NORTHWEST EMC

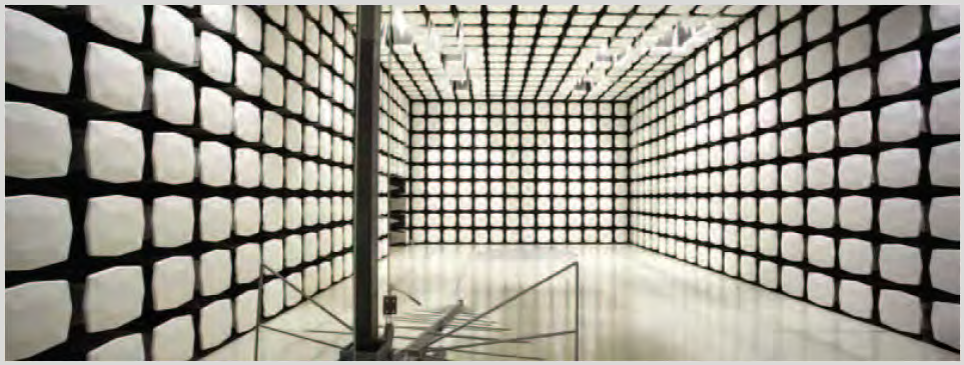
Electric Imp, Inc.

IMP003-FCC

FCC 15.207:2015

FCC 15.247:2015

Report # ELIM0007.1



NVLAP Lab Code: 200630-0

CERTIFICATE OF TEST

NORTHWEST EMC
2014-12-10

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

NORTHWEST EMC
REV 2014.10.14

Revision Number	Description	Date	Page Number
00	None		

ACCREDITATIONS AND AUTHORIZATIONS

REV 2014.10.08

United States

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

Canada

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

European Union

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.

Australia/New Zealand

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

Korea

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

Japan

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

Taiwan

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.

Singapore

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

Israel

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

Hong Kong

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

Vietnam

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

SCOPE

For details on the Scopes of our Accreditations, please visit:
http://www.nwemc.com/accreditations/

MEASUREMENT UNCERTAINTY

TMU.2014.12.03

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.

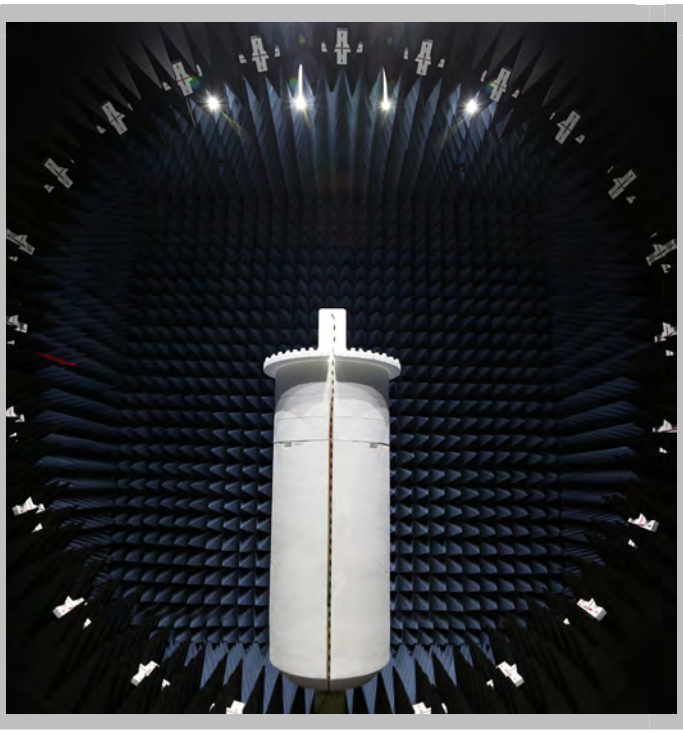
The following table represents the Measurement Uncertainty (MU) budgets for each of the tests that may be contained in this report.

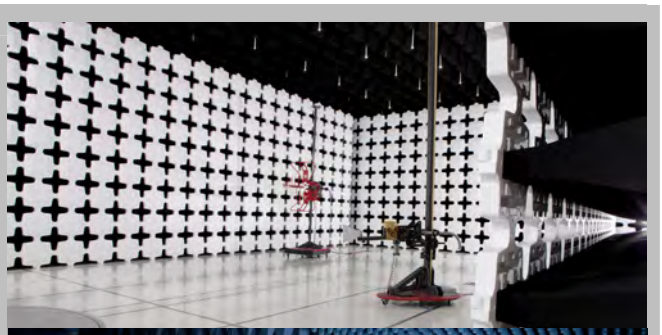
Test	+ MU	- MU
Frequency Accuracy (Hz)	0.0007%	-0.0007%
Amplitude Accuracy (dB)	1.2 dB	-1.2 dB
Conducted Power (dB)	0.3 dB	-0.3 dB
Radiated Power via Substitution (dB)	0.7 dB	-0.7 dB
Temperature (degrees C)	0.7°C	-0.7°C
Humidity (% RH)	2.5% RH	-2.5% RH
Voltage (AC)	1.0%	-1.0%
Voltage (DC)	0.7%	-0.7%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

FACILITIES

NORTHWEST EMC
REV 2014.10.08

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





PRODUCT DESCRIPTIONS

NORTHWEST EMC
2014-12-10

Client and Equipment Under Test (EUT) Information

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

Information Provided by the Party Requesting the Test

Functional Description of the EUT:
802.11bgn SISO radio module with 2 antenna types (PIFA and Chip Antennas).

Testing Objective:
To demonstrate compliance under FCC 15.247 for operation in the 2.4 GHz band.

CONFIGURATIONS

NORTHWEST EMC 2014-12-10

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

NORTHWEST EMC 2014-12-10

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

NORTHWEST EMC 2014-12-10

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

NORTHWEST EMC 2014-12-10

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

NORTHWEST EMC 2014-12-10

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

NORTHWEST EMC 2014-12-10

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

NORTHWEST EMC
2014-12-10

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

NORTHWEST EMC
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 Ω measuring port is terminated by a 50 Ω EMI meter or a 50 Ω resistive load. All 50 Ω measuring ports of the LISN are terminated by 50Ω.

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	HHD	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

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

COMMENTS

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

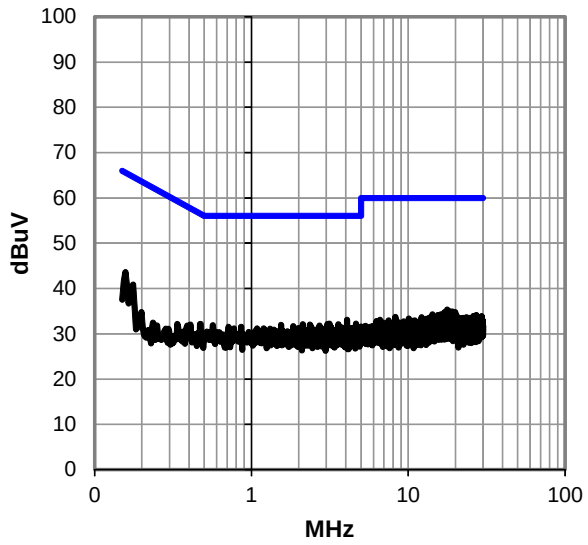
EUT OPERATING MODES

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

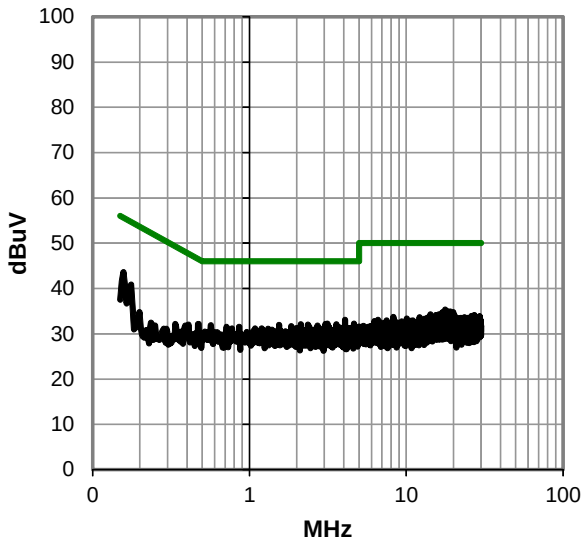
DEVIATIONS FROM TEST STANDARD

None

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



AC POWER LINE CONDUCTED EMISSIONS

NORTHWEST EMC
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

COMMENTS

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

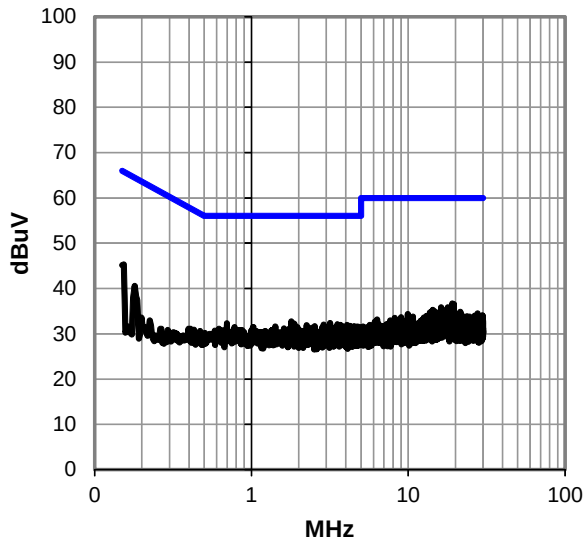
EUT OPERATING MODES

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

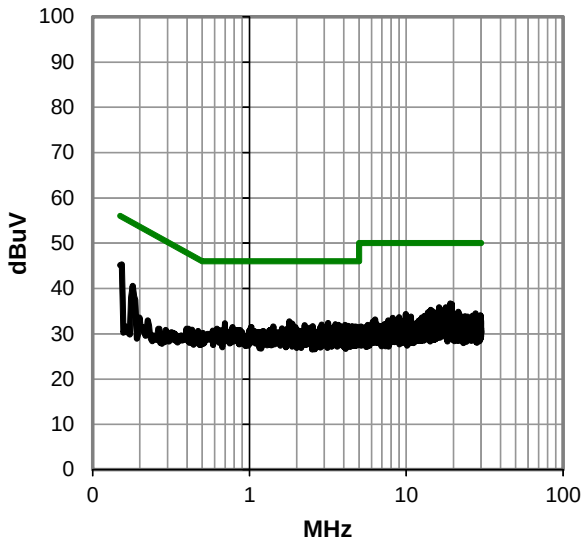
DEVIATIONS FROM TEST STANDARD

None

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



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

COMMENTS

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

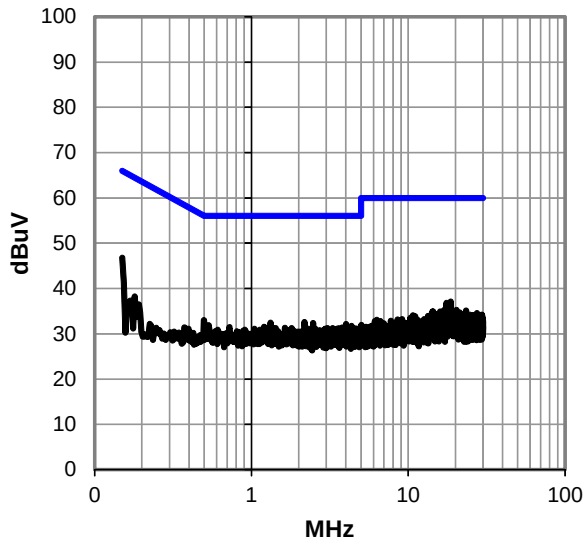
EUT OPERATING MODES

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

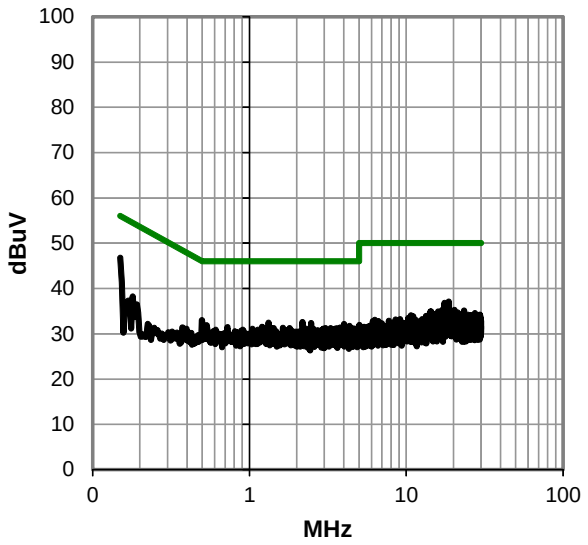
DEVIATIONS FROM TEST STANDARD

None

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



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

COMMENTS

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

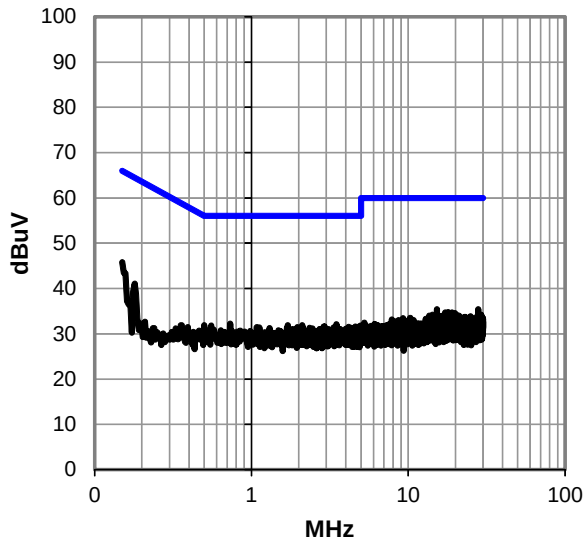
EUT OPERATING MODES

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

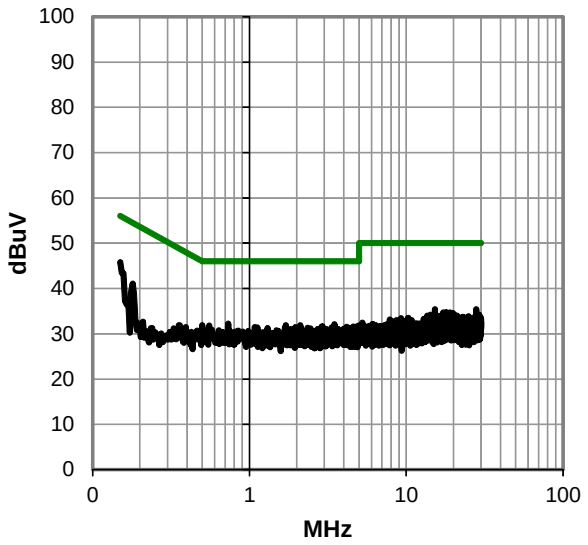
DEVIATIONS FROM TEST STANDARD

None

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



AC POWER LINE CONDUCTED EMISSIONS

NORTHWEST EMC
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

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

COMMENTS

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

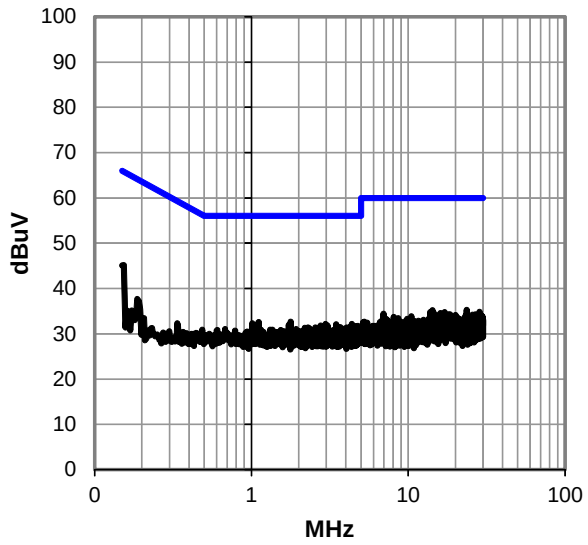
EUT OPERATING MODES

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

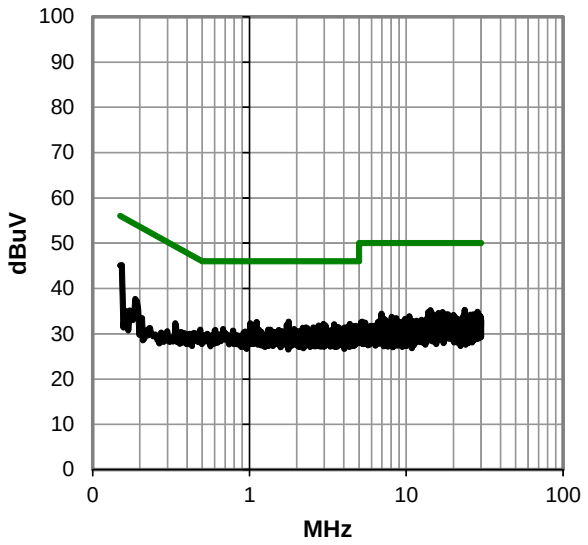
DEVIATIONS FROM TEST STANDARD

None

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



AC POWER LINE CONDUCTED EMISSIONS

NORTHWEST EMC
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

COMMENTS

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

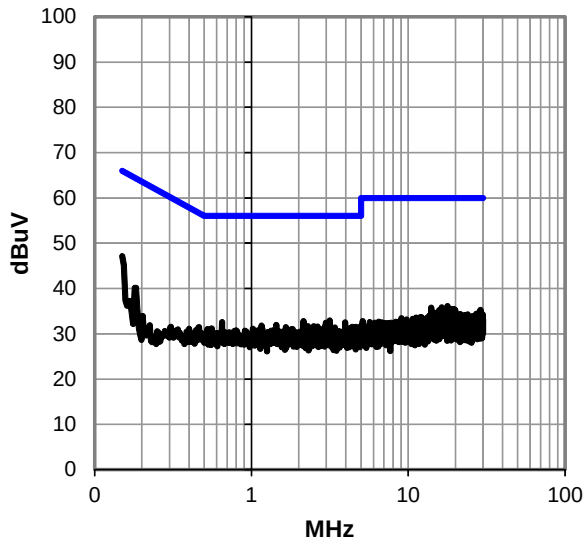
EUT OPERATING MODES

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

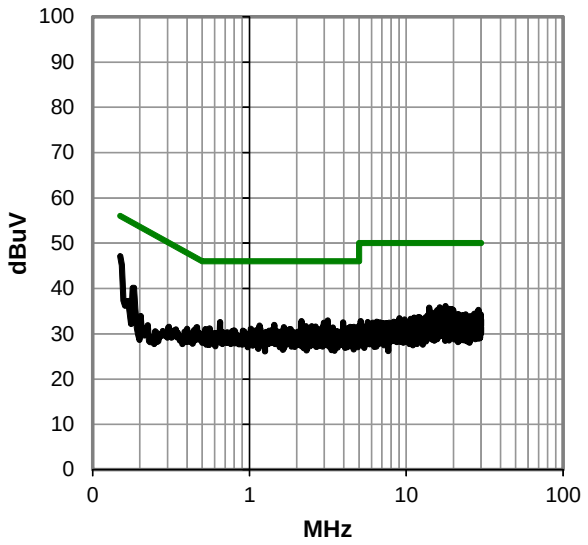
DEVIATIONS FROM TEST STANDARD

None

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



AC POWER LINE CONDUCTED EMISSIONS

NORTHWEST EMC
WTD.2014.10.14
PSA-ESCI 2014.09.10, EmiR5 2014.10.01.1

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

SPURIOUS RADIATED 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. 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

CONFIGURATIONS INVESTIGATED

ELIM0010 - 1
ELIM0010 - 2

FREQUENCY RANGE INVESTIGATED

Start Frequency	30 MHz	Stop Frequency	26.5 GHz

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

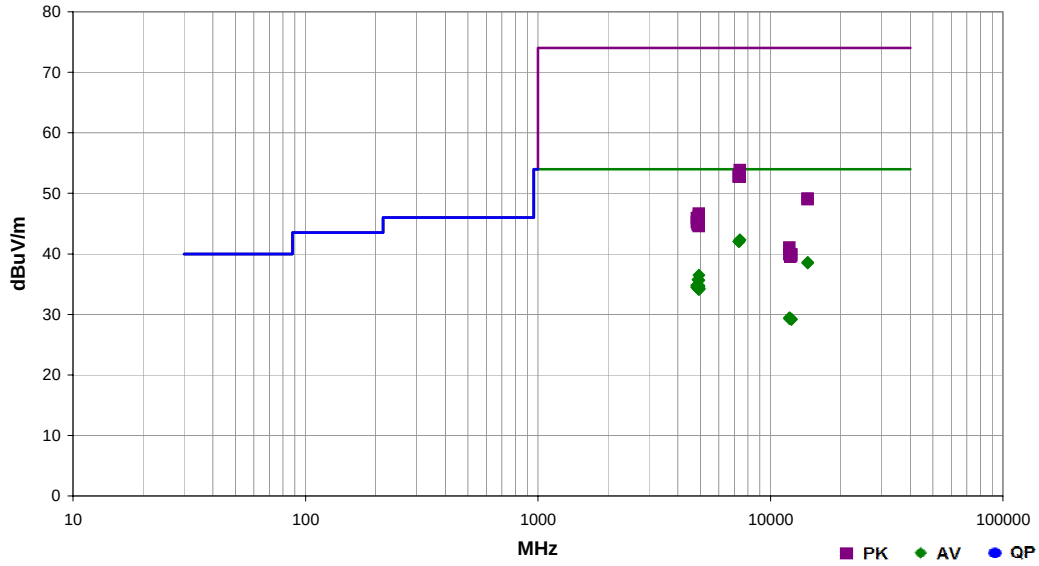
The highest gain of each type of antenna to be used with the EUT was tested. The EUT was configured for low, mid, and high band transmit frequencies. For each configuration, the spectrum was scanned throughout the specified range. In addition, measurements were made in the restricted bands to verify 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

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	**Tested by:**	Brandon Hobbs
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



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, 11Mbps, 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

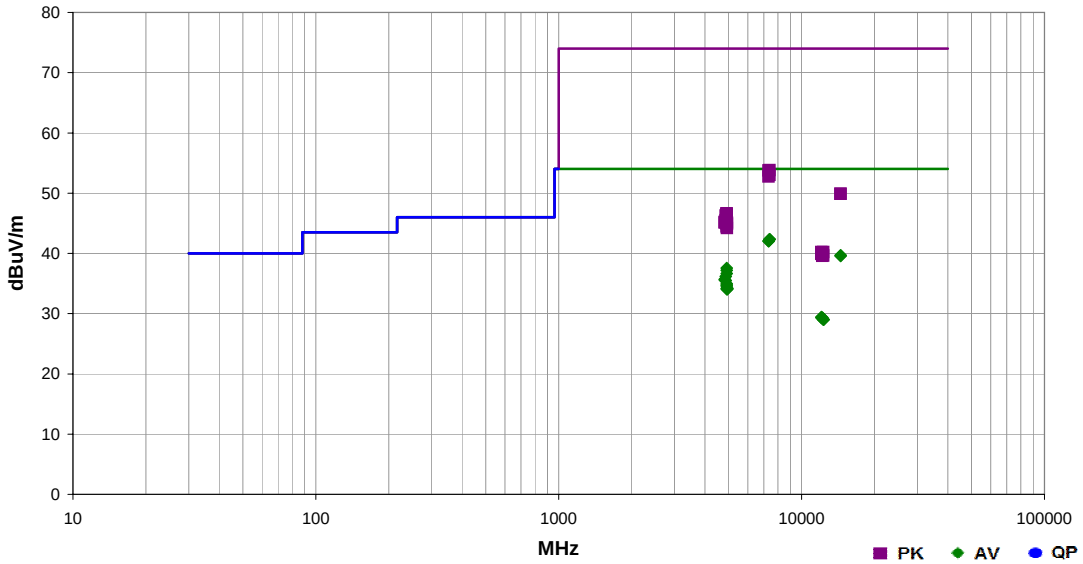
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
4924.035	40.5	6.2	1.0	66.0	3.0	0.0	Horz	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

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	**Tested by:**	Brandon Hobbs
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 EUTOreintation, 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



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, 11Mbps, 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

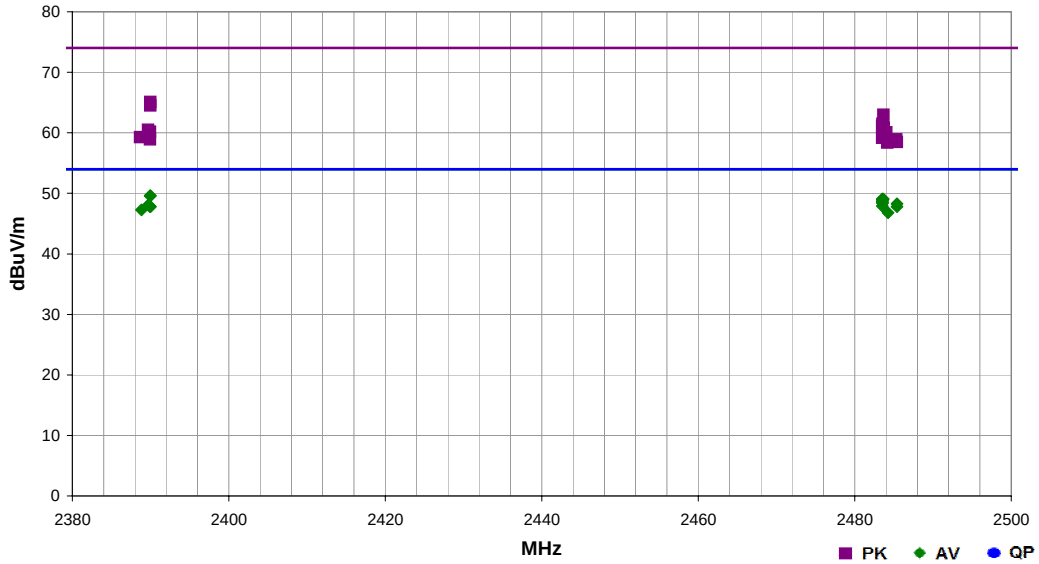
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
4924.058	40.5	6.2	1.0	206.0	3.0	0.0	Vert	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, 11Mbps, 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

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	**Tested by:**	Brandon Hobbs
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



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, MCS0, 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

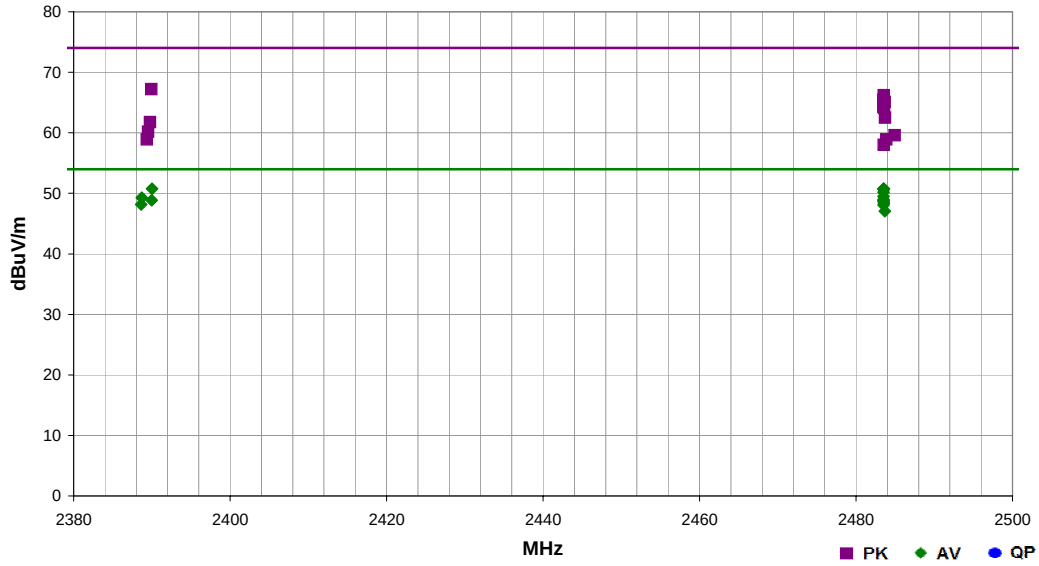
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
2485.387	42.9	-4.4	1.0	171.0	3.0	20.0	Vert	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

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	**Tested by:**	Brandon Hobbs
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 EUTorientation, 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



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

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.

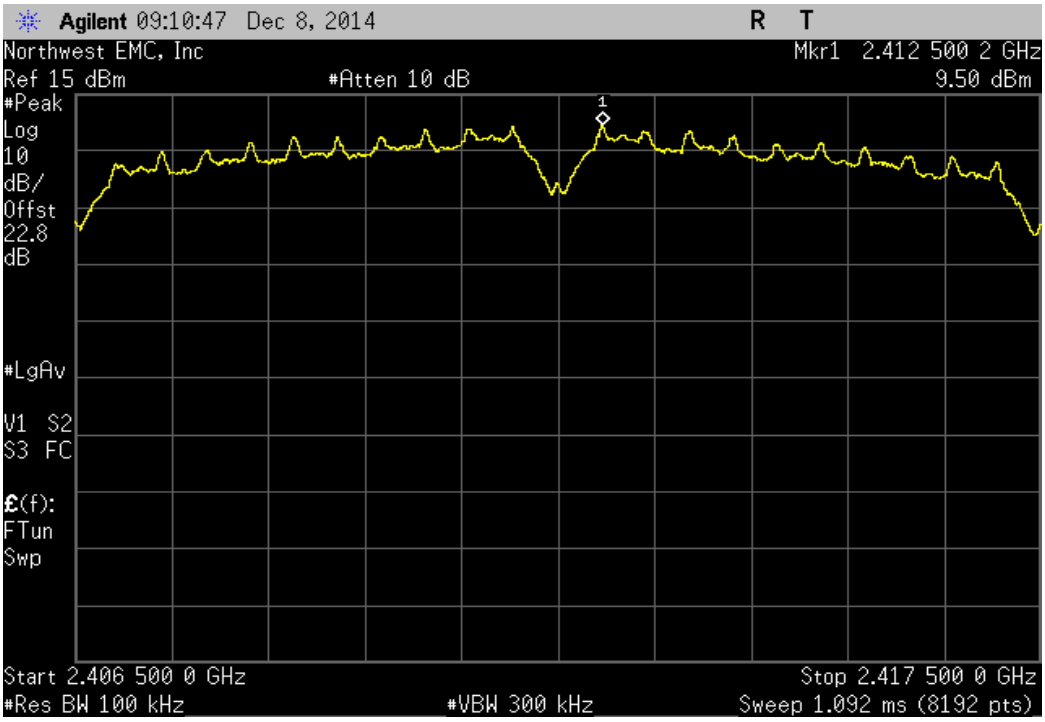
DEVIATIONS FROM TEST STANDARD

None

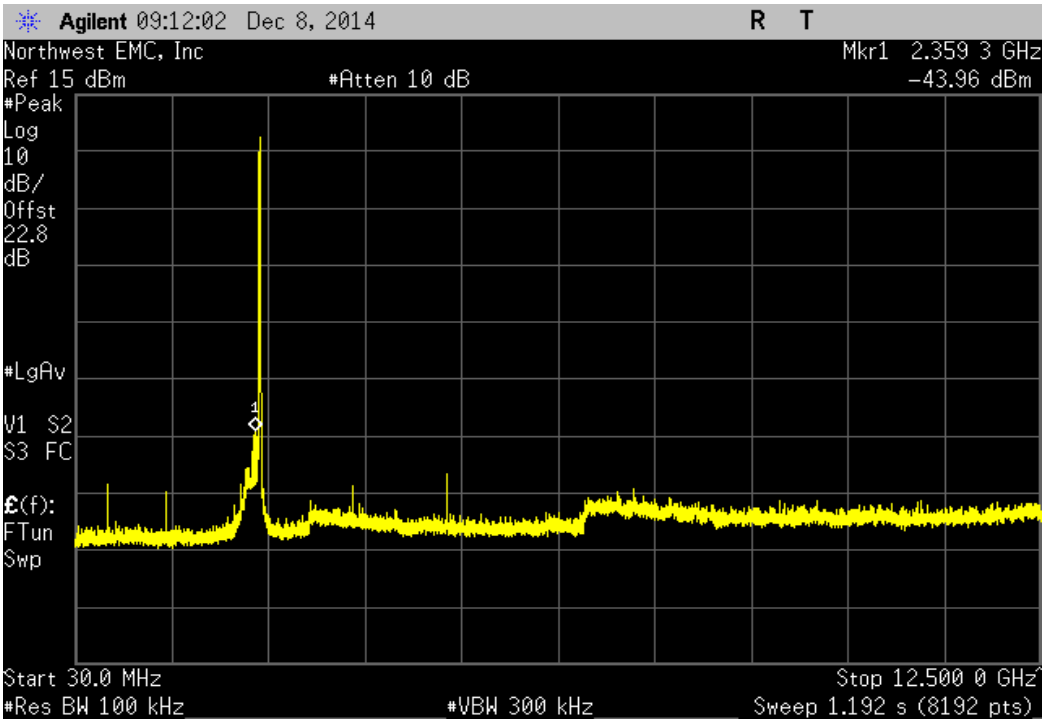
Configuration #	1	Signature

		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

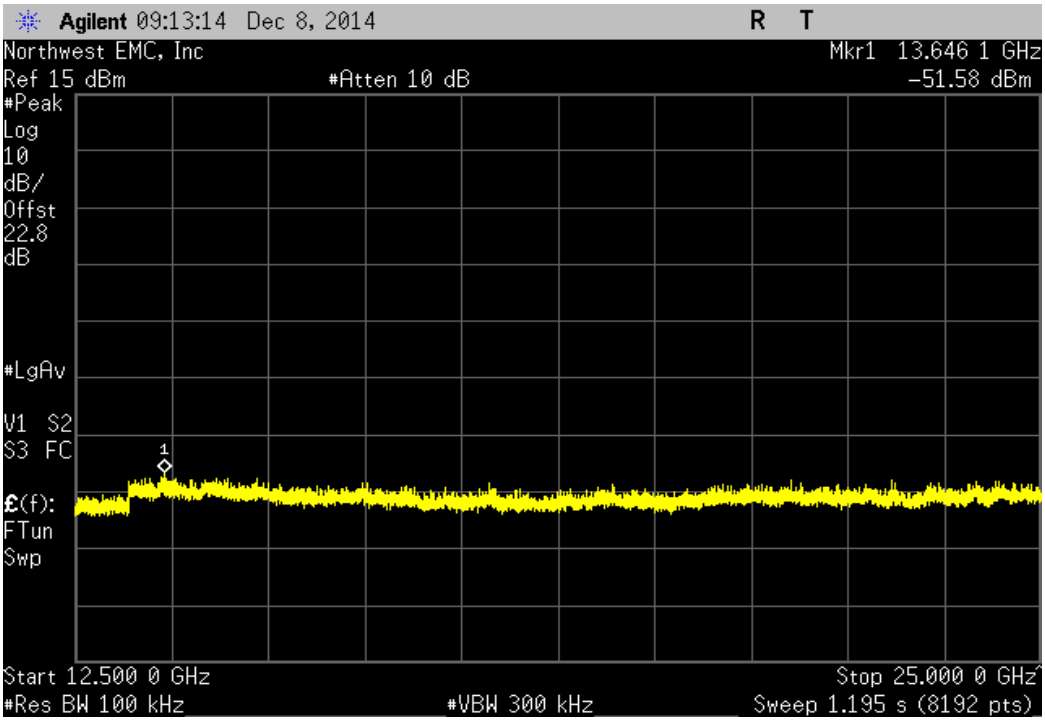


2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz					
Frequency Range		Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz		-53.46	-20	Pass	



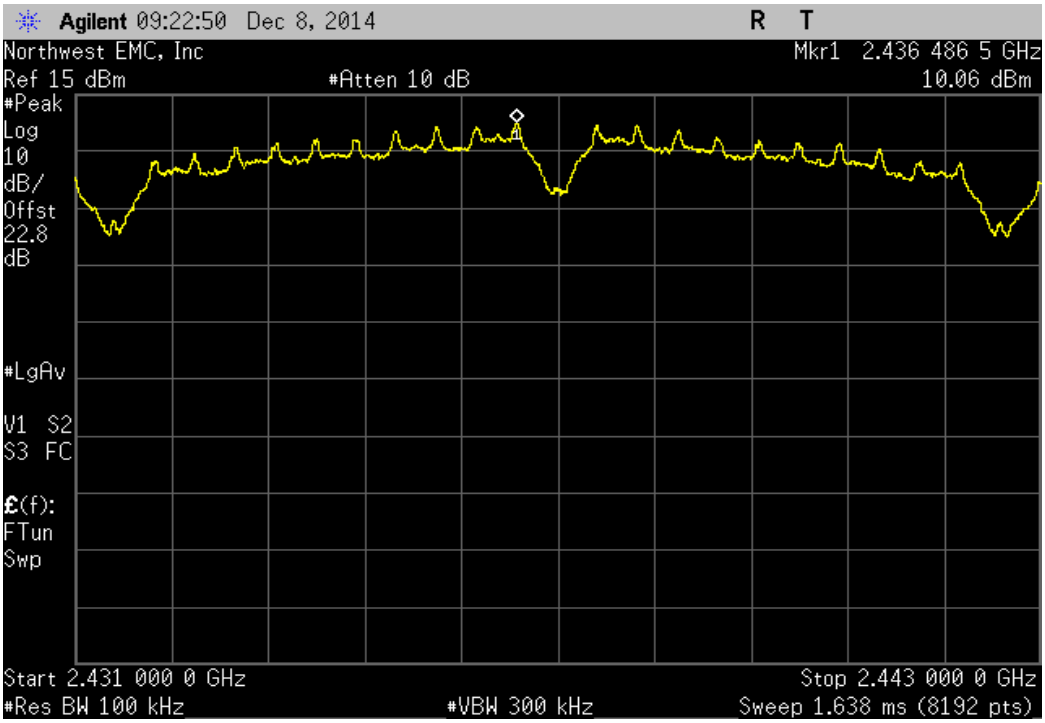
2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz

Frequency Range		Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz		-61.08	-20	Pass

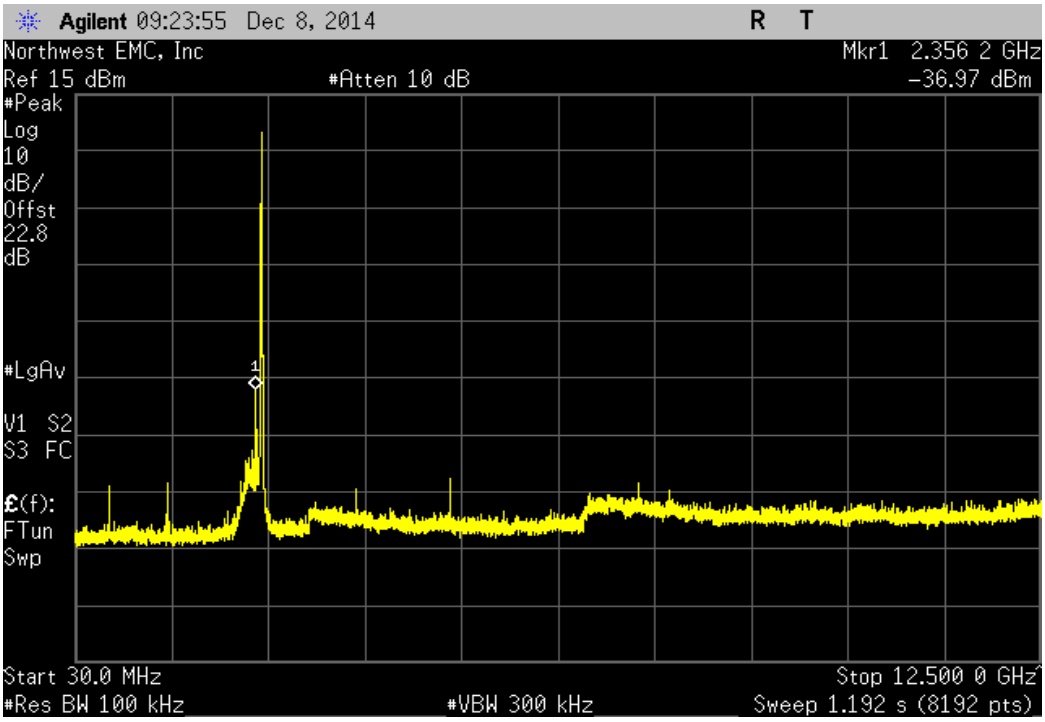


2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz

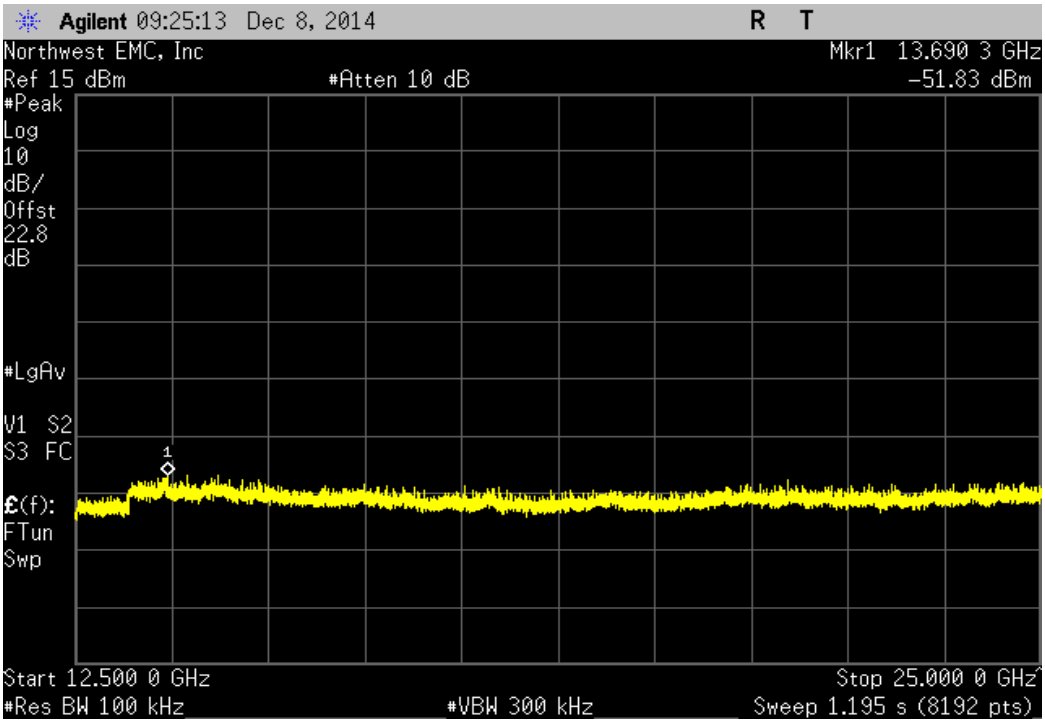
Frequency Range				Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental			N/A	N/A	N/A



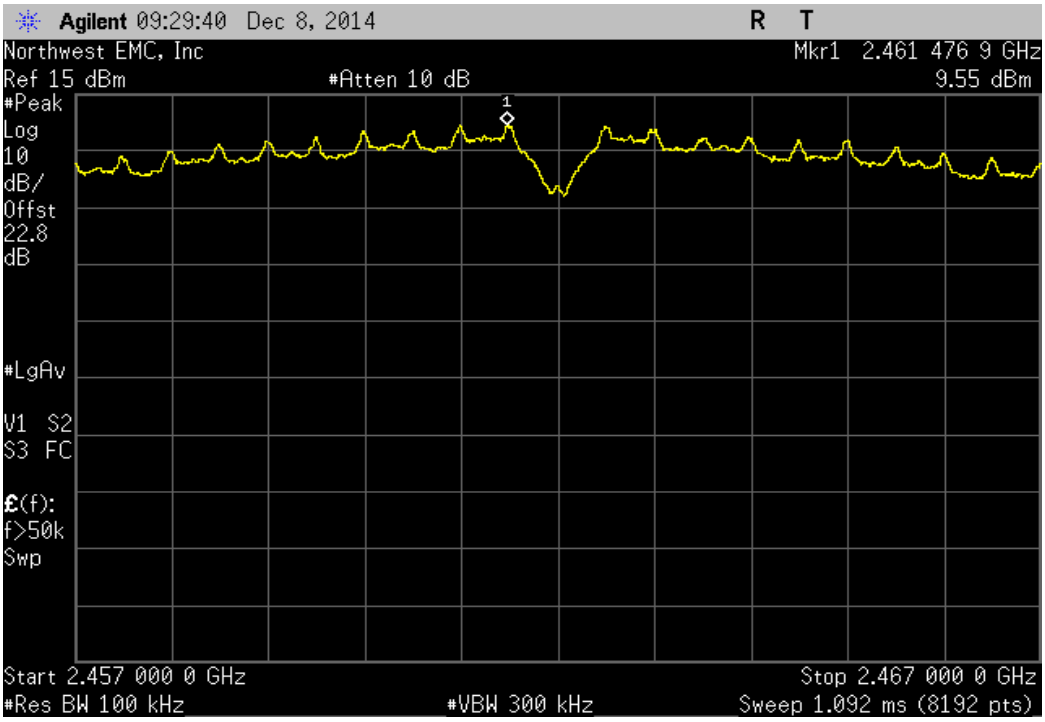
2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz				
Frequency Range		Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz		-47.04	-20	Pass



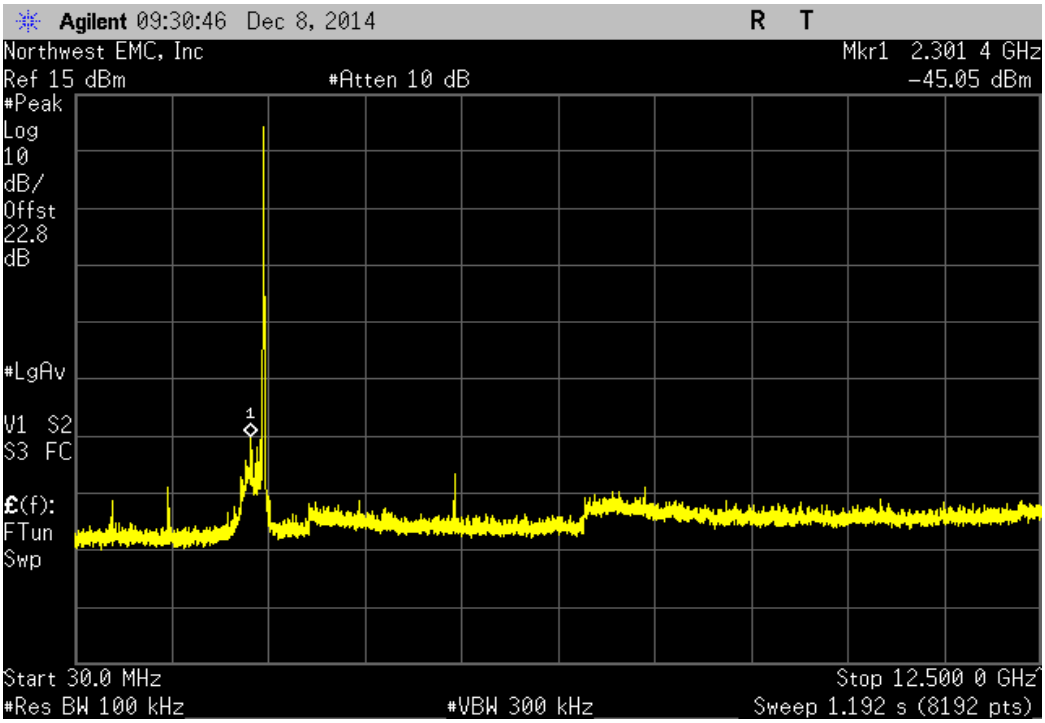
2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz				
Frequency Range		Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz		-61.9	-20	Pass



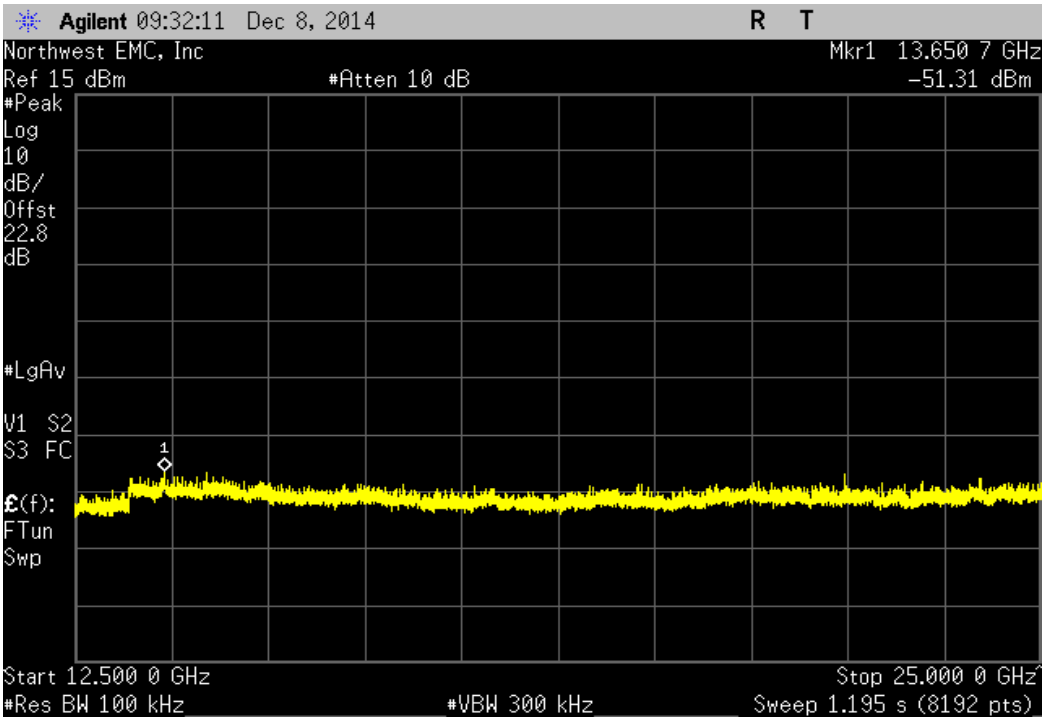
2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz						
	Frequency Range			Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental			N/A	N/A	N/A



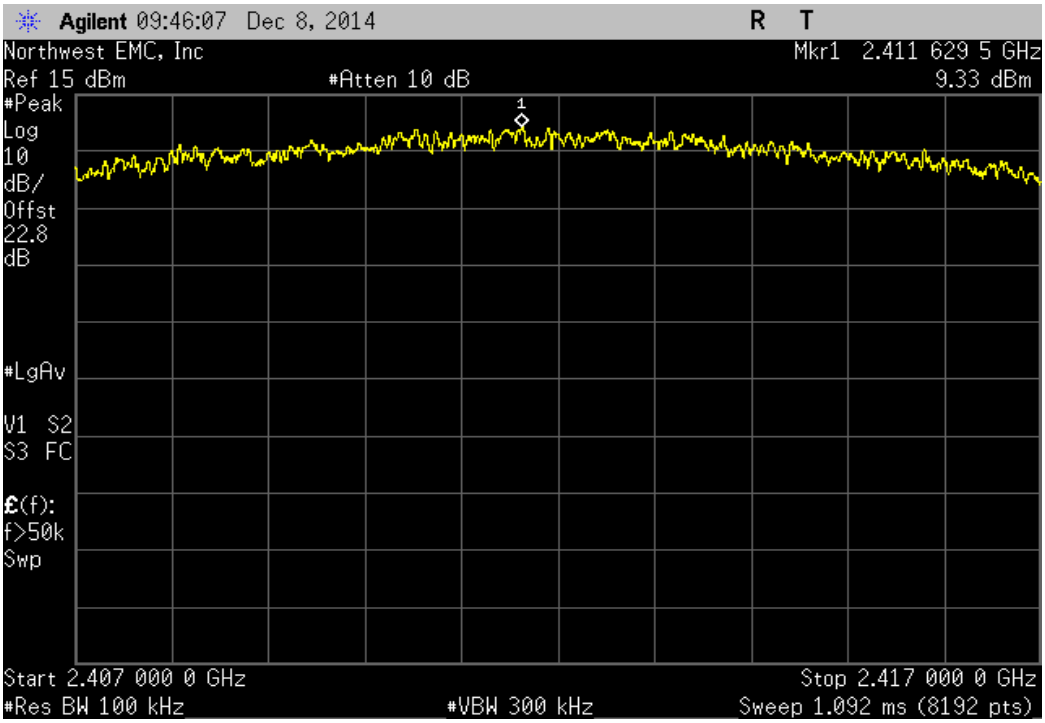
2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz					
	Frequency Range		Value (dBc)	Limit ≤ (dBc)	Result
	30 MHz - 12.5 GHz		-54.6	-20	Pass



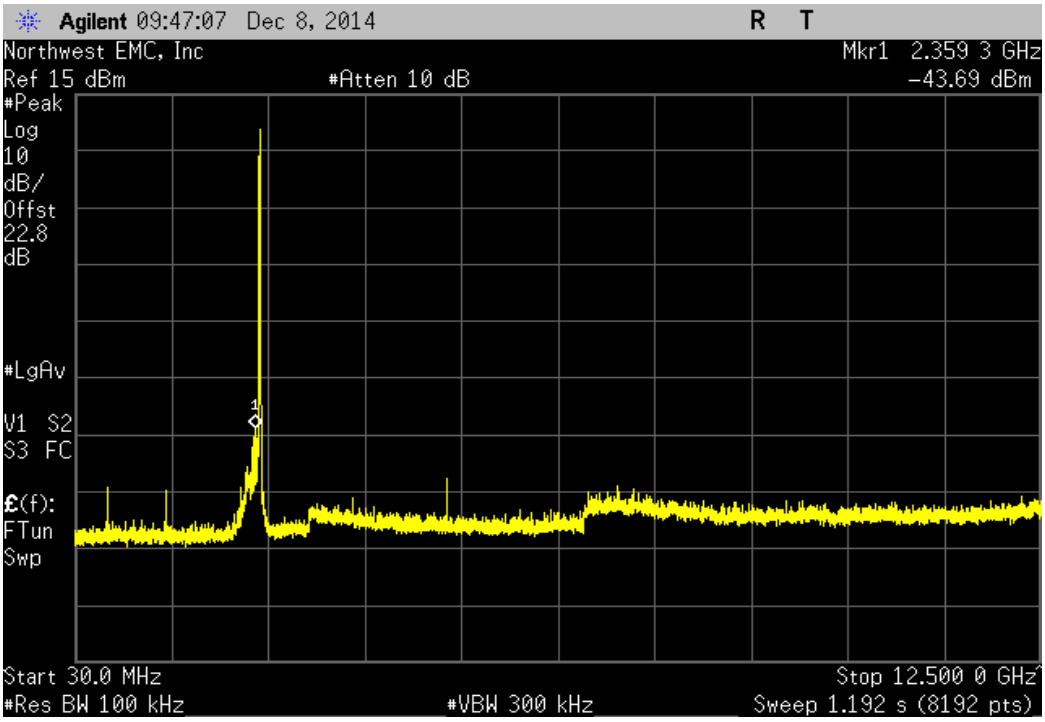
2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz				
Frequency Range		**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz		-60.86	-20	Pass



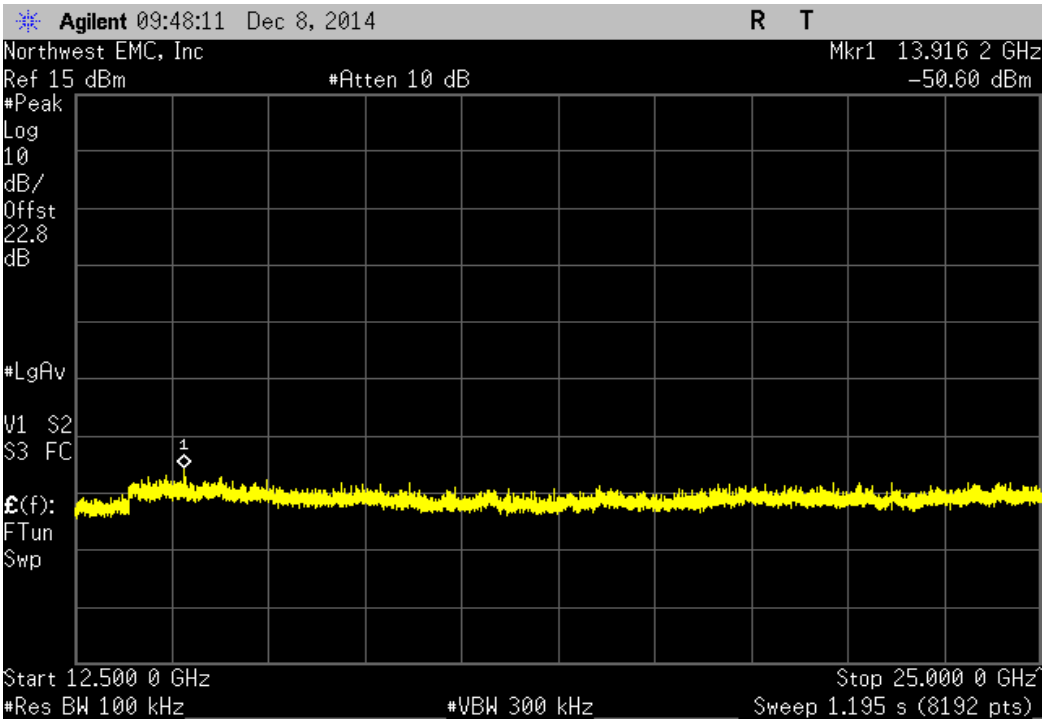
2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz						
	Frequency Range			**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
	Fundamental			N/A	N/A	N/A



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

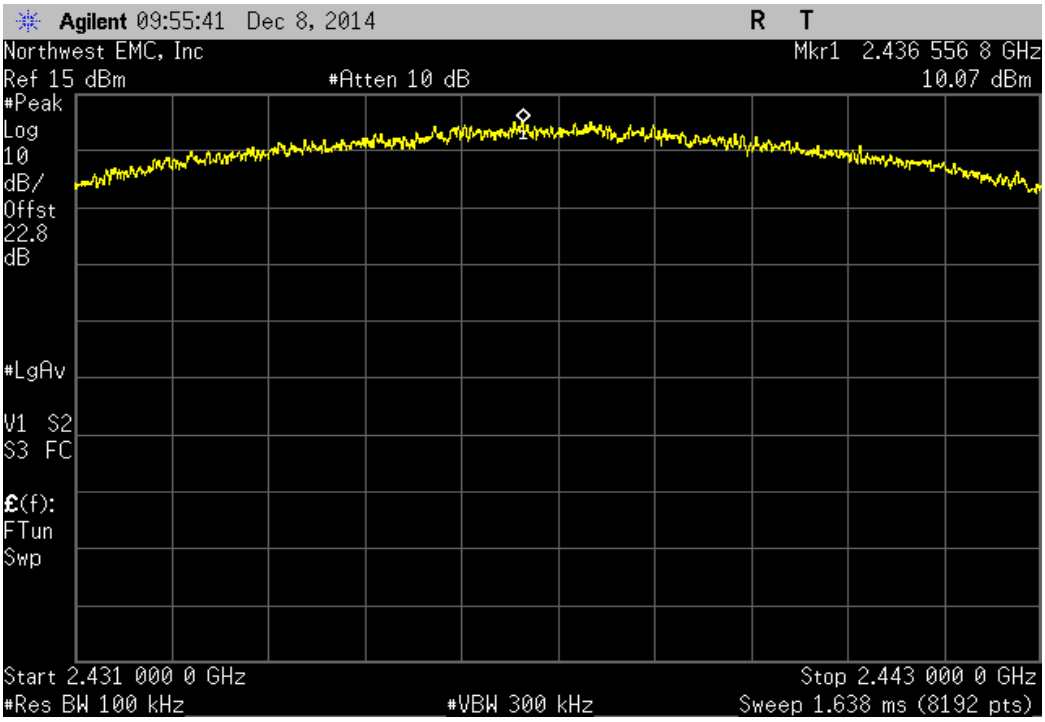


2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz				
Frequency Range		Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz		-59.93	-20	Pass

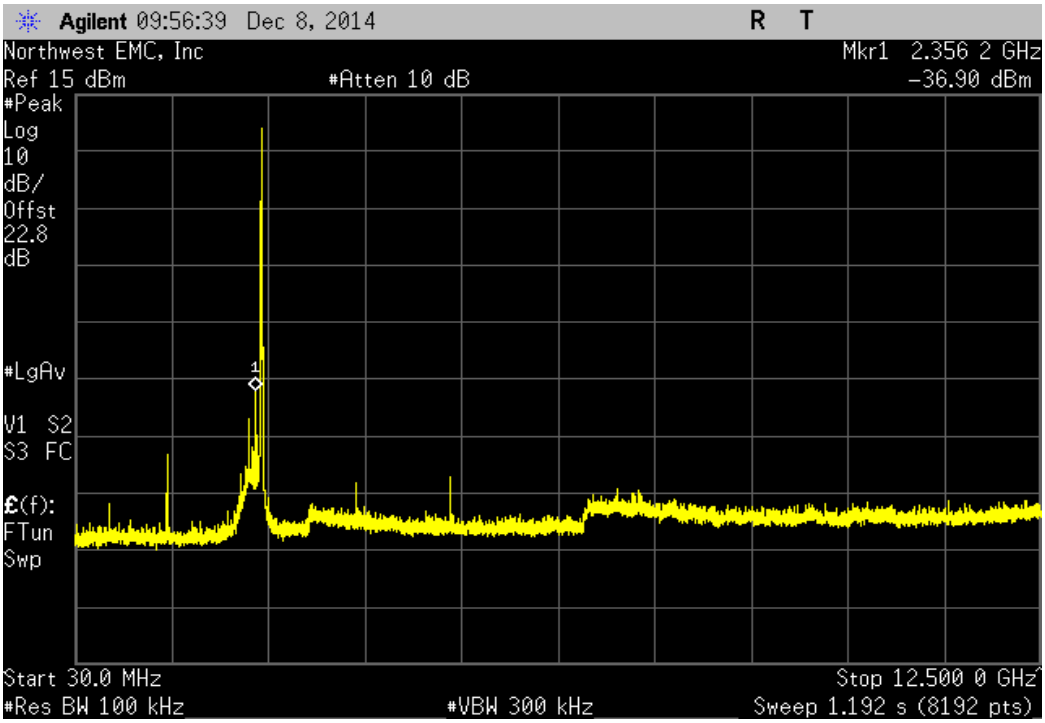


SPURIOUS CONDUCTED EMISSIONS

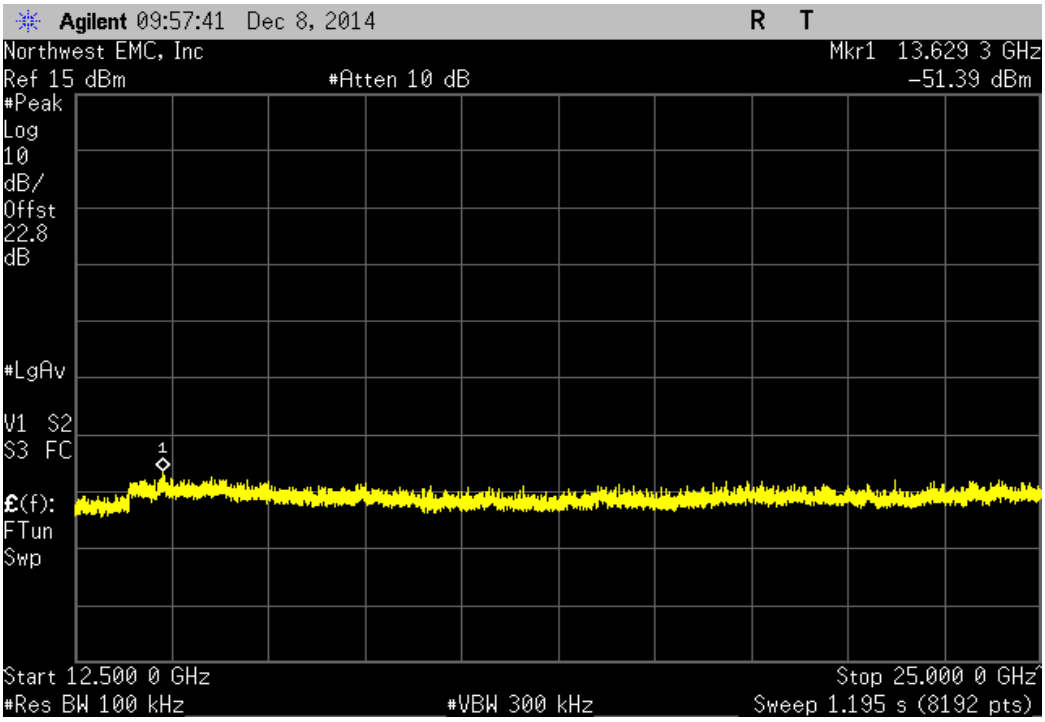
2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Mid Channel 6, 2437 MHz						
	Frequency Range			Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental			N/A	N/A	N/A



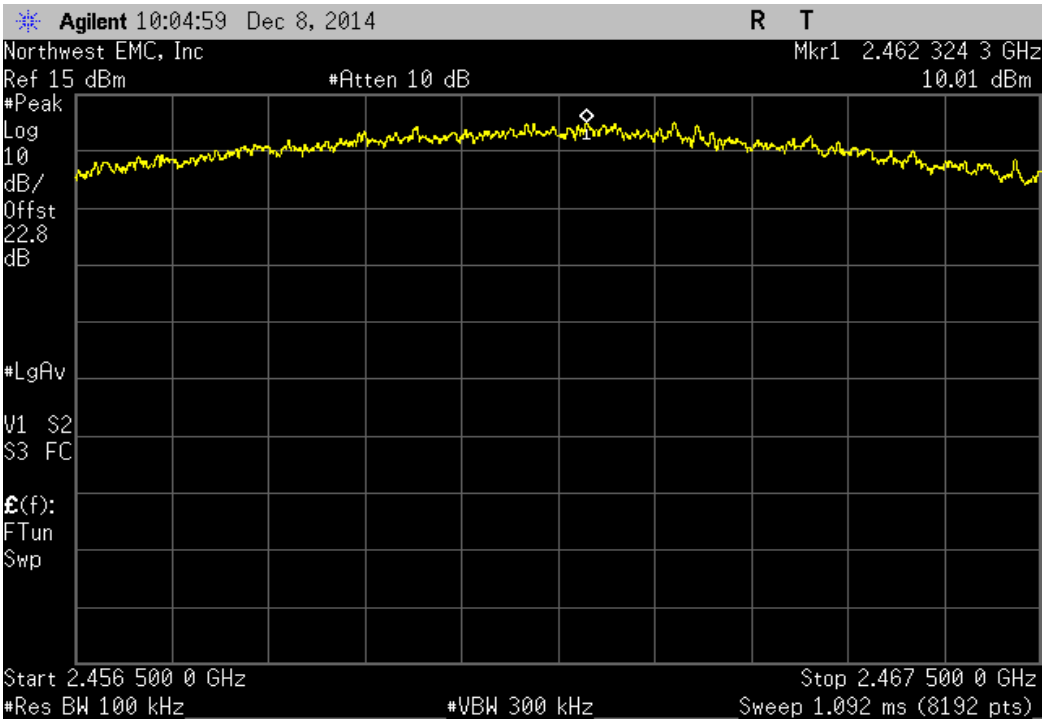
2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Mid Channel 6, 2437 MHz					
Frequency Range		Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz		-46.97	-20	Pass	



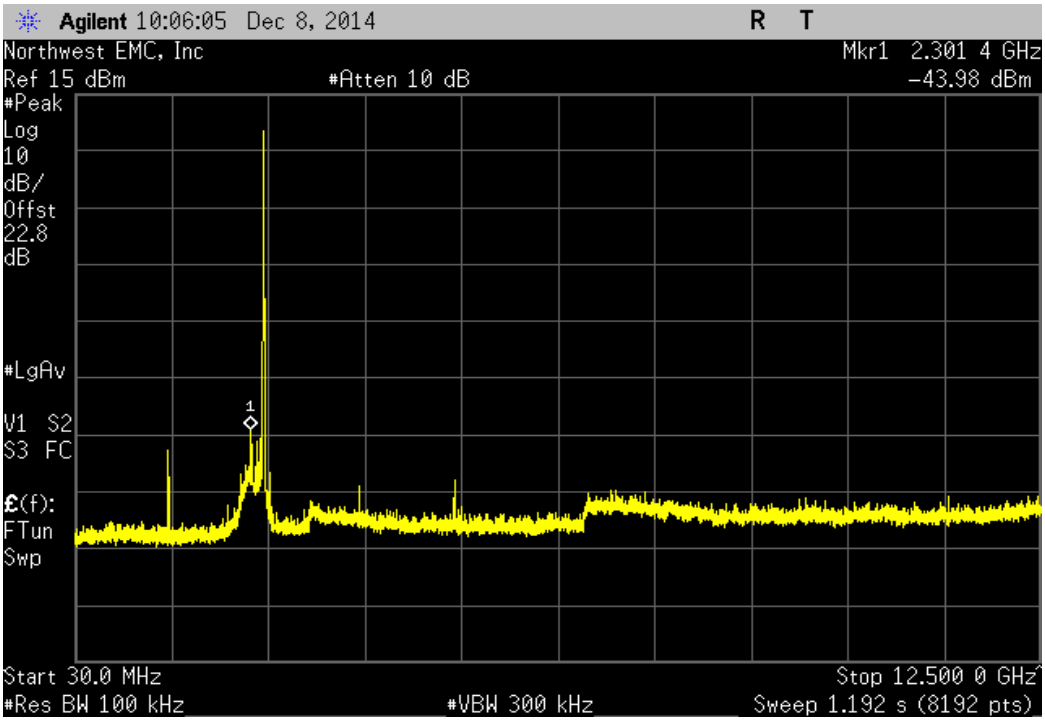
2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Mid Channel 6, 2437 MHz				
Frequency Range		**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz		-61.46	-20	Pass



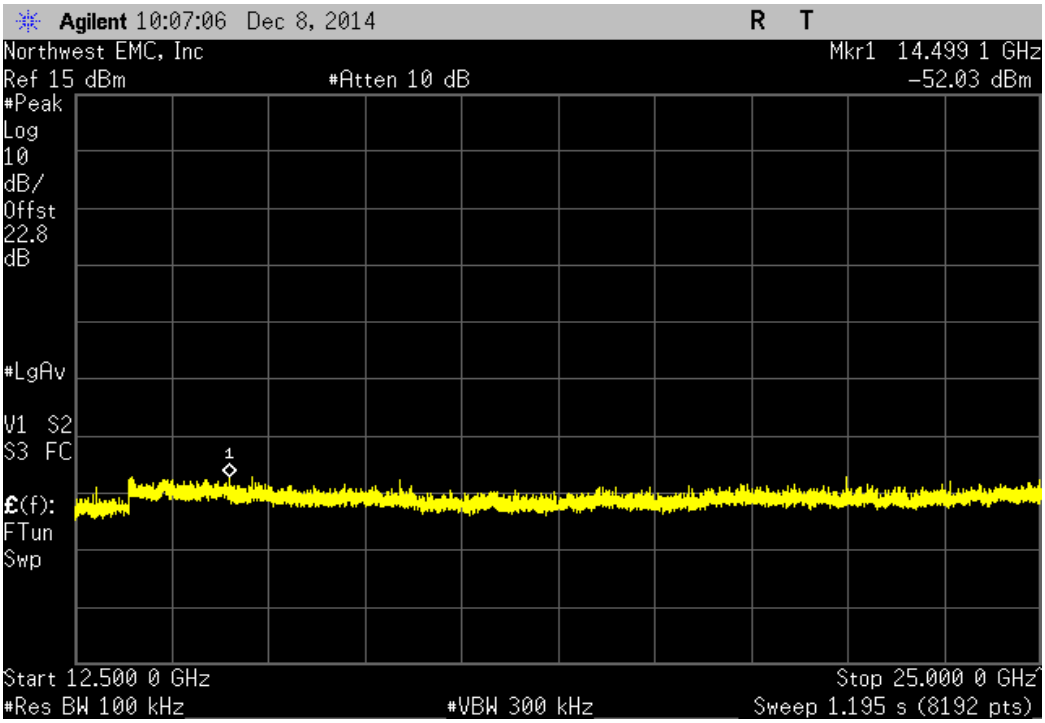
2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz					
	Frequency Range			**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
	Fundamental			N/A	N/A	N/A



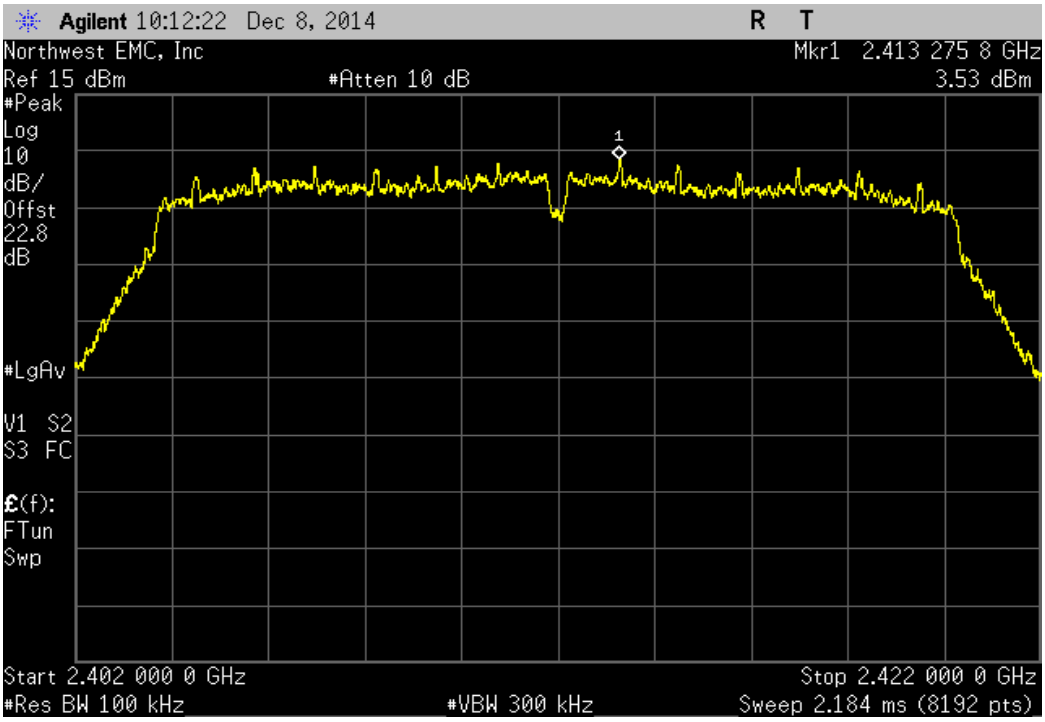
2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz				
Frequency Range		**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
30 MHz - 12.5 GHz		-53.99	-20	Pass



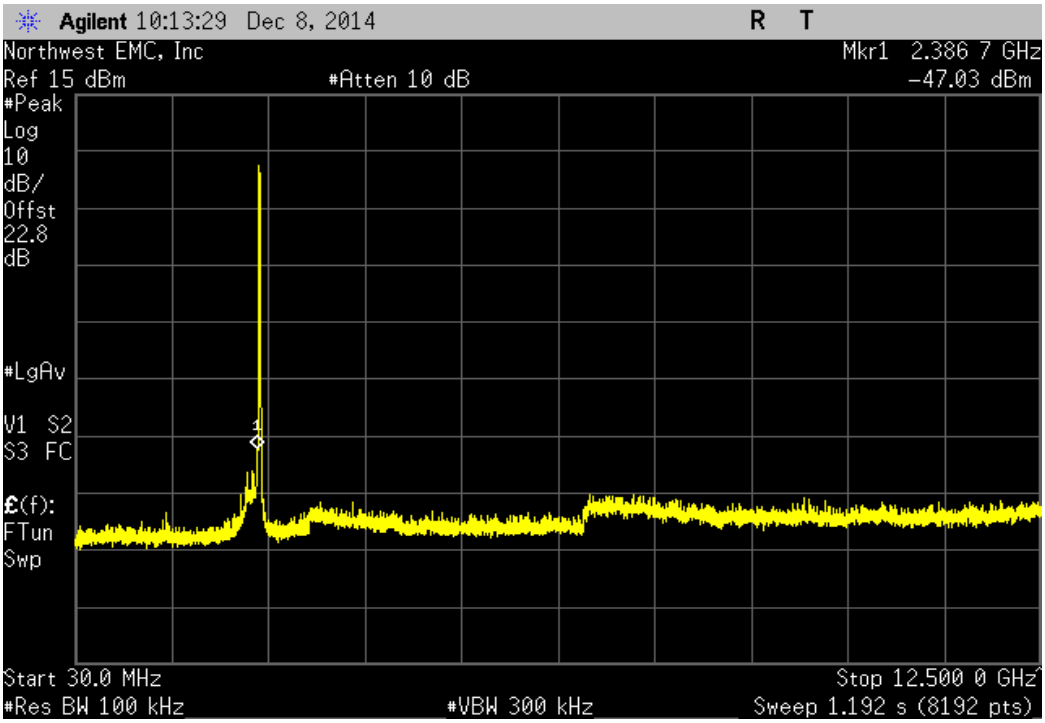
2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz				
Frequency Range		**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz		-62.04	-20	Pass



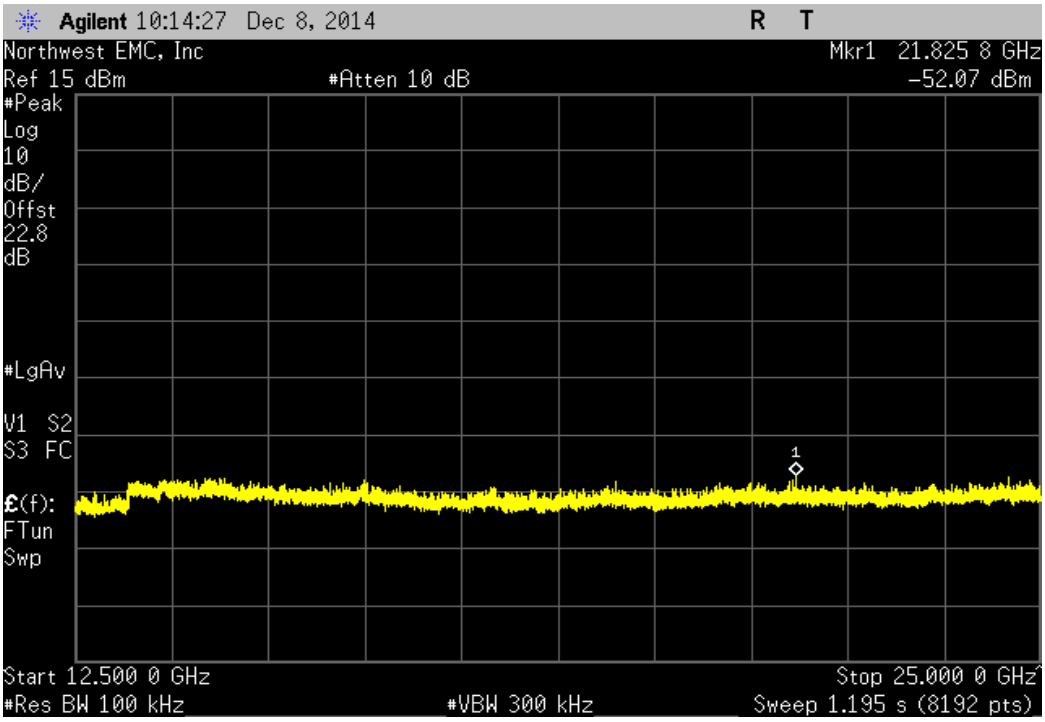
2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz						
	Frequency Range			Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental			N/A	N/A	N/A



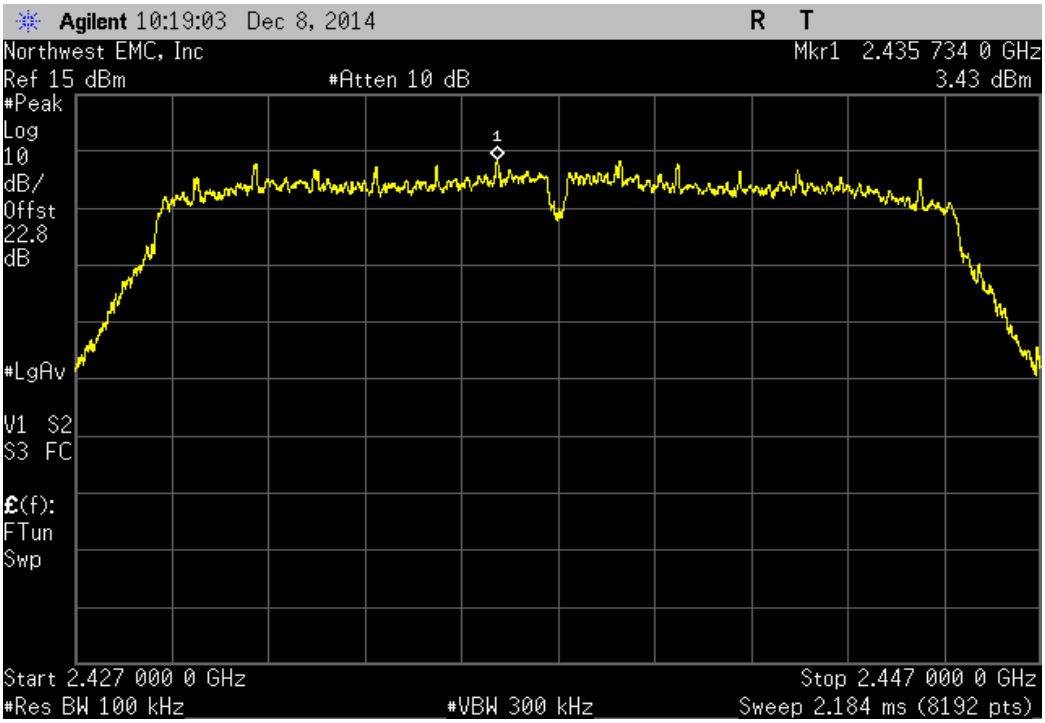
2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz					
Frequency Range		Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz		-50.56	-20	Pass



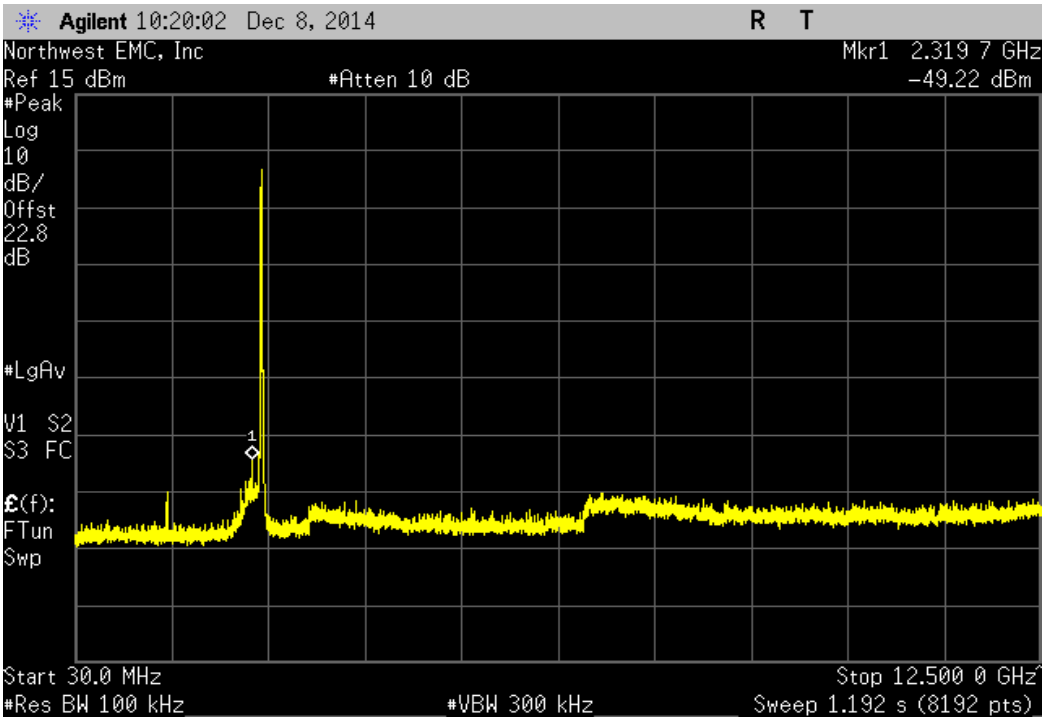
2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz				
Frequency Range		**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz		-55.6	-20	Pass



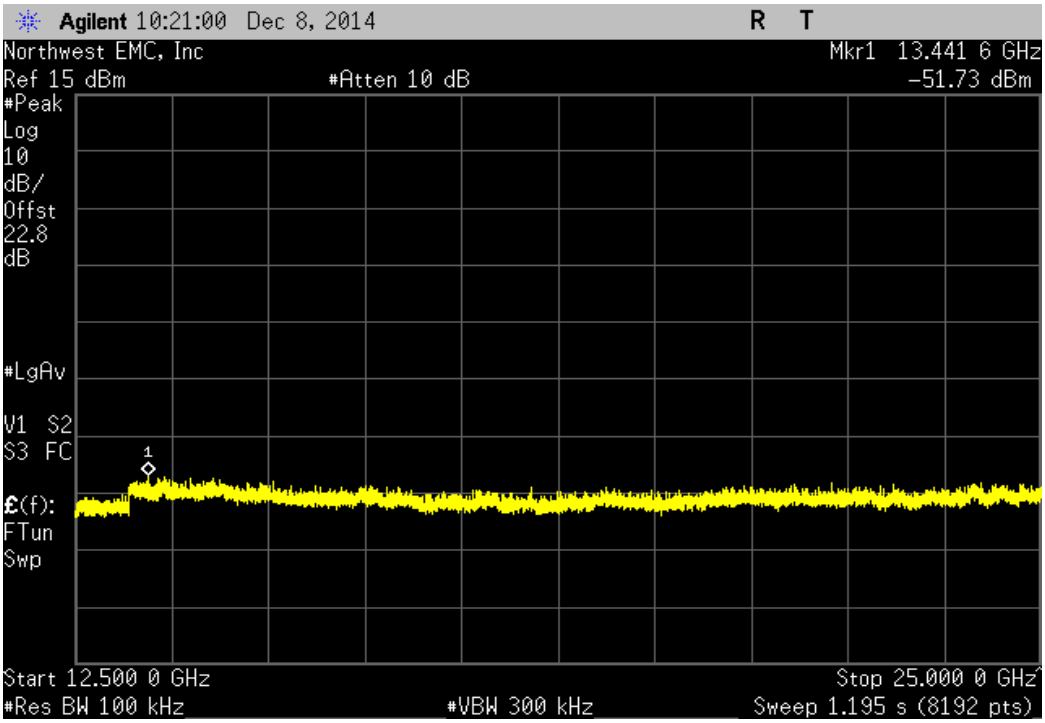
2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz						
	Frequency Range			**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
	Fundamental			N/A	N/A	N/A



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



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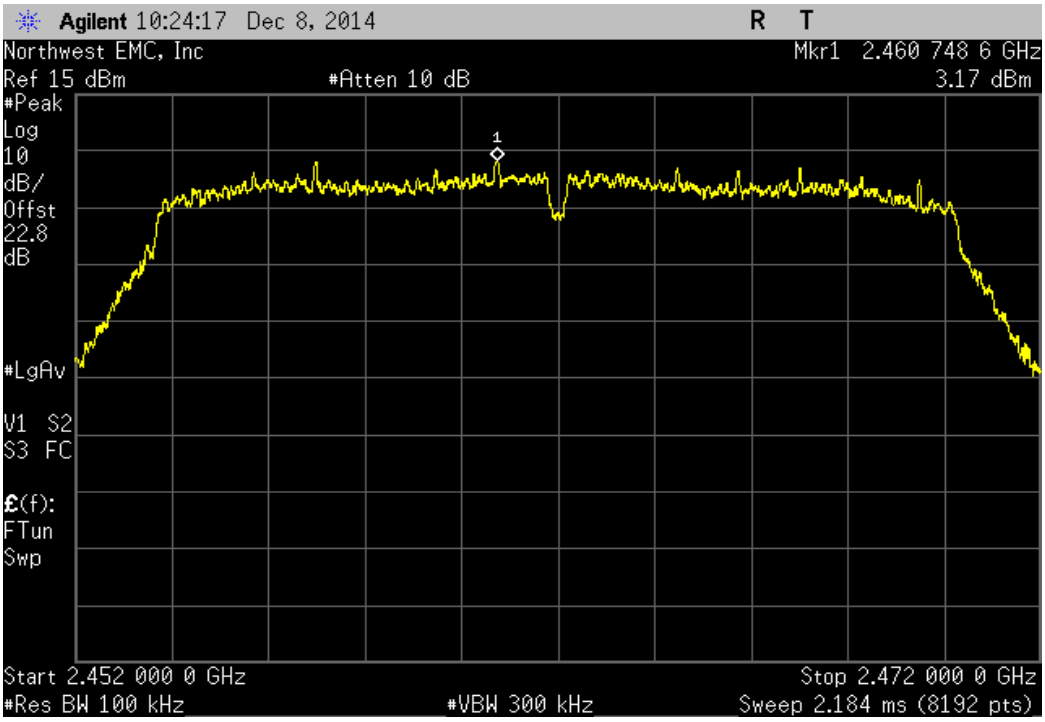
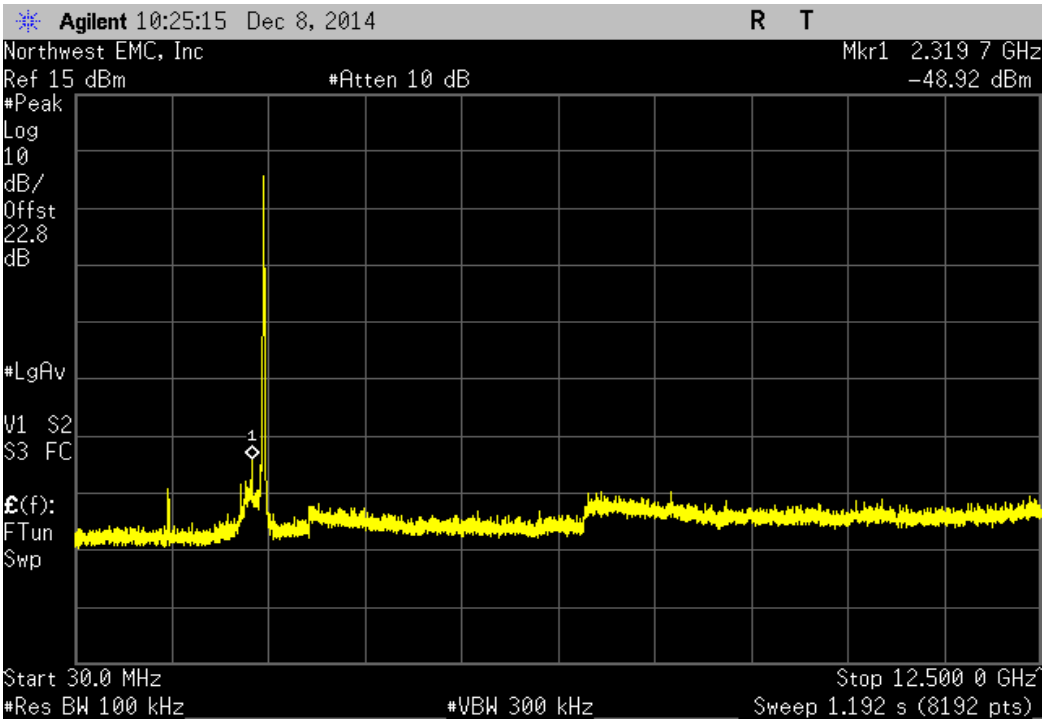
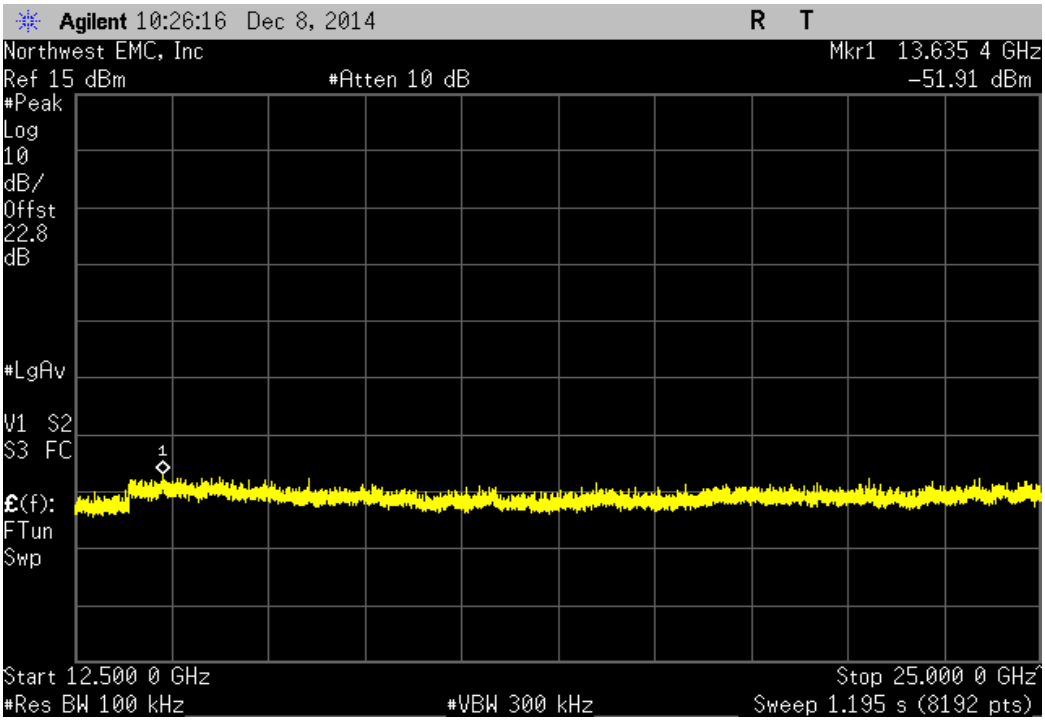
2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz						
	Frequency Range			Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental			N/A	N/A	N/A



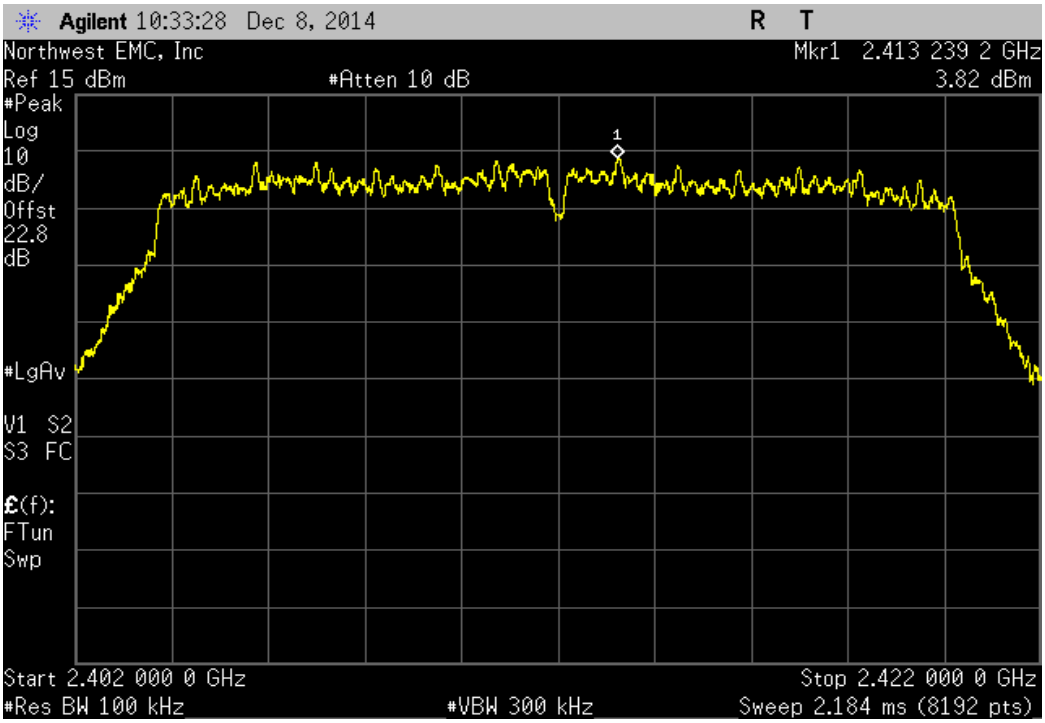
2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz					
Frequency Range			Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz			-52.09	-20	Pass



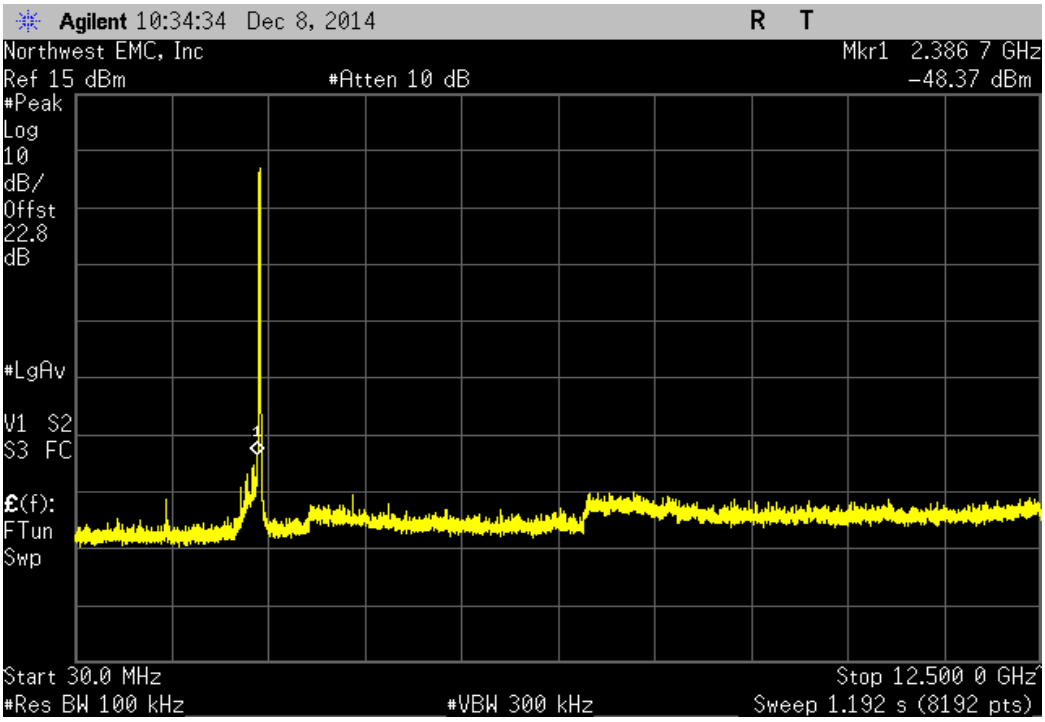
2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz				
Frequency Range		**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz		-55.08	-20	Pass



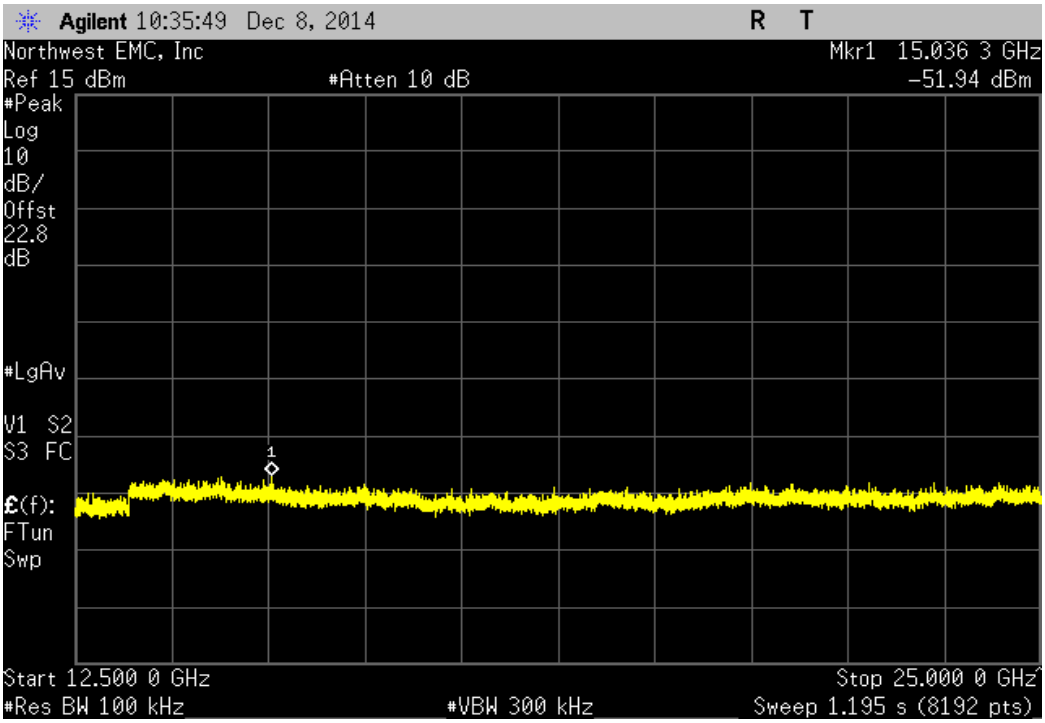
2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz						
	Frequency Range			**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
	Fundamental			N/A	N/A	N/A



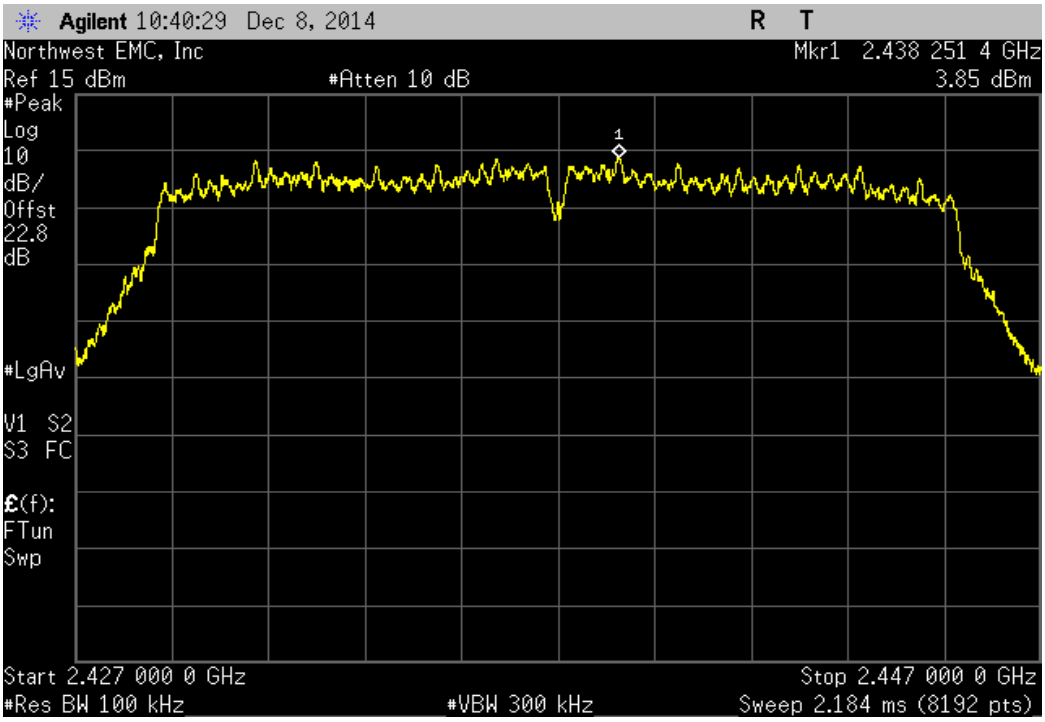
2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz				
Frequency Range		**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
30 MHz - 12.5 GHz		-52.19	-20	Pass



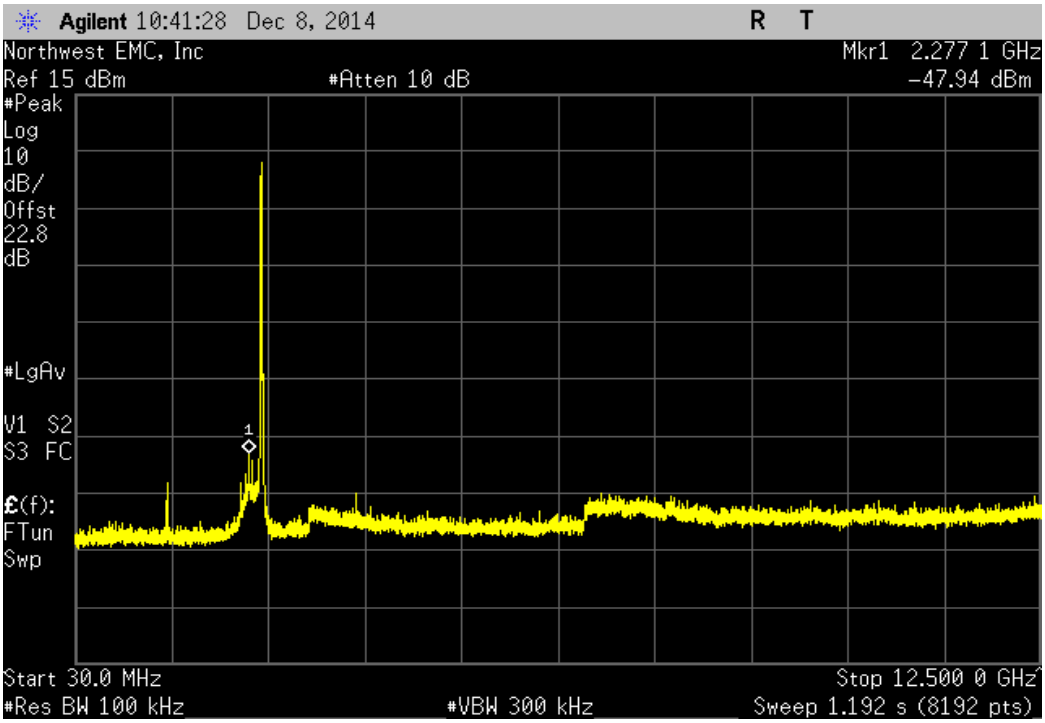
2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz				
Frequency Range		**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz		-55.76	-20	Pass



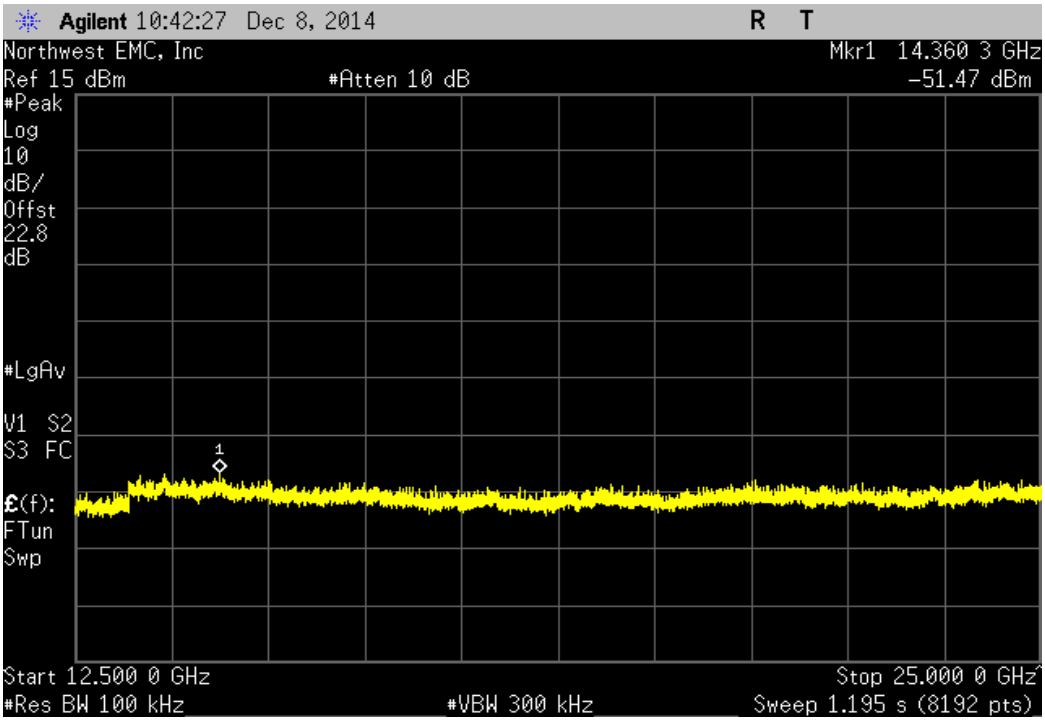
2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Mid Channel 6, 2437 MHz						
	Frequency Range			Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental			N/A	N/A	N/A



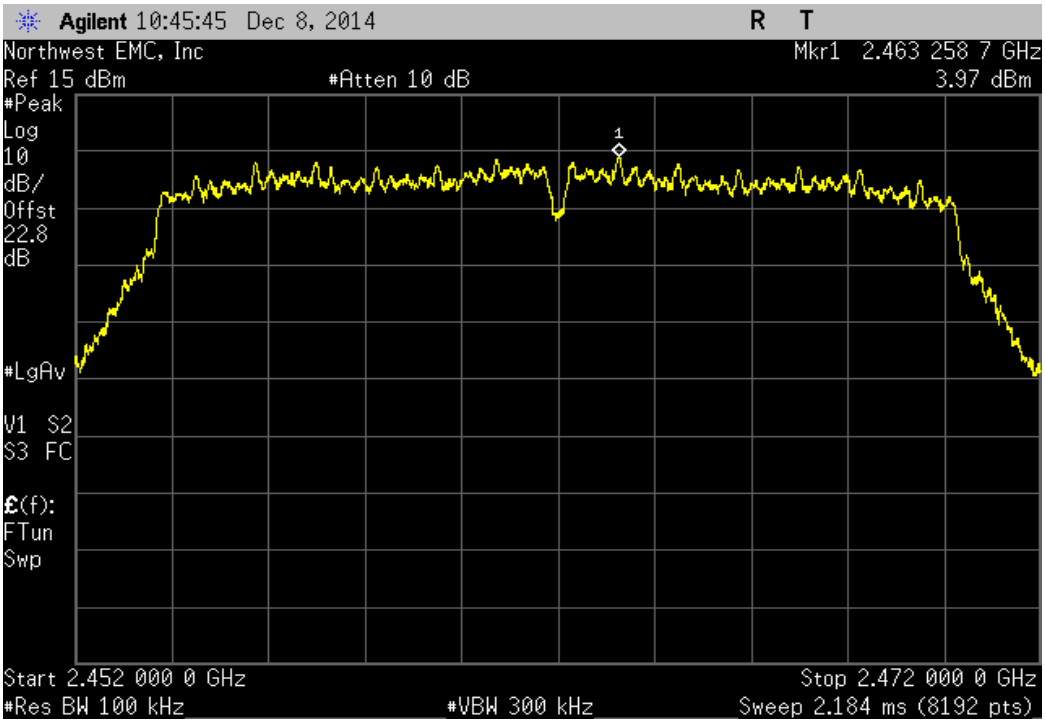
2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Mid Channel 6, 2437 MHz					
Frequency Range			Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz			-51.79	-20	Pass



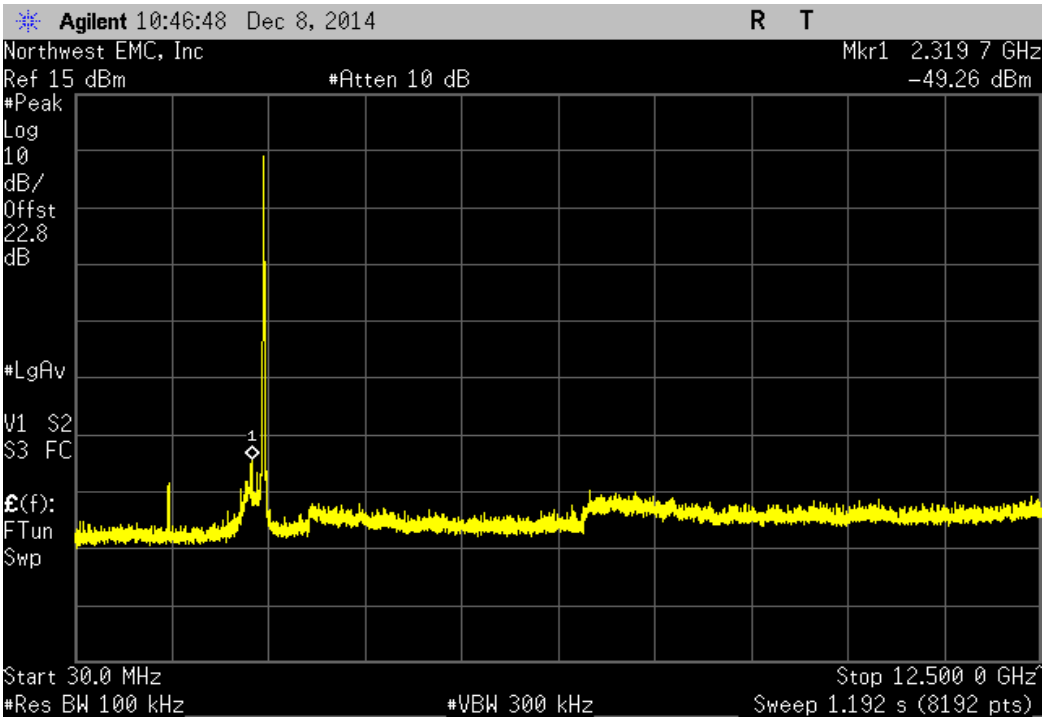
2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Mid Channel 6, 2437 MHz				
Frequency Range		**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz		-55.32	-20	Pass



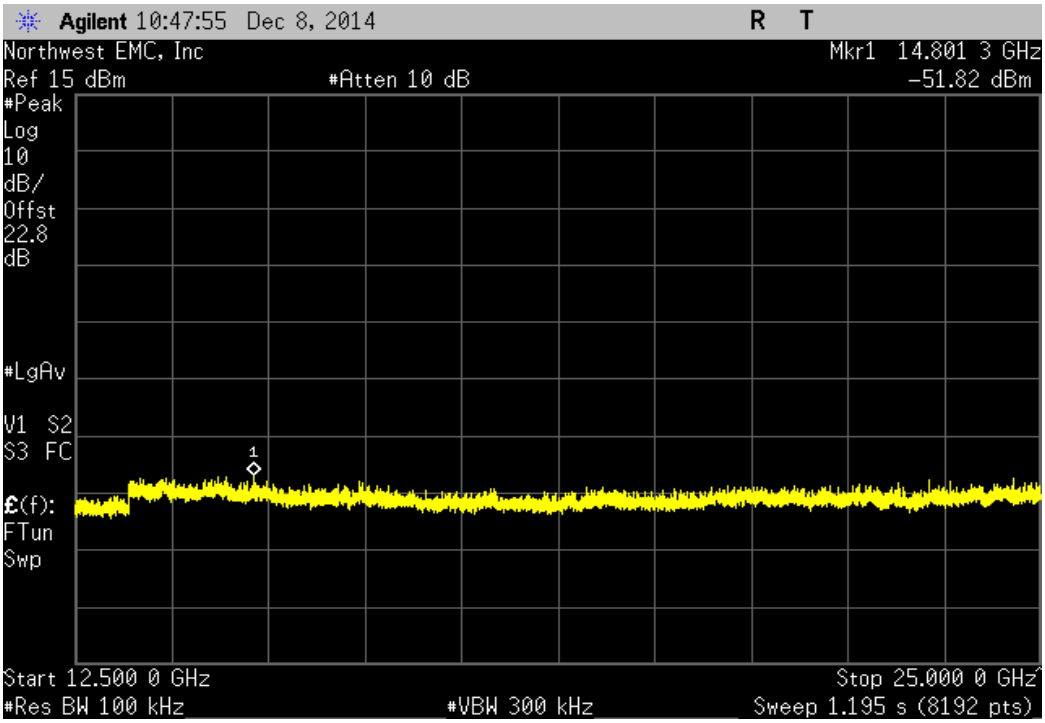
2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz						
	Frequency Range			**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
	Fundamental			N/A	N/A	N/A



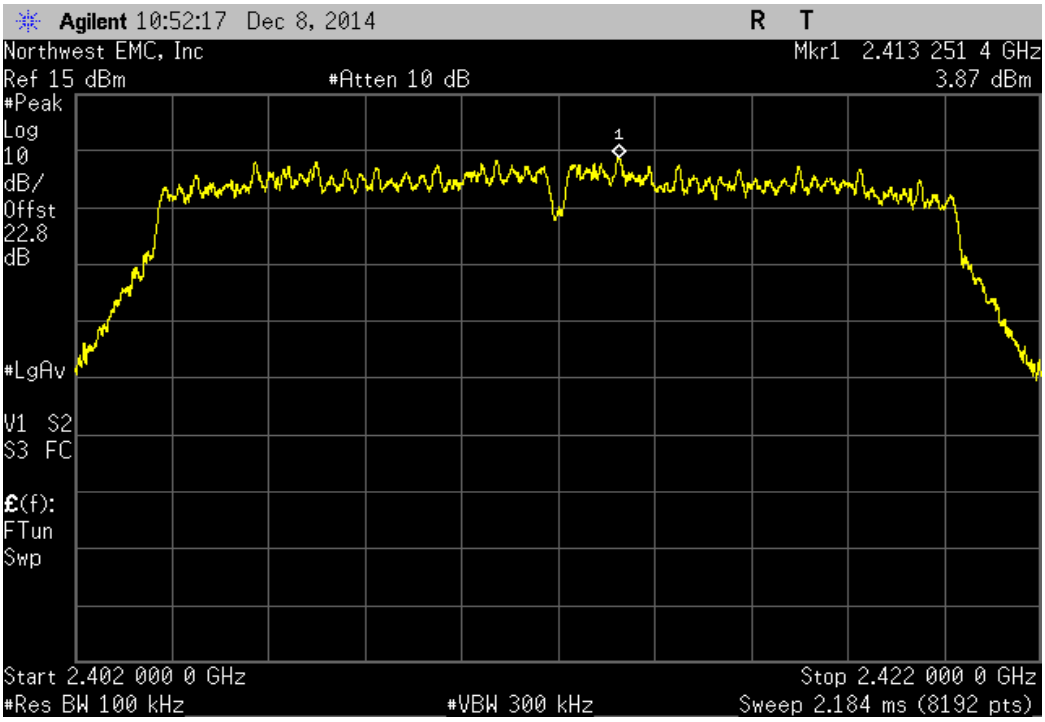
2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz				
Frequency Range		**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
30 MHz - 12.5 GHz		-53.23	-20	Pass



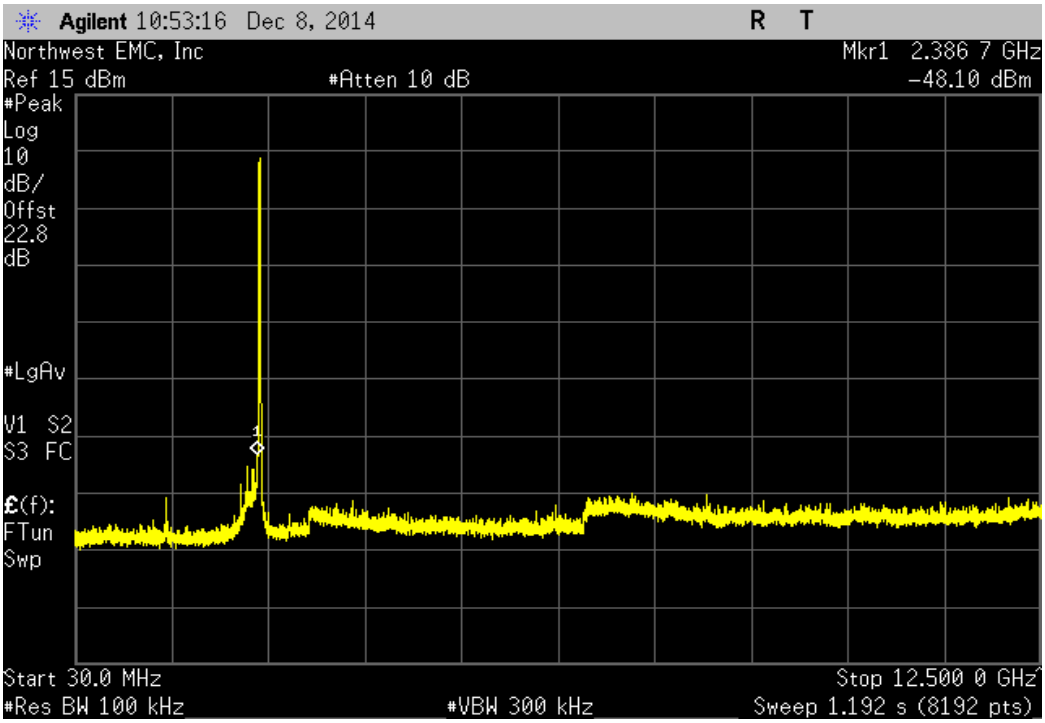
2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz				
Frequency Range		**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz		-55.79	-20	Pass



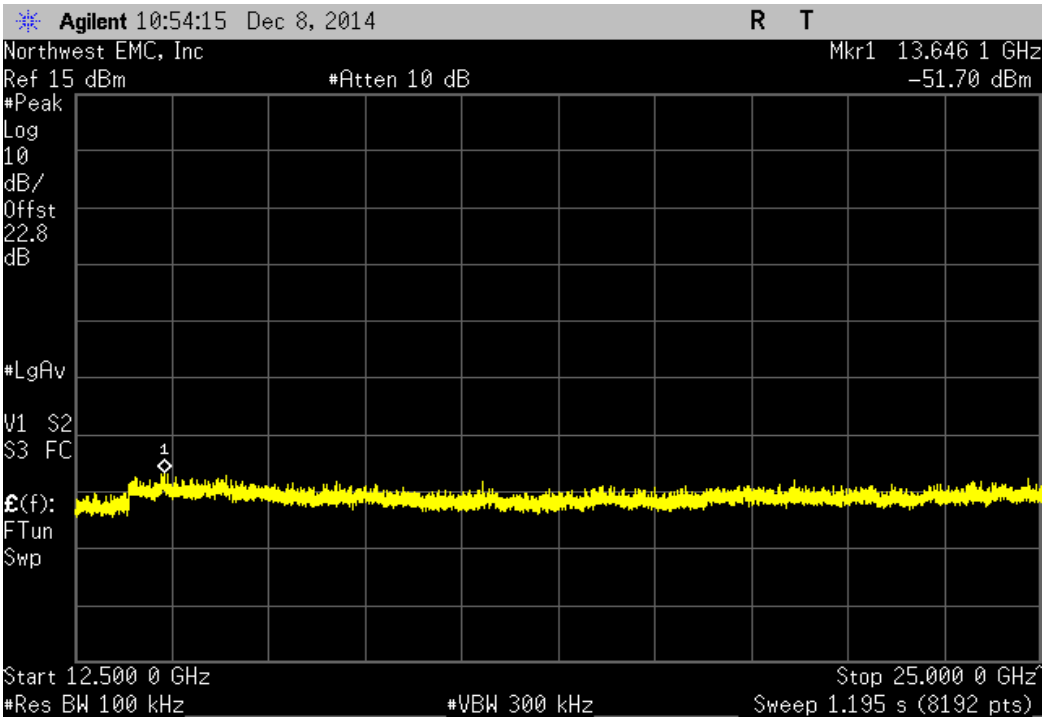
2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz						
	Frequency Range			Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental			N/A	N/A	N/A



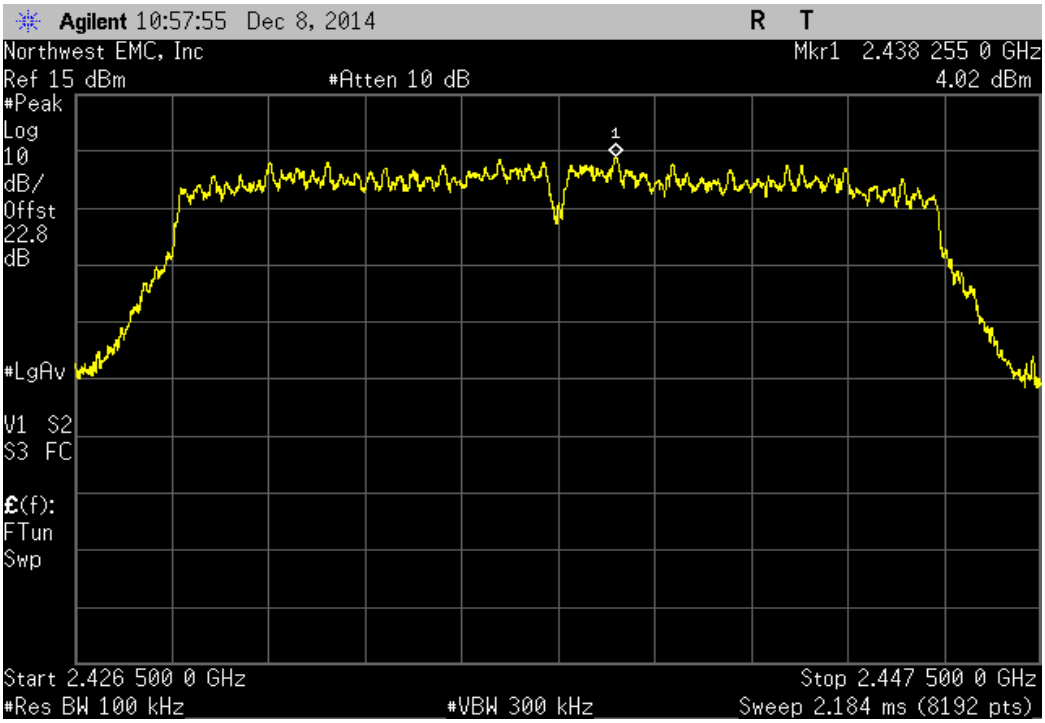
2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz					
Frequency Range			Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz			-51.97	-20	Pass



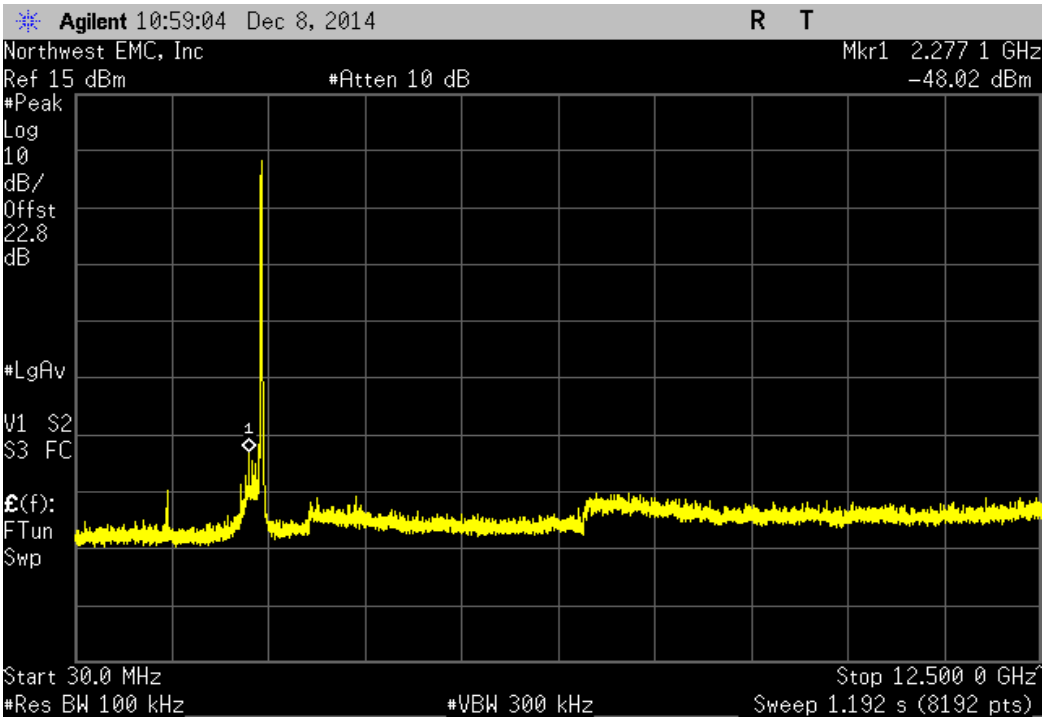
2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz				
Frequency Range		Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz		-55.57	-20	Pass



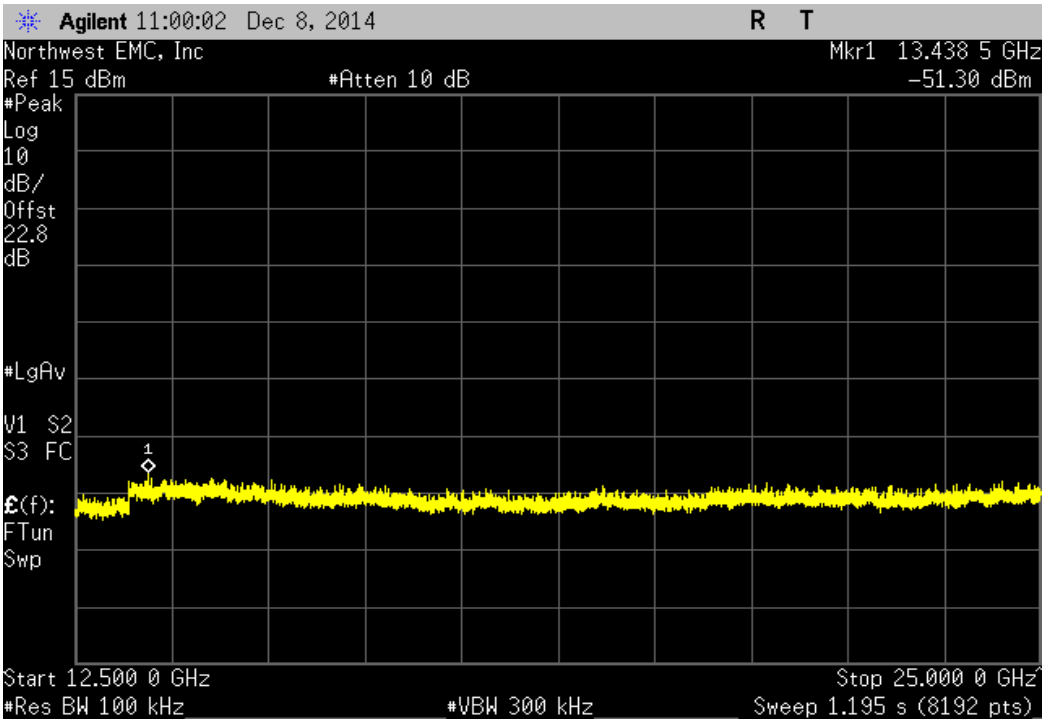
2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz						
	Frequency Range			Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental			N/A	N/A	N/A



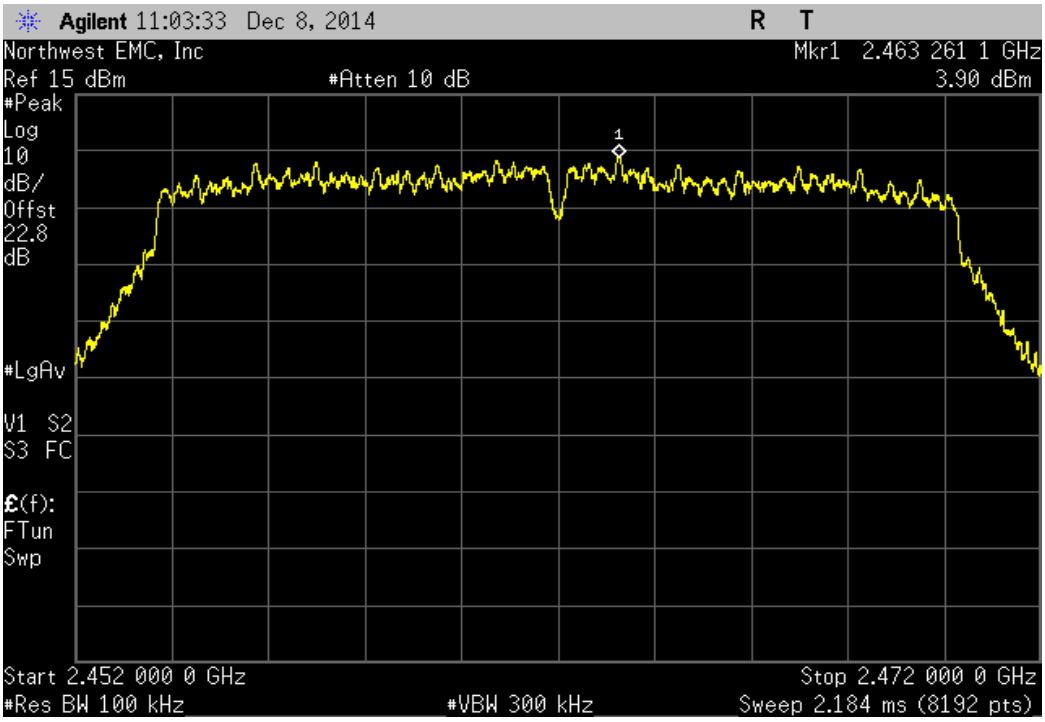
2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz				
Frequency Range		**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
30 MHz - 12.5 GHz		-52.04	-20	Pass



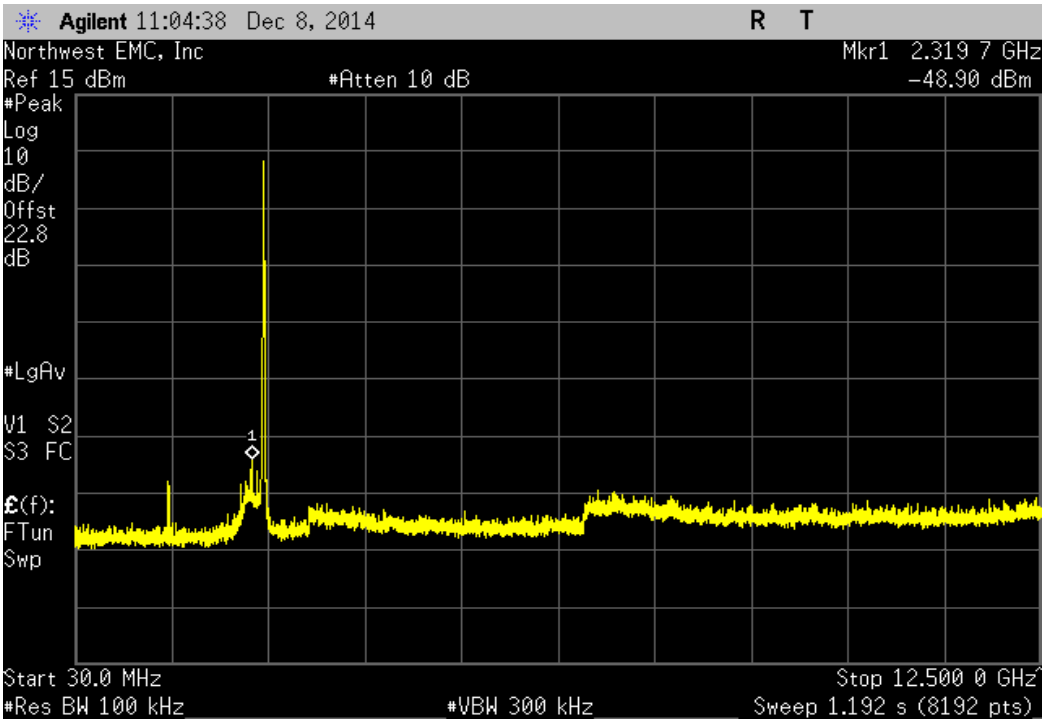
2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz				
Frequency Range		**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz		-55.32	-20	Pass



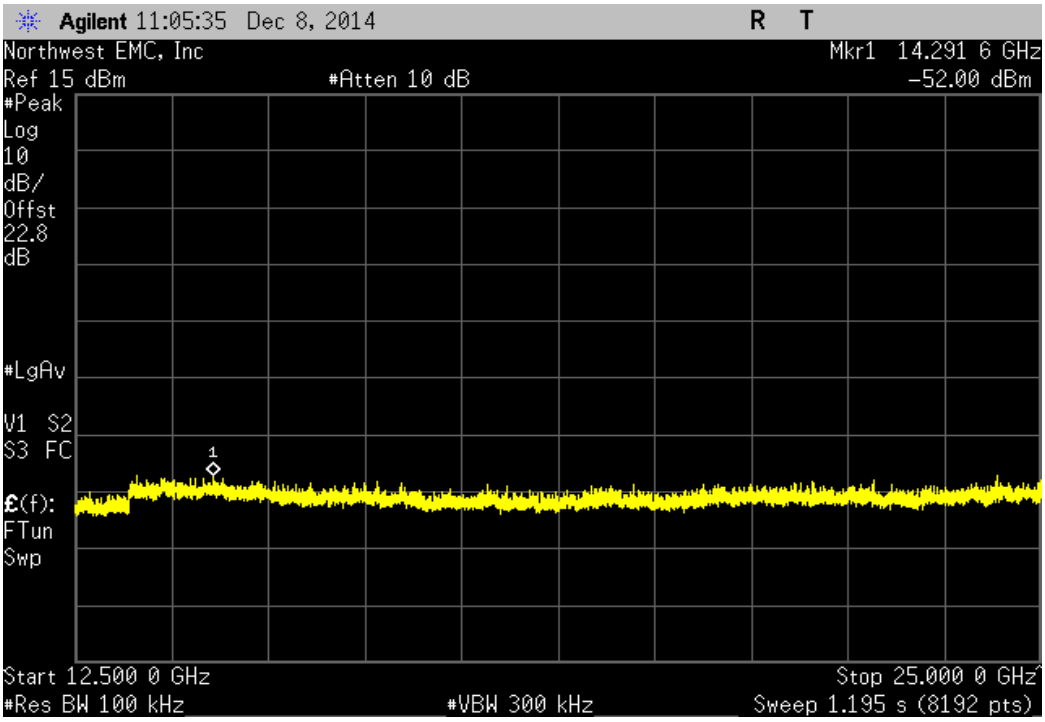
2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz						
	Frequency Range			Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental			N/A	N/A	N/A



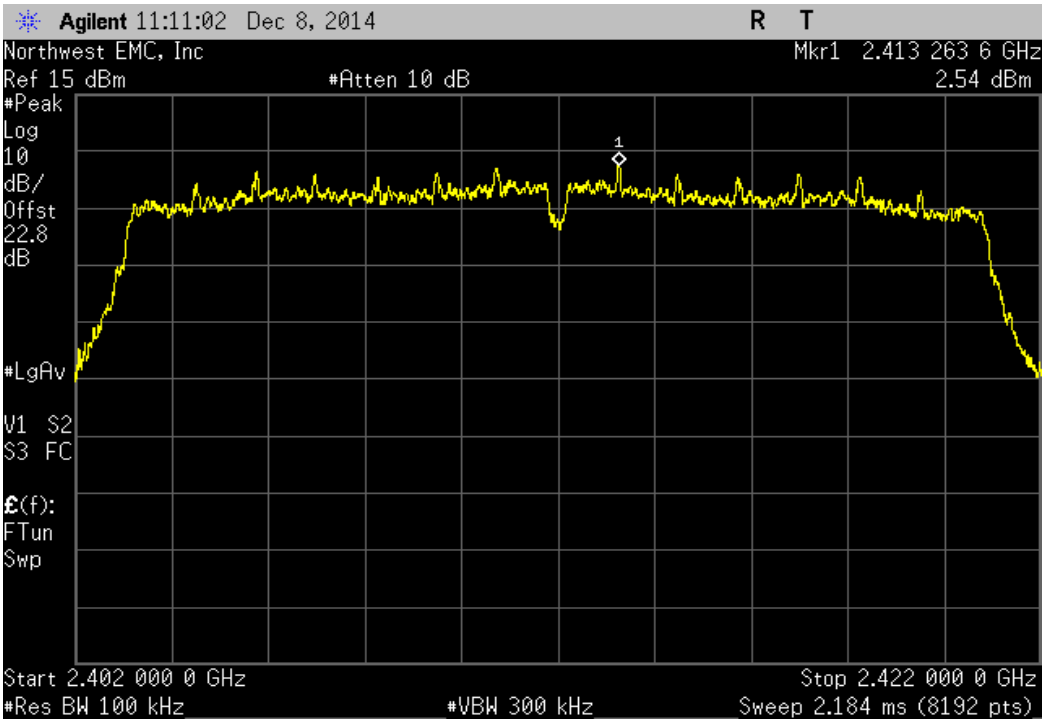
2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz					
Frequency Range			Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz			-52.8	-20	Pass



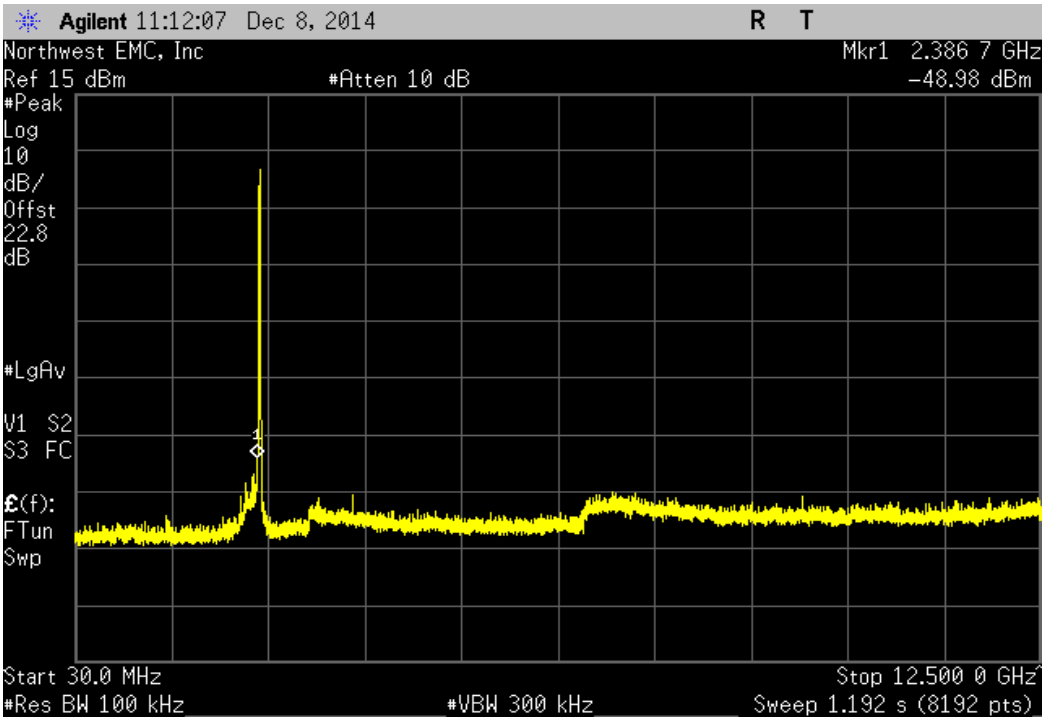
2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz				
Frequency Range		**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz		-55.9	-20	Pass



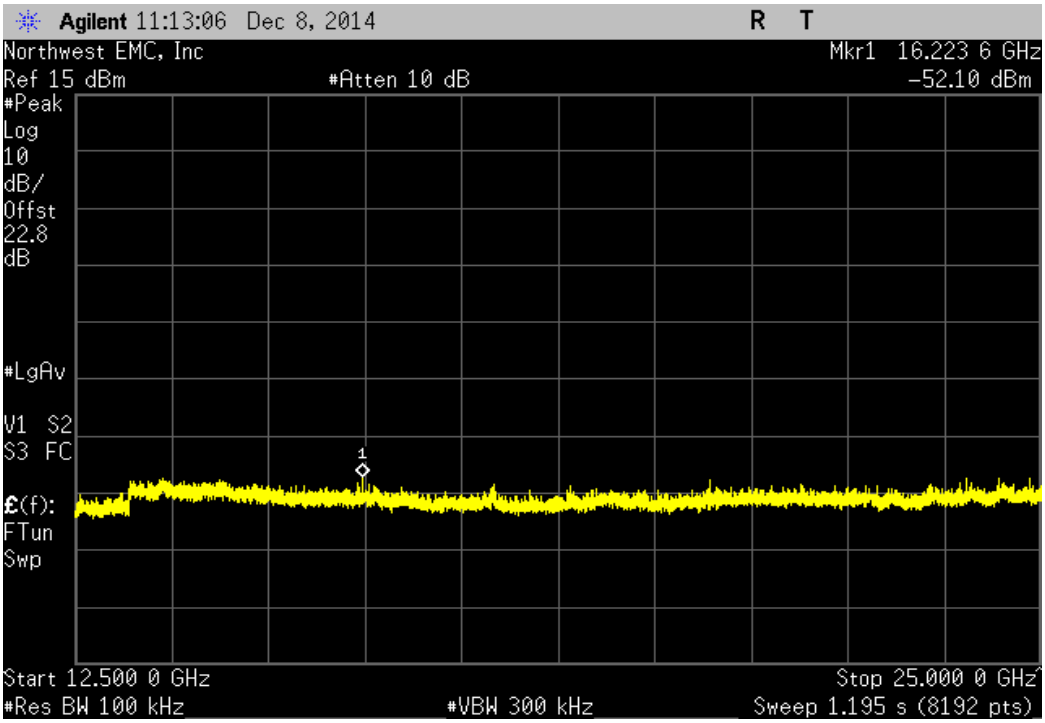
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1, 2412 MHz						
	Frequency Range			**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
	Fundamental			N/A	N/A	N/A



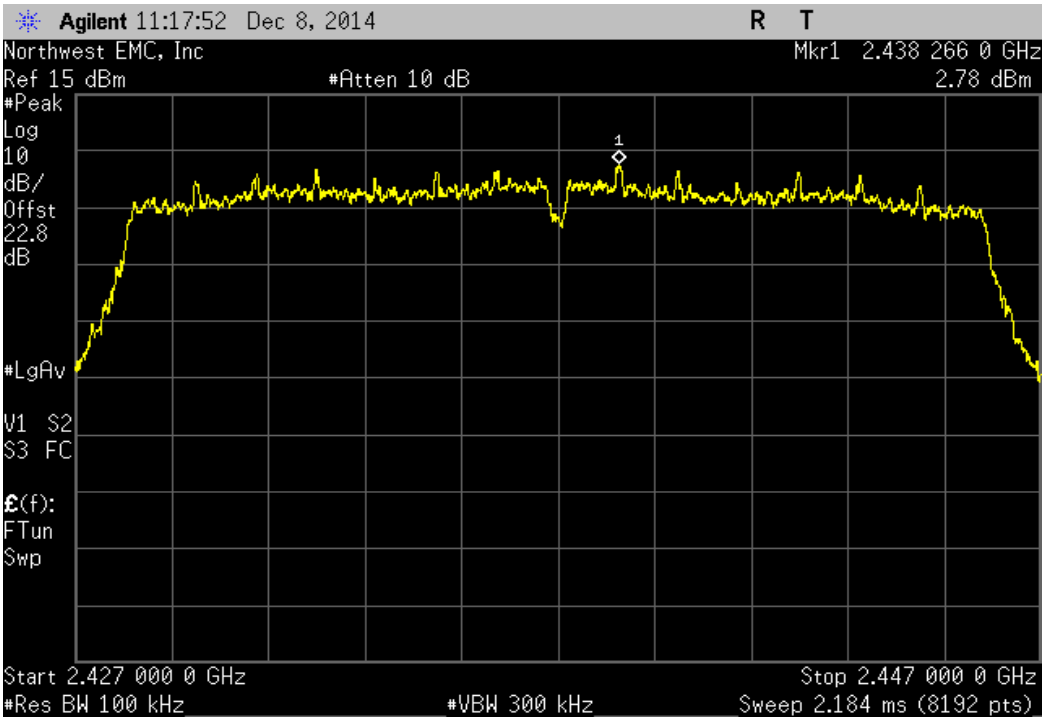
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1, 2412 MHz				
Frequency Range		Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz		-51.52	-20	Pass



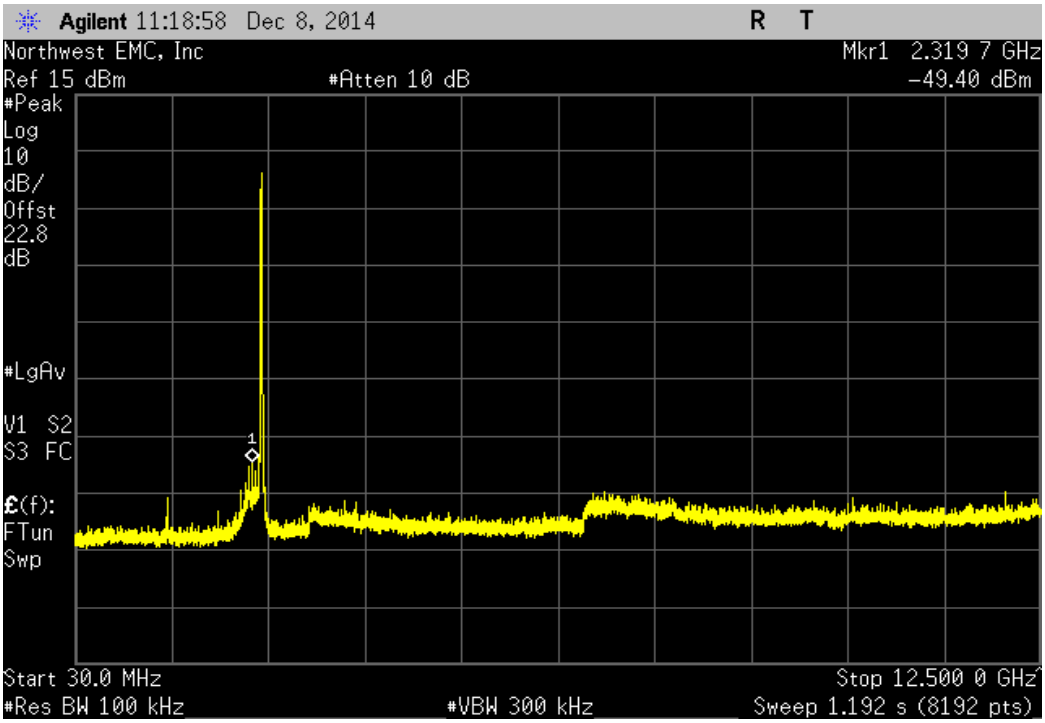
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1, 2412 MHz				
Frequency Range		Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz		-54.64	-20	Pass



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



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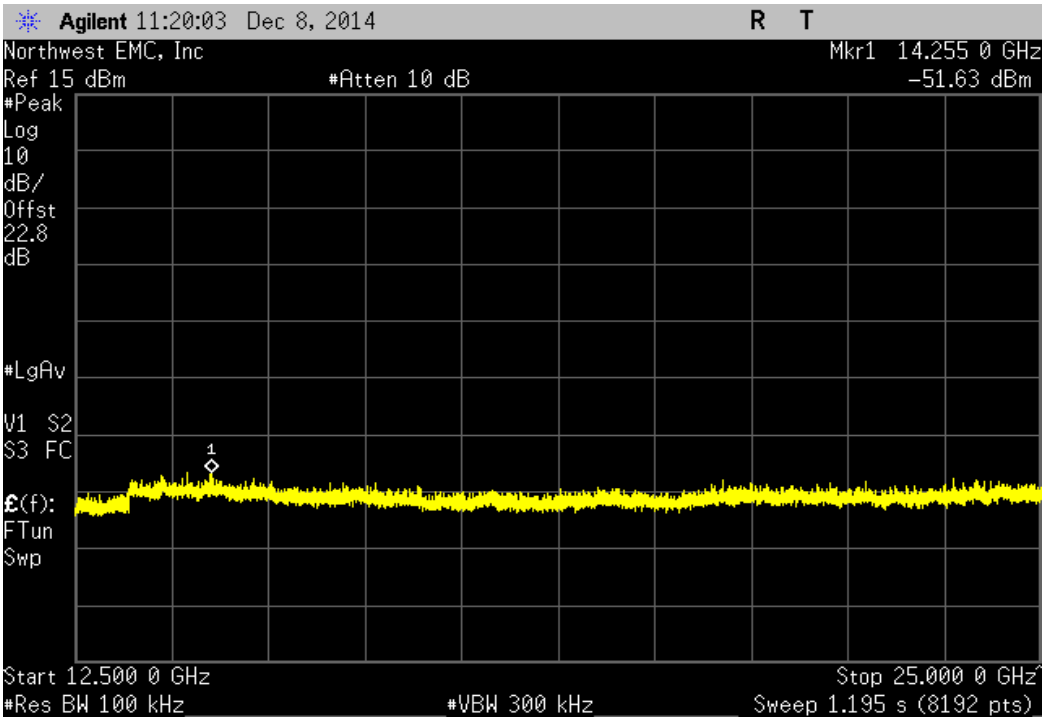
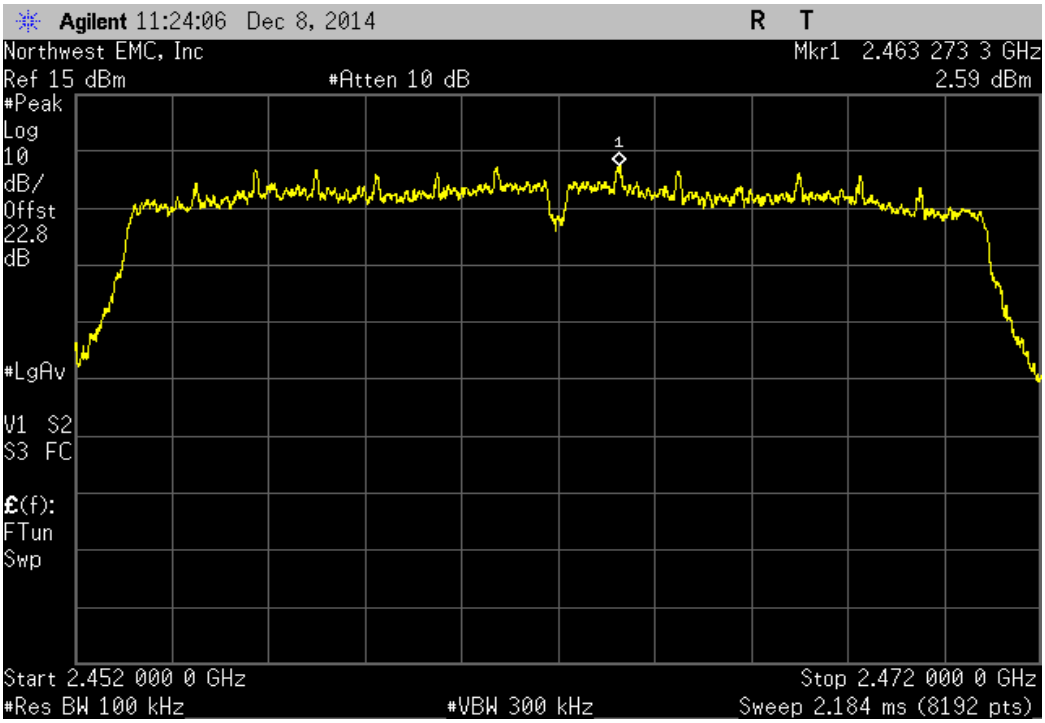
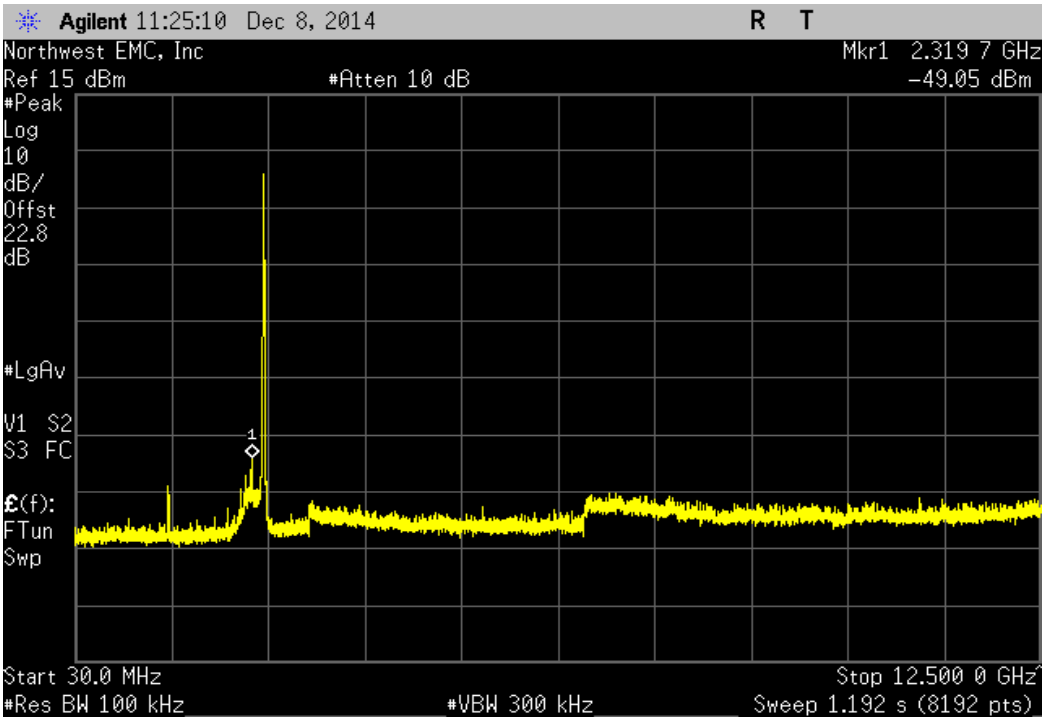
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Mid Channel 6, 2437 MHz				
Frequency Range		**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz		-54.41	-20	Pass



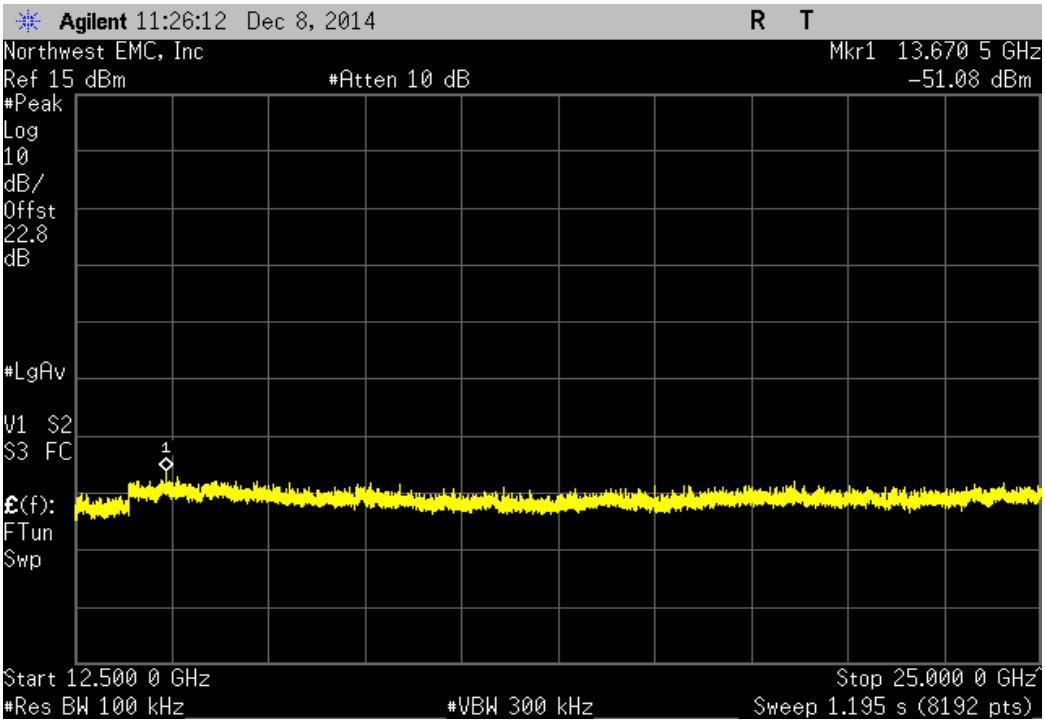
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 11, 2462 MHz					
	Frequency Range			**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
	Fundamental			N/A	N/A	N/A



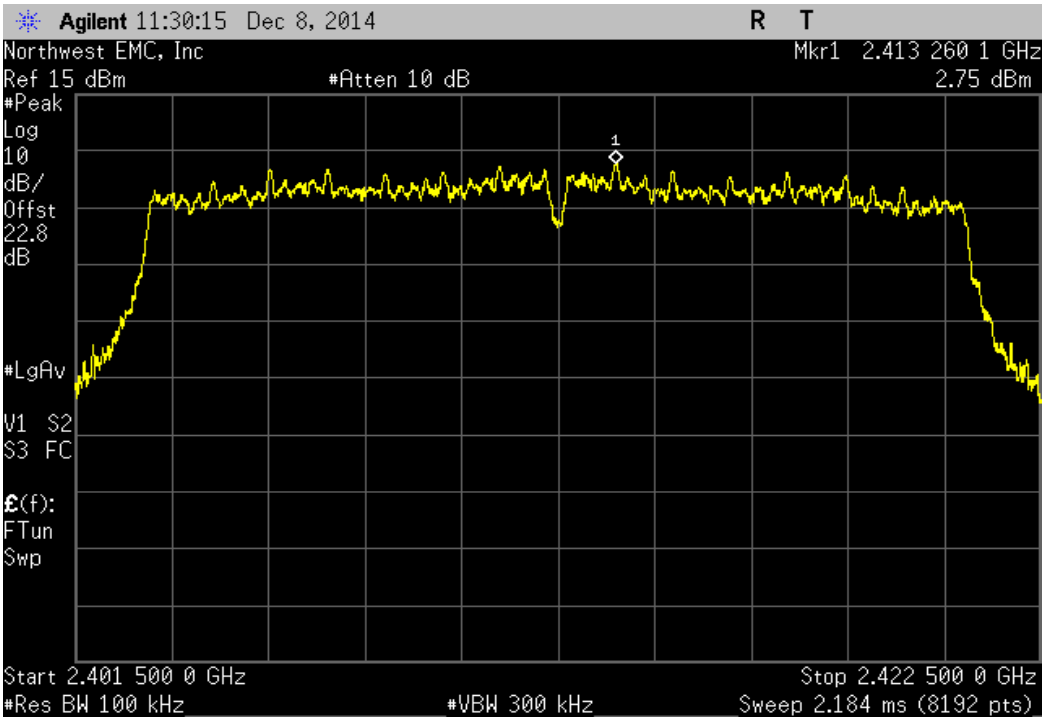
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 11, 2462 MHz				
Frequency Range		Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz		-51.64	-20	Pass



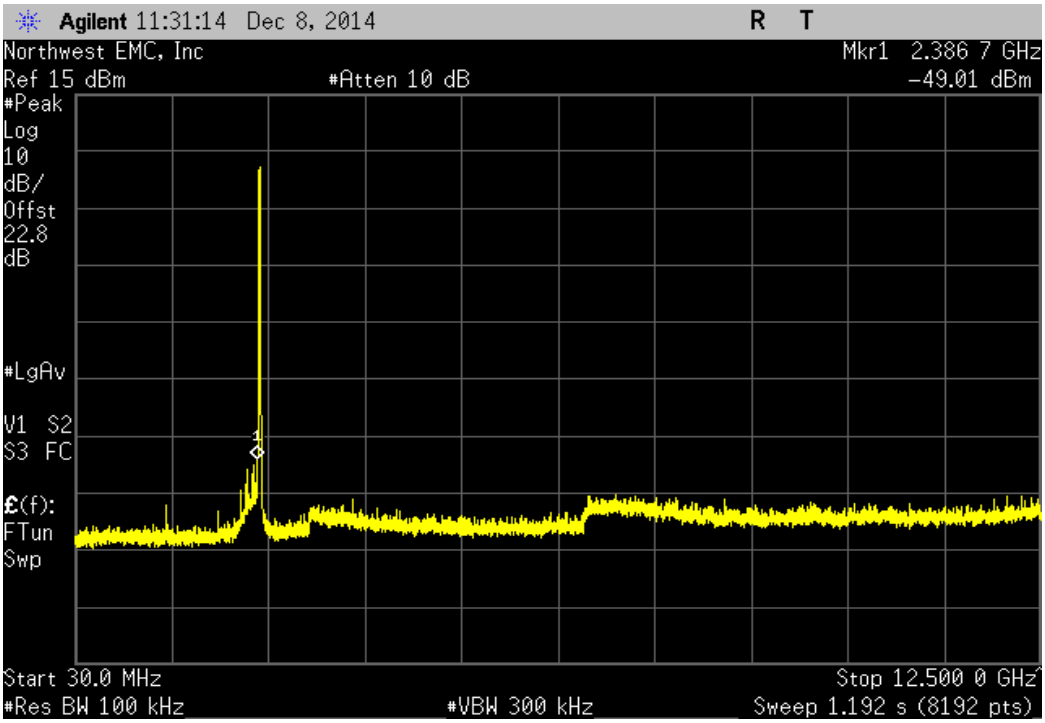
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 11, 2462 MHz				
Frequency Range		Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz		-53.67	-20	Pass



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

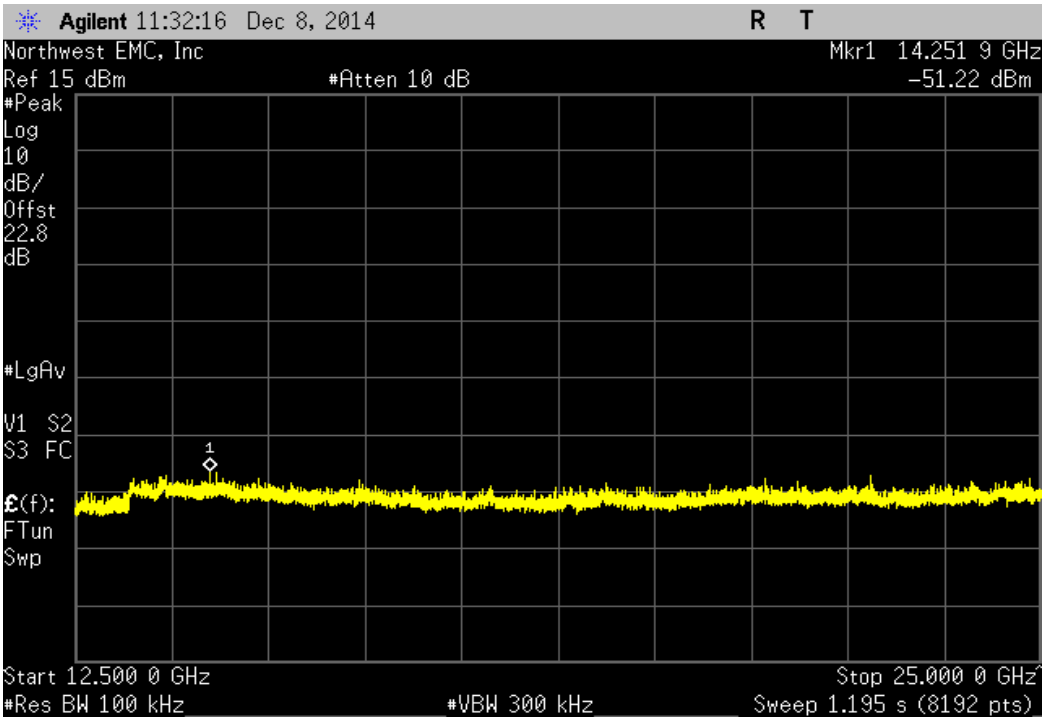


2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1, 2412 MHz					
Frequency Range			Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz			-51.77	-20	Pass

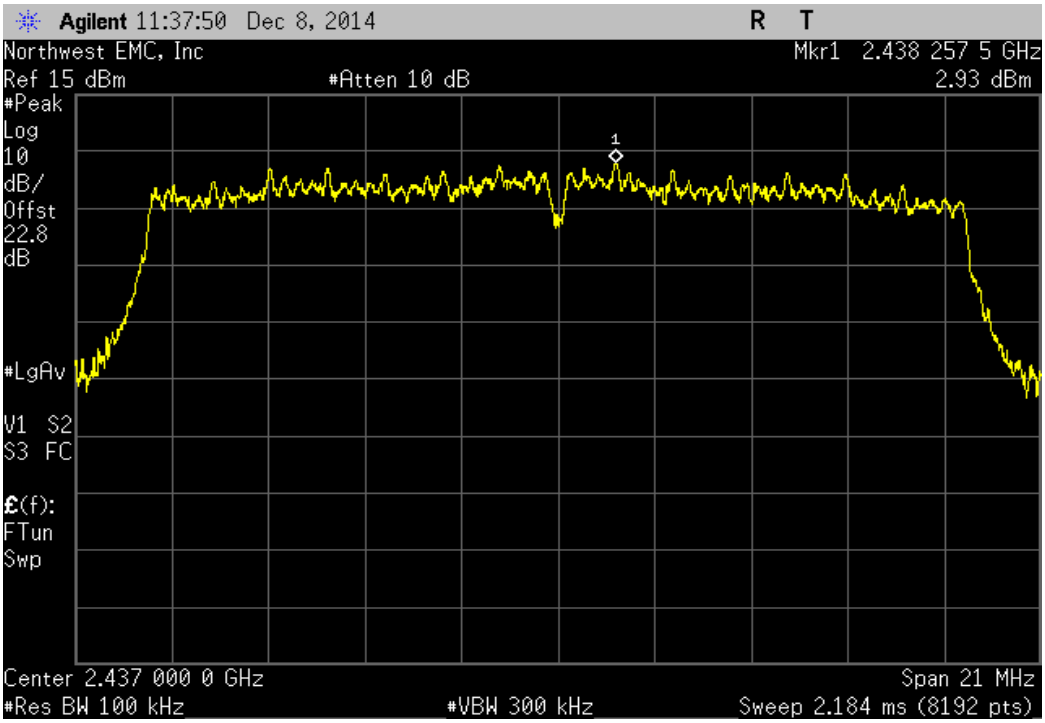


SPURIOUS CONDUCTED EMISSIONS

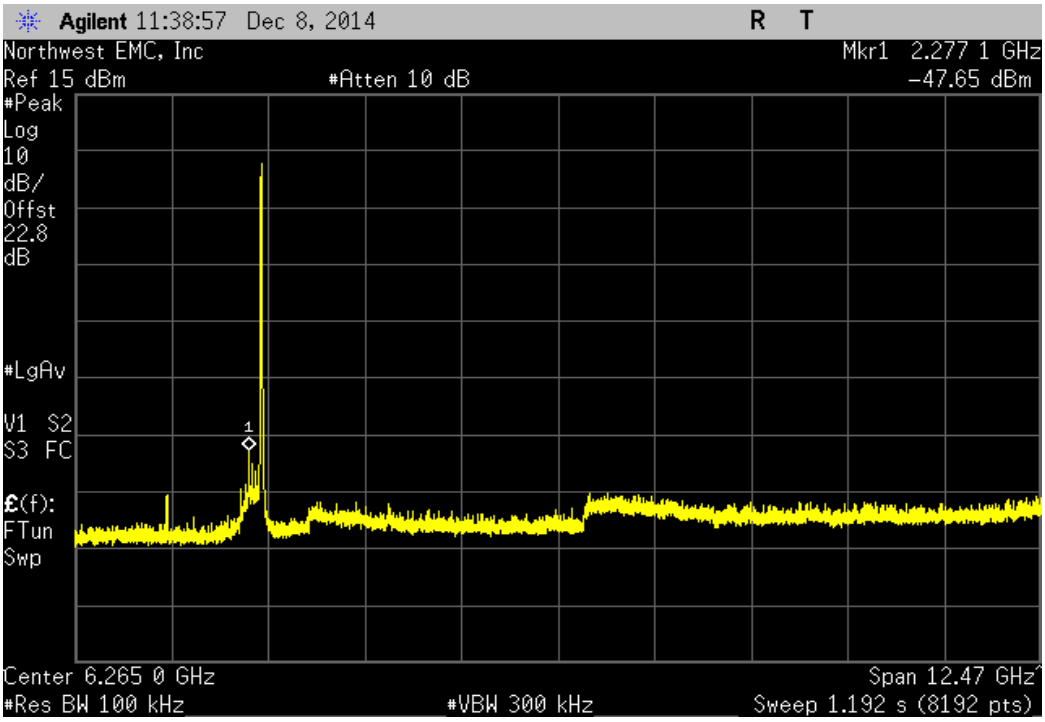
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1, 2412 MHz				
Frequency Range		**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz		-53.97	-20	Pass



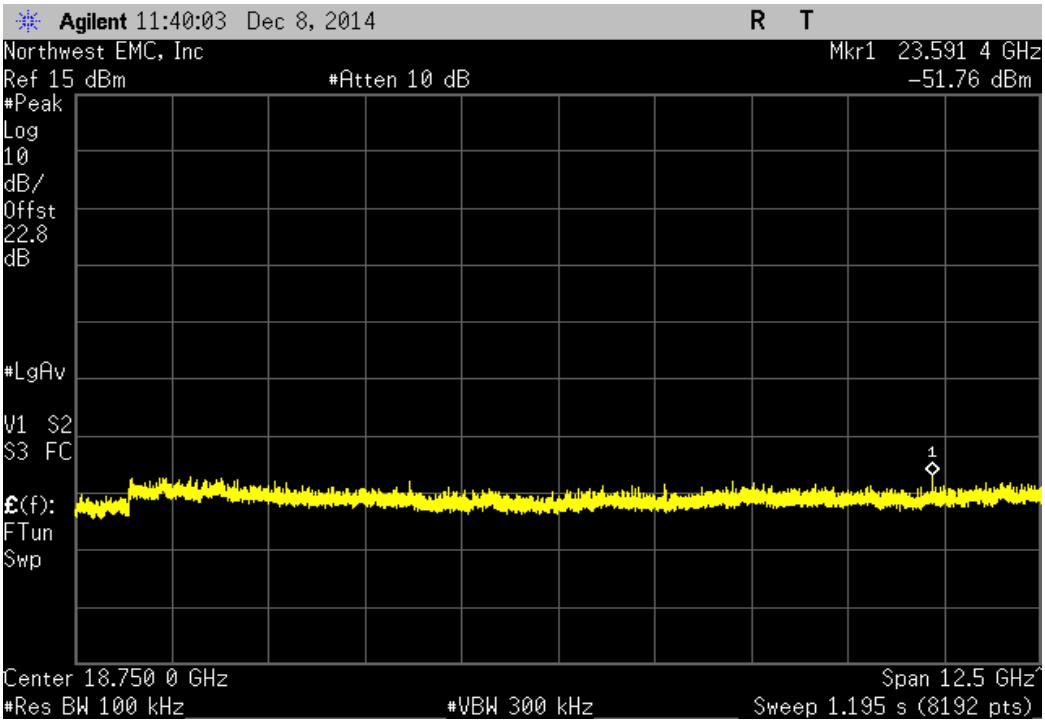
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Mid Channel 6, 2437 MHz						
	Frequency Range			**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
	Fundamental			N/A	N/A	N/A



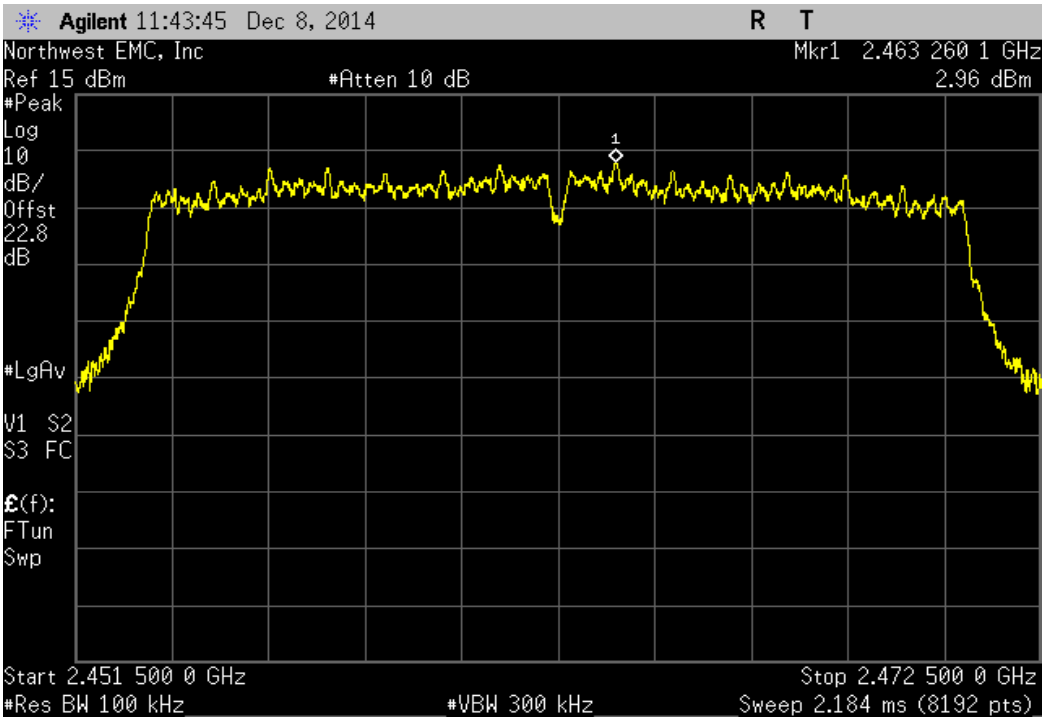
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Mid Channel 6, 2437 MHz				
Frequency Range		**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
30 MHz - 12.5 GHz		-50.58	-20	Pass



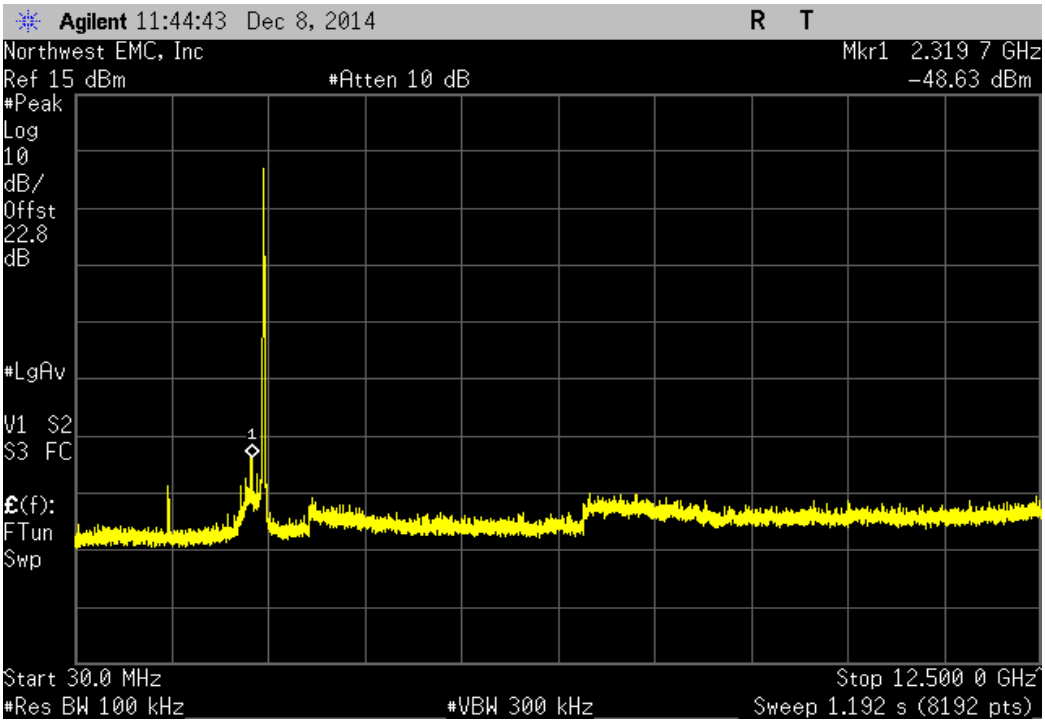
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Mid Channel 6, 2437 MHz				
Frequency Range		**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz		-54.69	-20	Pass



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

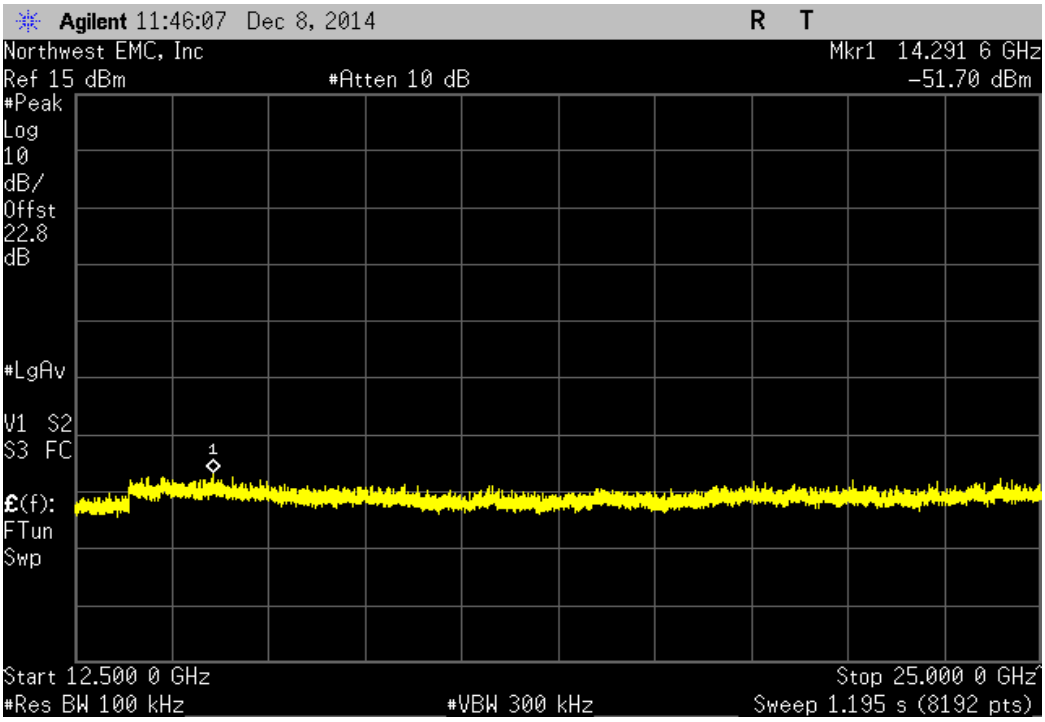


2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, High Channel 11, 2462 MHz					
Frequency Range			Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz			-51.59	-20	Pass



SPURIOUS CONDUCTED EMISSIONS

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

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

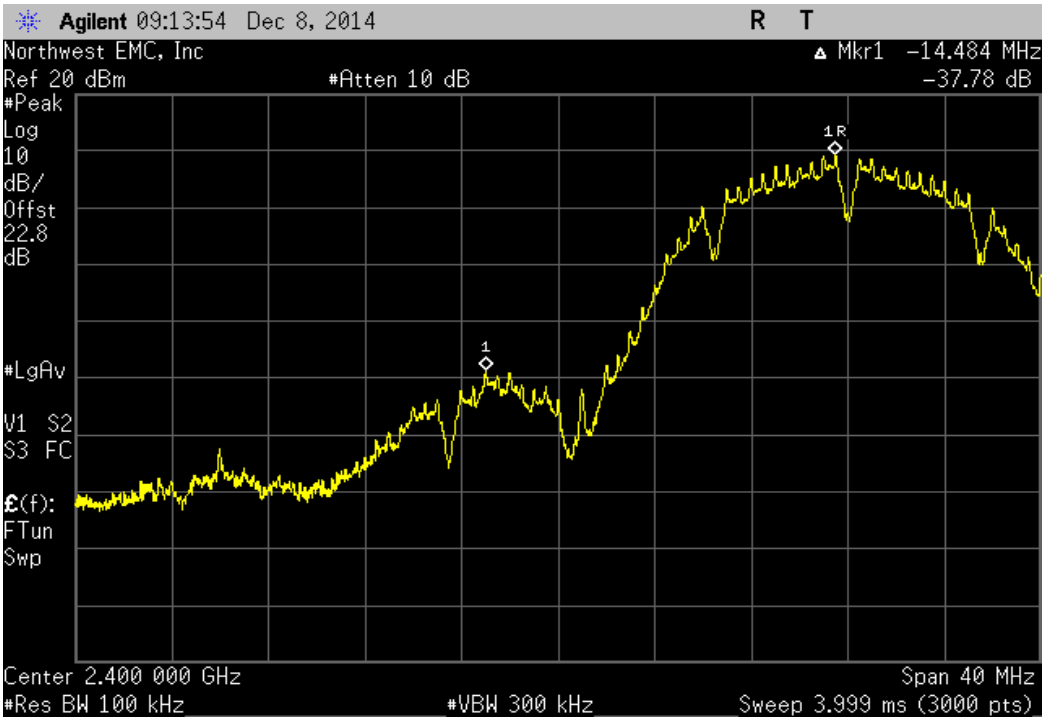
None

Configuration #	1	Signature

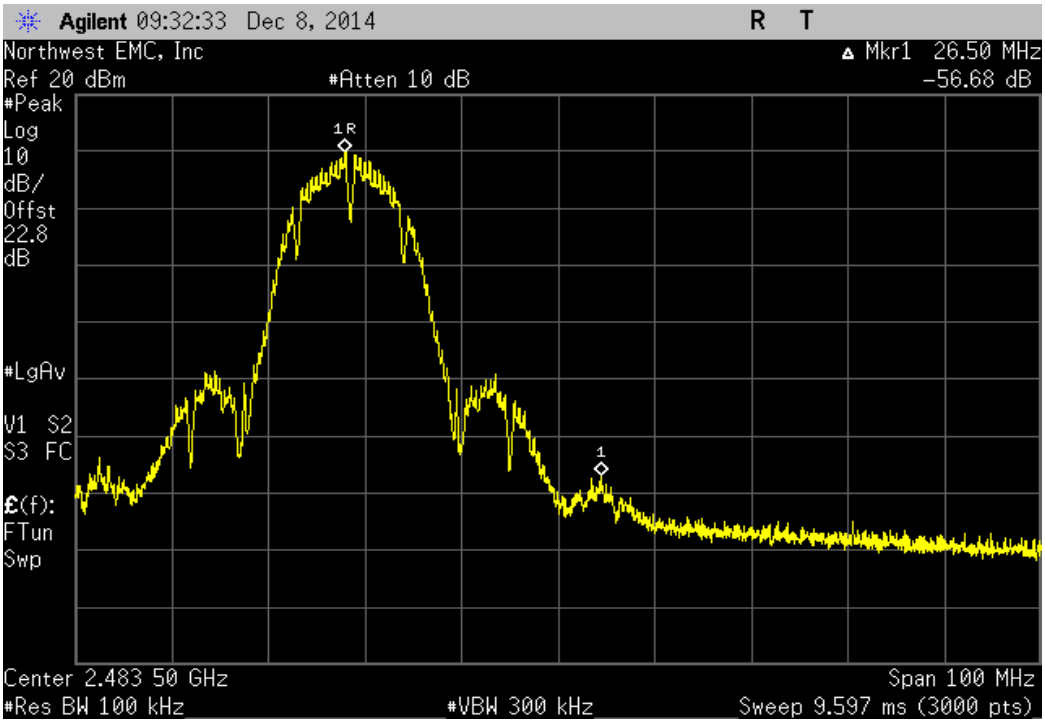
	Value (dBc)	Limit ≤ (dBc)	Result
2400 MHz - 2483.5 MHz Band			
802.11(b) 1 Mbps			
Low Channel 1, 2412 MHz	-37.78	-20	Pass
High Channel 11, 2462 MHz	-56.68	-20	Pass
802.11(b) 11 Mbps			
Low Channel 1, 2412 MHz	-38.79	-20	Pass
High Channel 11, 2462 MHz	-58.85	-20	Pass
802.11(g) 6 Mbps			
Low Channel 1, 2412 MHz	-33.84	-20	Pass
High Channel 11, 2462 MHz	-48.32	-20	Pass
802.11(g) 36 Mbps			
Low Channel 1, 2412 MHz	-34.25	-20	Pass
High Channel 11, 2462 MHz	-49.01	-20	Pass
802.11(g) 54 Mbps			
Low Channel 1, 2412 MHz	-36.68	-20	Pass
High Channel 11, 2462 MHz	-48.96	-20	Pass
802.11(n) MCS0			
Low Channel 1, 2412 MHz	-36.57	-20	Pass
High Channel 11, 2462 MHz	-47.45	-20	Pass
802.11(n) MCS7			
Low Channel 1, 2412 MHz	-37.43	-20	Pass
High Channel 11, 2462 MHz	-48.02	-20	Pass

BAND EDGE COMPLIANCE

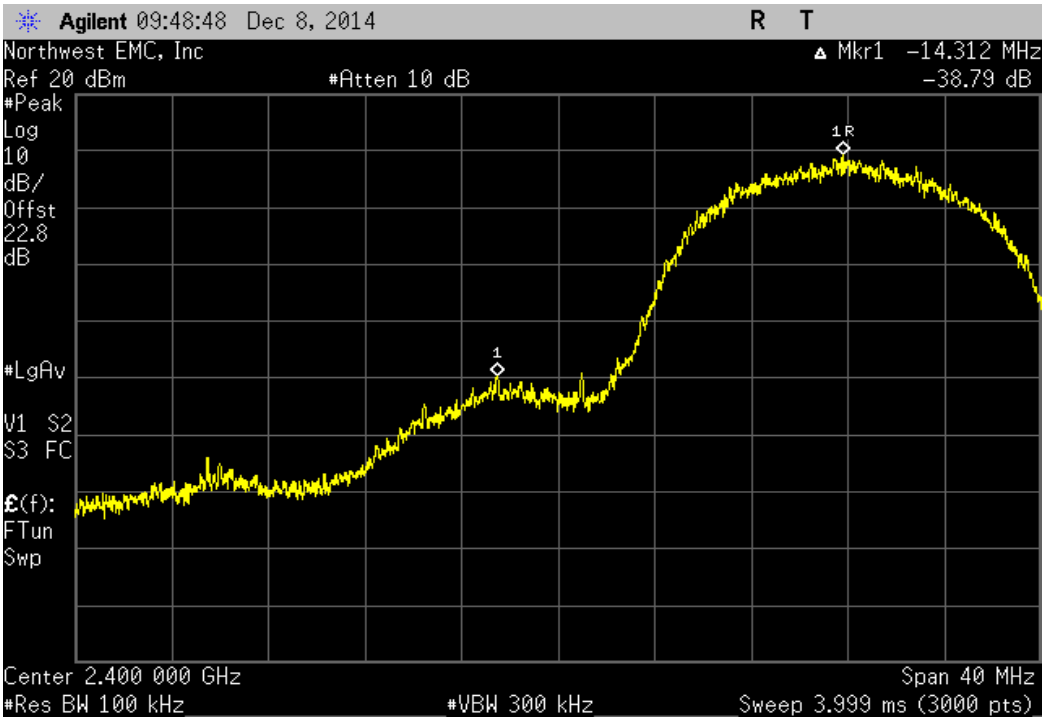
2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz							
					Value (dBc)	Limit ≤ (dBc)	Result
					-37.78	-20	Pass



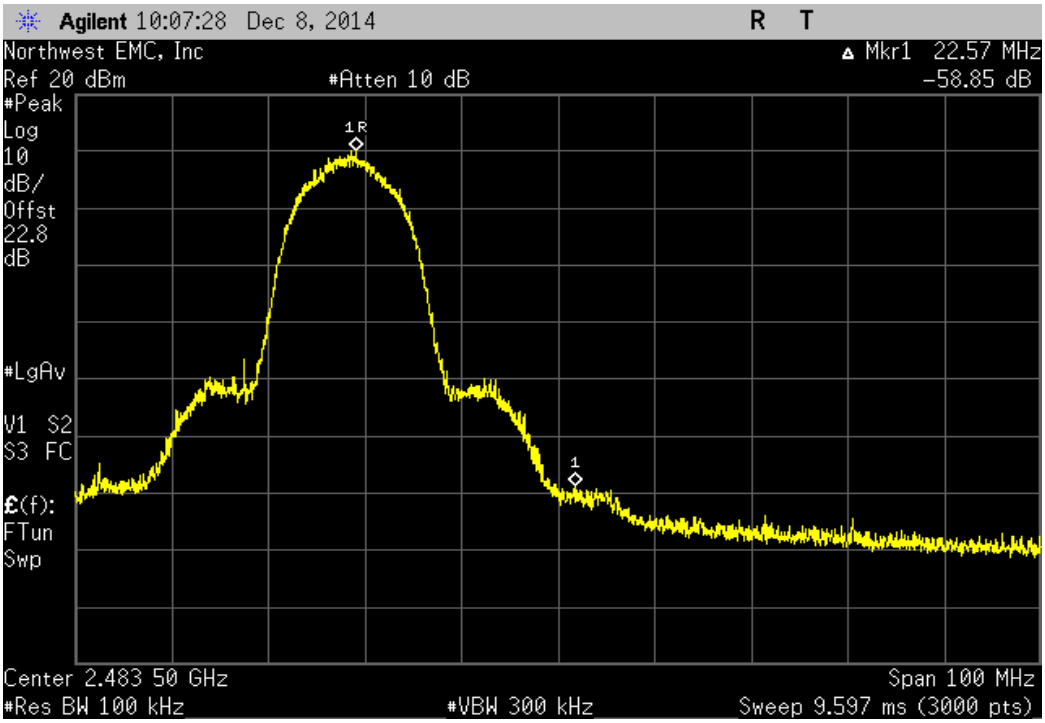
2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz							
					Value (dBc)	Limit ≤ (dBc)	Result
					-56.68	-20	Pass



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

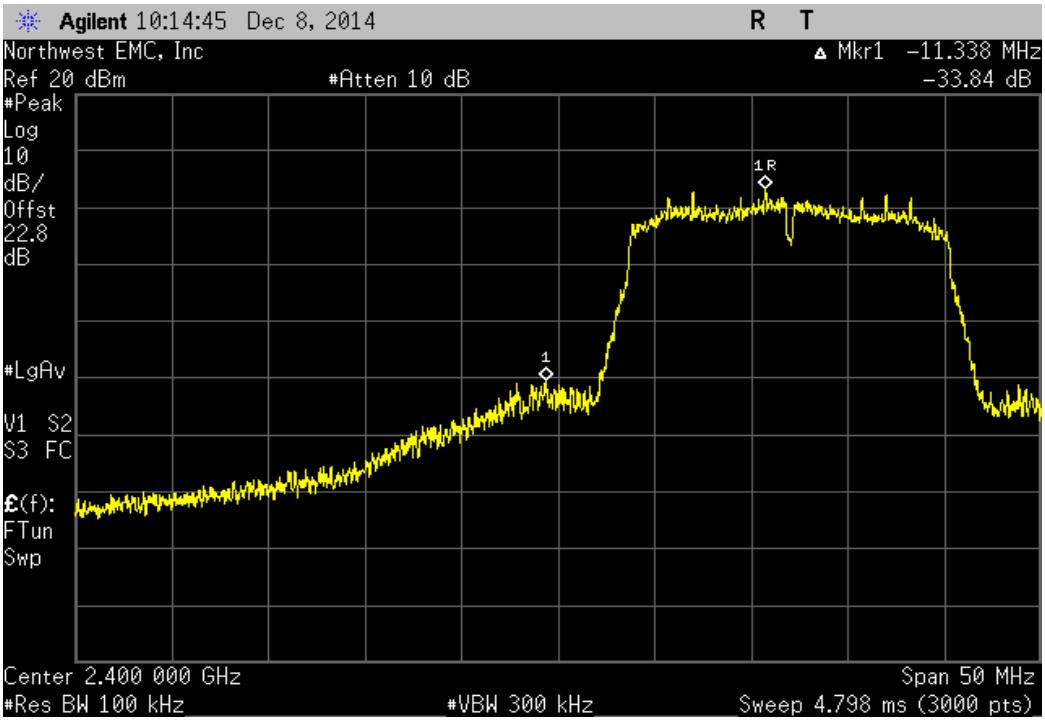


2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-58.85	-20	Pass

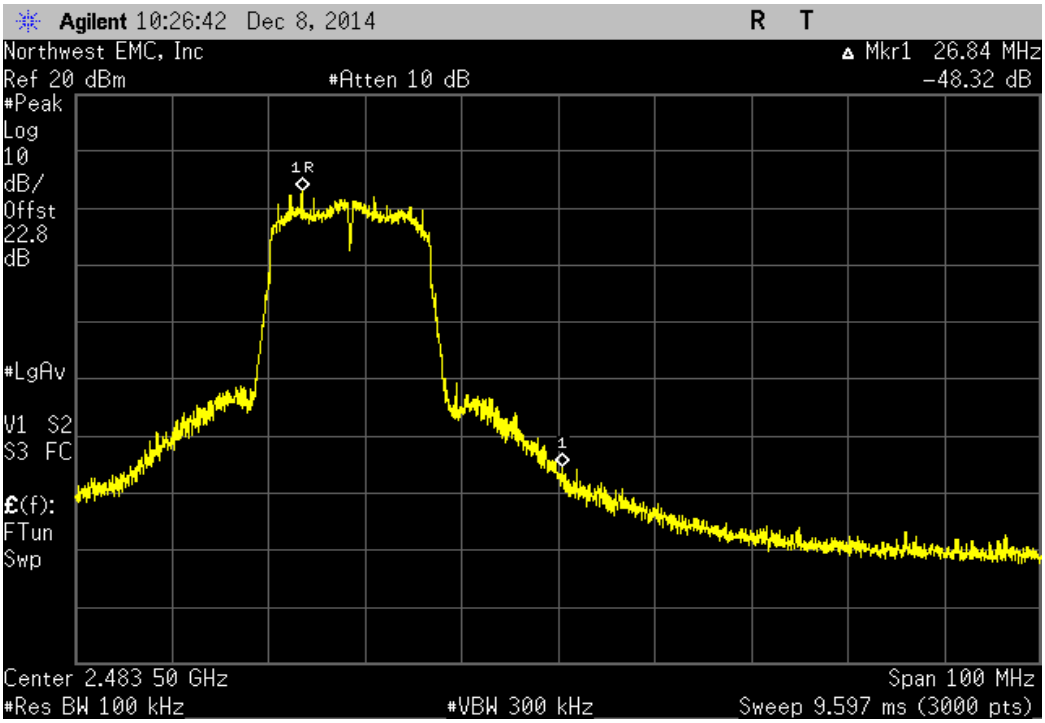


BAND EDGE COMPLIANCE

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

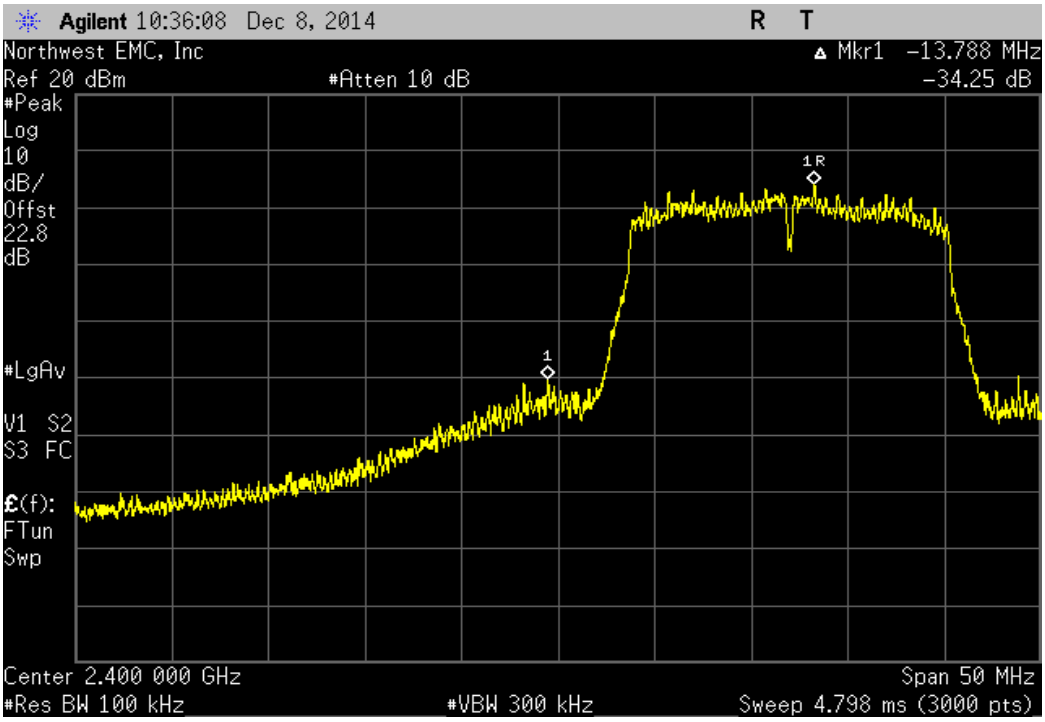


2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz							
					Value (dBc)	Limit ≤ (dBc)	Result
					-48.32	-20	Pass

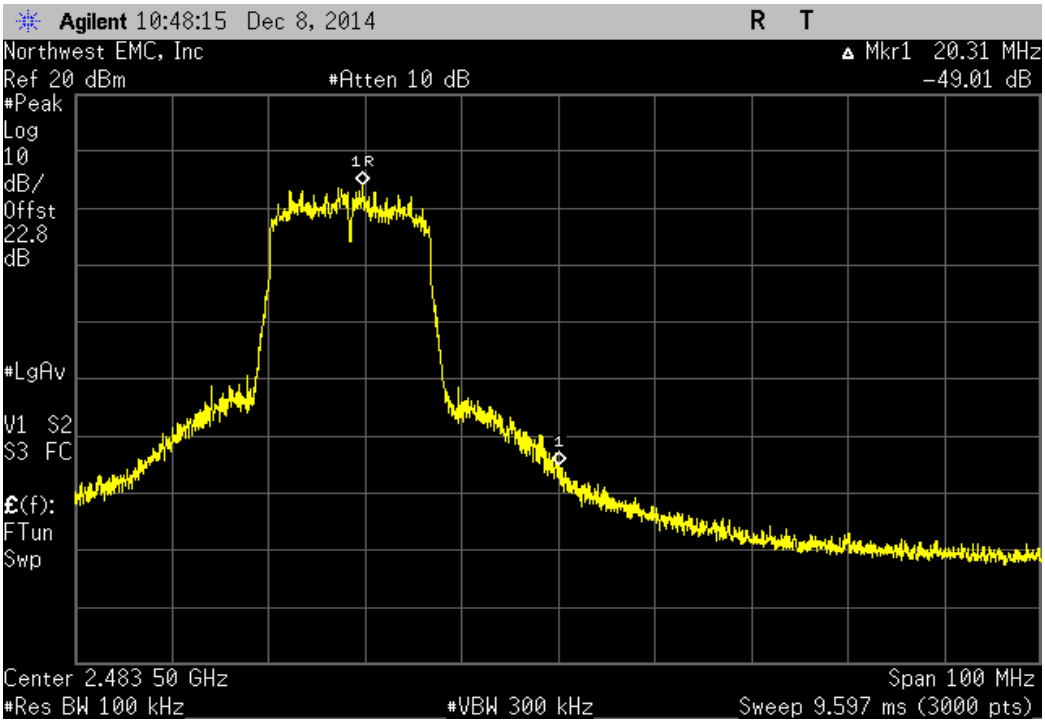


BAND EDGE COMPLIANCE

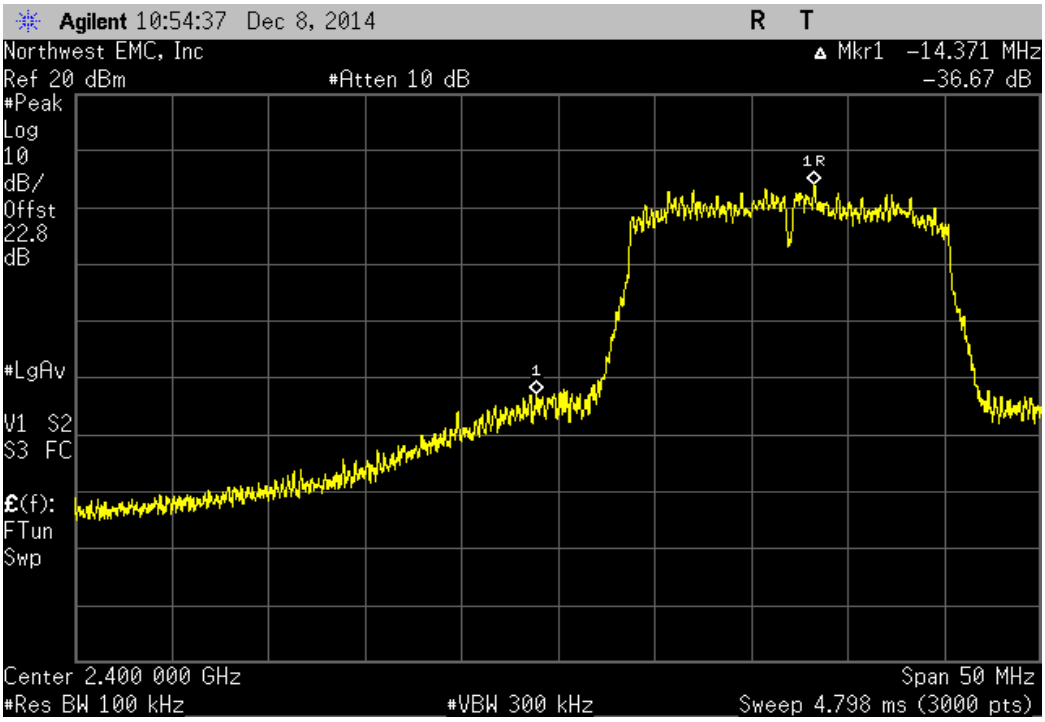
2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz						
					Value (dBc)	Limit ≤ (dBc)	Result
					-34.25	-20	Pass



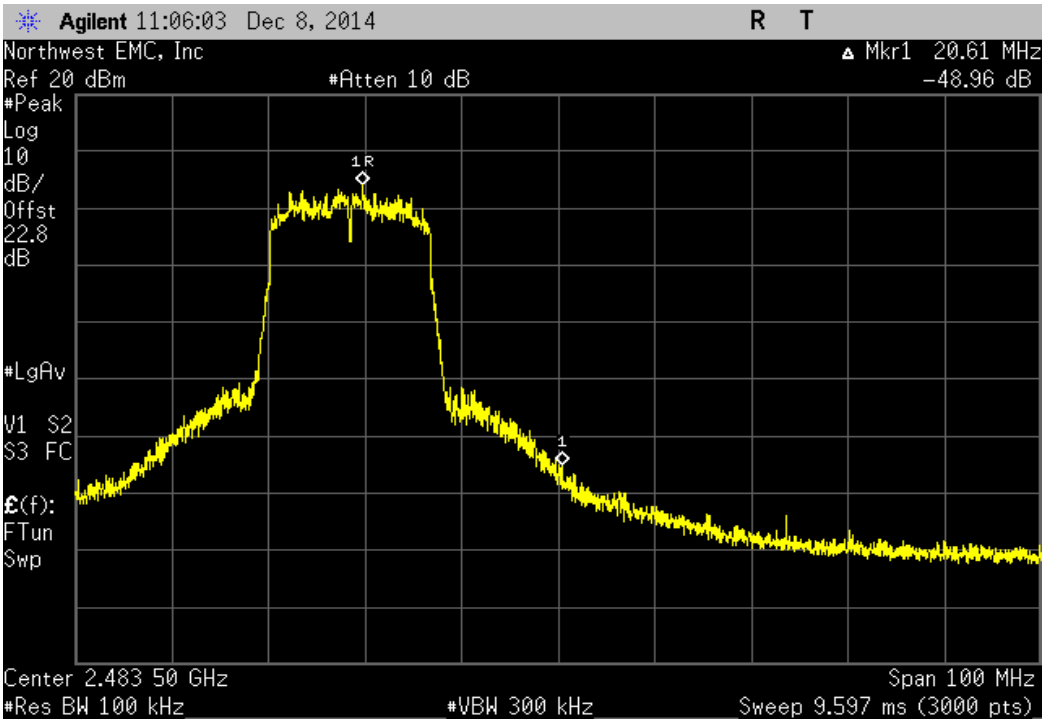
2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz						
					Value (dBc)	Limit ≤ (dBc)	Result
					-49.01	-20	Pass



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

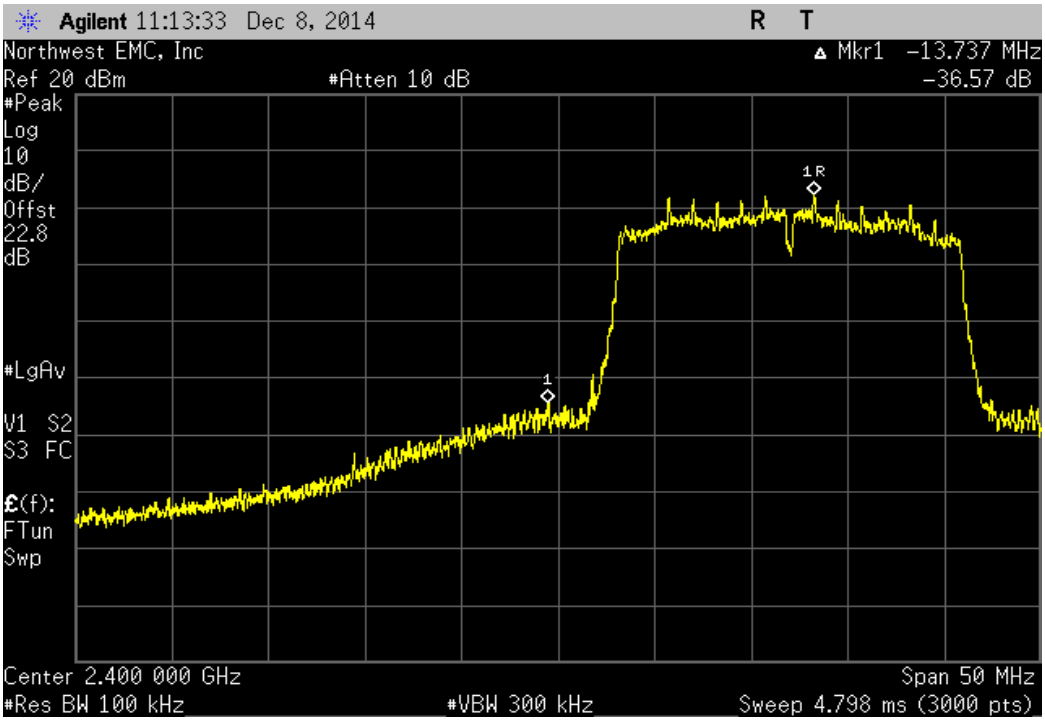


2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz							
					Value (dBc)	Limit ≤ (dBc)	Result
					-48.96	-20	Pass

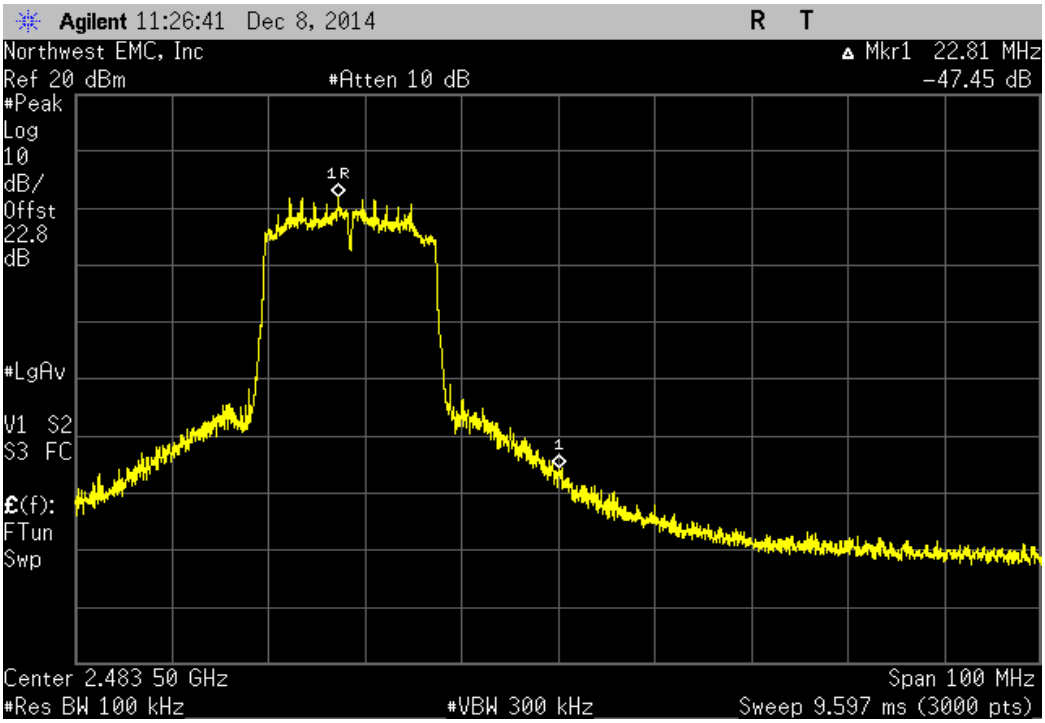


BAND EDGE COMPLIANCE

2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1, 2412 MHz							
					Value (dBc)	Limit ≤ (dBc)	Result
					-36.57	-20	Pass

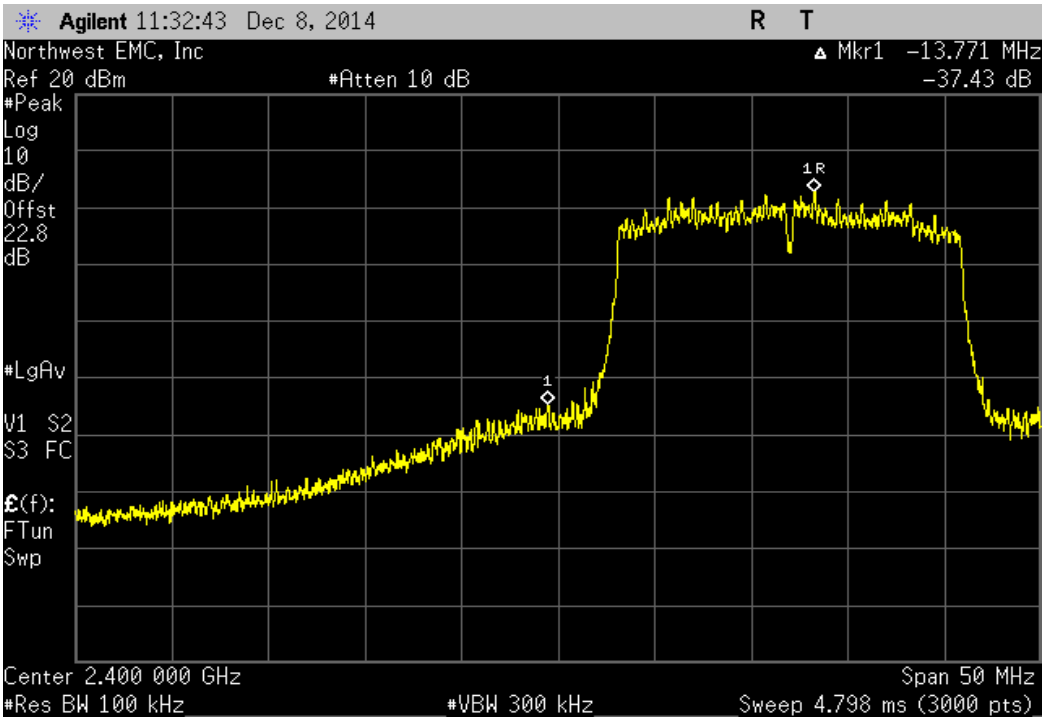


2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 11, 2462 MHz							
					Value (dBc)	Limit ≤ (dBc)	Result
					-47.45	-20	Pass

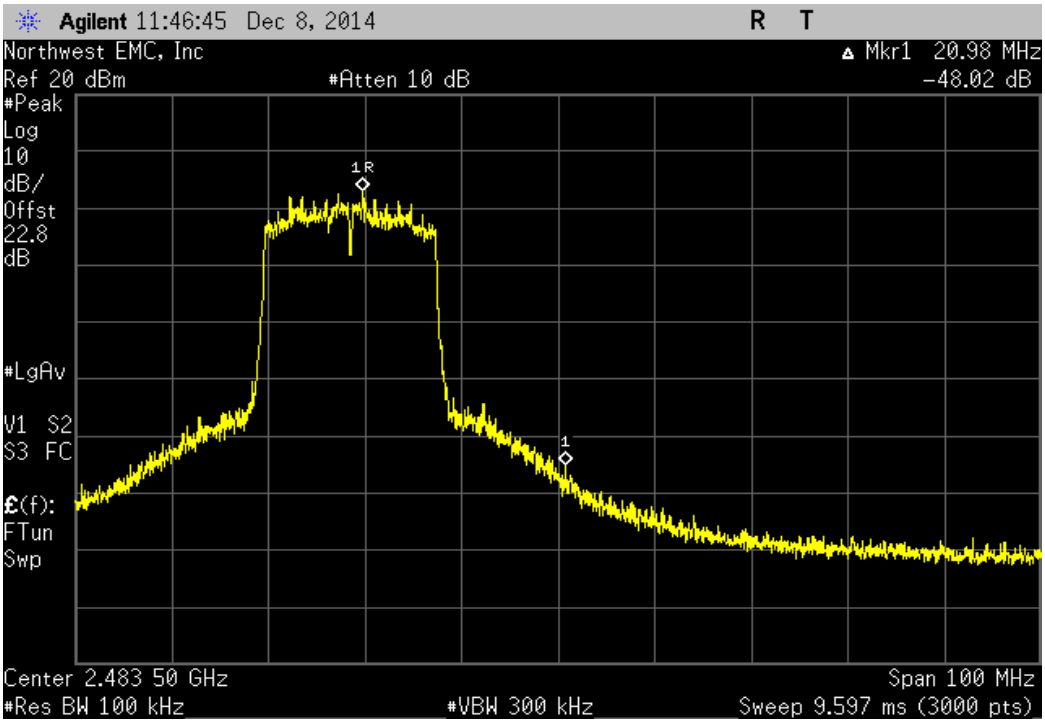


BAND EDGE COMPLIANCE

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

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

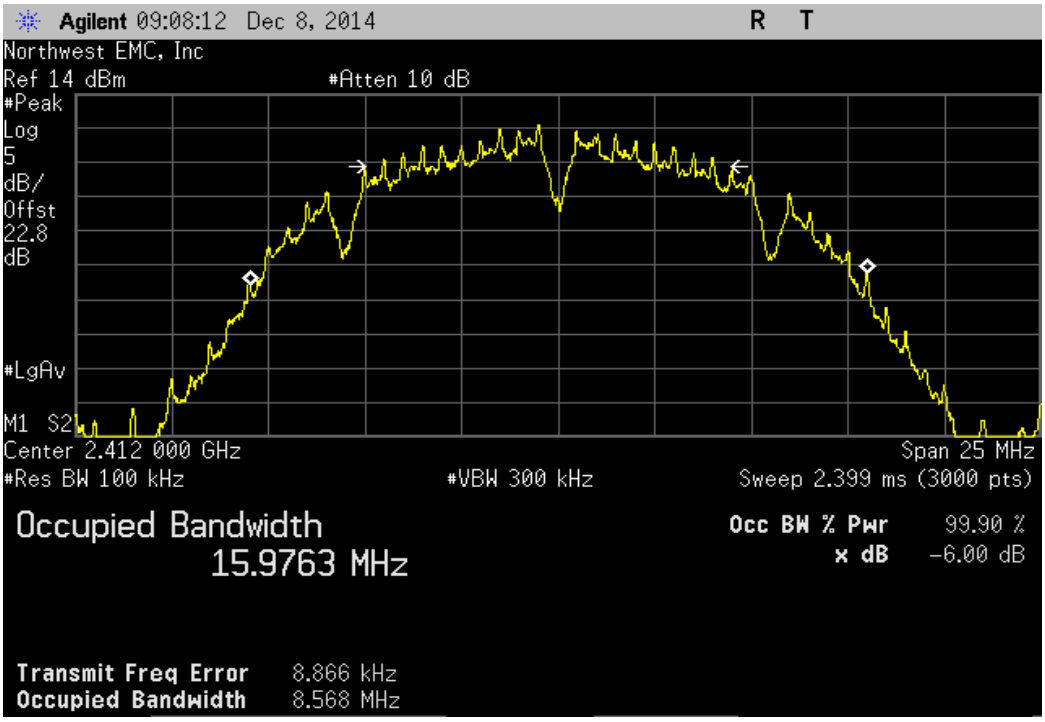
None

Configuration #	1	Signature

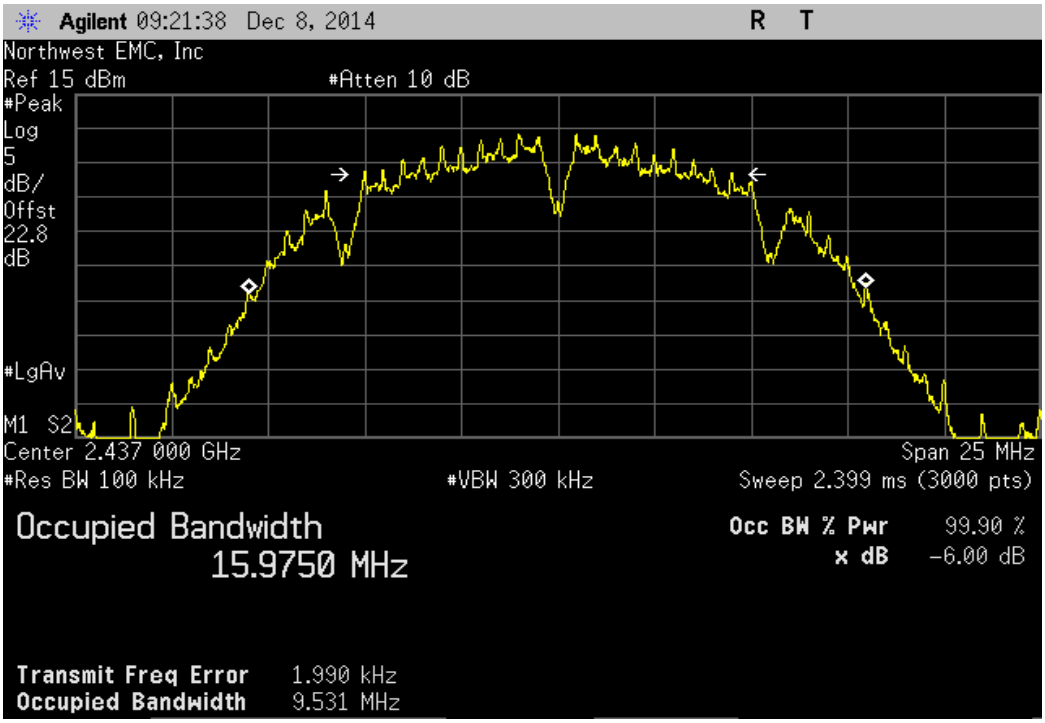
		Value	Limit (>)	Result
2400 MHz - 2483.5 MHz Band				
	802.11(b) 1 Mbps			
	Low Channel 1, 2412 MHz	8.568 MHz	500 kHz	Pass
	Mid Channel 6, 2437 MHz	9.531 MHz	500 kHz	Pass
	High Channel 11, 2462 MHz	8.071 MHz	500 kHz	Pass
	802.11(b) 11 Mbps			
	Low Channel 1, 2412 MHz	9.48 MHz	500 kHz	Pass
	Mid Channel 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

OCCUPIED BANDWIDTH

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

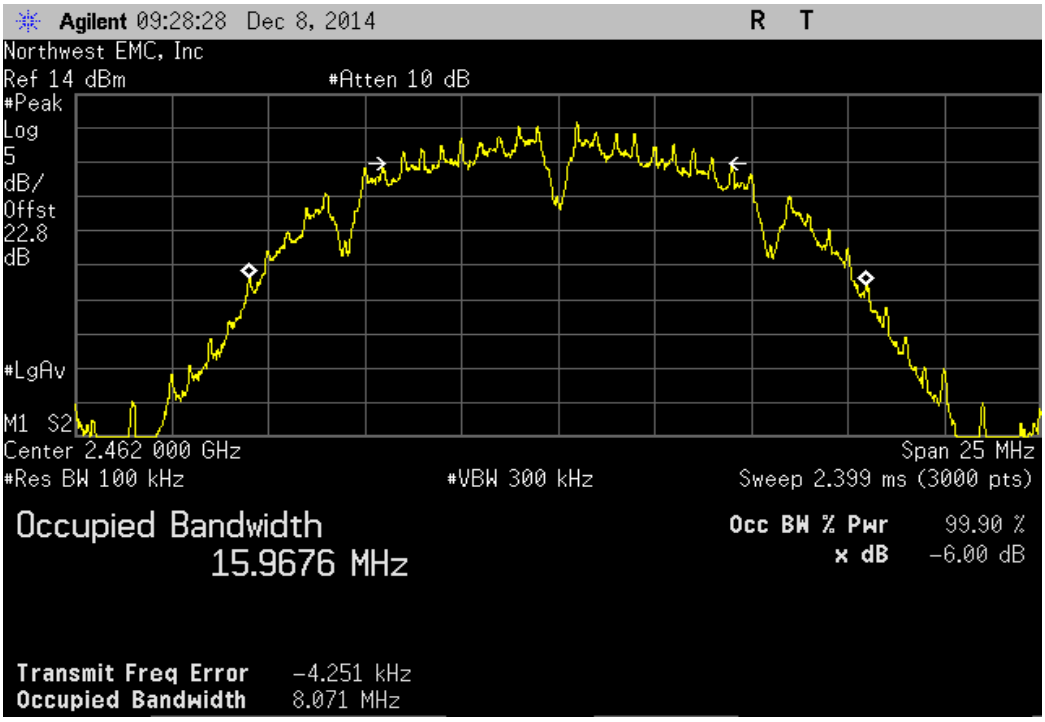


2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz						
				Value	Limit (>)	Result
				9.531 MHz	500 kHz	Pass

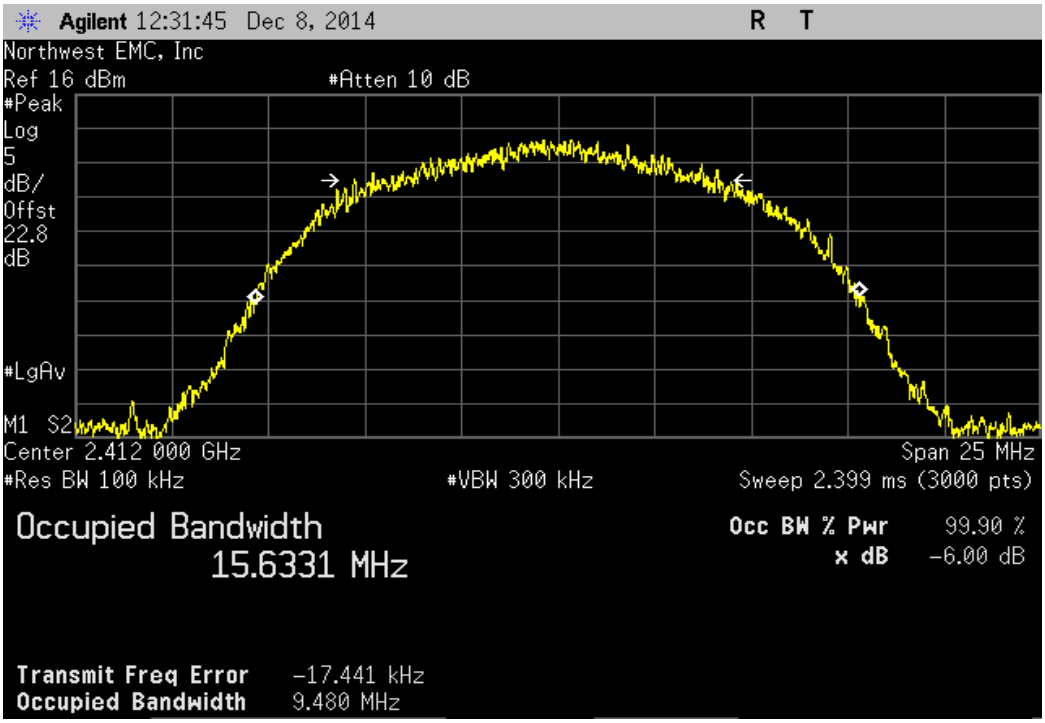


OCCUPIED BANDWIDTH

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

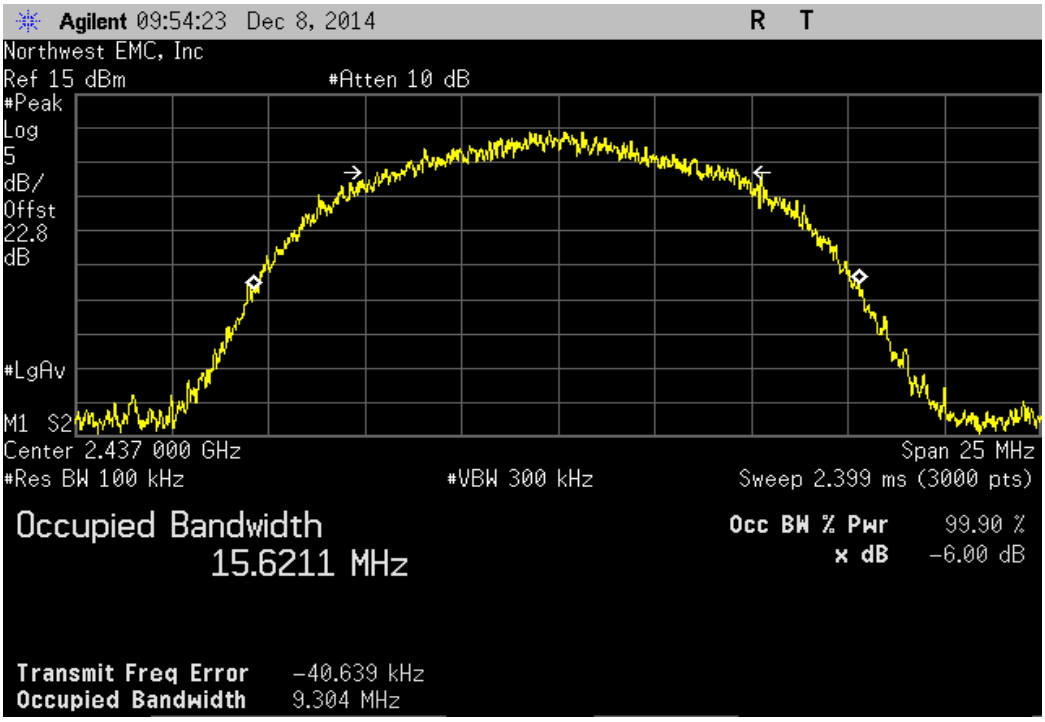


2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz						
				Value	Limit (>)	Result
				9.48 MHz	500 kHz	Pass

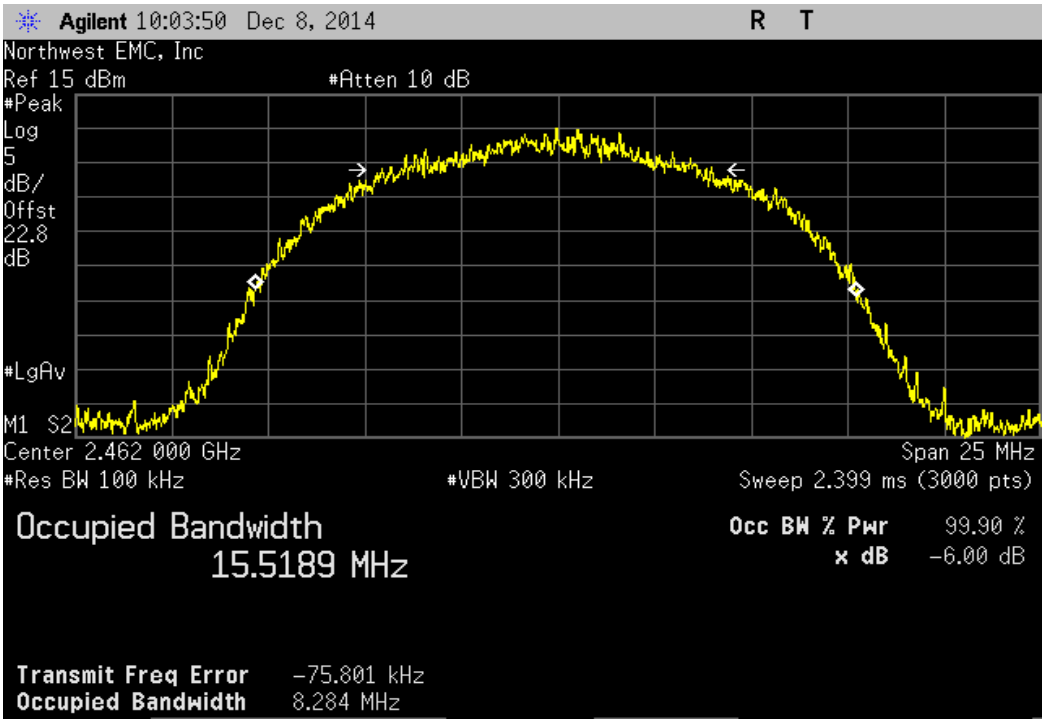


OCCUPIED BANDWIDTH

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

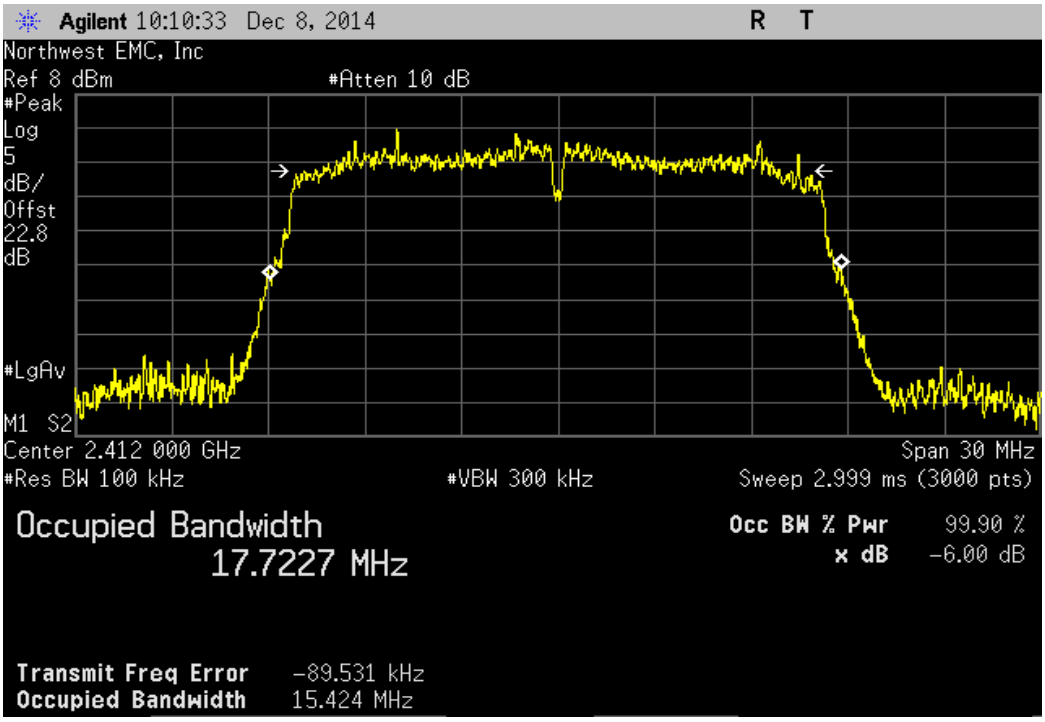


2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz						
				Value	Limit (>)	Result
				8.284 MHz	500 kHz	Pass

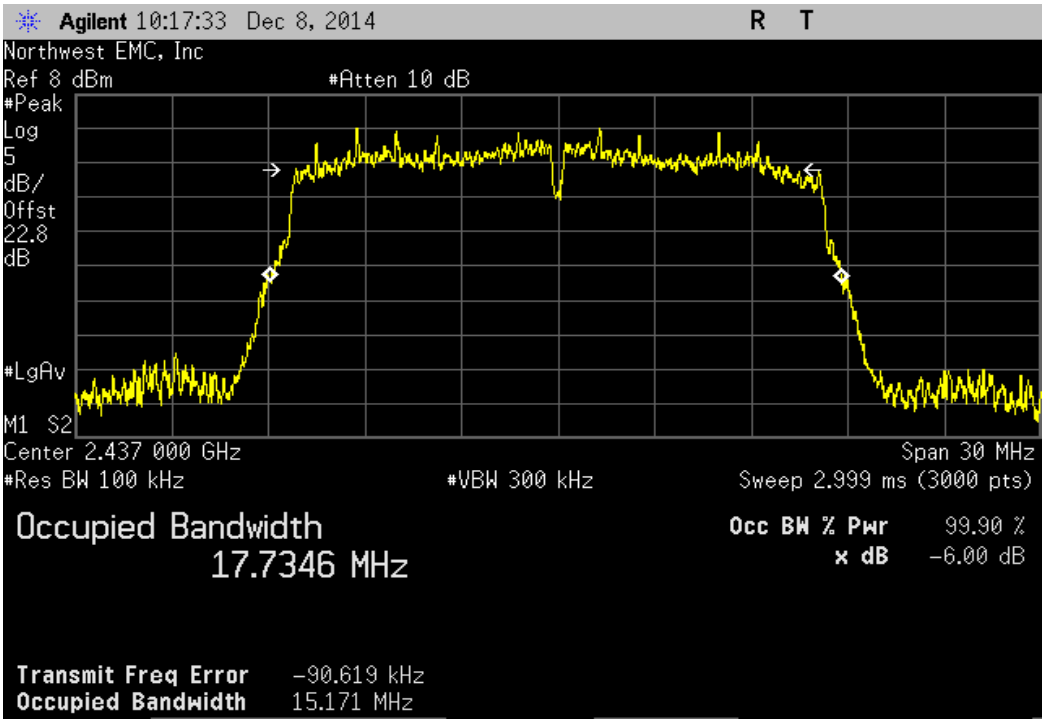


OCCUPIED BANDWIDTH

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

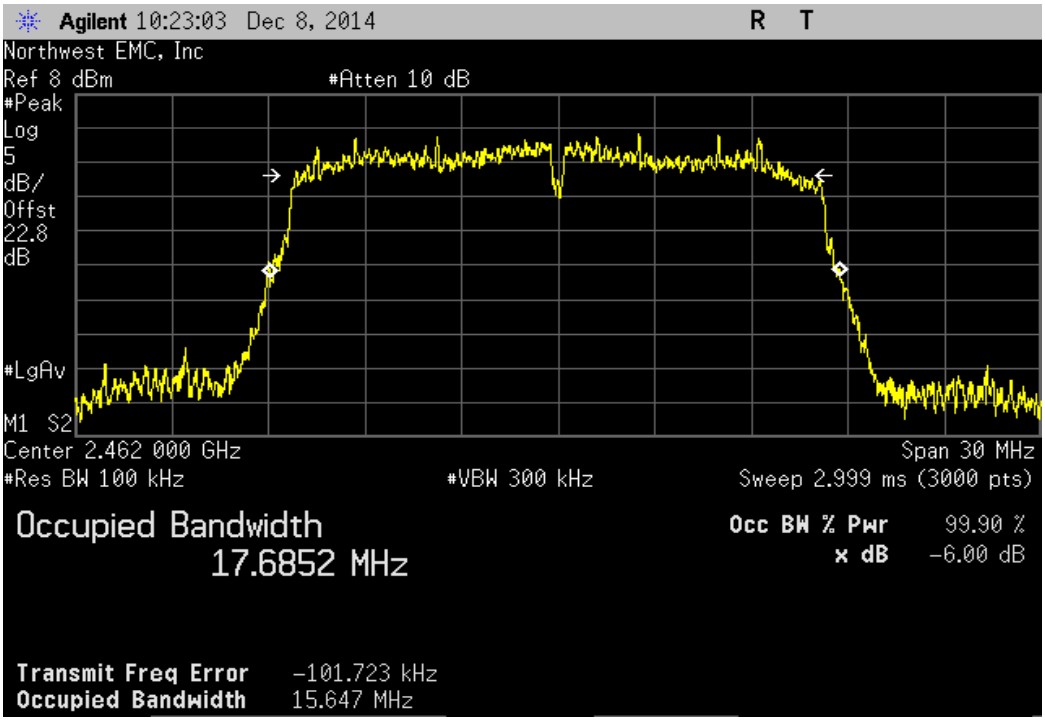


2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz							
					Value	Limit (>)	Result
					15.171 MHz	500 kHz	Pass

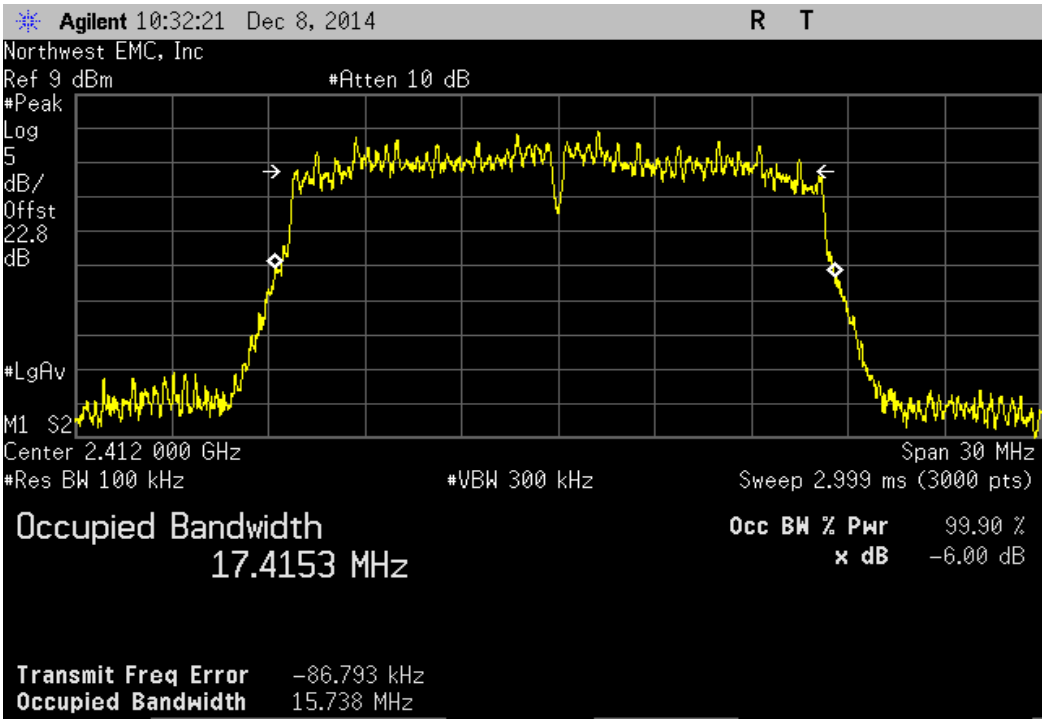


OCCUPIED BANDWIDTH

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

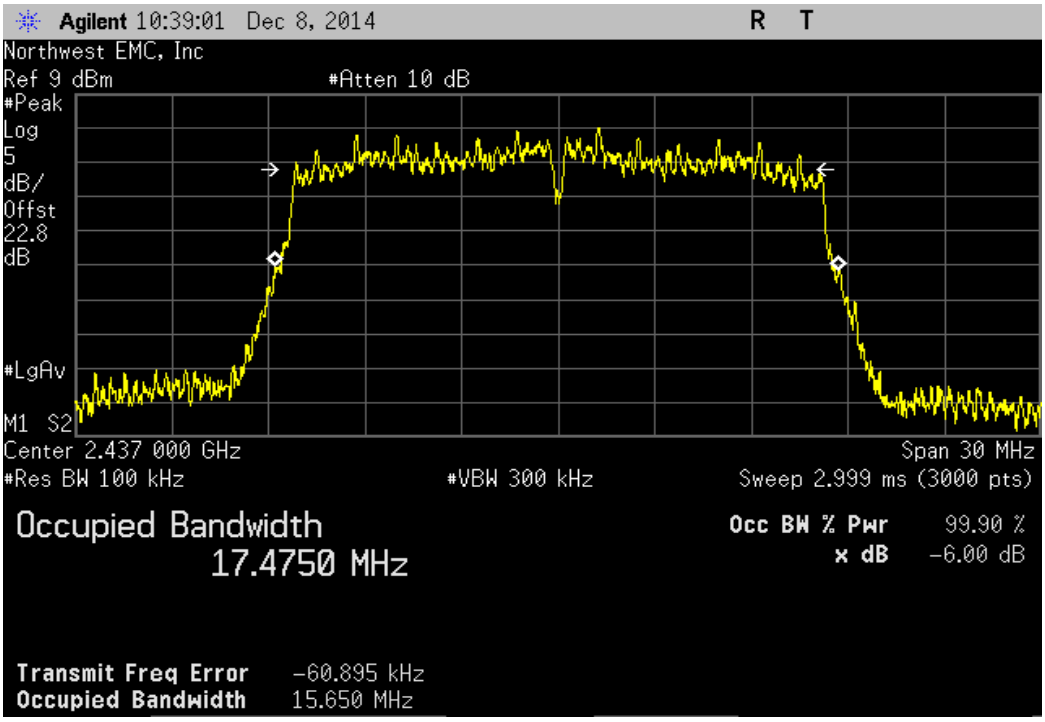


2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz							
					Value	Limit (>)	Result
					15.738 MHz	500 kHz	Pass

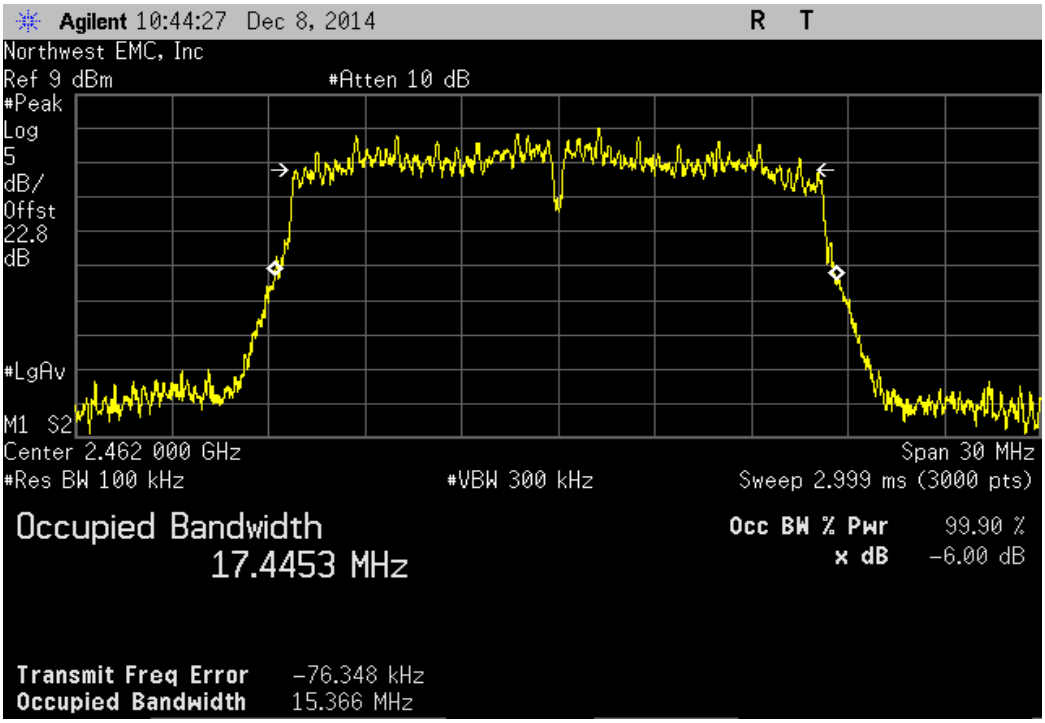


OCCUPIED BANDWIDTH

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

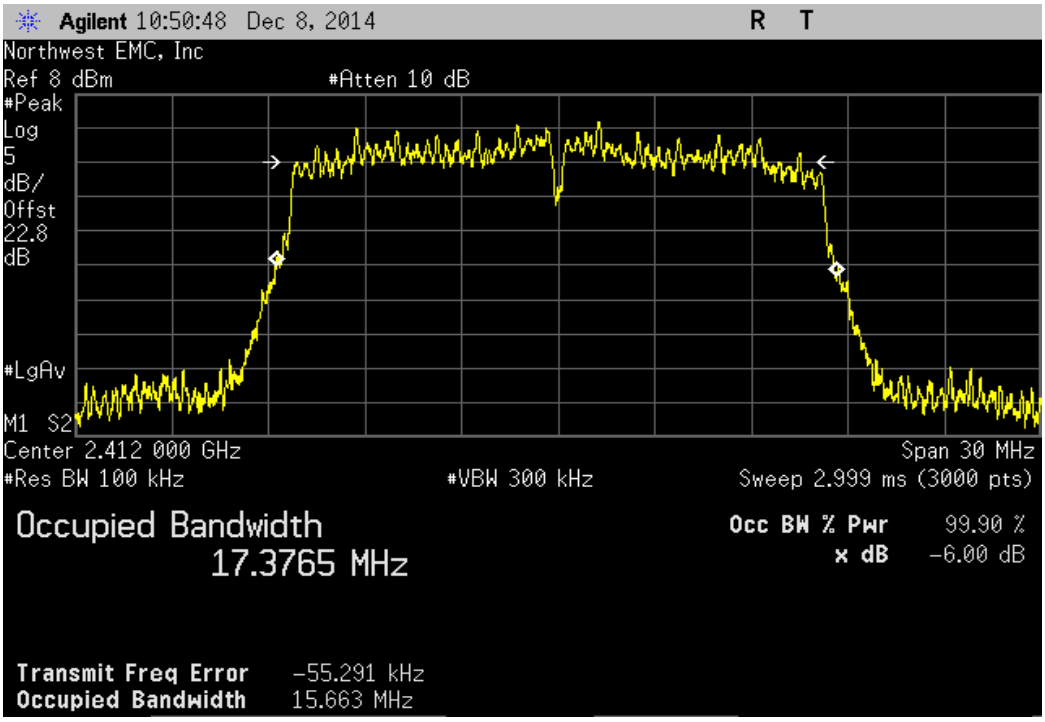


2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz						
				Value	Limit (>)	Result
				15.366 MHz	500 kHz	Pass

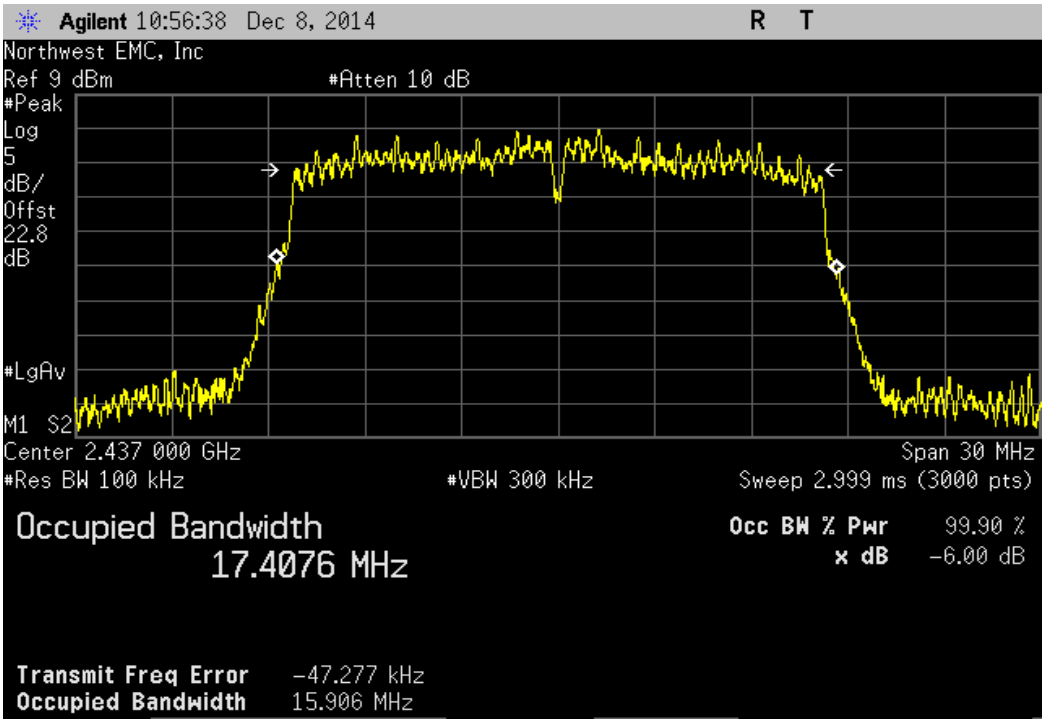


OCCUPIED BANDWIDTH

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



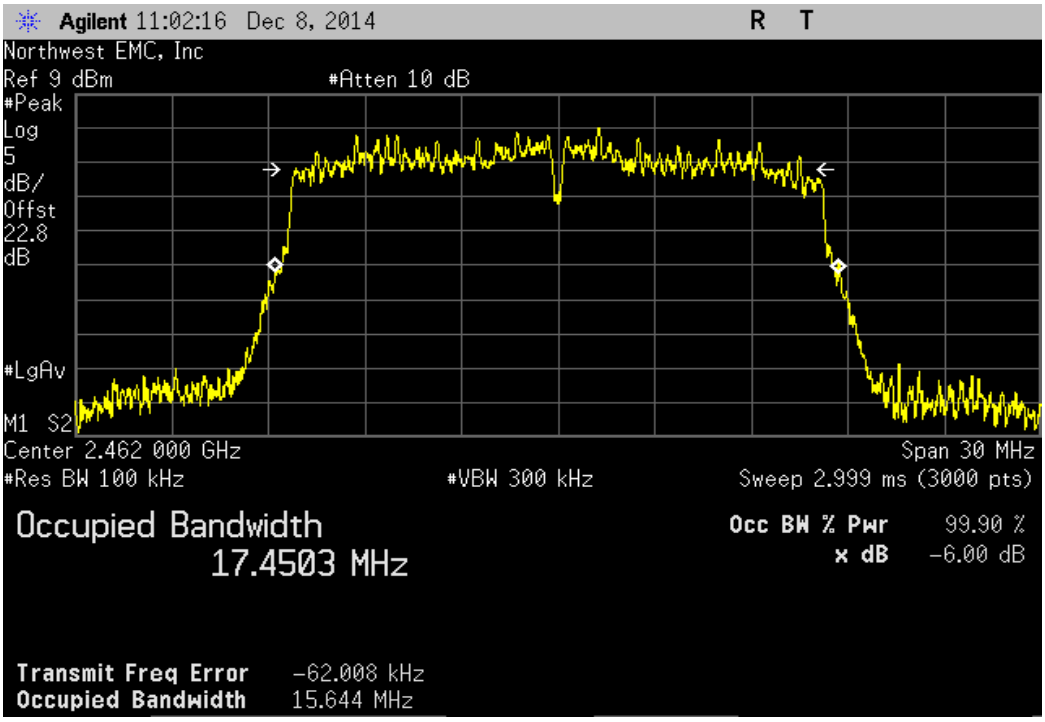
2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz						
				Value	Limit (>)	Result
				15.906 MHz	500 kHz	Pass



OCCUPIED BANDWIDTH

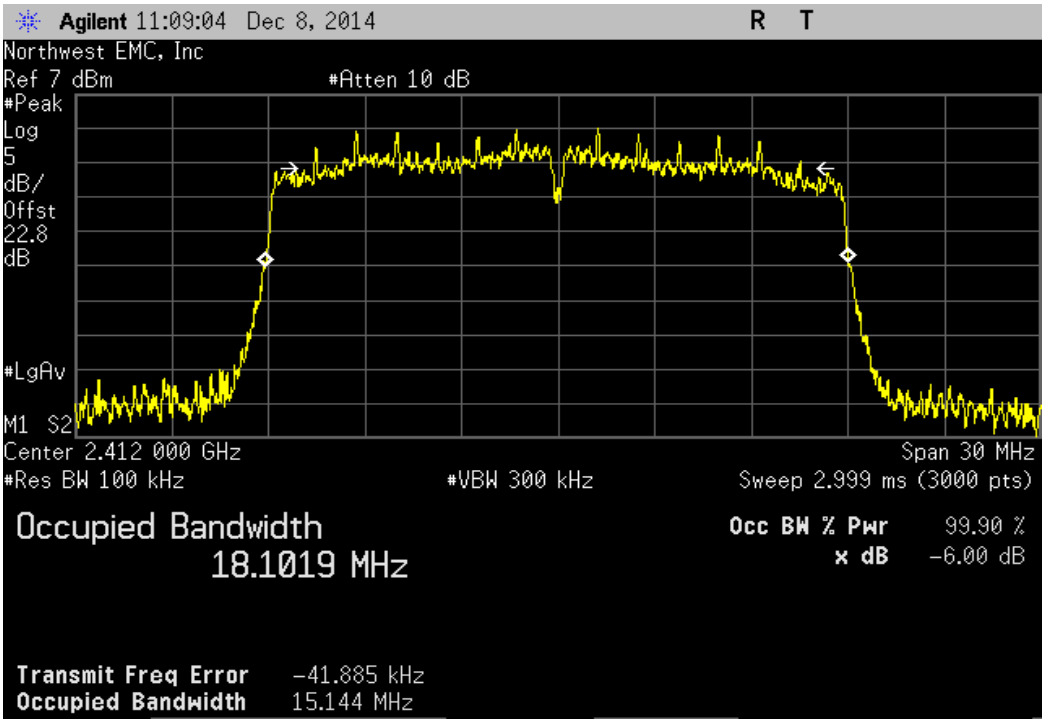
2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz

				Value	Limit (>)	Result
				15.644 MHz	500 kHz	Pass

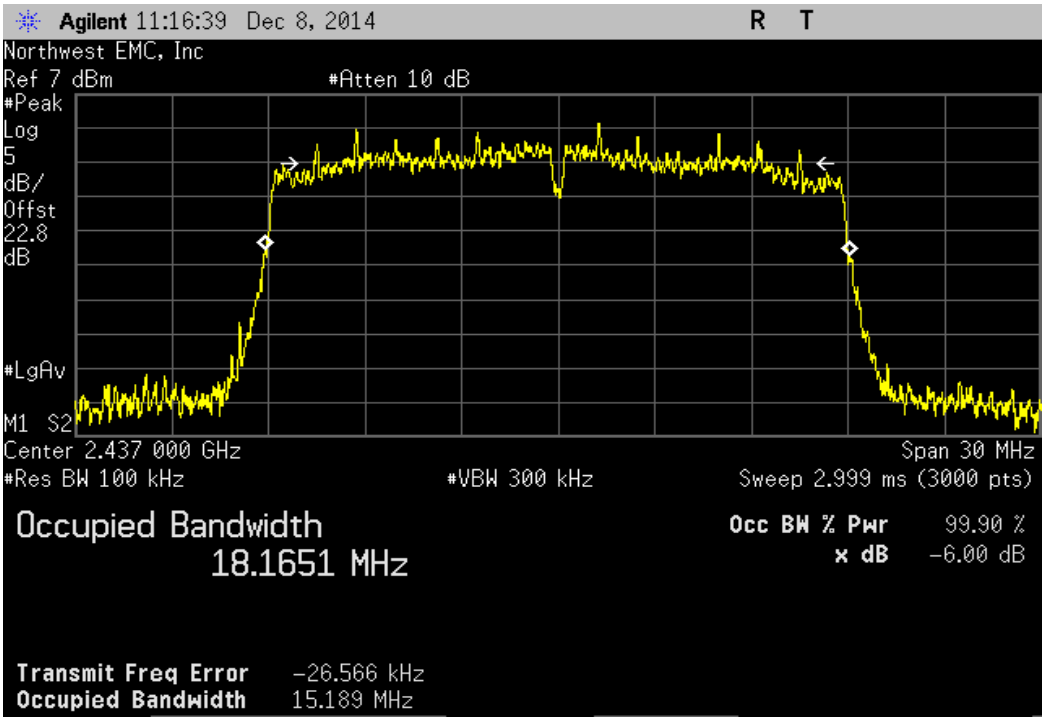


2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1, 2412 MHz

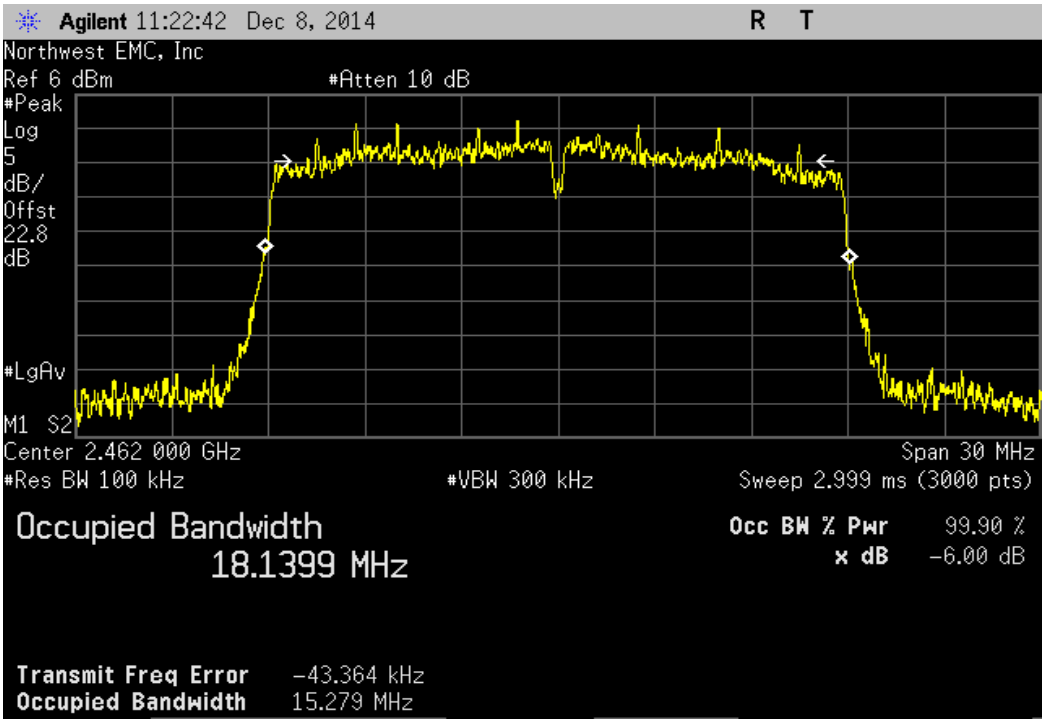
				Value	Limit (>)	Result
				15.144 MHz	500 kHz	Pass



2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Mid Channel 6, 2437 MHz						
				Value	Limit (>)	Result
				15.189 MHz	500 kHz	Pass

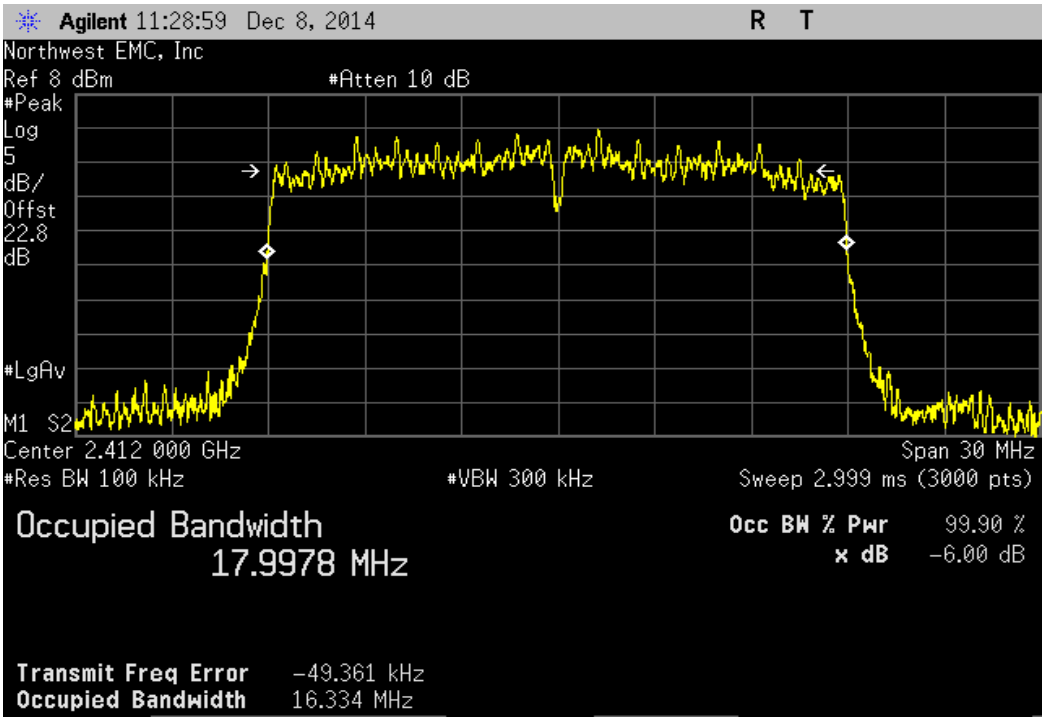


2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 11, 2462 MHz						
				Value	Limit (>)	Result
				15.279 MHz	500 kHz	Pass

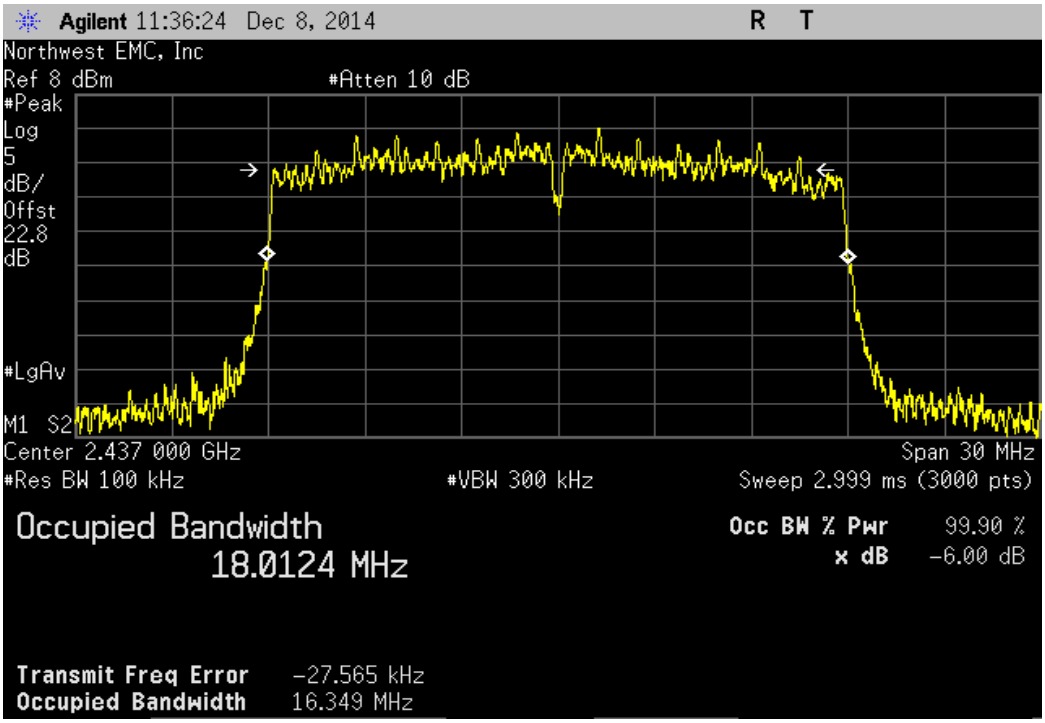


OCCUPIED BANDWIDTH

2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1, 2412 MHz						
				Value	Limit (>)	Result
				16.334 MHz	500 kHz	Pass

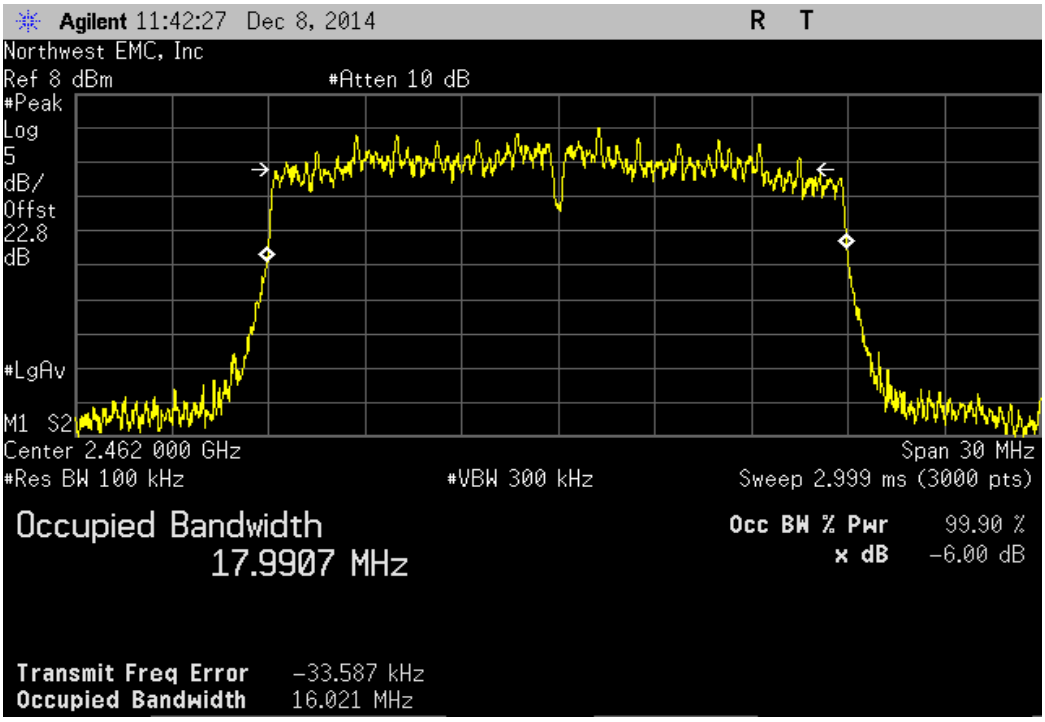


2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Mid Channel 6, 2437 MHz						
				Value	Limit (>)	Result
				16.349 MHz	500 kHz	Pass



OCCUPIED BANDWIDTH

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

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

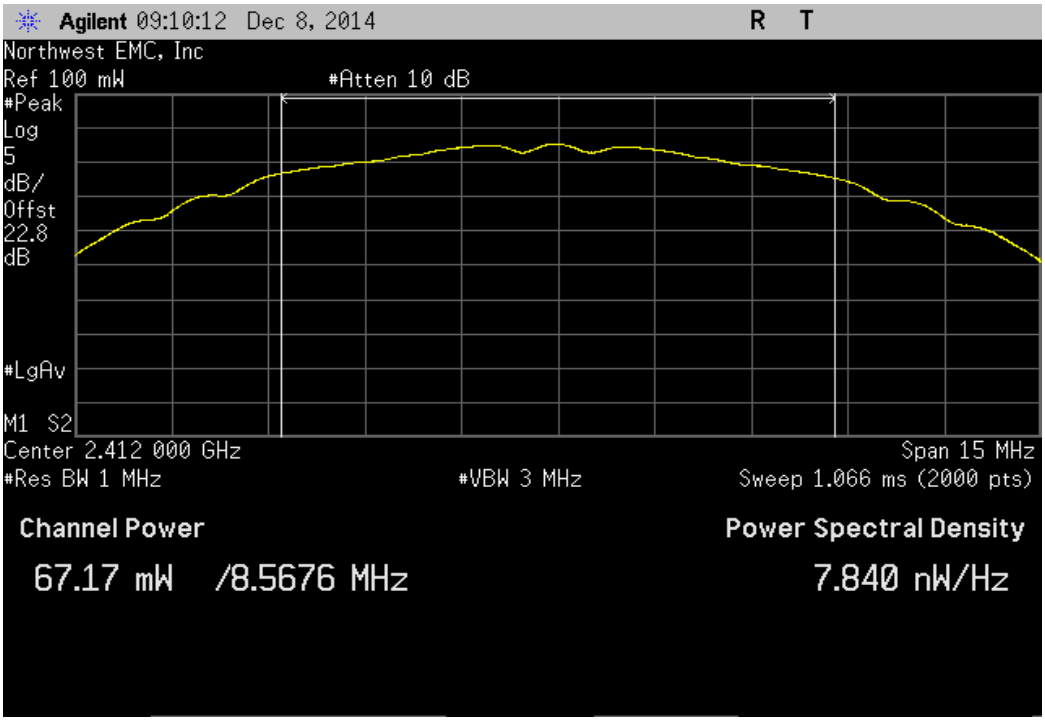
None

Configuration #	1	Signature

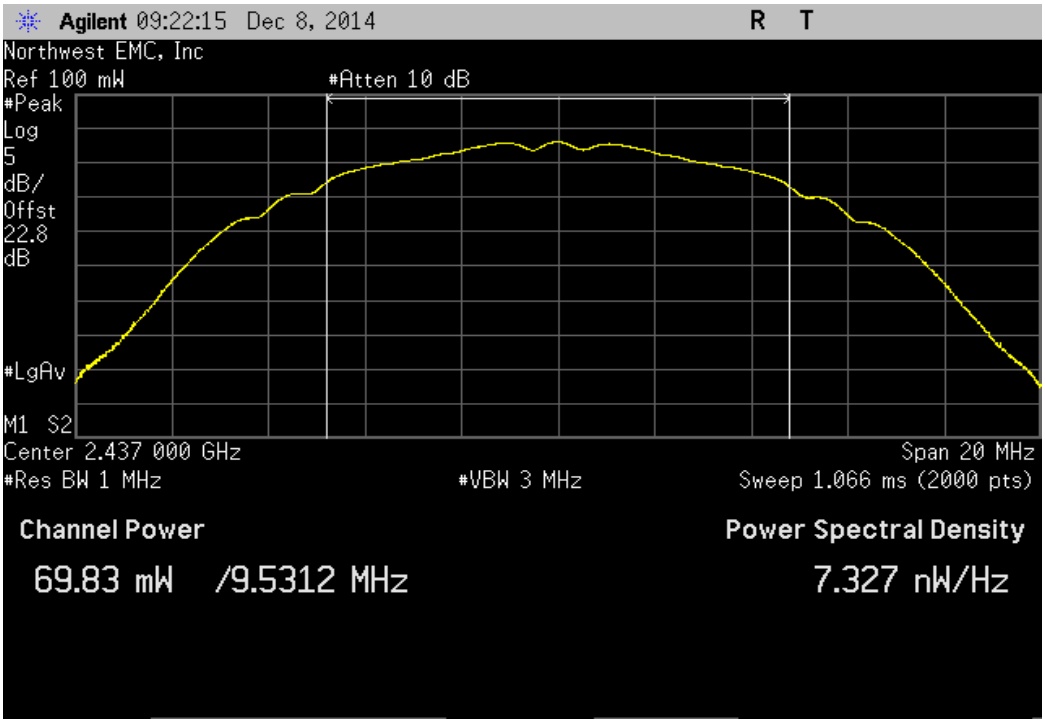
	Value	Limit (<)	Result
2400 MHz - 2483.5 MHz Band			
802.11(b) 1 Mbps			
Low Channel 1, 2412 MHz	67.172 mW	1 W	Pass
Mid Channel 6, 2437 MHz	69.832 mW	1 W	Pass
High Channel 11, 2462 MHz	59.3 mW	1 W	Pass
802.11(b) 11 Mbps			
Low Channel 1, 2412 MHz	85.909 mW	1 W	Pass
Mid Channel 6, 2437 MHz	88.325 mW	1 W	Pass
High Channel 11, 2462 MHz	80.852 mW	1 W	Pass
802.11(g) 6 Mbps			
Low Channel 1, 2412 MHz	36.942 mW	1 W	Pass
Mid Channel 6, 2437 MHz	37.974 mW	1 W	Pass
High Channel 11, 2462 MHz	36.8 mW	1 W	Pass
802.11(g) 36 Mbps			
Low Channel 1, 2412 MHz	34.977 mW	1 W	Pass
Mid Channel 6, 2437 MHz	37.772 mW	1 W	Pass
High Channel 11, 2462 MHz	36.363 mW	1 W	Pass
802.11(g) 54 Mbps			
Low Channel 1, 2412 MHz	33.522 mW	1 W	Pass
Mid Channel 6, 2437 MHz	36.082 mW	1 W	Pass
High Channel 11, 2462 MHz	35.209 mW	1 W	Pass
802.11(n) MCS0			
Low Channel 1, 2412 MHz	25.451 mW	1 W	Pass
Mid Channel 6, 2437 MHz	27.669 mW	1 W	Pass
High Channel 11, 2462 MHz	27.007 mW	1 W	Pass
802.11(n) MCS7			
Low Channel 1, 2412 MHz	25.254 mW	1 W	Pass
Mid Channel 6, 2437 MHz	26.765 mW	1 W	Pass
High Channel 11, 2462 MHz	26.619 mW	1 W	Pass

OUTPUT POWER

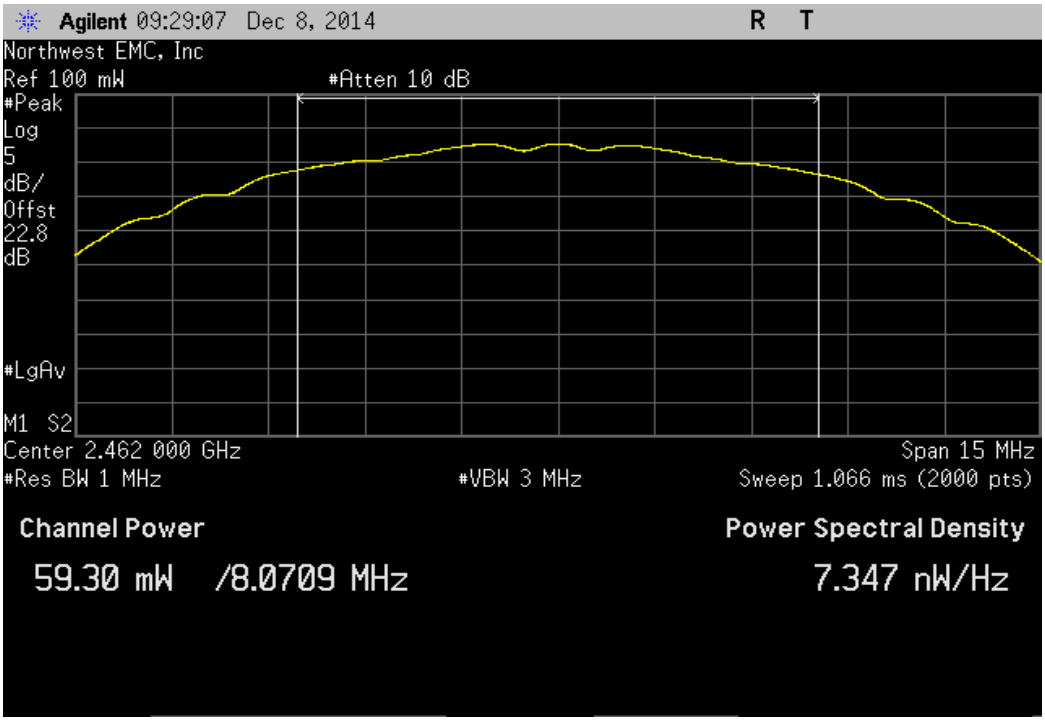
2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz							
					Value	Limit (<)	Result
					67.172 mW	1 W	Pass



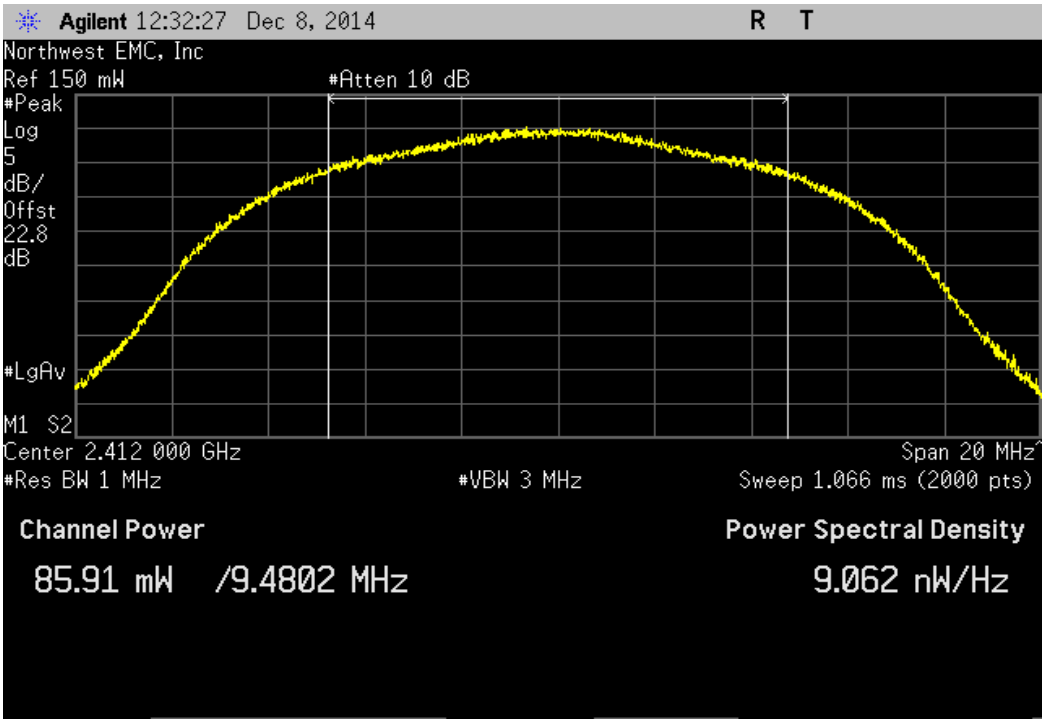
2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz							
					Value	Limit (<)	Result
					69.832 mW	1 W	Pass



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

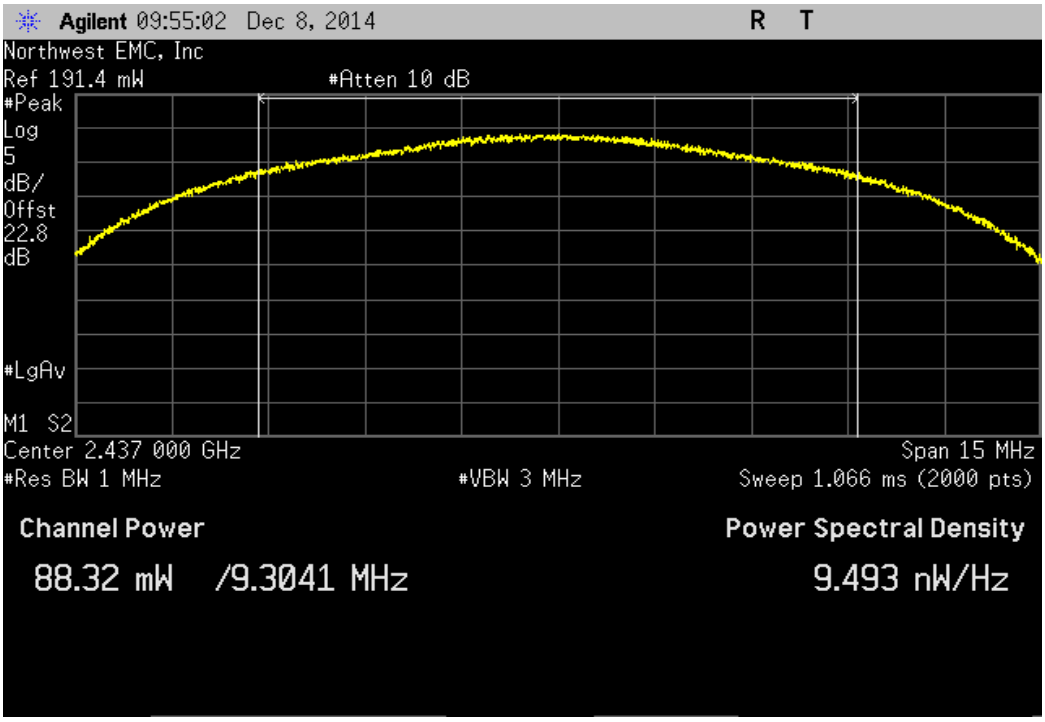


2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz						
				Value	Limit (<)	Result
				85.909 mW	1 W	Pass

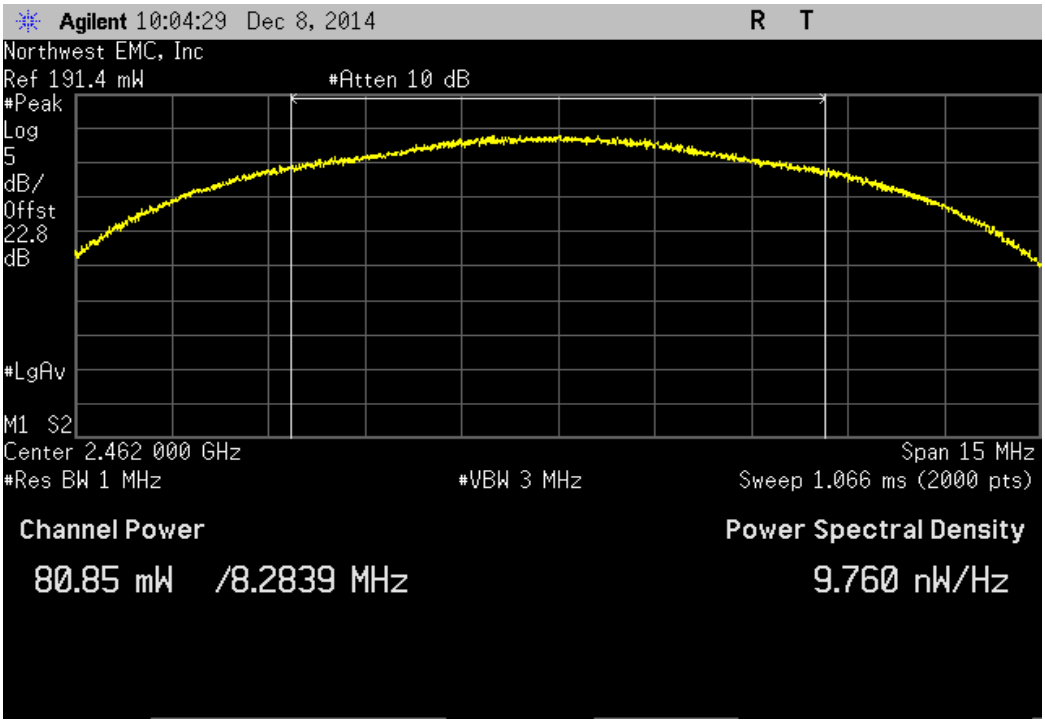


OUTPUT POWER

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

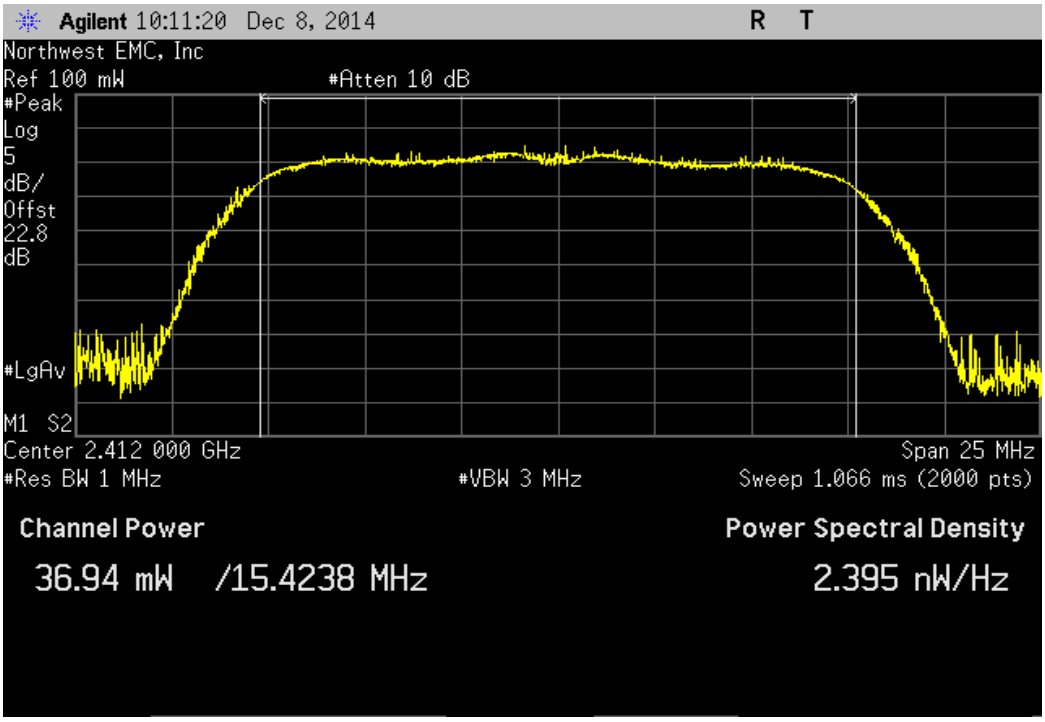


2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz							
					Value	Limit (<)	Result
					80.852 mW	1 W	Pass

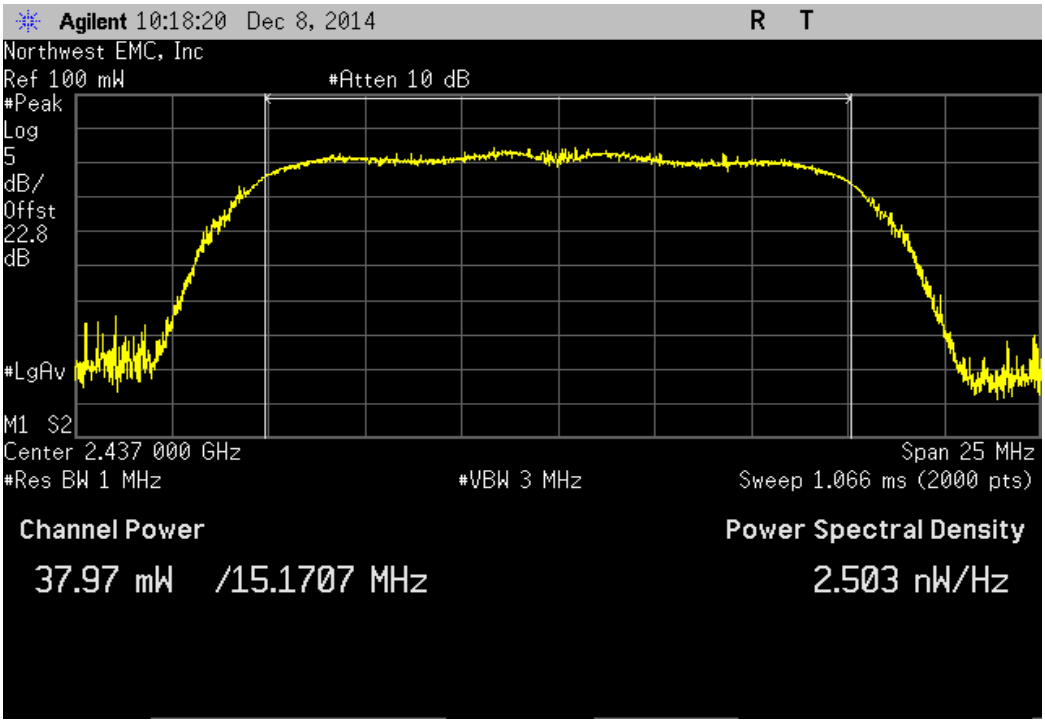


OUTPUT POWER

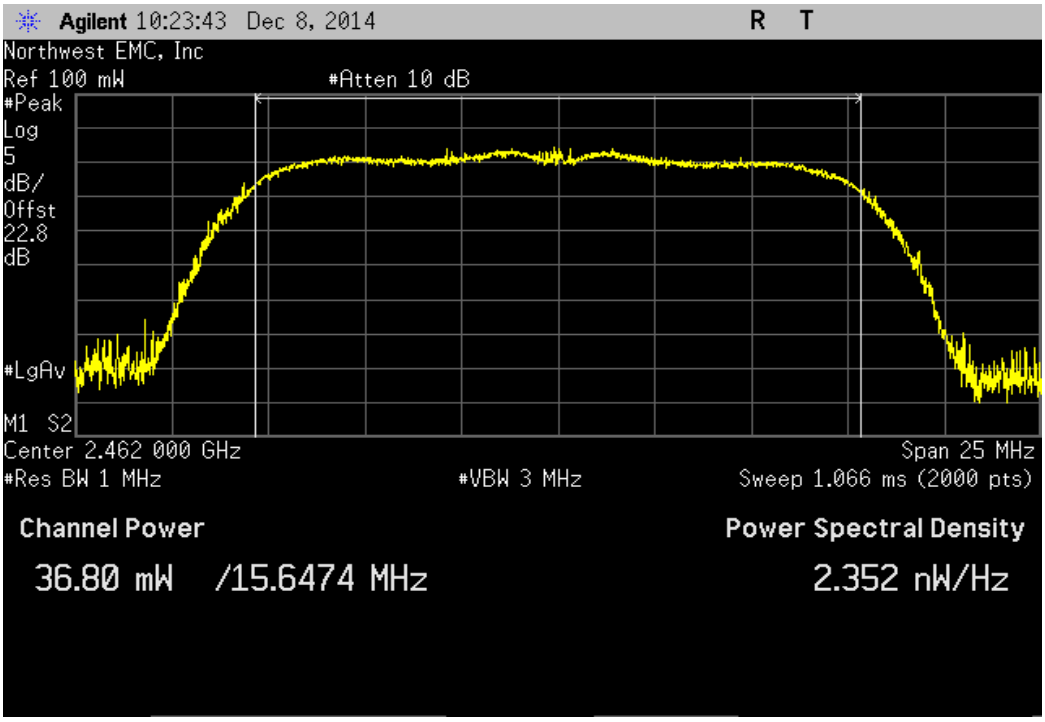
2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz							
					Value	Limit (<)	Result
					36.942 mW	1 W	Pass



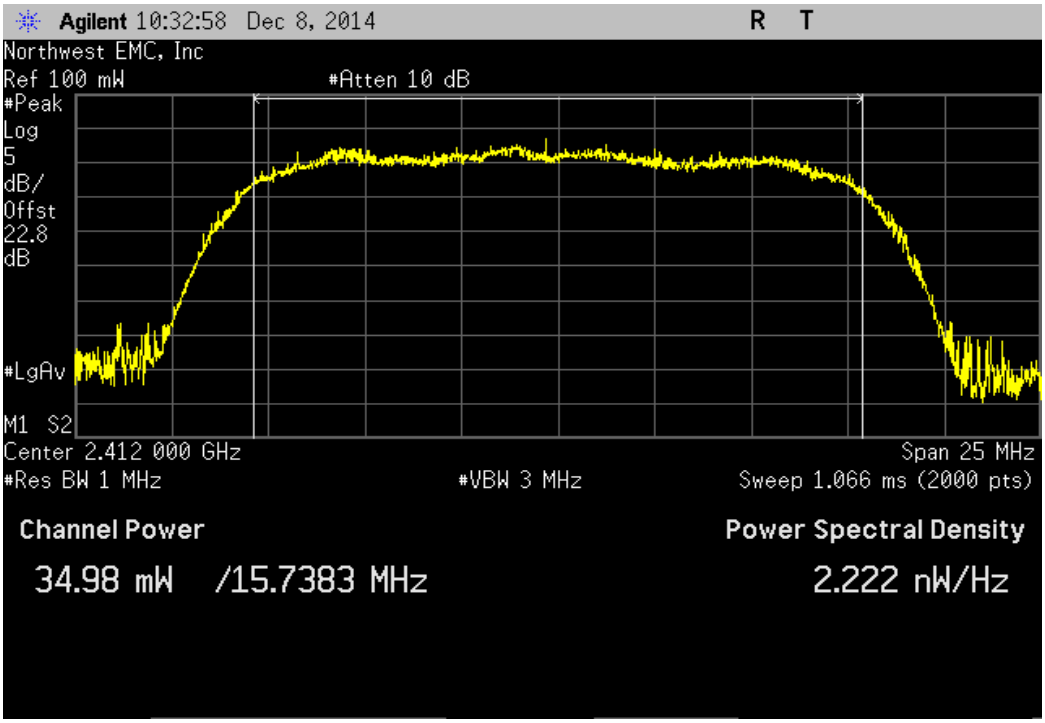
2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz							
					Value	Limit (<)	Result
					37.974 mW	1 W	Pass



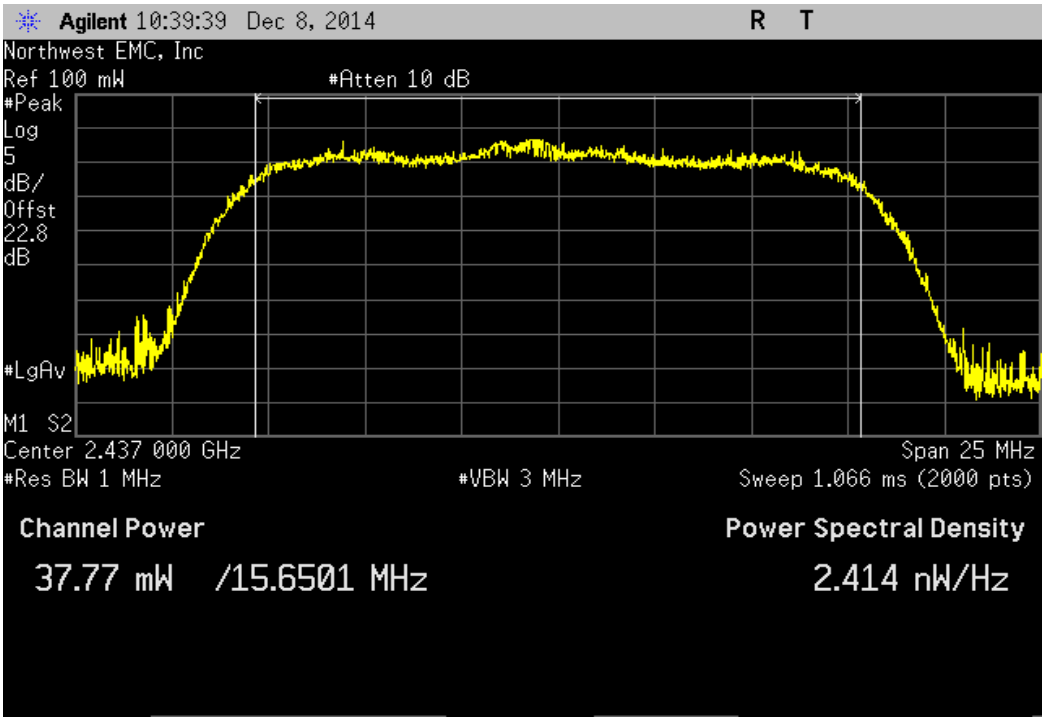
2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz						
				Value	Limit (<)	Result
				36.8 mW	1 W	Pass



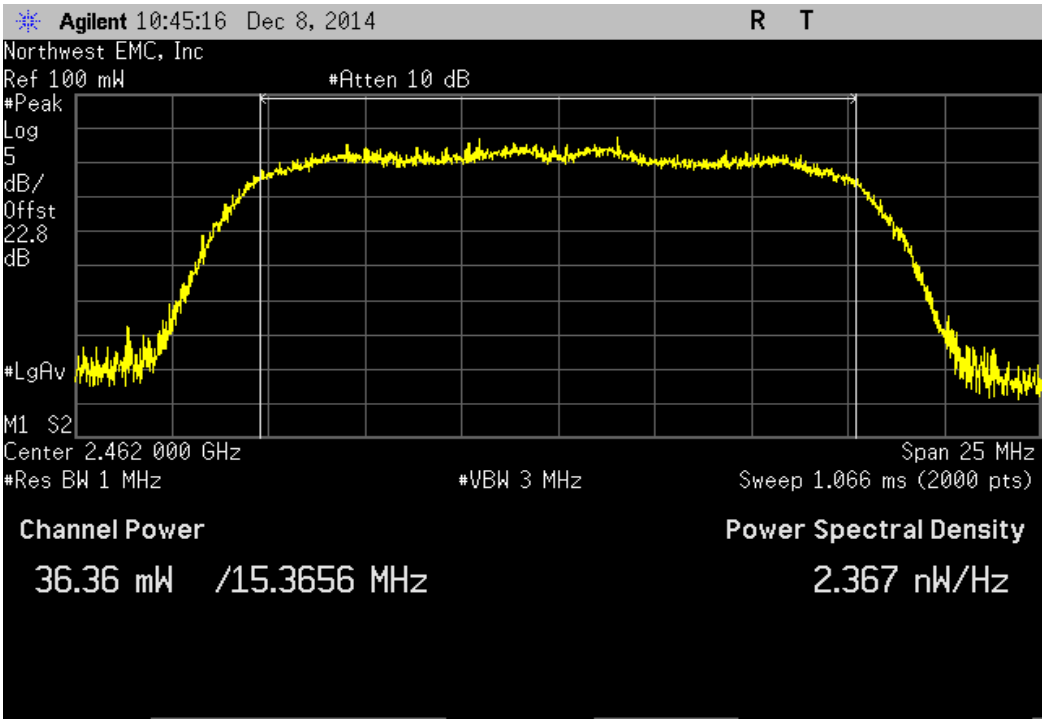
2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz						
				Value	Limit (<)	Result
				34.977 mW	1 W	Pass



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

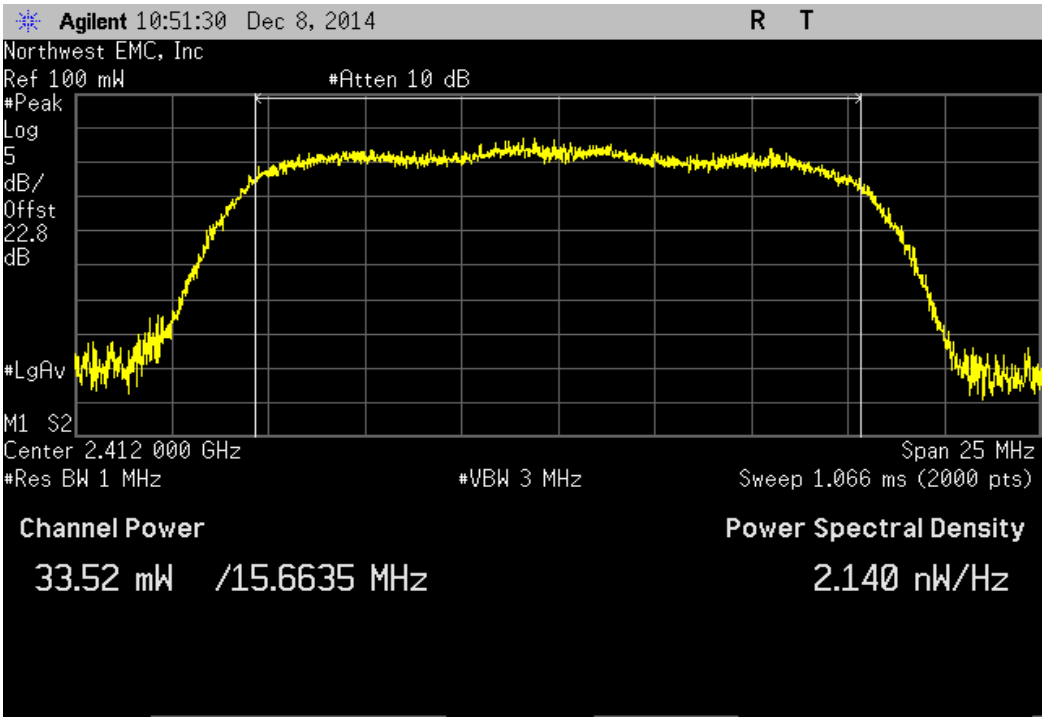


2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz							
					Value	Limit (<)	Result
					36.363 mW	1 W	Pass

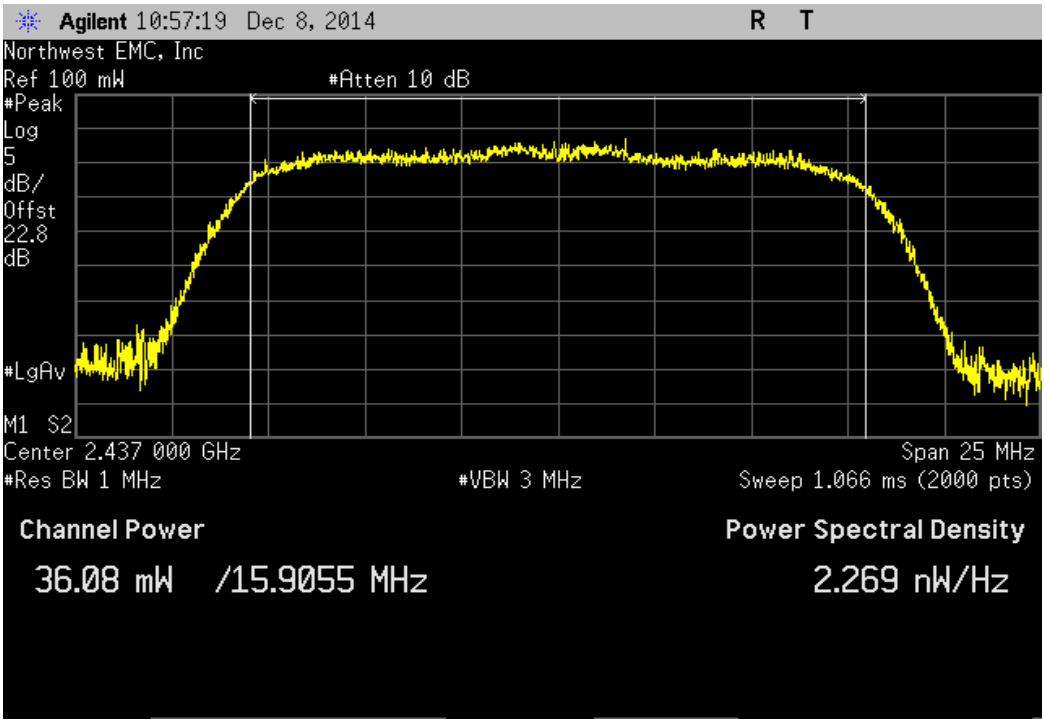


OUTPUT POWER

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

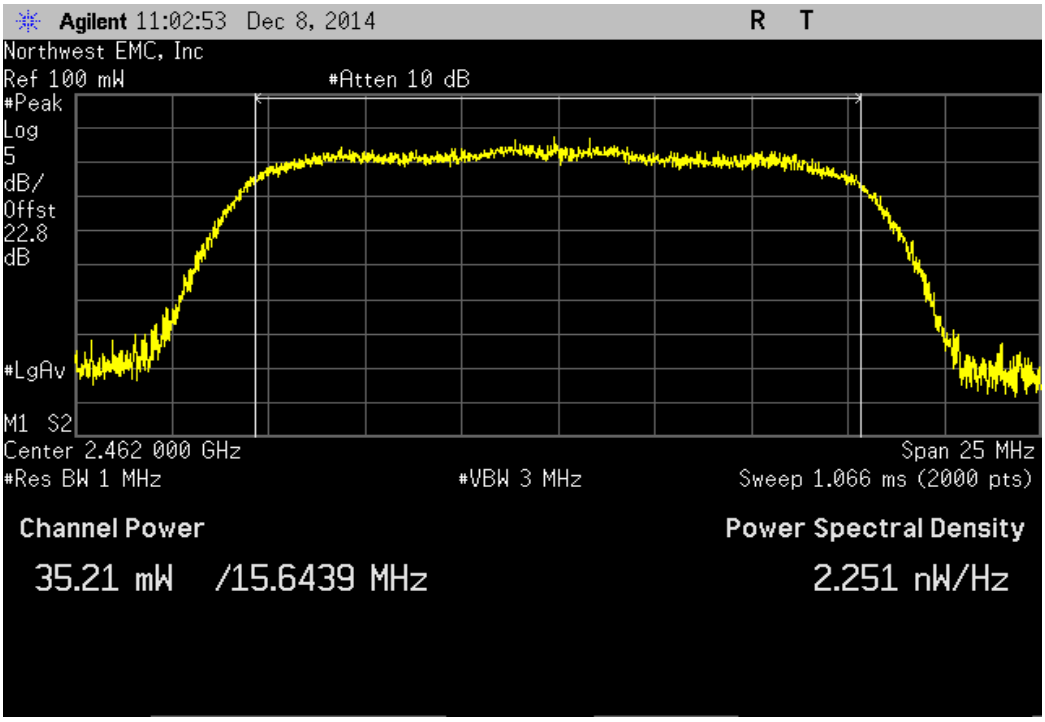


2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz						
				Value	Limit (<)	Result
				36.082 mW	1 W	Pass

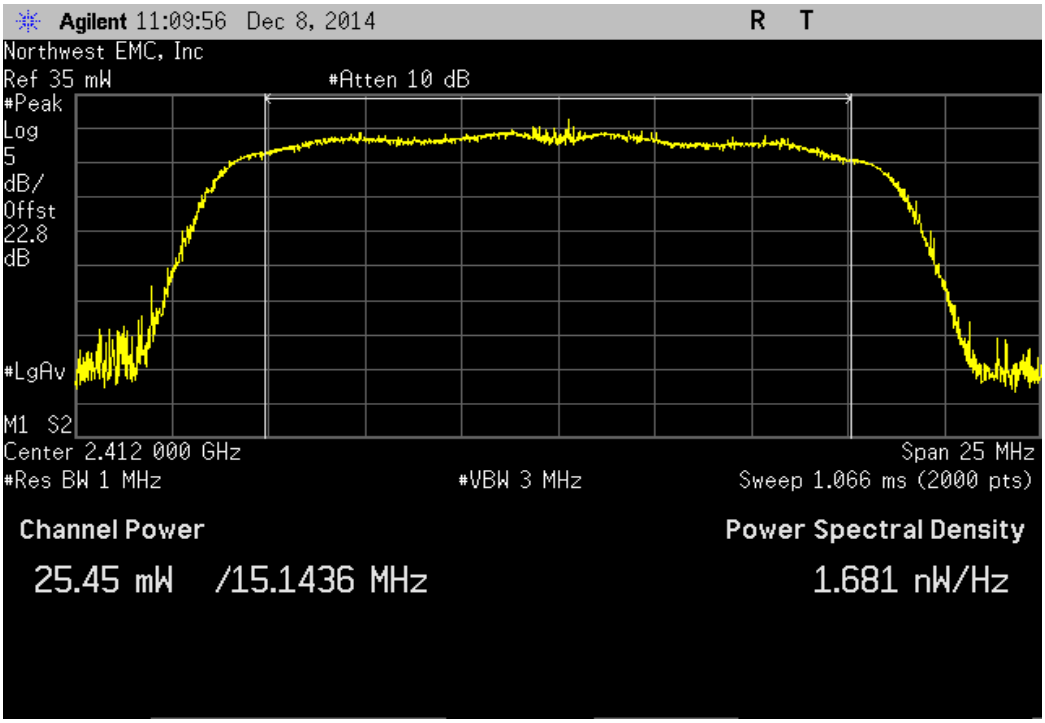


OUTPUT POWER

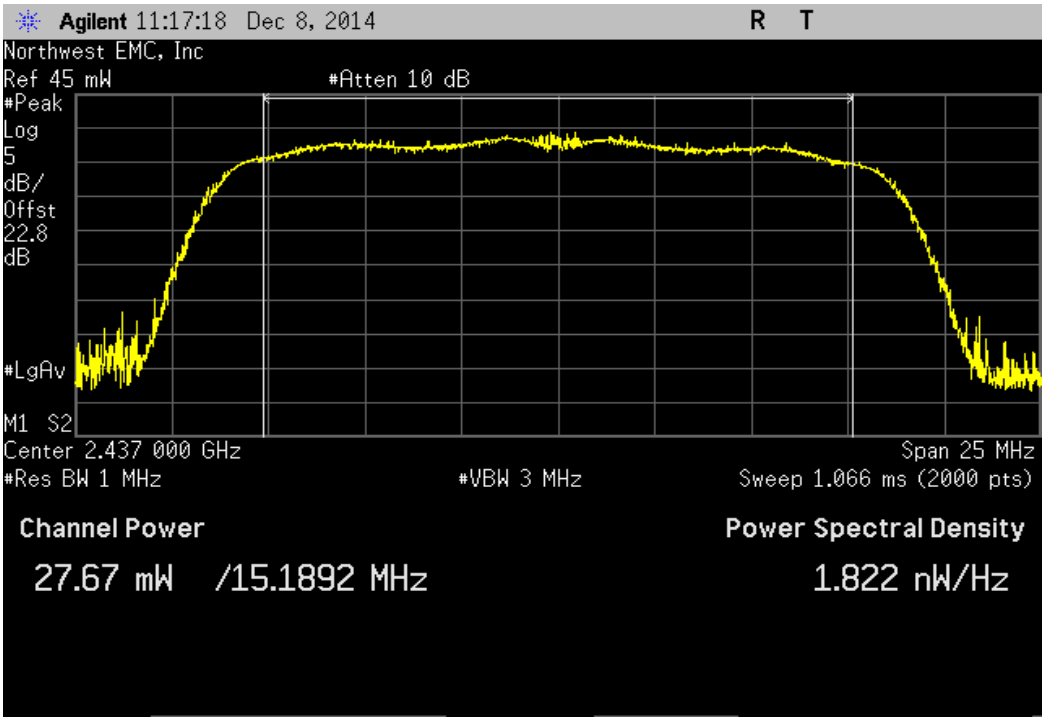
2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz						
				Value	Limit (<)	Result
				35.209 mW	1 W	Pass



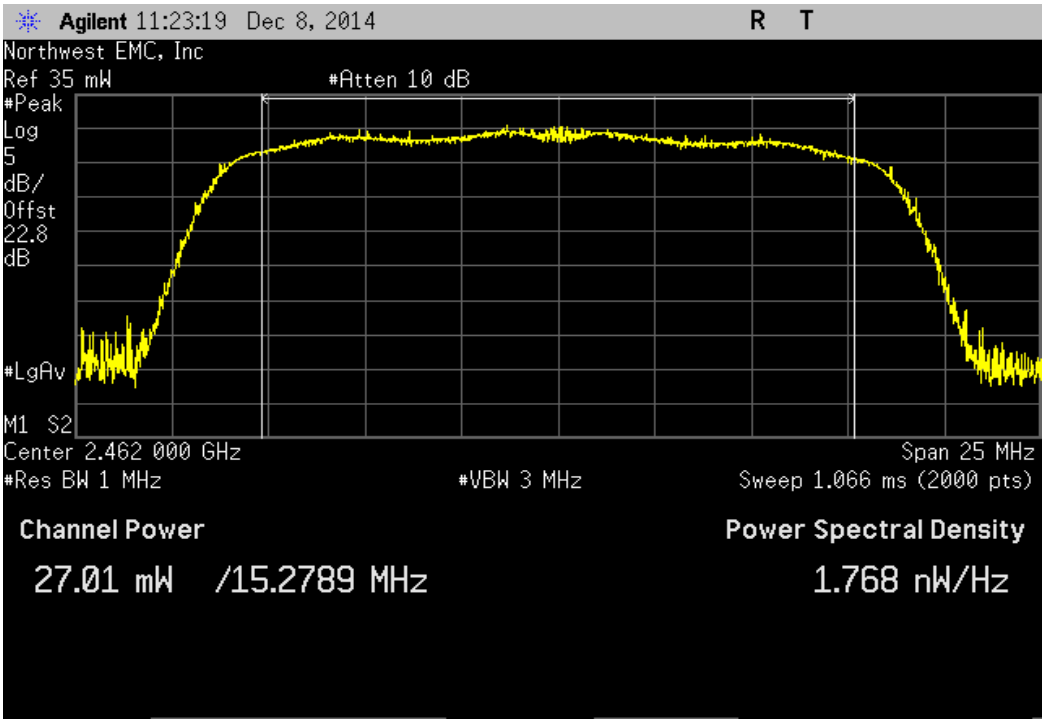
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1, 2412 MHz						
				Value	Limit (<)	Result
				25.451 mW	1 W	Pass



2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Mid Channel 6, 2437 MHz						
				Value	Limit (<)	Result
				27.669 mW	1 W	Pass

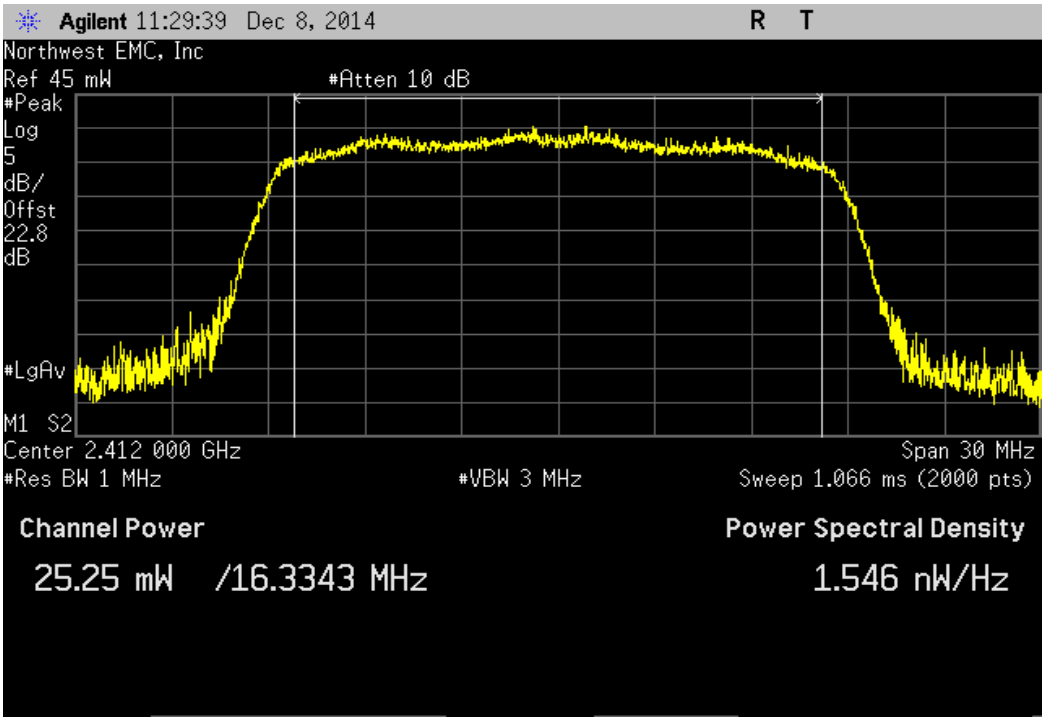


2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 11, 2462 MHz						
				Value	Limit (<)	Result
				27.007 mW	1 W	Pass

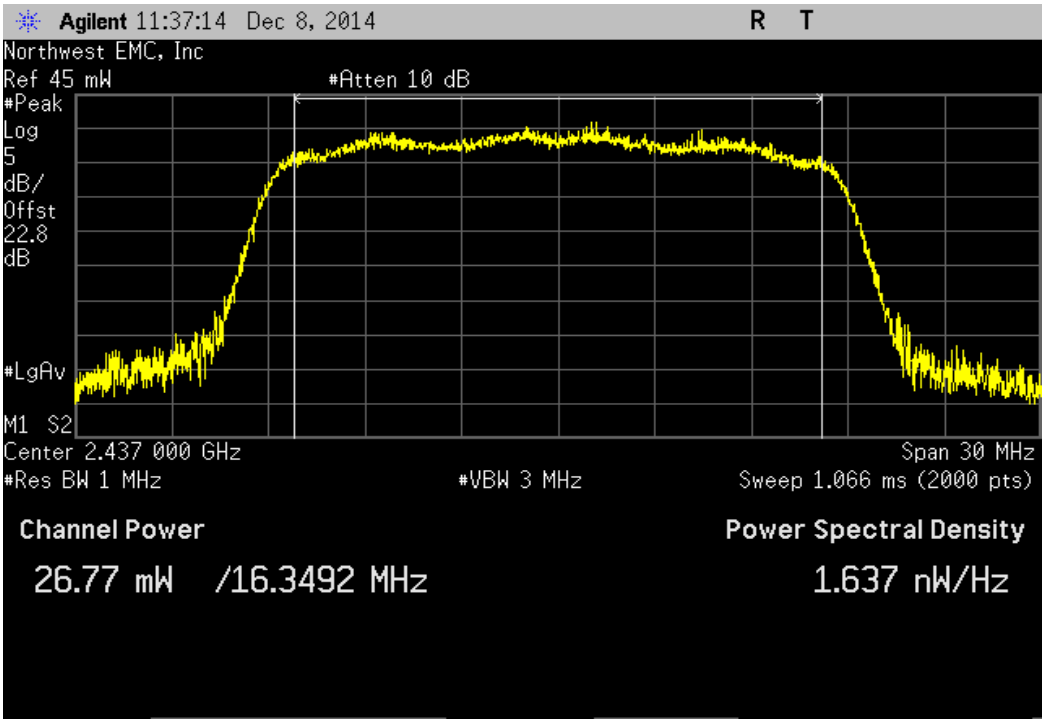


OUTPUT POWER

2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1, 2412 MHz						
				Value	Limit (<)	Result
				25.254 mW	1 W	Pass

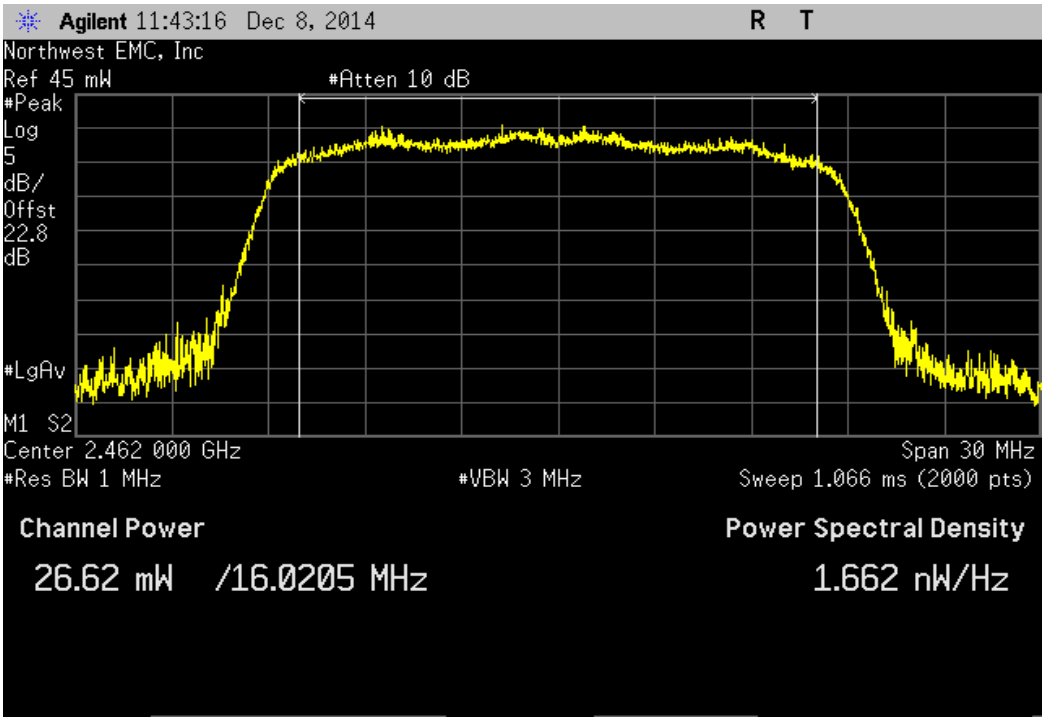


2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Mid Channel 6, 2437 MHz						
				Value	Limit (<)	Result
				26.765 mW	1 W	Pass



OUTPUT POWER

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*LOG (3 kHz / 100 kHz) = -15.2 dB

POWER SPECTRAL DENSITY

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

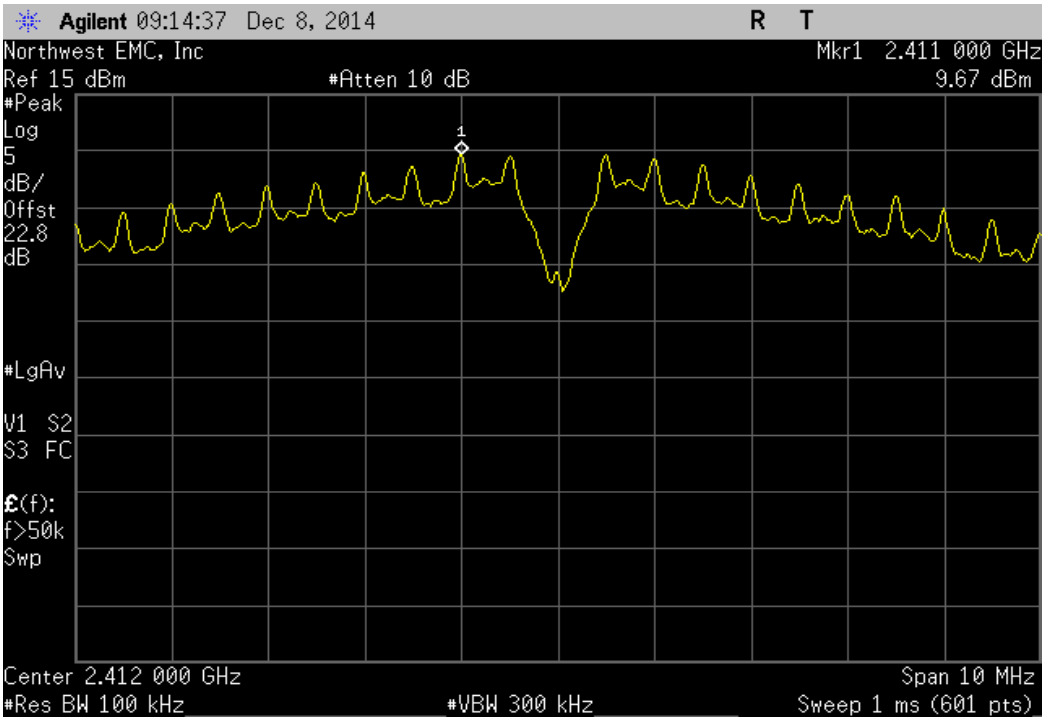
None

Configuration #	1	Signature

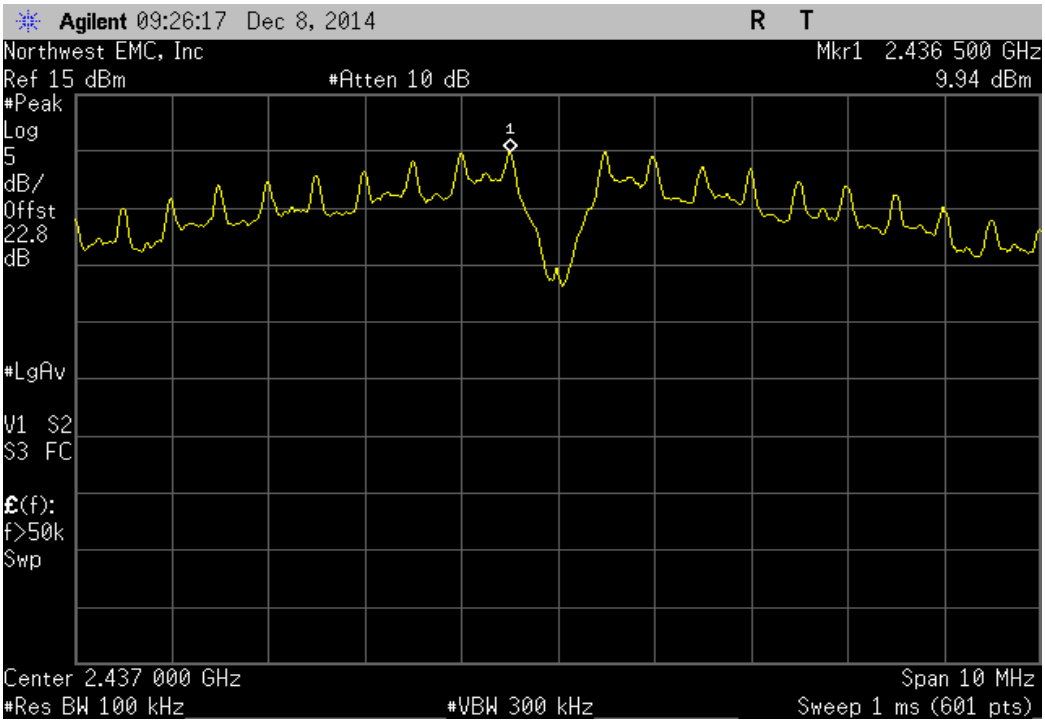
	Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
2400 MHz - 2483.5 MHz Band					
802.11(b) 1 Mbps					
Low Channel 1, 2412 MHz	9.668	-15.2	-5.532	8	Pass
Mid Channel 6, 2437 MHz	9.936	-15.2	-5.264	8	Pass
High Channel 11, 2462 MHz	9.794	-15.2	-5.406	8	Pass
802.11(b) 11 Mbps					
Low Channel 1, 2412 MHz	9.951	-15.2	-5.249	8	Pass
Mid Channel 6, 2437 MHz	10.532	-15.2	-4.668	8	Pass
High Channel 11, 2462 MHz	10.473	-15.2	-4.727	8	Pass
802.11(g) 6 Mbps					
Low Channel 1, 2412 MHz	3.909	-15.2	-11.291	8	Pass
Mid Channel 6, 2437 MHz	4.091	-15.2	-11.109	8	Pass
High Channel 11, 2462 MHz	3.861	-15.2	-11.339	8	Pass
802.11(g) 36 Mbps					
Low Channel 1, 2412 MHz	4.058	-15.2	-11.142	8	Pass
Mid Channel 6, 2437 MHz	4.276	-15.2	-10.924	8	Pass
High Channel 11, 2462 MHz	4.054	-15.2	-11.146	8	Pass
802.11(g) 54 Mbps					
Low Channel 1, 2412 MHz	4.006	-15.2	-11.194	8	Pass
Mid Channel 6, 2437 MHz	4.072	-15.2	-11.128	8	Pass
High Channel 11, 2462 MHz	3.991	-15.2	-11.209	8	Pass
802.11(n) MCS0					
Low Channel 1, 2412 MHz	2.81	-15.2	-12.39	8	Pass
Mid Channel 6, 2437 MHz	2.935	-15.2	-12.265	8	Pass
High Channel 11, 2462 MHz	2.881	-15.2	-12.319	8	Pass
802.11(n) MCS7					
Low Channel 1, 2412 MHz	2.835	-15.2	-12.365	8	Pass
Mid Channel 6, 2437 MHz	3.017	-15.2	-12.183	8	Pass
High Channel 11, 2462 MHz	3.015	-15.2	-12.185	8	Pass

POWER SPECTRAL DENSITY

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

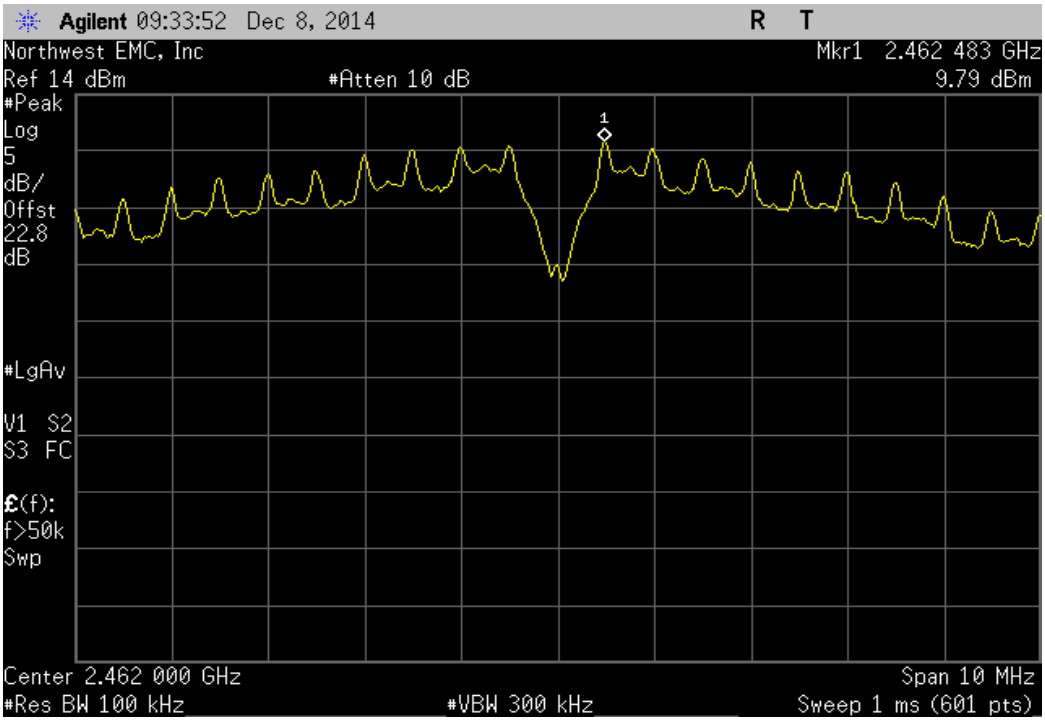


2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		9.936	-15.2	-5.264	8	Pass

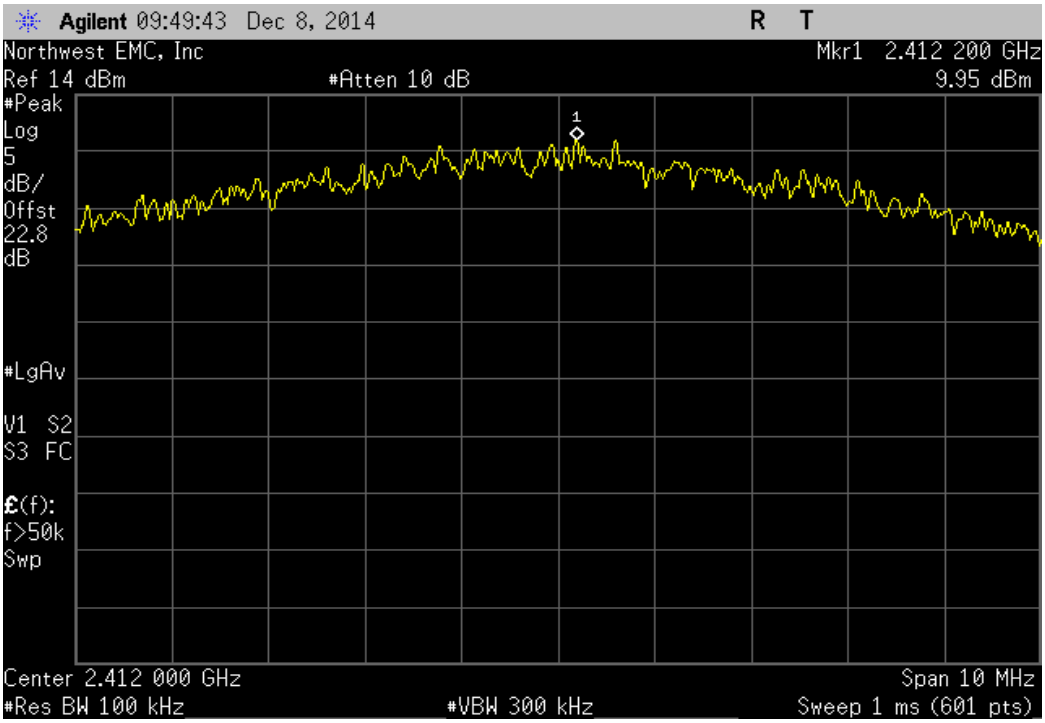


POWER SPECTRAL DENSITY

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

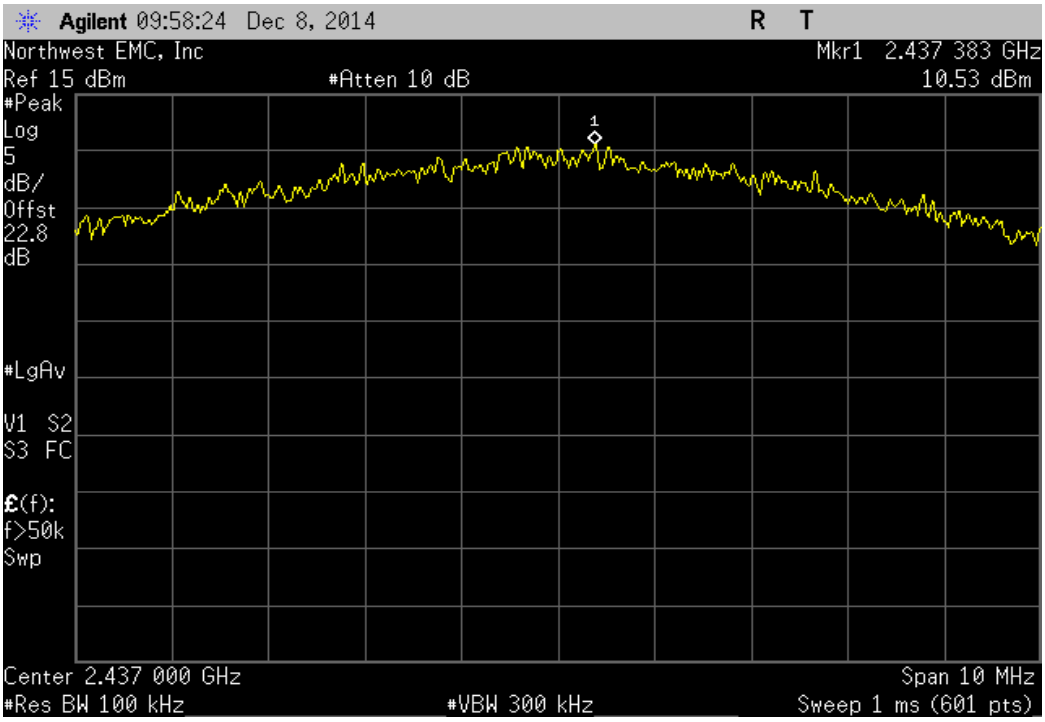


2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		9.951	-15.2	-5.249	8	Pass

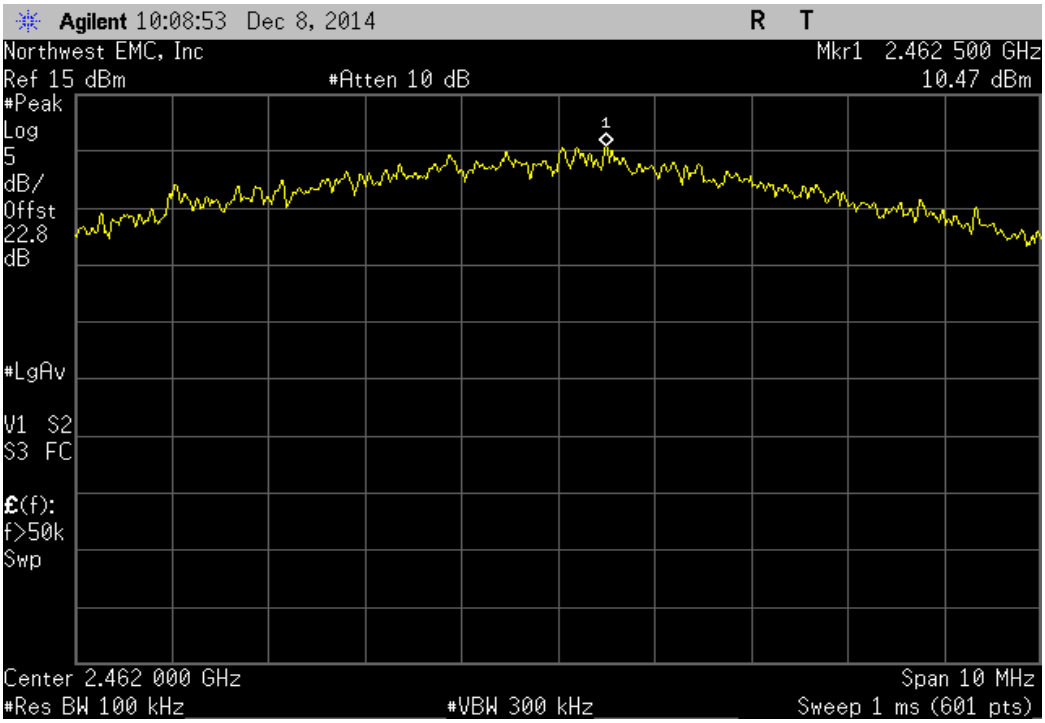


POWER SPECTRAL DENSITY

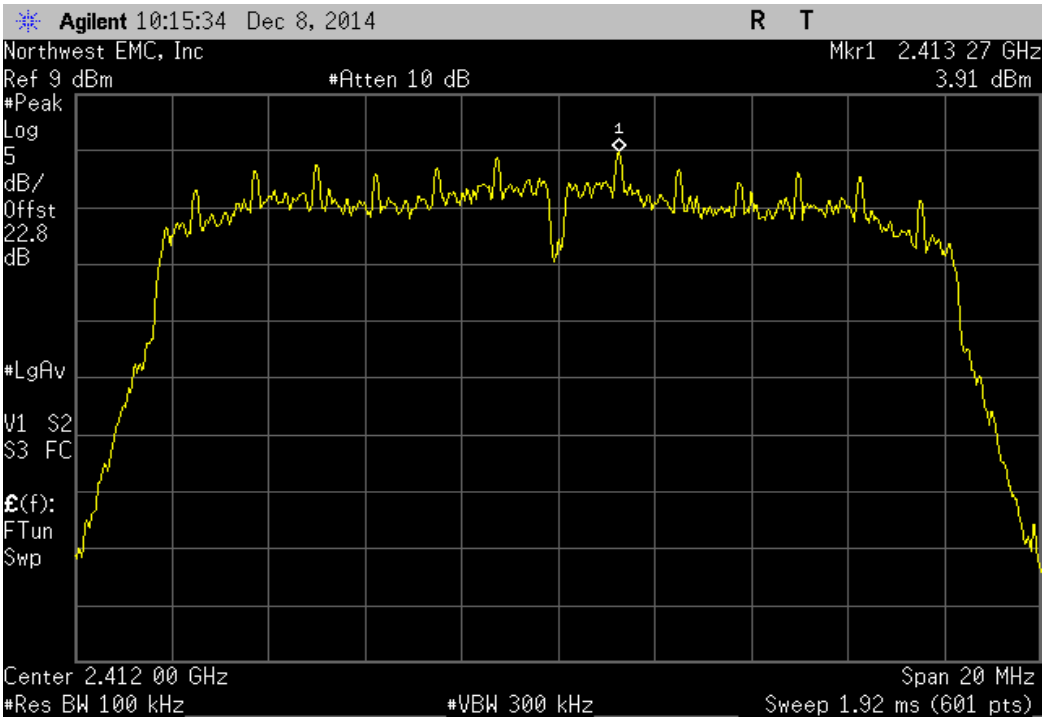
2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		10.532	-15.2	-4.668	8	Pass



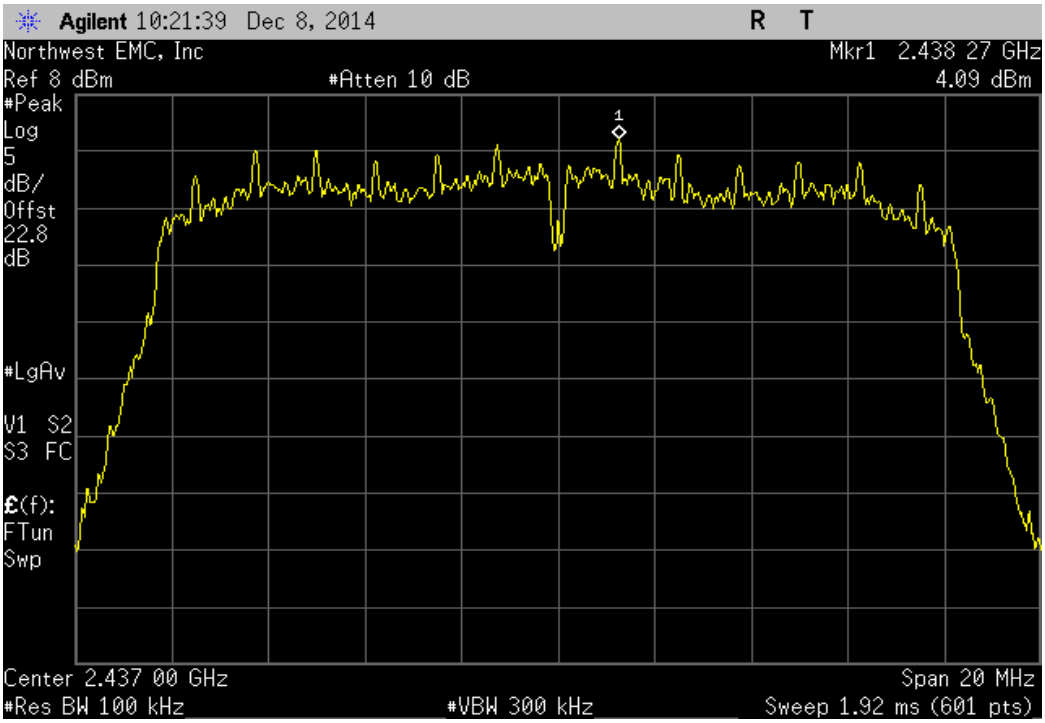
2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		10.473	-15.2	-4.727	8	Pass



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

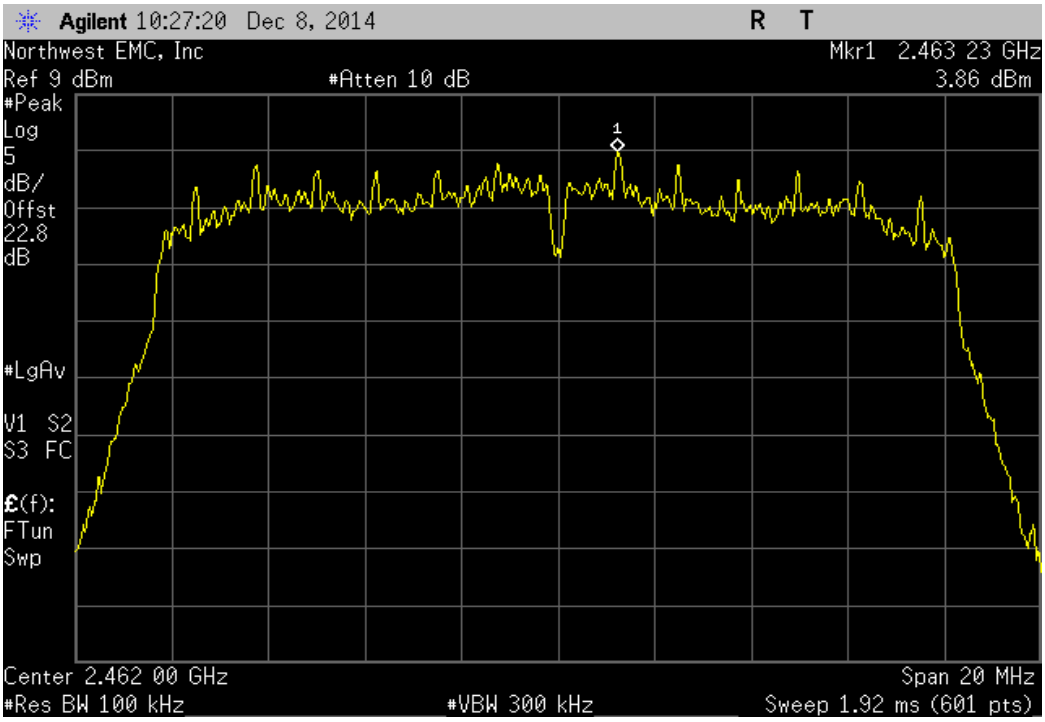


2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		4.091	-15.2	-11.109	8	Pass

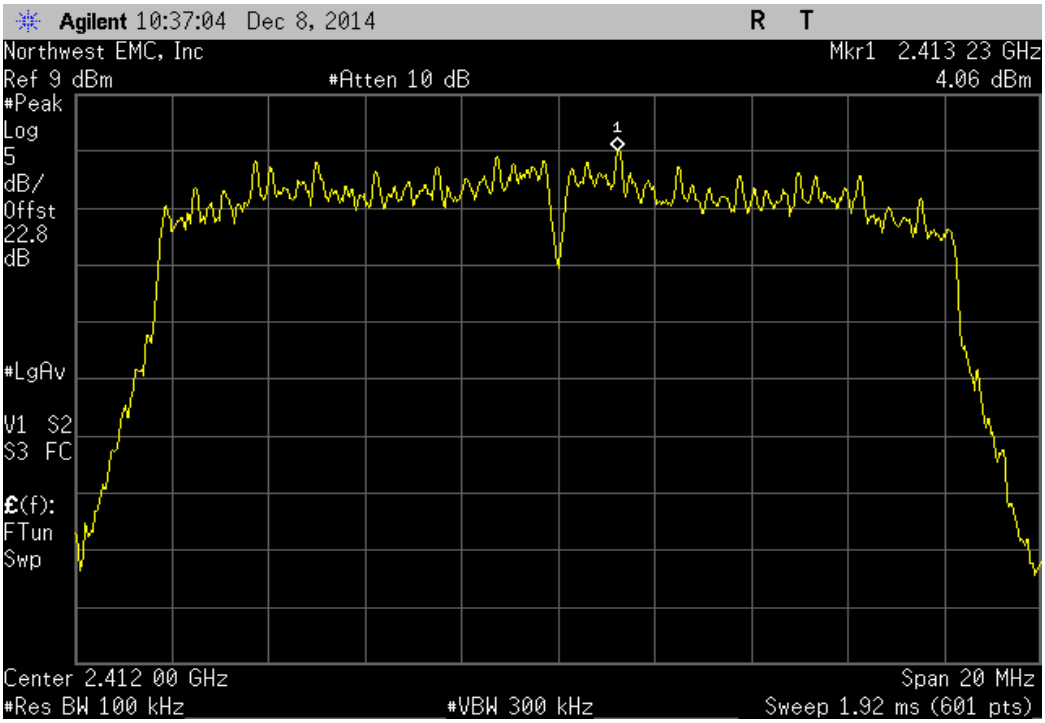


POWER SPECTRAL DENSITY

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

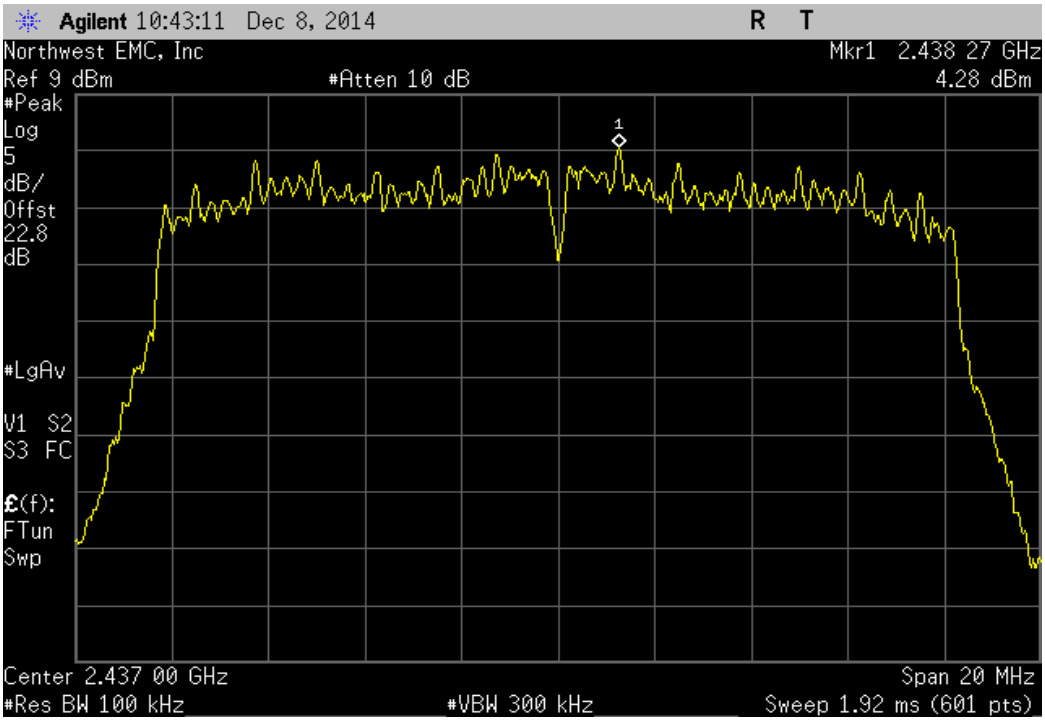


2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		4.058	-15.2	-11.142	8	Pass

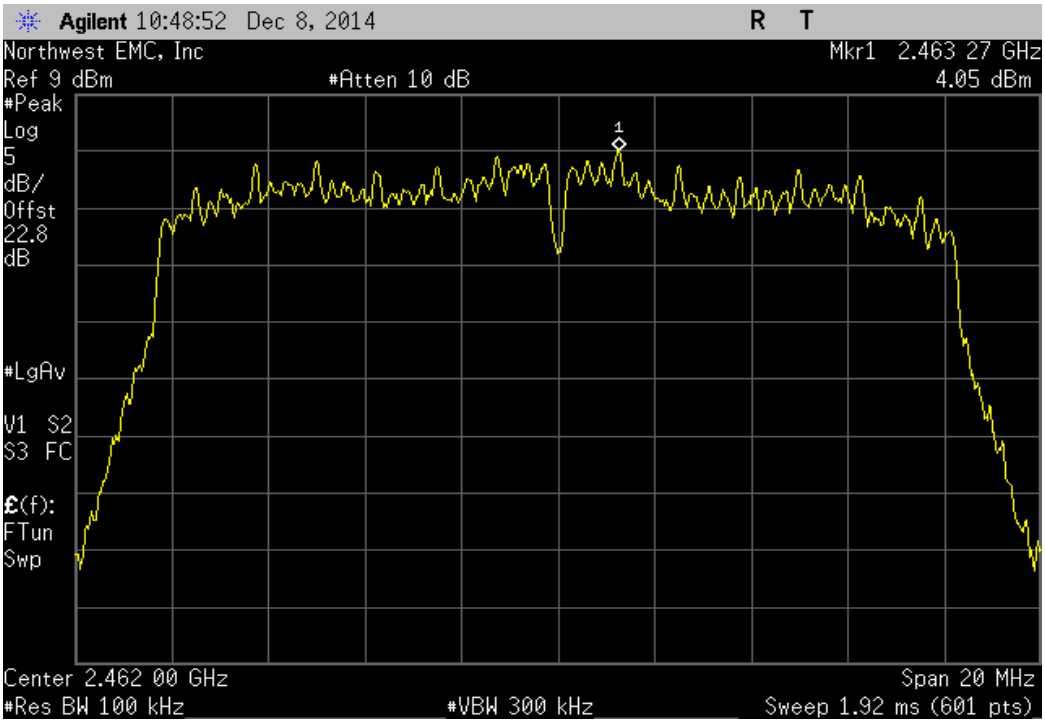


POWER SPECTRAL DENSITY

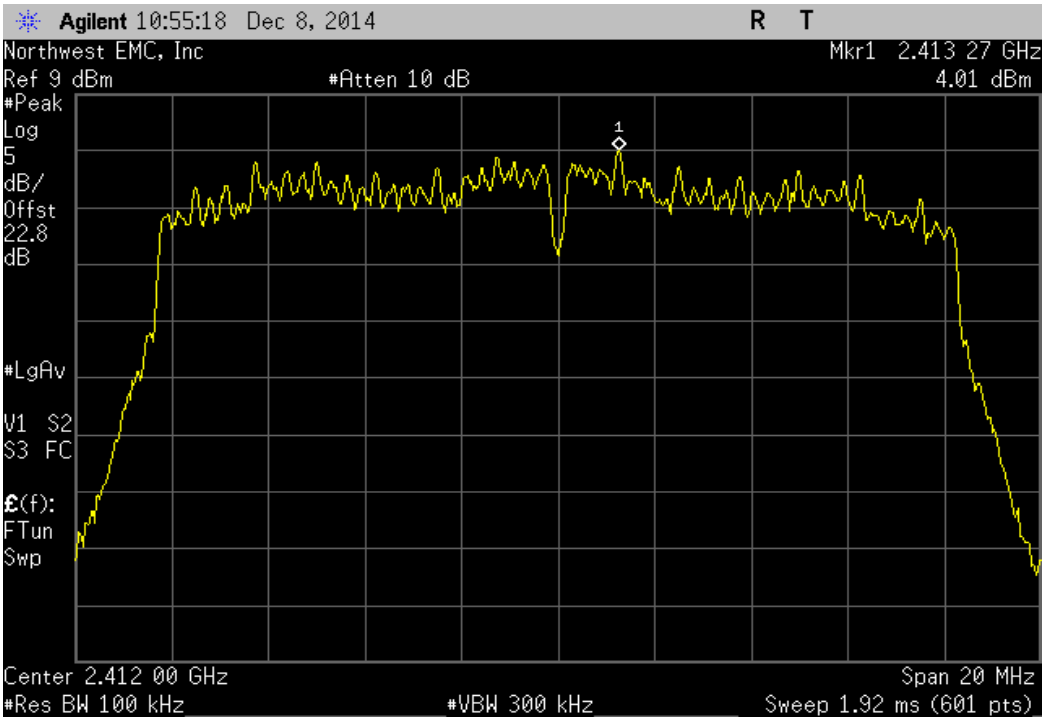
2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		4.276	-15.2	-10.924	8	Pass



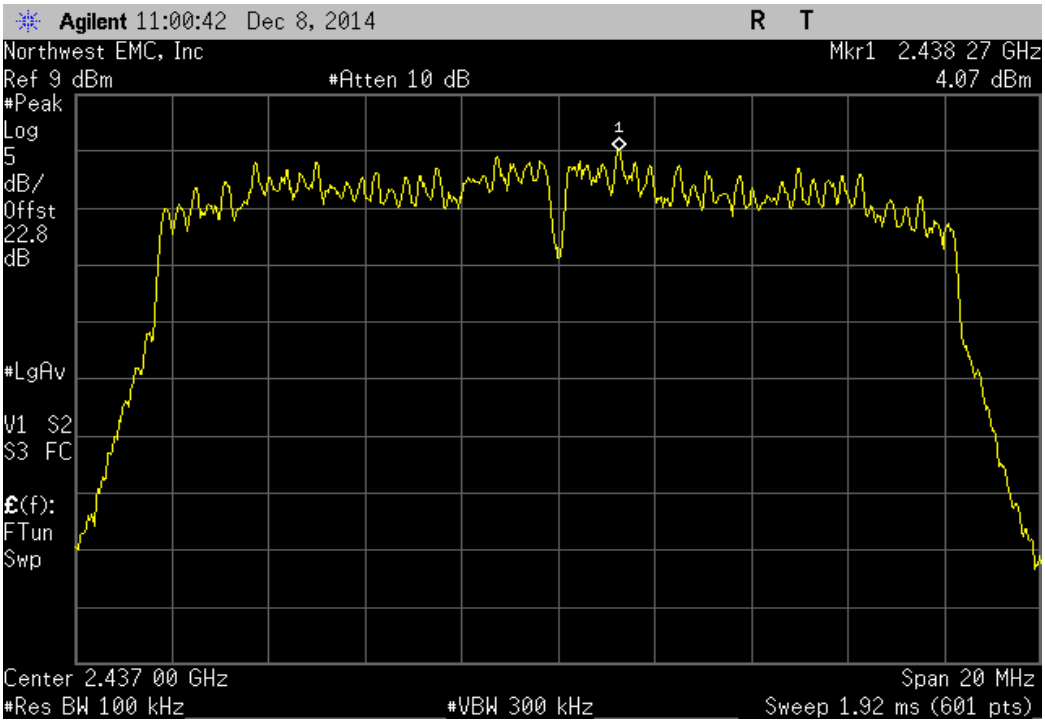
2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		4.054	-15.2	-11.146	8	Pass



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

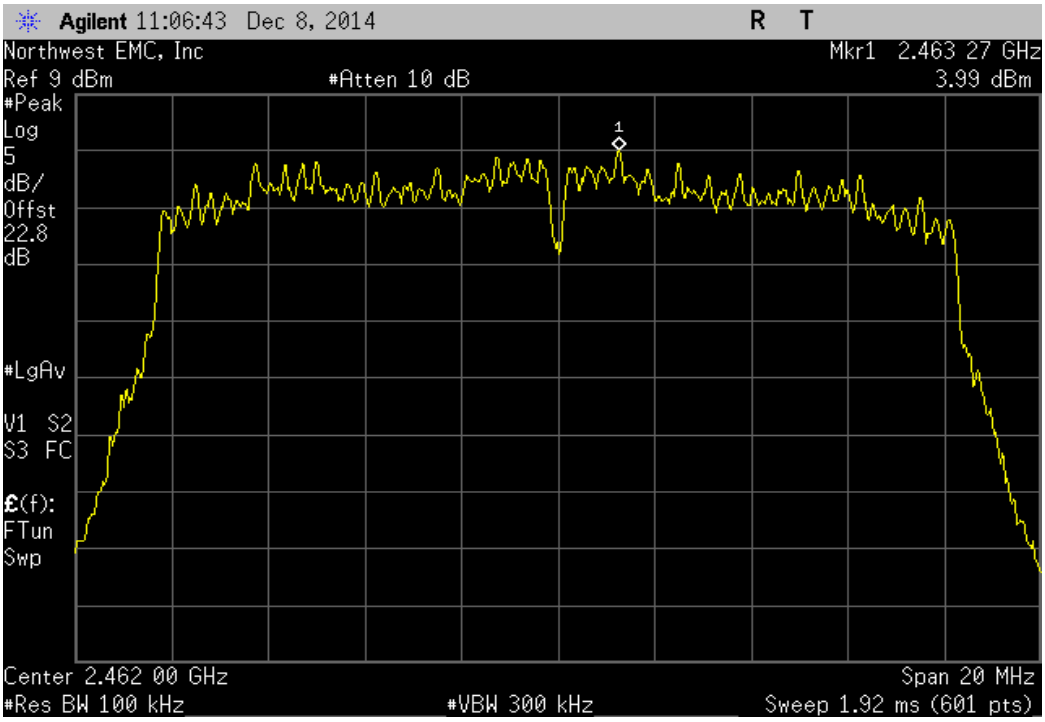


2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		4.072	-15.2	-11.128	8	Pass

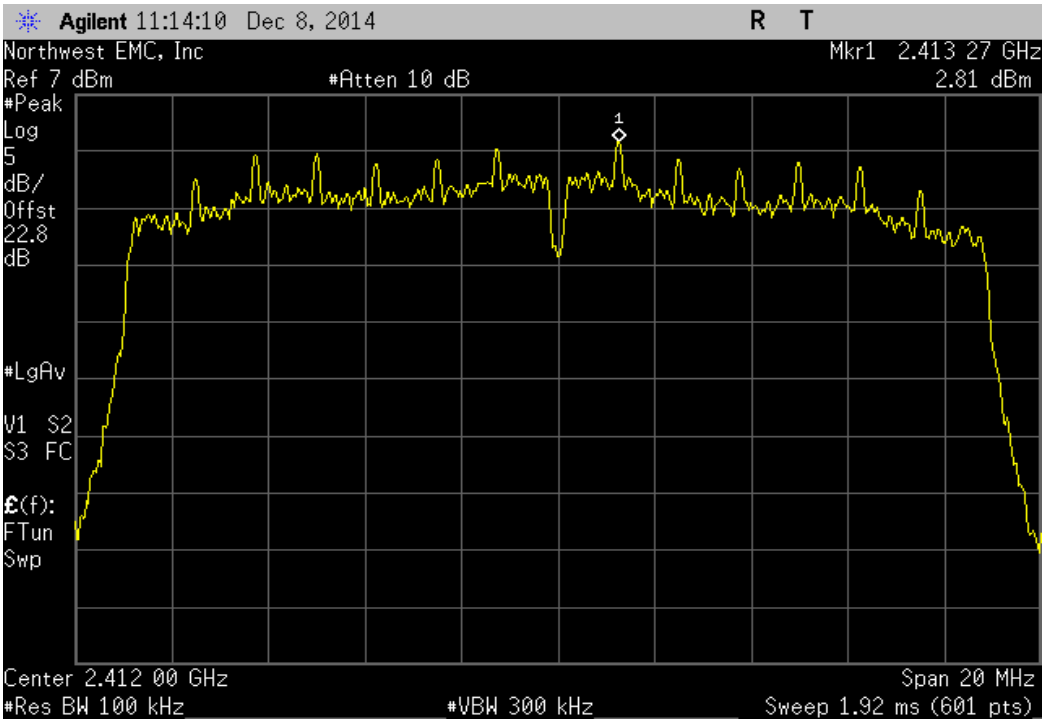


POWER SPECTRAL DENSITY

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

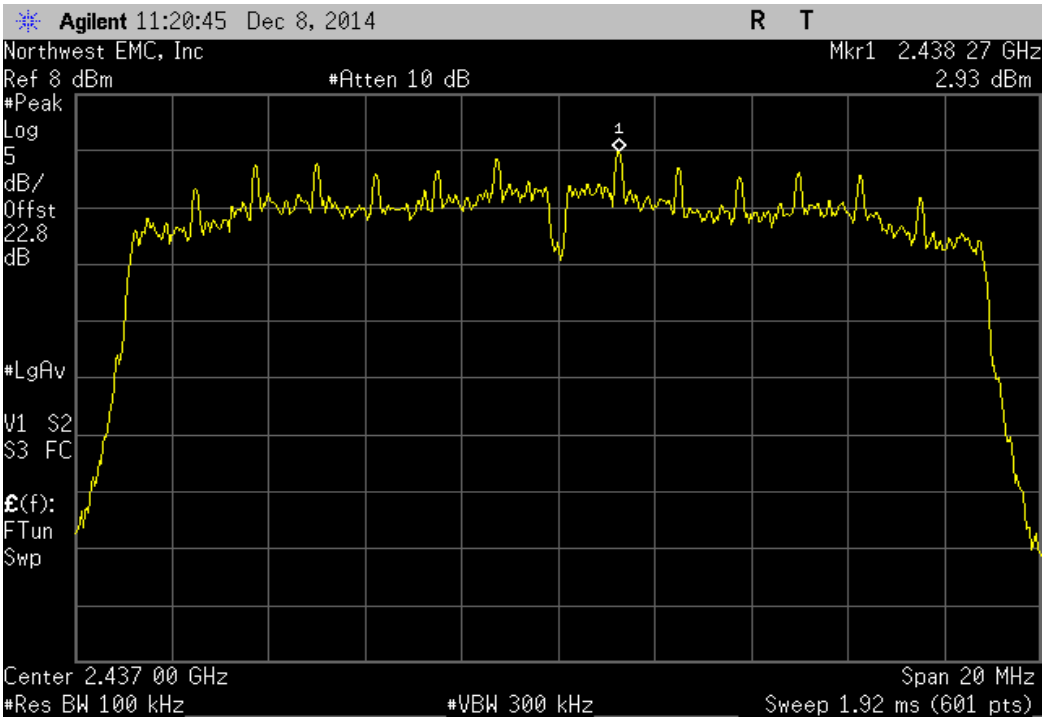


2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		2.81	-15.2	-12.39	8	Pass

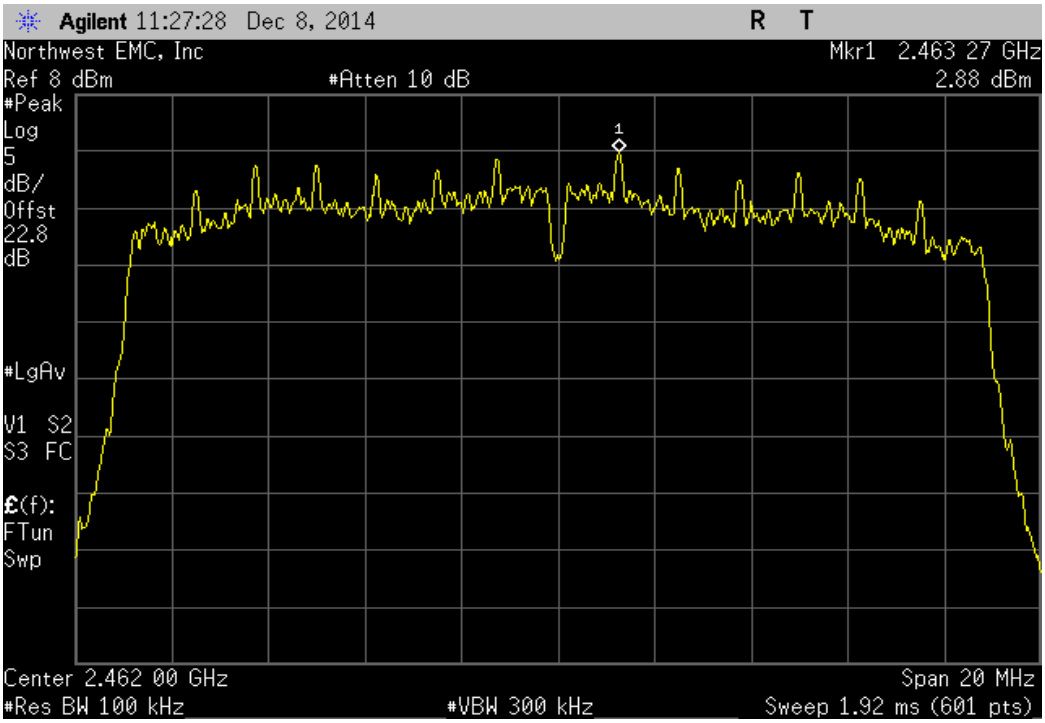


POWER SPECTRAL DENSITY

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

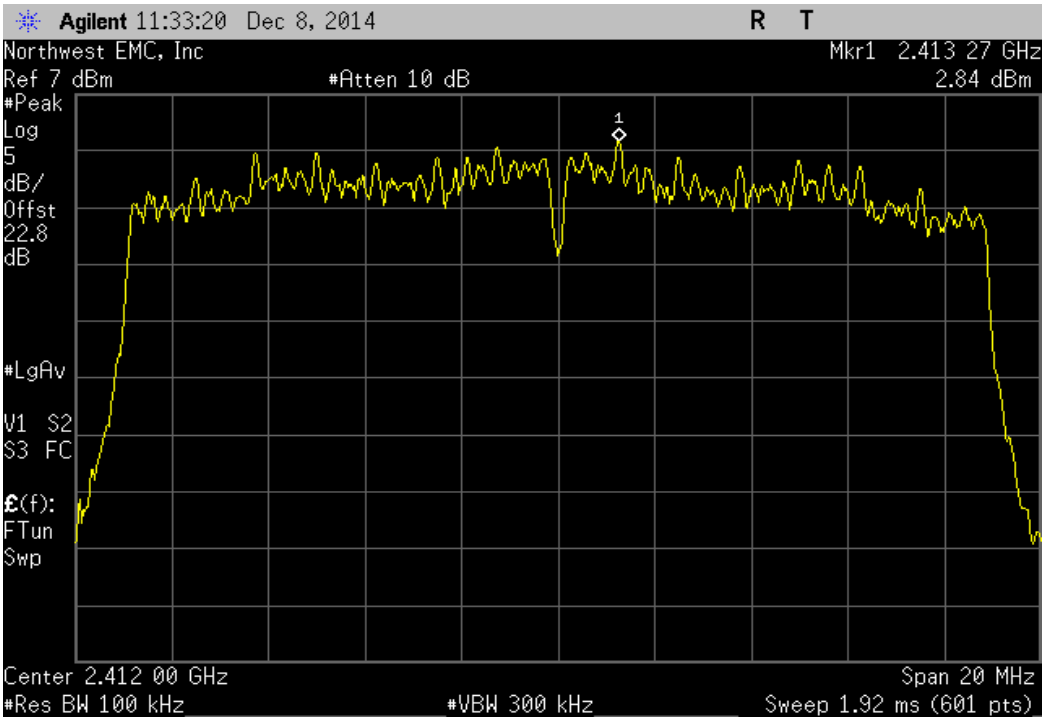


2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		2.881	-15.2	-12.319	8	Pass

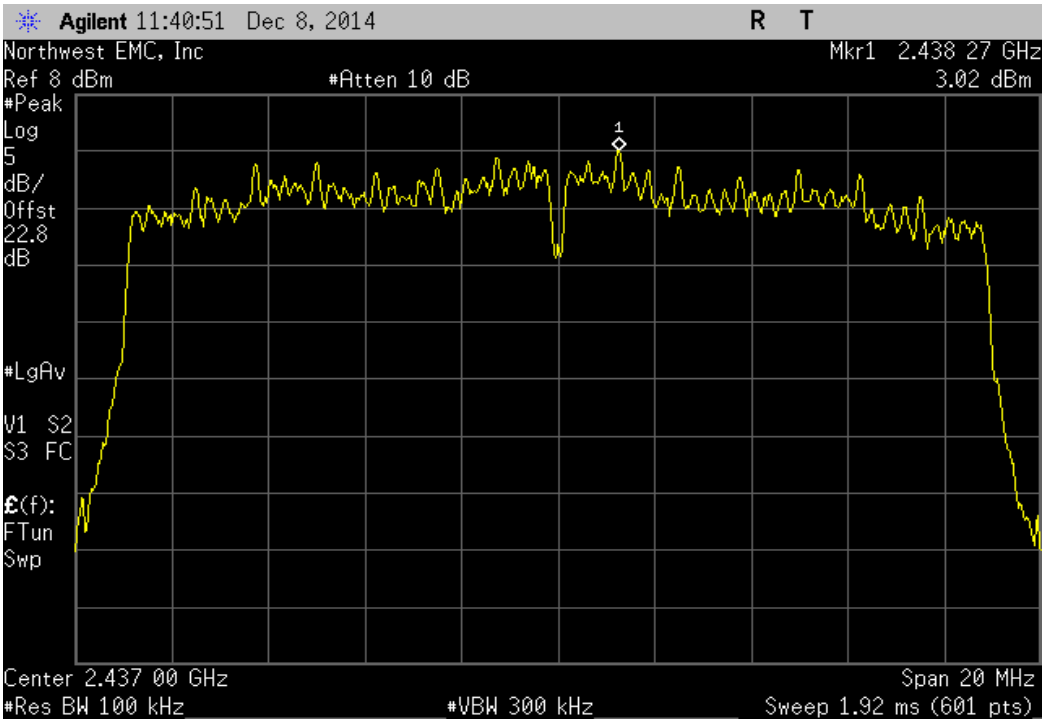


POWER SPECTRAL DENSITY

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

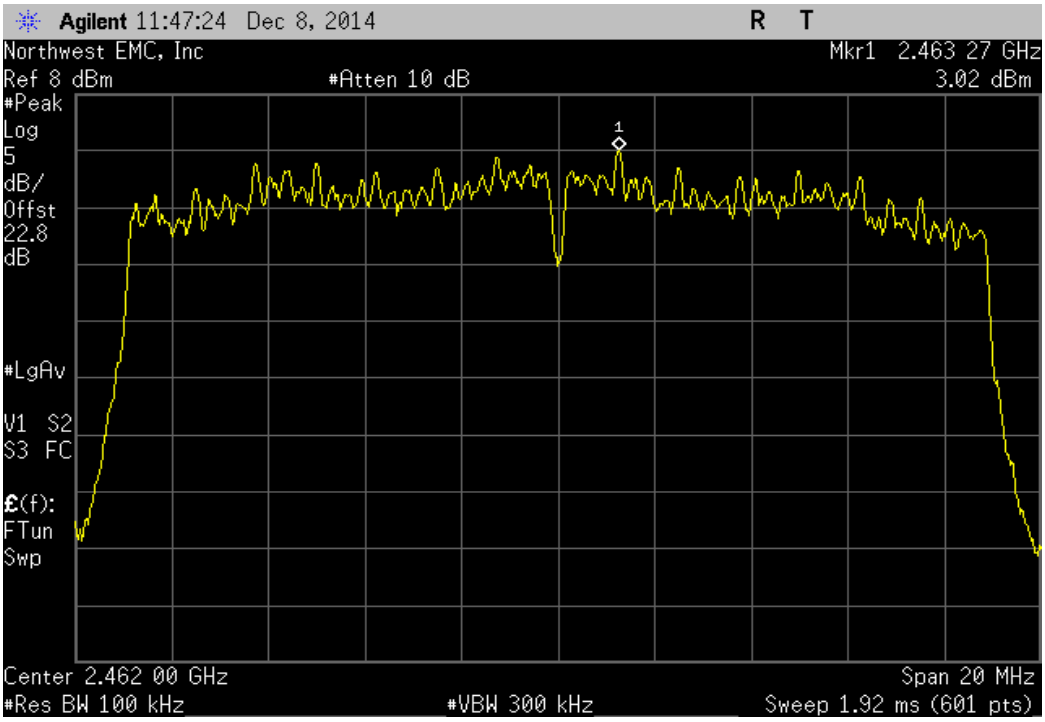


2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		3.017	-15.2	-12.183	8	Pass



POWER SPECTRAL DENSITY

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

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

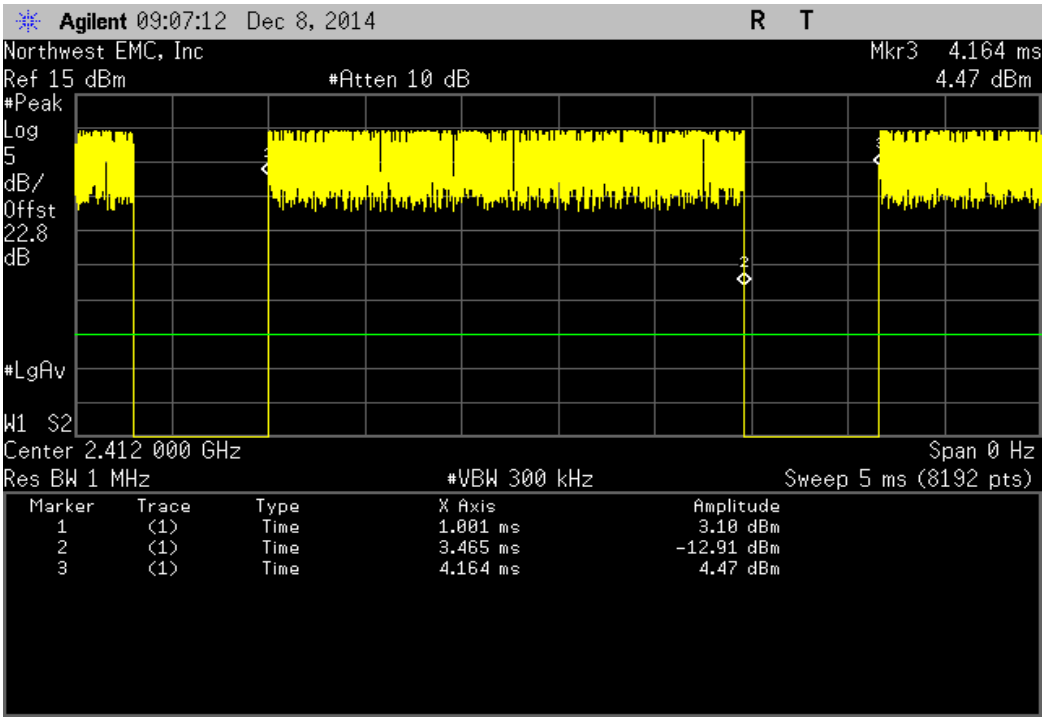
None

Configuration #	1	Signature

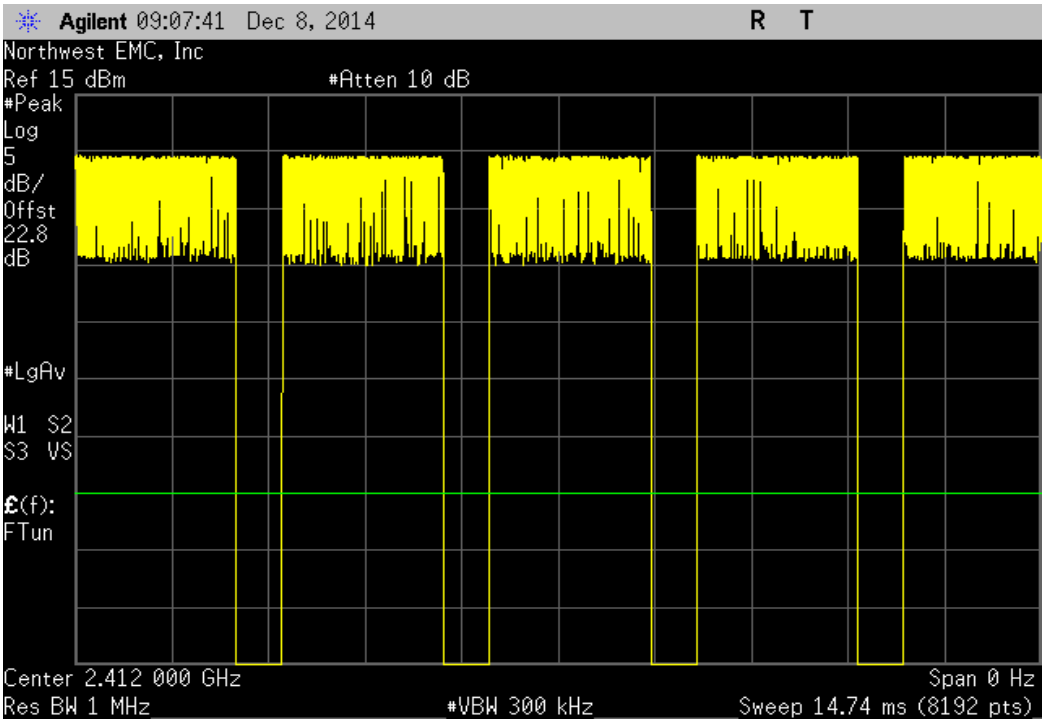
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
2400 MHz - 2483.5 MHz Band						
802.11(b) 1 Mbps						
Low Channel 1, 2412 MHz	2.465 ms	3.164 ms	1	77.9	N/A	N/A
Low Channel 1, 2412 MHz	N/A	N/A	5	N/A	N/A	N/A
Mid Channel 6, 2437 MHz	2.465 ms	3.164 ms	1	77.9	N/A	N/A
Mid Channel 6, 2437 MHz	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

DUTY CYCLE

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

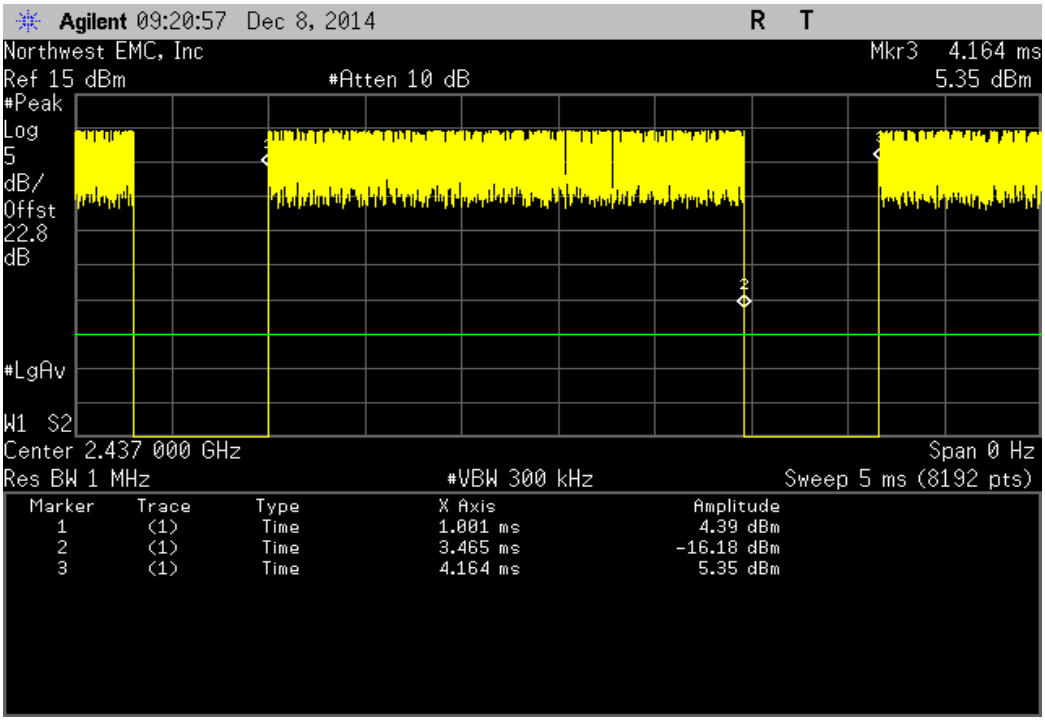


2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A

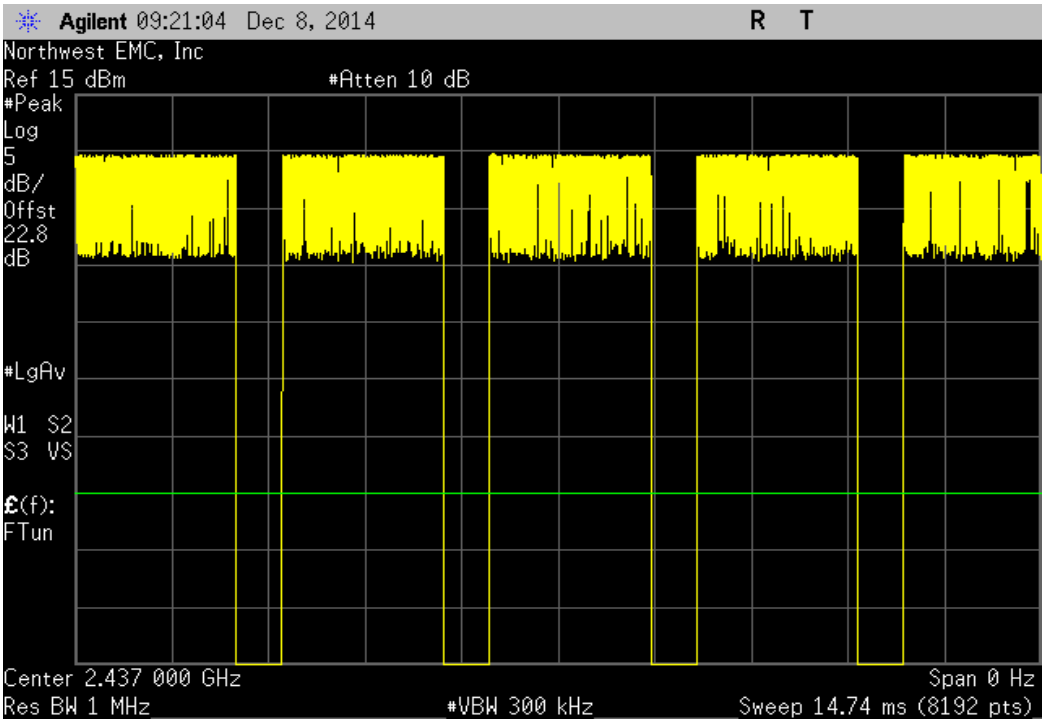


DUTY CYCLE

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

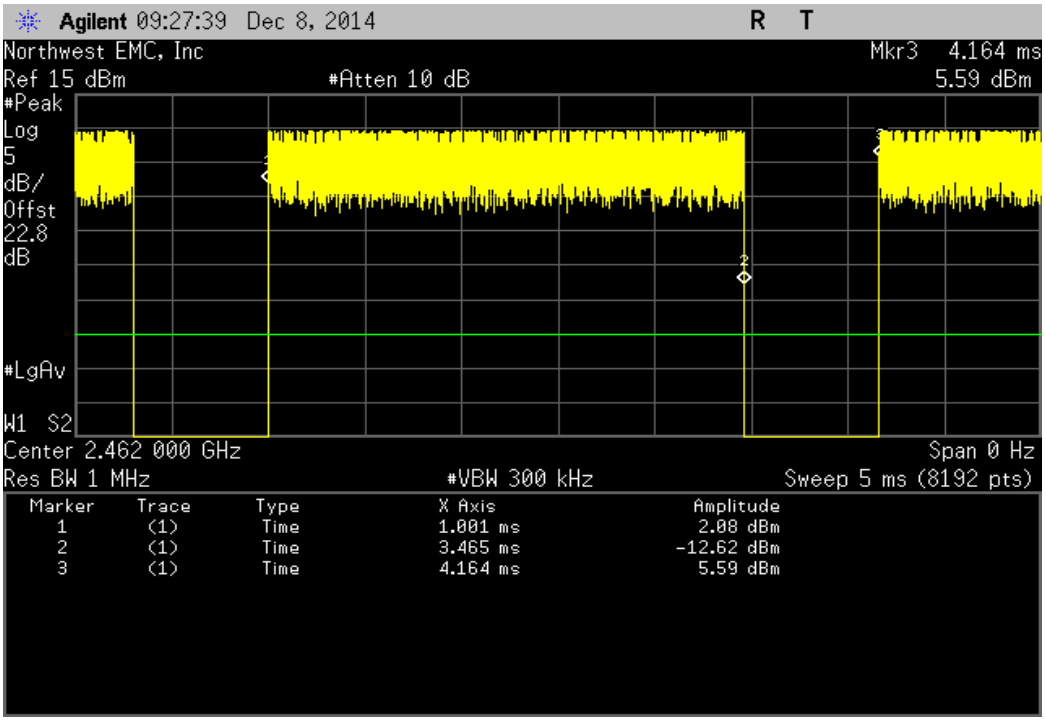


2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A

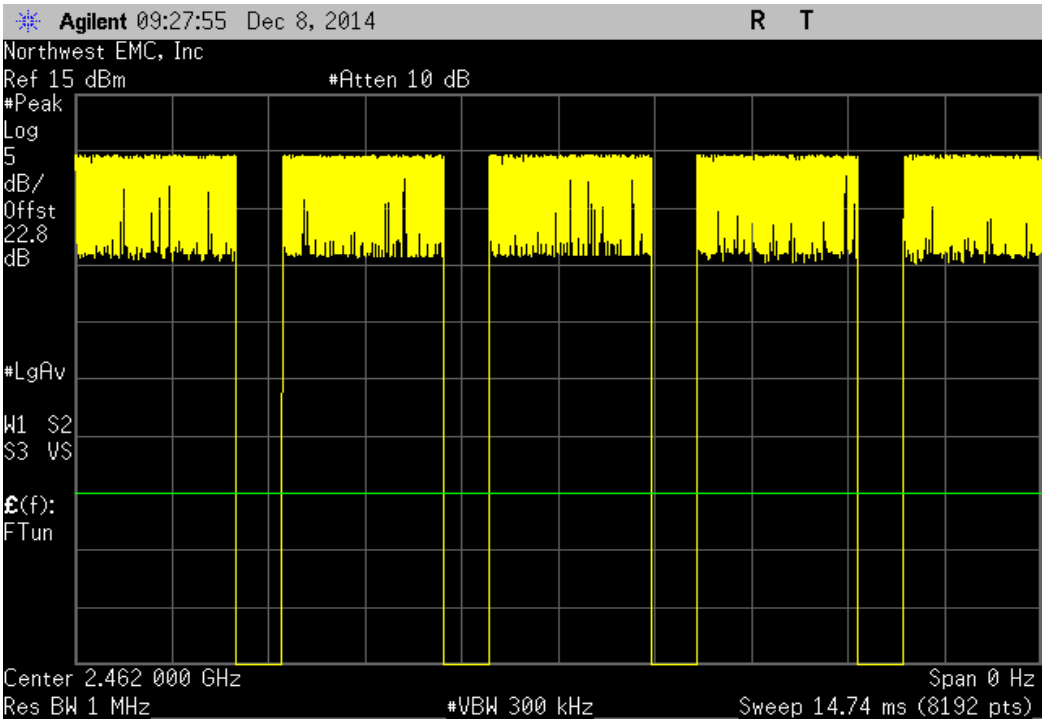


DUTY CYCLE

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



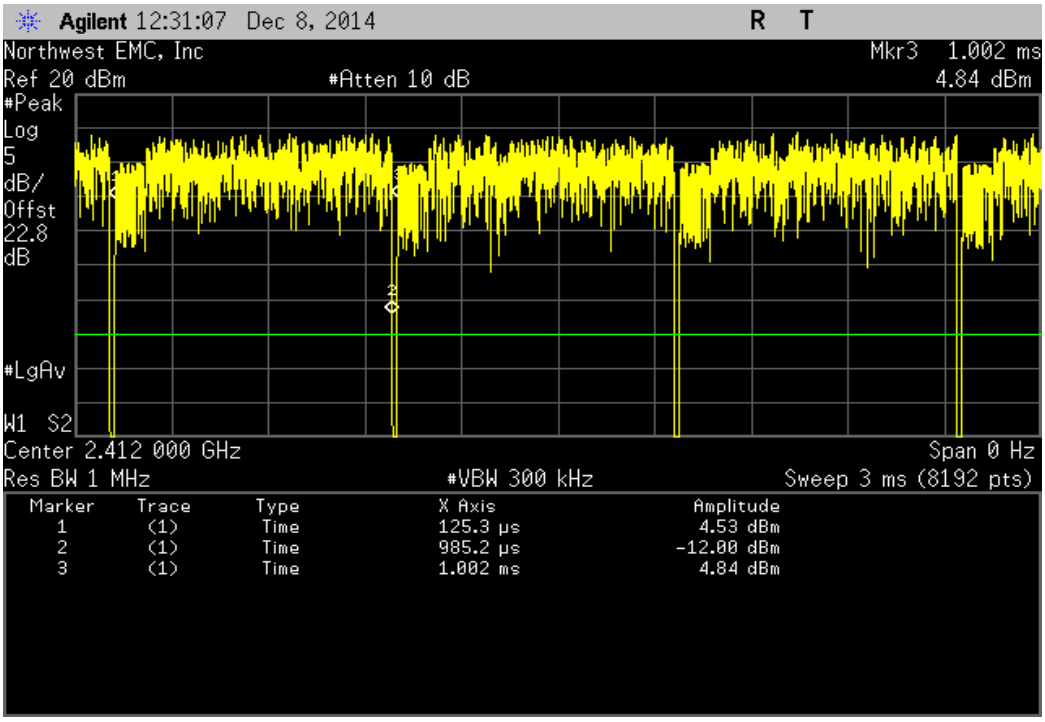
2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A



DUTY CYCLE

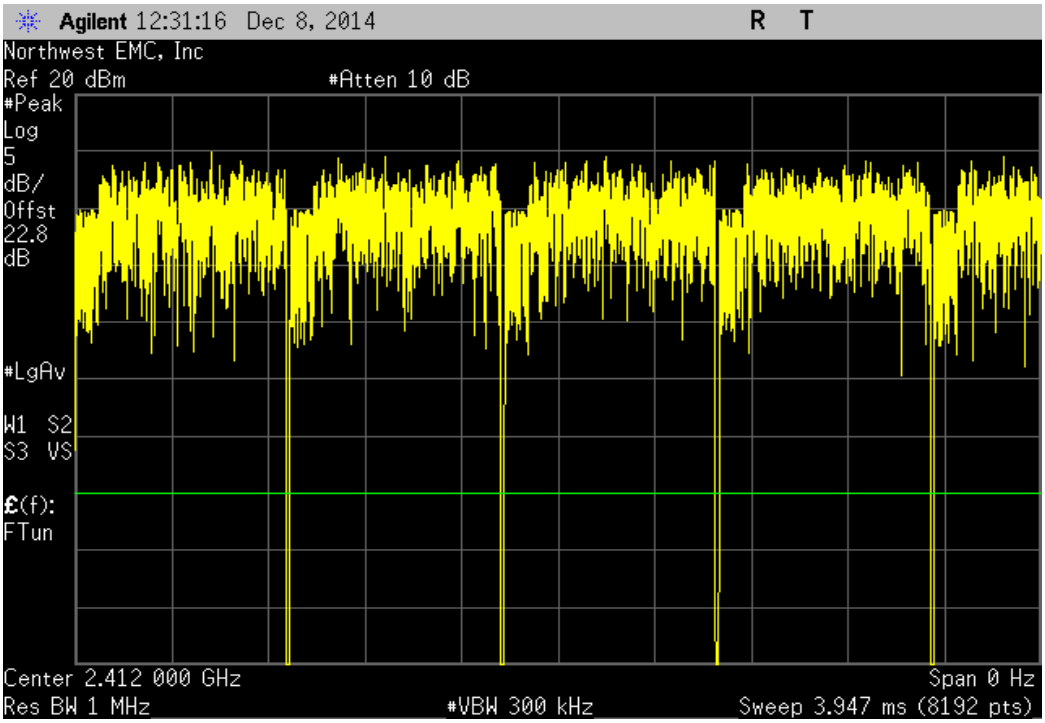
2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz

	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	859.9 us	877.1 us	1	98	N/A	N/A



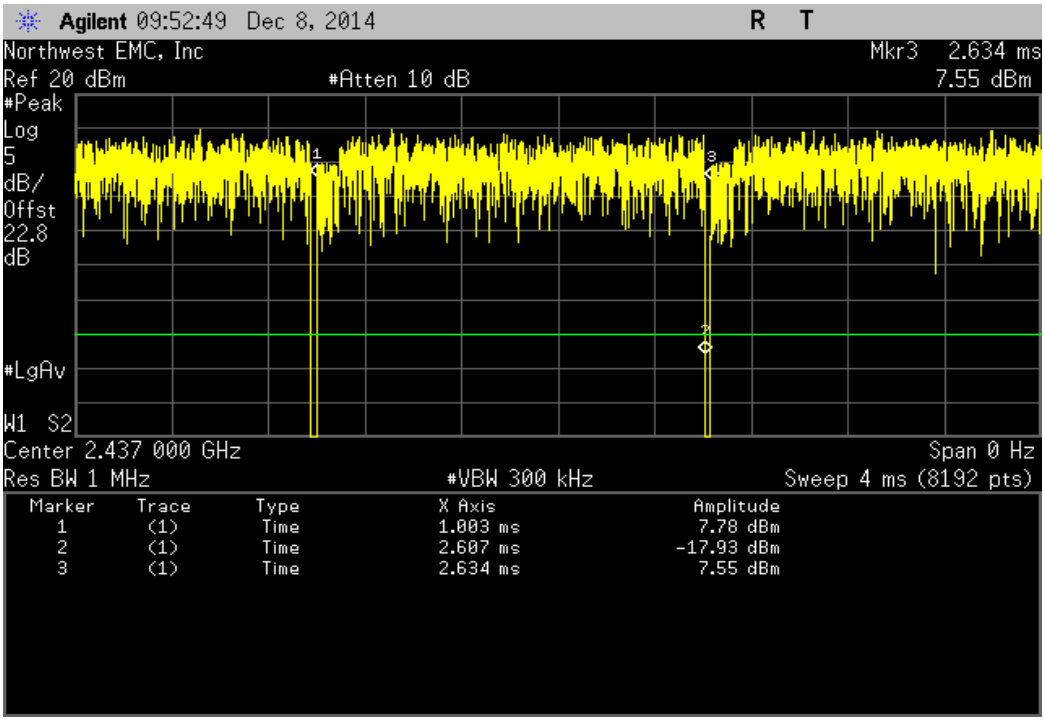
2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz

	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A

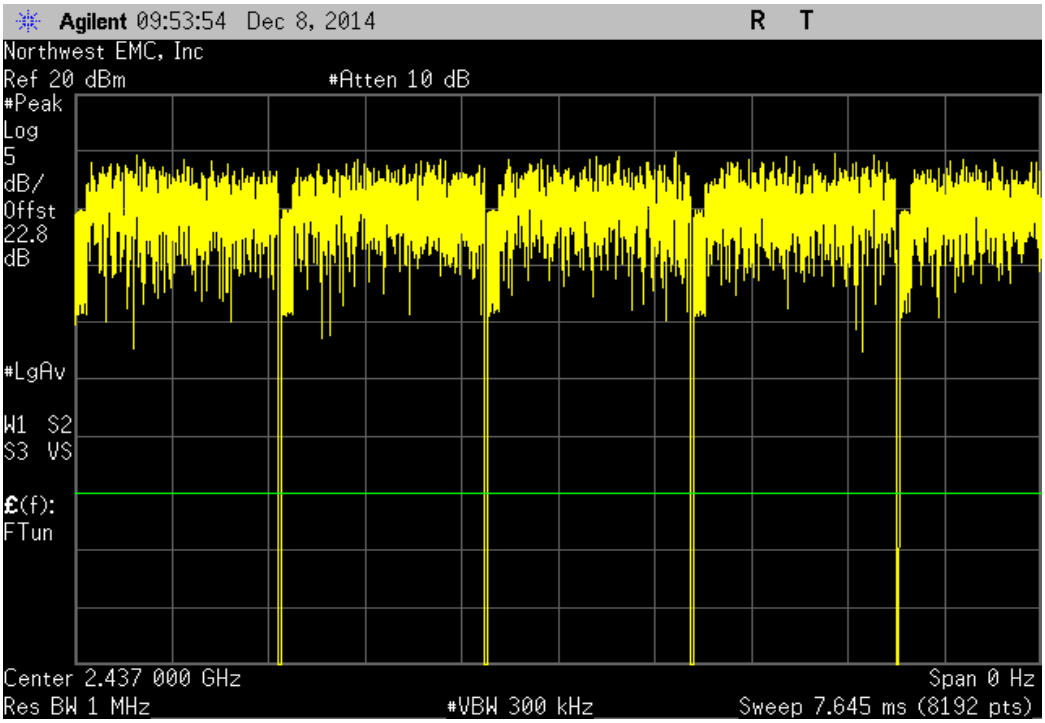


DUTY CYCLE

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

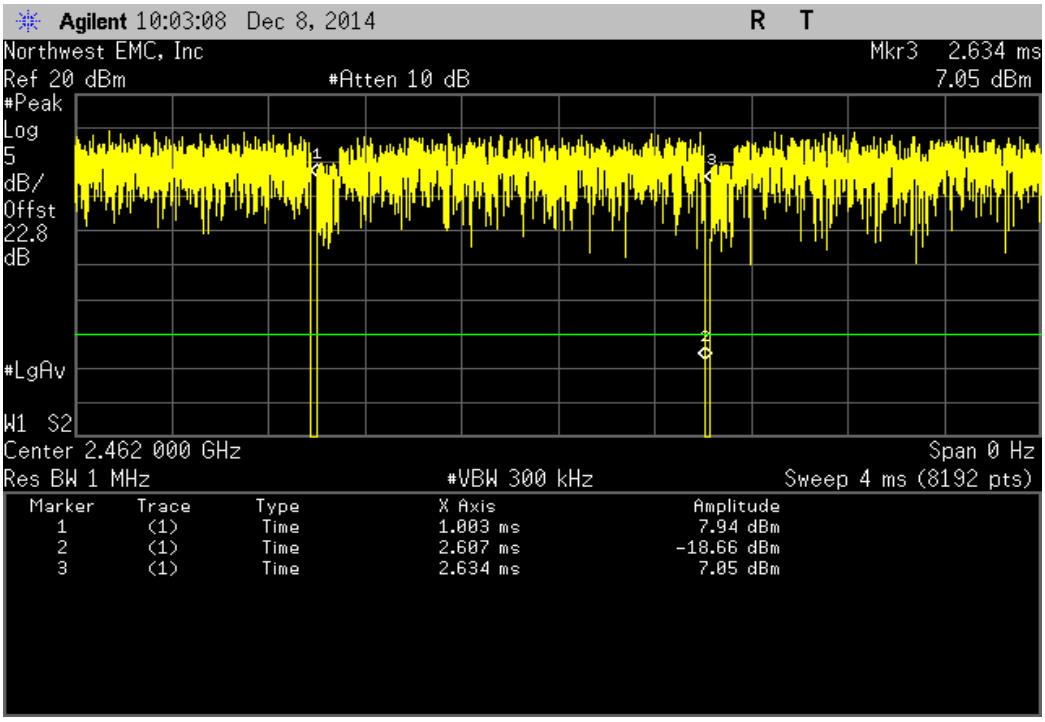


2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Mid Channel 6, 2437 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A

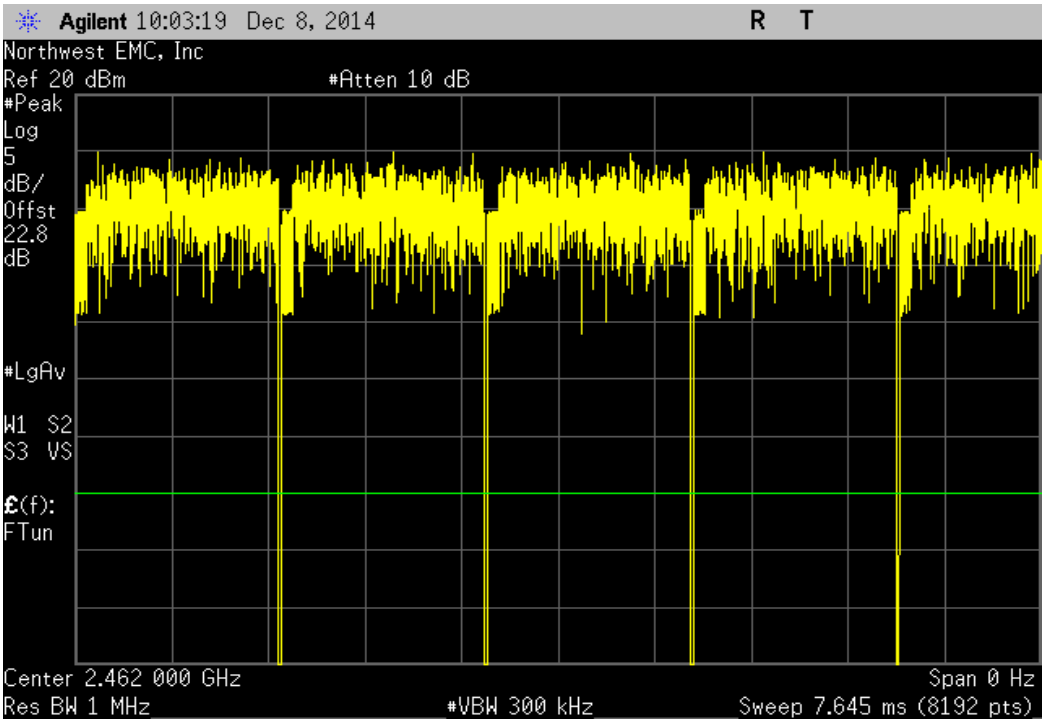


DUTY CYCLE

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

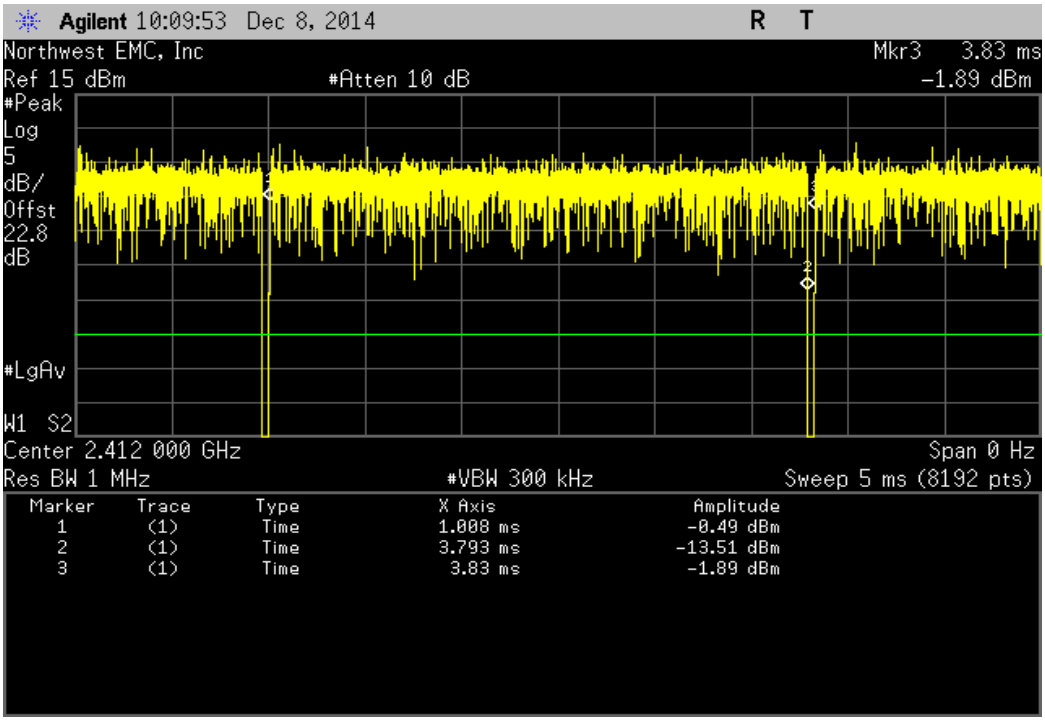


2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A

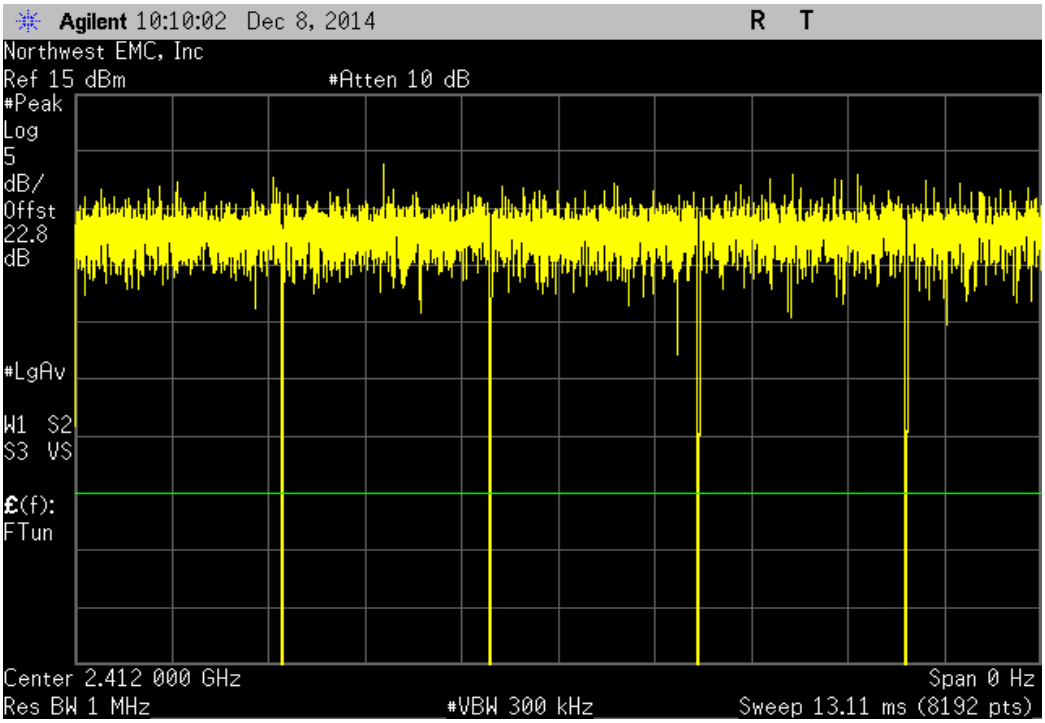


DUTY CYCLE

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

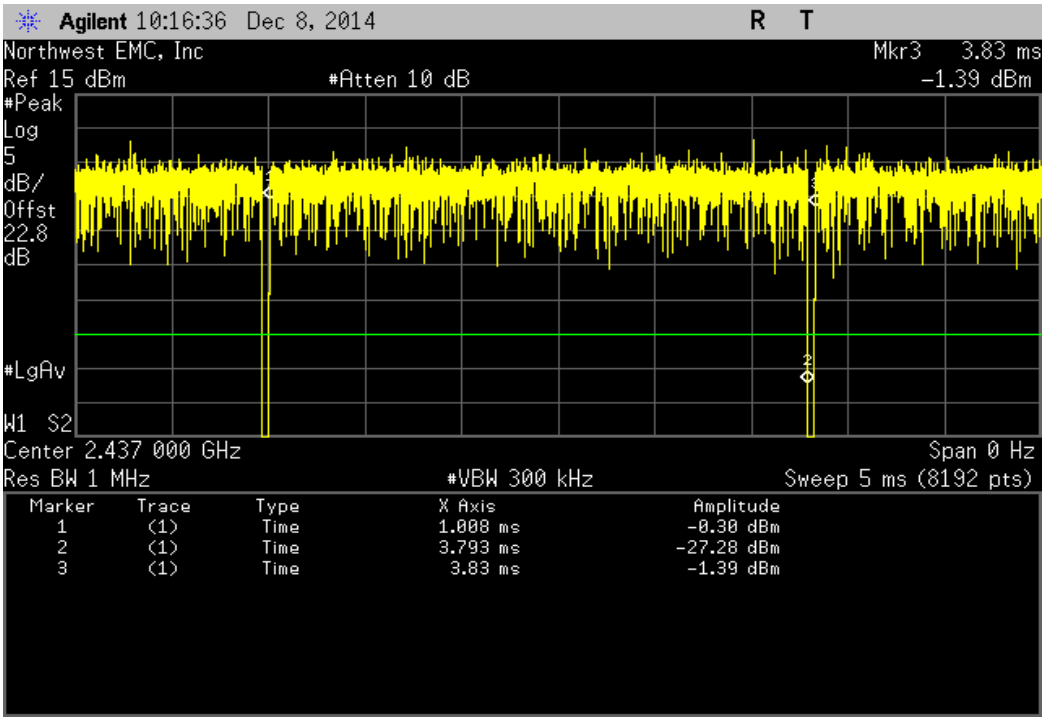


2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A

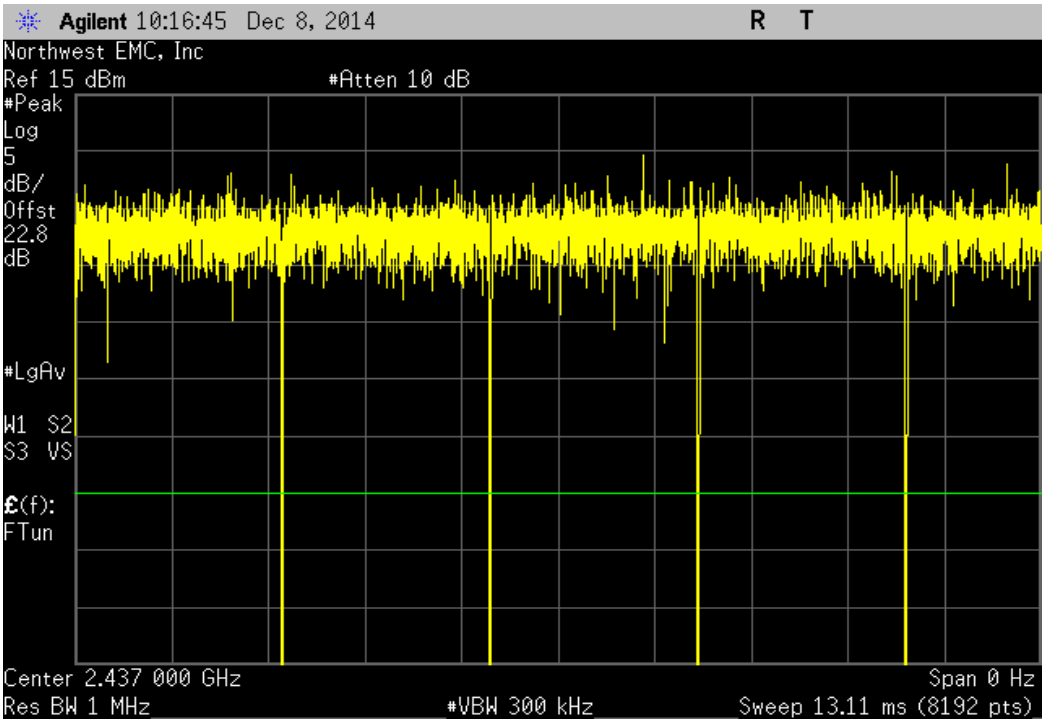


DUTY CYCLE

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



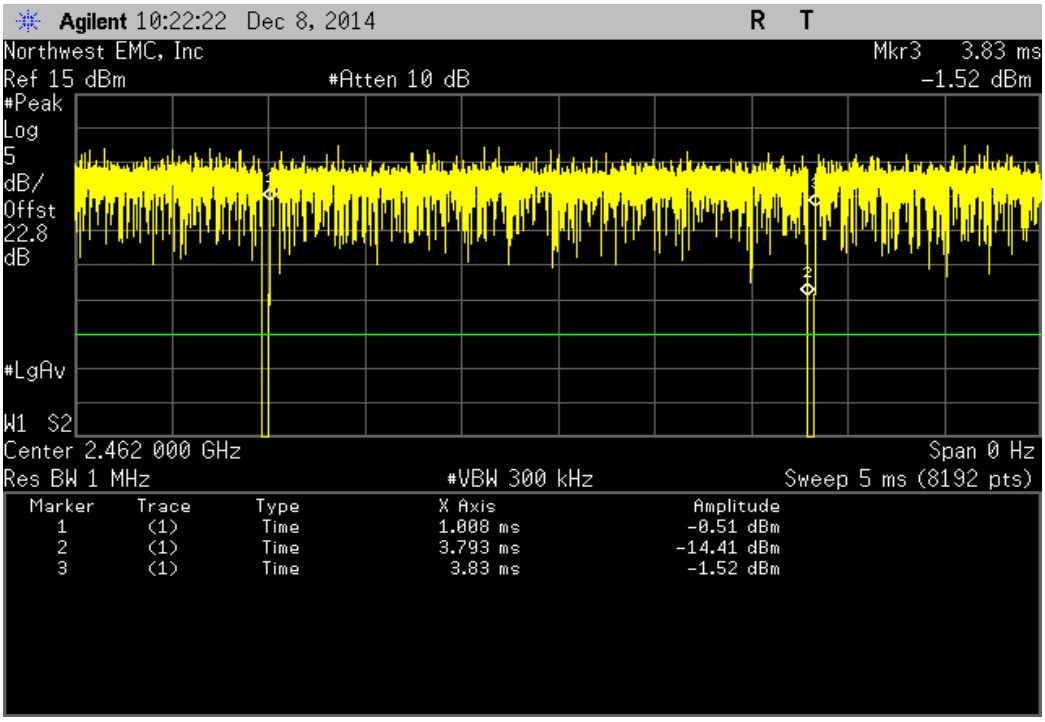
2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A



DUTY CYCLE

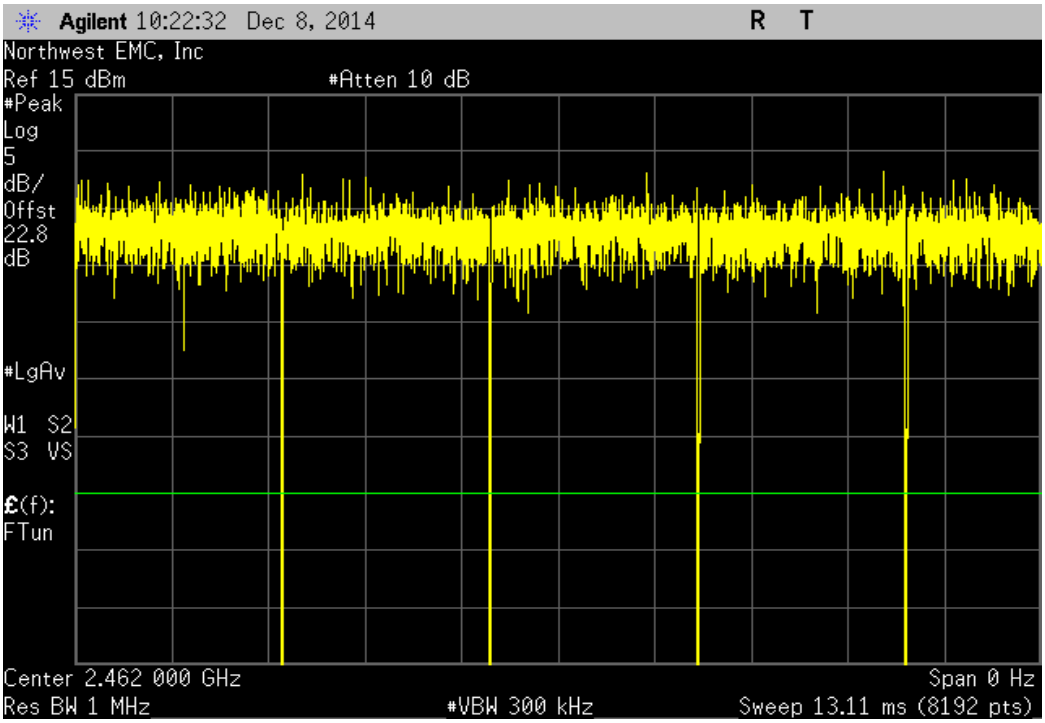
2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz

	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	2.785 ms	2.823 ms	1	98.7	N/A	N/A



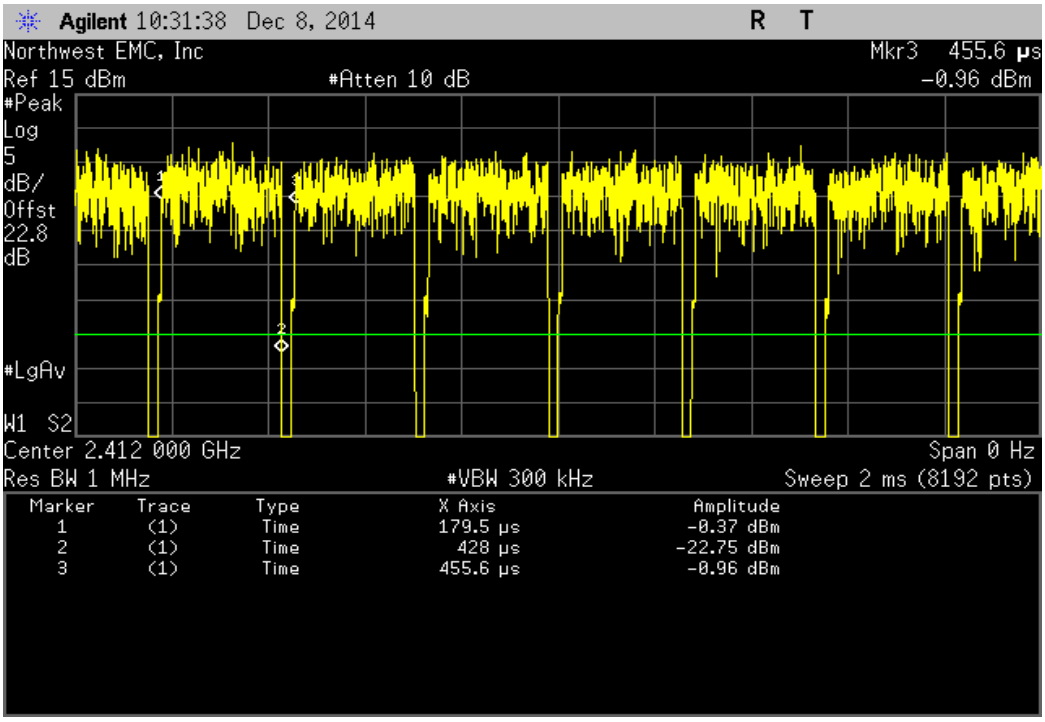
2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz

	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A

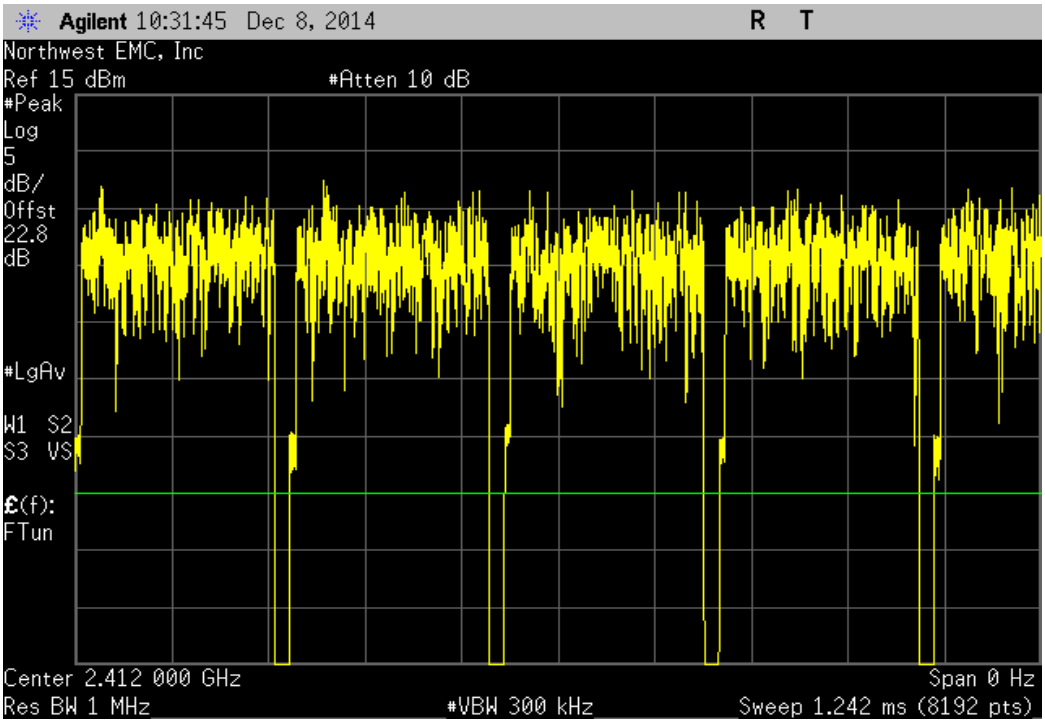


DUTY CYCLE

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

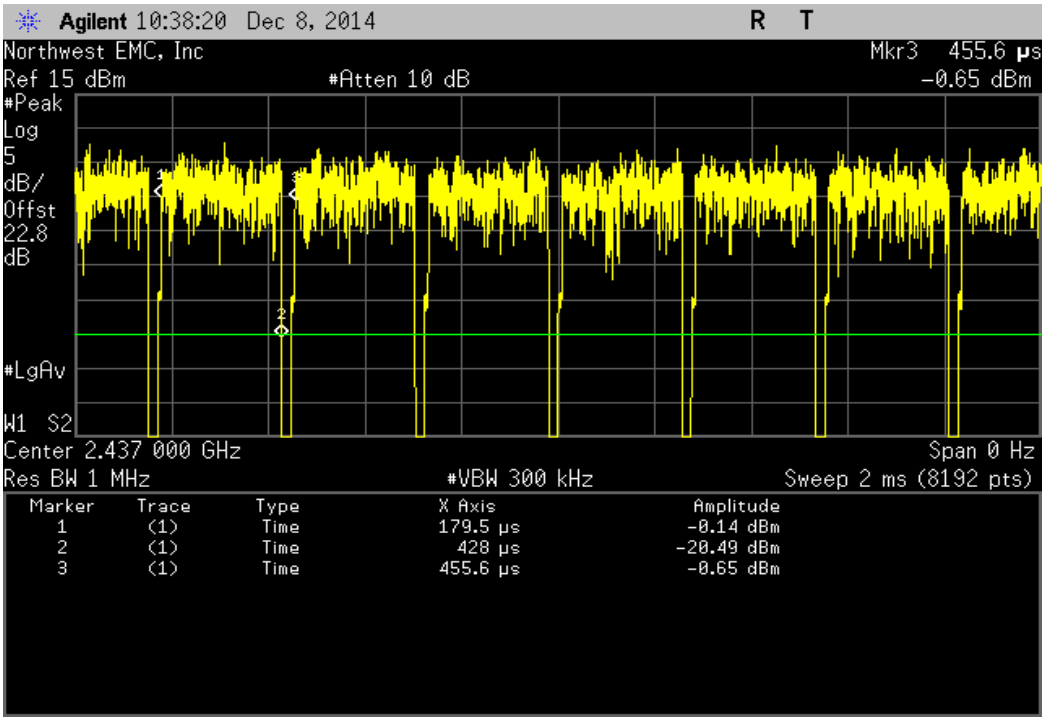


2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A

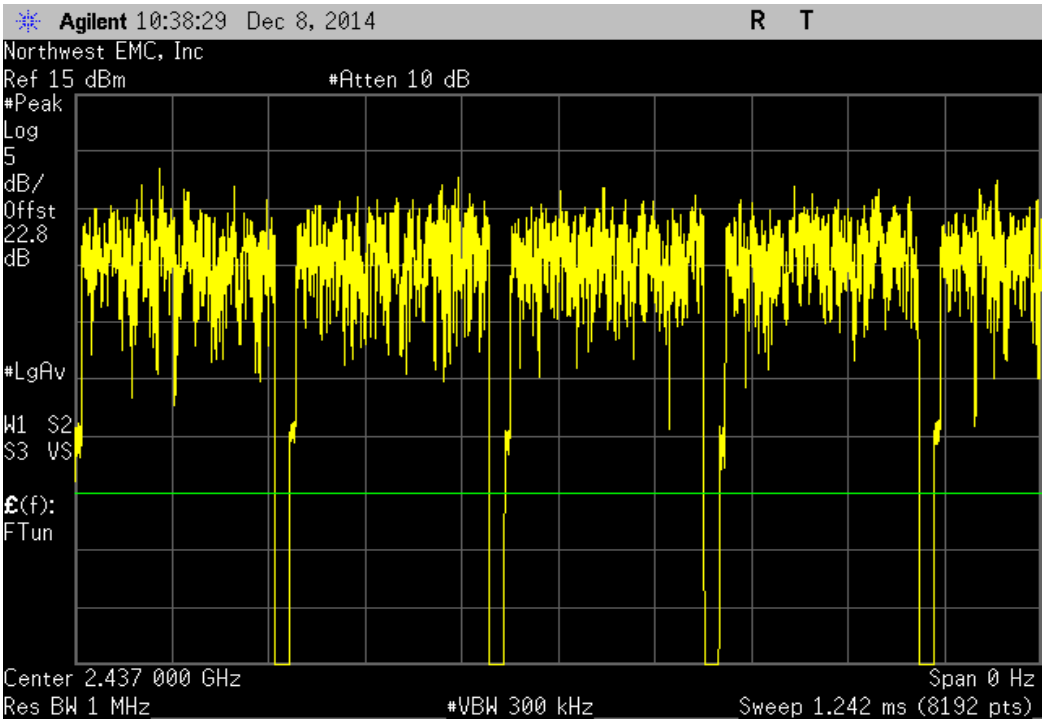


DUTY CYCLE

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

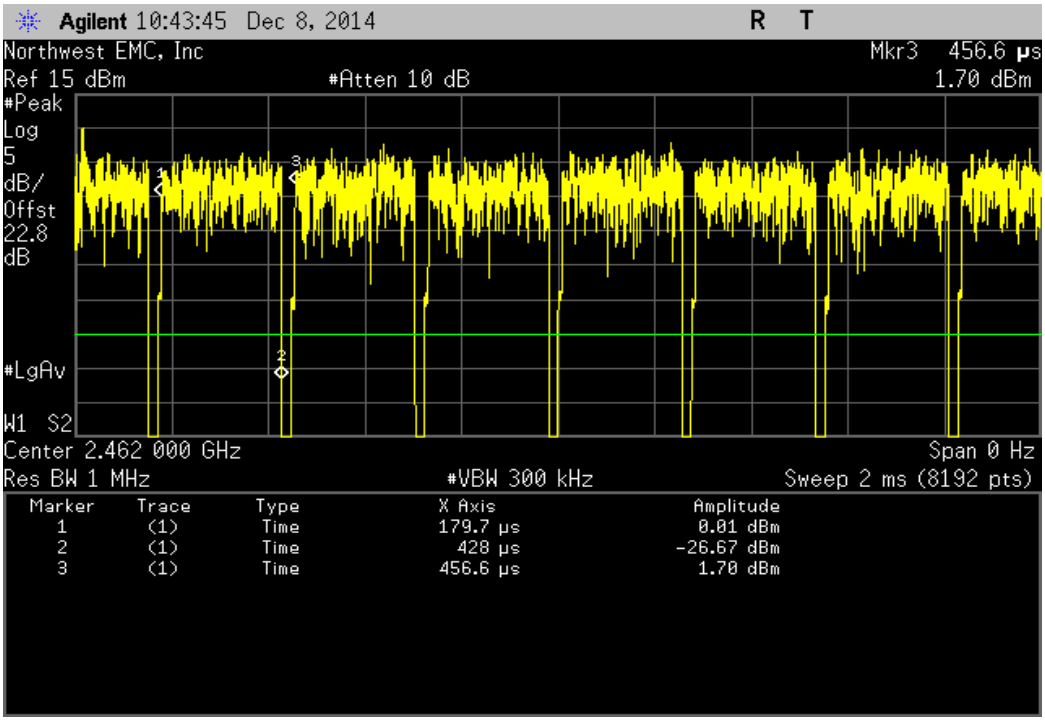


2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Mid Channel 6, 2437 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A

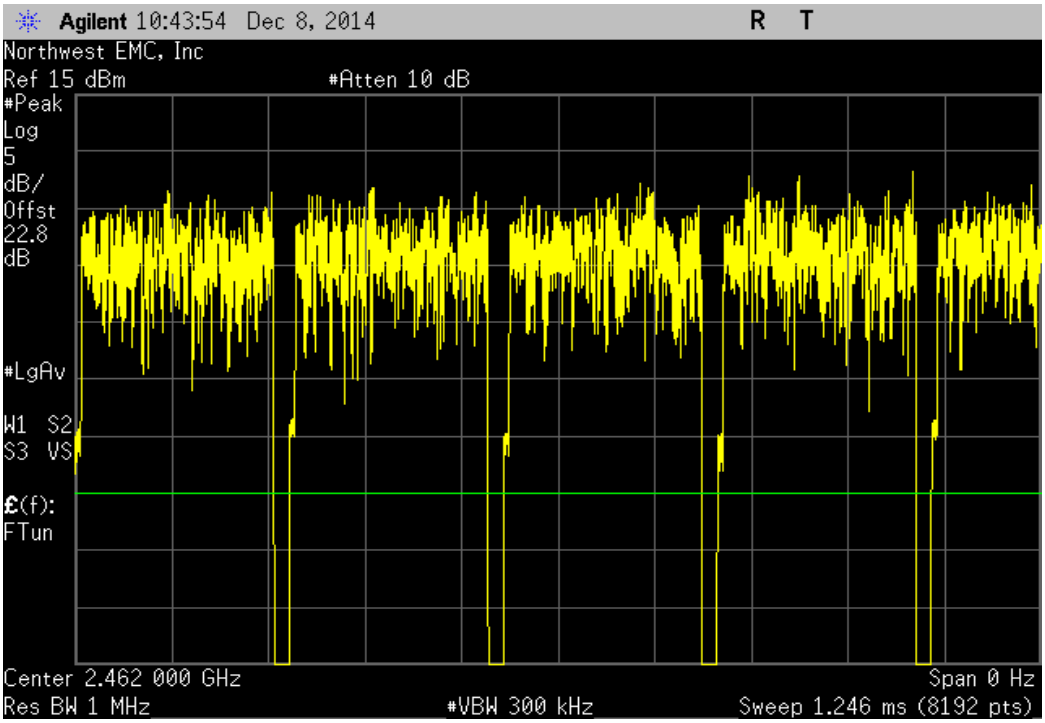


DUTY CYCLE

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

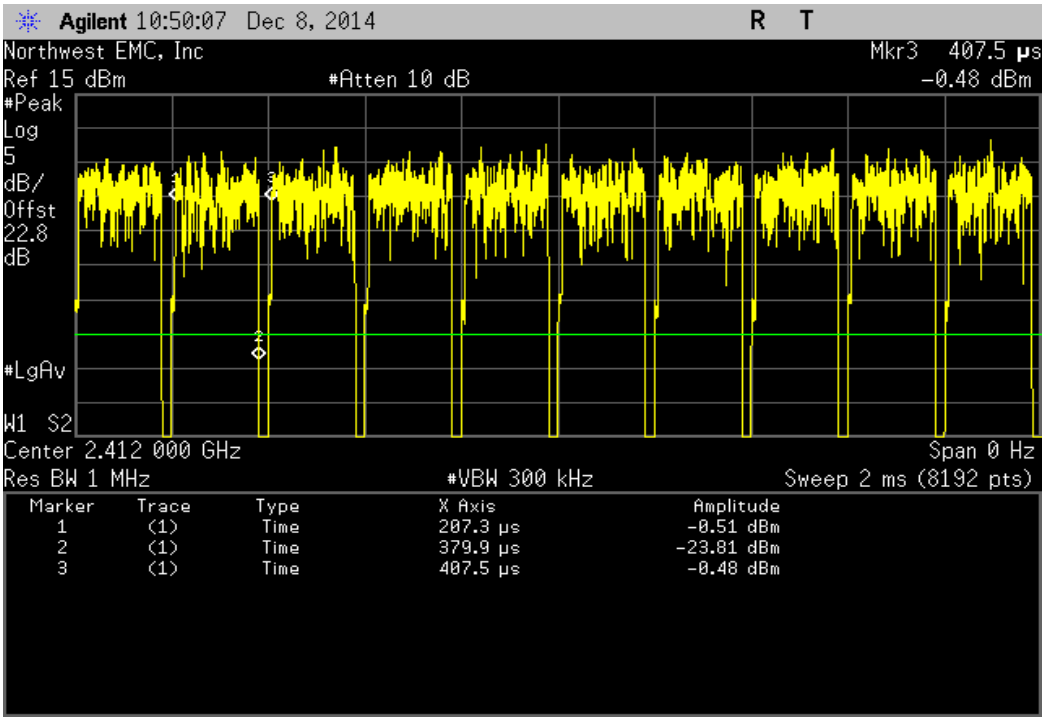


2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A

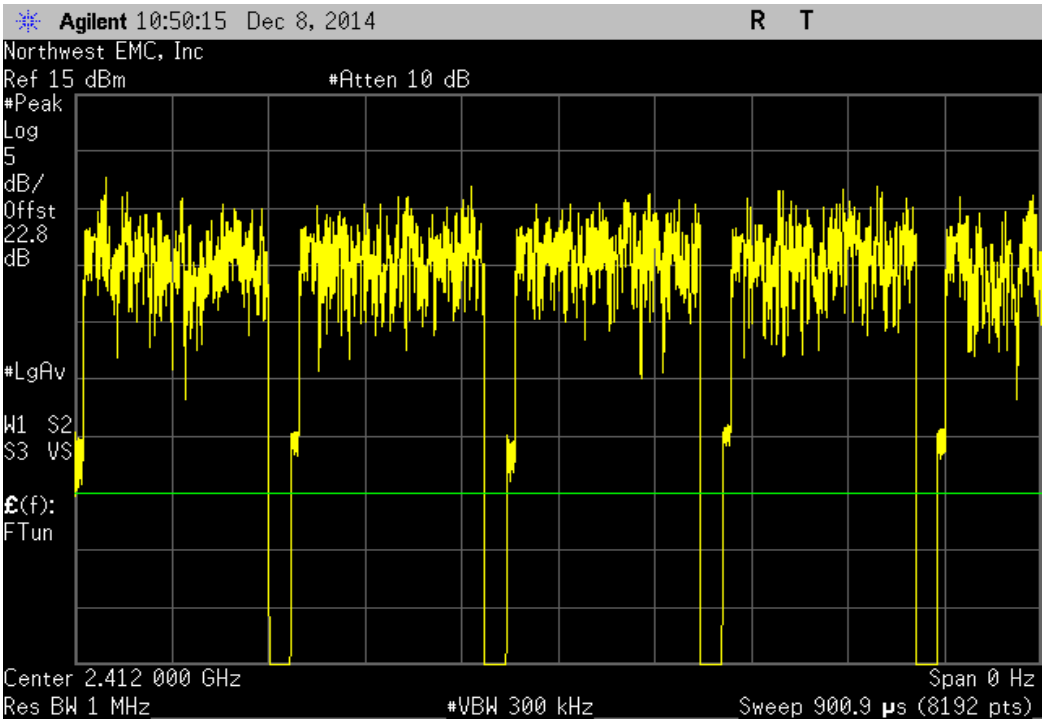


DUTY CYCLE

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

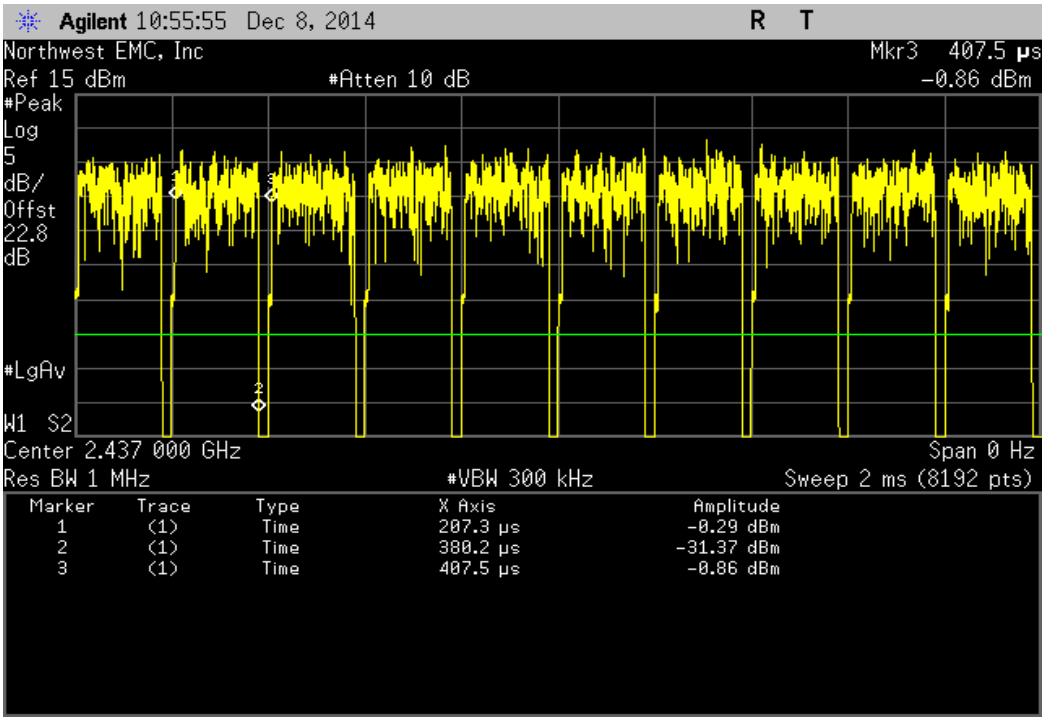


2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	6	N/A	N/A	N/A

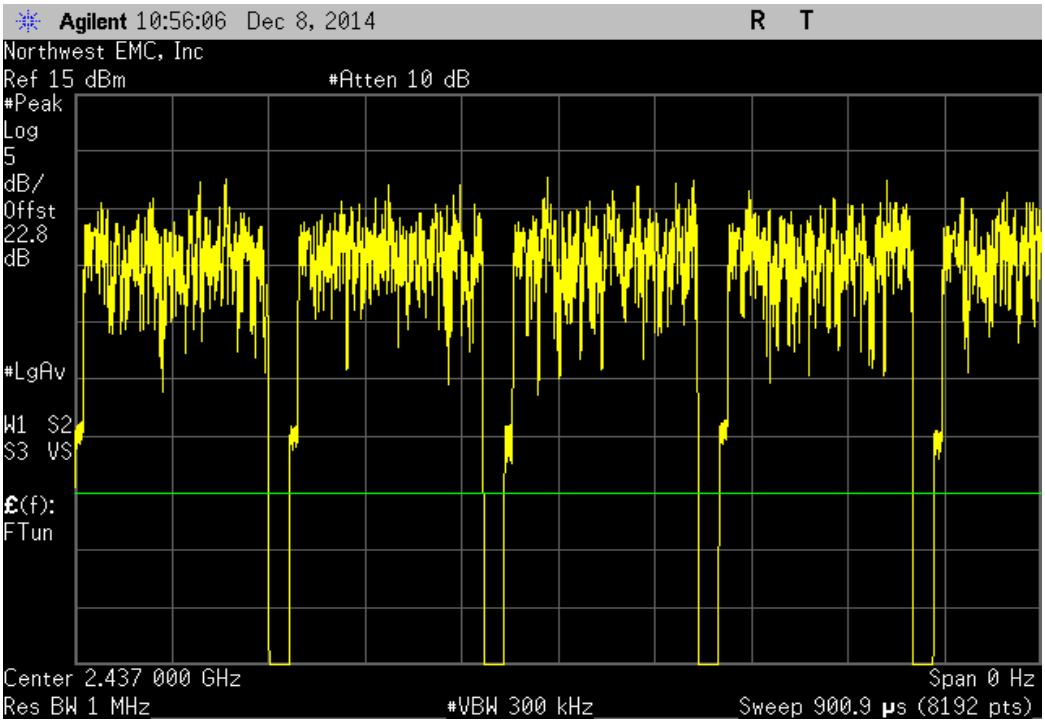


DUTY CYCLE

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

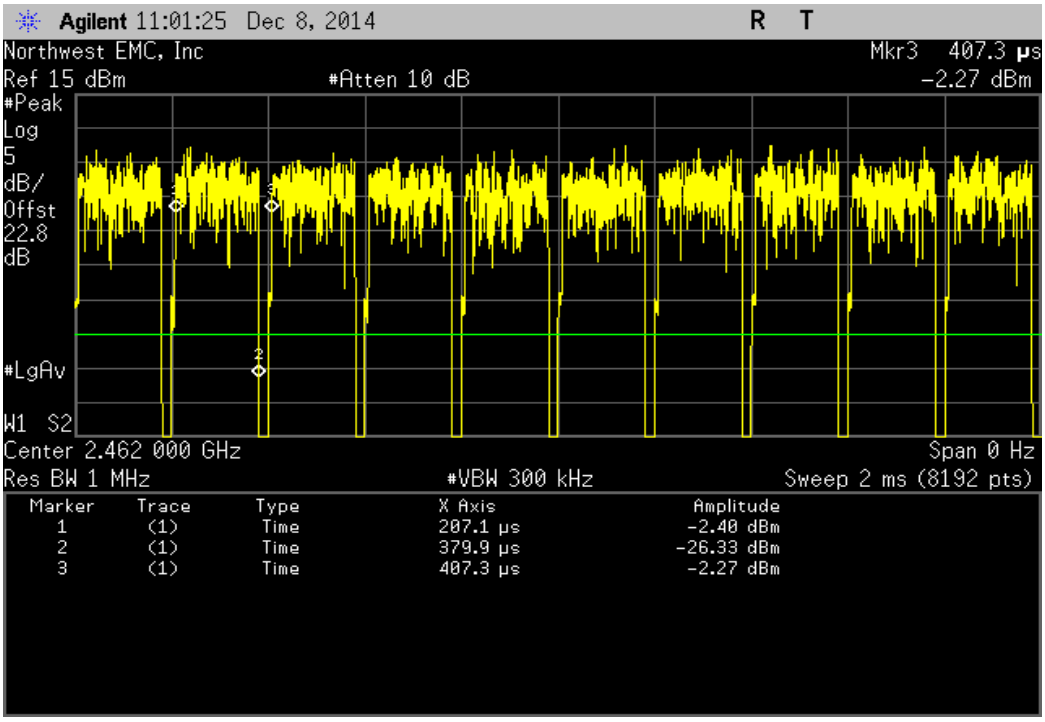


2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A

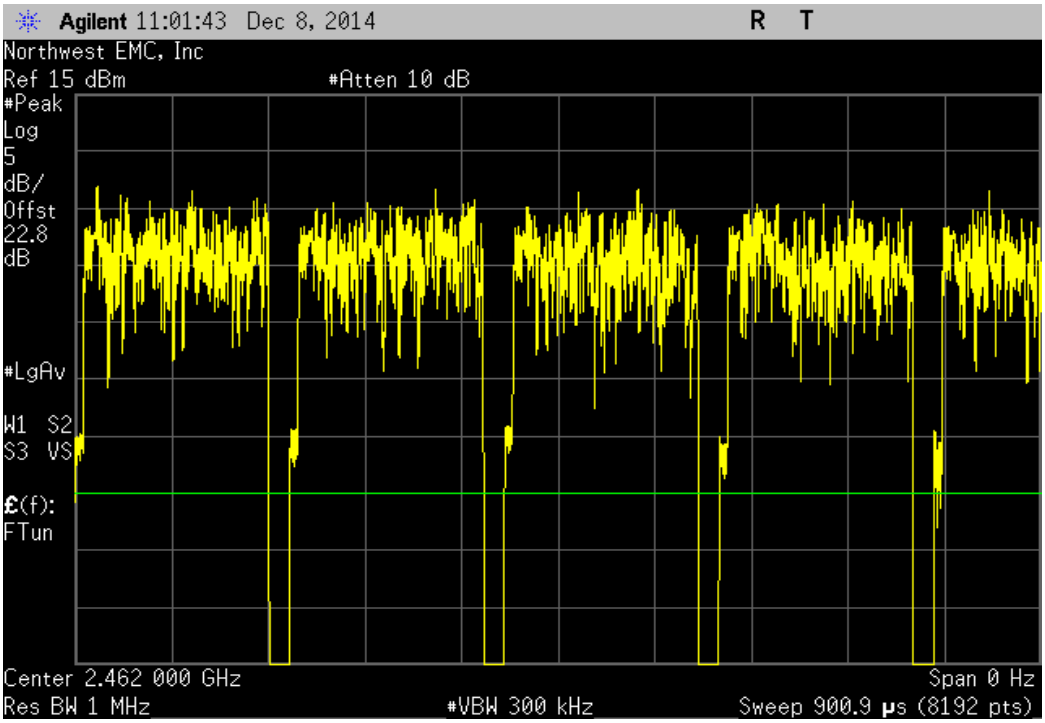


DUTY CYCLE

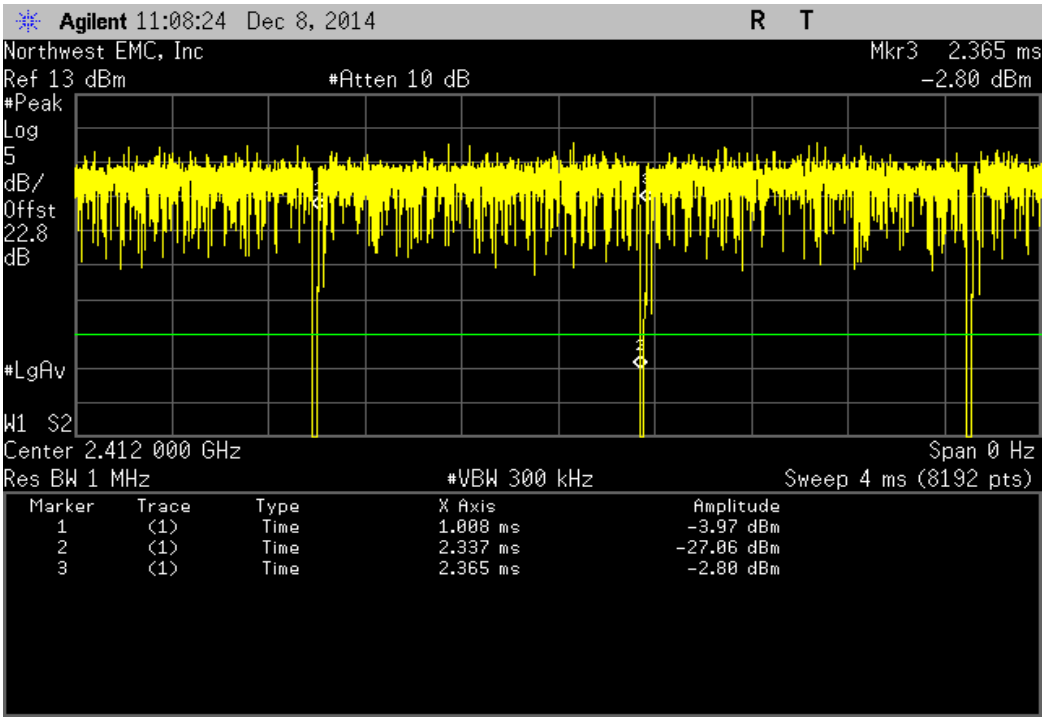
2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	172.8 us	200.2 us	1	86.3	N/A	N/A



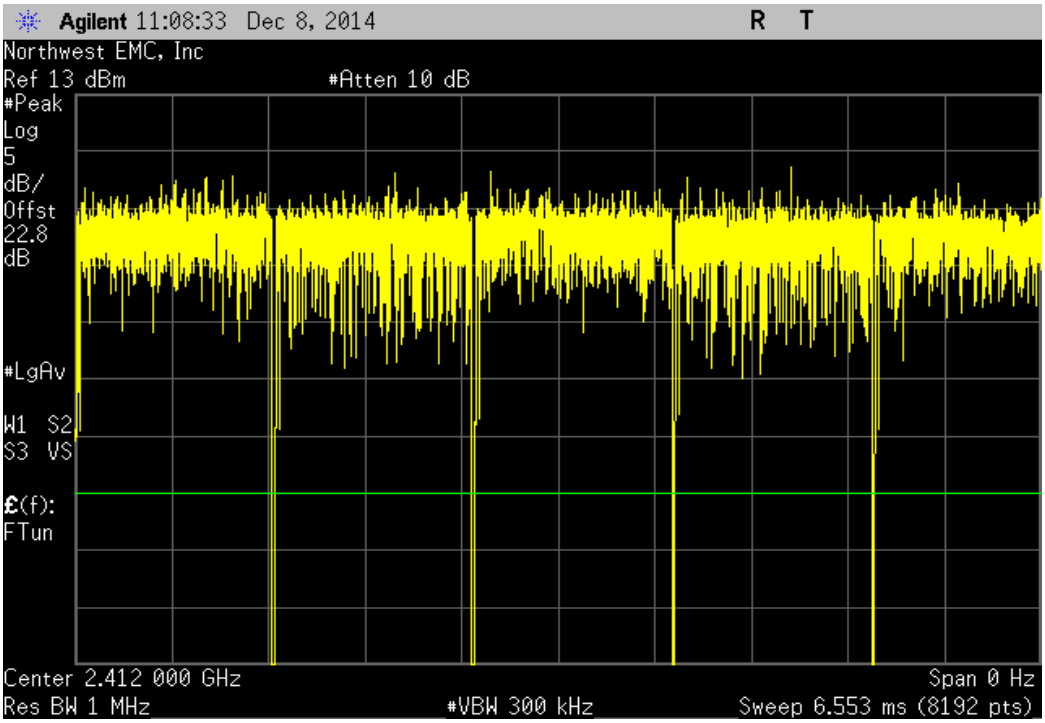
2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	6	N/A	N/A	N/A



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

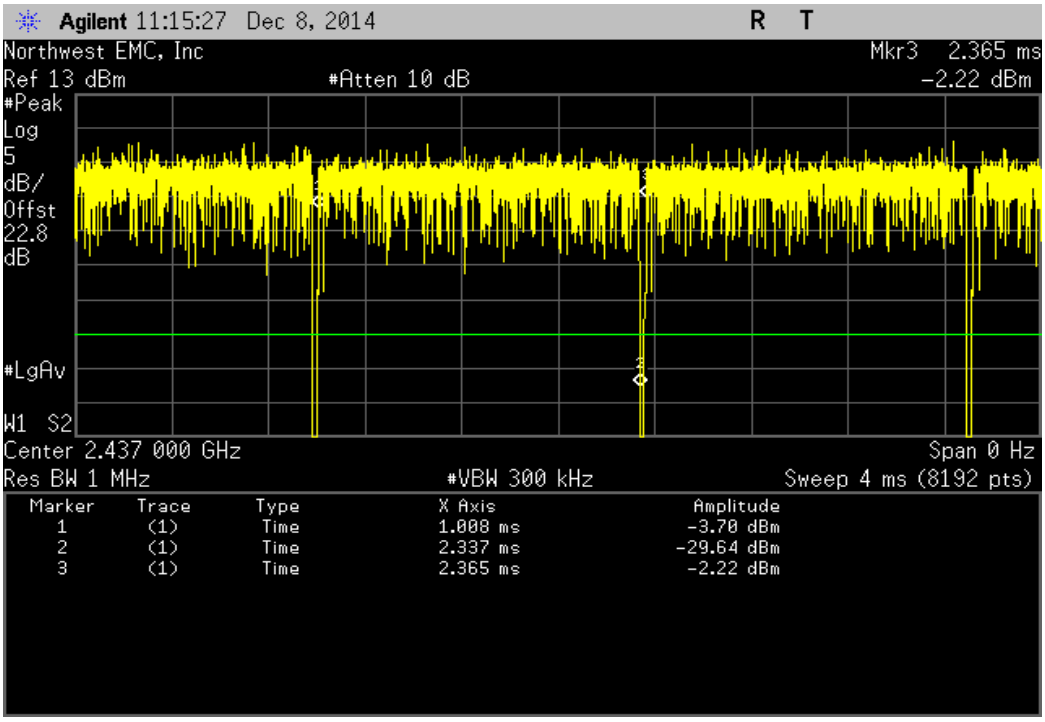


2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1, 2412 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A

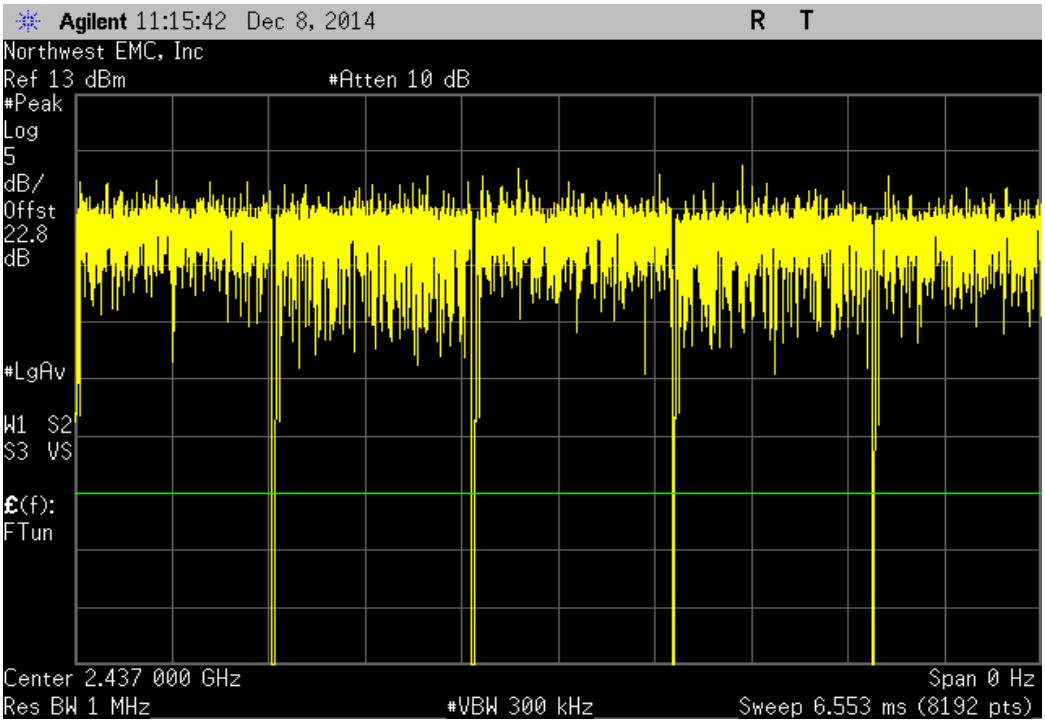


DUTY CYCLE

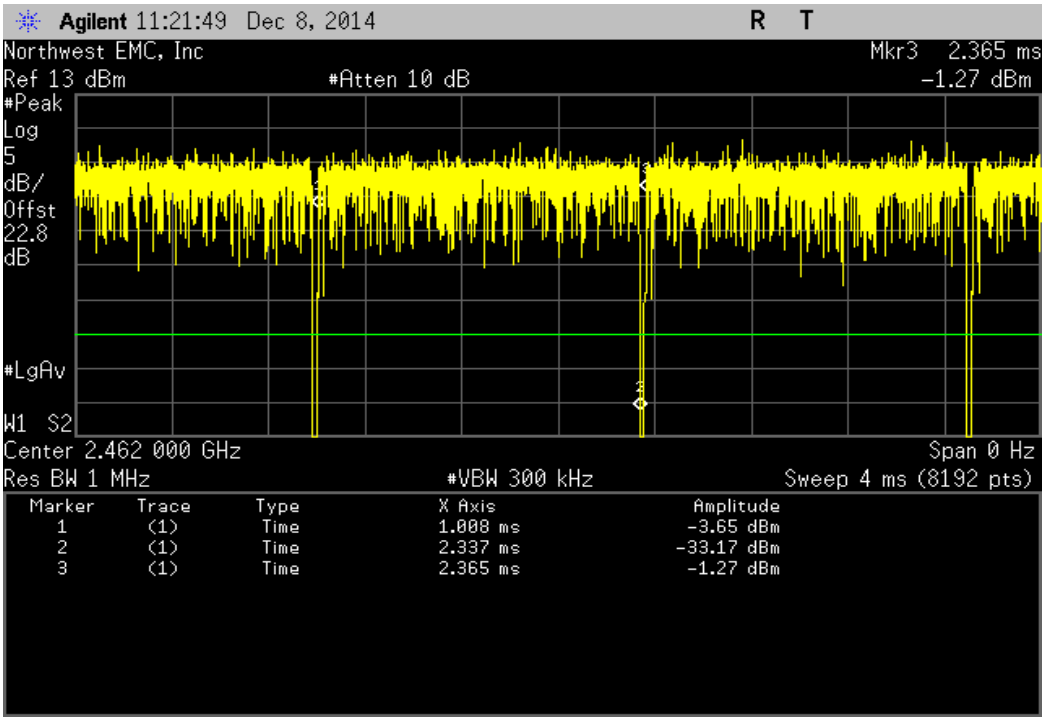
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Mid Channel 6, 2437 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	1.329 ms	1.357 ms	1	98	N/A	N/A



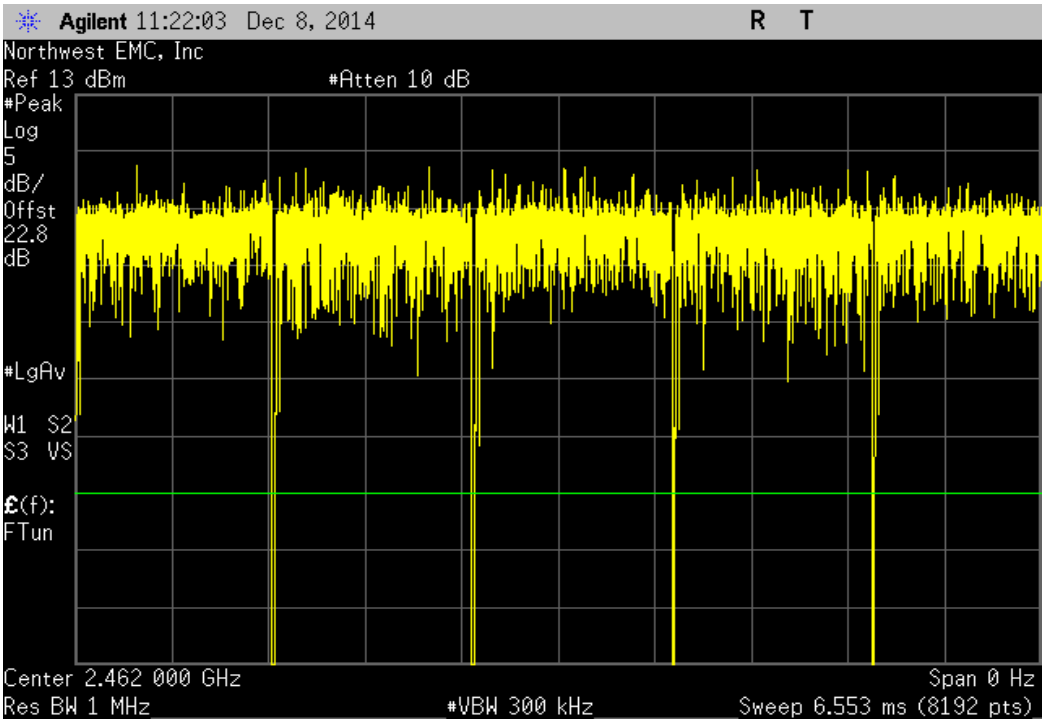
2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Mid Channel 6, 2437 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A



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

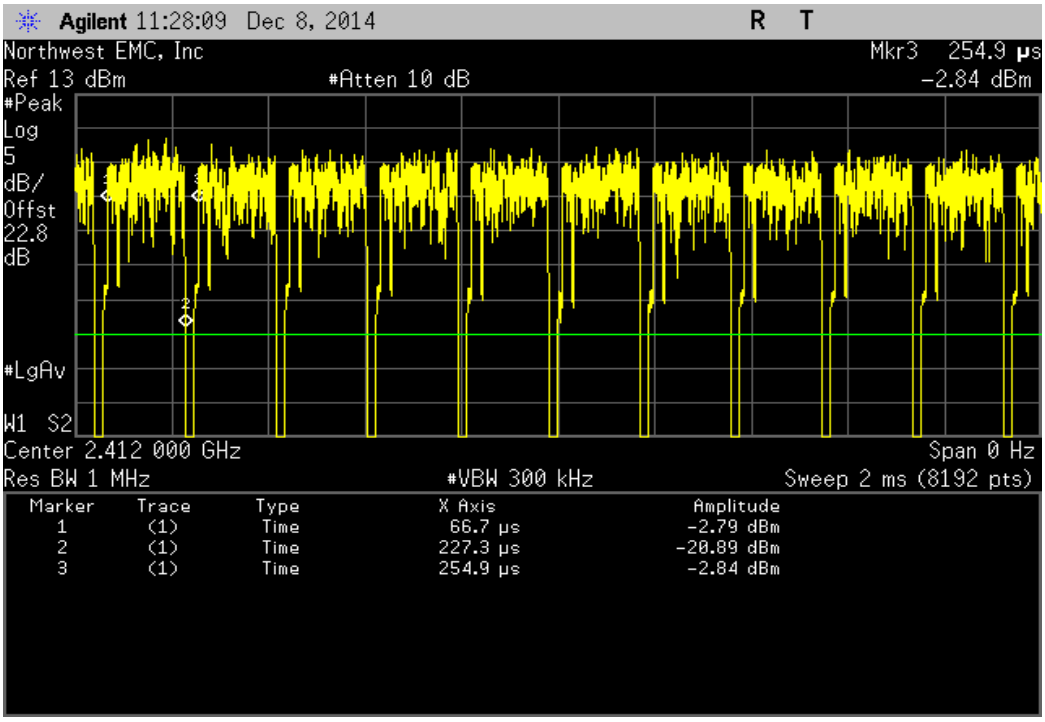


2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 11, 2462 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	5	N/A	N/A	N/A

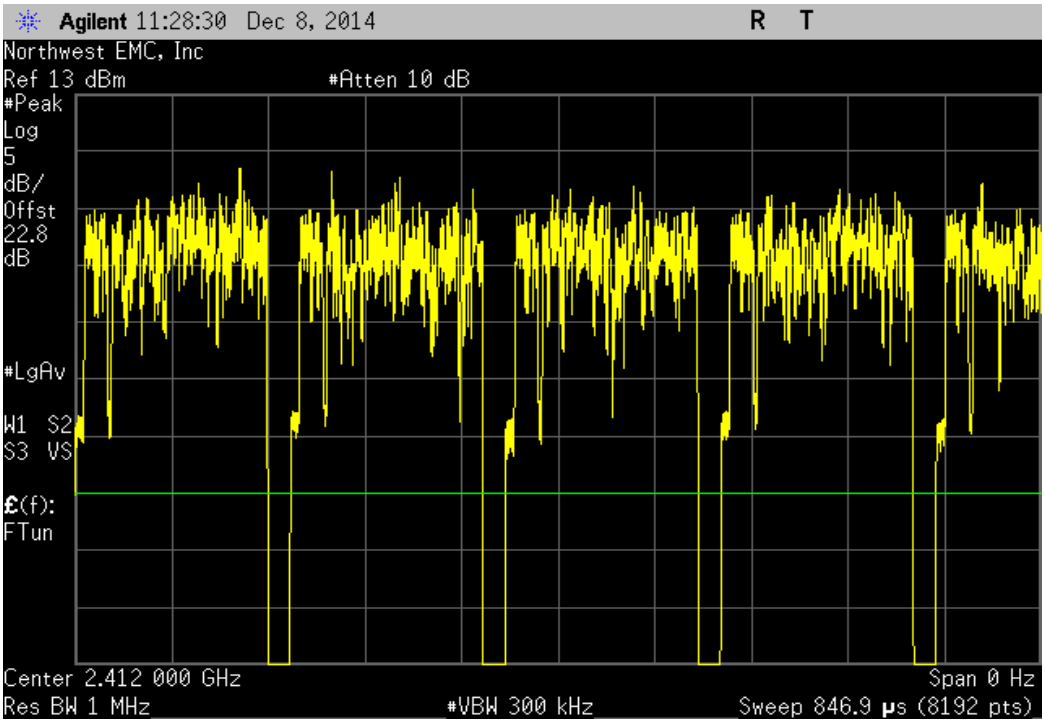


DUTY CYCLE

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

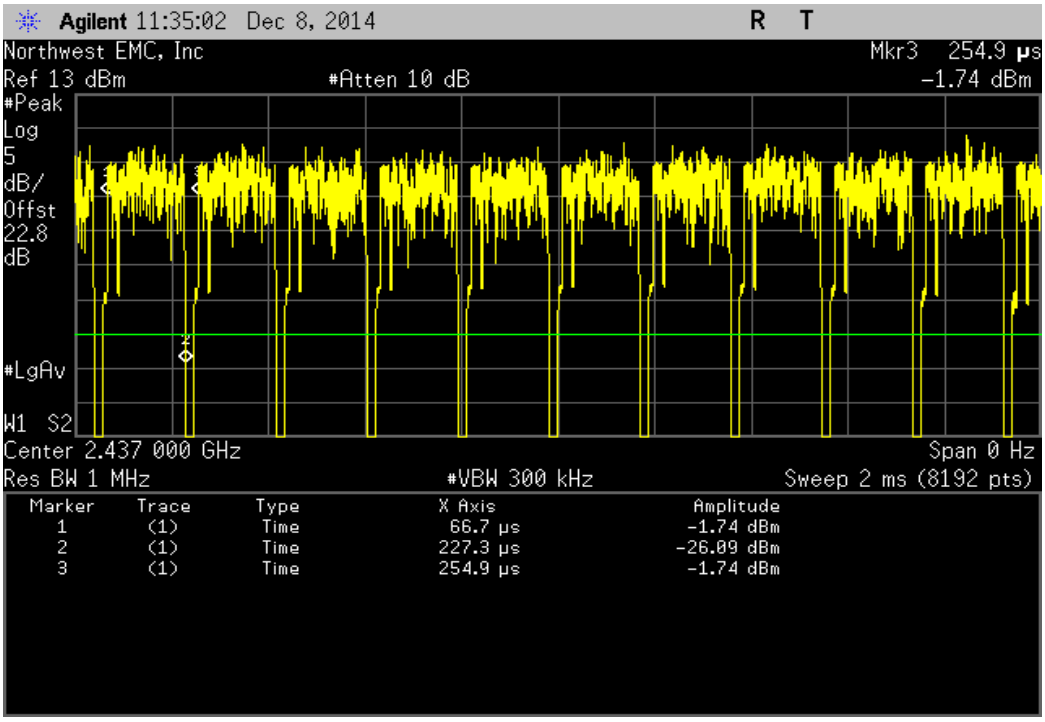


2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1, 2412 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	6	N/A	N/A	N/A

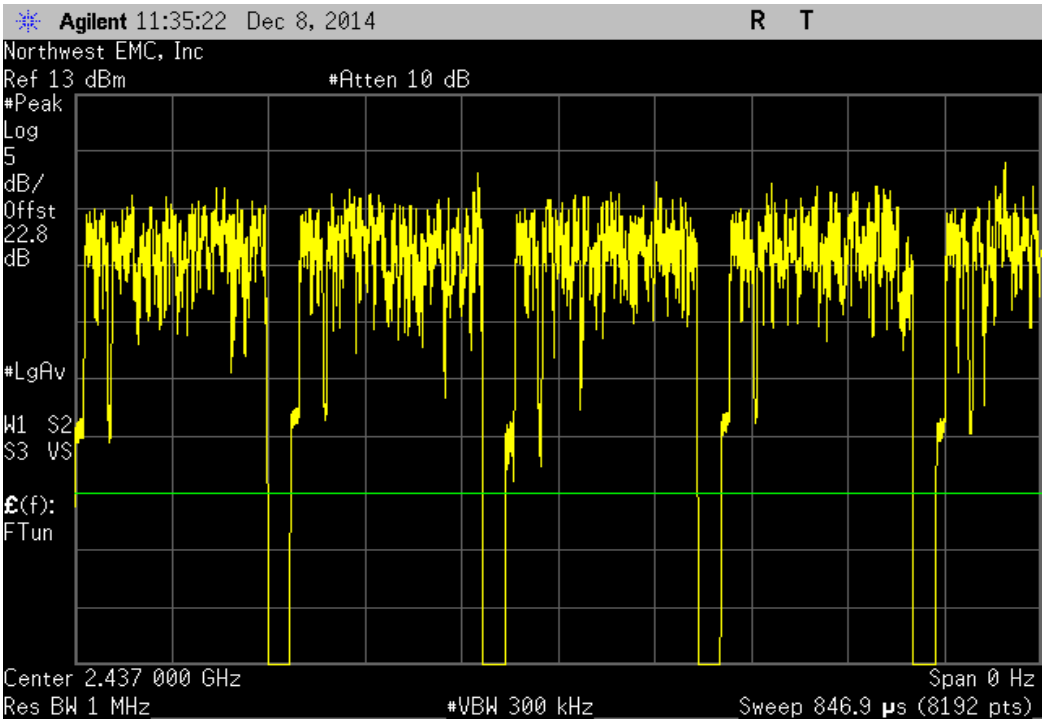


DUTY CYCLE

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

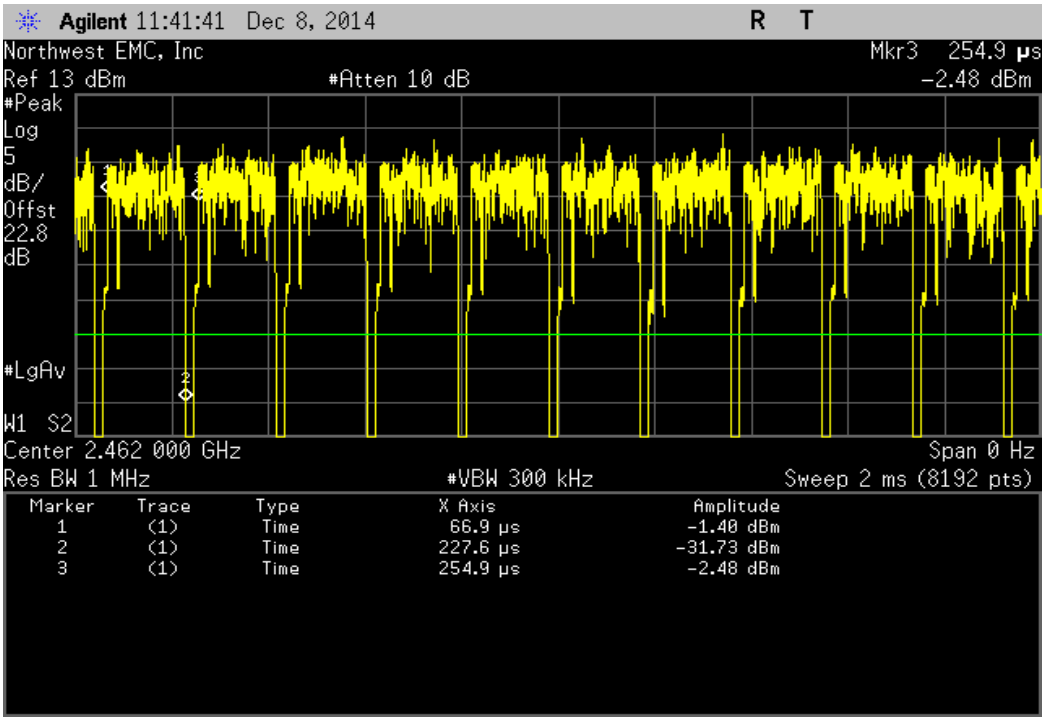


2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Mid Channel 6, 2437 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit (%)	Results
	N/A	N/A	6	N/A	N/A	N/A



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