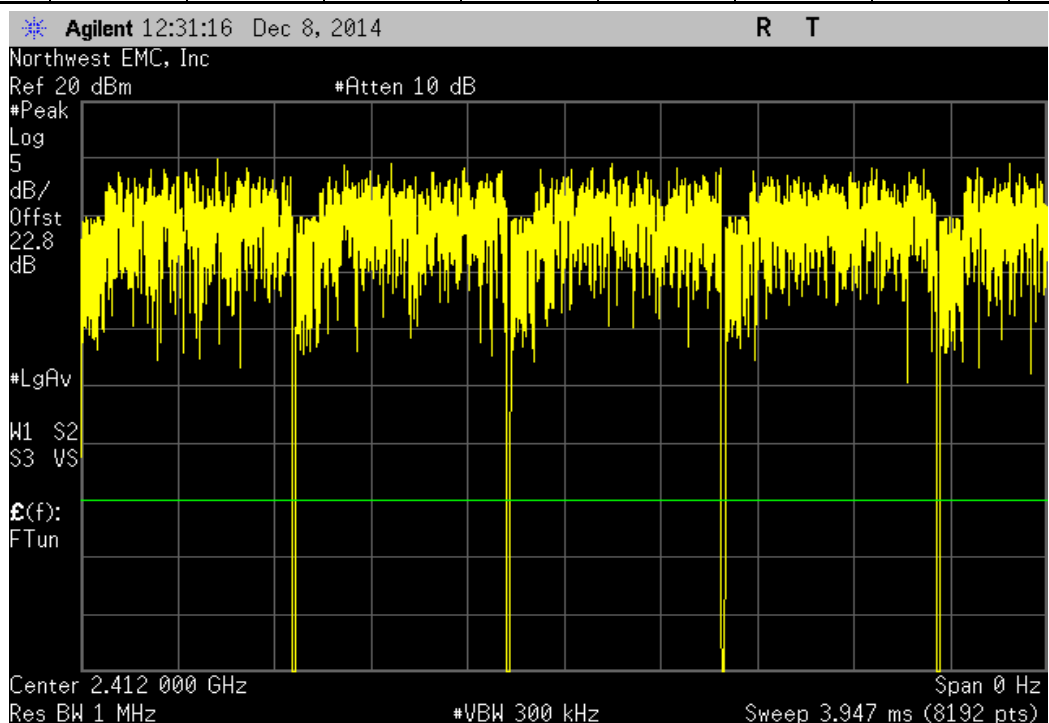
2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A



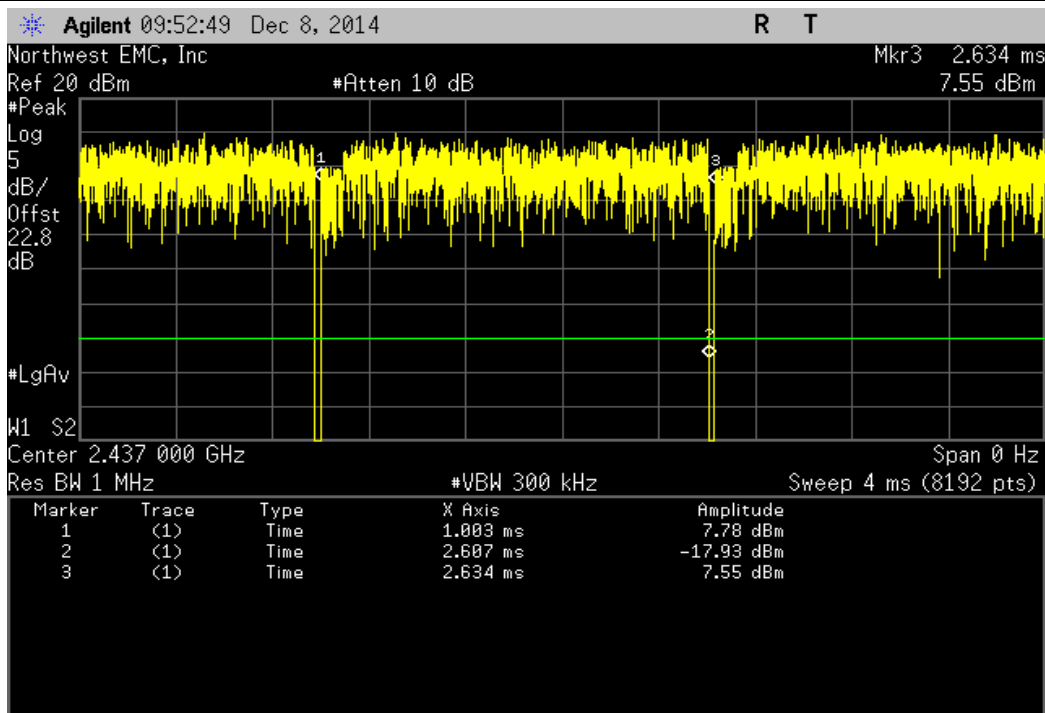
2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
859.9 us	877.1 us	1	98	N/A	N/A	



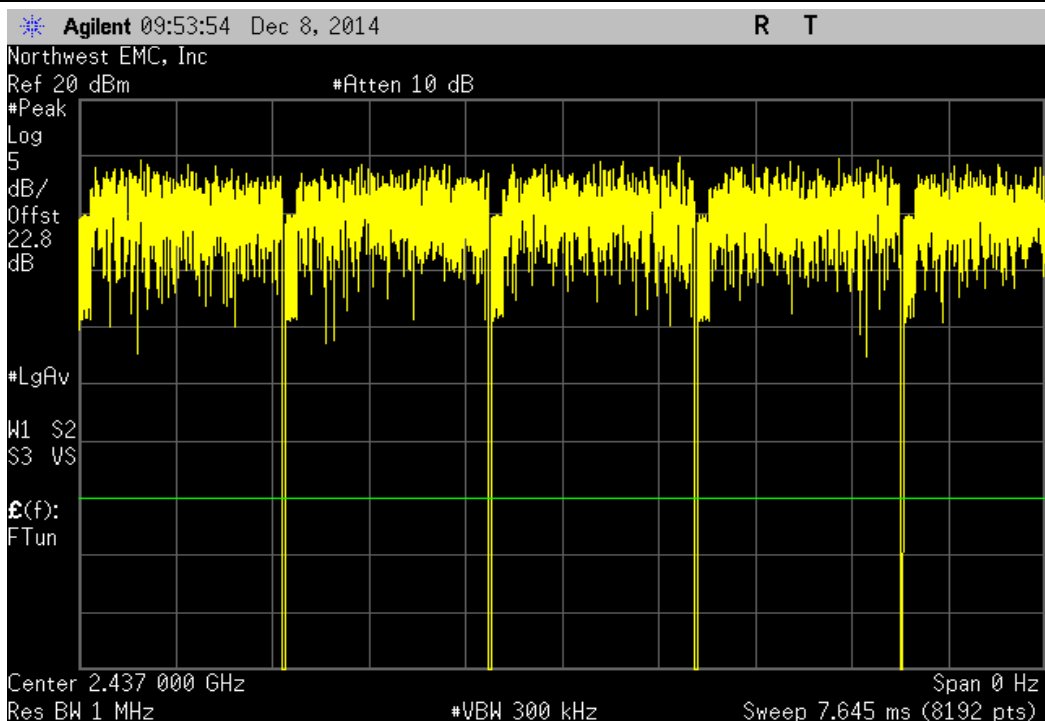
2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	



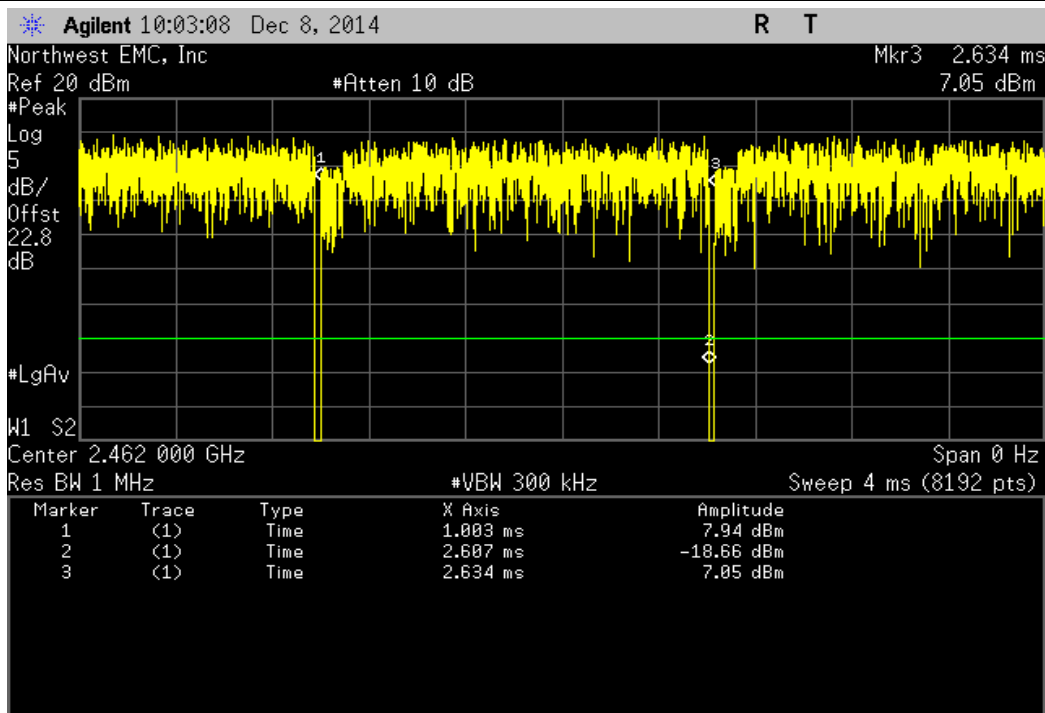
2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Mid Channel 6, 2437 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
1.604 ms	1.631 ms	1	98.4	N/A	N/A	



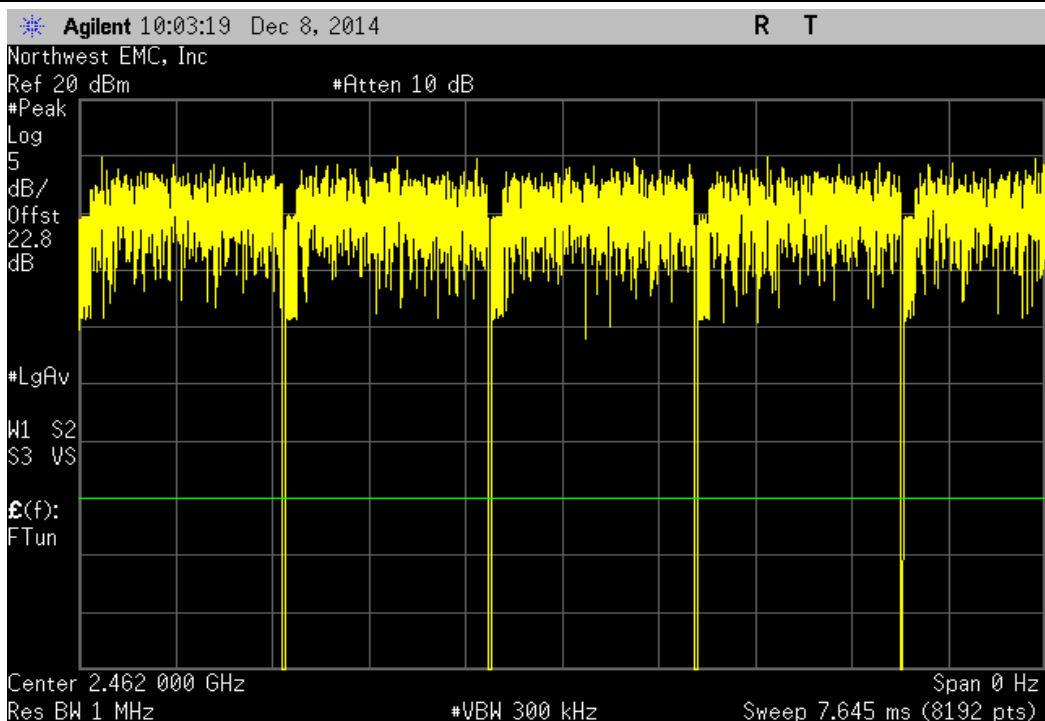
2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Mid Channel 6, 2437 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	



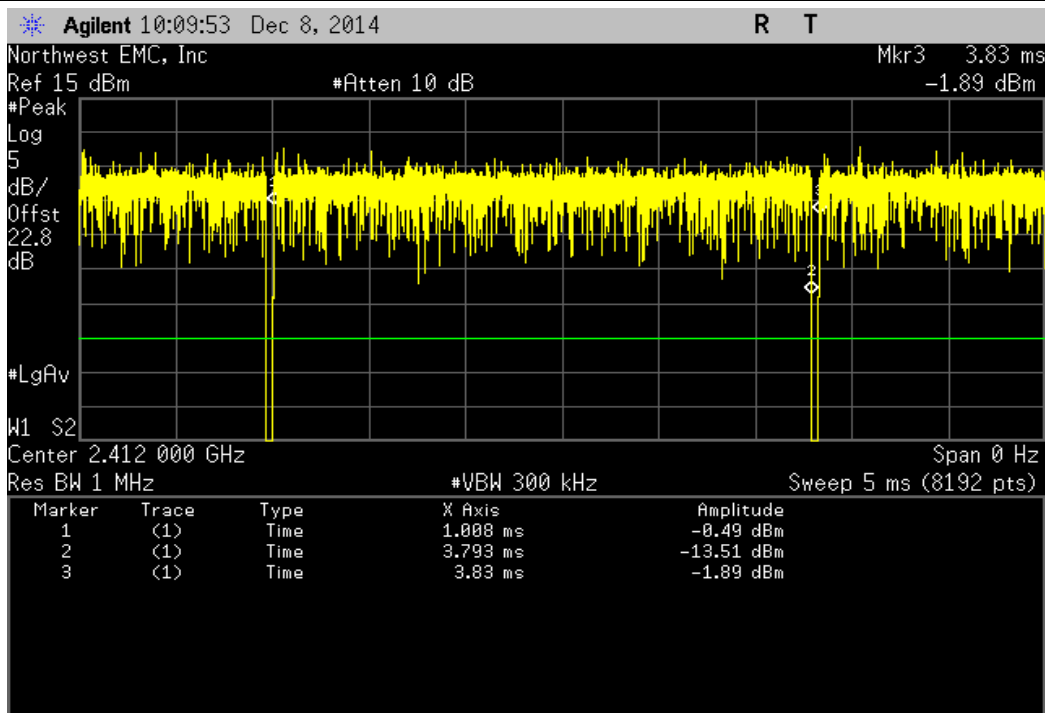
2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
1.604 ms	1.631 ms	1	98.4	N/A	N/A	



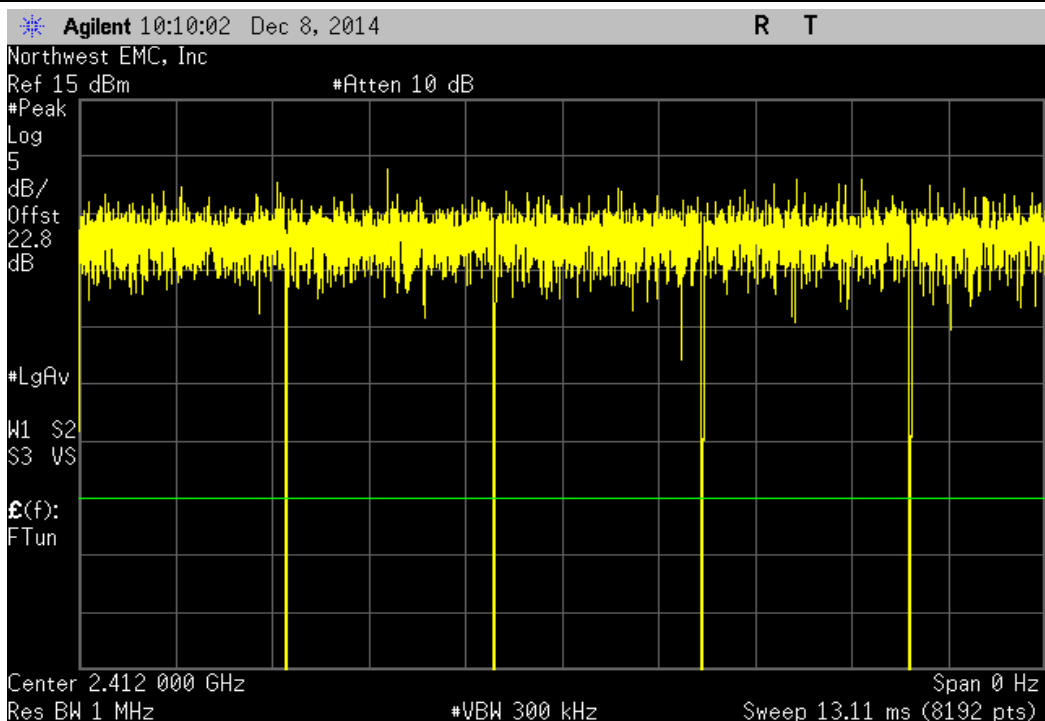
2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	



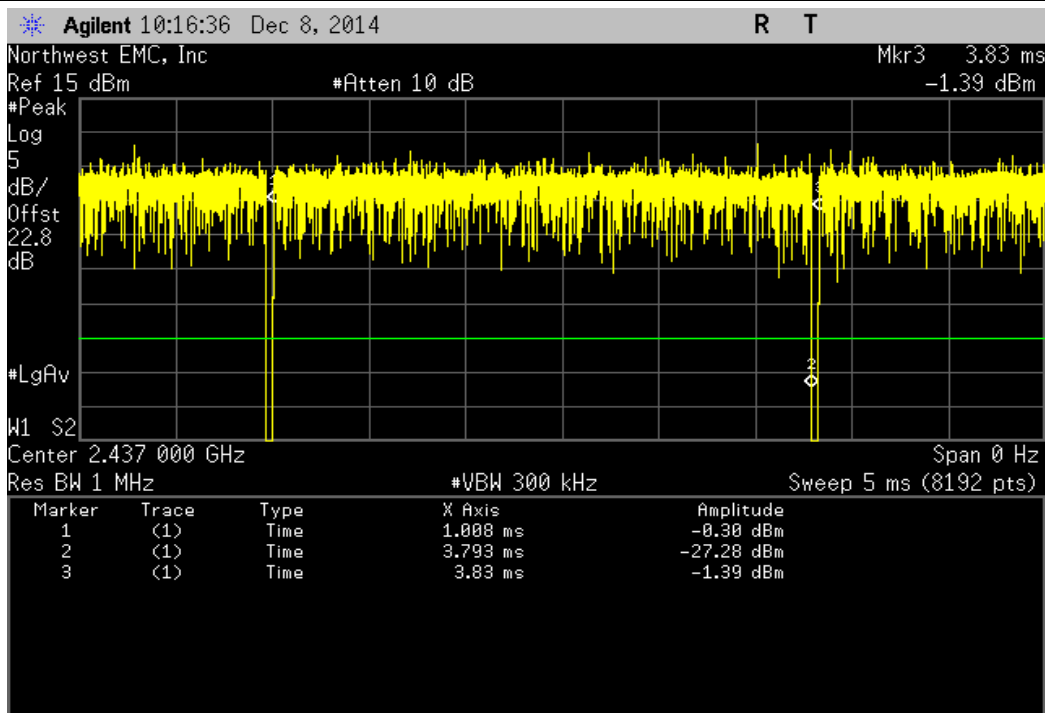
2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	2.785 ms	2.823 ms	1	98.7	N/A	N/A



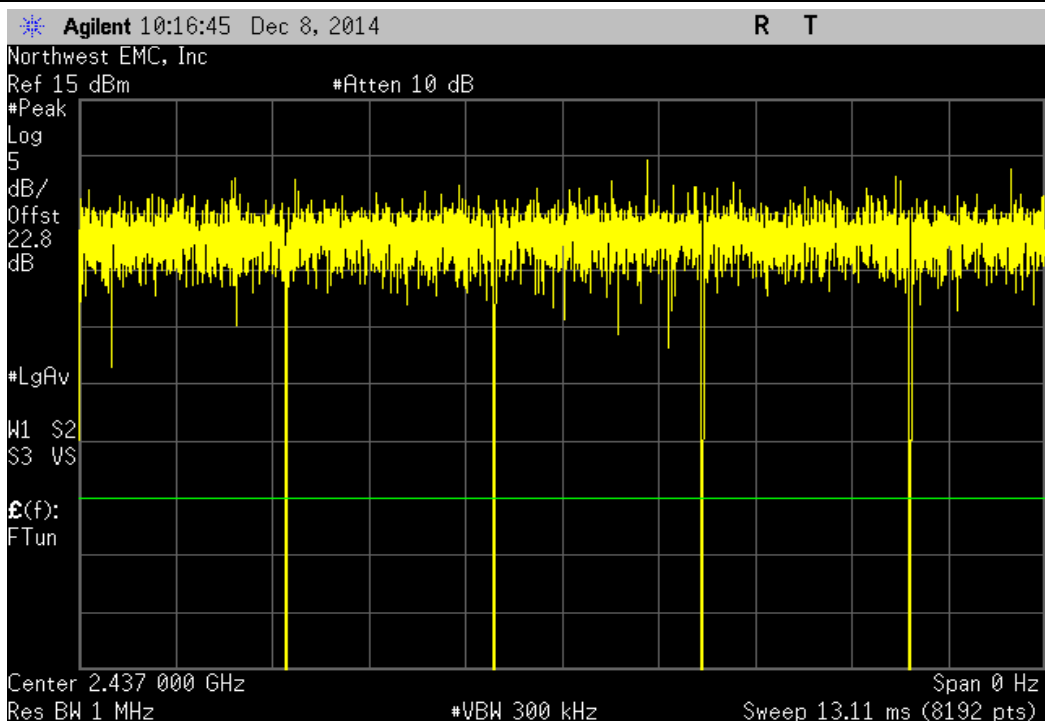
2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A



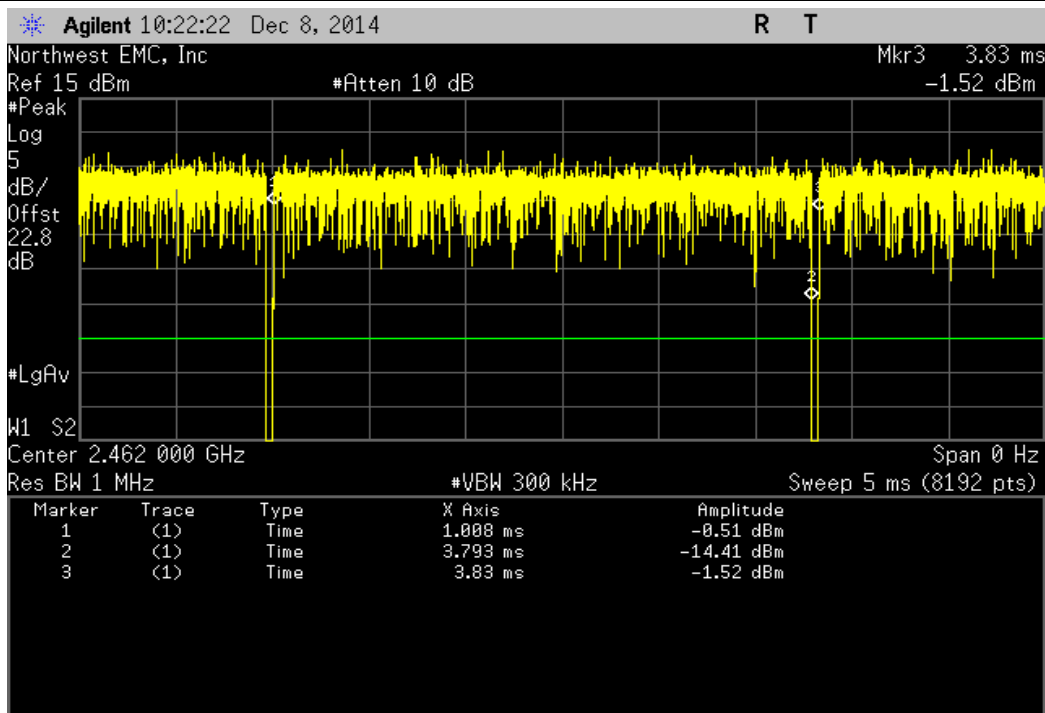
2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	2.785 ms	2.823 ms	1	98.7	N/A	N/A



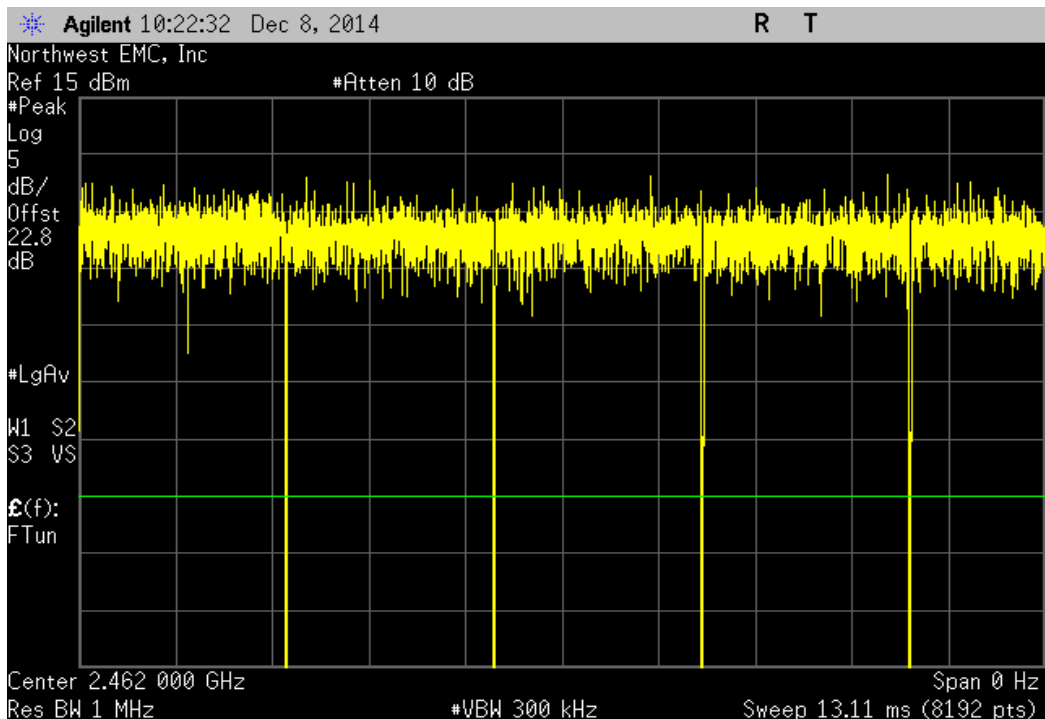
2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A



2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
2.785 ms	2.823 ms	1	98.7	N/A	N/A	

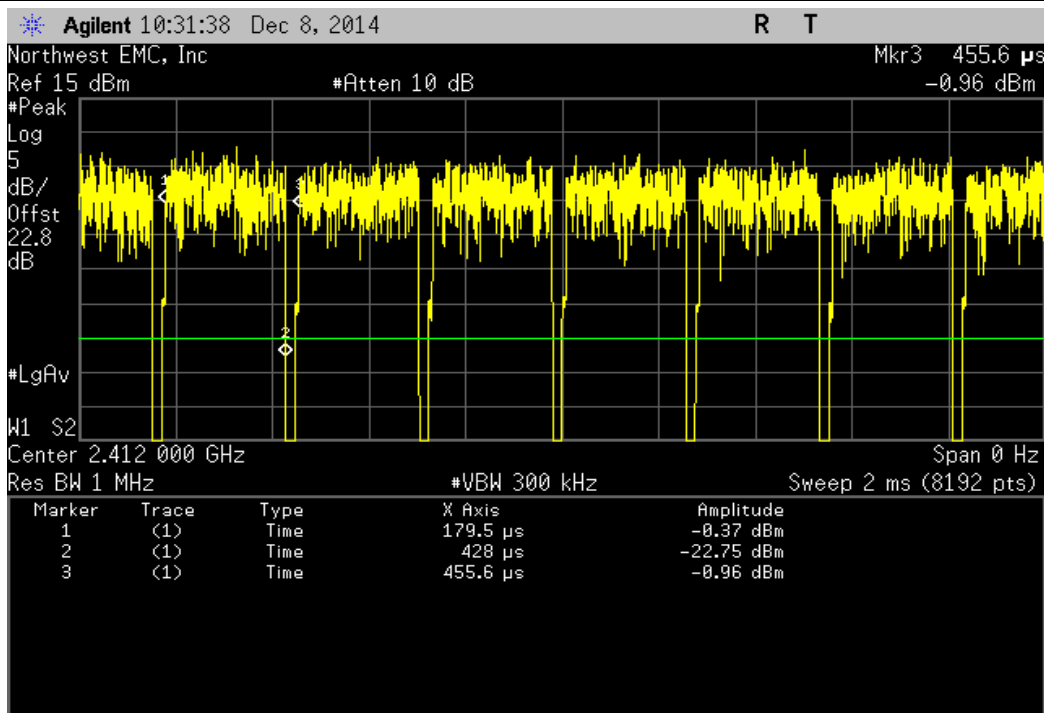


2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	

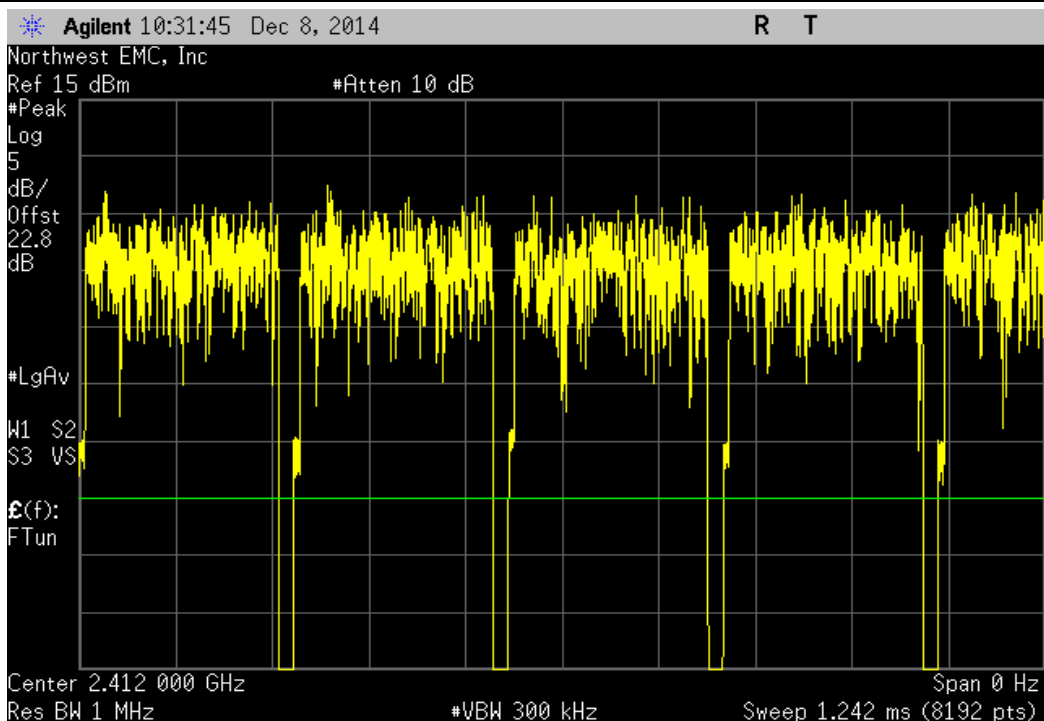




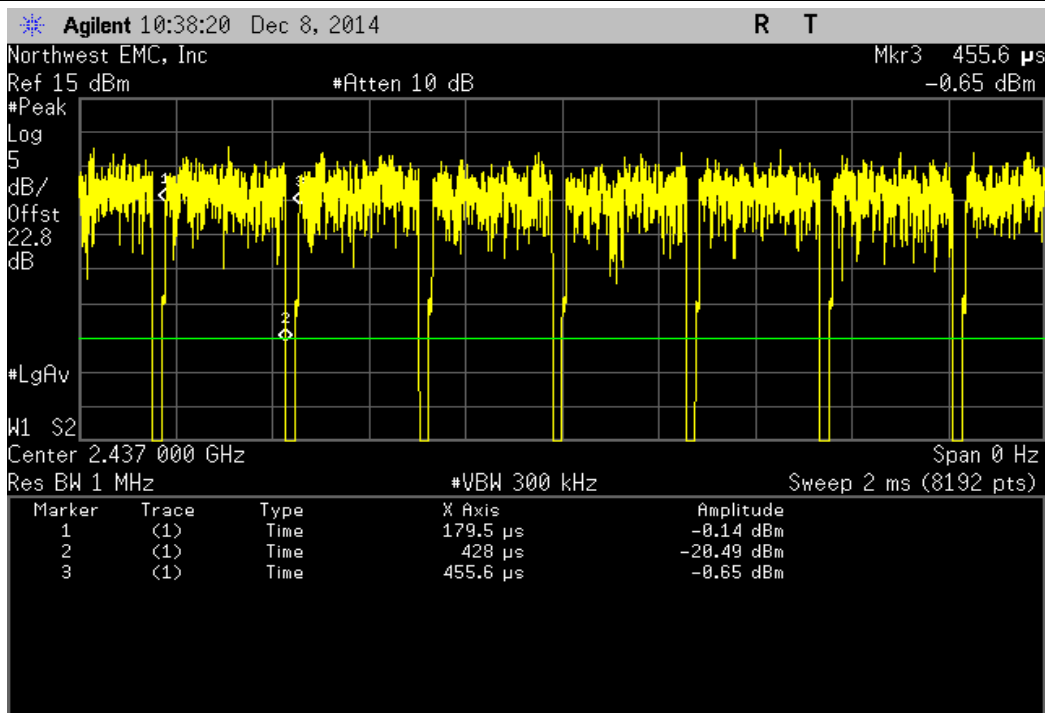
2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
248.5 us	276.1 us	1	90	N/A	N/A	



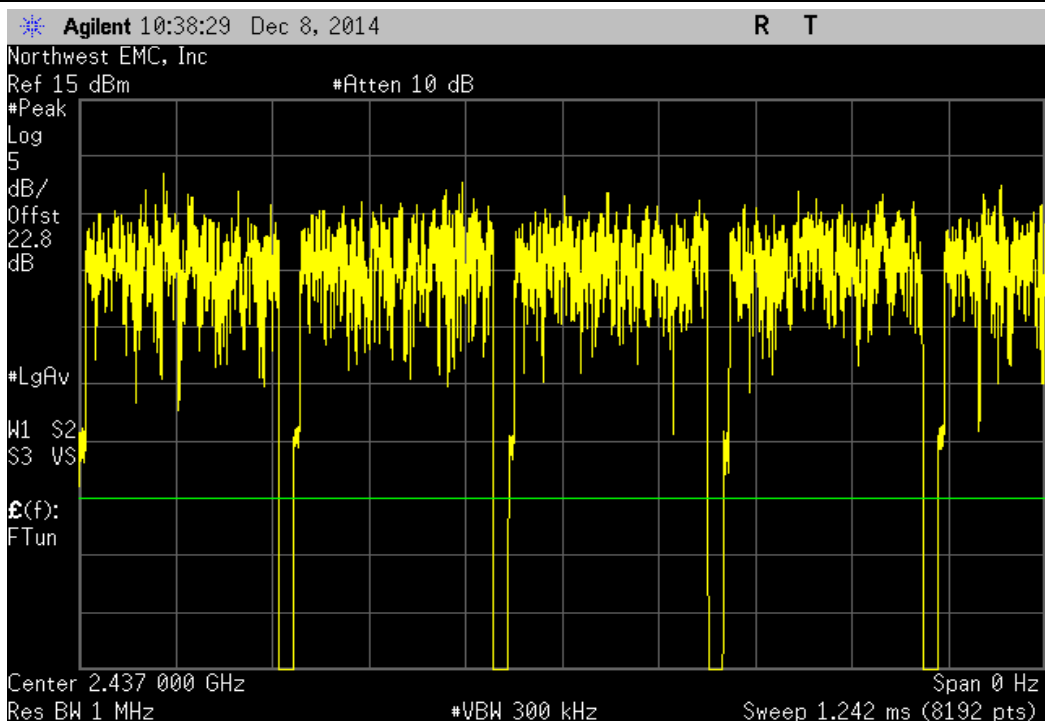
2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	



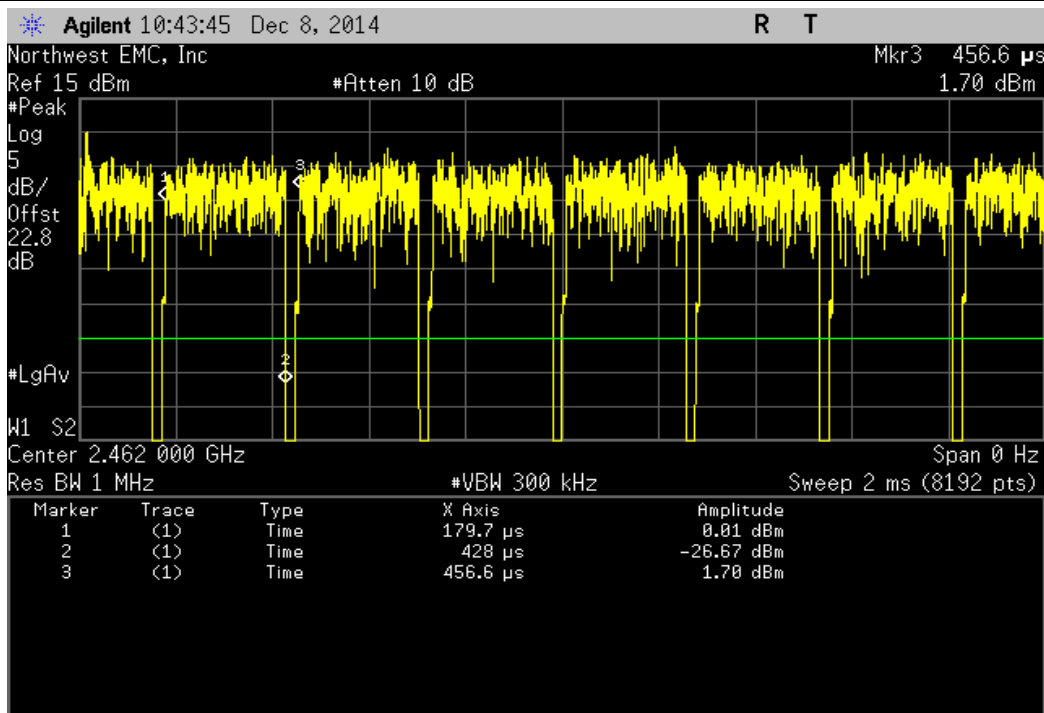
2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Mid Channel 6, 2437 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
248.5 us	276.1 us	1	90	N/A	N/A	



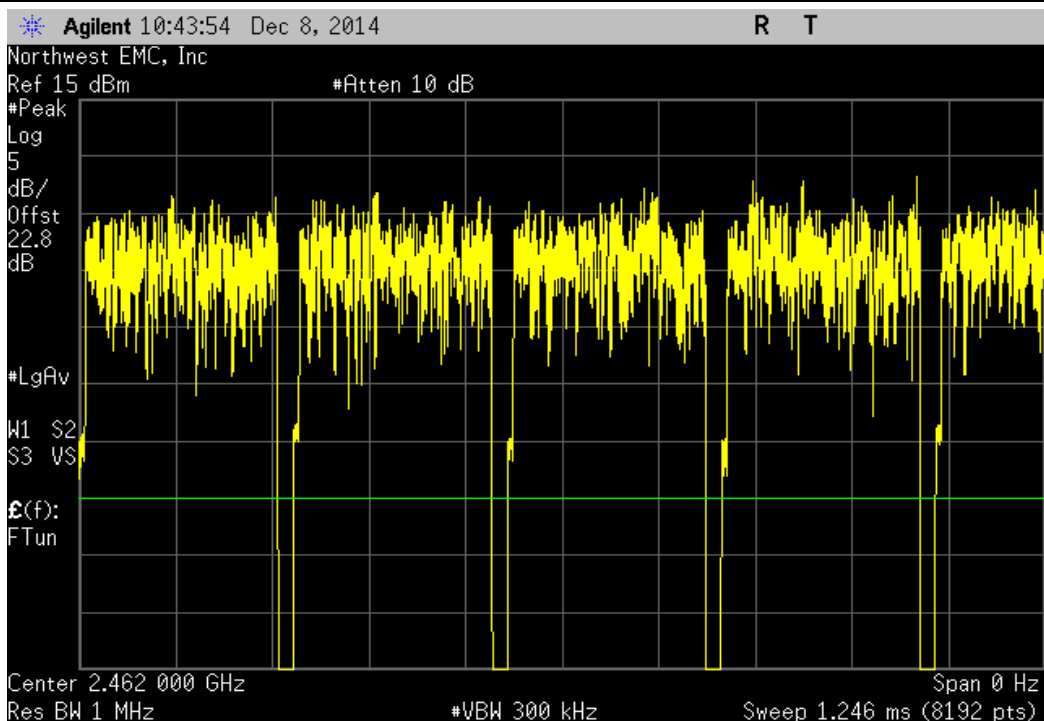
2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Mid Channel 6, 2437 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	



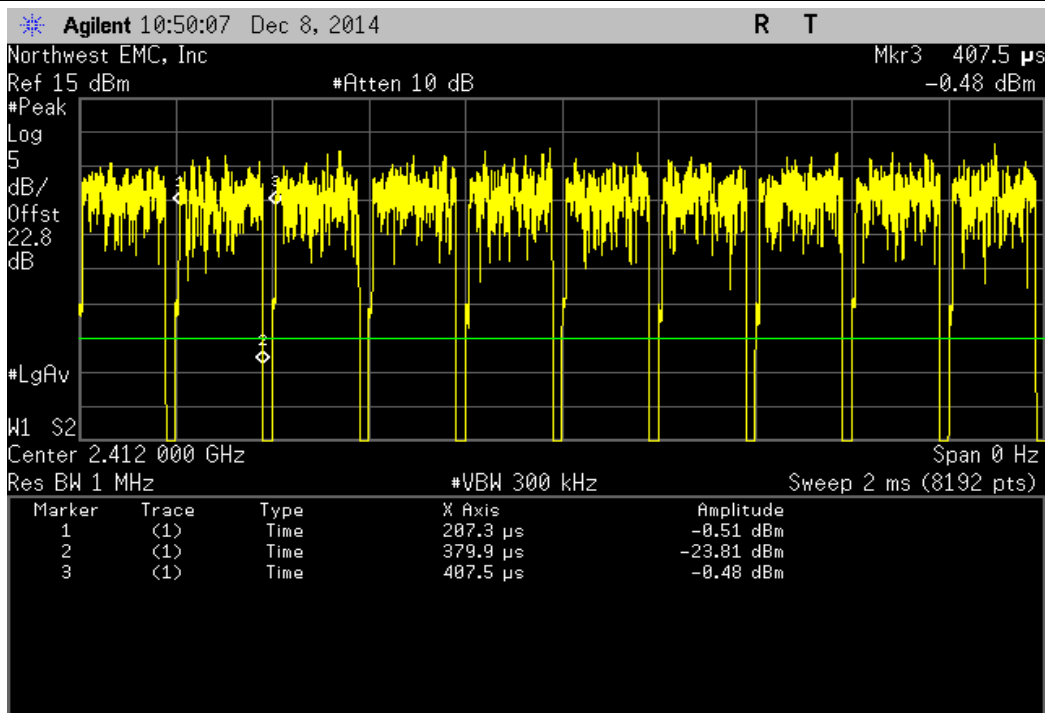
2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
248.3 us	276.9 us	1	89.7	N/A	N/A	



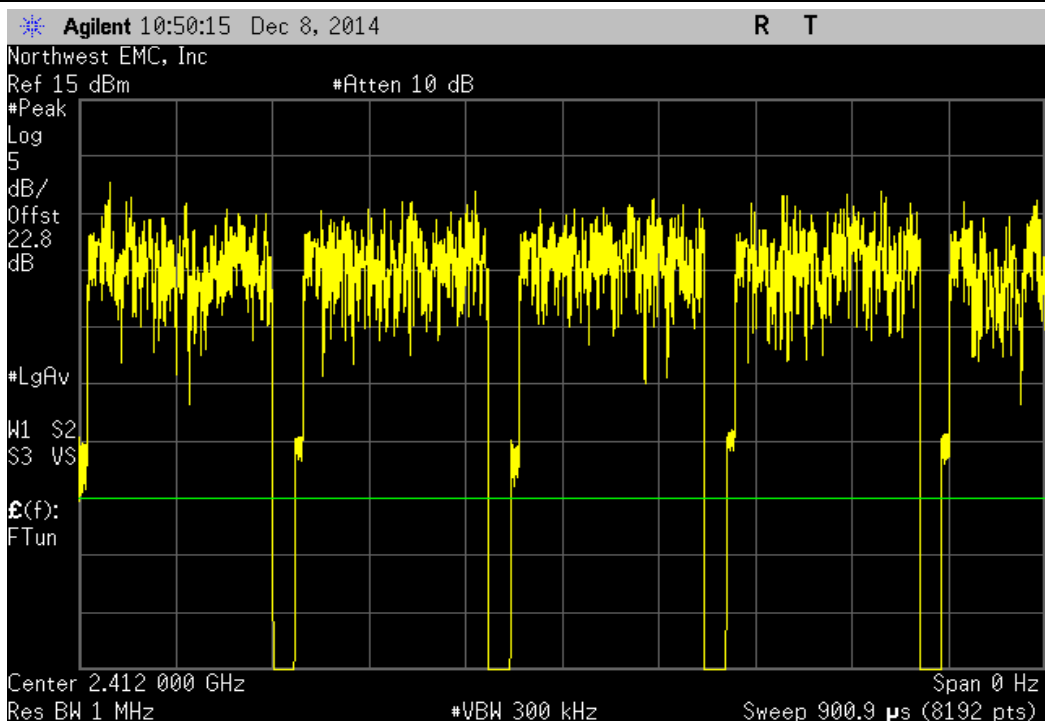
2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	



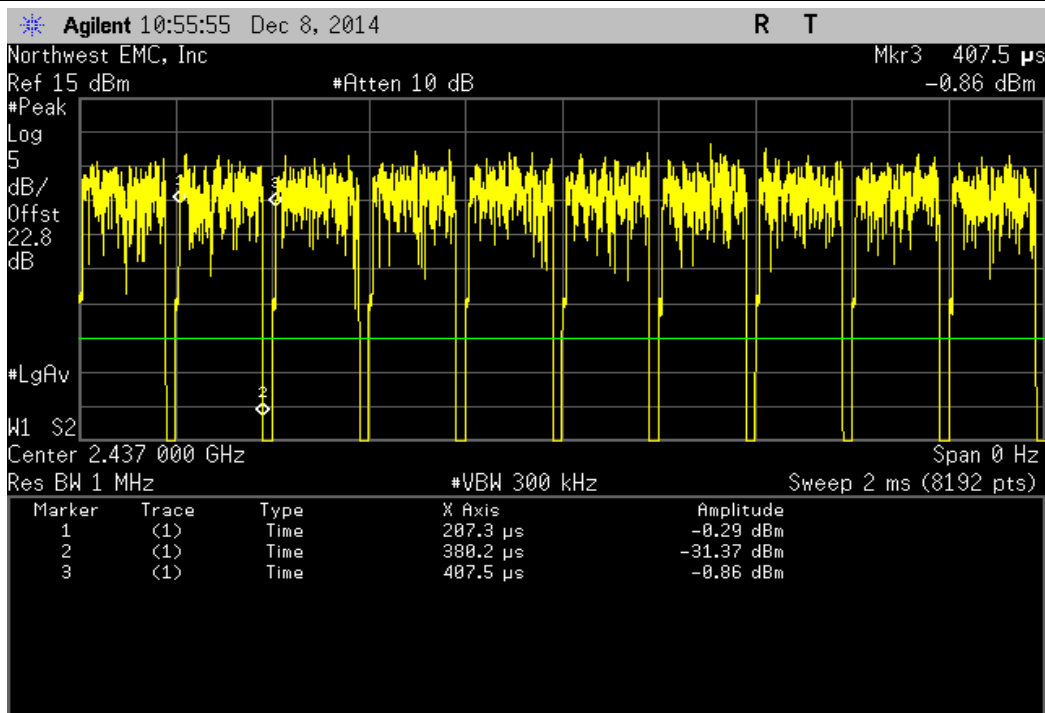
2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
172.6 us	200.2 us	1	86.2	N/A	N/A	



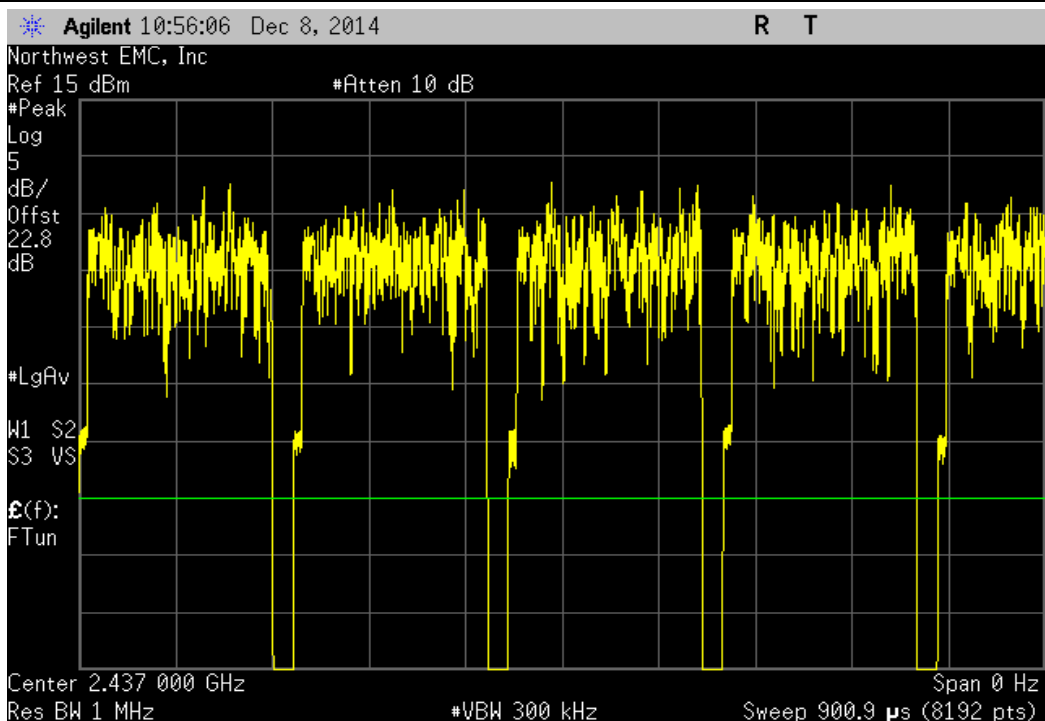
2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	6	N/A	N/A	N/A	



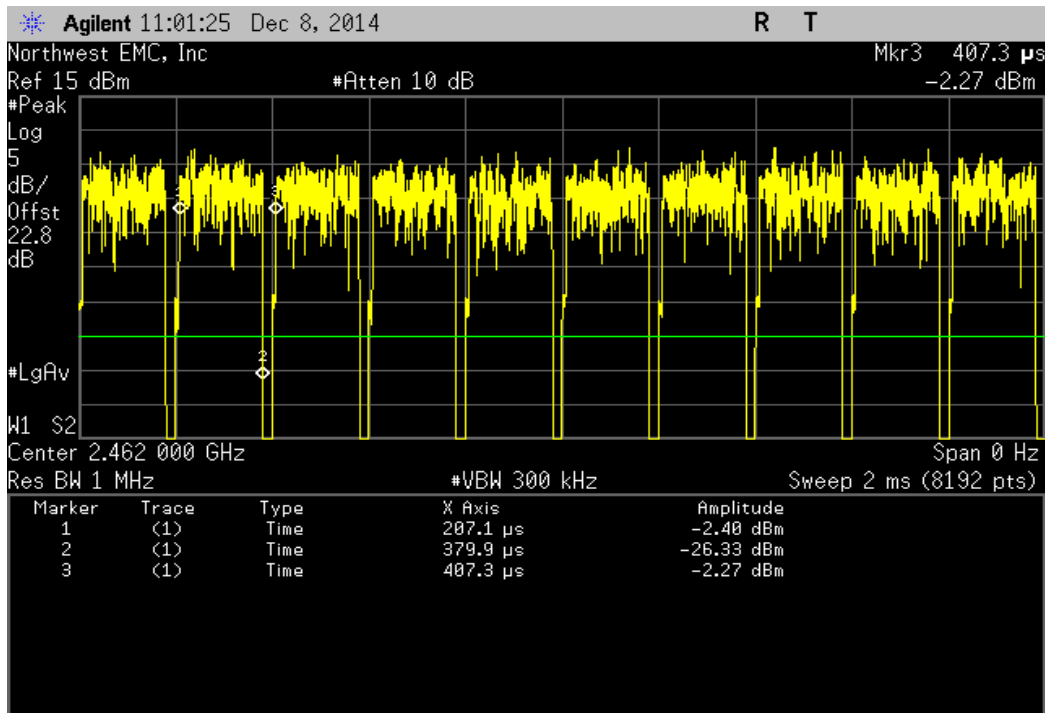
2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
172.9 us	200.2 us	1	86.4	N/A	N/A	



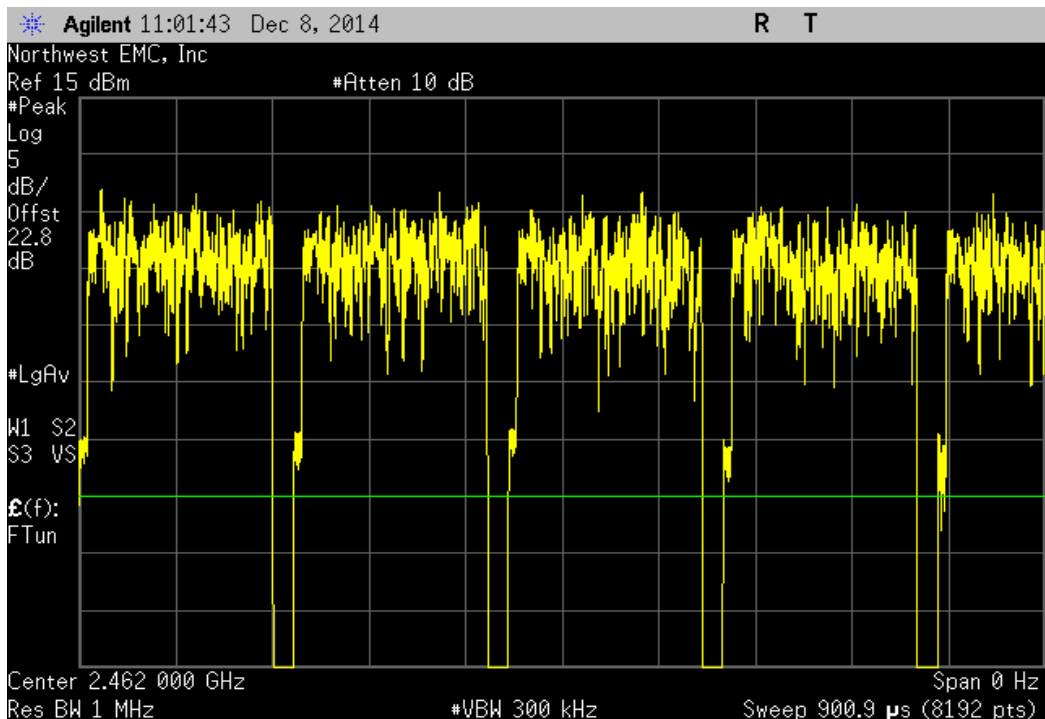
2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	



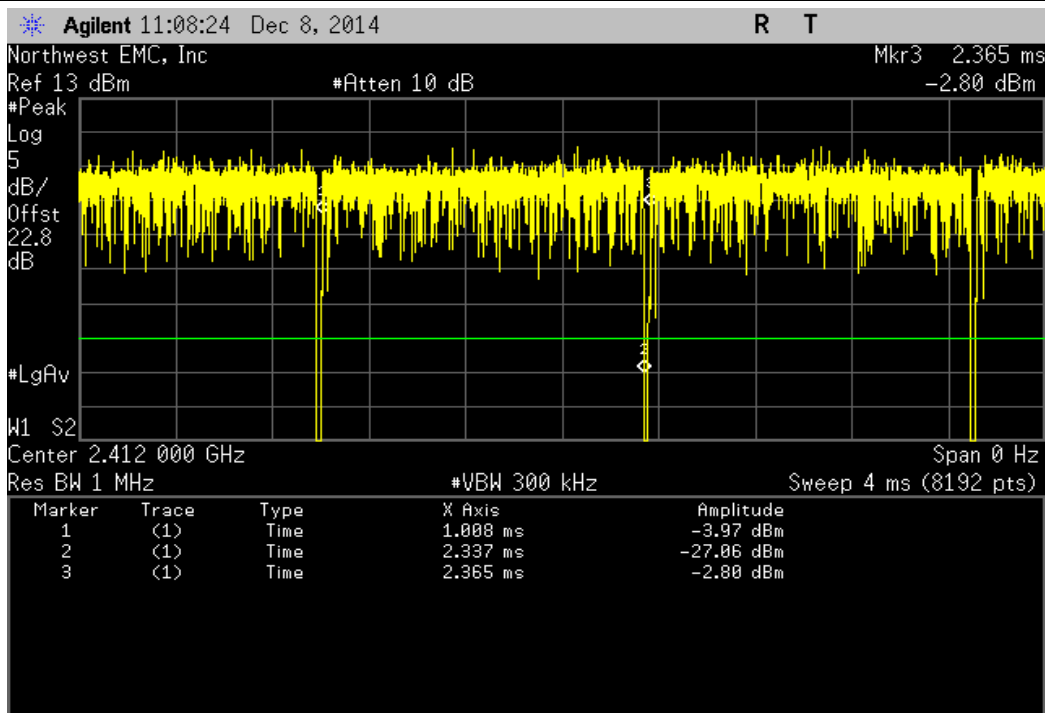
2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
172.8 us	200.2 us	1	86.3	N/A	N/A	



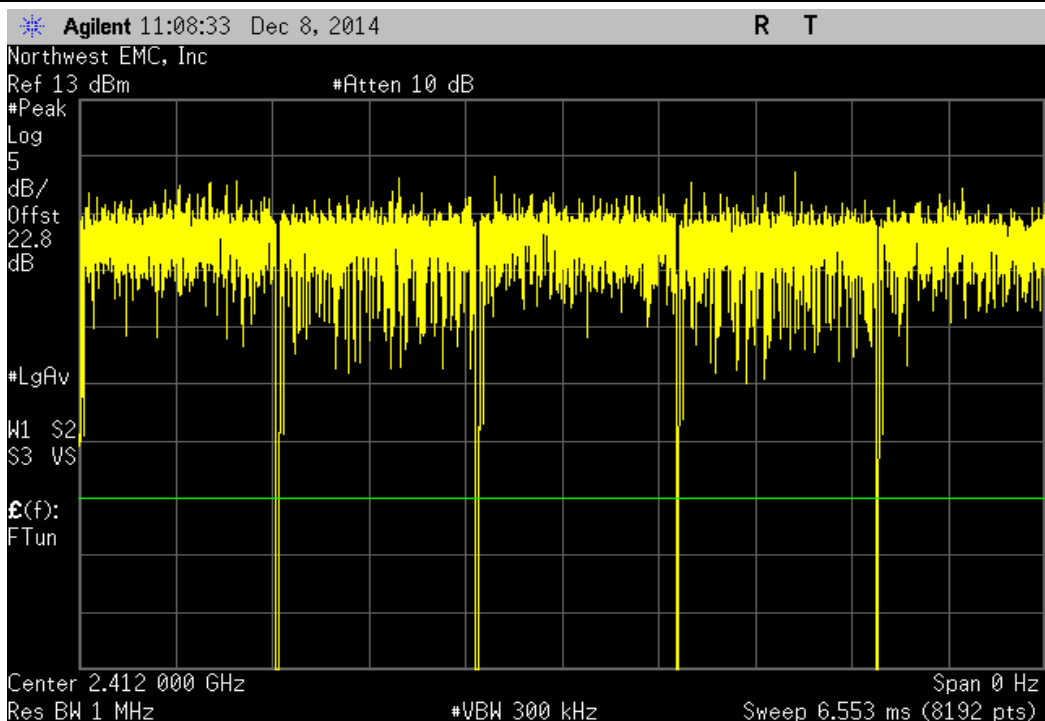
2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	6	N/A	N/A	N/A	



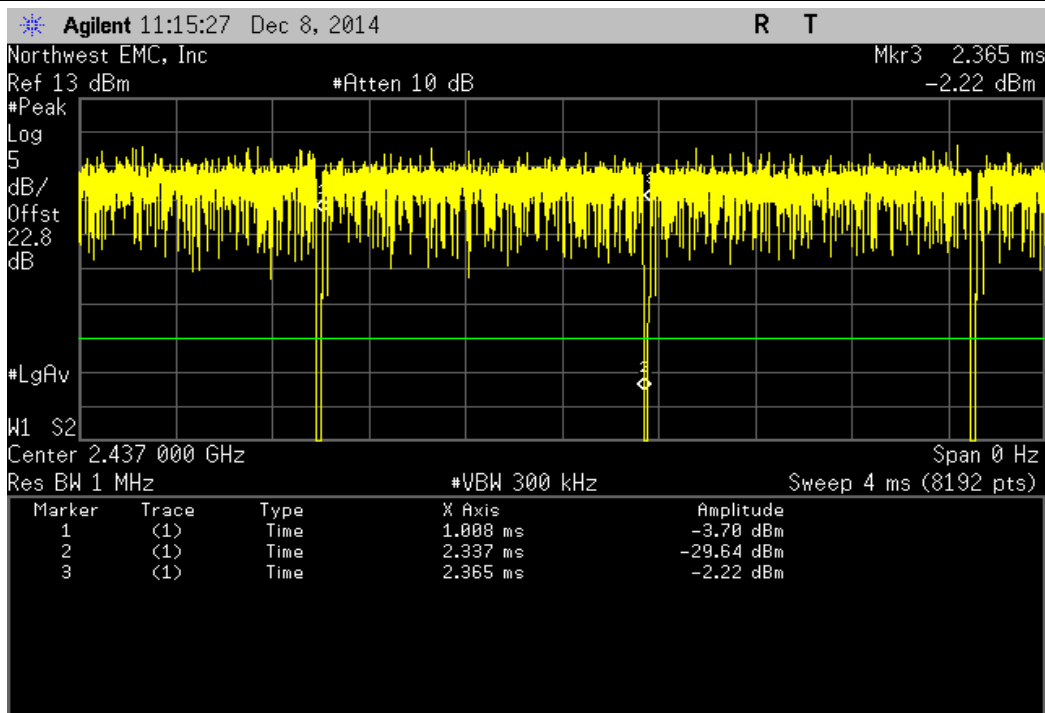
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1, 2412 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
1.329 ms	1.357 ms	1	98	N/A	N/A	



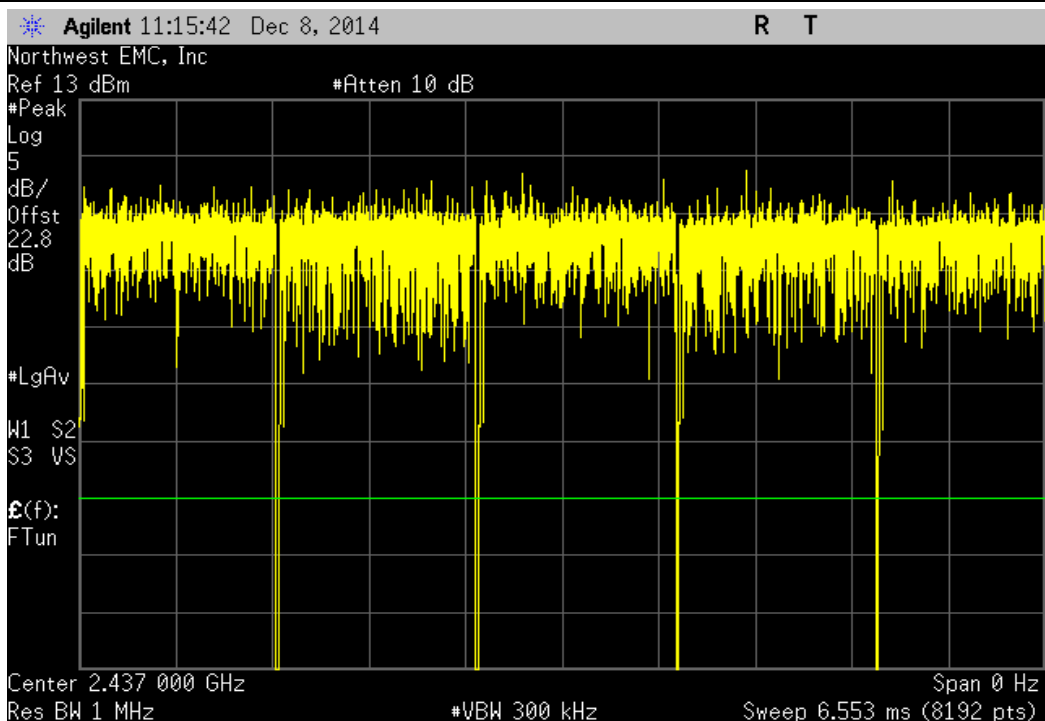
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1, 2412 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	



2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Mid Channel 6, 2437 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
1.329 ms	1.357 ms	1	98	N/A	N/A	

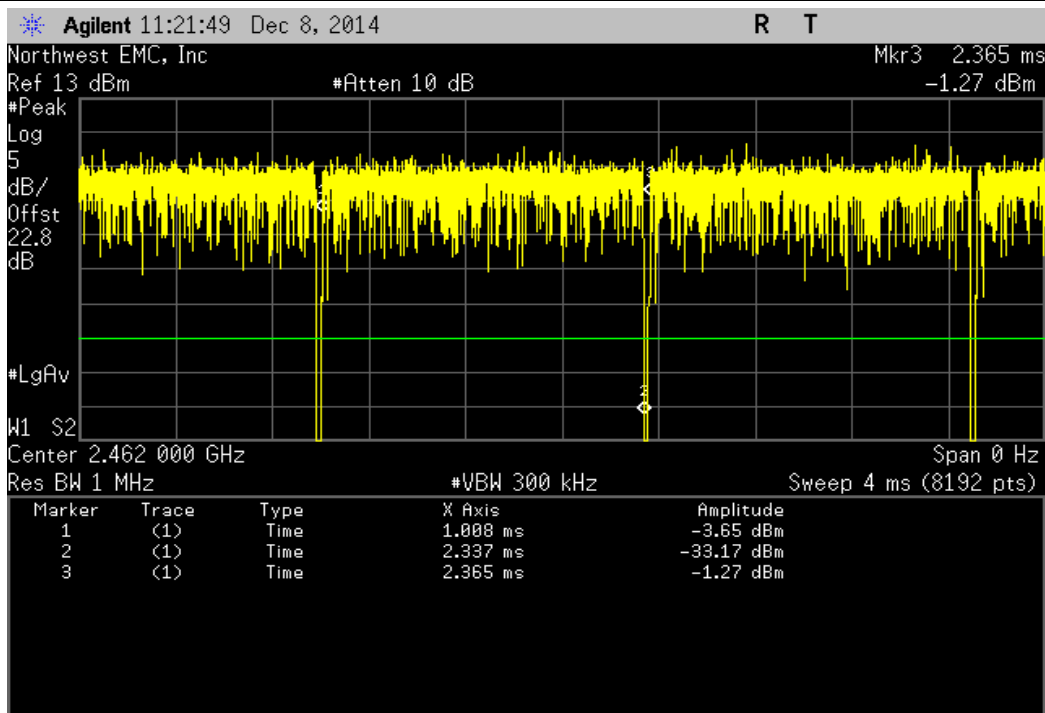


2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Mid Channel 6, 2437 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	

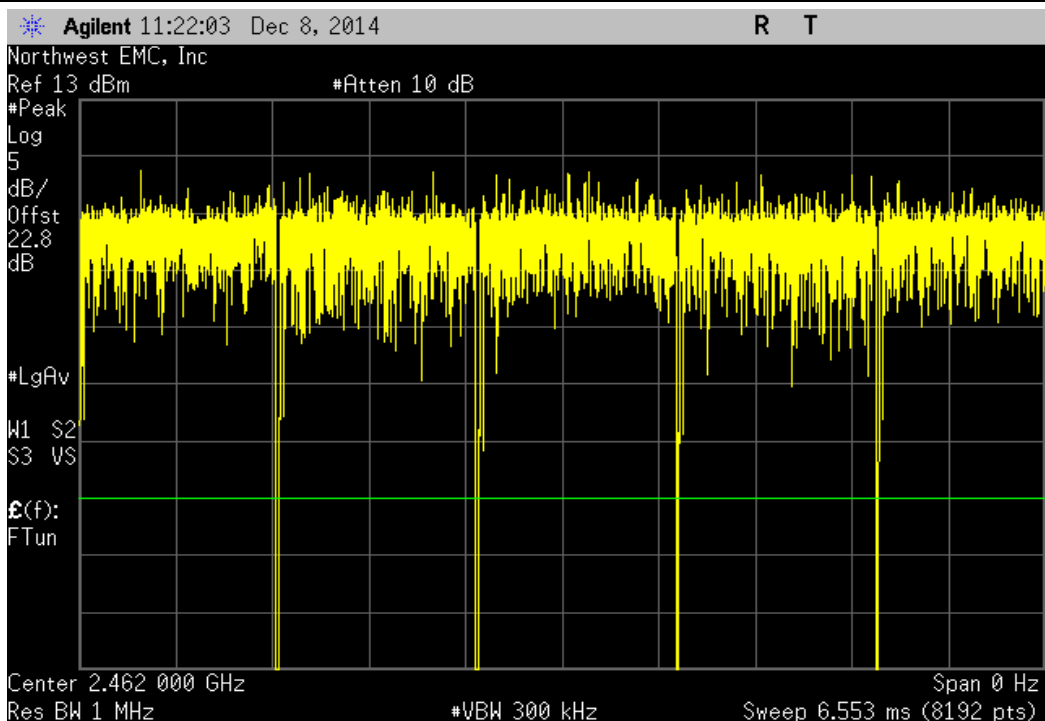




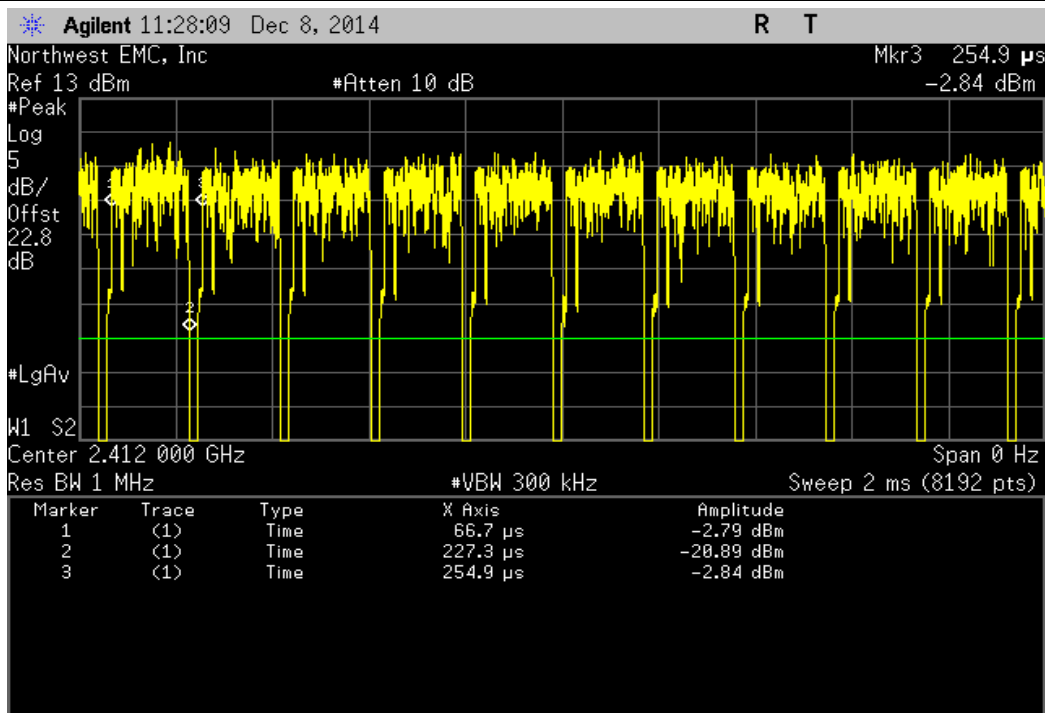
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 11, 2462 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
1.329 ms	1.357 ms	1	98	N/A	N/A	



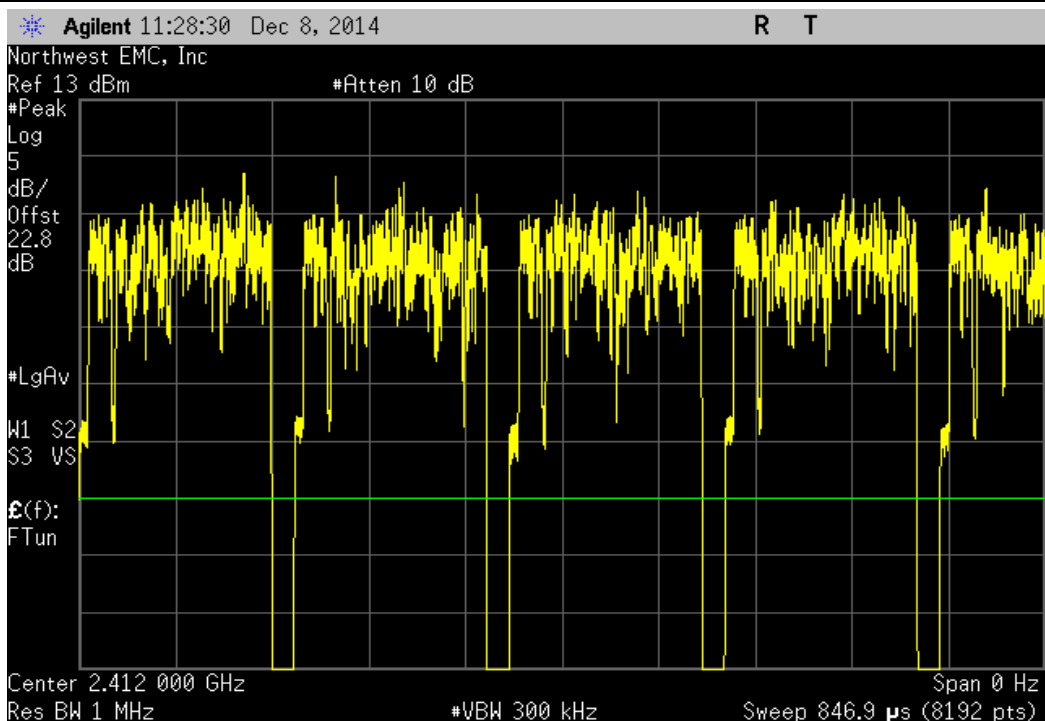
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 11, 2462 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	5	N/A	N/A	N/A	



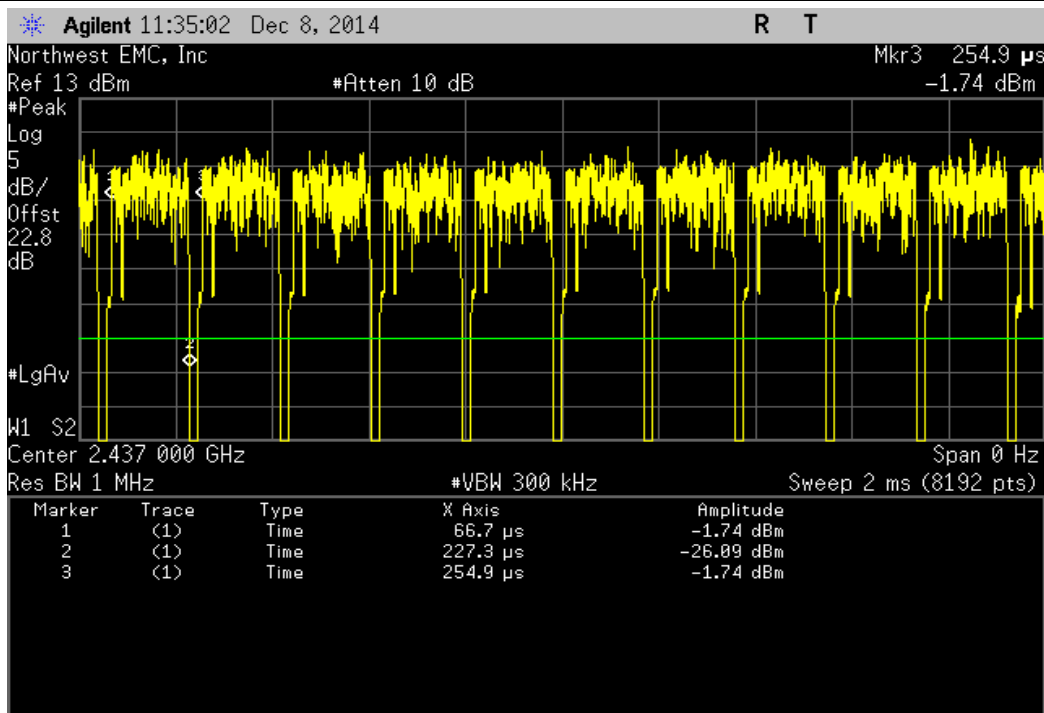
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1, 2412 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
160.6 us	188.2 us	1	85.3	N/A	N/A	



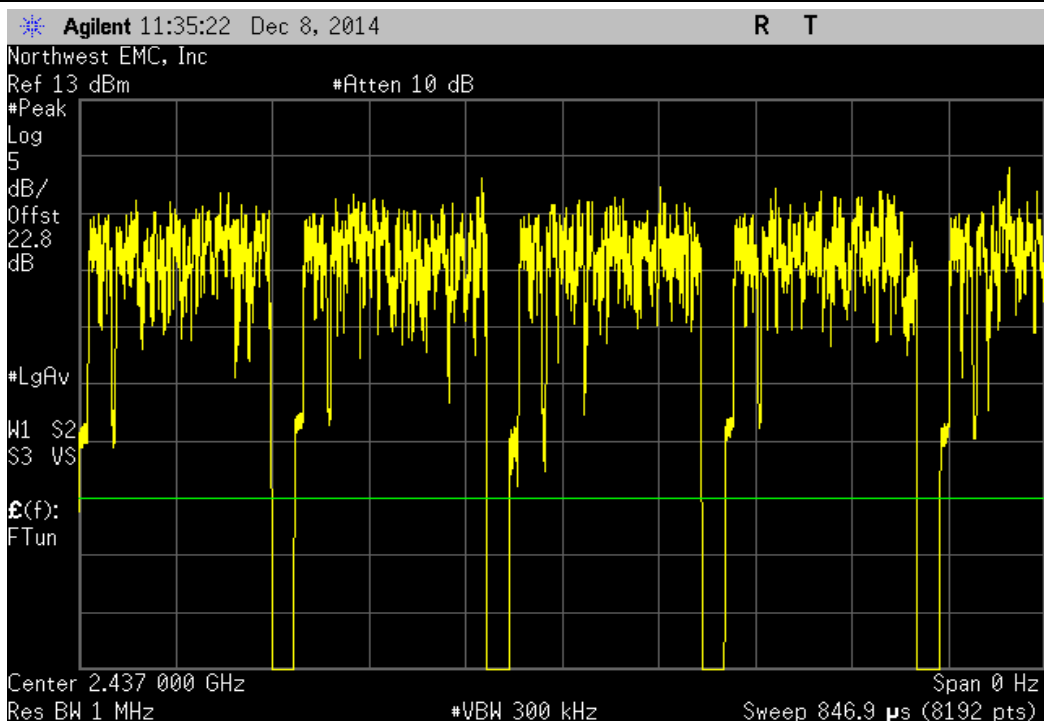
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1, 2412 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	6	N/A	N/A	N/A	



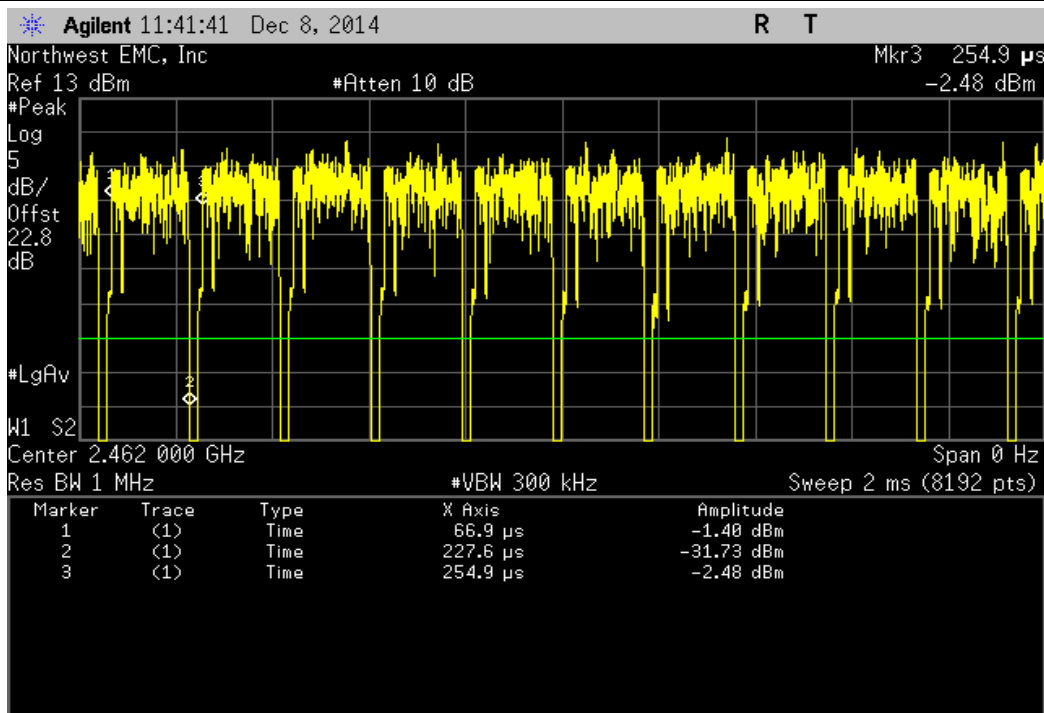
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Mid Channel 6, 2437 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
160.6 us	188.2 us	1	85.3	N/A	N/A	



2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Mid Channel 6, 2437 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results	
N/A	N/A	6	N/A	N/A	N/A	



2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, High Channel 11, 2462 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	160.7 us	188 us	1	85.5	N/A	N/A



2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, High Channel 11, 2462 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A

