NORTHWEST EMC

Welch Allyn Protocol, Inc.

WATY

FCC 15.247:2014

Report # PROT0338

NVLAP Lab Code: 200630-0

CERTIFICATE OF TEST

NORTHWEST EMC
2014-12-10

Last Date of Test: December 09, 2014
Welch Allyn Protocol, Inc.
Model: WATY

Radio Equipment Testing

Standards

Specification	Method
FCC 15.247:2014	ANSI C63.10:2009
	KDB 558074 V3

Results

Method Clause	Test Description	Applied	Results	Comments
6.2	AC Powerline Conduced 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	N/A	Characterization of radio operation.

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

NORTHWEST EMC
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

NORTHWEST EMC
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.

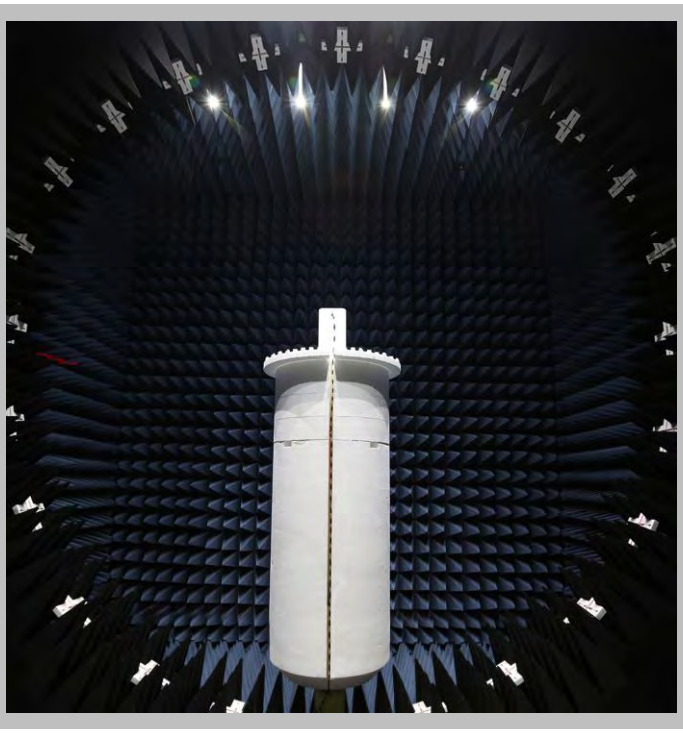
The following table represents the Measurement Uncertainty (MU) budgets for each of the tests that may be contained in this report.

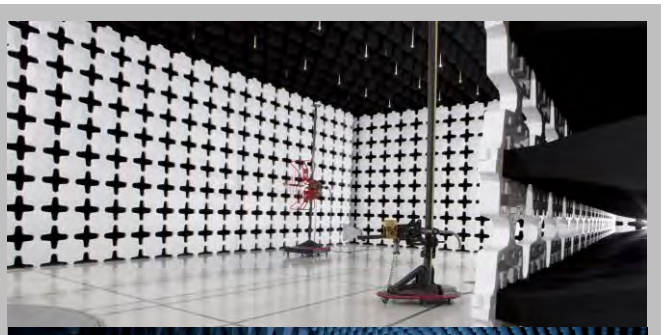
Test	+ MU	- MU
Frequency Accuracy (Hz)	0.0007%	-0.0007%
Amplitude Accuracy (dB)	1.2 dB	-1.2 dB
Conducted Power (dB)	0.3 dB	-0.3 dB
Radiated Power via Substitution (dB)	0.7 dB	-0.7 dB
Temperature (degrees C)	0.7°C	-0.7°C
Humidity (% RH)	2.5% RH	-2.5% RH
Voltage (AC)	1.0%	-1.0%
Voltage (DC)	0.7%	-0.7%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

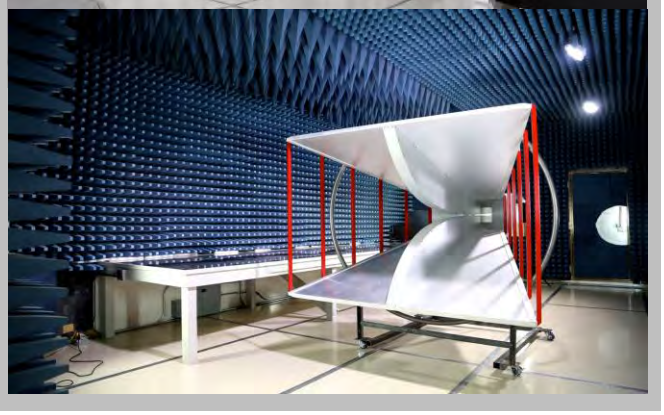
FACILITIES

NORTHWEST EMC
REV 2015.1.05

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	SL2-IN-E-1158R	SL2-IN-E-1153R
VCCI					
A-0029	A-0109	N/A	A-0108	A-0201	A-0110







PRODUCT DESCRIPTION

NORTHWEST EMC
2014-12-10

Client and Equipment Under Test (EUT) Information

Company Name:	Welch Allyn Protocol, Inc.
Address:	8500 SW Creekside Place
City, State, Zip:	Beaverton, OR 97008-7107
Test Requested By:	Rob Berry
Model:	WATY
First Date of Test:	December 03, 2014
Last Date of Test:	December 09, 2014
Receipt Date of Samples:	December 01, 2014
Equipment Design Stage:	Production
Equipment Condition:	No Damage

Information Provided by the Party Requesting the Test

Functional Description of the EUT:
802.11 b/g/n SISO radio module with one antenna.

Testing Objective:
To demonstrate compliance of the 802.11 radio under FCC 15.247 for operation in the 2.4 GHz band.

CONFIGURATIONS

NORTHWEST EMC 2014-12-10

Configuration PROT0338- 1

Software/Firmware Running during test	
Description	**Version**
Putty	Unknown
Windows 7	SP1
Linux	2.6

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
802.11 bgn Radio Module	e-Con Systems	WATY/eSOM3730 2.6	E3730BG4098

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
2.4 GHz Antenna	Pulse	W1049B	Unknown
eSOM3730 Base Test PCBA (Dev PCBA)	e-Con Systems	eSOM3730 Base Test PCBA (Dev PCBA)	10
Test Laptop	Lenovo	Unknown	Unknown
AC/DC Adapter	Triad	WSU050-3000	Unknown
Ethernet/Hub PCBA	e-Con Systems	Unknown	EUEC011
AC/DC Power Supply	Lenovo	92P1109	Unknown

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
USB A-B	Unknown	.5m	No	Ethernet/Hub PCBA	eSOM3730 Base Test PCBA (Dev PCBA)
USB micro-A	Unknown	1m	No	eSOM3730 Base Test PCBA (Dev PCBA)	Test Laptop
DC Power Cable	Unknown	2m	No	AC Main	eSOM3730 Base Test PCBA (Dev PCBA)
Ethernet Cable	Unknown	2m	No	Test Laptop	Ethernet/Hub PCBA

CONFIGURATIONS

NORTHWEST EMC 2014-12-10

Configuration PROT0338- 2

Software/Firmware Running during test	
Description	**Version**
Putty	Unknown
Windows 7	SP1
Linux	2.6

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
802.11 bgn Radio Module	e-Con Systems	WATY/eSOM3730 2.6	E3730BG4098

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
2.4 GHz Antenna	Pulse	W1049B	Unknown
Test Laptop	Lenovo	Unknown	Unknown
Ethernet/Hub PCBA	e-Con Systems	Unknown	EUEC011
DC Linear Power Supply (TPD)	Topward Electric	TPS-2000	Unknown
AC/DC Power Supply	Lenovo	92P1109	Unknown

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
USB A-B	Unknown	.5m	No	Ethernet/Hub PCBA	eSOM3730 Base Test PCBA (Dev PCBA)
USB micro-A	Unknown	1m	No	eSOM3730 Base Test PCBA (Dev PCBA)	Test Laptop
DC Power Cable	Unknown	2m	No	AC Main	eSOM3730 Base Test PCBA (Dev PCBA)
Ethernet Cable	Unknown	2m	No	Test Laptop	Ethernet/Hub PCBA
DC Power Lead	No	1m	No	eSOM3730 Base Test PCBA (Dev PCBA)	DC Linear Power Supply (TPD)

MODIFICATIONS

NORTHWEST EMC
2014-12-10

Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	12/3/2014	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.
2	12/3/2014	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	12/3/2014	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	12/3/2014	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	12/3/2014	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.
6	12/03/2014	AC Powerline 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	12/09/2014	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 POWERLINE 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
LISN	Solar	9252-50-R-24-BNC	LIN	02/03/2014	12 mo
Receiver	Rohde & Schwarz	ESCI	ARH	02/05/2014	12 mo
Attenuator, BNC 10 Watt	Fairview Microwave	SA6B10W-20	TQP	11/20/2014	12 mo
High Pass Filter	TTE	H97-100K-50-720B	HHD	01/05/2015	12 mo
EV07 Cables	N/A	Conducted Cables	EVG	03/07/2014	12 mo

MEASUREMENT UNCERTAINTY

Description		
Expanded k=2	2.4 dB	-2.4 dB

CONFIGURATIONS INVESTIGATED

PROT0338-2

MODES INVESTIGATED

Continuous Transmit on Ch. 11: 2462MHz, 1Mbps
Continuous Transmit on Ch. 1: 2412MHz, 1Mbps
Continuous Transmit on Ch. 6: 2437MHz, 1Mbps

AC POWERLINE CONDUCTED EMISSIONS

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

EUT:	WATY	Work Order:	PROT0338
Serial Number:	E3730BG4098	Date:	12/03/2014
Customer:	Welch Allyn Protocol, Inc.	Temperature:	22.3°C
Attendees:	None	Relative Humidity:	46%
Customer Project:	eSOM3730	Bar. Pressure:	1024 mb
Tested By:	Jared Ison	Job Site:	EV07
Power:	5 VDC	Configuration:	PROT0338-2

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2015	ANSI C63.10:2009

TEST PARAMETERS

Run #:	11	Line:	High Line	Ext. Attenuation (dB):	20

COMMENTS

None

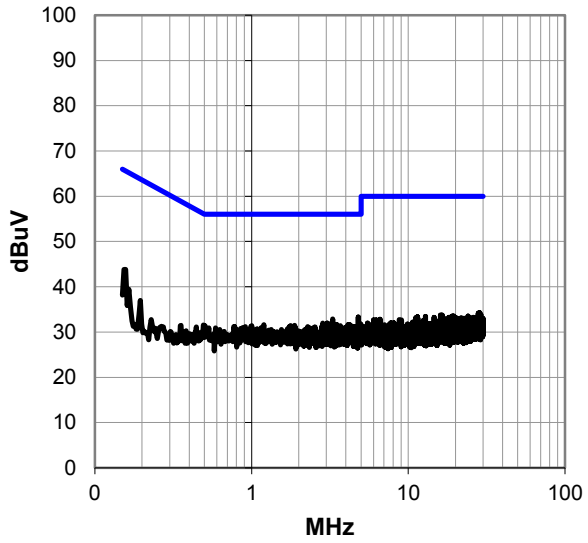
EUT OPERATING MODES

Continuous Transmit on Ch. 1: 2412MHz, 1Mbps

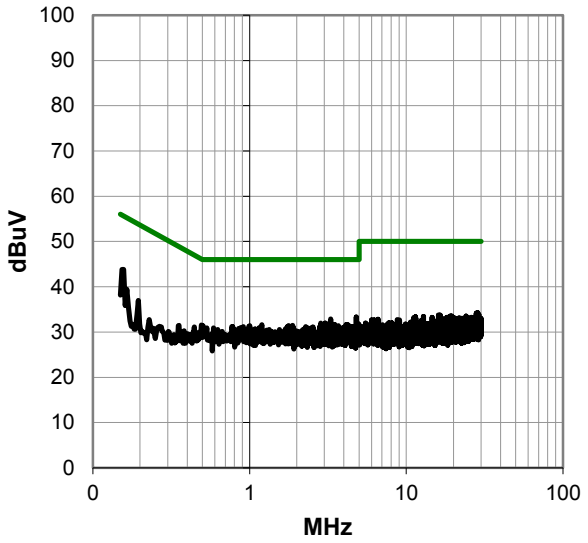
DEVIATIONS FROM TEST STANDARD

None

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



AC POWERLINE CONDUCTED EMISSIONS

NORTHWEST EMC

WTD.2014.10.14
PSA-ESCI 2014.09.10, EmiR5 2014.10.01.1

RESULTS - Run #11

Peak Data - vs - Quasi Peak Limit

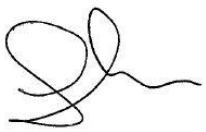
Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.154	23.2	20.6	43.8	65.8	-22.0
4.802	12.4	20.9	33.3	56.0	-22.7
3.299	12.1	20.8	32.9	56.0	-23.1
3.041	11.2	20.7	31.9	56.0	-24.1
2.851	11.2	20.7	31.9	56.0	-24.1
4.937	10.9	20.9	31.8	56.0	-24.2
3.153	11.0	20.8	31.8	56.0	-24.2
3.489	10.9	20.8	31.7	56.0	-24.3
4.235	10.8	20.8	31.6	56.0	-24.4
1.198	11.0	20.6	31.6	56.0	-24.4
4.127	10.8	20.8	31.6	56.0	-24.4
4.273	10.7	20.8	31.5	56.0	-24.5
1.885	10.8	20.7	31.5	56.0	-24.5
0.493	11.0	20.5	31.5	56.1	-24.6
1.001	10.8	20.6	31.4	56.0	-24.6
3.679	10.6	20.8	31.4	56.0	-24.6
1.780	10.7	20.7	31.4	56.0	-24.6
2.818	10.6	20.7	31.3	56.0	-24.7
4.396	10.4	20.9	31.3	56.0	-24.7
3.470	10.5	20.8	31.3	56.0	-24.7
1.754	10.6	20.7	31.3	56.0	-24.7
4.720	10.3	20.9	31.2	56.0	-24.8
2.280	10.5	20.7	31.2	56.0	-24.8
0.911	10.6	20.6	31.2	56.0	-24.8
0.781	10.6	20.6	31.2	56.0	-24.8
2.538	10.4	20.7	31.1	56.0	-24.9

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.154	23.2	20.6	43.8	55.8	-12.0
4.802	12.4	20.9	33.3	46.0	-12.7
3.299	12.1	20.8	32.9	46.0	-13.1
3.041	11.2	20.7	31.9	46.0	-14.1
2.851	11.2	20.7	31.9	46.0	-14.1
4.937	10.9	20.9	31.8	46.0	-14.2
3.153	11.0	20.8	31.8	46.0	-14.2
3.489	10.9	20.8	31.7	46.0	-14.3
4.235	10.8	20.8	31.6	46.0	-14.4
1.198	11.0	20.6	31.6	46.0	-14.4
4.127	10.8	20.8	31.6	46.0	-14.4
4.273	10.7	20.8	31.5	46.0	-14.5
1.885	10.8	20.7	31.5	46.0	-14.5
0.493	11.0	20.5	31.5	46.1	-14.6
1.001	10.8	20.6	31.4	46.0	-14.6
3.679	10.6	20.8	31.4	46.0	-14.6
1.780	10.7	20.7	31.4	46.0	-14.6
2.818	10.6	20.7	31.3	46.0	-14.7
4.396	10.4	20.9	31.3	46.0	-14.7
3.470	10.5	20.8	31.3	46.0	-14.7
1.754	10.6	20.7	31.3	46.0	-14.7
4.720	10.3	20.9	31.2	46.0	-14.8
2.280	10.5	20.7	31.2	46.0	-14.8
0.911	10.6	20.6	31.2	46.0	-14.8
0.781	10.6	20.6	31.2	46.0	-14.8
2.538	10.4	20.7	31.1	46.0	-14.9

CONCLUSION

Pass



Tested By

AC POWERLINE CONDUCTED EMISSIONS

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

EUT:	WATY	Work Order:	PROT0338
Serial Number:	E3730BG4098	Date:	12/03/2014
Customer:	Welch Allyn Protocol, Inc.	Temperature:	22.3°C
Attendees:	None	Relative Humidity:	46%
Customer Project:	eSOM3730	Bar. Pressure:	1024 mb
Tested By:	Jared Ison	Job Site:	EV07
Power:	5 VDC	Configuration:	PROT0338-2

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2015	ANSI C63.10:2009

TEST PARAMETERS

Run #:	12	Line:	Neutral	Ext. Attenuation (dB):	20

COMMENTS

None

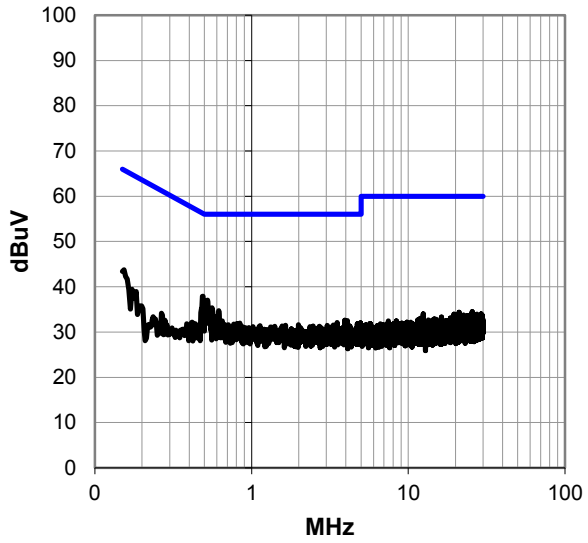
EUT OPERATING MODES

Continuous Transmit on Ch. 1: 2412MHz, 1Mbps

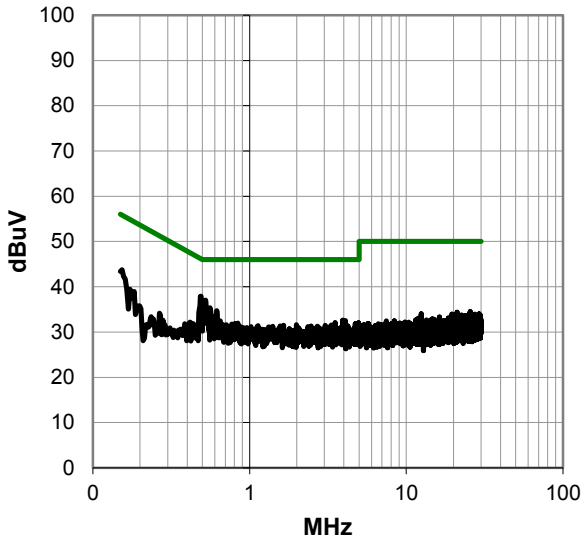
DEVIATIONS FROM TEST STANDARD

None

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



AC POWERLINE CONDUCTED EMISSIONS

NORTHWEST EMC

WTD.2014.10.14
PSA-ESCI 2014.09.10, EmiR5 2014.10.01.1

RESULTS - Run #12

Peak Data - vs - Quasi Peak Limit

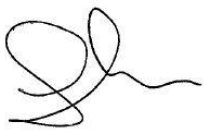
Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.490	17.4	20.5	37.9	56.2	-18.3
0.523	16.5	20.5	37.0	56.0	-19.0
0.504	15.2	20.5	35.7	56.0	-20.3
0.560	14.8	20.5	35.3	56.0	-20.7
0.616	14.2	20.5	34.7	56.0	-21.3
0.154	23.1	20.6	43.7	65.8	-22.1
0.587	12.8	20.5	33.3	56.0	-22.7
3.937	11.8	20.8	32.6	56.0	-23.4
0.605	12.0	20.5	32.5	56.0	-23.5
4.097	11.7	20.8	32.5	56.0	-23.5
0.650	11.9	20.5	32.4	56.0	-23.6
3.511	11.3	20.8	32.1	56.0	-23.9
4.955	11.1	20.9	32.0	56.0	-24.0
0.840	11.4	20.6	32.0	56.0	-24.0
0.807	11.3	20.6	31.9	56.0	-24.1
4.724	10.9	20.9	31.8	56.0	-24.2
0.769	11.2	20.6	31.8	56.0	-24.2
4.030	10.9	20.8	31.7	56.0	-24.3
3.989	10.9	20.8	31.7	56.0	-24.3
0.710	11.1	20.5	31.6	56.0	-24.4
4.112	10.8	20.8	31.6	56.0	-24.4
1.993	10.9	20.7	31.6	56.0	-24.4
3.332	10.8	20.8	31.6	56.0	-24.4
1.646	10.8	20.7	31.5	56.0	-24.5
3.034	10.7	20.7	31.4	56.0	-24.6
4.989	10.5	20.9	31.4	56.0	-24.6

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.490	17.4	20.5	37.9	46.2	-8.3
0.523	16.5	20.5	37.0	46.0	-9.0
0.504	15.2	20.5	35.7	46.0	-10.3
0.560	14.8	20.5	35.3	46.0	-10.7
0.616	14.2	20.5	34.7	46.0	-11.3
0.154	23.1	20.6	43.7	55.8	-12.1
0.587	12.8	20.5	33.3	46.0	-12.7
3.937	11.8	20.8	32.6	46.0	-13.4
0.605	12.0	20.5	32.5	46.0	-13.5
4.097	11.7	20.8	32.5	46.0	-13.5
0.650	11.9	20.5	32.4	46.0	-13.6
3.511	11.3	20.8	32.1	46.0	-13.9
4.955	11.1	20.9	32.0	46.0	-14.0
0.840	11.4	20.6	32.0	46.0	-14.0
0.807	11.3	20.6	31.9	46.0	-14.1
4.724	10.9	20.9	31.8	46.0	-14.2
0.769	11.2	20.6	31.8	46.0	-14.2
4.030	10.9	20.8	31.7	46.0	-14.3
3.989	10.9	20.8	31.7	46.0	-14.3
0.710	11.1	20.5	31.6	46.0	-14.4
4.112	10.8	20.8	31.6	46.0	-14.4
1.993	10.9	20.7	31.6	46.0	-14.4
3.332	10.8	20.8	31.6	46.0	-14.4
1.646	10.8	20.7	31.5	46.0	-14.5
3.034	10.7	20.7	31.4	46.0	-14.6
4.989	10.5	20.9	31.4	46.0	-14.6

CONCLUSION

Pass



Tested By

AC POWERLINE CONDUCTED EMISSIONS

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

EUT:	WATY	Work Order:	PROT0338
Serial Number:	E3730BG4098	Date:	12/03/2014
Customer:	Welch Allyn Protocol, Inc.	Temperature:	22.3°C
Attendees:	None	Relative Humidity:	46%
Customer Project:	eSOM3730	Bar. Pressure:	1024 mb
Tested By:	Jared Ison	Job Site:	EV07
Power:	5 VDC	Configuration:	PROT0338-2

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2015	ANSI C63.10:2009

TEST PARAMETERS

Run #:	13	Line:	High Line	Ext. Attenuation (dB):	20

COMMENTS

None

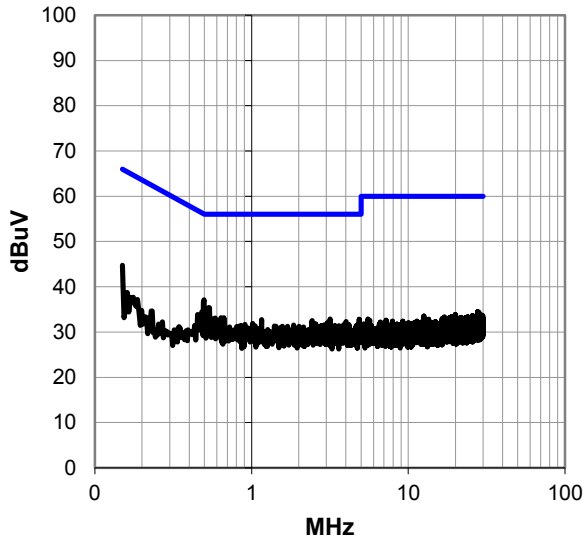
EUT OPERATING MODES

Continuous Transmit on Ch. 6: 2437MHz, 1Mbps

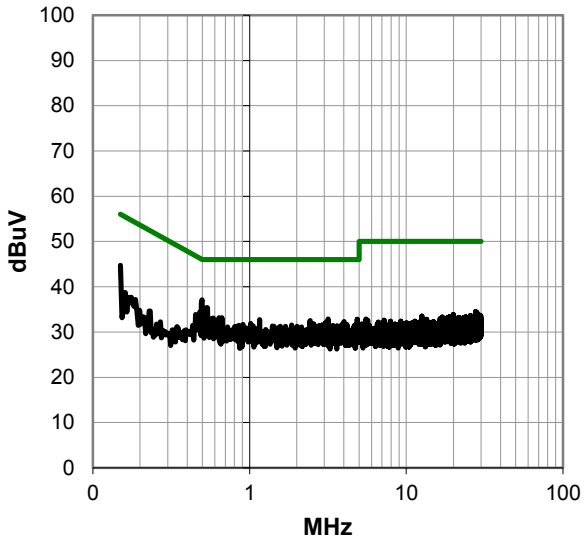
DEVIATIONS FROM TEST STANDARD

None

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



AC POWERLINE CONDUCTED EMISSIONS

NORTHWEST EMC

WTD.2014.10.14
PSA-ESCI 2014.09.10, EmiR5 2014.10.01.1

RESULTS - Run #13

Peak Data - vs - Quasi Peak Limit

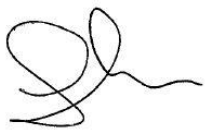
Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.497	16.6	20.5	37.1	56.1	-18.9
0.534	14.9	20.5	35.4	56.0	-20.6
0.150	24.1	20.7	44.8	66.0	-21.2
0.523	14.1	20.5	34.6	56.0	-21.4
0.486	13.9	20.5	34.4	56.2	-21.8
0.665	12.6	20.5	33.1	56.0	-22.9
0.639	12.6	20.5	33.1	56.0	-22.9
0.587	12.6	20.5	33.1	56.0	-22.9
0.452	13.4	20.5	33.9	56.8	-22.9
0.572	12.4	20.5	32.9	56.0	-23.1
3.179	12.1	20.8	32.9	56.0	-23.1
4.869	11.9	20.9	32.8	56.0	-23.2
1.157	12.1	20.6	32.7	56.0	-23.3
0.601	12.1	20.5	32.6	56.0	-23.4
2.433	11.8	20.7	32.5	56.0	-23.5
4.004	11.5	20.8	32.3	56.0	-23.7
3.053	11.3	20.7	32.0	56.0	-24.0
1.016	11.3	20.6	31.9	56.0	-24.1
2.497	11.1	20.7	31.8	56.0	-24.2
2.568	11.0	20.7	31.7	56.0	-24.3
4.142	10.9	20.8	31.7	56.0	-24.3
0.907	11.1	20.6	31.7	56.0	-24.3
2.911	10.9	20.7	31.6	56.0	-24.4
3.881	10.8	20.8	31.6	56.0	-24.4
1.855	10.9	20.7	31.6	56.0	-24.4
3.086	10.8	20.8	31.6	56.0	-24.4

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.497	16.6	20.5	37.1	46.1	-8.9
0.534	14.9	20.5	35.4	46.0	-10.6
0.150	24.1	20.7	44.8	56.0	-11.2
0.523	14.1	20.5	34.6	46.0	-11.4
0.486	13.9	20.5	34.4	46.2	-11.8
0.665	12.6	20.5	33.1	46.0	-12.9
0.639	12.6	20.5	33.1	46.0	-12.9
0.587	12.6	20.5	33.1	46.0	-12.9
0.452	13.4	20.5	33.9	46.8	-12.9
0.572	12.4	20.5	32.9	46.0	-13.1
3.179	12.1	20.8	32.9	46.0	-13.1
4.869	11.9	20.9	32.8	46.0	-13.2
1.157	12.1	20.6	32.7	46.0	-13.3
0.601	12.1	20.5	32.6	46.0	-13.4
2.433	11.8	20.7	32.5	46.0	-13.5
4.004	11.5	20.8	32.3	46.0	-13.7
3.053	11.3	20.7	32.0	46.0	-14.0
1.016	11.3	20.6	31.9	46.0	-14.1
2.497	11.1	20.7	31.8	46.0	-14.2
2.568	11.0	20.7	31.7	46.0	-14.3
4.142	10.9	20.8	31.7	46.0	-14.3
0.907	11.1	20.6	31.7	46.0	-14.3
2.911	10.9	20.7	31.6	46.0	-14.4
3.881	10.8	20.8	31.6	46.0	-14.4
1.855	10.9	20.7	31.6	46.0	-14.4
3.086	10.8	20.8	31.6	46.0	-14.4

CONCLUSION

Pass



Tested By

AC POWERLINE CONDUCTED EMISSIONS

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

EUT:	WATY	Work Order:	PROT0338
Serial Number:	E3730BG4098	Date:	12/03/2014
Customer:	Welch Allyn Protocol, Inc.	Temperature:	22.3°C
Attendees:	None	Relative Humidity:	46%
Customer Project:	eSOM3730	Bar. Pressure:	1024 mb
Tested By:	Jared Ison	Job Site:	EV07
Power:	5 VDC	Configuration:	PROT0338-2

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2015	ANSI C63.10:2009

TEST PARAMETERS

Run #:	14	Line:	Neutral	Ext. Attenuation (dB):	20

COMMENTS

None

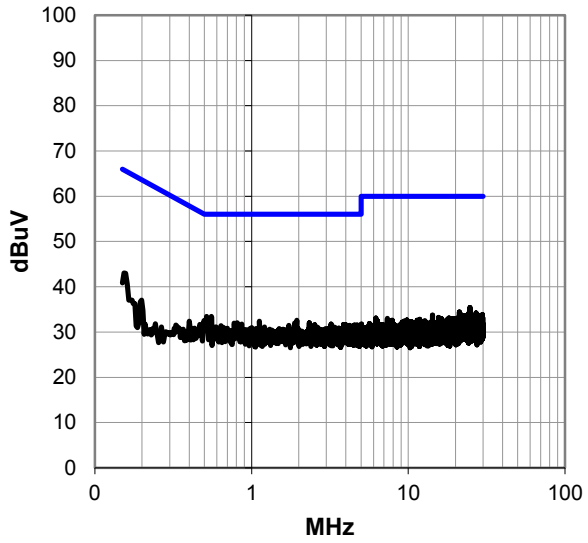
EUT OPERATING MODES

Continuous Transmit on Ch. 6: 2437MHz, 1Mbps

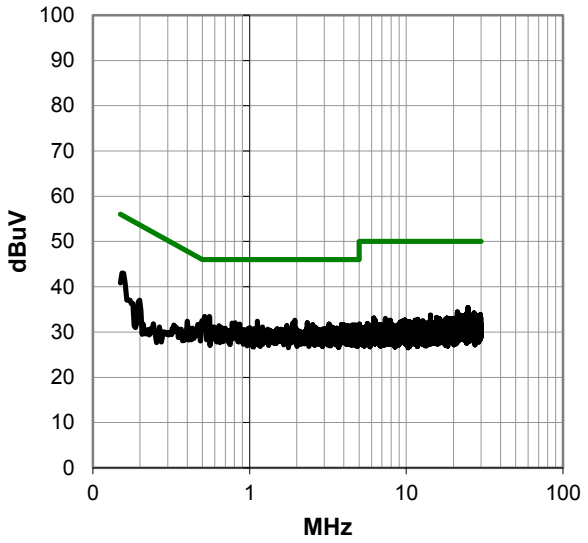
DEVIATIONS FROM TEST STANDARD

None

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



AC POWERLINE CONDUCTED EMISSIONS

NORTHWEST EMC

WTD.2014.10.14
PSA-ESCI 2014.09.10, EmiR5 2014.10.01.1

RESULTS - Run #14

Peak Data - vs - Quasi Peak Limit

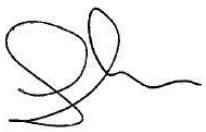
Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.553	12.9	20.5	33.4	56.0	-22.6
0.516	12.9	20.5	33.4	56.0	-22.6
0.154	22.4	20.6	43.0	65.8	-22.8
1.941	11.9	20.7	32.6	56.0	-23.4
1.124	11.8	20.6	32.4	56.0	-23.6
0.810	11.5	20.6	32.1	56.0	-23.9
2.336	11.3	20.7	32.0	56.0	-24.0
1.885	11.3	20.7	32.0	56.0	-24.0
0.773	11.4	20.6	32.0	56.0	-24.0
0.866	11.2	20.6	31.8	56.0	-24.2
3.217	11.0	20.8	31.8	56.0	-24.2
3.862	10.9	20.8	31.7	56.0	-24.3
4.716	10.7	20.9	31.6	56.0	-24.4
2.530	10.9	20.7	31.6	56.0	-24.4
3.989	10.8	20.8	31.6	56.0	-24.4
4.534	10.6	20.9	31.5	56.0	-24.5
1.732	10.8	20.7	31.5	56.0	-24.5
24.792	13.3	22.1	35.4	60.0	-24.6
4.993	10.5	20.9	31.4	56.0	-24.6
4.228	10.6	20.8	31.4	56.0	-24.6
0.639	10.9	20.5	31.4	56.0	-24.6
2.497	10.6	20.7	31.3	56.0	-24.7
2.385	10.5	20.7	31.2	56.0	-24.8
0.467	11.2	20.5	31.7	56.6	-24.9
0.650	10.6	20.5	31.1	56.0	-24.9
4.832	10.2	20.9	31.1	56.0	-24.9

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.553	12.9	20.5	33.4	46.0	-12.6
0.516	12.9	20.5	33.4	46.0	-12.6
0.154	22.4	20.6	43.0	55.8	-12.8
1.941	11.9	20.7	32.6	46.0	-13.4
1.124	11.8	20.6	32.4	46.0	-13.6
0.810	11.5	20.6	32.1	46.0	-13.9
2.336	11.3	20.7	32.0	46.0	-14.0
1.885	11.3	20.7	32.0	46.0	-14.0
0.773	11.4	20.6	32.0	46.0	-14.0
0.866	11.2	20.6	31.8	46.0	-14.2
3.217	11.0	20.8	31.8	46.0	-14.2
3.862	10.9	20.8	31.7	46.0	-14.3
4.716	10.7	20.9	31.6	46.0	-14.4
2.530	10.9	20.7	31.6	46.0	-14.4
3.989	10.8	20.8	31.6	46.0	-14.4
4.534	10.6	20.9	31.5	46.0	-14.5
1.732	10.8	20.7	31.5	46.0	-14.5
24.792	13.3	22.1	35.4	50.0	-14.6
4.993	10.5	20.9	31.4	46.0	-14.6
4.228	10.6	20.8	31.4	46.0	-14.6
0.639	10.9	20.5	31.4	46.0	-14.6
2.497	10.6	20.7	31.3	46.0	-14.7
2.385	10.5	20.7	31.2	46.0	-14.8
0.467	11.2	20.5	31.7	46.6	-14.9
0.650	10.6	20.5	31.1	46.0	-14.9
4.832	10.2	20.9	31.1	46.0	-14.9

CONCLUSION

Pass



Tested By

AC POWERLINE CONDUCTED EMISSIONS

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

EUT:	WATY	Work Order:	PROT0338
Serial Number:	E3730BG4098	Date:	12/03/2014
Customer:	Welch Allyn Protocol, Inc.	Temperature:	22.3°C
Attendees:	None	Relative Humidity:	46%
Customer Project:	eSOM3730	Bar. Pressure:	1024 mb
Tested By:	Jared Ison	Job Site:	EV07
Power:	5 VDC	Configuration:	PROT0338-2

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2015	ANSI C63.10:2009

TEST PARAMETERS

Run #:	15	Line:	High Line	Ext. Attenuation (dB):	20

COMMENTS

None

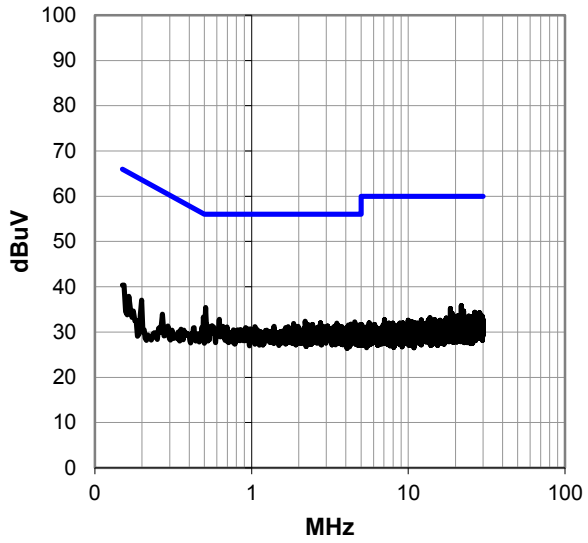
EUT OPERATING MODES

Continuous Transmit on Ch. 11: 2462MHz, 1Mbps

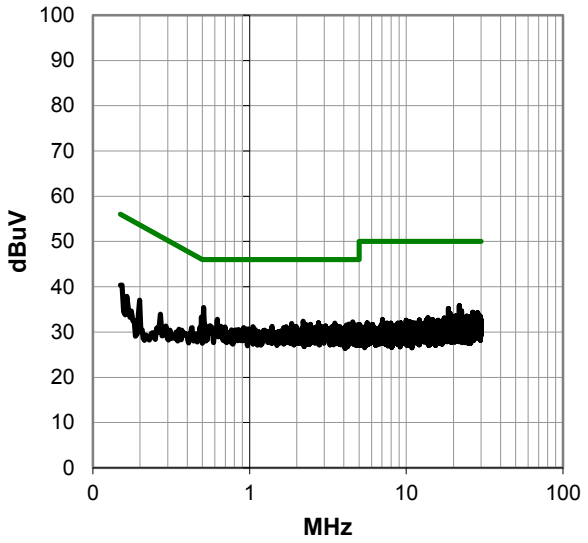
DEVIATIONS FROM TEST STANDARD

None

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



AC POWERLINE CONDUCTED EMISSIONS

NORTHWEST EMC

WTD.2014.10.14
PSA-ESCI 2014.09.10, EmiR5 2014.10.01.1

RESULTS - Run #15

Peak Data - vs - Quasi Peak Limit

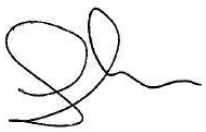
Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.508	14.9	20.5	35.4	56.0	-20.6
0.493	12.8	20.5	33.3	56.1	-22.8
0.624	12.3	20.5	32.8	56.0	-23.2
2.202	11.7	20.7	32.4	56.0	-23.6
4.564	11.3	20.9	32.2	56.0	-23.8
2.754	11.3	20.7	32.0	56.0	-24.0
3.497	11.2	20.8	32.0	56.0	-24.0
21.859	13.9	22.0	35.9	60.0	-24.1
1.855	11.2	20.7	31.9	56.0	-24.1
4.314	10.9	20.9	31.8	56.0	-24.2
2.448	11.0	20.7	31.7	56.0	-24.3
2.288	11.0	20.7	31.7	56.0	-24.3
4.981	10.6	20.9	31.5	56.0	-24.5
4.892	10.6	20.9	31.5	56.0	-24.5
4.638	10.6	20.9	31.5	56.0	-24.5
4.138	10.7	20.8	31.5	56.0	-24.5
0.560	10.9	20.5	31.4	56.0	-24.6
3.582	10.6	20.8	31.4	56.0	-24.6
3.056	10.6	20.7	31.3	56.0	-24.7
4.791	10.4	20.9	31.3	56.0	-24.7
4.463	10.4	20.9	31.3	56.0	-24.7
1.986	10.6	20.7	31.3	56.0	-24.7
3.392	10.5	20.8	31.3	56.0	-24.7
2.870	10.5	20.7	31.2	56.0	-24.8
1.392	10.6	20.6	31.2	56.0	-24.8
1.053	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)
0.508	14.9	20.5	35.4	46.0	-10.6
0.493	12.8	20.5	33.3	46.1	-12.8
0.624	12.3	20.5	32.8	46.0	-13.2
2.202	11.7	20.7	32.4	46.0	-13.6
4.564	11.3	20.9	32.2	46.0	-13.8
2.754	11.3	20.7	32.0	46.0	-14.0
3.497	11.2	20.8	32.0	46.0	-14.0
21.859	13.9	22.0	35.9	50.0	-14.1
1.855	11.2	20.7	31.9	46.0	-14.1
4.314	10.9	20.9	31.8	46.0	-14.2
2.448	11.0	20.7	31.7	46.0	-14.3
2.288	11.0	20.7	31.7	46.0	-14.3
4.981	10.6	20.9	31.5	46.0	-14.5
4.892	10.6	20.9	31.5	46.0	-14.5
4.638	10.6	20.9	31.5	46.0	-14.5
4.138	10.7	20.8	31.5	46.0	-14.5
0.560	10.9	20.5	31.4	46.0	-14.6
3.582	10.6	20.8	31.4	46.0	-14.6
3.056	10.6	20.7	31.3	46.0	-14.7
4.791	10.4	20.9	31.3	46.0	-14.7
4.463	10.4	20.9	31.3	46.0	-14.7
1.986	10.6	20.7	31.3	46.0	-14.7
3.392	10.5	20.8	31.3	46.0	-14.7
2.870	10.5	20.7	31.2	46.0	-14.8
1.392	10.6	20.6	31.2	46.0	-14.8
1.053	10.6	20.6	31.2	46.0	-14.8

CONCLUSION

Pass



Tested By

AC POWERLINE CONDUCTED EMISSIONS

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

EUT:	WATY	Work Order:	PROT0338
Serial Number:	E3730BG4098	Date:	12/03/2014
Customer:	Welch Allyn Protocol, Inc.	Temperature:	22.3°C
Attendees:	None	Relative Humidity:	46%
Customer Project:	eSOM3730	Bar. Pressure:	1024 mb
Tested By:	Jared Ison	Job Site:	EV07
Power:	5 VDC	Configuration:	PROT0338-2

TEST SPECIFICATIONS

Specification:	Method:
FCC 15.207:2015	ANSI C63.10:2009

TEST PARAMETERS

Run #:	16	Line:	Neutral	Ext. Attenuation (dB):	20

COMMENTS

None

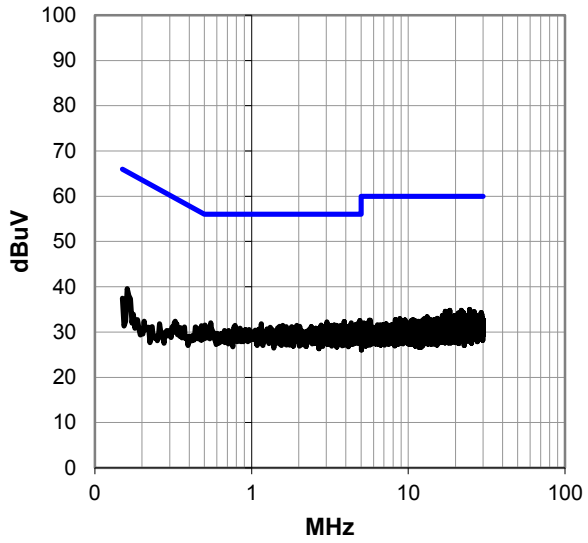
EUT OPERATING MODES

Continuous Transmit on Ch. 11: 2462MHz, 1Mbps

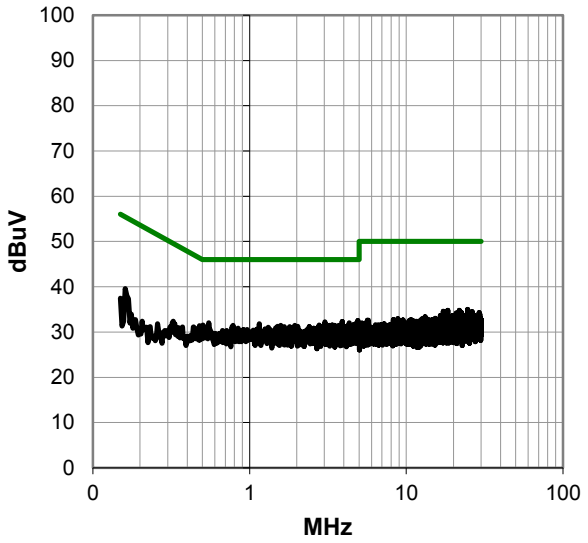
DEVIATIONS FROM TEST STANDARD

None

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



AC POWERLINE CONDUCTED EMISSIONS

NORTHWEST EMC

WTD.2014.10.14
PSA-ESCI 2014.09.10, EmiR5 2014.10.01.1

RESULTS - Run #16

Peak Data - vs - Quasi Peak Limit

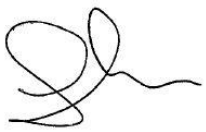
Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
4.910	11.6	20.9	32.5	56.0	-23.5
3.899	11.5	20.8	32.3	56.0	-23.7
3.030	11.5	20.7	32.2	56.0	-23.8
4.317	11.2	20.9	32.1	56.0	-23.9
0.549	11.5	20.5	32.0	56.0	-24.0
1.154	11.2	20.6	31.8	56.0	-24.2
4.709	10.8	20.9	31.7	56.0	-24.3
4.623	10.7	20.9	31.6	56.0	-24.4
3.373	10.8	20.8	31.6	56.0	-24.4
2.776	10.8	20.7	31.5	56.0	-24.5
3.713	10.7	20.8	31.5	56.0	-24.5
1.941	10.8	20.7	31.5	56.0	-24.5
3.485	10.7	20.8	31.5	56.0	-24.5
3.261	10.7	20.8	31.5	56.0	-24.5
0.784	10.9	20.6	31.5	56.0	-24.5
1.579	10.8	20.7	31.5	56.0	-24.5
2.810	10.6	20.7	31.3	56.0	-24.7
2.030	10.6	20.7	31.3	56.0	-24.7
1.508	10.6	20.6	31.2	56.0	-24.8
4.187	10.4	20.8	31.2	56.0	-24.8
2.403	10.5	20.7	31.2	56.0	-24.8
1.803	10.5	20.7	31.2	56.0	-24.8
1.665	10.5	20.7	31.2	56.0	-24.8
1.911	10.4	20.7	31.1	56.0	-24.9
0.478	10.9	20.5	31.4	56.4	-25.0
24.680	12.9	22.1	35.0	60.0	-25.0

Peak Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
4.910	11.6	20.9	32.5	46.0	-13.5
3.899	11.5	20.8	32.3	46.0	-13.7
3.030	11.5	20.7	32.2	46.0	-13.8
4.317	11.2	20.9	32.1	46.0	-13.9
0.549	11.5	20.5	32.0	46.0	-14.0
1.154	11.2	20.6	31.8	46.0	-14.2
4.709	10.8	20.9	31.7	46.0	-14.3
4.623	10.7	20.9	31.6	46.0	-14.4
3.373	10.8	20.8	31.6	46.0	-14.4
2.776	10.8	20.7	31.5	46.0	-14.5
3.713	10.7	20.8	31.5	46.0	-14.5
1.941	10.8	20.7	31.5	46.0	-14.5
3.485	10.7	20.8	31.5	46.0	-14.5
3.261	10.7	20.8	31.5	46.0	-14.5
0.784	10.9	20.6	31.5	46.0	-14.5
1.579	10.8	20.7	31.5	46.0	-14.5
2.810	10.6	20.7	31.3	46.0	-14.7
2.030	10.6	20.7	31.3	46.0	-14.7
1.508	10.6	20.6	31.2	46.0	-14.8
4.187	10.4	20.8	31.2	46.0	-14.8
2.403	10.5	20.7	31.2	46.0	-14.8
1.803	10.5	20.7	31.2	46.0	-14.8
1.665	10.5	20.7	31.2	46.0	-14.8
1.911	10.4	20.7	31.1	46.0	-14.9
0.478	10.9	20.5	31.4	46.4	-15.0
24.680	12.9	22.1	35.0	50.0	-15.0

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.

CHANNEL OF OPERATION

Low Ch. 1: 2412MHz
Mid Ch. 6: 2437MHz
High Ch. 11: 2462MHz

MODULATION OF OPERATION

1Mbps
11Mbps
6Mbps
36Mbps
54Mbps
MSC0
MSC7

POWER SETTINGS INVESTIGATED

5 VDC

CONFIGURATIONS INVESTIGATED

PROT0338 - 1

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
Attenuator - 20dB, HF (1000MHz - 18000MHz)	Coaxicom	3910-20	AXZ	6/19/2014	12 mo
HP Filter	Micro-Tronics	HPM50111	HFO	7/6/2013	24 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
EV01 Cables	N/A	Standard Gain Horns Cables	EVF	12/15/2014	12 mo
Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AVC	12/15/2014	12 mo
Antenna, Horn	ETS	3160-07	AHU	NCR	0 mo
EV01 Cables	N/A	Double Ridge Horn Cables	EVB	12/15/2014	12 mo
Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	PAG	12/15/2014	12 mo
Antenna, Horn	ETS	3115	AIZ	1/24/2014	24 mo
EV01 Cables	N/A	Bilog Cables	EVA	2/18/2014	12 mo
Pre-Amplifier	Miteq	AM-1616-1000	AOL	2/18/2014	12 mo
Spectrum Analyzer	Agilent	E4446A	AAQ	1/21/2014	12 mo
Antenna, Biconilog	EMCO	3141	AXE	8/29/2014	24 mo

MEASUREMENT BANDWIDTHS

Frequency Range (MHz)	Peak Data (kHz)	Quasi-Peak Data (kHz)	Average Data (kHz)
0.01 - 0.15	1.0	0.2	0.2
0.15 - 30.0	10.0	9.0	9.0
30.0 - 1000	100.0	120.0	120.0
Above 1000	1000.0	N/A	1000.0

TEST DESCRIPTION

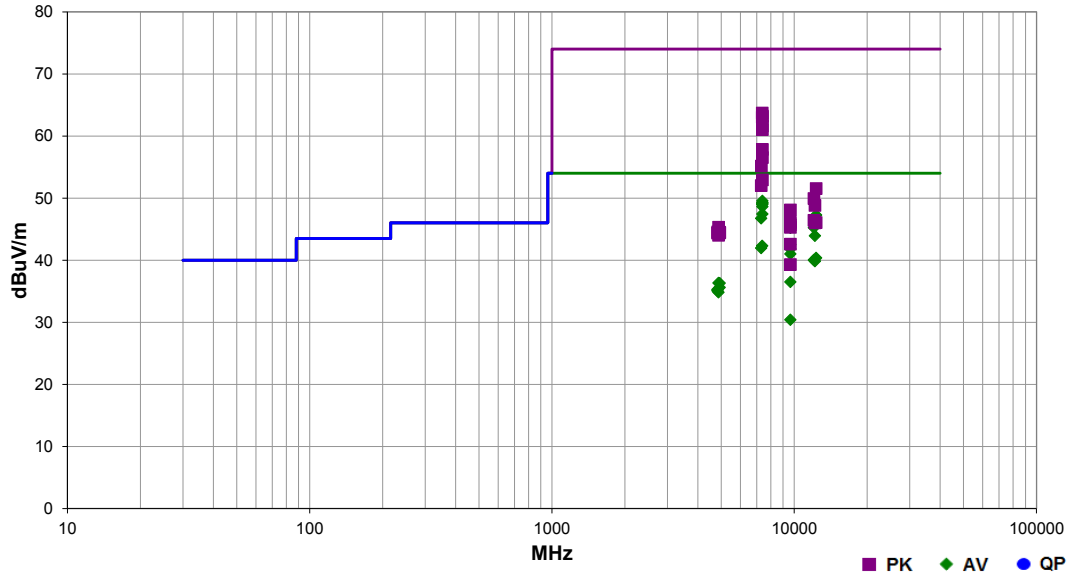
The highest gain of each type of antenna to be used with the EUT was tested. The EUT was configured for low, mid, and high band transmit frequencies. For each configuration, the spectrum was scanned throughout the specified range. In addition, measurements were made in the restricted bands to verify 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:	PROT0338	**Date:**	12/09/14		
Project:	eSOM3730	**Temperature:**	22.5 °C		
Job Site:	EV01	**Humidity:**	43% RH		
Serial Number:	E3730BG4098	**Barometric Pres.:**	1024 mbar	**Tested by:**	Jared Ison
EUT:	WATY				
Configuration:	1				
Customer:	Welch Allyn Protocol, Inc.				
Attendees:	None				
EUT Power:	5 VDC				
Operating Mode:	Continuous transmit 802.11bgn. Output power level set to 15dBm.				
Deviations:	None				
Comments:	Reference data comments for EUT channel, modulation and oreintation.				

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

Run #	26	**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
7389.042	35.0	14.5	1.6	245.0	3.0	0.0	Horz	AV	0.0	49.5	54.0	-4.5	High Ch. 11: 2462MHz, 36Mbps, EUT On Side
7388.942	34.7	14.5	1.6	245.0	3.0	0.0	Horz	AV	0.0	49.2	54.0	-4.8	High Ch. 11: 2462MHz, MCS7, EUT On Side
7386.167	34.7	14.5	1.6	245.0	3.0	0.0	Horz	AV	0.0	49.2	54.0	-4.8	High Ch. 11: 2462MHz, 54Mbps, EUT On Side
7387.017	35.2	13.8	1.1	66.0	3.0	0.0	Horz	AV	0.0	49.0	54.0	-5.0	High Ch. 11: 2462MHz, 1Mbps, EUT On Side
7385.658	34.5	14.5	1.6	245.0	3.0	0.0	Horz	AV	0.0	49.0	54.0	-5.0	High Ch. 11: 2462MHz, 6Mbps, EUT On Side
7386.867	34.1	14.5	1.6	245.0	3.0	0.0	Horz	AV	0.0	48.6	54.0	-5.4	High Ch. 11: 2462MHz, MCS0, EUT On Side
7387.658	32.9	14.5	1.6	248.0	3.0	0.0	Horz	AV	0.0	47.4	54.0	-6.6	High Ch. 11: 2462MHz, 11Mbps, EUT On Side
12308.950	48.1	-0.8	1.1	98.0	3.0	0.0	Vert	AV	0.0	47.3	54.0	-6.7	High Ch. 11: 2462MHz, 1Mbps, EUT On Side
7310.075	33.4	13.3	1.1	62.0	3.0	0.0	Horz	AV	0.0	46.7	54.0	-7.3	Mid Ch. 6: 2437MHz, 1Mbps, EUT On Side
12060.900	47.1	-1.9	1.2	98.0	3.0	0.0	Vert	AV	0.0	45.2	54.0	-8.8	Low Ch. 1: 2412MHz, 1Mbps, EUT On Side
9647.967	56.4	-11.2	1.3	84.0	3.0	0.0	Horz	AV	0.0	45.2	54.0	-8.8	Low Ch. 1: 2412MHz, 1Mbps, EUT On Side
12183.970	45.1	-1.2	1.0	100.0	3.0	0.0	Vert	AV	0.0	43.9	54.0	-10.1	Mid Ch. 6: 2437MHz, 1Mbps, EUT On Side
7384.833	49.2	14.5	1.6	245.0	3.0	0.0	Horz	PK	0.0	63.7	74.0	-10.3	High Ch. 11: 2462MHz, MCS7, EUT On Side
7386.675	48.7	14.5	1.6	245.0	3.0	0.0	Horz	PK	0.0	63.2	74.0	-10.8	High Ch. 11: 2462MHz, 54Mbps, EUT On Side
7384.683	48.5	14.5	1.6	245.0	3.0	0.0	Horz	PK	0.0	63.0	74.0	-11.0	High Ch. 11: 2462MHz, MCS0, EUT On Side
9647.942	53.7	-11.2	1.3	153.0	3.0	0.0	Horz	AV	0.0	42.5	54.0	-11.5	Low Ch. 1: 2412MHz, 1Mbps, EUT Horz
7384.550	28.5	13.8	1.0	247.0	3.0	0.0	Vert	AV	0.0	42.3	54.0	-11.7	High Ch. 11: 2462MHz, 1Mbps, EUT On Side
7309.475	28.6	13.3	1.0	191.0	3.0	0.0	Vert	AV	0.0	41.9	54.0	-12.1	Mid Ch. 6: 2437MHz, 1Mbps, EUT On Side
9648.000	53.0	-11.2	1.2	168.0	3.0	0.0	Vert	AV	0.0	41.8	54.0	-12.2	Low Ch. 1: 2412MHz, 1Mbps, EUT On Side
7386.317	47.1	14.5	1.6	245.0	3.0	0.0	Horz	PK	0.0	61.6	74.0	-12.4	High Ch. 11: 2462MHz, 36Mbps, EUT On Side
7387.383	46.5	14.5	1.6	245.0	3.0	0.0	Horz	PK	0.0	61.0	74.0	-13.0	High Ch. 11: 2462MHz, 6Mbps, EUT On Side
9647.942	52.2	-11.2	1.0	102.0	3.0	0.0	Vert	AV	0.0	41.0	54.0	-13.0	Low Ch. 1: 2412MHz, 1Mbps, EUT Vert
12309.030	41.2	-0.8	1.1	54.0	3.0	0.0	Horz	AV	0.0	40.4	54.0	-13.6	High Ch. 11: 2462MHz, 1Mbps, EUT On Side
12060.920	41.9	-1.9	1.1	111.0	3.0	0.0	Horz	AV	0.0	40.0	54.0	-14.0	Low Ch. 1: 2412MHz, 1Mbps, EUT On Side
12184.070	41.0	-1.2	1.0	108.0	3.0	0.0	Horz	AV	0.0	39.8	54.0	-14.2	Mid Ch. 6: 2437MHz, 1Mbps, EUT On Side
7387.308	43.3	14.5	1.6	248.0	3.0	0.0	Horz	PK	0.0	57.8	74.0	-16.2	High Ch. 11: 2462MHz, 11Mbps, EUT On Side
7387.433	42.7	13.8	1.1	66.0	3.0	0.0	Horz	PK	0.0	56.5	74.0	-17.5	High Ch. 11: 2462MHz, 1Mbps, EUT On Side
9647.942	47.7	-11.2	1.0	32.0	3.0	0.0	Vert	AV	0.0	36.5	54.0	-17.5	Low Ch. 1: 2412MHz, 1Mbps, EUT Horz
4873.950	31.4	4.9	1.4	80.0	3.0	0.0	Vert	AV	0.0	36.3	54.0	-17.7	Mid Ch. 6: 2437MHz, 1Mbps, EUT On Side
4923.967	31.2	5.1	1.7	75.0	3.0	0.0	Vert	AV	0.0	36.3	54.0	-17.7	High Ch. 11: 2462MHz, 1Mbps, EUT On Side
4924.008	30.5	5.1	1.8	44.0	3.0	0.0	Horz	AV	0.0	35.6	54.0	-18.4	High Ch. 11: 2462MHz, 1Mbps, EUT On Side
4824.025	30.5	4.8	1.0	145.0	3.0	0.0	Vert	AV	0.0	35.3	54.0	-18.7	Low Ch. 1: 2412MHz, 1Mbps, EUT On Side

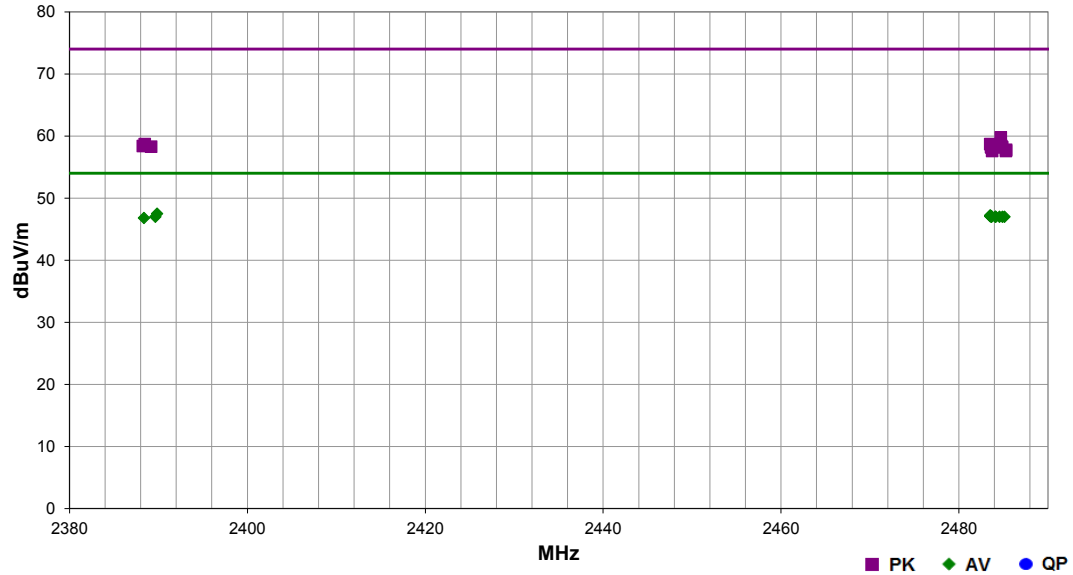
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
7314.100	41.8	13.4	1.1	62.0	3.0	0.0	Horz	PK	0.0	55.2	74.0	-18.8	Mid Ch. 6: 2437MHz, 1Mbps, EUT On Side
4823.975	30.3	4.8	1.0	39.0	3.0	0.0	Horz	AV	0.0	35.1	54.0	-18.9	Low Ch. 1: 2412MHz, 1Mbps, EUT On Side
4874.050	29.9	4.9	1.0	41.0	3.0	0.0	Horz	AV	0.0	34.8	54.0	-19.2	Mid Ch. 6: 2437MHz, 1Mbps, EUT On Side
7388.408	39.1	13.8	1.0	247.0	3.0	0.0	Vert	PK	0.0	52.9	74.0	-21.1	High Ch. 11: 2462MHz, 1Mbps, EUT On Side
7308.825	38.7	13.3	1.0	191.0	3.0	0.0	Vert	PK	0.0	52.0	74.0	-22.0	Mid Ch. 6: 2437MHz, 1Mbps, EUT On Side
12310.100	52.4	-0.8	1.1	98.0	3.0	0.0	Vert	PK	0.0	51.6	74.0	-22.4	High Ch. 11: 2462MHz, 1Mbps, EUT On Side
9647.900	41.6	-11.2	1.0	89.0	3.0	0.0	Horz	AV	0.0	30.4	54.0	-23.6	Low Ch. 1: 2412MHz, 1Mbps, EUT Vert
12060.050	51.8	-1.9	1.2	98.0	3.0	0.0	Vert	PK	0.0	49.9	74.0	-24.1	Low Ch. 1: 2412MHz, 1Mbps, EUT On Side
12185.020	50.0	-1.2	1.0	100.0	3.0	0.0	Vert	PK	0.0	48.8	74.0	-25.2	Mid Ch. 6: 2437MHz, 1Mbps, EUT On Side
9647.700	59.3	-11.2	1.3	84.0	3.0	0.0	Horz	PK	0.0	48.1	74.0	-25.9	Low Ch. 1: 2412MHz, 1Mbps, EUT On Side
12059.970	48.3	-1.9	1.1	111.0	3.0	0.0	Horz	PK	0.0	46.4	74.0	-27.6	Low Ch. 1: 2412MHz, 1Mbps, EUT On Side
9647.683	57.3	-11.2	1.3	153.0	3.0	0.0	Horz	PK	0.0	46.1	74.0	-27.9	Low Ch. 1: 2412MHz, 1Mbps, EUT Horz
12308.880	46.9	-0.8	1.1	54.0	3.0	0.0	Horz	PK	0.0	46.1	74.0	-27.9	High Ch. 11: 2462MHz, 1Mbps, EUT On Side
12182.970	47.2	-1.2	1.0	108.0	3.0	0.0	Horz	PK	0.0	46.0	74.0	-28.0	Mid Ch. 6: 2437MHz, 1Mbps, EUT On Side
9647.933	56.9	-11.2	1.2	168.0	3.0	0.0	Vert	PK	0.0	45.7	74.0	-28.3	Low Ch. 1: 2412MHz, 1Mbps, EUT Horz
4873.950	40.4	4.9	1.4	80.0	3.0	0.0	Vert	PK	0.0	45.3	74.0	-28.7	Mid Ch. 6: 2437MHz, 1Mbps, EUT On Side
9648.108	56.5	-11.2	1.0	102.0	3.0	0.0	Vert	PK	0.0	45.3	74.0	-28.7	Low Ch. 1: 2412MHz, 1Mbps, EUT Vert
4827.375	39.8	4.8	1.0	39.0	3.0	0.0	Horz	PK	0.0	44.6	74.0	-29.4	Low Ch. 1: 2412MHz, 1Mbps, EUT On Side
4924.000	39.4	5.1	1.7	75.0	3.0	0.0	Vert	PK	0.0	44.5	74.0	-29.5	High Ch. 11: 2462MHz, 1Mbps, EUT On Side
4924.150	39.3	5.1	1.8	44.0	3.0	0.0	Horz	PK	0.0	44.4	74.0	-29.6	High Ch. 11: 2462MHz, 1Mbps, EUT On Side
4823.800	39.6	4.8	1.0	145.0	3.0	0.0	Vert	PK	0.0	44.4	74.0	-29.6	Low Ch. 1: 2412MHz, 1Mbps, EUT On Side
4873.750	39.1	4.9	1.0	41.0	3.0	0.0	Horz	PK	0.0	44.0	74.0	-30.0	Mid Ch. 6: 2437MHz, 1Mbps, EUT On Side
9647.892	53.8	-11.2	1.0	32.0	3.0	0.0	Vert	PK	0.0	42.6	74.0	-31.4	Low Ch. 1: 2412MHz, 1Mbps, EUT Horz
9647.975	50.5	-11.2	1.0	89.0	3.0	0.0	Horz	PK	0.0	39.3	74.0	-34.7	Low Ch. 1: 2412MHz, 1Mbps, EUT Vert

SPURIOUS RADIATED EMISSIONS

Work Order:	PROT0338	**Date:**	12/09/14		
Project:	eSOM3730	**Temperature:**	22.3 °C		
Job Site:	EV01	**Humidity:**	43% RH		
Serial Number:	E3730BG4098	**Barometric Pres.:**	1024 mbar	**Tested by:**	Jared Ison
EUT:	WATY				
Configuration:	1				
Customer:	Welch Allyn Protocol, Inc.				
Attendees:	None				
EUT Power:	5 VDC				
Operating Mode:	Continuous transmit 802.11bgn. Output power level set to 15dBm.				
Deviations:	None				
Comments:	Reference data comments for EUT channel, modulation and oreintation.				

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

Run #	34	**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
2389.857	32.1	-4.6	1.0	60.0	3.0	20.0	Horz	AV	0.0	47.5	54.0	-6.5	Low Ch. 1: 2412 MHz, 6Mbps, EUT On Side
2483.547	31.6	-4.4	1.0	291.0	3.0	20.0	Horz	AV	0.0	47.2	54.0	-6.8	High Ch. 11: 2462 MHz, 11Mbps, EUT On Side
2483.517	31.6	-4.4	1.0	24.0	3.0	20.0	Vert	AV	0.0	47.2	54.0	-6.8	High Ch. 11: 2462 MHz, 6Mbps, EUT On Side
2483.663	31.5	-4.4	1.0	291.0	3.0	20.0	Horz	AV	0.0	47.1	54.0	-6.9	High Ch. 11: 2462 MHz, MCS7, EUT On Side
2483.517	31.5	-4.4	1.0	291.0	3.0	20.0	Horz	AV	0.0	47.1	54.0	-6.9	High Ch. 11: 2462 MHz, MCS0, EUT On Side
2483.517	31.5	-4.4	1.0	291.0	3.0	20.0	Horz	AV	0.0	47.1	54.0	-6.9	High Ch. 11: 2462 MHz, 1Mbps, EUT On Side
2485.130	31.4	-4.4	1.0	13.0	3.0	20.0	Horz	AV	0.0	47.0	54.0	-7.0	High Ch. 11: 2462 MHz, 6Mbps, EUT On Side
2484.907	31.4	-4.4	1.0	280.0	3.0	20.0	Vert	AV	0.0	47.0	54.0	-7.0	High Ch. 11: 2462 MHz, 6Mbps, EUT Vert
2484.573	31.4	-4.4	1.0	291.0	3.0	20.0	Horz	AV	0.0	47.0	54.0	-7.0	High Ch. 11: 2462 MHz, 36Mbps, EUT On Side
2484.150	31.4	-4.4	1.0	49.0	3.0	20.0	Vert	AV	0.0	47.0	54.0	-7.0	High Ch. 11: 2462 MHz, 6Mbps, EUT Horz
2484.110	31.4	-4.4	3.9	201.0	3.0	20.0	Horz	AV	0.0	47.0	54.0	-7.0	High Ch. 11: 2462 MHz, 6Mbps, EUT Vert
2483.650	31.4	-4.4	1.0	114.0	3.0	20.0	Horz	AV	0.0	47.0	54.0	-7.0	High Ch. 11: 2462 MHz, 6Mbps, EUT Horz
2483.650	31.4	-4.4	1.0	291.0	3.0	20.0	Horz	AV	0.0	47.0	54.0	-7.0	High Ch. 11: 2462 MHz, 54Mbps, EUT On Side
2389.667	31.6	-4.6	1.0	60.0	3.0	20.0	Horz	AV	0.0	47.0	54.0	-7.0	Low Ch. 1: 2412 MHz, 1Mbps, EUT On Side
2388.377	31.4	-4.6	1.0	60.0	3.0	20.0	Horz	AV	0.0	46.8	54.0	-7.2	Low Ch. 1: 2412 MHz, 11Mbps, EUT On Side
2484.713	44.2	-4.4	1.0	24.0	3.0	20.0	Vert	PK	0.0	59.8	74.0	-14.2	High Ch. 11: 2462 MHz, 6Mbps, EUT On Side
2388.463	43.3	-4.6	1.0	60.0	3.0	20.0	Horz	PK	0.0	58.7	74.0	-15.3	Low Ch. 1: 2412 MHz, 6Mbps, EUT On Side
2483.530	43.1	-4.4	1.0	114.0	3.0	20.0	Horz	PK	0.0	58.7	74.0	-15.3	High Ch. 11: 2462 MHz, 6Mbps, EUT Horz
2484.290	42.9	-4.4	1.0	291.0	3.0	20.0	Horz	PK	0.0	58.5	74.0	-15.5	High Ch. 11: 2462 MHz, 54Mbps, EUT On Side
2388.243	43.0	-4.6	1.0	60.0	3.0	20.0	Horz	PK	0.0	58.4	74.0	-15.6	Low Ch. 1: 2412 MHz, 1Mbps, EUT On Side
2484.773	42.8	-4.4	1.0	13.0	3.0	20.0	Horz	PK	0.0	58.4	74.0	-15.6	High Ch. 11: 2462 MHz, 6Mbps, EUT On Side
2484.433	42.8	-4.4	3.9	201.0	3.0	20.0	Horz	PK	0.0	58.4	74.0	-15.6	High Ch. 11: 2462 MHz, 6Mbps, EUT Vert
2389.177	42.9	-4.6	1.0	60.0	3.0	20.0	Horz	PK	0.0	58.3	74.0	-15.7	Low Ch. 1: 2412 MHz, 11Mbps, EUT On Side
2484.873	42.6	-4.4	1.0	291.0	3.0	20.0	Horz	PK	0.0	58.2	74.0	-15.8	High Ch. 11: 2462 MHz, MCS0, EUT On Side
2484.827	42.6	-4.4	1.0	280.0	3.0	20.0	Vert	PK	0.0	58.2	74.0	-15.8	High Ch. 11: 2462 MHz, 6Mbps, EUT Vert
2483.637	42.6	-4.4	1.0	291.0	3.0	20.0	Horz	PK	0.0	58.2	74.0	-15.8	High Ch. 11: 2462 MHz, 11Mbps, EUT On Side
2483.613	42.6	-4.4	1.0	291.0	3.0	20.0	Horz	PK	0.0	58.2	74.0	-15.8	High Ch. 11: 2462 MHz, MCS7, EUT On Side
2485.317	42.2	-4.4	1.0	291.0	3.0	20.0	Horz	PK	0.0	57.8	74.0	-16.2	High Ch. 11: 2462 MHz, 36Mbps, EUT On Side
2485.283	42.0	-4.4	1.0	291.0	3.0	20.0	Horz	PK	0.0	57.6	74.0	-16.4	High Ch. 11: 2462 MHz, 1Mbps, EUT On Side
2483.740	42.0	-4.4	1.0	49.0	3.0	20.0	Vert	PK	0.0	57.6	74.0	-16.4	High Ch. 11: 2462 MHz, 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 (mo)
Humidity Temperature Meter	Omega	HH311	DUH	2/19/2013	36
Power Meter	Gigatronics	8651A	SPM	9/17/2014	12
Power Sensor	Gigatronics	80701A	SPL	5/28/2014	12
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	2/3/2014	12
MXG Analog Signal Generator	Agilent	N5181A	TIG	3/28/2014	36
18 GHz DC Block, SMA	Pasternack	PE8210	AME	10/7/2014	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
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:	WATY			**Work Order:**	PROT0338
Serial Number:	E3730BG4098			**Date:**	12/03/14
Customer:	Welch Allyn Protocol, Inc.			**Temperature:**	20.9°C
Attendees:	None			**Humidity:**	30%
Project:	eSOM3730			**Barometric Pres.:**	1009
Tested by:	Jared Ison	**Power:**	5 VDC	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2014	ANSI C63.10:2009

COMMENTS

Modes of operation were client provided. Output power set to 15dBm.

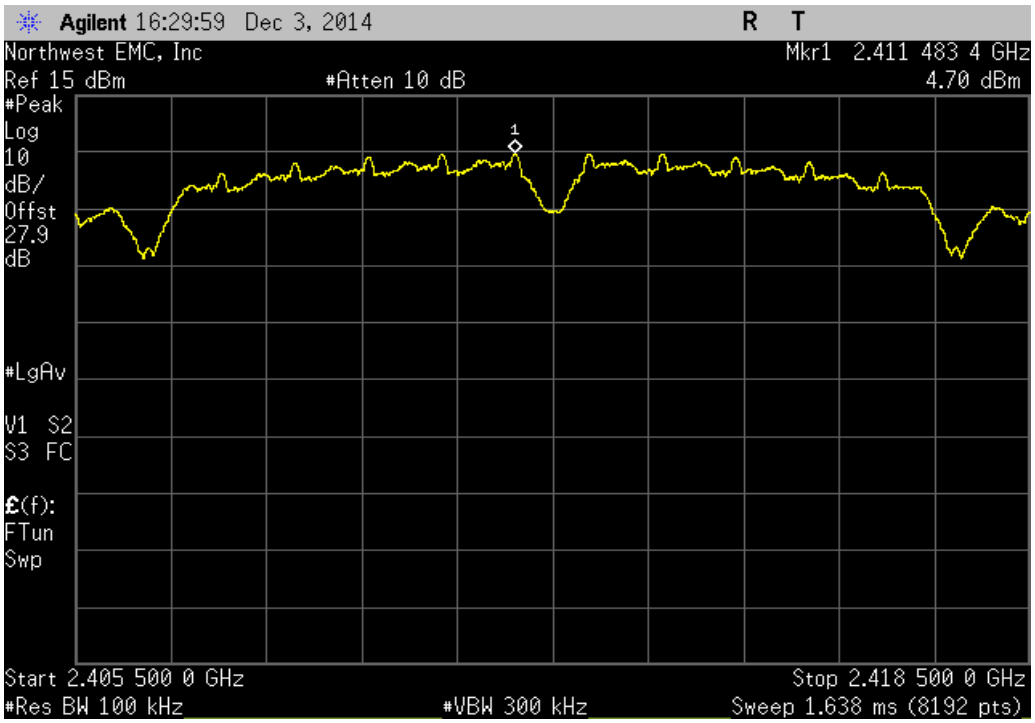
DEVIATIONS FROM TEST STANDARD

None

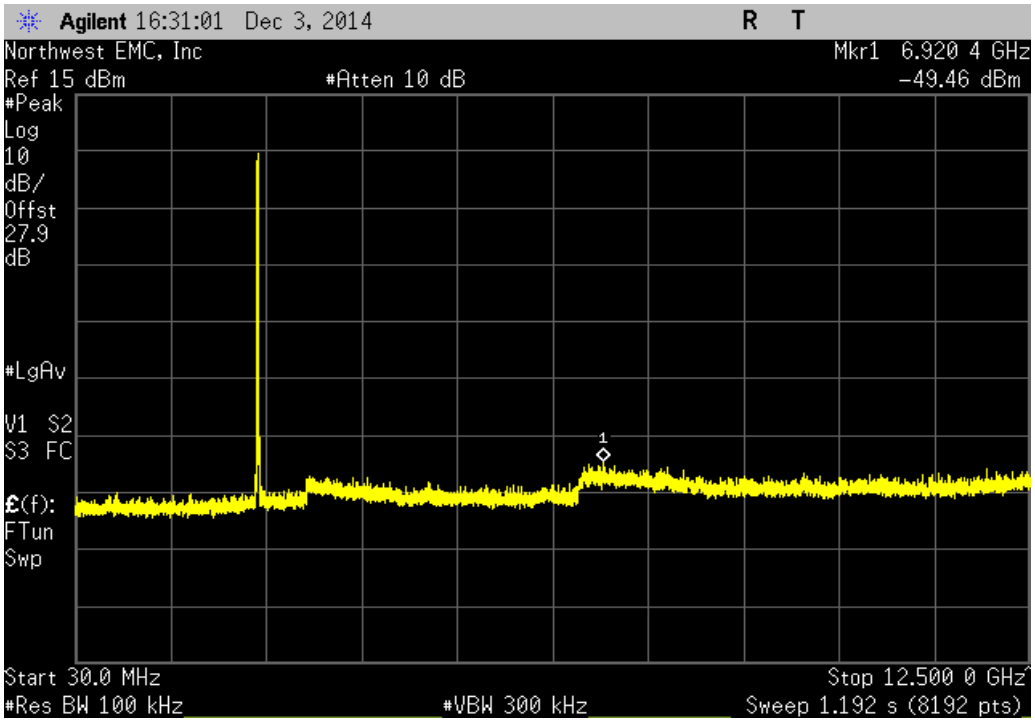
Configuration #	1	Signature

		Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result
20MHz					
	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	-54.16	-20	Pass
	Low Channel 1, 2412 MHz	12.5 GHz - 25 GHz	-51.54	-20	Pass
	Mid Channel 6, 2437 MHz	Fundamental	N/A	N/A	N/A
	Mid Channel 6, 2437 MHz	30 MHz - 12.5 GHz	-55.24	-20	Pass
	Mid Channel 6, 2437 MHz	12.5 GHz - 25 GHz	-51.83	-20	Pass
	High Channel 11, 2462 MHz	Fundamental	N/A	N/A	N/A
	High Channel 11, 2462 MHz	30 MHz - 12.5 GHz	-55.26	-20	Pass
	High Channel 11, 2462 MHz	12.5 GHz - 25 GHz	-52.65	-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	-55.96	-20	Pass
	Low Channel 1, 2412 MHz	12.5 GHz - 25 GHz	-54.34	-20	Pass
	Mid Channel 6, 2437 MHz	Fundamental	N/A	N/A	N/A
	Mid Channel 6, 2437 MHz	30 MHz - 12.5 GHz	-55.84	-20	Pass
	Mid Channel 6, 2437 MHz	12.5 GHz - 25 GHz	-53.7	-20	Pass
	High Channel 11, 2462 MHz	Fundamental	N/A	N/A	N/A
	High Channel 11, 2462 MHz	30 MHz - 12.5 GHz	-56.82	-20	Pass
	High Channel 11, 2462 MHz	12.5 GHz - 25 GHz	-53.51	-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	-43.25	-20	Pass
	Low Channel 1, 2412 MHz	12.5 GHz - 25 GHz	-48.42	-20	Pass
	Mid Channel 6, 2437 MHz	Fundamental	N/A	N/A	N/A
	Mid Channel 6, 2437 MHz	30 MHz - 12.5 GHz	-52.09	-20	Pass
	Mid Channel 6, 2437 MHz	12.5 GHz - 25 GHz	-48.6	-20	Pass
	High Channel 11, 2462 MHz	Fundamental	N/A	N/A	N/A
	High Channel 11, 2462 MHz	30 MHz - 12.5 GHz	-51.45	-20	Pass
	High Channel 11, 2462 MHz	12.5 GHz - 25 GHz	-48.51	-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	-45.42	-20	Pass
	Low Channel 1, 2412 MHz	12.5 GHz - 25 GHz	-49.01	-20	Pass
	Mid Channel 6, 2437 MHz	Fundamental	N/A	N/A	N/A
	Mid Channel 6, 2437 MHz	30 MHz - 12.5 GHz	-52.98	-20	Pass
	Mid Channel 6, 2437 MHz	12.5 GHz - 25 GHz	-49.52	-20	Pass
	High Channel 11, 2462 MHz	Fundamental	N/A	N/A	N/A
	High Channel 11, 2462 MHz	30 MHz - 12.5 GHz	-52.94	-20	Pass
	High Channel 11, 2462 MHz	12.5 GHz - 25 GHz	-49.76	-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	-45.39	-20	Pass
	Low Channel 1, 2412 MHz	12.5 GHz - 25 GHz	-49.96	-20	Pass
	Mid Channel 6, 2437 MHz	Fundamental	N/A	N/A	N/A
	Mid Channel 6, 2437 MHz	30 MHz - 12.5 GHz	-53.52	-20	Pass
	Mid Channel 6, 2437 MHz	12.5 GHz - 25 GHz	-49.7	-20	Pass
	High Channel 11, 2462 MHz	Fundamental	N/A	N/A	N/A
	High Channel 11, 2462 MHz	30 MHz - 12.5 GHz	-53.39	-20	Pass
	High Channel 11, 2462 MHz	12.5 GHz - 25 GHz	-49.64	-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	-42.45	-20	Pass
	Low Channel 1, 2412 MHz	12.5 GHz - 25 GHz	-48.4	-20	Pass
	Mid Channel 6, 2437 MHz	Fundamental	N/A	N/A	N/A
	Mid Channel 6, 2437 MHz	30 MHz - 12.5 GHz	-52.3	-20	Pass
	Mid Channel 6, 2437 MHz	12.5 GHz - 25 GHz	-48.53	-20	Pass
	High Channel 11, 2462 MHz	Fundamental	N/A	N/A	N/A
	High Channel 11, 2462 MHz	30 MHz - 12.5 GHz	-52.41	-20	Pass
	High Channel 11, 2462 MHz	12.5 GHz - 25 GHz	-49.22	-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	-42.16	-20	Pass
	Low Channel 1, 2412 MHz	12.5 GHz - 25 GHz	-48.69	-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	-20	Pass
	Mid Channel 6, 2437 MHz	12.5 GHz - 25 GHz	-48.78	-20	Pass
	High Channel 11, 2462 MHz	Fundamental	N/A	N/A	N/A
	High Channel 11, 2462 MHz	30 MHz - 12.5 GHz	-51.85	-20	Pass
	High Channel 11, 2462 MHz	12.5 GHz - 25 GHz	-48.73	-20	Pass

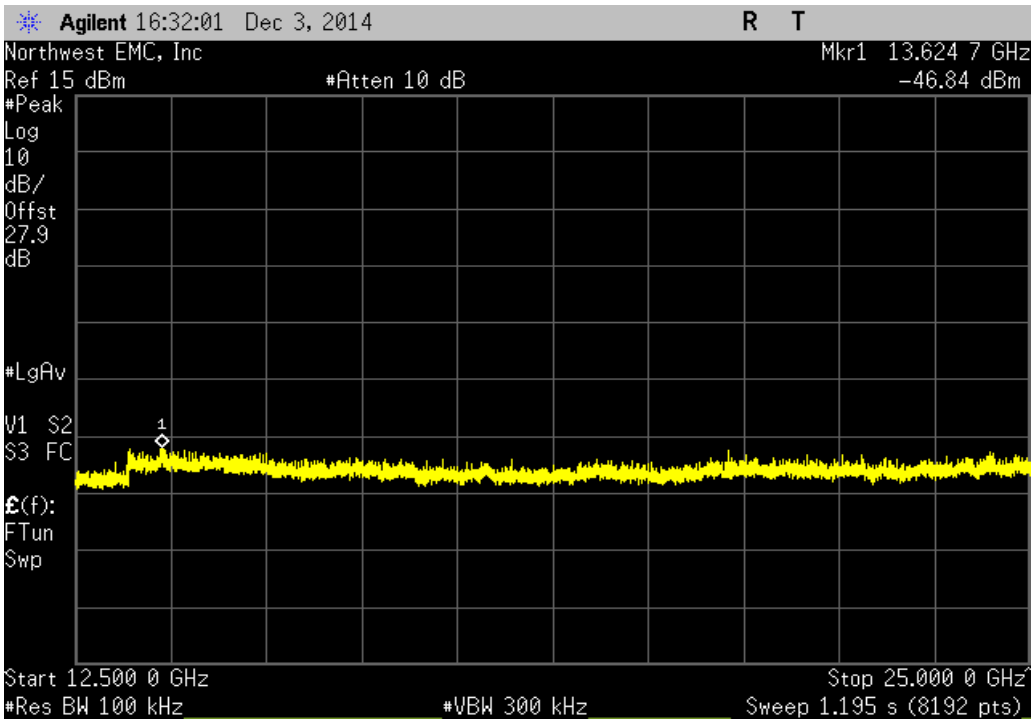
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz						
	Frequency Range			Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental			N/A	N/A	N/A



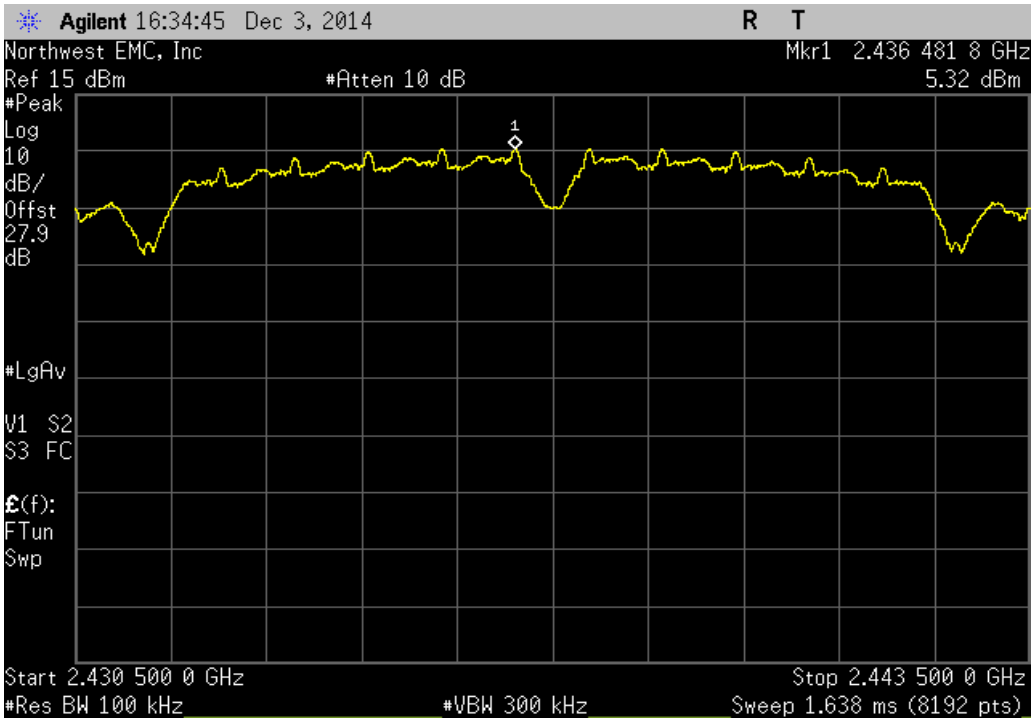
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz					
	Frequency Range		Value (dBc)	Limit ≤ (dBc)	Result
	30 MHz - 12.5 GHz		-54.16	-20	Pass



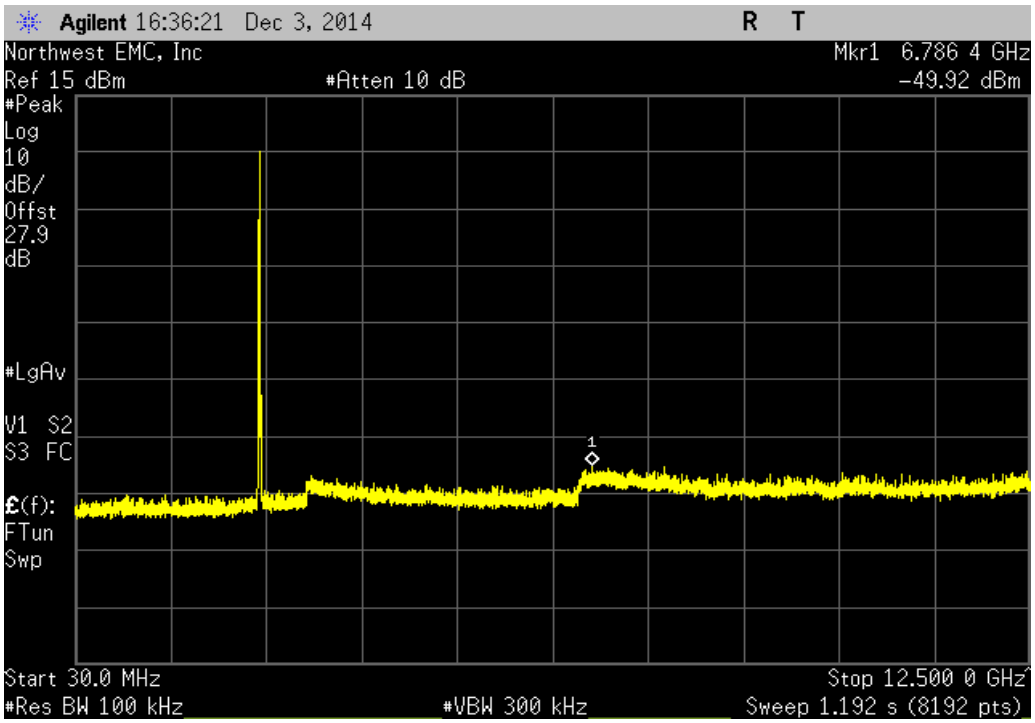
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz				
Frequency Range		**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz		-51.54	-20	Pass



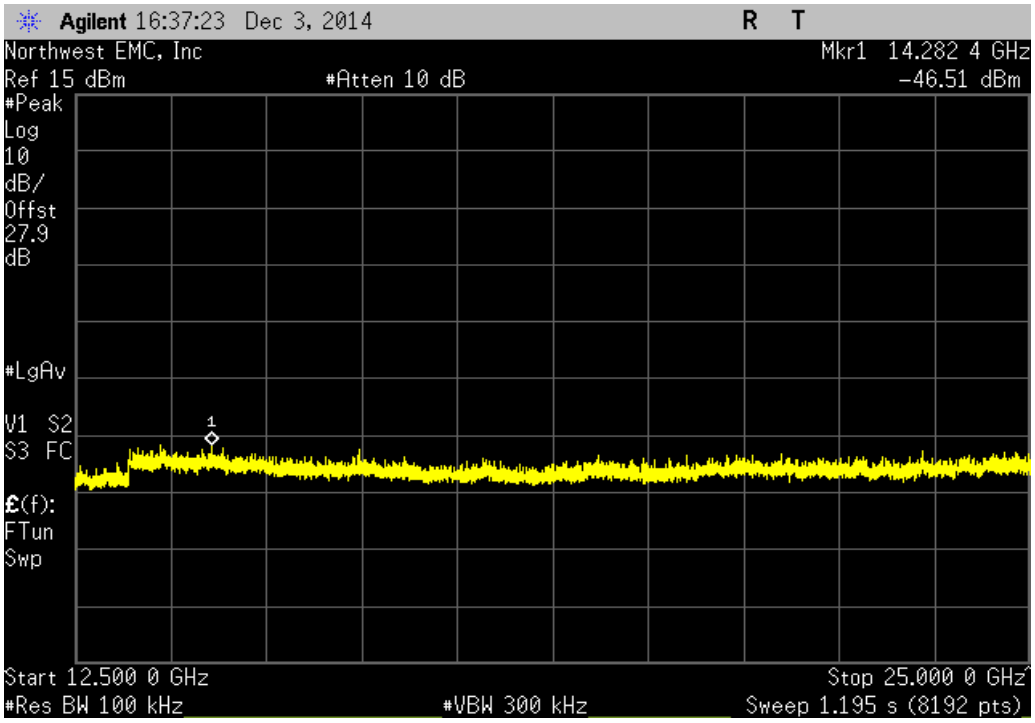
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz						
	Frequency Range			**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
	Fundamental			N/A	N/A	N/A



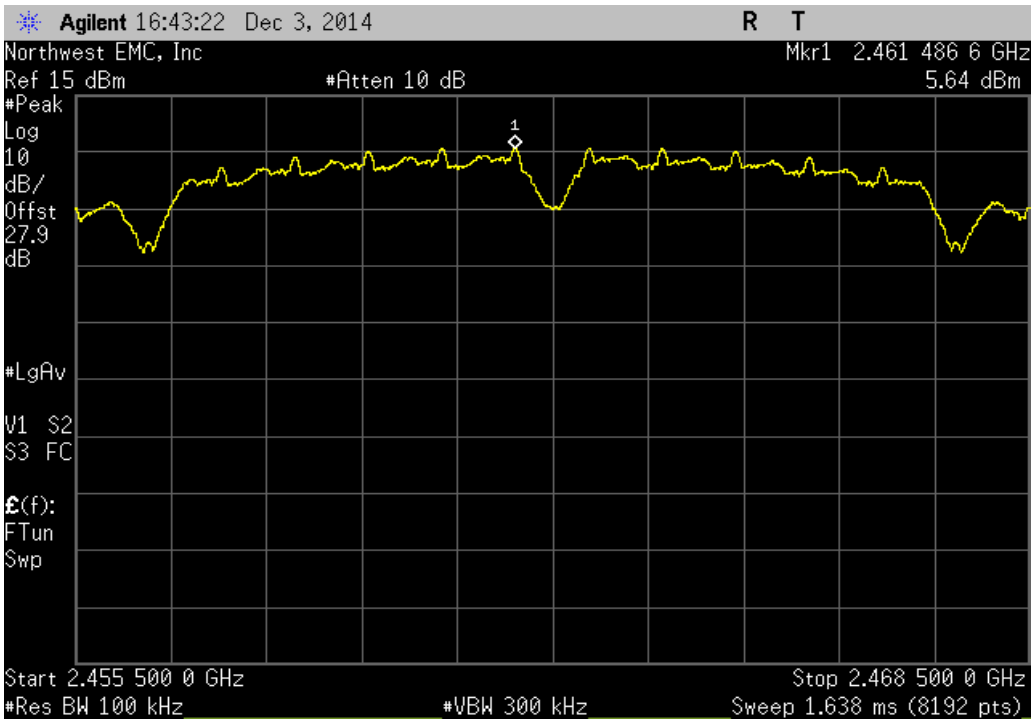
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz				
Frequency Range		**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
30 MHz - 12.5 GHz		-55.24	-20	Pass



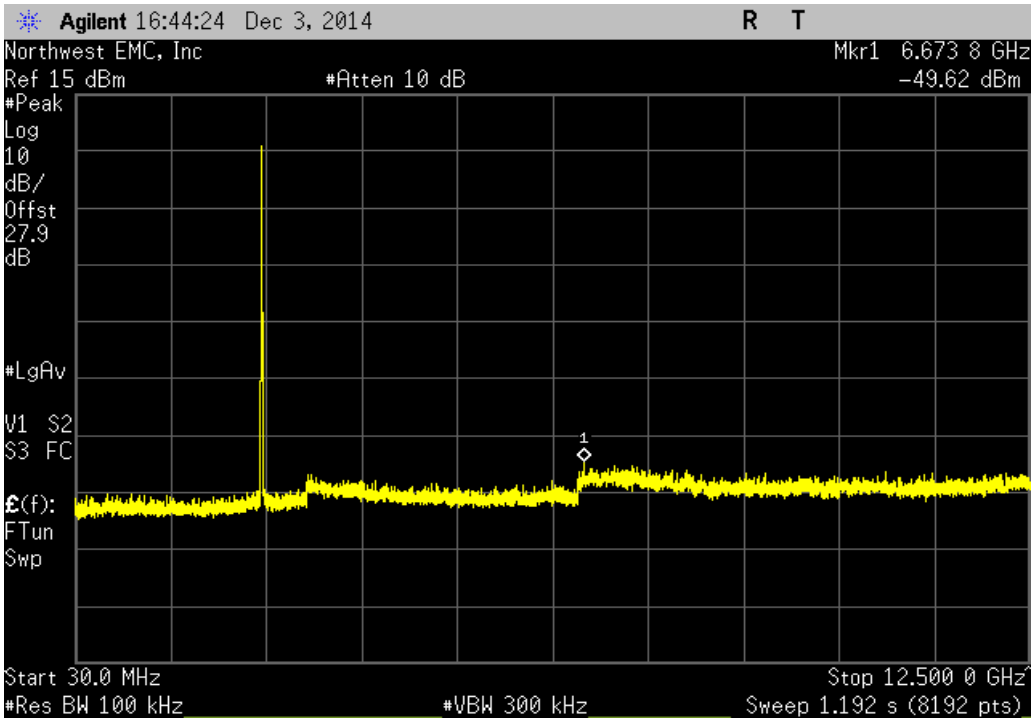
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz				
Frequency Range		**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz		-51.83	-20	Pass



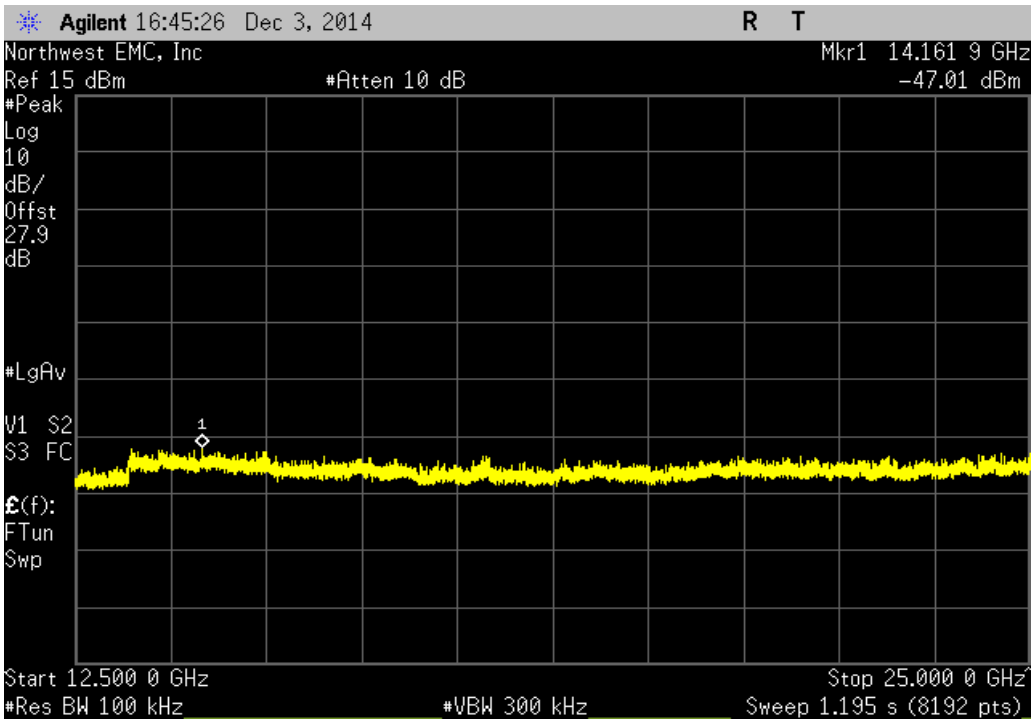
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz						
	Frequency Range			Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental			N/A	N/A	N/A



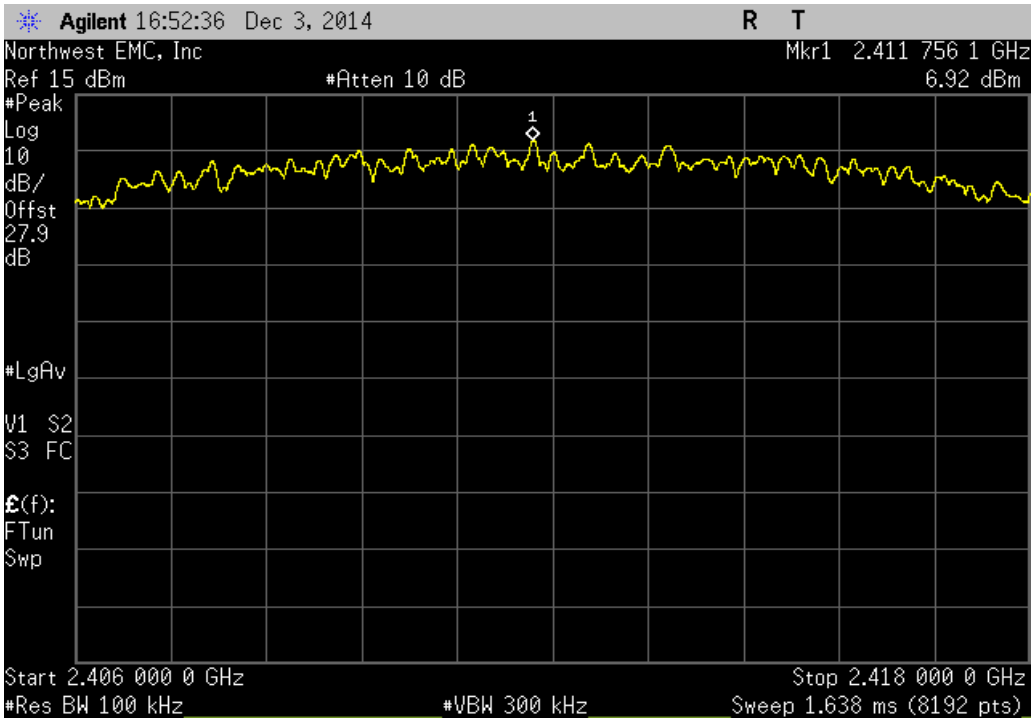
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz					
Frequency Range			Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz			-55.26	-20	Pass



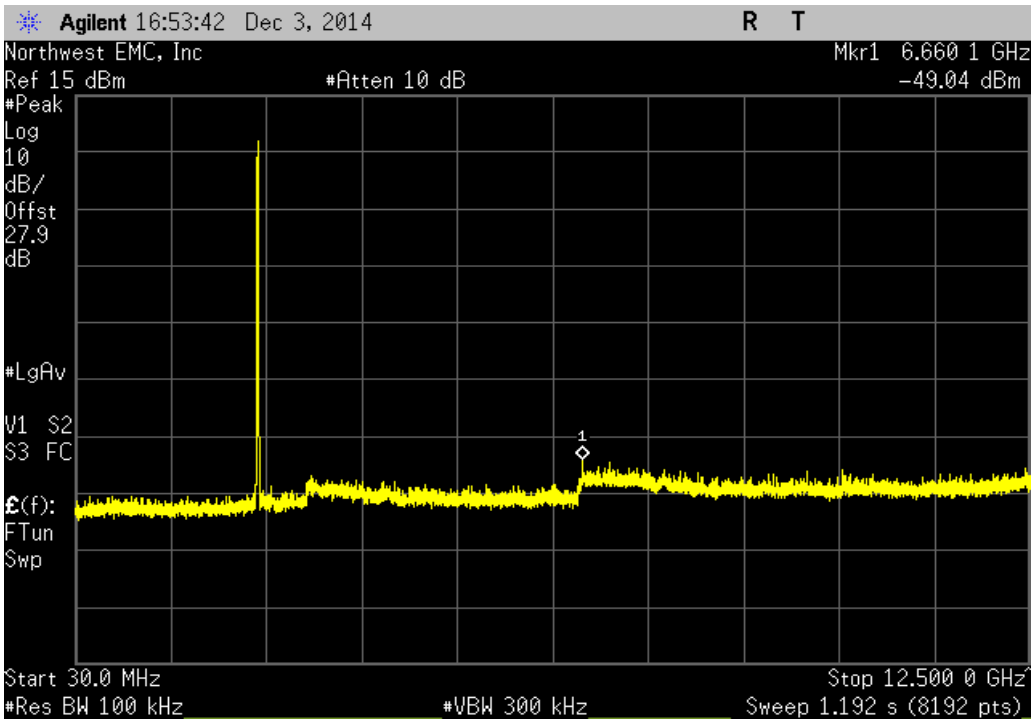
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz				
Frequency Range		**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz		-52.65	-20	Pass



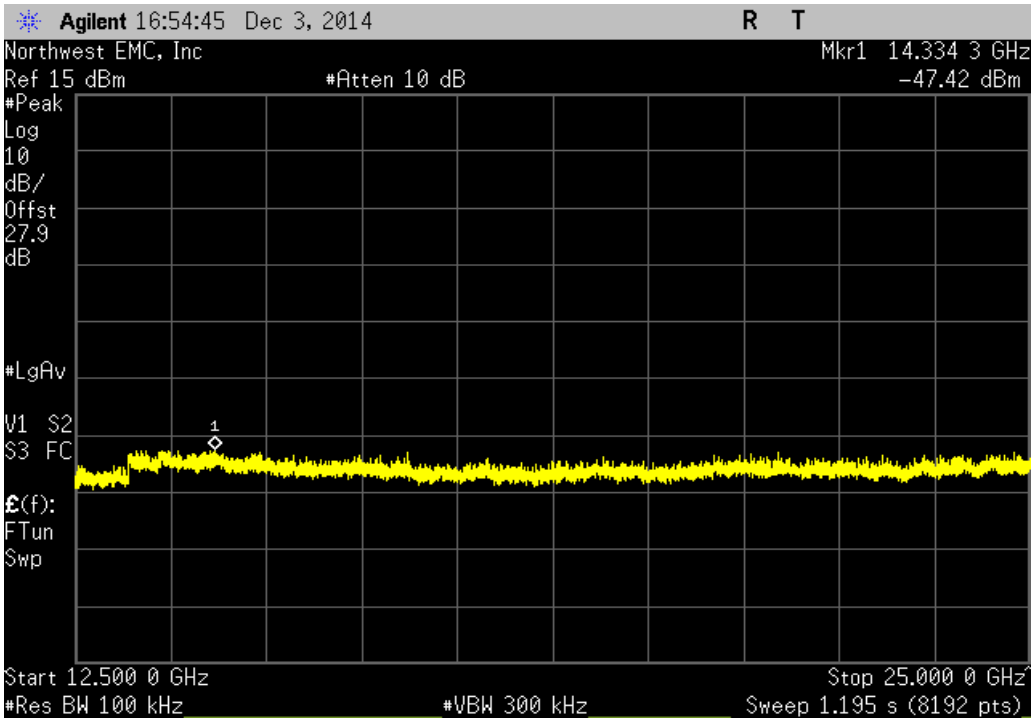
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz						
	Frequency Range			**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
	Fundamental			N/A	N/A	N/A



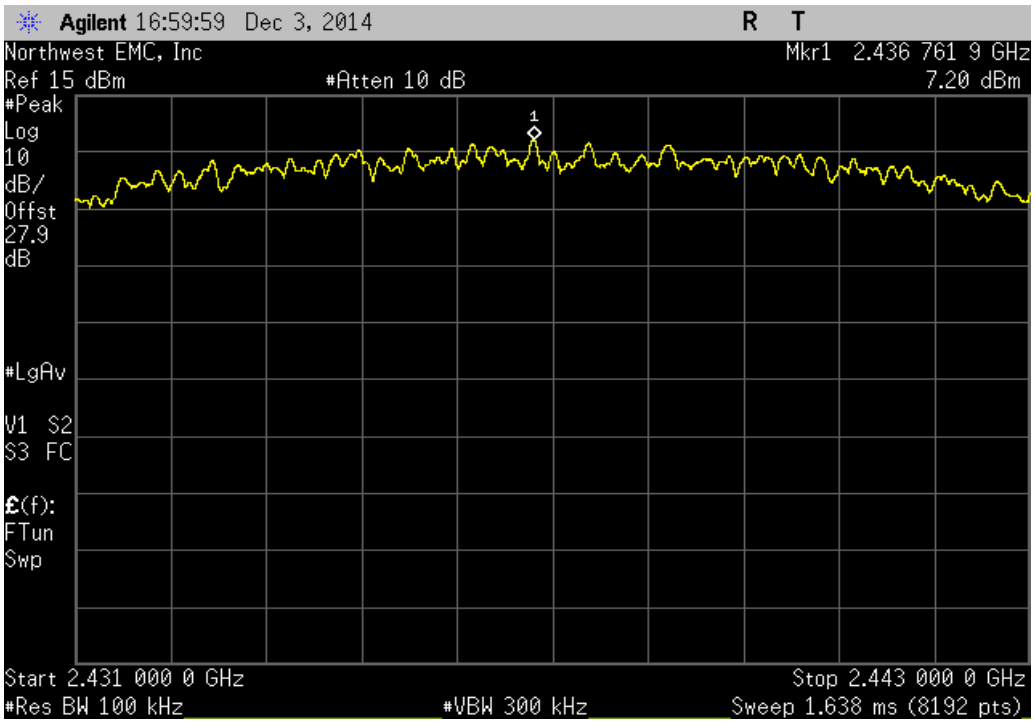
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz				
Frequency Range		**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
30 MHz - 12.5 GHz		-55.96	-20	Pass



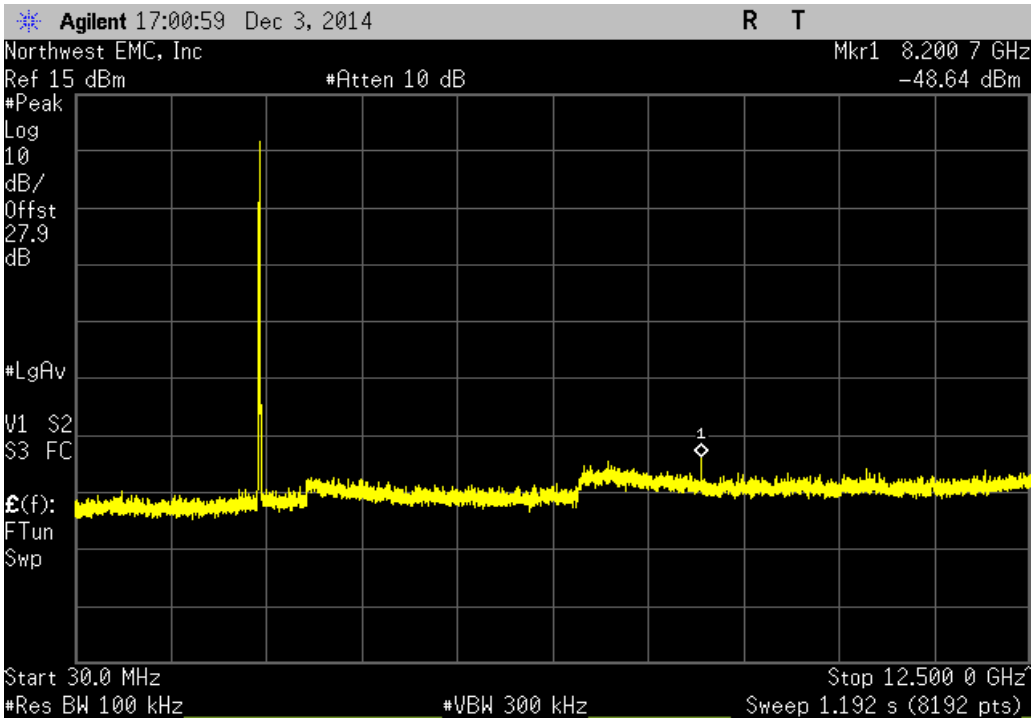
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz				
Frequency Range		**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz		-54.34	-20	Pass



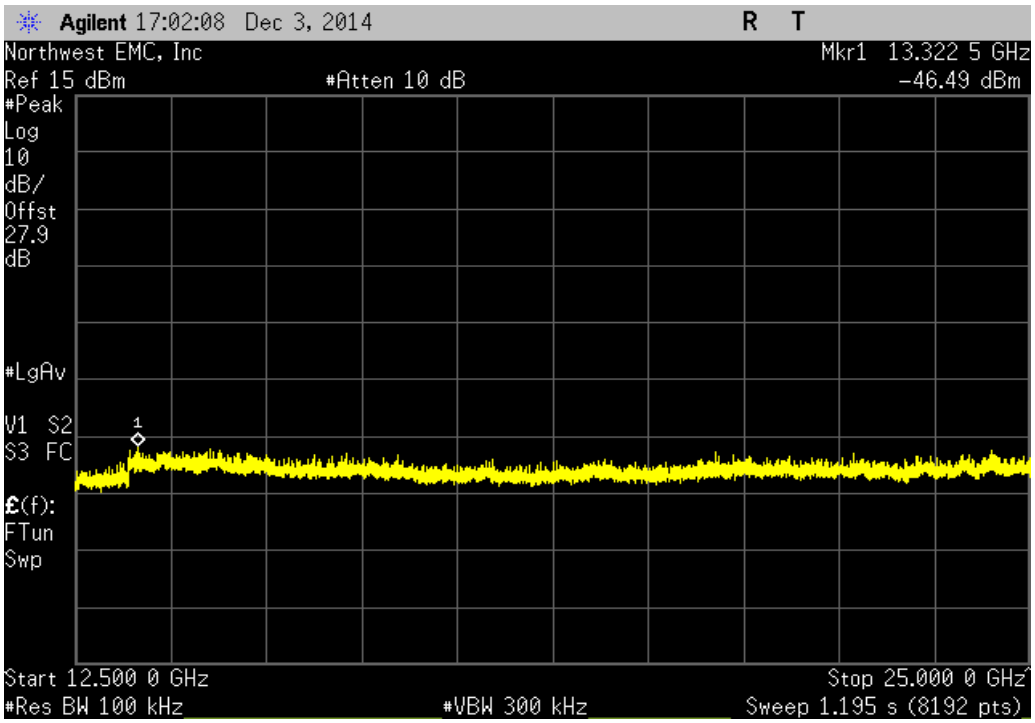
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Mid Channel 6, 2437 MHz						
	Frequency Range			Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental			N/A	N/A	N/A



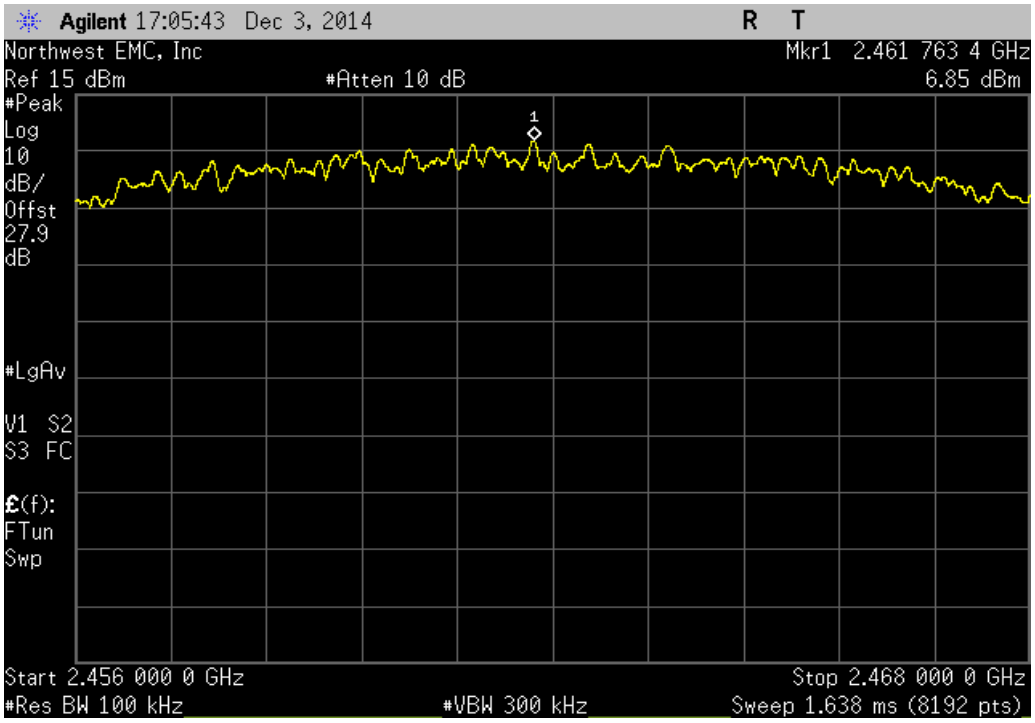
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Mid Channel 6, 2437 MHz					
	Frequency Range		Value (dBc)	Limit ≤ (dBc)	Result
	30 MHz - 12.5 GHz		-55.84	-20	Pass



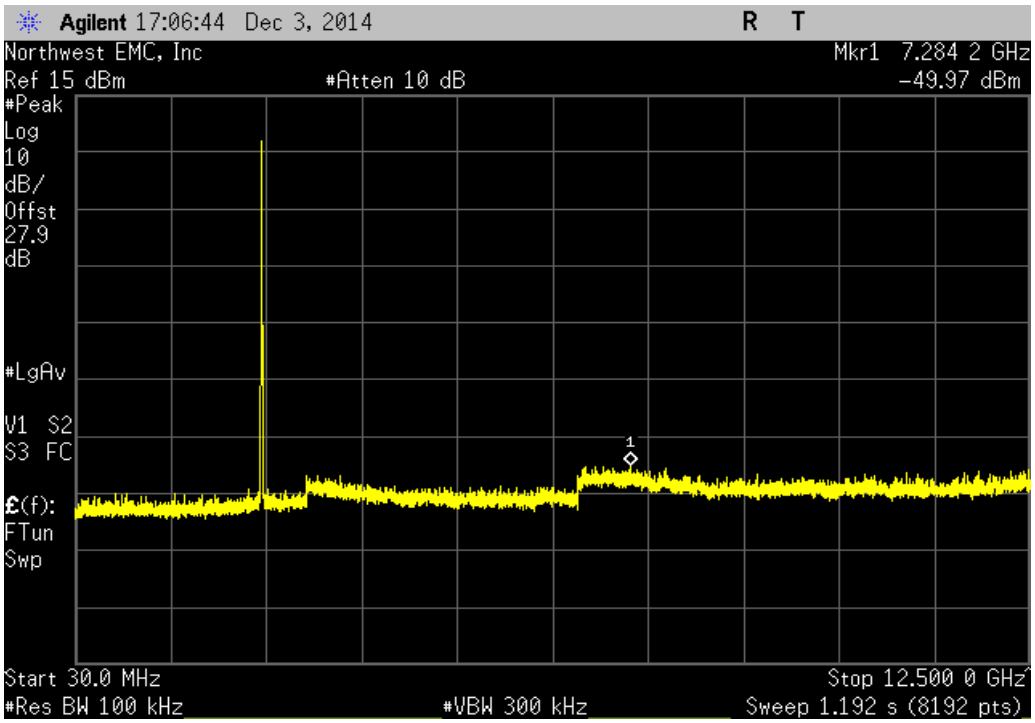
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Mid Channel 6, 2437 MHz				
Frequency Range		**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz		-53.7	-20	Pass



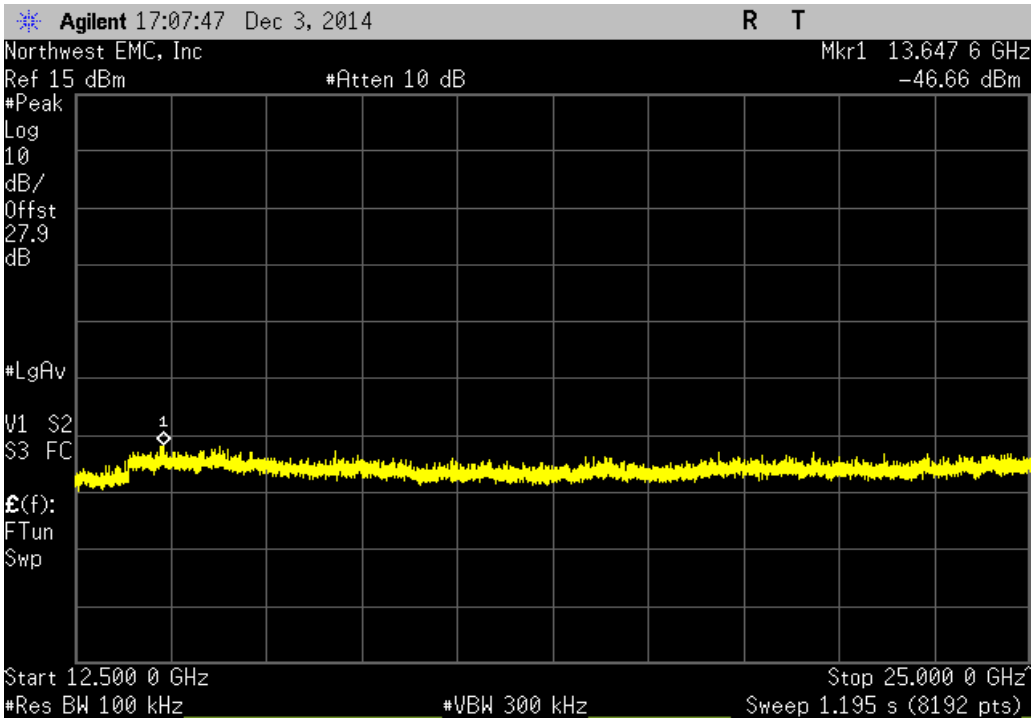
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz						
	Frequency Range			**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
	Fundamental			N/A	N/A	N/A



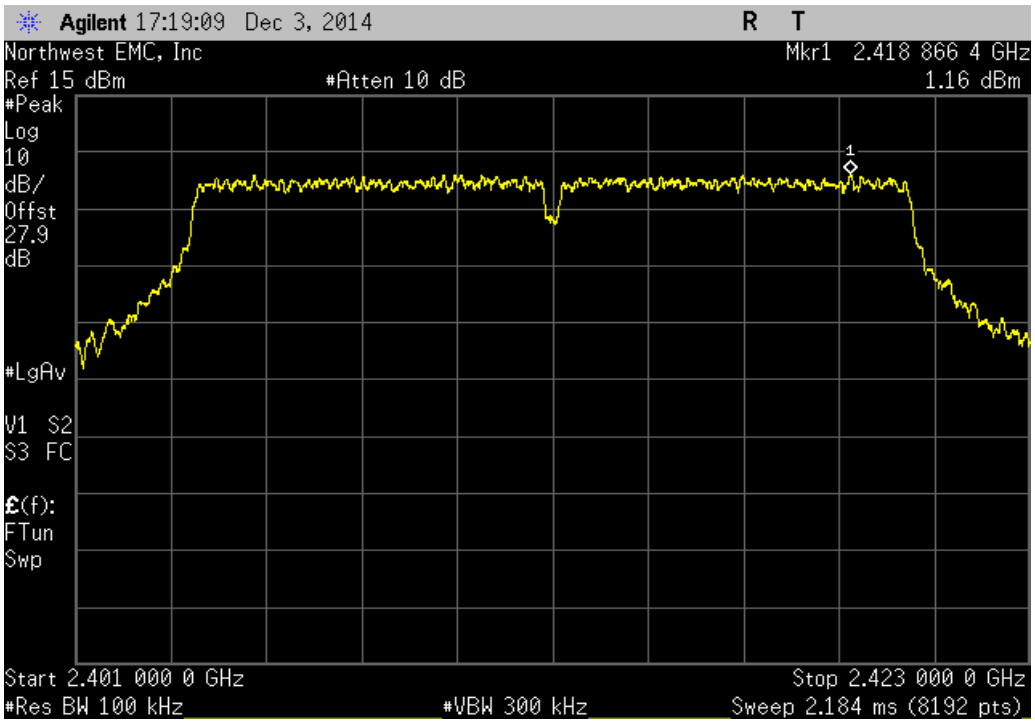
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz				
Frequency Range		Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz		-56.82	-20	Pass



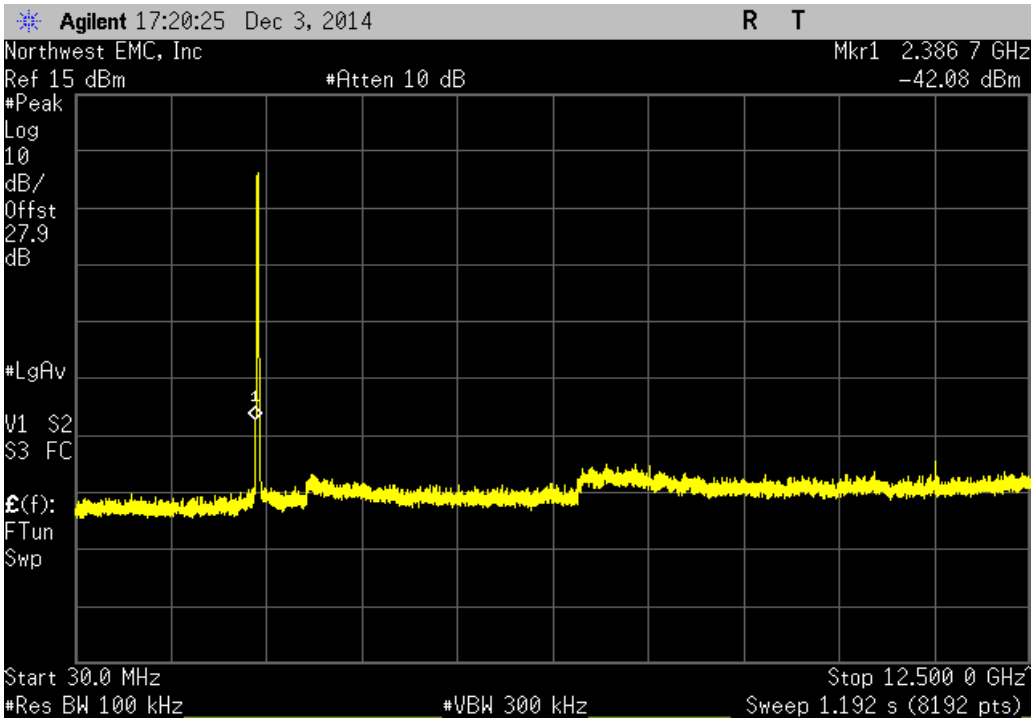
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz				
Frequency Range		Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz		-53.51	-20	Pass



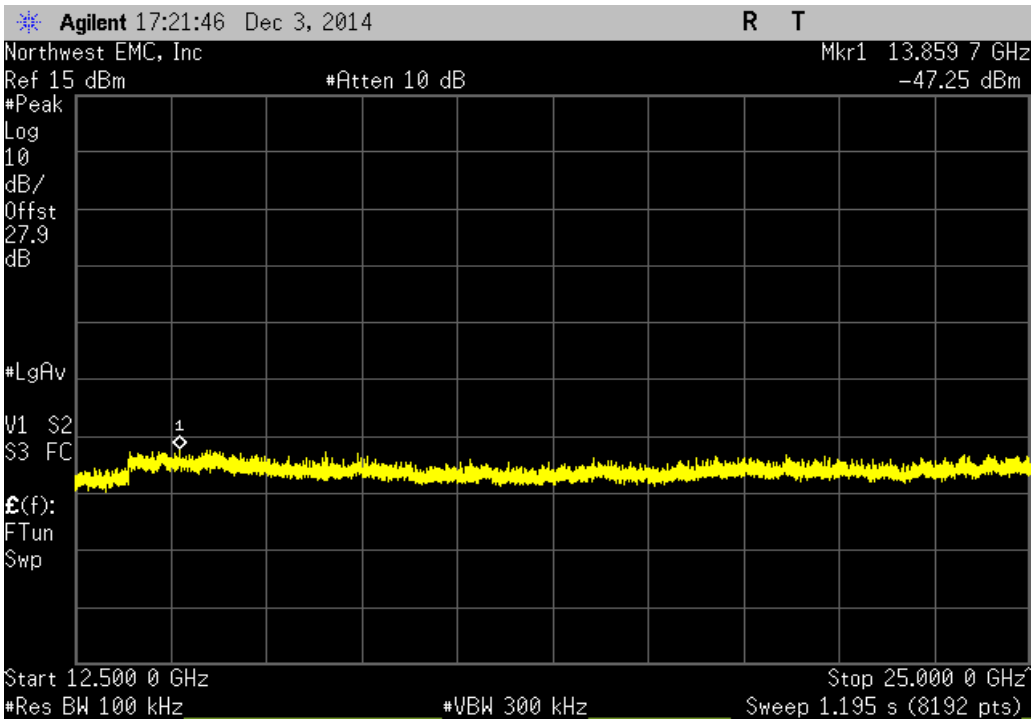
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz						
	Frequency Range			Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental			N/A	N/A	N/A



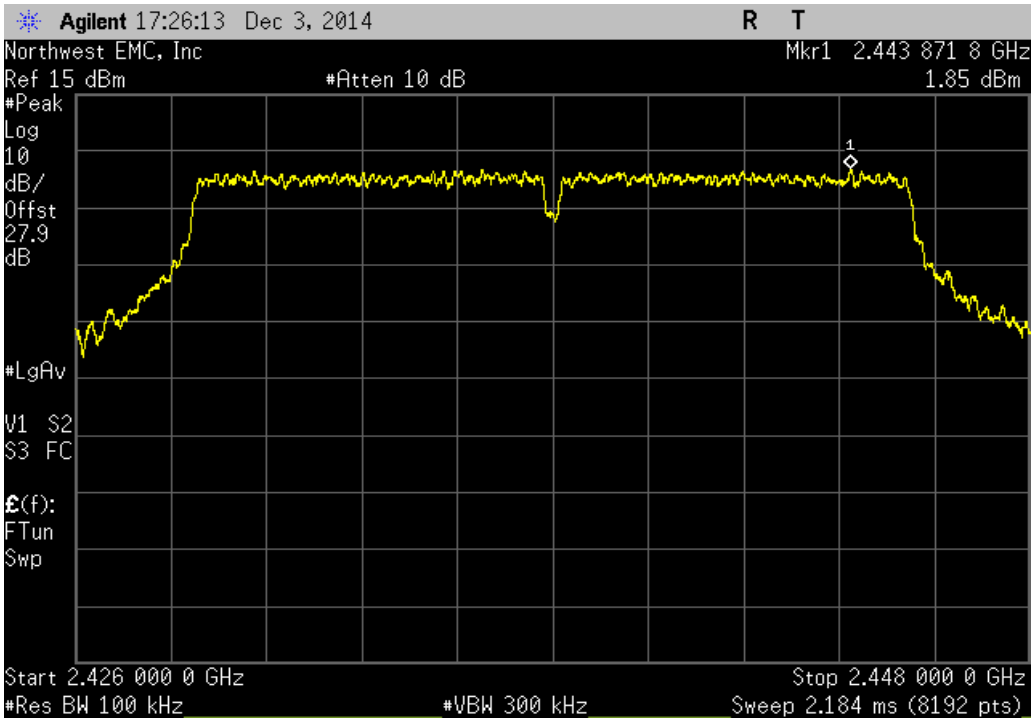
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz					
Frequency Range			Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz			-43.25	-20	Pass



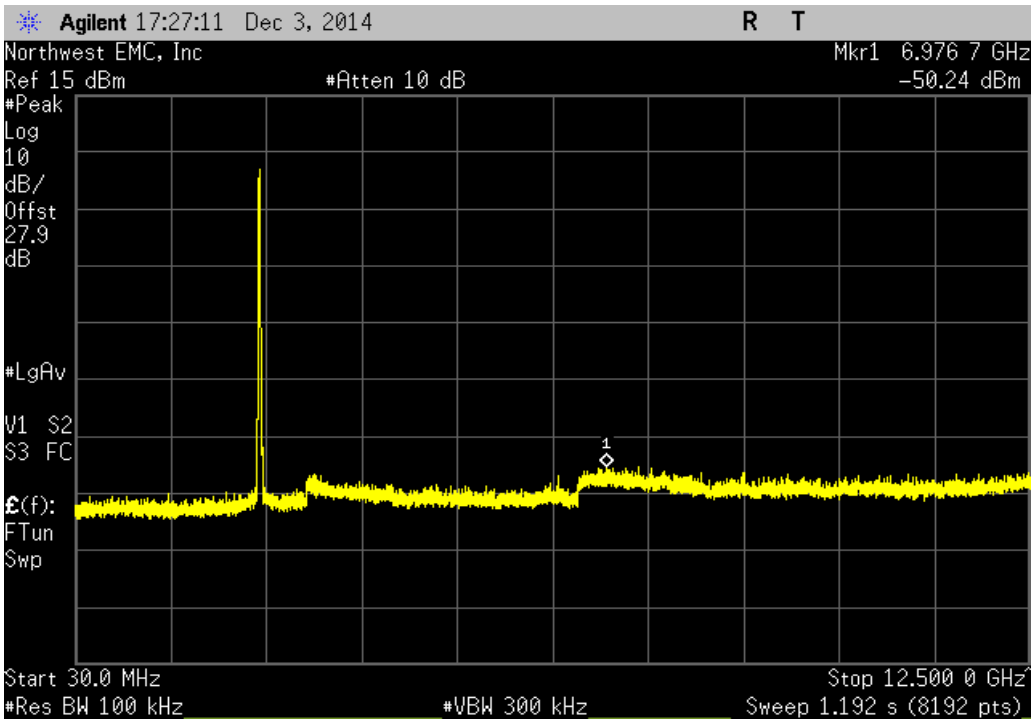
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz				
Frequency Range		**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz		-48.42	-20	Pass



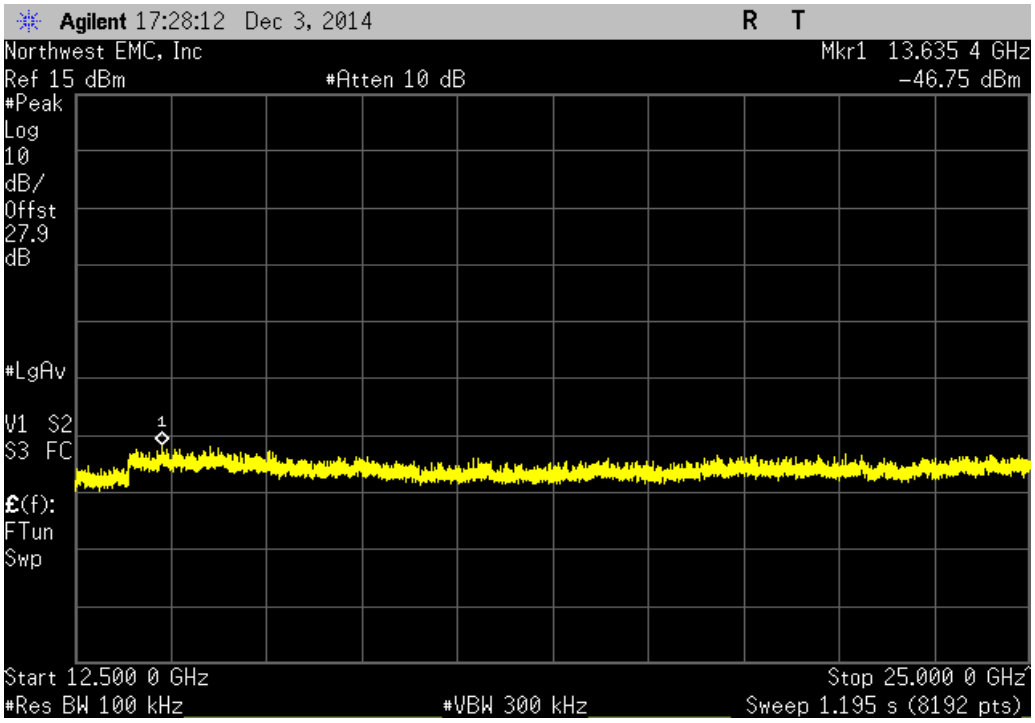
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz						
	Frequency Range			**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
	Fundamental			N/A	N/A	N/A



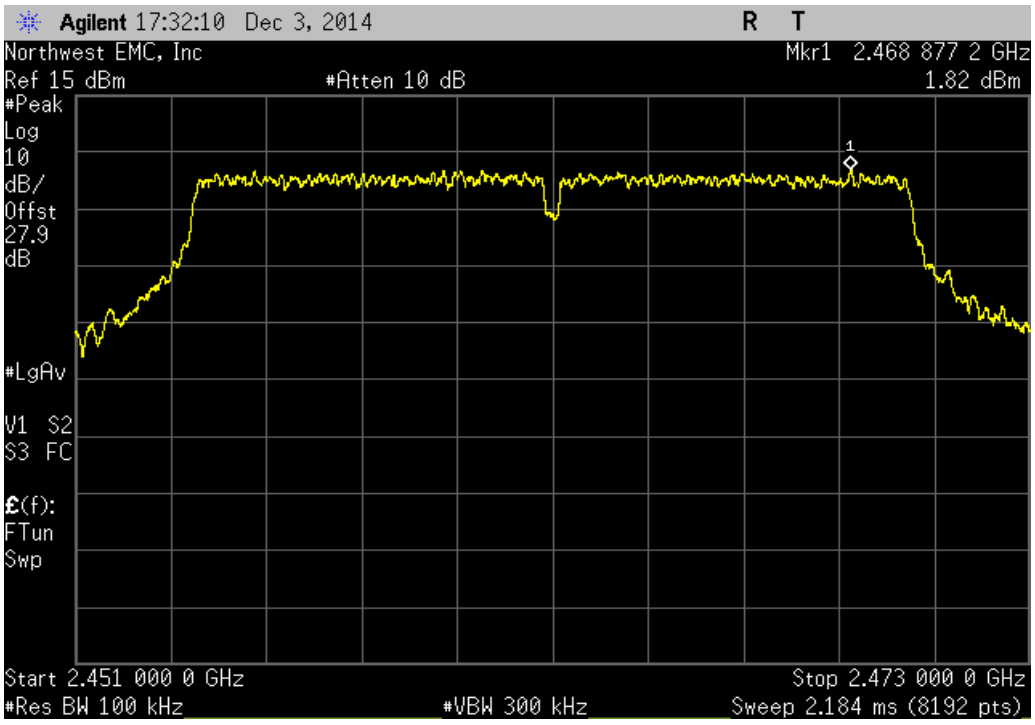
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz				
Frequency Range		**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
30 MHz - 12.5 GHz		-52.09	-20	Pass



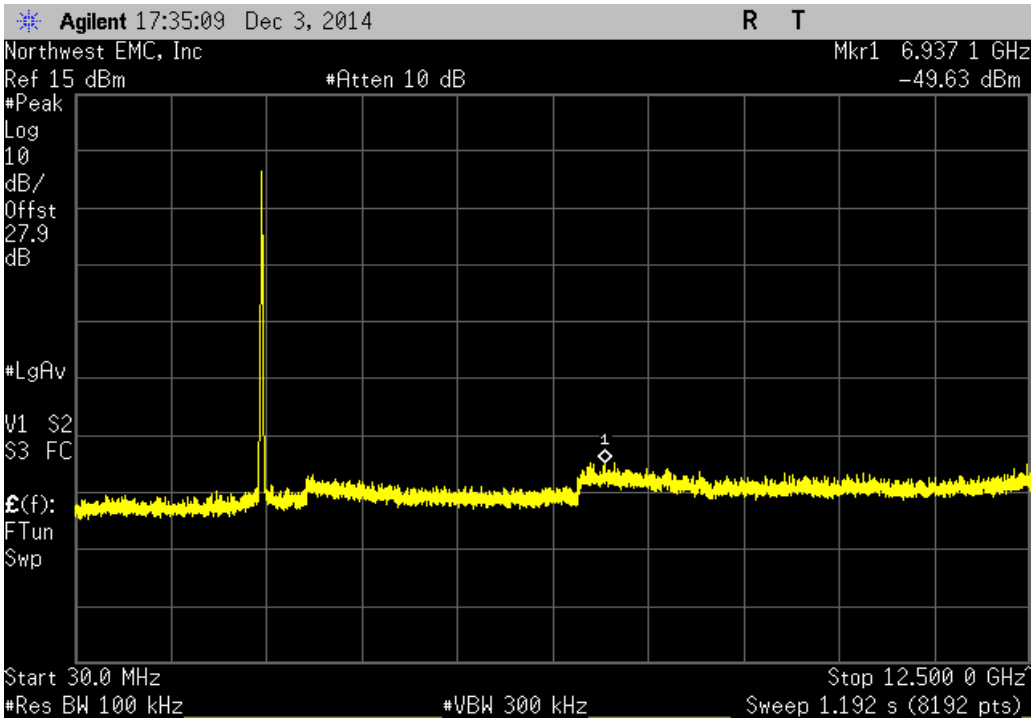
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz				
Frequency Range		**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz		-48.6	-20	Pass



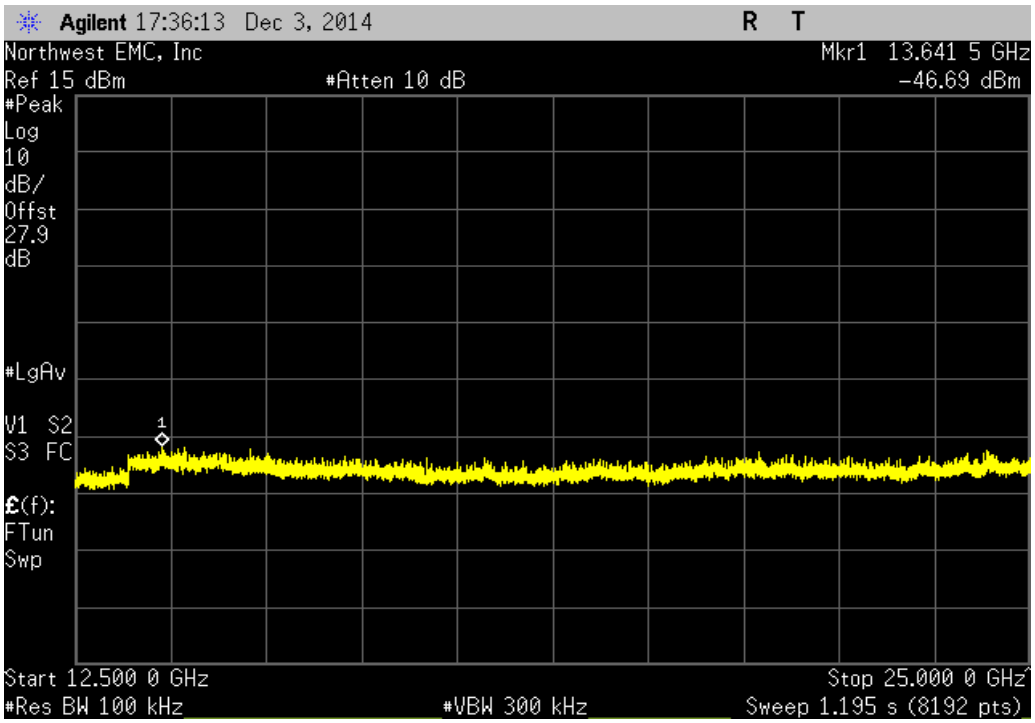
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz						
	Frequency Range			Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental			N/A	N/A	N/A



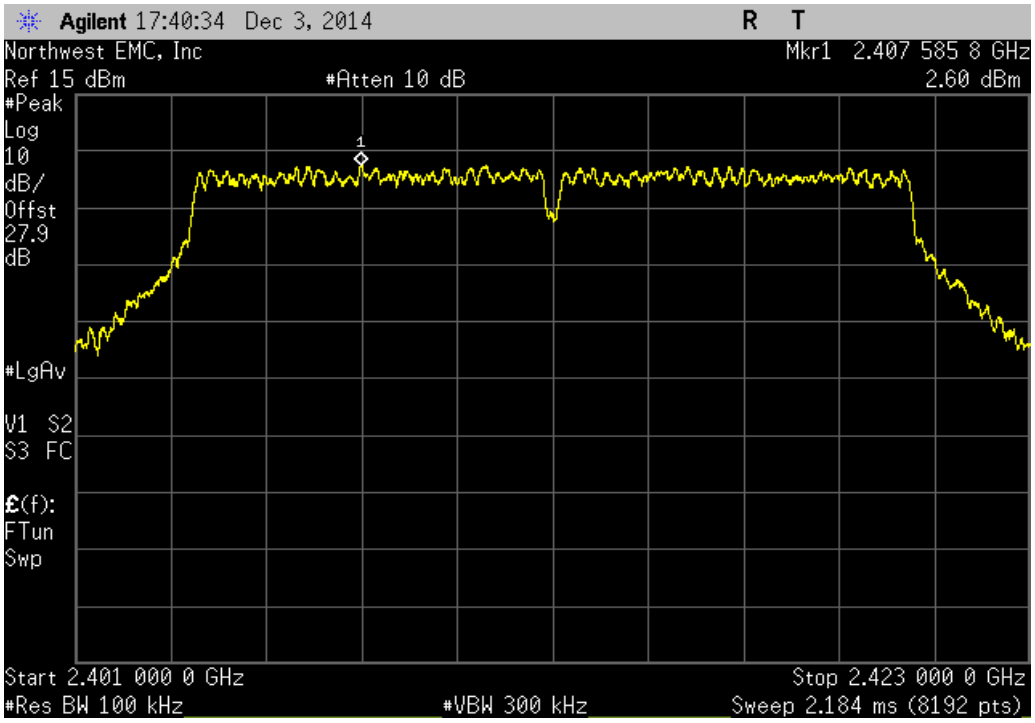
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz					
Frequency Range			Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz			-51.45	-20	Pass



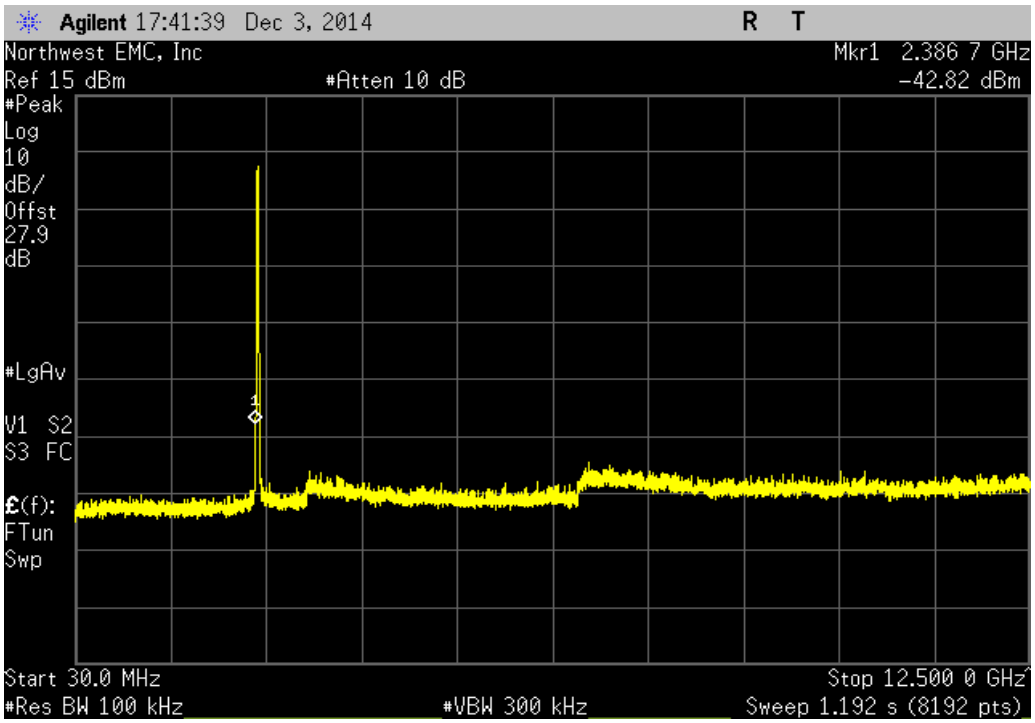
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz					
	Frequency Range		Value (dBc)	Limit ≤ (dBc)	Result
	12.5 GHz - 25 GHz		-48.51	-20	Pass



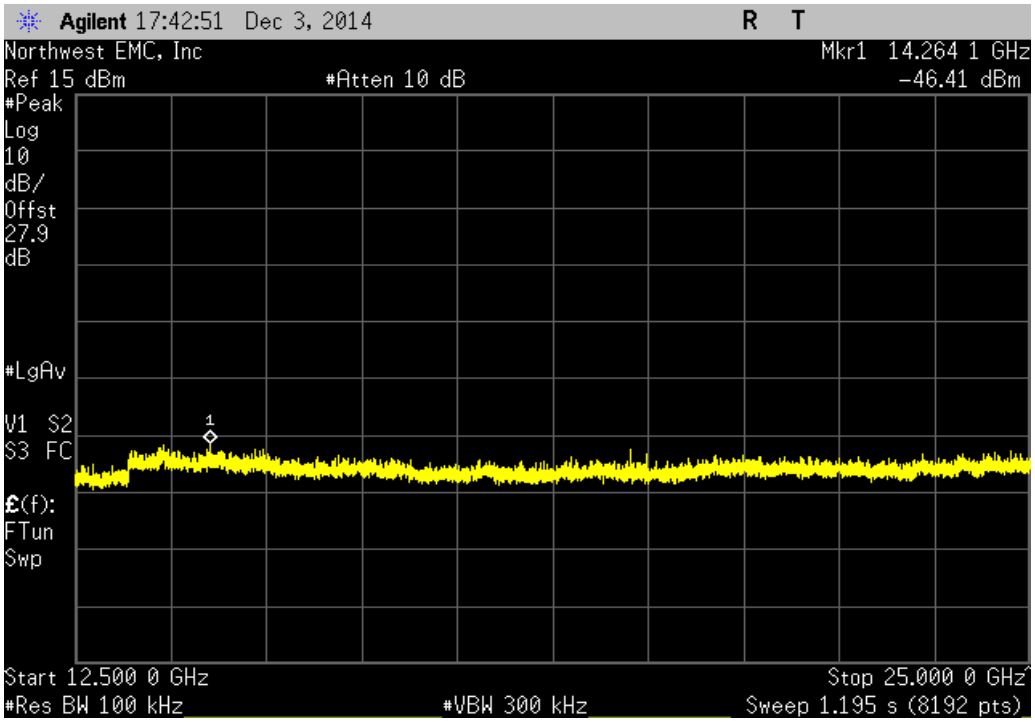
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz						
	Frequency Range			Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental			N/A	N/A	N/A



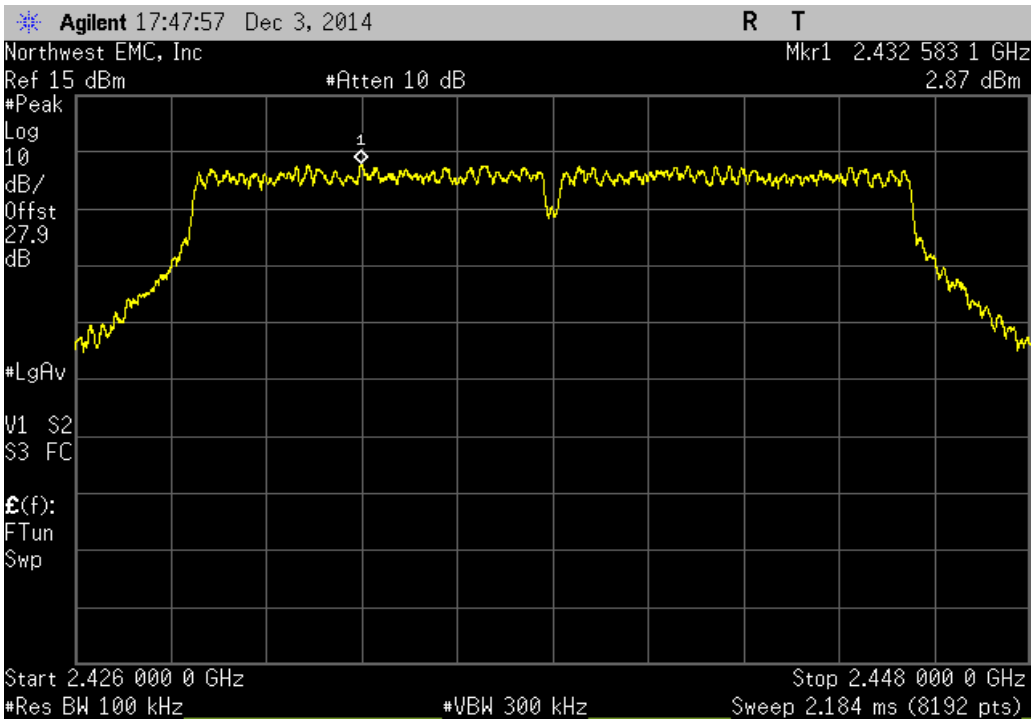
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz				
Frequency Range		**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
30 MHz - 12.5 GHz		-45.42	-20	Pass



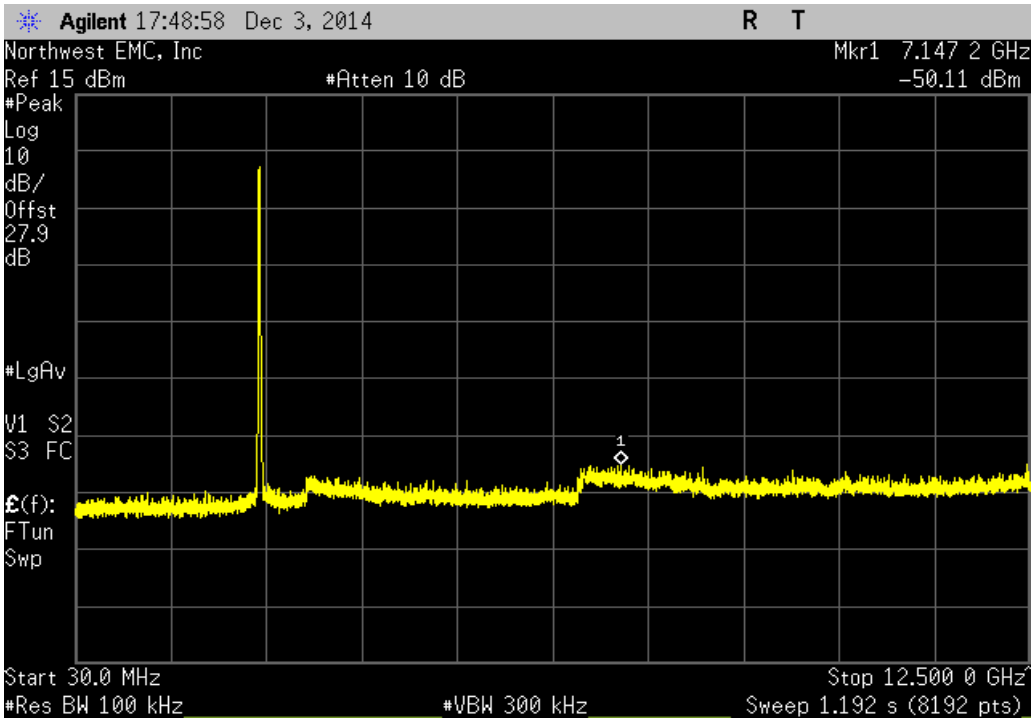
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz				
Frequency Range		**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz		-49.01	-20	Pass



20MHz, 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

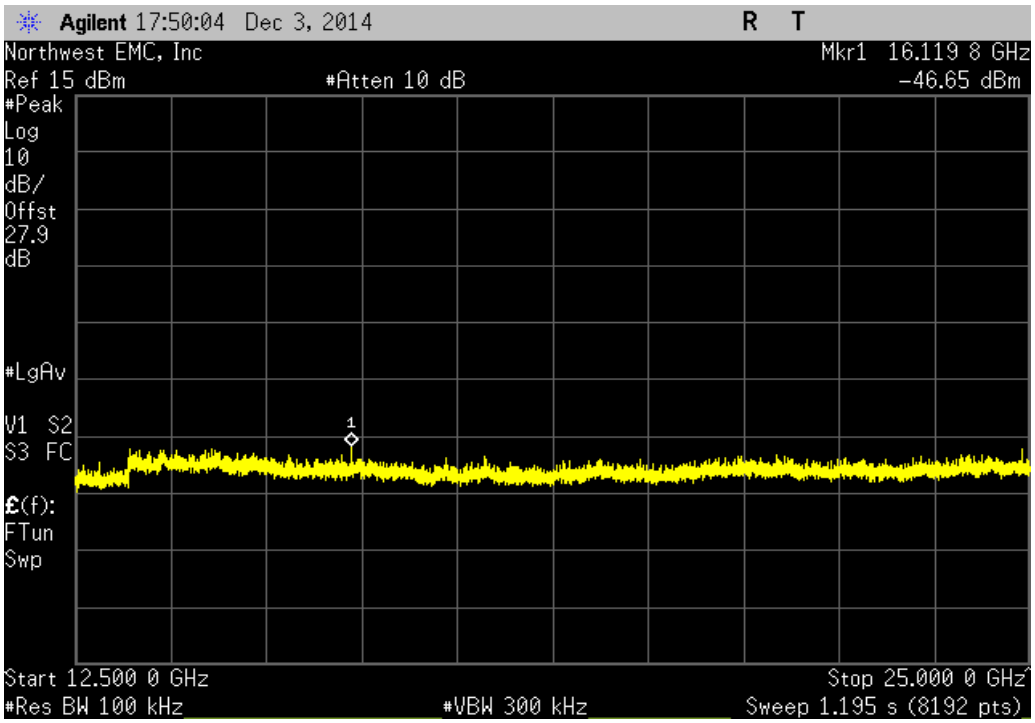


20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Mid Channel 6, 2437 MHz					
Frequency Range			Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz			-52.98	-20	Pass

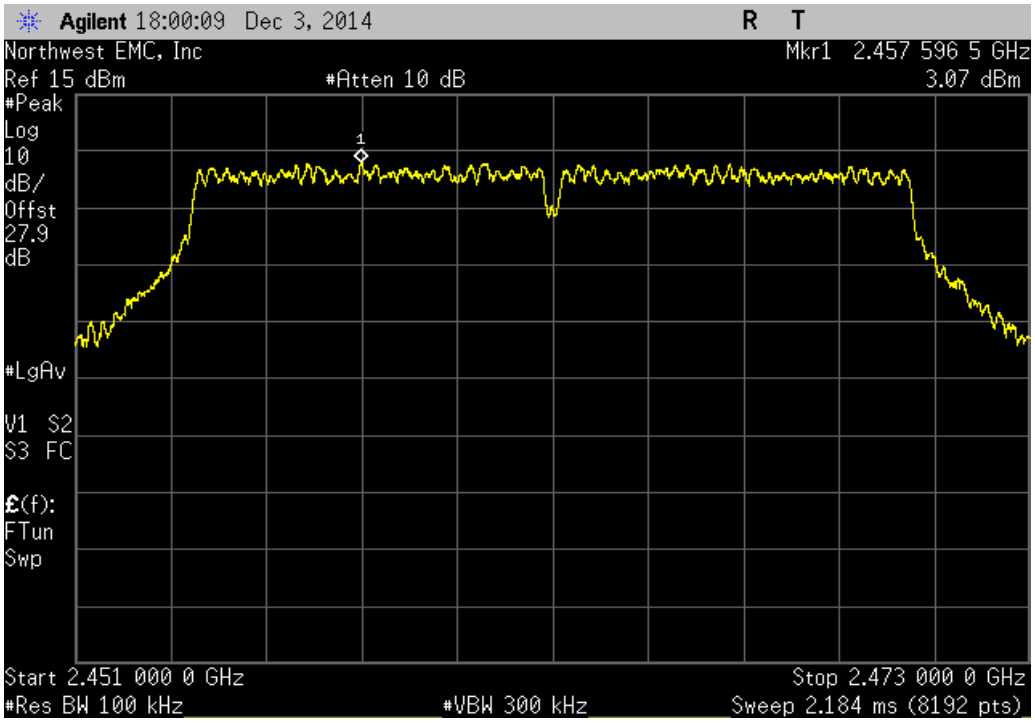


SPURIOUS CONDUCTED EMISSIONS

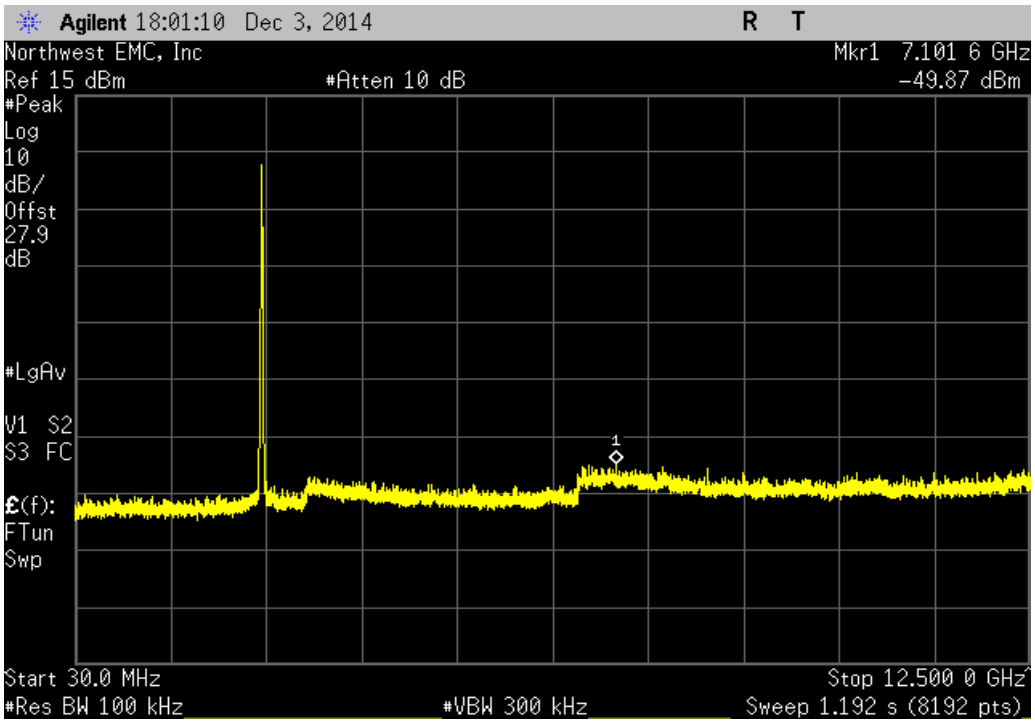
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Mid Channel 6, 2437 MHz				
Frequency Range		**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz		-49.52	-20	Pass



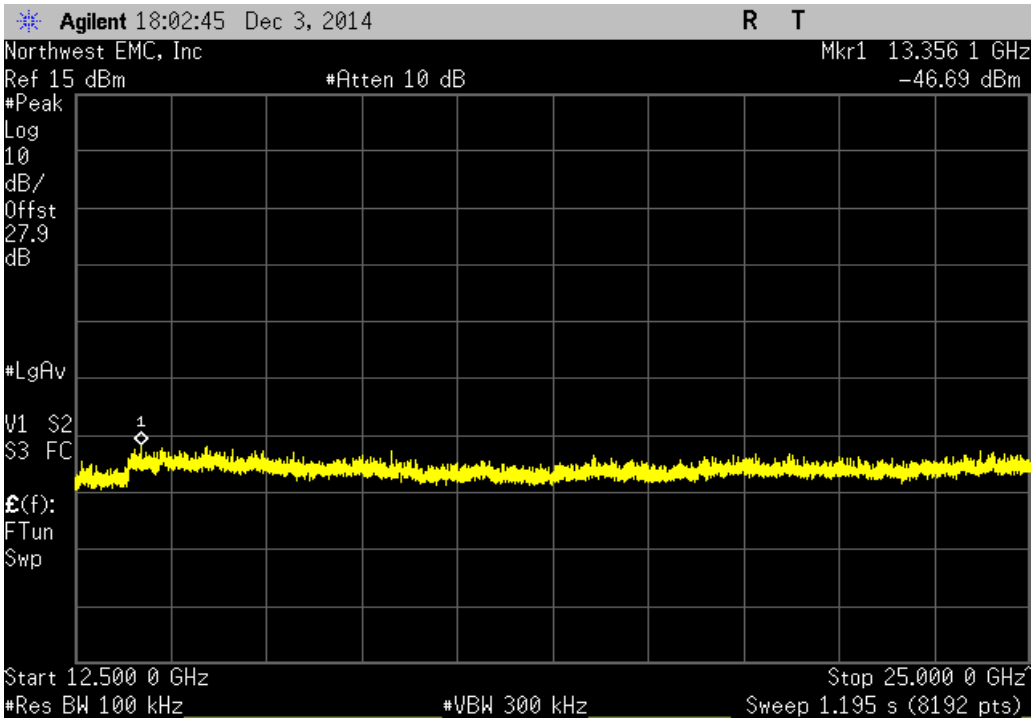
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz						
	Frequency Range			**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
	Fundamental			N/A	N/A	N/A



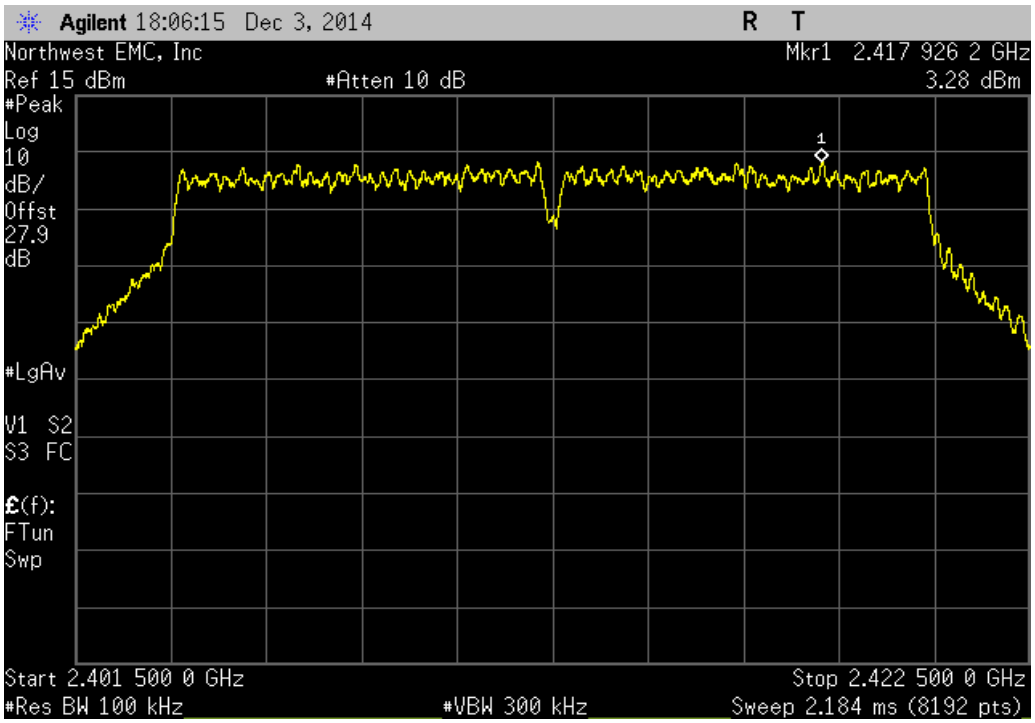
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz				
Frequency Range		**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
30 MHz - 12.5 GHz		-52.94	-20	Pass



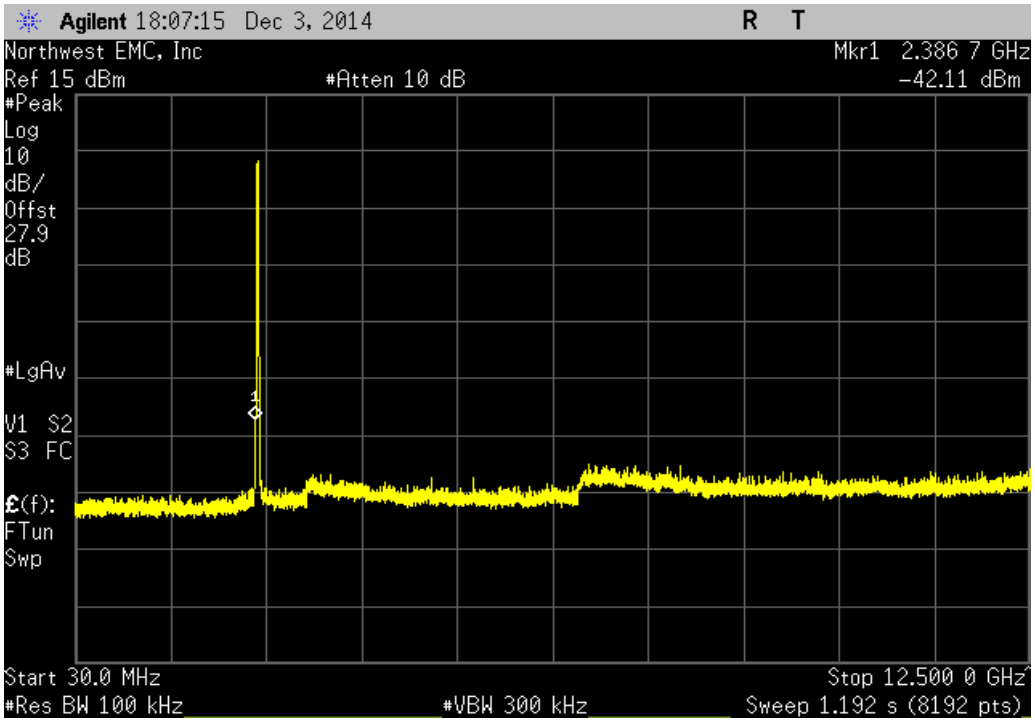
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz				
Frequency Range		**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz		-49.76	-20	Pass



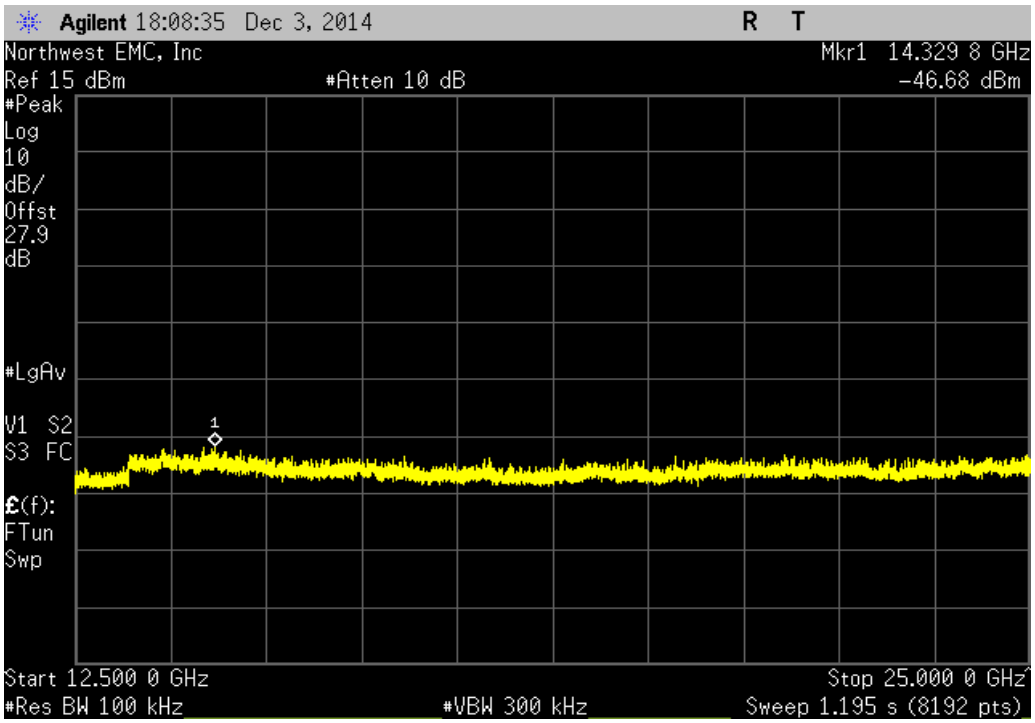
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz						
	Frequency Range			Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental			N/A	N/A	N/A



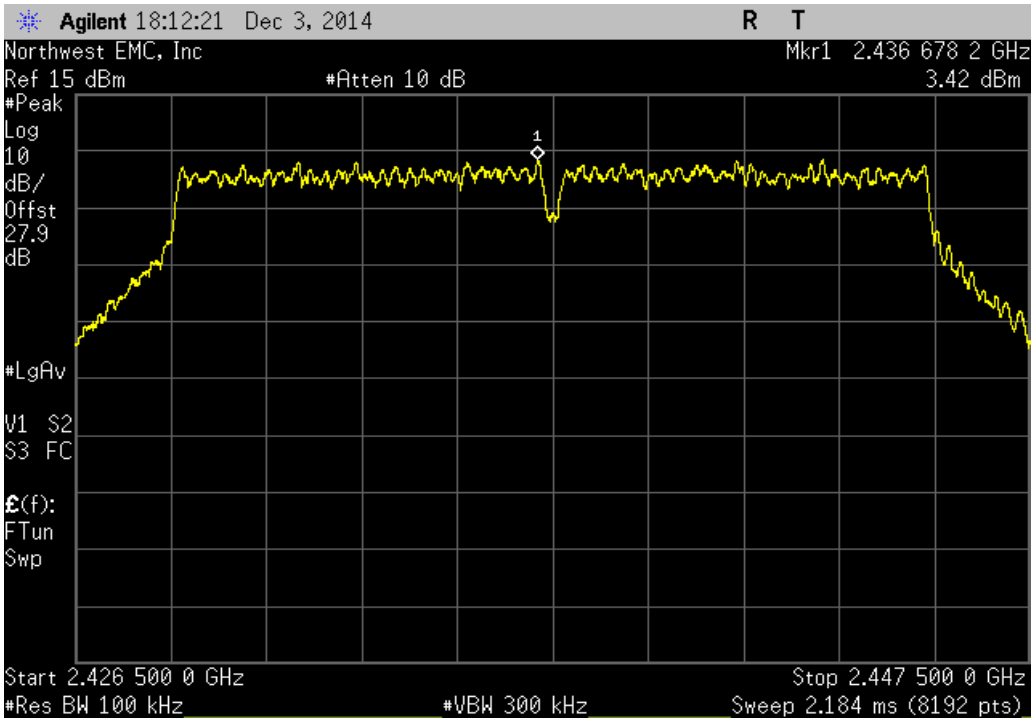
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz					
	Frequency Range		Value (dBc)	Limit ≤ (dBc)	Result
	30 MHz - 12.5 GHz		-45.39	-20	Pass



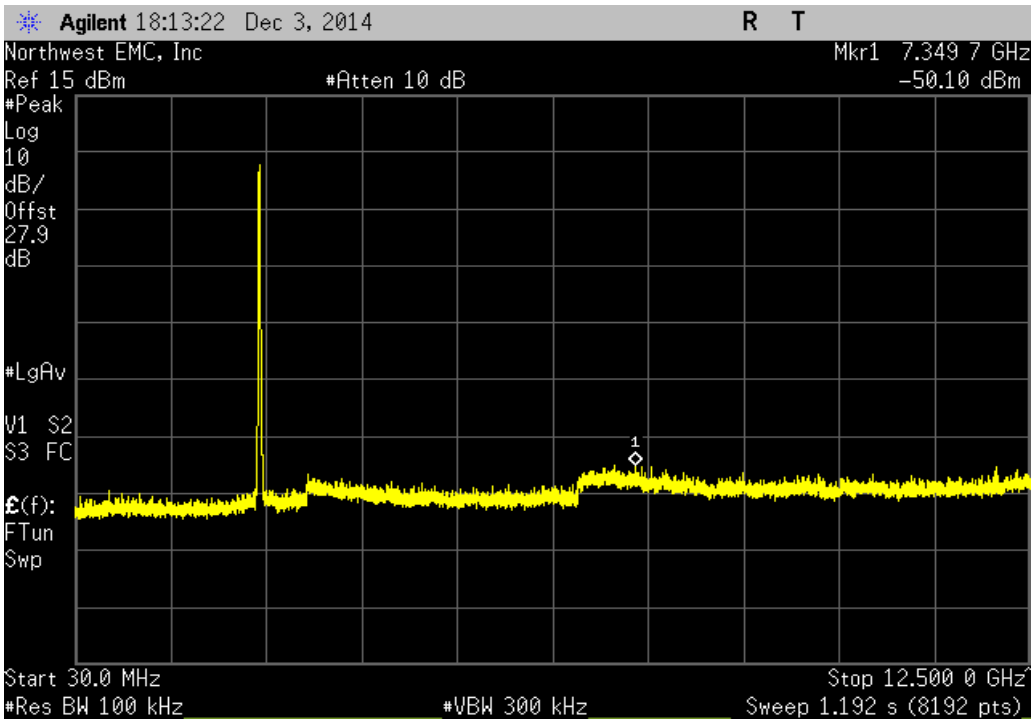
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz				
Frequency Range		**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz		-49.96	-20	Pass



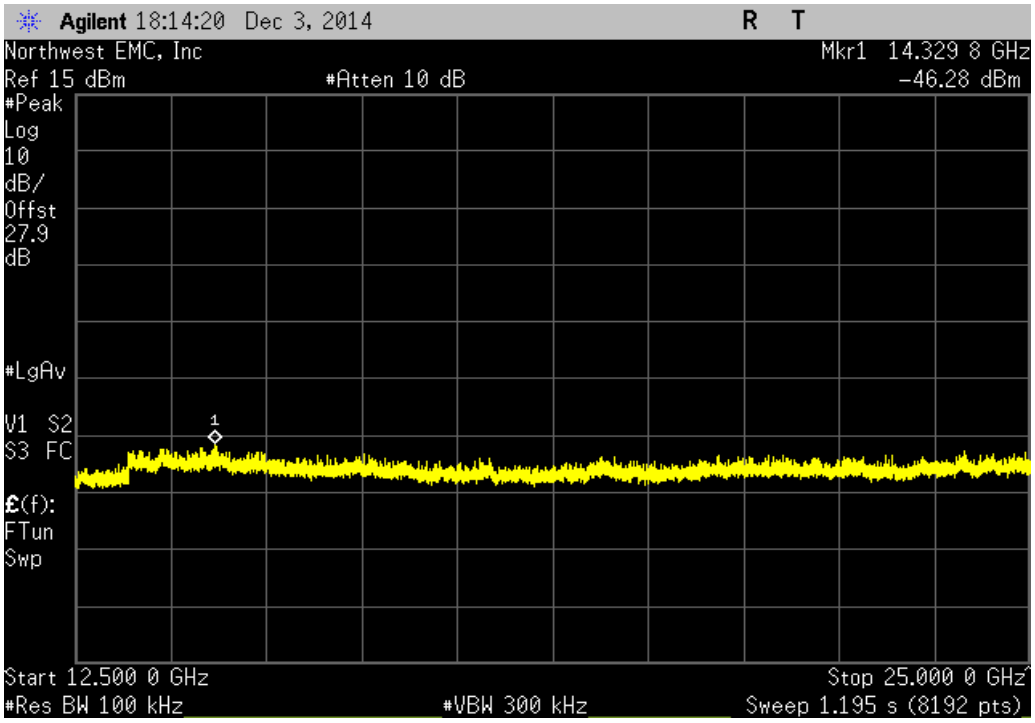
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz						
	Frequency Range			**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
	Fundamental			N/A	N/A	N/A



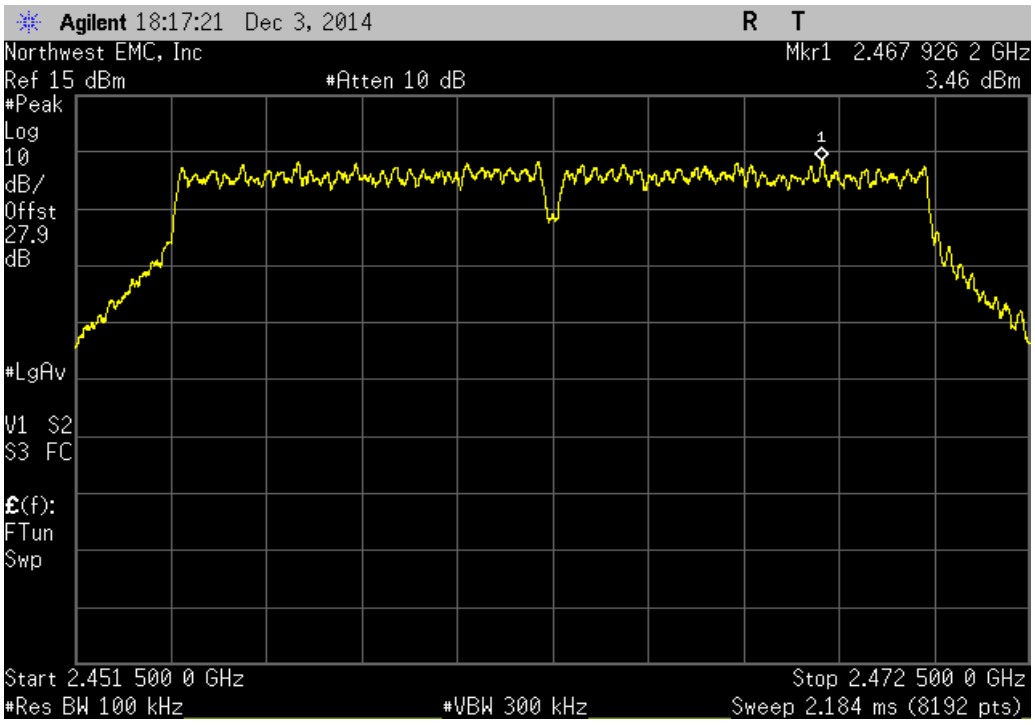
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz				
Frequency Range		**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
30 MHz - 12.5 GHz		-53.52	-20	Pass



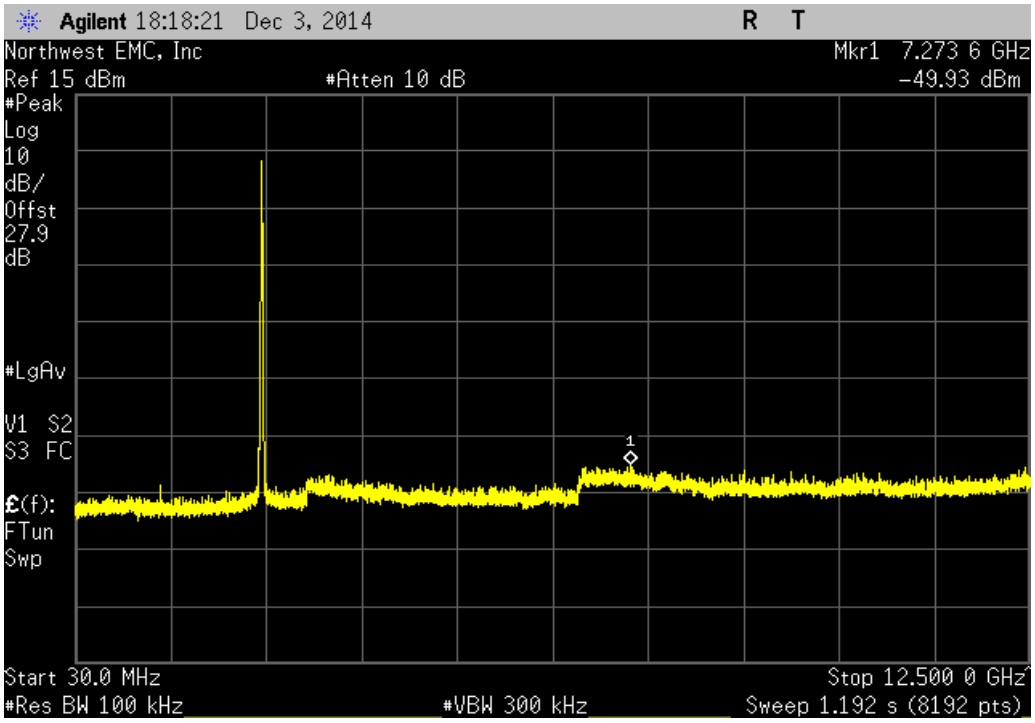
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz				
Frequency Range		**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz		-49.7	-20	Pass



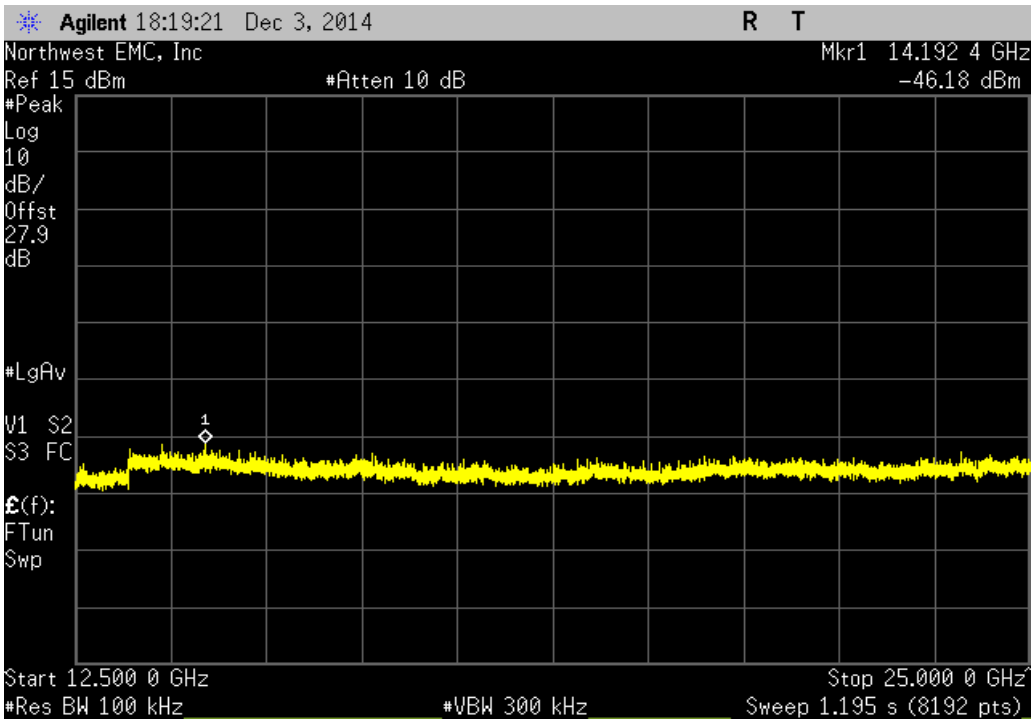
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz						
	Frequency Range			Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental			N/A	N/A	N/A



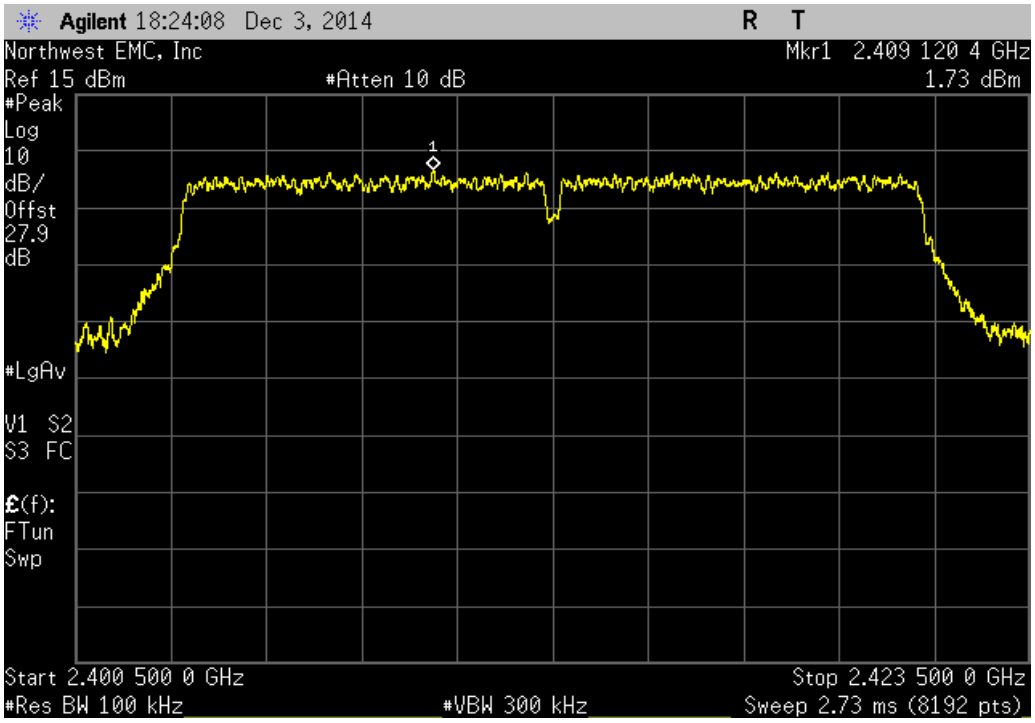
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz					
Frequency Range			Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz			-53.39	-20	Pass



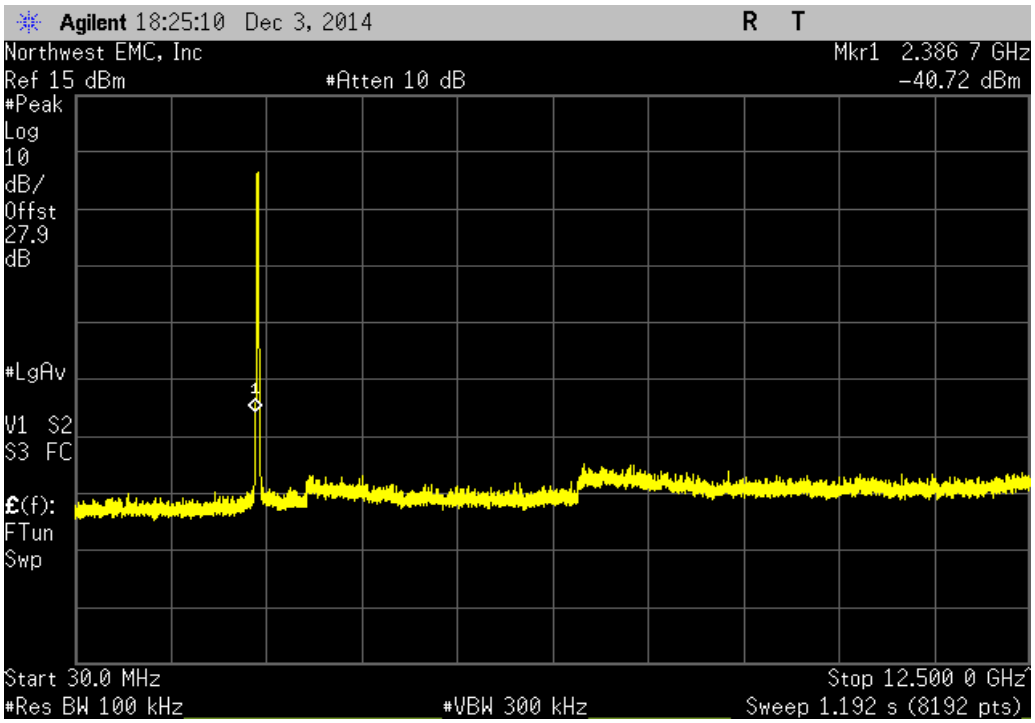
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz				
Frequency Range		Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz		-49.64	-20	Pass



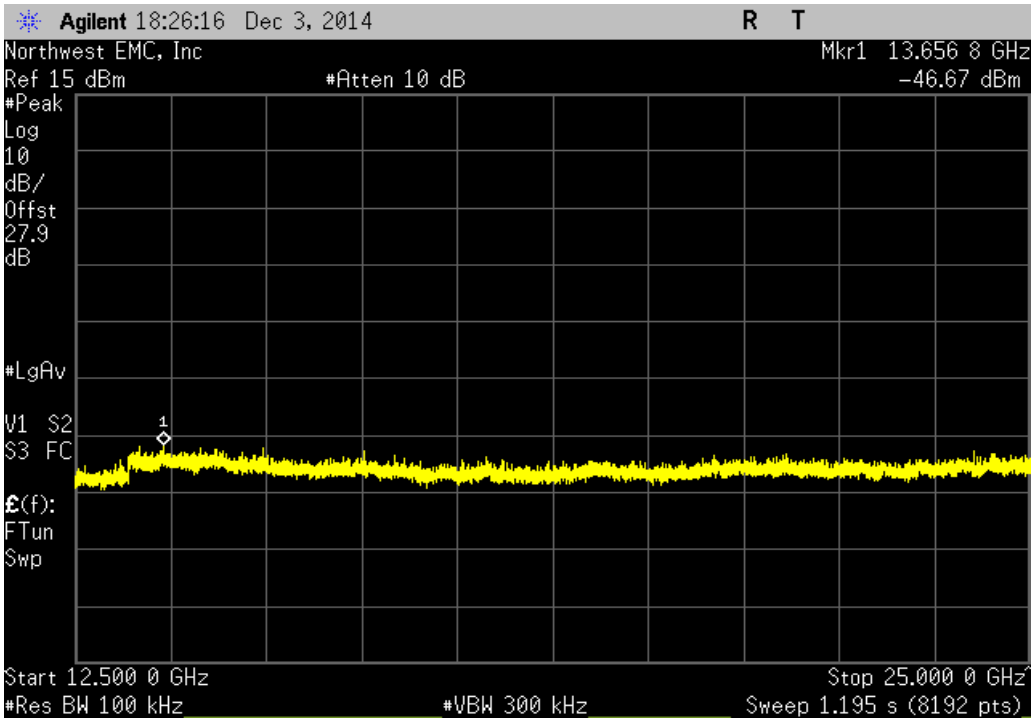
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1, 2412 MHz						
	Frequency Range			Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental			N/A	N/A	N/A



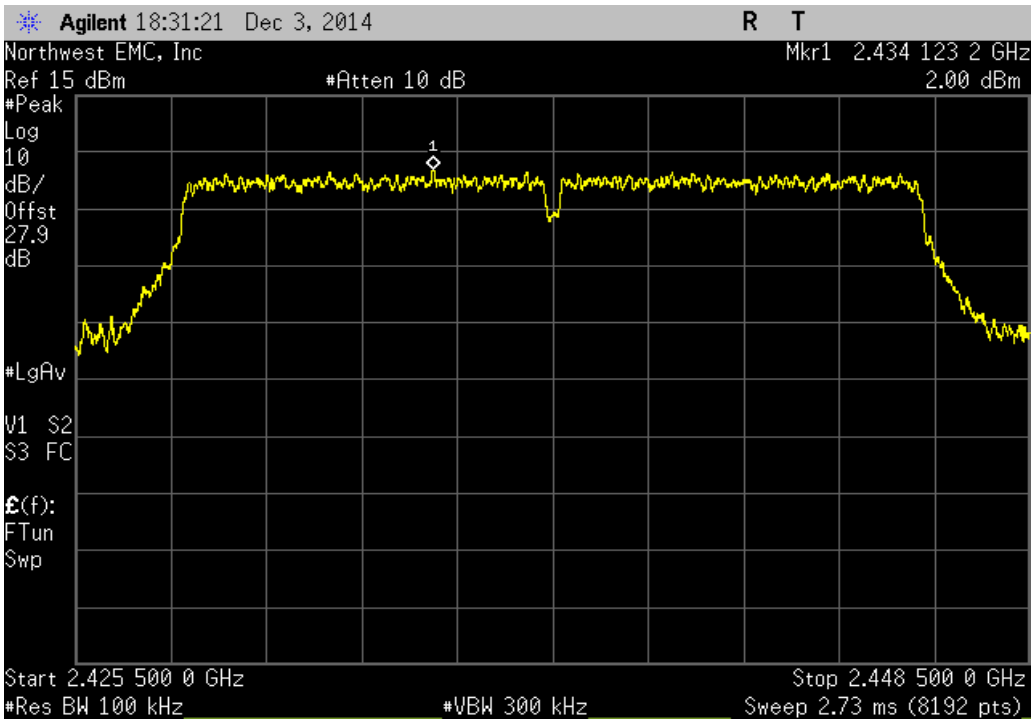
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1, 2412 MHz				
Frequency Range		Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz		-42.45	-20	Pass



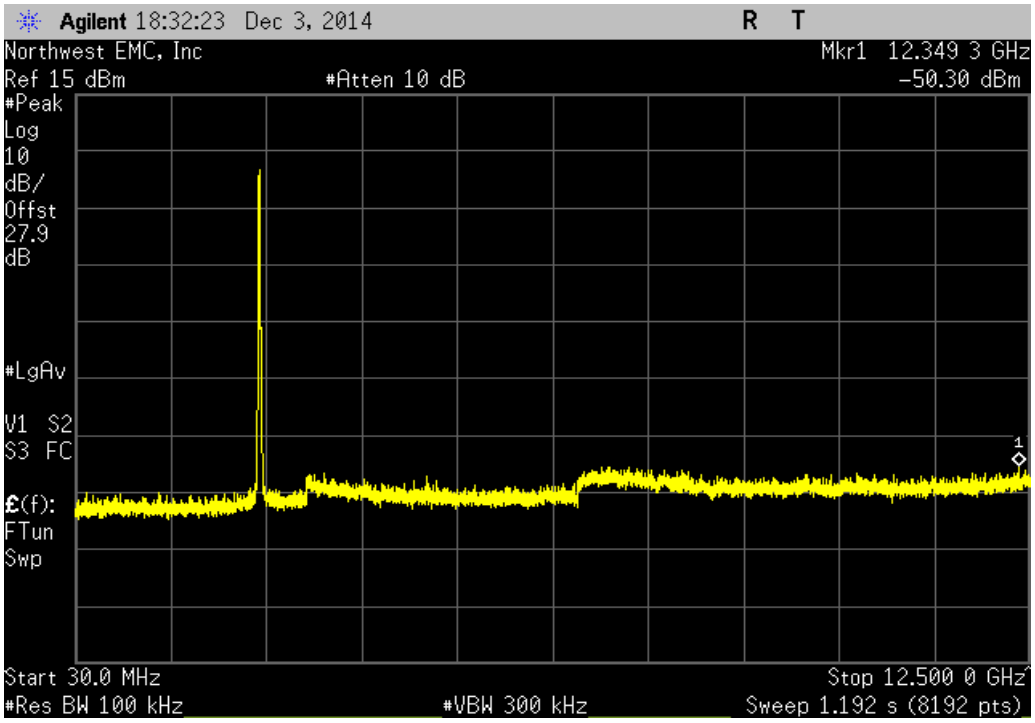
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1, 2412 MHz				
Frequency Range		Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz		-48.4	-20	Pass



20MHz, 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

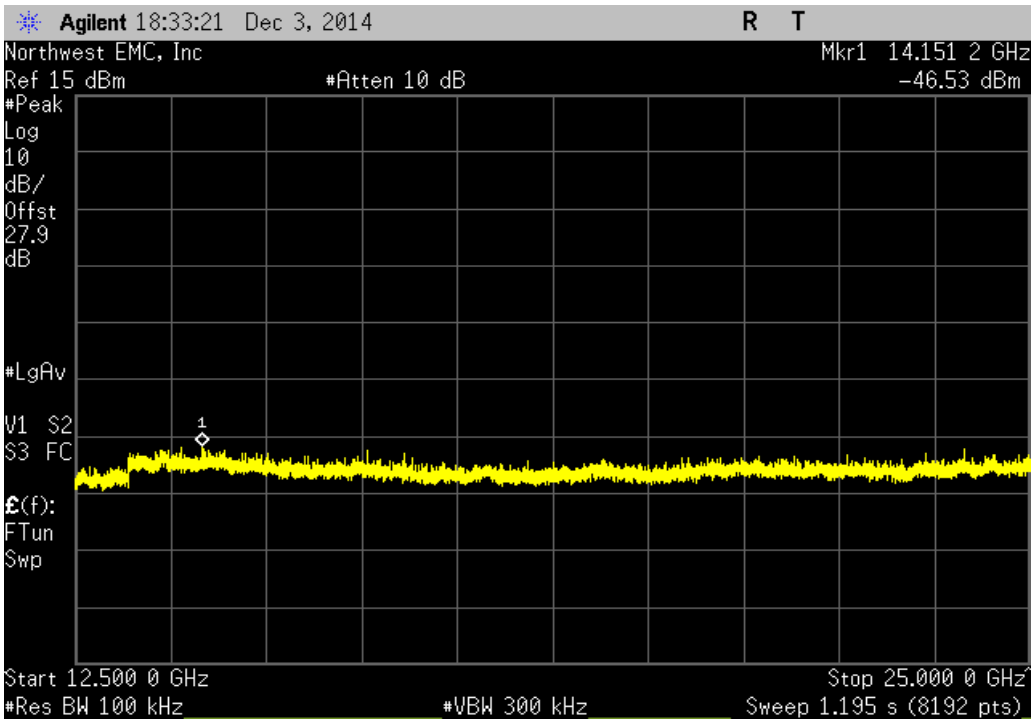


20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Mid Channel 6, 2437 MHz					
	Frequency Range		Value (dBc)	Limit ≤ (dBc)	Result
	30 MHz - 12.5 GHz		-52.3	-20	Pass

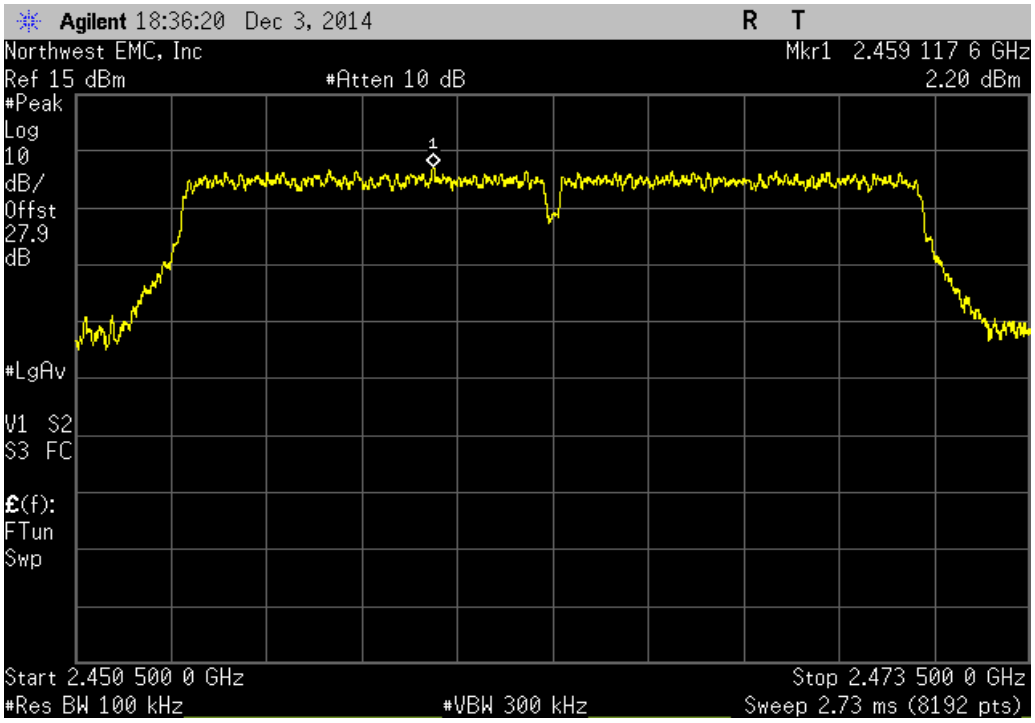


SPURIOUS CONDUCTED EMISSIONS

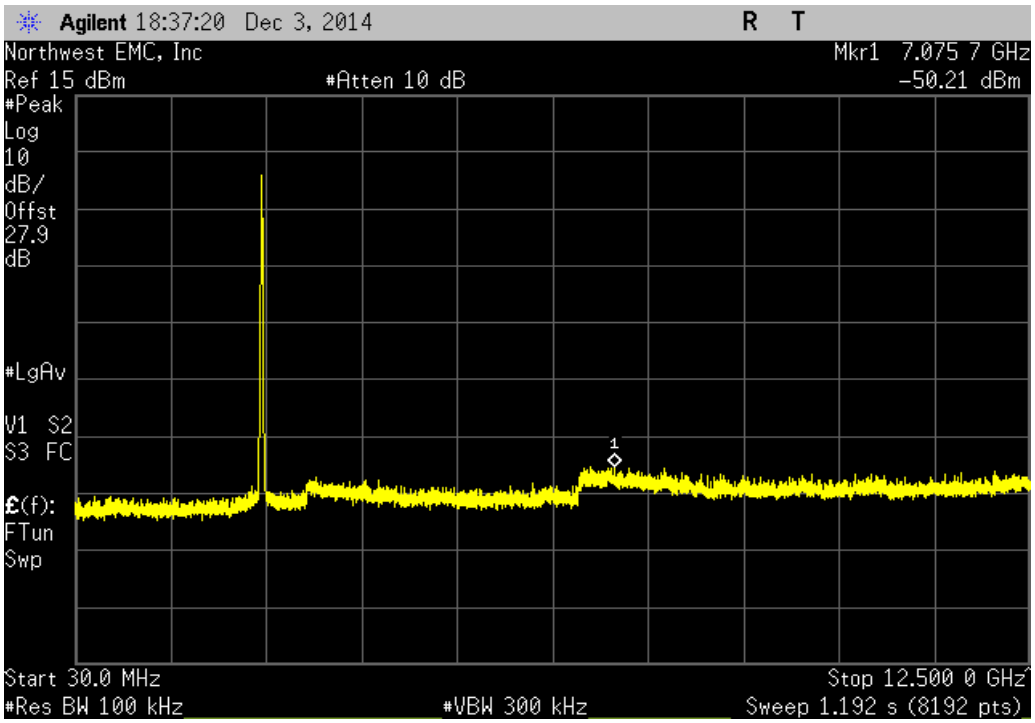
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Mid Channel 6, 2437 MHz				
Frequency Range		Value (dBc)	Limit ≤ (dBc)	Result
12.5 GHz - 25 GHz		-48.53	-20	Pass



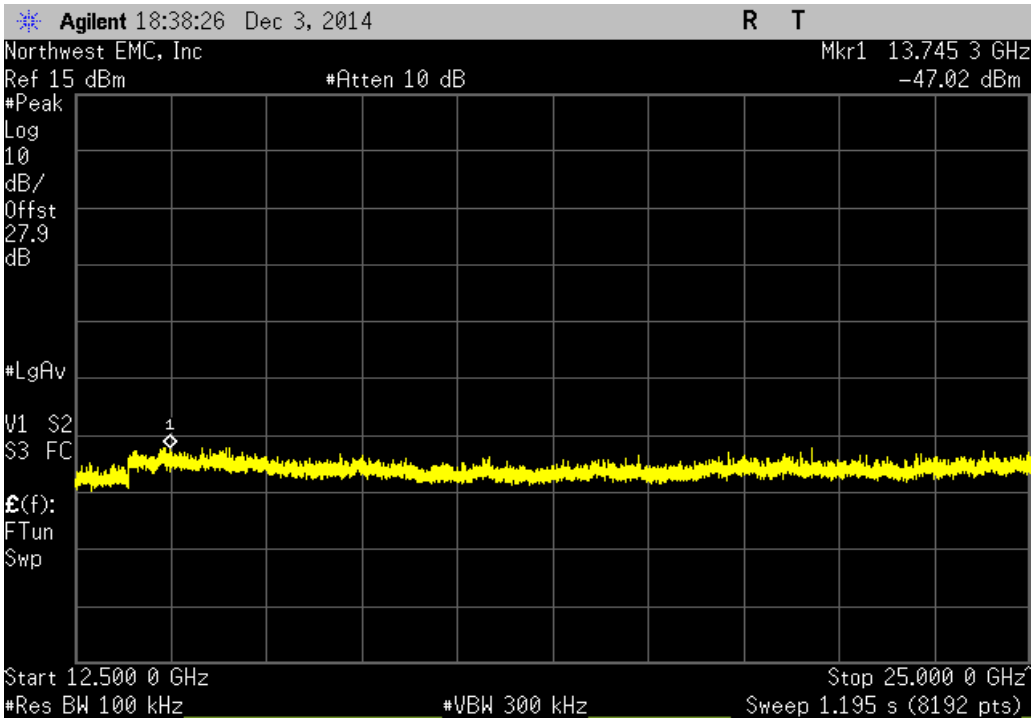
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 11, 2462 MHz						
	Frequency Range			Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental			N/A	N/A	N/A



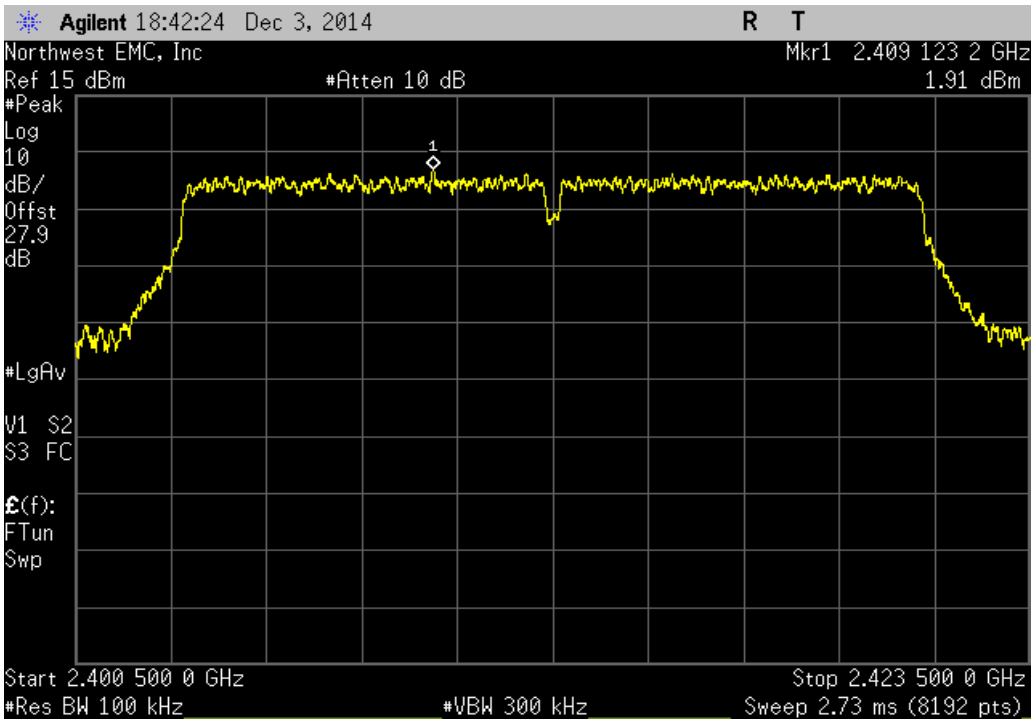
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 11, 2462 MHz				
Frequency Range		**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
30 MHz - 12.5 GHz		-52.41	-20	Pass



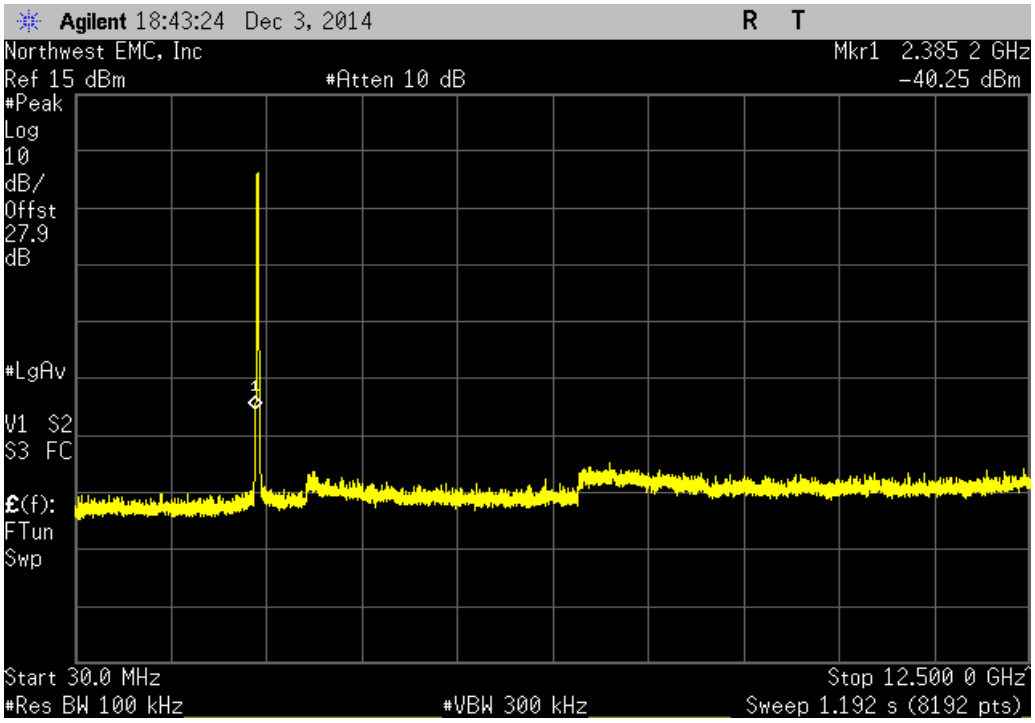
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 11, 2462 MHz				
Frequency Range		**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz		-49.22	-20	Pass



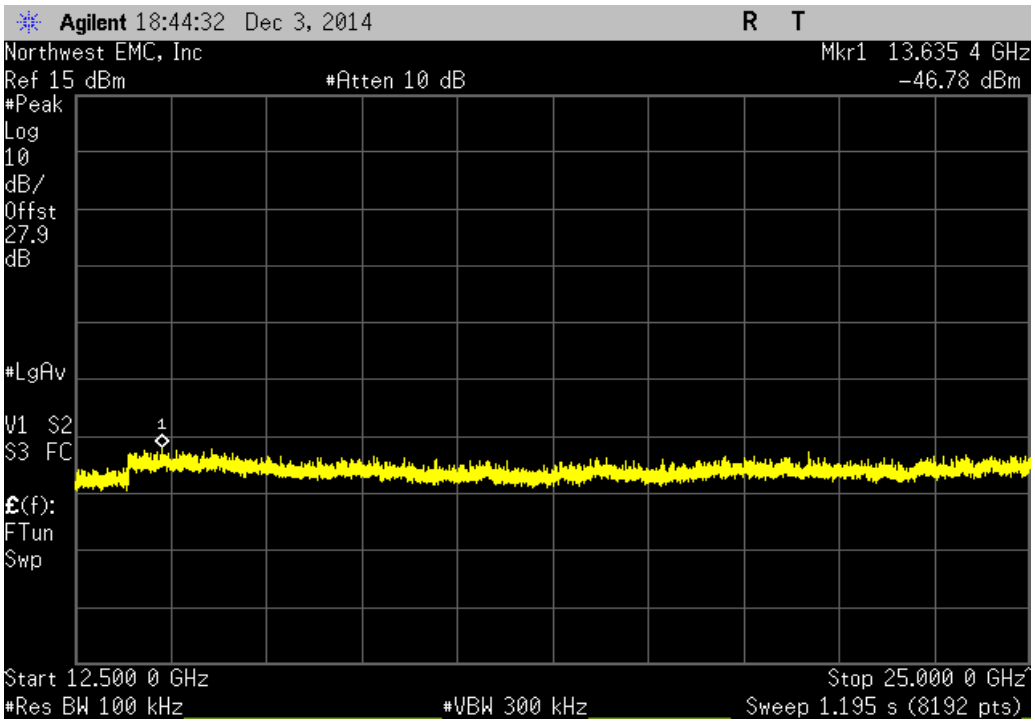
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1, 2412 MHz						
	Frequency Range			Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental			N/A	N/A	N/A



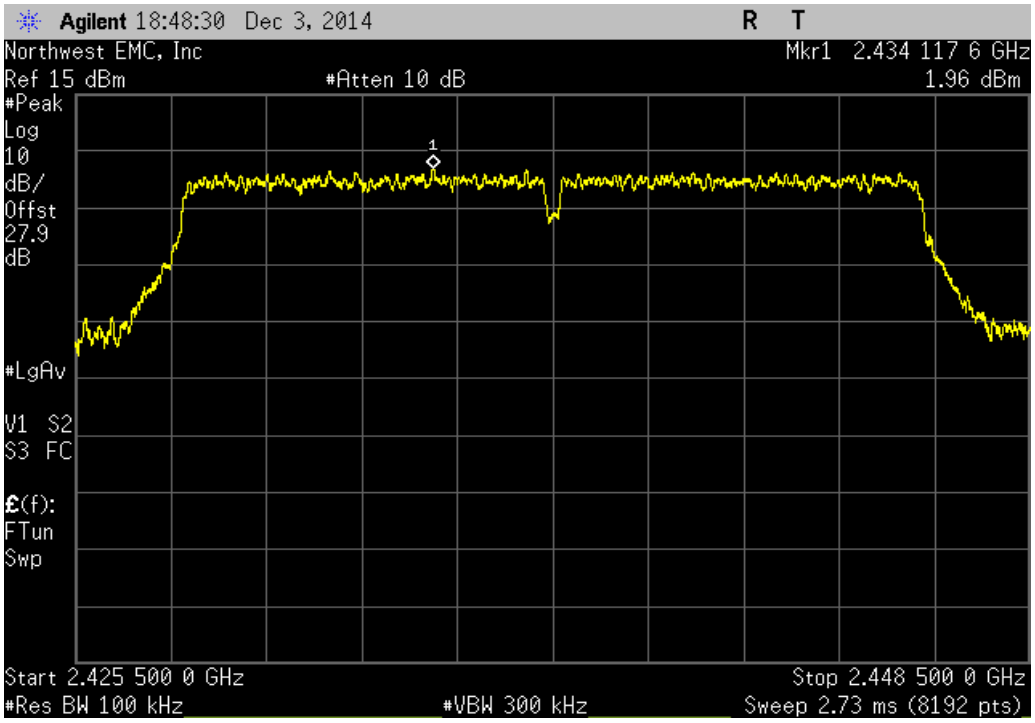
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1, 2412 MHz					
	Frequency Range		Value (dBc)	Limit ≤ (dBc)	Result
	30 MHz - 12.5 GHz		-42.16	-20	Pass



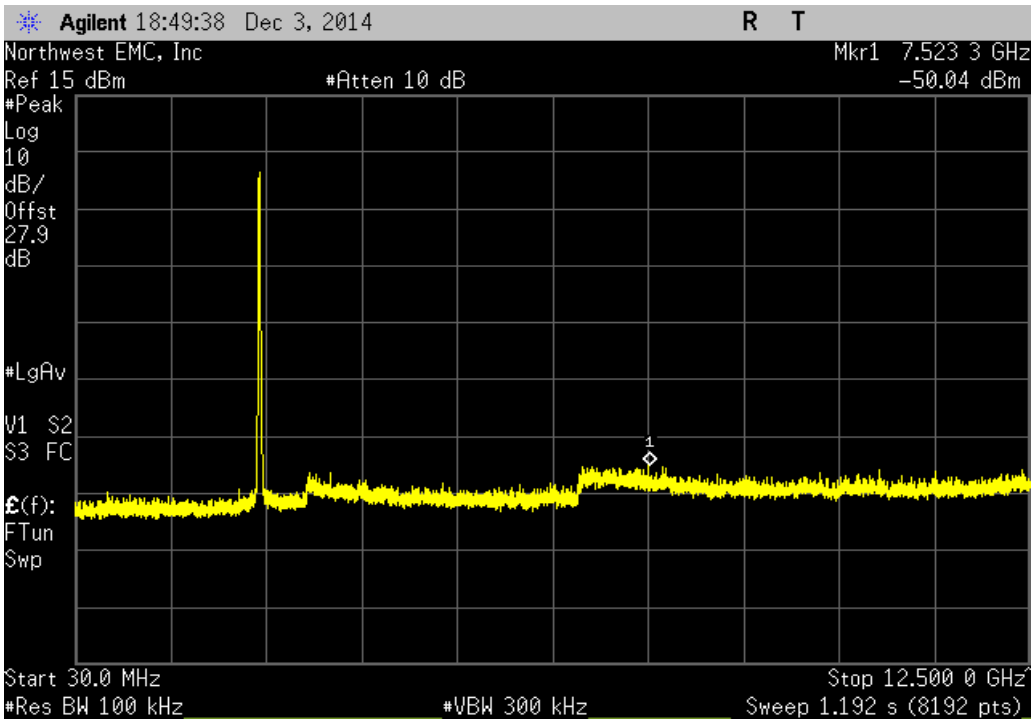
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1, 2412 MHz				
Frequency Range		**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz		-48.69	-20	Pass



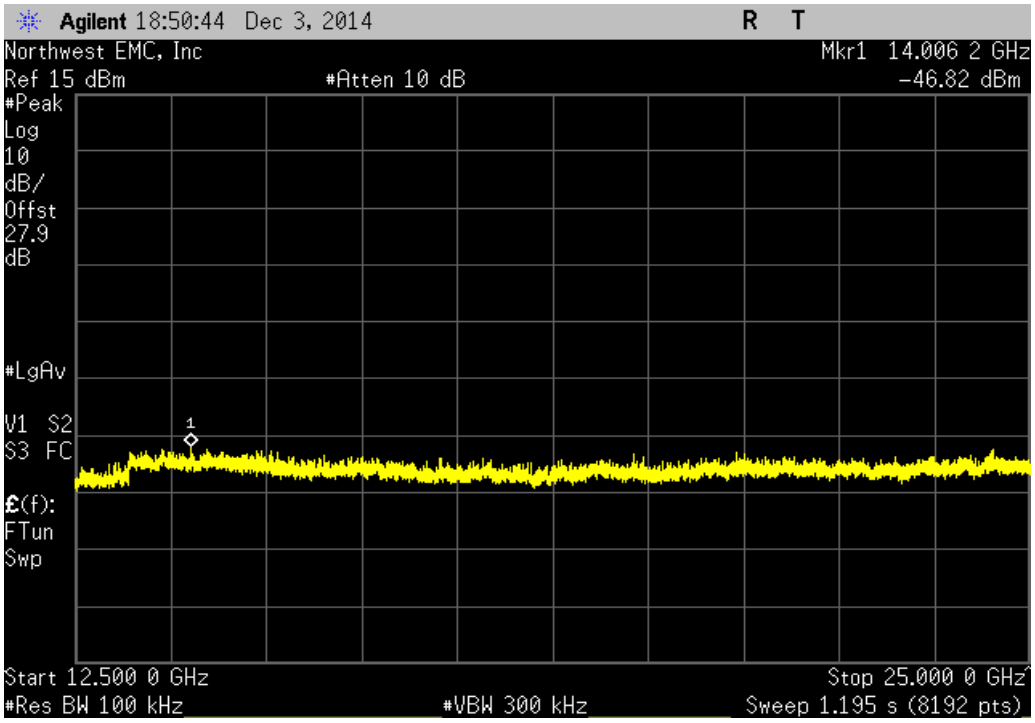
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Mid Channel 6, 2437 MHz						
	Frequency Range			**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
	Fundamental			N/A	N/A	N/A



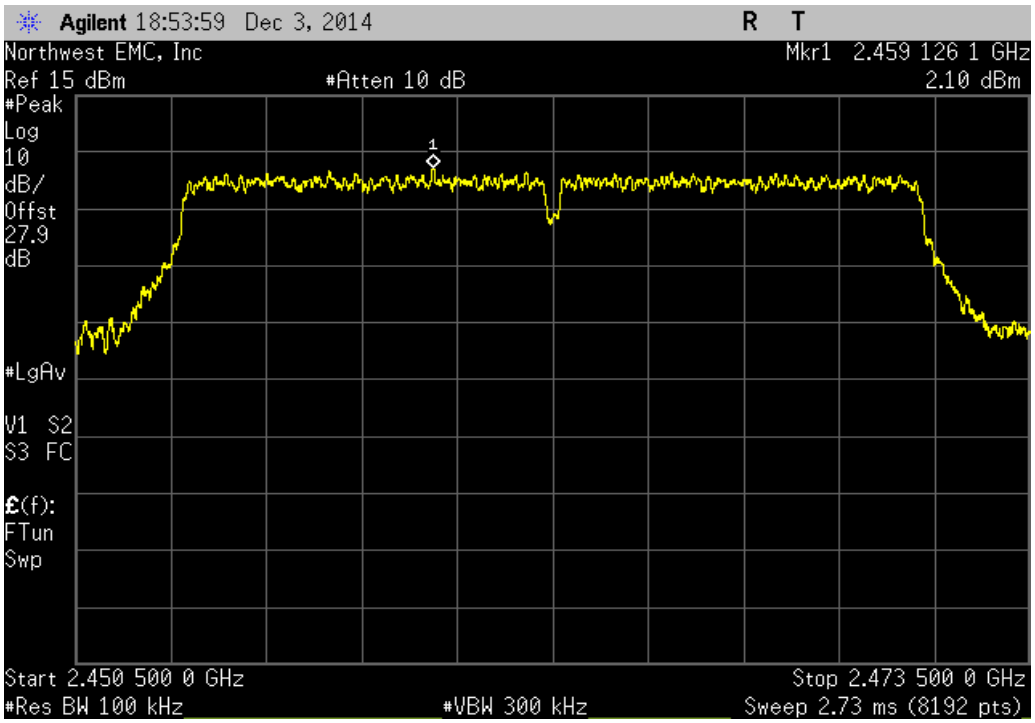
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Mid Channel 6, 2437 MHz				
Frequency Range		**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
30 MHz - 12.5 GHz		-52	-20	Pass



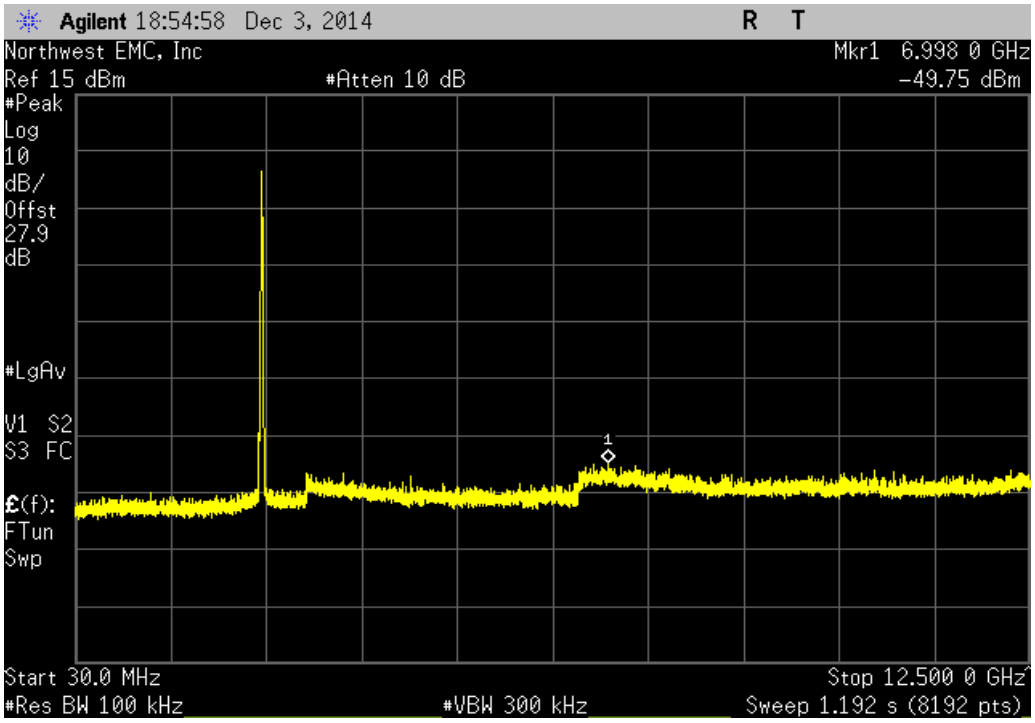
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Mid Channel 6, 2437 MHz				
Frequency Range		**Value (dBc)**	**Limit ≤ (dBc)**	**Result**
12.5 GHz - 25 GHz		-48.78	-20	Pass



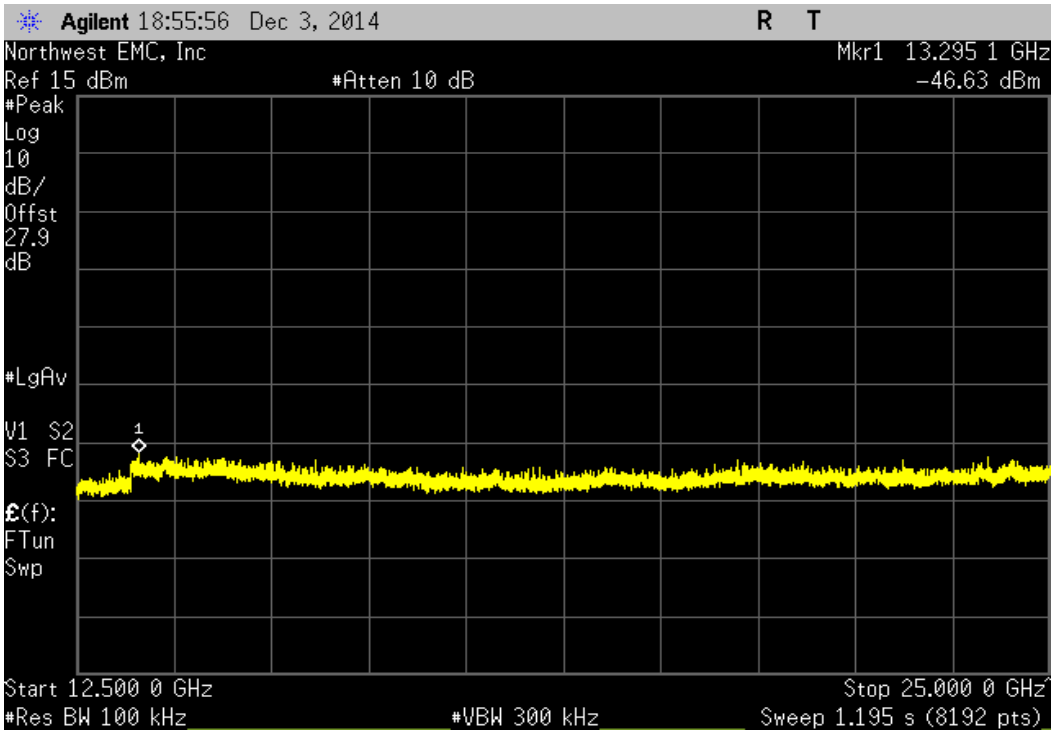
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, High Channel 11, 2462 MHz						
	Frequency Range			Value (dBc)	Limit ≤ (dBc)	Result
	Fundamental			N/A	N/A	N/A



20MHz, 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		-51.85	-20	Pass



20MHz, 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		-48.73	-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 (mo)
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2014	12
18 GHz DC Block, SMA	Pasternack	PE8210	AME	10/7/2014	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	2/3/2014	12
Power Meter	Gigatronics	8651A	SPM	9/17/2014	12
Power Sensor	Gigatronics	80701A	SPL	5/28/2014	12
MXG Analog Signal Generator	Agilent	N5181A	TIG	3/28/2014	36
Humidity Temperature Meter	Omega	HH311	DUH	2/19/2013	36
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:	WATY			Work Order:	PROT0338
Serial Number:	E3730BG4098			Date:	12/03/14
Customer:	Welch Allyn Protocol, Inc.			Temperature:	20.9°C
Attendees:	None			Humidity:	30%
Project:	eSOM3730			Barometric Pres.:	1009
Tested by:	Jared Ison	Power:	5 VDC	Job Site:	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2014	ANSI C63.10:2009

COMMENTS

Modes of operation were client provided. Output power set to 15dBm.

DEVIATIONS FROM TEST STANDARD

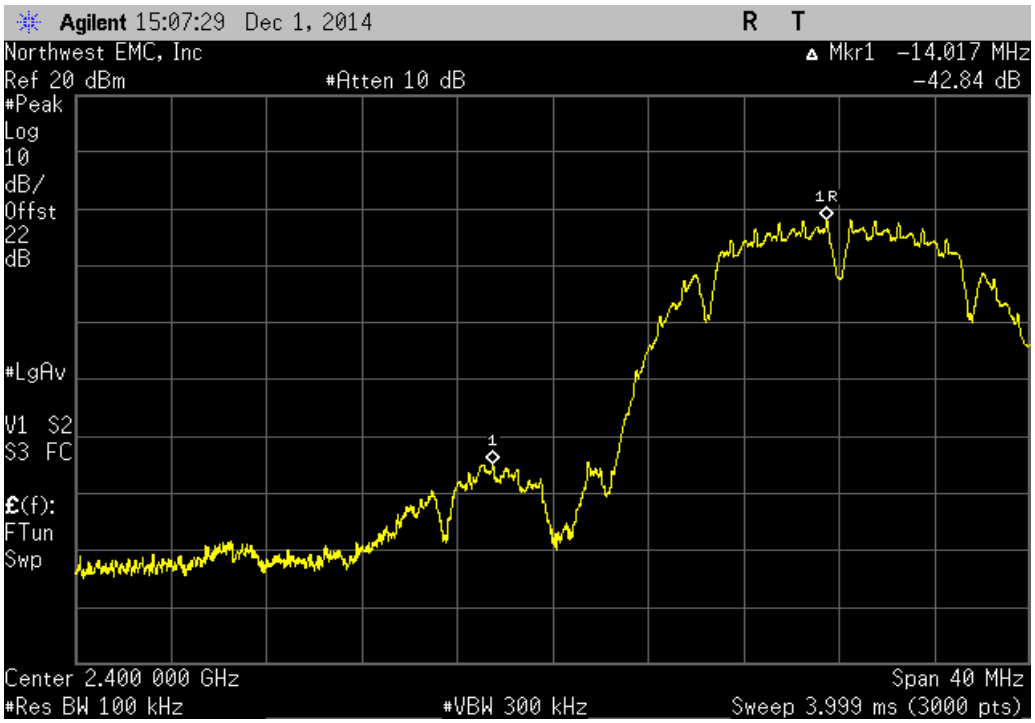
None

Configuration #	1	Signature

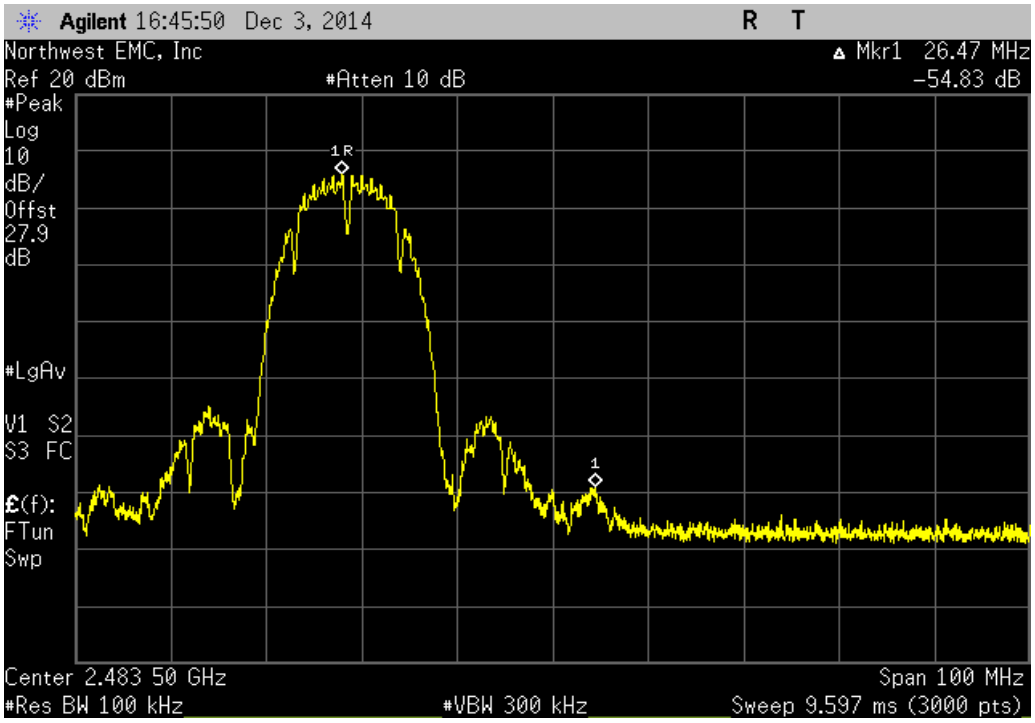
	Value (dBc)	Limit ≤ (dBc)	Result
20MHz			
2400 MHz - 2483.5 MHz Band			
802.11(b) 1 Mbps			
Low Channel 1, 2412 MHz	-42.84	-20	Pass
High Channel 11, 2462 MHz	-54.83	-20	Pass
802.11(b) 11 Mbps			
Low Channel 1, 2412 MHz	-44.22	-20	Pass
High Channel 11, 2462 MHz	-58.2	-20	Pass
802.11(g) 6 Mbps			
Low Channel 1, 2412 MHz	-28.07	-20	Pass
High Channel 11, 2462 MHz	-37.35	-20	Pass
802.11(g) 36 Mbps			
Low Channel 1, 2412 MHz	-31.21	-20	Pass
High Channel 11, 2462 MHz	-39.29	-20	Pass
802.11(g) 54 Mbps			
Low Channel 1, 2412 MHz	-30.07	-20	Pass
High Channel 11, 2462 MHz	-38.99	-20	Pass
802.11(n) MCS0			
Low Channel 1, 2412 MHz	-27.64	-20	Pass
High Channel 11, 2462 MHz	-34.1	-20	Pass
802.11(n) MCS7			
Low Channel 1, 2412 MHz	-27.65	-20	Pass
High Channel 11, 2462 MHz	-34.29	-20	Pass

BAND EDGE COMPLIANCE

20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-42.84	-20	Pass

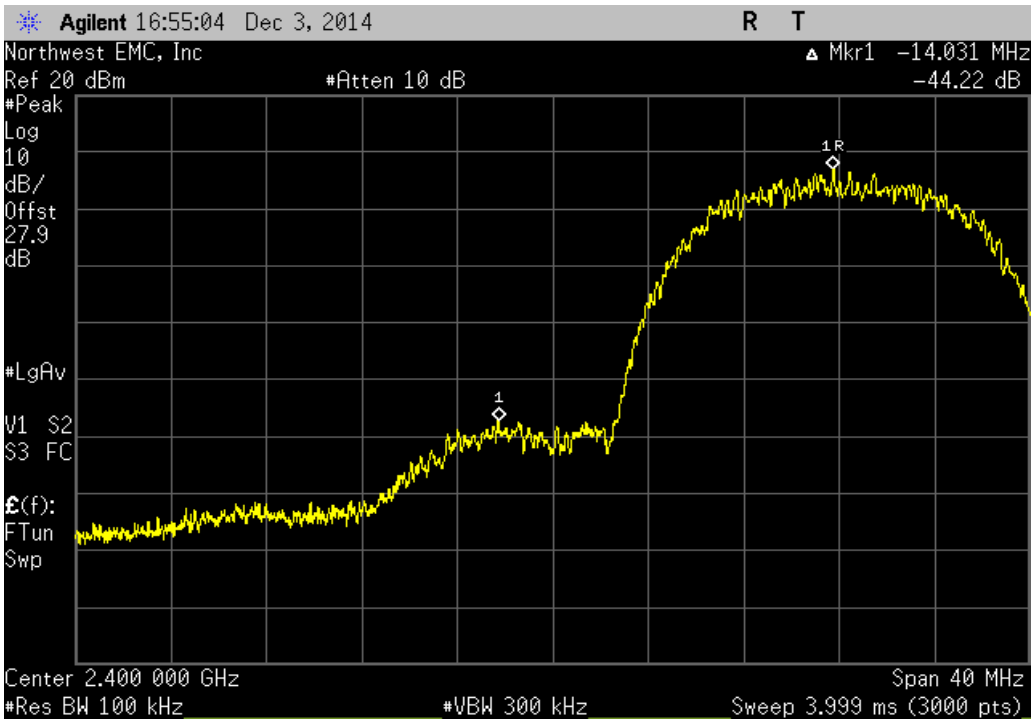


20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-54.83	-20	Pass

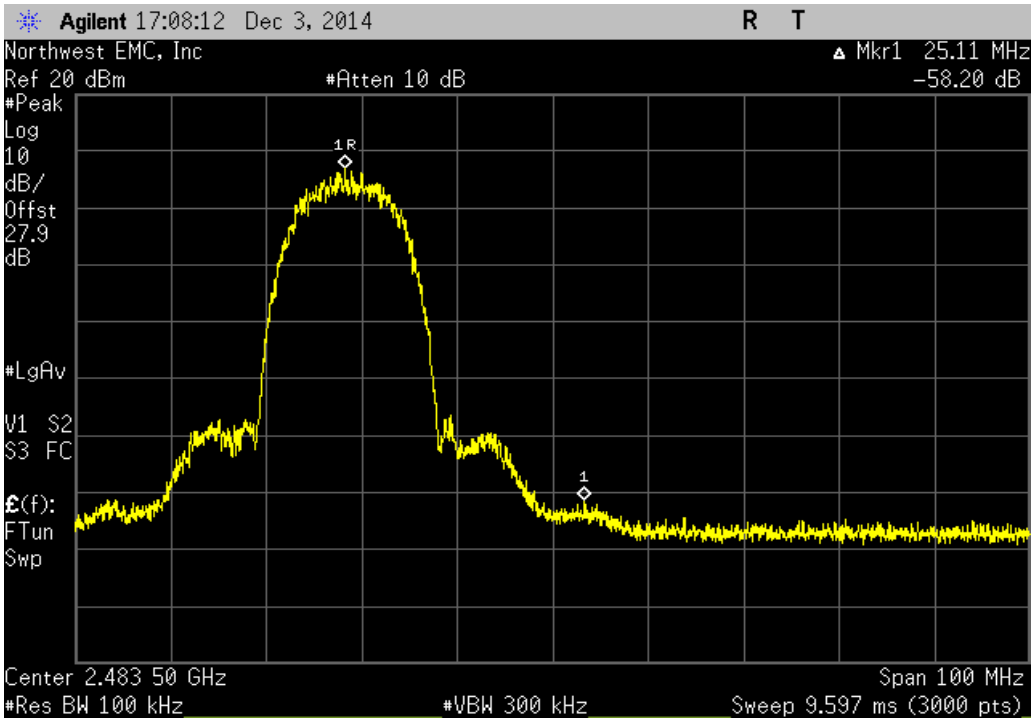


BAND EDGE COMPLIANCE

20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-44.22	-20	Pass

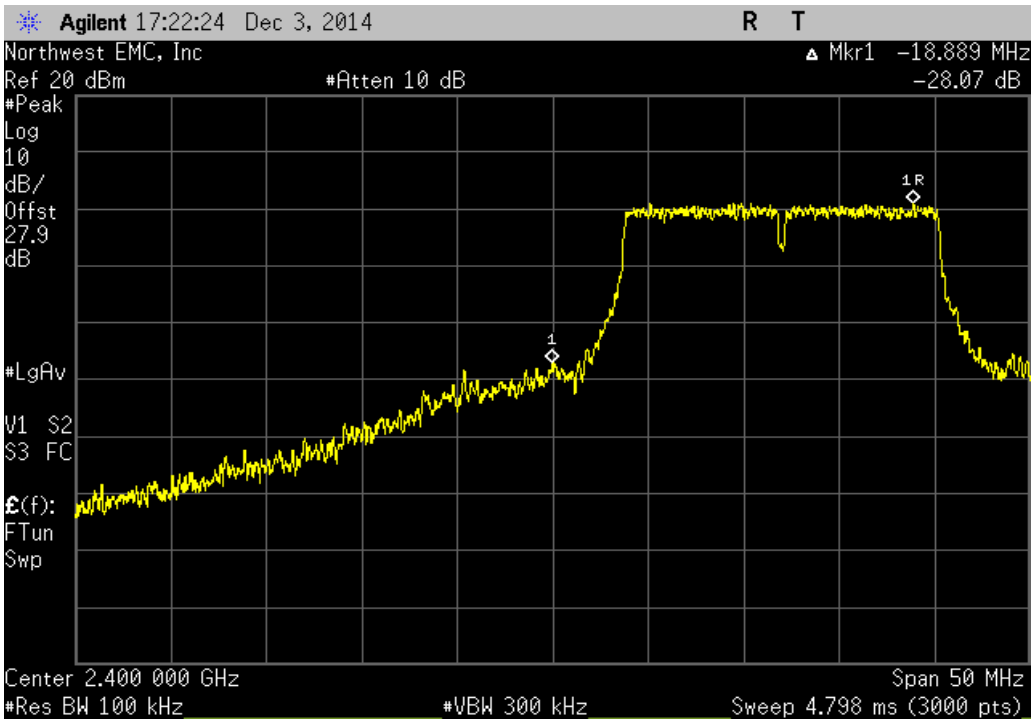


20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-58.2	-20	Pass

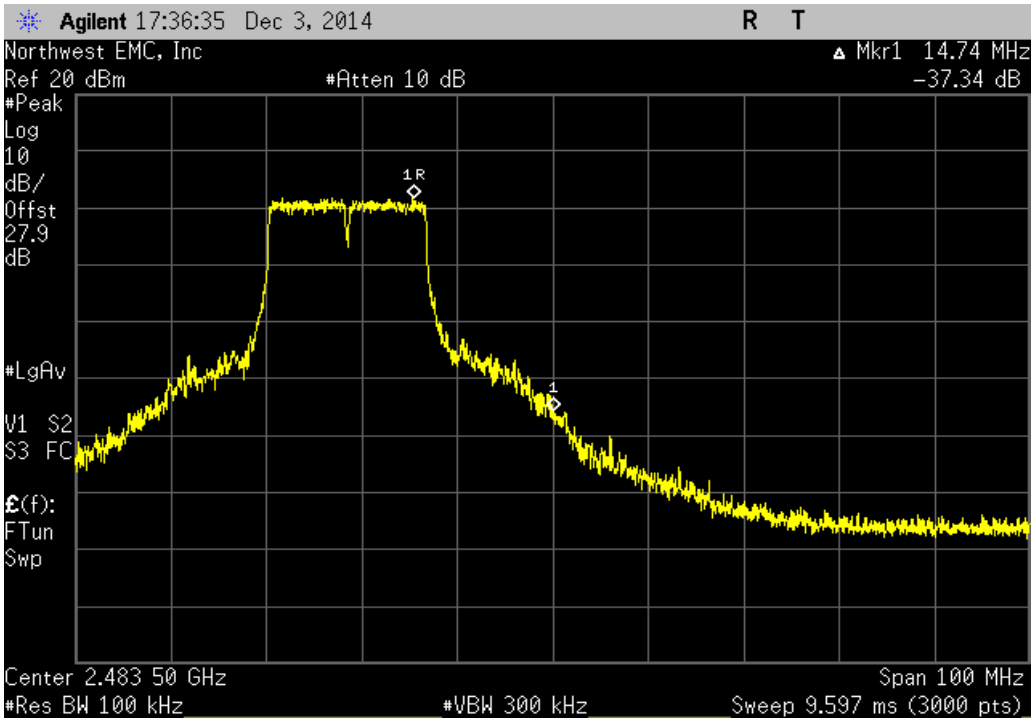


BAND EDGE COMPLIANCE

20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-28.07	-20	Pass

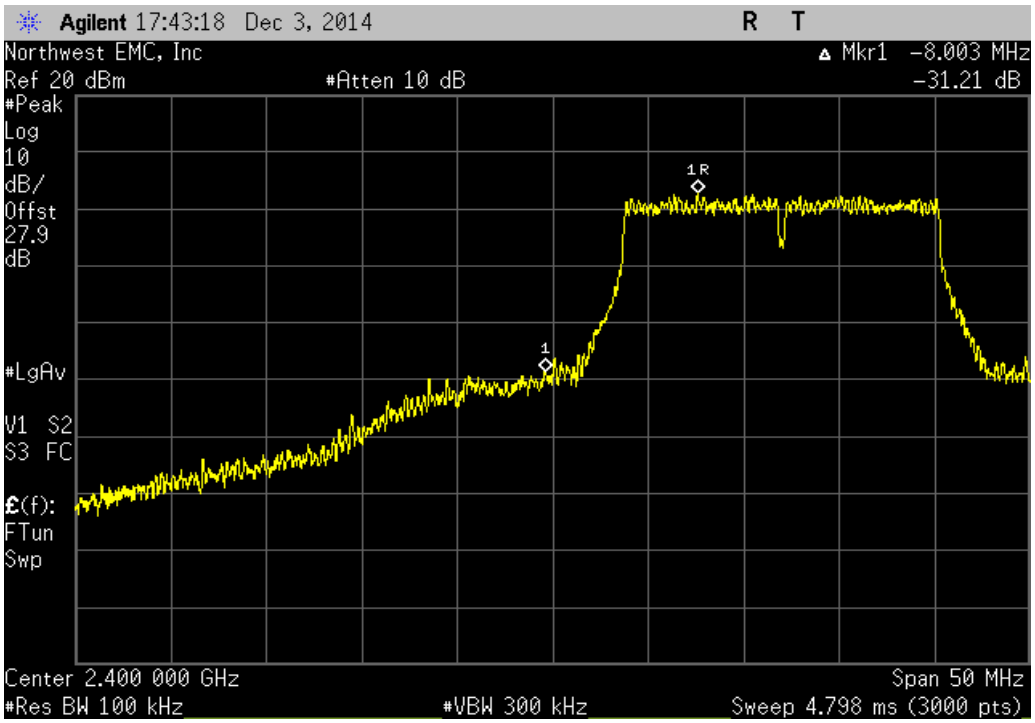


20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-37.35	-20	Pass

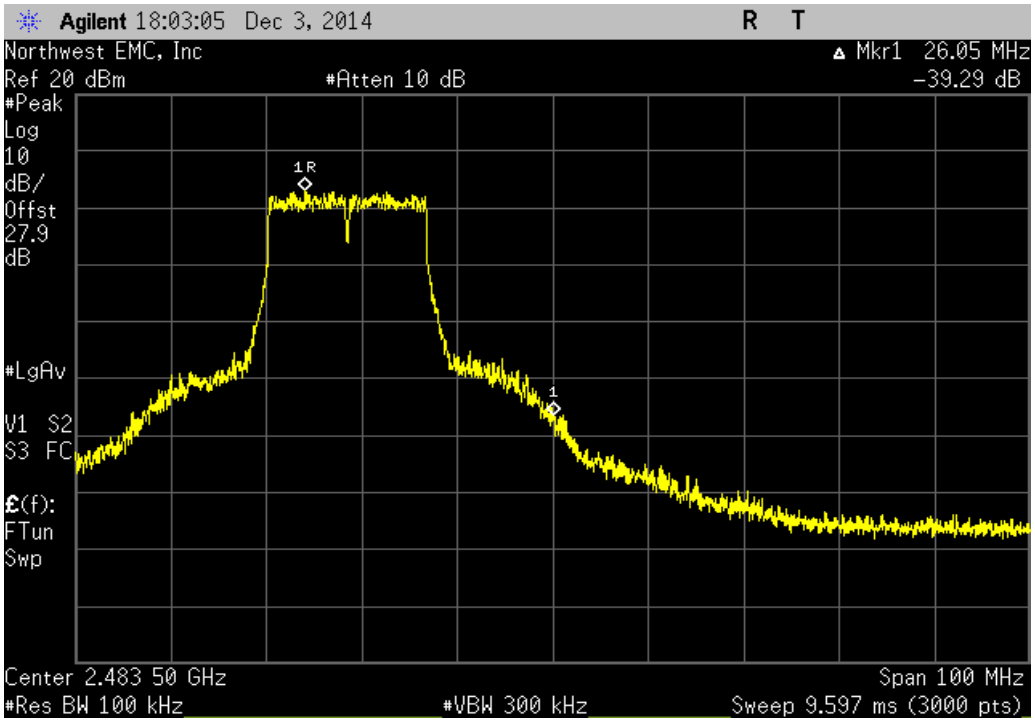


BAND EDGE COMPLIANCE

20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-31.21	-20	Pass

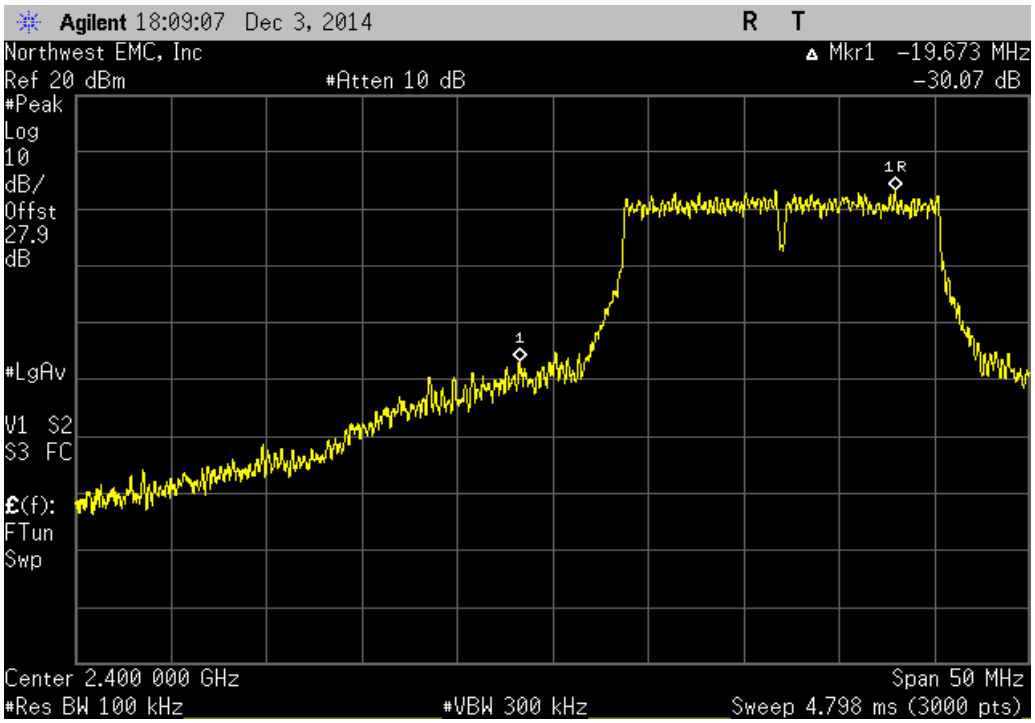


20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-39.29	-20	Pass

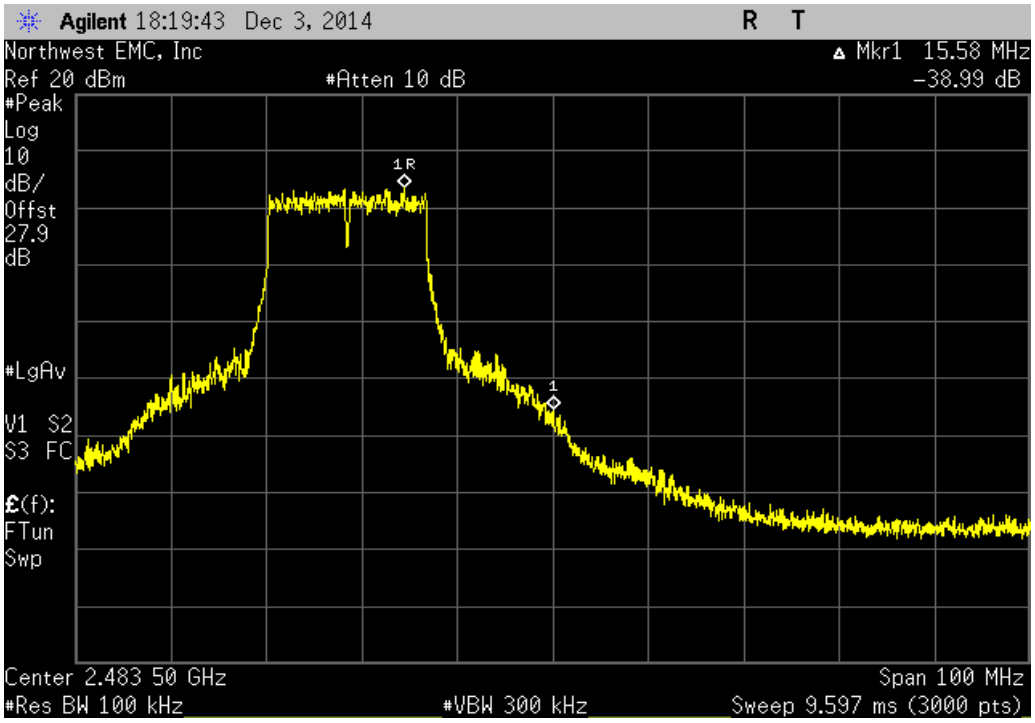


BAND EDGE COMPLIANCE

20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-30.07	-20	Pass

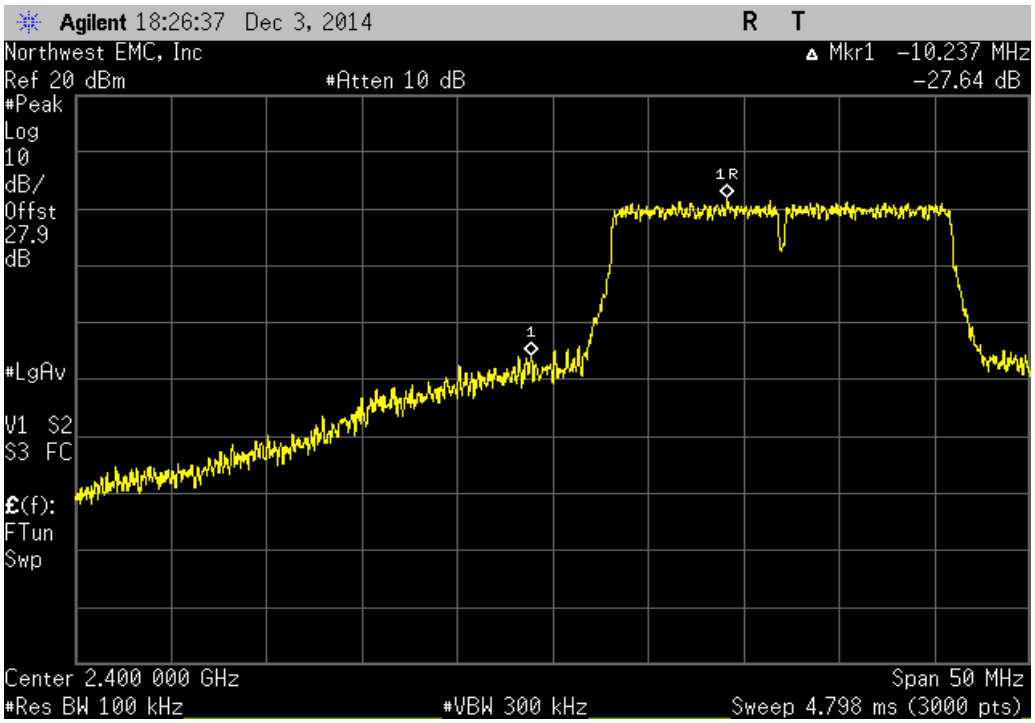


20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-38.99	-20	Pass

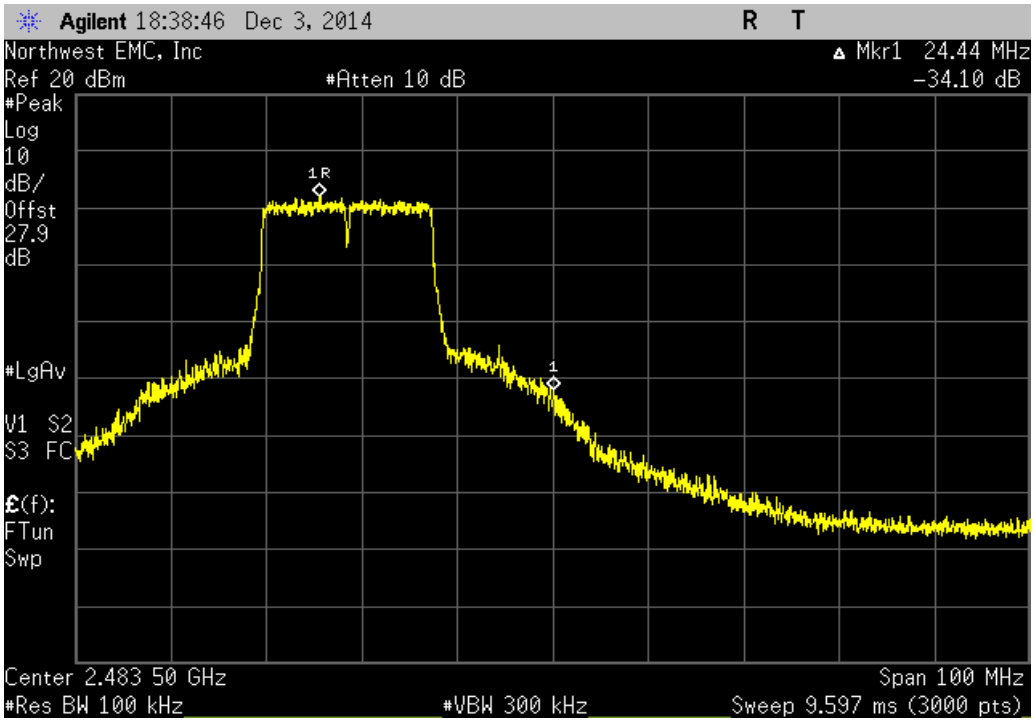


BAND EDGE COMPLIANCE

20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1, 2412 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-27.64	-20	Pass

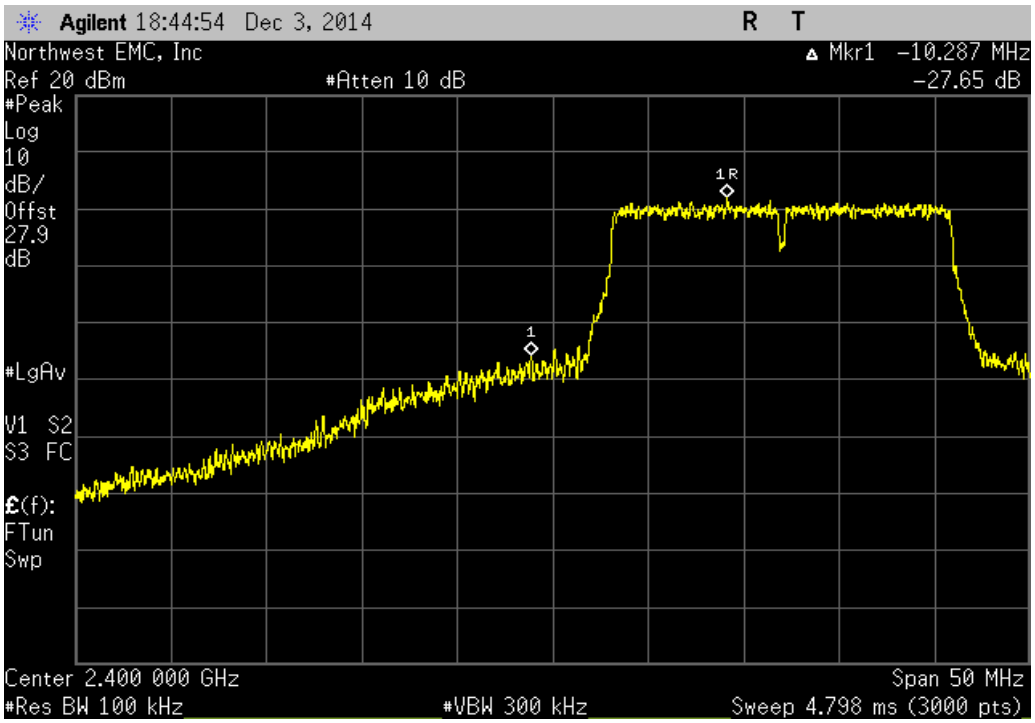


20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 11, 2462 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-34.1	-20	Pass

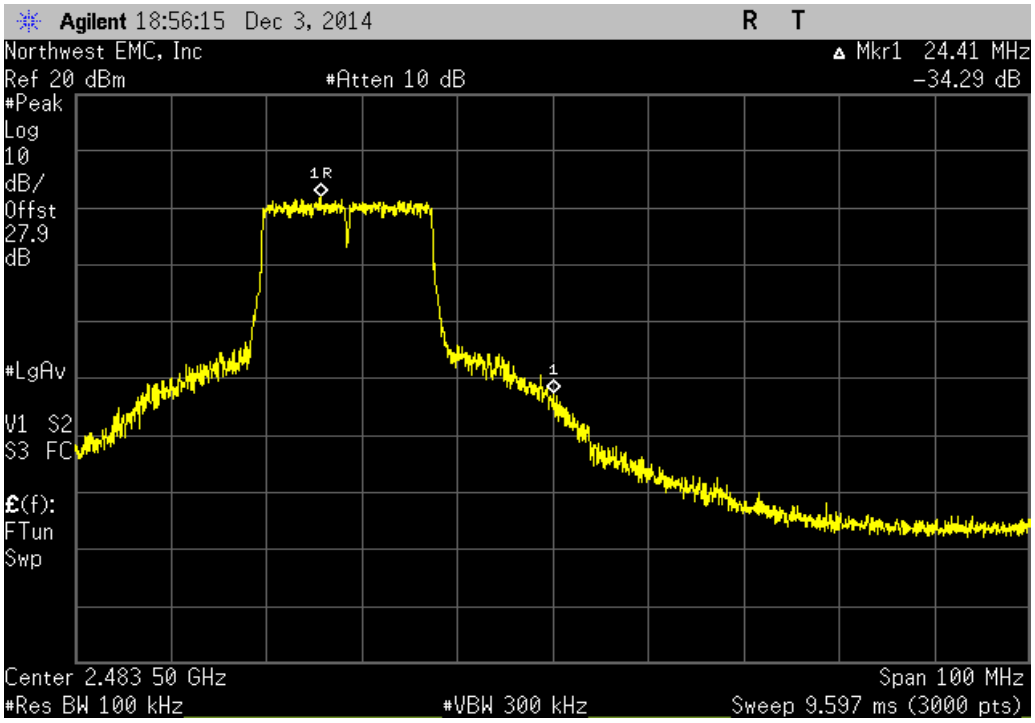


BAND EDGE COMPLIANCE

20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1, 2412 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-27.65	-20	Pass



20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, High Channel 11, 2462 MHz						
				Value (dBc)	Limit ≤ (dBc)	Result
				-34.29	-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 (mo)
Humidity Temperature Meter	Omega	HH311	DUH	2/19/2013	36
Power Meter	Gigatronics	8651A	SPM	9/17/2014	12
Power Sensor	Gigatronics	80701A	SPL	5/28/2014	12
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	2/3/2014	12
MXG Analog Signal Generator	Agilent	N5181A	TIG	3/28/2014	36
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
18 GHz DC Block, SMA	Pasternack	PE8210	AME	10/7/2014	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:	WATY			**Work Order:**	PROT0338
Serial Number:	E3730BG4098			**Date:**	12/03/14
Customer:	Welch Allyn Protocol, Inc.			**Temperature:**	20.9°C
Attendees:	None			**Humidity:**	30%
Project:	eSOM3730			**Barometric Pres.:**	1009
Tested by:	Jared Ison	**Power:**	5 VDC	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2014	ANSI C63.10:2009

COMMENTS

Modes of operation were client provided. Output power set to 15dBm.

DEVIATIONS FROM TEST STANDARD

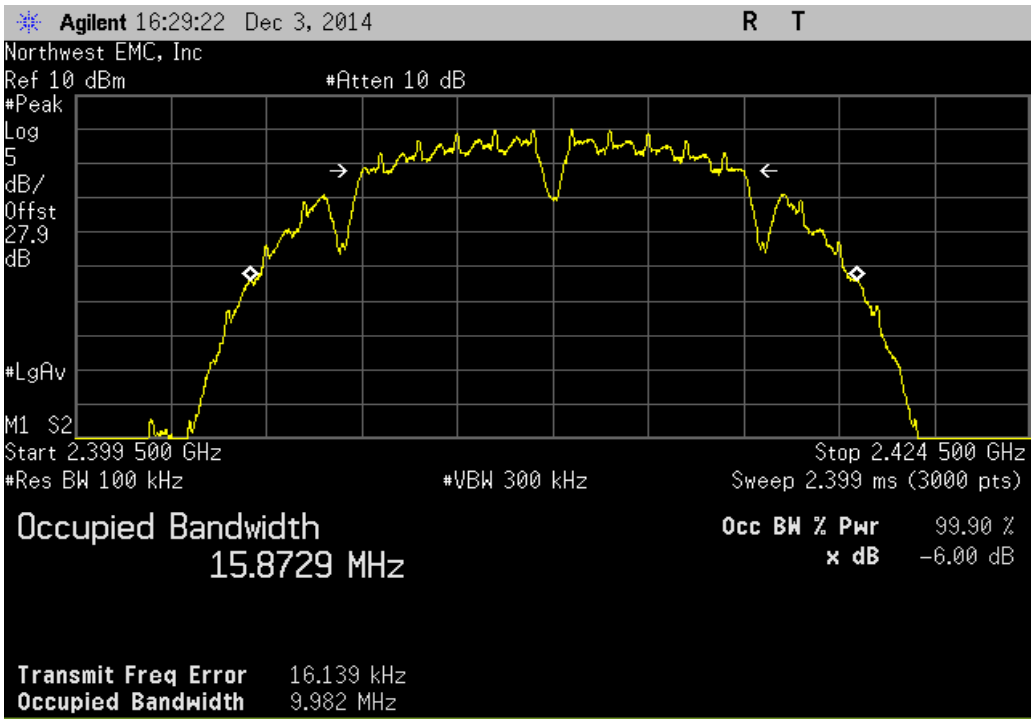
None

Configuration #	1	Signature

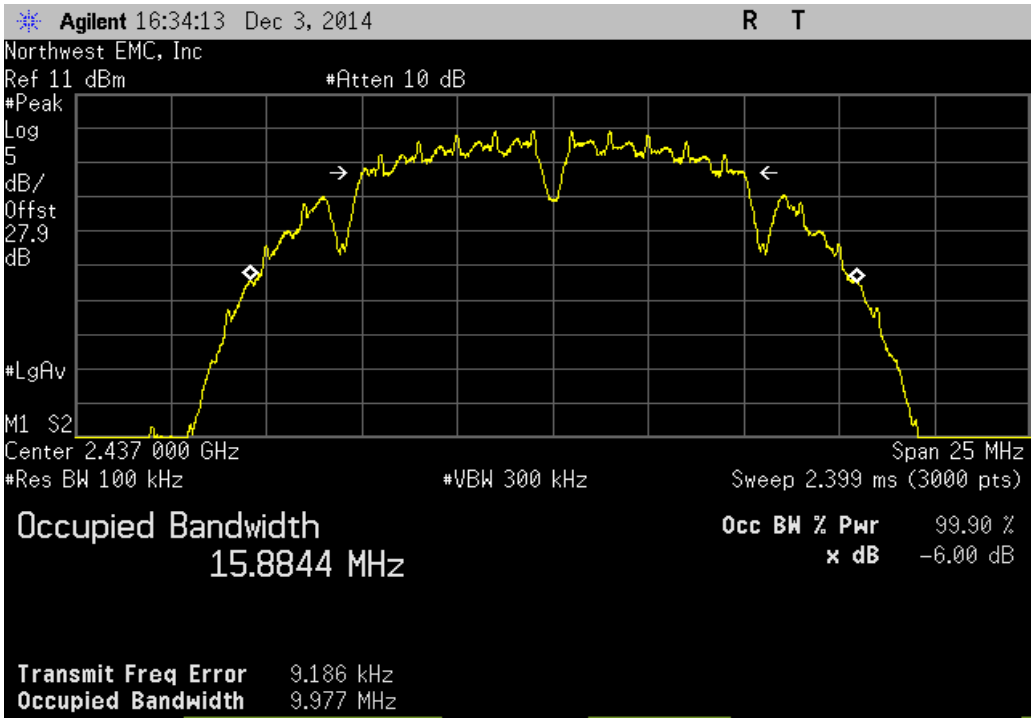
	Value	Limit (>)	Result
20MHz			
2400 MHz - 2483.5 MHz Band			
802.11(b) 1 Mbps			
Low Channel 1, 2412 MHz	9.982 MHz	500 kHz	Pass
Mid Channel 6, 2437 MHz	9.977 MHz	500 kHz	Pass
High Channel 11, 2462 MHz	9.93 MHz	500 kHz	Pass
802.11(b) 11 Mbps			
Low Channel 1, 2412 MHz	9.516 MHz	500 kHz	Pass
Mid Channel 6, 2437 MHz	9.535 MHz	500 kHz	Pass
High Channel 11, 2462 MHz	9.527 MHz	500 kHz	Pass
802.11(g) 6 Mbps			
Low Channel 1, 2412 MHz	16.562 MHz	500 kHz	Pass
Mid Channel 6, 2437 MHz	16.556 MHz	500 kHz	Pass
High Channel 11, 2462 MHz	16.568 MHz	500 kHz	Pass
802.11(g) 36 Mbps			
Low Channel 1, 2412 MHz	16.549 MHz	500 kHz	Pass
Mid Channel 6, 2437 MHz	16.554 MHz	500 kHz	Pass
High Channel 11, 2462 MHz	16.541 MHz	500 kHz	Pass
802.11(g) 54 Mbps			
Low Channel 1, 2412 MHz	16.523 MHz	500 kHz	Pass
Mid Channel 6, 2437 MHz	16.537 MHz	500 kHz	Pass
High Channel 11, 2462 MHz	16.534 MHz	500 kHz	Pass
802.11(n) MCS0			
Low Channel 1, 2412 MHz	17.837 MHz	500 kHz	Pass
Mid Channel 6, 2437 MHz	17.831 MHz	500 kHz	Pass
High Channel 11, 2462 MHz	17.793 MHz	500 kHz	Pass
802.11(n) MCS7			
Low Channel 1, 2412 MHz	17.819 MHz	500 kHz	Pass
Mid Channel 6, 2437 MHz	17.783 MHz	500 kHz	Pass
High Channel 11, 2462 MHz	17.816 MHz	500 kHz	Pass

OCCUPIED BANDWIDTH

20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz						
				Value	Limit (>)	Result
				9.982 MHz	500 kHz	Pass

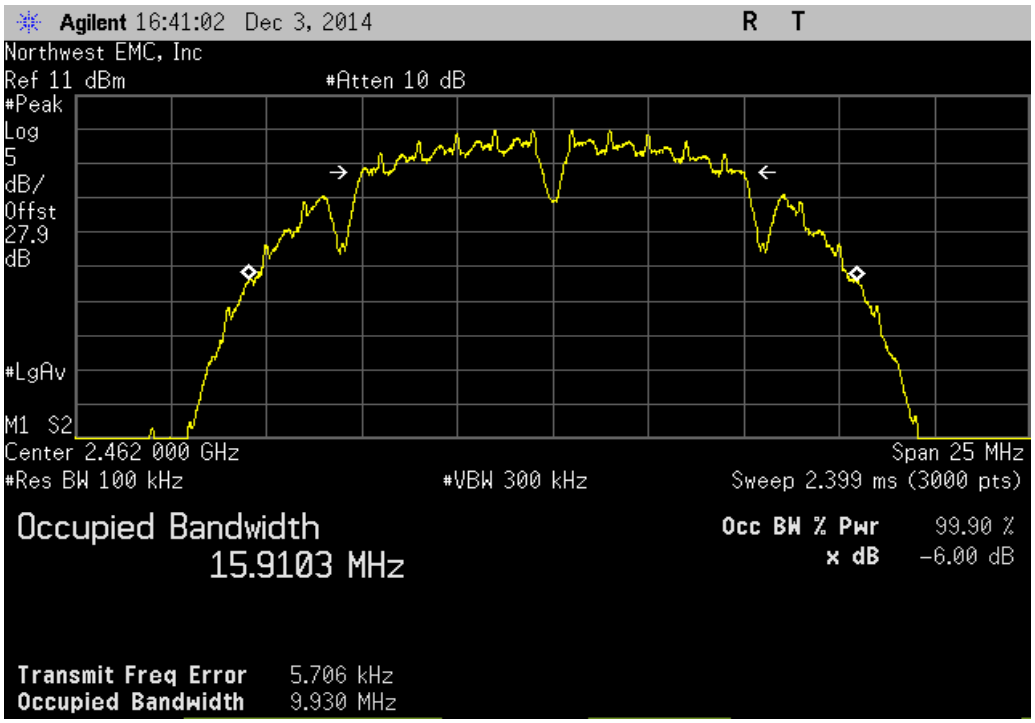


20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz						
				Value	Limit (>)	Result
				9.977 MHz	500 kHz	Pass

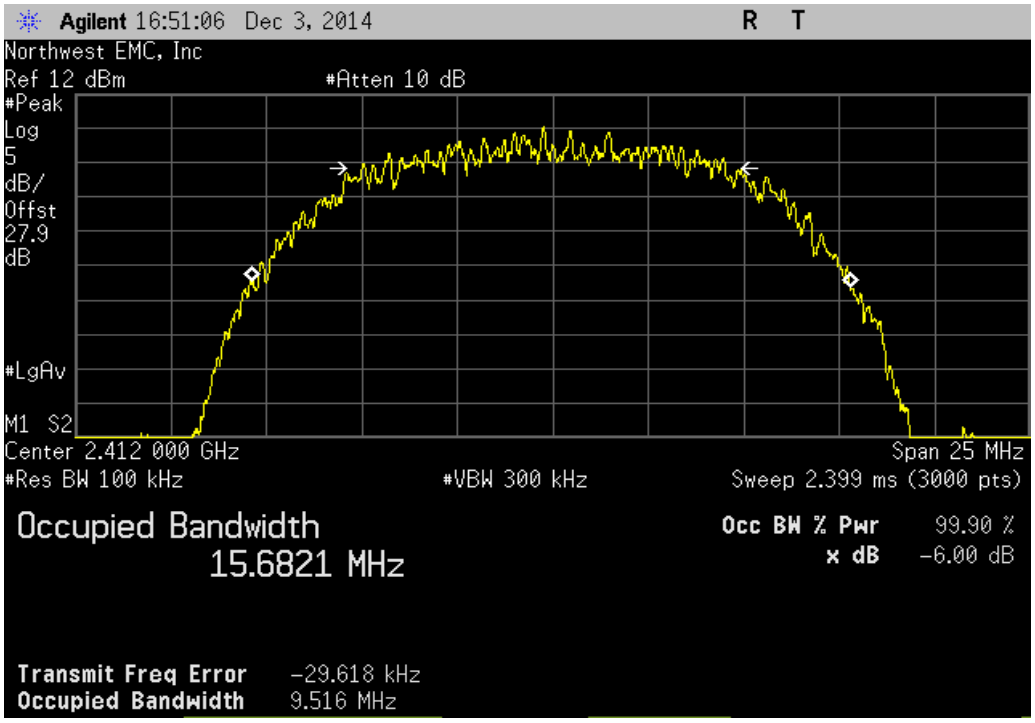


OCCUPIED BANDWIDTH

20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz						
				Value	Limit (>)	Result
				9.93 MHz	500 kHz	Pass

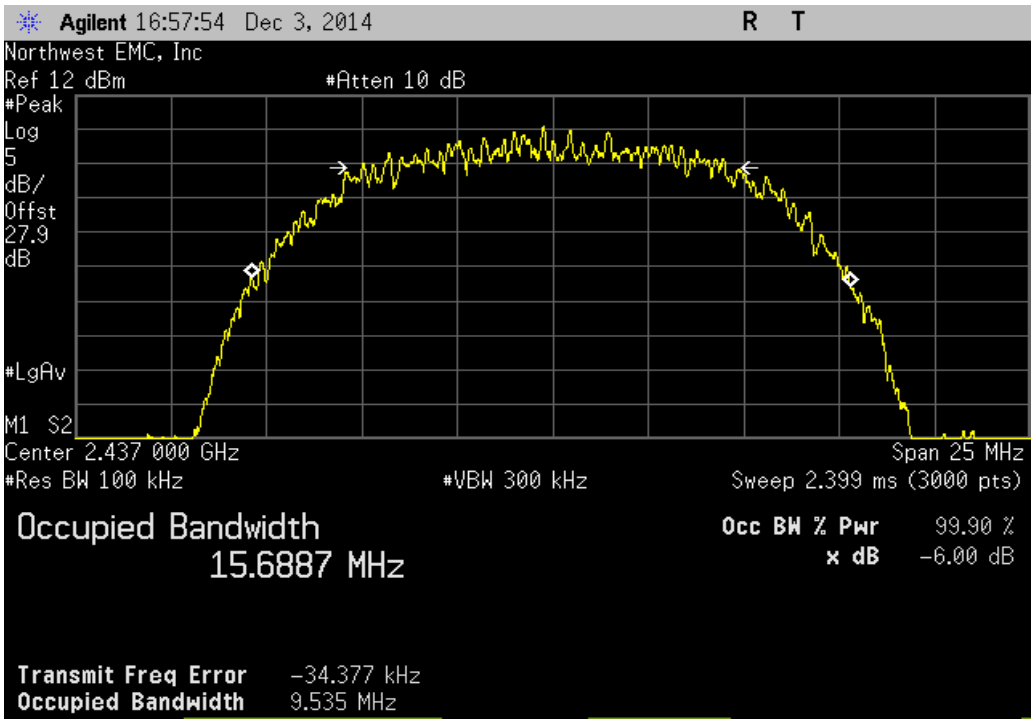


20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz						
				Value	Limit (>)	Result
				9.516 MHz	500 kHz	Pass

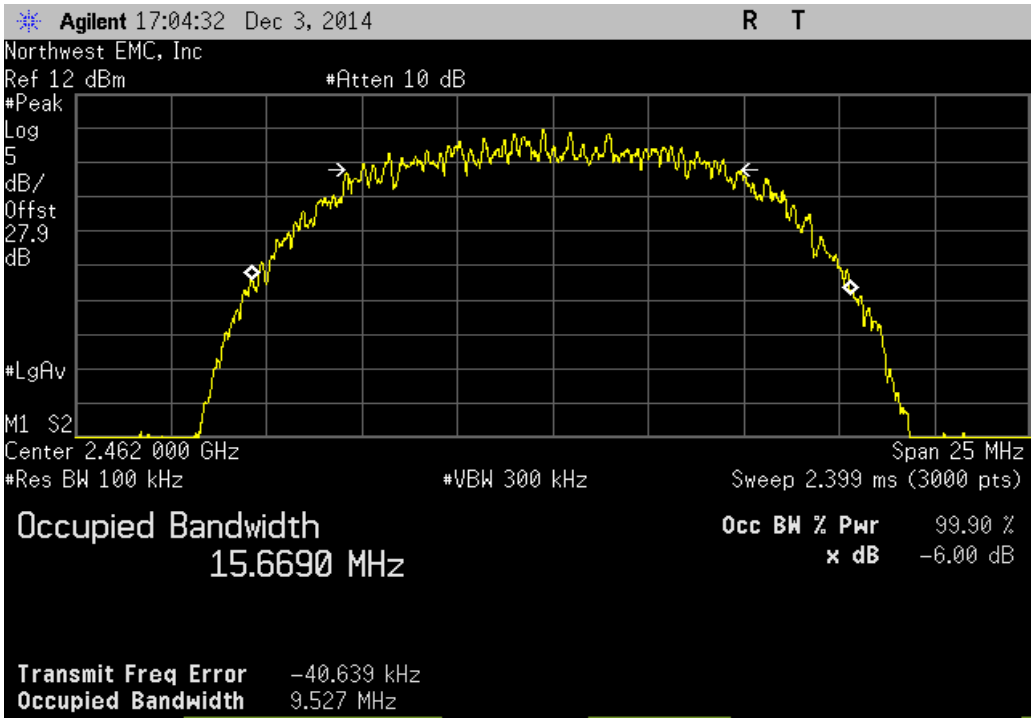


OCCUPIED BANDWIDTH

20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Mid Channel 6, 2437 MHz						
				Value	Limit (>)	Result
				9.535 MHz	500 kHz	Pass

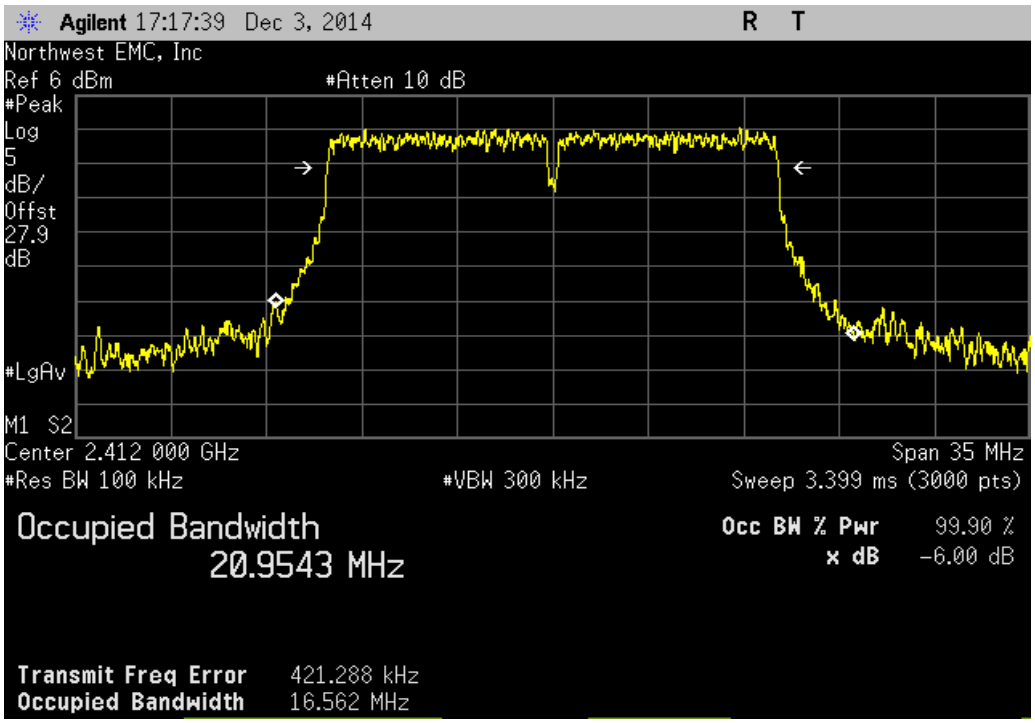


20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz						
				Value	Limit (>)	Result
				9.527 MHz	500 kHz	Pass



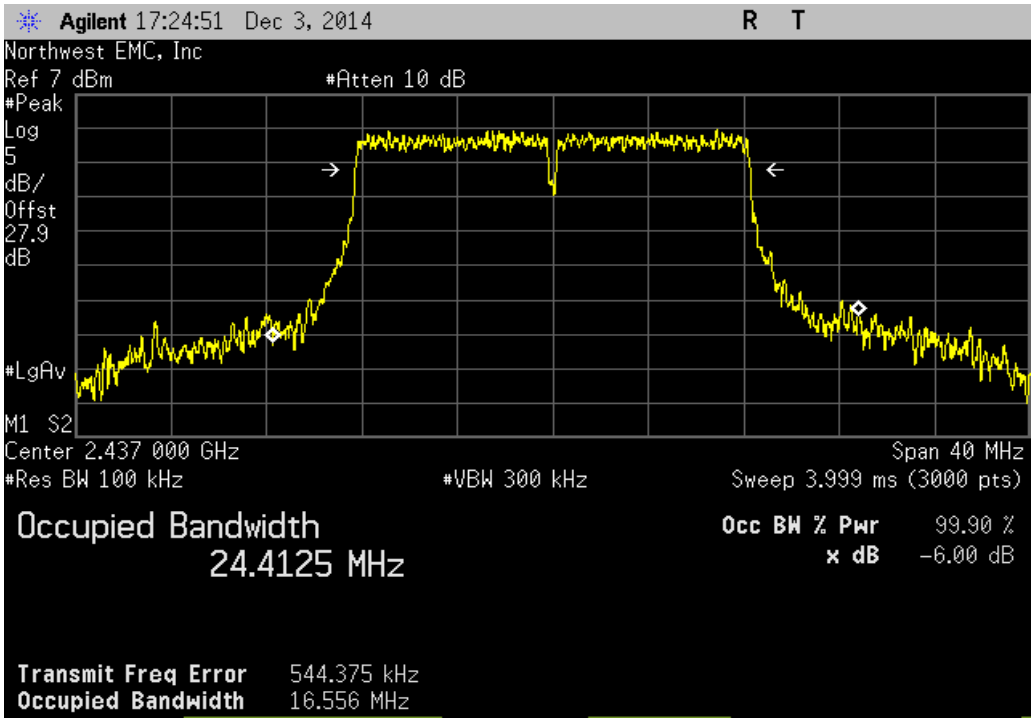
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz

				Value	Limit (>)	Result
				16.562 MHz	500 kHz	Pass



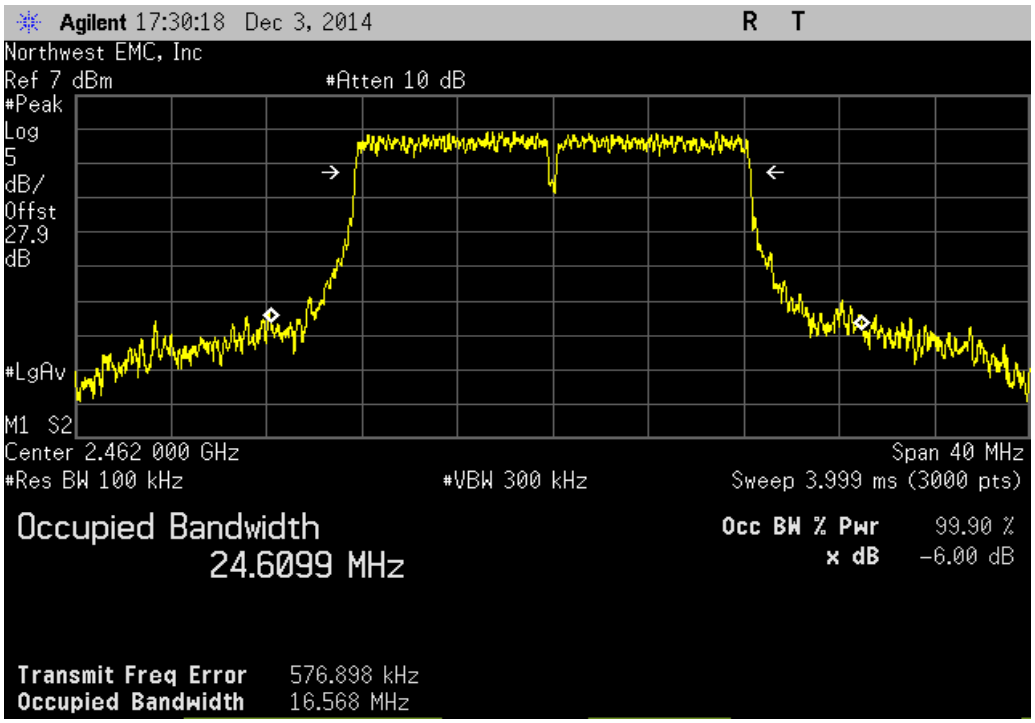
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz

				Value	Limit (>)	Result
				16.556 MHz	500 kHz	Pass

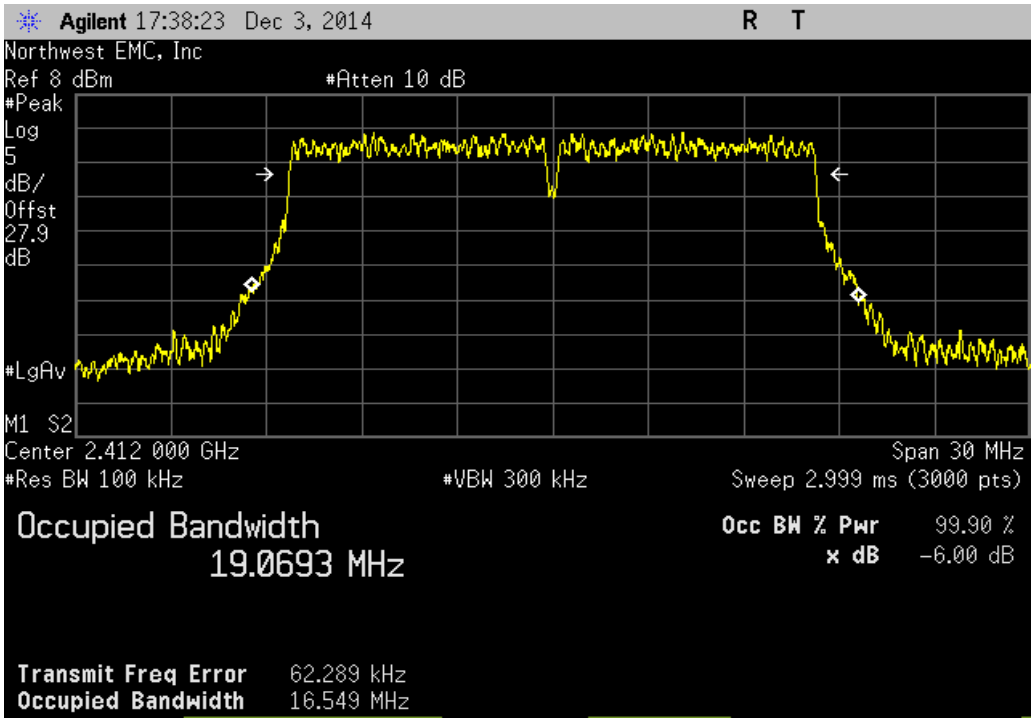


OCCUPIED BANDWIDTH

20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz						
				Value	Limit (>)	Result
				16.568 MHz	500 kHz	Pass

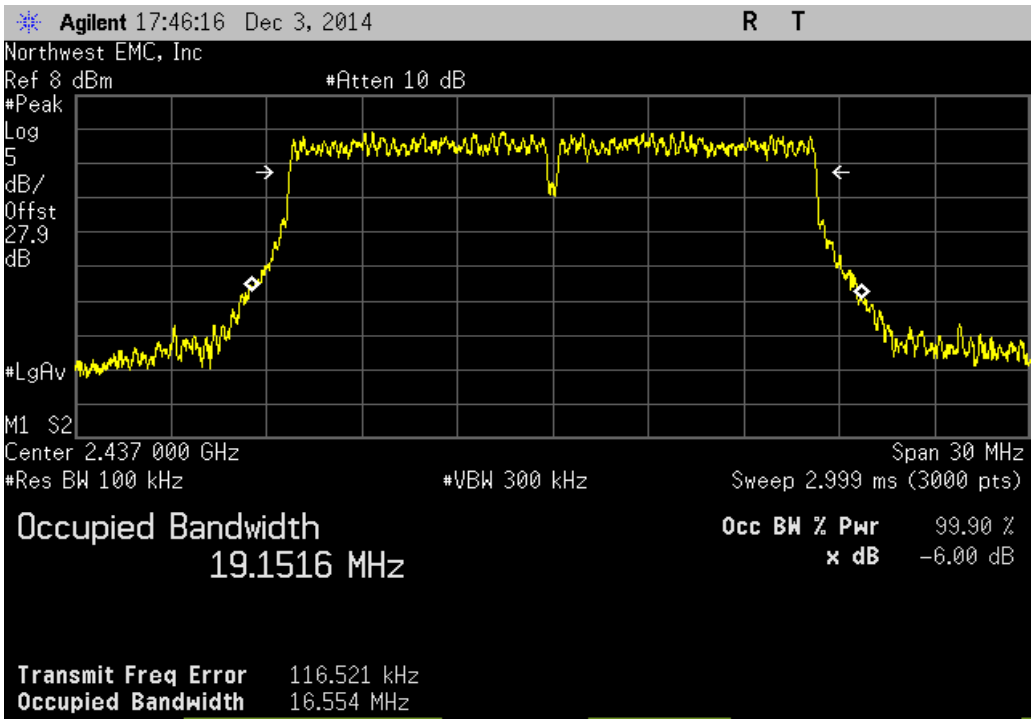


20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz						
				Value	Limit (>)	Result
				16.549 MHz	500 kHz	Pass

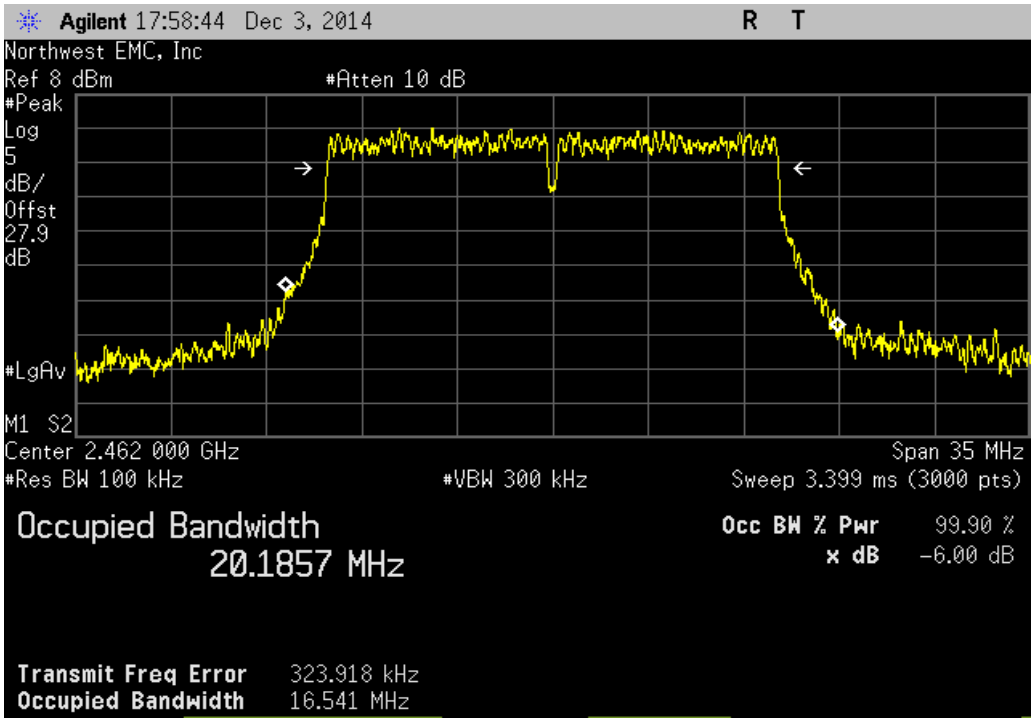


OCCUPIED BANDWIDTH

20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Mid Channel 6, 2437 MHz						
				Value	Limit (>)	Result
				16.554 MHz	500 kHz	Pass

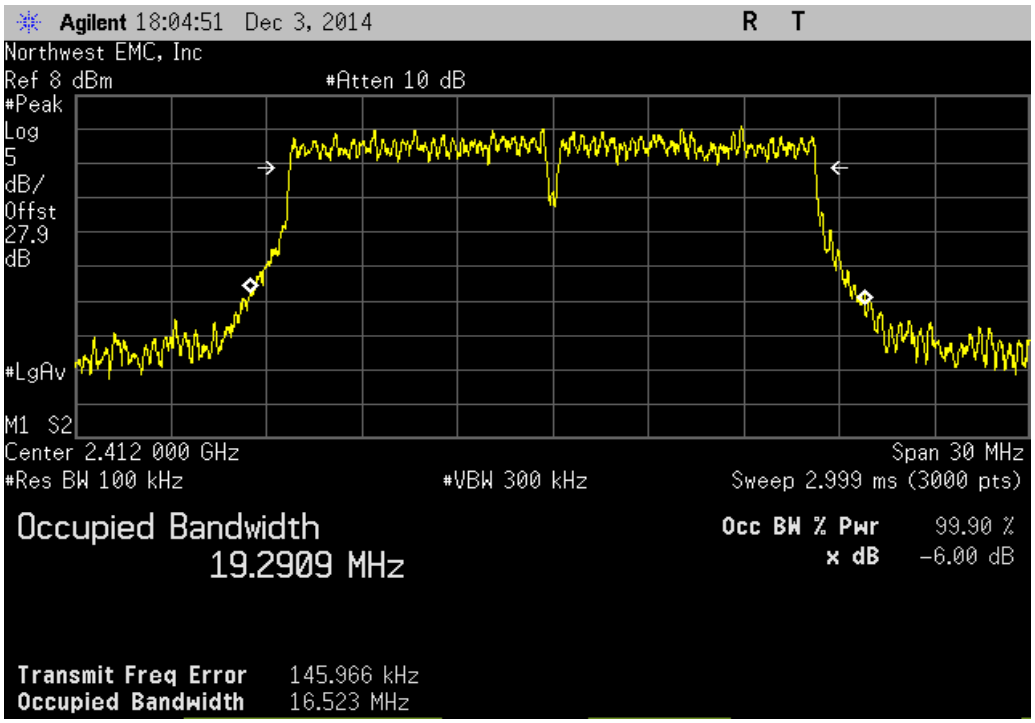


20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz						
				Value	Limit (>)	Result
				16.541 MHz	500 kHz	Pass

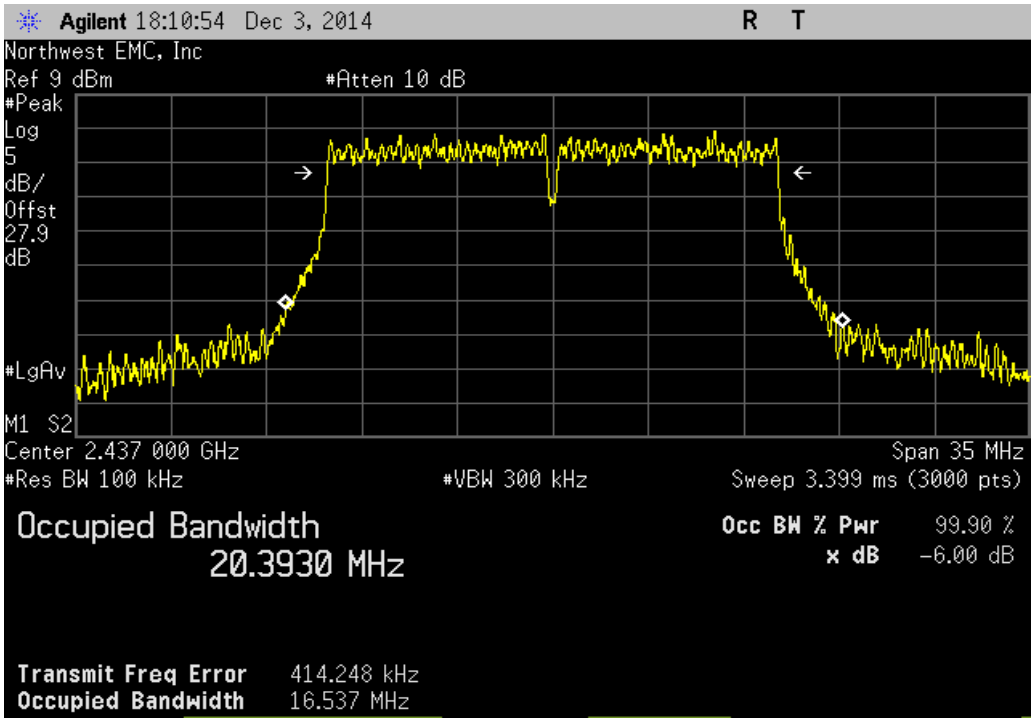


OCCUPIED BANDWIDTH

20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz						
				Value	Limit (>)	Result
				16.523 MHz	500 kHz	Pass

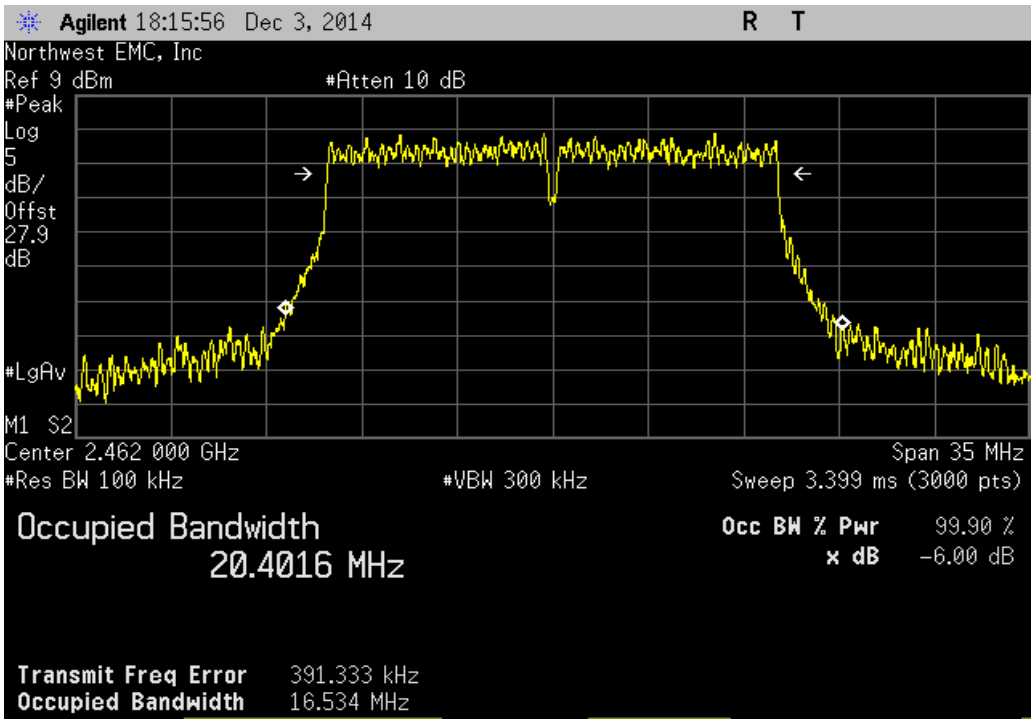


20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz						
				Value	Limit (>)	Result
				16.537 MHz	500 kHz	Pass



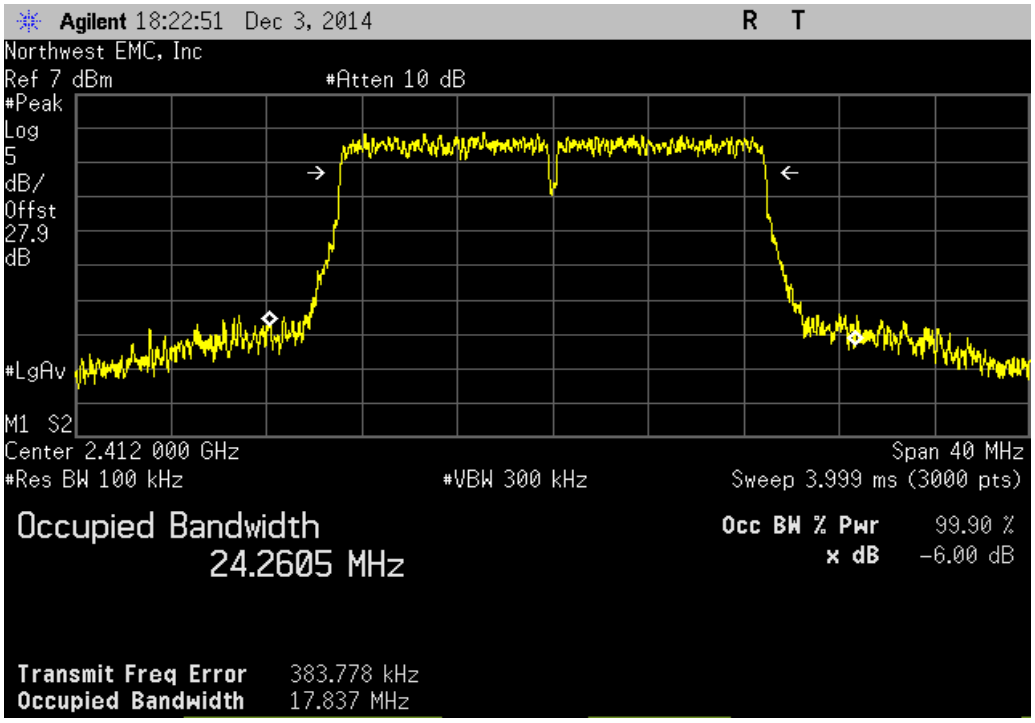
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz

				Value	Limit (>)	Result
				16.534 MHz	500 kHz	Pass

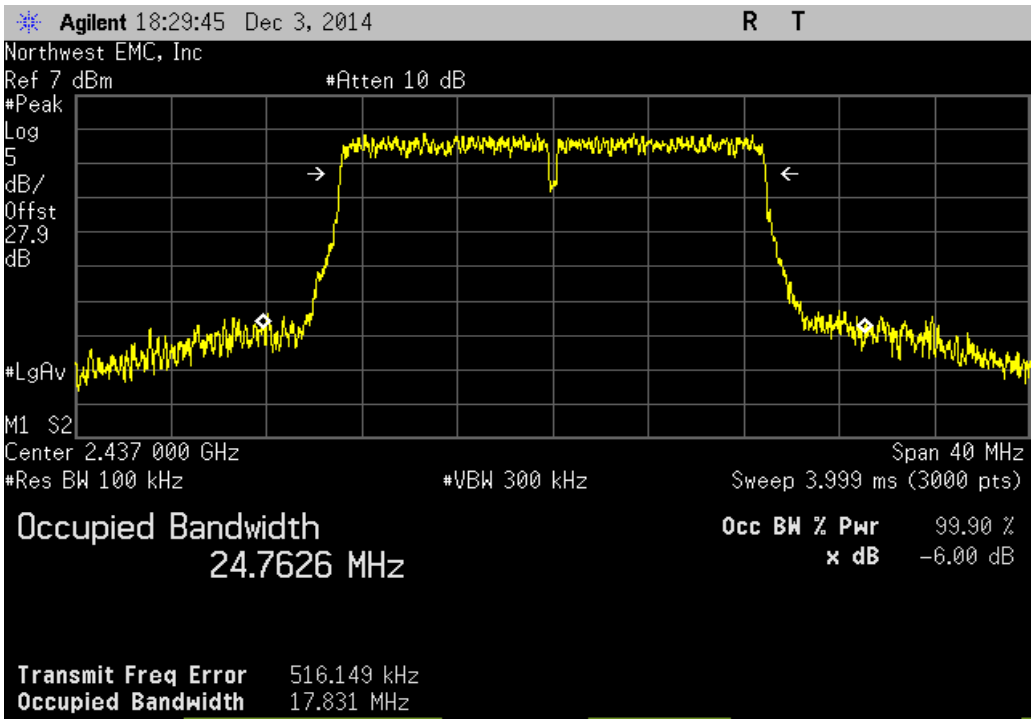


20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1, 2412 MHz

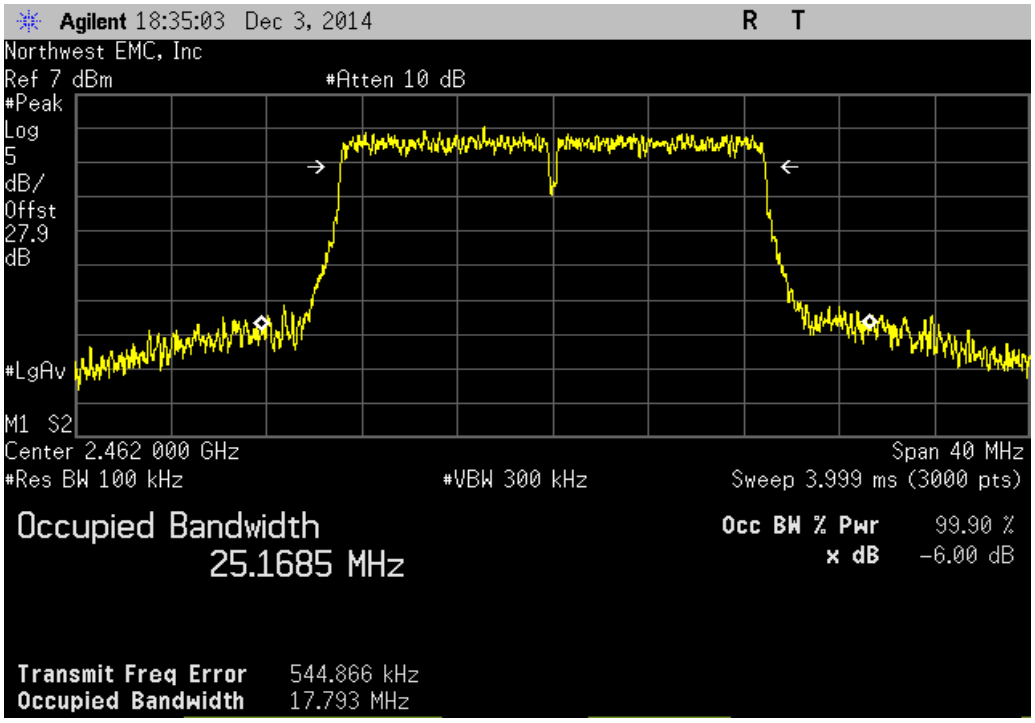
				Value	Limit (>)	Result
				17.837 MHz	500 kHz	Pass



20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Mid Channel 6, 2437 MHz						
				Value	Limit (>)	Result
				17.831 MHz	500 kHz	Pass

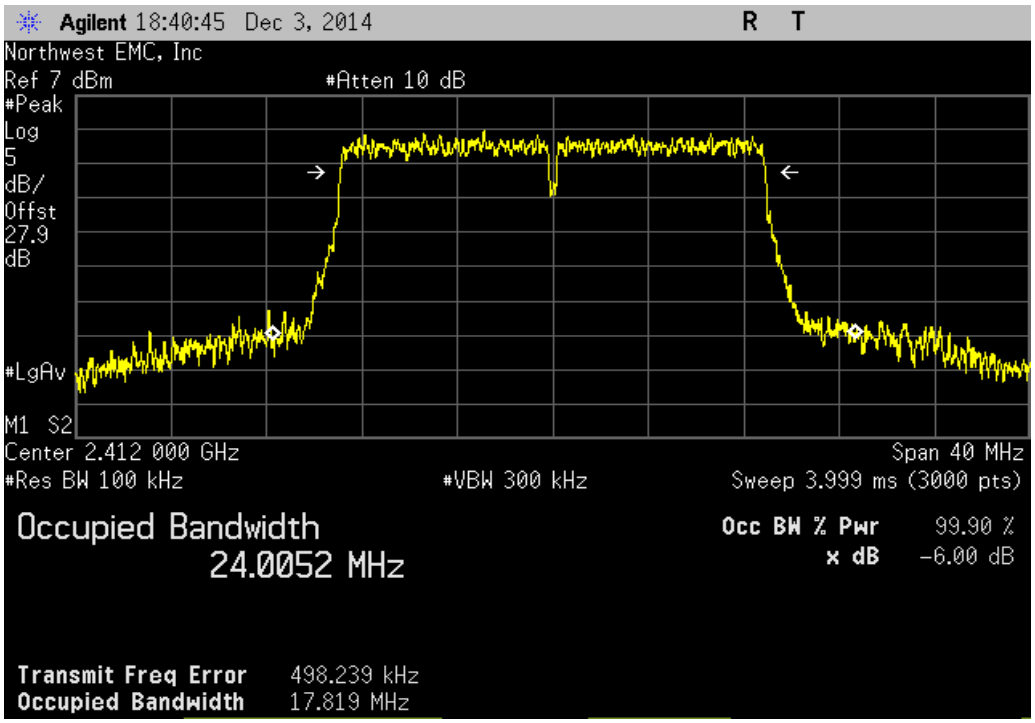


20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 11, 2462 MHz						
				Value	Limit (>)	Result
				17.793 MHz	500 kHz	Pass

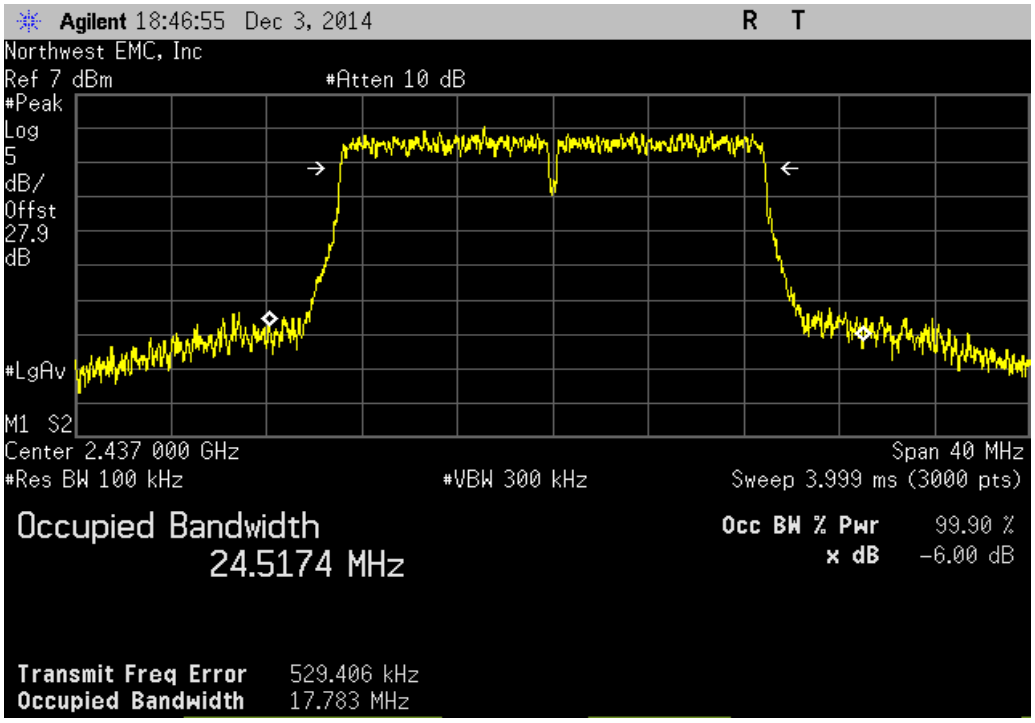


OCCUPIED BANDWIDTH

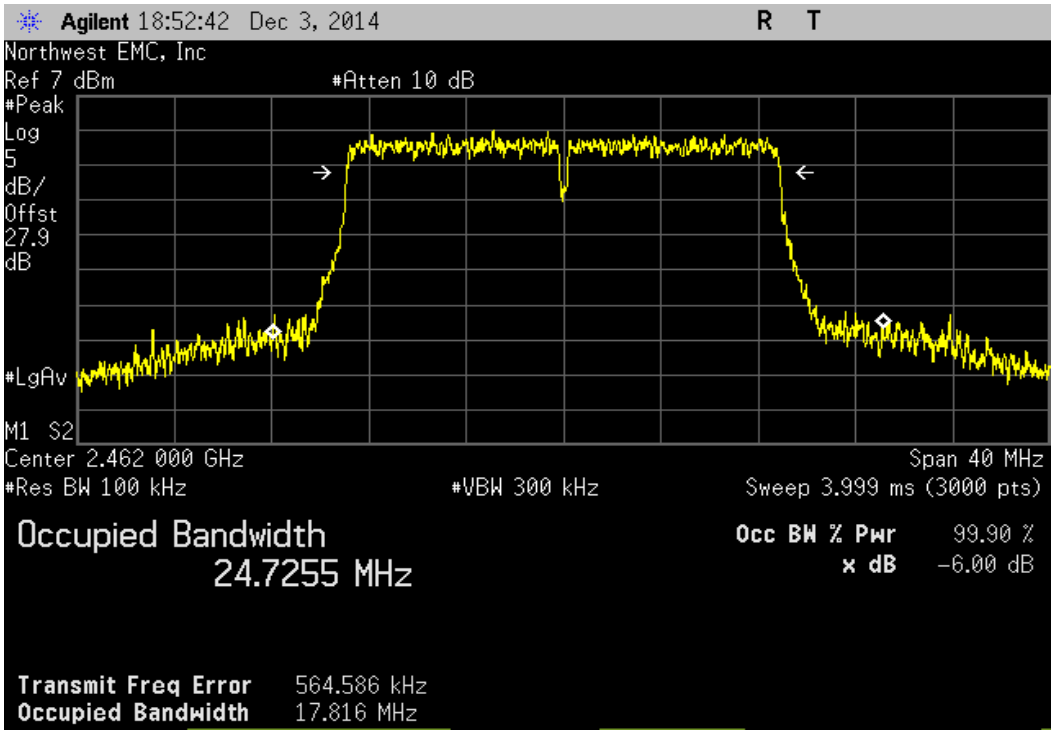
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1, 2412 MHz						
				Value	Limit (>)	Result
				17.819 MHz	500 kHz	Pass



20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Mid Channel 6, 2437 MHz						
				Value	Limit (>)	Result
				17.783 MHz	500 kHz	Pass



20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, High Channel 11, 2462 MHz						
				Value	Limit (>)	Result
				17.816 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 (mo)
Humidity Temperature Meter	Omega	HH311	DUH	2/19/2013	36
Power Meter	Gigatronics	8651A	SPM	9/17/2014	12
Power Sensor	Gigatronics	80701A	SPL	5/28/2014	12
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	2/3/2014	12
MXG Analog Signal Generator	Agilent	N5181A	TIG	3/28/2014	36
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
18 GHz DC Block, SMA	Pasternack	PE8210	AME	10/7/2014	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 DTS 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 method found in KDB 558074 DTS D01 Measurement Section 9.1.1 was used because the RBW on the analyzer was greater than the DTS Bandwidth of the radio.

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:	WATY			**Work Order:**	PROT0338
Serial Number:	E3730BG4098			**Date:**	12/03/14
Customer:	Welch Allyn Protocol, Inc.			**Temperature:**	20.9°C
Attendees:	None			**Humidity:**	30%
Project:	eSOM3730			**Barometric Pres.:**	1009
Tested by:	Jared Ison	**Power:**	5 VDC	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2014	ANSI C63.10:2009

COMMENTS

Modes of operation were client provided. Output power set to 15dBm.

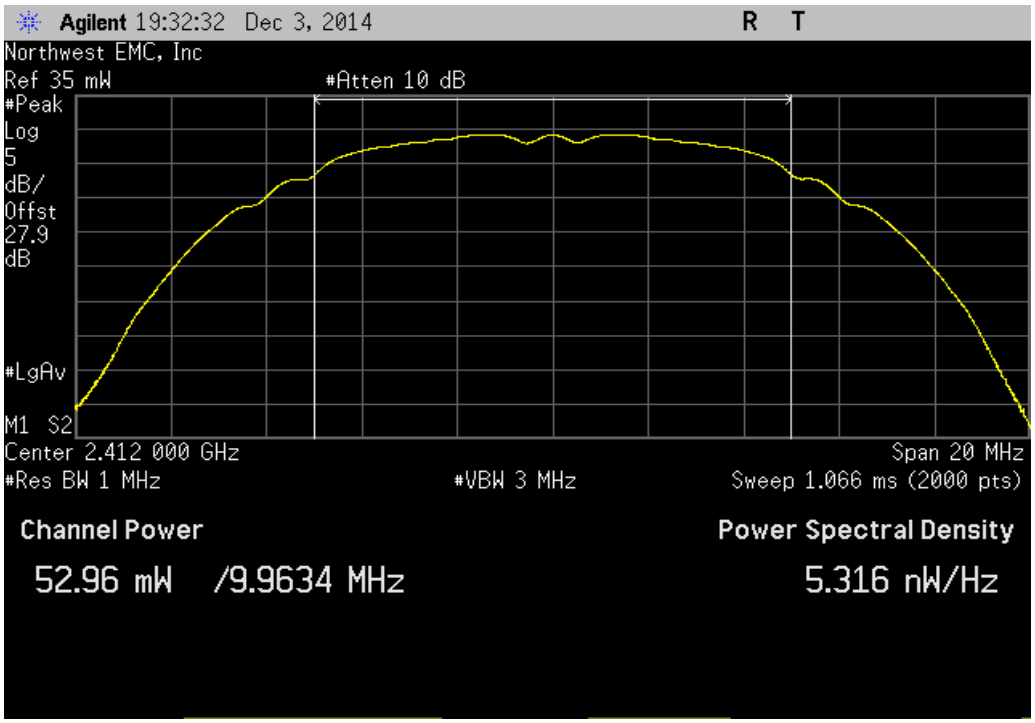
DEVIATIONS FROM TEST STANDARD

None

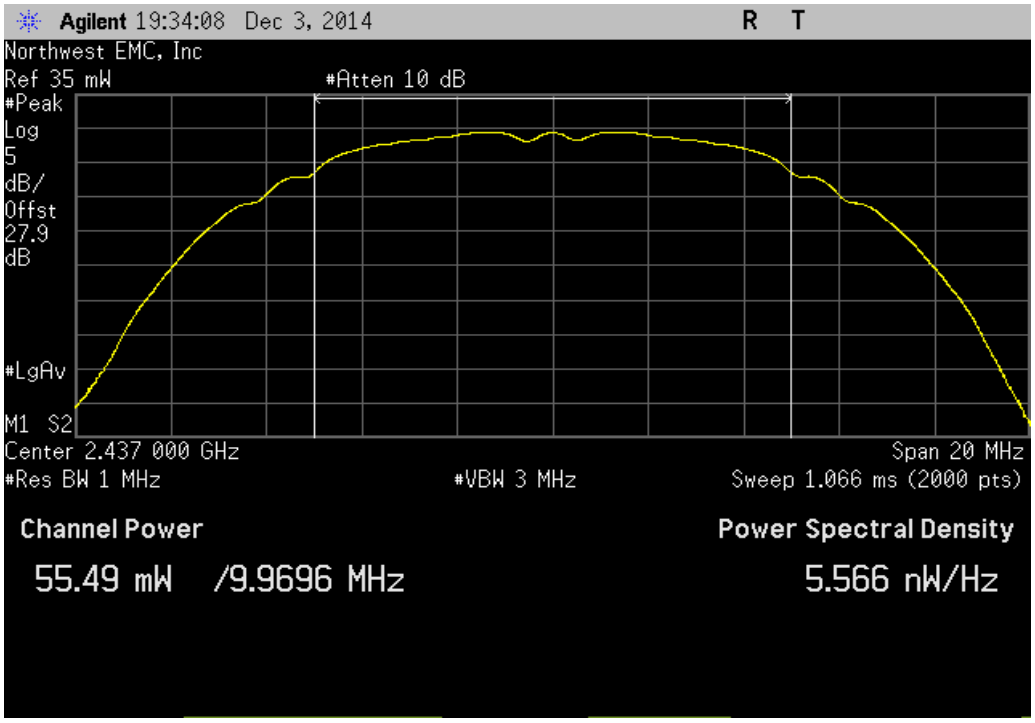
Configuration #	1	Signature

	Value	Limit (<)	Result
20MHz			
2400 MHz - 2483.5 MHz Band			
802.11(b) 1 Mbps			
Low Channel 1, 2412 MHz	52.965 mW	1 W	Pass
Mid Channel 6, 2437 MHz	55.493 mW	1 W	Pass
High Channel 11, 2462 MHz	61.393 mW	1 W	Pass
802.11(b) 11 Mbps			
Low Channel 1, 2412 MHz	51.607 mW	1 W	Pass
Mid Channel 6, 2437 MHz	54.909 mW	1 W	Pass
High Channel 11, 2462 MHz	50.27 mW	1 W	Pass
802.11(g) 6 Mbps			
Low Channel 1, 2412 MHz	51.568 mW	1 W	Pass
Mid Channel 6, 2437 MHz	59.558 mW	1 W	Pass
High Channel 11, 2462 MHz	59.454 mW	1 W	Pass
802.11(g) 36 Mbps			
Low Channel 1, 2412 MHz	54.812 mW	1 W	Pass
Mid Channel 6, 2437 MHz	58.943 mW	1 W	Pass
High Channel 11, 2462 MHz	59.514 mW	1 W	Pass
802.11(g) 54 Mbps			
Low Channel 1, 2412 MHz	55.885 mW	1 W	Pass
Mid Channel 6, 2437 MHz	59.116 mW	1 W	Pass
High Channel 11, 2462 MHz	58.813 mW	1 W	Pass
802.11(n) MCS0			
Low Channel 1, 2412 MHz	56.446 mW	1 W	Pass
Mid Channel 6, 2437 MHz	58.993 mW	1 W	Pass
High Channel 11, 2462 MHz	60.209 mW	1 W	Pass
802.11(n) MCS7			
Low Channel 1, 2412 MHz	56.949 mW	1 W	Pass
Mid Channel 6, 2437 MHz	59.671 mW	1 W	Pass
High Channel 11, 2462 MHz	59.161 mW	1 W	Pass

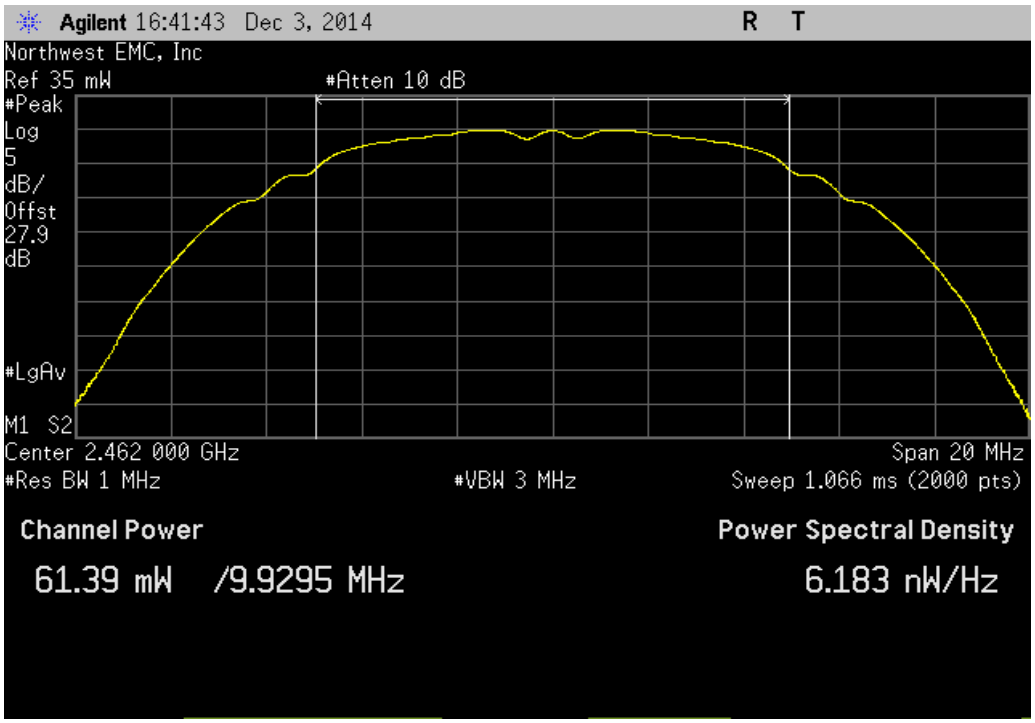
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz						
				Value	Limit (<)	Result
				52.965 mW	1 W	Pass



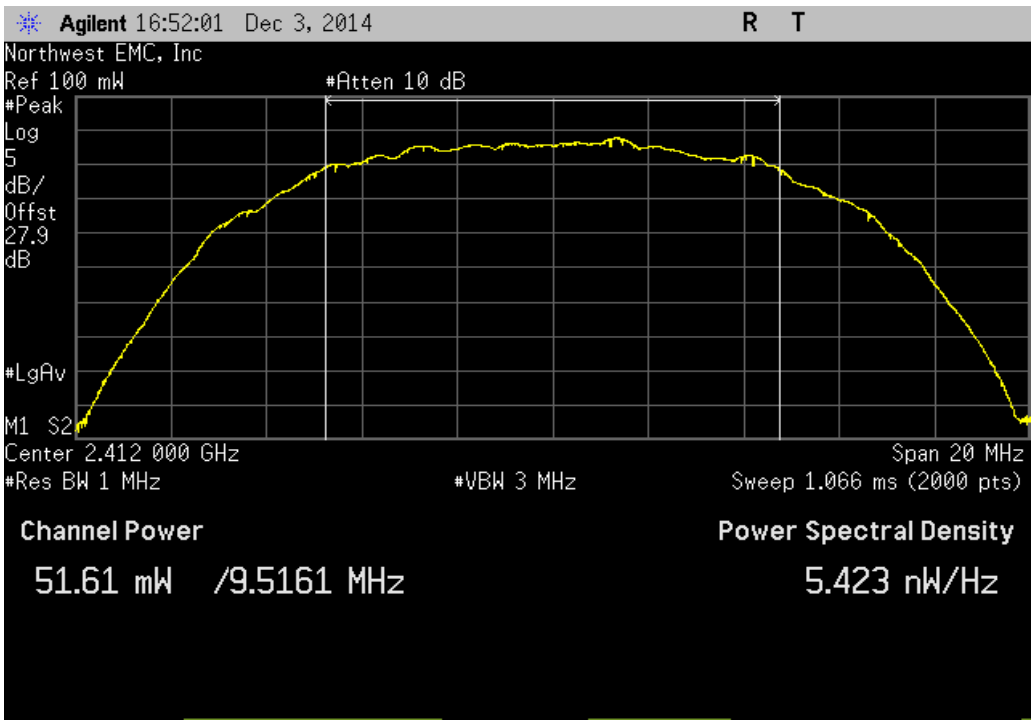
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz						
				Value	Limit (<)	Result
				55.493 mW	1 W	Pass



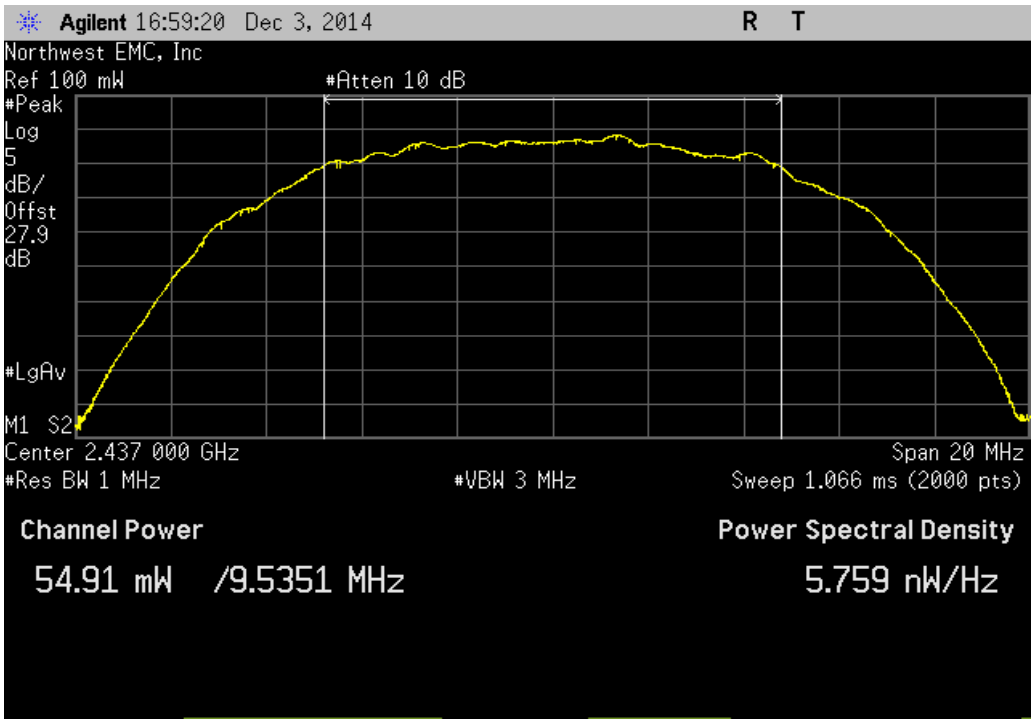
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz						
				Value	Limit (<)	Result
				61.393 mW	1 W	Pass



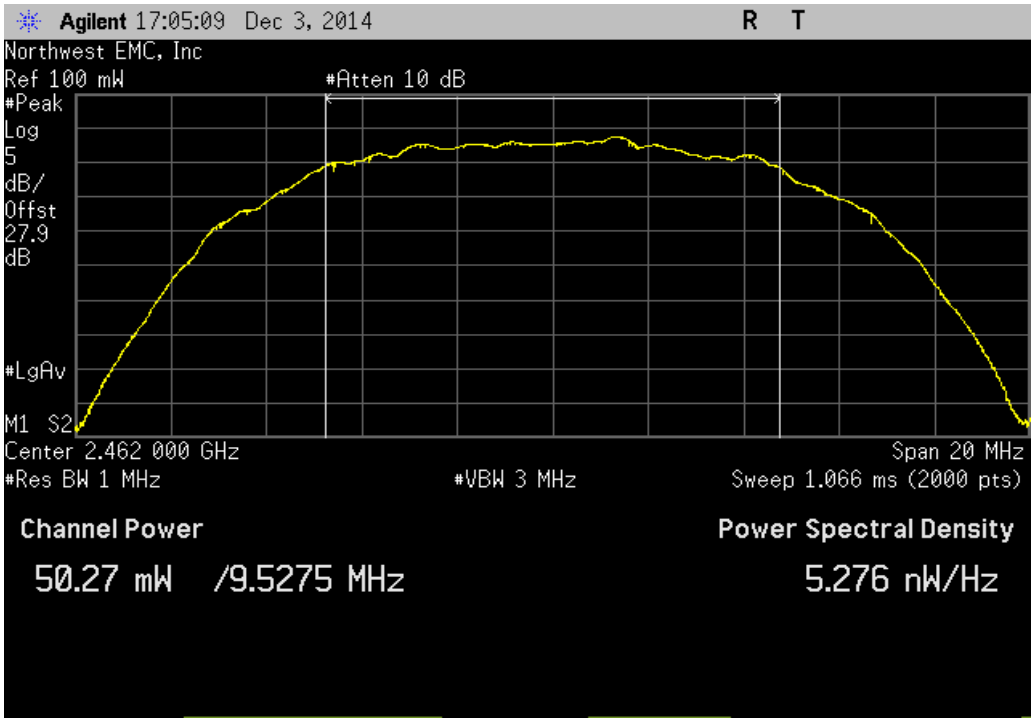
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz						
				Value	Limit (<)	Result
				51.607 mW	1 W	Pass



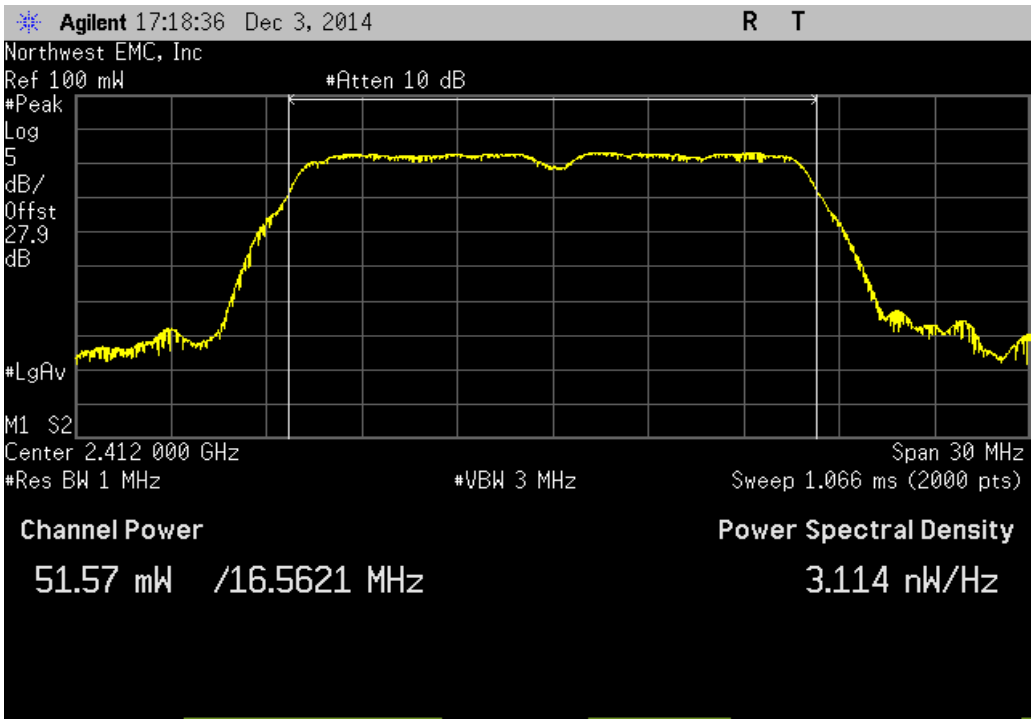
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Mid Channel 6, 2437 MHz						
				Value	Limit (<)	Result
				54.909 mW	1 W	Pass



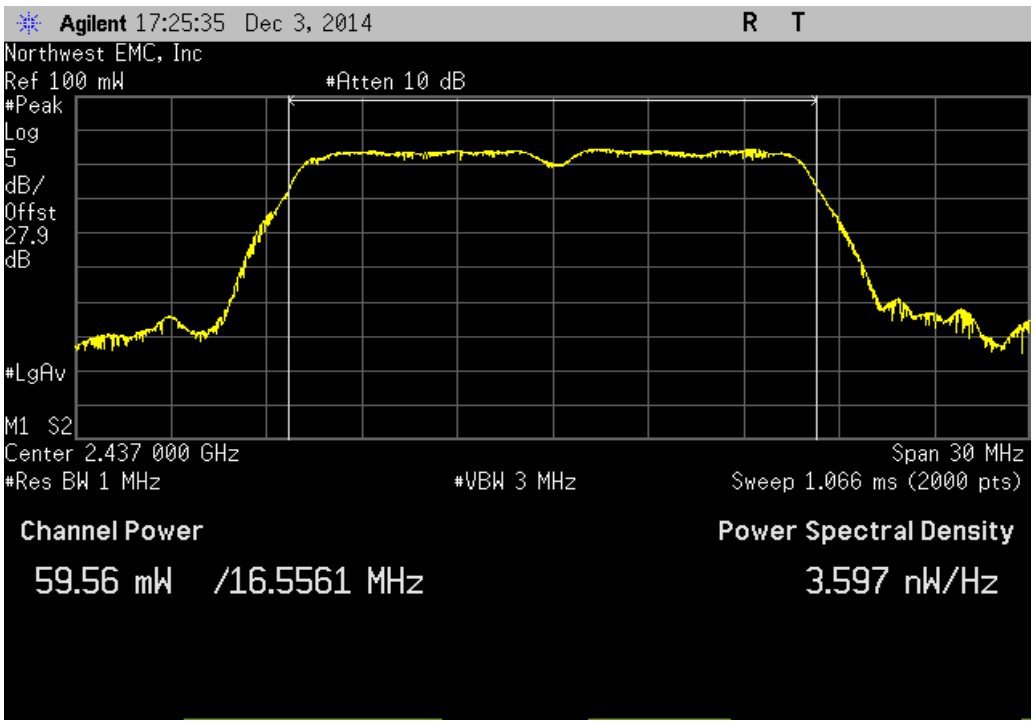
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz						
				Value	Limit (<)	Result
				50.27 mW	1 W	Pass



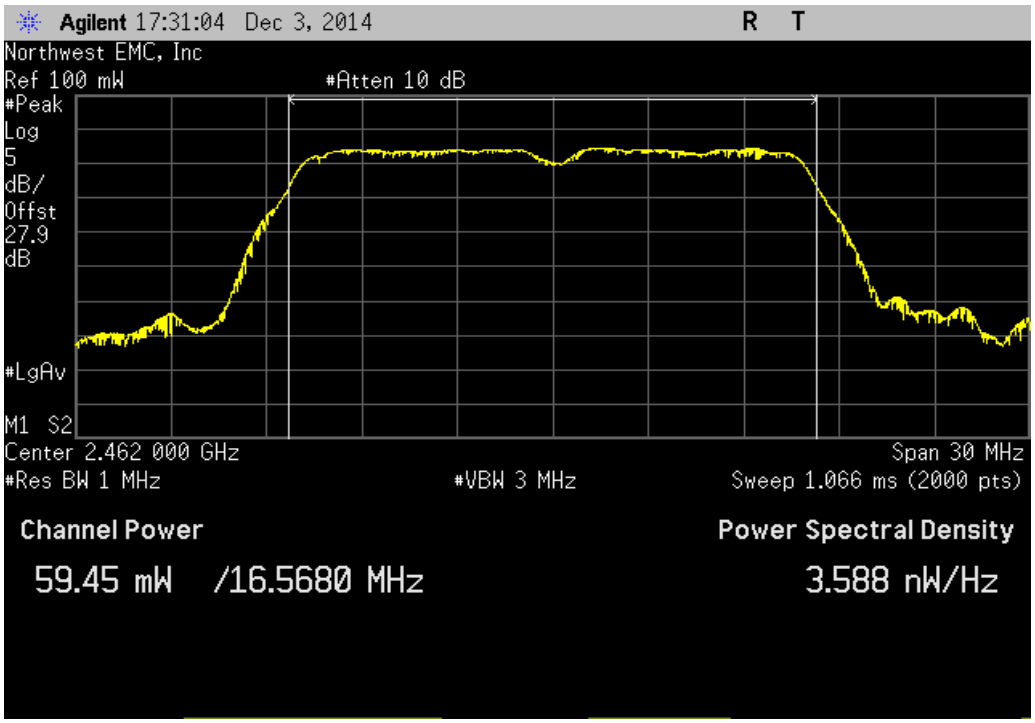
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz						
				Value	Limit (<)	Result
				51.568 mW	1 W	Pass



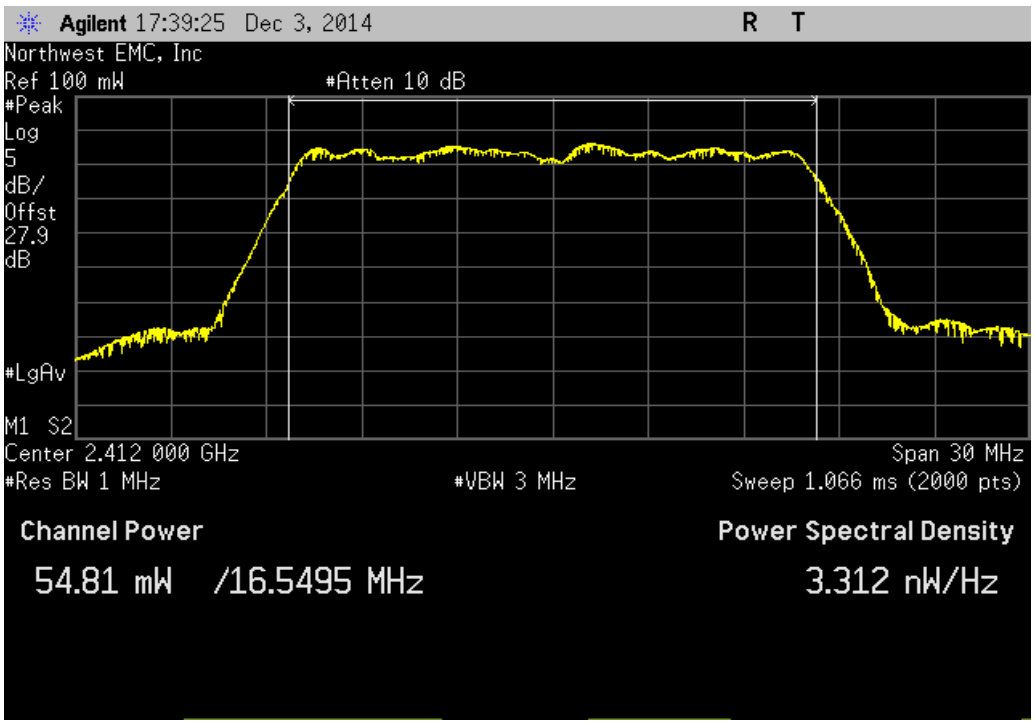
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz						
				Value	Limit (<)	Result
				59.558 mW	1 W	Pass



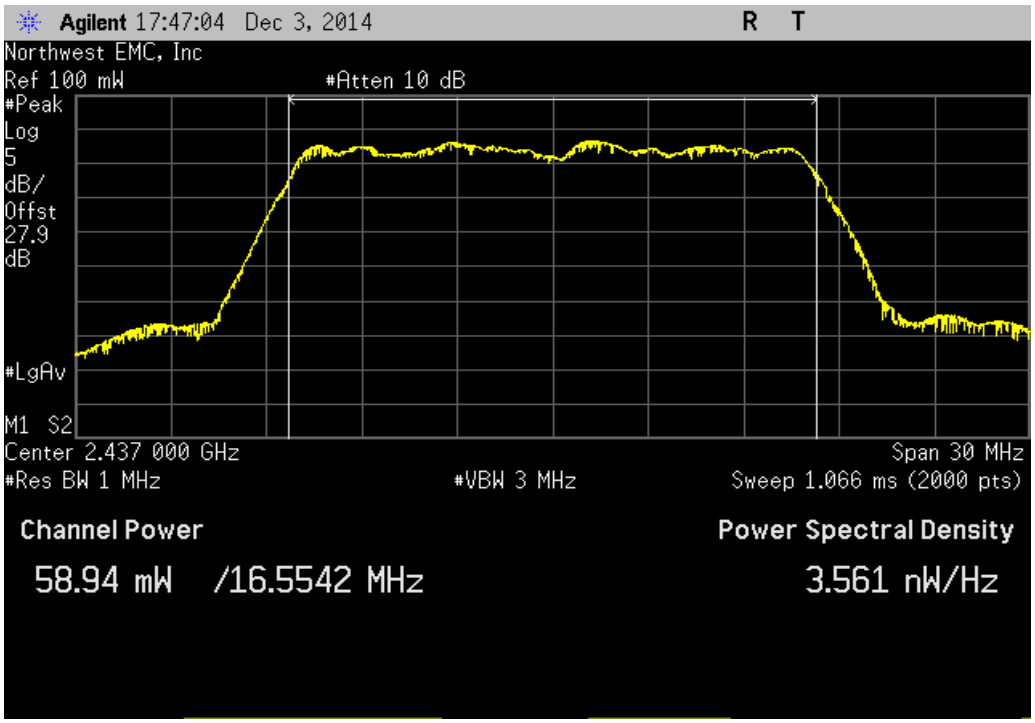
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz						
				Value	Limit (<)	Result
				59.454 mW	1 W	Pass



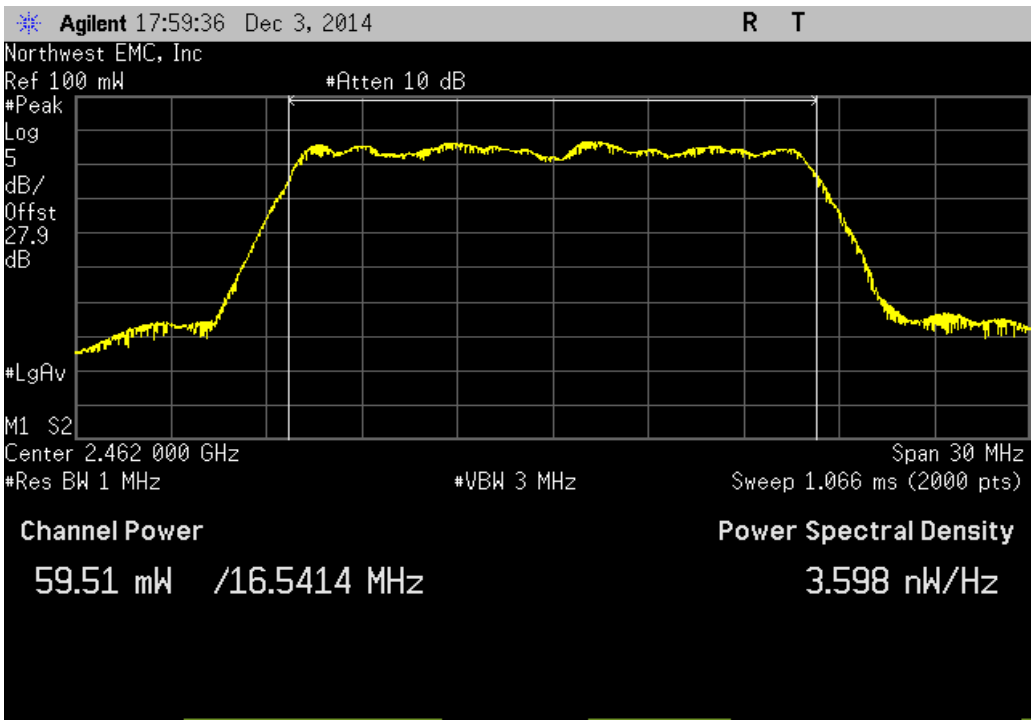
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz						
				Value	Limit (<)	Result
				54.812 mW	1 W	Pass



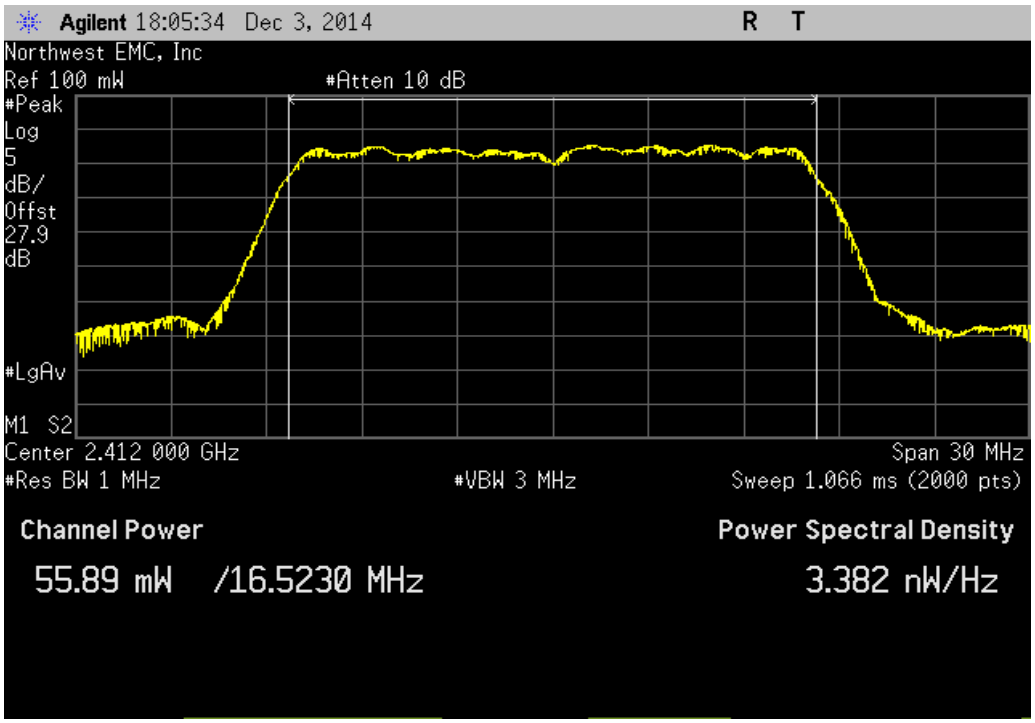
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Mid Channel 6, 2437 MHz						
				Value	Limit (<)	Result
				58.943 mW	1 W	Pass



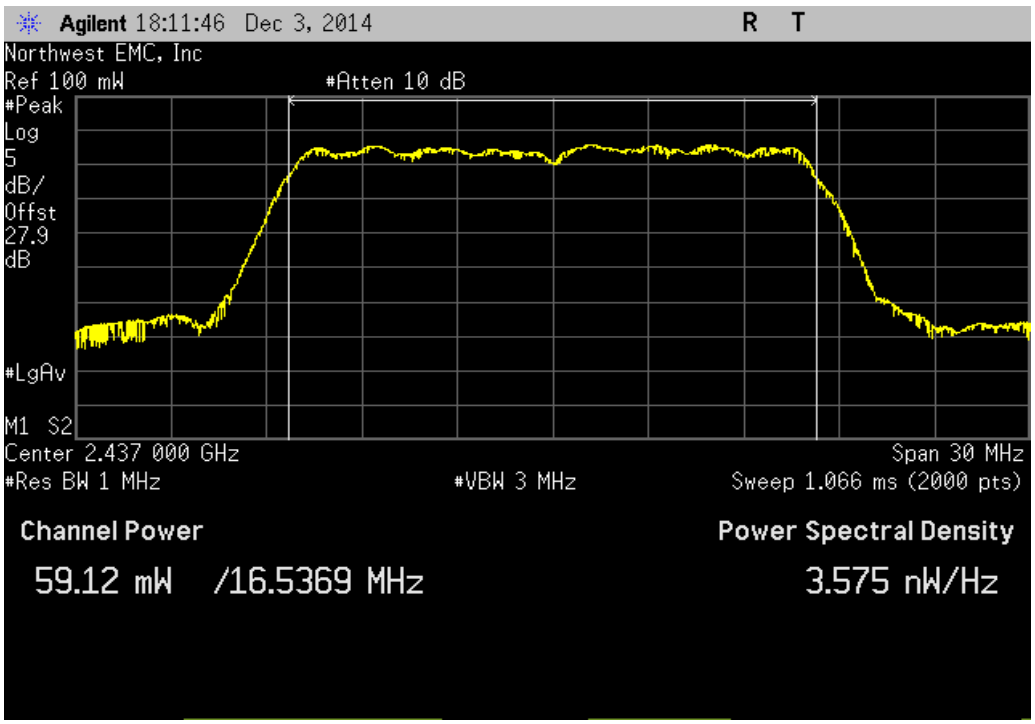
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz						
				Value	Limit (<)	Result
				59.514 mW	1 W	Pass



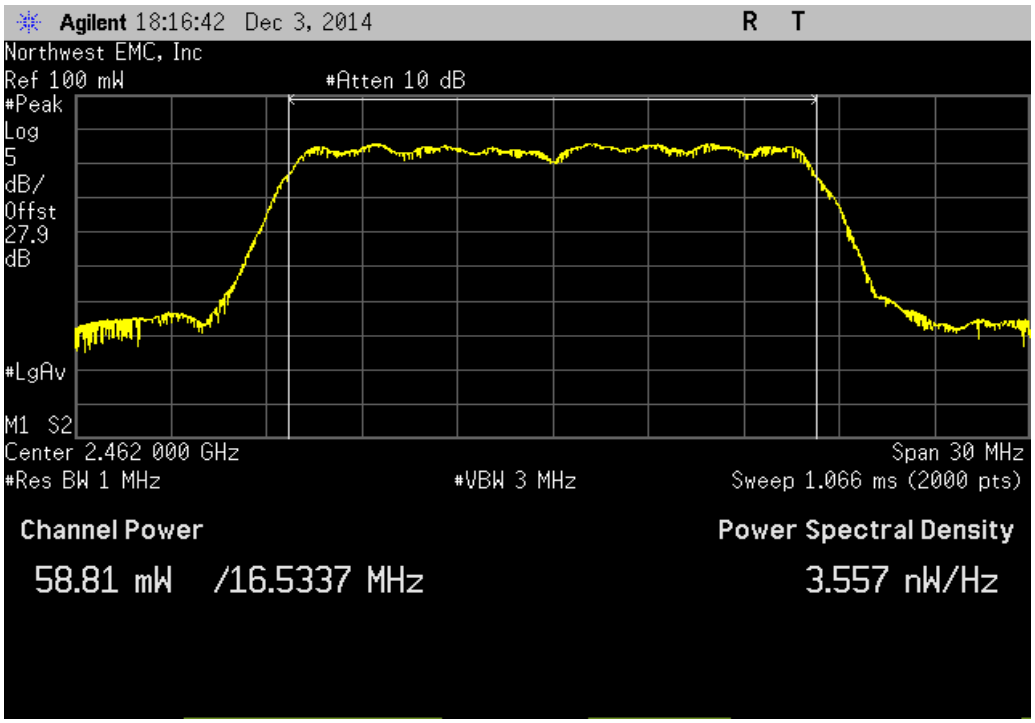
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz						
				Value	Limit (<)	Result
				55.885 mW	1 W	Pass



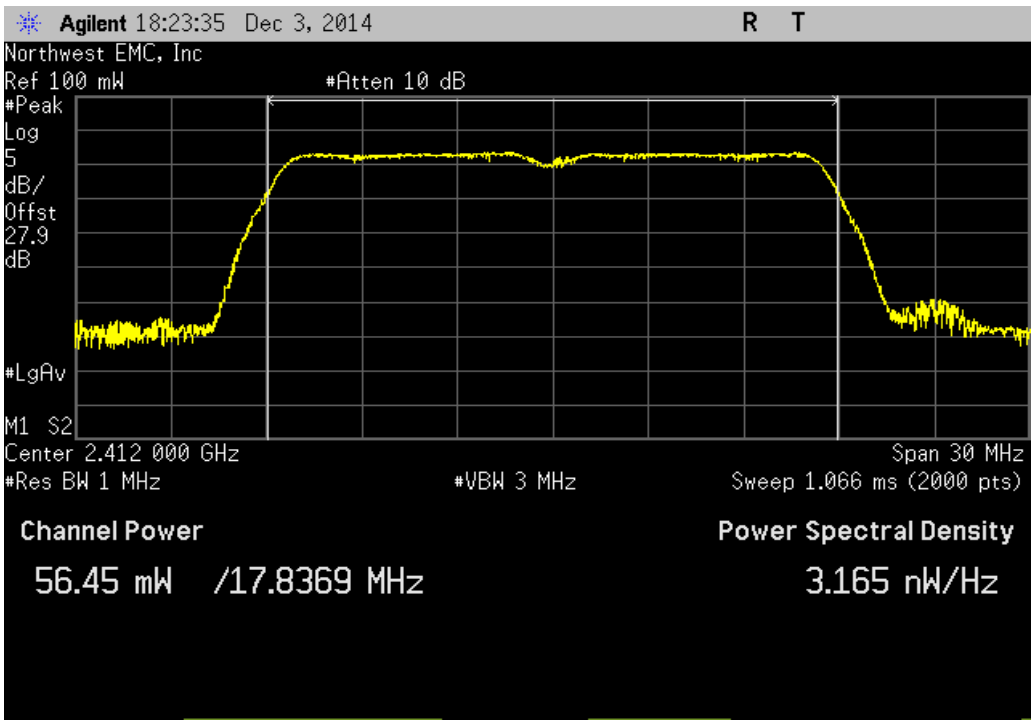
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz						
				Value	Limit (<)	Result
				59.116 mW	1 W	Pass



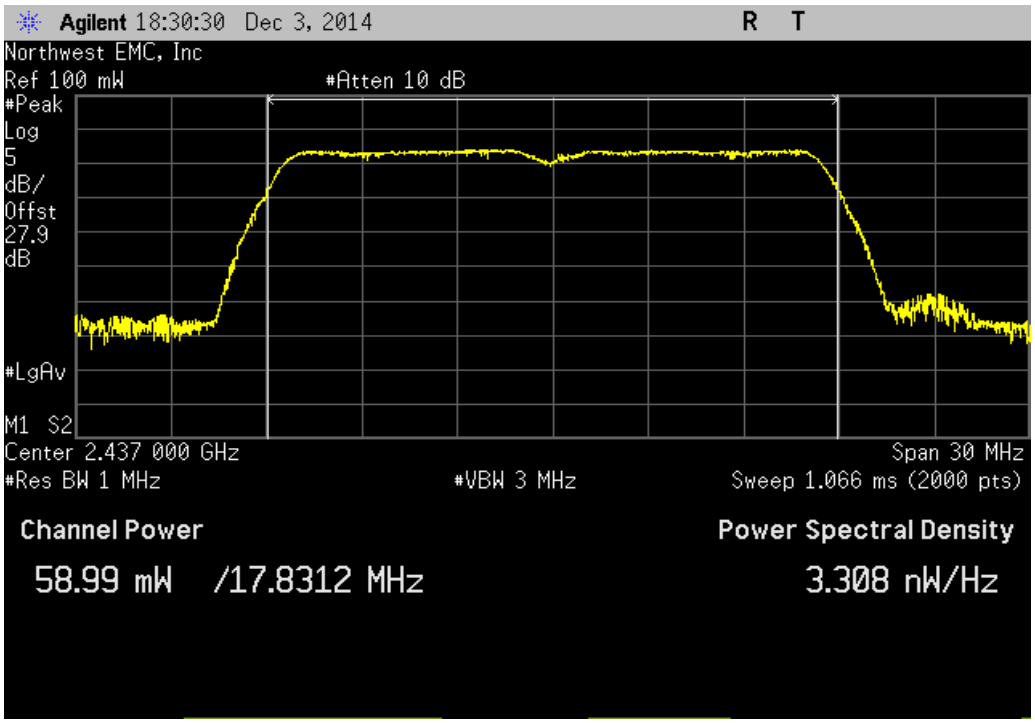
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz						
				Value	Limit (<)	Result
				58.813 mW	1 W	Pass



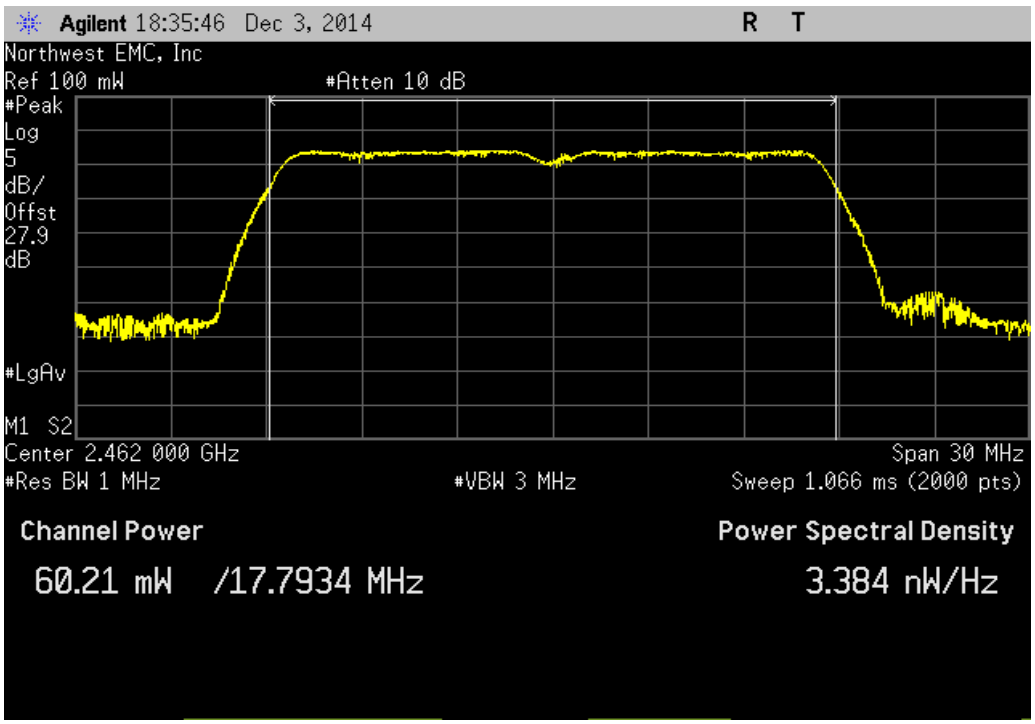
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1, 2412 MHz						
				Value	Limit (<)	Result
				56.446 mW	1 W	Pass



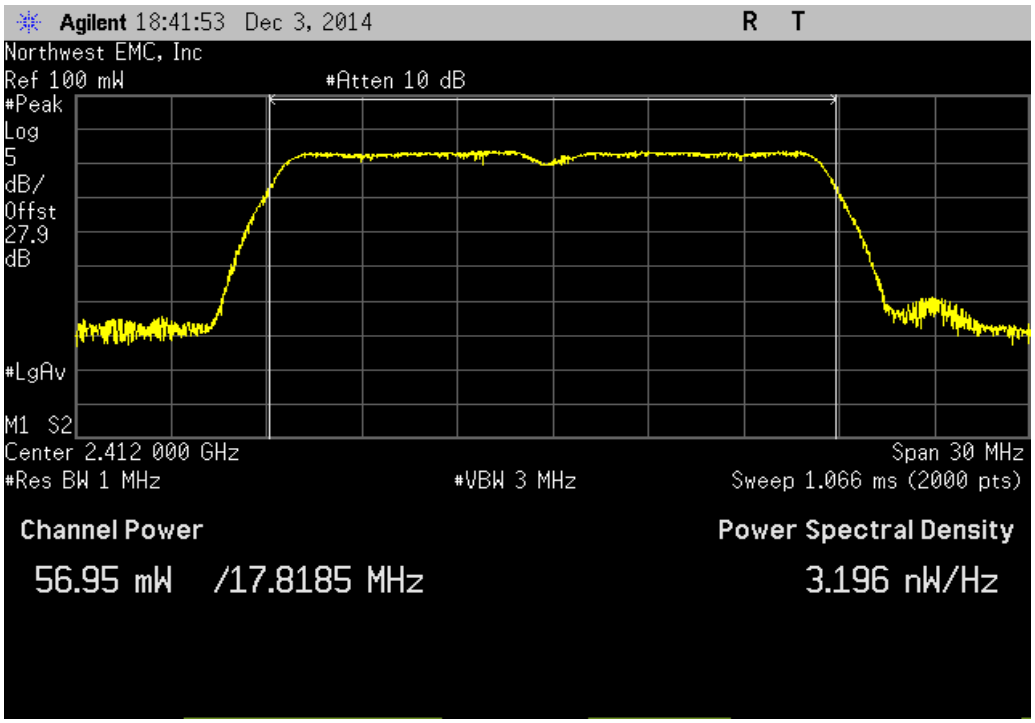
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Mid Channel 6, 2437 MHz						
				Value	Limit (<)	Result
				58.993 mW	1 W	Pass



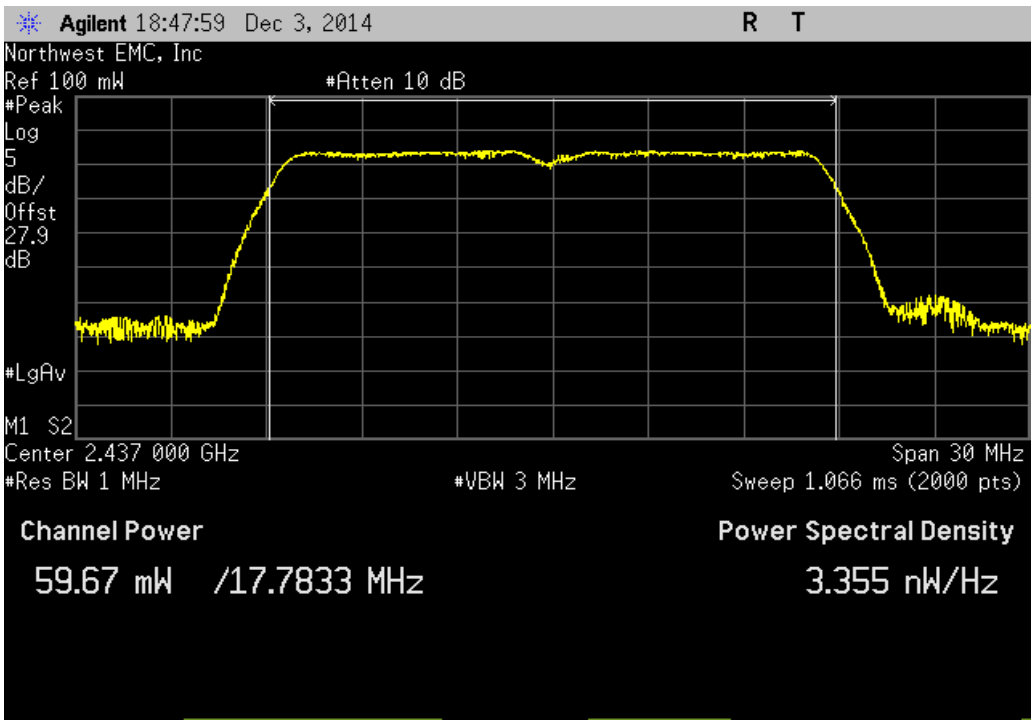
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 11, 2462 MHz						
				Value	Limit (<)	Result
				60.209 mW	1 W	Pass



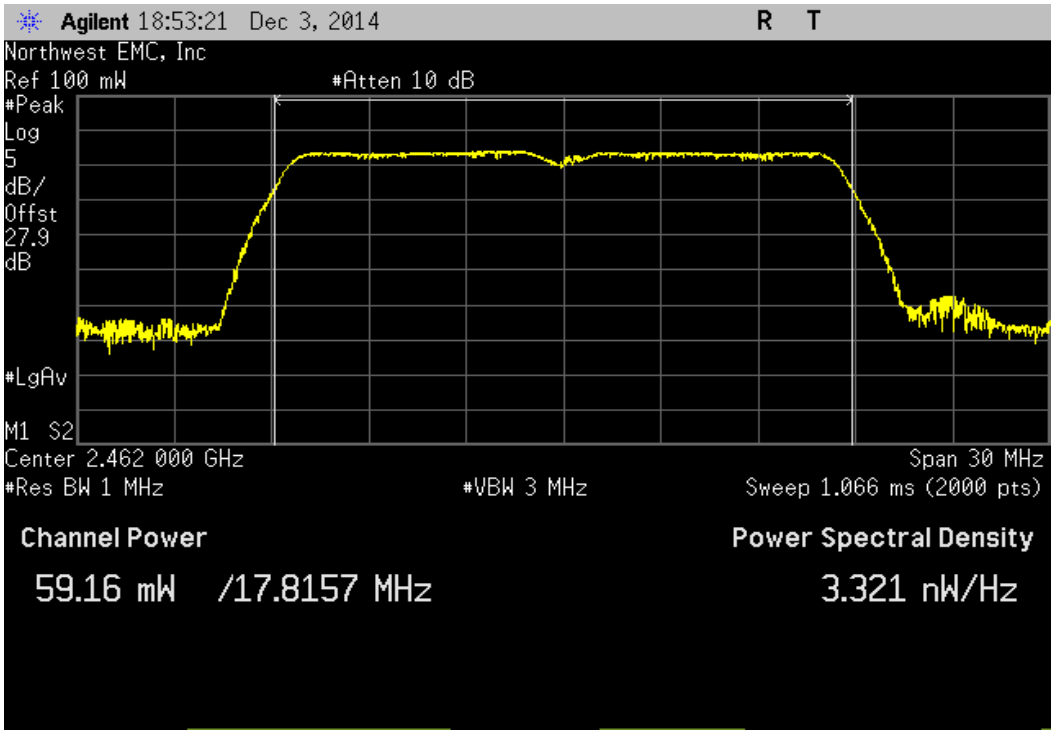
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1, 2412 MHz						
				Value	Limit (<)	Result
				56.949 mW	1 W	Pass



20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Mid Channel 6, 2437 MHz						
				Value	Limit (<)	Result
				59.671 mW	1 W	Pass



20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, High Channel 11, 2462 MHz						
				Value	Limit (<)	Result
				59.161 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 (mo)
Humidity Temperature Meter	Omega	HH311	DUH	2/19/2013	36
Power Meter	Gigatronics	8651A	SPM	9/17/2014	12
Power Sensor	Gigatronics	80701A	SPL	5/28/2014	12
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	2/3/2014	12
MXG Analog Signal Generator	Agilent	N5181A	TIG	3/28/2014	36
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2014	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
18 GHz DC Block, SMA	Pasternack	PE8210	AME	10/7/2014	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 Section 10.2, 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:	WATY			Work Order:	PROT0338
Serial Number:	E3730BG4098			Date:	12/03/14
Customer:	Welch Allyn Protocol, Inc.			Temperature:	20.9°C
Attendees:	None			Humidity:	30%
Project:	eSOM3730			Barometric Pres.:	1009
Tested by:	Jared Ison	Power:	5 VDC	Job Site:	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247:2014	ANSI C63.10:2009

COMMENTS

Modes of operation were client provided. Output power set to 15dBm.

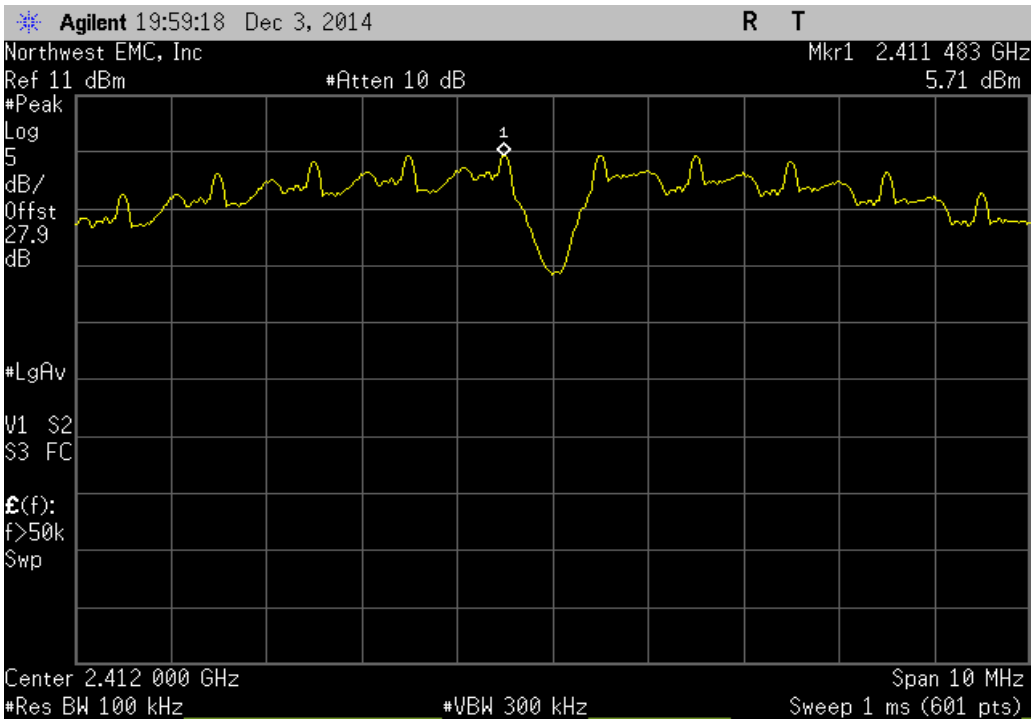
DEVIATIONS FROM TEST STANDARD

None

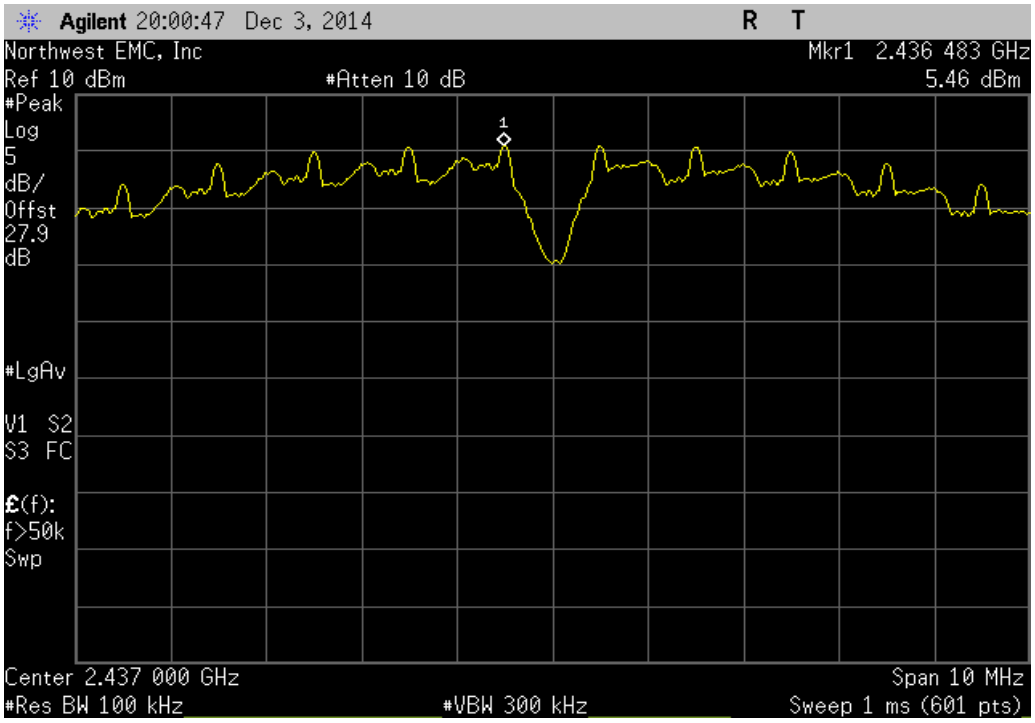
Configuration #	1	Signature

	Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
20MHz					
2400 MHz - 2483.5 MHz Band					
802.11(b) 1 Mbps					
Low Channel 1, 2412 MHz	5.71	-15.2	-9.49	8	Pass
Mid Channel 6, 2437 MHz	5.457	-15.2	-9.743	8	Pass
High Channel 11, 2462 MHz	5.766	-15.2	-9.434	8	Pass
802.11(b) 11 Mbps					
Low Channel 1, 2412 MHz	7.014	-15.2	-8.186	8	Pass
Mid Channel 6, 2437 MHz	7.332	-15.2	-7.868	8	Pass
High Channel 11, 2462 MHz	6.955	-15.2	-8.245	8	Pass
802.11(g) 6 Mbps					
Low Channel 1, 2412 MHz	1.18	-15.2	-14.02	8	Pass
Mid Channel 6, 2437 MHz	1.831	-15.2	-13.369	8	Pass
High Channel 11, 2462 MHz	1.854	-15.2	-13.346	8	Pass
802.11(g) 36 Mbps					
Low Channel 1, 2412 MHz	2.68	-15.2	-12.52	8	Pass
Mid Channel 6, 2437 MHz	2.982	-15.2	-12.218	8	Pass
High Channel 11, 2462 MHz	3.085	-15.2	-12.115	8	Pass
802.11(g) 54 Mbps					
Low Channel 1, 2412 MHz	3.334	-15.2	-11.866	8	Pass
Mid Channel 6, 2437 MHz	3.527	-15.2	-11.673	8	Pass
High Channel 11, 2462 MHz	3.518	-15.2	-11.682	8	Pass
802.11(n) MCS0					
Low Channel 1, 2412 MHz	1.938	-15.2	-13.262	8	Pass
Mid Channel 6, 2437 MHz	2.208	-15.2	-12.992	8	Pass
High Channel 11, 2462 MHz	2.131	-15.2	-13.069	8	Pass
802.11(n) MCS7					
Low Channel 1, 2412 MHz	1.914	-15.2	-13.286	8	Pass
Mid Channel 6, 2437 MHz	2.006	-15.2	-13.194	8	Pass
High Channel 11, 2462 MHz	2.231	-15.2	-12.969	8	Pass

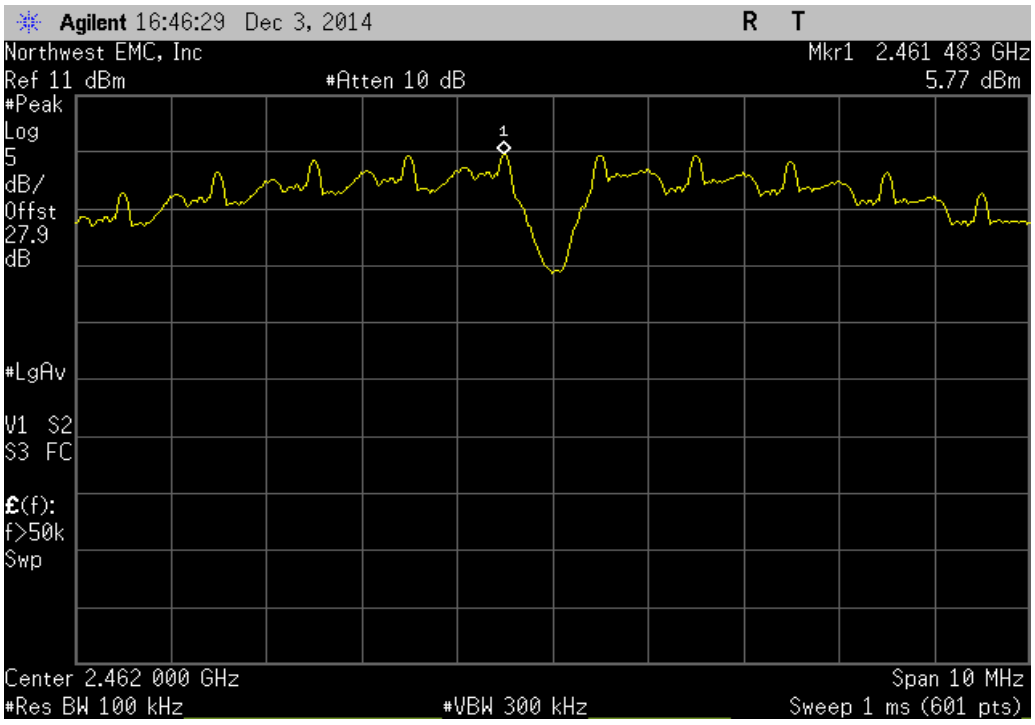
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		5.71	-15.2	-9.49	8	Pass



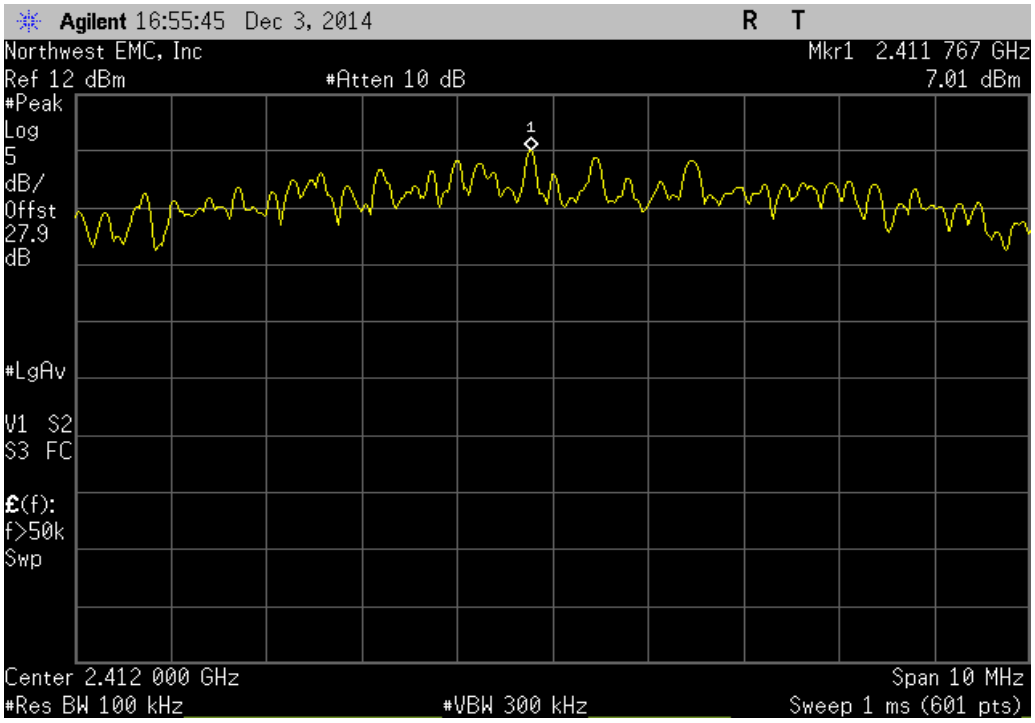
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		5.457	-15.2	-9.743	8	Pass



20MHz, 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
		5.766	-15.2	-9.434	8	Pass

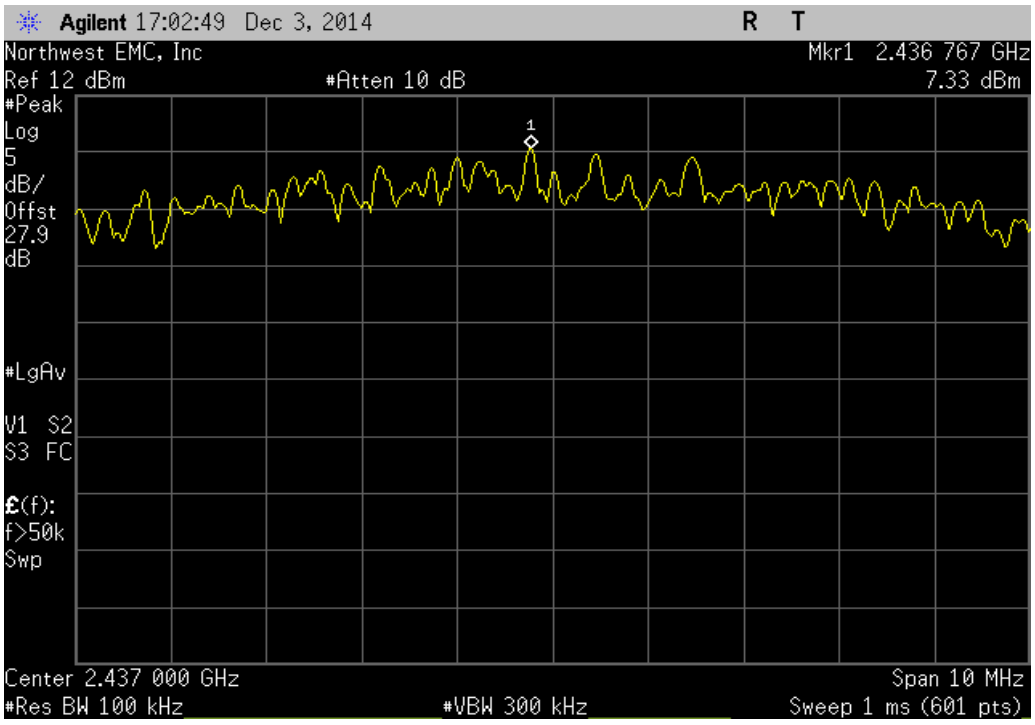


20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		7.014	-15.2	-8.186	8	Pass

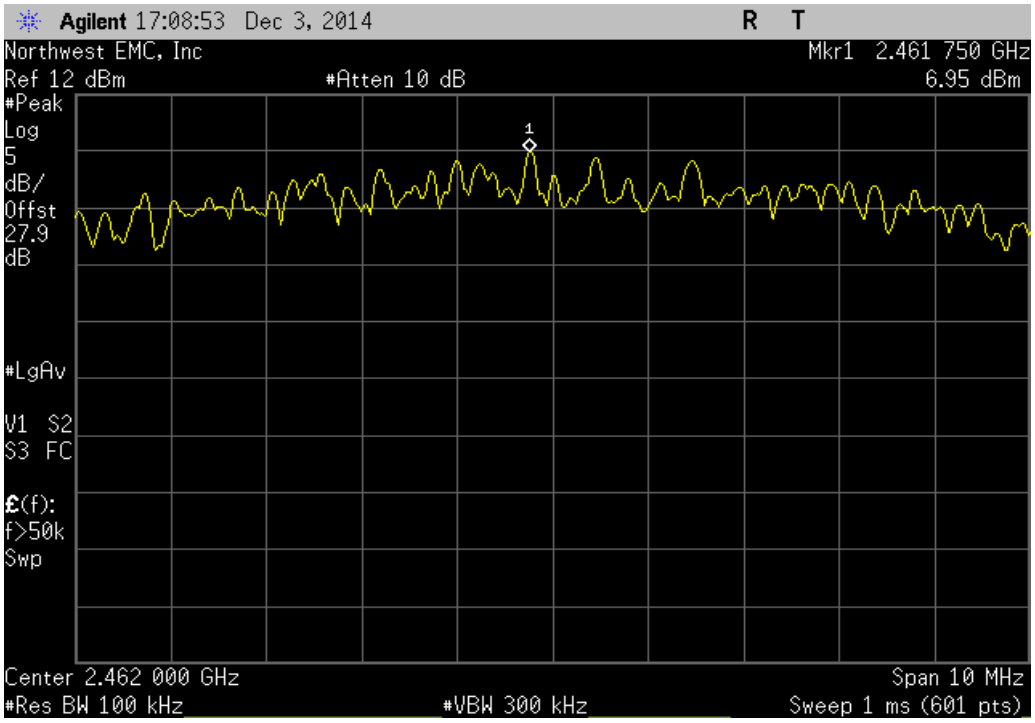


POWER SPECTRAL DENSITY

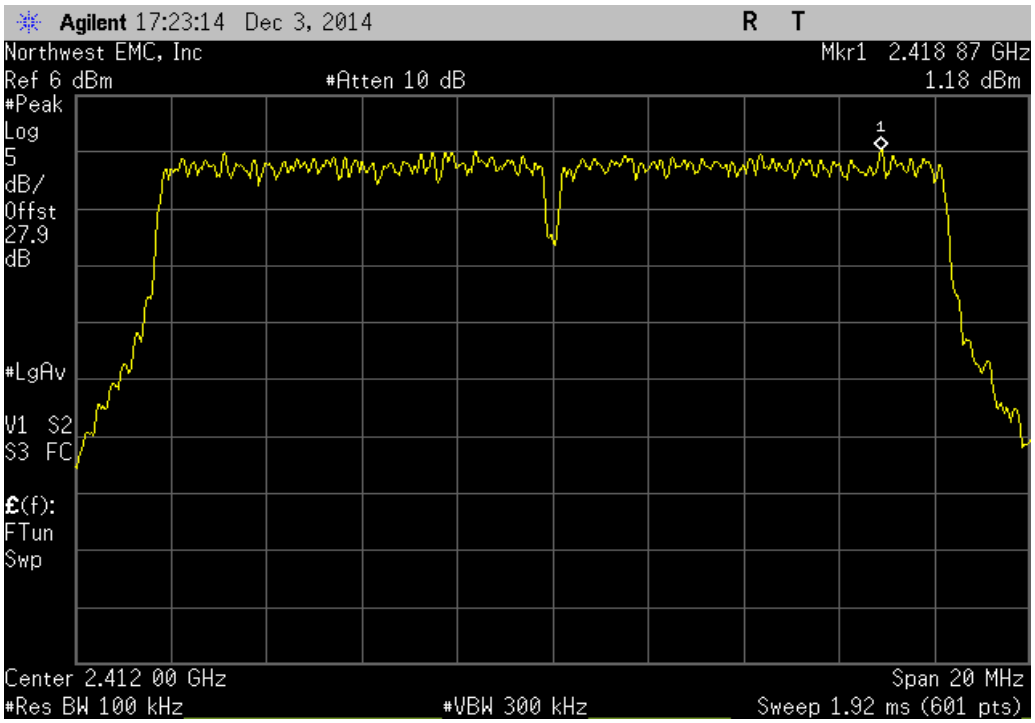
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		7.332	-15.2	-7.868	8	Pass



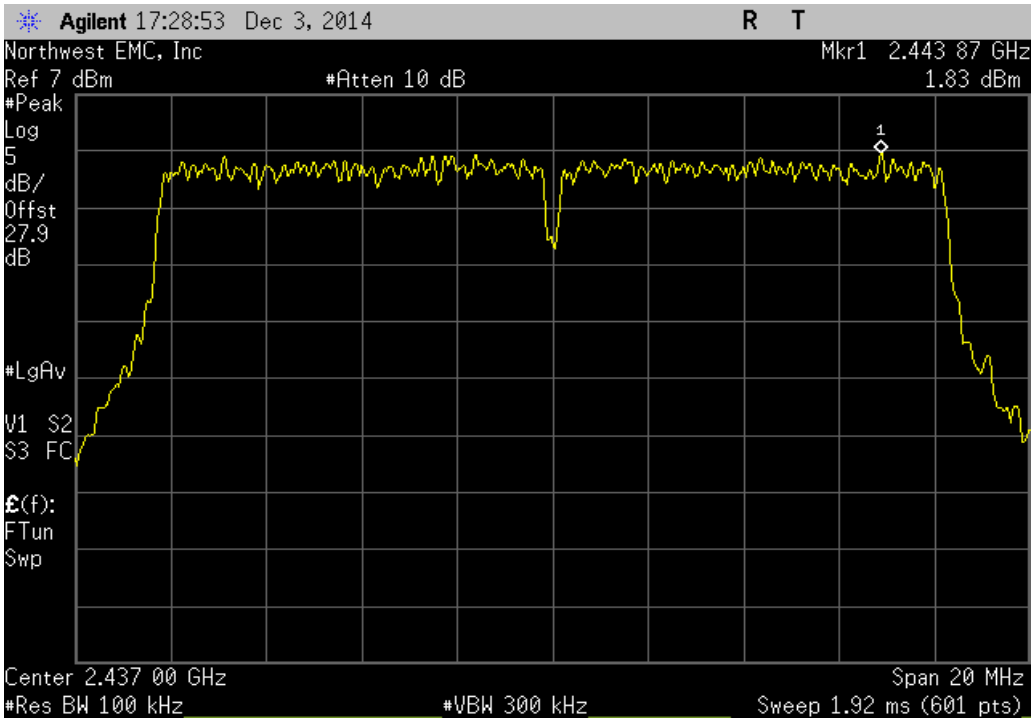
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		6.955	-15.2	-8.245	8	Pass



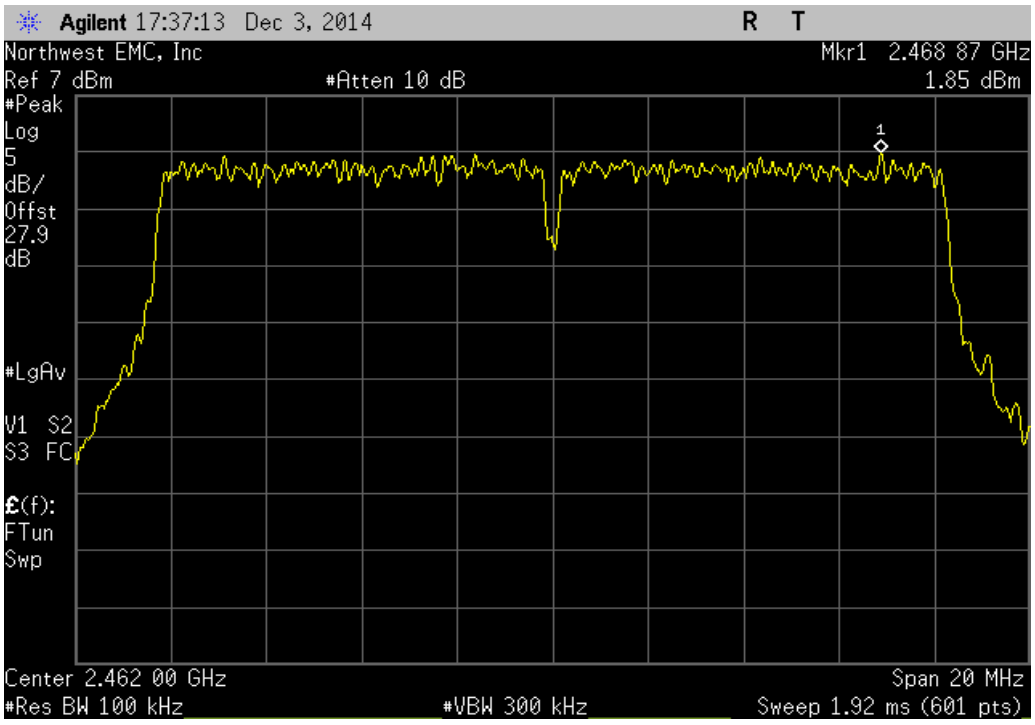
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		1.18	-15.2	-14.02	8	Pass



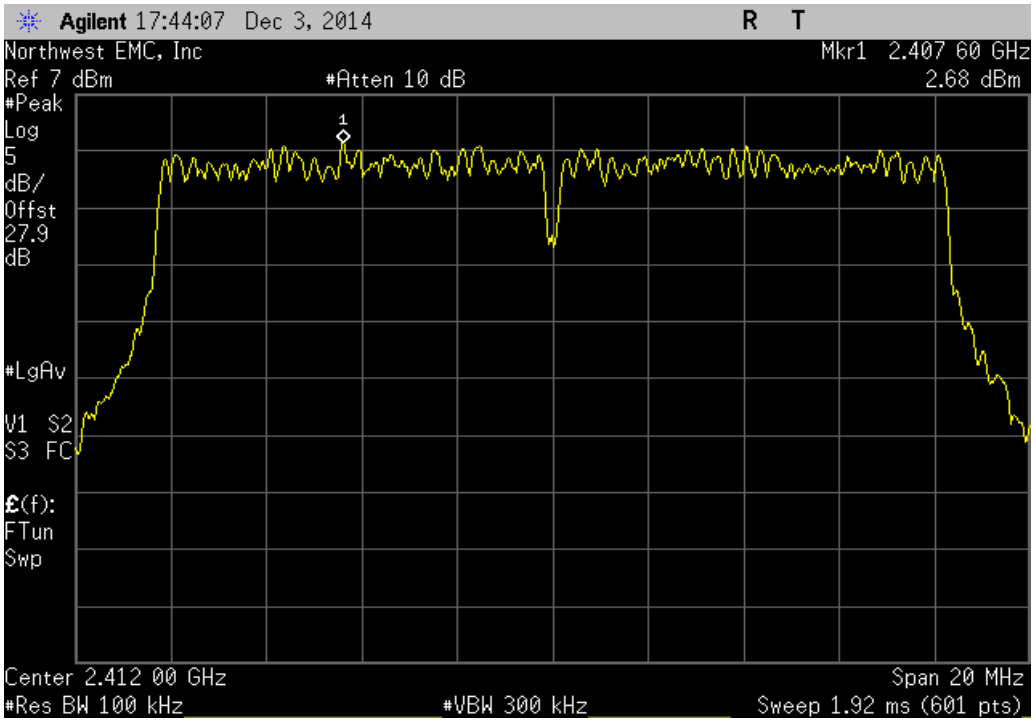
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		1.831	-15.2	-13.369	8	Pass



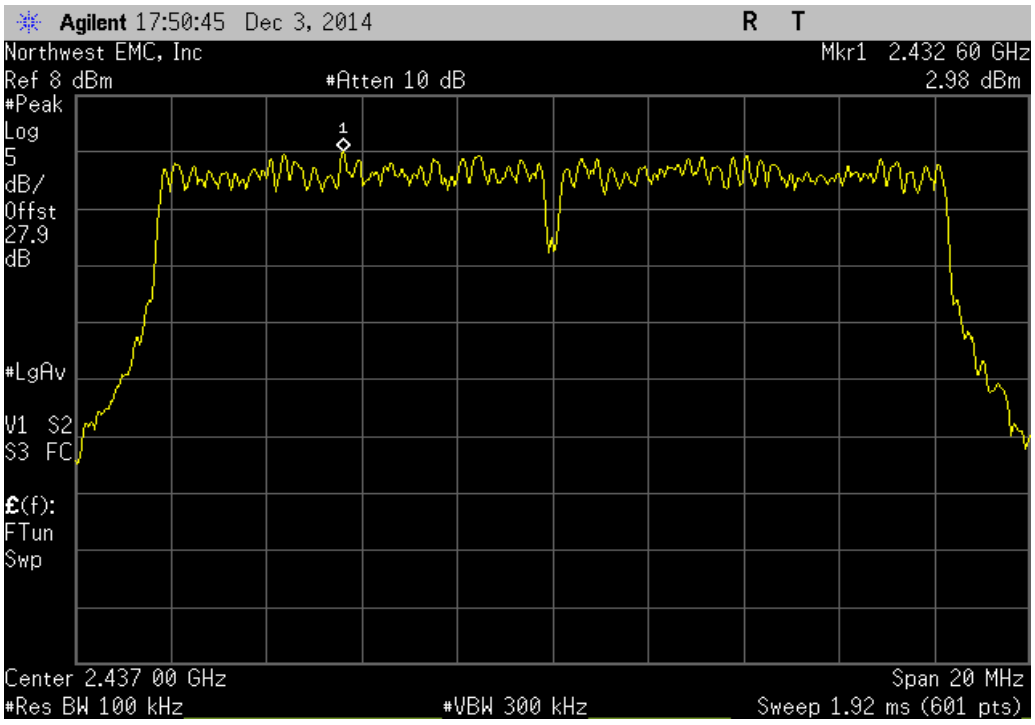
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		1.854	-15.2	-13.346	8	Pass



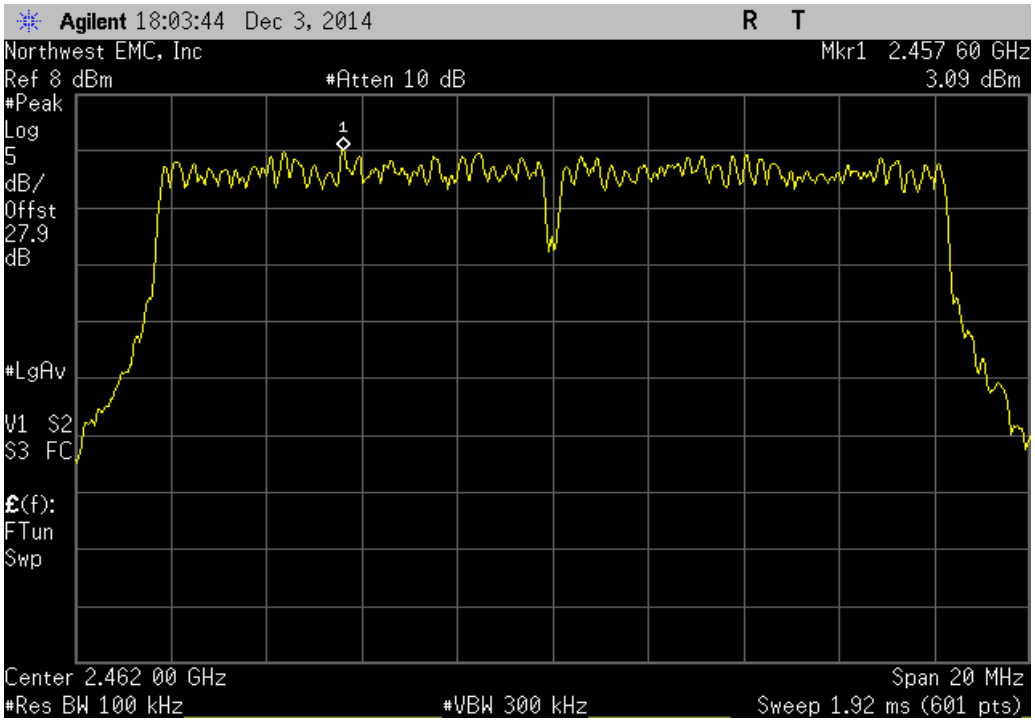
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		2.68	-15.2	-12.52	8	Pass



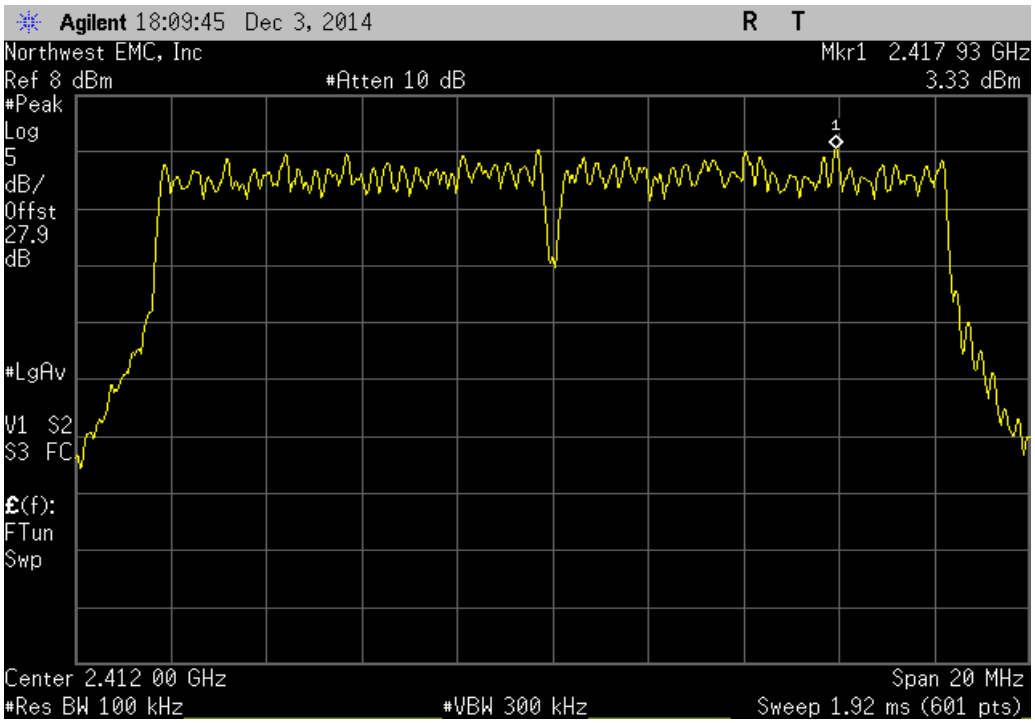
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		2.982	-15.2	-12.218	8	Pass



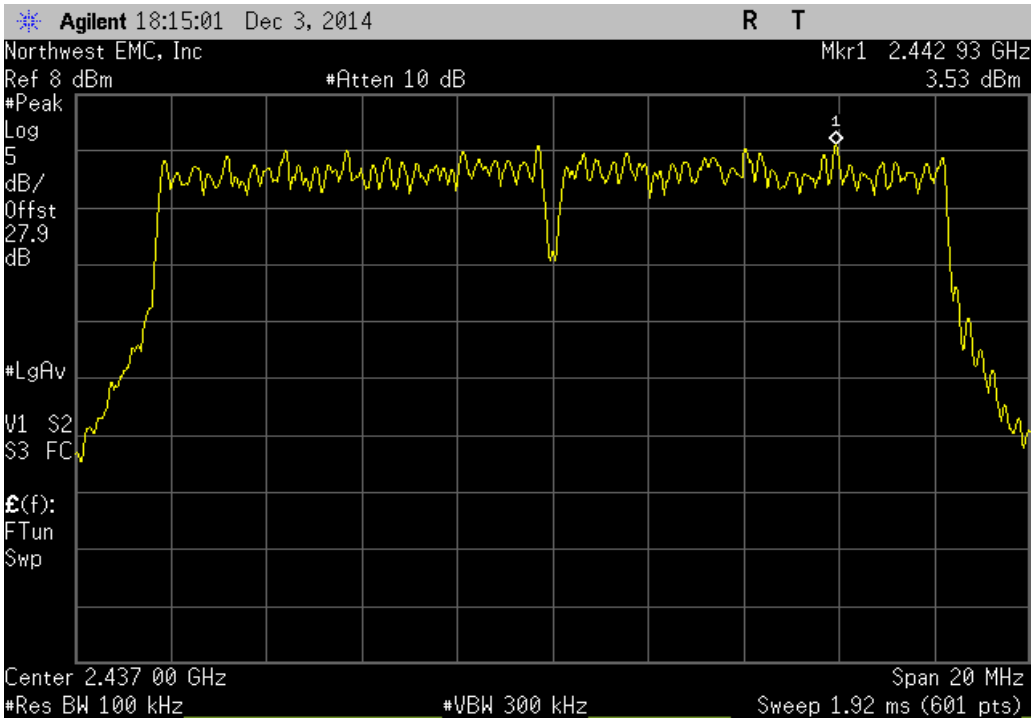
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		3.085	-15.2	-12.115	8	Pass



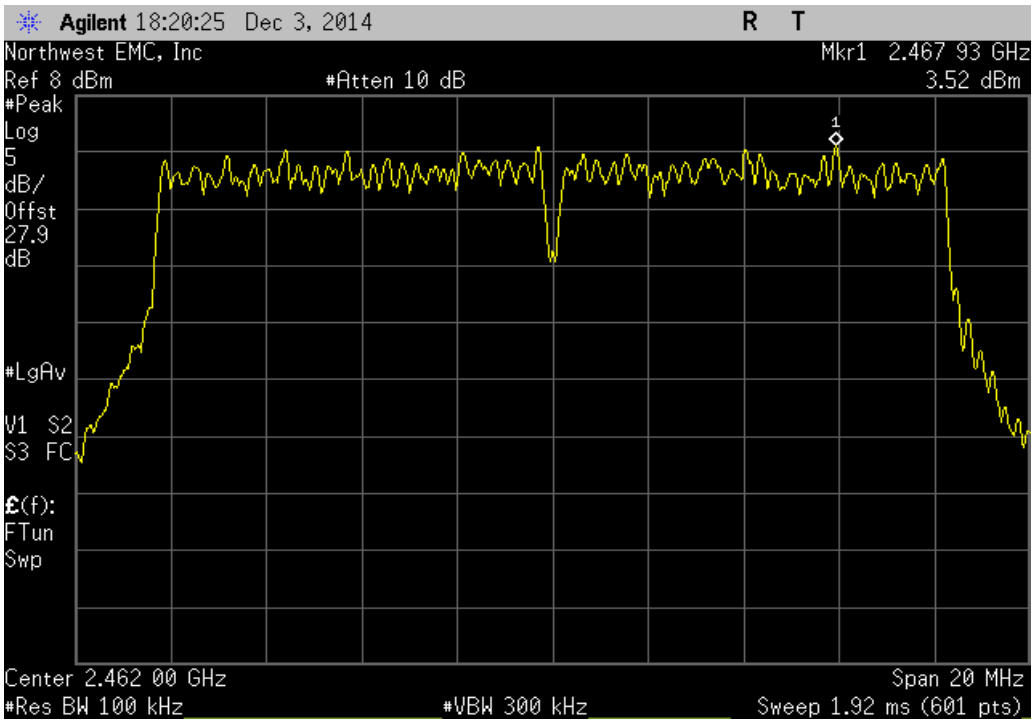
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		3.334	-15.2	-11.866	8	Pass



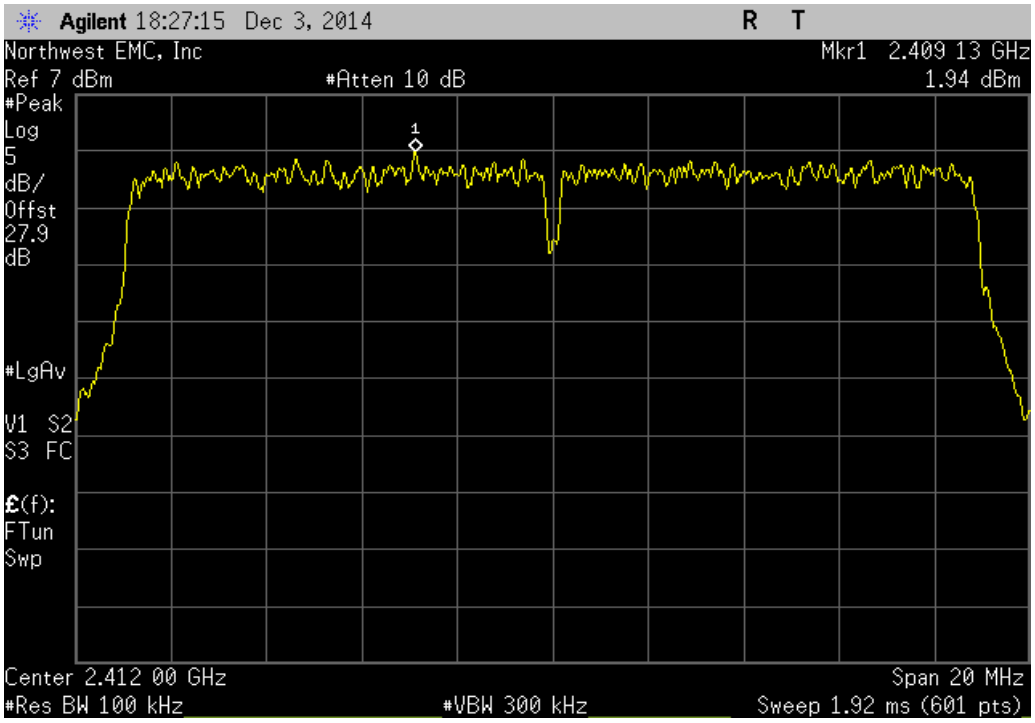
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		3.527	-15.2	-11.673	8	Pass



20MHz, 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
		3.518	-15.2	-11.682	8	Pass

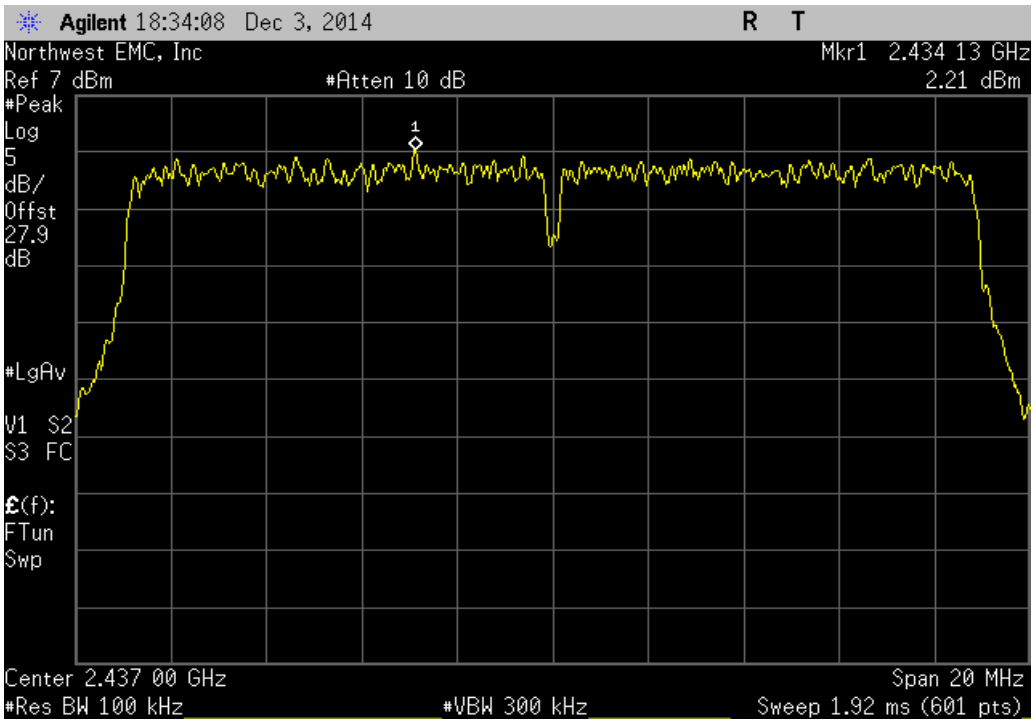


20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		1.938	-15.2	-13.262	8	Pass

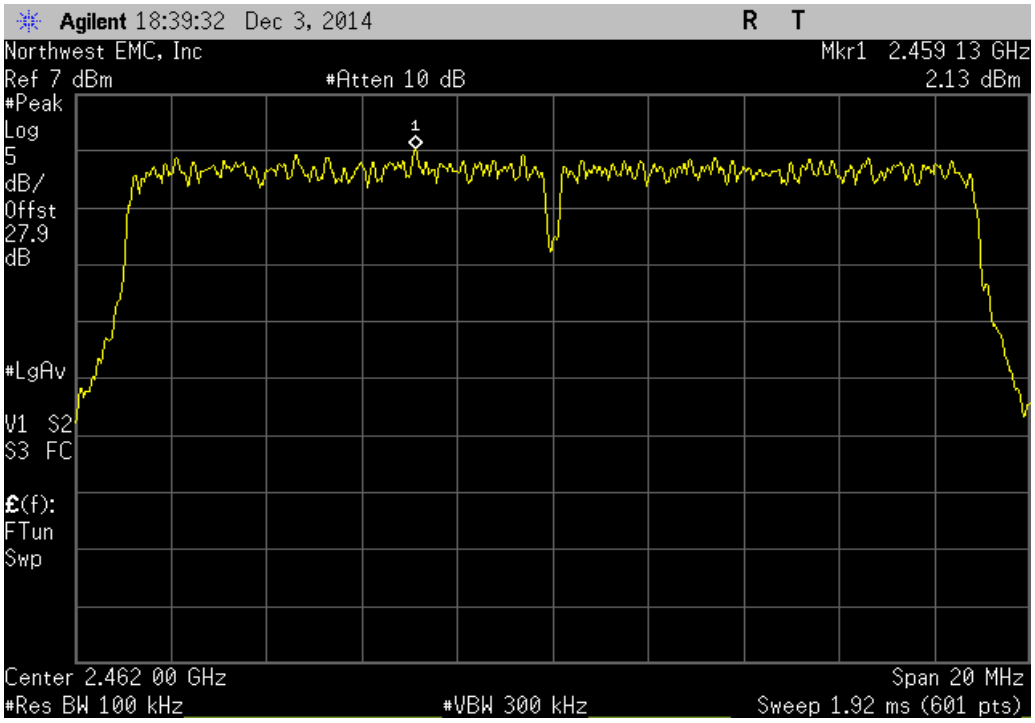


POWER SPECTRAL DENSITY

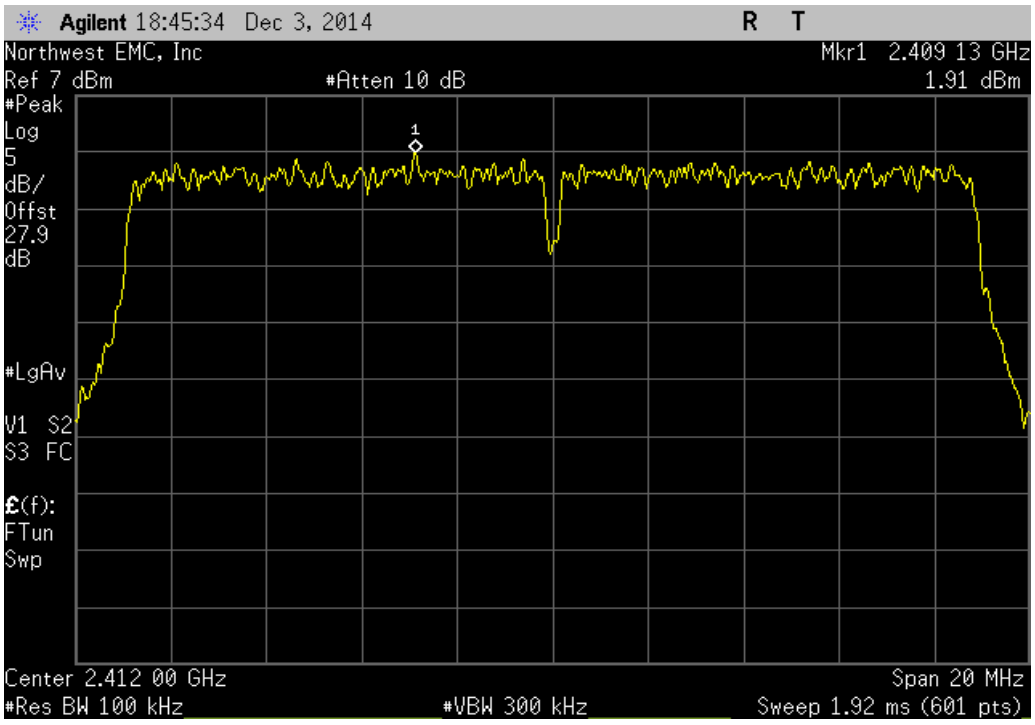
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Mid Channel 6, 2437 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		2.208	-15.2	-12.992	8	Pass



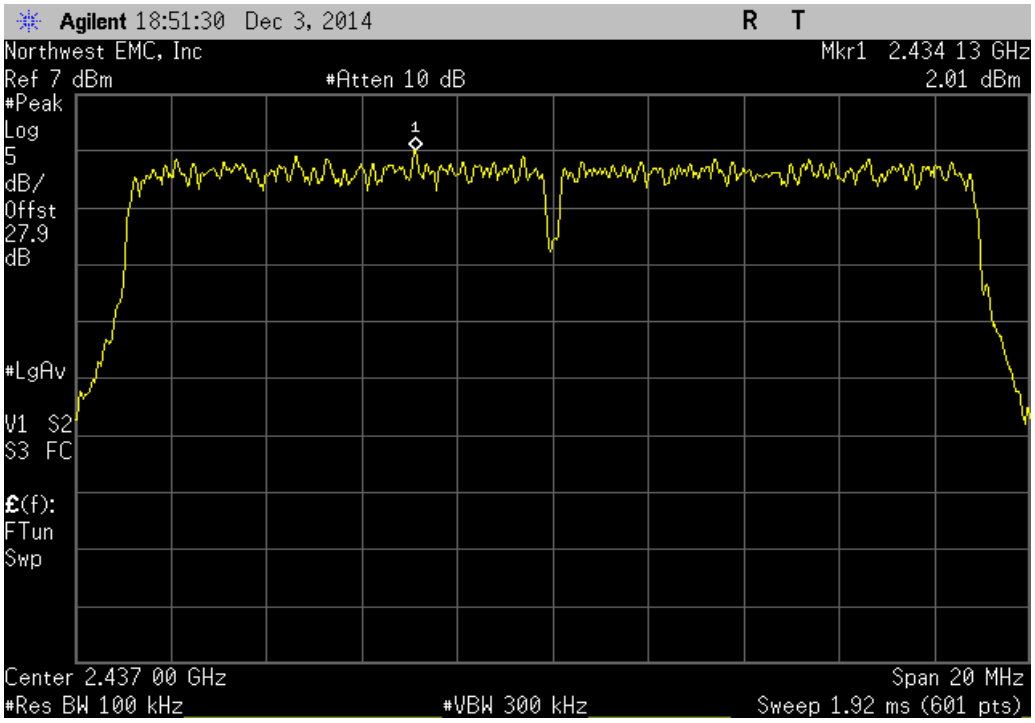
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 11, 2462 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		2.131	-15.2	-13.069	8	Pass



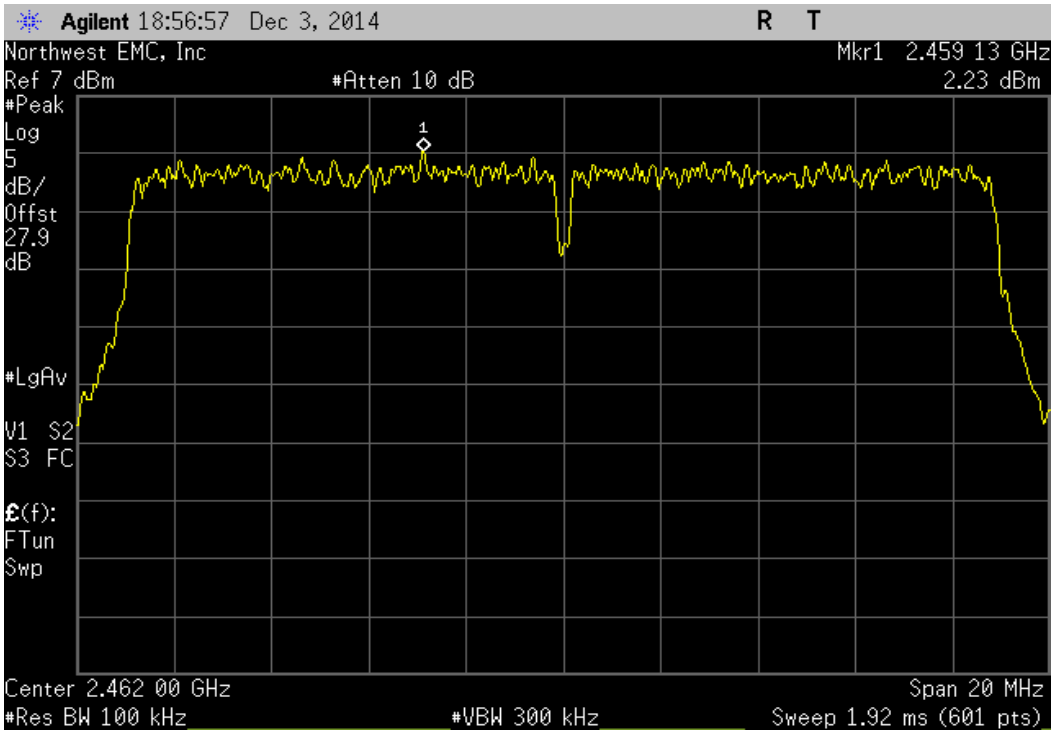
20MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1, 2412 MHz						
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Results
		1.914	-15.2	-13.286	8	Pass



20MHz, 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
		2.006	-15.2	-13.194	8	Pass



20MHz, 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
		2.231	-15.2	-12.969	8	Pass



DUTY CYCLE

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 test software provided for operation in a fixed, single channel mode allows the EUT to operate continuously at 100% Duty Cycle.