



Microsoft Corporation

1601

FCC 15.207:2013

FCC 15.247:2013

Report #: MCSO1665



Report Prepared By Northwest EMC Inc.

NORTHWEST EMC – (888) 364-2378 – www.nwemc.com

California – Minnesota – Oregon – New York – Washington

CERTIFICATE OF TEST

Last Date of Test: July 25, 2013
Microsoft Corporation
Model: 1601

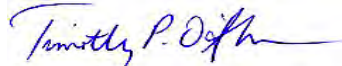
Emissions

Test Description	Specification	Test Method	Pass/Fail
Output Power	FCC 15.247:2013	ANSI C63.10:2009	Pass
Occupied Bandwidth	FCC 15.247:2013	ANSI C63.10:2009	Pass
Power Spectral Density	FCC 15.247:2013	ANSI C63.10:2009	Pass
Spurious Conducted Emissions	FCC 15.247:2013	ANSI C63.10:2009	Pass
Band Edge Compliance	FCC 15.247:2013	ANSI C63.10:2009	Pass
Spurious Radiated Emissions	FCC 15.247:2013	ANSI C63.10:2009	Pass
AC Powerline Conducted Emissions	FCC 15.207:2013	ANSI C63.10:2009	Pass

Deviations From Test Standards

None

Approved By:



Tim O'Shea, Operations Manager



NVLAP Lab Code: 200629-0

Test Facility

The measurement facility used to collect the data is located at:

Northwest EMC, Inc.
 19201 120th Avenue NE, Suite 104
 Bothell, WA 98011

Phone: (425) 984-6600 Fax: 984-6602

This site has been fully described in a report filed with and accepted by the FCC (Federal Communications Commission) and Industry Canada (Site filing #2834C-1).

This report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government of the United States of America.

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. This Report may only be duplicated in its entirety. The results of this test pertain only to the sample(s) tested. The specific description is noted in each of the individual sections of the test report supporting this certificate of test.

REVISION HISTORY

Revision Number	Description	Date	Page Number
00	None		

Barometric Pressure

The recorded barometric pressure has been normalized to sea level.

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 listed below. 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 16-4-1 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)	0.12	-0.01
Amplitude Accuracy (dB)	0.49	-0.49
Conducted Power (dB)	0.41	-0.41
Radiated Power via Substitution (dB)	0.69	-0.68
Temperature (degrees C)	0.81	-0.81
Humidity (% RH)	2.89	-2.89
Field Strength (dB)	3.80	-3.80
AC Powerline Conducted Emissions (dB)	2.94	-2.94

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

KCC / 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.

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.

Russia

GOST – Accredited by Certinform VNIINMASH, CERTINFO, SAMTES, and Federal CHEC to perform EMC and Hygienic testing for Information Technology products to GOST standards.

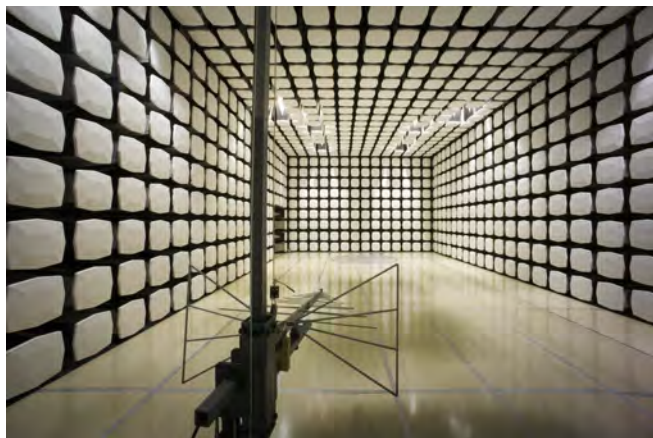
SCOPE

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

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



Oregon Labs EV01-12 22975 NW Evergreen Pkwy Hillsboro, OR 97124 (503) 844-4066	California Labs OC01-13 41 Tesla Irvine, CA 92618 (949) 861-8918	New York Labs NY01-04 4939 Jordan Rd. Elbridge, NY 13060 (315) 685-0796	Minnesota Labs MN01-08 9349 W Broadway Ave. Brooklyn Park, MN 55445 (763) 425-2281	Washington Labs NC01-05, SU02, SU07 19201 120 th Ave. NE Bothell, WA 98011 (425) 984-6600
VCCI				
A-0108	A-0029		A-0109	A-0110
Industry Canada				
2834D-1, 2834D-2	2834B-1, 2834B-2, 2834B-3		2834E-1	2834C-1
NVLAP				
NVLAP Lab Code: 200630-0	NVLAP Lab Code: 200676-0	NVLAP Lab Code: 200761-0	NVLAP Lab Code: 200881-0	NVLAP Lab Code: 200629-0



Client and Equipment Under Test (EUT) Information

Company Name:	Microsoft Corporation
Address:	One Microsoft Way
City, State, Zip:	Redmond, WA 98052-6399
Test Requested By:	Mike Boucher
Model:	1601
First Date of Test:	July 09, 2013
Last Date of Test:	August 13, 2013
Receipt Date of Samples:	July 08, 2013
Equipment Design Stage:	Production
Equipment Condition:	No Damage

Information Provided by the Party Requesting the Test

Functional Description of the EUT (Equipment Under Test):
Handheld Computing Device with 802.11 a/g/b/n and Bluetooth radios.
Testing Objective:
To demonstrate compliance under FCC 15.247 for operation in the 2.4 GHz and 5 GHz.

Configuration MCSO1665- 1

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Handheld Computing Device	Microsoft Corporation	1601	006079632553

Peripherals in test setup boundary			
Description	Manufacturer	Model/Part Number	Serial Number
AC Adapter	Microsoft Corporation	X865587-001	0D130T053ZA34
USB Ethernet Adapter	LinkSys	USB300M	CU906M715622

Remote Equipment Outside of Test Setup Boundary			
Description	Manufacturer	Model/Part Number	Serial Number
Remote Laptop	Lenovo	4171-53U	R9-N8A80 12/04

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
AC Power	No	0.5m	No	AC Adapter	AC Mains
DC Power	No	1.5m	No	AC Adapter	Handheld Computing Device
USB	Yes	0.1m	No	USB Ethernet Adapter	Handheld Computing Device
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

Configuration MCSO1665- 2

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Handheld Computing Device	Microsoft Corporation	1601	006079632553

Peripherals in test setup boundary			
Description	Manufacturer	Model/Part Number	Serial Number
AC Adapter	Microsoft Corporation	X865587-001	0D130T053ZA34
USB Ethernet Adapter	LinkSys	USB300M	CU906M715622
Detachable Keyboard	Microsoft Corporation	X865049-001	016967623751

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
Headphone	No	1.2m	No	Handheld Computing Device	Ear buds
AC Power	No	0.5m	No	AC Adapter	AC Mains
DC Power	No	1.5m	No	AC Adapter	Handheld Computing Device
USB	Yes	0.1m	No	USB Ethernet Adapter	Handheld Computing Device
Ethernet	No	0.8m	No	Remote Laptop	USB Ethernet Adapter
Display Port	Yes	2.0m	No	Handheld Computing Device	Unterminated
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

Configuration MCSO1665- 3

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Handheld Computing Device	Microsoft Corporation	1601	017980332453

Peripherals in test setup boundary			
Description	Manufacturer	Model/Part Number	Serial Number
USB Ethernet Adapter	LinkSys	USB300M	CU906M715622

Remote Equipment Outside of Test Setup Boundary			
Description	Manufacturer	Model/Part Number	Serial Number
Remote Laptop	Lenovo	4171-53U	R9-N8A80 12/04

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
USB	Yes	0.1m	No	USB Ethernet Adapter	Handheld Computing Device
Cat 5 cable	No	2.0m	No	USB Ethernet Adapter	Remote Laptop
DC Power Lead x2	No	1.5m	No	DC Power Supply	Handheld Computing Device
DC Power Lead x2	No	.5m	No	Multimeter	DC Power Supply
AC Power Cable	No	.8m	No	DC Power Supply	AC Mains
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

Configuration MCSO1665- 4

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Handheld Computing Device	Microsoft Corporation	1601	006079632553

Peripherals in test setup boundary			
Description	Manufacturer	Model/Part Number	Serial Number
AC Adapter	Microsoft Corporation	X865587-001	0D130T053ZA34
USB Ethernet Adapter	LinkSys	USB300M	CU906M715622
Detachable Keyboard	Microsoft Corporation	X865049-001	016967623751

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
Headphone	No	1.2m	No	Handheld Computing Device	Ear buds
AC Power	No	0.5m	No	AC Adapter	AC Mains
DC Power	No	1.5m	No	AC Adapter	Handheld Computing Device
USB	Yes	0.1m	No	USB Ethernet Adapter	Handheld Computing Device
Ethernet	No	0.8m	No	Remote Laptop	USB Ethernet Adapter
Display Port	Yes	2.0m	No	Handheld Computing Device	Unterminated
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

Configuration MCSO1665- 5

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Handheld Computing Device	Microsoft Corporation	1601	018612332553

Peripherals in test setup boundary			
Description	Manufacturer	Model/Part Number	Serial Number
AC Adapter	Microsoft Corporation	X865587-001	0D130T0MM9334
USB Ethernet Adapter	LinkSys	USB300M	CU906M703796
Detachable Keyboard	Microsoft Corporation	81E5-13100R03	000883222254

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
AC Power	No	0.5m	No	AC Adapter	AC Mains
DC Power	No	1.5m	No	AC Adapter	Handheld Computing Device
USB	Yes	0.1m	No	USB Ethernet Adapter	Handheld Computing Device
Audio	No	0.8m	No	Handheld Computing Device	Unterminated
Ethernet	No	1.5m	No	USB Ethernet Adapter	Unterminated
Display Port	Yes	1.8m	No	Handheld Computing Device	Unterminated
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	7/10/2013	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	7/10/2013	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	7/10/2013	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	7/10/2013	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	7/10/2013	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	7/17/2013	Spurious Radiated 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	7/25/2013	AC Powerline Conducted Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

This power table represents the power level settings used in the customer provided radio control test software during testing.

FCC 15.247		Test Description						
		Radiated Spurious	Output Power	Power Spectral Density	Occupied Bandwidth	Band Edge Compliance	Spurious Conducted Emissions	AC Powerline Conducted
Frequency Band	Channel	Power (dBm)	Power (dBm)	Power (dBm)	Power (dBm)	Power (dBm)	Power (dBm)	Power (dBm)
2400 to 2483.5 MHz	Ch 1	16	16	16	16	16	16	16
	Ch 6	16	16	16	16	16	16	16
	Ch 11	16	16	16	16	16	16	16
	Ch 1/5 - 40 MHz	11	11	11	11	16	16	16
	Ch 4/8 - 40 MHz	16	16	16	16	16	16	16
	Ch 7/11 - 40 MHz	11	11	11	11	16	16	16
5.725 to 5.85 GHz	Ch 149	12	12	12	12	12	12	12
	Ch 157	12	12	12	12	12	12	12
	Ch 165	12	12	12	12	12	12	12
	Ch 149/153-40 MHz	12	10	10	10	12	12	12
	Ch 157/161-40 MHz	12	10	10	10	12	12	12

Duty Cycle

TEST DESCRIPTION

The Duty Cycle (x) were measured for each of the EUT operating modes. The measurements were made using a zero span on the spectrum analyzer to see the pulses in the time domain. The transmit power was set to its default maximum. A direct connection was made between the RF output of the EUT and a spectrum analyzer. Attenuation and a DC block were used

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

The EUT operates at 100% Duty Cycle.

Output Power - Antenna A-B

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
Signal Generator	Agilent	N5183A	TID	9/19/2011	36
Attenuator	Fairview Microwave	SA4014-20	TKE	2/12/2013	12
Spectrum Analyzer	Agilent	E4446A	AAT	6/28/2012	24
NC02 Cable	ESM Cable Corp.	TTBJ-141 KMKM-72	NC5	7/3/2013	12

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.

Method Option 1 found in KDB 558074 DTS D01 Measurement Section 8.1.1 was used because the RBW on the analyzer was greater than the Emission Bandwidth of the radio.

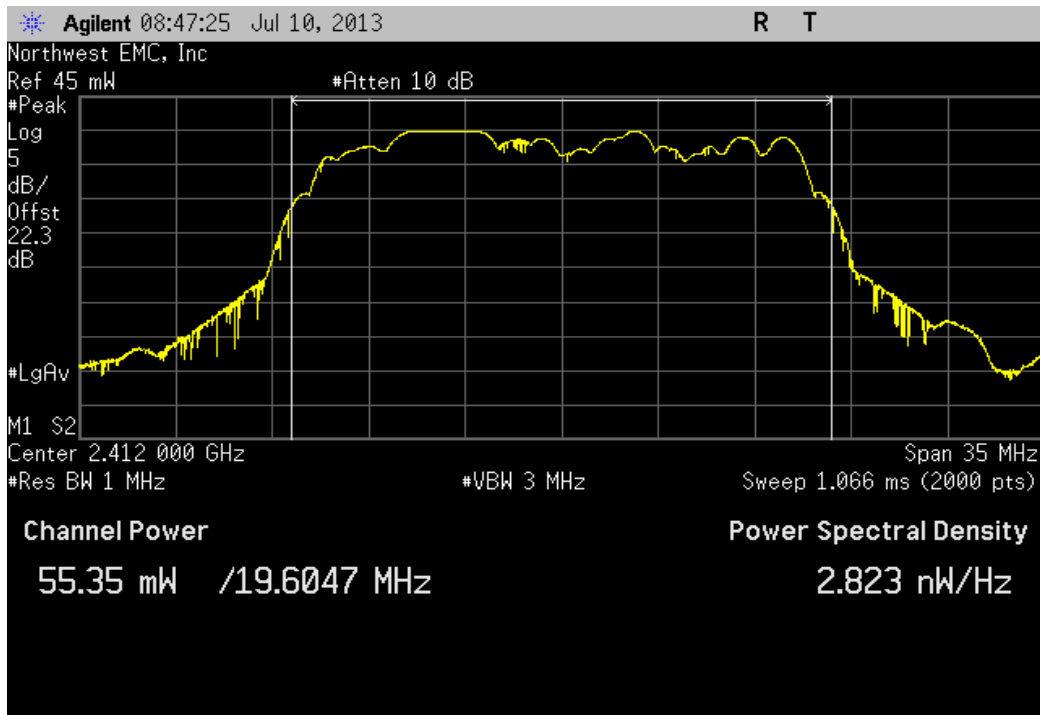
De Facto EIRP Limit: Per 47 CFR 15.247 (b)(1-3), the EUT meets the de facto EIRP limit of +36 dBm.

DC Block was used in-line for measurements made while under test. For channel output power levels, please refer to the accompanying power table included in this report.

EUT: 1601			Work Order: MCS01665		
Serial Number: 006079632553			Date: 08/13/13		
Customer: Microsoft Corporation			Temperature: 23°C		
Attendees: None			Humidity: 50%		
Project: None			Barometric Pres.: 1020mb		
Tested by: Richard Mellroth, Brandon Hobbs		Power: 110VAC/60Hz		Job Site: NC02	
TEST SPECIFICATIONS			Test Method		
FCC 15.247-2013			ANSI C63.10-2009		
COMMENTS					
EUT was operating at 100% Duty Cycle. Adapter cable loss of 0.75 dB for 2.4 GHz channels and 1.3 dB for 5.7 GHz channels was added to analyzer reference level offset.					
DEVIATIONS FROM TEST STANDARD					
None					
Configuration #	1	Signature 			
			Value	Limit	Result
Chain A					
20 MHz					
2400 MHz - 2483.5 MHz Band					
802.11(n) MCS8					
Low Channel 1, 2412 MHz			55.349 mW	< 1 W	Pass
Mid Channel 6, 2437 MHz			69.475 mW	< 1 W	Pass
High Channel 11, 2462 MHz			61.122 mW	< 1 W	Pass
802.11(n) MCS15					
Low Channel 1, 2412 MHz			66.701 mW	< 1 W	Pass
Mid Channel 6, 2437 MHz			68.522 mW	< 1 W	Pass
High Channel 11, 2462 MHz			60.94 mW	< 1 W	Pass
5725 MHz - 5850 MHz Band					
802.11(n) MCS8					
Low Channel 149, 5745 MHz			24.464 mW	< 1 W	Pass
Mid Channel 157, 5785 MHz			25.814 mW	< 1 W	Pass
High Channel 165, 5825 MHz			18.805 mW	< 1 W	Pass
802.11(n) MCS15					
Low Channel 149, 5745 MHz			24.397 mW	< 1 W	Pass
Mid Channel 157, 5785 MHz			23.609 mW	< 1 W	Pass
High Channel 165, 5825 MHz			20.801 mW	< 1 W	Pass
40 MHz					
2400 MHz - 2483.5 MHz Band					
802.11(n) MCS8					
Low Channel 1/5, 2422 MHz			22.33 mW	< 1 W	Pass
Mid Channel 4/8, 2437 MHz			70.742 mW	< 1 W	Pass
High Channel 7/11, 2452 MHz			25.221 mW	< 1 W	Pass
802.11(n) MCS15					
Low Channel 1/5, 2422 MHz			29.395 mW	< 1 W	Pass
Mid Channel 4/8, 2437 MHz			84.977 mW	< 1 W	Pass
High Channel 7/11, 2452 MHz			30.552 mW	< 1 W	Pass
5725 MHz - 5850 MHz Band					
802.11(n) MCS8					
Low Channel 149/153, 5755 MHz			14.744 mW	< 1 W	Pass
High Channel 157/161, 5795 MHz			16.204 mW	< 1 W	Pass
802.11(n) MCS15					
Low Channel 149/153, 5755 MHz			19.036 mW	< 1 W	Pass
High Channel 157/161, 5795 MHz			19.743 mW	< 1 W	Pass
Chain B					
20 MHz					
2400 MHz - 2483.5 MHz Band					
802.11(n) MCS8					
Low Channel 1, 2412 MHz			64.008 mW	< 1 W	Pass
Mid Channel 6, 2437 MHz			54.262 mW	< 1 W	Pass
High Channel 11, 2462 MHz			54.815 mW	< 1 W	Pass
802.11(n) MCS15					
Low Channel 1, 2412 MHz			50.446 mW	< 1 W	Pass
Mid Channel 6, 2437 MHz			53.759 mW	< 1 W	Pass
High Channel 11, 2462 MHz			54.182 mW	< 1 W	Pass
5725 MHz - 5850 MHz Band					
802.11(n) MCS8					
Low Channel 149, 5745 MHz			14.908 mW	< 1 W	Pass
Mid Channel 157, 5785 MHz			15.482 mW	< 1 W	Pass
High Channel 165, 5825 MHz			12.623 mW	< 1 W	Pass
802.11(n) MCS15					
Low Channel 149, 5745 MHz			17.379 mW	< 1 W	Pass
Mid Channel 157, 5785 MHz			16.149 mW	< 1 W	Pass
High Channel 165, 5825 MHz			12.931 mW	< 1 W	Pass
40 MHz					
2400 MHz - 2483.5 MHz Band					
802.11(n) MCS8					
Low Channel 1/5, 2422 MHz			21.098 mW	< 1 W	Pass
Mid Channel 4/8, 2437 MHz			55.926 mW	< 1 W	Pass
High Channel 7/11, 2452 MHz			22.497 mW	< 1 W	Pass
802.11(n) MCS15					
Low Channel 1/5, 2422 MHz			17.892 mW	< 1 W	Pass
Mid Channel 4/8, 2437 MHz			52.169 mW	< 1 W	Pass
High Channel 7/11, 2452 MHz			21.256 mW	< 1 W	Pass
5725 MHz - 5850 MHz Band					
802.11(n) MCS8					
Low Channel 149/153, 5755 MHz			11.198 mW	< 1 W	Pass
High Channel 157/161, 5795 MHz			11.092 mW	< 1 W	Pass
802.11(n) MCS15					
Low Channel 149/153, 5755 MHz			10.523 mW	< 1 W	Pass
High Channel 157/161, 5795 MHz			10.504 mW	< 1 W	Pass
Chain AB					
20 MHz					
2400 MHz - 2483.5 MHz Band					
802.11(n) MCS8					
			Chain A (mw)	Chain B (mw)	Summed Power (mW)
Low Channel 1, 2412 MHz			55.3	64.0	119.4
Mid Channel 6, 2437 MHz			69.5	54.3	123.7
High Channel 11, 2462 MHz			61.1	54.8	115.9
802.11(n) MCS15					
Low Channel 1, 2412 MHz			66.7	50.4	117.1
Mid Channel 6, 2437 MHz			68.5	53.8	122.3
High Channel 11, 2462 MHz			60.9	54.2	115.1
5725 MHz - 5850 MHz Band					
802.11(n) MCS8					
Low Channel 149, 5745 MHz			24.5	14.9	39.4
Mid Channel 157, 5785 MHz			25.8	15.5	41.3
High Channel 165, 5825 MHz			18.8	12.6	31.4
802.11(n) MCS15					
Low Channel 149, 5745 MHz			24.4	17.4	41.8
Mid Channel 157, 5785 MHz			23.6	16.1	39.8
High Channel 165, 5825 MHz			20.8	12.9	33.7
40 MHz					
2400 MHz - 2483.5 MHz Band					
802.11(n) MCS8					
Low Channel 1/5, 2422 MHz			22.3	21.1	43.4
Mid Channel 4/8, 2437 MHz			70.7	55.9	126.6
High Channel 7/11, 2452 MHz			25.2	22.5	47.7
802.11(n) MCS15					
Low Channel 1/5, 2422 MHz			29.4	17.9	47.3
Mid Channel 4/8, 2437 MHz			85.0	52.2	137.2
High Channel 7/11, 2452 MHz			30.6	21.3	51.9
5725 MHz - 5850 MHz Band					
802.11(n) MCS8					
Low Channel 149/153, 5755 MHz			14.7	11.2	25.9
High Channel 157/161, 5795 MHz			16.2	11.1	27.3
802.11(n) MCS15					
Low Channel 149/153, 5755 MHz			19.0	10.5	29.5
High Channel 157/161, 5795 MHz			19.7	10.5	30.2

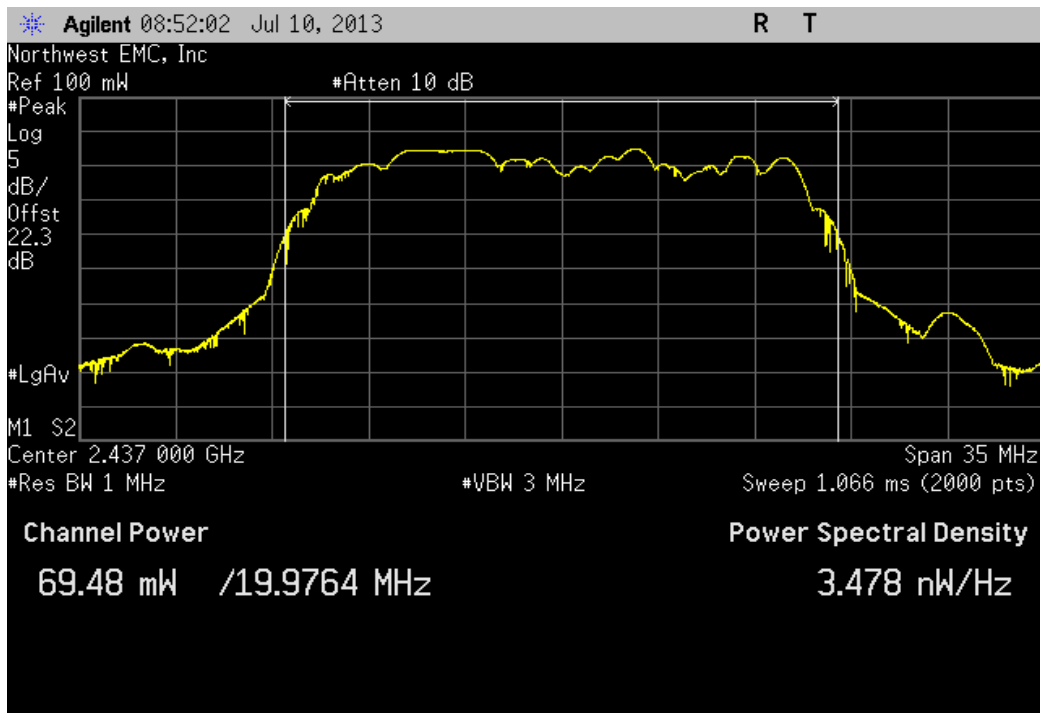
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Low Channel 1, 2412 MHz

Value	Limit	Result
55.349 mW	< 1 W	Pass



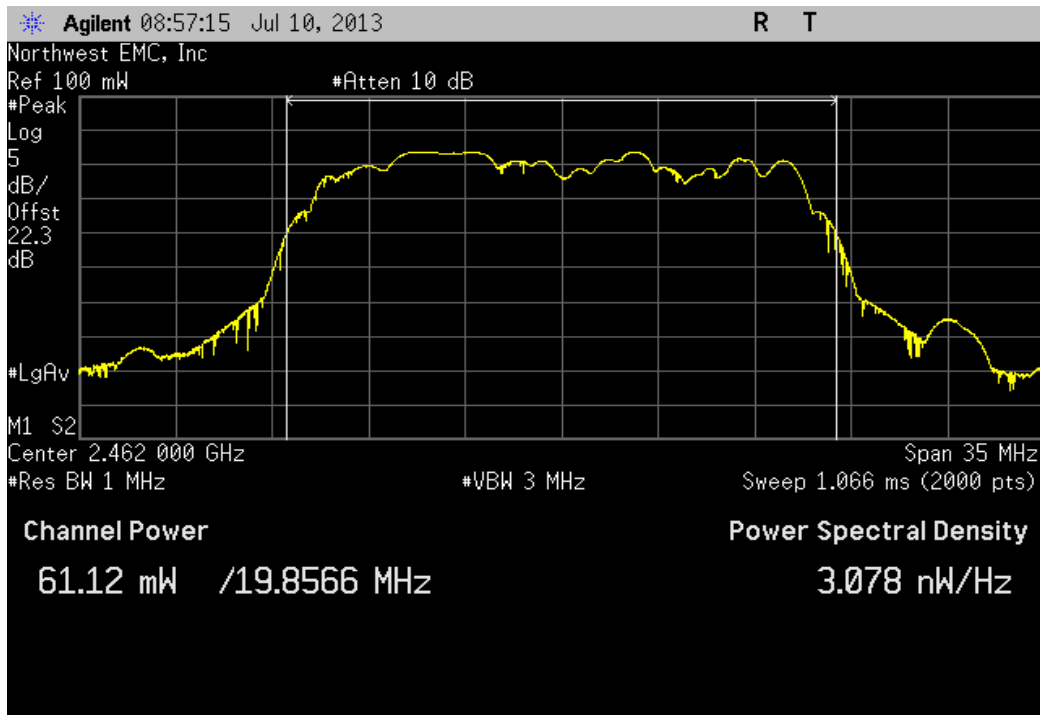
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Mid Channel 6, 2437 MHz

Value	Limit	Result
69.475 mW	< 1 W	Pass



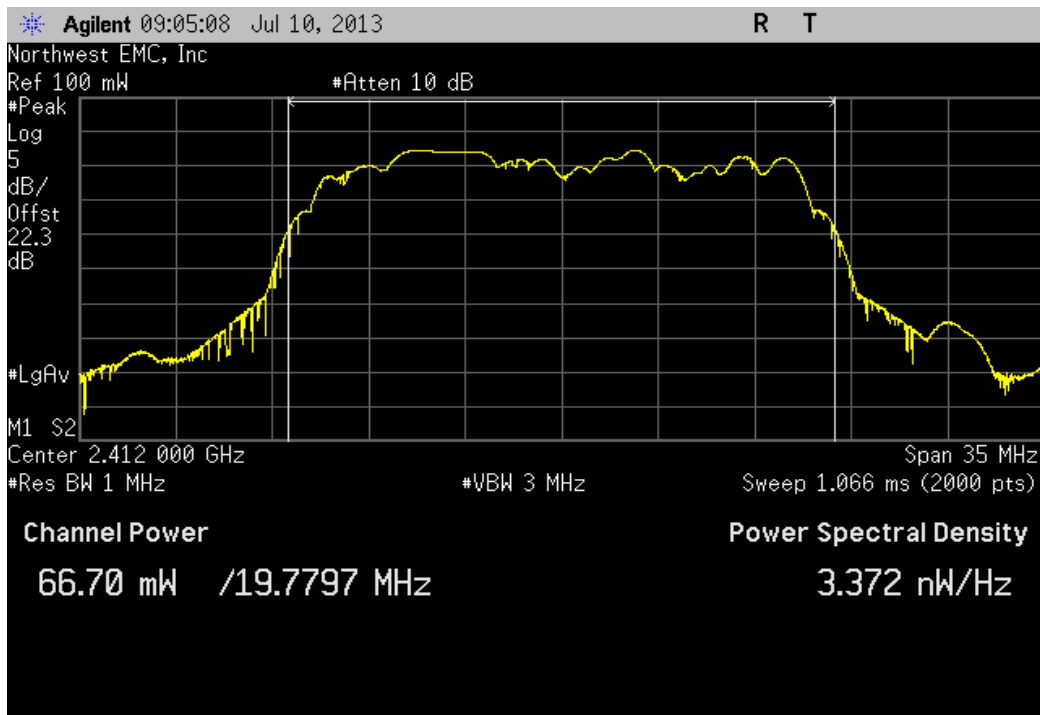
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, High Channel 11, 2462 MHz

Value	Limit	Result
61.122 mW	< 1 W	Pass



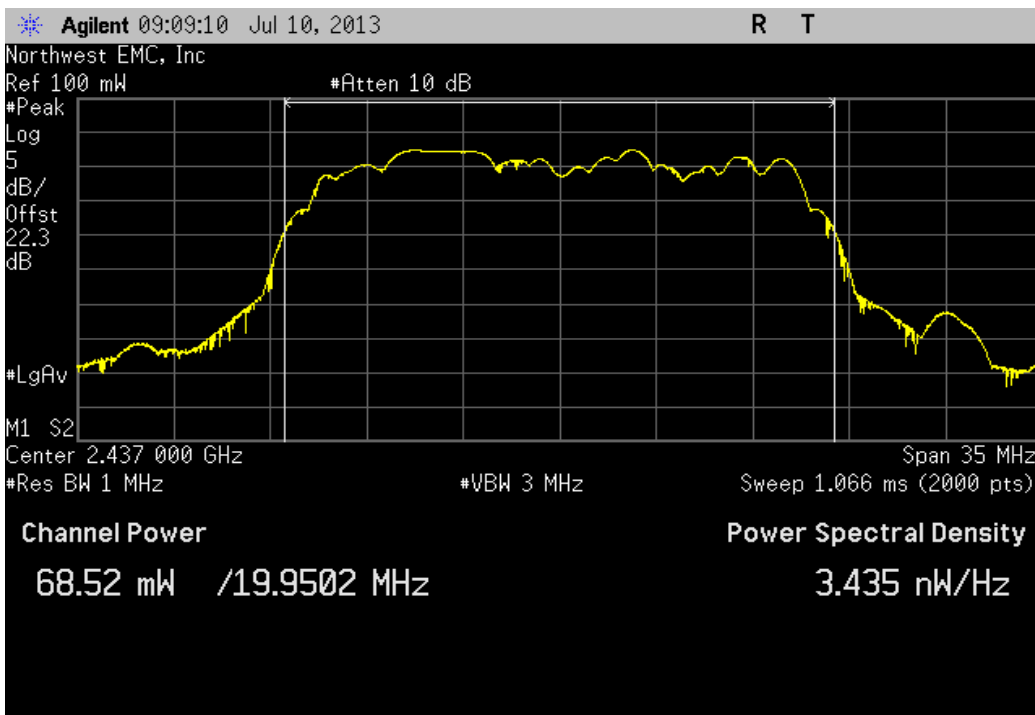
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Low Channel 1, 2412 MHz

Value	Limit	Result
66.701 mW	< 1 W	Pass



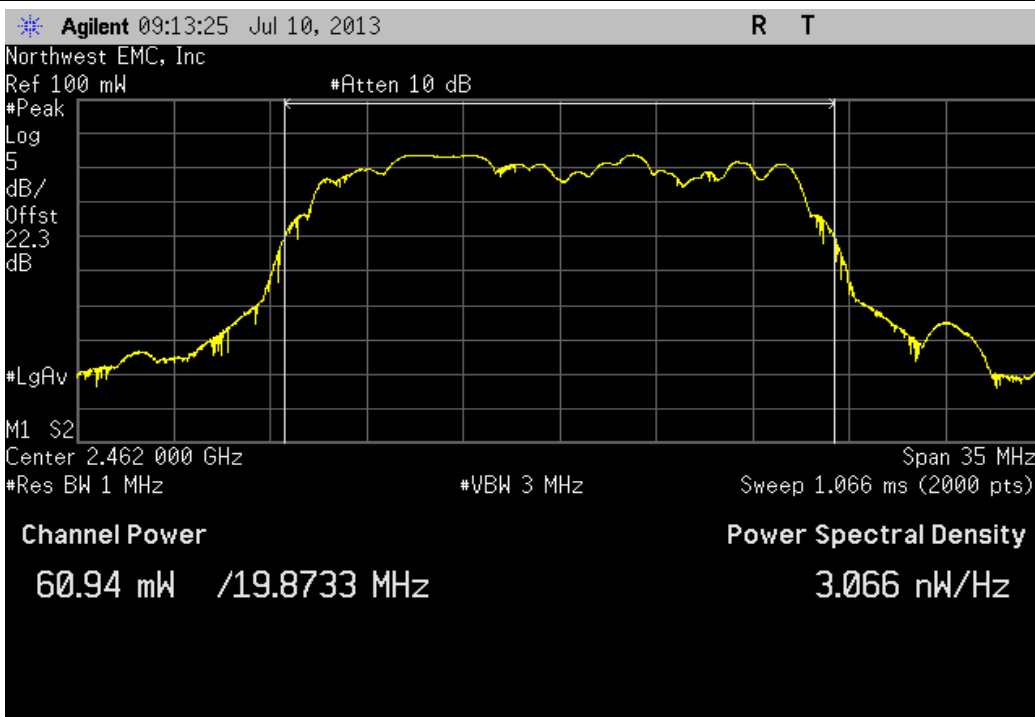
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Mid Channel 6, 2437 MHz

Value	Limit	Result
68.522 mW	< 1 W	Pass



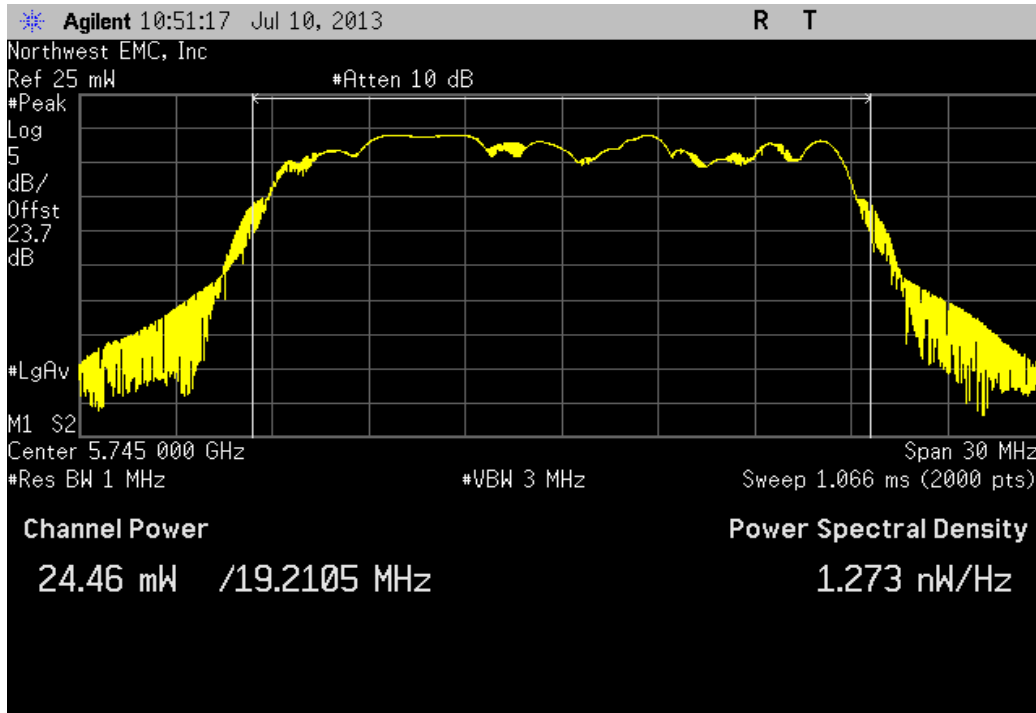
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, High Channel 11, 2462 MHz

Value	Limit	Result
60.94 mW	< 1 W	Pass



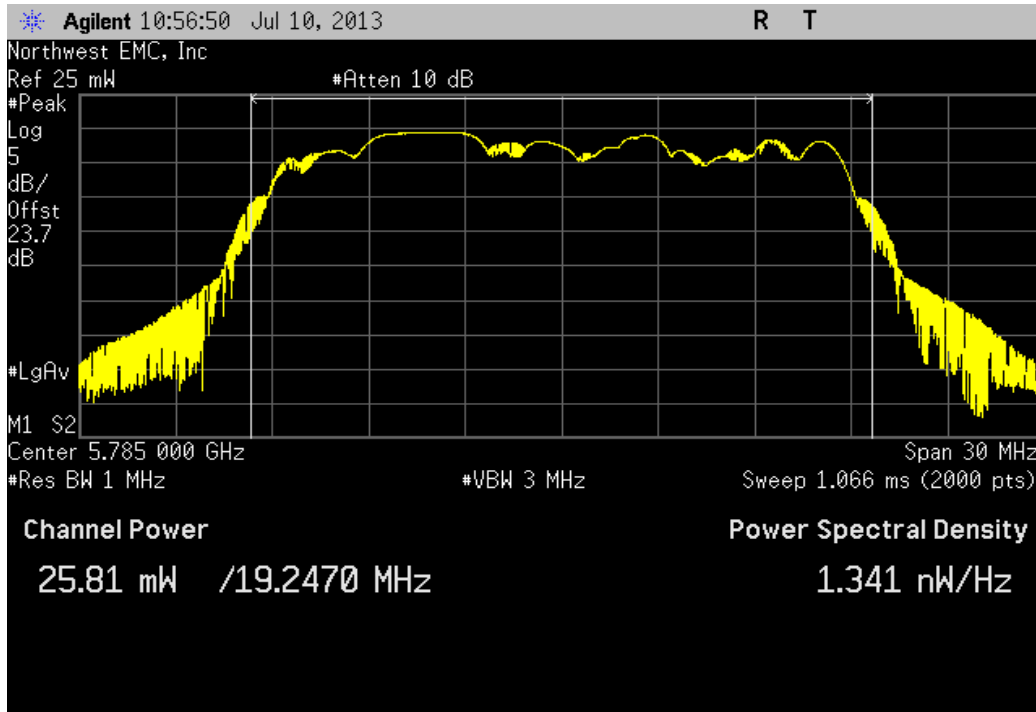
Chain A, 20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS8, Low Channel 149, 5745 MHz

Value	Limit	Result
24.464 mW	< 1 W	Pass



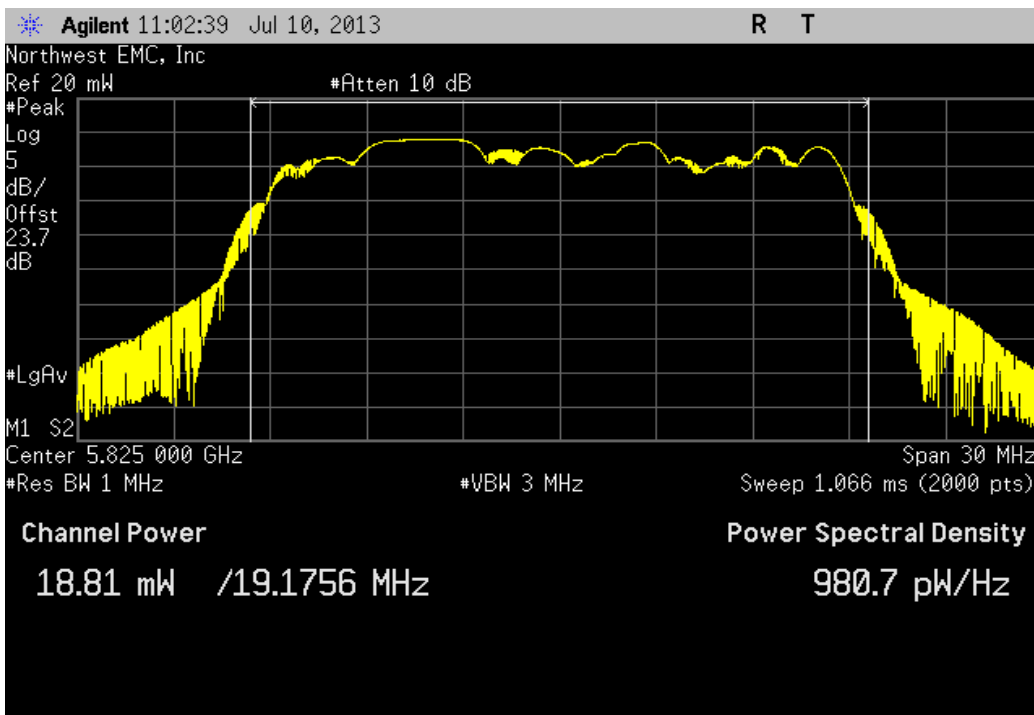
Chain A, 20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS8, Mid Channel 157, 5785 MHz

Value	Limit	Result
25.814 mW	< 1 W	Pass



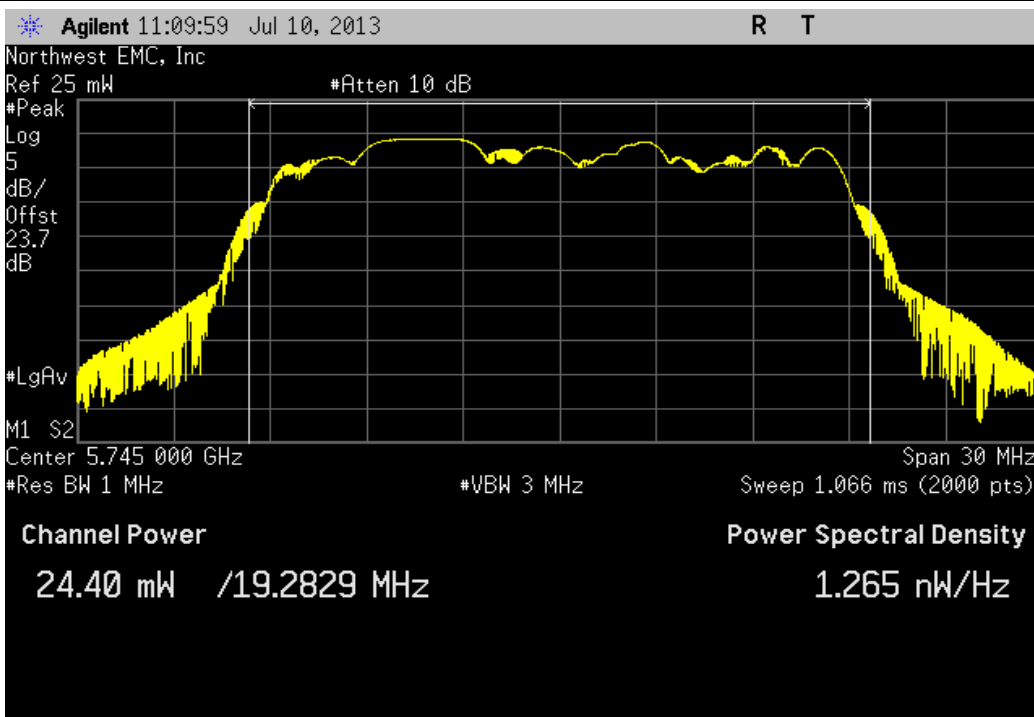
Chain A, 20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS8, High Channel 165, 5825 MHz

Value	Limit	Result
18.805 mW	< 1 W	Pass



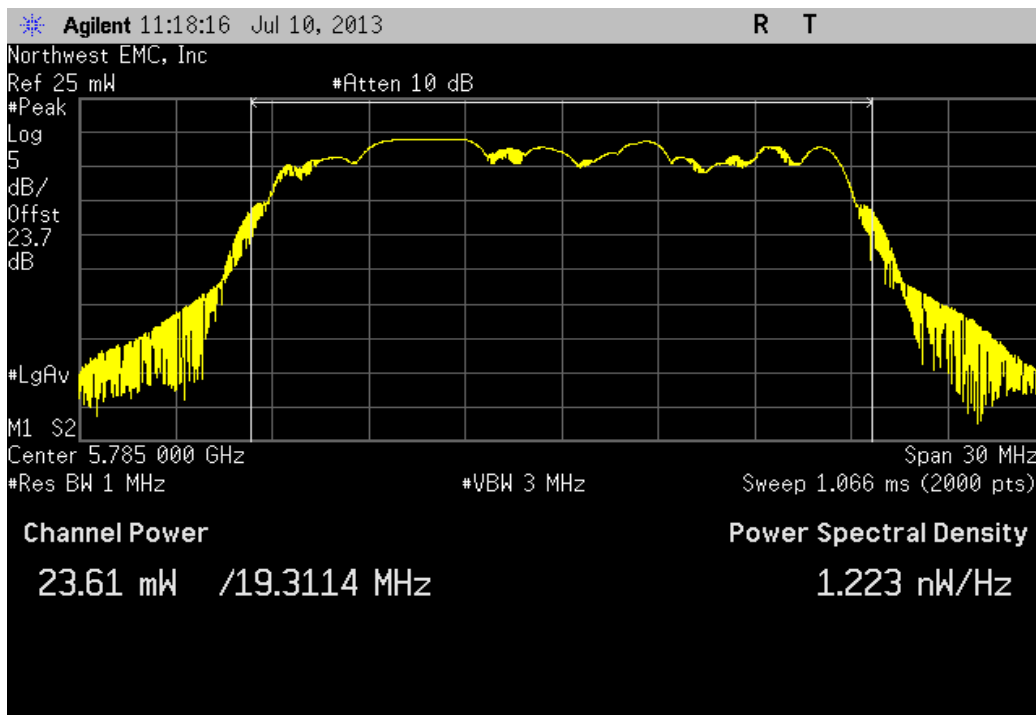
Chain A, 20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS15, Low Channel 149, 5745 MHz

Value	Limit	Result
24.397 mW	< 1 W	Pass



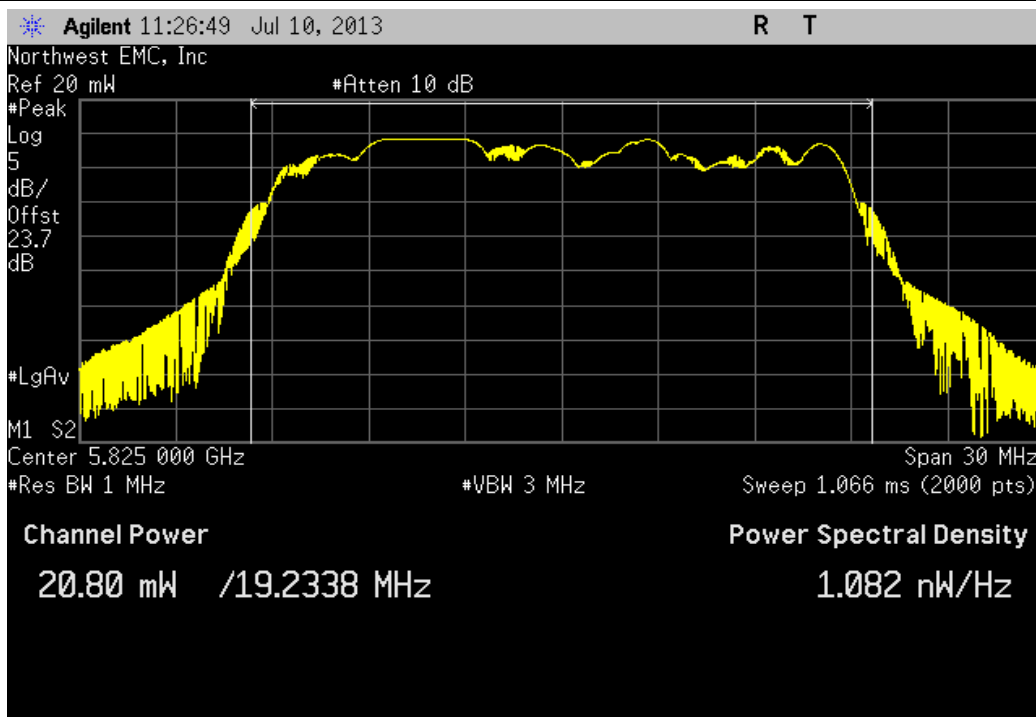
Chain A, 20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS15, Mid Channel 157, 5785 MHz

				Value	Limit	Result
				23.609 mW	< 1 W	Pass



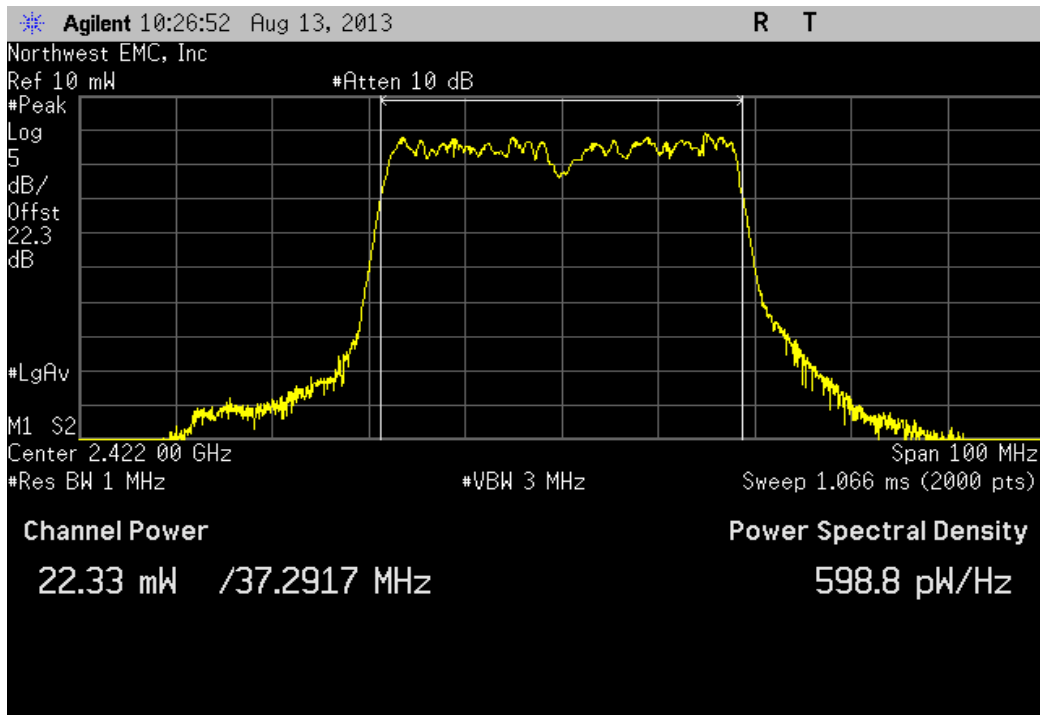
Chain A, 20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS15, High Channel 165, 5825 MHz

				Value	Limit	Result
				20.801 mW	< 1 W	Pass



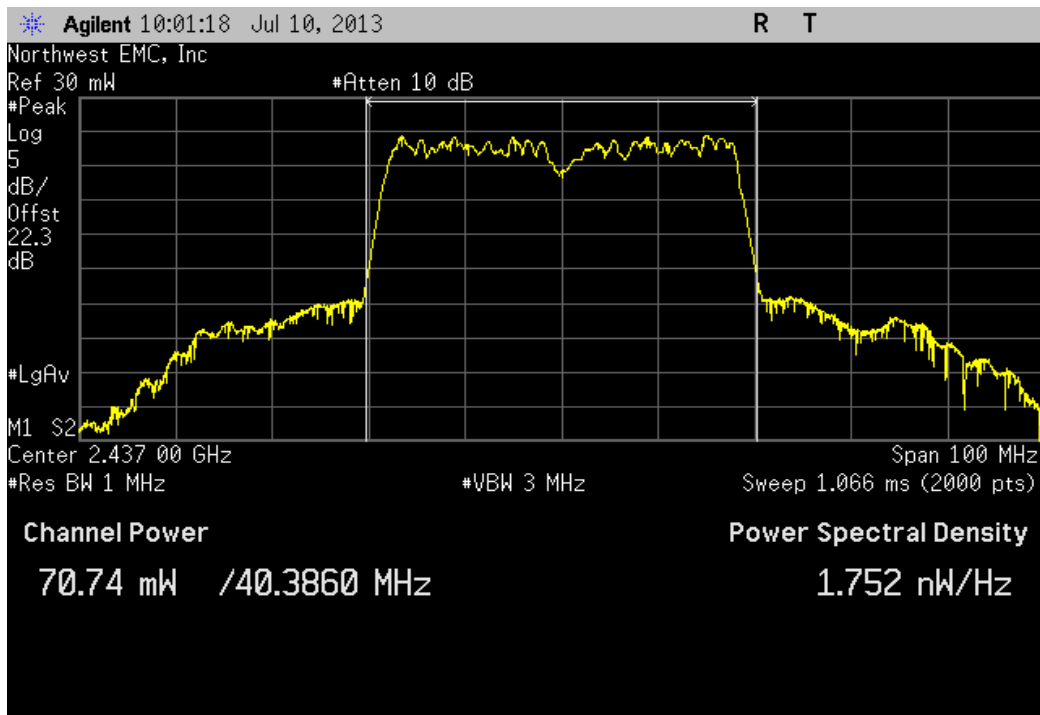
Chain A, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Low Channel 1/5, 2422 MHz

				Value	Limit	Result
				22.33 mW	< 1 W	Pass



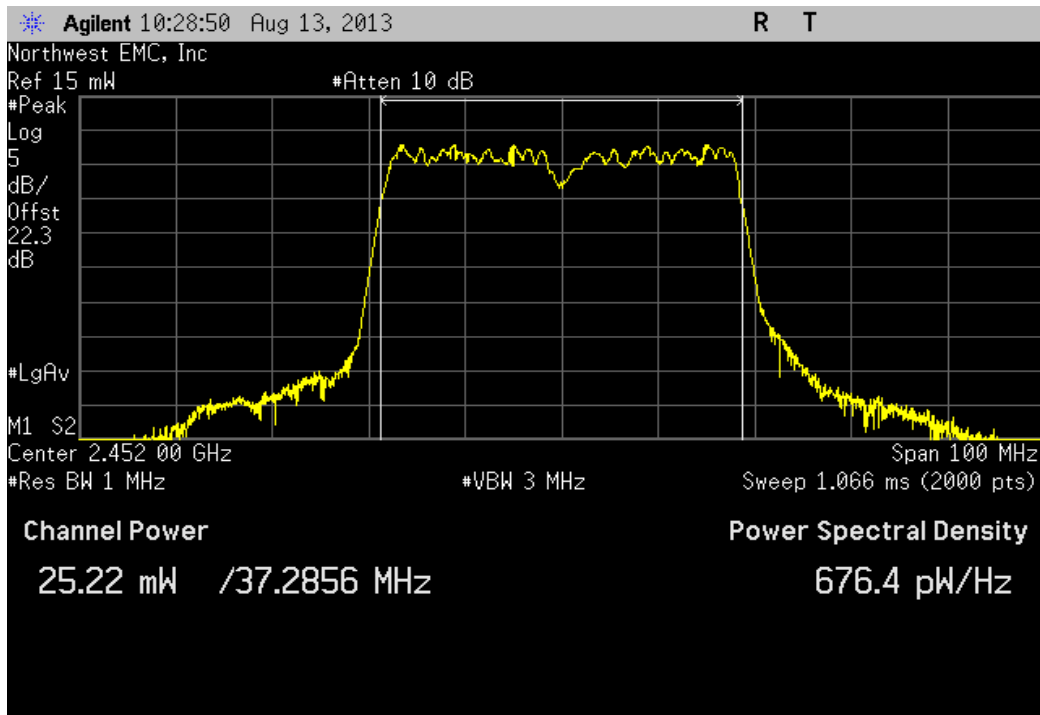
Chain A, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Mid Channel 4/8, 2437 MHz

				Value	Limit	Result
				70.742 mW	< 1 W	Pass



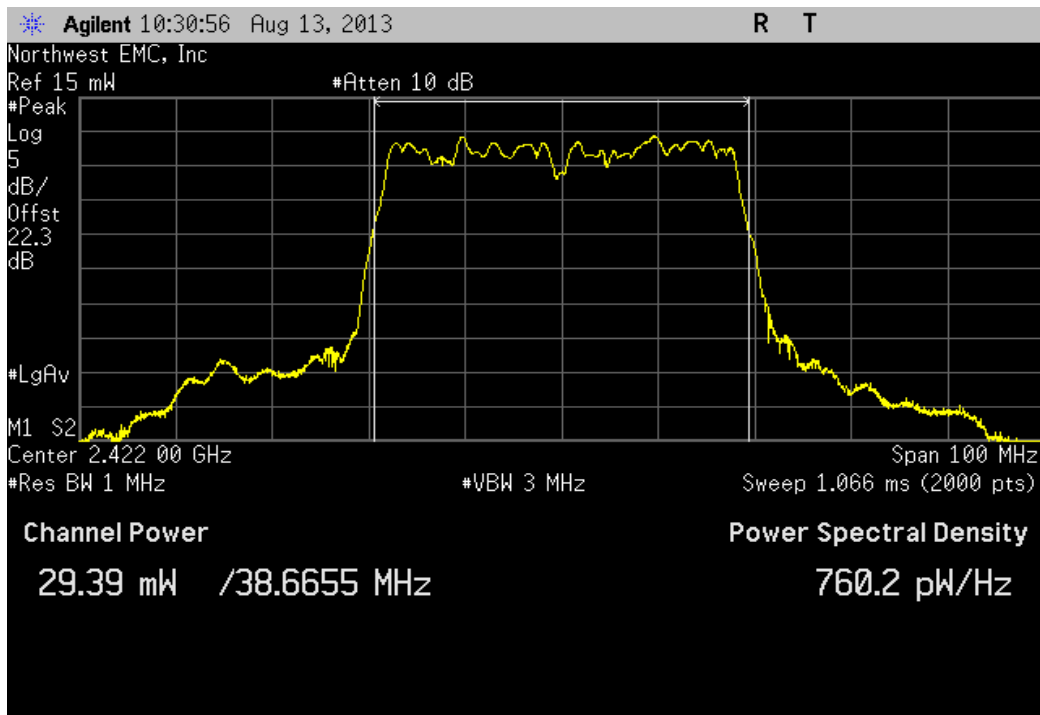
Chain A, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, High Channel 7/11, 2452 MHz

				Value	Limit	Result
				25.221 mW	< 1 W	Pass



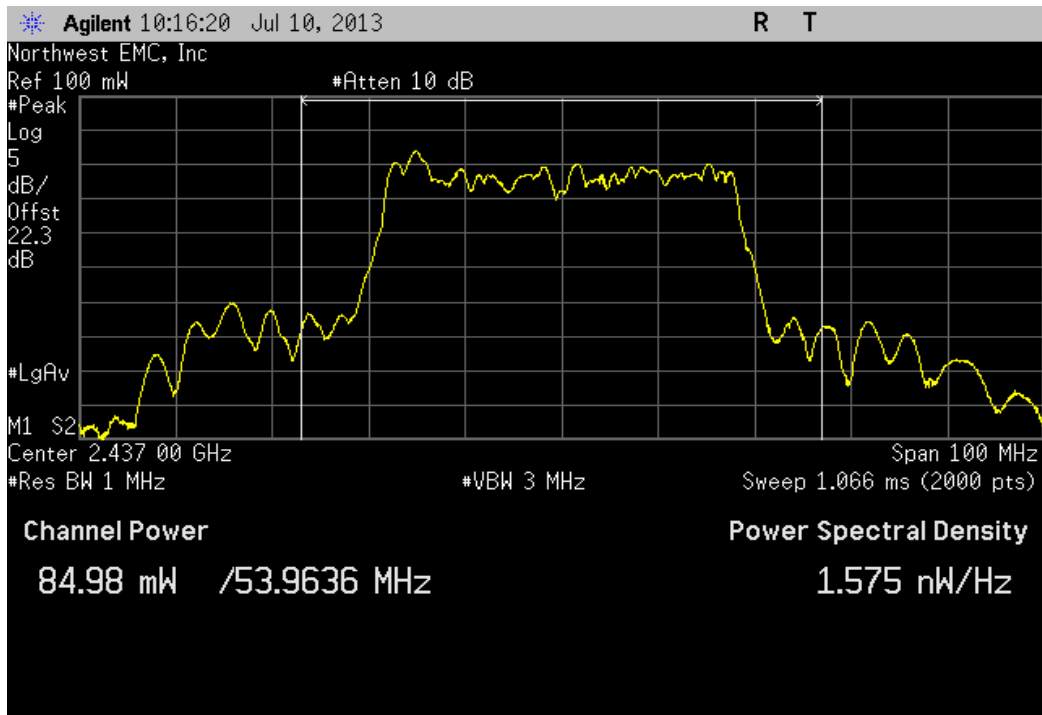
Chain A, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Low Channel 1/5, 2422 MHz

				Value	Limit	Result
				29.395 mW	< 1 W	Pass



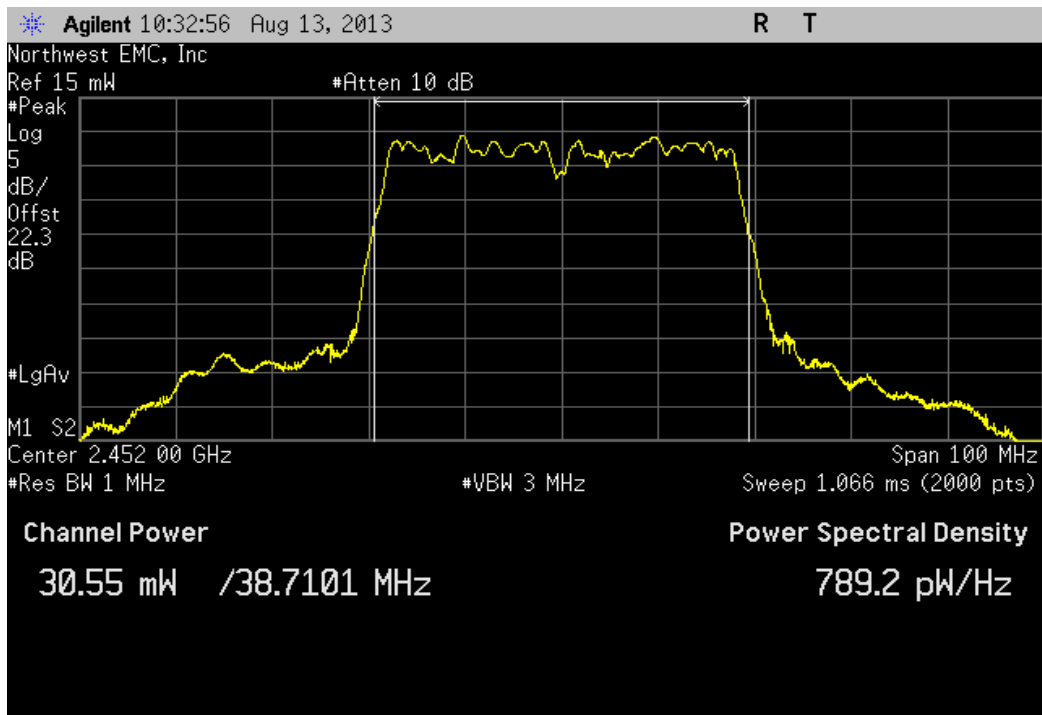
Chain A, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Mid Channel 4/8, 2437 MHz

Value	Limit	Result
84.977 mW	< 1 W	Pass



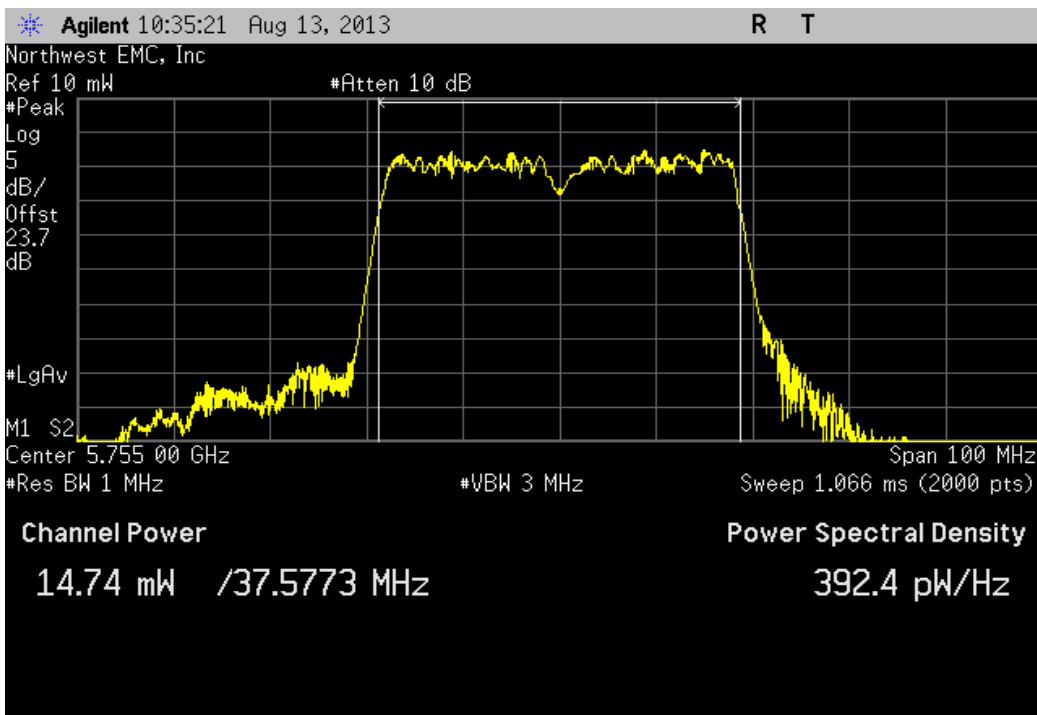
Chain A, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, High Channel 7/11, 2452 MHz

Value	Limit	Result
30.552 mW	< 1 W	Pass



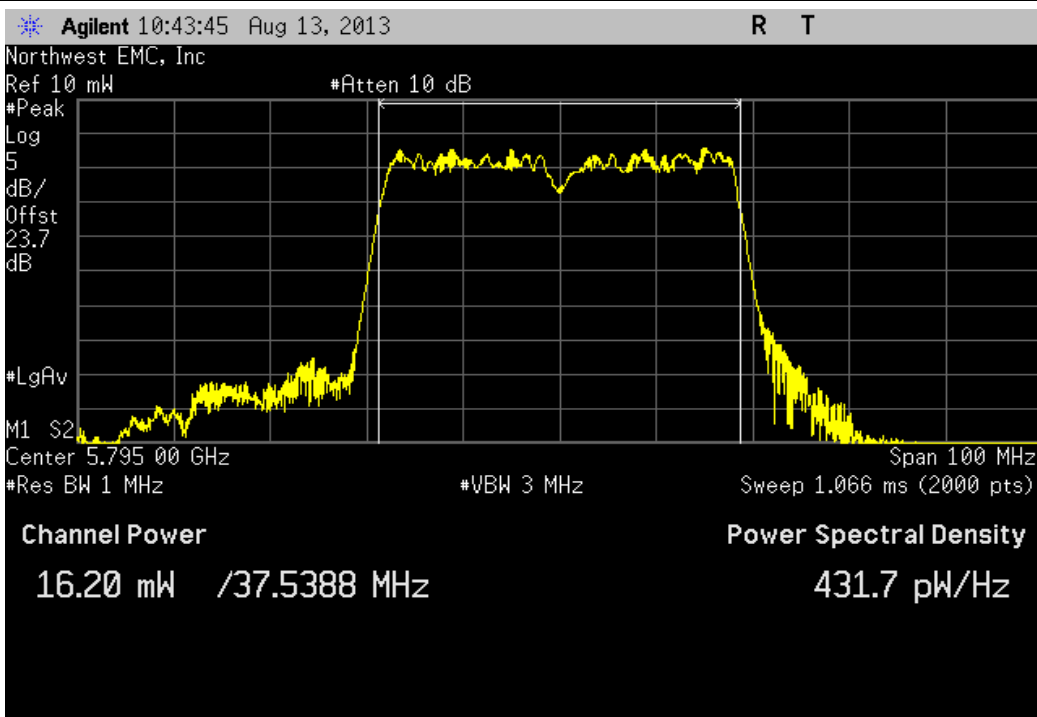
Chain A, 40 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS8, Low Channel 149/153, 5755 MHz

Value	Limit	Result
14.744 mW	< 1 W	Pass



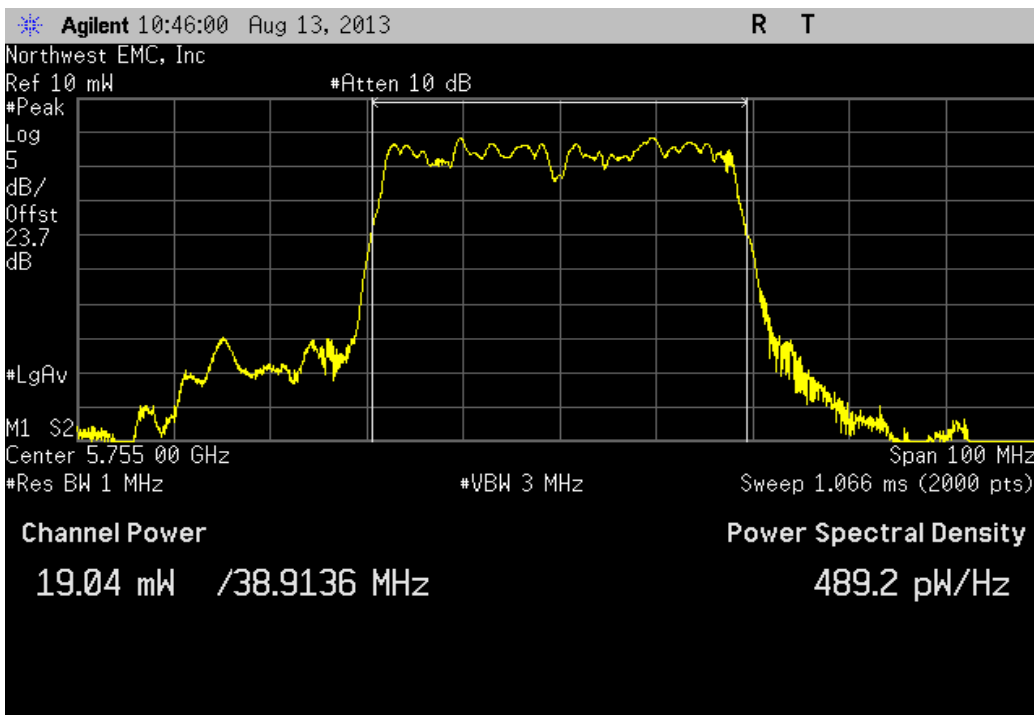
Chain A, 40 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS8, High Channel 157/161, 5795 MHz

Value	Limit	Result
16.204 mW	< 1 W	Pass



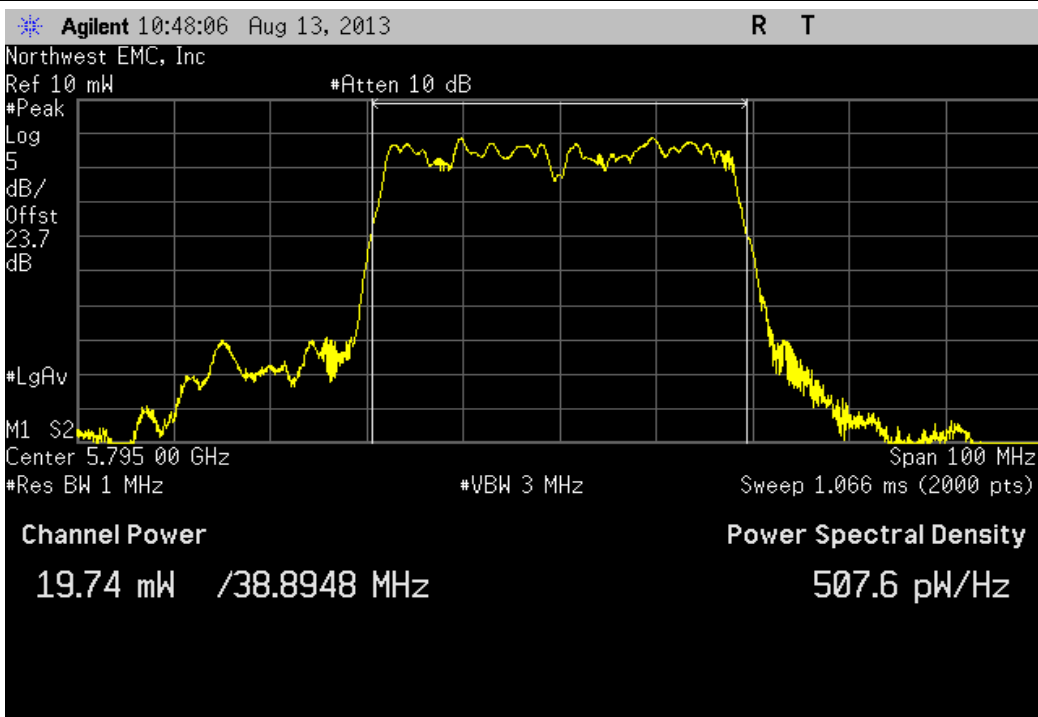
Chain A, 40 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS15, Low Channel 149/153, 5755 MHz

Value	Limit	Result
19.036 mW	< 1 W	Pass



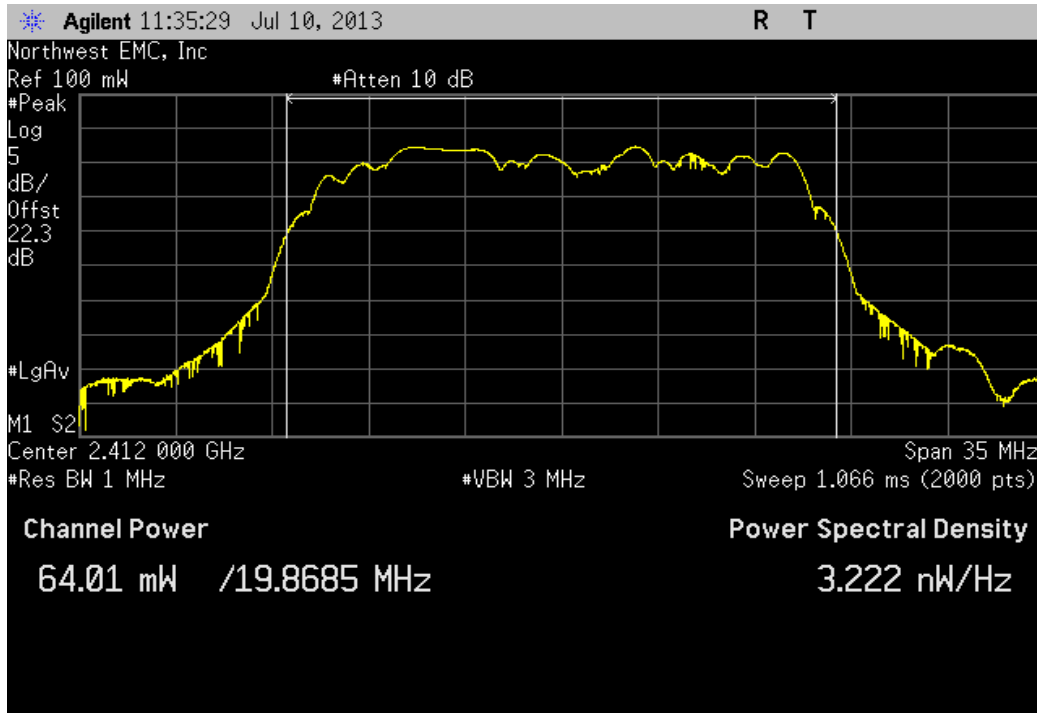
Chain A, 40 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS15, High Channel 157/161, 5795 MHz

Value	Limit	Result
19.743 mW	< 1 W	Pass



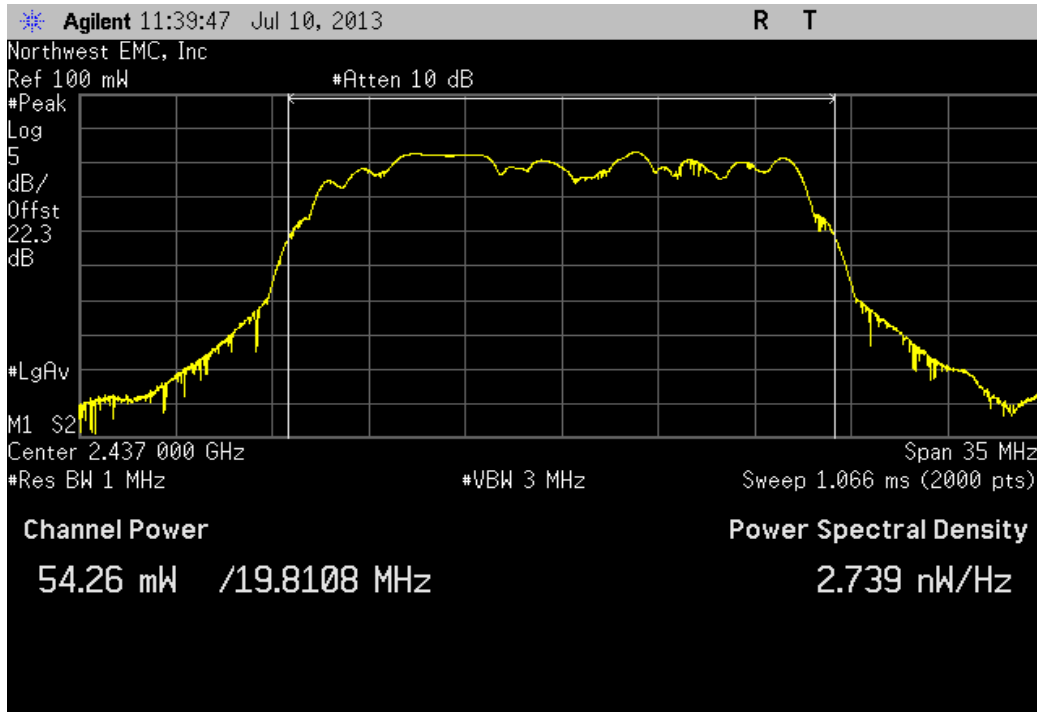
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Low Channel 1, 2412 MHz

Value	Limit	Result
64.008 mW	< 1 W	Pass



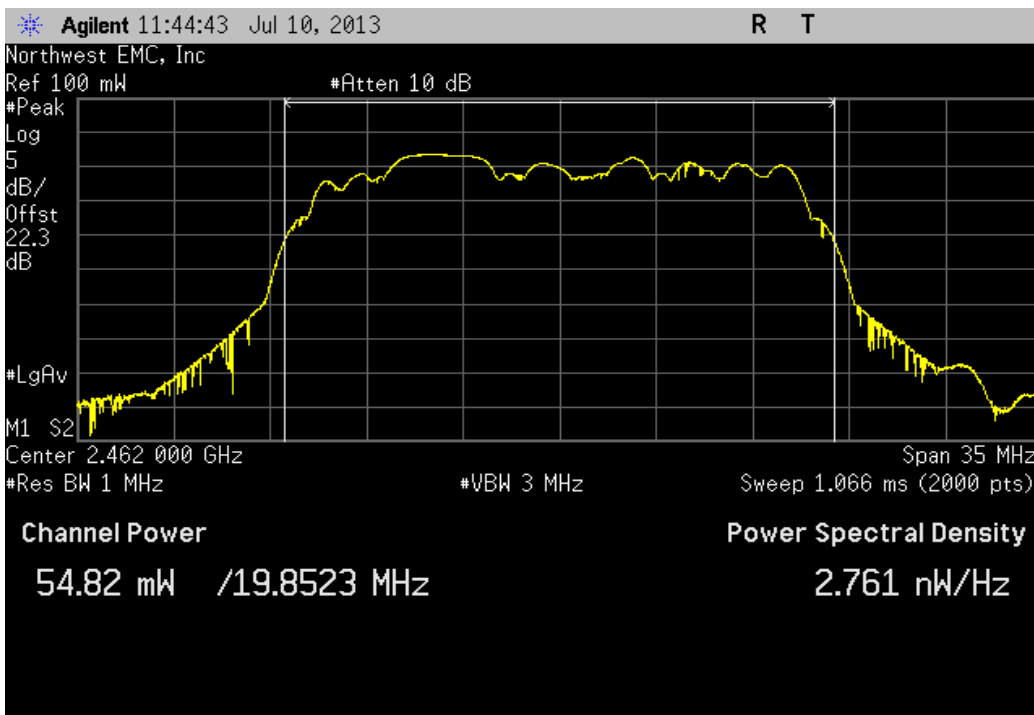
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Mid Channel 6, 2437 MHz

Value	Limit	Result
54.262 mW	< 1 W	Pass



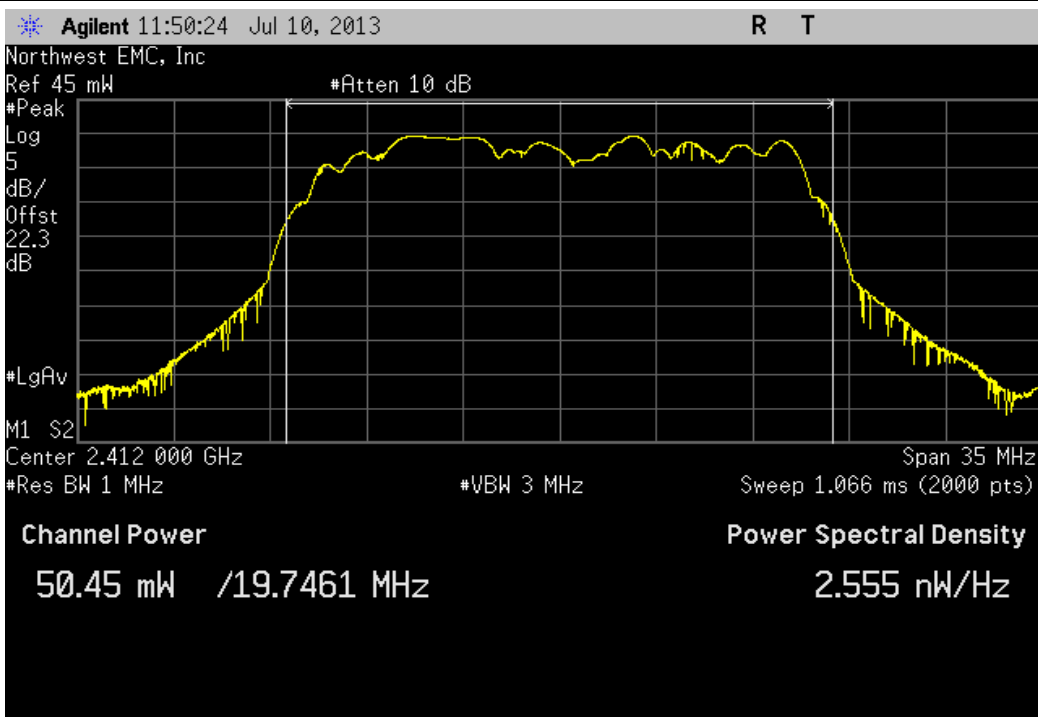
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, High Channel 11, 2462 MHz

Value	Limit	Result
54.815 mW	< 1 W	Pass



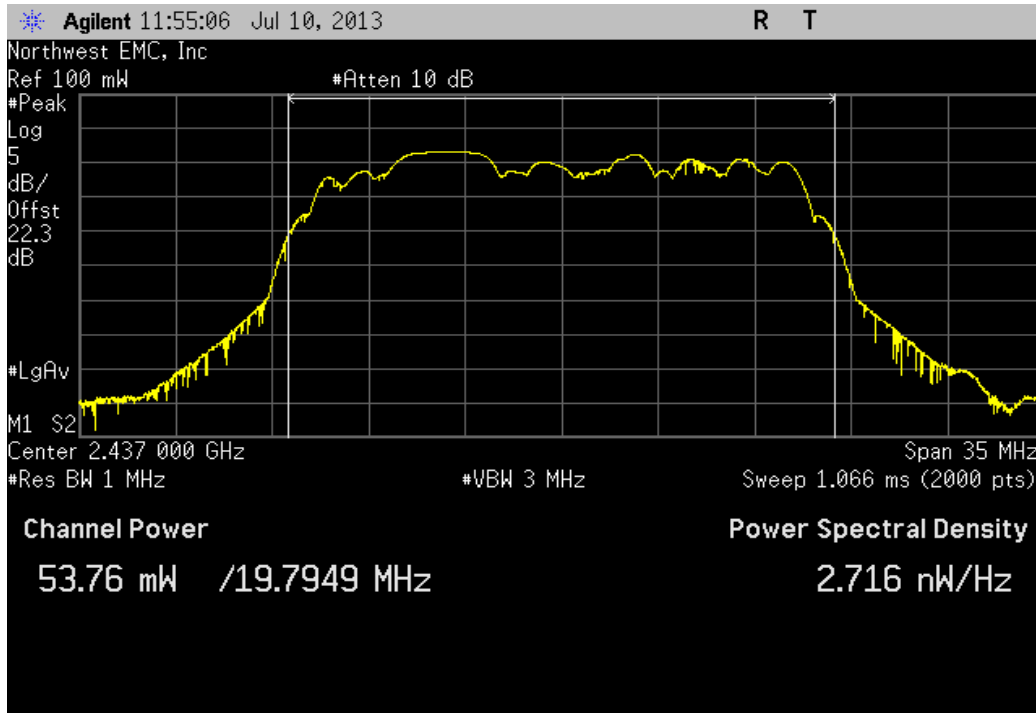
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Low Channel 1, 2412 MHz

Value	Limit	Result
50.446 mW	< 1 W	Pass



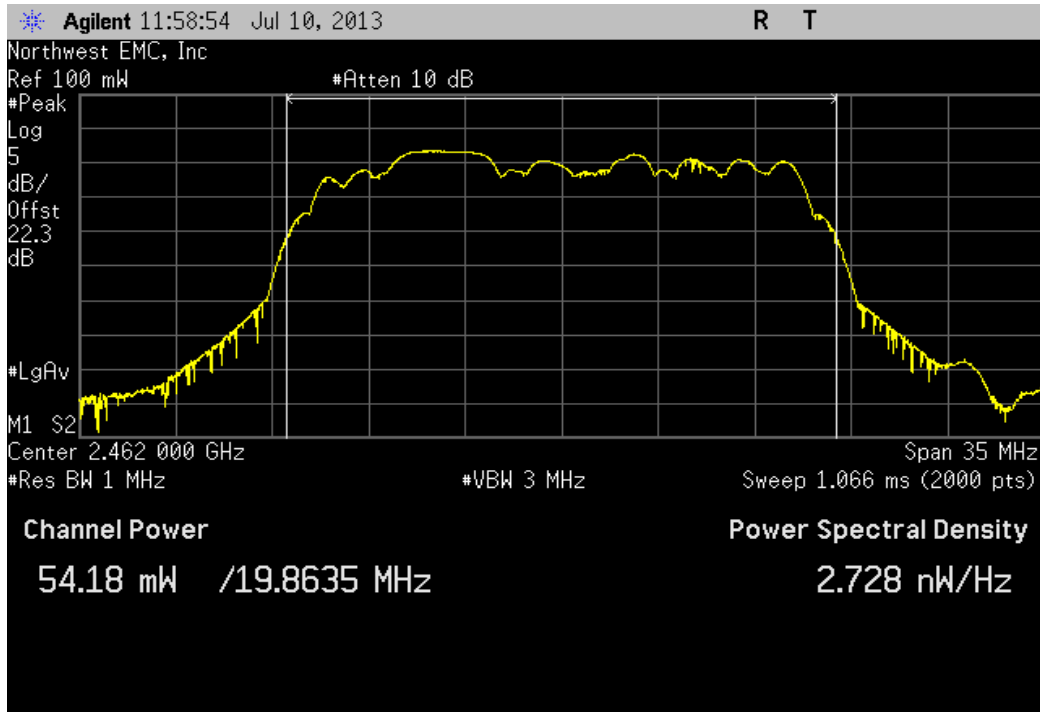
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Mid Channel 6, 2437 MHz

Value	Limit	Result
53.759 mW	< 1 W	Pass



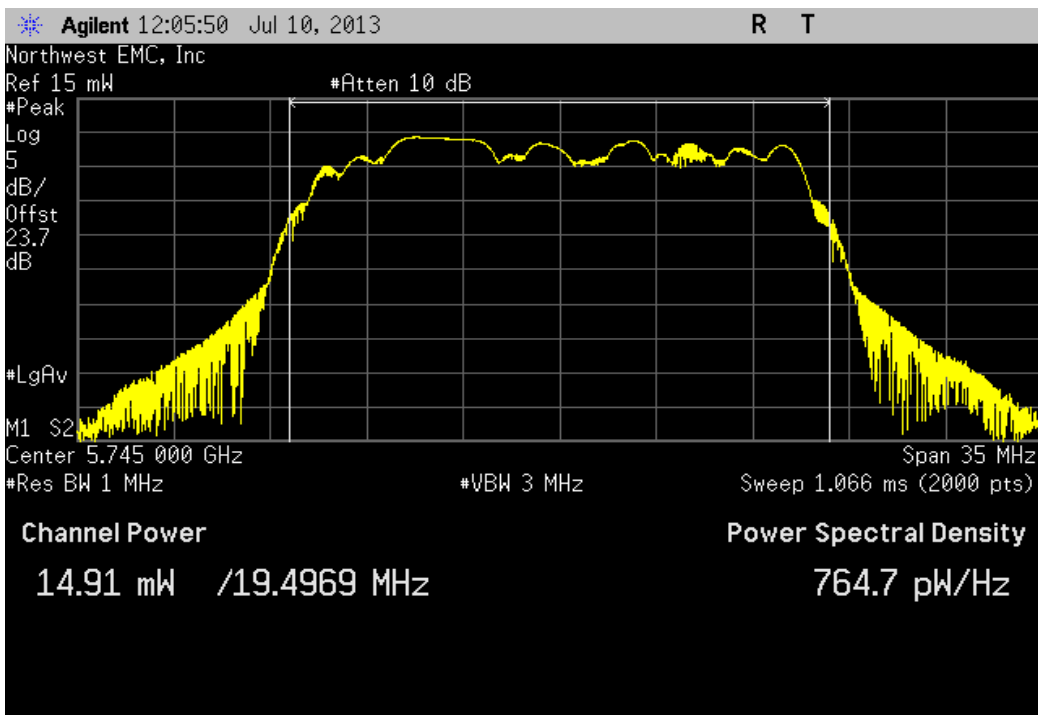
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, High Channel 11, 2462 MHz

Value	Limit	Result
54.182 mW	< 1 W	Pass



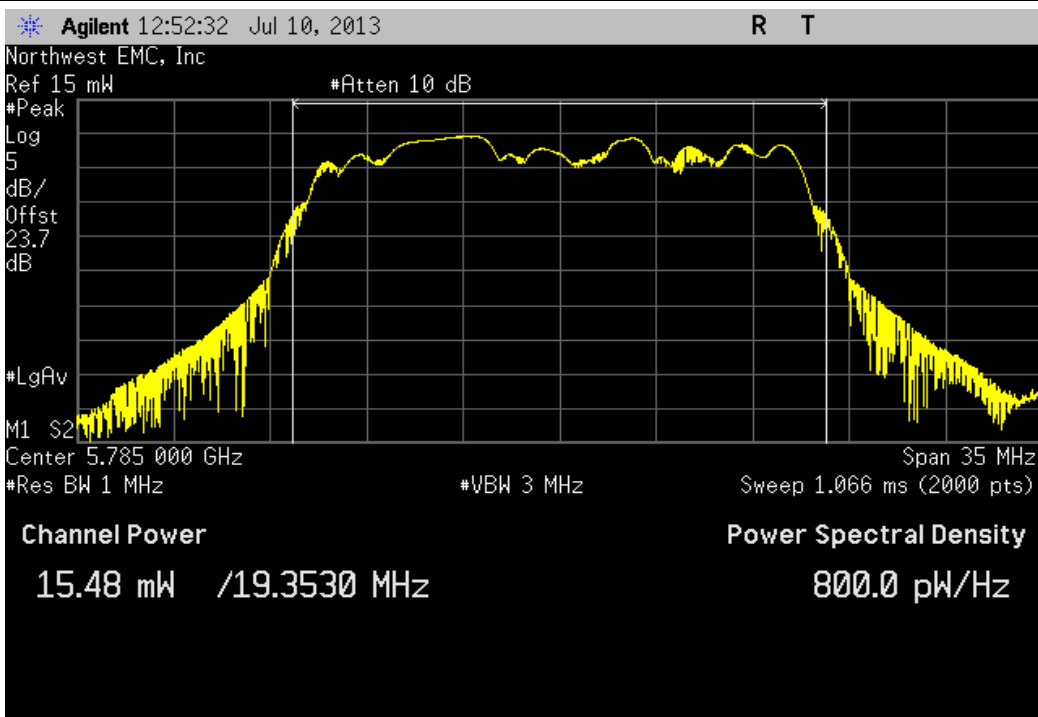
Chain B, 20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS8, Low Channel 149, 5745 MHz

Value	Limit	Result
14.908 mW	< 1 W	Pass



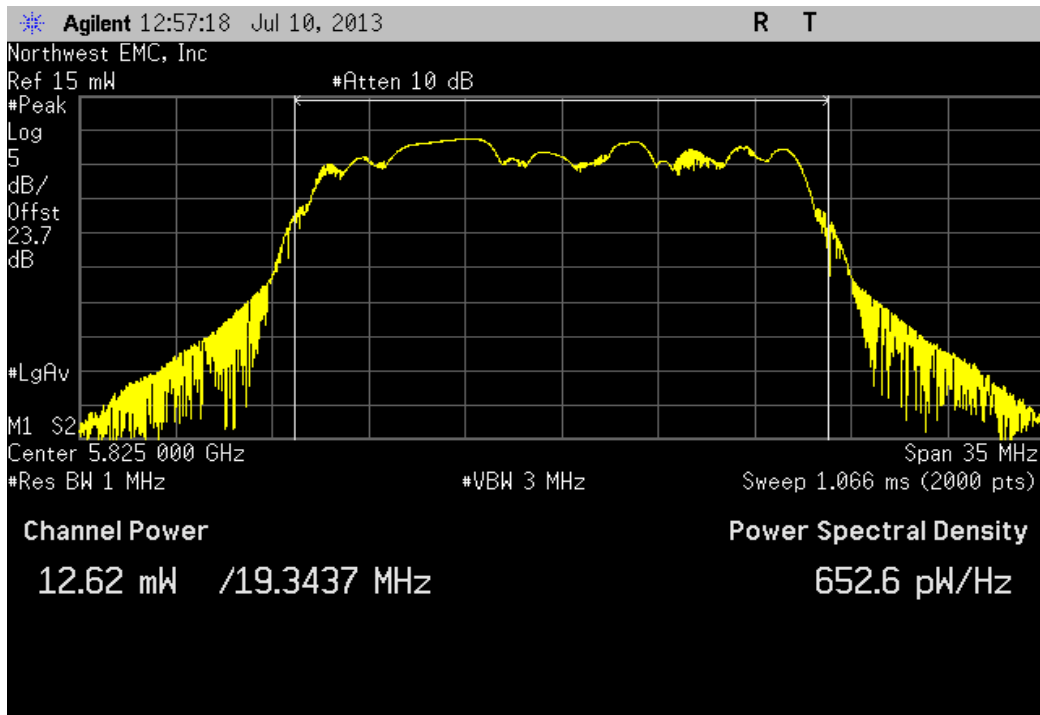
Chain B, 20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS8, Mid Channel 157, 5785 MHz

Value	Limit	Result
15.482 mW	< 1 W	Pass



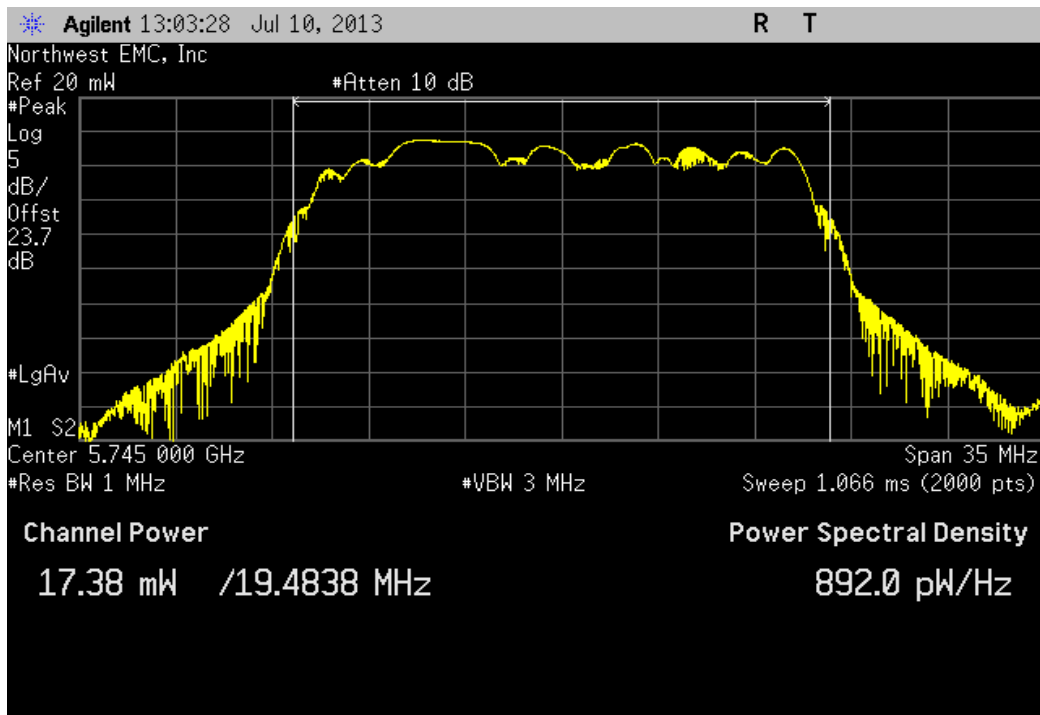
Chain B, 20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS8, High Channel 165, 5825 MHz

Value	Limit	Result
12.623 mW	< 1 W	Pass



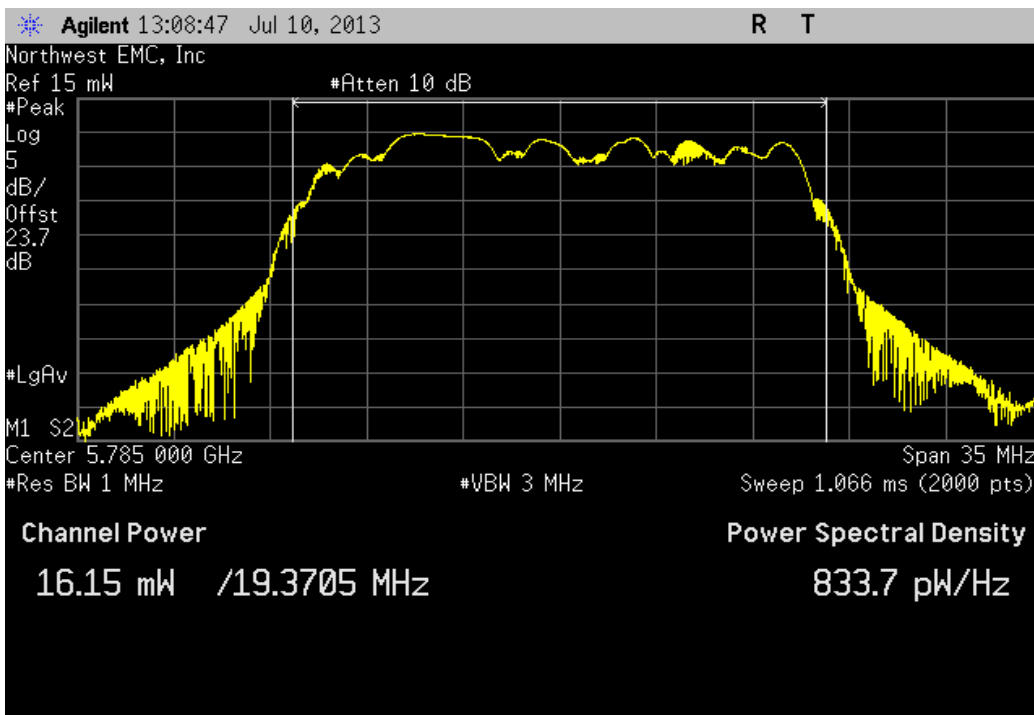
Chain B, 20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS15, Low Channel 149, 5745 MHz

Value	Limit	Result
17.379 mW	< 1 W	Pass



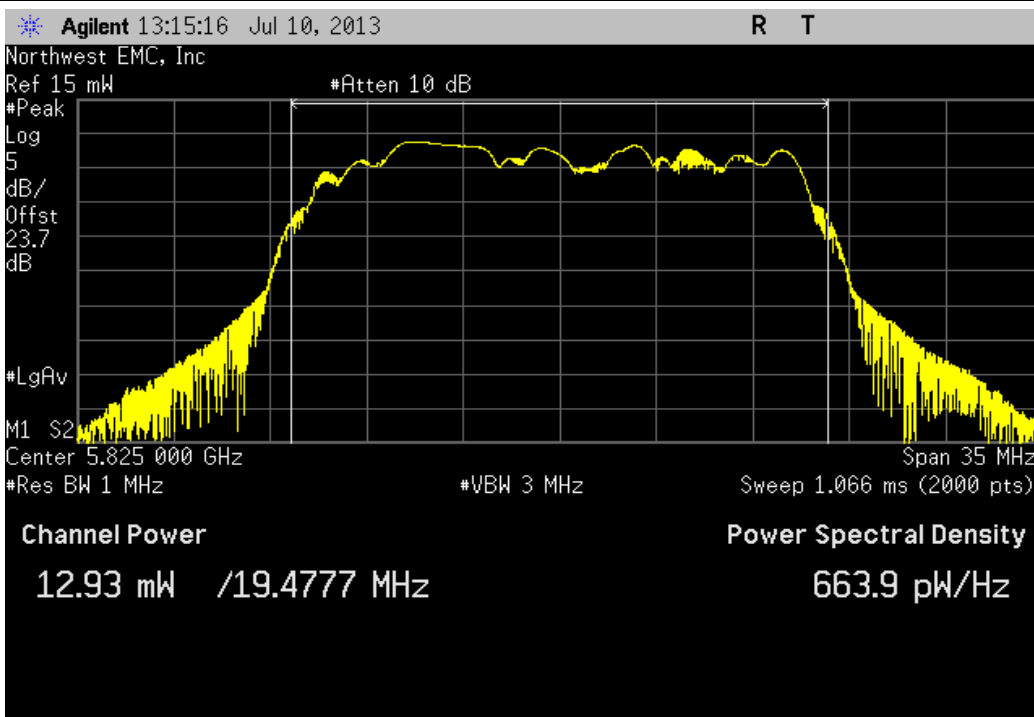
Chain B, 20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS15, Mid Channel 157, 5785 MHz

Value	Limit	Result
16.149 mW	< 1 W	Pass



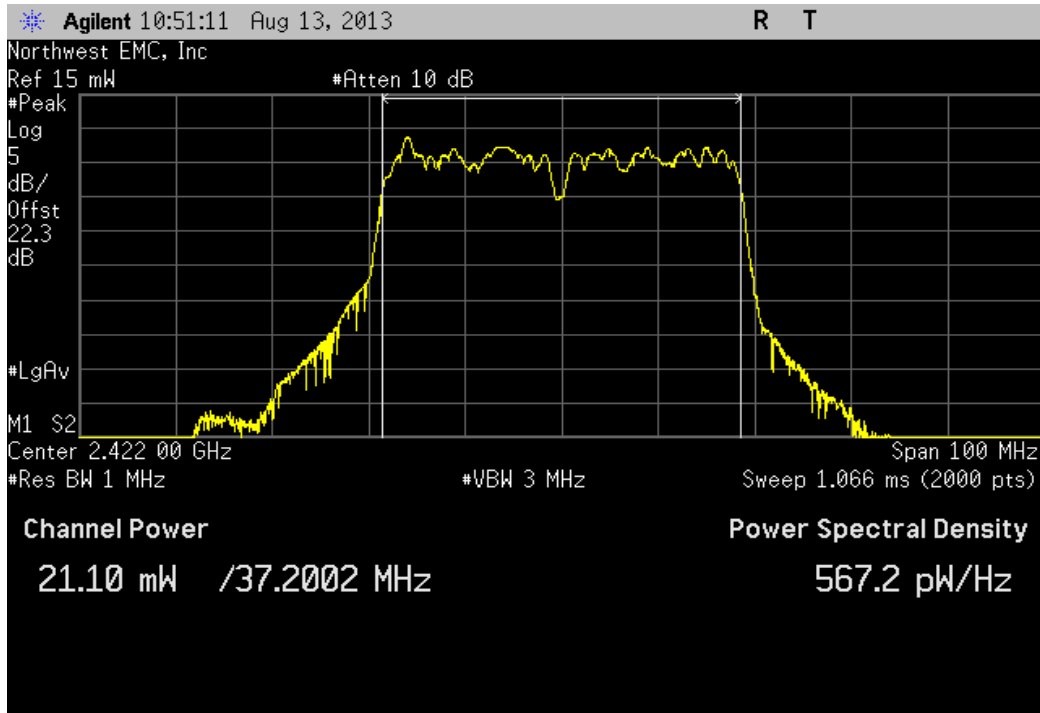
Chain B, 20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS15, High Channel 165, 5825 MHz

Value	Limit	Result
12.931 mW	< 1 W	Pass



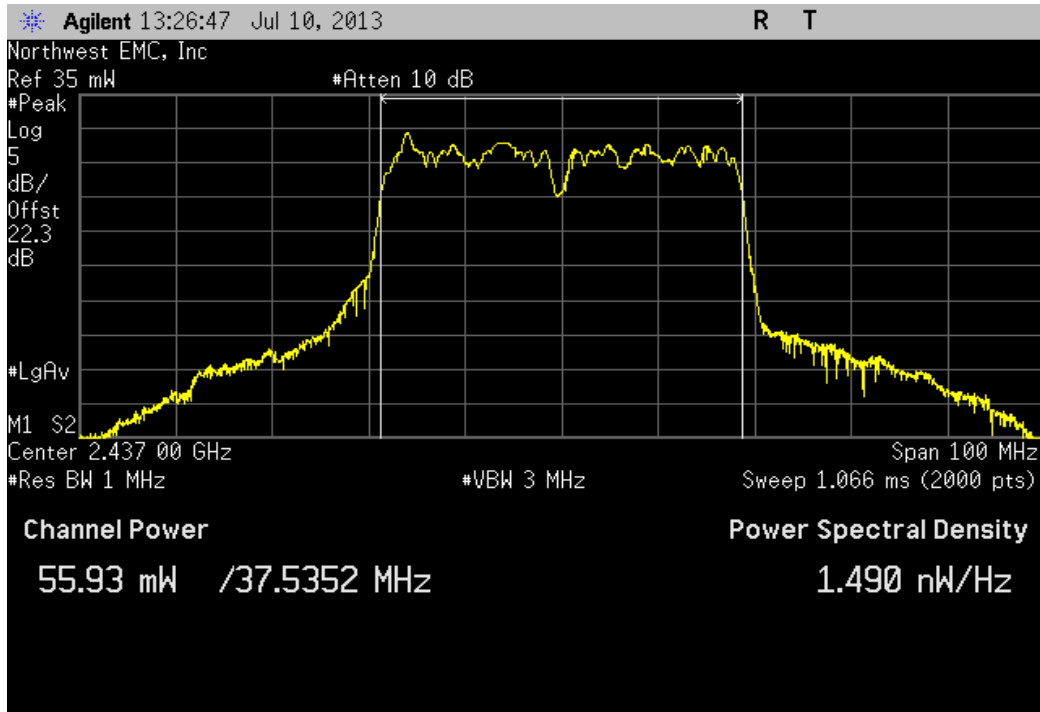
Chain B, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Low Channel 1/5, 2422 MHz

Value	Limit	Result
21.098 mW	< 1 W	Pass



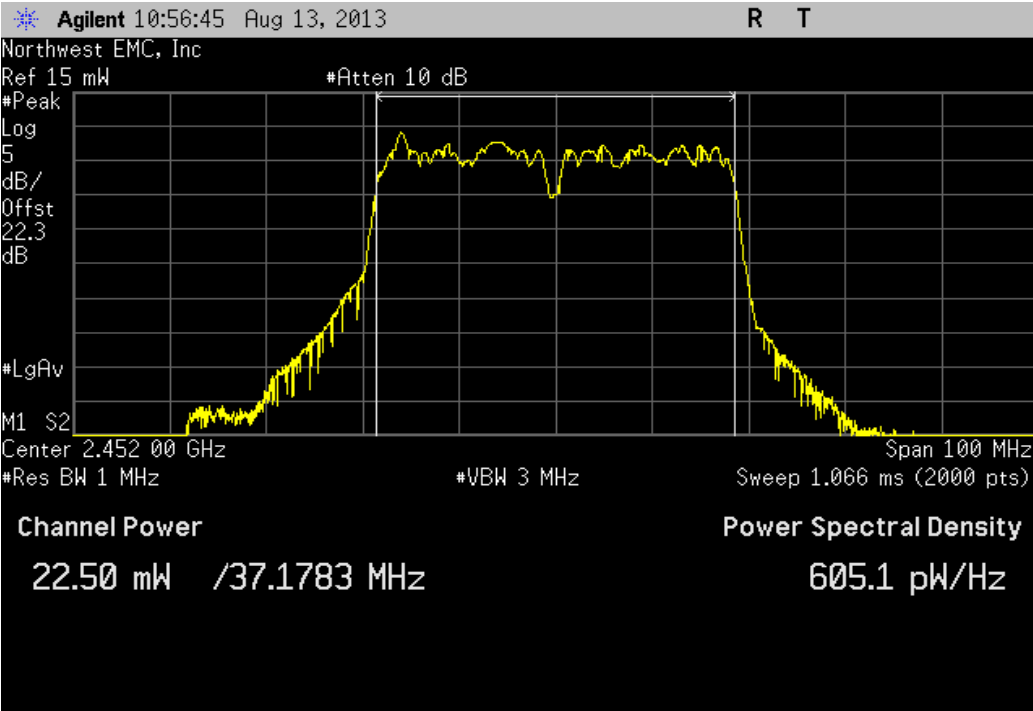
Chain B, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Mid Channel 4/8, 2437 MHz

Value	Limit	Result
55.926 mW	< 1 W	Pass



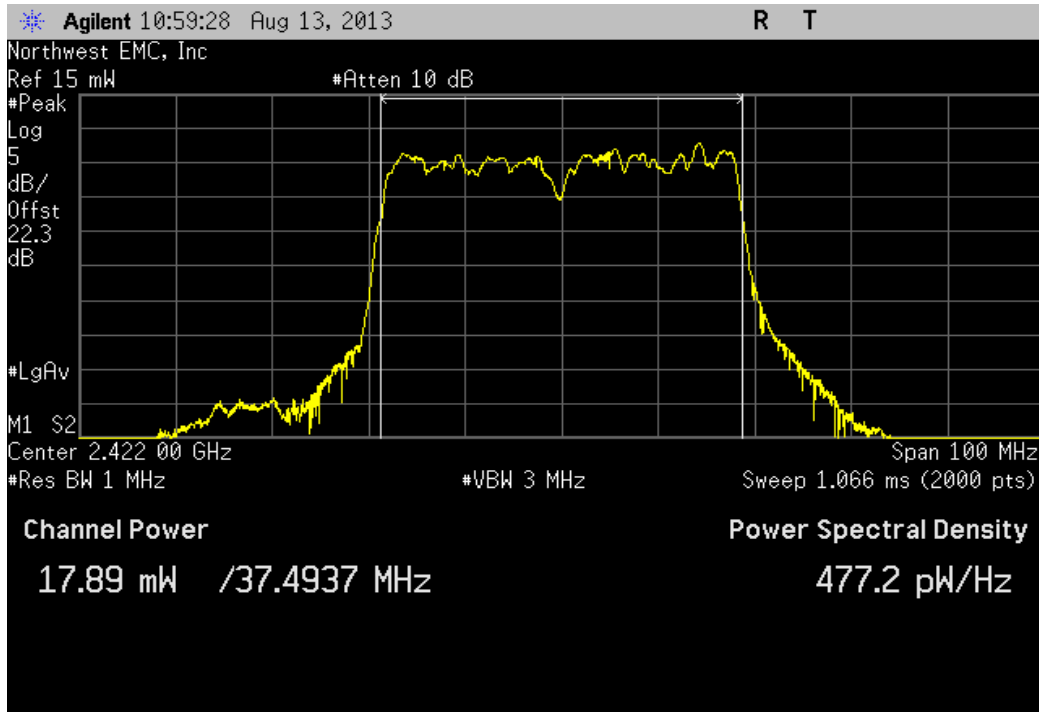
Chain B, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, High Channel 7/11, 2452 MHz

Value	Limit	Result
22.497 mW	< 1 W	Pass



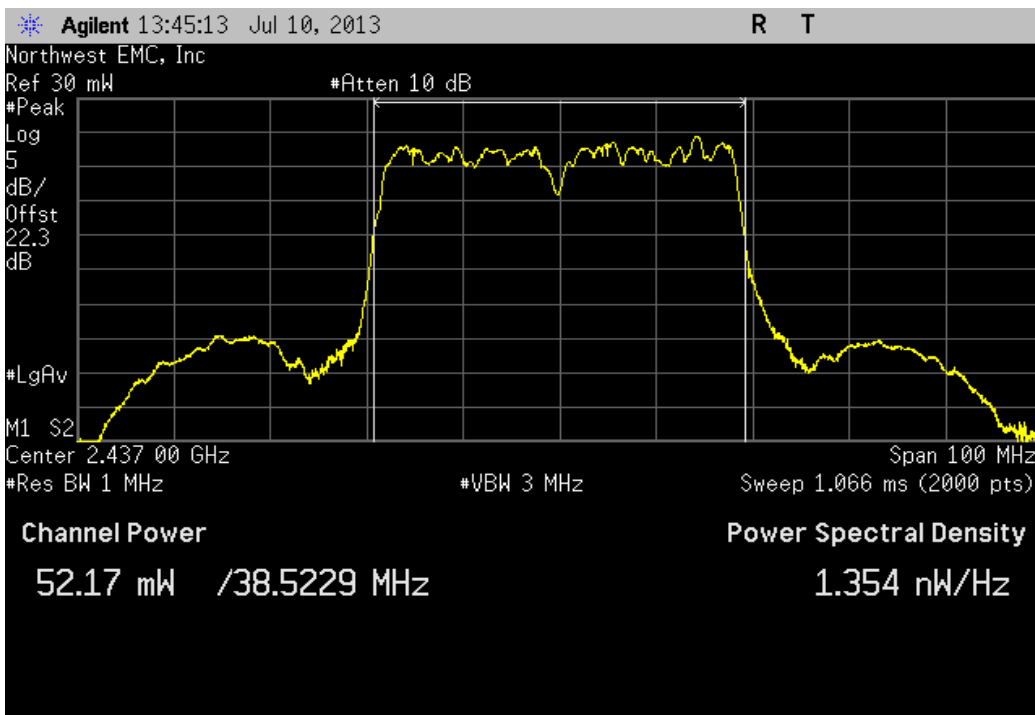
Chain B, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Low Channel 1/5, 2422 MHz

Value	Limit	Result
17.892 mW	< 1 W	Pass



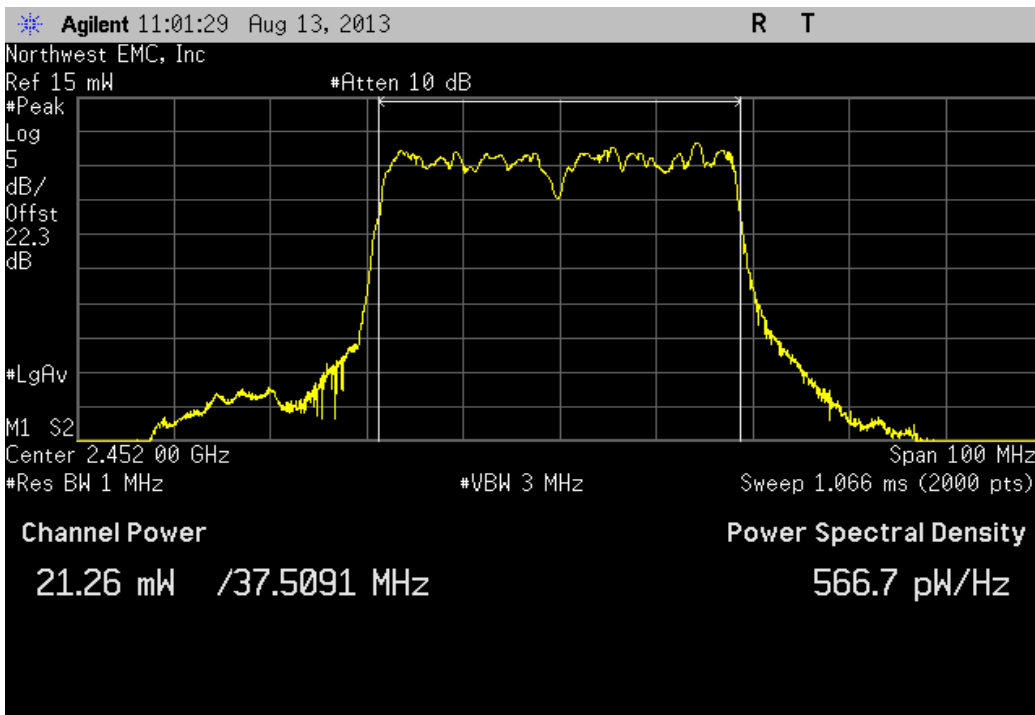
Chain B, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Mid Channel 4/8, 2437 MHz

Value	Limit	Result
52.169 mW	< 1 W	Pass



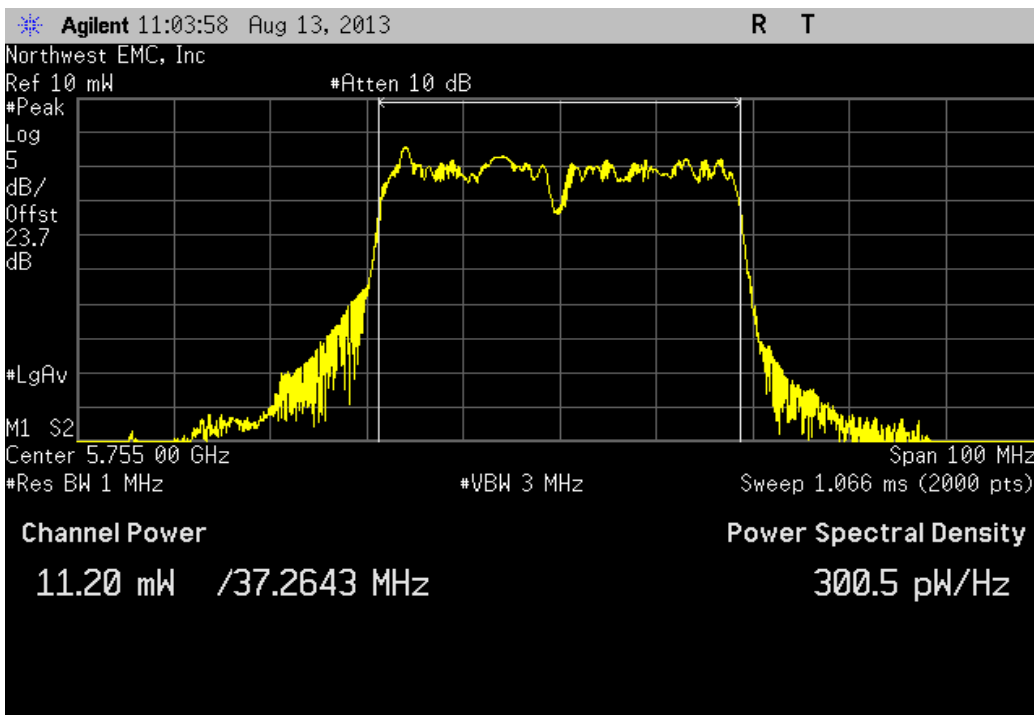
Chain B, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, High Channel 7/11, 2452 MHz

Value	Limit	Result
21.256 mW	< 1 W	Pass



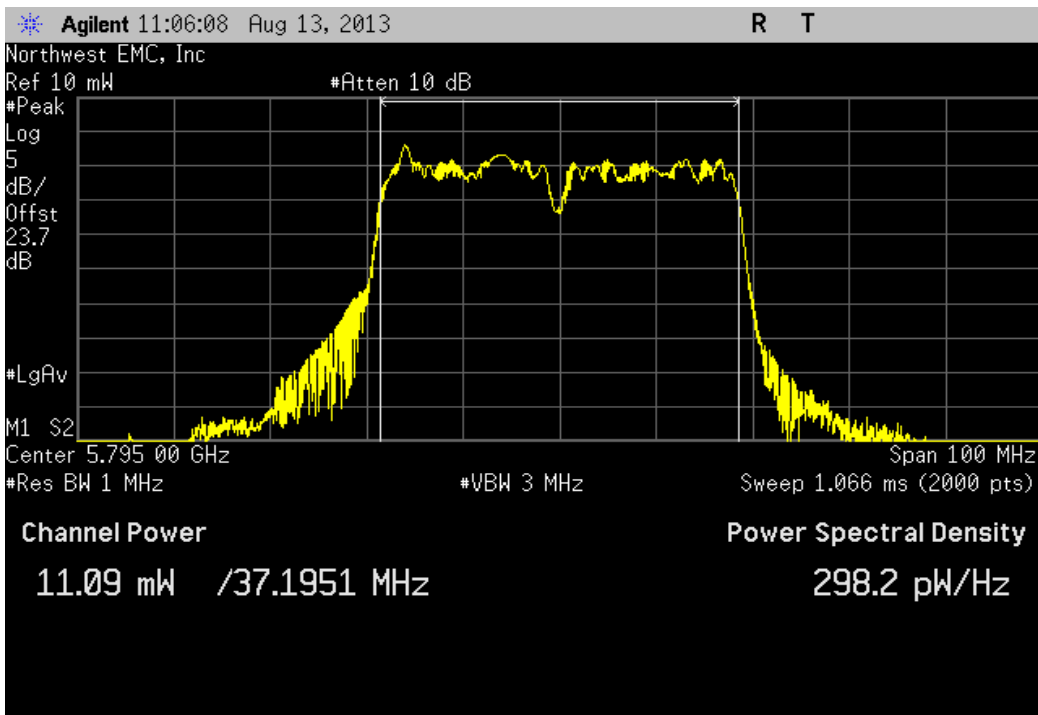
Chain B, 40 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS8, Low Channel 149/153, 5755 MHz

Value	Limit	Result
11.198 mW	< 1 W	Pass



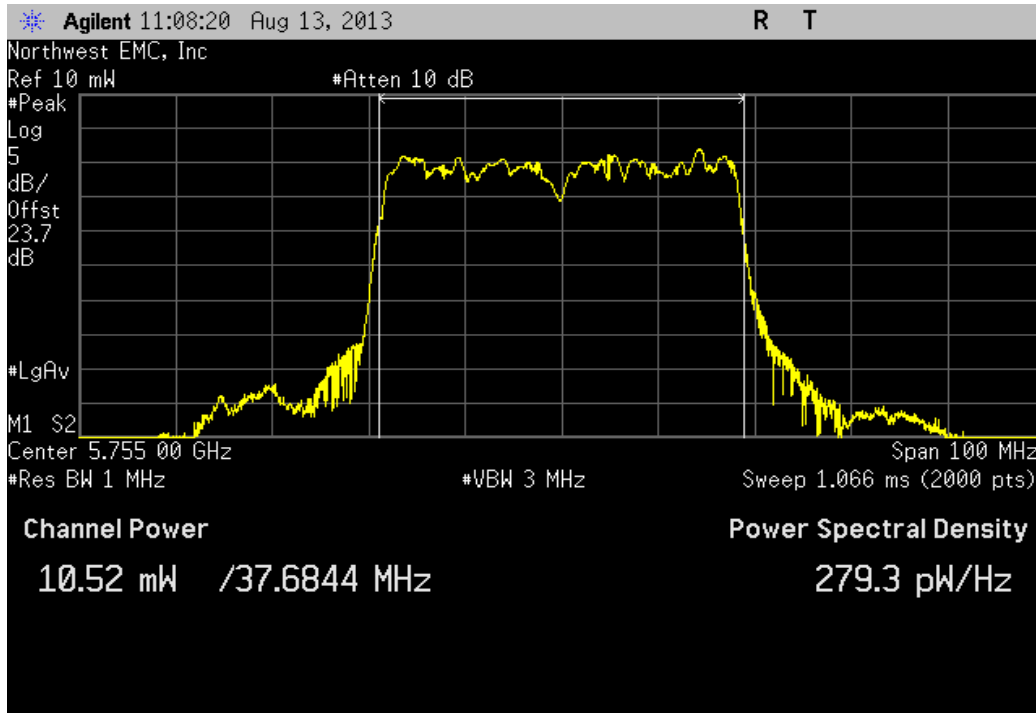
Chain B, 40 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS8, High Channel 157/161, 5795 MHz

Value	Limit	Result
11.092 mW	< 1 W	Pass



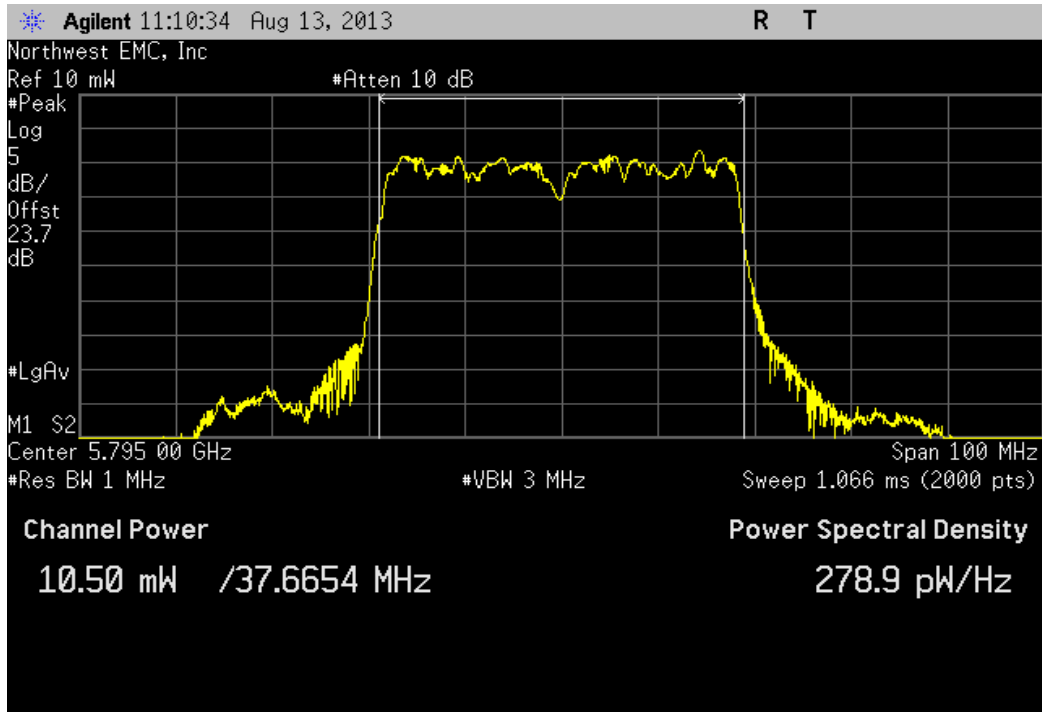
Chain B, 40 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS15, Low Channel 149/153, 5755 MHz

Value	Limit	Result
10.523 mW	< 1 W	Pass



Chain B, 40 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS15, High Channel 157/161, 5795 MHz

Value	Limit	Result
10.504 mW	< 1 W	Pass



Output Power - Antenna A

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Attenuator	Fairview Microwave	SA4014-20	TKE	2/12/2013	12
Signal Generator	Agilent	N5183A	TID	9/19/2011	36
Spectrum Analyzer	Agilent	E4446A	AAT	6/28/2012	24
NC02 Cable	ESM Cable Corp.	TTBJ-141 KMKM-72	NC5	7/3/2013	12

TEST DESCRIPTION

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

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

Method PK2 found in KDB 558074 DTS D01 Measurement Section 5.2.1.2 was used because the Emission Bandwidth was greater than the largest RBW on the analyzer.

The spectrum analyzer settings were as follows:

- The span was set to encompass entire emission bandwidth (B), centered on the transmit channel.
- The RBW = 1 MHz, VBW = 3 MHz.
- Peak detector mode
- Power was integrated across "B", by using the channel power function of the analyzer.

DC Block was used in-line for measurements made while under test. For channel output power levels, please refer to the accompanying power table included in this report.



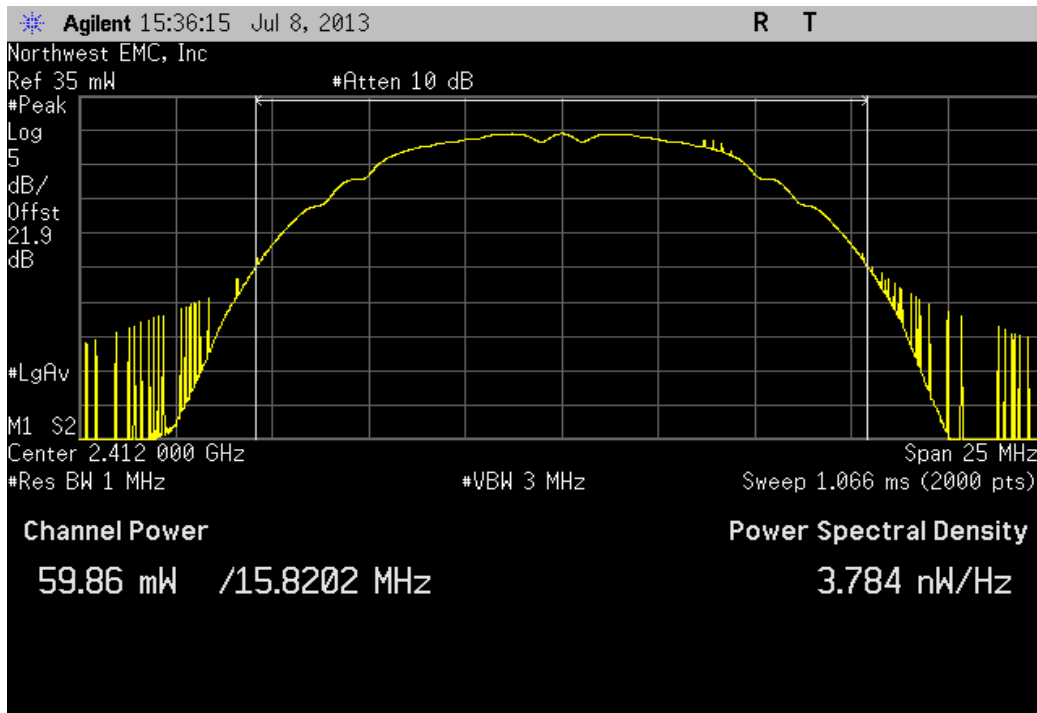
Output Power - Antenna A

XMit 2013.02.28
PsaTx 2013.06.07

EUT: 1601		Work Order: MCSO1665
Serial Number: 006079632553		Date: 08/13/13
Customer: Microsoft Corporation		Temperature: 23°C
Attendees: None		Humidity: 50%
Project: None		Barometric Pres.: 1020mb
Tested by: Richard Mellroth, Brandon Hobbs		Power: 110VAC/60Hz
TEST SPECIFICATIONS		Job Site: NC02
FCC 15.247:2013		Test Method
		ANSI C63.10:2009
COMMENTS		
EUT was operating at 100% Duty Cycle. Adapter cable loss of 0.75 dB for 2.4 GHz channels and 1.3 dB for 5.7 GHz channels was added to analyzer reference level offset.		
DEVIATIONS FROM TEST STANDARD		
None		
Configuration #	1	Signature 
		Value Limit Result
20 MHz		
2400 MHz - 2483.5 MHz Band		
802.11(b) 1 Mbps		
Low Channel 1, 2412 MHz		59.861 mW < 1 W Pass
Mid Channel 6, 2437 MHz		70.852 mW < 1 W Pass
High Channel 11, 2462 MHz		56.848 mW < 1 W Pass
802.11(b) 11 Mbps		
Low Channel 1, 2412 MHz		57.402 mW < 1 W Pass
Mid Channel 6, 2437 MHz		66.978 mW < 1 W Pass
High Channel 11, 2462 MHz		53.495 mW < 1 W Pass
802.11(g) 6 Mbps		
Low Channel 1, 2412 MHz		60.981 mW < 1 W Pass
Mid Channel 6, 2437 MHz		63.928 mW < 1 W Pass
High Channel 11, 2462 MHz		56.968 mW < 1 W Pass
802.11(g) 36 Mbps		
Low Channel 1, 2412 MHz		66.73 mW < 1 W Pass
Mid Channel 6, 2437 MHz		68.952 mW < 1 W Pass
High Channel 11, 2462 MHz		57.061 mW < 1 W Pass
802.11(g) 54 Mbps		
Low Channel 1, 2412 MHz		64.489 mW < 1 W Pass
Mid Channel 6, 2437 MHz		68.507 mW < 1 W Pass
High Channel 11, 2462 MHz		54.746 mW < 1 W Pass
802.11(n) MCS0		
Low Channel 1, 2412 MHz		64.232 mW < 1 W Pass
Mid Channel 6, 2437 MHz		60.728 mW < 1 W Pass
High Channel 11, 2462 MHz		54.855 mW < 1 W Pass
802.11(n) MCS7		
Low Channel 1, 2412 MHz		57.919 mW < 1 W Pass
Mid Channel 6, 2437 MHz		66.615 mW < 1 W Pass
High Channel 11, 2462 MHz		60.537 mW < 1 W Pass
5725 MHz - 5850 MHz Band		
802.11(a) 6 Mbps		
Low Channel 149, 5745 MHz		22.233 mW < 1 W Pass
Mid Channel 157, 5785 MHz		23.74 mW < 1 W Pass
High Channel 165, 5825 MHz		19.374 mW < 1 W Pass
802.11(a) 36 Mbps		
Low Channel 149, 5745 MHz		21.477 mW < 1 W Pass
Mid Channel 157, 5785 MHz		23.92 mW < 1 W Pass
High Channel 165, 5825 MHz		17.556 mW < 1 W Pass
802.11(a) 54 Mbps		
Low Channel 149, 5745 MHz		23.545 mW < 1 W Pass
Mid Channel 157, 5785 MHz		23.596 mW < 1 W Pass
High Channel 165, 5825 MHz		17.382 mW < 1 W Pass
802.11(n) MCS0 - UNII		
Low Channel 149, 5745 MHz		22.758 mW < 1 W Pass
Mid Channel 157, 5785 MHz		22.064 mW < 1 W Pass
High Channel 165, 5825 MHz		18.337 mW < 1 W Pass
802.11(n) MCS7 - UNII		
Low Channel 149, 5745 MHz		23.19 mW < 1 W Pass
Mid Channel 157, 5785 MHz		22.019 mW < 1 W Pass
High Channel 165, 5825 MHz		18.545 mW < 1 W Pass
40 MHz		
2400 MHz - 2483.5 MHz Band		
802.11(n) MCS0		
Low Channel 1/5, 2422 MHz		21.26 mW < 1 W Pass
Mid Channel 4/8, 2437 MHz		65.586 mW < 1 W Pass
High Channel 7/11, 2452 MHz		21.508 mW < 1 W Pass
802.11(n) MCS7		
Low Channel 1/5, 2422 MHz		25.462 mW < 1 W Pass
Mid Channel 4/8, 2437 MHz		74.601 mW < 1 W Pass
High Channel 7/11, 2452 MHz		26.095 mW < 1 W Pass
5725 MHz - 5850 MHz Band		
802.11(n) MCS0 - UNII		
Low Channel 149/153, 5755 MHz		14.856 mW < 1 W Pass
High Channel 157/161, 5795 MHz		15.281 mW < 1 W Pass
802.11(n) MCS7 - UNII		
Low Channel 149/153, 5755 MHz		17.958 mW < 1 W Pass
High Channel 157/161, 5795 MHz		20.866 mW < 1 W Pass

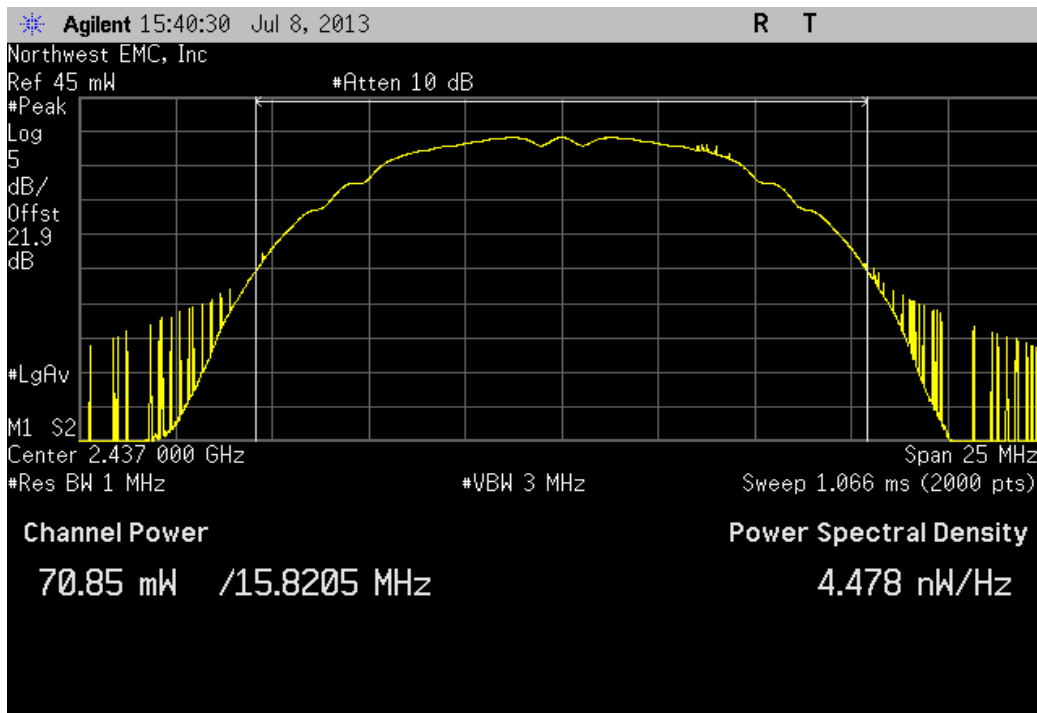
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz

Value	Limit	Result
59.861 mW	< 1 W	Pass



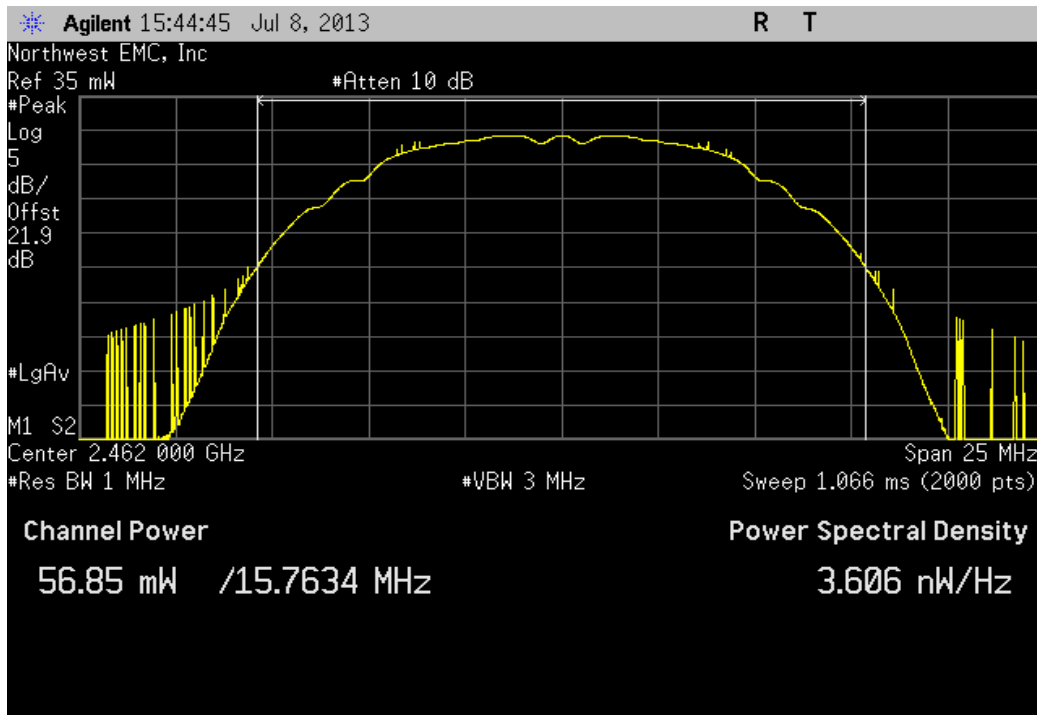
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz

Value	Limit	Result
70.852 mW	< 1 W	Pass



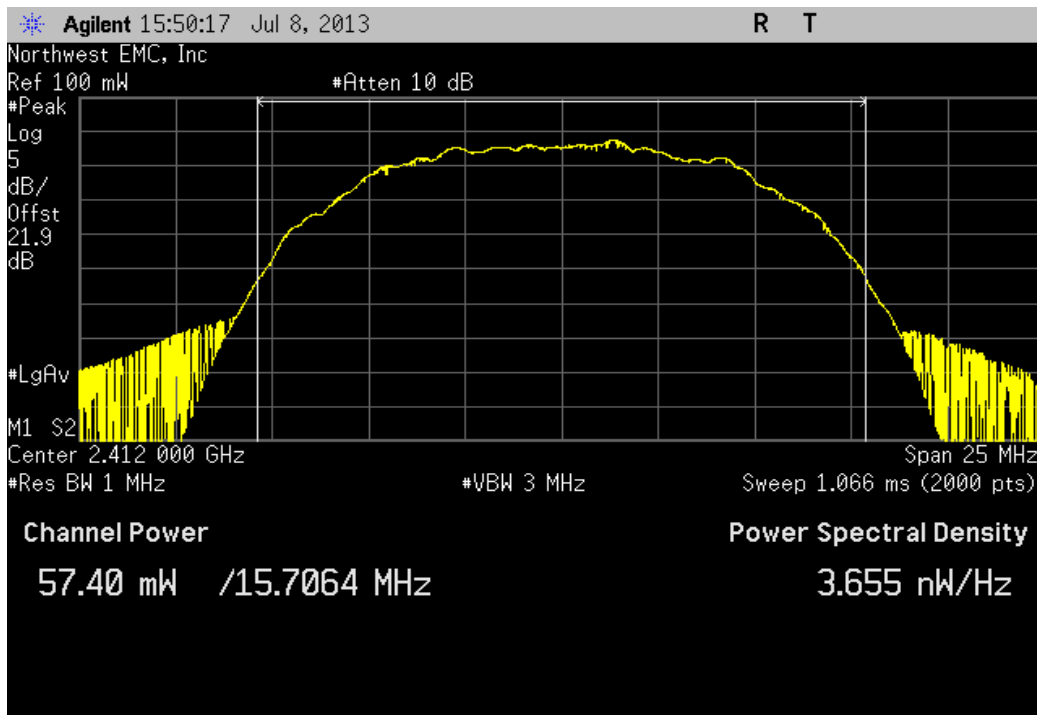
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz

Value	Limit	Result
56.848 mW	< 1 W	Pass



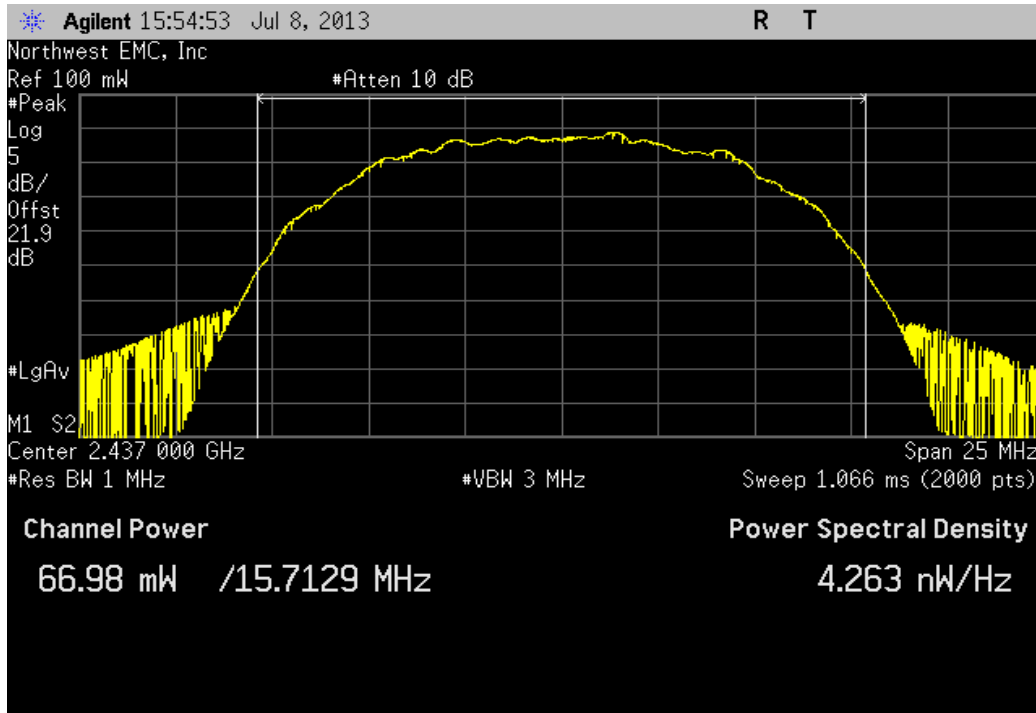
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz

Value	Limit	Result
57.402 mW	< 1 W	Pass



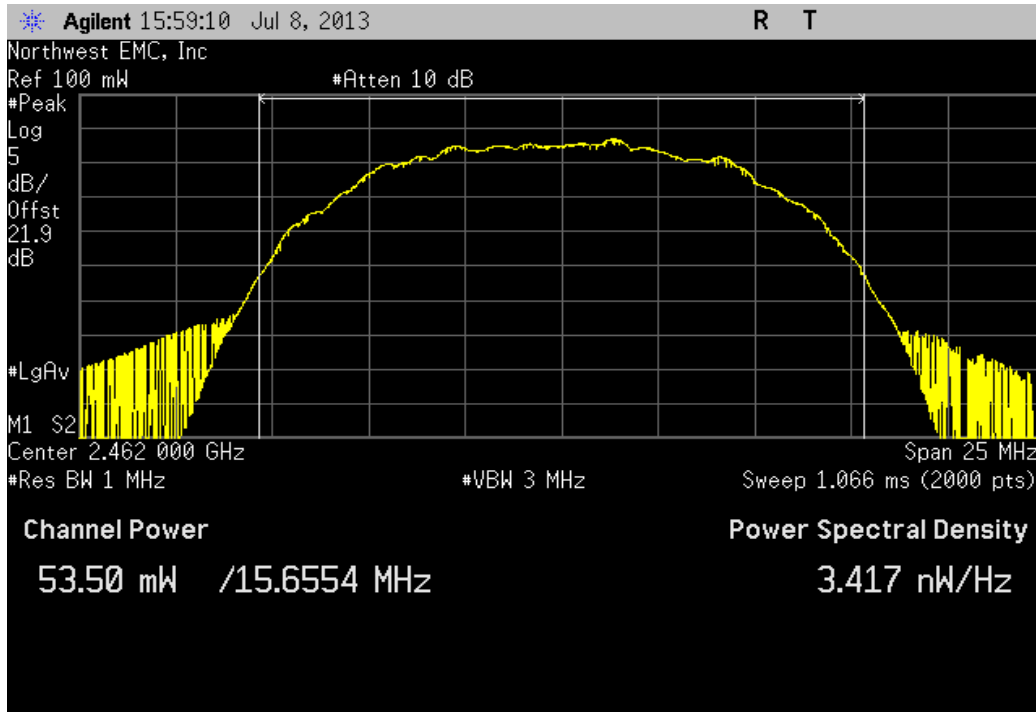
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Mid Channel 6, 2437 MHz

Value	Limit	Result
66.978 mW	< 1 W	Pass



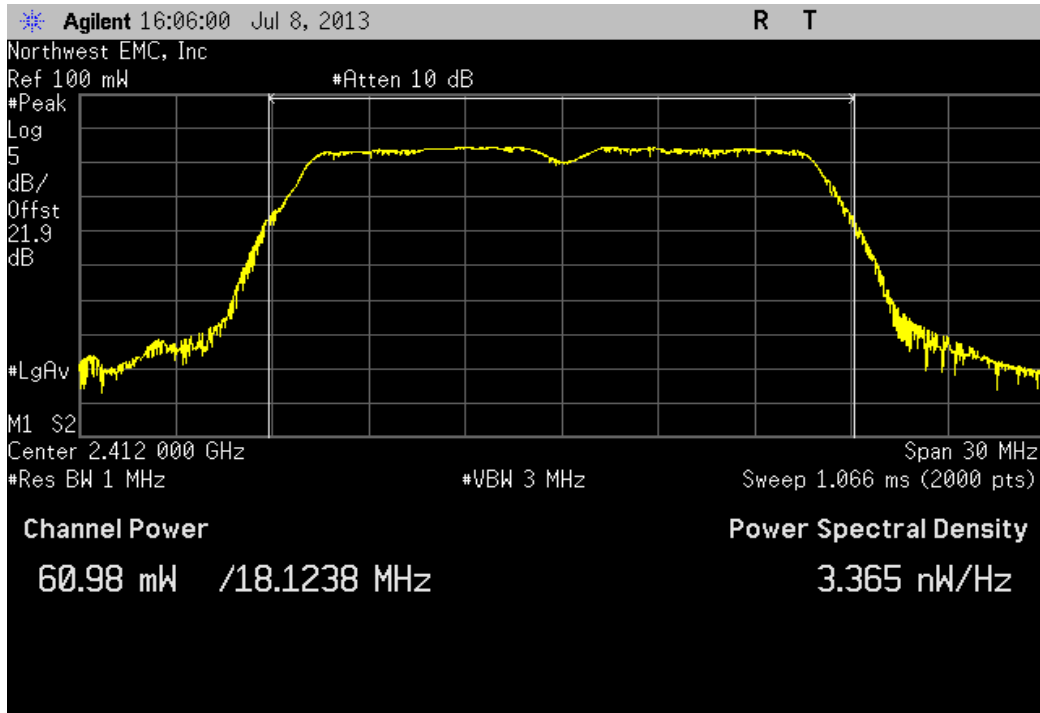
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz

Value	Limit	Result
53.495 mW	< 1 W	Pass



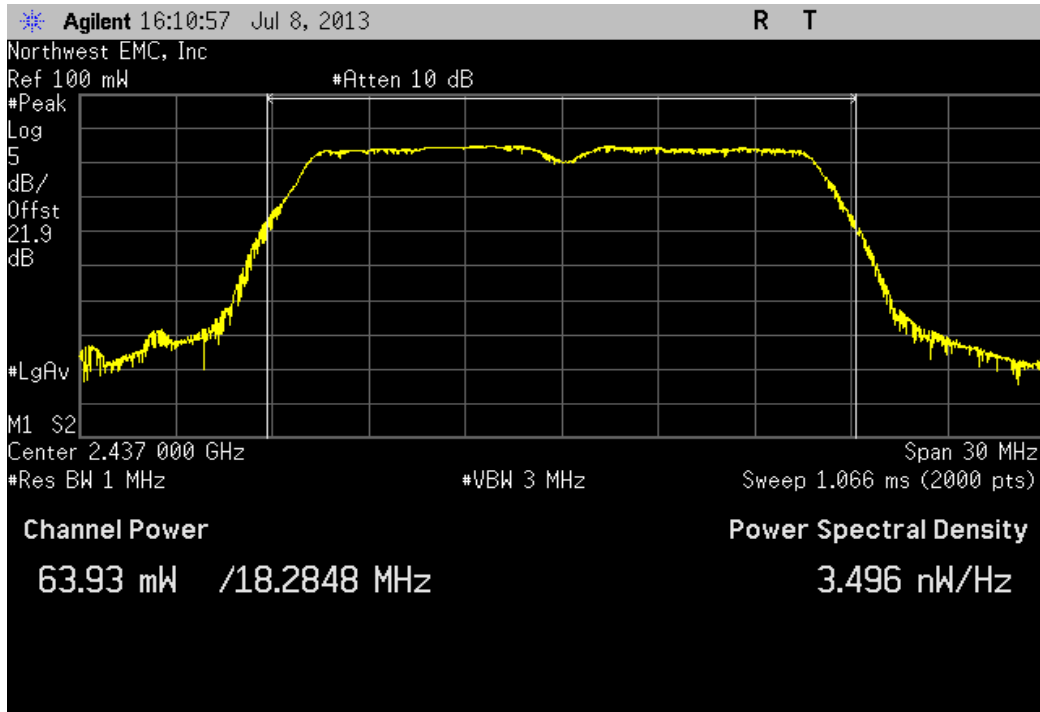
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz

Value	Limit	Result
60.981 mW	< 1 W	Pass



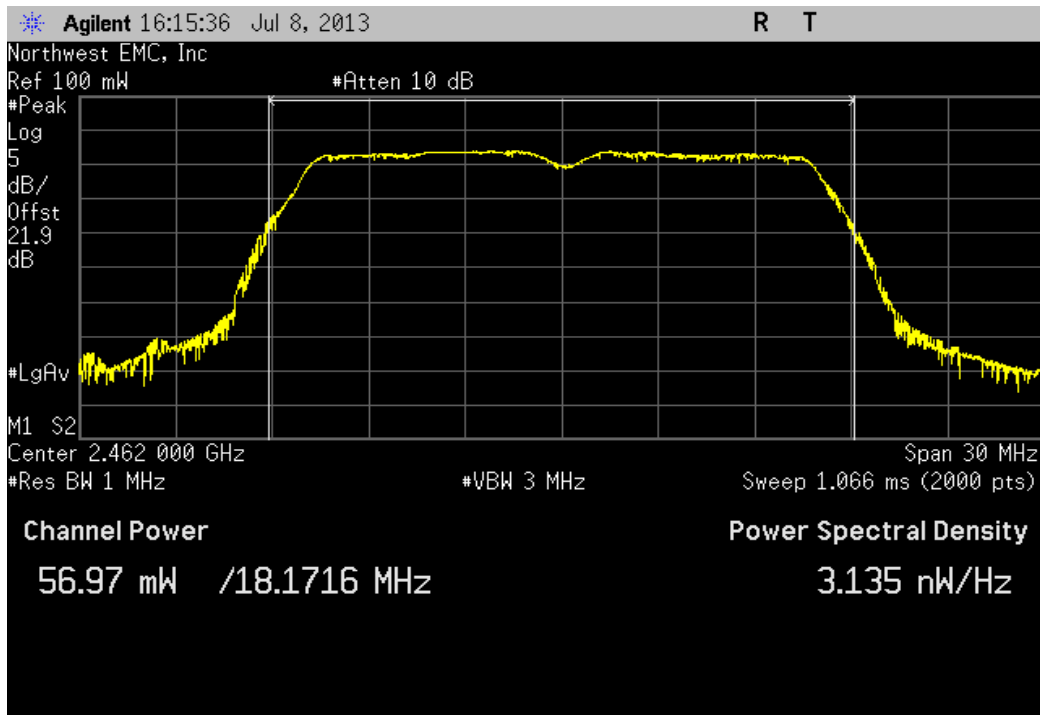
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz

Value	Limit	Result
63.928 mW	< 1 W	Pass



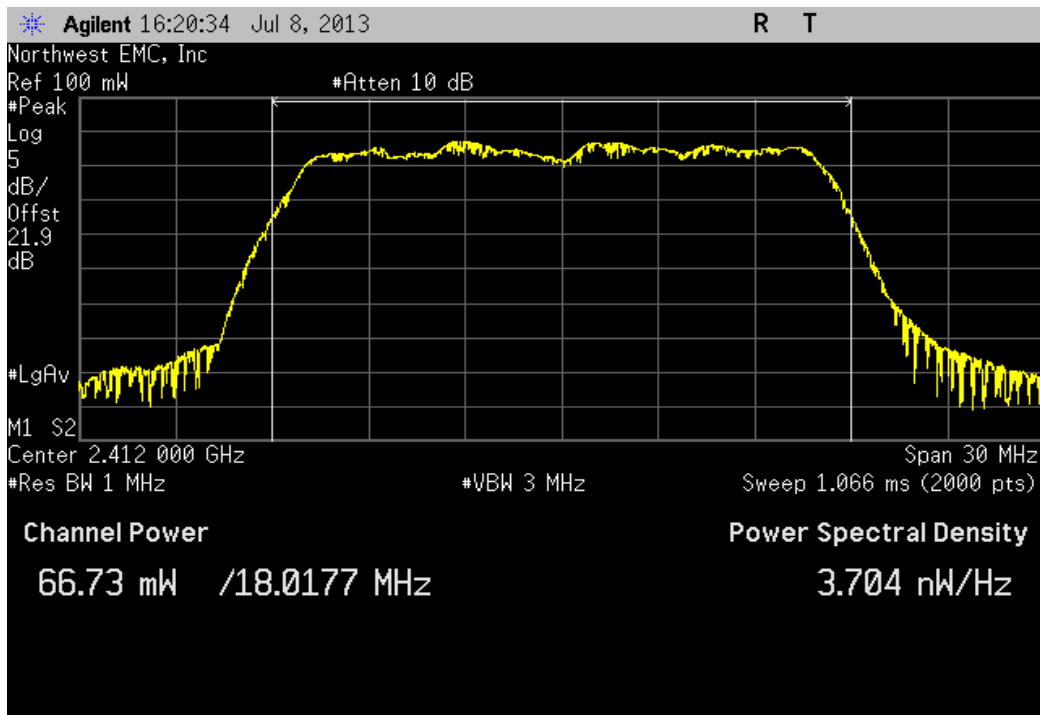
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz

Value	Limit	Result
56.968 mW	< 1 W	Pass



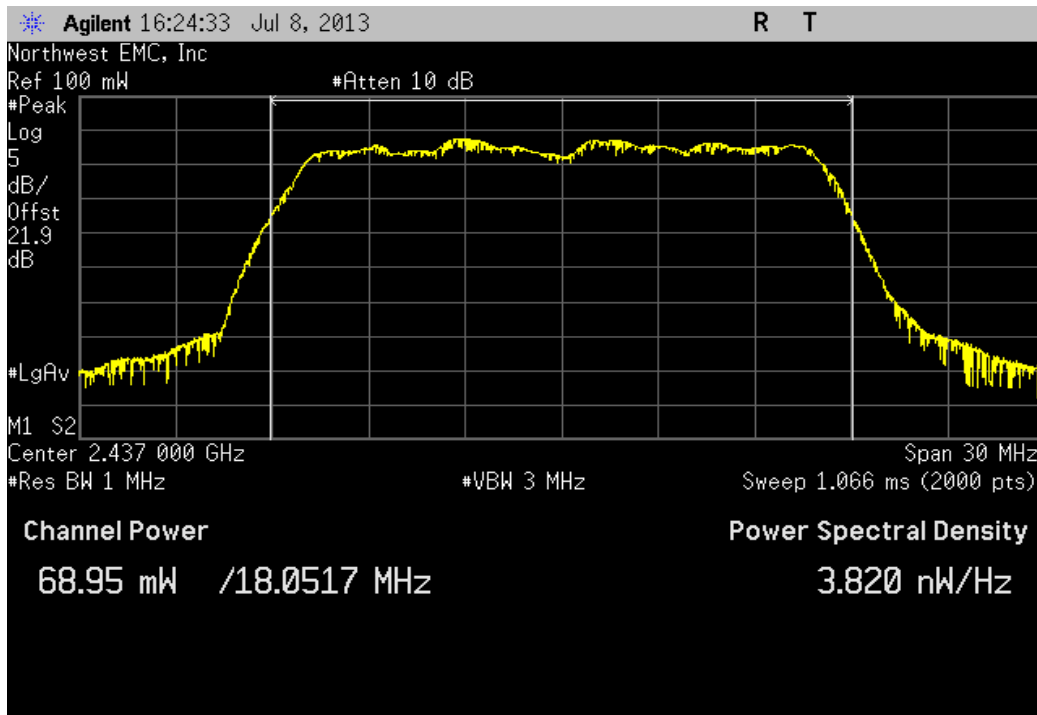
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz

Value	Limit	Result
66.73 mW	< 1 W	Pass



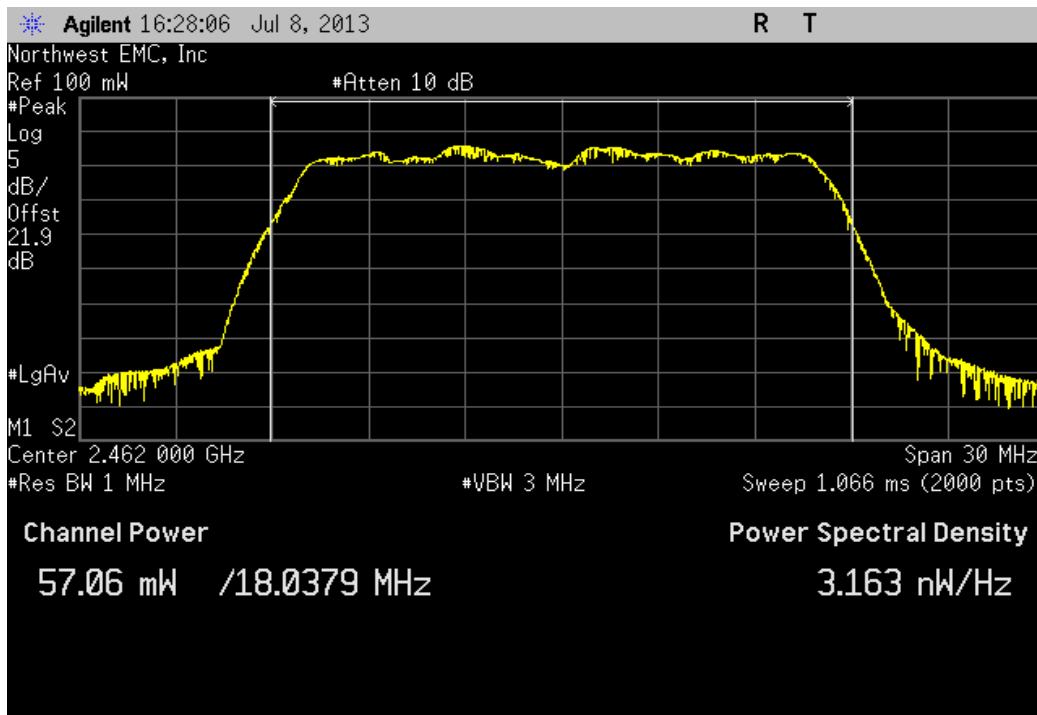
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Mid Channel 6, 2437 MHz

Value	Limit	Result
68.952 mW	< 1 W	Pass



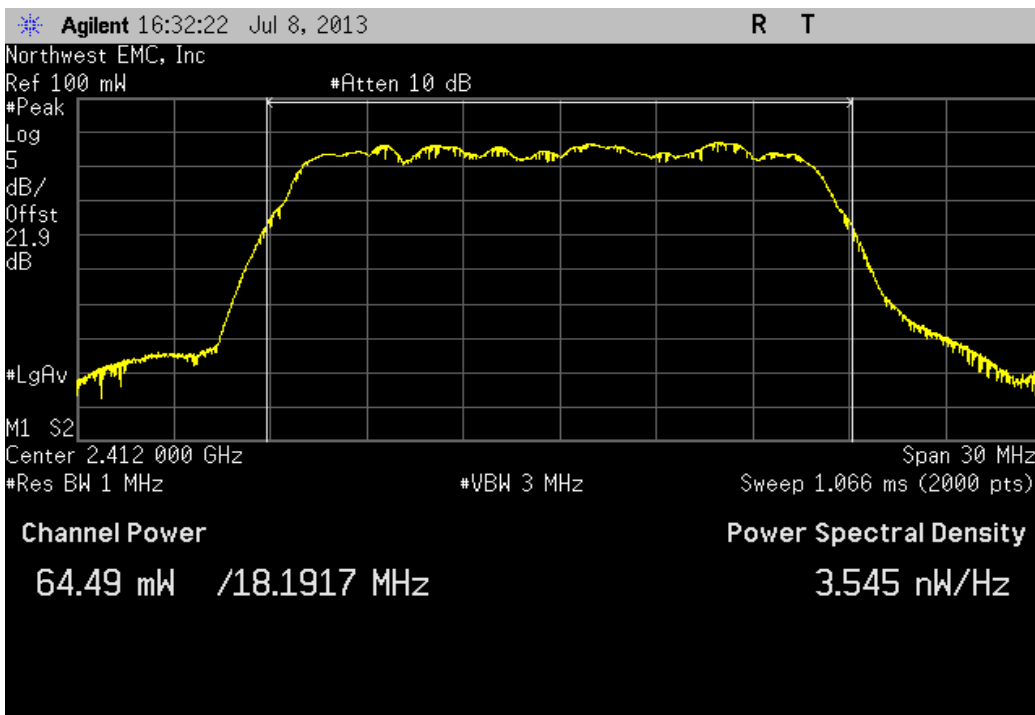
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz

Value	Limit	Result
57.061 mW	< 1 W	Pass



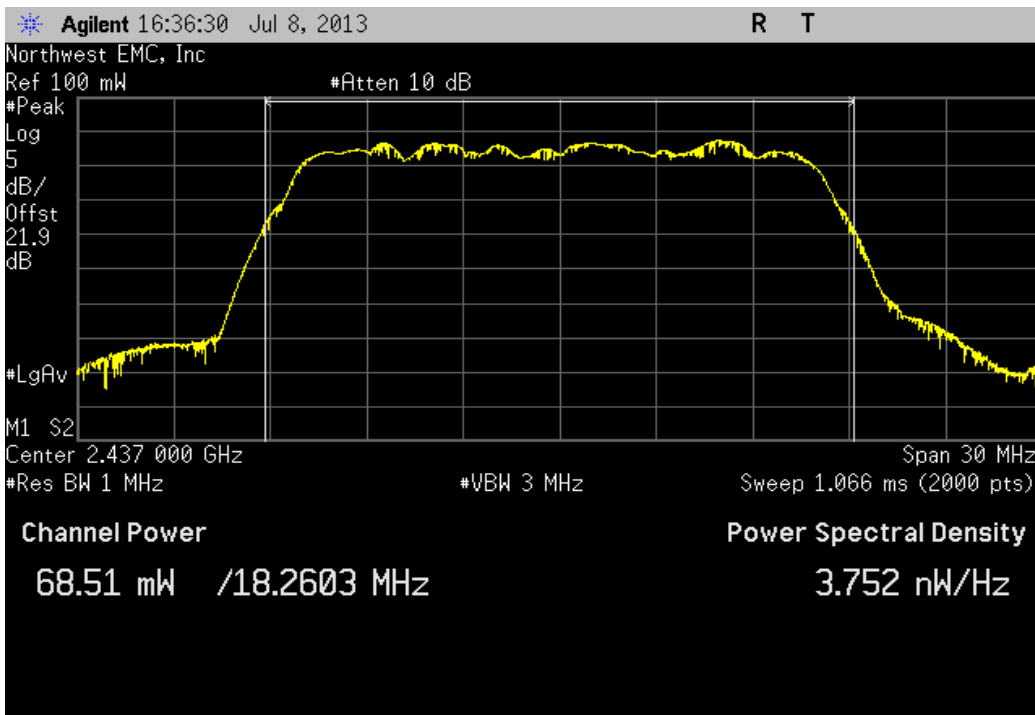
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz

Value	Limit	Result
64.489 mW	< 1 W	Pass



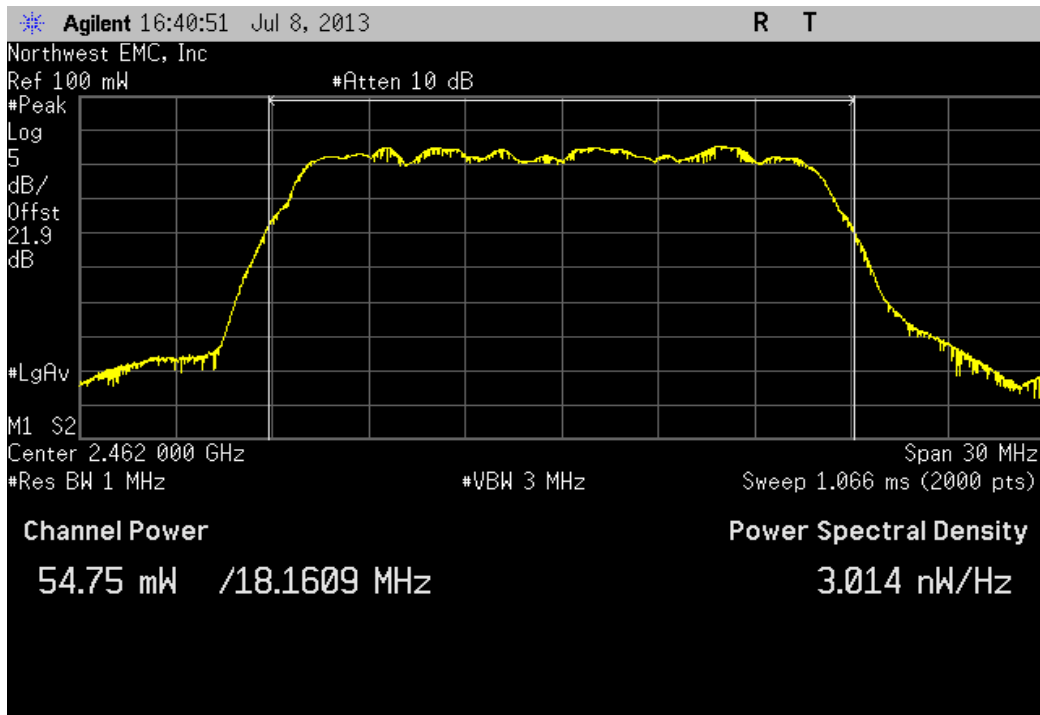
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz

Value	Limit	Result
68.507 mW	< 1 W	Pass



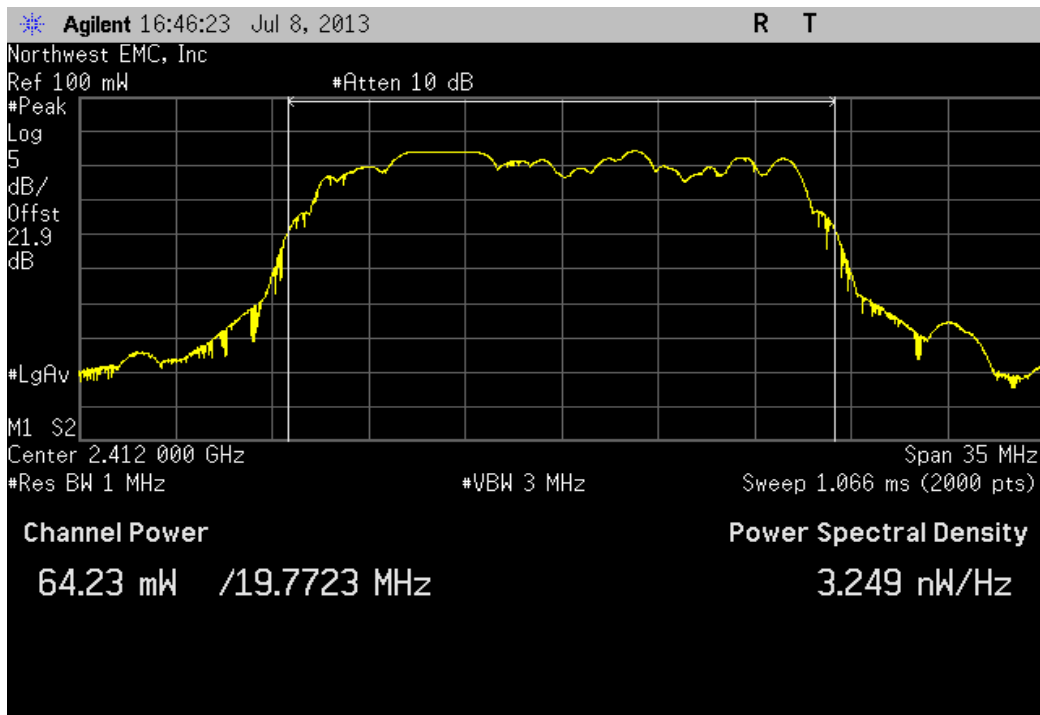
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz

Value	Limit	Result
54.746 mW	< 1 W	Pass



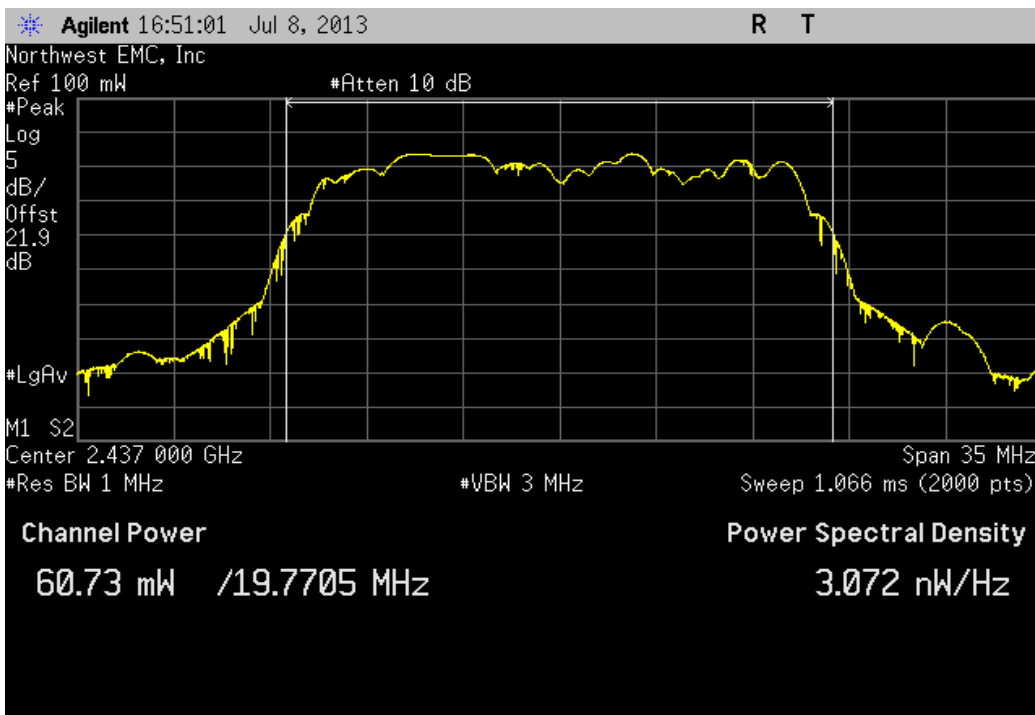
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1, 2412 MHz

Value	Limit	Result
64.232 mW	< 1 W	Pass



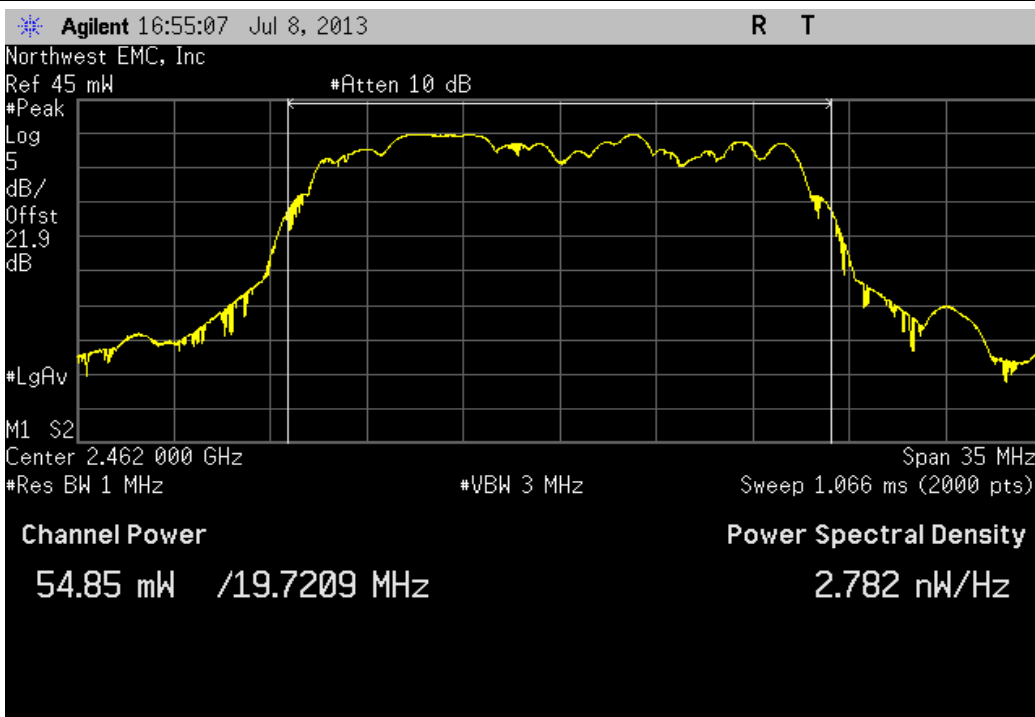
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Mid Channel 6, 2437 MHz

Value	Limit	Result
60.728 mW	< 1 W	Pass



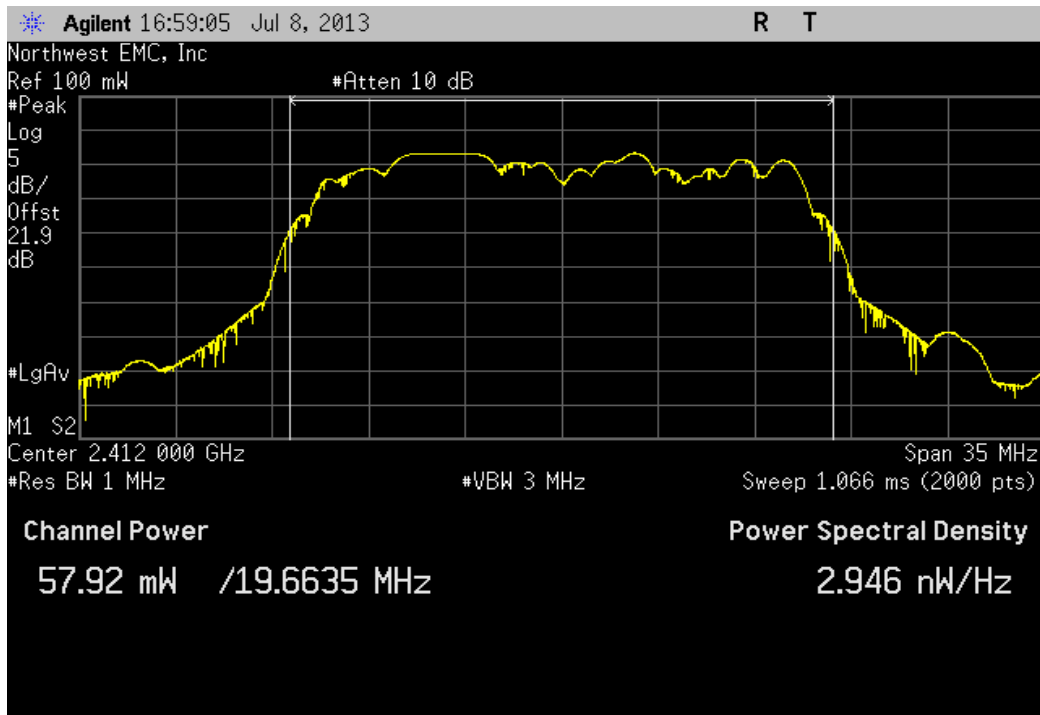
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 11, 2462 MHz

Value	Limit	Result
54.855 mW	< 1 W	Pass



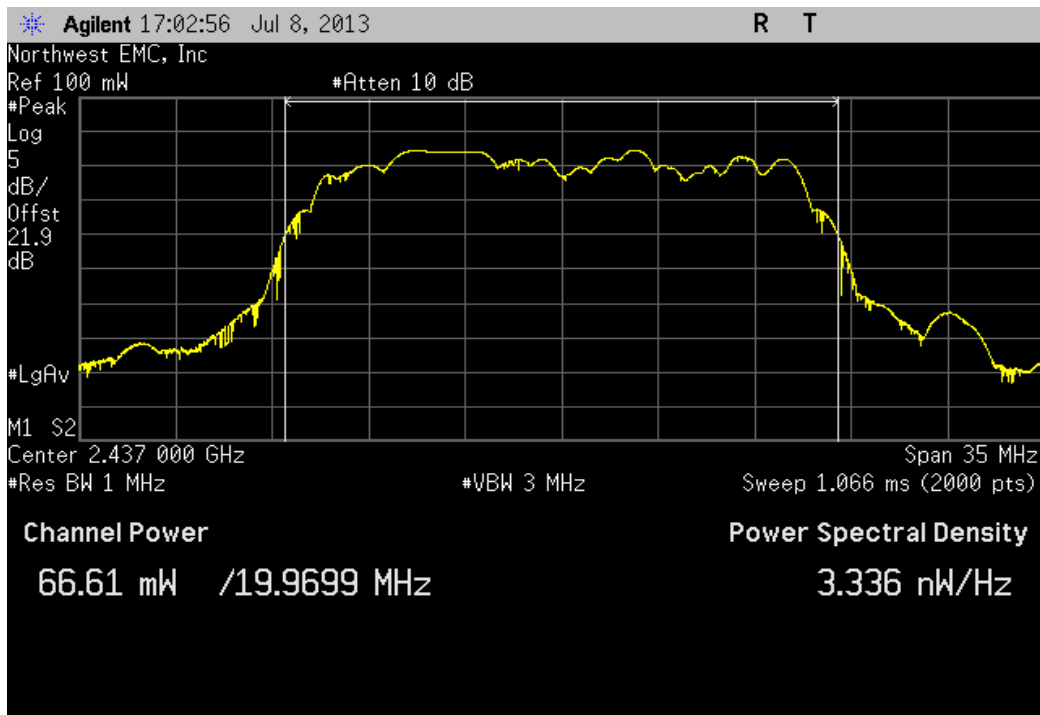
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1, 2412 MHz

Value	Limit	Result
57.919 mW	< 1 W	Pass



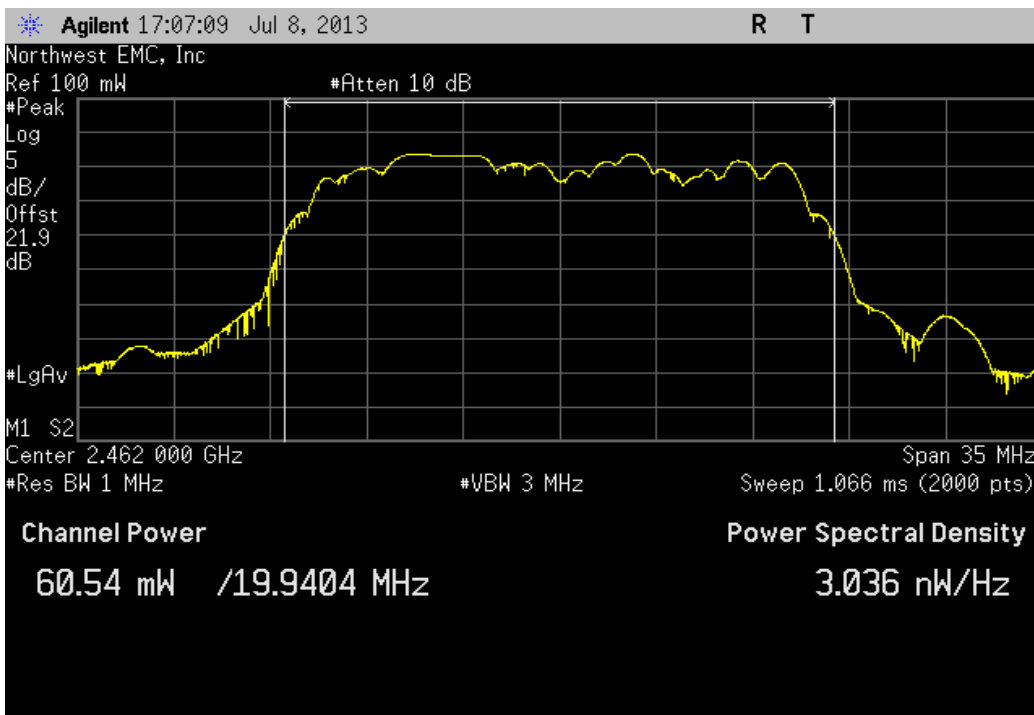
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Mid Channel 6, 2437 MHz

Value	Limit	Result
66.615 mW	< 1 W	Pass



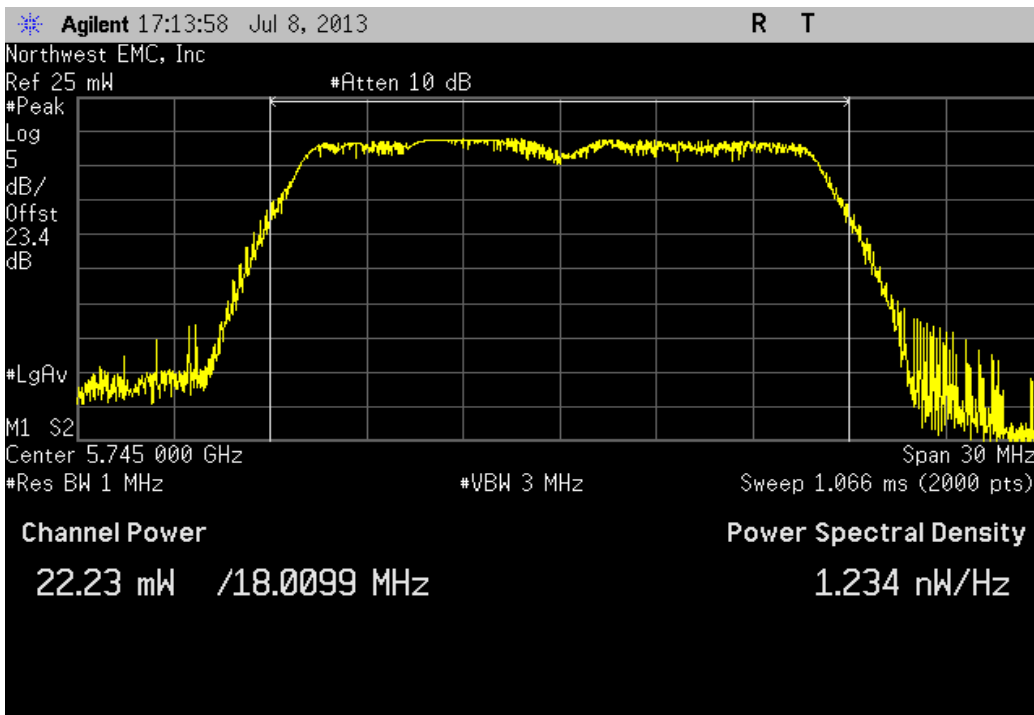
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, High Channel 11, 2462 MHz

Value	Limit	Result
60.537 mW	< 1 W	Pass



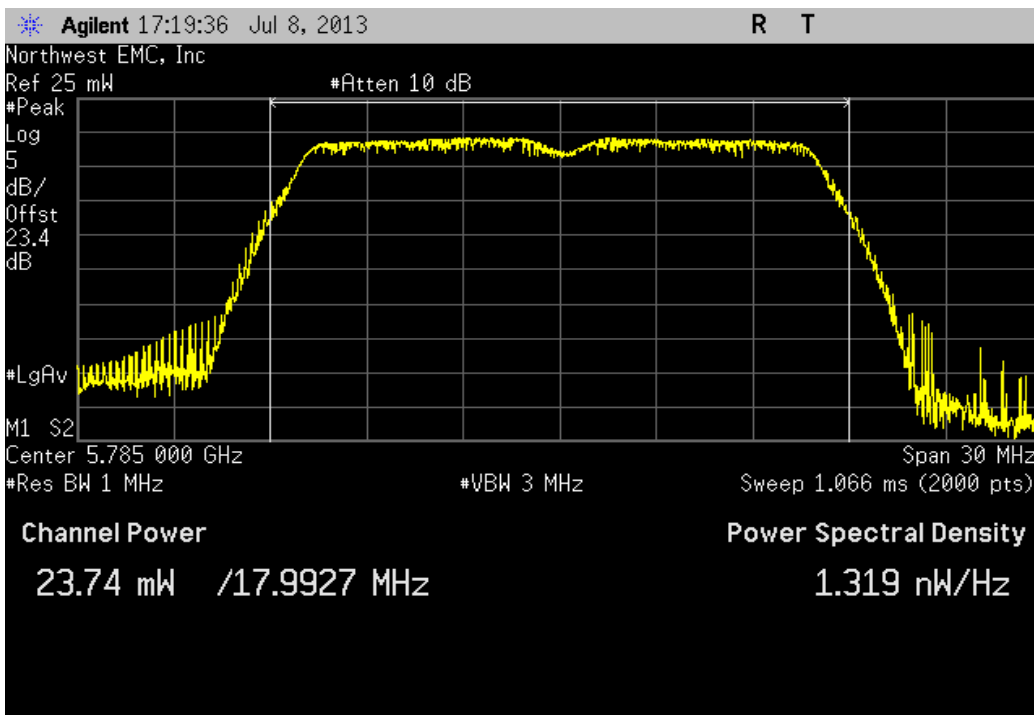
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Low Channel 149, 5745 MHz

Value	Limit	Result
22.233 mW	< 1 W	Pass



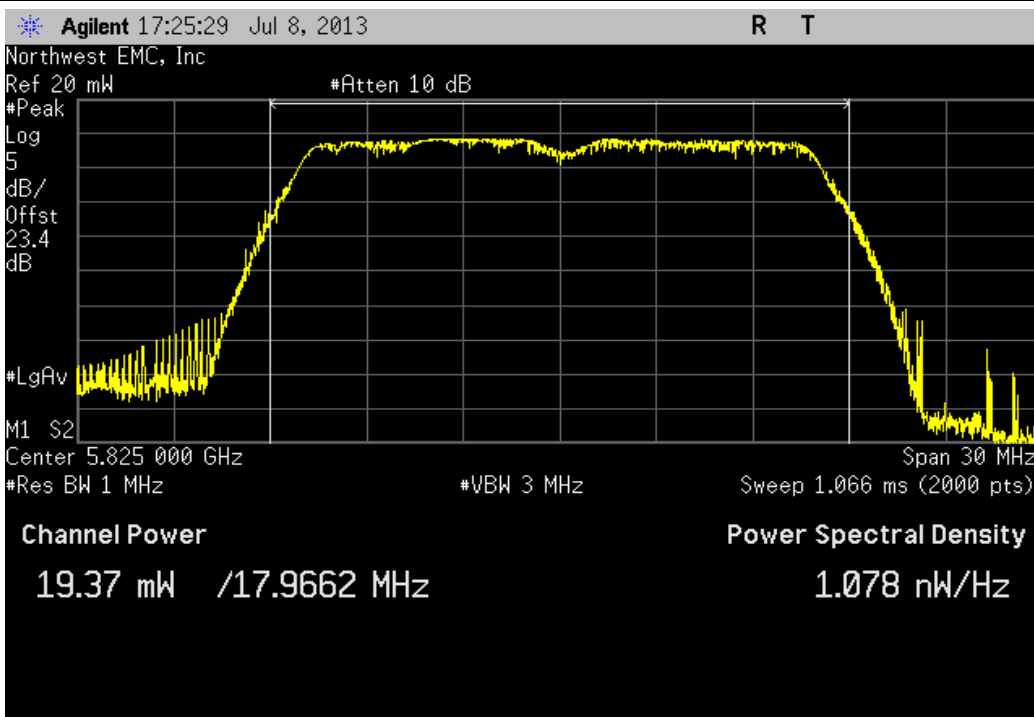
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Mid Channel 157, 5785 MHz

				Value	Limit	Result
				23.74 mW	< 1 W	Pass



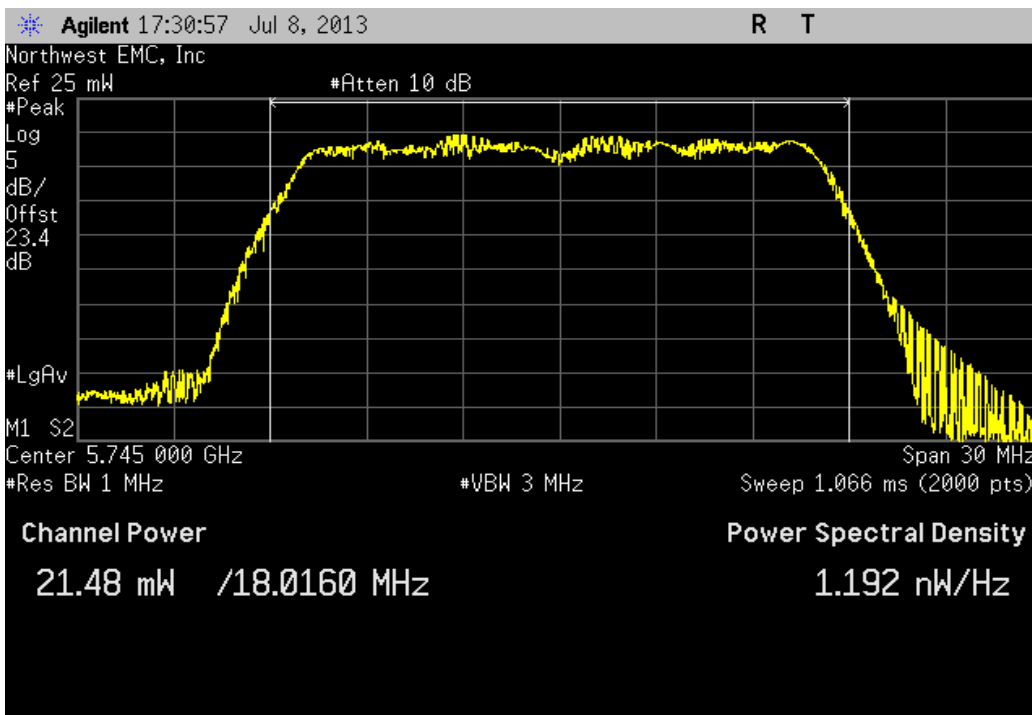
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, High Channel 165, 5825 MHz

				Value	Limit	Result
				19.374 mW	< 1 W	Pass



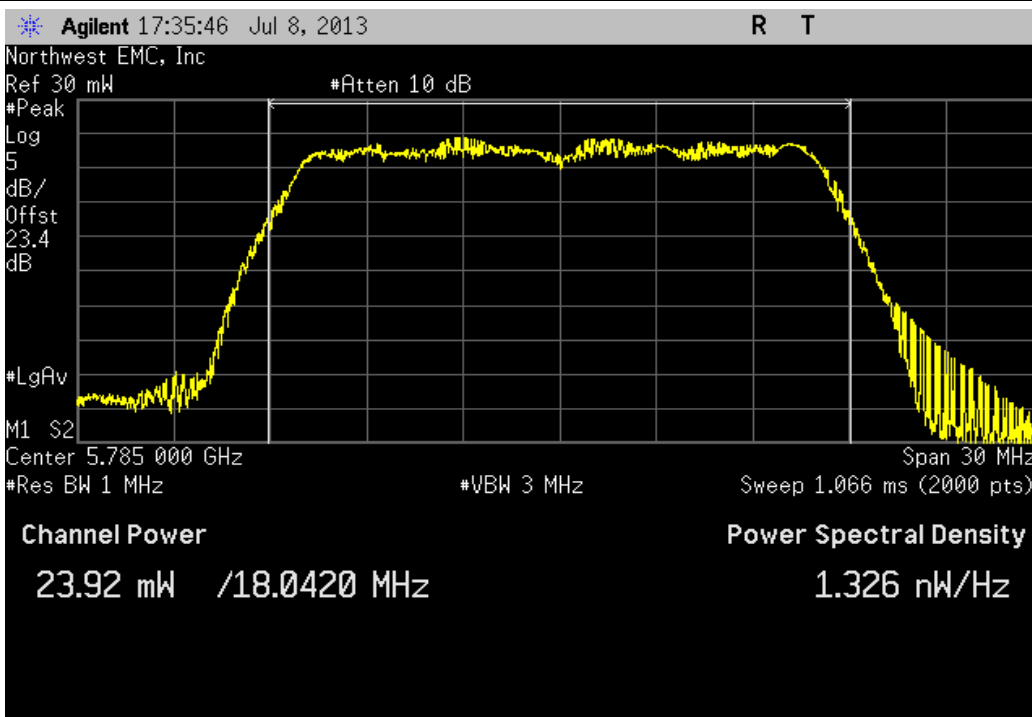
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Low Channel 149, 5745 MHz

	Value	Limit	Result
	21.477 mW	< 1 W	Pass



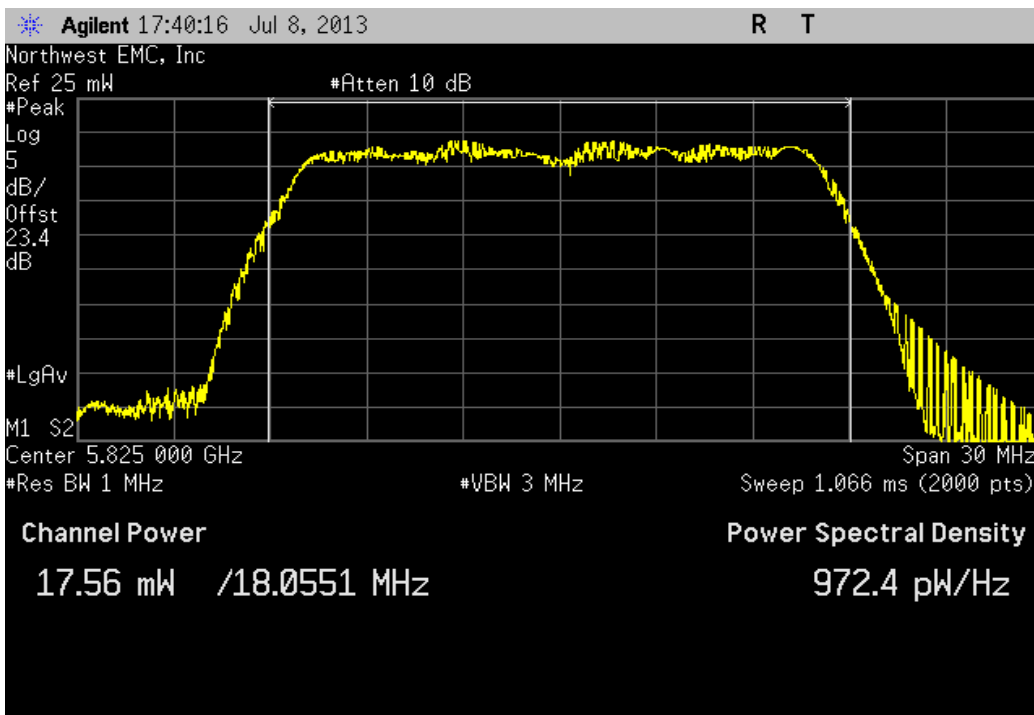
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Mid Channel 157, 5785 MHz

	Value	Limit	Result
	23.92 mW	< 1 W	Pass



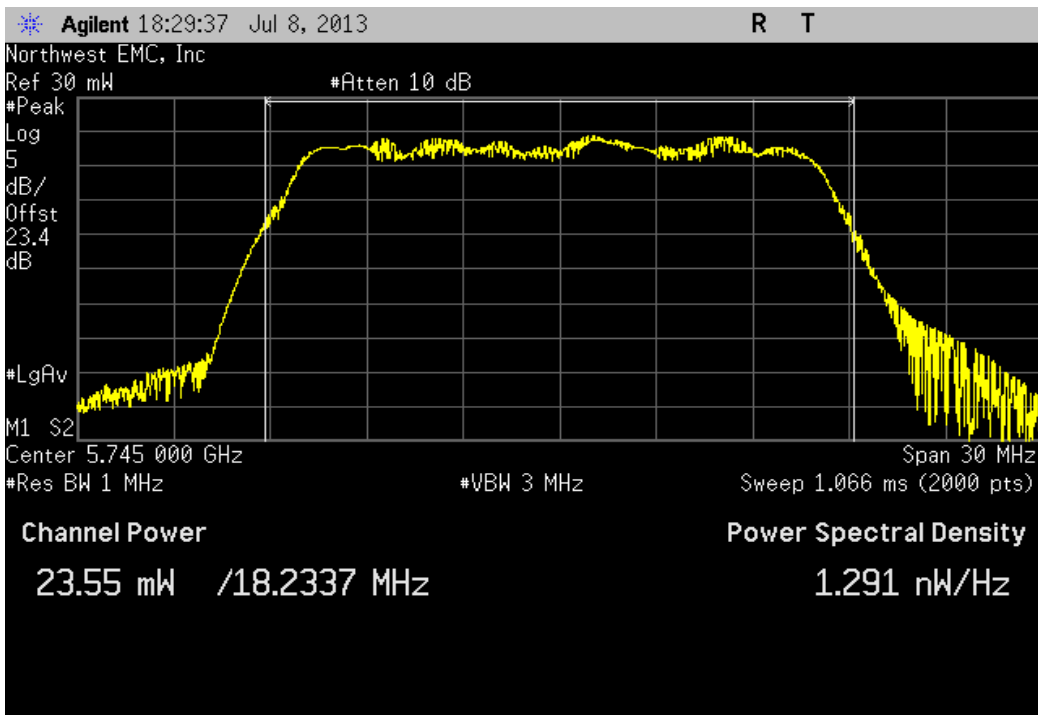
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, High Channel 165, 5825 MHz

Value	Limit	Result
17.556 mW	< 1 W	Pass



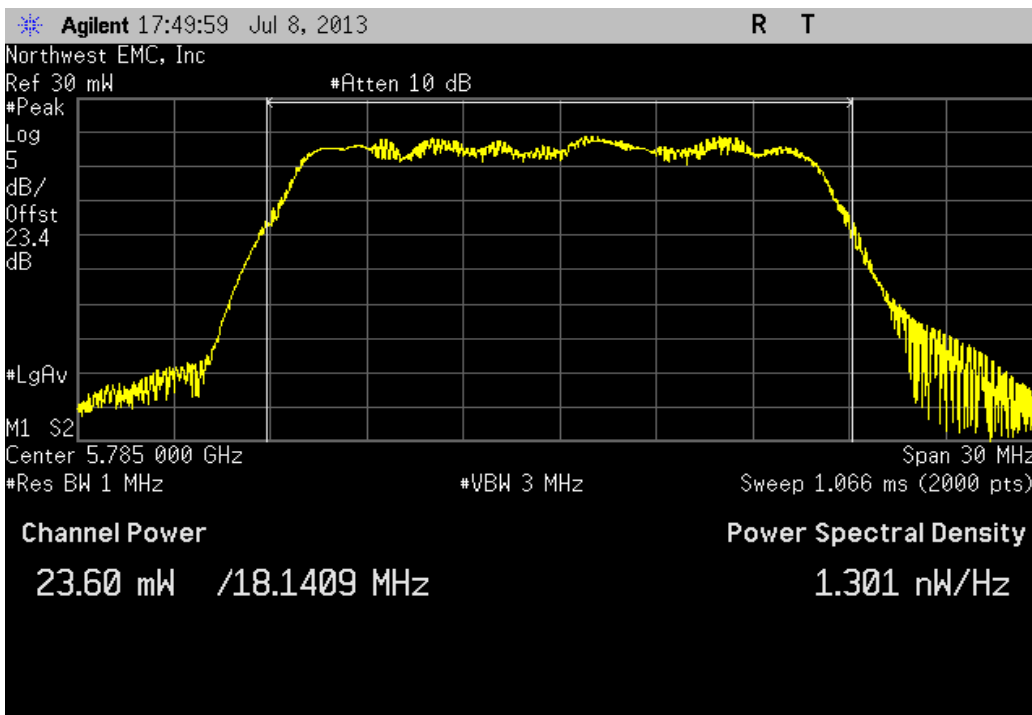
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 54 Mbps, Low Channel 149, 5745 MHz

Value	Limit	Result
23.545 mW	< 1 W	Pass



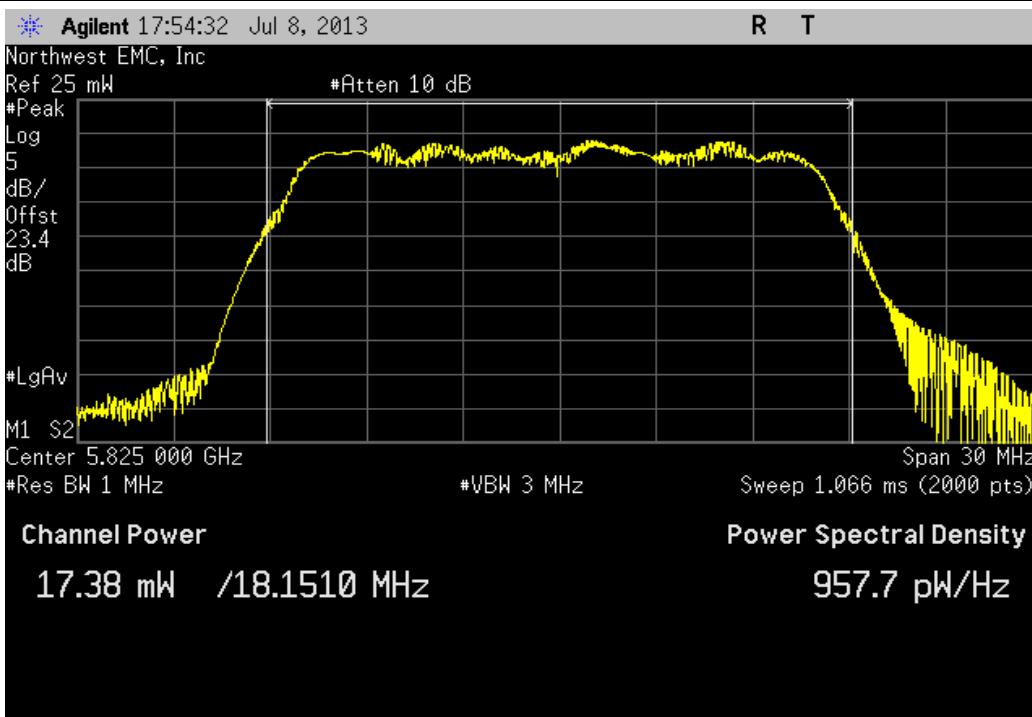
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 54 Mbps, Mid Channel 157, 5785 MHz

				Value	Limit	Result
				23.596 mW	< 1 W	Pass



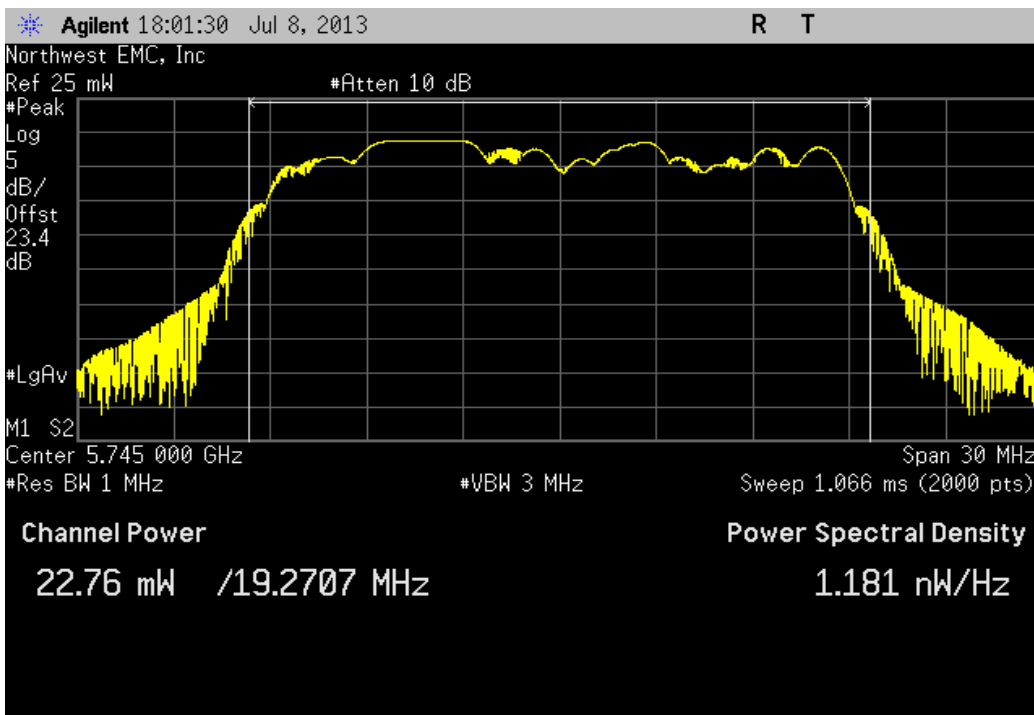
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 54 Mbps, High Channel 165, 5825 MHz

				Value	Limit	Result
				17.382 mW	< 1 W	Pass



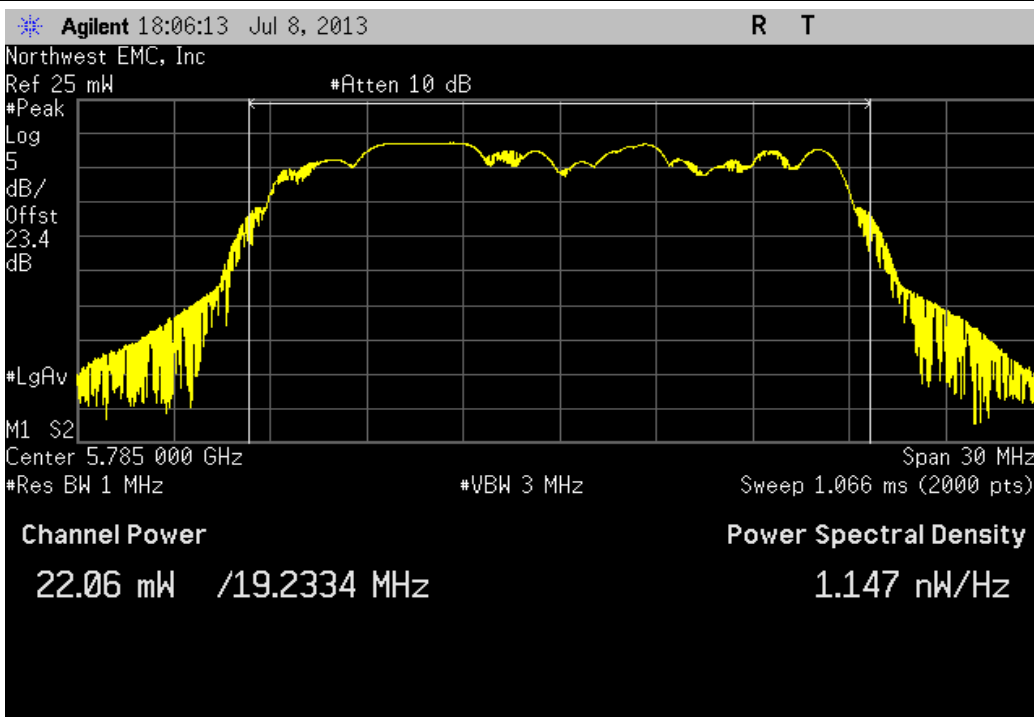
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, Low Channel 149, 5745 MHz

	Value	Limit	Result
	22.758 mW	< 1 W	Pass



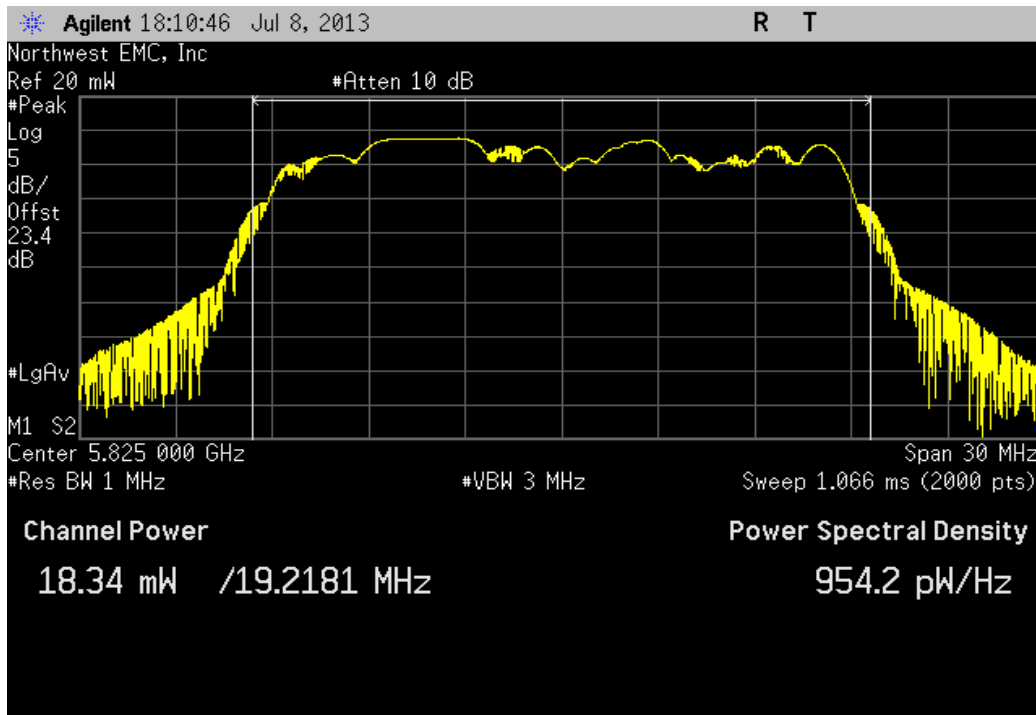
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, Mid Channel 157, 5785 MHz

	Value	Limit	Result
	22.064 mW	< 1 W	Pass



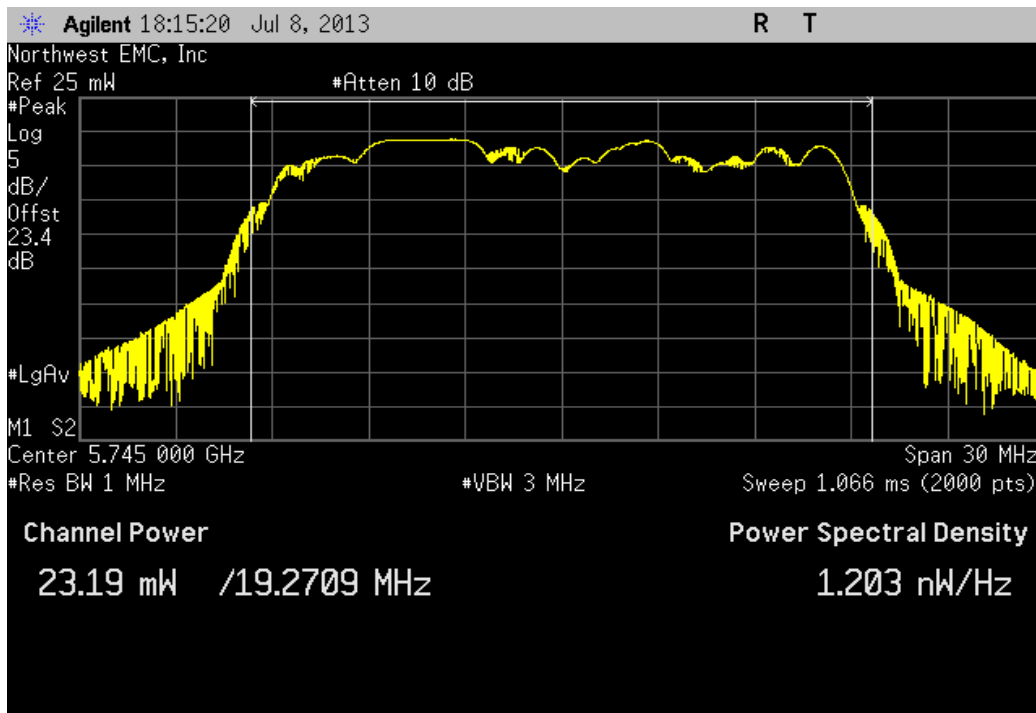
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, High Channel 165, 5825 MHz

Value	Limit	Result
18.337 mW	< 1 W	Pass



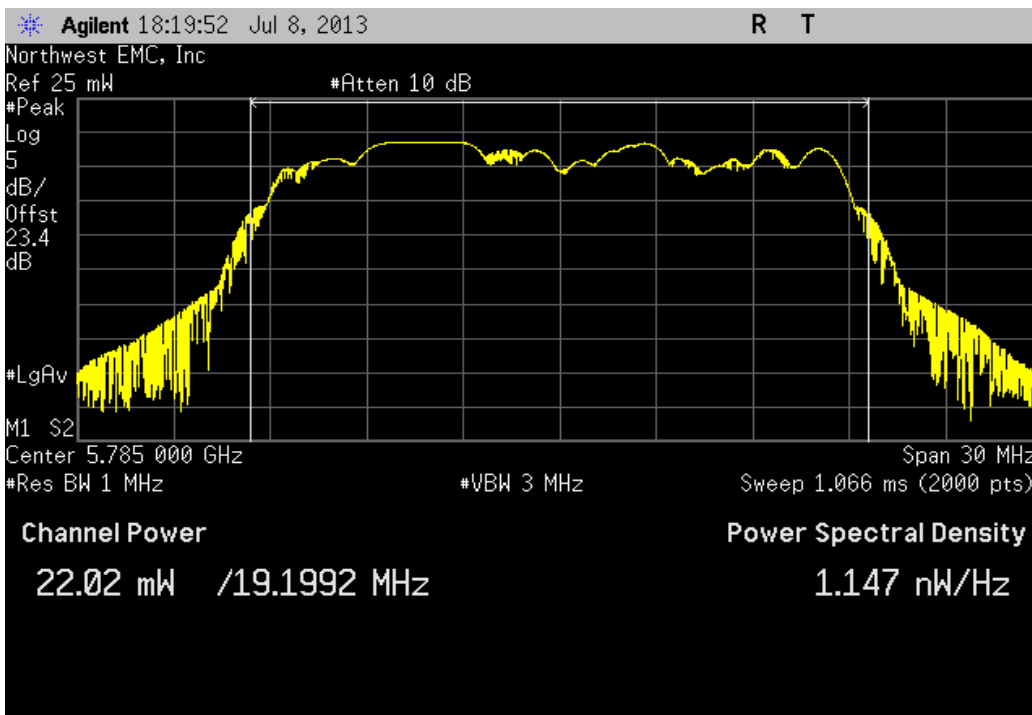
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, Low Channel 149, 5745 MHz

Value	Limit	Result
23.19 mW	< 1 W	Pass



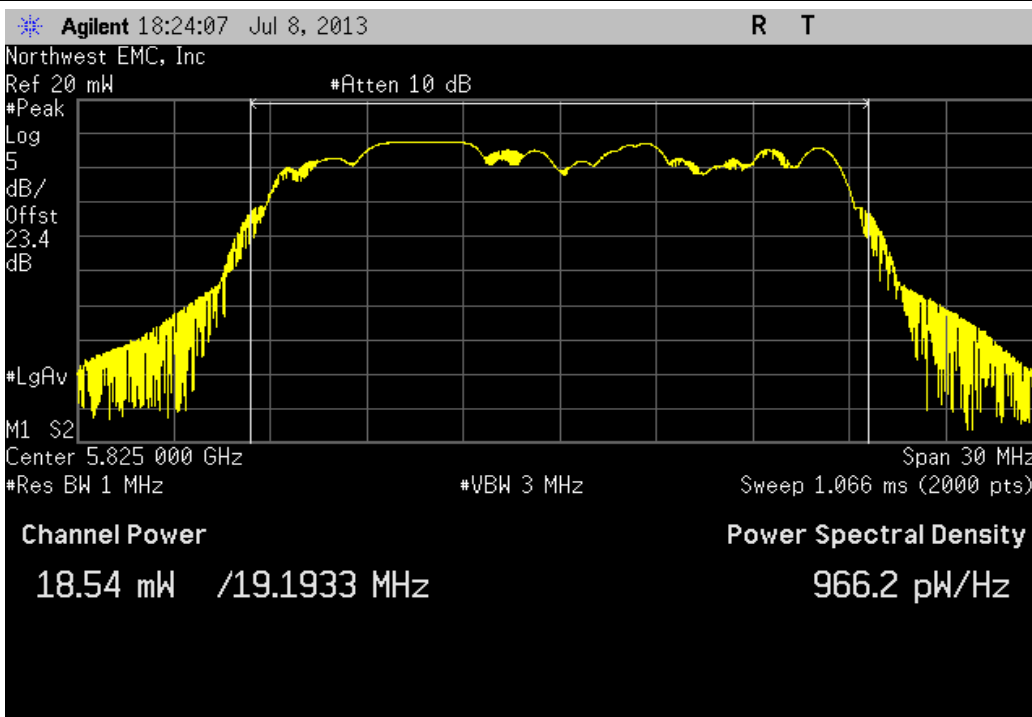
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, Mid Channel 157, 5785 MHz

	Value	Limit	Result
	22.019 mW	< 1 W	Pass



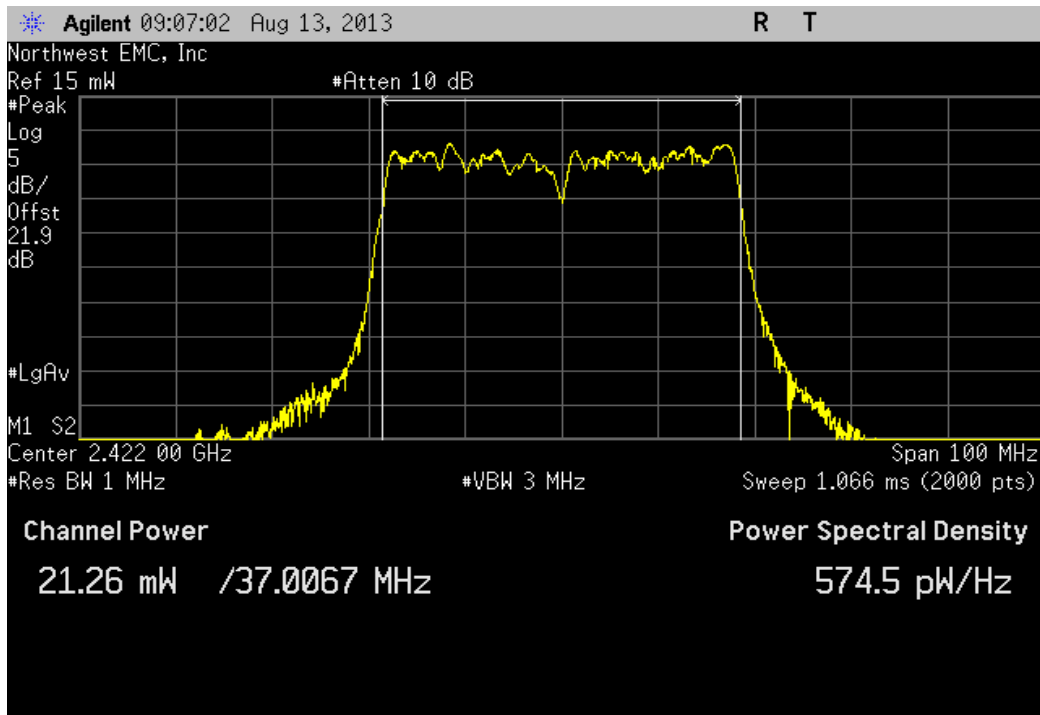
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, High Channel 165, 5825 MHz

	Value	Limit	Result
	18.545 mW	< 1 W	Pass



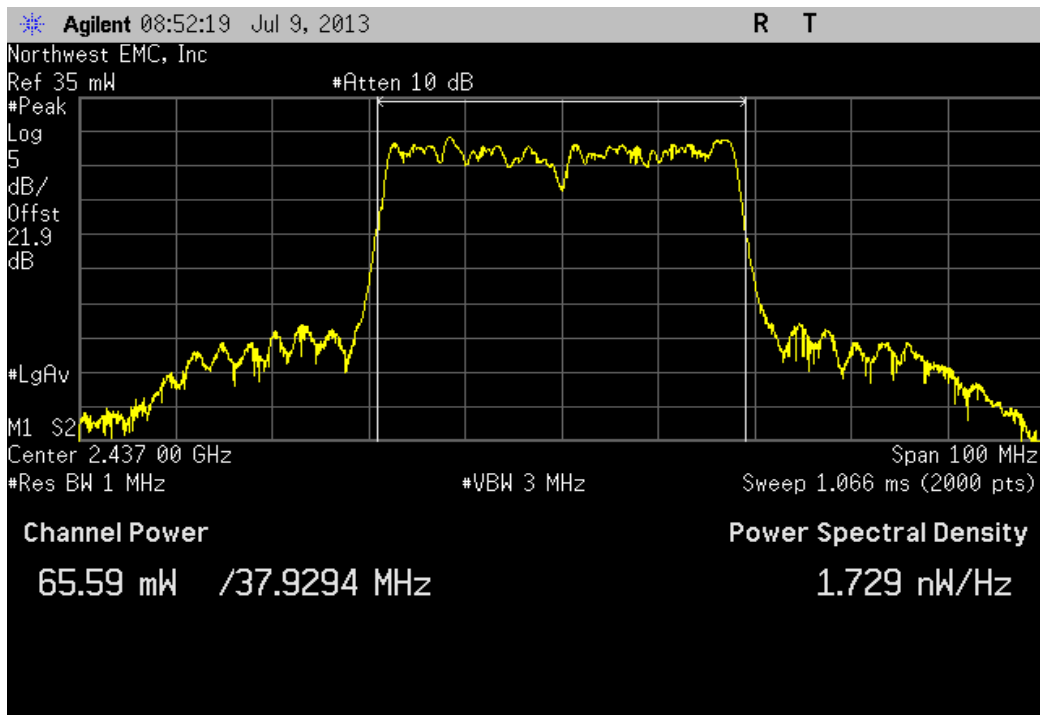
40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1/5, 2422 MHz

				Value	Limit	Result
				21.26 mW	< 1 W	Pass



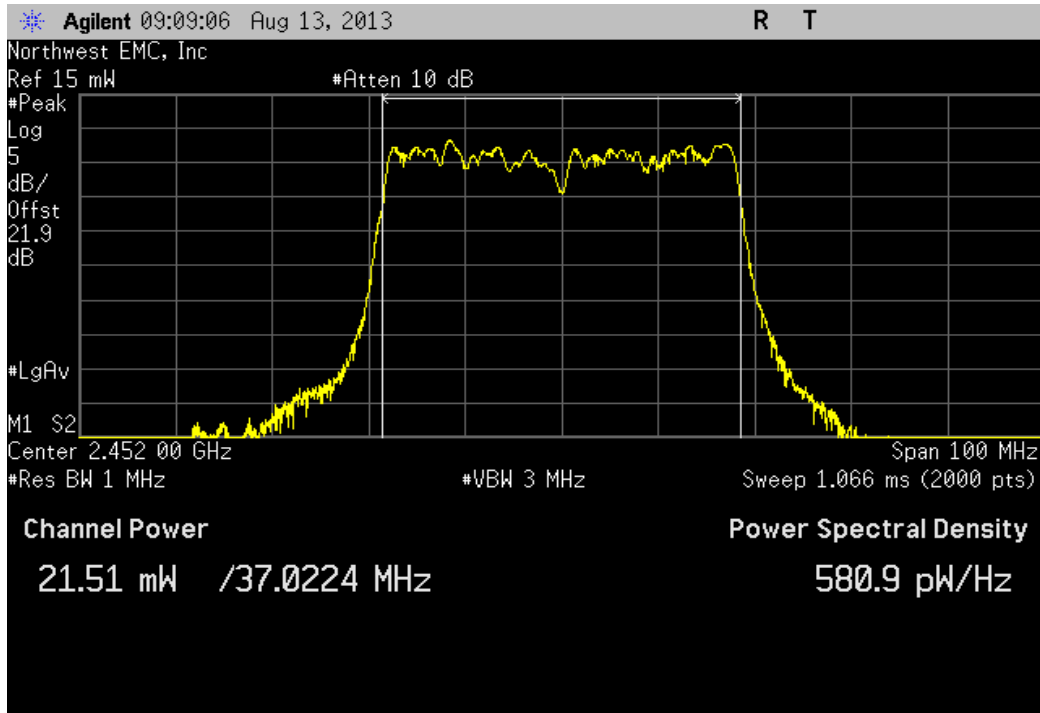
40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Mid Channel 4/8, 2437 MHz

				Value	Limit	Result
				65.586 mW	< 1 W	Pass



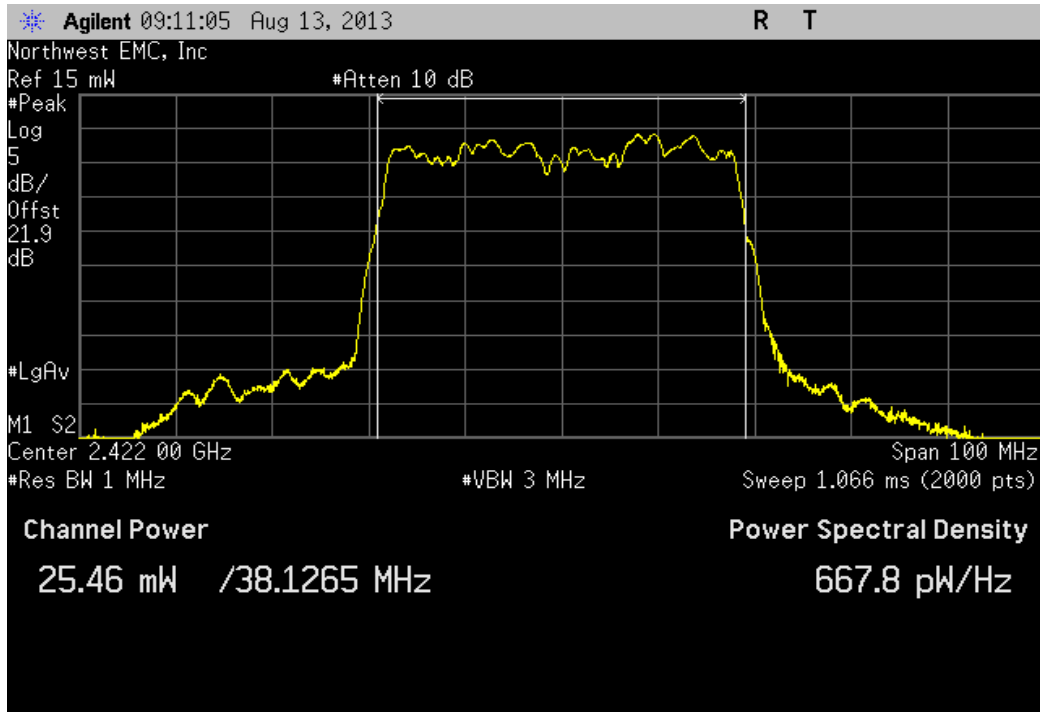
40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 7/11, 2452 MHz

				Value	Limit	Result
				21.508 mW	< 1 W	Pass



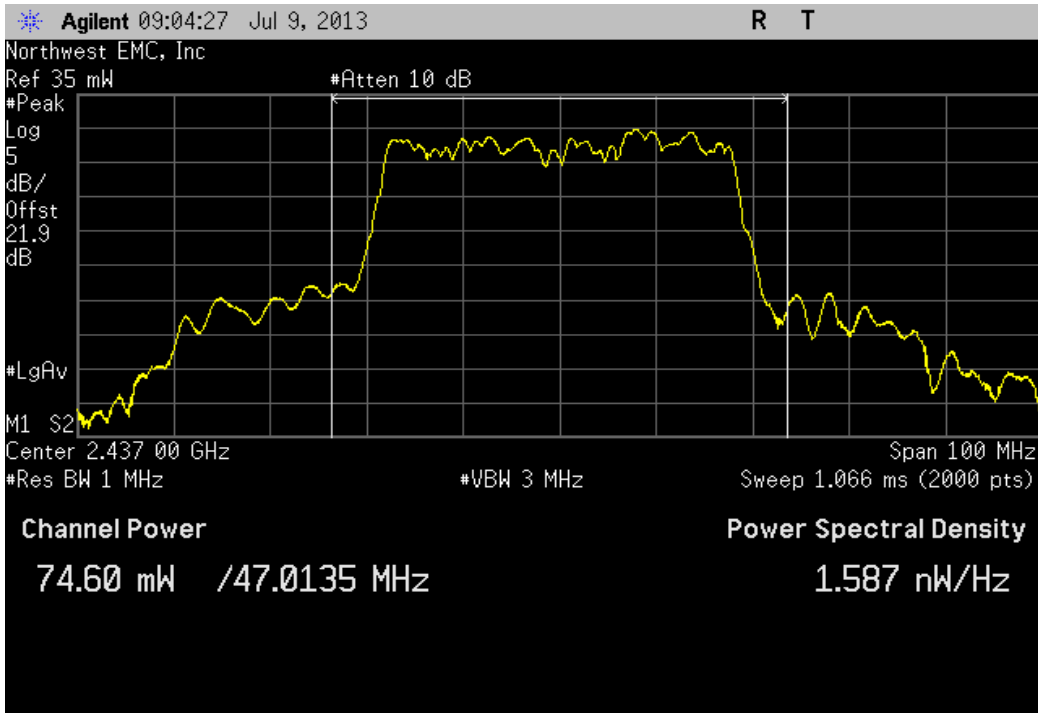
40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1/5, 2422 MHz

				Value	Limit	Result
				25.462 mW	< 1 W	Pass



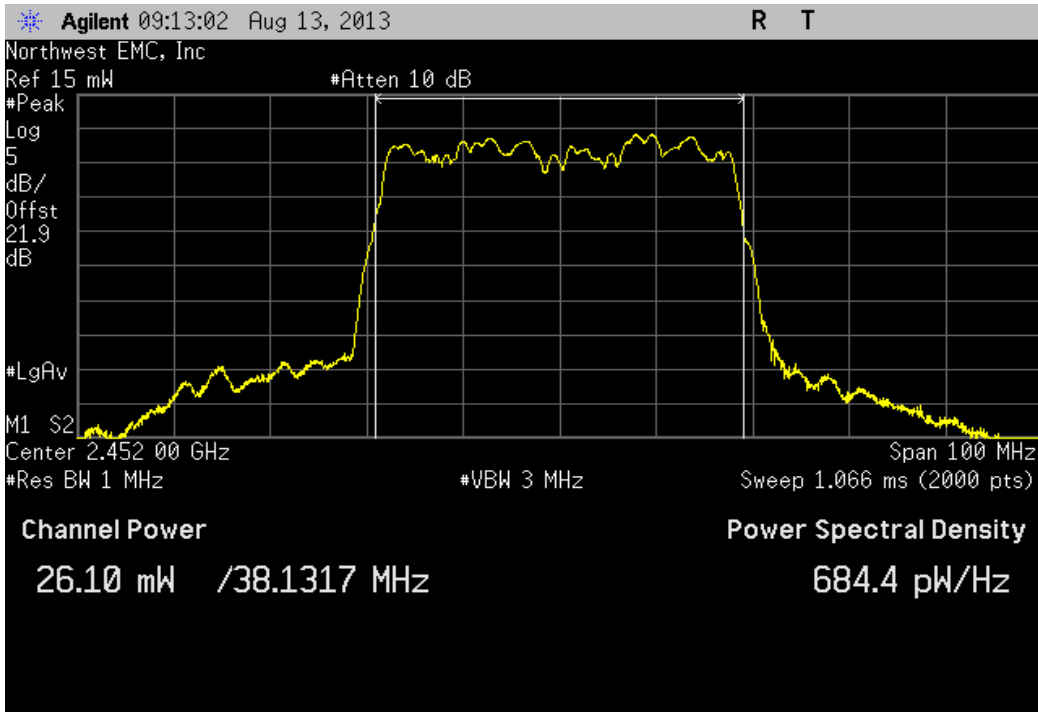
40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Mid Channel 4/8, 2437 MHz

Value	Limit	Result
74.601 mW	< 1 W	Pass



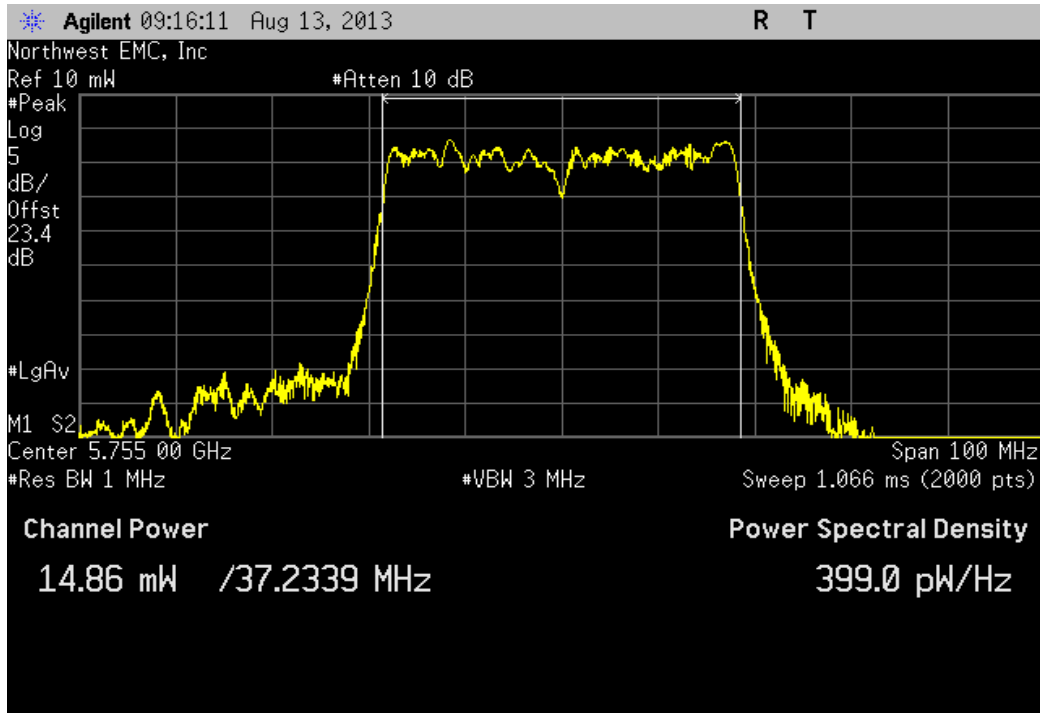
40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, High Channel 7/11, 2452 MHz

Value	Limit	Result
26.095 mW	< 1 W	Pass



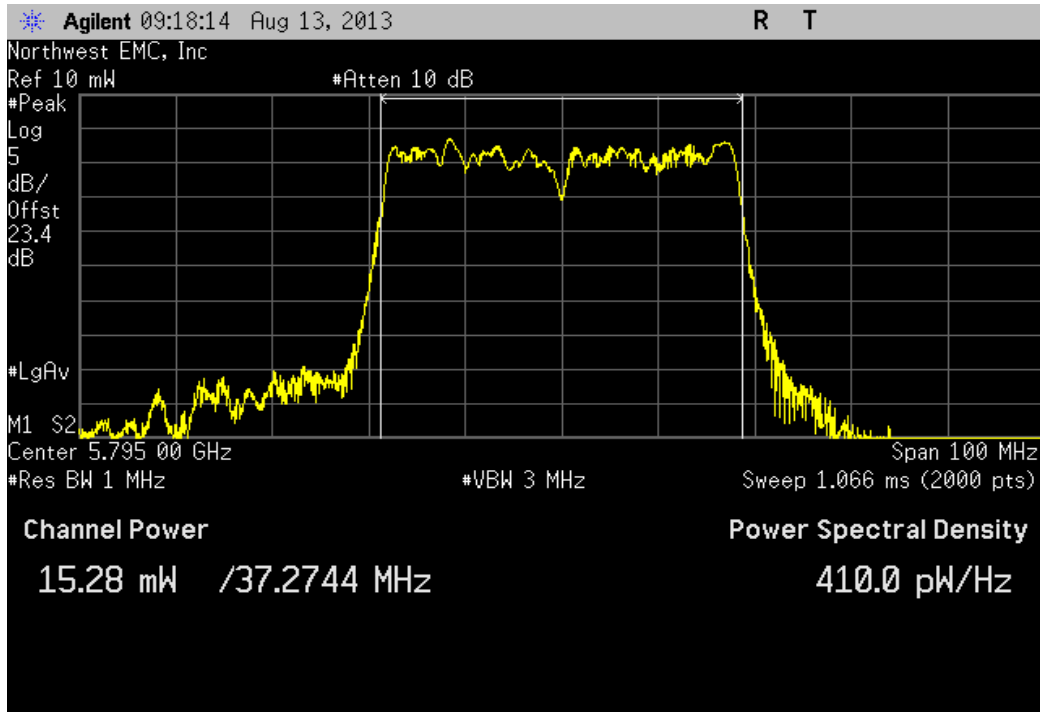
40 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, Low Channel 149/153, 5755 MHz

Value	Limit	Result
14.856 mW	< 1 W	Pass



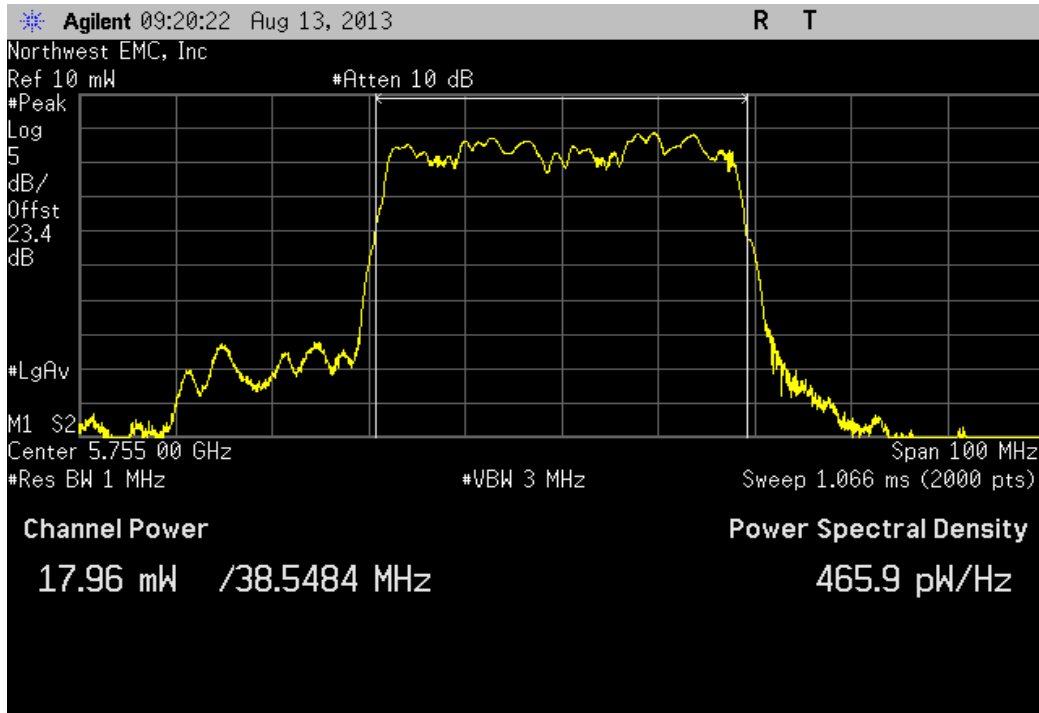
40 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, High Channel 157/161, 5795 MHz

Value	Limit	Result
15.281 mW	< 1 W	Pass



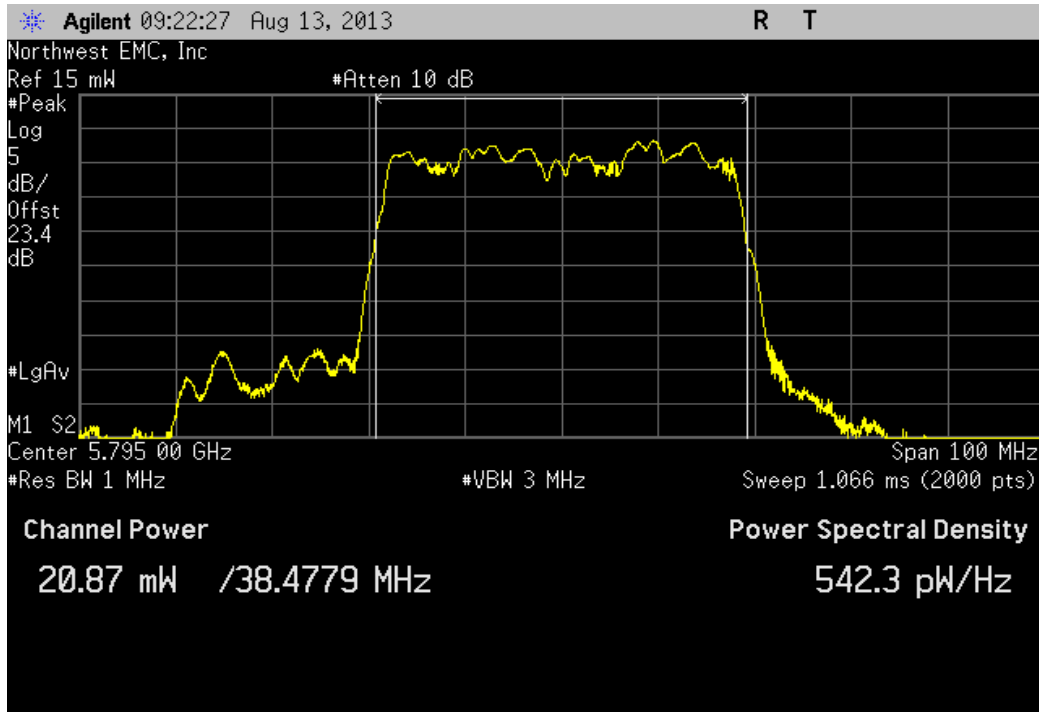
40 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, Low Channel 149/153, 5755 MHz

Value	Limit	Result
17.958 mW	< 1 W	Pass



40 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, High Channel 157/161, 5795 MHz

Value	Limit	Result
20.866 mW	< 1 W	Pass



Output Power - Antenna B

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
Signal Generator	Agilent	N5183A	TID	9/19/2011	36
Attenuator	Fairview Microwave	SA4014-20	TKE	2/12/2013	12
Spectrum Analyzer	Agilent	E4446A	AAT	6/28/2012	24
NC02 Cable	ESM Cable Corp.	TTBJ-141 KMKM-72	NC5	7/3/2013	12

TEST DESCRIPTION

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

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

Method PK2 found in KDB 558074 DTS D01 Measurement Section 5.2.1.2 was used because the Emission Bandwidth was greater than the largest RBW on the analyzer.

The spectrum analyzer settings were as follows:

- The span was set to encompass entire emission bandwidth (B), centered on the transmit channel.
- The RBW = 1 MHz, VBW = 3 MHz.
- Peak detector mode
- Power was integrated across "B", by using the channel power function of the analyzer.

DC Block was used in-line for measurements made while under test. For channel output power levels, please refer to the accompanying power table included in this report.



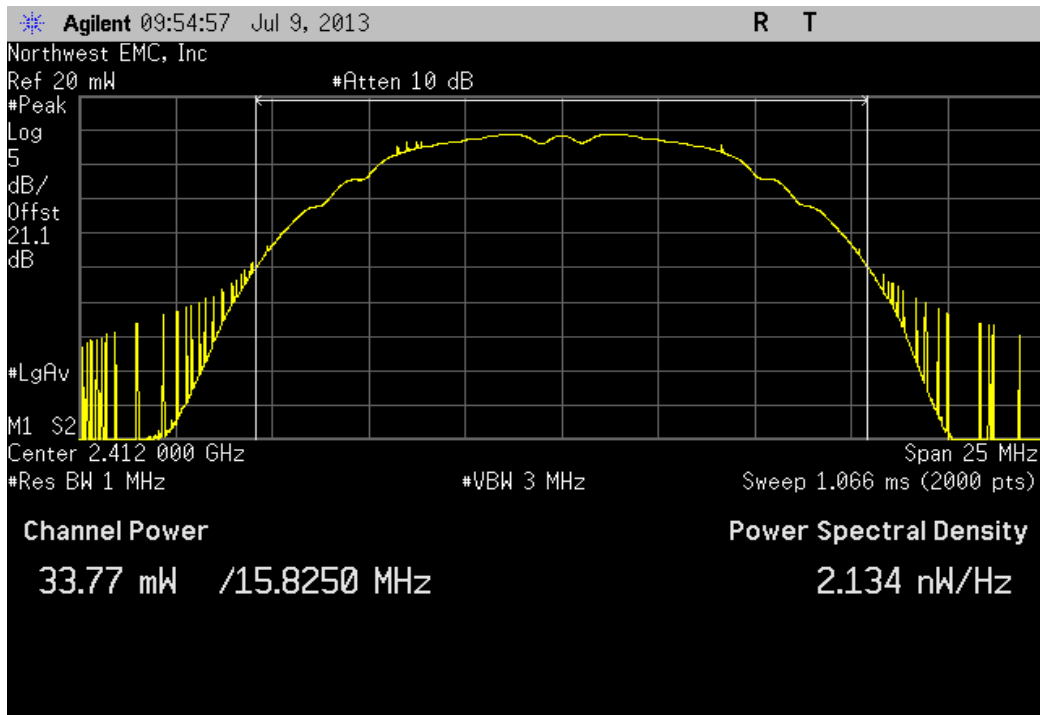
Output Power - Antenna B

XMit 2013.02.28
PsaTx 2013.06.07

EUT: 1601		Work Order: MCSO1665
Serial Number: 006079632553		Date: 08/13/13
Customer: Microsoft Corporation		Temperature: 23°C
Attendees: None		Humidity: 50%
Project: None		Barometric Pres.: 1020mb
Tested by: Richard Mellroth, Brandon Hobbs		Power: 110VAC/60Hz
TEST SPECIFICATIONS		Job Site: NC02
FCC 15.247:2013		Test Method
		ANSI C63.10:2009
COMMENTS		
EUT was operating at 100% Duty Cycle. Adapter cable loss of 0.75 dB for 2.4 GHz channels and 1.3 dB for 5.7 GHz channels was added to analyzer reference level offset.		
DEVIATIONS FROM TEST STANDARD		
None		
Configuration #	1	Signature 
		Value Limit Result
20 MHz		
2400 MHz - 2483.5 MHz Band		
802.11(b) 1 Mbps		
Low Channel 1, 2412 MHz		33.769 mW < 1 W Pass
Mid Channel 6, 2437 MHz		42.754 mW < 1 W Pass
High Channel 11, 2462 MHz		44.097 mW < 1 W Pass
802.11(b) 11 Mbps		
Low Channel 1, 2412 MHz		38.475 mW < 1 W Pass
Mid Channel 6, 2437 MHz		42.257 mW < 1 W Pass
High Channel 11, 2462 MHz		43.759 mW < 1 W Pass
802.11(g) 6 Mbps		
Low Channel 1, 2412 MHz		40.166 mW < 1 W Pass
Mid Channel 6, 2437 MHz		42.388 mW < 1 W Pass
High Channel 11, 2462 MHz		44.421 mW < 1 W Pass
802.11(g) 36 Mbps		
Low Channel 1, 2412 MHz		39.897 mW < 1 W Pass
Mid Channel 6, 2437 MHz		42.373 mW < 1 W Pass
High Channel 11, 2462 MHz		44.613 mW < 1 W Pass
802.11(g) 54 Mbps		
Low Channel 1, 2412 MHz		40.9 mW < 1 W Pass
Mid Channel 6, 2437 MHz		43.024 mW < 1 W Pass
High Channel 11, 2462 MHz		43.954 mW < 1 W Pass
802.11(n) MCS0		
Low Channel 1, 2412 MHz		40.789 mW < 1 W Pass
Mid Channel 6, 2437 MHz		42.895 mW < 1 W Pass
High Channel 11, 2462 MHz		44.6 mW < 1 W Pass
802.11(n) MCS7		
Low Channel 1, 2412 MHz		40.758 mW < 1 W Pass
Mid Channel 6, 2437 MHz		43.775 mW < 1 W Pass
High Channel 11, 2462 MHz		40.839 mW < 1 W Pass
5725 MHz - 5850 MHz Band		
802.11(a) 6 Mbps		
Low Channel 149, 5745 MHz		11.792 mW < 1 W Pass
Mid Channel 157, 5785 MHz		10.407 mW < 1 W Pass
High Channel 165, 5825 MHz		8.876 mW < 1 W Pass
802.11(a) 36 Mbps		
Low Channel 149, 5745 MHz		11.171 mW < 1 W Pass
Mid Channel 157, 5785 MHz		10.207 mW < 1 W Pass
High Channel 165, 5825 MHz		9.247 mW < 1 W Pass
802.11(a) 54 Mbps		
Low Channel 149, 5745 MHz		10.231 mW < 1 W Pass
Mid Channel 157, 5785 MHz		11.156 mW < 1 W Pass
High Channel 165, 5825 MHz		8.932 mW < 1 W Pass
802.11(n) MCS0 - UNII		
Low Channel 149, 5745 MHz		10.814 mW < 1 W Pass
Mid Channel 157, 5785 MHz		10.347 mW < 1 W Pass
High Channel 165, 5825 MHz		9.35 mW < 1 W Pass
802.11(n) MCS7 - UNII		
Low Channel 149, 5745 MHz		9.938 mW < 1 W Pass
Mid Channel 157, 5785 MHz		9.984 mW < 1 W Pass
High Channel 165, 5825 MHz		9.447 mW < 1 W Pass
40 MHz		
2400 MHz - 2483.5 MHz Band		
802.11(n) MCS0		
Low Channel 1/5, 2422 MHz		16.677 mW < 1 W Pass
Mid Channel 4/8, 2437 MHz		44.04 mW < 1 W Pass
High Channel 7/11, 2452 MHz		17.897 mW < 1 W Pass
802.11(n) MCS7		
Low Channel 1/5, 2422 MHz		21.181 mW < 1 W Pass
Mid Channel 4/8, 2437 MHz		55.544 mW < 1 W Pass
High Channel 7/11, 2452 MHz		22.403 mW < 1 W Pass
5725 MHz - 5850 MHz Band		
802.11(n) MCS0 - UNII		
Low Channel 149/153, 5755 MHz		8.026 mW < 1 W Pass
High Channel 157/161, 5795 MHz		8.037 mW < 1 W Pass
802.11(n) MCS7 - UNII		
Low Channel 149/153, 5755 MHz		10.178 mW < 1 W Pass
High Channel 157/161, 5795 MHz		10.527 mW < 1 W Pass

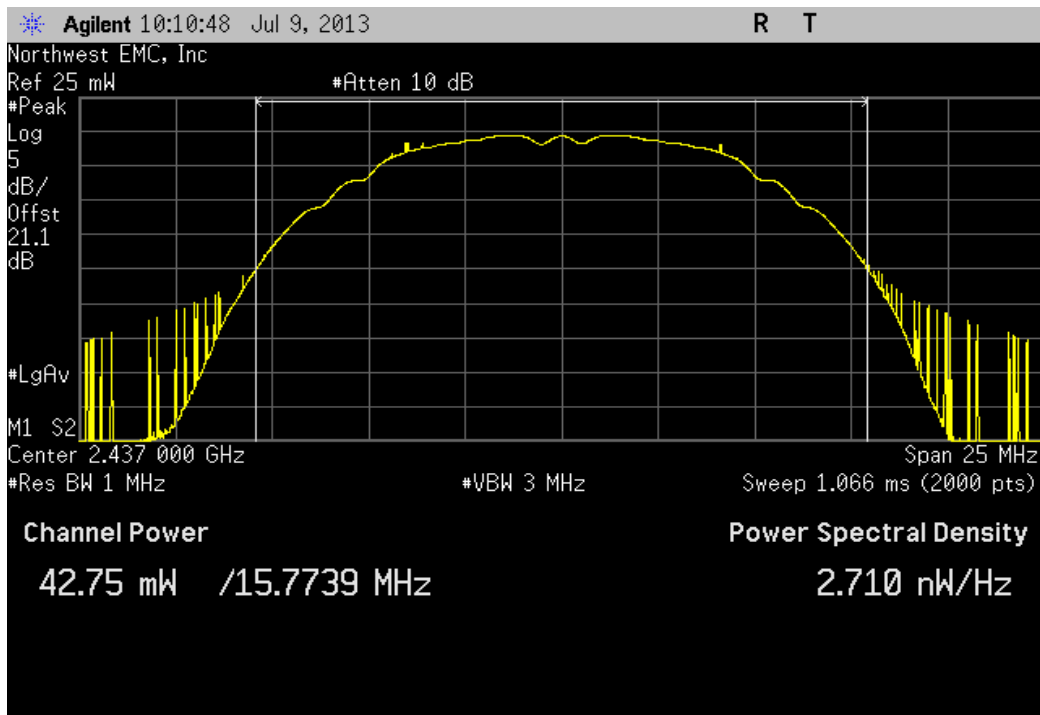
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz

Value	Limit	Result
33.769 mW	< 1 W	Pass



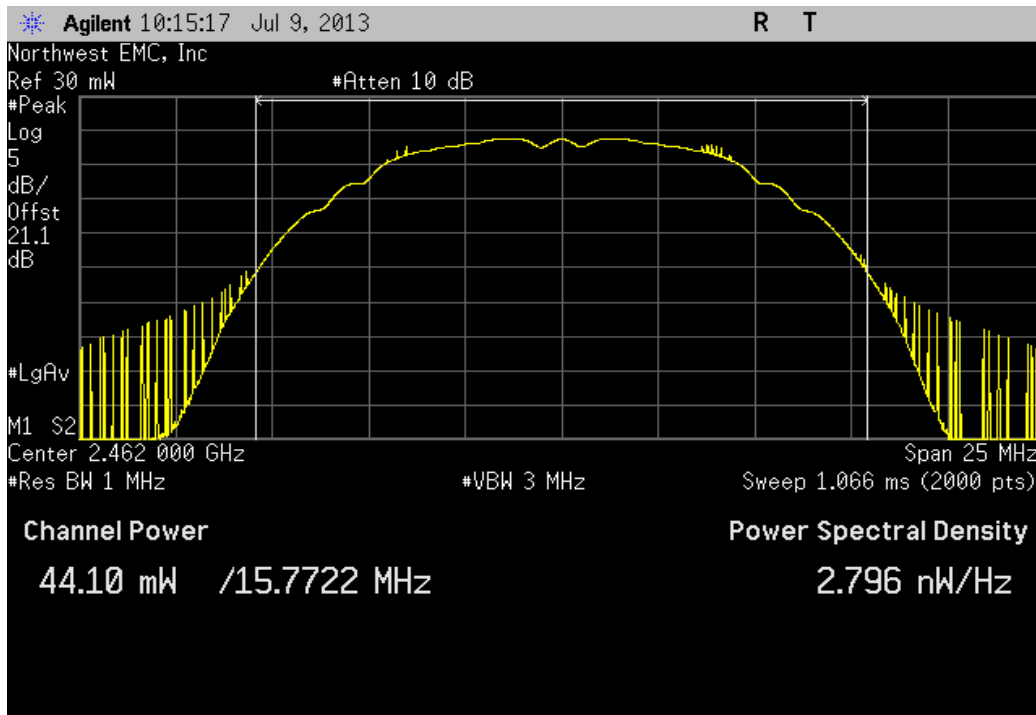
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz

Value	Limit	Result
42.754 mW	< 1 W	Pass



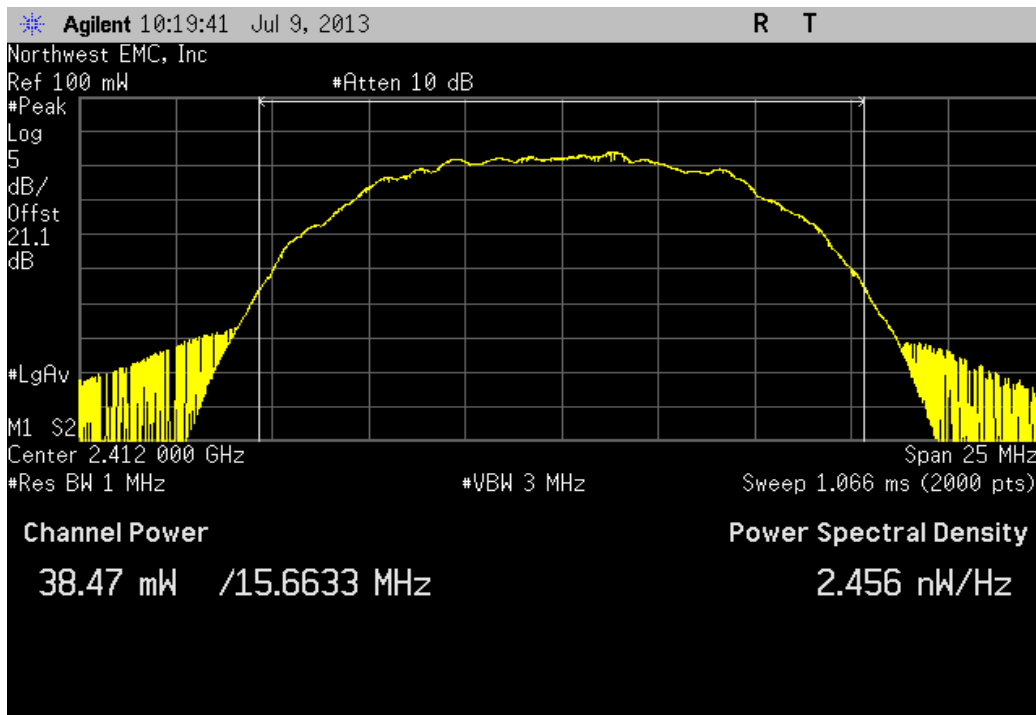
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz

Value	Limit	Result
44.097 mW	< 1 W	Pass



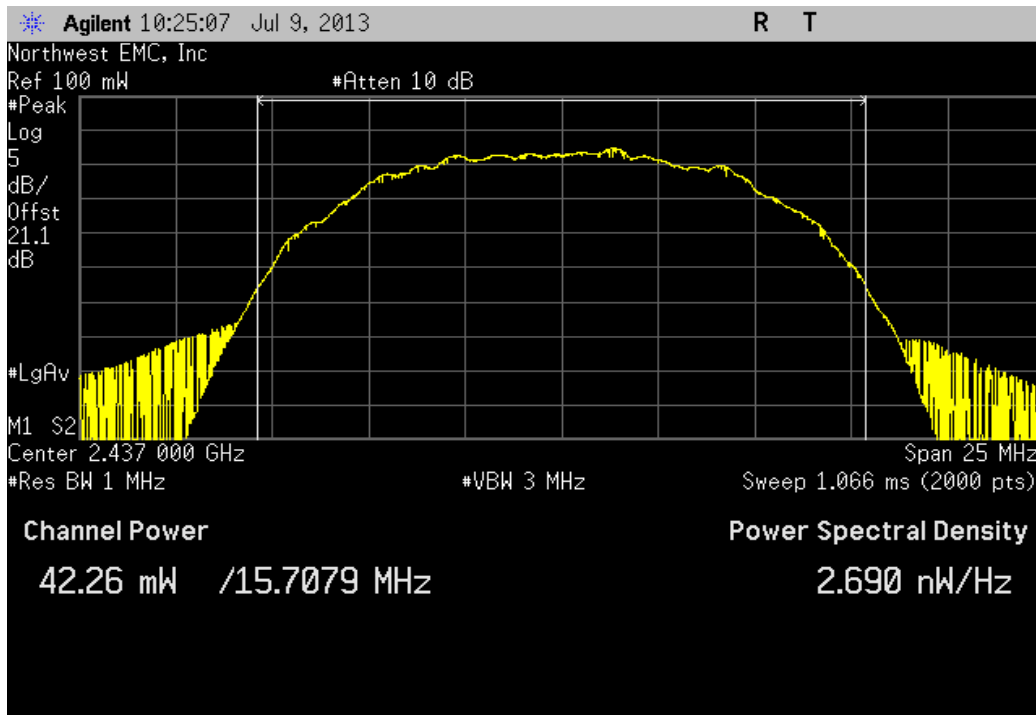
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz

Value	Limit	Result
38.475 mW	< 1 W	Pass



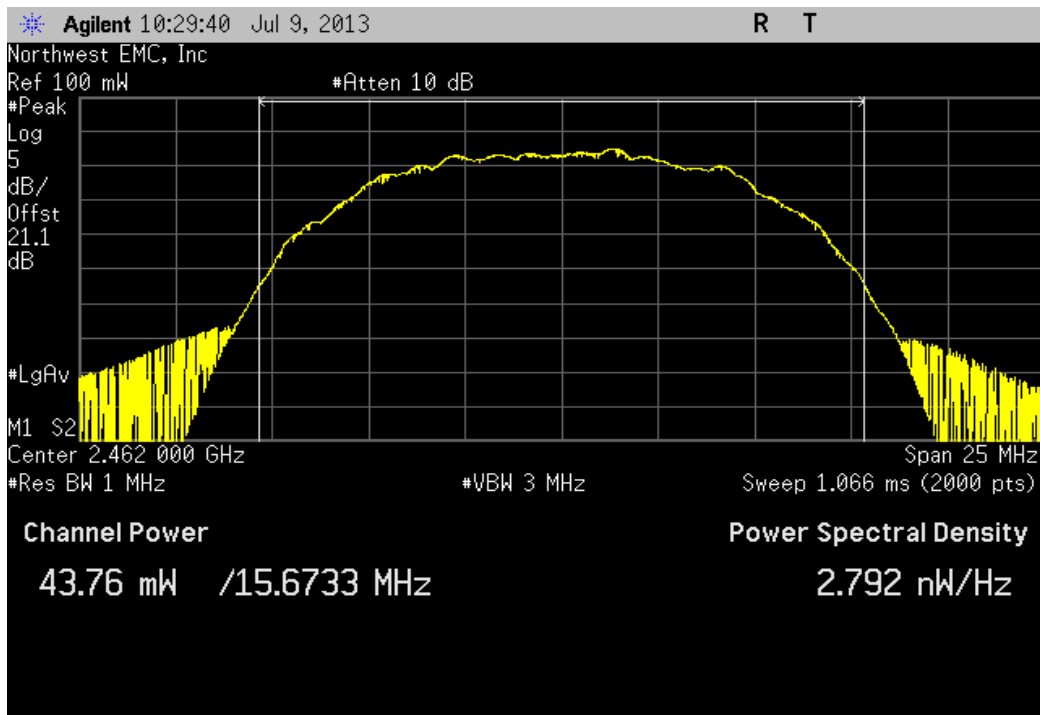
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Mid Channel 6, 2437 MHz

Value	Limit	Result
42.257 mW	< 1 W	Pass



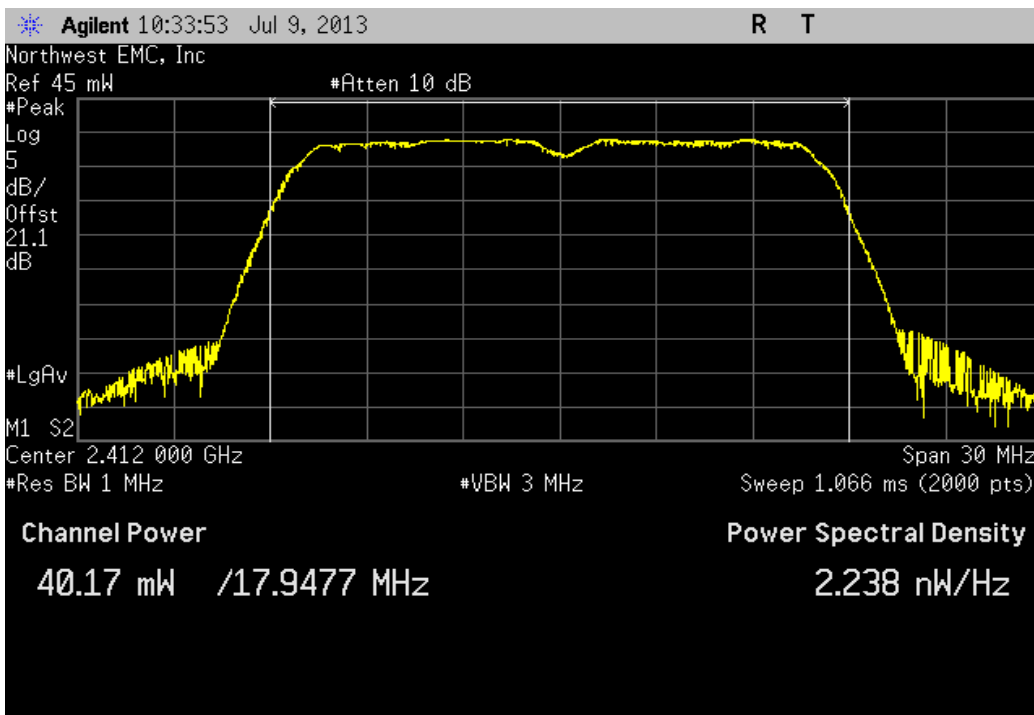
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz

Value	Limit	Result
43.759 mW	< 1 W	Pass



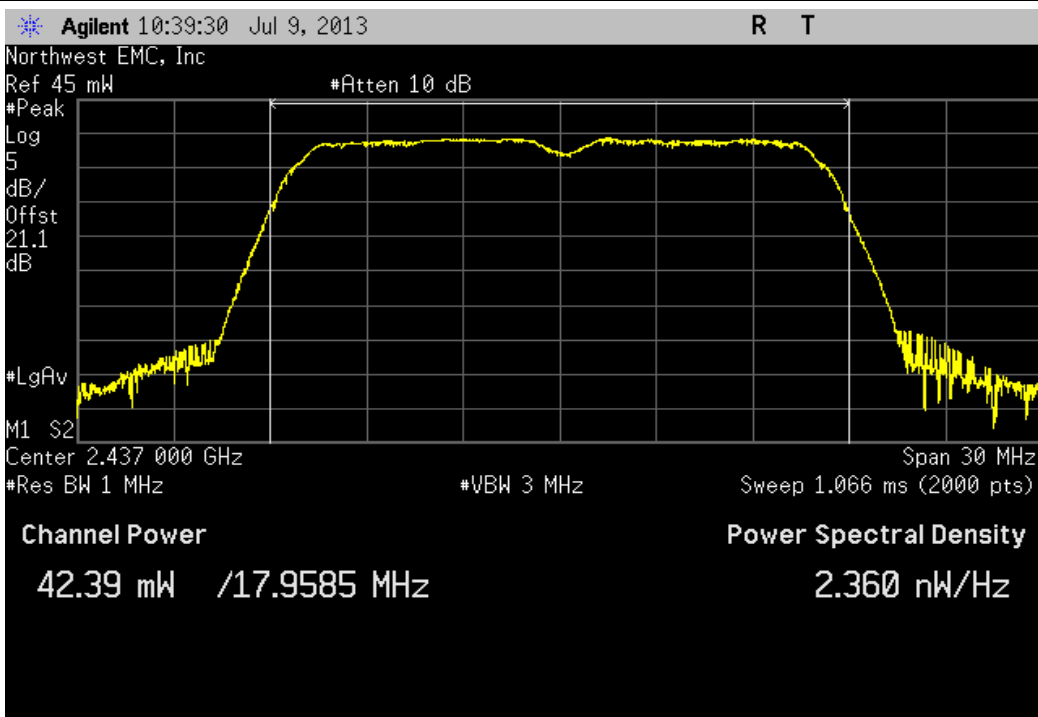
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz

Value	Limit	Result
40.166 mW	< 1 W	Pass



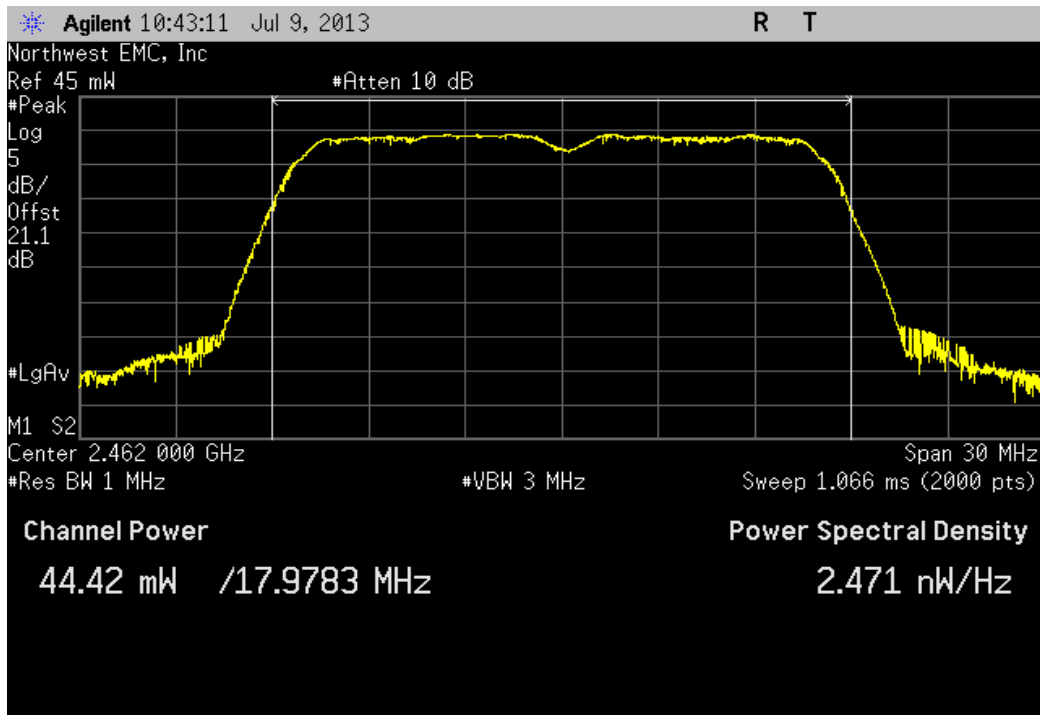
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz

Value	Limit	Result
42.388 mW	< 1 W	Pass



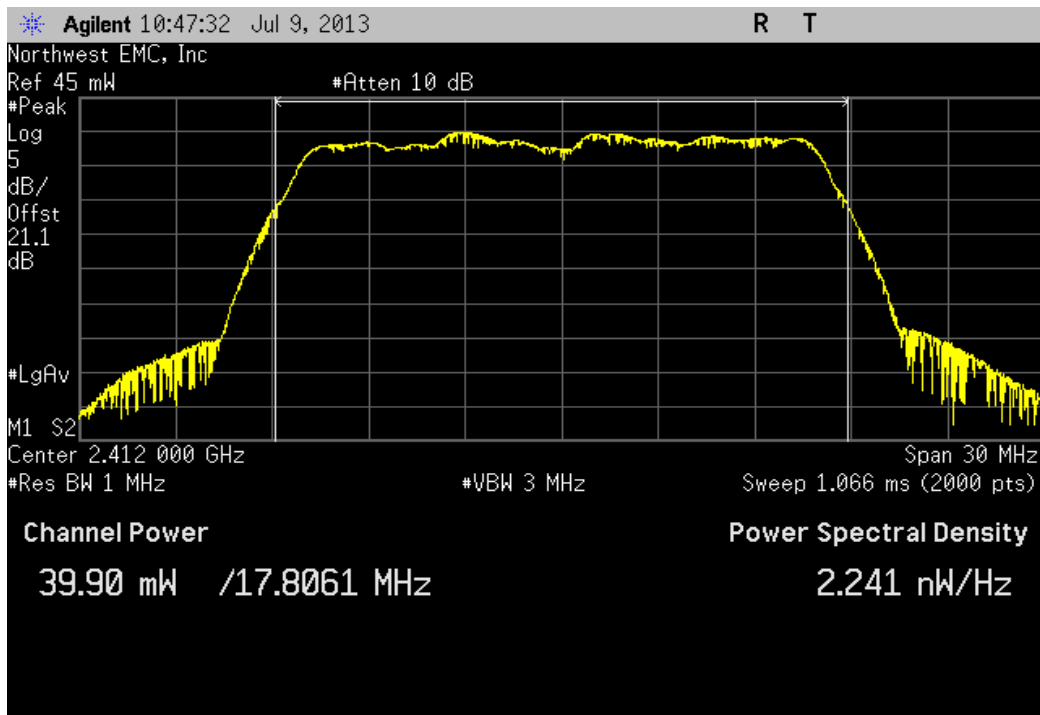
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz

Value	Limit	Result
44.421 mW	< 1 W	Pass



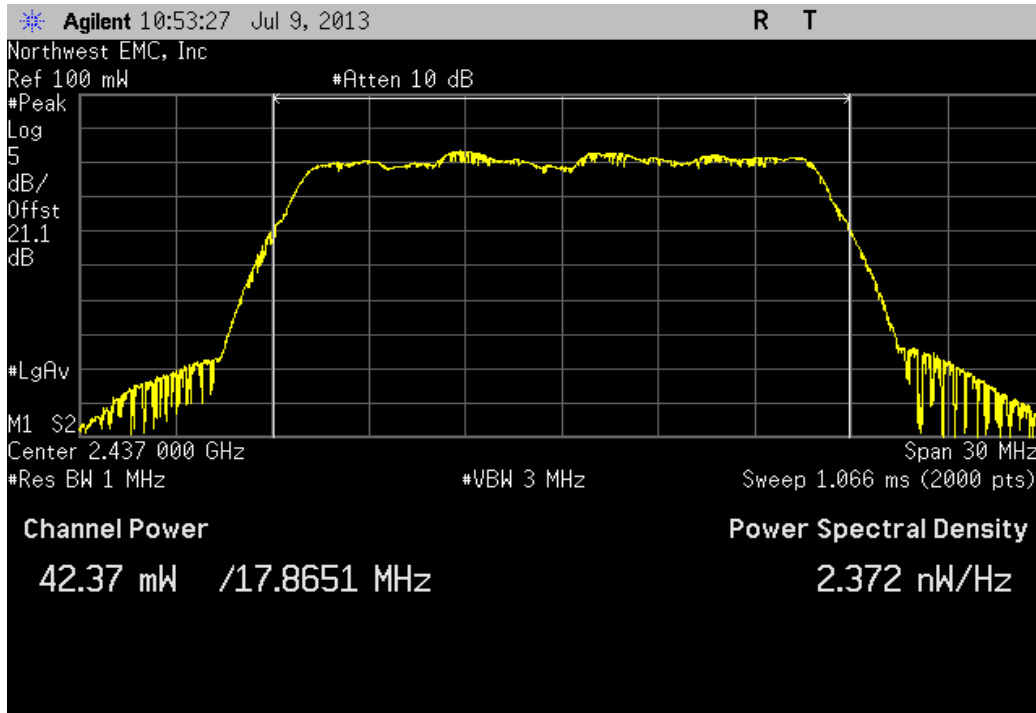
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz

Value	Limit	Result
39.897 mW	< 1 W	Pass



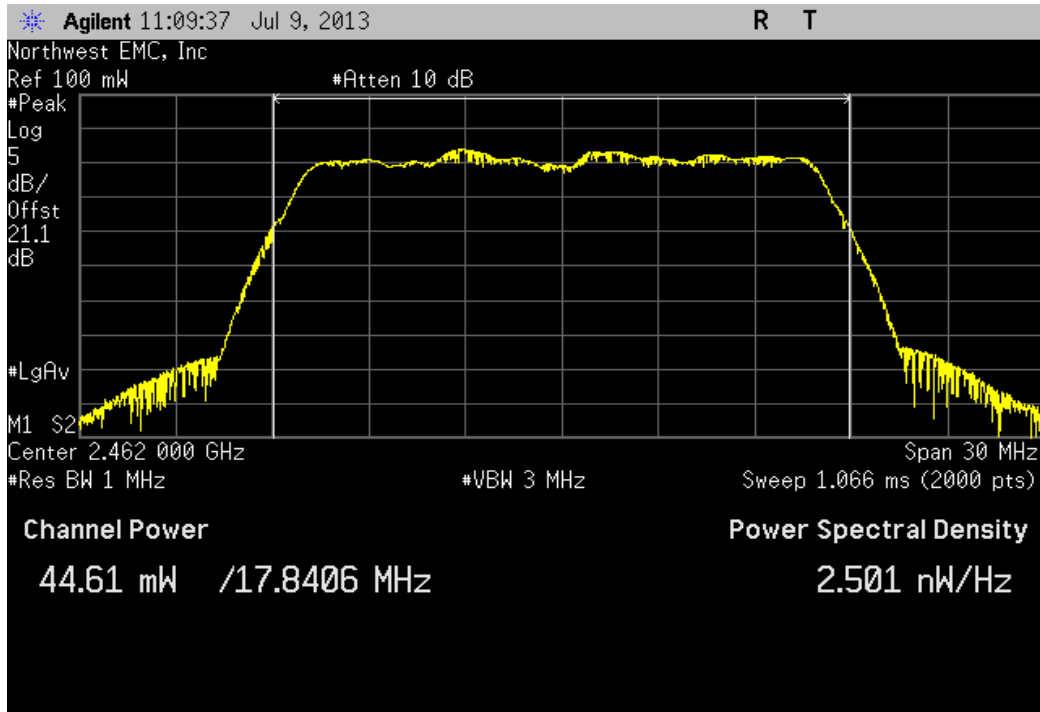
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Mid Channel 6, 2437 MHz

Value	Limit	Result
42.373 mW	< 1 W	Pass



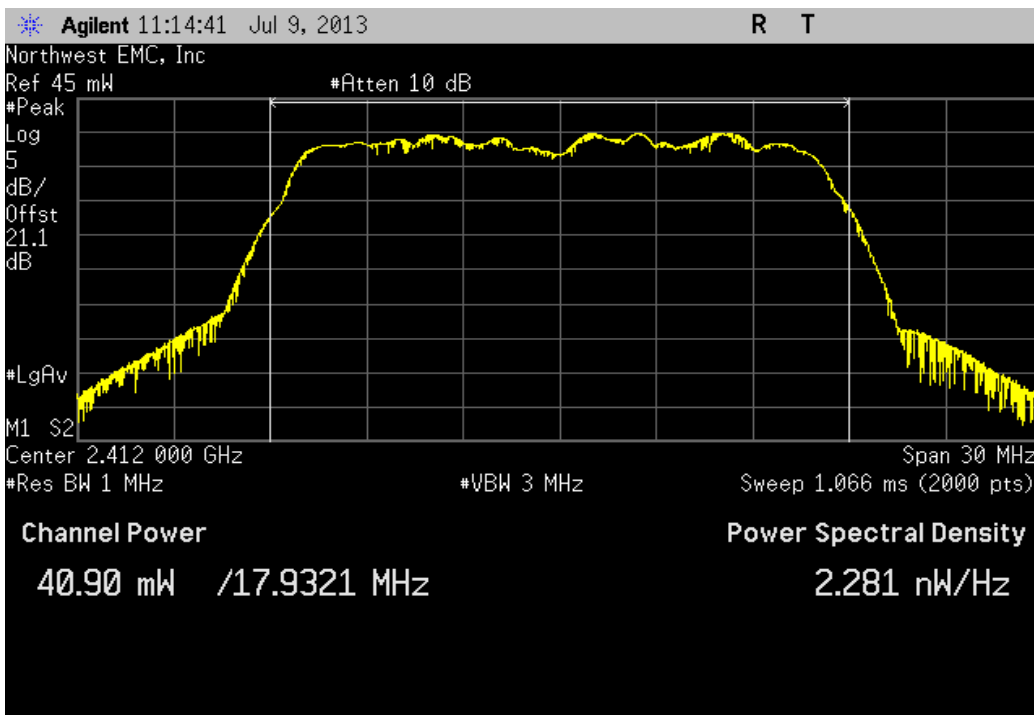
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz

Value	Limit	Result
44.613 mW	< 1 W	Pass



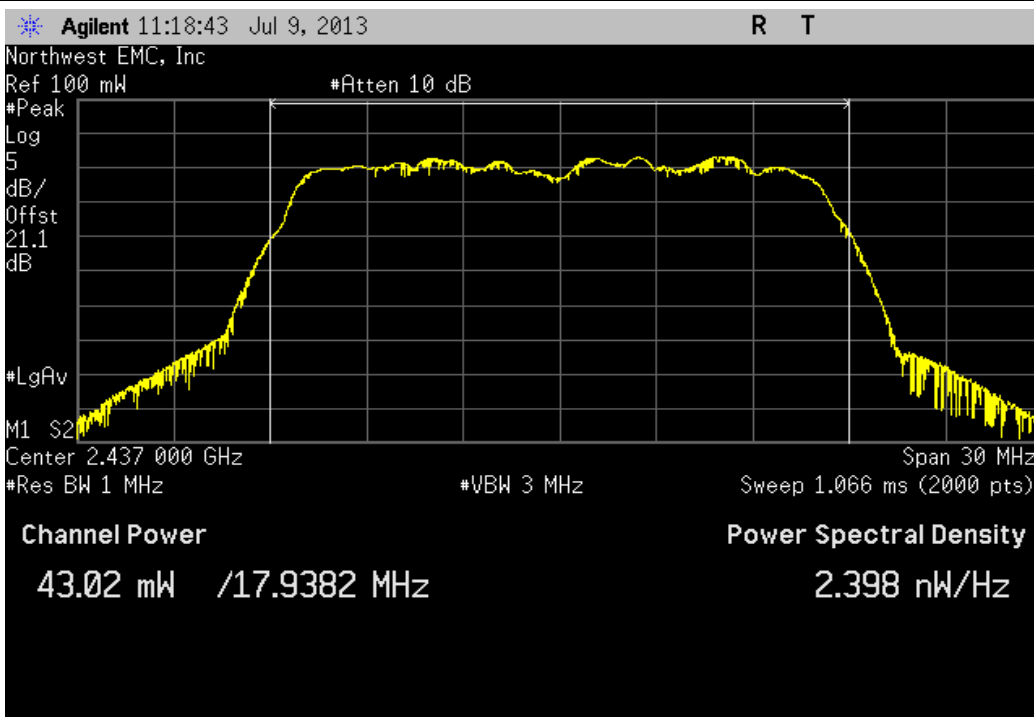
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz

Value	Limit	Result
40.9 mW	< 1 W	Pass



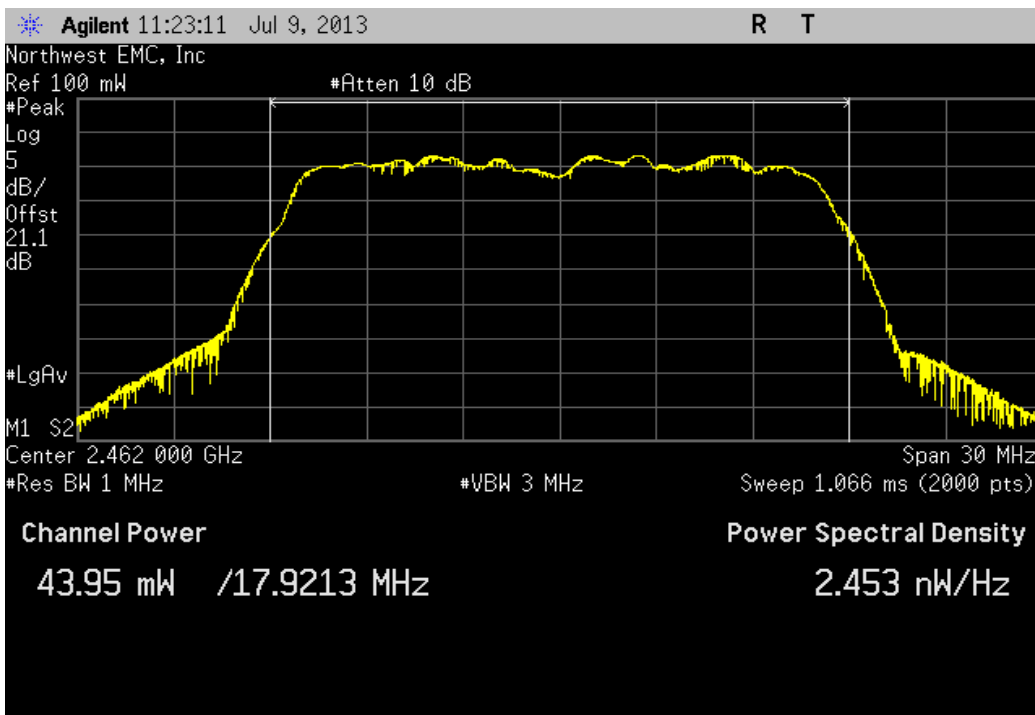
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz

Value	Limit	Result
43.024 mW	< 1 W	Pass



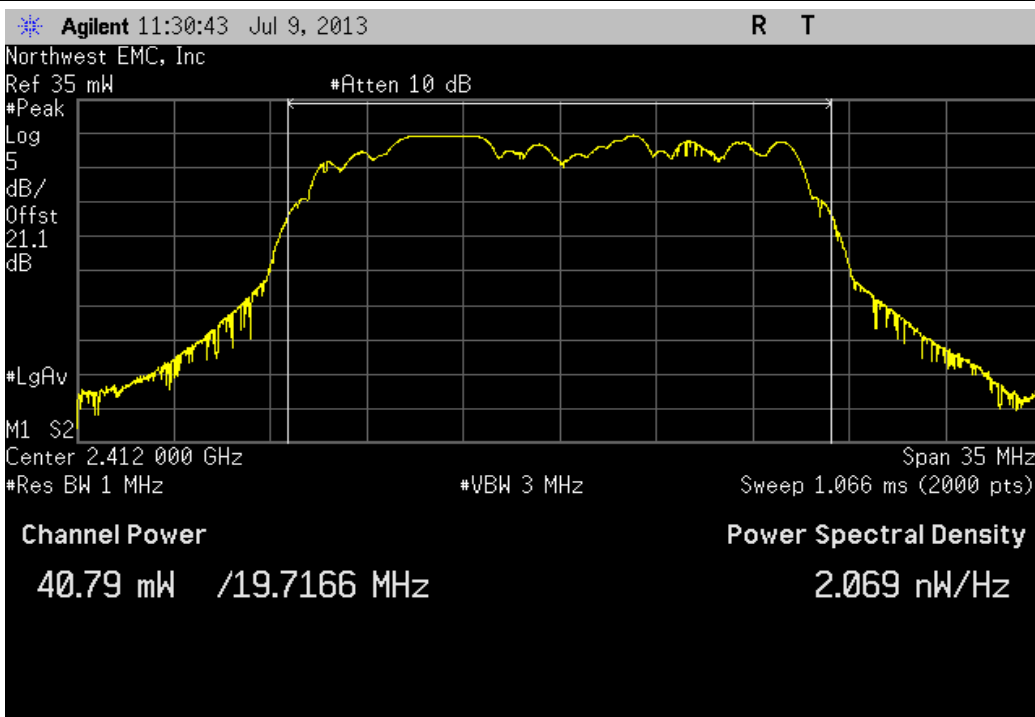
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz

Value	Limit	Result
43.954 mW	< 1 W	Pass



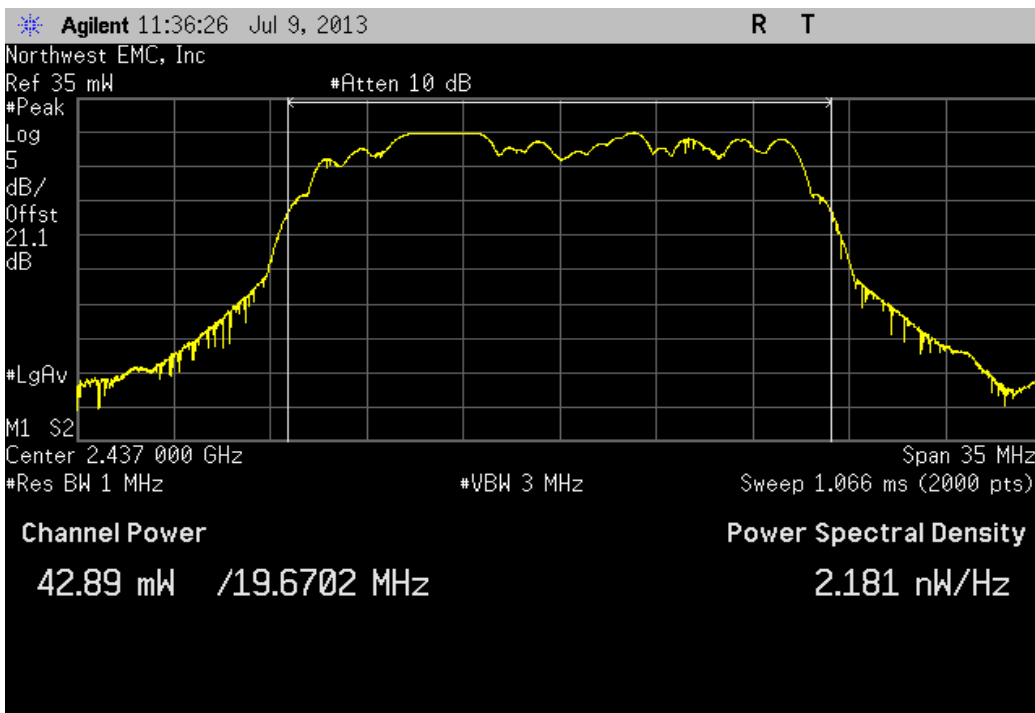
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1, 2412 MHz

Value	Limit	Result
40.789 mW	< 1 W	Pass



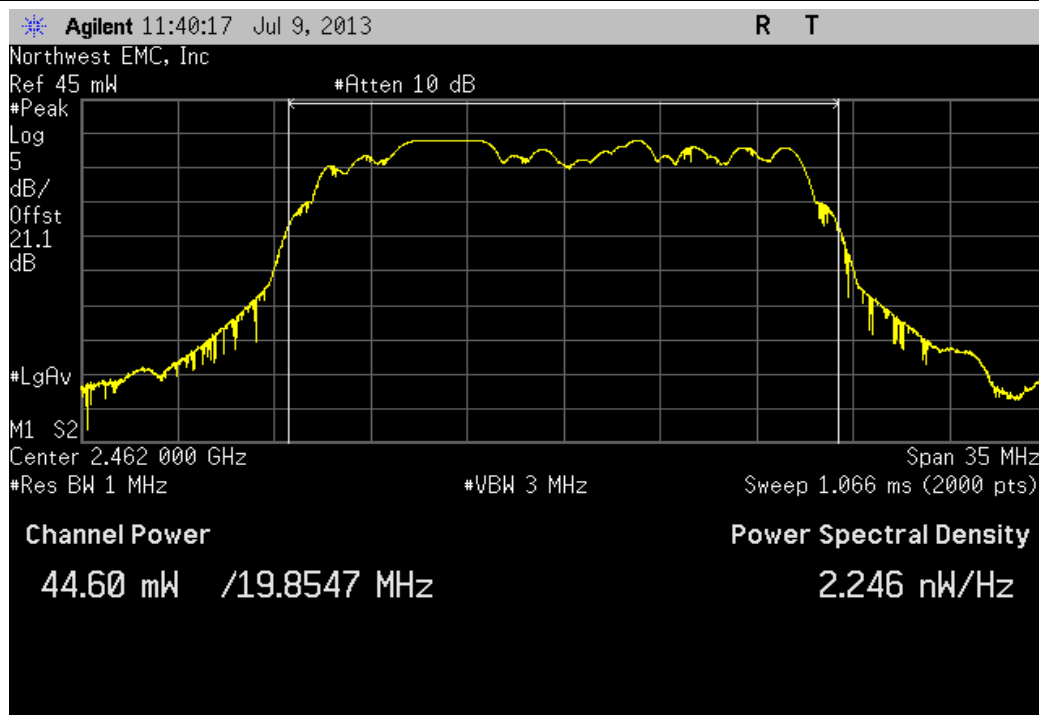
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Mid Channel 6, 2437 MHz

Value	Limit	Result
42.895 mW	< 1 W	Pass



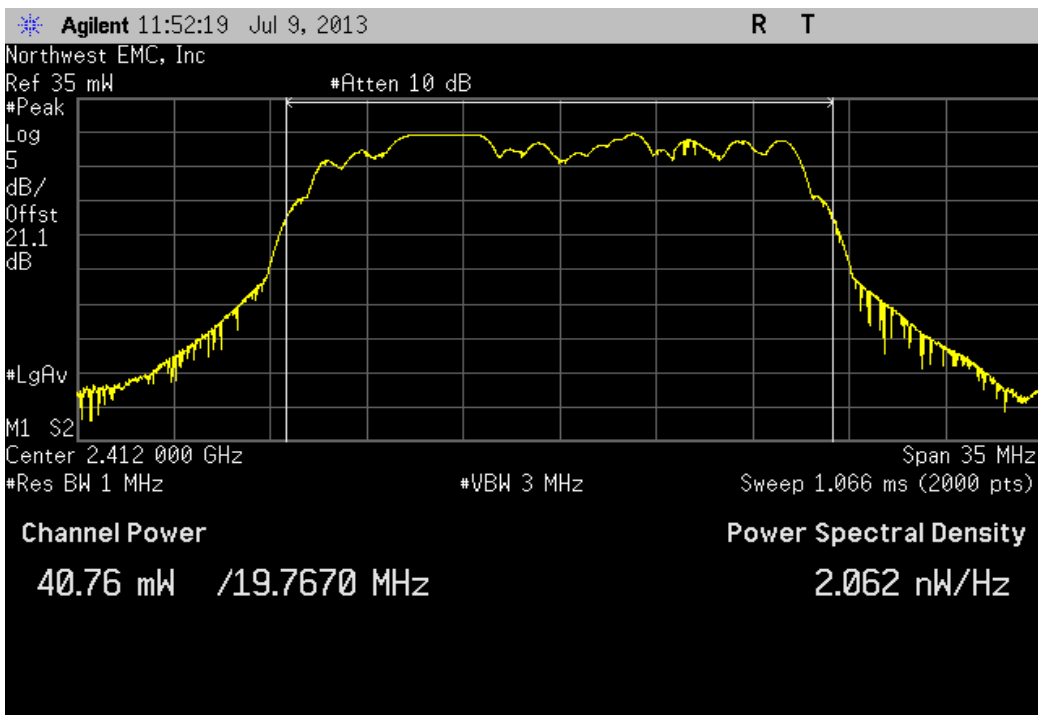
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 11, 2462 MHz

Value	Limit	Result
44.6 mW	< 1 W	Pass



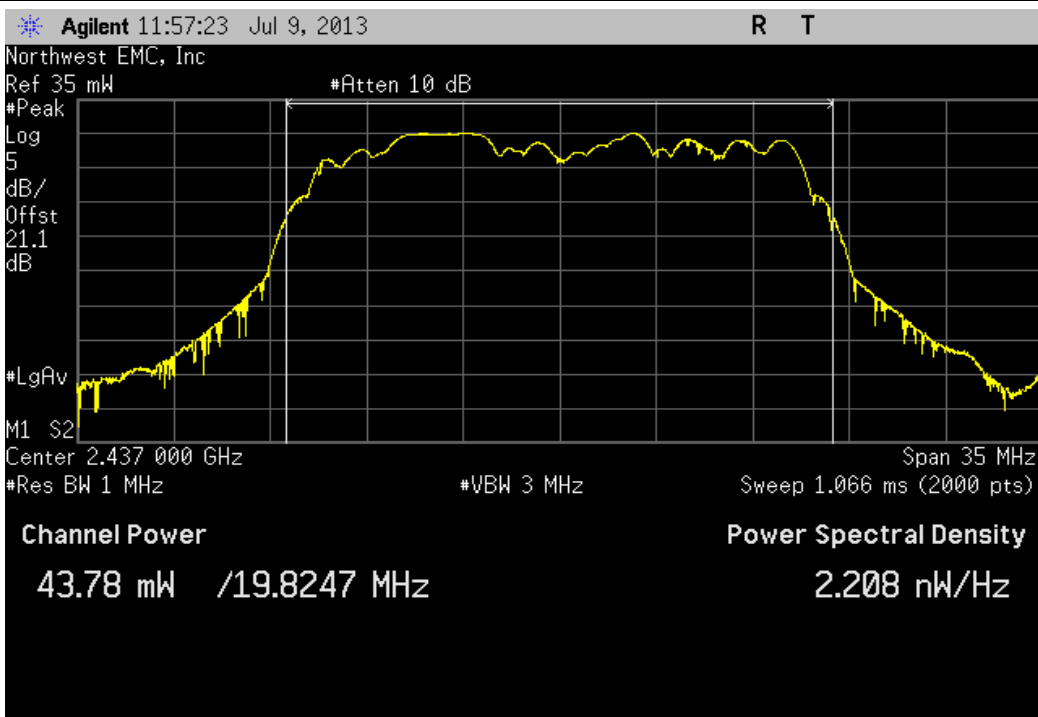
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1, 2412 MHz

Value	Limit	Result
40.758 mW	< 1 W	Pass



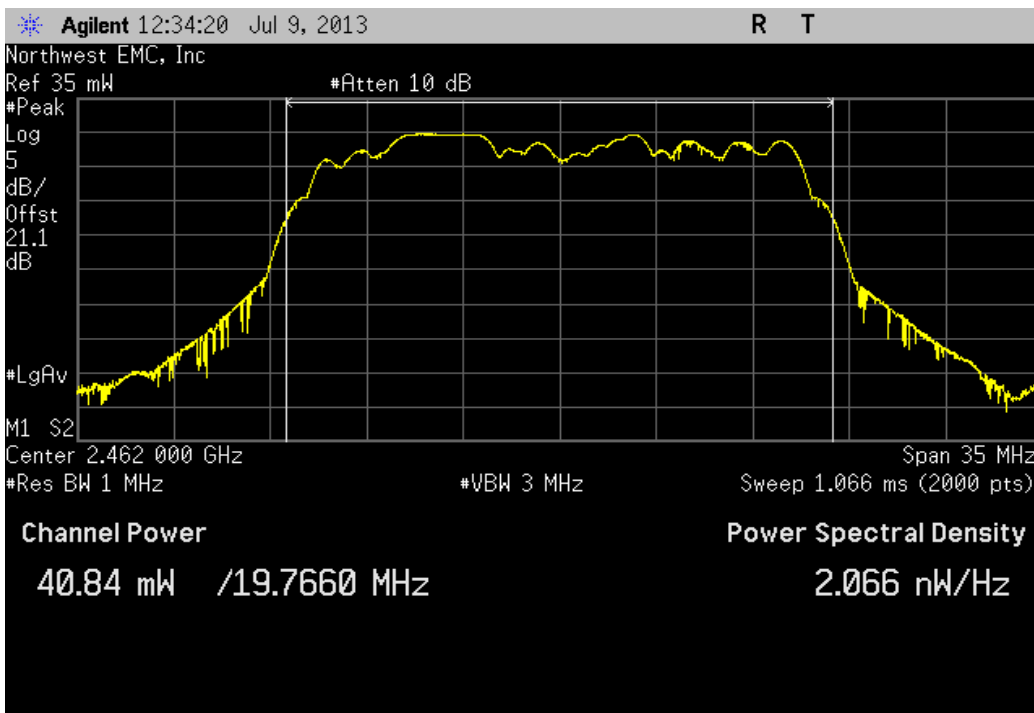
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Mid Channel 6, 2437 MHz

Value	Limit	Result
43.775 mW	< 1 W	Pass



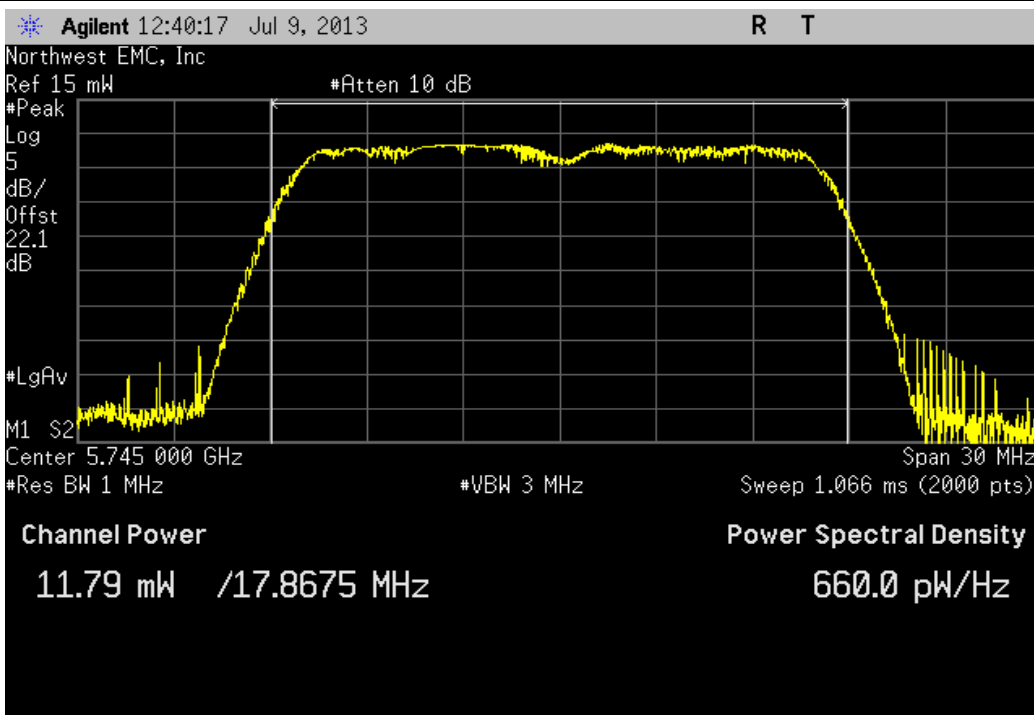
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, High Channel 11, 2462 MHz

Value	Limit	Result
40.839 mW	< 1 W	Pass



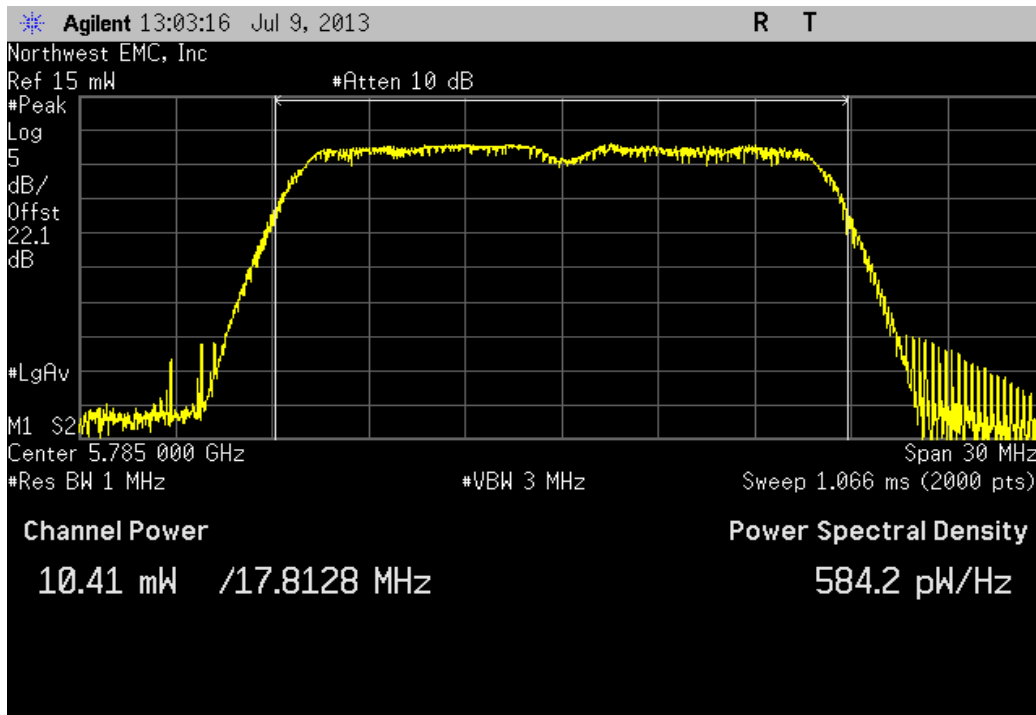
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Low Channel 149, 5745 MHz

Value	Limit	Result
11.792 mW	< 1 W	Pass



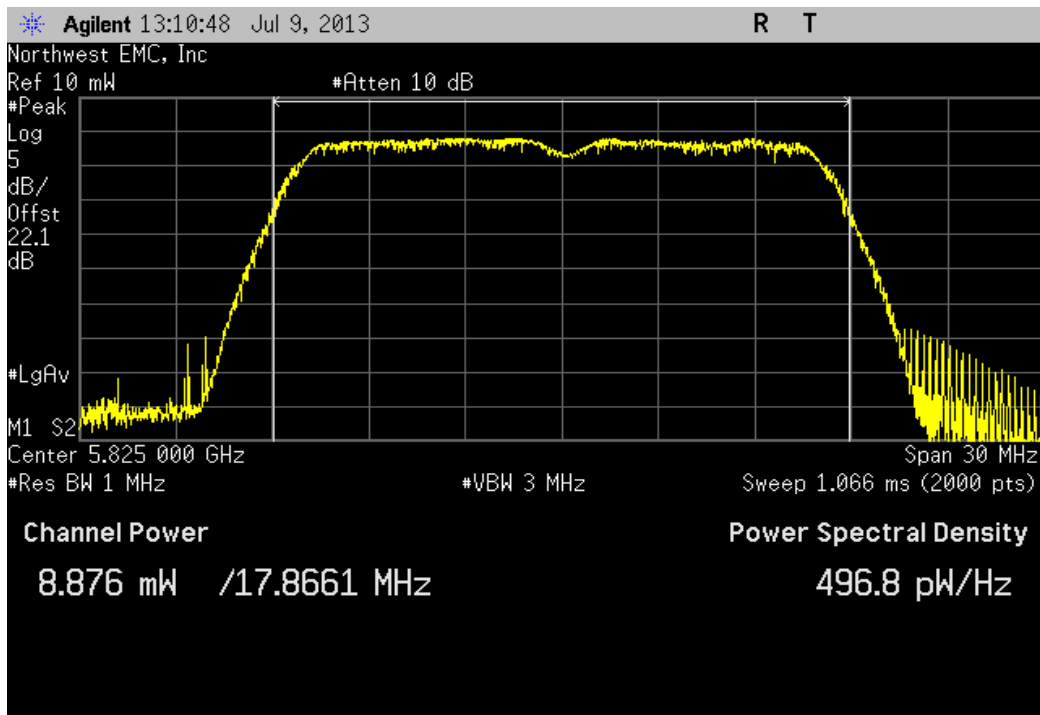
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Mid Channel 157, 5785 MHz

Value	Limit	Result
10.407 mW	< 1 W	Pass



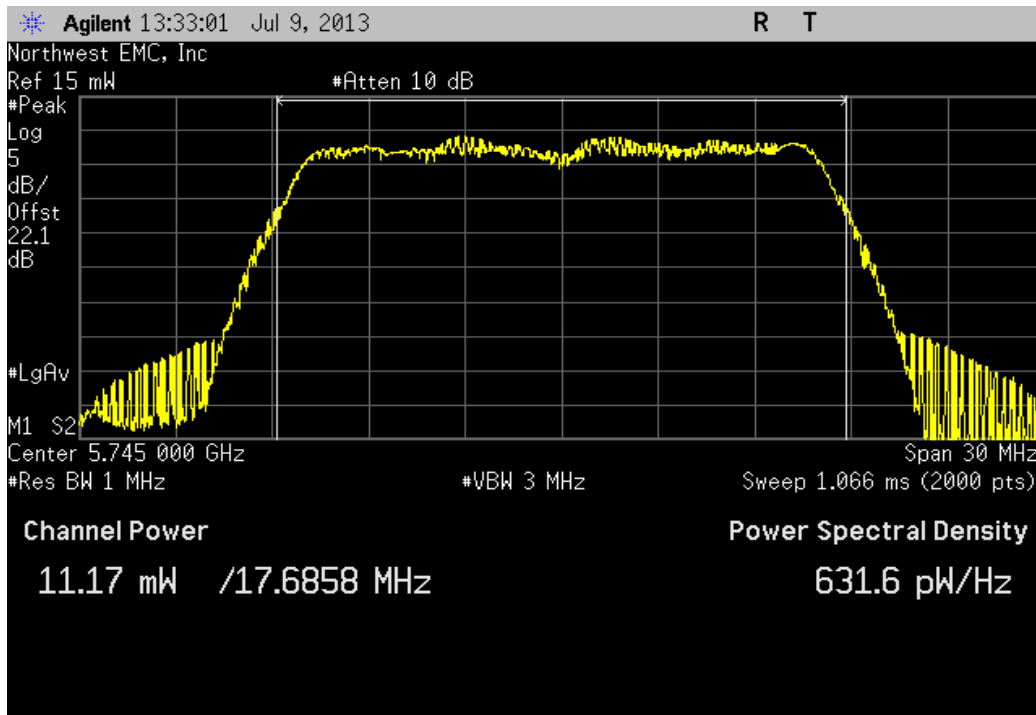
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, High Channel 165, 5825 MHz

Value	Limit	Result
8.876 mW	< 1 W	Pass



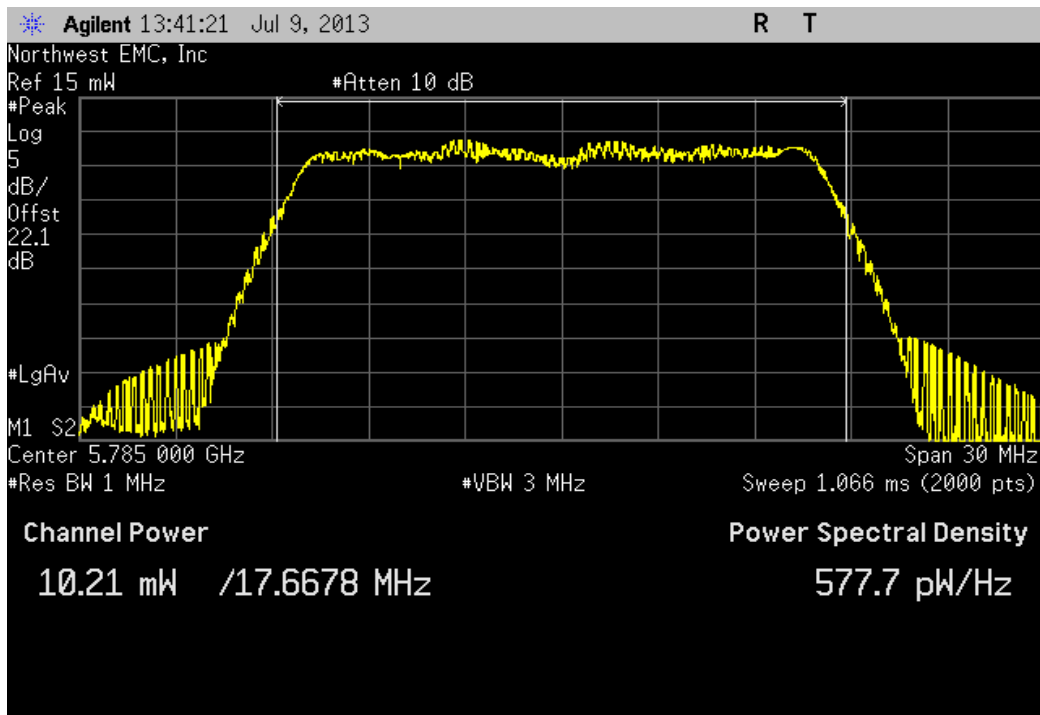
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Low Channel 149, 5745 MHz

Value	Limit	Result
11.171 mW	< 1 W	Pass



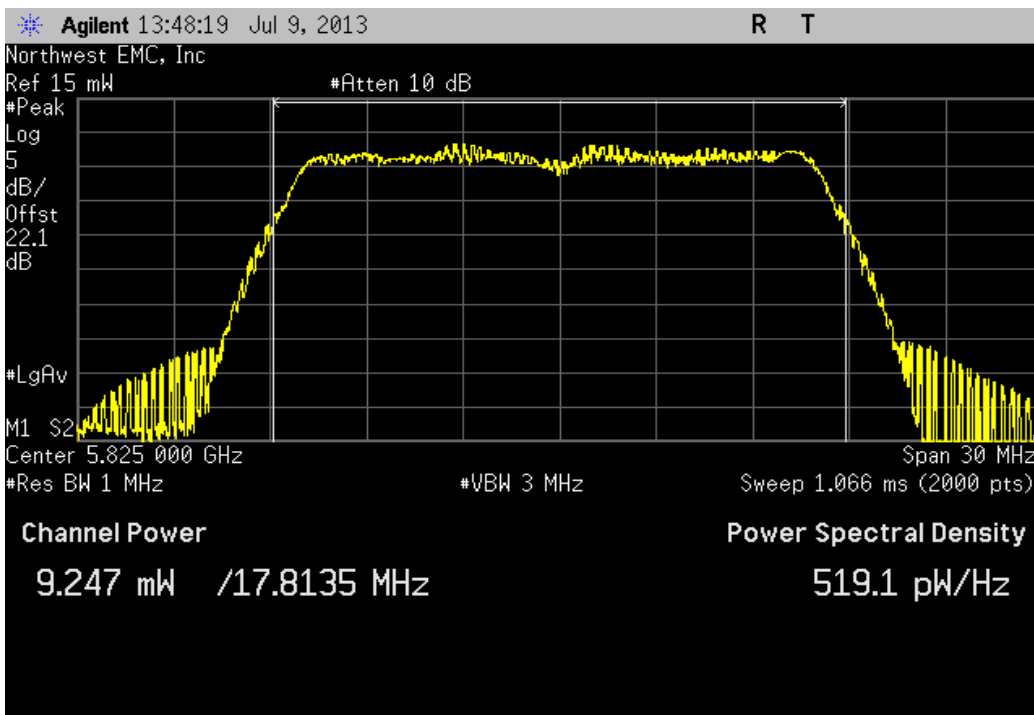
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Mid Channel 157, 5785 MHz

Value	Limit	Result
10.207 mW	< 1 W	Pass



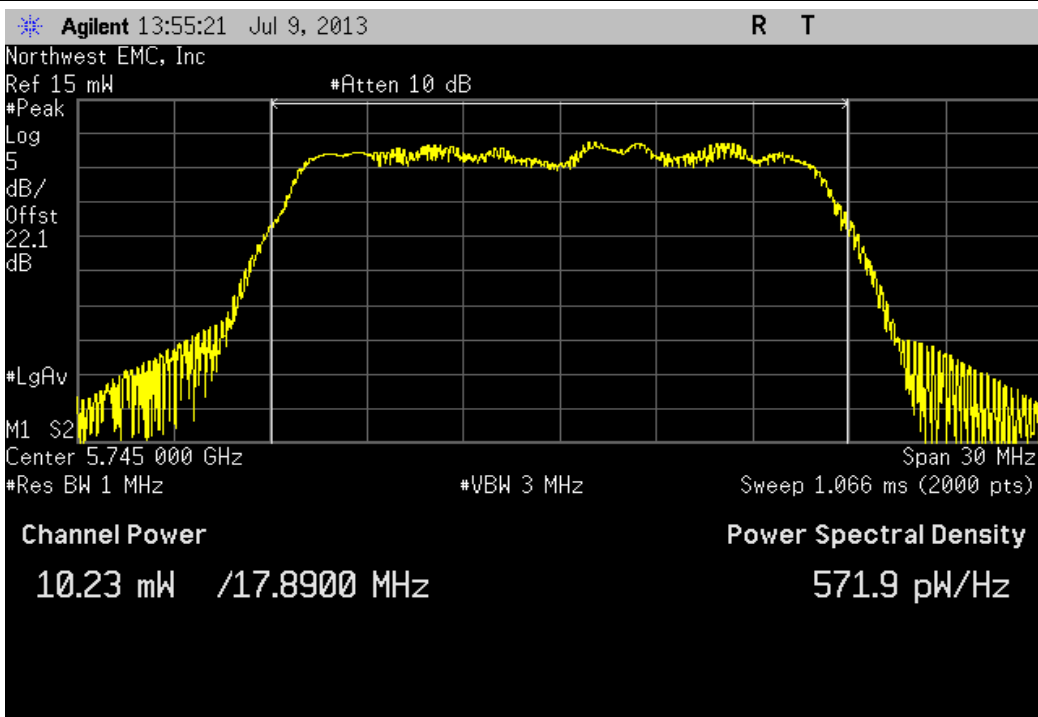
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, High Channel 165, 5825 MHz

Value	Limit	Result
9.247 mW	< 1 W	Pass



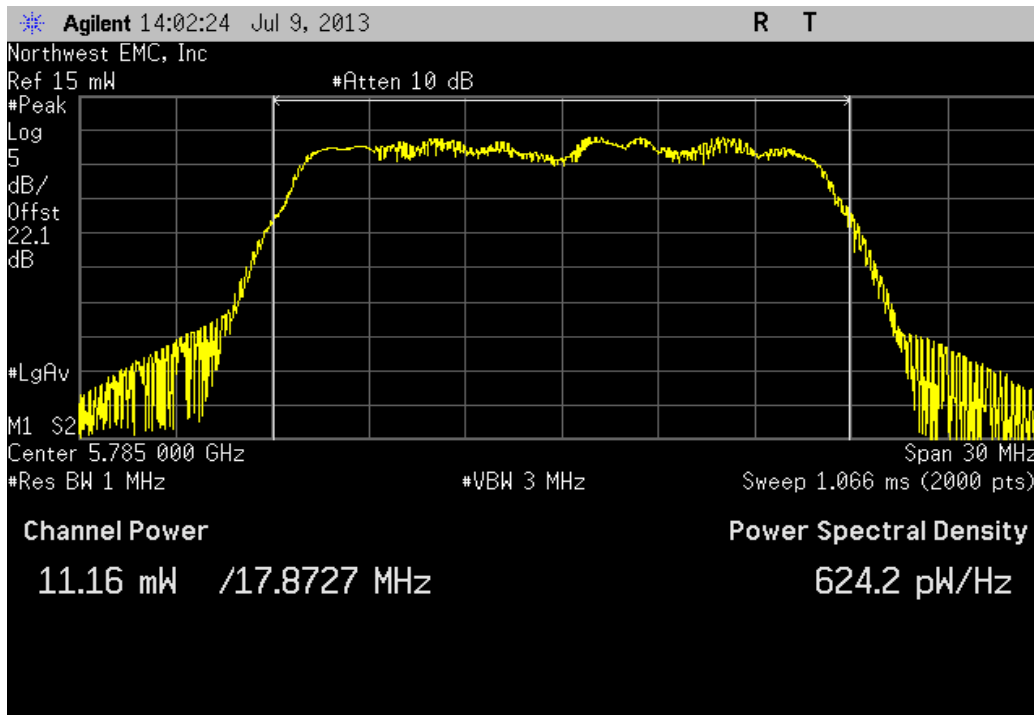
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 54 Mbps, Low Channel 149, 5745 MHz

Value	Limit	Result
10.231 mW	< 1 W	Pass



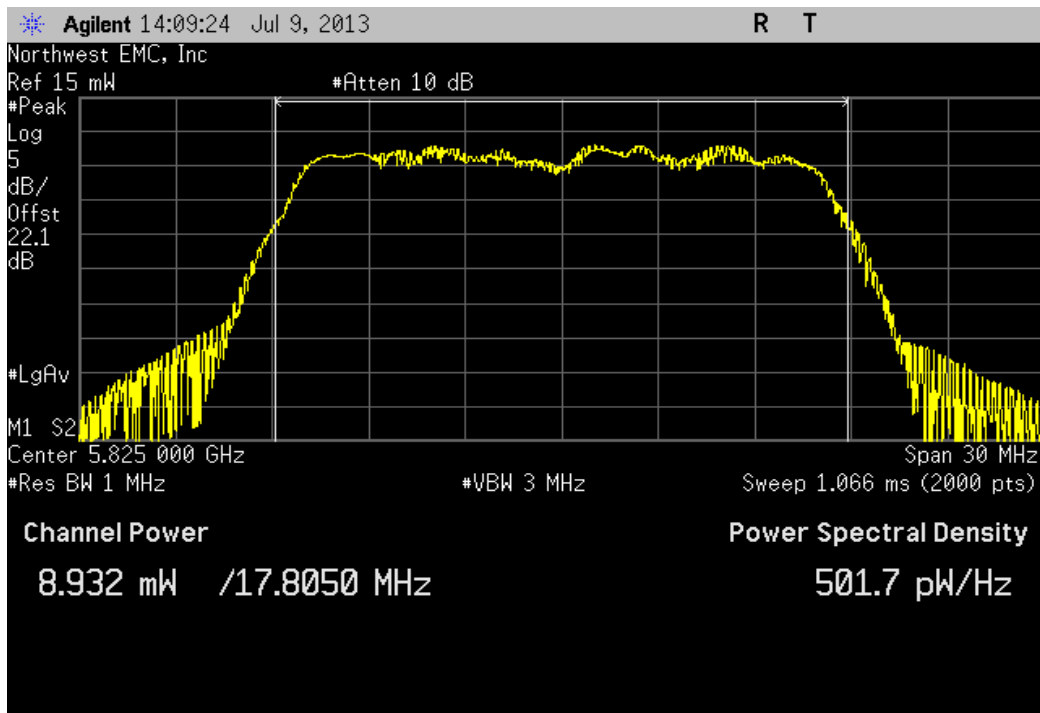
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 54 Mbps, Mid Channel 157, 5785 MHz

Value	Limit	Result
11.156 mW	< 1 W	Pass



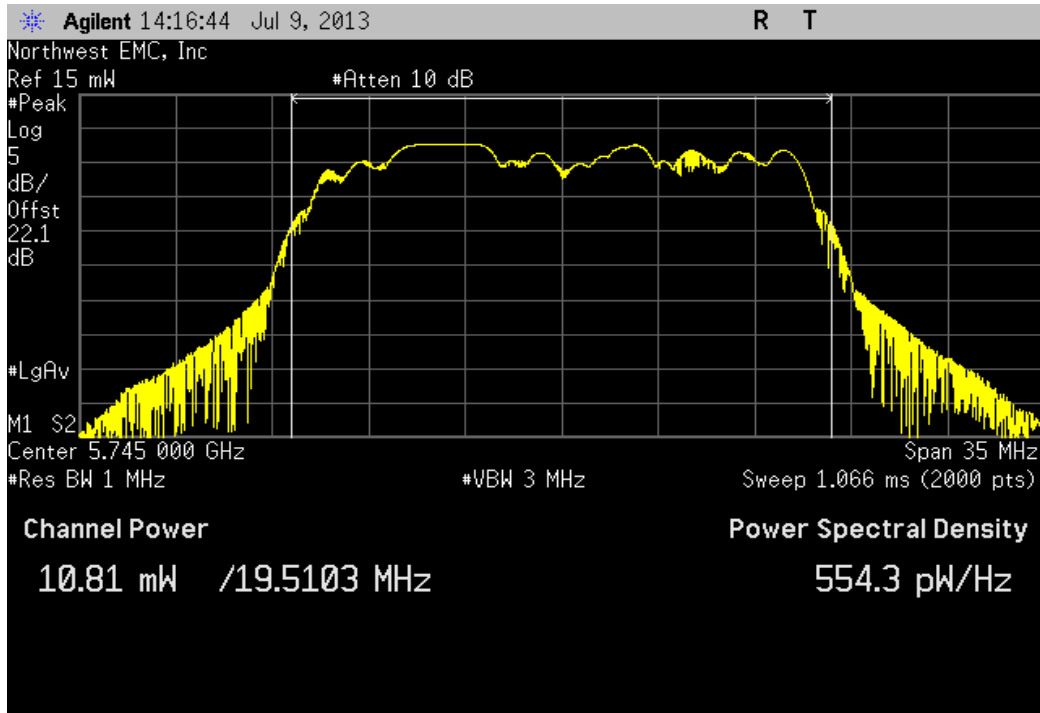
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 54 Mbps, High Channel 165, 5825 MHz

Value	Limit	Result
8.932 mW	< 1 W	Pass



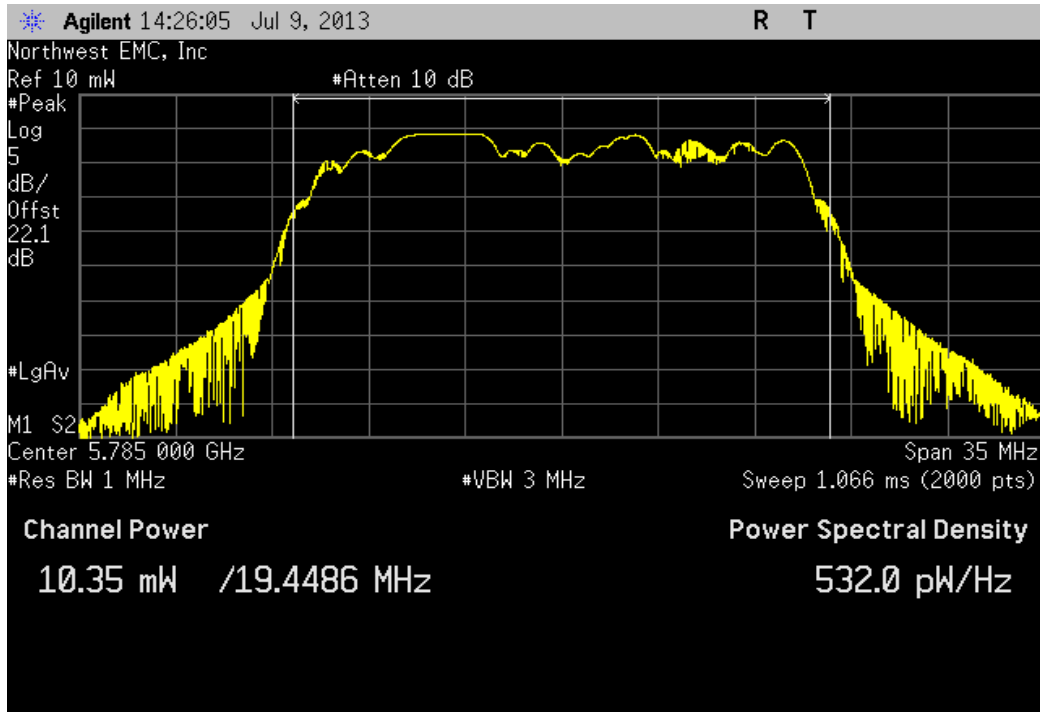
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, Low Channel 149, 5745 MHz

Value	Limit	Result
10.814 mW	< 1 W	Pass



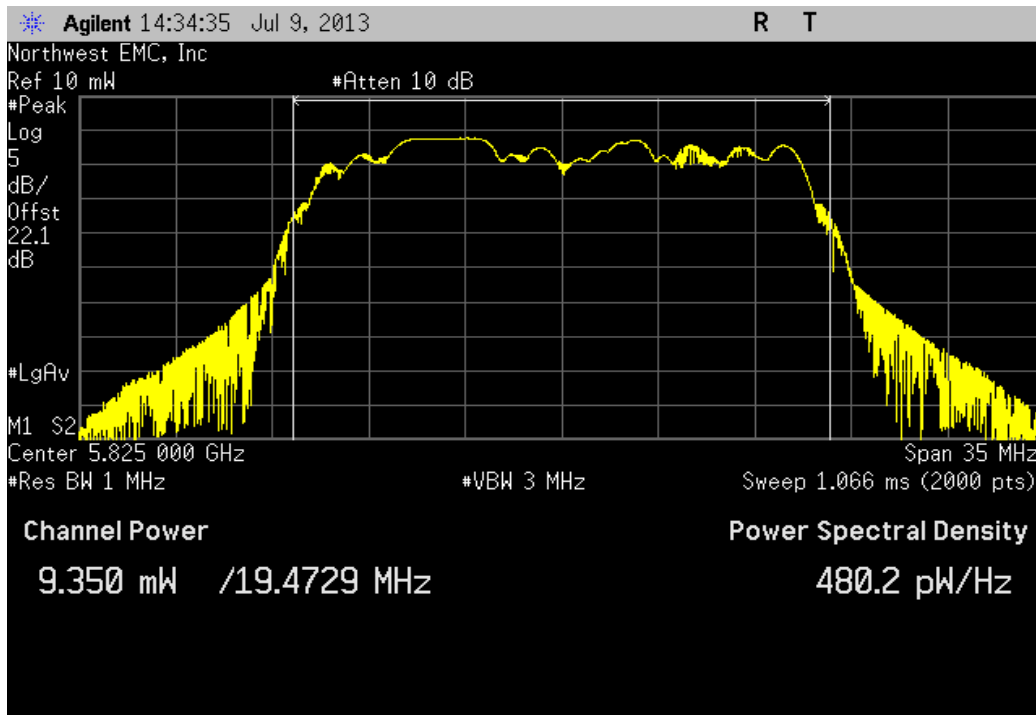
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, Mid Channel 157, 5785 MHz

Value	Limit	Result
10.347 mW	< 1 W	Pass



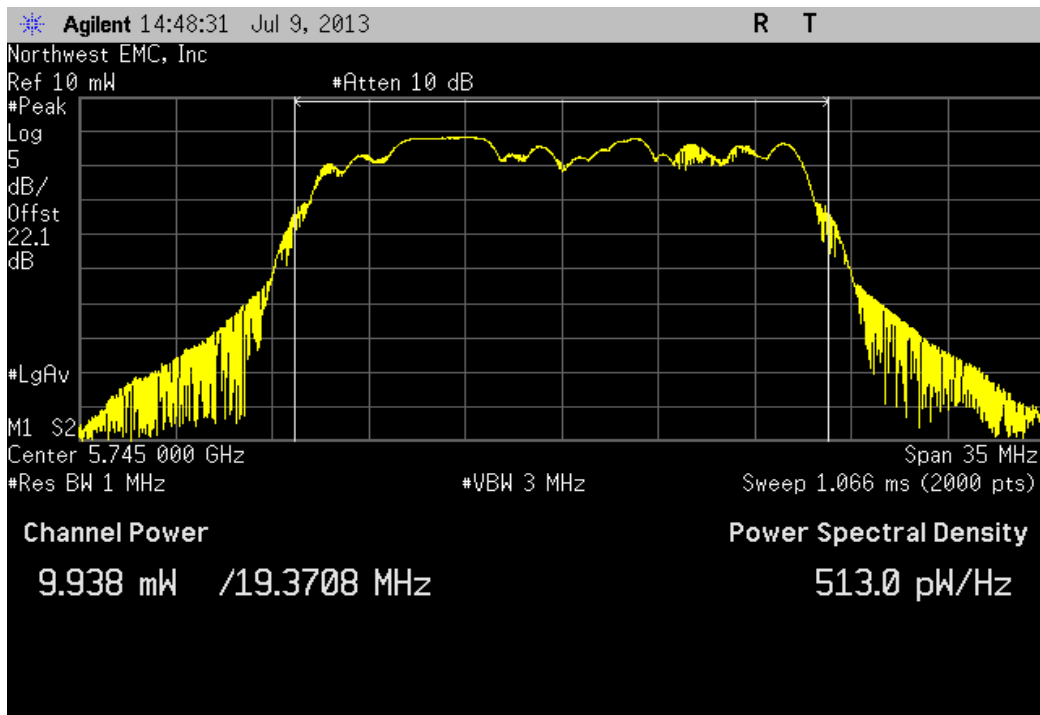
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, High Channel 165, 5825 MHz

Value	Limit	Result
9.35 mW	< 1 W	Pass



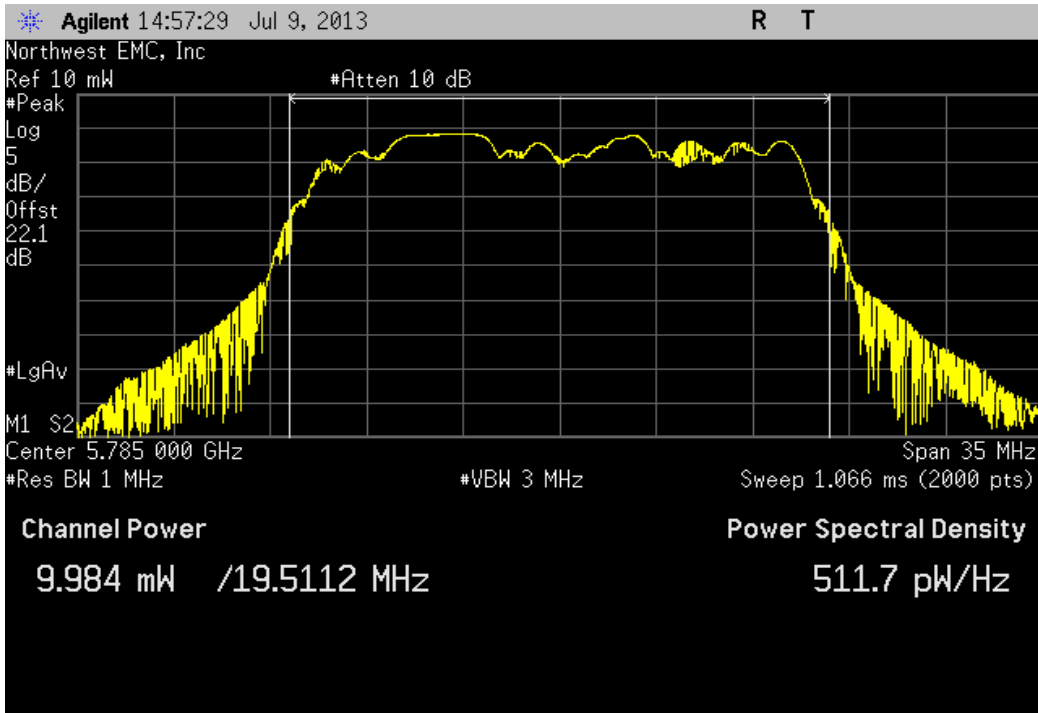
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, Low Channel 149, 5745 MHz

Value	Limit	Result
9.938 mW	< 1 W	Pass



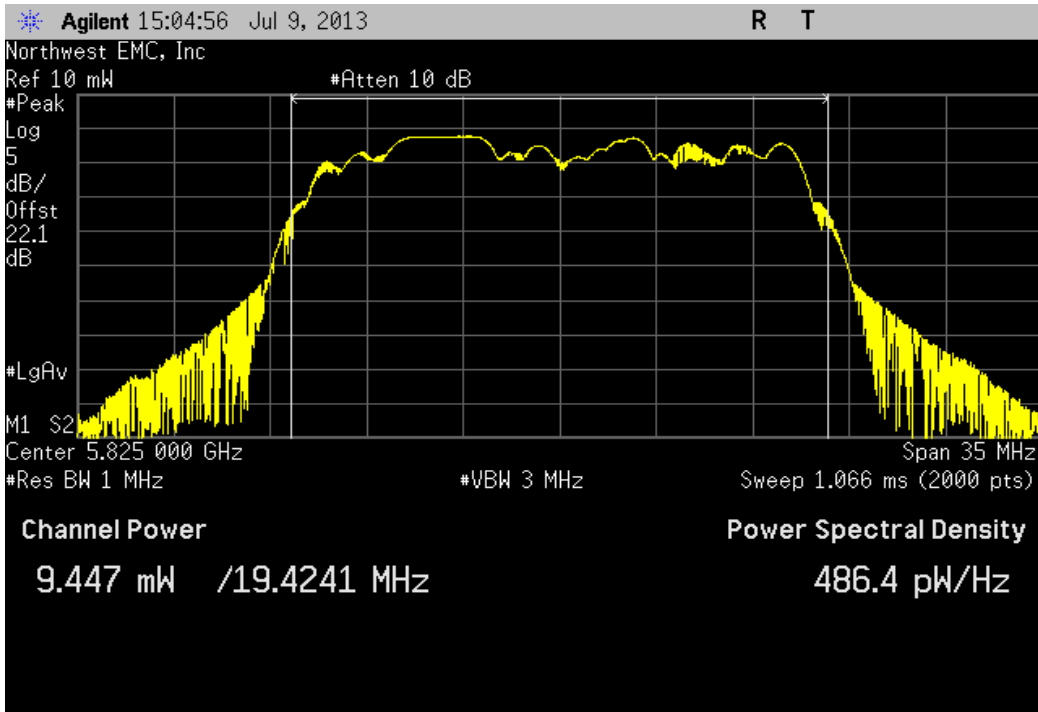
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, Mid Channel 157, 5785 MHz

Value	Limit	Result
9.984 mW	< 1 W	Pass



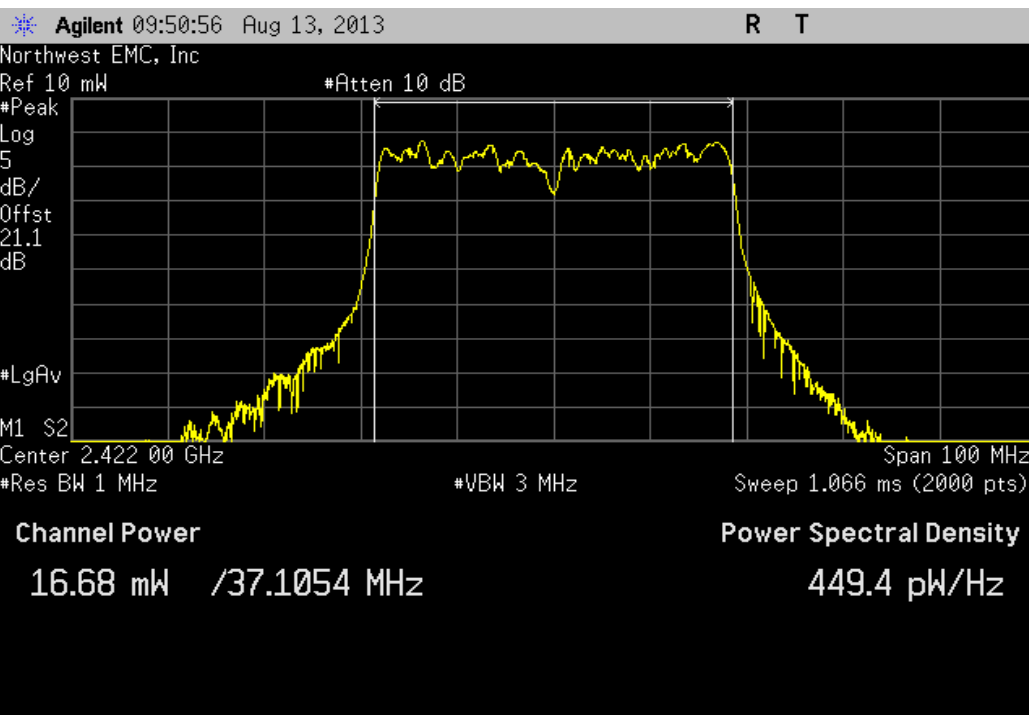
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, High Channel 165, 5825 MHz

Value	Limit	Result
9.447 mW	< 1 W	Pass



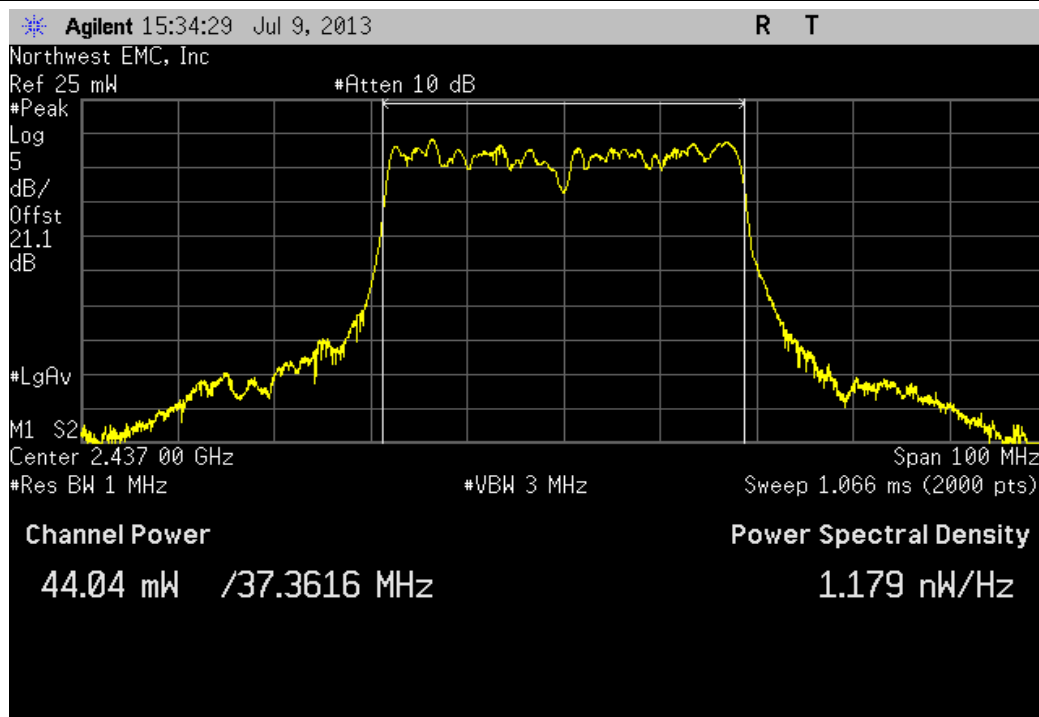
40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1/5, 2422 MHz

Value	Limit	Result
16.677 mW	< 1 W	Pass



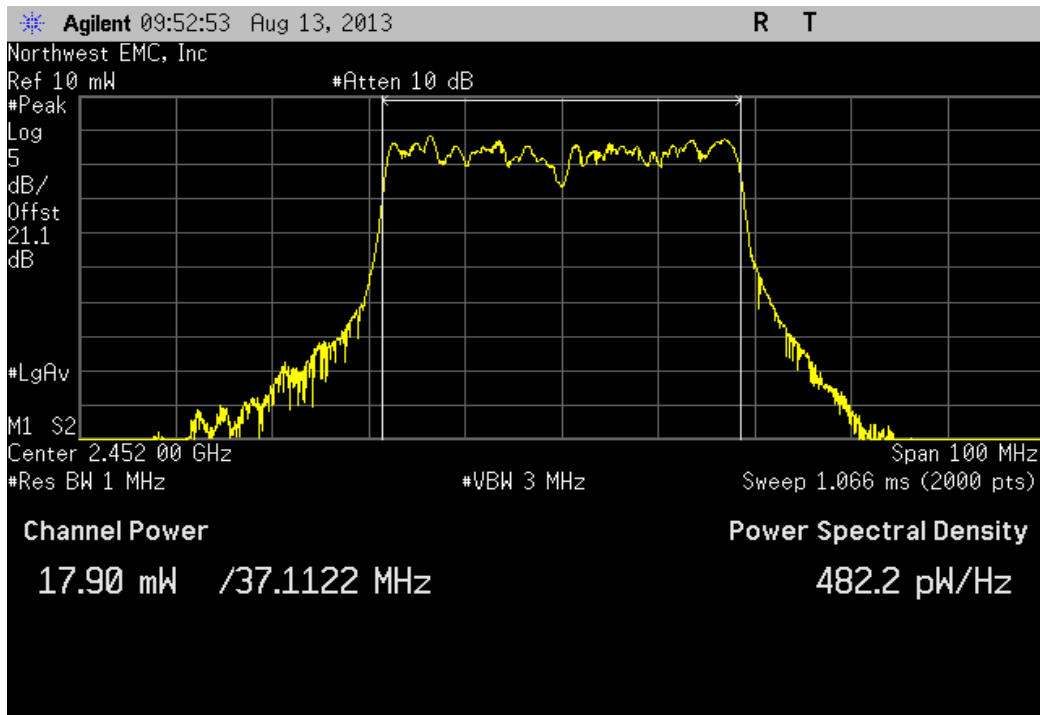
40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Mid Channel 4/8, 2437 MHz

Value	Limit	Result
44.04 mW	< 1 W	Pass



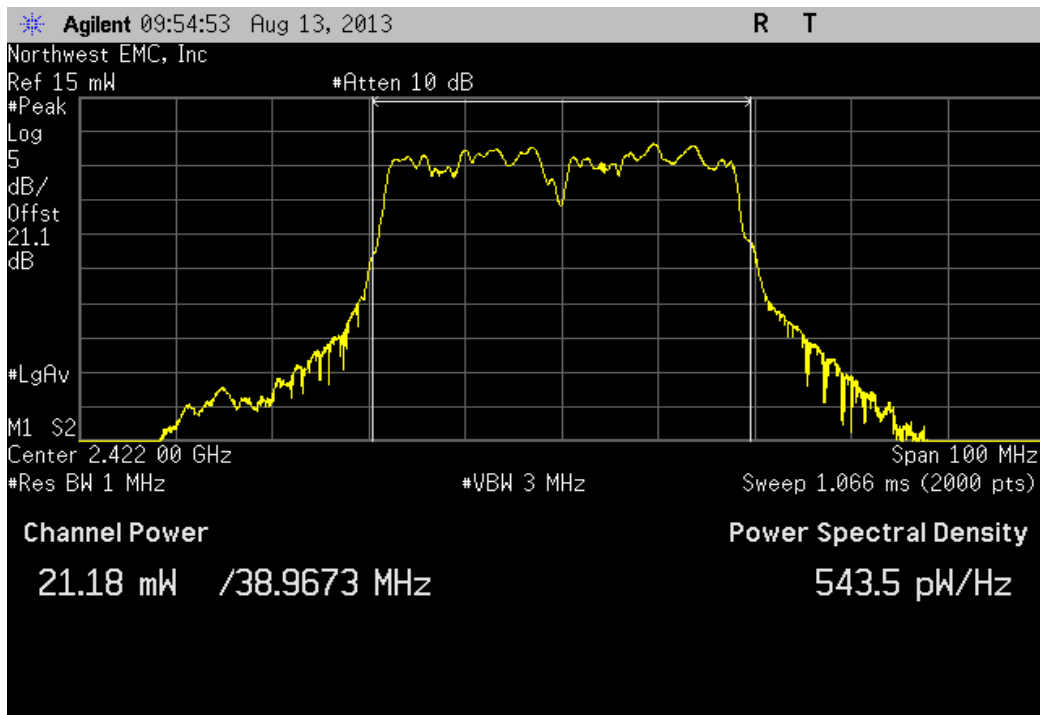
40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 7/11, 2452 MHz

Value	Limit	Result
17.897 mW	< 1 W	Pass



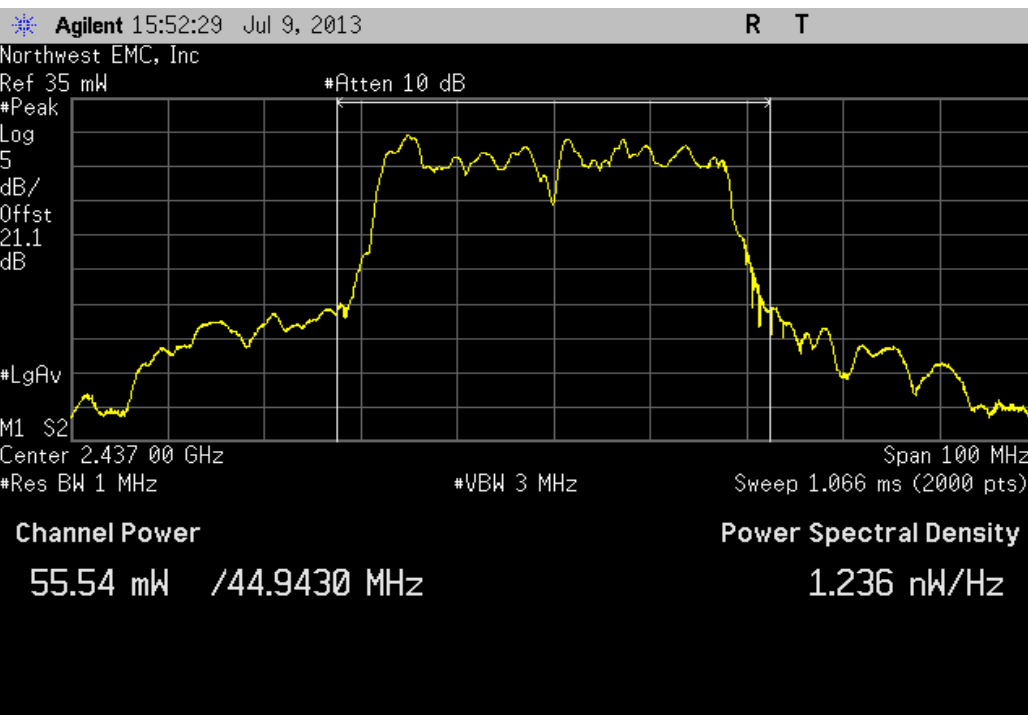
40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1/5, 2422 MHz

Value	Limit	Result
21.181 mW	< 1 W	Pass



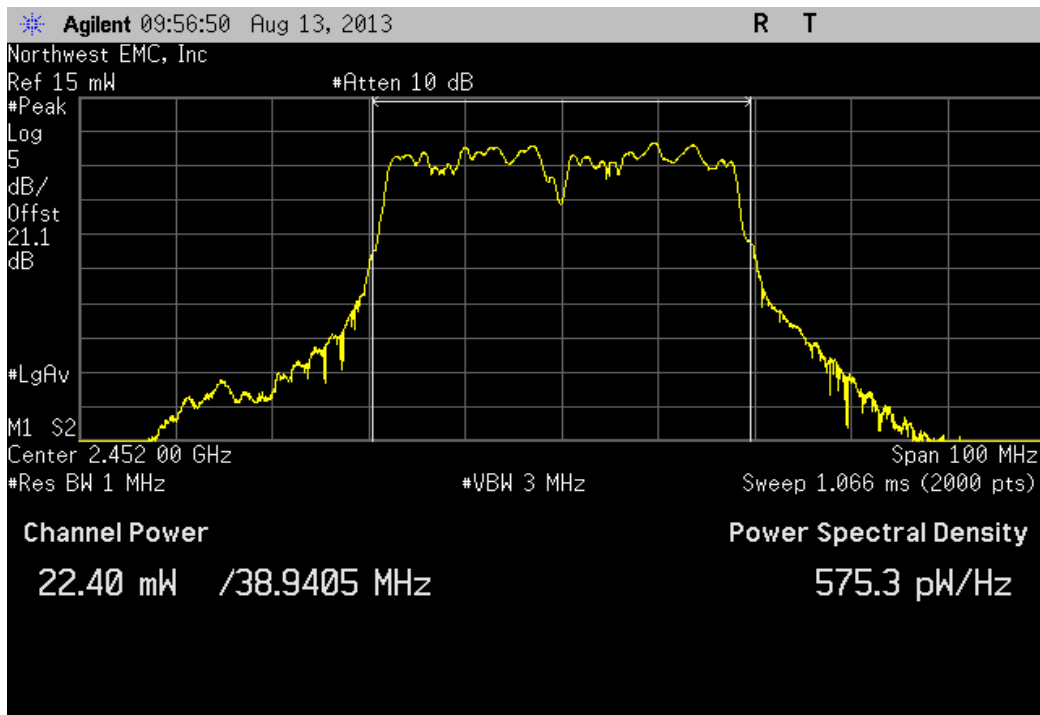
40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Mid Channel 4/8, 2437 MHz

Value	Limit	Result
55.544 mW	< 1 W	Pass



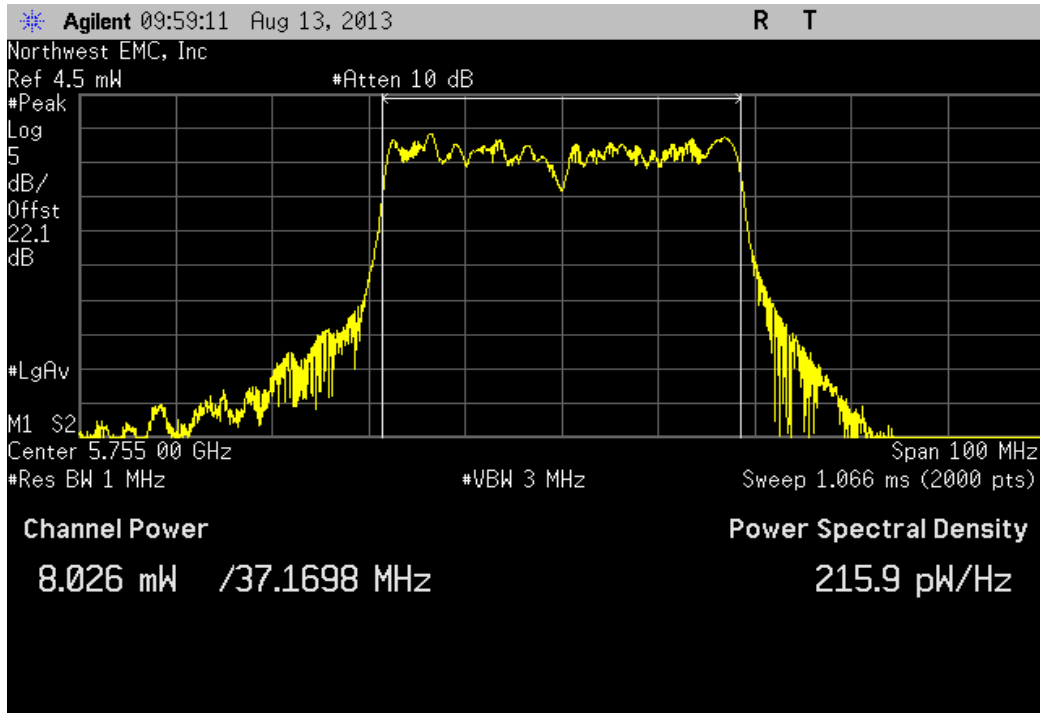
40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, High Channel 7/11, 2452 MHz

Value	Limit	Result
22.403 mW	< 1 W	Pass



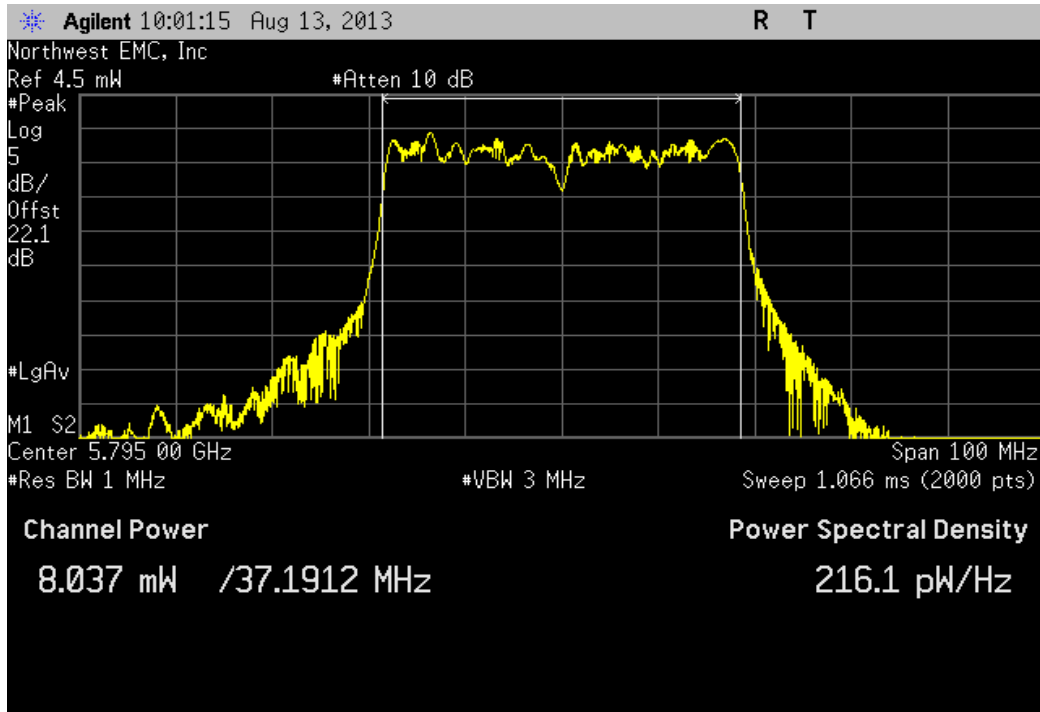
40 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, Low Channel 149/153, 5755 MHz

Value	Limit	Result
8.026 mW	< 1 W	Pass



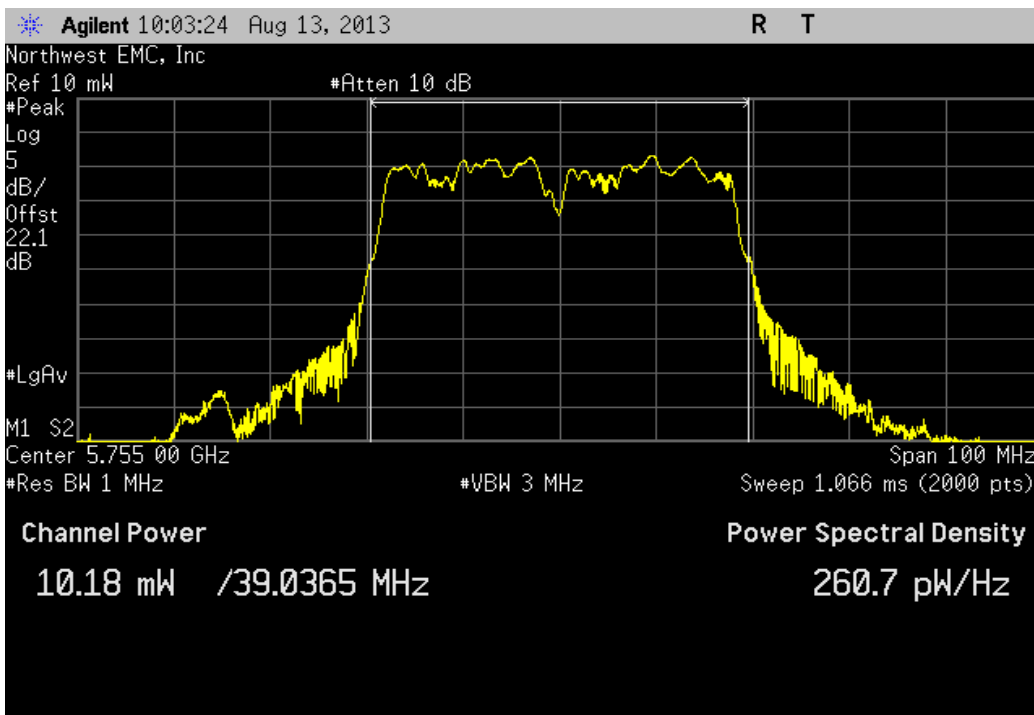
40 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, High Channel 157/161, 5795 MHz

Value	Limit	Result
8.037 mW	< 1 W	Pass



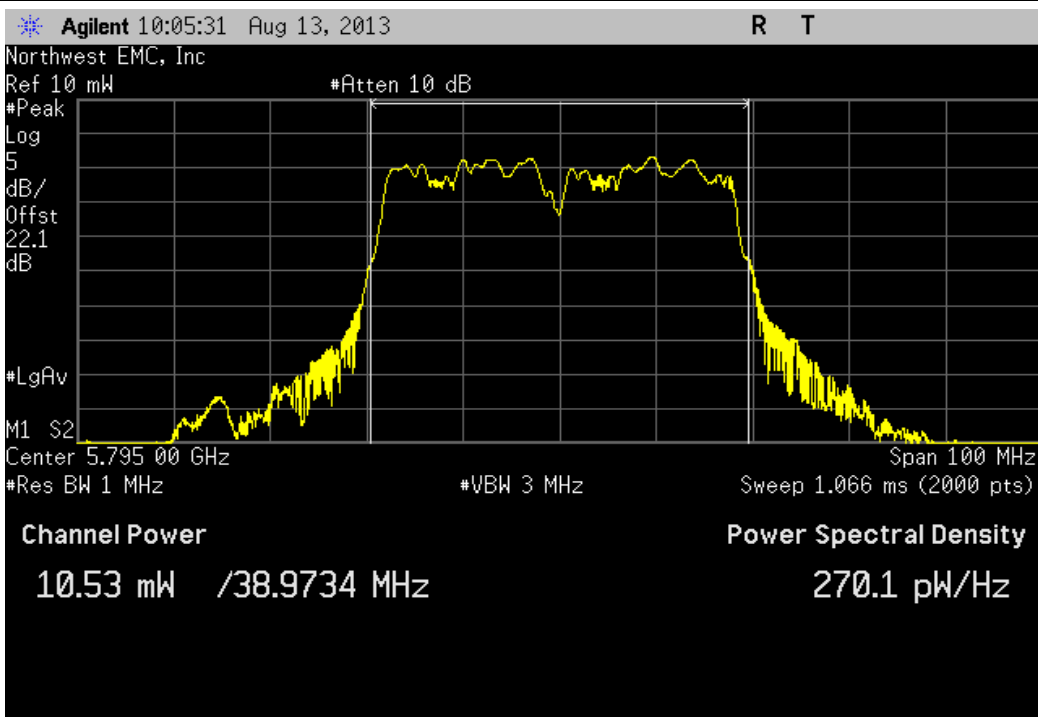
40 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, Low Channel 149/153, 5755 MHz

Value	Limit	Result
10.178 mW	< 1 W	Pass



40 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, High Channel 157/161, 5795 MHz

Value	Limit	Result
10.527 mW	< 1 W	Pass



Occupied Bandwidth - Antenna A

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Attenuator	Fairview Microwave	SA4014-20	TKE	2/12/2013	12
Signal Generator	Agilent	N5183A	TID	9/19/2011	36
Spectrum Analyzer	Agilent	E4446A	AAT	6/28/2012	24
NC02 Cable	ESM Cable Corp.	TTBJ-141 KMKM-72	NC5	7/3/2013	12

TEST DESCRIPTION

The 6dB occupied bandwidth was measured. The 26 dB (99.9%) 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.

DC Block was used in-line for measurements made while under test. For channel output power levels, please refer to the accompanying power table included in this report.



Occupied Bandwidth - Antenna A

XMit 2013.02.28
PsaTx 2013.06.07

EUT: 1601	Work Order: MCS01665
Serial Number: 006079632553	Date: 08/13/13
Customer: Microsoft Corporation	Temperature: 23°C
Attendees: None	Humidity: 50%
Project: None	Barometric Pres.: 1020mb
Tested by: Richard Mellroth, Brandon Hobbs	Power: 110VAC/60Hz
TEST SPECIFICATIONS	
FCC 15.247:2013	
ANSI C63.10:2009	
TEST METHOD	
Job Site: NC02	

COMMENTS
EUT was operating at 100% Duty Cycle. Adapter cable loss of 0.75 dB for 2.4 GHz channels and 1.3 dB for 5.7 GHz channels was added to analyzer reference level offset.

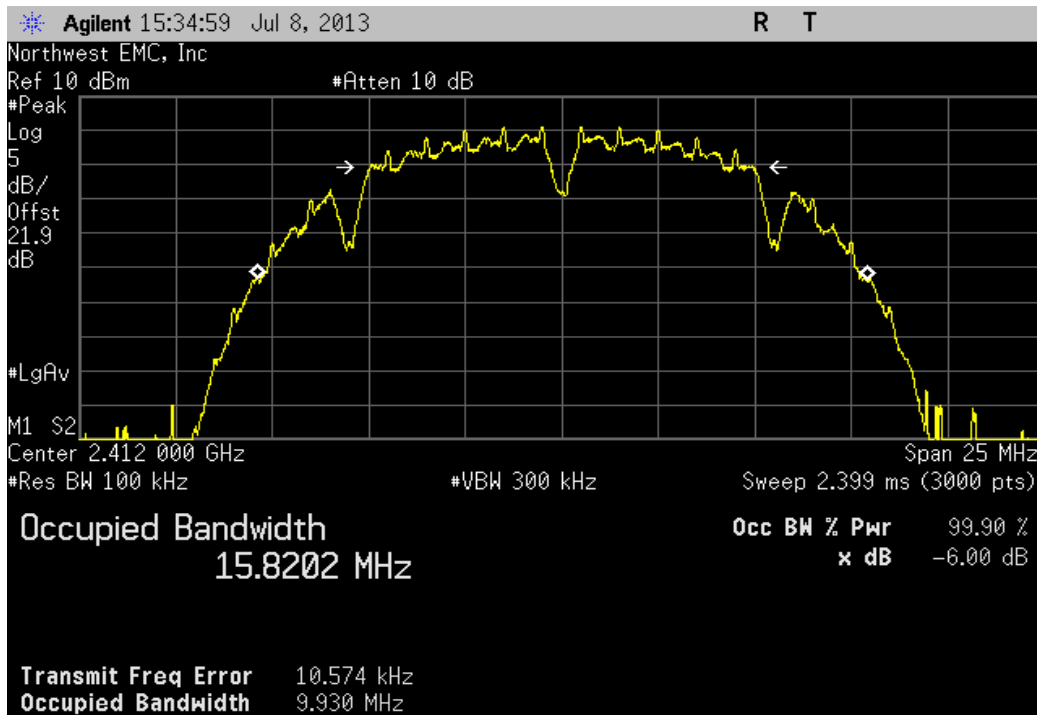
DEVIATIONS FROM TEST STANDARD
None

Configuration #	1	Signature
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	Value	Limit	Result
20 MHz			
2400 MHz - 2483.5 MHz Band			
802.11(b) 1 Mbps			
Low Channel 1, 2412 MHz	9.93 MHz	> 500 kHz	Pass
Mid Channel 6, 2437 MHz	10.001 MHz	> 500 kHz	Pass
High Channel 11, 2462 MHz	9.915 MHz	> 500 kHz	Pass
802.11(b) 11 Mbps			
Low Channel 1, 2412 MHz	9.592 MHz	> 500 kHz	Pass
Mid Channel 6, 2437 MHz	9.564 MHz	> 500 kHz	Pass
High Channel 11, 2462 MHz	9.474 MHz	> 500 kHz	Pass
802.11(g) 6 Mbps			
Low Channel 1, 2412 MHz	16.354 MHz	> 500 kHz	Pass
Mid Channel 6, 2437 MHz	16.347 MHz	> 500 kHz	Pass
High Channel 11, 2462 MHz	16.353 MHz	> 500 kHz	Pass
802.11(g) 36 Mbps			
Low Channel 1, 2412 MHz	16.415 MHz	> 500 kHz	Pass
Mid Channel 6, 2437 MHz	16.383 MHz	> 500 kHz	Pass
High Channel 11, 2462 MHz	16.405 MHz	> 500 kHz	Pass
802.11(g) 54 Mbps			
Low Channel 1, 2412 MHz	16.446 MHz	> 500 kHz	Pass
Mid Channel 6, 2437 MHz	16.431 MHz	> 500 kHz	Pass
High Channel 11, 2462 MHz	16.459 MHz	> 500 kHz	Pass
802.11(n) MCS0			
Low Channel 1, 2412 MHz	15.784 MHz	> 500 kHz	Pass
Mid Channel 6, 2437 MHz	16.602 MHz	> 500 kHz	Pass
High Channel 11, 2462 MHz	16.055 MHz	> 500 kHz	Pass
802.11(n) MCS7			
Low Channel 1, 2412 MHz	15.762 MHz	> 500 kHz	Pass
Mid Channel 6, 2437 MHz	16.928 MHz	> 500 kHz	Pass
High Channel 11, 2462 MHz	15.972 MHz	> 500 kHz	Pass
5725 MHz - 5850 MHz Band			
802.11(a) 6 Mbps			
Low Channel 149, 5745 MHz	16.382 MHz	> 500 kHz	Pass
Mid Channel 157, 5785 MHz	16.375 MHz	> 500 kHz	Pass
High Channel 165, 5825 MHz	16.379 MHz	> 500 kHz	Pass
802.11(a) 36 Mbps			
Low Channel 149, 5745 MHz	16.405 MHz	> 500 kHz	Pass
Mid Channel 157, 5785 MHz	16.368 MHz	> 500 kHz	Pass
High Channel 165, 5825 MHz	16.327 MHz	> 500 kHz	Pass
802.11(a) 54 Mbps			
Low Channel 149, 5745 MHz	16.337 MHz	> 500 kHz	Pass
Mid Channel 157, 5785 MHz	16.384 MHz	> 500 kHz	Pass
High Channel 165, 5825 MHz	16.418 MHz	> 500 kHz	Pass
802.11(n) MCS0 - UNII			
Low Channel 149, 5745 MHz	16.486 MHz	> 500 kHz	Pass
Mid Channel 157, 5785 MHz	17.093 MHz	> 500 kHz	Pass
High Channel 165, 5825 MHz	17.387 MHz	> 500 kHz	Pass
802.11(n) MCS7 - UNII			
Low Channel 149, 5745 MHz	16.37 MHz	> 500 kHz	Pass
Mid Channel 157, 5785 MHz	17.399 MHz	> 500 kHz	Pass
High Channel 165, 5825 MHz	17.386 MHz	> 500 kHz	Pass
40 MHz			
2400 MHz - 2483.5 MHz Band			
802.11(n) MCS0			
Low Channel 1/5, 2422 MHz	36.051 MHz	> 500 kHz	Pass
Mid Channel 4/8, 2437 MHz	36.134 MHz	> 500 kHz	Pass
High Channel 7/11, 2452 MHz	36.284 MHz	> 500 kHz	Pass
802.11(n) MCS7			
Low Channel 1/5, 2422 MHz	35.945 MHz	> 500 kHz	Pass
Mid Channel 4/8, 2437 MHz	35.871 MHz	> 500 kHz	Pass
High Channel 7/11, 2452 MHz	35.716 MHz	> 500 kHz	Pass
5725 MHz - 5850 MHz Band			
802.11(n) MCS0 - UNII			
Low Channel 149/153, 5755 MHz	35.983 MHz	> 500 kHz	Pass
High Channel 157/161, 5795 MHz	36.325 MHz	> 500 kHz	Pass
802.11(n) MCS7 - UNII			
Low Channel 149/153, 5755 MHz	35.789 MHz	> 500 kHz	Pass
High Channel 157/161, 5795 MHz	35.912 MHz	> 500 kHz	Pass

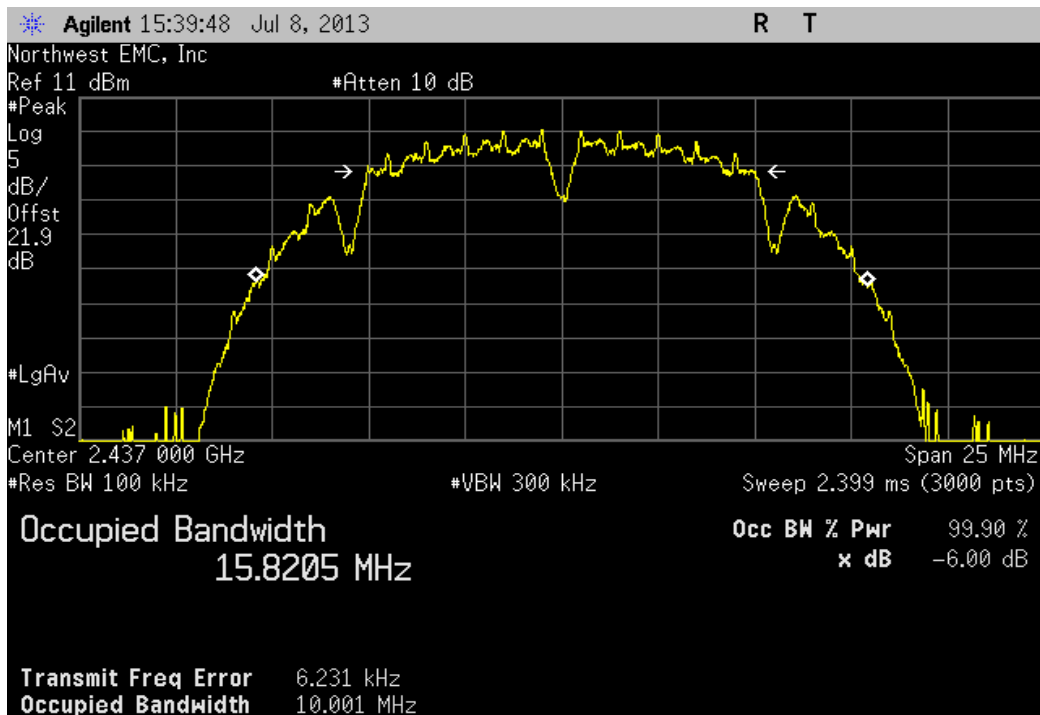
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz

Value	Limit	Result
9.93 MHz	> 500 kHz	Pass



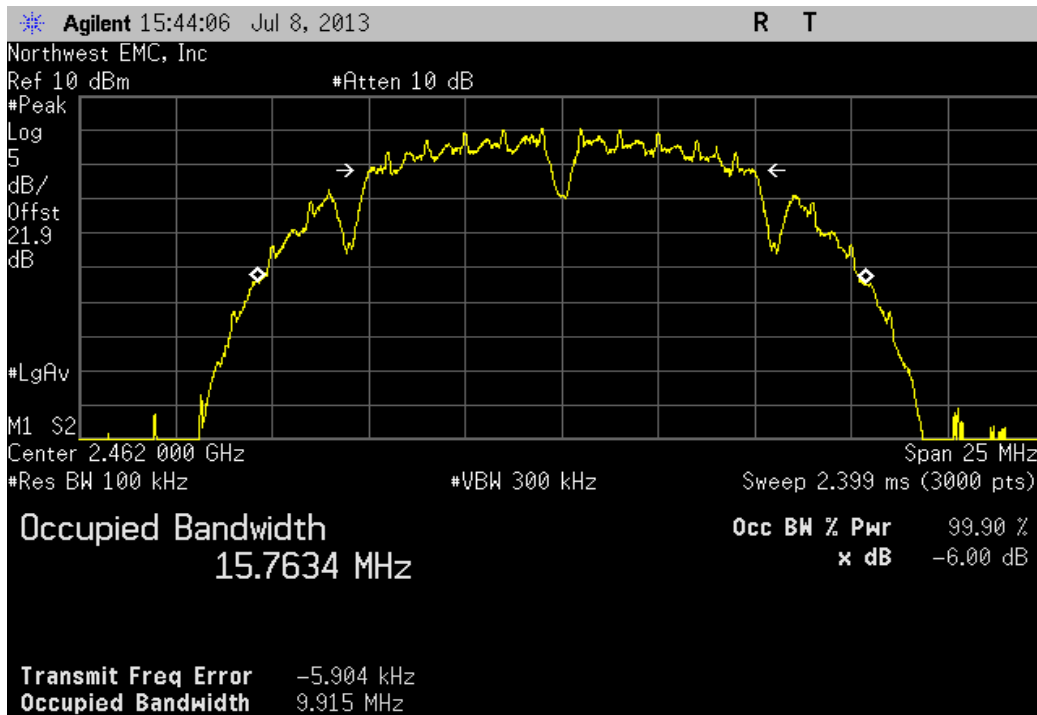
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz

Value	Limit	Result
10.001 MHz	> 500 kHz	Pass



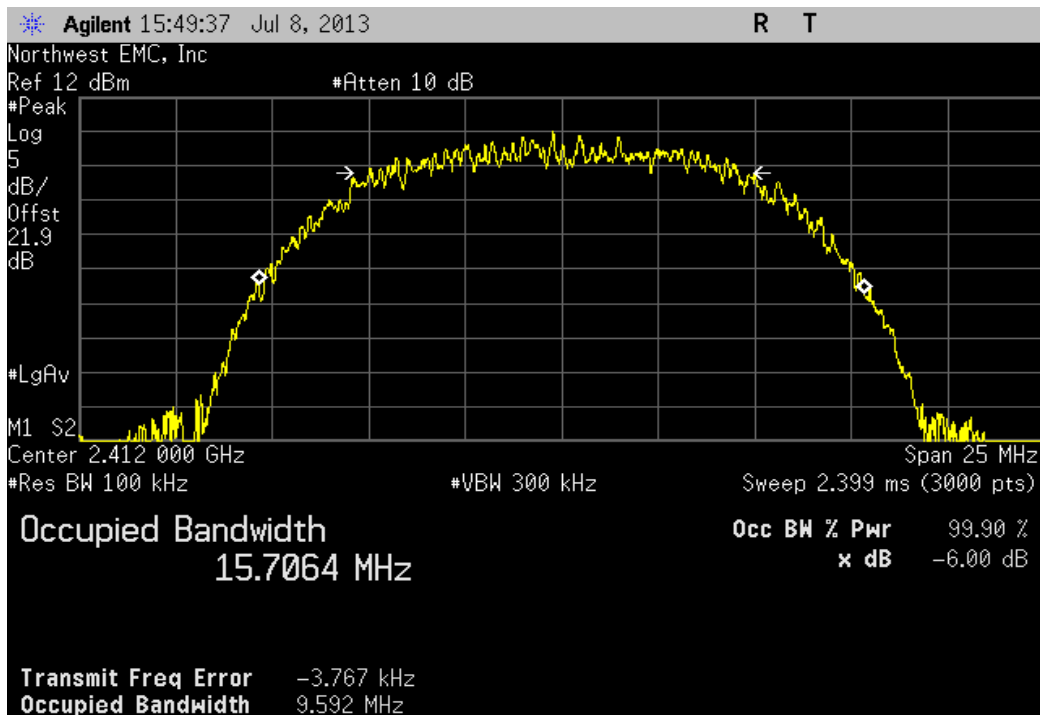
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz

Value	Limit	Result
9.915 MHz	> 500 kHz	Pass



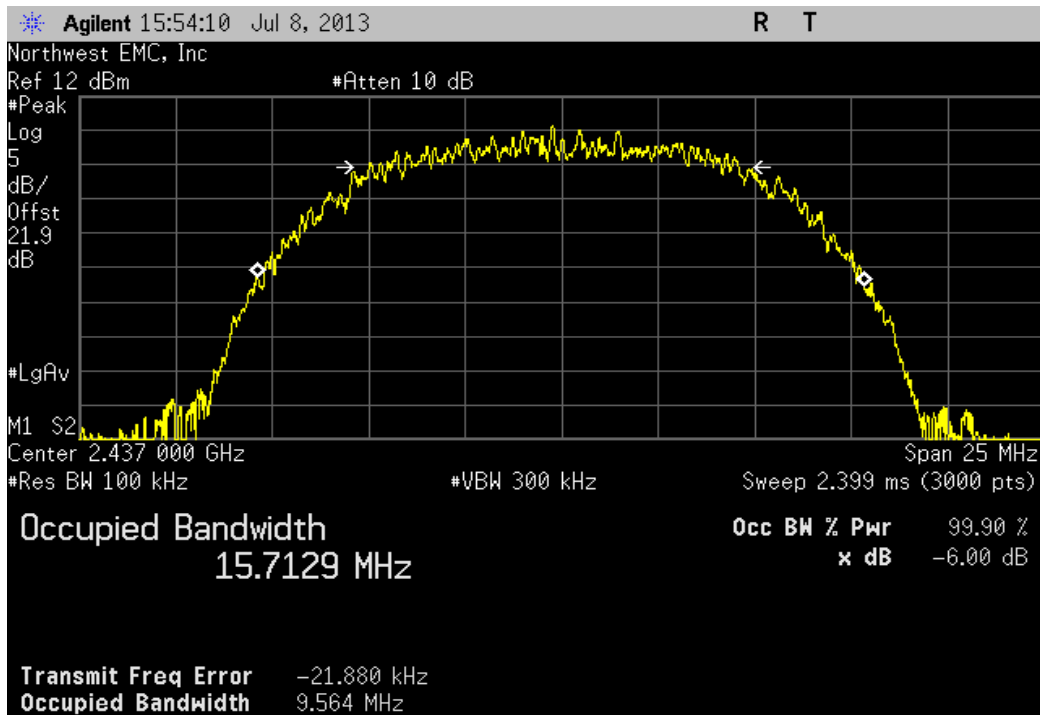
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz

Value	Limit	Result
9.592 MHz	> 500 kHz	Pass



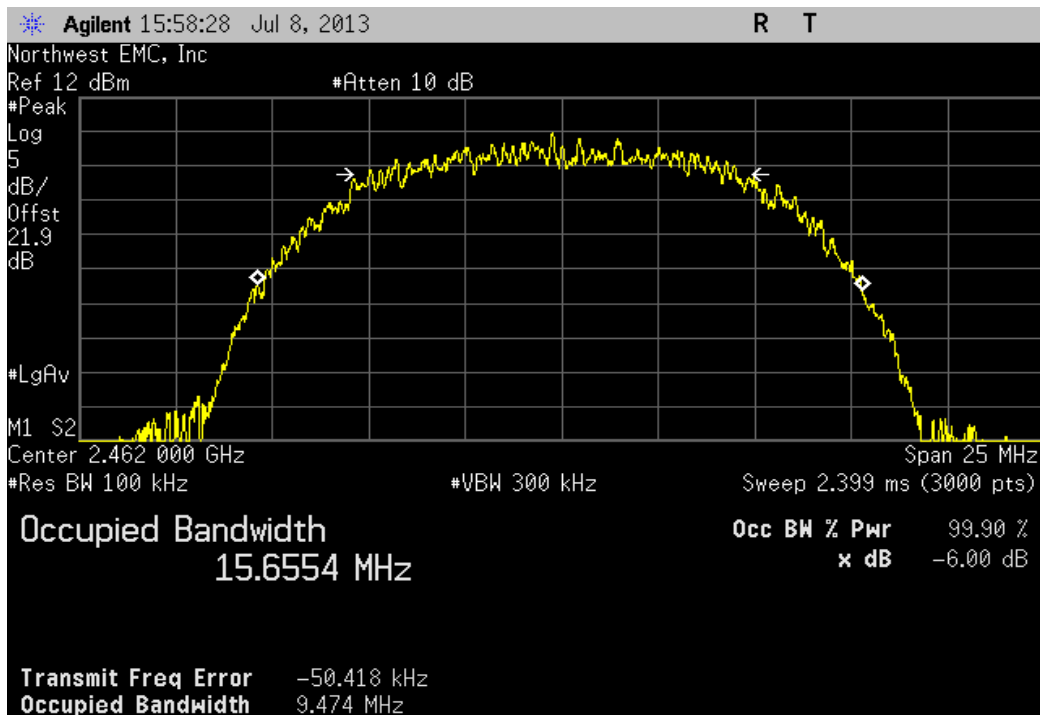
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Mid Channel 6, 2437 MHz

Value	Limit	Result
9.564 MHz	> 500 kHz	Pass



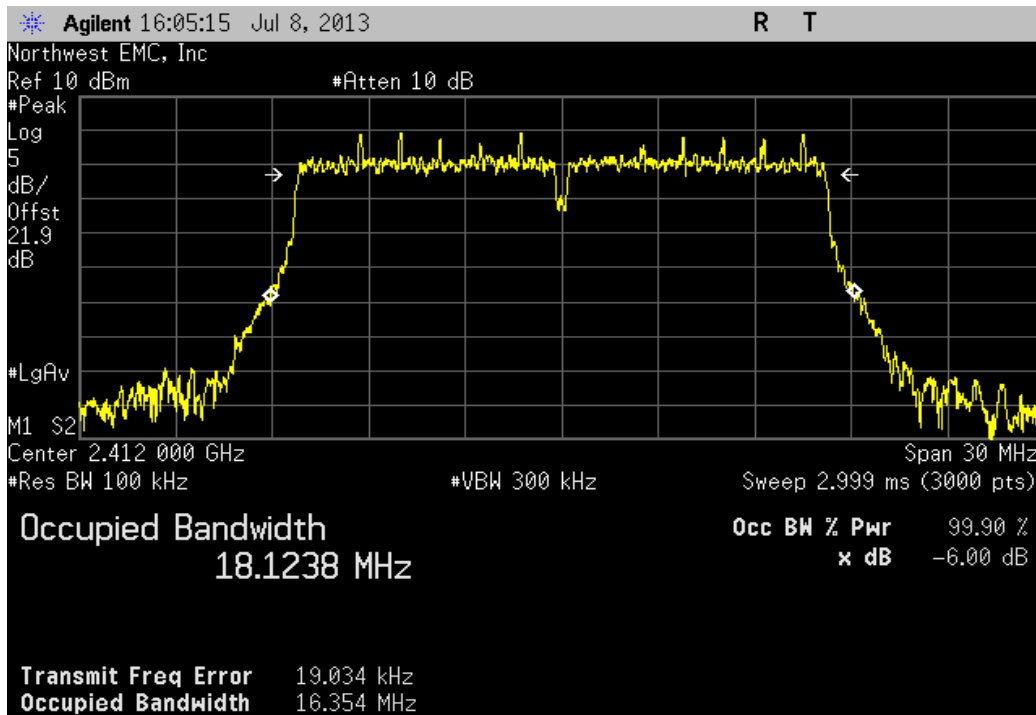
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz

Value	Limit	Result
9.474 MHz	> 500 kHz	Pass



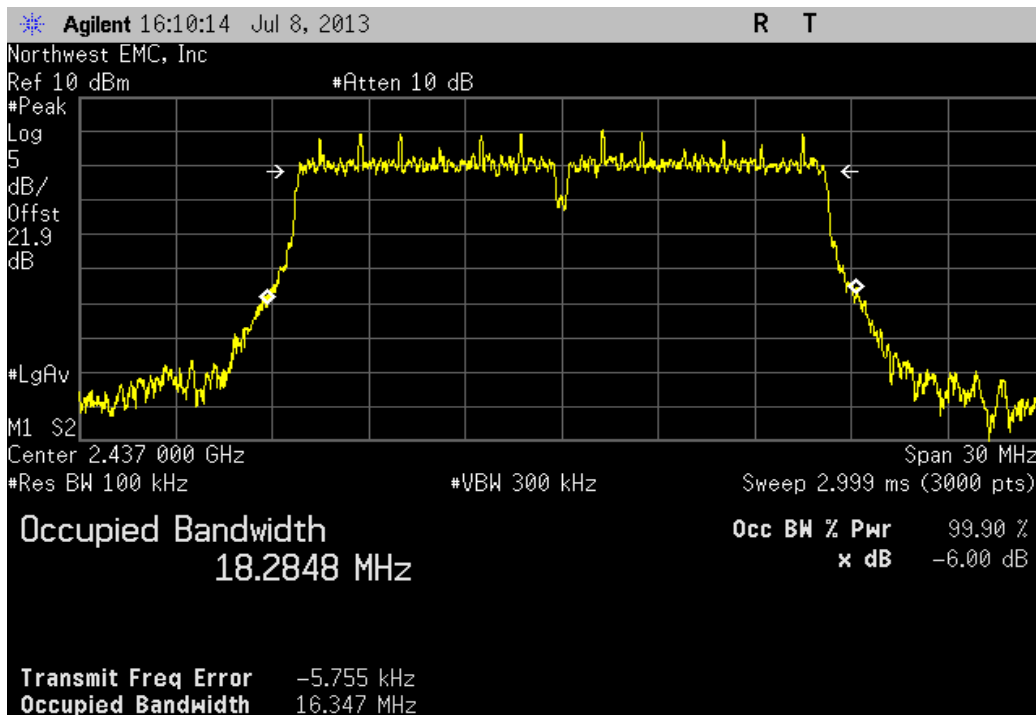
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz

Value	Limit	Result
16.354 MHz	> 500 kHz	Pass



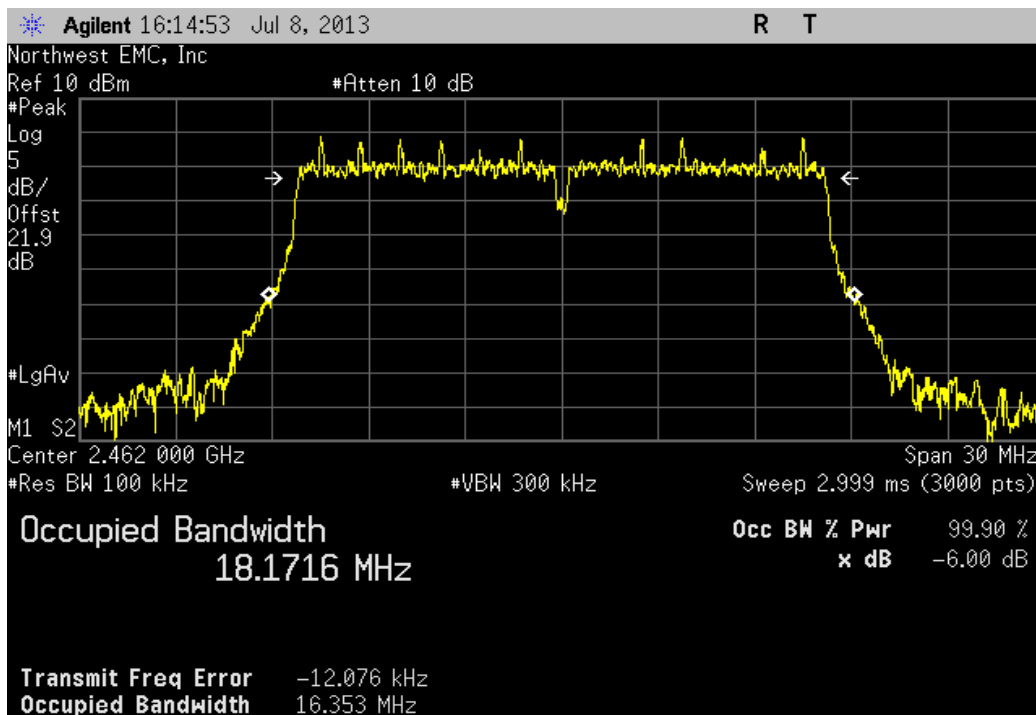
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz

Value	Limit	Result
16.347 MHz	> 500 kHz	Pass



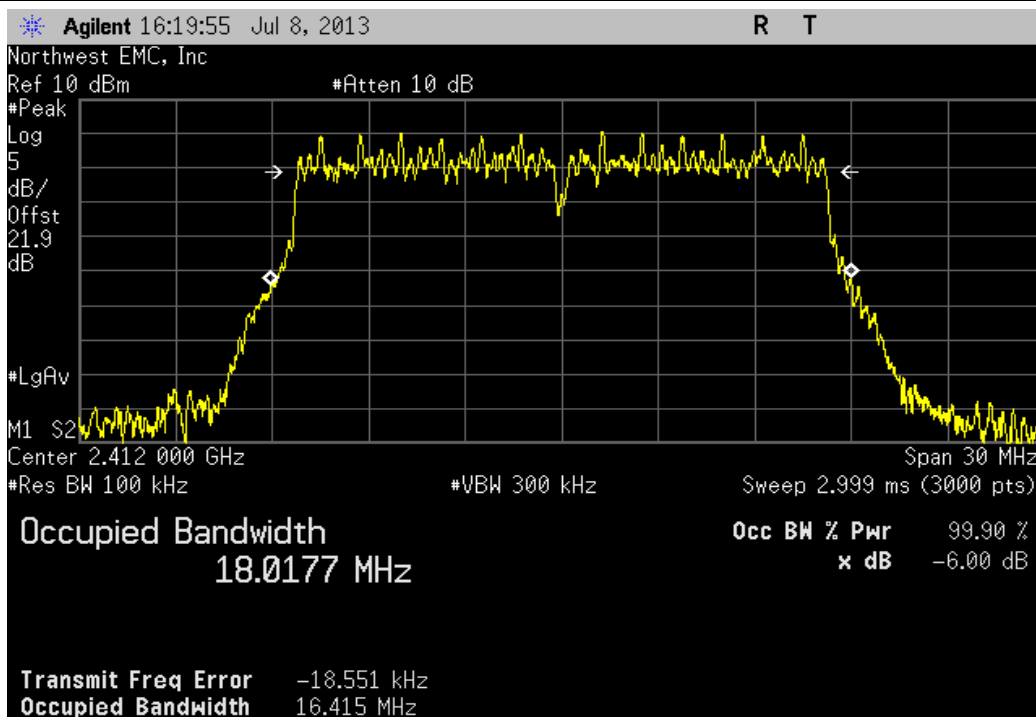
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz

Value	Limit	Result
16.353 MHz	> 500 kHz	Pass



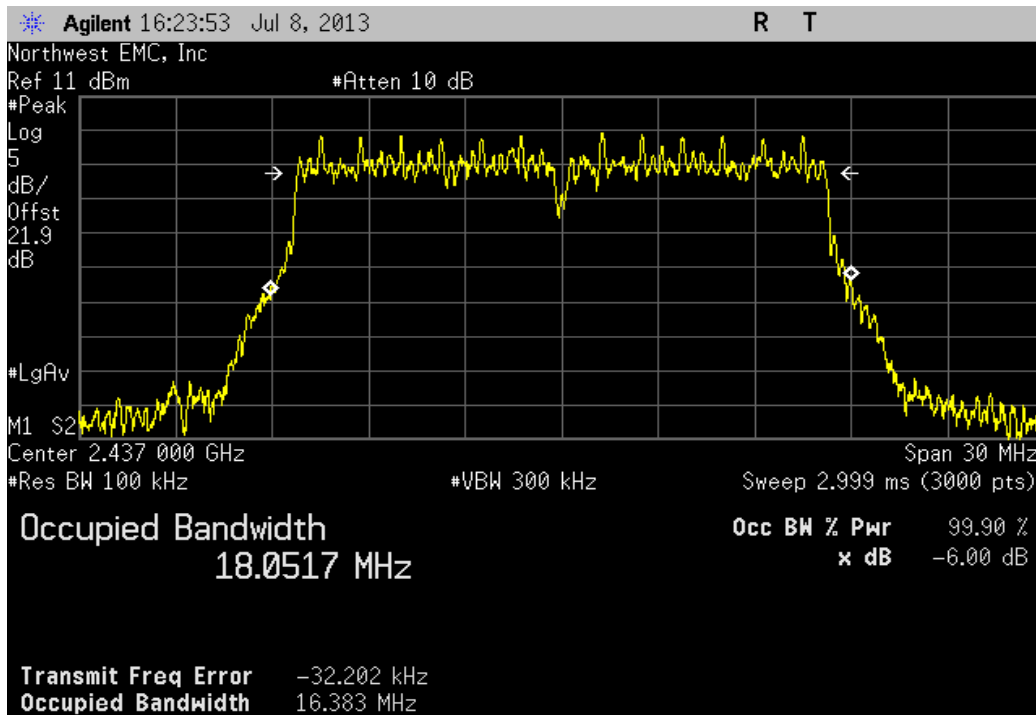
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz

Value	Limit	Result
16.415 MHz	> 500 kHz	Pass



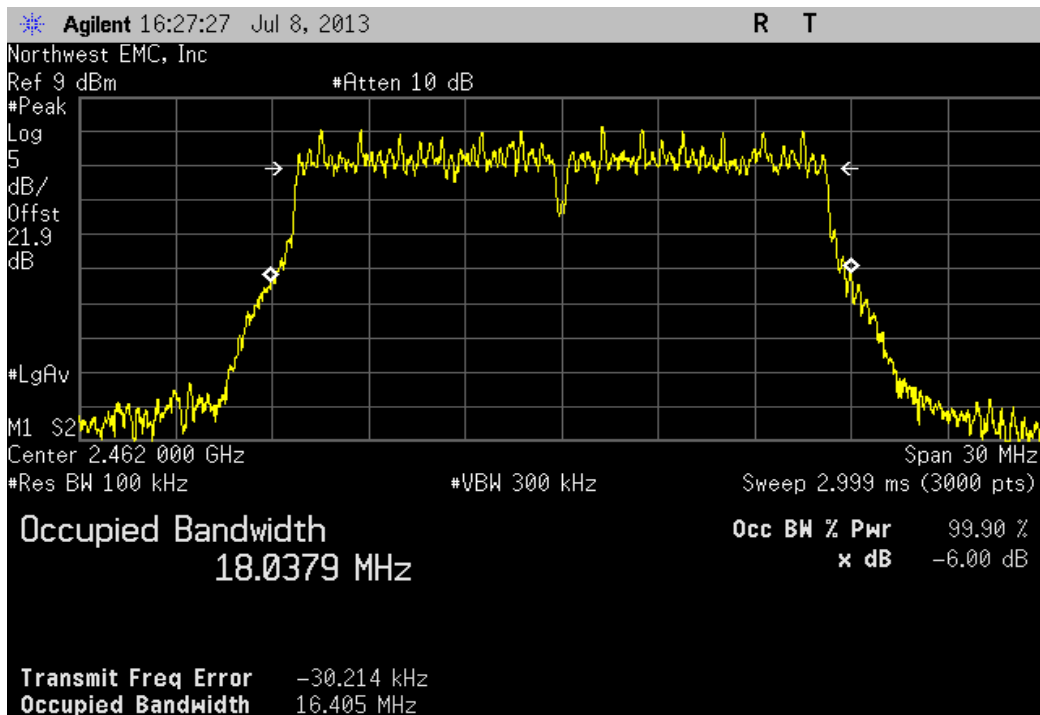
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Mid Channel 6, 2437 MHz

Value	Limit	Result
16.383 MHz	> 500 kHz	Pass



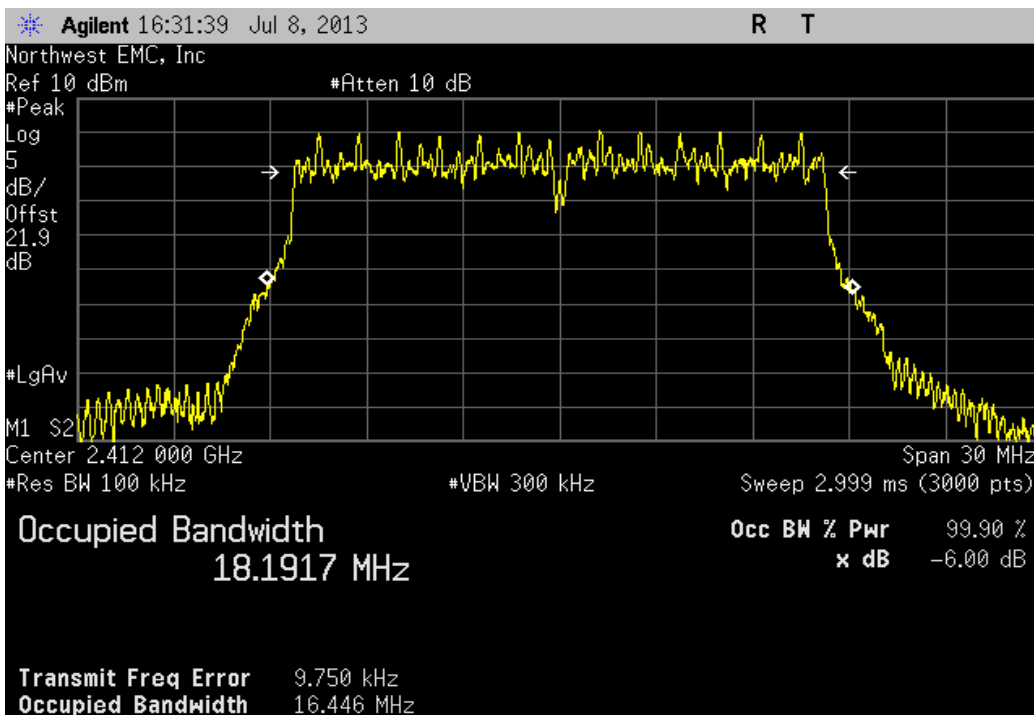
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz

Value	Limit	Result
16.405 MHz	> 500 kHz	Pass



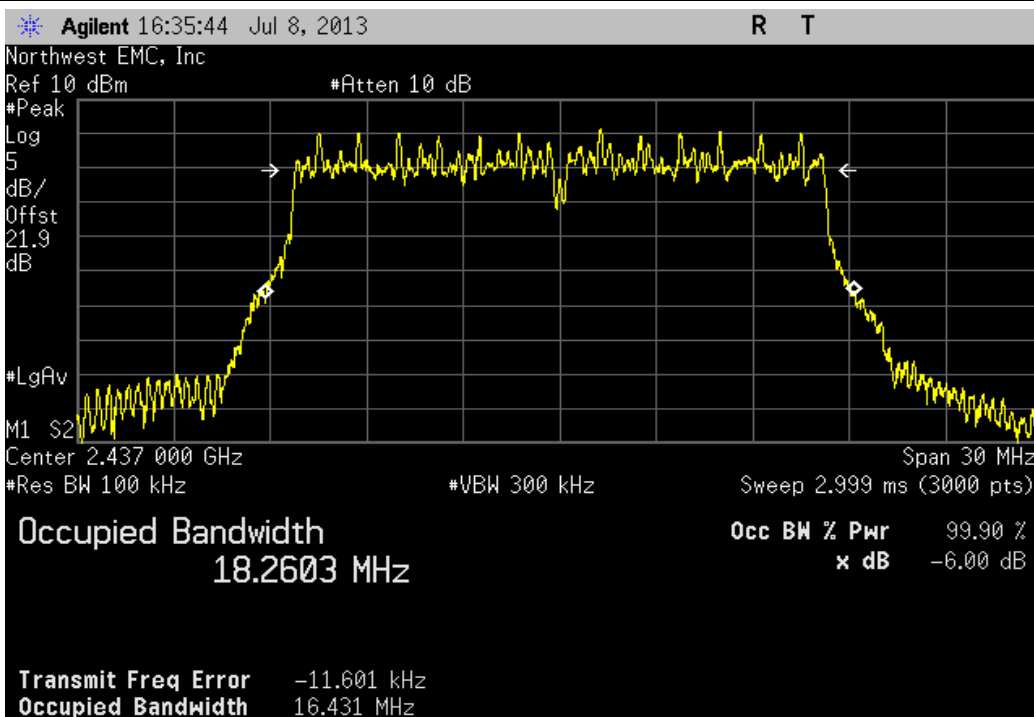
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz

Value	Limit	Result
16.446 MHz	> 500 kHz	Pass



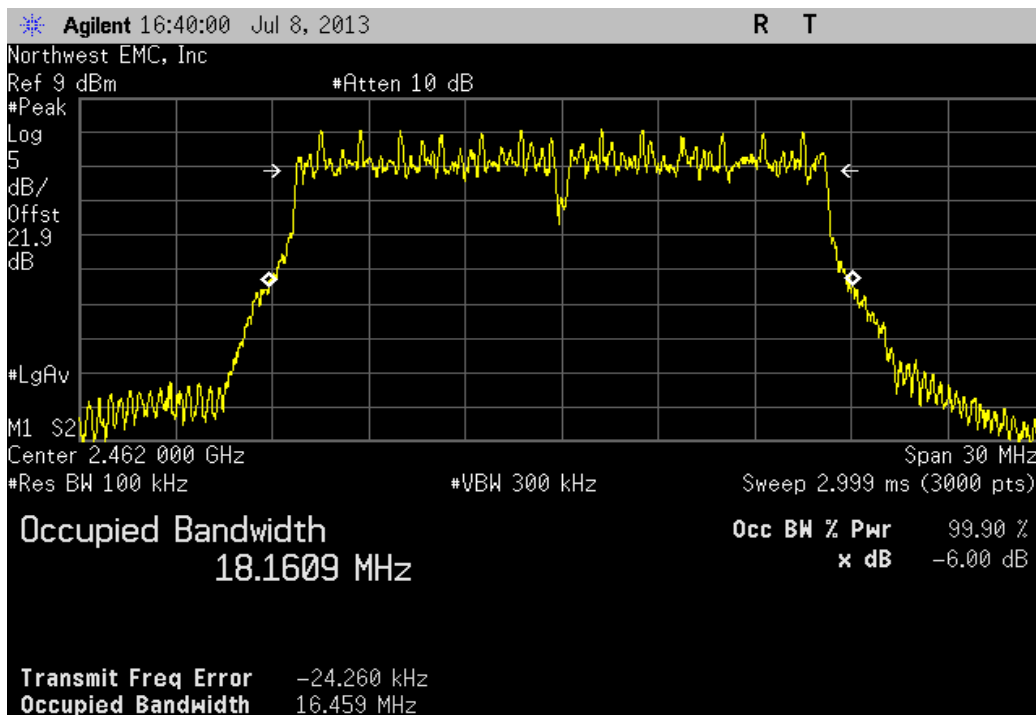
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz

Value	Limit	Result
16.431 MHz	> 500 kHz	Pass



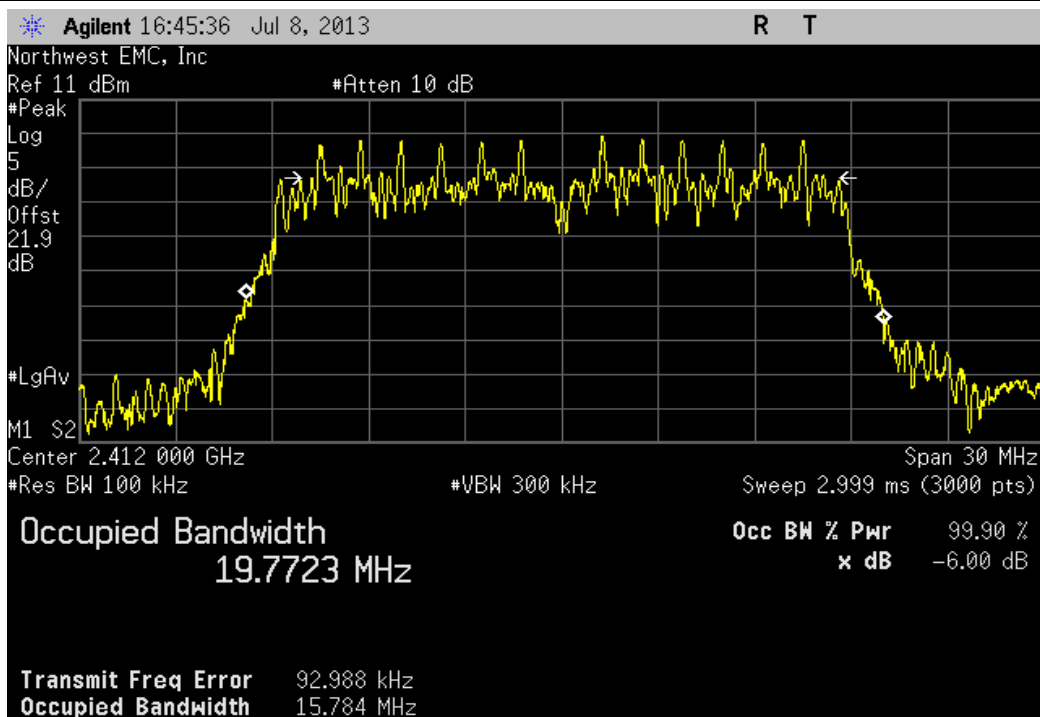
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz

Value	Limit	Result
16.459 MHz	> 500 kHz	Pass



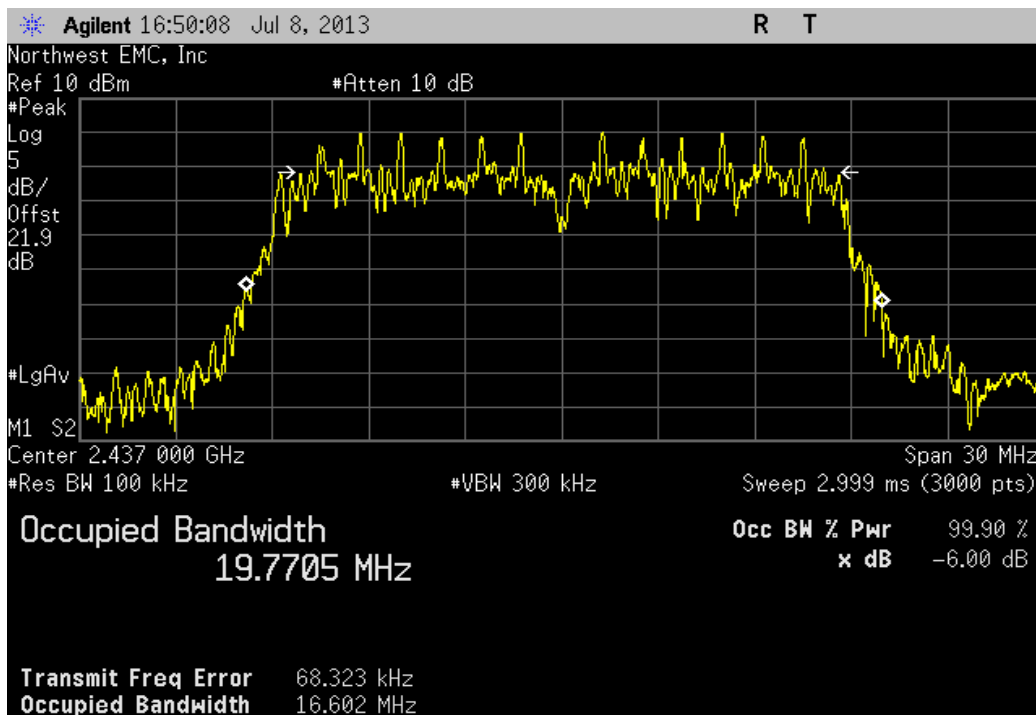
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1, 2412 MHz

Value	Limit	Result
15.784 MHz	> 500 kHz	Pass



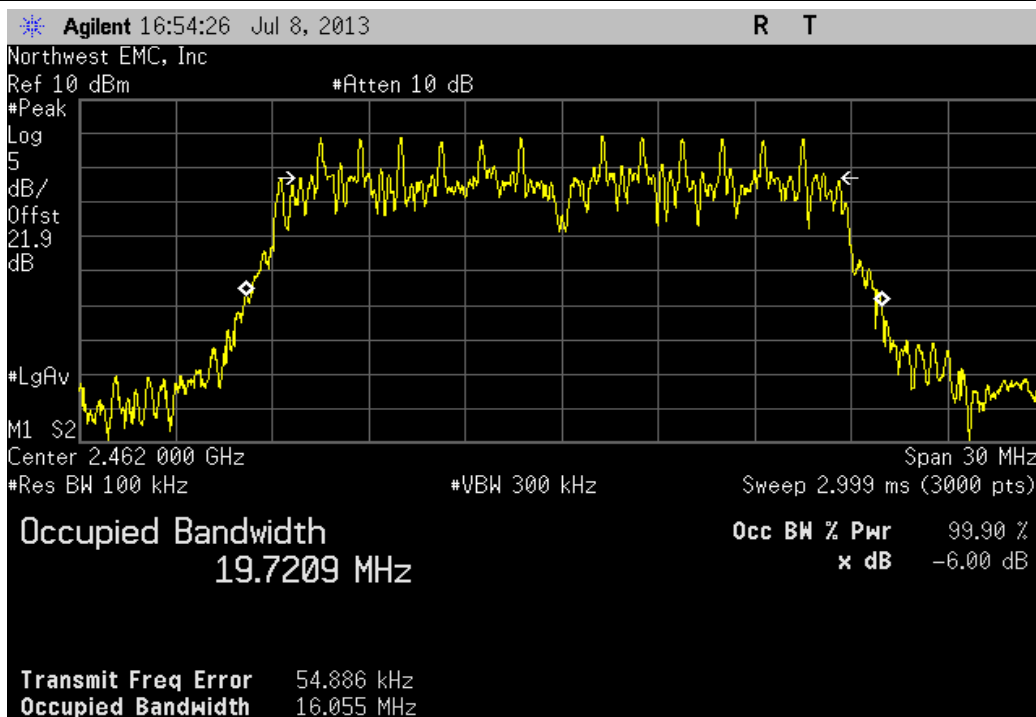
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Mid Channel 6, 2437 MHz

Value	Limit	Result
16.602 MHz	> 500 kHz	Pass



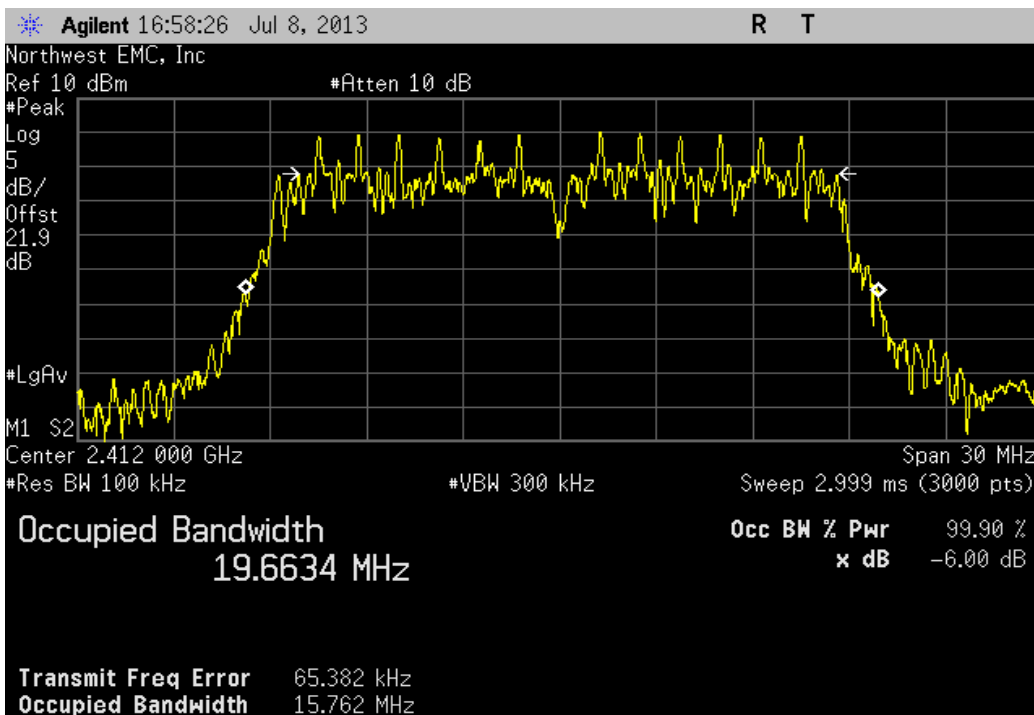
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 11, 2462 MHz

Value	Limit	Result
16.055 MHz	> 500 kHz	Pass



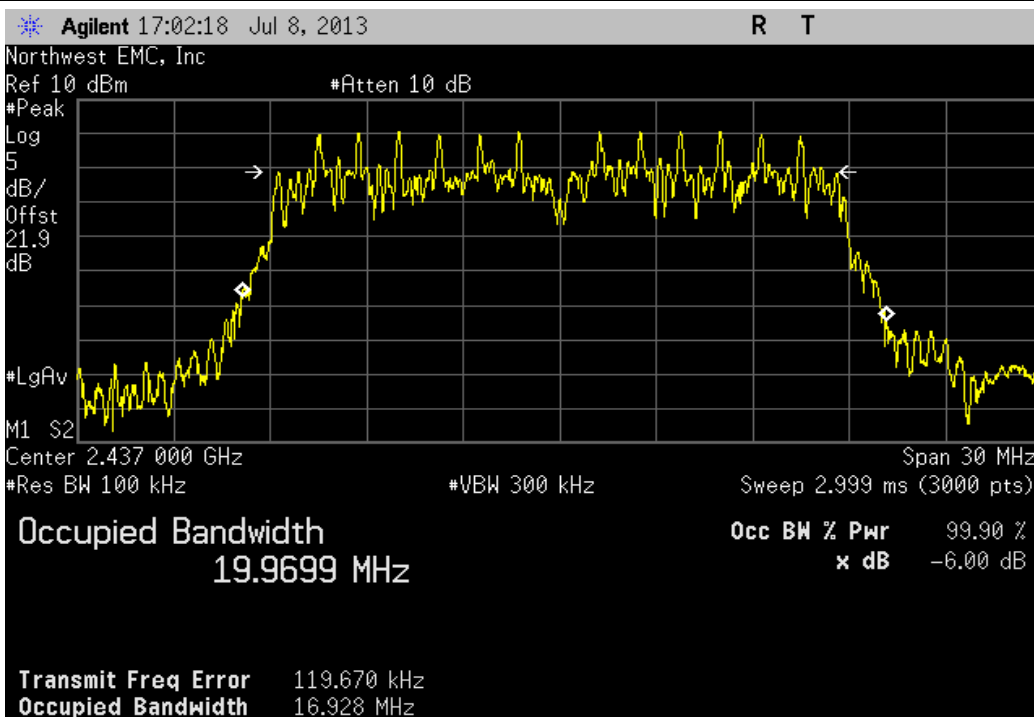
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1, 2412 MHz

Value	Limit	Result
15.762 MHz	> 500 kHz	Pass



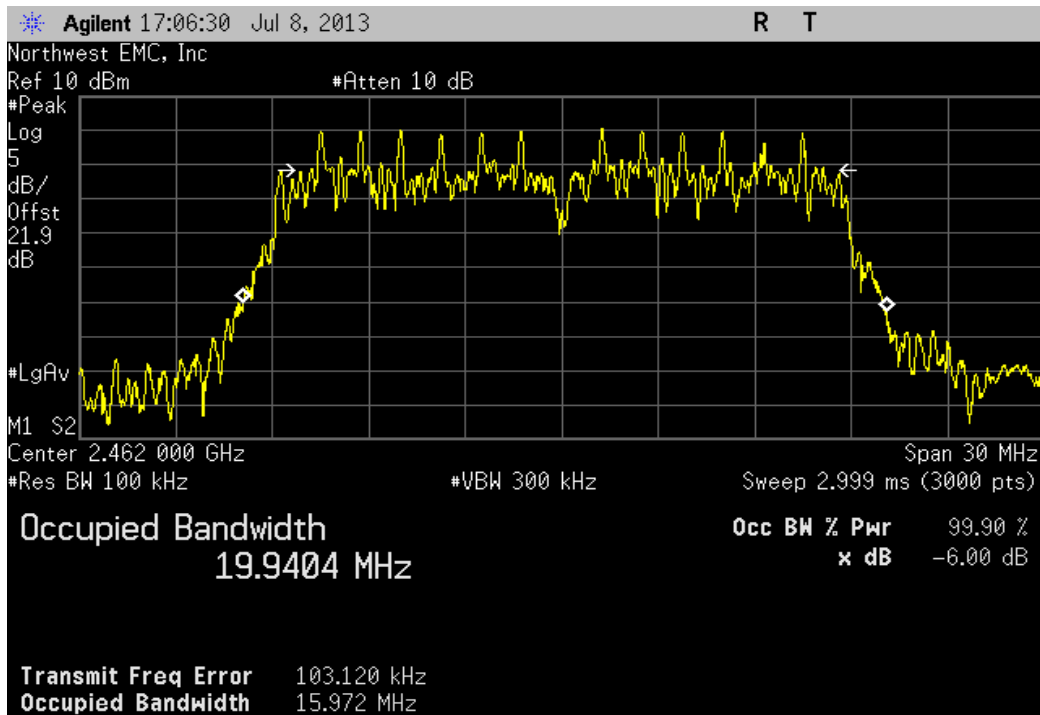
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Mid Channel 6, 2437 MHz

Value	Limit	Result
16.928 MHz	> 500 kHz	Pass



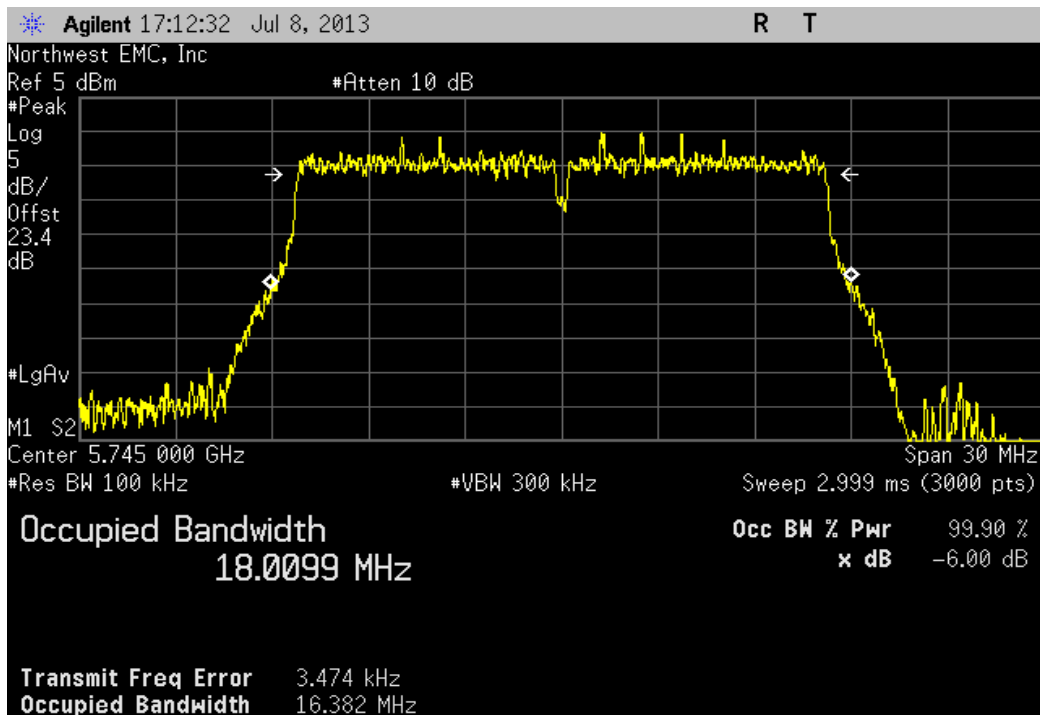
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, High Channel 11, 2462 MHz

Value	Limit	Result
15.972 MHz	> 500 kHz	Pass



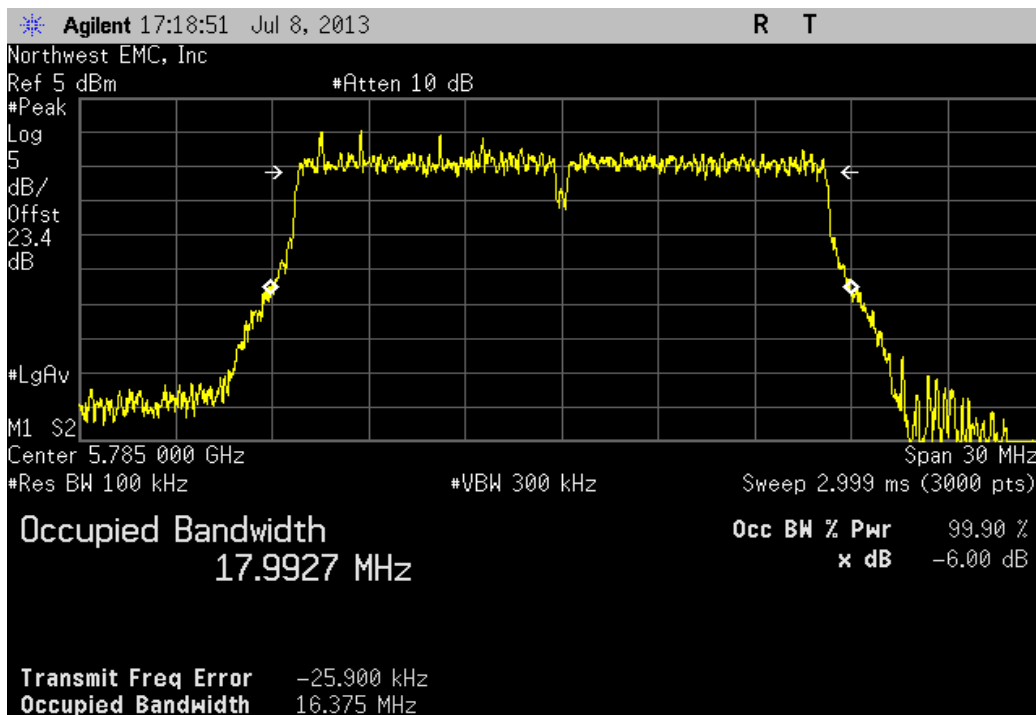
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Low Channel 149, 5745 MHz

Value	Limit	Result
16.382 MHz	> 500 kHz	Pass



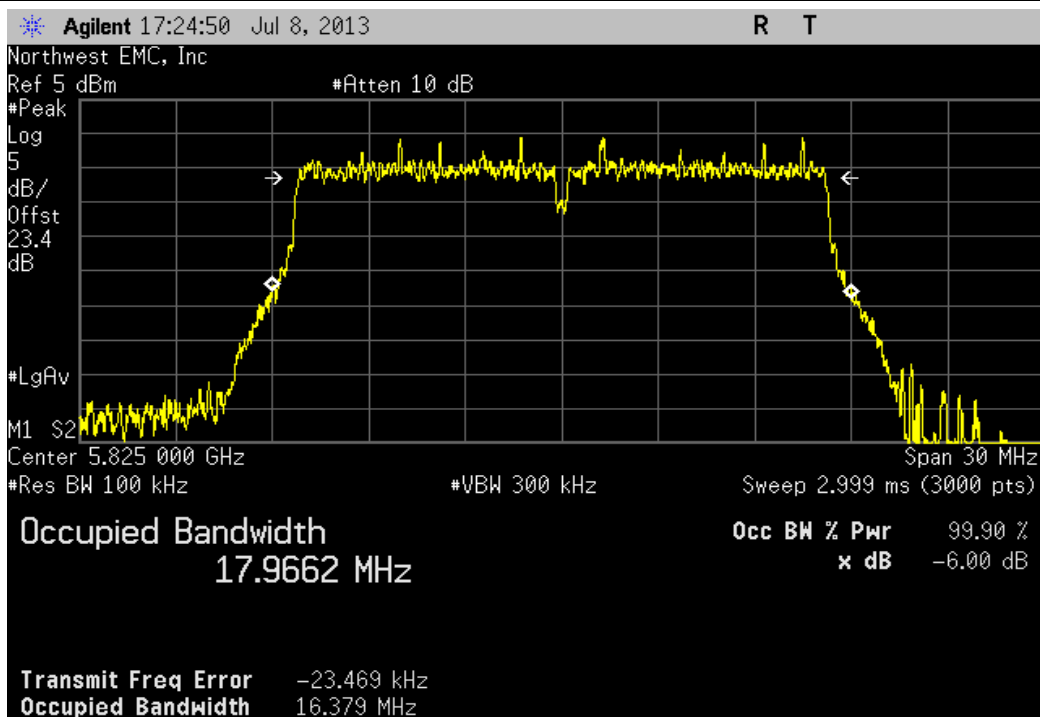
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Mid Channel 157, 5785 MHz

Value	Limit	Result
16.375 MHz	> 500 kHz	Pass



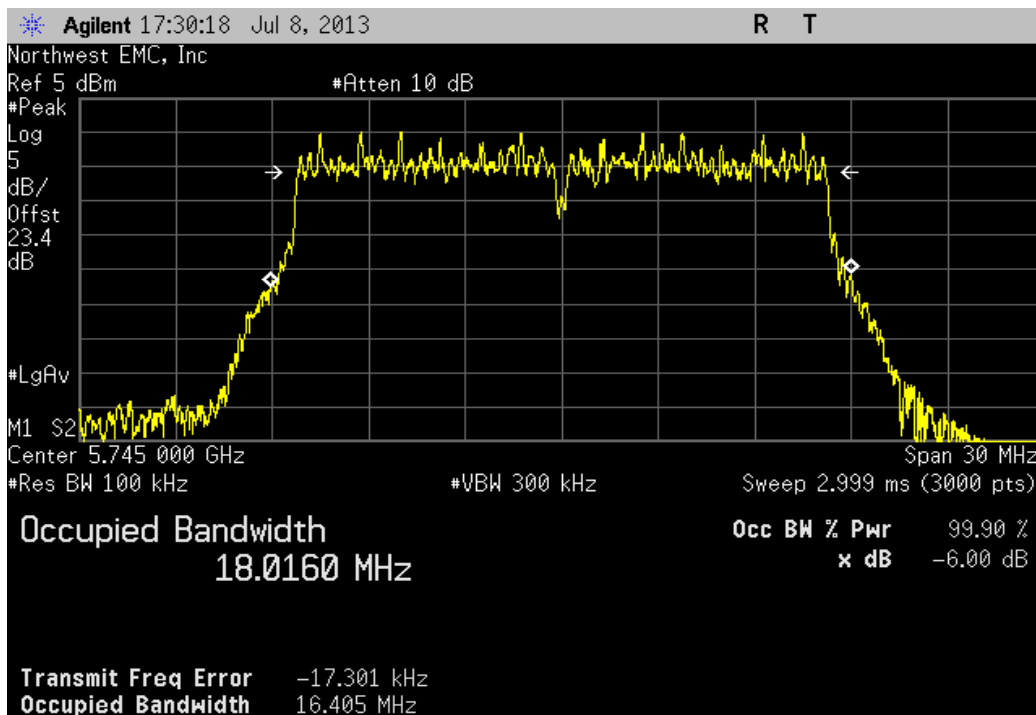
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, High Channel 165, 5825 MHz

Value	Limit	Result
16.379 MHz	> 500 kHz	Pass



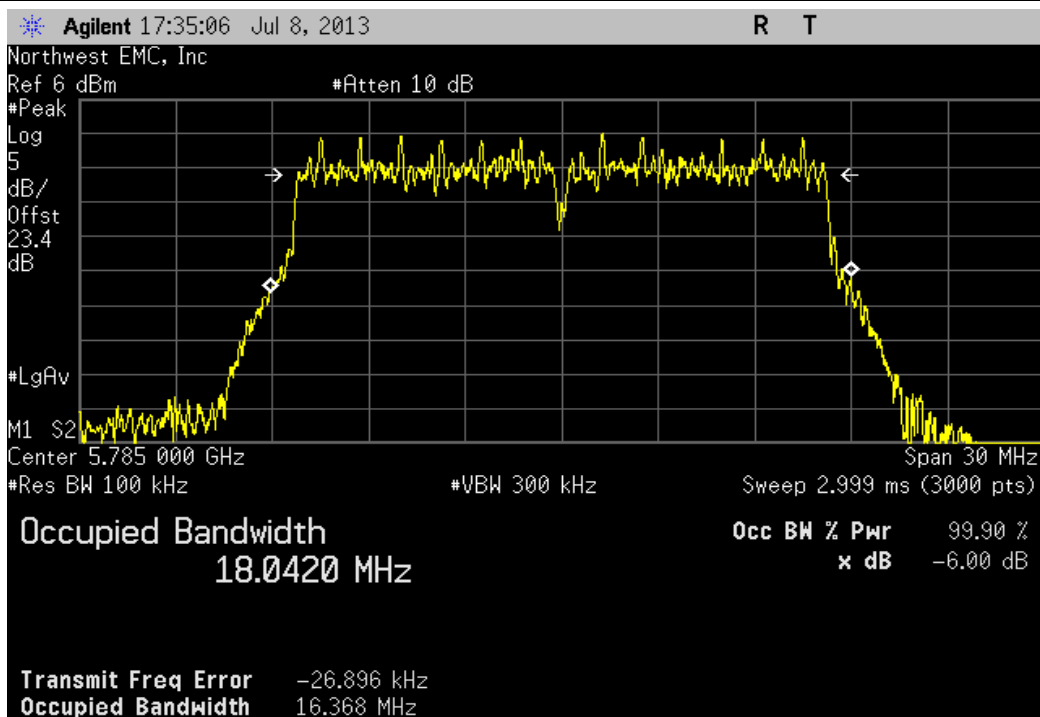
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Low Channel 149, 5745 MHz

Value	Limit	Result
16.405 MHz	> 500 kHz	Pass



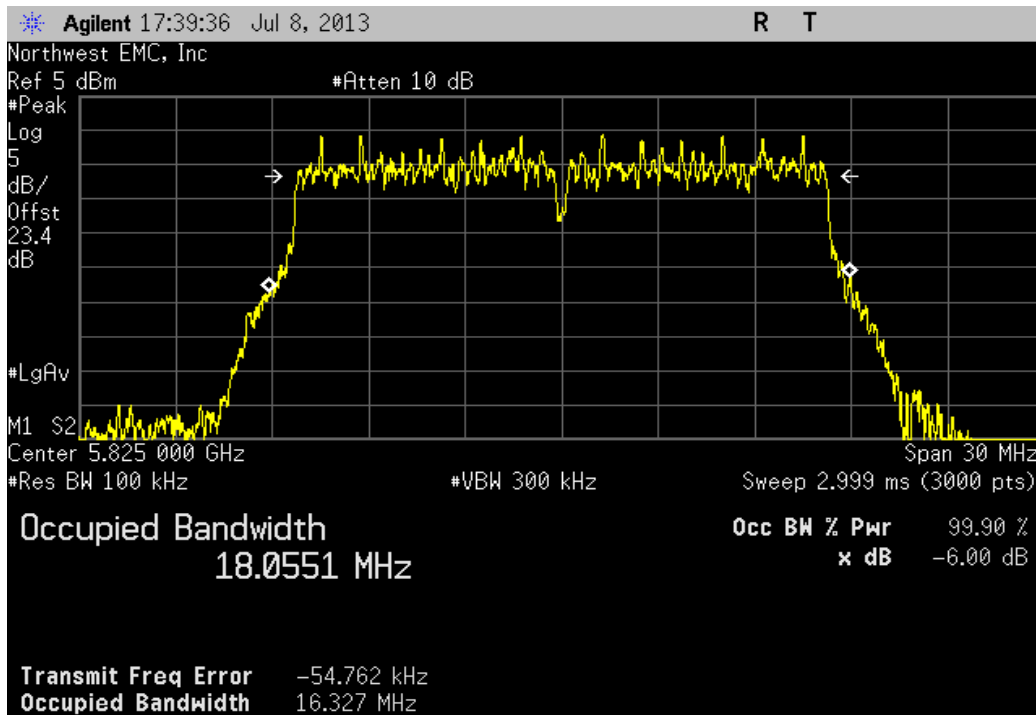
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Mid Channel 157, 5785 MHz

Value	Limit	Result
16.368 MHz	> 500 kHz	Pass



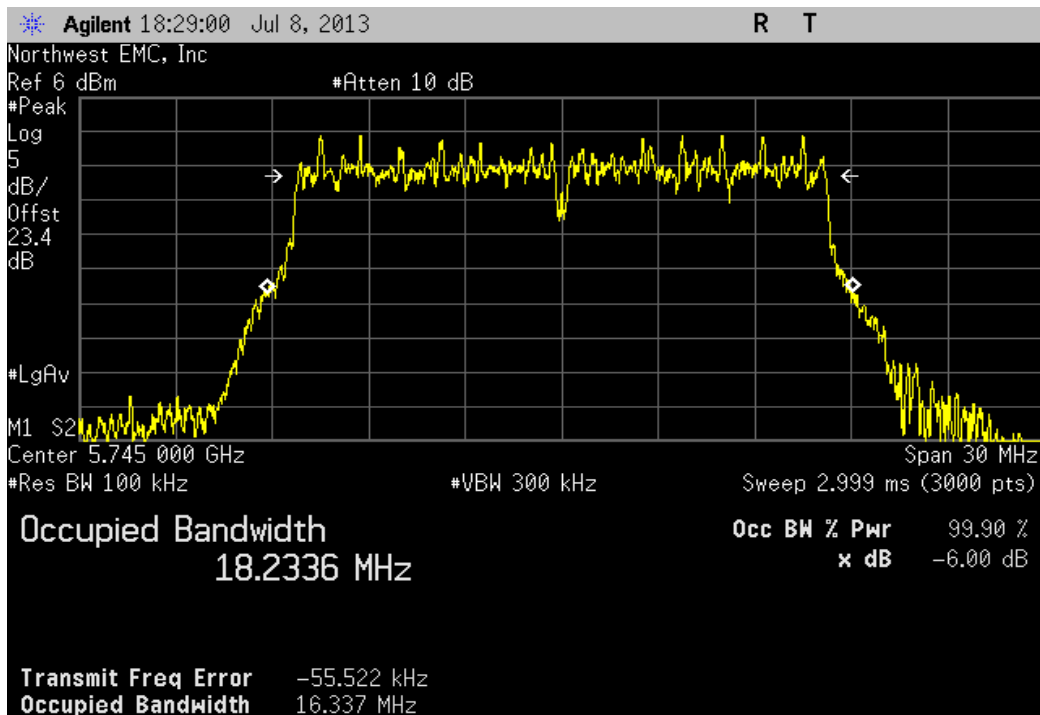
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, High Channel 165, 5825 MHz

Value	Limit	Result
16.327 MHz	> 500 kHz	Pass



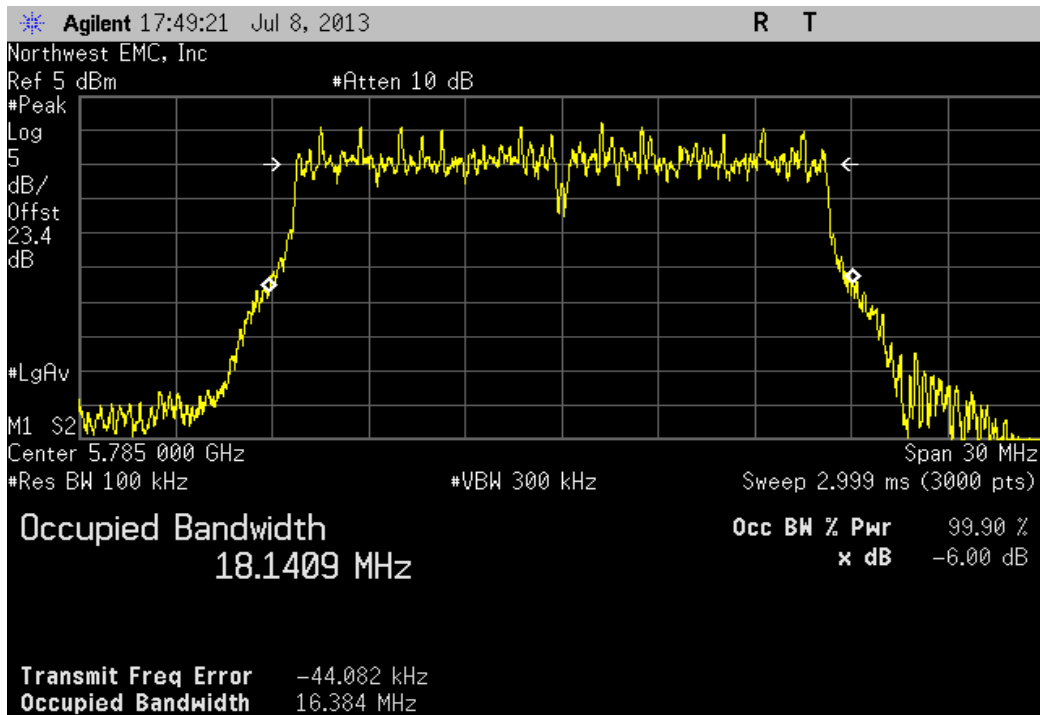
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 54 Mbps, Low Channel 149, 5745 MHz

Value	Limit	Result
16.337 MHz	> 500 kHz	Pass



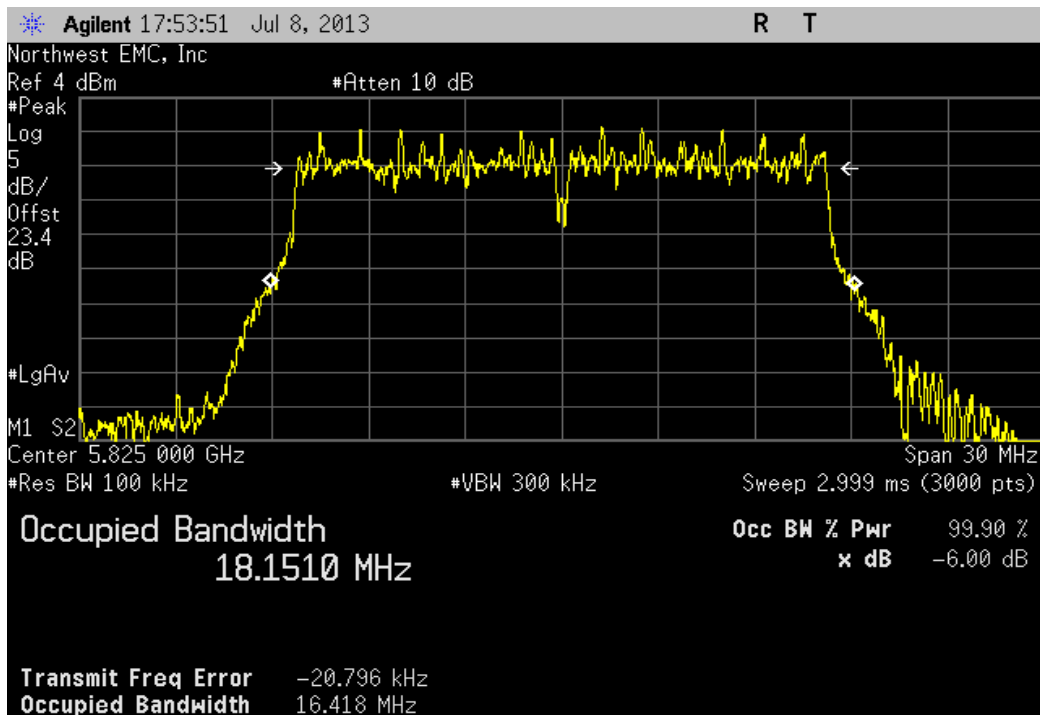
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 54 Mbps, Mid Channel 157, 5785 MHz

Value	Limit	Result
16.384 MHz	> 500 kHz	Pass



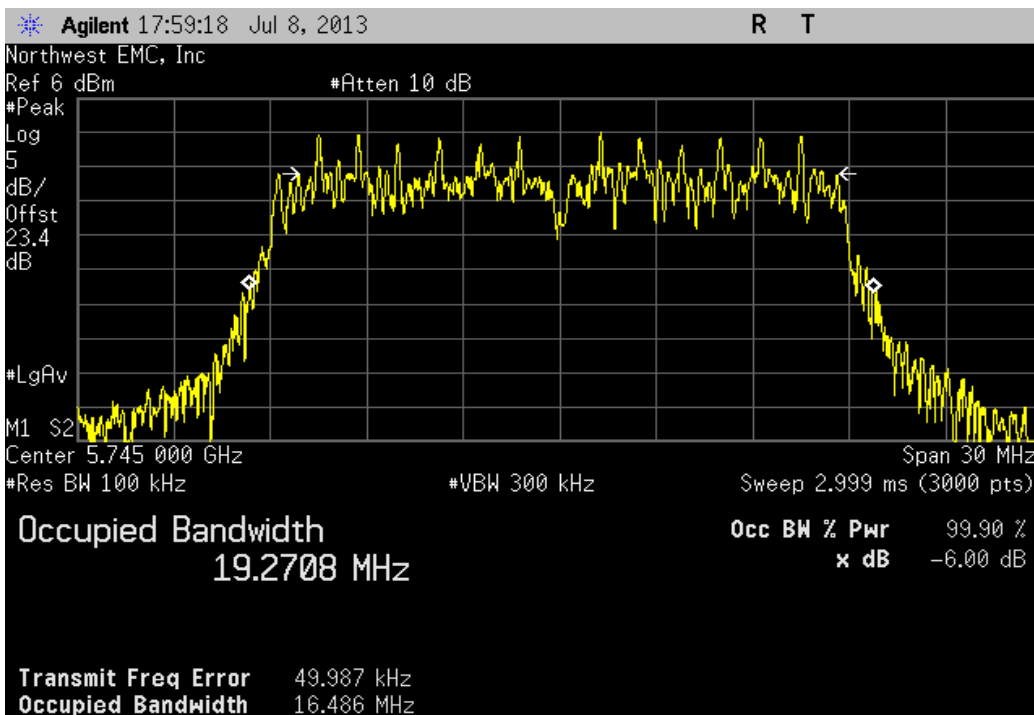
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 54 Mbps, High Channel 165, 5825 MHz

Value	Limit	Result
16.418 MHz	> 500 kHz	Pass



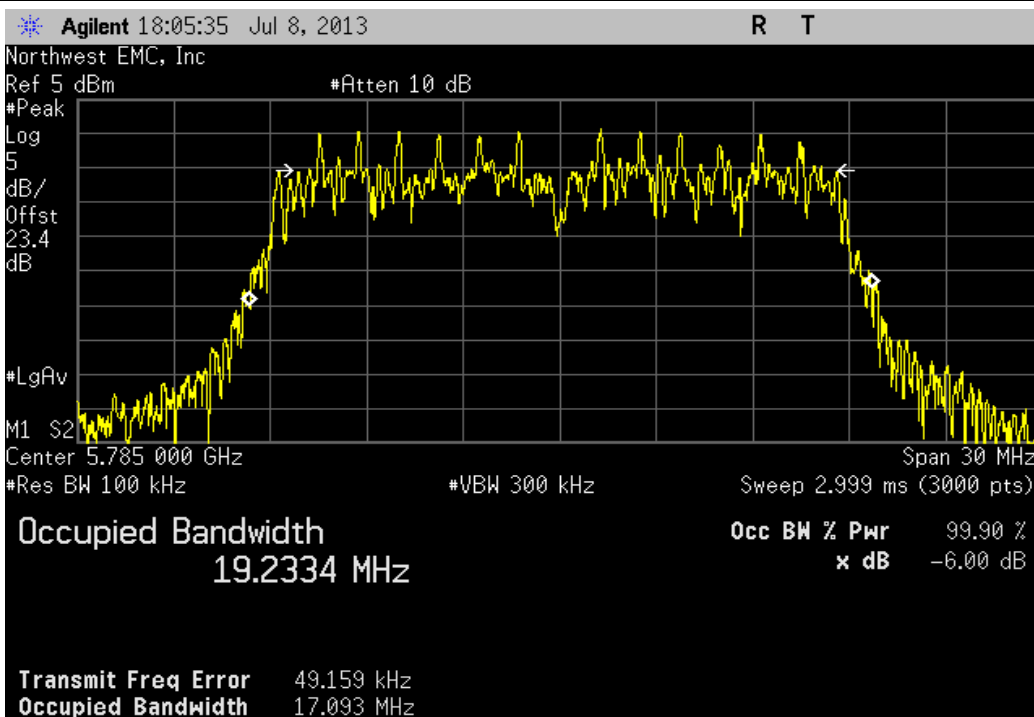
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, Low Channel 149, 5745 MHz

Value	Limit	Result
16.486 MHz	> 500 kHz	Pass



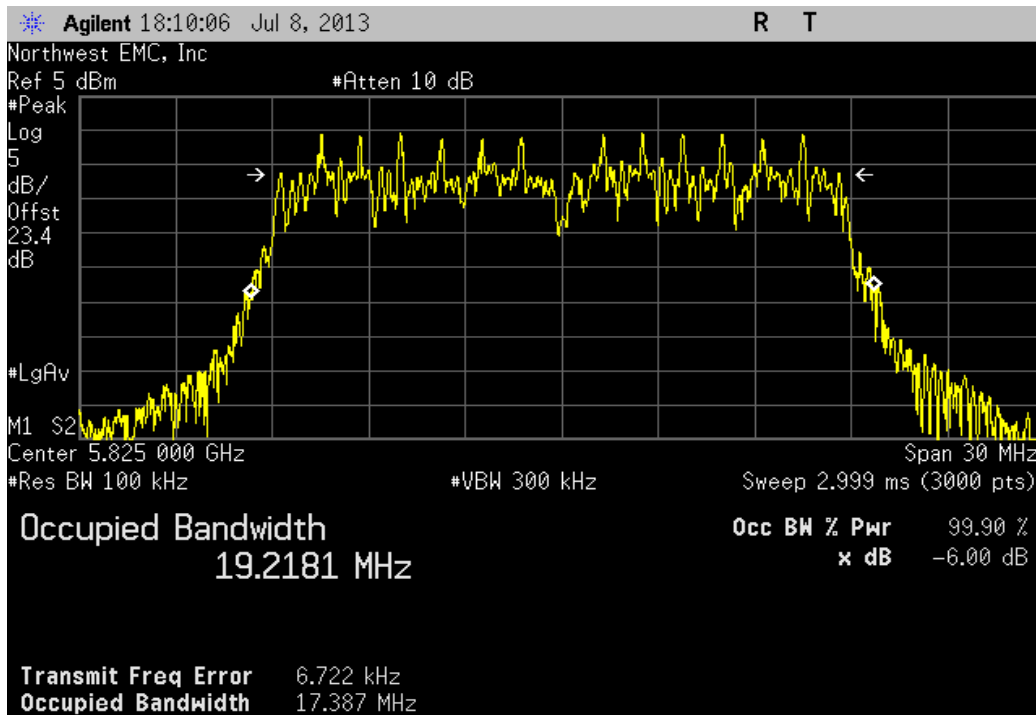
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, Mid Channel 157, 5785 MHz

Value	Limit	Result
17.093 MHz	> 500 kHz	Pass



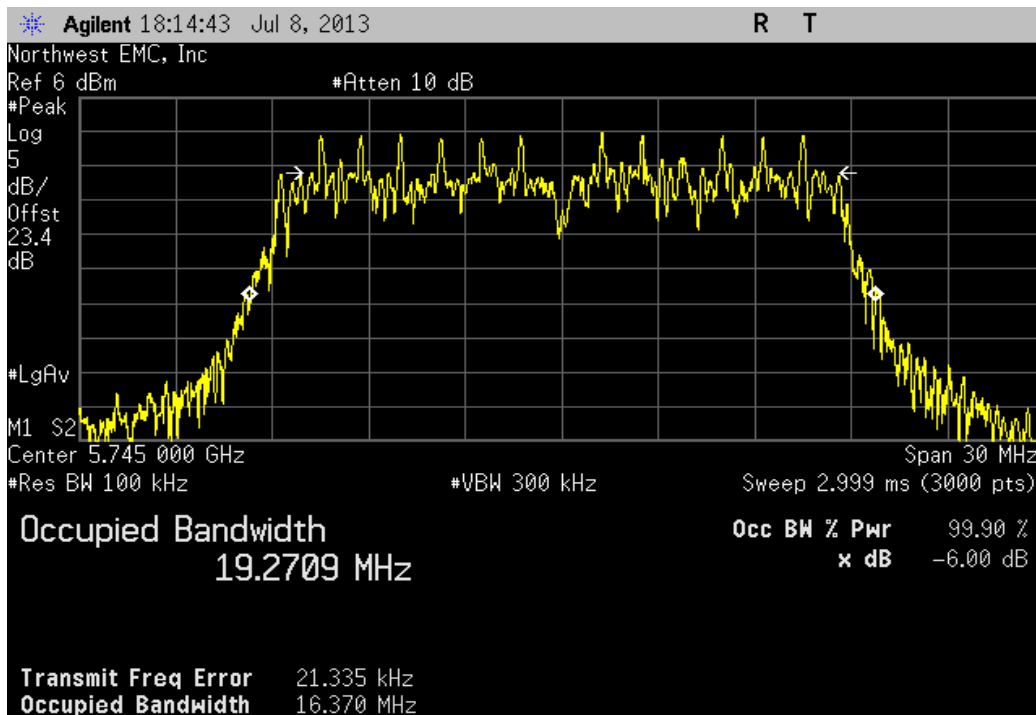
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, High Channel 165, 5825 MHz

Value	Limit	Result
17.387 MHz	> 500 kHz	Pass



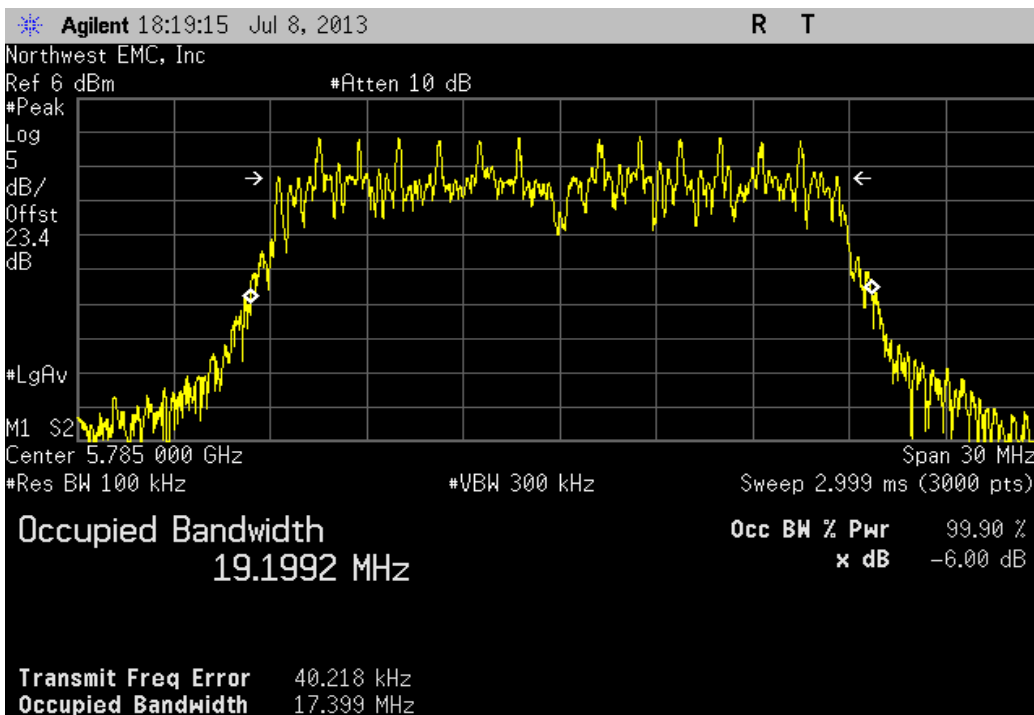
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, Low Channel 149, 5745 MHz

Value	Limit	Result
16.37 MHz	> 500 kHz	Pass



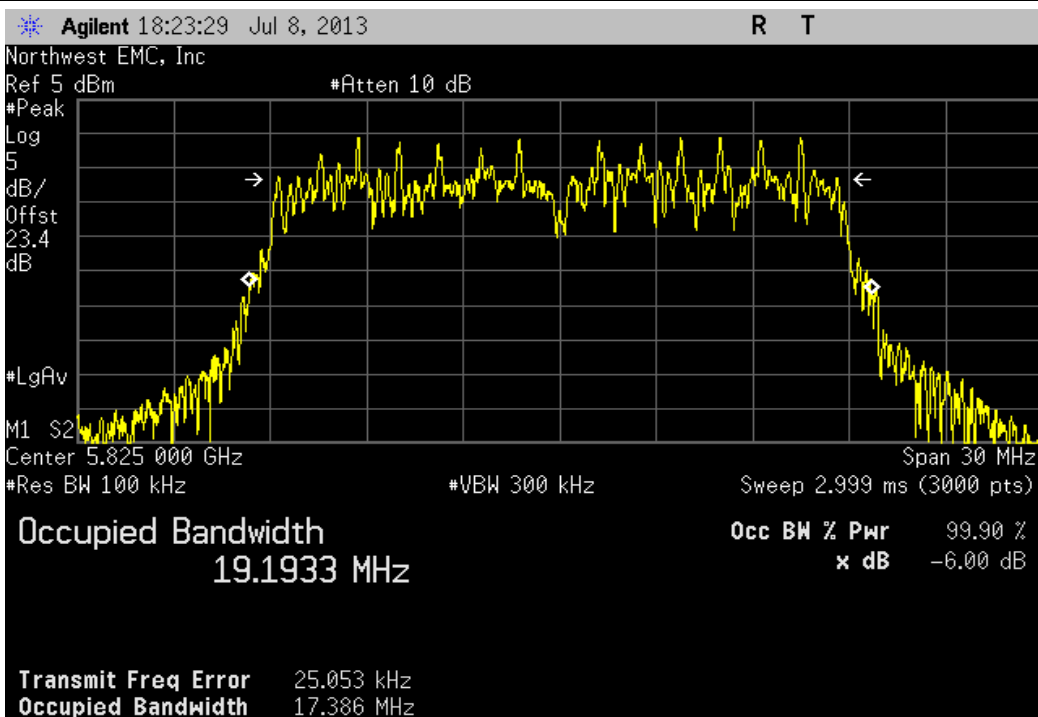
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, Mid Channel 157, 5785 MHz

Value	Limit	Result
17.399 MHz	> 500 kHz	Pass



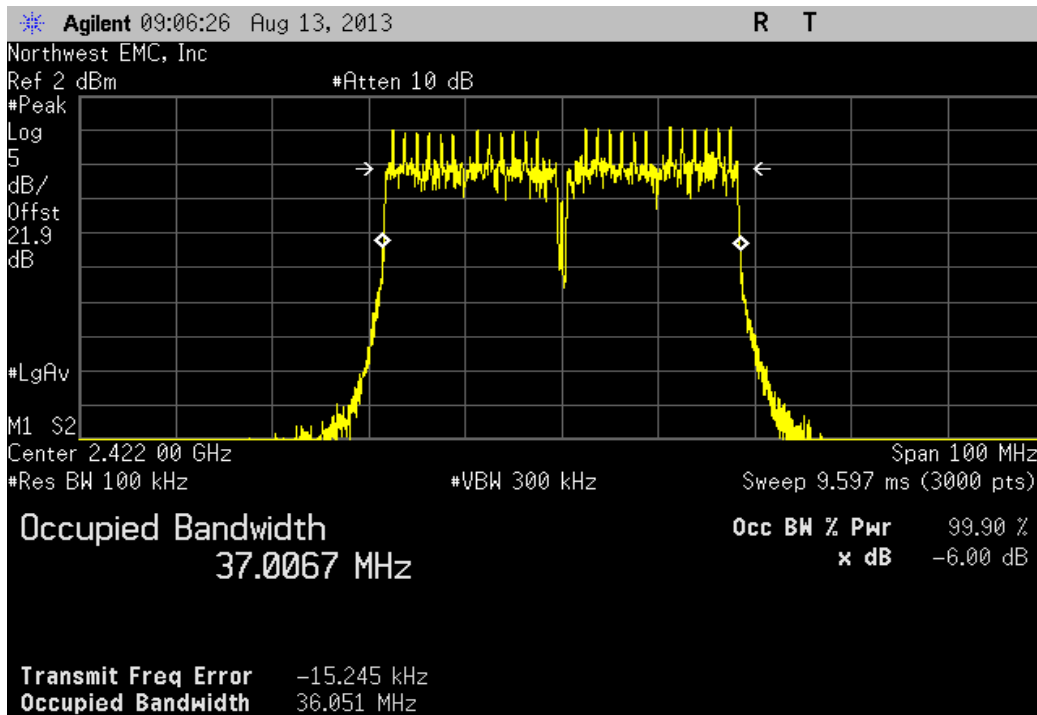
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, High Channel 165, 5825 MHz

Value	Limit	Result
17.386 MHz	> 500 kHz	Pass



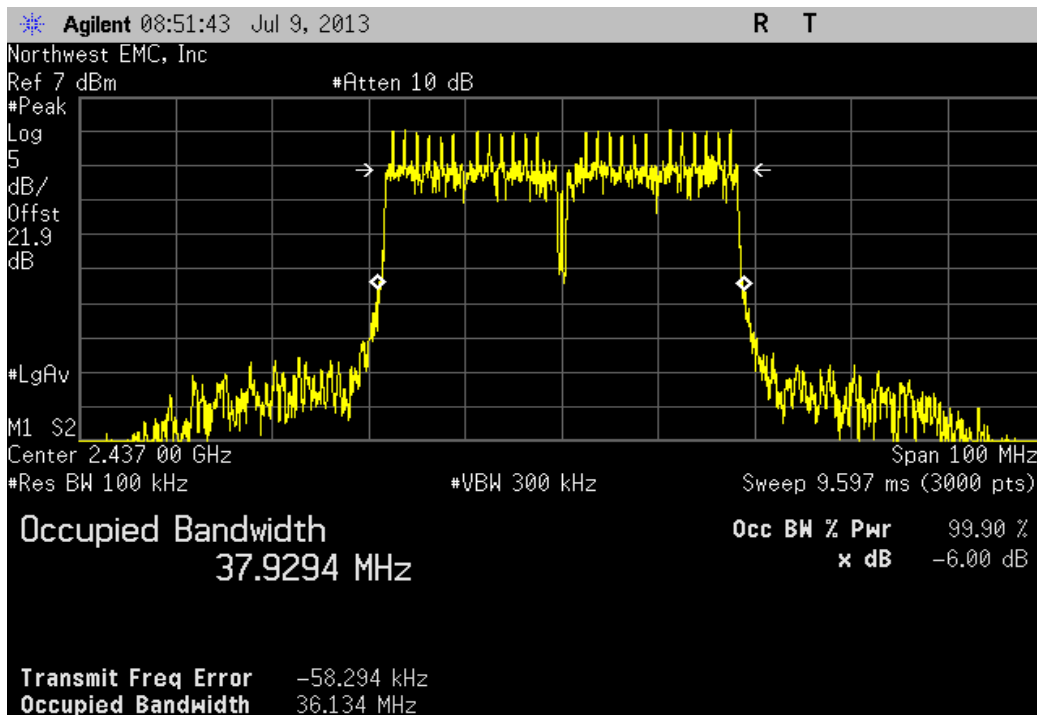
40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1/5, 2422 MHz

Value	Limit	Result
36.051 MHz	> 500 kHz	Pass



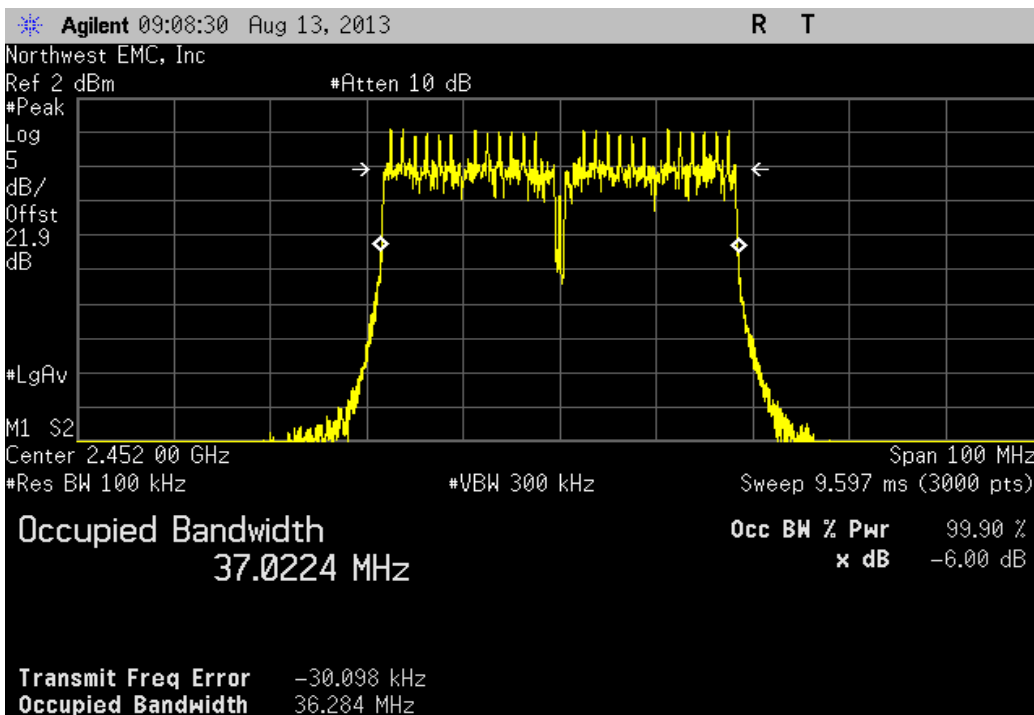
40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Mid Channel 4/8, 2437 MHz

Value	Limit	Result
36.134 MHz	> 500 kHz	Pass



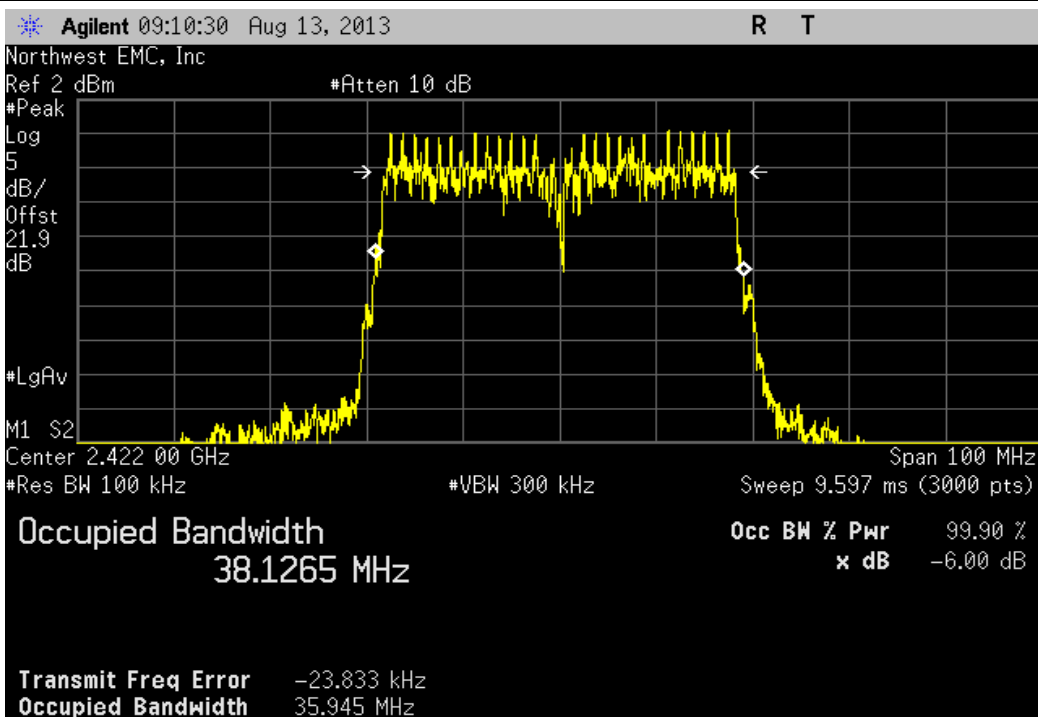
40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 7/11, 2452 MHz

Value	Limit	Result
36.284 MHz	> 500 kHz	Pass



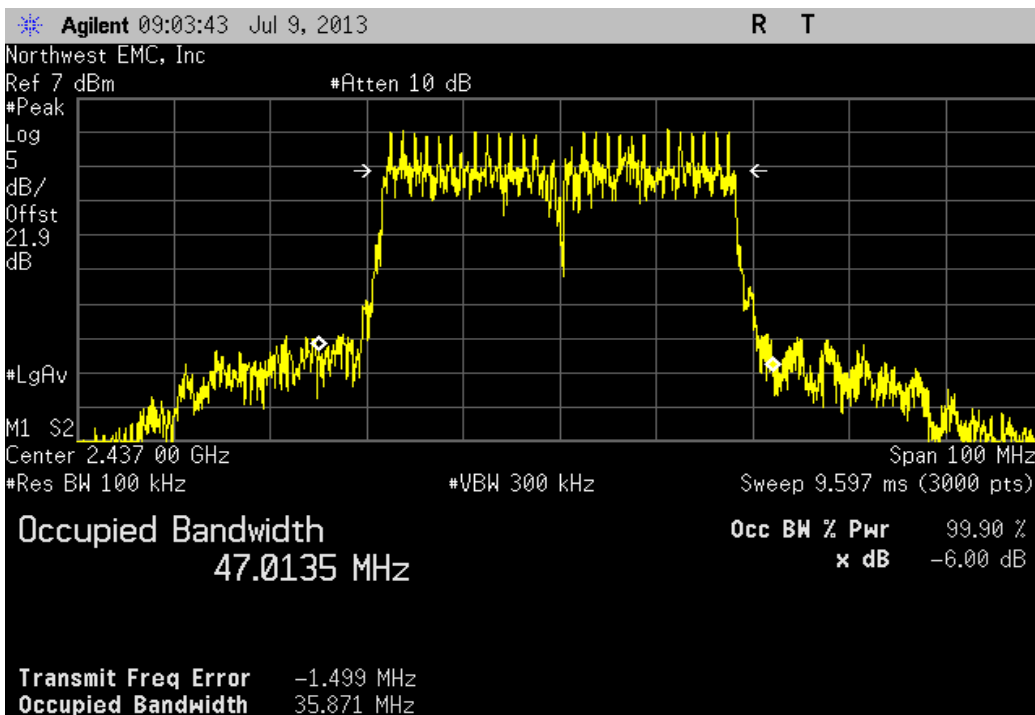
40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1/5, 2422 MHz

Value	Limit	Result
35.945 MHz	> 500 kHz	Pass



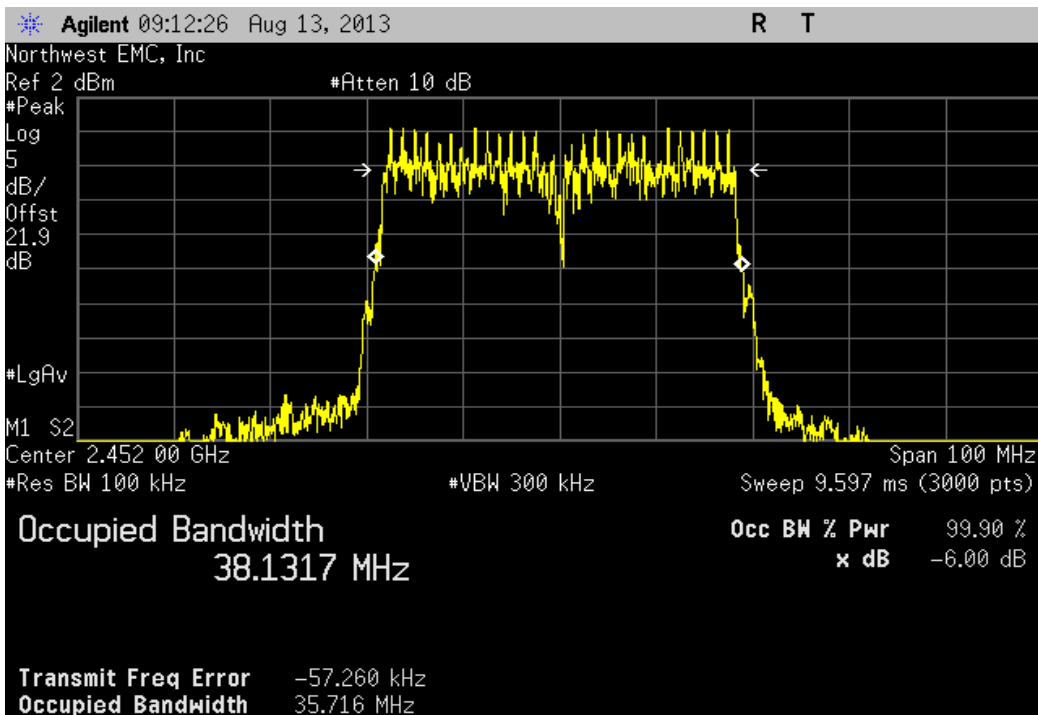
40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Mid Channel 4/8, 2437 MHz

Value	Limit	Result
35.871 MHz	> 500 kHz	Pass



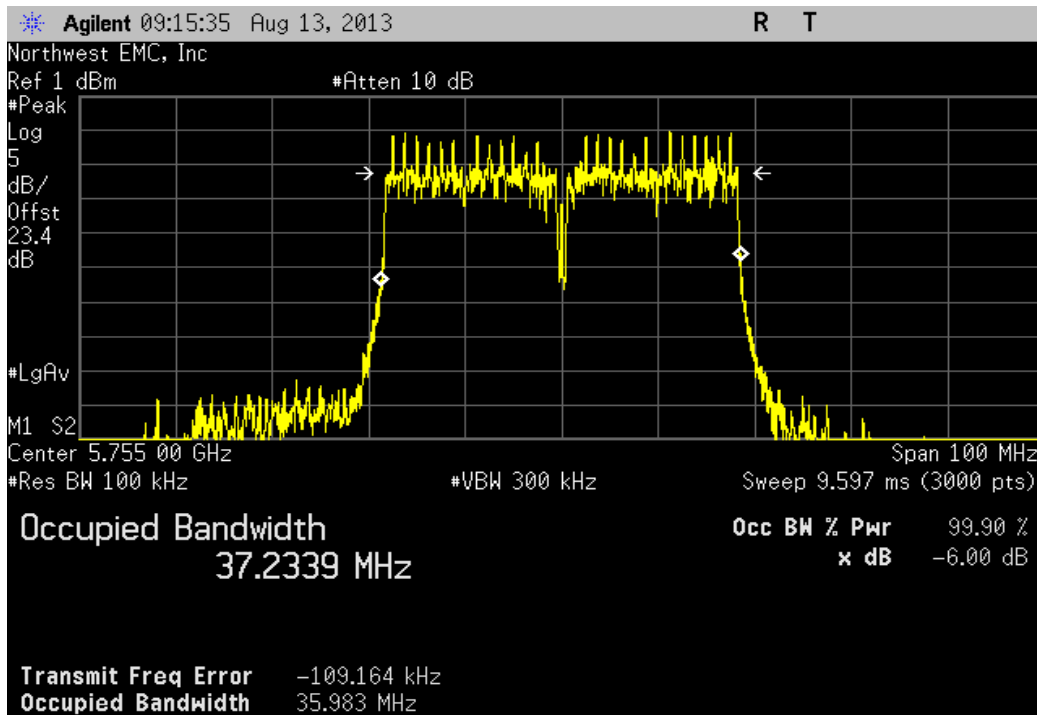
40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, High Channel 7/11, 2452 MHz

Value	Limit	Result
35.716 MHz	> 500 kHz	Pass



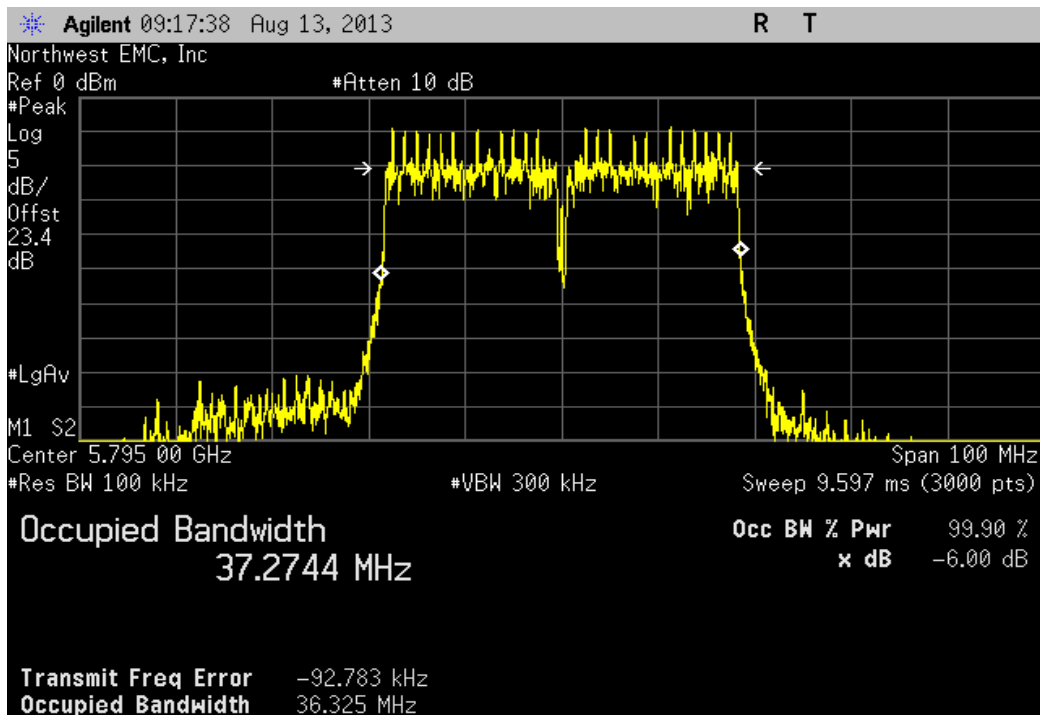
40 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, Low Channel 149/153, 5755 MHz

Value	Limit	Result
35.983 MHz	> 500 kHz	Pass



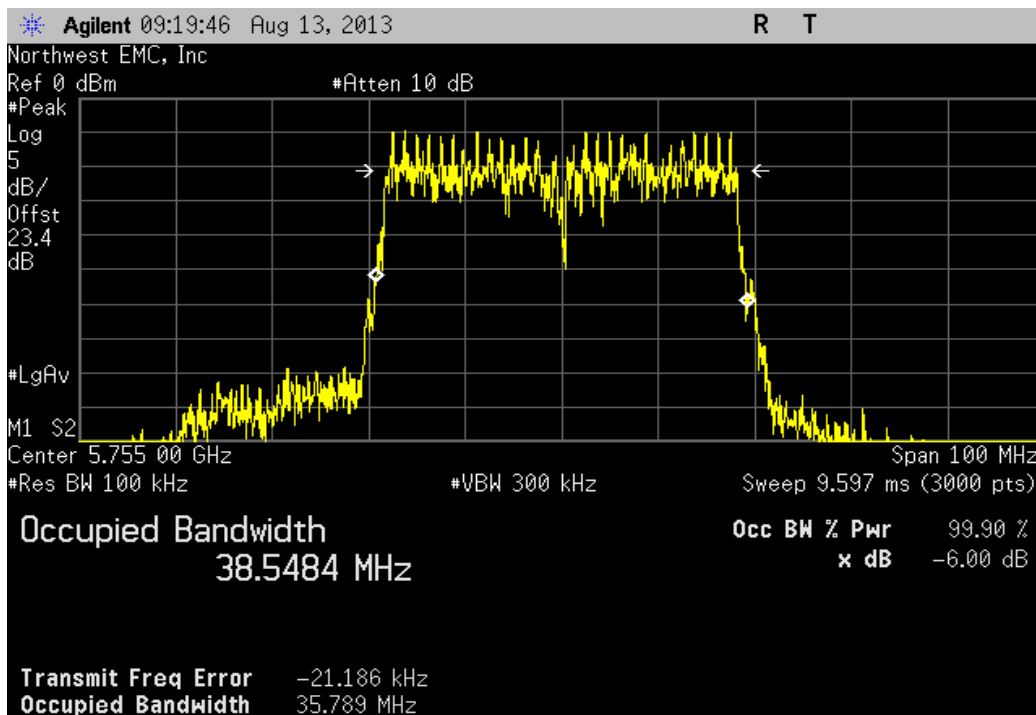
40 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, High Channel 157/161, 5795 MHz

Value	Limit	Result
36.325 MHz	> 500 kHz	Pass



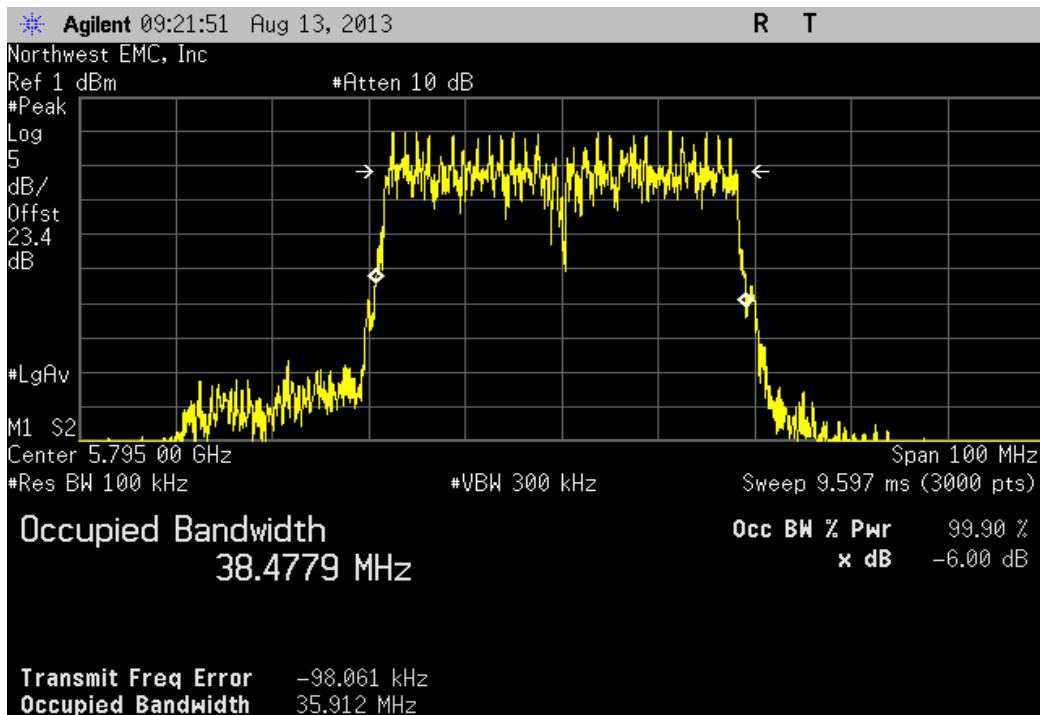
40 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, Low Channel 149/153, 5755 MHz

Value	Limit	Result
35.789 MHz	> 500 kHz	Pass



40 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, High Channel 157/161, 5795 MHz

Value	Limit	Result
35.912 MHz	> 500 kHz	Pass



Occupied Bandwidth - Antenna A-B

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Attenuator	Fairview Microwave	SA4014-20	TKE	2/12/2013	12
Signal Generator	Agilent	N5183A	TID	9/19/2011	36
Spectrum Analyzer	Agilent	E4446A	AAT	6/28/2012	24
NC02 Cable	ESM Cable Corp.	TTBJ-141 KMKM-72	NC5	7/3/2013	12

TEST DESCRIPTION

The 6dB occupied bandwidth was measured. The 26 dB (99.9%) 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.

DC Block was used in-line for measurements made while under test. For channel output power levels, please refer to the accompanying power table included in this report.



Occupied Bandwidth - Antenna A-B

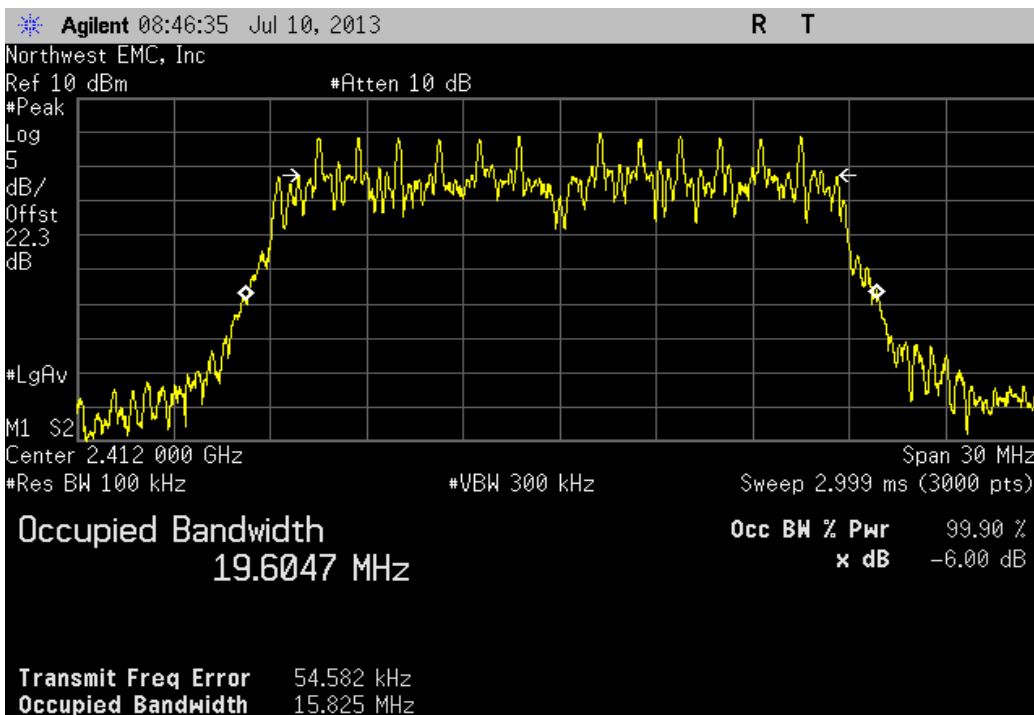
XMit 2013.02.28
PsaTx 2013.06.07

EUT: 1601		Work Order: MCSO1665	
Serial Number: 006079632553		Date: 08/13/13	
Customer: Microsoft Corporation		Temperature: 23°C	
Attendees: None		Humidity: 50%	
Project: None		Barometric Pres.: 1020mb	
Tested by: Richard Mellroth, Brandon Hobbs		Power: 110VAC/60Hz	
Job Site: NC02		Test Method	
FCC 15.247:2013		ANSI C63.10:2009	
COMMENTS			
EUT was operating at 100% Duty Cycle. Adapter cable loss of 0.75 dB for 2.4 GHz channels and 1.3 dB for 5.7 GHz channels was added to analyzer reference level offset.			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	1	Signature 	
		Value	Limit
		Result	

Chain A			
20 MHz			
2400 MHz - 2483.5 MHz Band			
802.11(n) MCS8			
Low Channel 1, 2412 MHz		15.825 MHz	> 500 kHz
Mid Channel 6, 2437 MHz		16.677 MHz	> 500 kHz
High Channel 11, 2462 MHz		16.392 MHz	> 500 kHz
802.11(n) MCS15			
Low Channel 1, 2412 MHz		16.967 MHz	> 500 kHz
Mid Channel 6, 2437 MHz		16.002 MHz	> 500 kHz
High Channel 11, 2462 MHz		15.995 MHz	> 500 kHz
5725 MHz - 5850 MHz Band			
802.11(n) MCS8			
Low Channel 149, 5745 MHz		16.415 MHz	> 500 kHz
Mid Channel 157, 5785 MHz		16.354 MHz	> 500 kHz
High Channel 165, 5825 MHz		17.408 MHz	> 500 kHz
802.11(n) MCS15			
Low Channel 149, 5745 MHz		16.767 MHz	> 500 kHz
Mid Channel 157, 5785 MHz		17.112 MHz	> 500 kHz
High Channel 165, 5825 MHz		16.405 MHz	> 500 kHz
40 MHz			
2400 MHz - 2483.5 MHz Band			
802.11(n) MCS8			
Low Channel 1/5, 2422 MHz		36.114 MHz	> 500 kHz
Mid Channel 4/8, 2437 MHz		36.096 MHz	> 500 kHz
High Channel 7/11, 2452 MHz		36.095 MHz	> 500 kHz
802.11(n) MCS15			
Low Channel 1/5, 2422 MHz		35.999 MHz	> 500 kHz
Mid Channel 4/8, 2437 MHz		35.998 MHz	> 500 kHz
High Channel 7/11, 2452 MHz		36.021 MHz	> 500 kHz
5725 MHz - 5850 MHz Band			
802.11(n) MCS8			
Low Channel 149/153, 5755 MHz		35.798 MHz	> 500 kHz
High Channel 157/161, 5795 MHz		36.084 MHz	> 500 kHz
802.11(n) MCS15			
Low Channel 149/153, 5755 MHz		36.007 MHz	> 500 kHz
High Channel 157/161, 5795 MHz		36.016 MHz	> 500 kHz
Chain B			
20 MHz			
2400 MHz - 2483.5 MHz Band			
802.11(n) MCS8			
Low Channel 1, 2412 MHz		15.998 MHz	> 500 kHz
Mid Channel 6, 2437 MHz		16.898 MHz	> 500 kHz
High Channel 11, 2462 MHz		16.713 MHz	> 500 kHz
802.11(n) MCS15			
Low Channel 1, 2412 MHz		15.978 MHz	> 500 kHz
Mid Channel 6, 2437 MHz		16.728 MHz	> 500 kHz
High Channel 11, 2462 MHz		16.714 MHz	> 500 kHz
5725 MHz - 5850 MHz Band			
802.11(n) MCS8			
Low Channel 149, 5745 MHz		16.805 MHz	> 500 kHz
Mid Channel 157, 5785 MHz		16.908 MHz	> 500 kHz
High Channel 165, 5825 MHz		16.723 MHz	> 500 kHz
802.11(n) MCS15			
Low Channel 149, 5745 MHz		16.899 MHz	> 500 kHz
Mid Channel 157, 5785 MHz		17.245 MHz	> 500 kHz
High Channel 165, 5825 MHz		16.644 MHz	> 500 kHz
40 MHz			
2400 MHz - 2483.5 MHz Band			
802.11(n) MCS8			
Low Channel 1/5, 2422 MHz		35.982 MHz	> 500 kHz
Mid Channel 4/8, 2437 MHz		35.964 MHz	> 500 kHz
High Channel 7/11, 2452 MHz		36.34 MHz	> 500 kHz
802.11(n) MCS15			
Low Channel 1/5, 2422 MHz		35.777 MHz	> 500 kHz
Mid Channel 4/8, 2437 MHz		35.68 MHz	> 500 kHz
High Channel 7/11, 2452 MHz		35.67 MHz	> 500 kHz
5725 MHz - 5850 MHz Band			
802.11(n) MCS8			
Low Channel 149/153, 5755 MHz		36.247 MHz	> 500 kHz
High Channel 157/161, 5795 MHz		36.319 MHz	> 500 kHz
802.11(n) MCS15			
Low Channel 149/153, 5755 MHz		35.613 MHz	> 500 kHz
High Channel 157/161, 5795 MHz		35.59 MHz	> 500 kHz

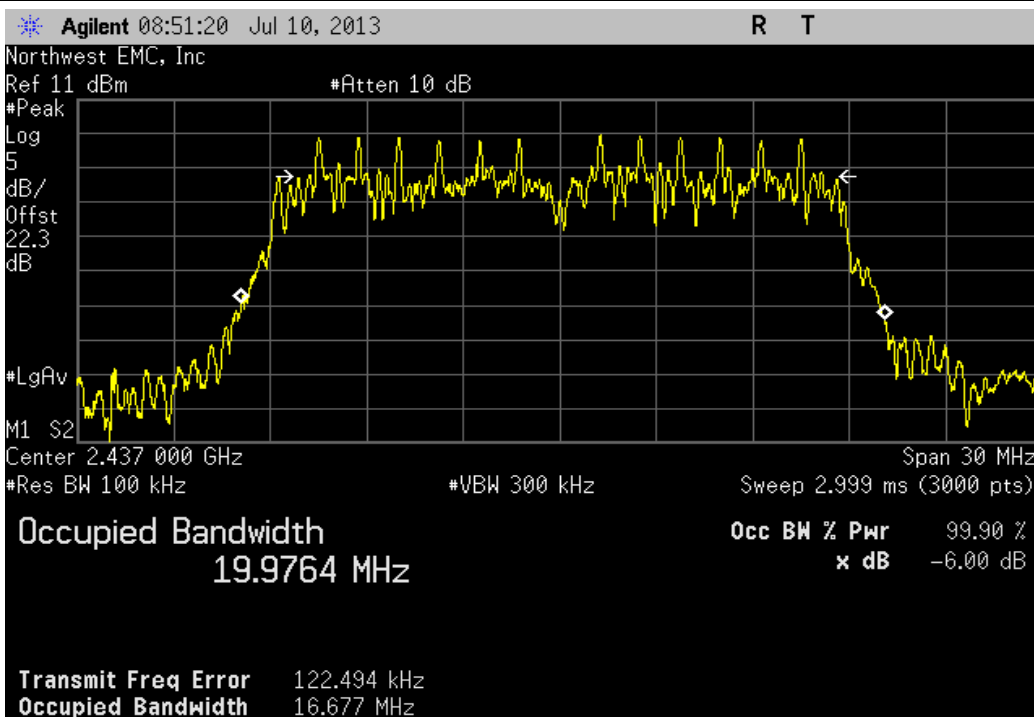
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Low Channel 1, 2412 MHz

Value	Limit	Result
15.825 MHz	> 500 kHz	Pass



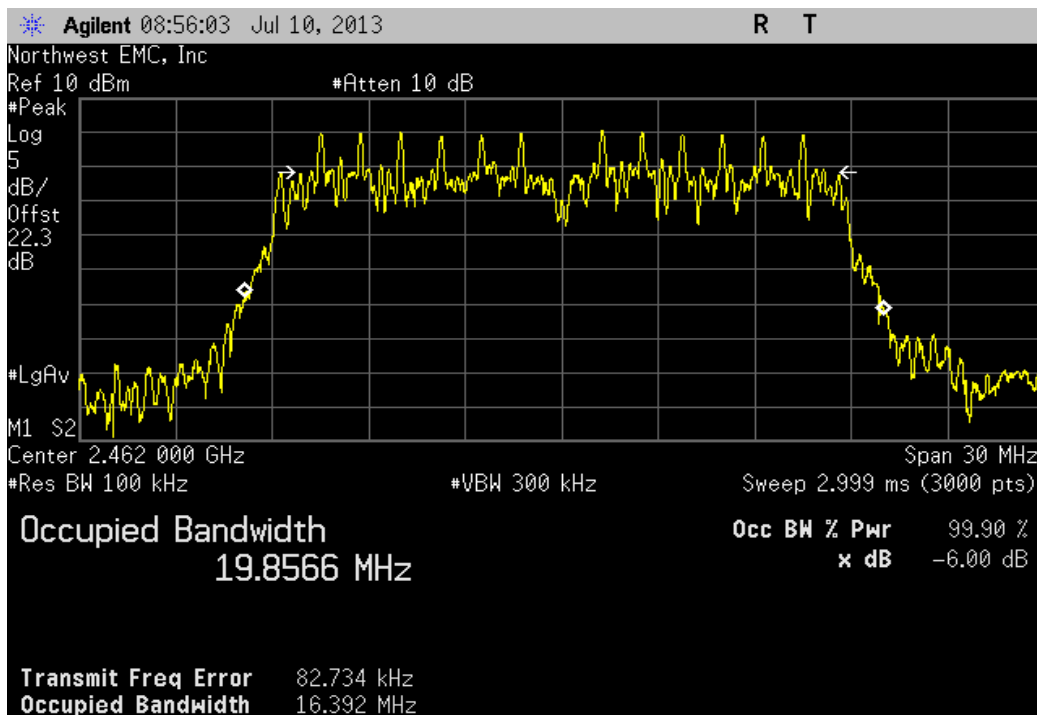
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Mid Channel 6, 2437 MHz

Value	Limit	Result
16.677 MHz	> 500 kHz	Pass



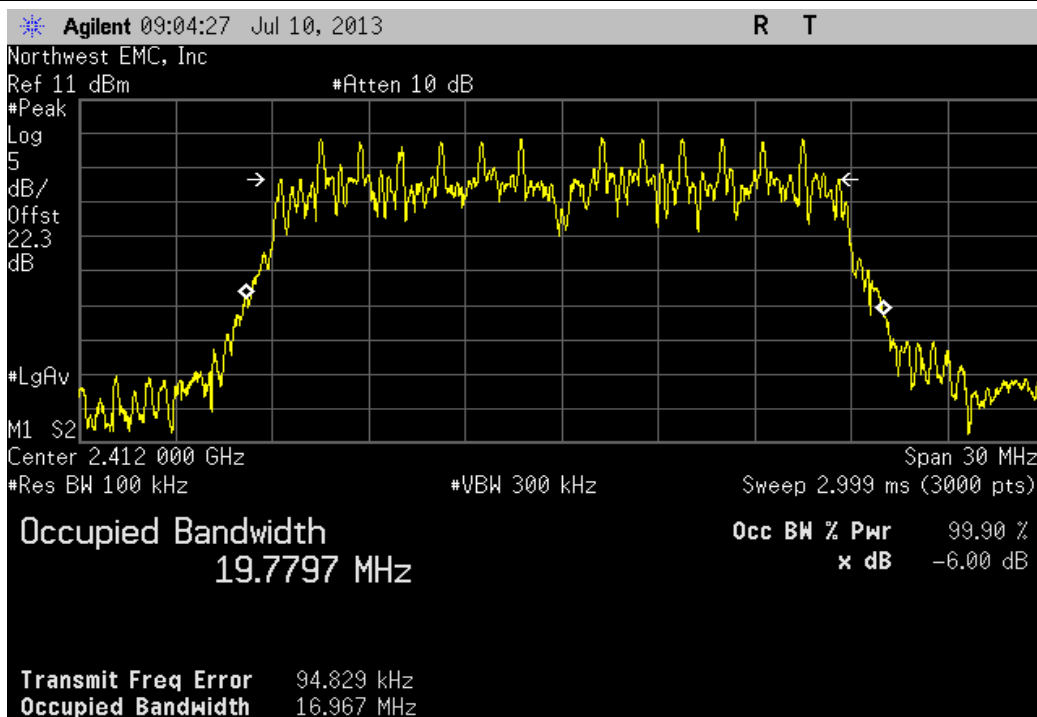
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, High Channel 11, 2462 MHz

Value	Limit	Result
16.392 MHz	> 500 kHz	Pass



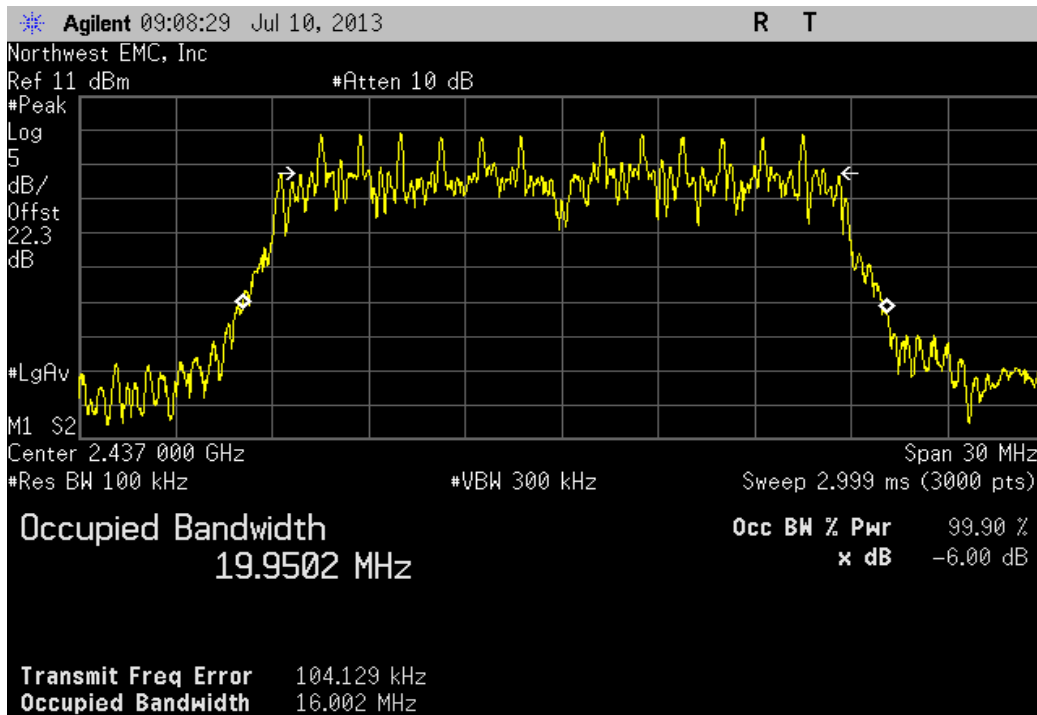
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Low Channel 1, 2412 MHz

Value	Limit	Result
16.967 MHz	> 500 kHz	Pass



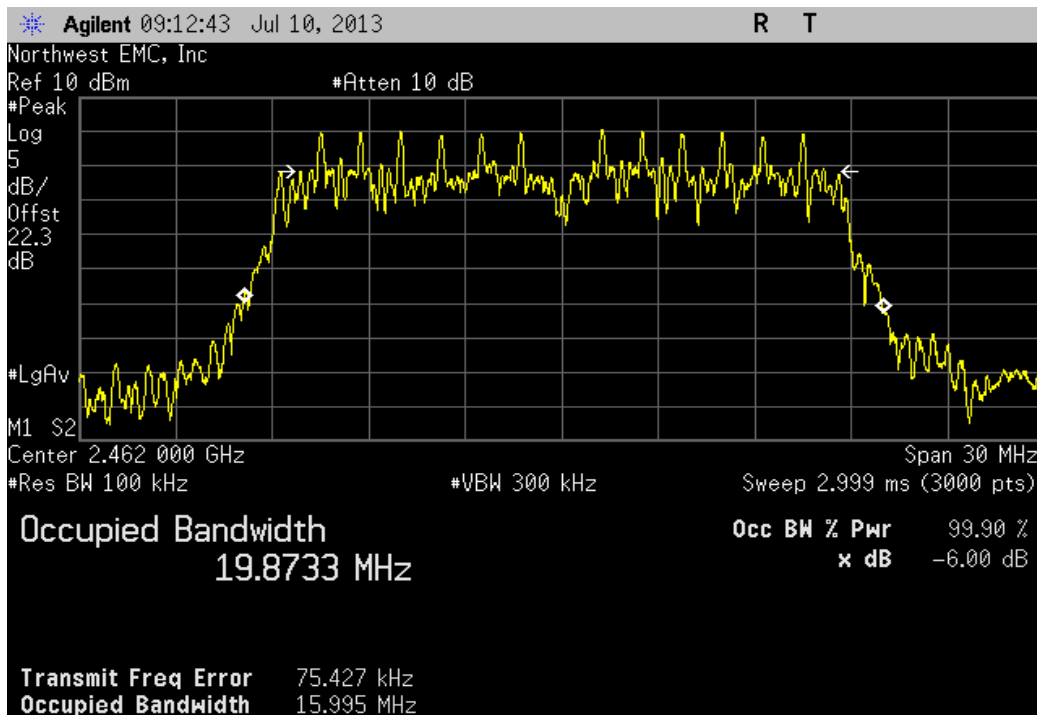
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Mid Channel 6, 2437 MHz

Value	Limit	Result
16.002 MHz	> 500 kHz	Pass



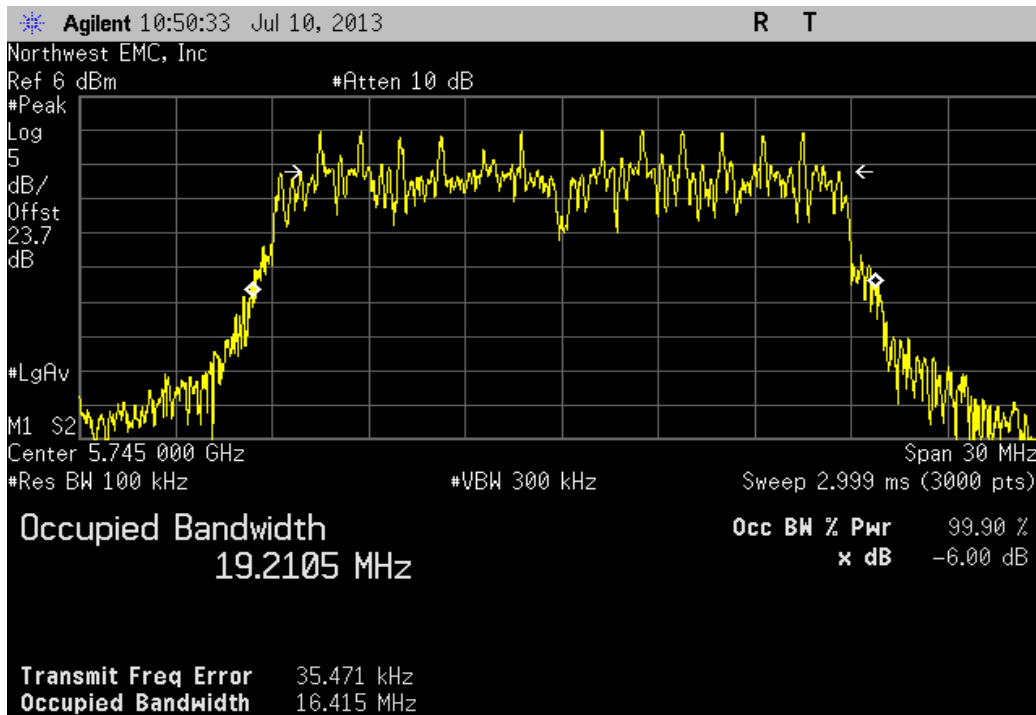
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, High Channel 11, 2462 MHz

Value	Limit	Result
15.995 MHz	> 500 kHz	Pass



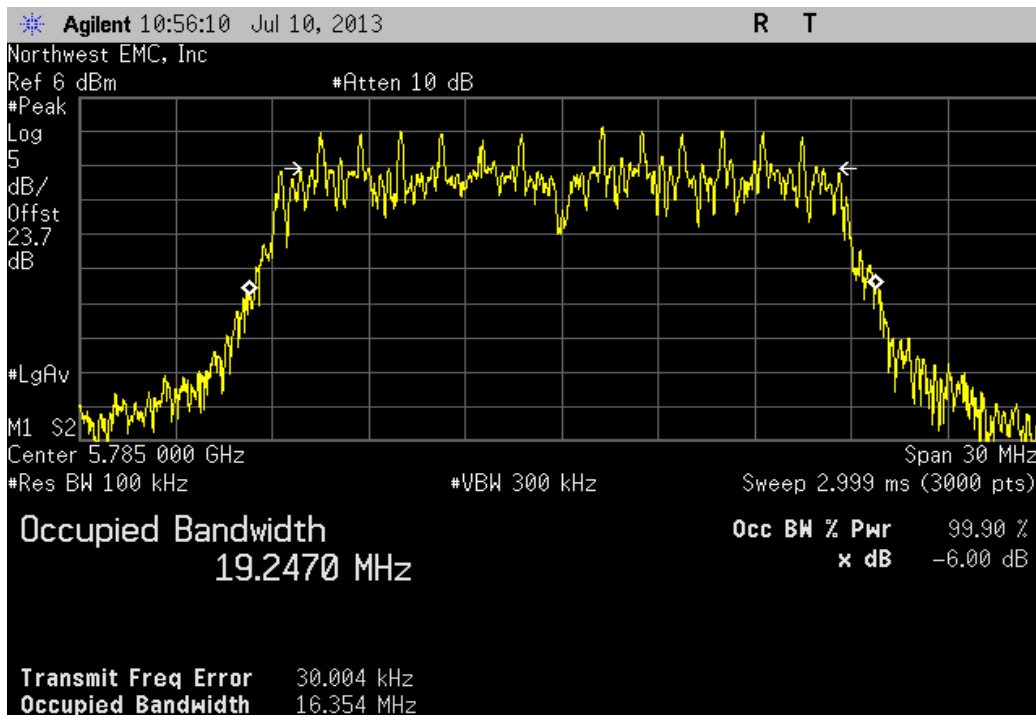
Chain A, 20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS8, Low Channel 149, 5745 MHz

Value	Limit	Result
16.415 MHz	> 500 kHz	Pass



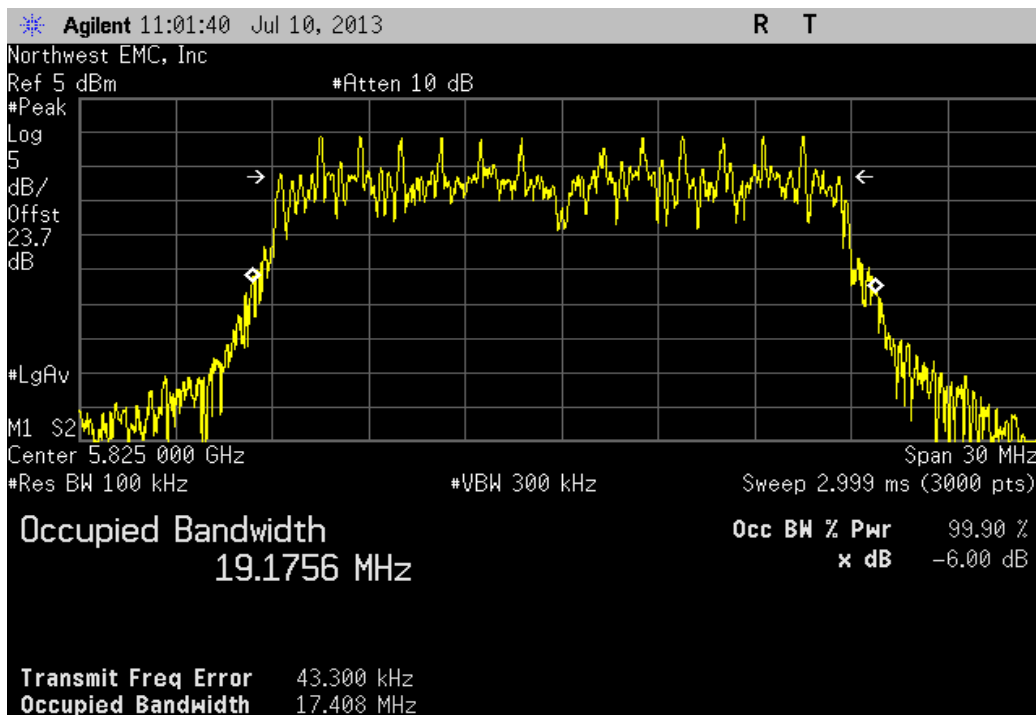
Chain A, 20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS8, Mid Channel 157, 5785 MHz

Value	Limit	Result
16.354 MHz	> 500 kHz	Pass



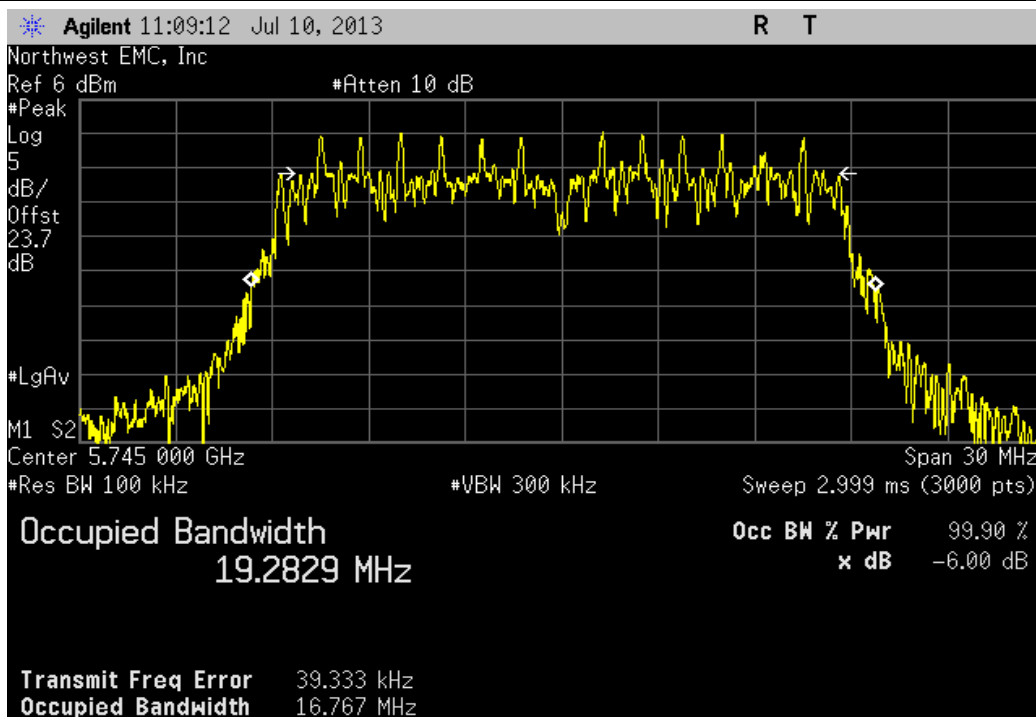
Chain A, 20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS8, High Channel 165, 5825 MHz

Value	Limit	Result
17.408 MHz	> 500 kHz	Pass



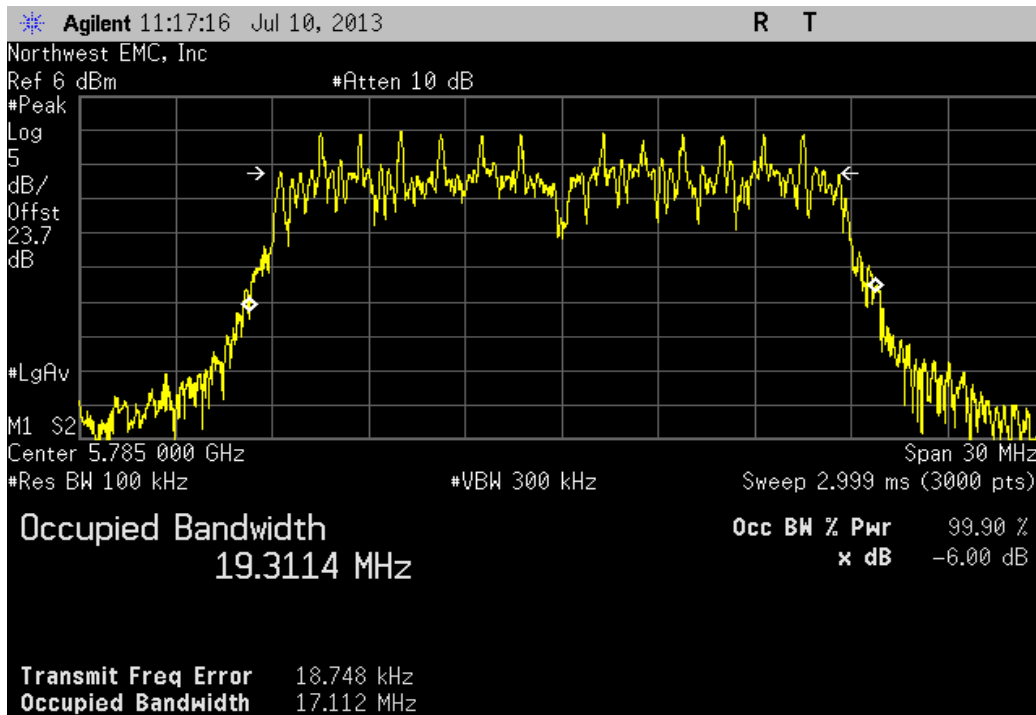
Chain A, 20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS15, Low Channel 149, 5745 MHz

Value	Limit	Result
16.767 MHz	> 500 kHz	Pass



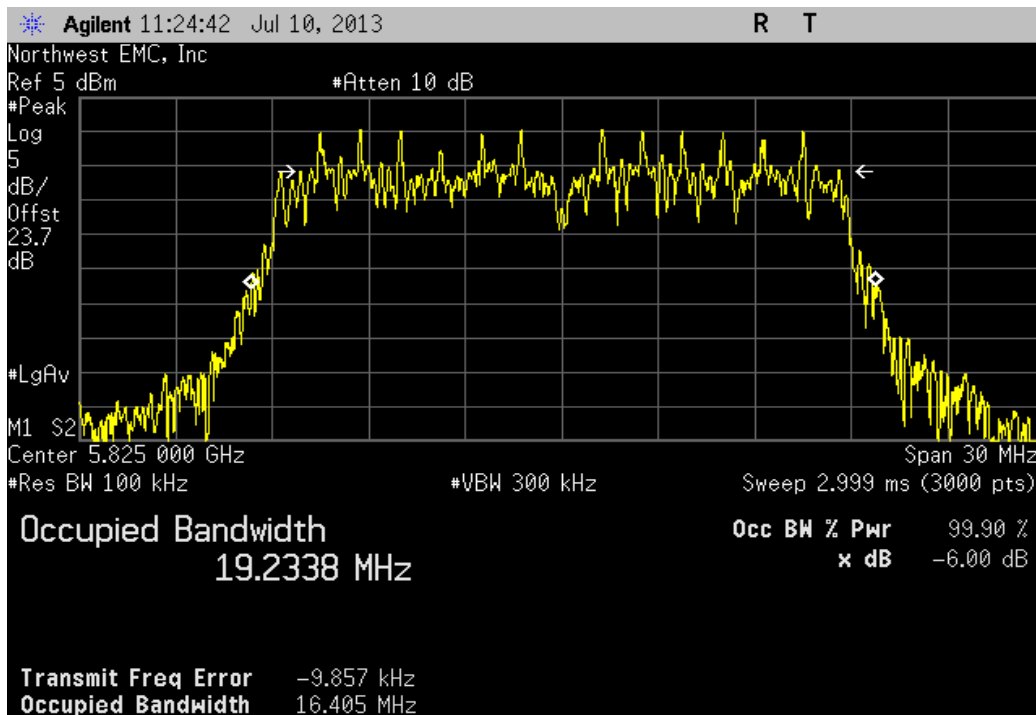
Chain A, 20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS15, Mid Channel 157, 5785 MHz

Value	Limit	Result
17.112 MHz	> 500 kHz	Pass



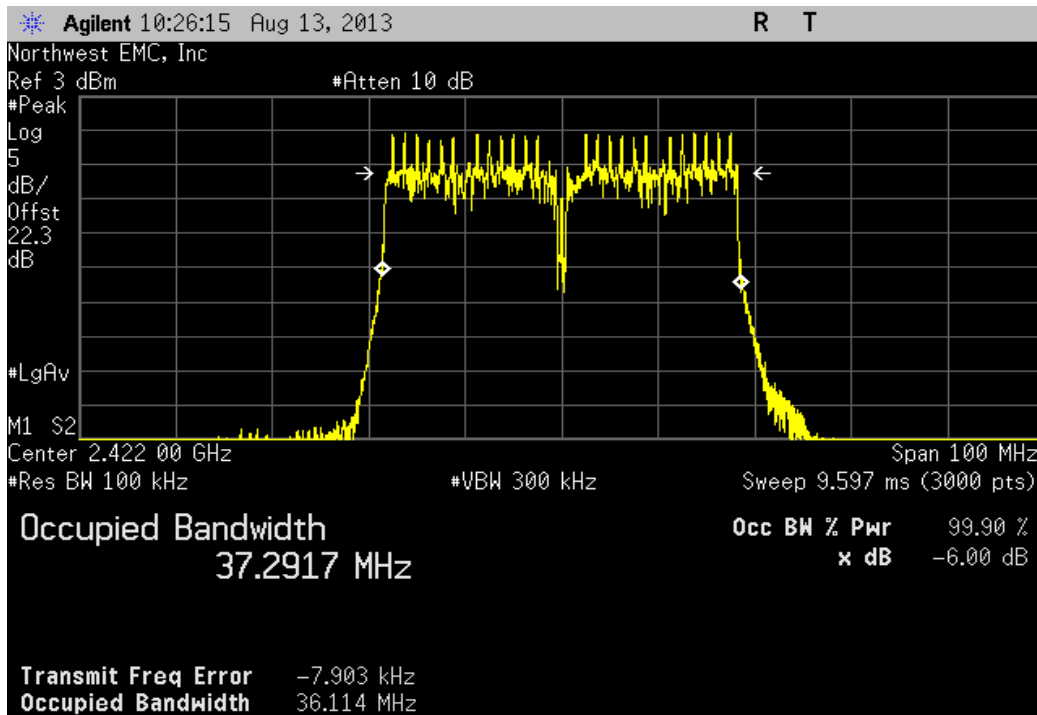
Chain A, 20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS15, High Channel 165, 5825 MHz

Value	Limit	Result
16.405 MHz	> 500 kHz	Pass



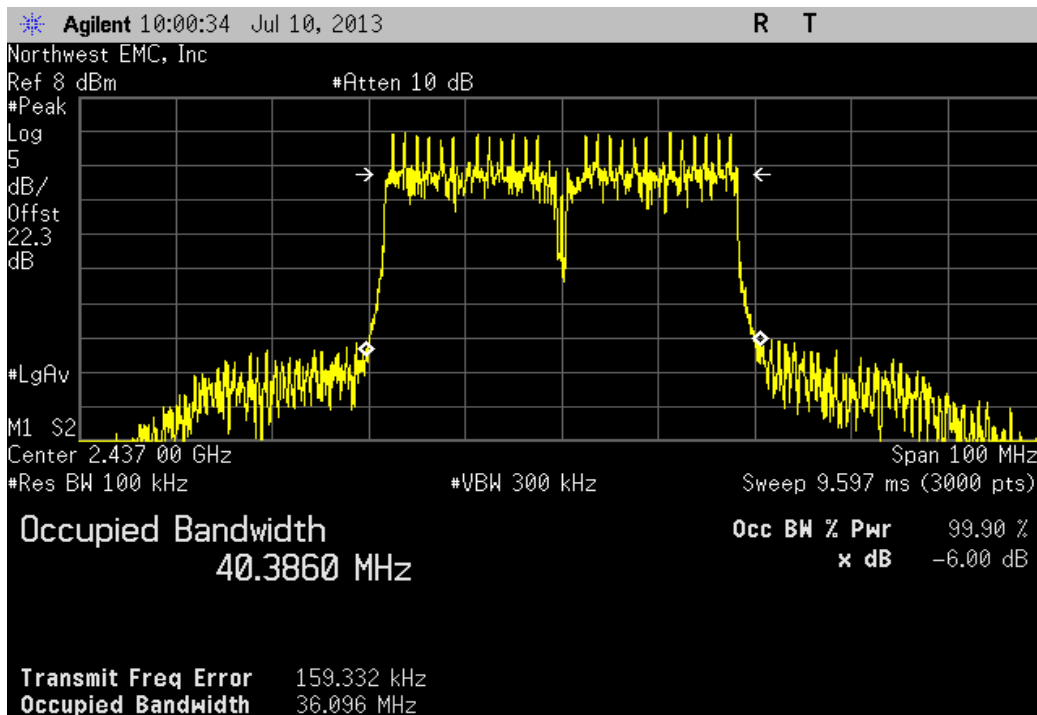
Chain A, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Low Channel 1/5, 2422 MHz

Value	Limit	Result
36.114 MHz	> 500 kHz	Pass



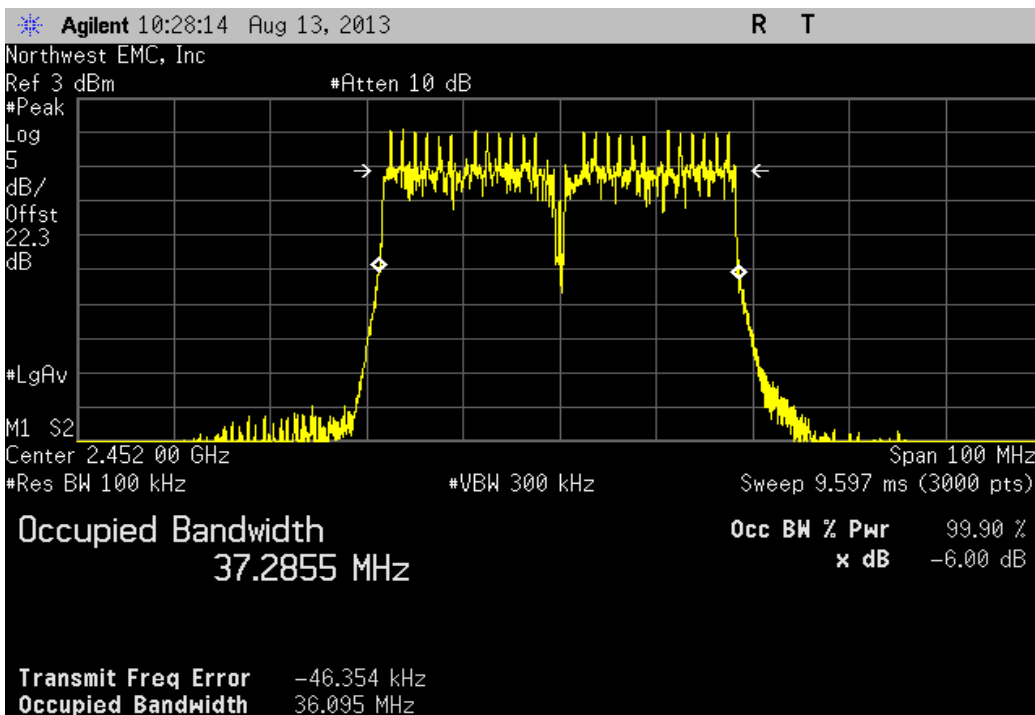
Chain A, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Mid Channel 4/8, 2437 MHz

Value	Limit	Result
36.096 MHz	> 500 kHz	Pass



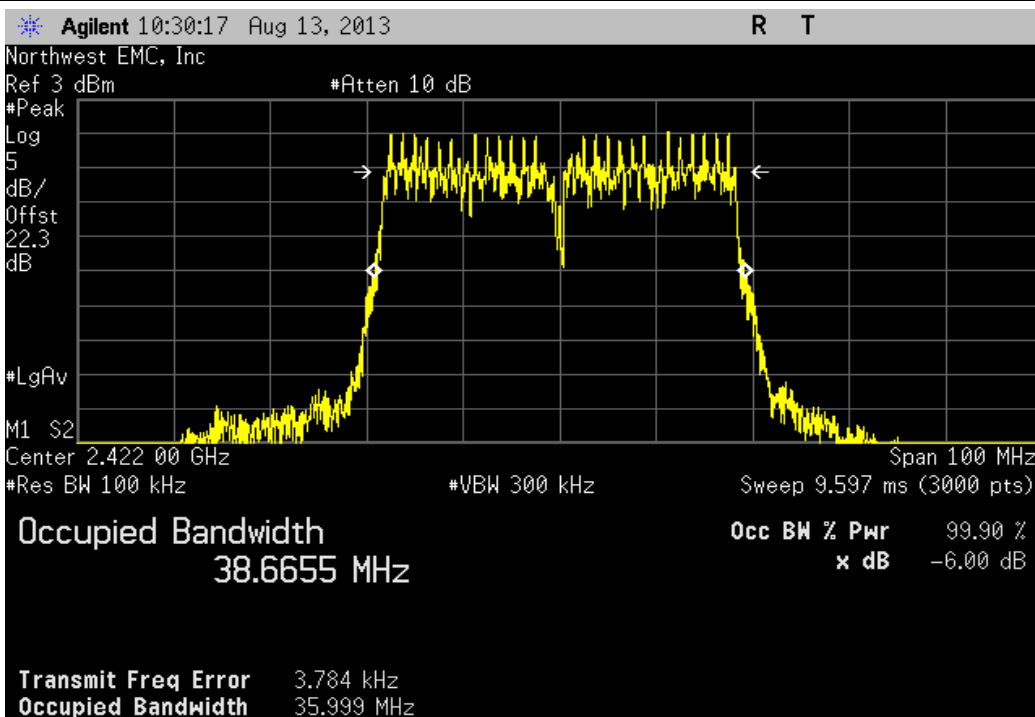
Chain A, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, High Channel 7/11, 2452 MHz

Value	Limit	Result
36.095 MHz	> 500 kHz	Pass



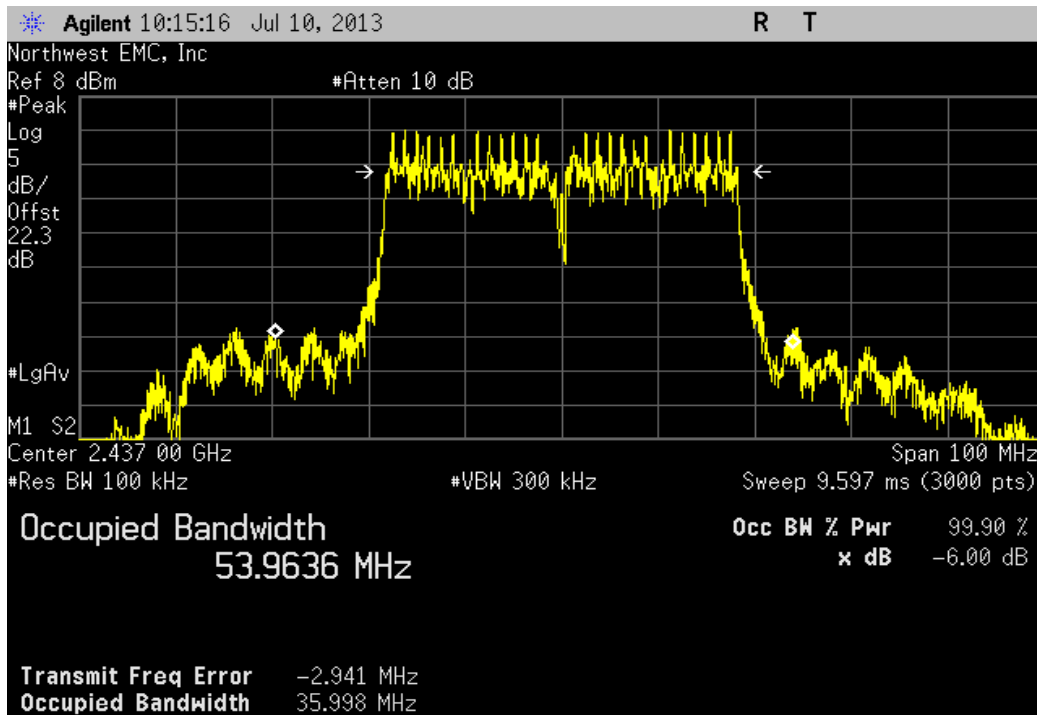
Chain A, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Low Channel 1/5, 2422 MHz

Value	Limit	Result
35.999 MHz	> 500 kHz	Pass



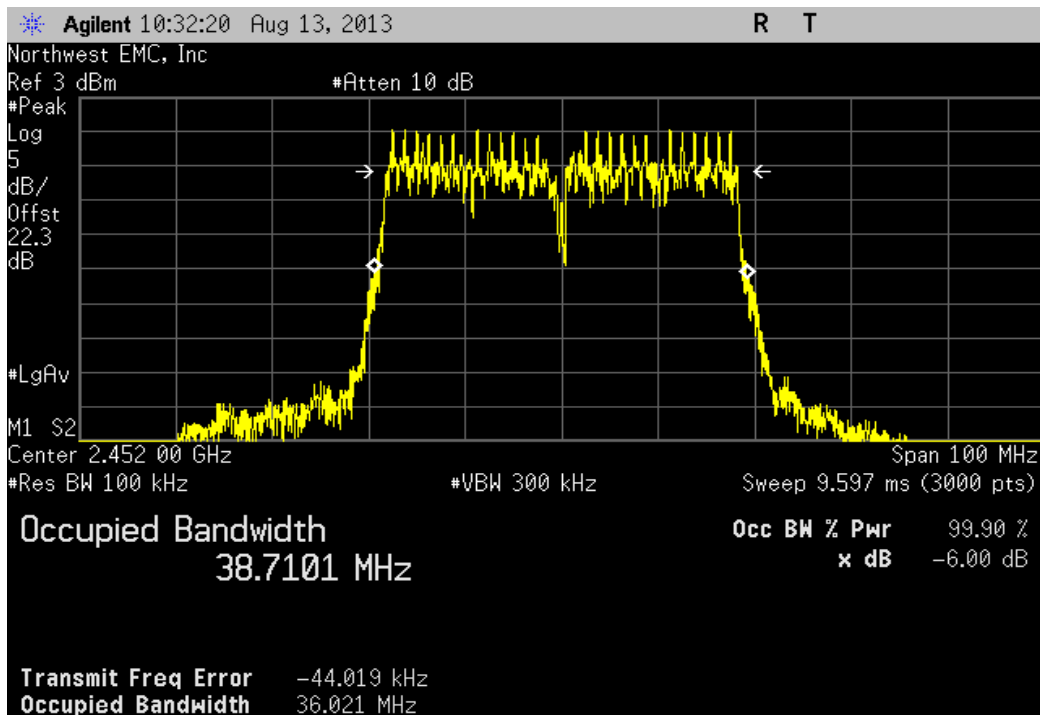
Chain A, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Mid Channel 4/8, 2437 MHz

Value	Limit	Result
35.998 MHz	> 500 kHz	Pass



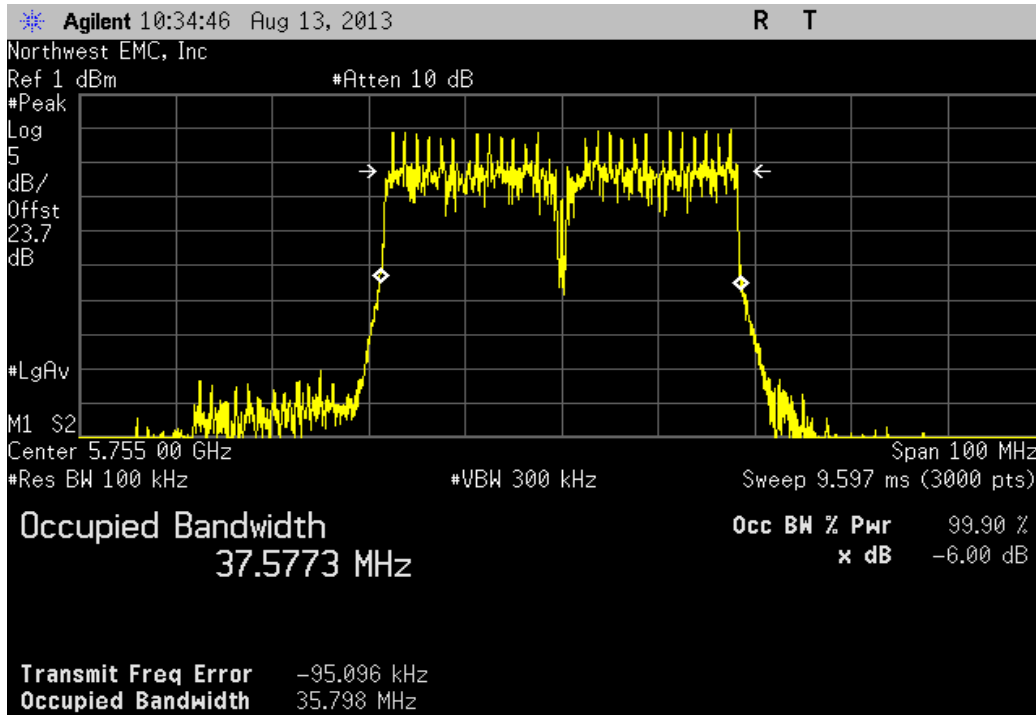
Chain A, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, High Channel 7/11, 2452 MHz

Value	Limit	Result
36.021 MHz	> 500 kHz	Pass



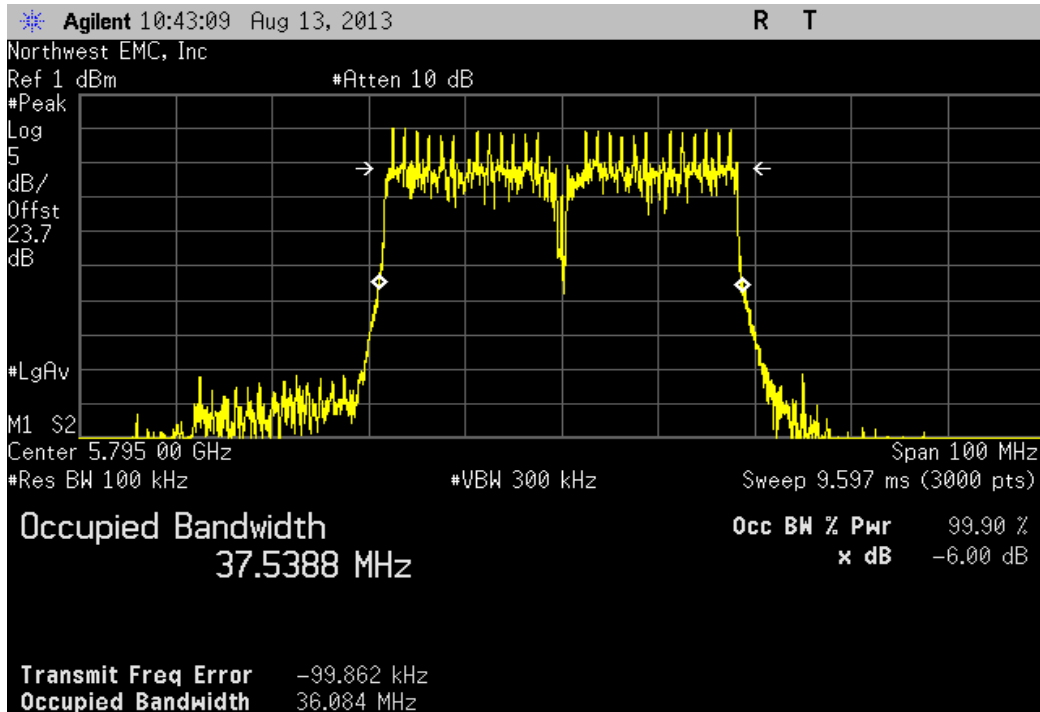
Chain A, 40 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS8, Low Channel 149/153, 5755 MHz

Value	Limit	Result
35.798 MHz	> 500 kHz	Pass



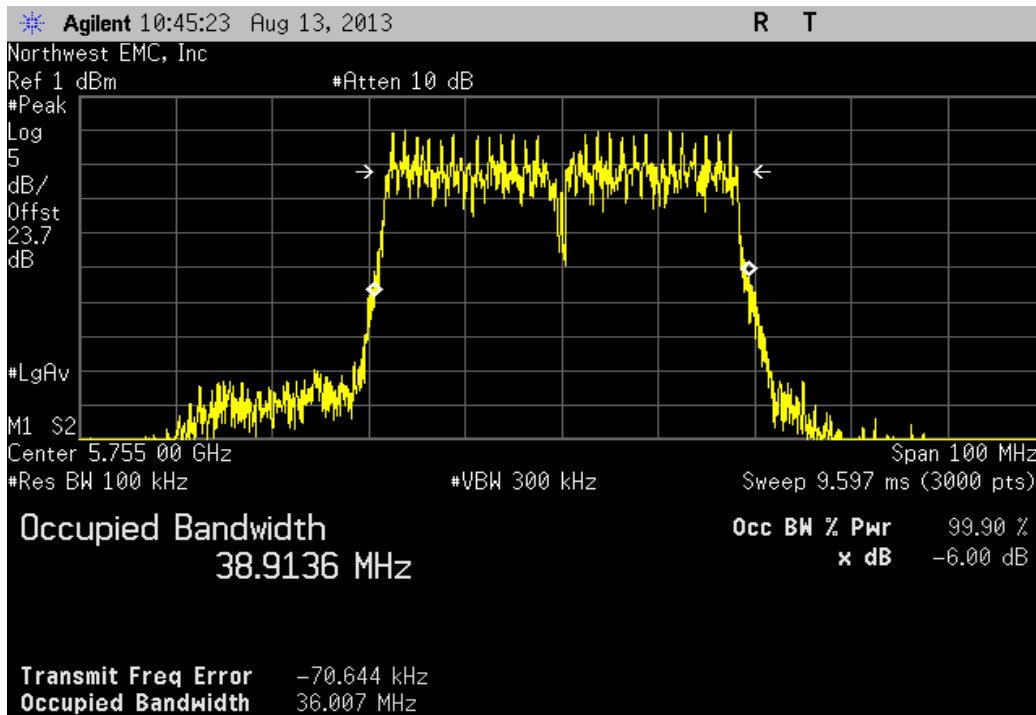
Chain A, 40 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS8, High Channel 157/161, 5795 MHz

Value	Limit	Result
36.084 MHz	> 500 kHz	Pass



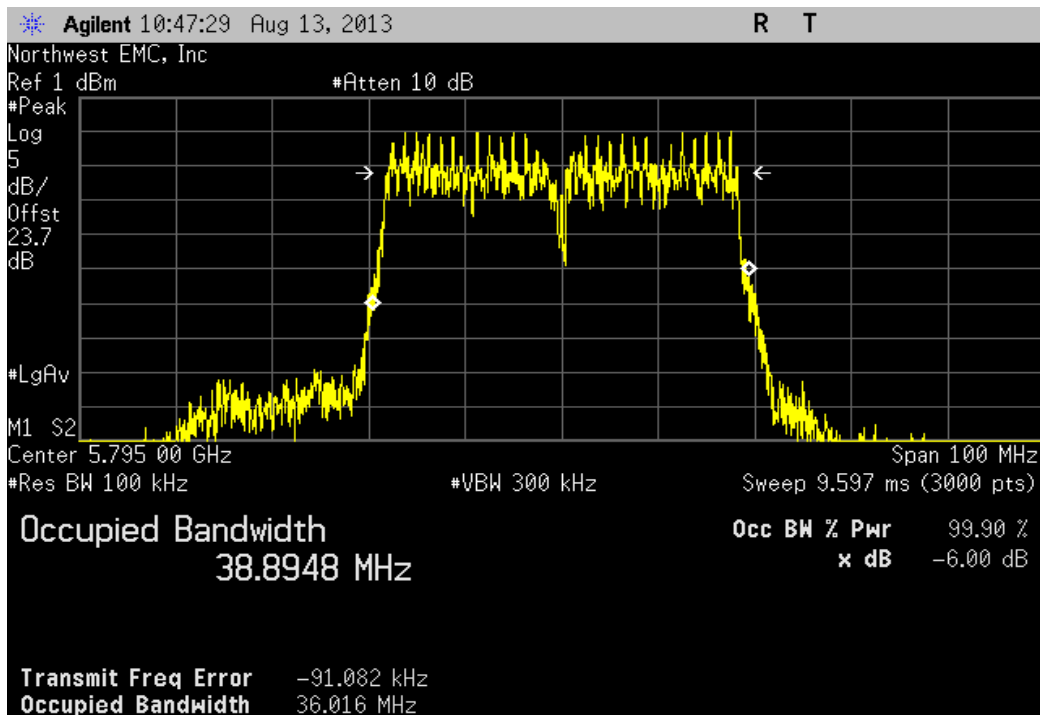
Chain A, 40 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS15, Low Channel 149/153, 5755 MHz

Value	Limit	Result
36.007 MHz	> 500 kHz	Pass



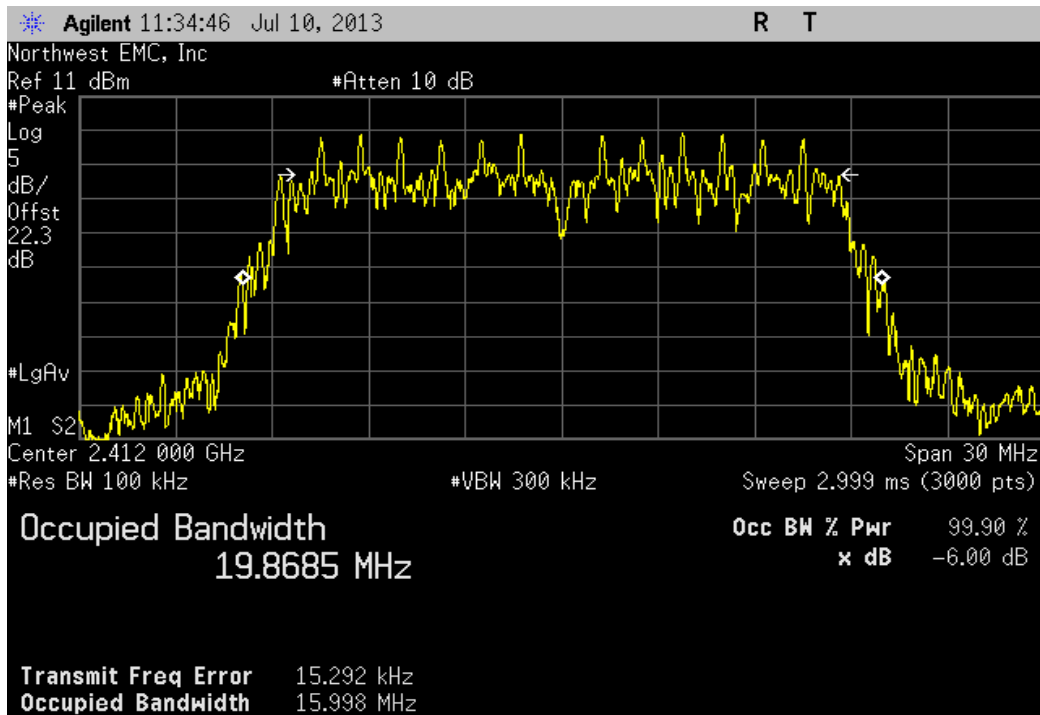
Chain A, 40 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS15, High Channel 157/161, 5795 MHz

Value	Limit	Result
36.016 MHz	> 500 kHz	Pass



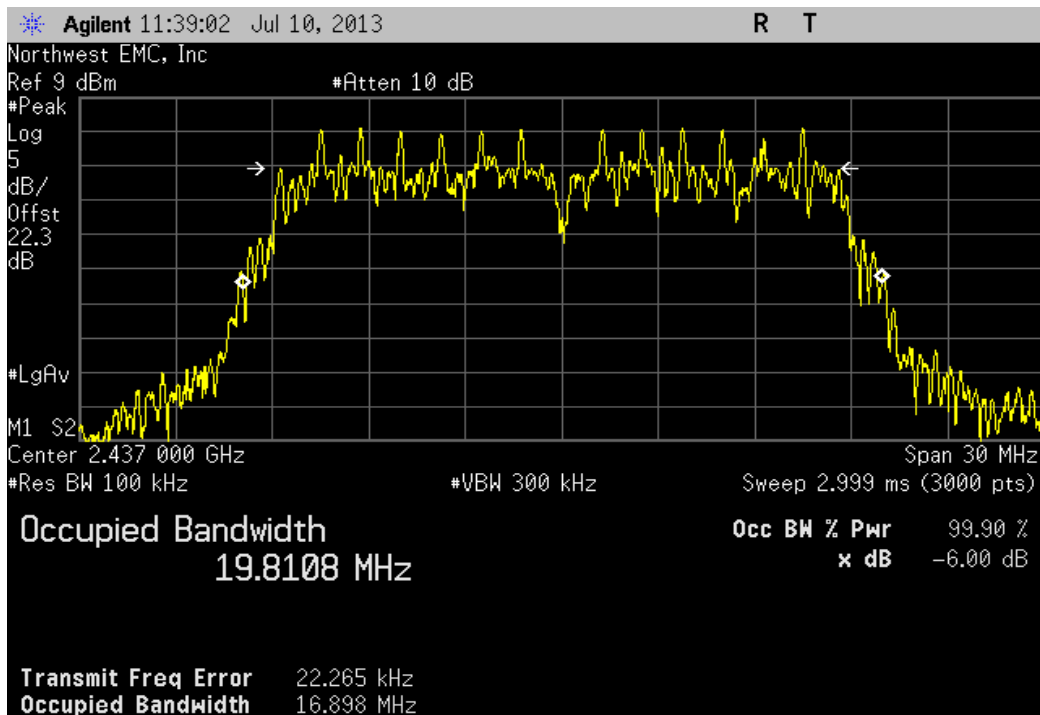
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Low Channel 1, 2412 MHz

Value	Limit	Result
15.998 MHz	> 500 kHz	Pass



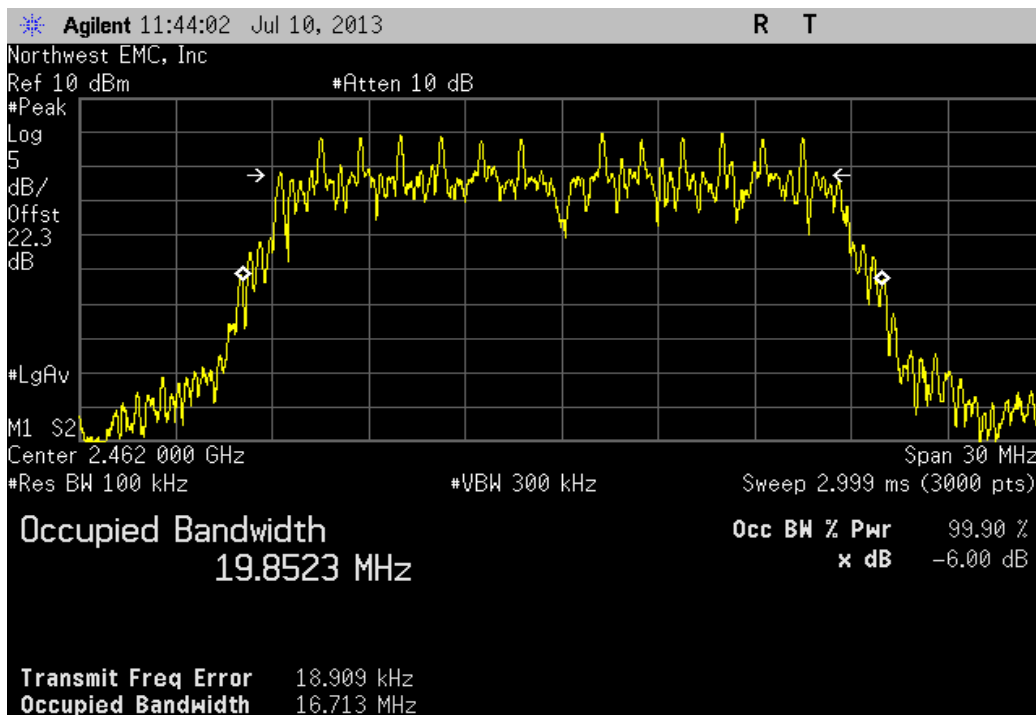
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Mid Channel 6, 2437 MHz

Value	Limit	Result
16.898 MHz	> 500 kHz	Pass



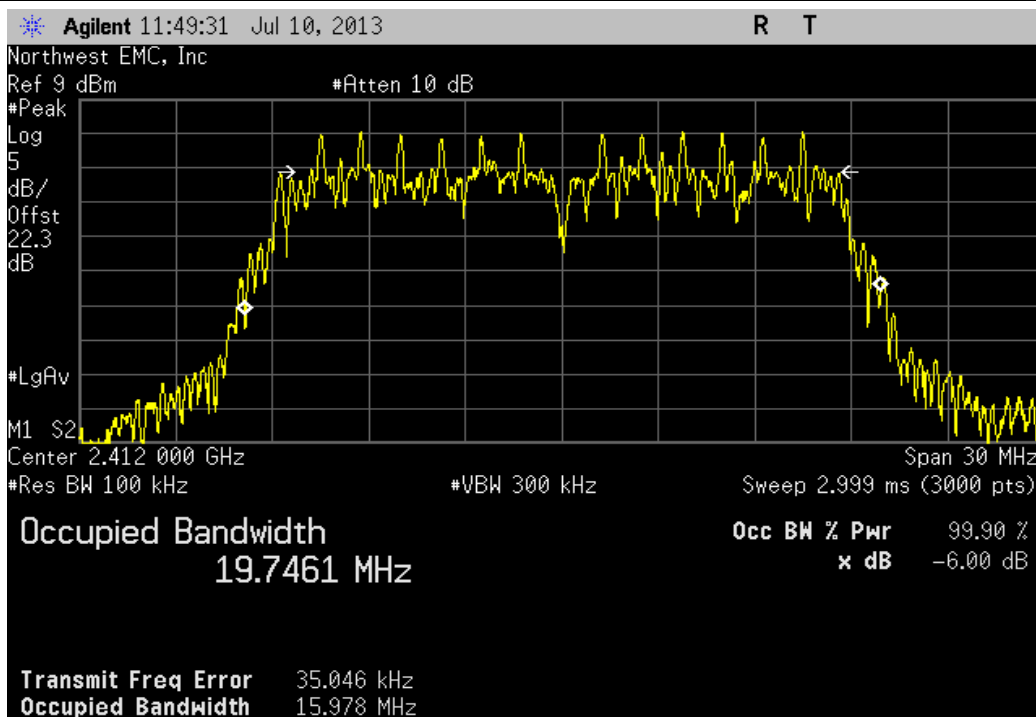
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, High Channel 11, 2462 MHz

Value	Limit	Result
16.713 MHz	> 500 kHz	Pass



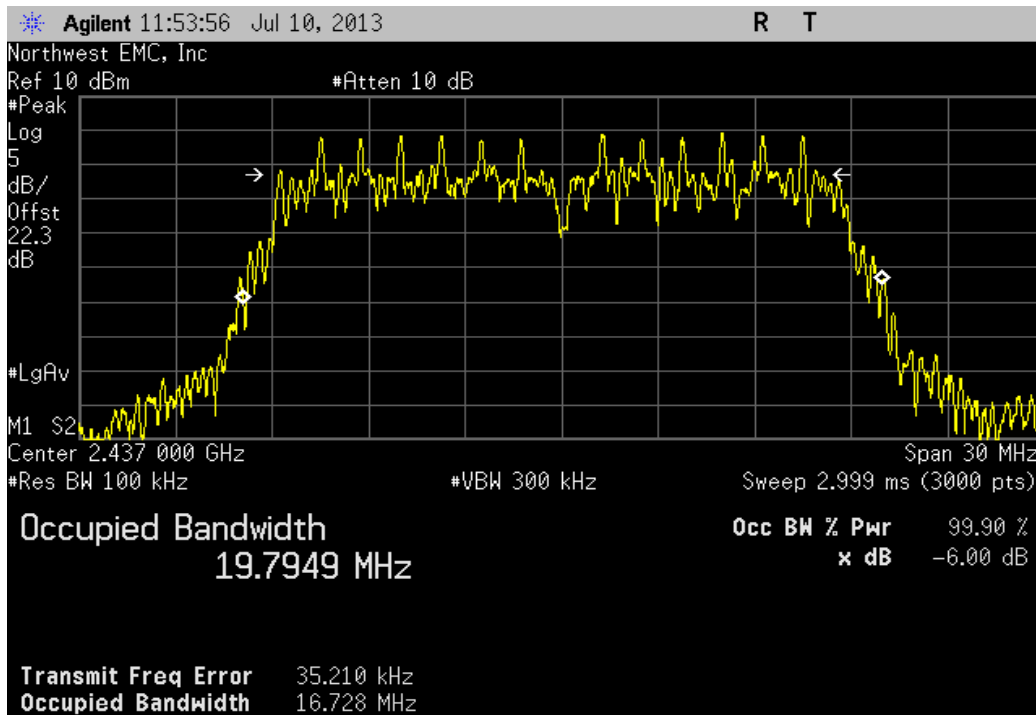
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Low Channel 1, 2412 MHz

Value	Limit	Result
15.978 MHz	> 500 kHz	Pass



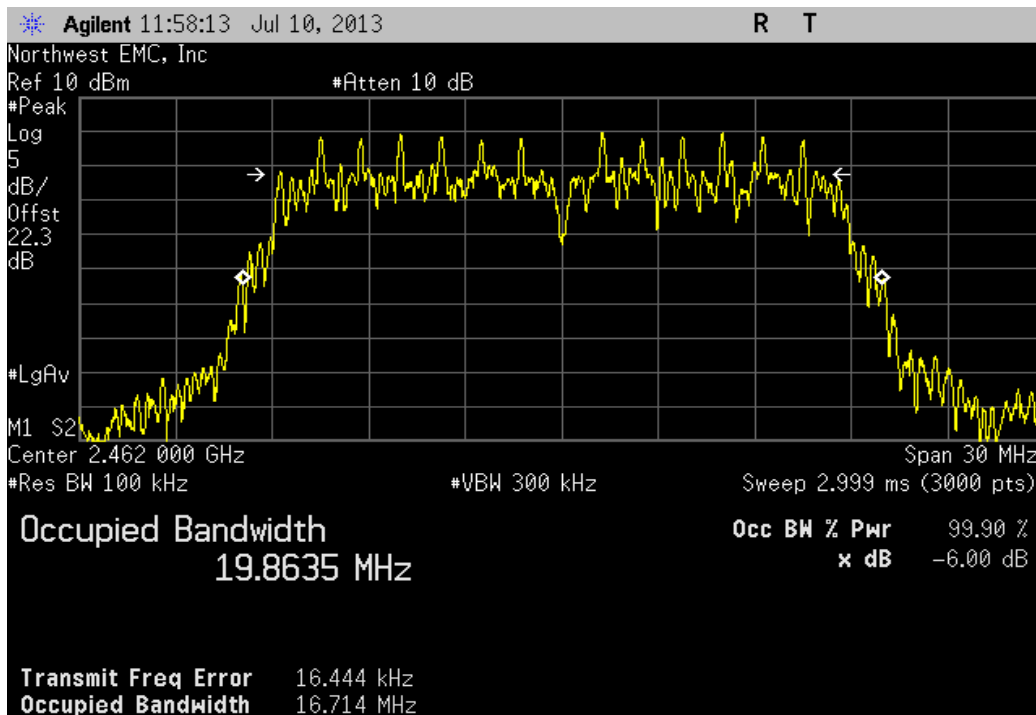
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Mid Channel 6, 2437 MHz

Value	Limit	Result
16.728 MHz	> 500 kHz	Pass



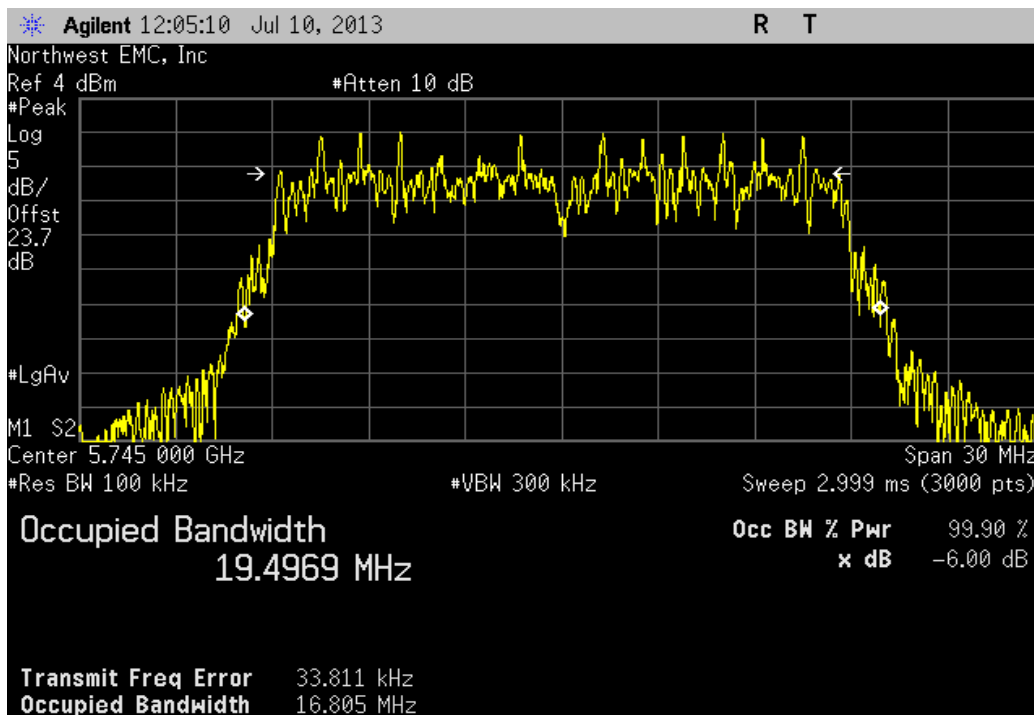
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, High Channel 11, 2462 MHz

Value	Limit	Result
16.714 MHz	> 500 kHz	Pass



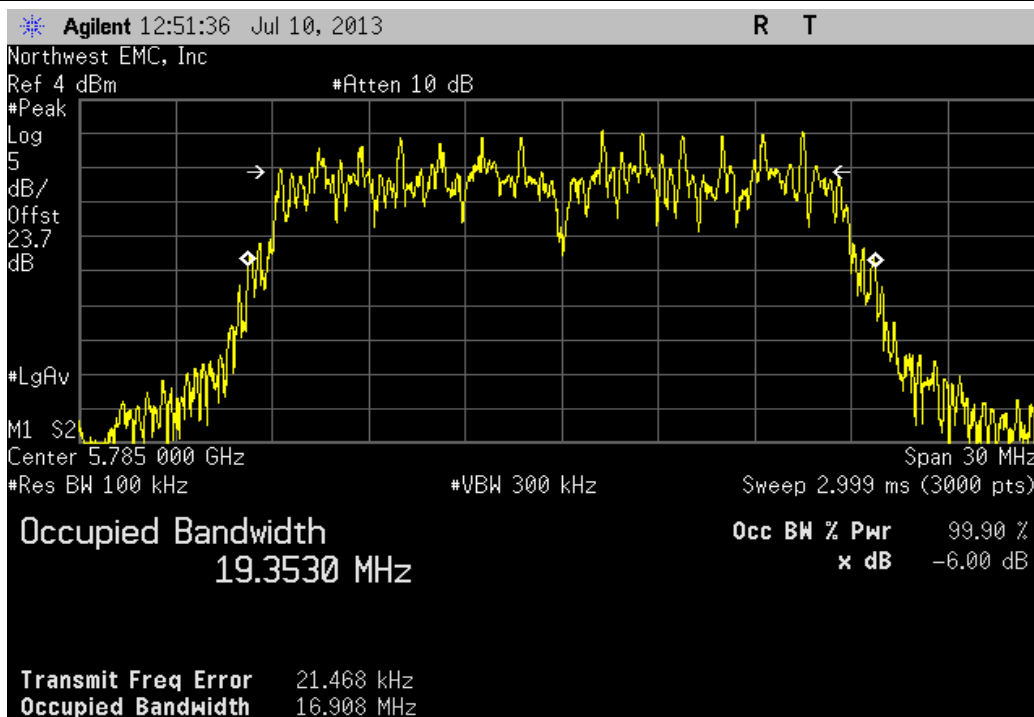
Chain B, 20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS8, Low Channel 149, 5745 MHz

Value	Limit	Result
16.805 MHz	> 500 kHz	Pass



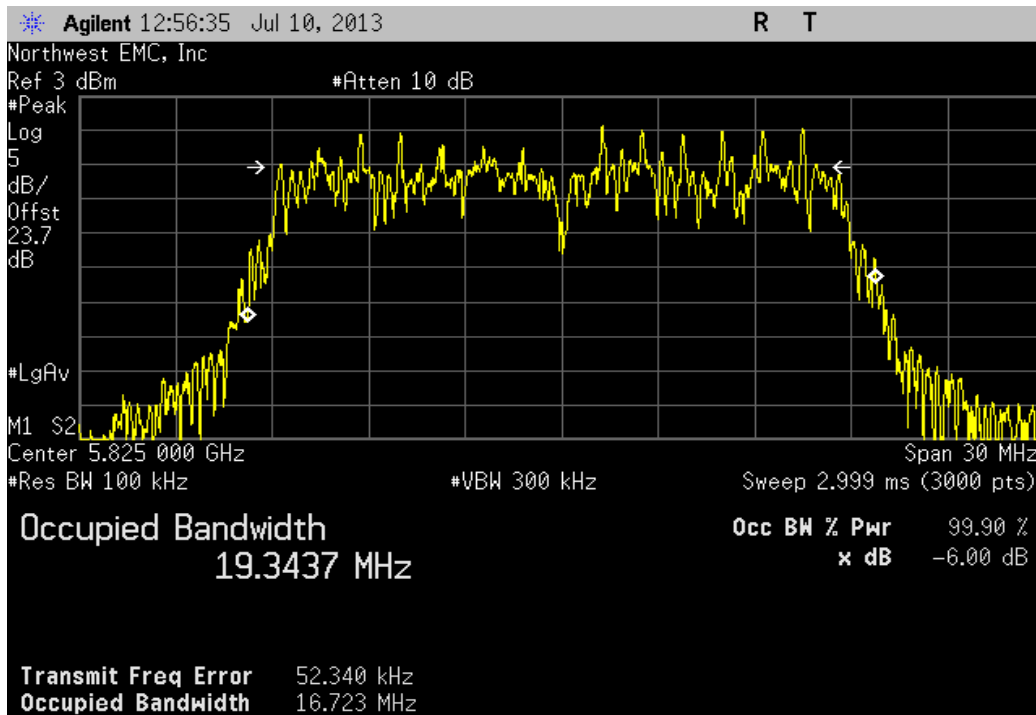
Chain B, 20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS8, Mid Channel 157, 5785 MHz

Value	Limit	Result
16.908 MHz	> 500 kHz	Pass



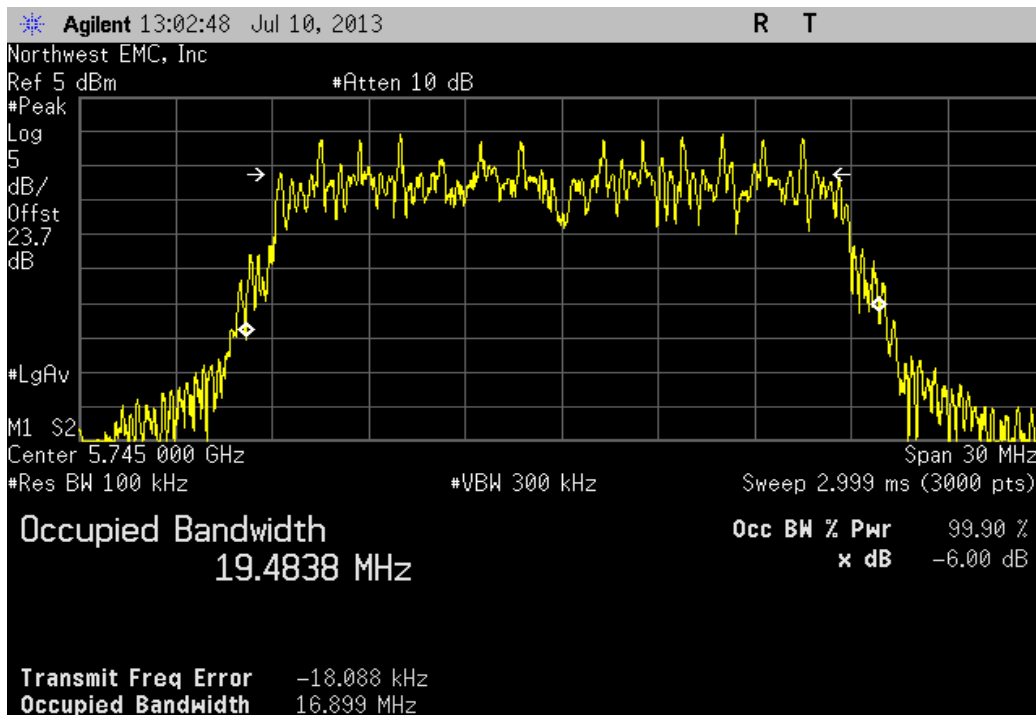
Chain B, 20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS8, High Channel 165, 5825 MHz

Value	Limit	Result
16.723 MHz	> 500 kHz	Pass



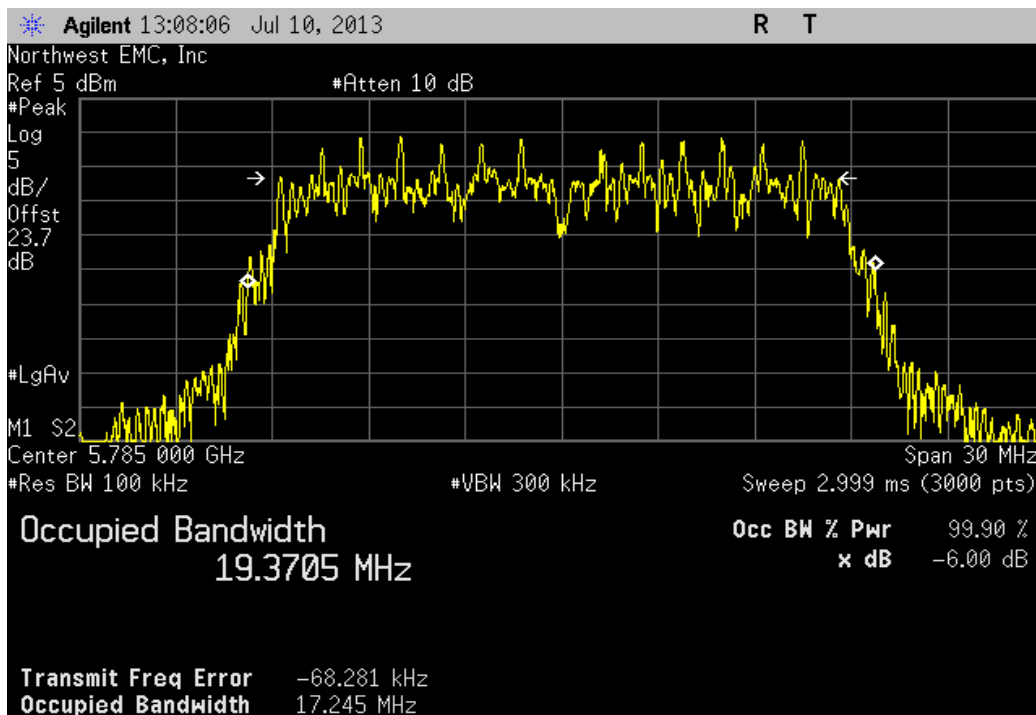
Chain B, 20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS15, Low Channel 149, 5745 MHz

Value	Limit	Result
16.899 MHz	> 500 kHz	Pass



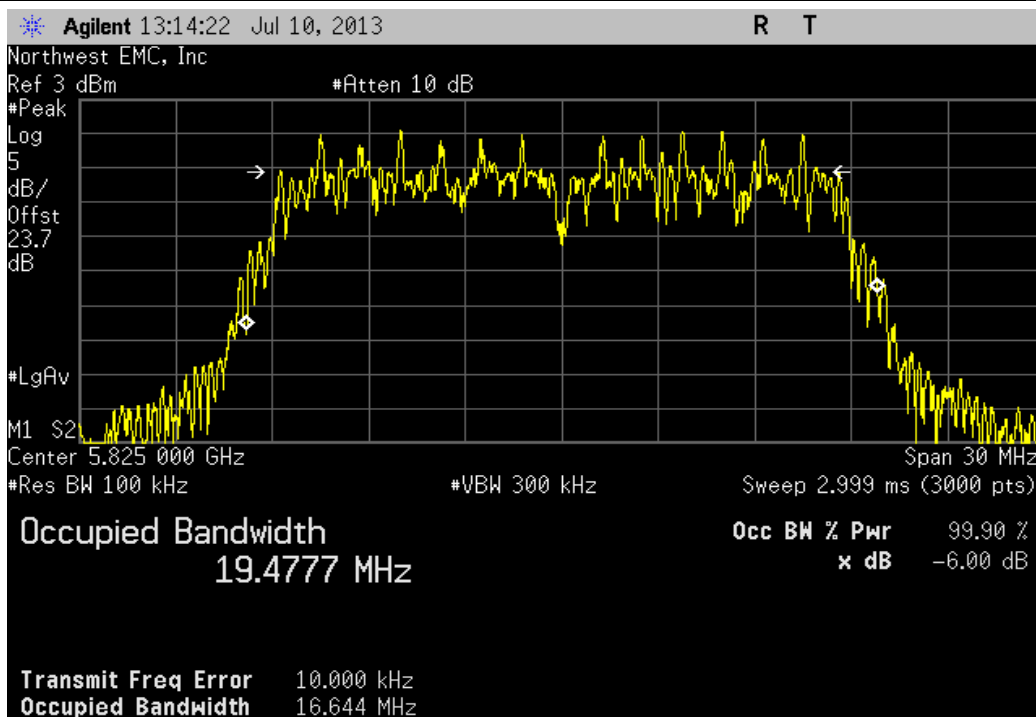
Chain B, 20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS15, Mid Channel 157, 5785 MHz

Value	Limit	Result
17.245 MHz	> 500 kHz	Pass



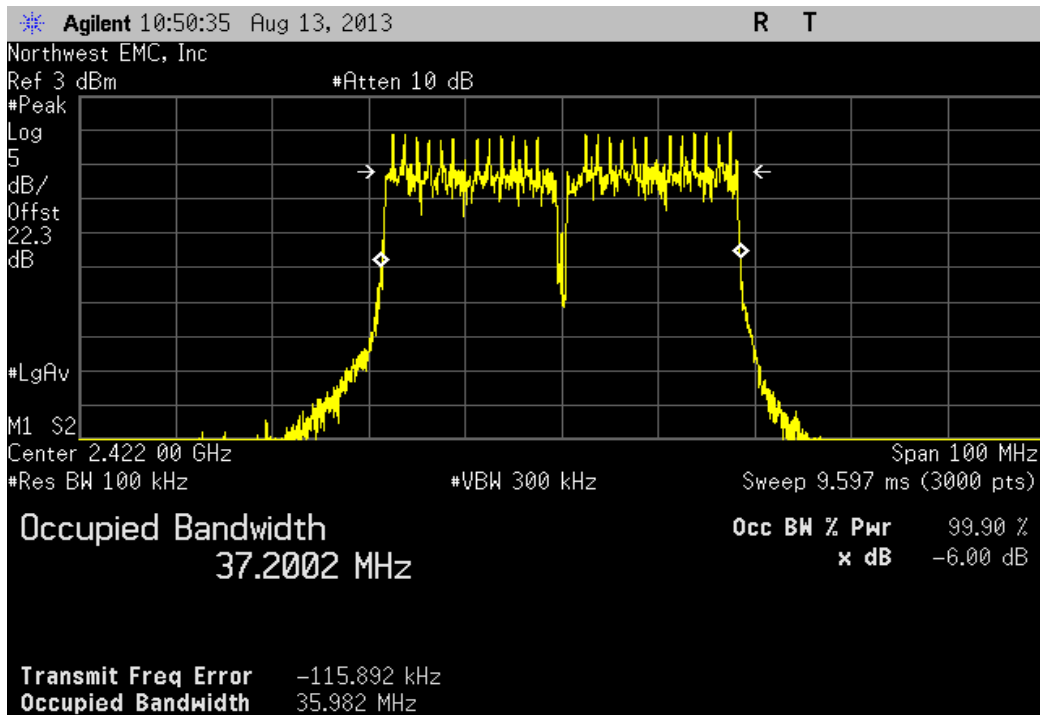
Chain B, 20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS15, High Channel 165, 5825 MHz

Value	Limit	Result
16.644 MHz	> 500 kHz	Pass



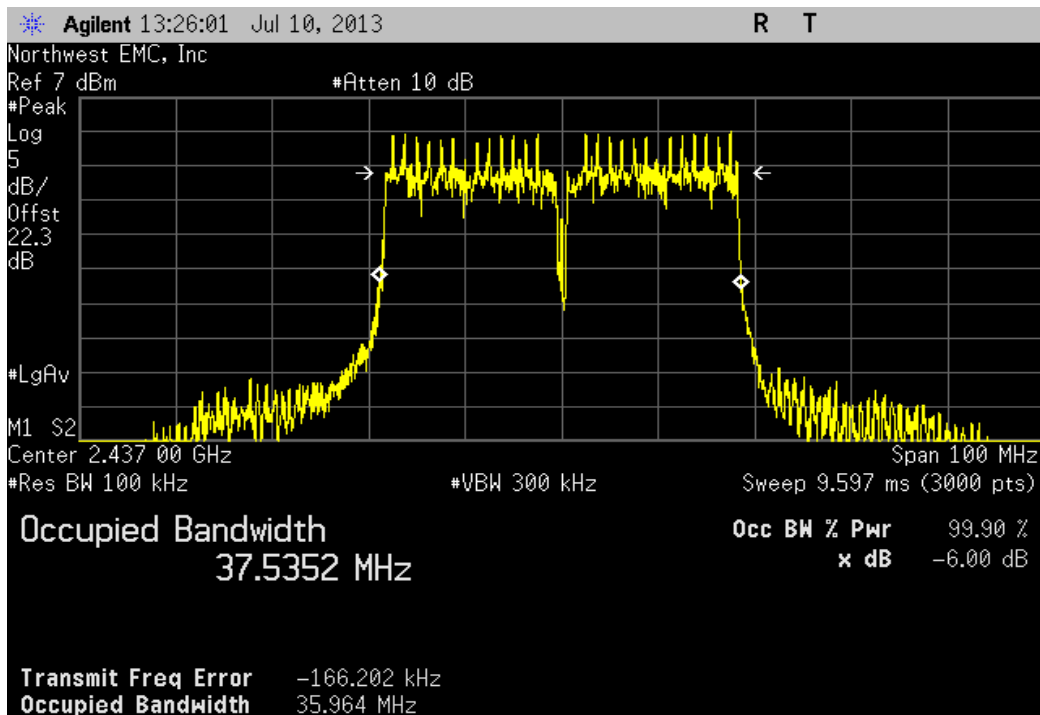
Chain B, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Low Channel 1/5, 2422 MHz

Value	Limit	Result
35.982 MHz	> 500 kHz	Pass



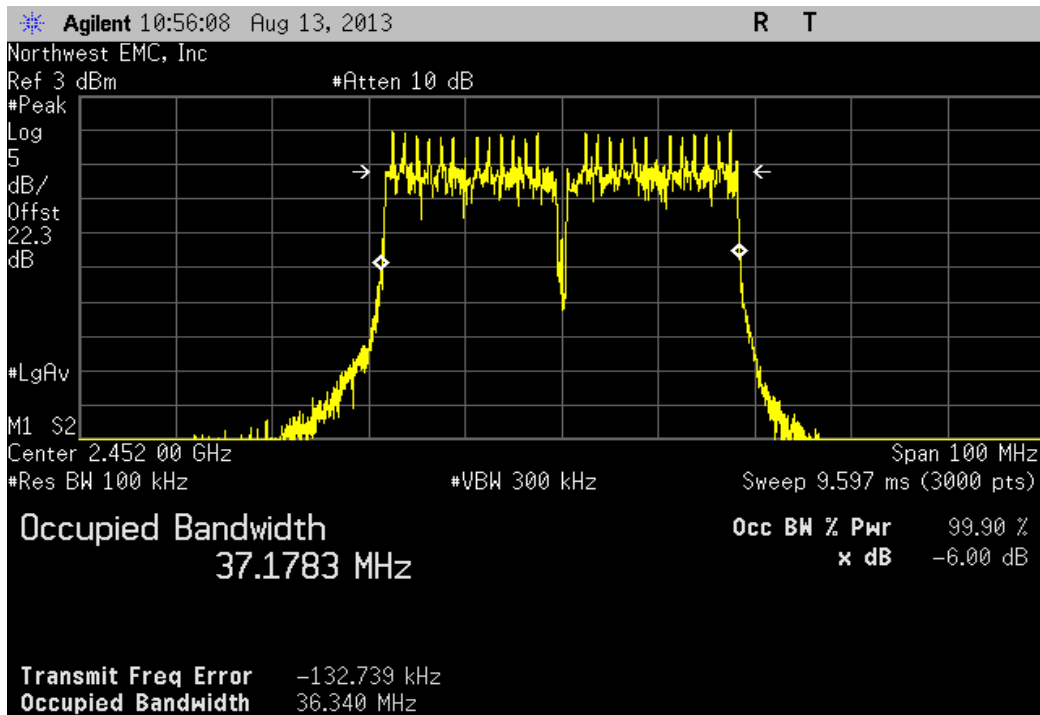
Chain B, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Mid Channel 4/8, 2437 MHz

Value	Limit	Result
35.964 MHz	> 500 kHz	Pass



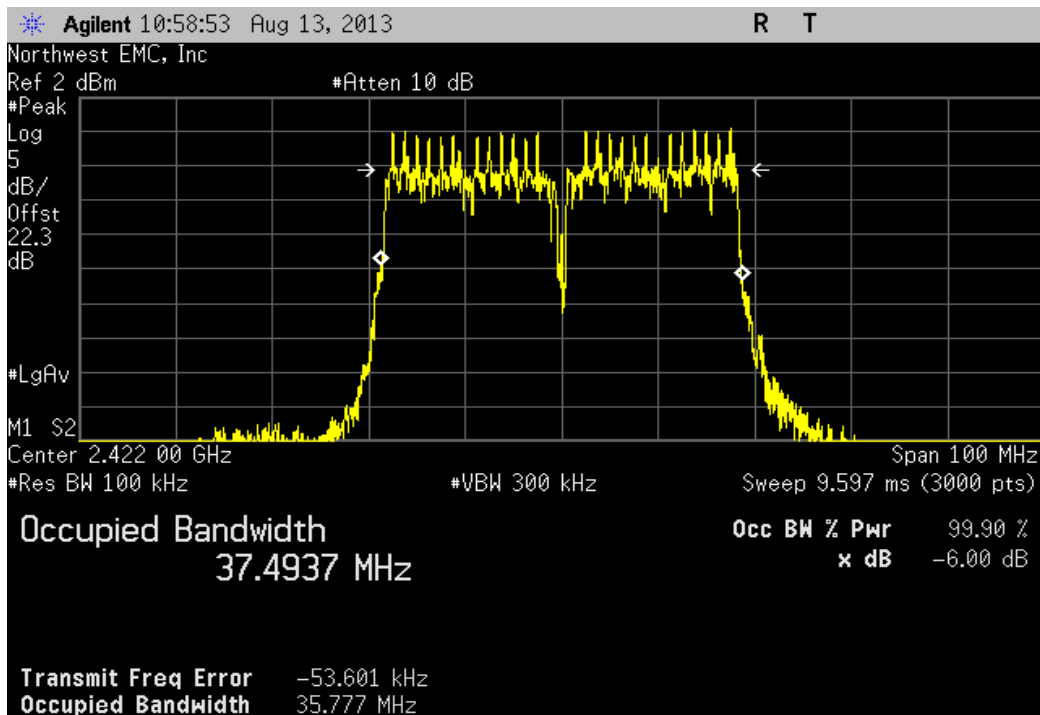
Chain B, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, High Channel 7/11, 2452 MHz

Value	Limit	Result
36.34 MHz	> 500 kHz	Pass



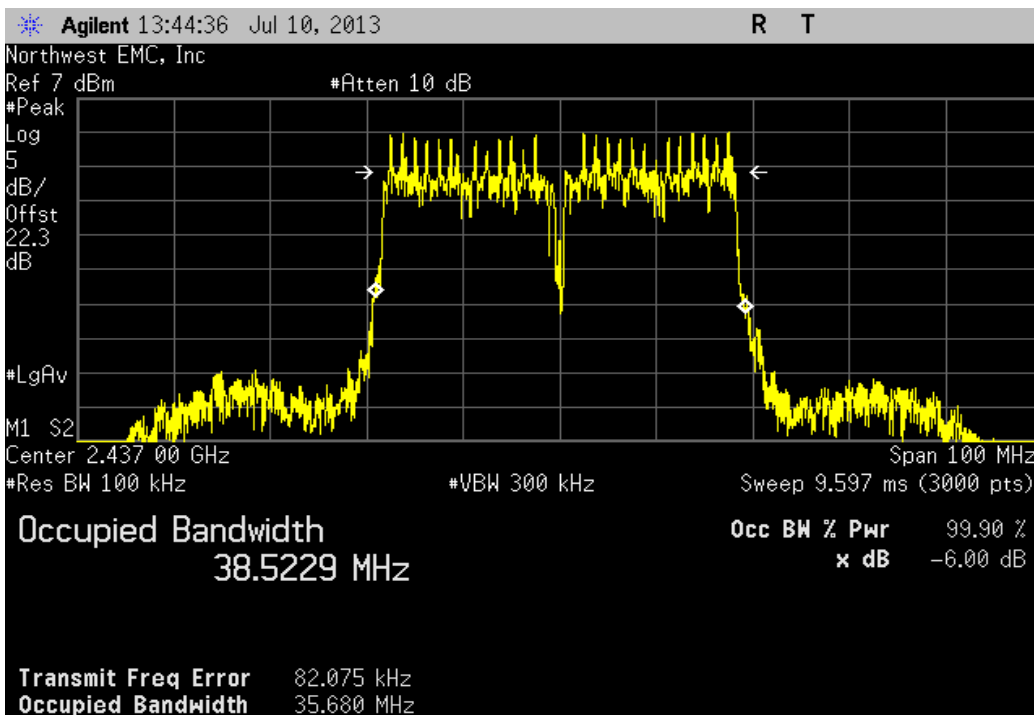
Chain B, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Low Channel 1/5, 2422 MHz

Value	Limit	Result
35.777 MHz	> 500 kHz	Pass



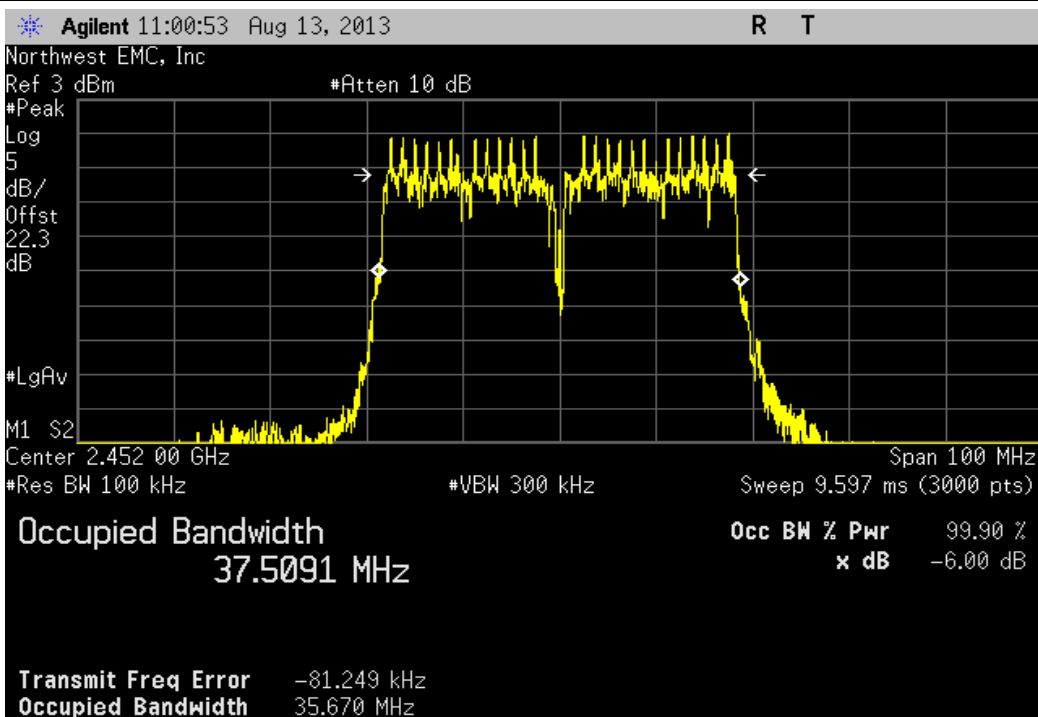
Chain B, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Mid Channel 4/8, 2437 MHz

Value	Limit	Result
35.68 MHz	> 500 kHz	Pass



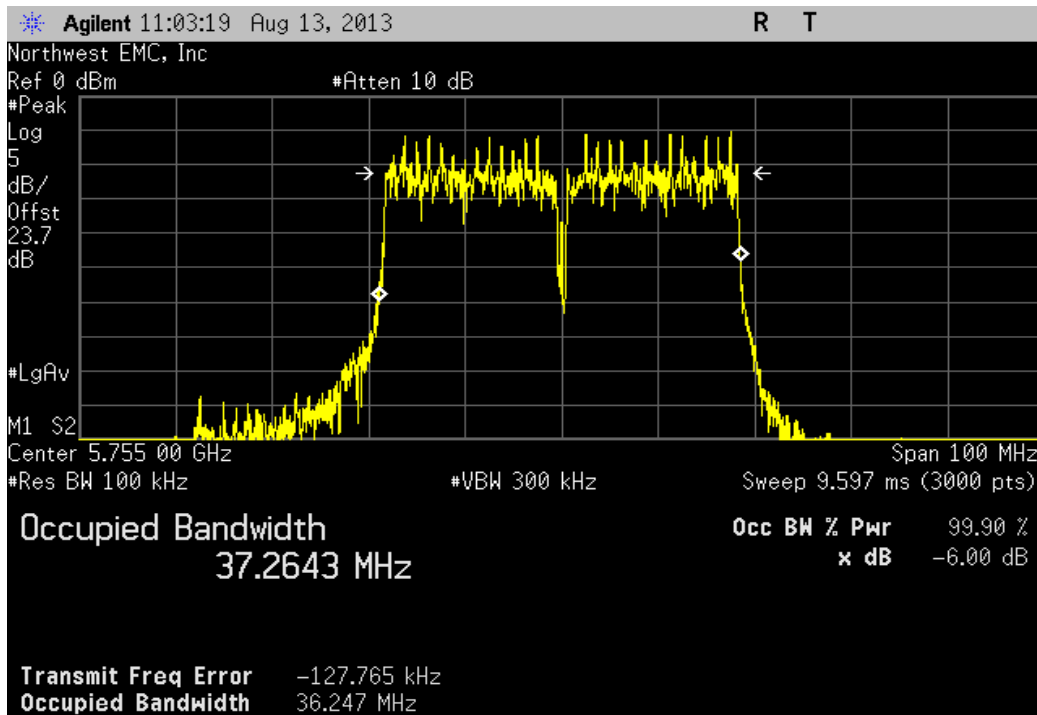
Chain B, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, High Channel 7/11, 2452 MHz

Value	Limit	Result
35.67 MHz	> 500 kHz	Pass



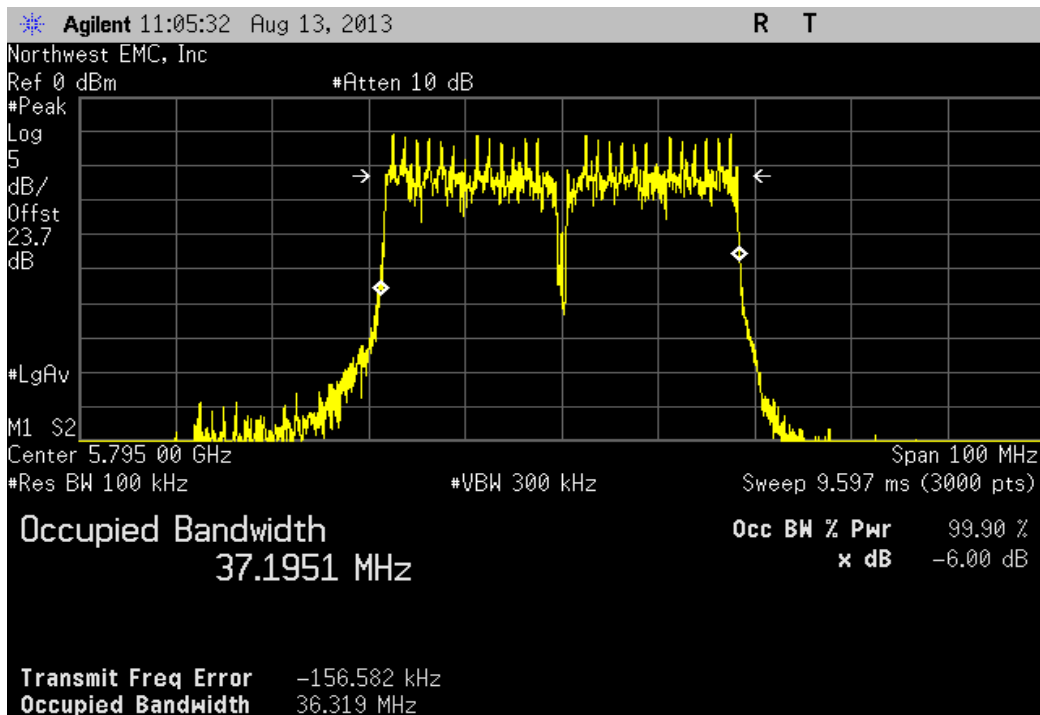
Chain B, 40 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS8, Low Channel 149/153, 5755 MHz

Value	Limit	Result
36.247 MHz	> 500 kHz	Pass



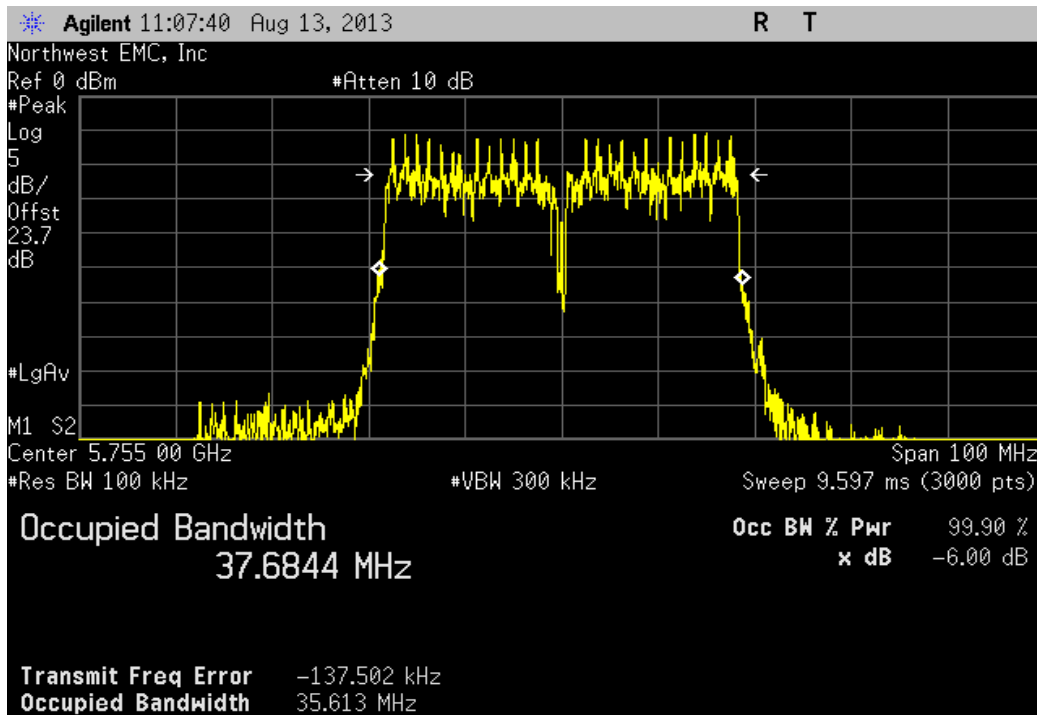
Chain B, 40 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS8, High Channel 157/161, 5795 MHz

Value	Limit	Result
36.319 MHz	> 500 kHz	Pass



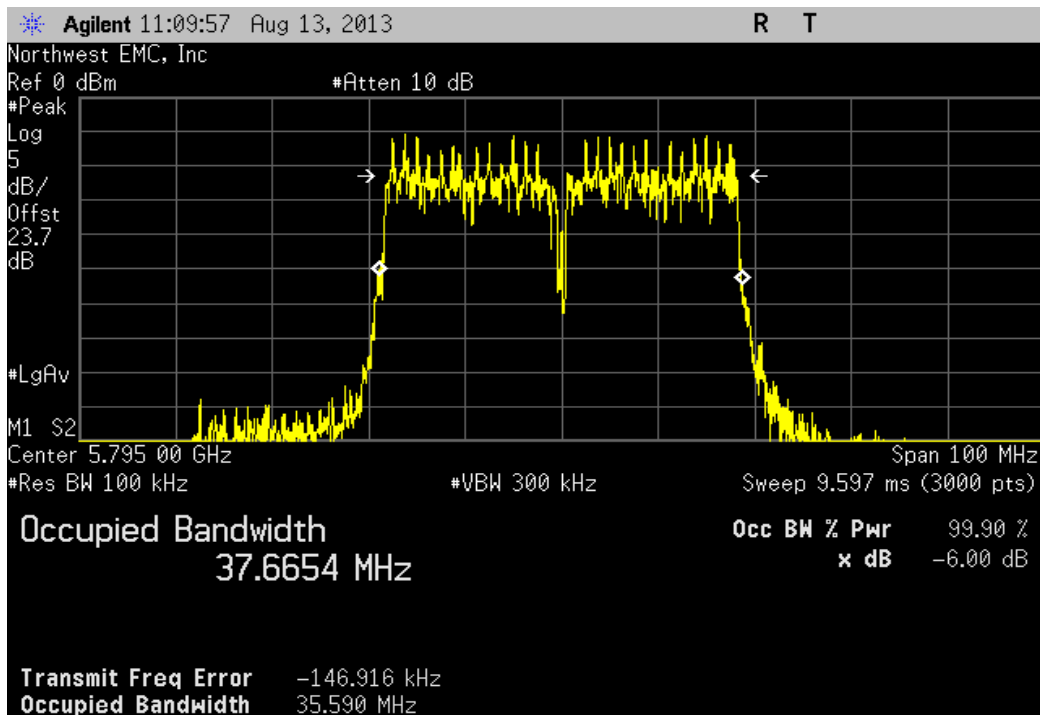
Chain B, 40 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS15, Low Channel 149/153, 5755 MHz

Value	Limit	Result
35.613 MHz	> 500 kHz	Pass



Chain B, 40 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS15, High Channel 157/161, 5795 MHz

Value	Limit	Result
35.59 MHz	> 500 kHz	Pass



Occupied Bandwidth - Antenna B

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Attenuator	Fairview Microwave	SA4014-20	TKE	2/12/2013	12
Signal Generator	Agilent	N5183A	TID	9/19/2011	36
Spectrum Analyzer	Agilent	E4446A	AAT	6/28/2012	24
NC02 Cable	ESM Cable Corp.	TTBJ-141 KMKM-72	NC5	7/3/2013	12

TEST DESCRIPTION

The 6dB occupied bandwidth was measured. The 26 dB (99.9%) 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.

DC Block was used in-line for measurements made while under test. For channel output power levels, please refer to the accompanying power table included in this report.



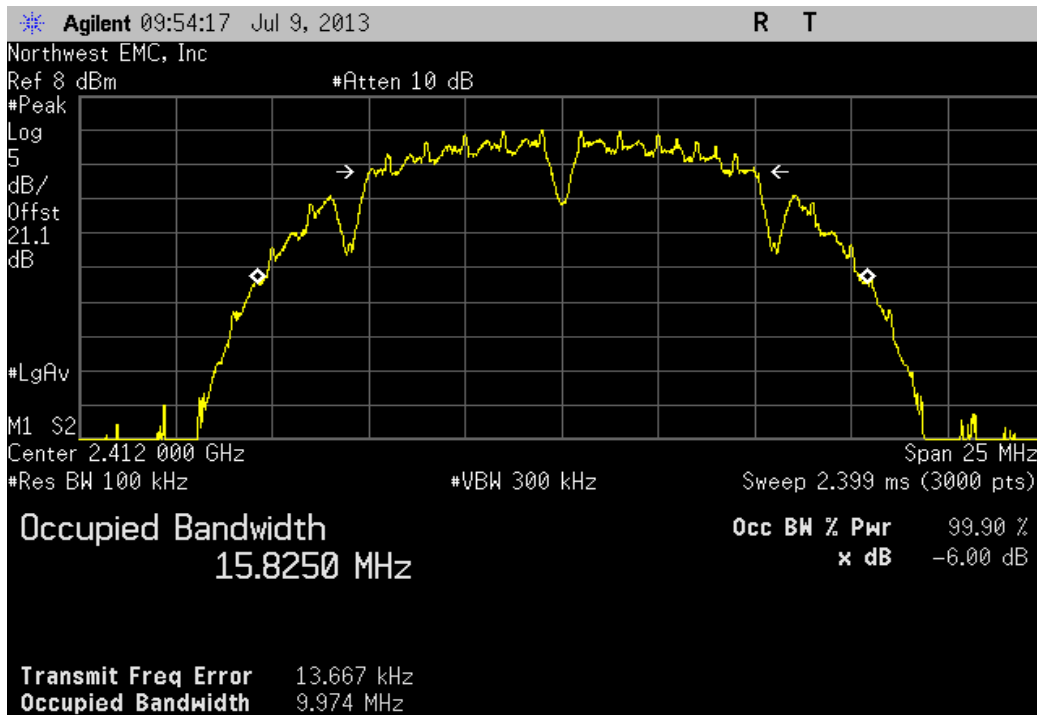
Occupied Bandwidth - Antenna B

XMit 2013.02.28
PsaTx 2013.06.07

EUT: 1601		Work Order: MCSO1665	
Serial Number: 006079632553		Date: 08/13/13	
Customer: Microsoft Corporation		Temperature: 23°C	
Attendees: None		Humidity: 50%	
Project: None		Barometric Pres.: 1020mb	
Tested by: Richard Mellroth, Brandon Hobbs		Power: 110VAC/60Hz	
TEST SPECIFICATIONS		Test Method	
FCC 15.247:2013		ANSI C63.10:2009	
COMMENTS			
EUT was operating at 100% Duty Cycle. Adapter cable loss of 0.75 dB for 2.4 GHz channels and 1.3 dB for 5.7 GHz channels was added to analyzer reference level offset.			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	1	Signature 	
		Value	Limit
			Result
20 MHz			
2400 MHz - 2483.5 MHz Band			
802.11(b) 1 Mbps			
Low Channel 1, 2412 MHz		9.974 MHz	> 500 kHz
Mid Channel 6, 2437 MHz		9.985 MHz	> 500 kHz
High Channel 11, 2462 MHz		9.921 MHz	> 500 kHz
802.11(b) 11 Mbps			
Low Channel 1, 2412 MHz		9.663 MHz	> 500 kHz
Mid Channel 6, 2437 MHz		9.519 MHz	> 500 kHz
High Channel 11, 2462 MHz		9.56 MHz	> 500 kHz
802.11(g) 6 Mbps			
Low Channel 1, 2412 MHz		16.406 MHz	> 500 kHz
Mid Channel 6, 2437 MHz		16.396 MHz	> 500 kHz
High Channel 11, 2462 MHz		16.397 MHz	> 500 kHz
802.11(g) 36 Mbps			
Low Channel 1, 2412 MHz		16.392 MHz	> 500 kHz
Mid Channel 6, 2437 MHz		16.424 MHz	> 500 kHz
High Channel 11, 2462 MHz		16.414 MHz	> 500 kHz
802.11(g) 54 Mbps			
Low Channel 1, 2412 MHz		16.436 MHz	> 500 kHz
Mid Channel 6, 2437 MHz		16.437 MHz	> 500 kHz
High Channel 11, 2462 MHz		16.438 MHz	> 500 kHz
802.11(n) MCS0			
Low Channel 1, 2412 MHz		16.954 MHz	> 500 kHz
Mid Channel 6, 2437 MHz		16.737 MHz	> 500 kHz
High Channel 11, 2462 MHz		16.938 MHz	> 500 kHz
802.11(n) MCS7			
Low Channel 1, 2412 MHz		16.934 MHz	> 500 kHz
Mid Channel 6, 2437 MHz		16.84 MHz	> 500 kHz
High Channel 11, 2462 MHz		16.944 MHz	> 500 kHz
5725 MHz - 5850 MHz Band			
802.11(a) 6 Mbps			
Low Channel 149, 5745 MHz		16.395 MHz	> 500 kHz
Mid Channel 157, 5785 MHz		16.397 MHz	> 500 kHz
High Channel 165, 5825 MHz		16.426 MHz	> 500 kHz
802.11(a) 36 Mbps			
Low Channel 149, 5745 MHz		16.371 MHz	> 500 kHz
Mid Channel 157, 5785 MHz		16.377 MHz	> 500 kHz
High Channel 165, 5825 MHz		16.284 MHz	> 500 kHz
802.11(a) 54 Mbps			
Low Channel 149, 5745 MHz		16.35 MHz	> 500 kHz
Mid Channel 157, 5785 MHz		16.371 MHz	> 500 kHz
High Channel 165, 5825 MHz		16.399 MHz	> 500 kHz
802.11(n) MCS0 - UNII			
Low Channel 149, 5745 MHz		16.986 MHz	> 500 kHz
Mid Channel 157, 5785 MHz		16.768 MHz	> 500 kHz
High Channel 165, 5825 MHz		16.817 MHz	> 500 kHz
802.11(n) MCS7 - UNII			
Low Channel 149, 5745 MHz		16.868 MHz	> 500 kHz
Mid Channel 157, 5785 MHz		16.752 MHz	> 500 kHz
High Channel 165, 5825 MHz		16.981 MHz	> 500 kHz
40 MHz			
2400 MHz - 2483.5 MHz Band			
802.11(n) MCS0			
Low Channel 1/5, 2422 MHz		36.361 MHz	> 500 kHz
Mid Channel 4/8, 2437 MHz		36.357 MHz	> 500 kHz
High Channel 7/11, 2452 MHz		36.364 MHz	> 500 kHz
802.11(n) MCS7			
Low Channel 1/5, 2422 MHz		36.336 MHz	> 500 kHz
Mid Channel 4/8, 2437 MHz		36.344 MHz	> 500 kHz
High Channel 7/11, 2452 MHz		36.061 MHz	> 500 kHz
5725 MHz - 5850 MHz Band			
802.11(n) MCS0 - UNII			
Low Channel 149/153, 5755 MHz		36.367 MHz	> 500 kHz
High Channel 157/161, 5795 MHz		36.36 MHz	> 500 kHz
802.11(n) MCS7 - UNII			
Low Channel 149/153, 5755 MHz		36.219 MHz	> 500 kHz
High Channel 157/161, 5795 MHz		36.147 MHz	> 500 kHz

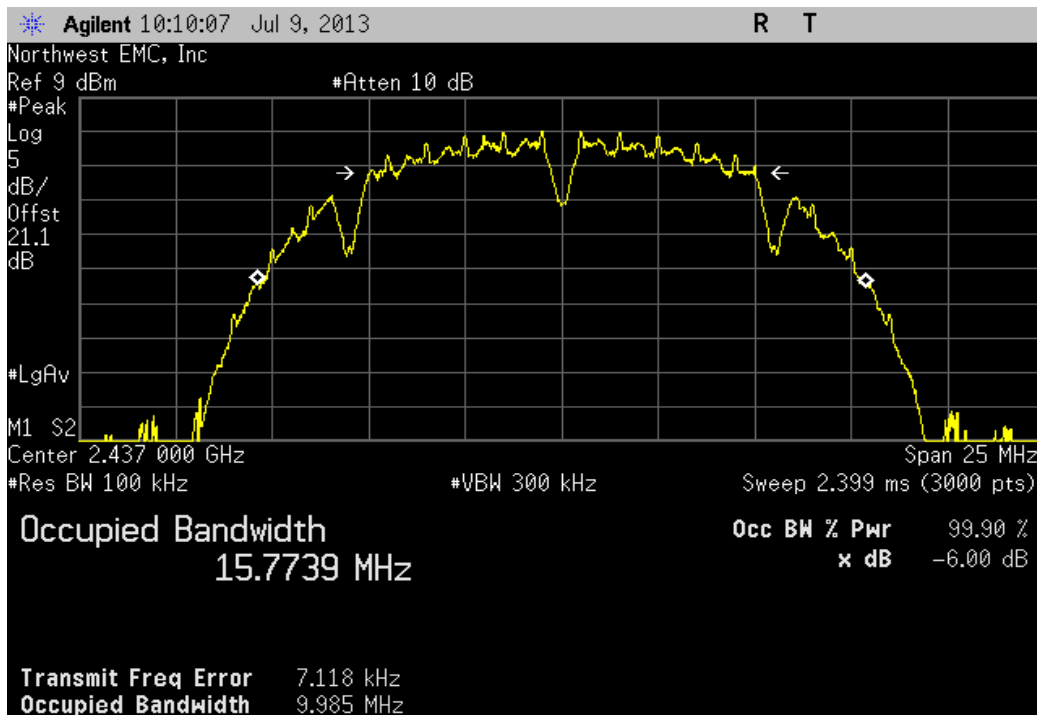
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz

Value	Limit	Result
9.974 MHz	> 500 kHz	Pass



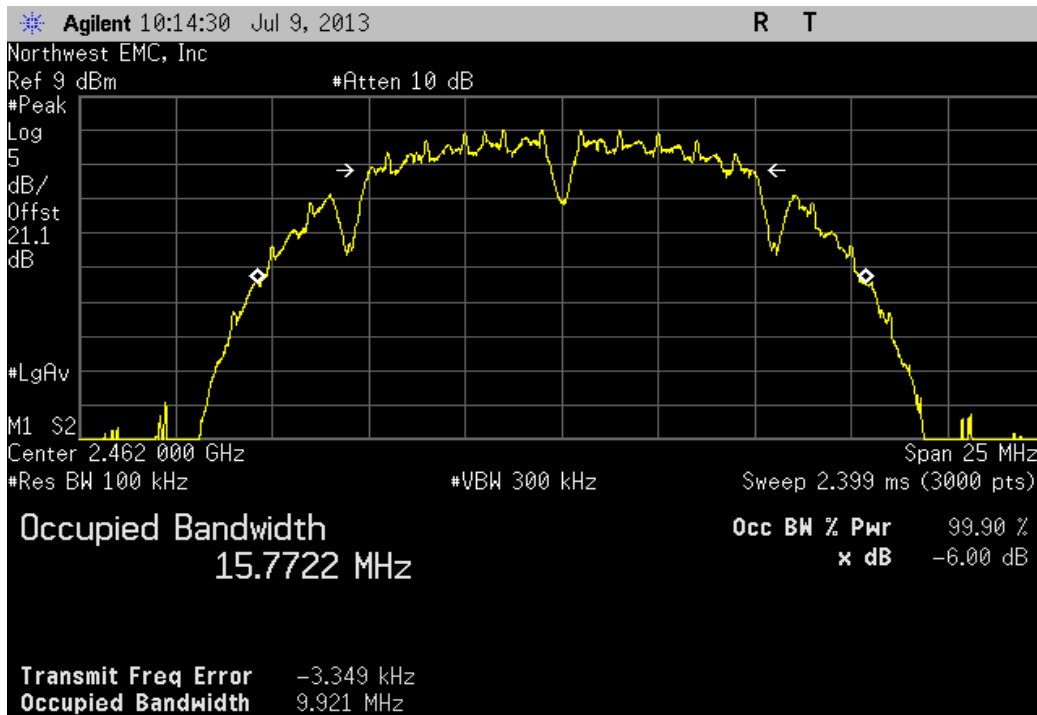
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz

Value	Limit	Result
9.985 MHz	> 500 kHz	Pass



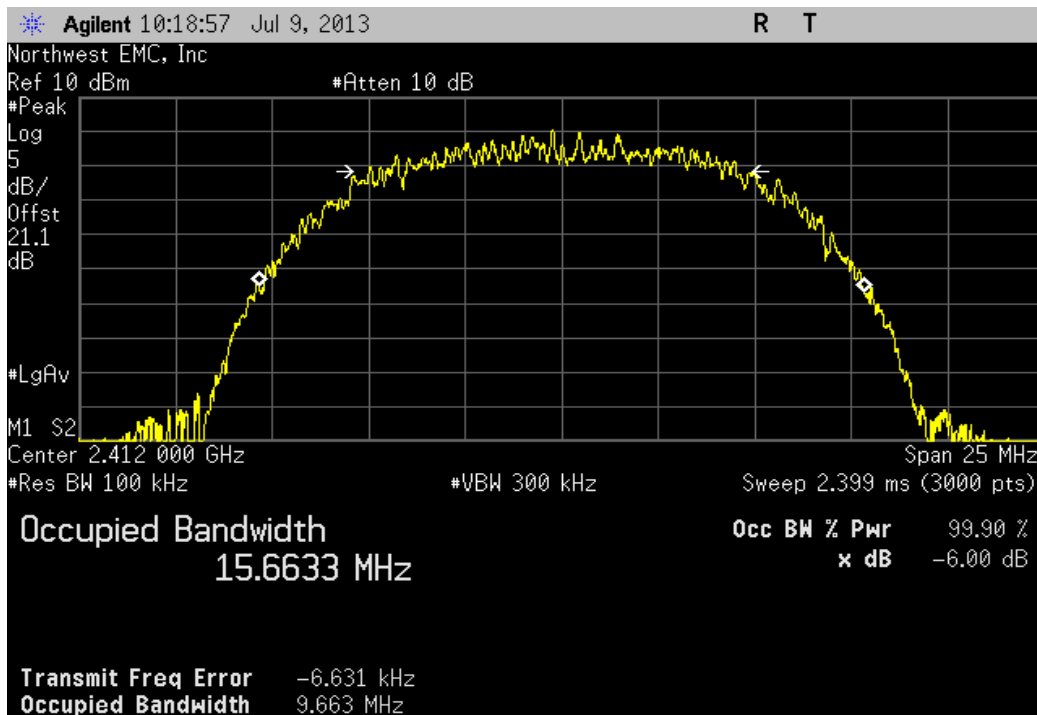
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz

Value	Limit	Result
9.921 MHz	> 500 kHz	Pass



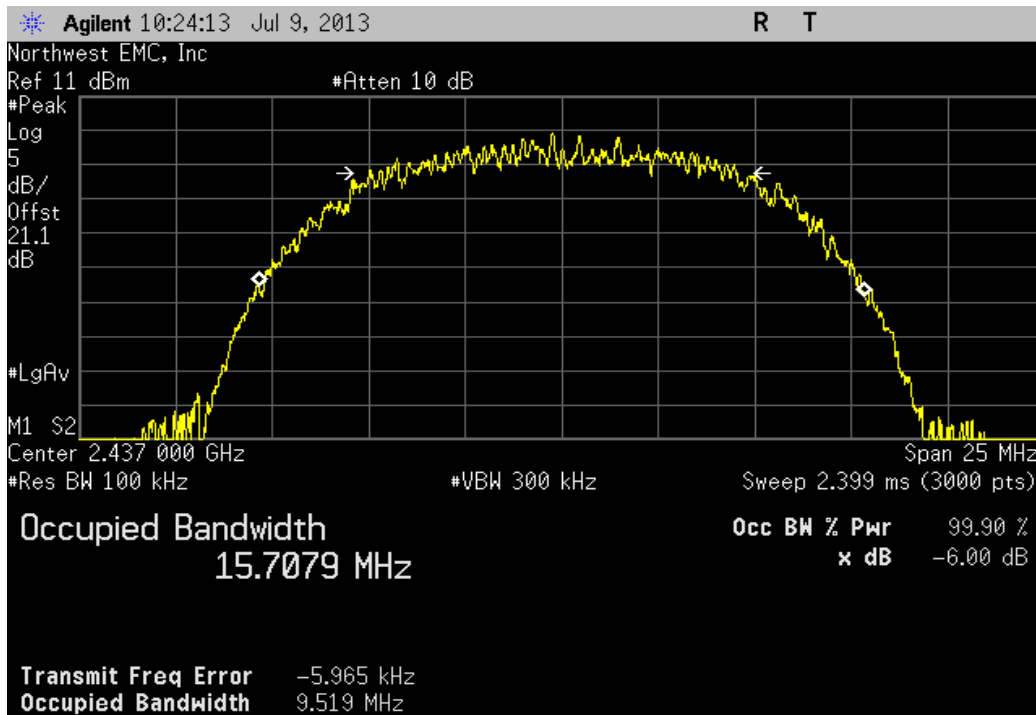
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz

Value	Limit	Result
9.663 MHz	> 500 kHz	Pass



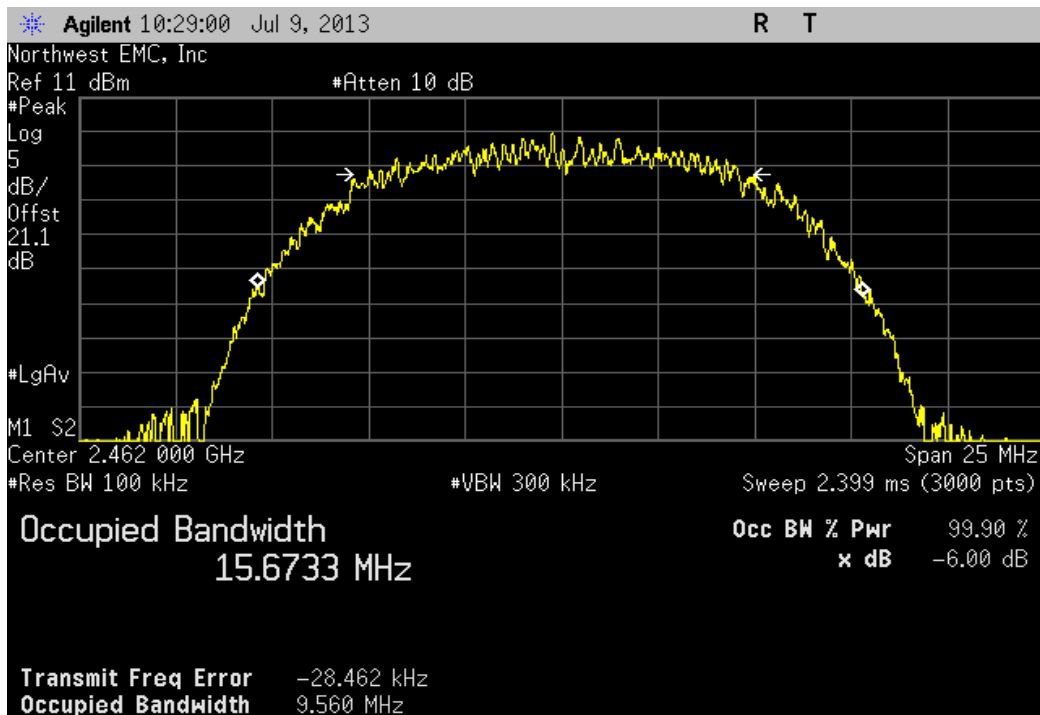
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Mid Channel 6, 2437 MHz

Value	Limit	Result
9.519 MHz	> 500 kHz	Pass



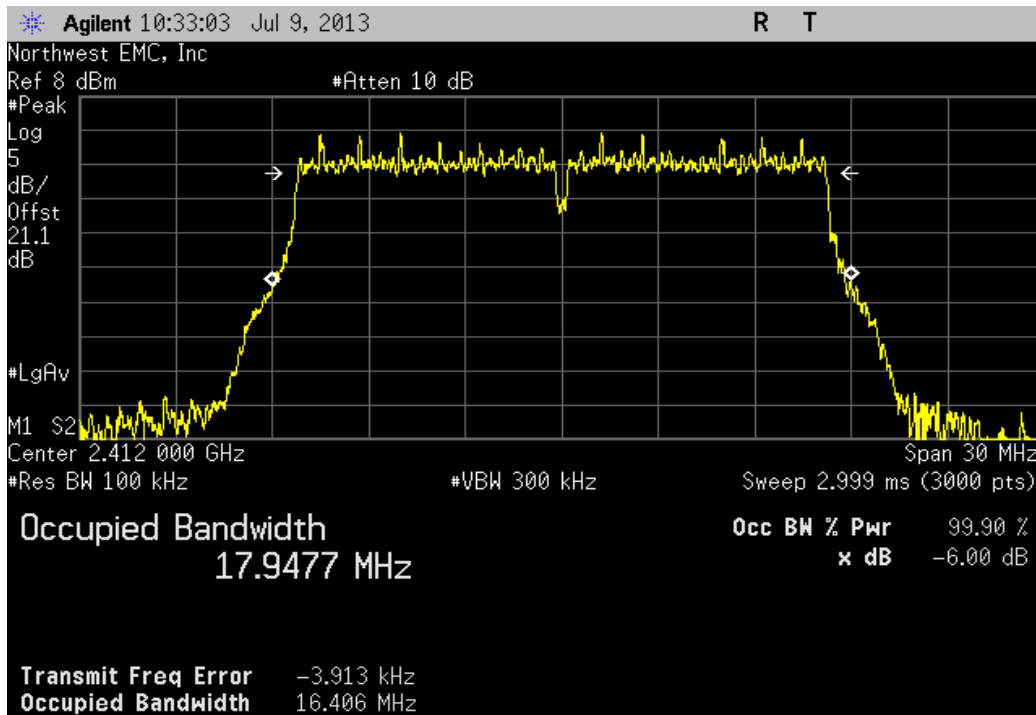
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz

Value	Limit	Result
9.56 MHz	> 500 kHz	Pass



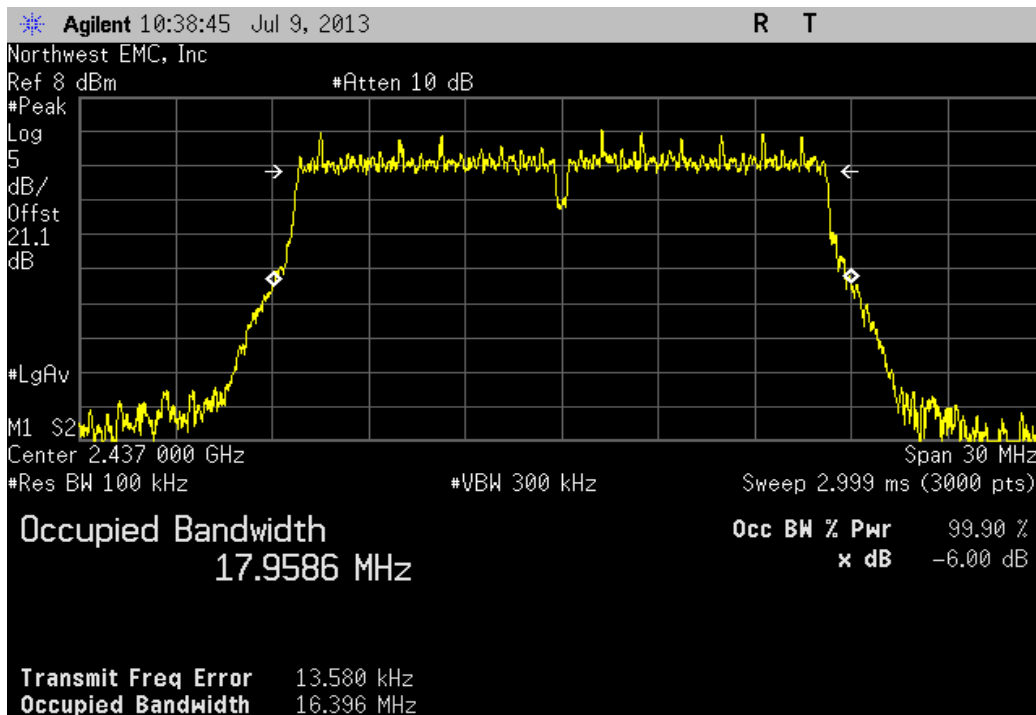
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz

Value	Limit	Result
16.406 MHz	> 500 kHz	Pass



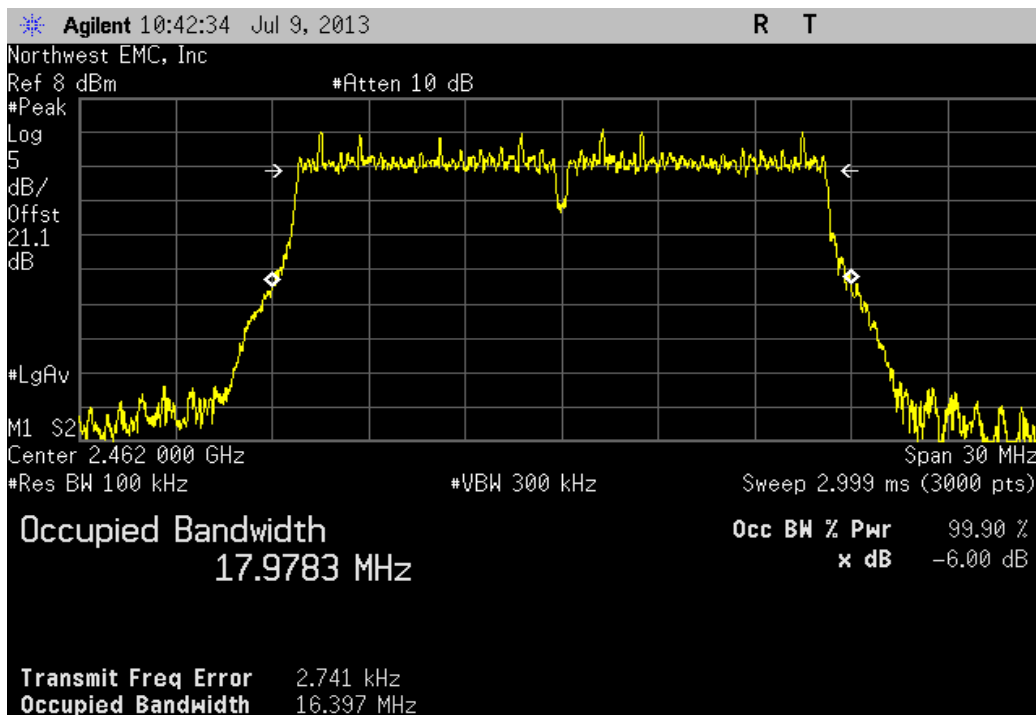
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz

Value	Limit	Result
16.396 MHz	> 500 kHz	Pass



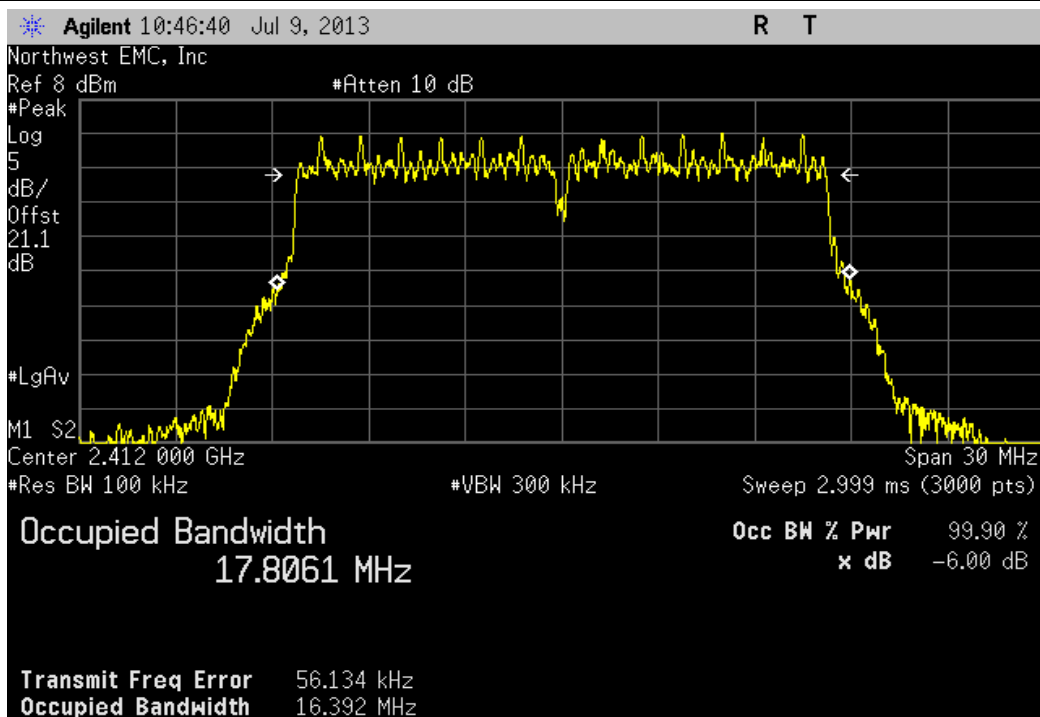
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz

Value	Limit	Result
16.397 MHz	> 500 kHz	Pass



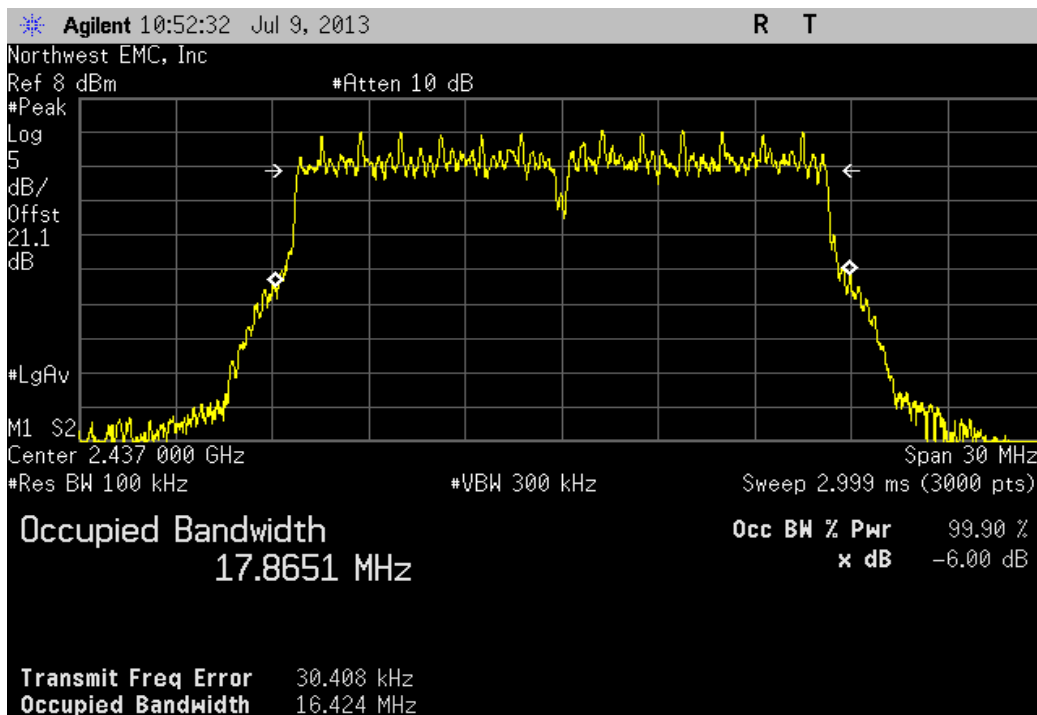
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz

Value	Limit	Result
16.392 MHz	> 500 kHz	Pass



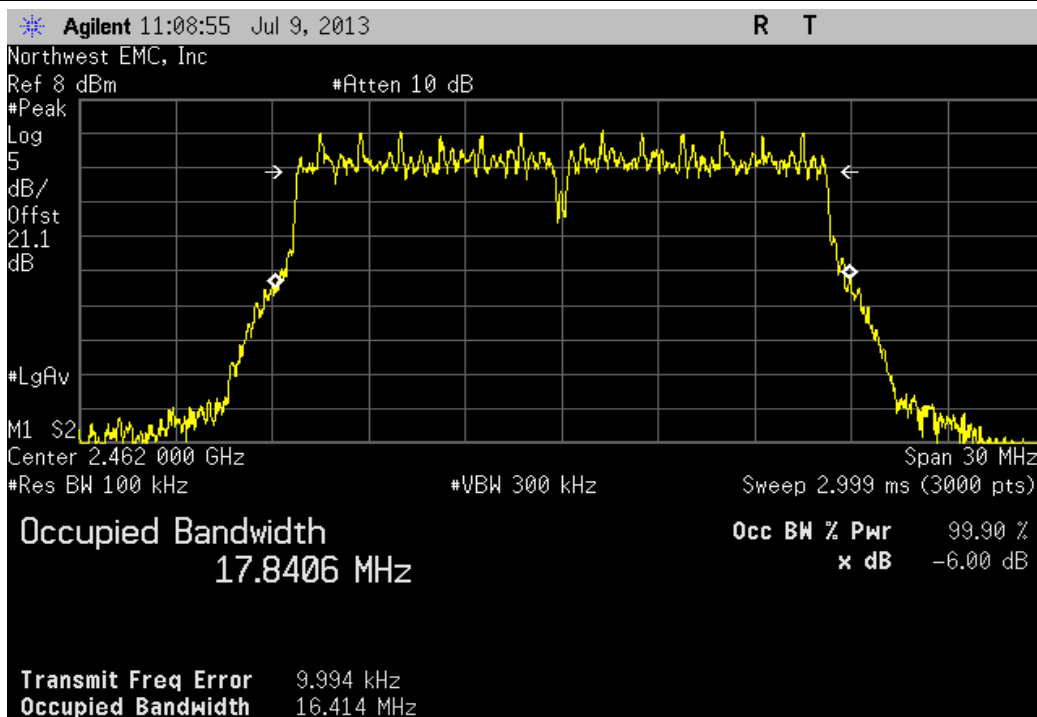
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Mid Channel 6, 2437 MHz

Value	Limit	Result
16.424 MHz	> 500 kHz	Pass



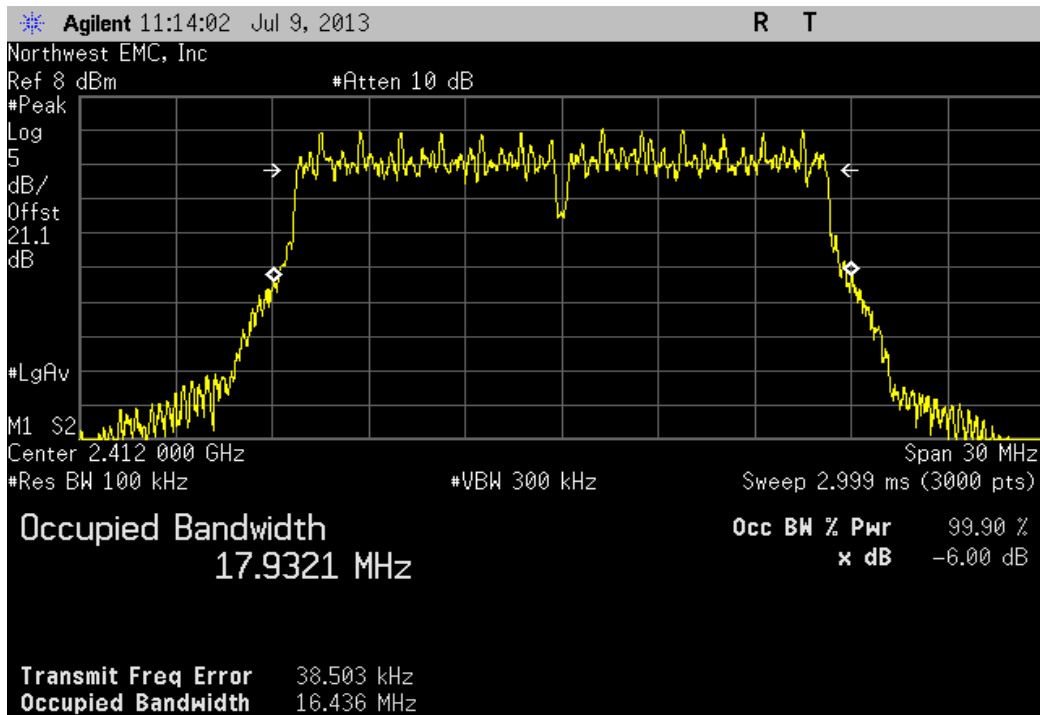
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz

Value	Limit	Result
16.414 MHz	> 500 kHz	Pass



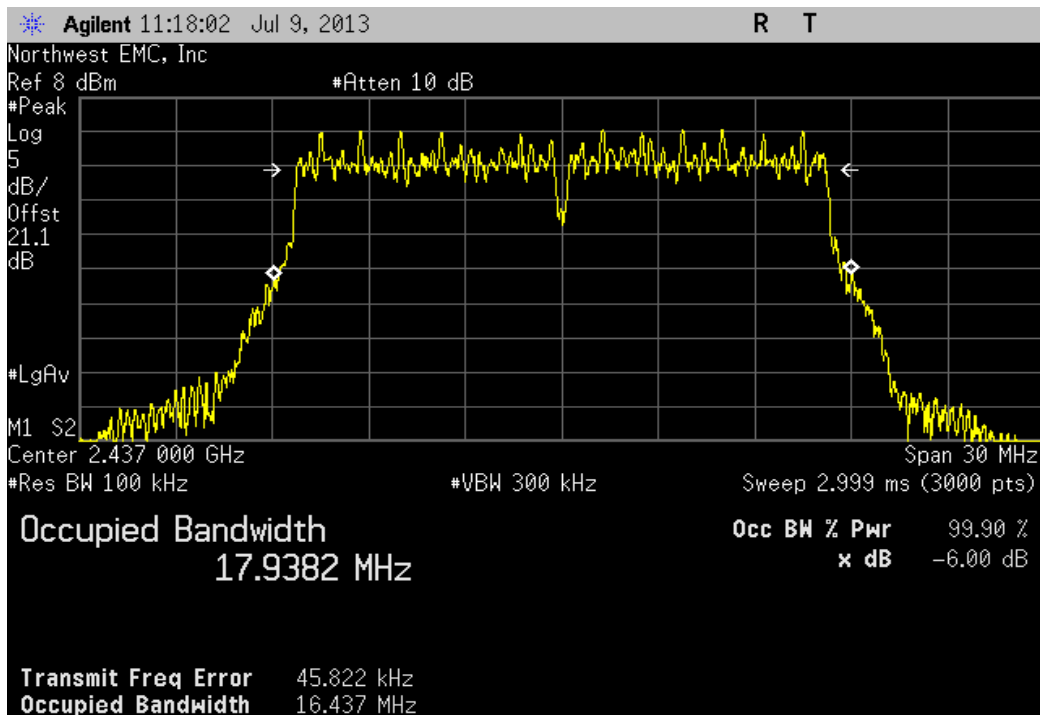
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz

Value	Limit	Result
16.436 MHz	> 500 kHz	Pass



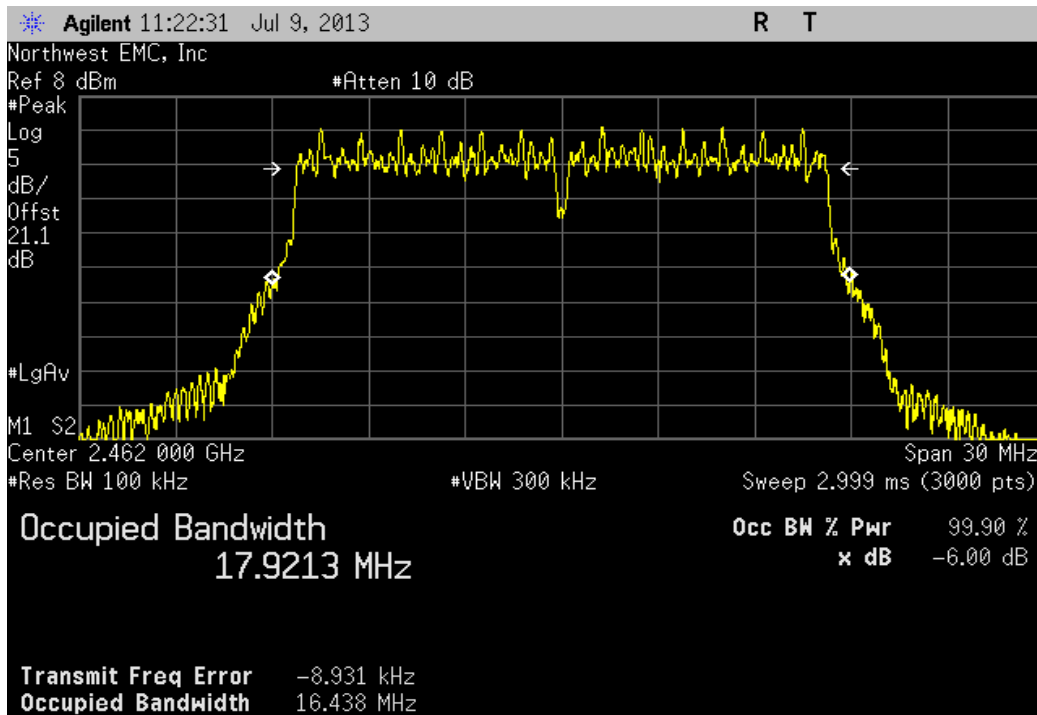
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz

Value	Limit	Result
16.437 MHz	> 500 kHz	Pass



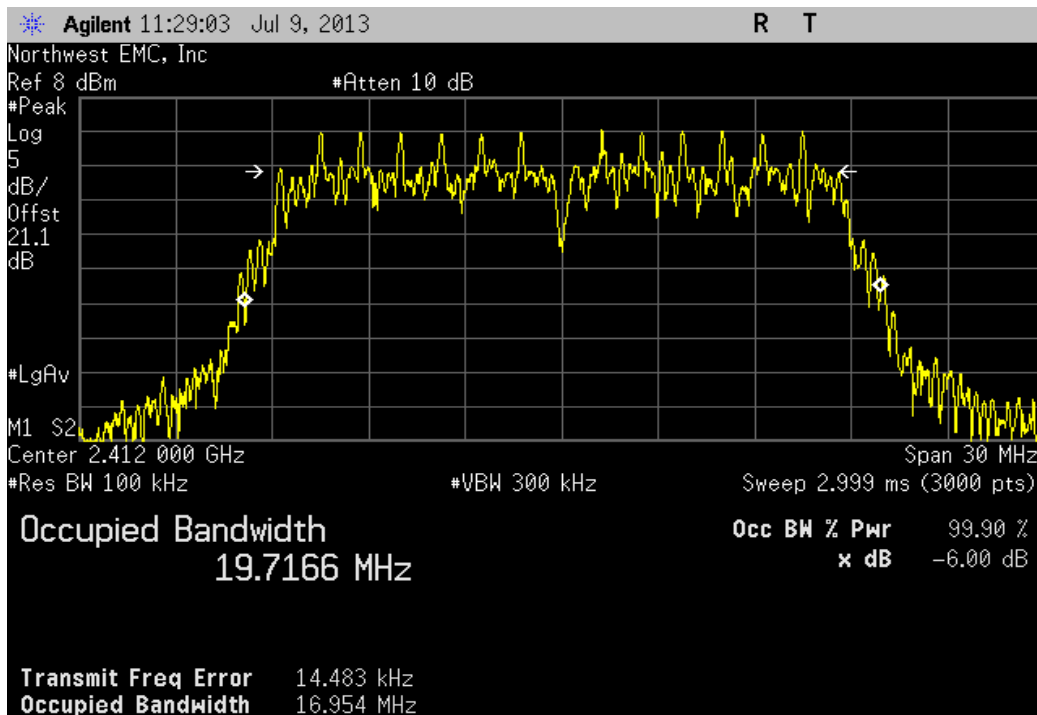
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz

Value	Limit	Result
16.438 MHz	> 500 kHz	Pass



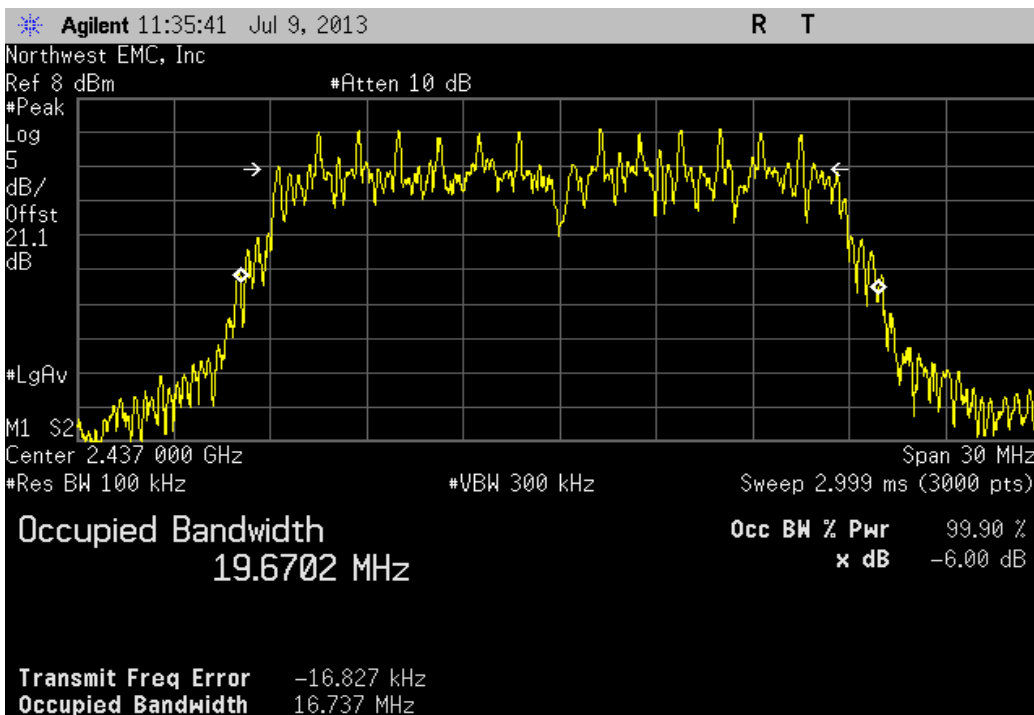
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1, 2412 MHz

Value	Limit	Result
16.954 MHz	> 500 kHz	Pass



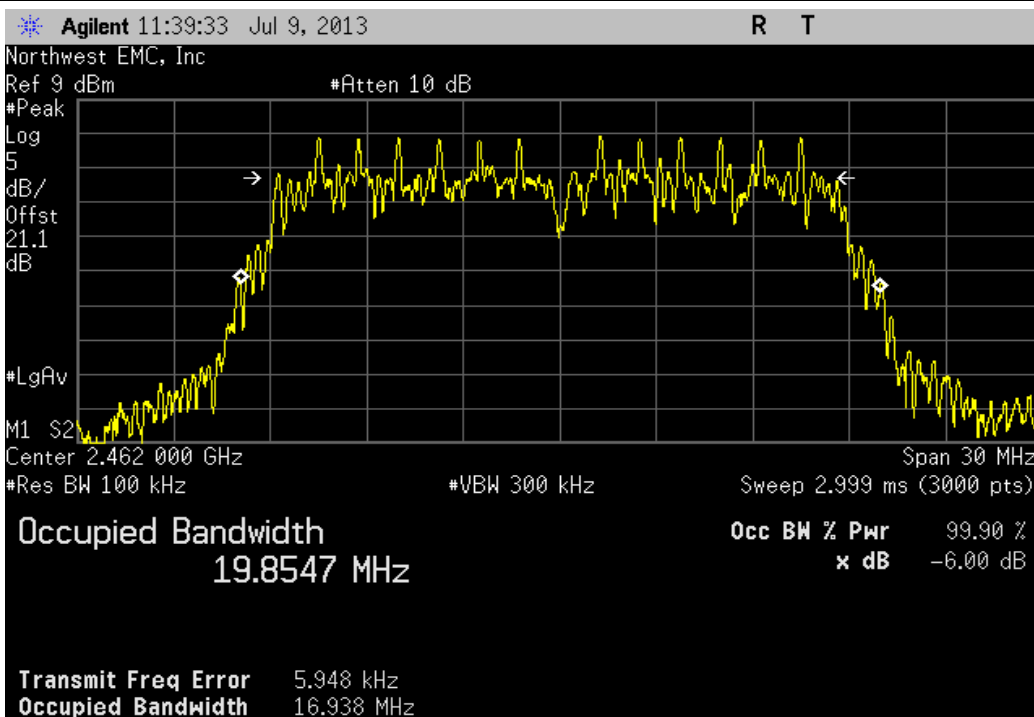
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Mid Channel 6, 2437 MHz

Value	Limit	Result
16.737 MHz	> 500 kHz	Pass



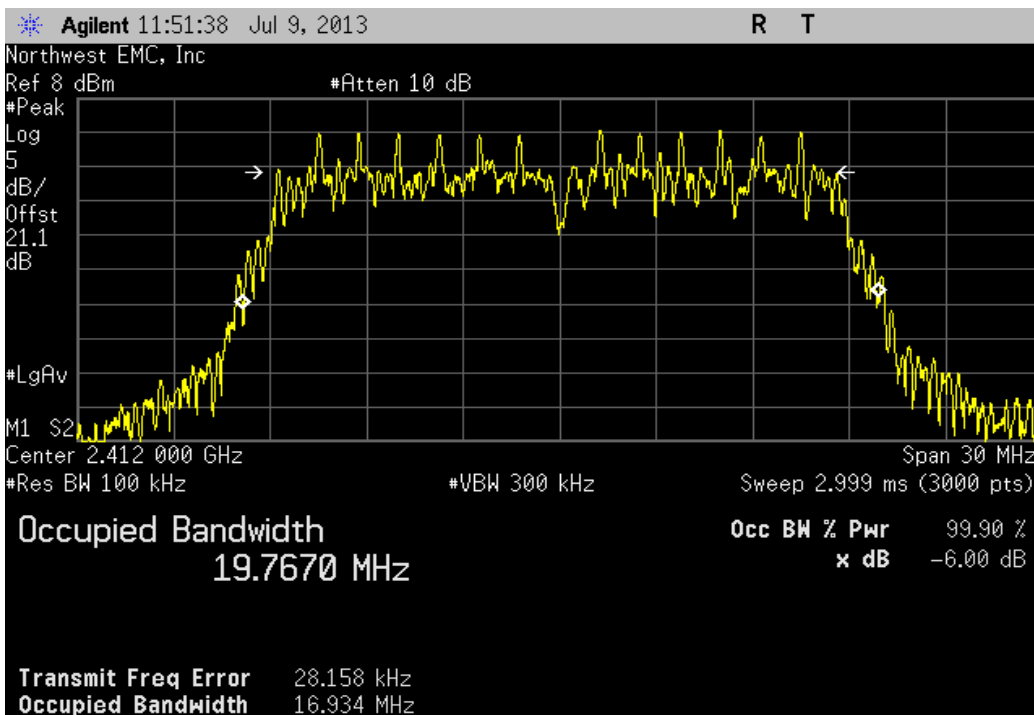
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 11, 2462 MHz

Value	Limit	Result
16.938 MHz	> 500 kHz	Pass



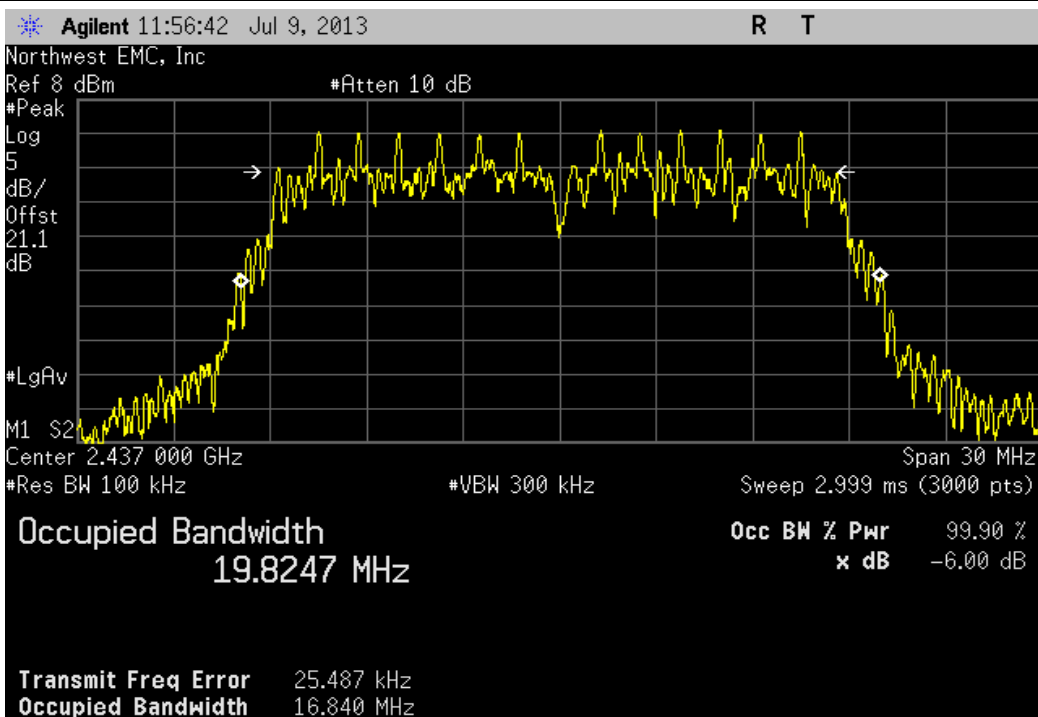
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1, 2412 MHz

Value	Limit	Result
16.934 MHz	> 500 kHz	Pass



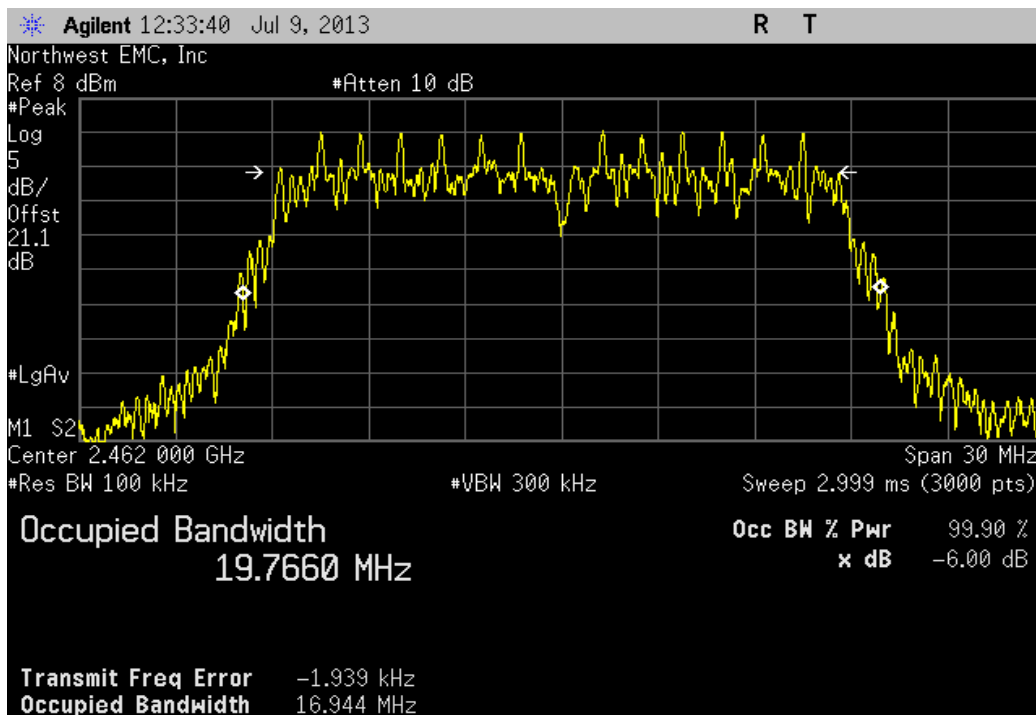
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Mid Channel 6, 2437 MHz

Value	Limit	Result
16.84 MHz	> 500 kHz	Pass



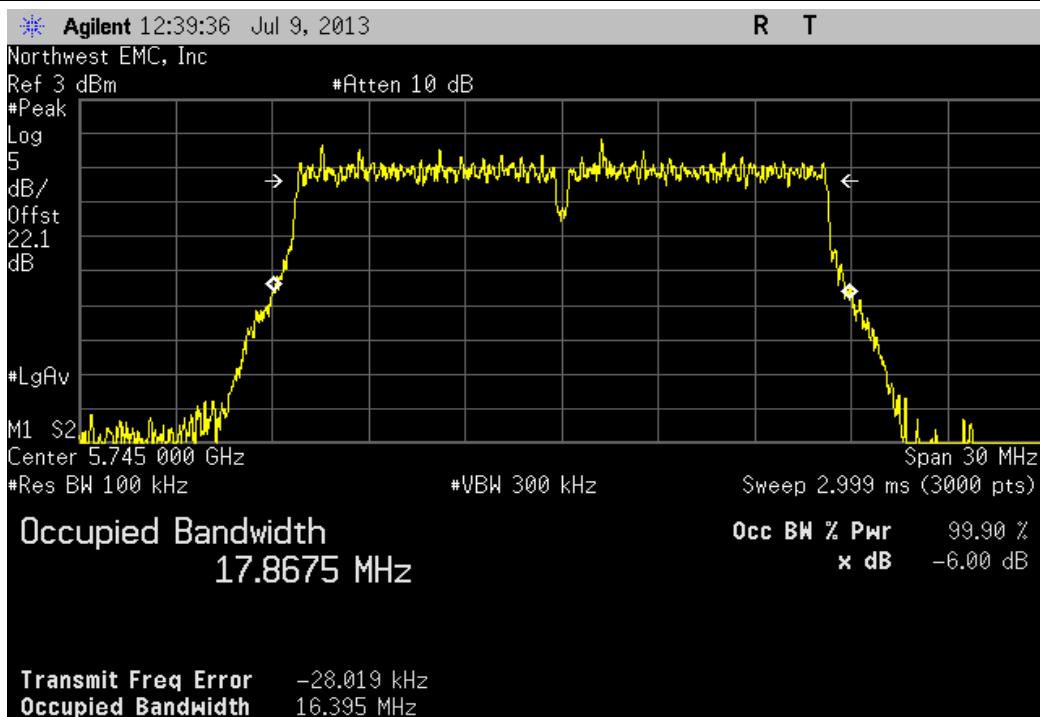
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, High Channel 11, 2462 MHz

Value	Limit	Result
16.944 MHz	> 500 kHz	Pass



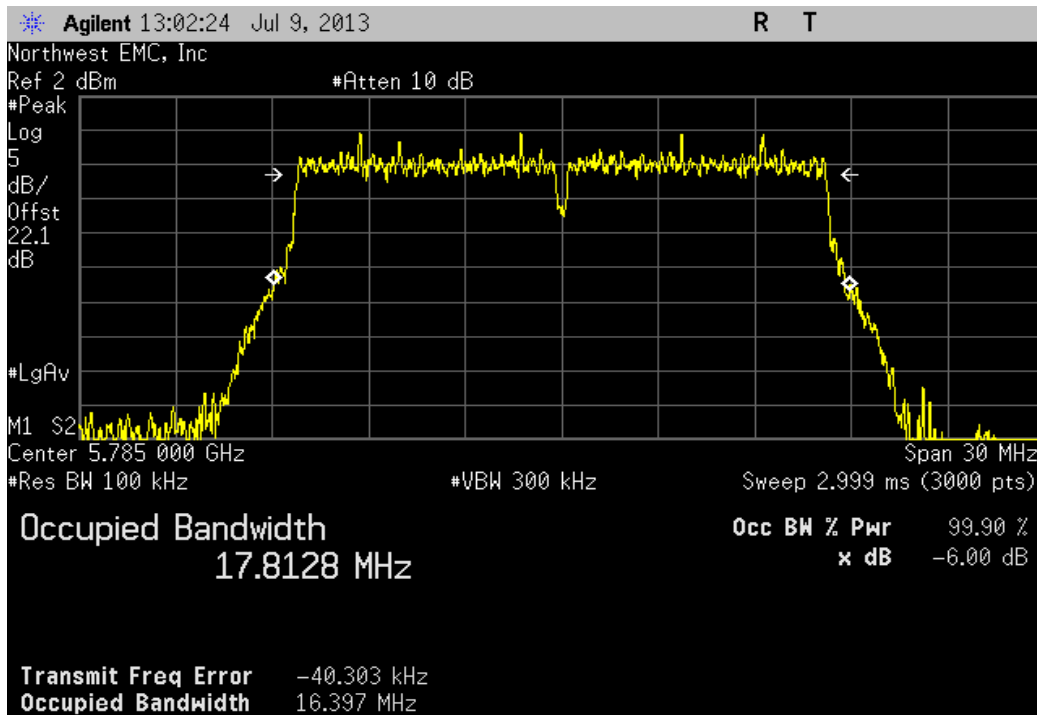
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Low Channel 149, 5745 MHz

Value	Limit	Result
16.395 MHz	> 500 kHz	Pass



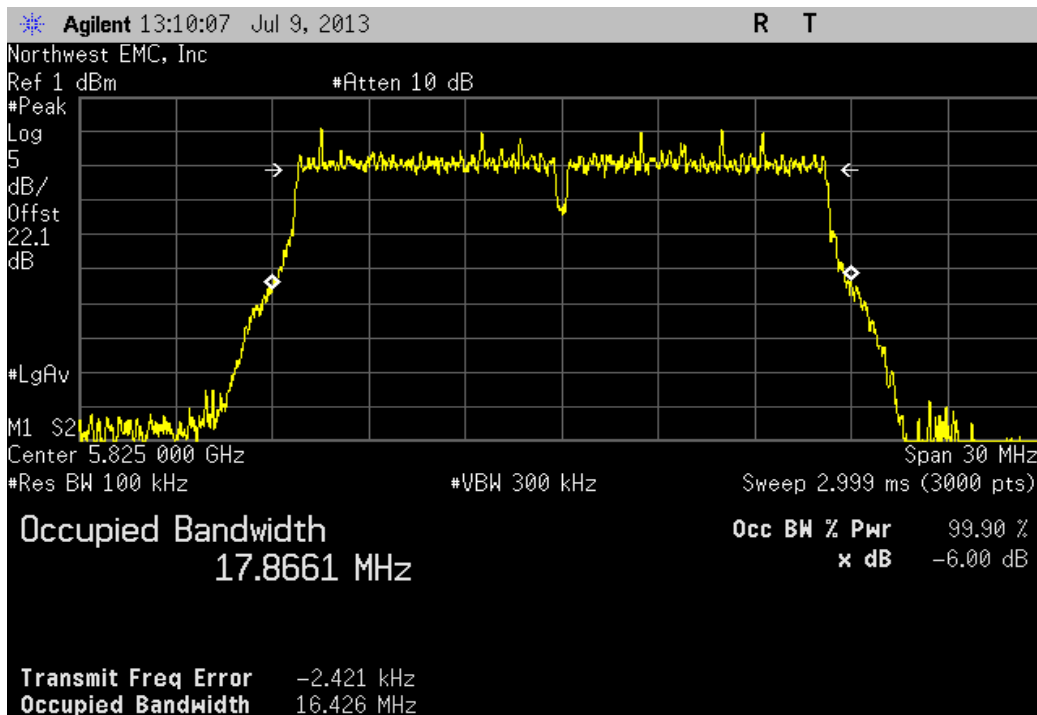
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Mid Channel 157, 5785 MHz

Value	Limit	Result
16.397 MHz	> 500 kHz	Pass



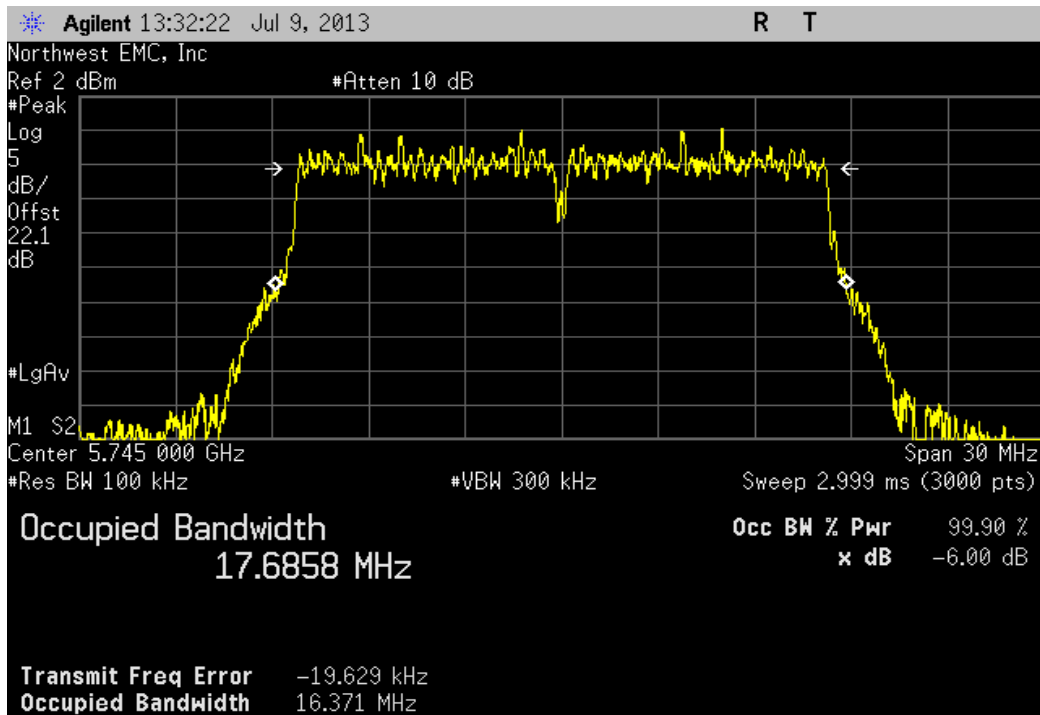
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, High Channel 165, 5825 MHz

Value	Limit	Result
16.426 MHz	> 500 kHz	Pass



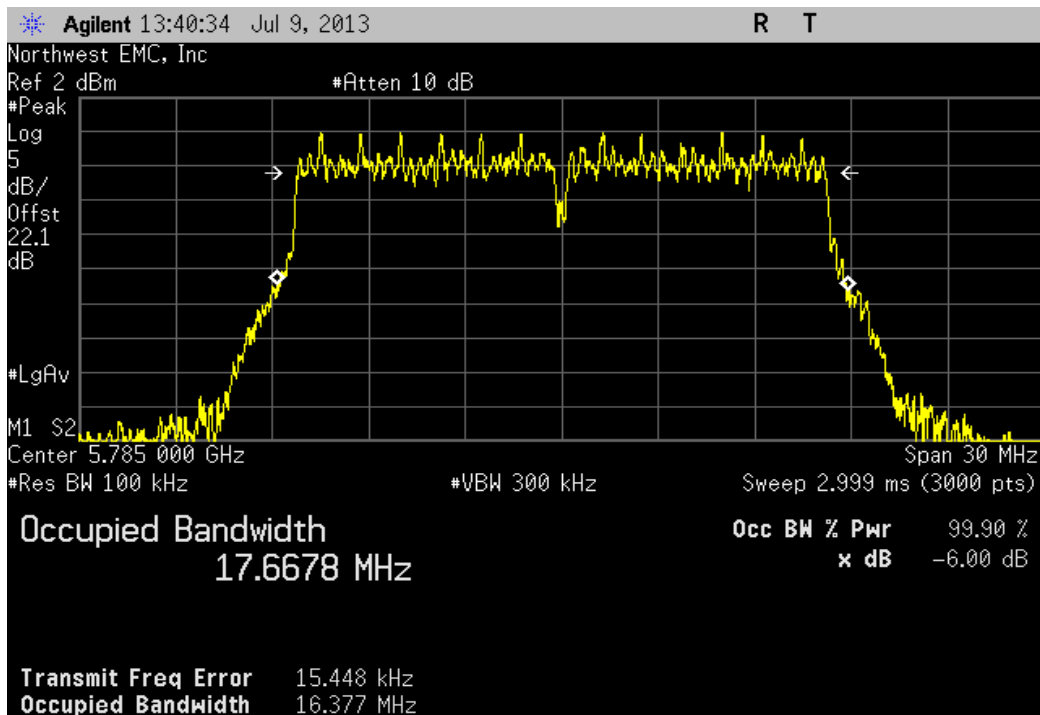
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Low Channel 149, 5745 MHz

Value	Limit	Result
16.371 MHz	> 500 kHz	Pass



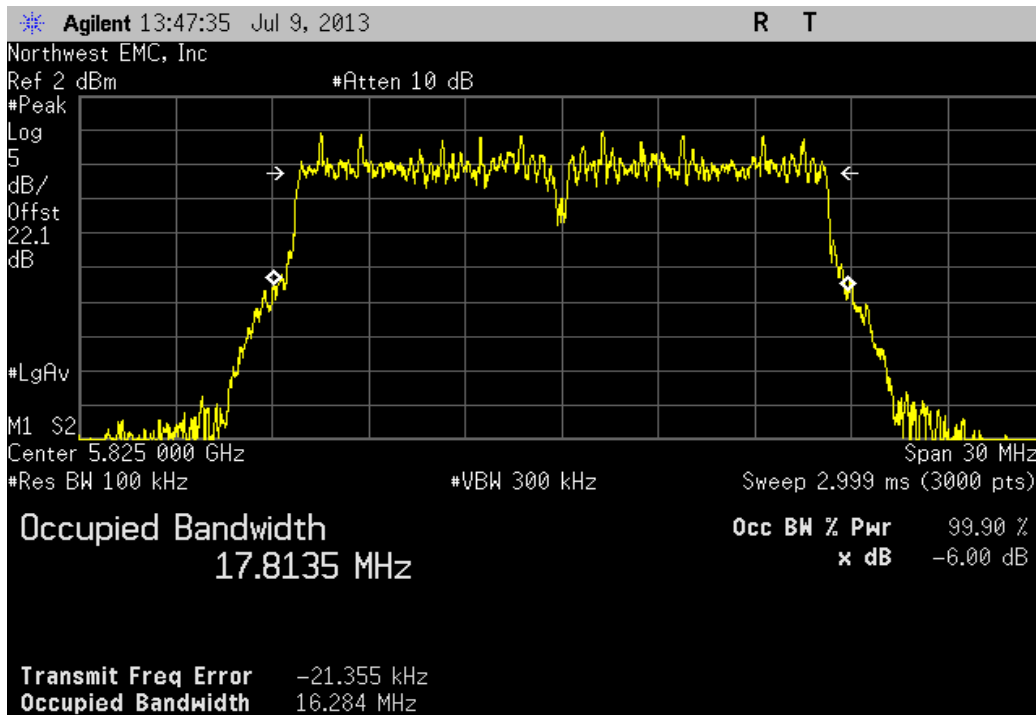
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Mid Channel 157, 5785 MHz

Value	Limit	Result
16.377 MHz	> 500 kHz	Pass



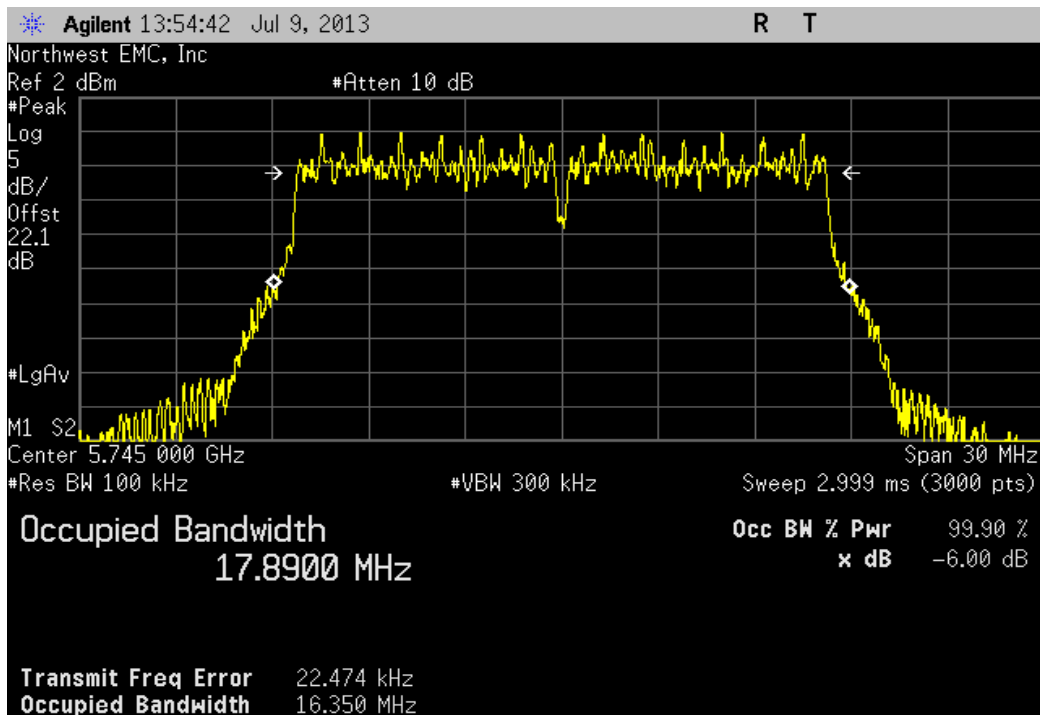
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, High Channel 165, 5825 MHz

Value	Limit	Result
16.284 MHz	> 500 kHz	Pass



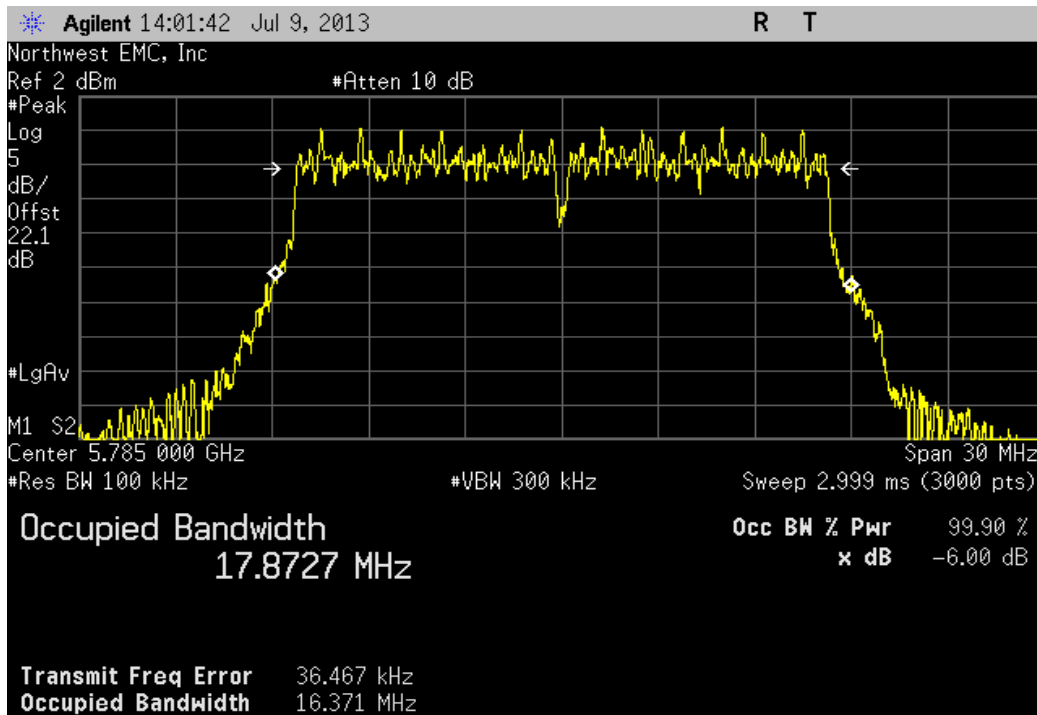
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 54 Mbps, Low Channel 149, 5745 MHz

Value	Limit	Result
16.35 MHz	> 500 kHz	Pass



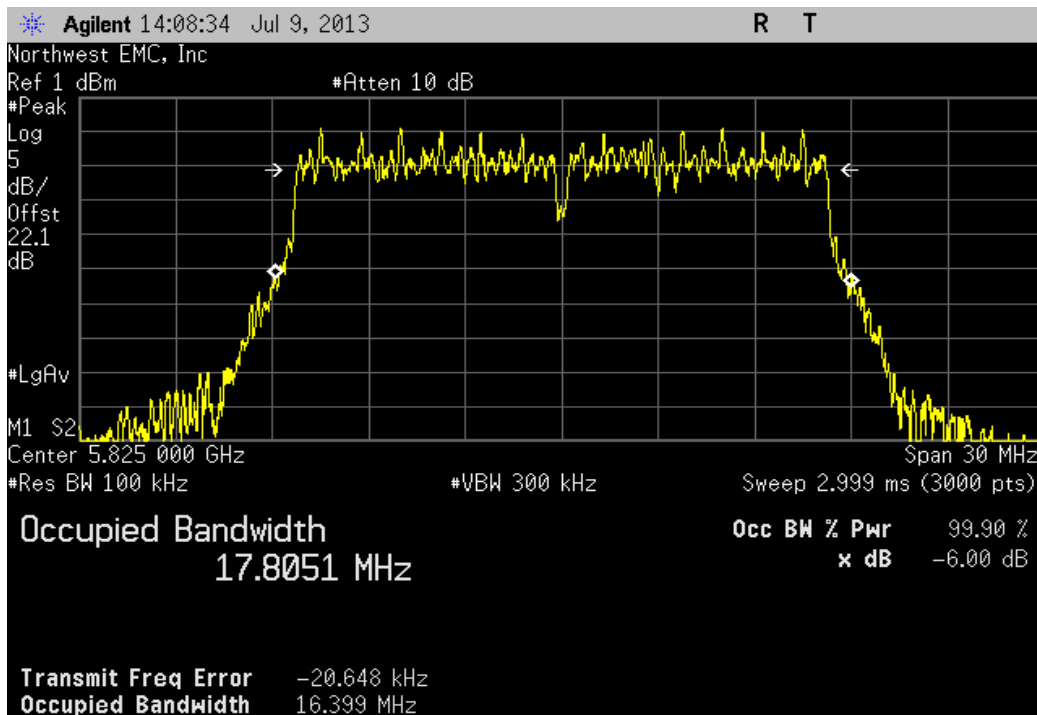
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 54 Mbps, Mid Channel 157, 5785 MHz

Value	Limit	Result
16.371 MHz	> 500 kHz	Pass



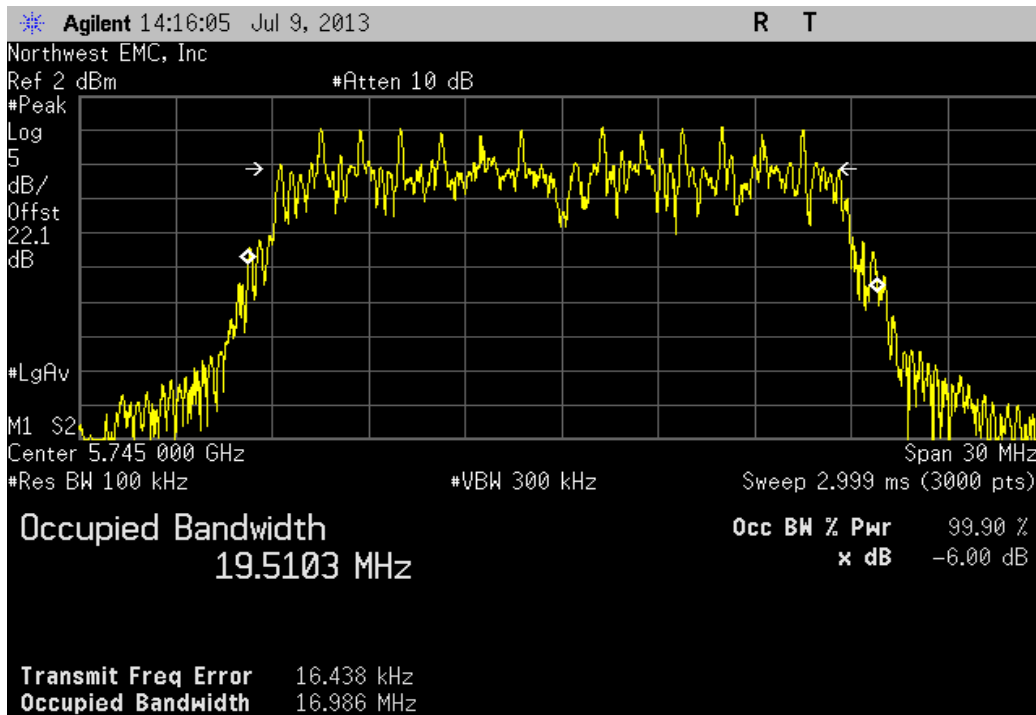
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 54 Mbps, High Channel 165, 5825 MHz

Value	Limit	Result
16.399 MHz	> 500 kHz	Pass



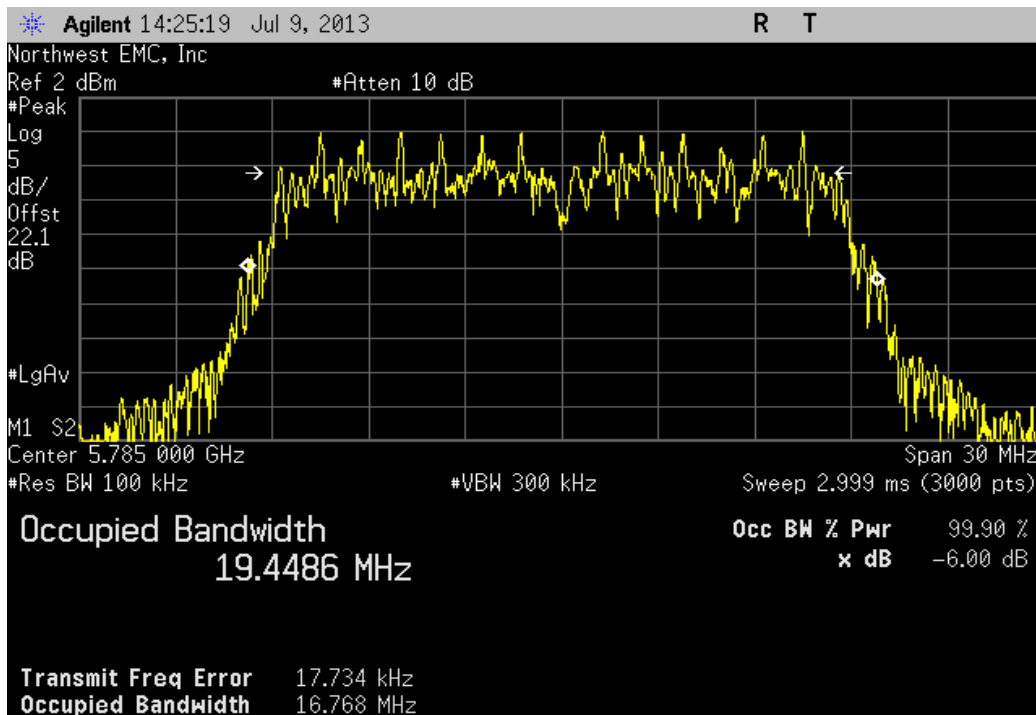
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, Low Channel 149, 5745 MHz

Value	Limit	Result
16.986 MHz	> 500 kHz	Pass



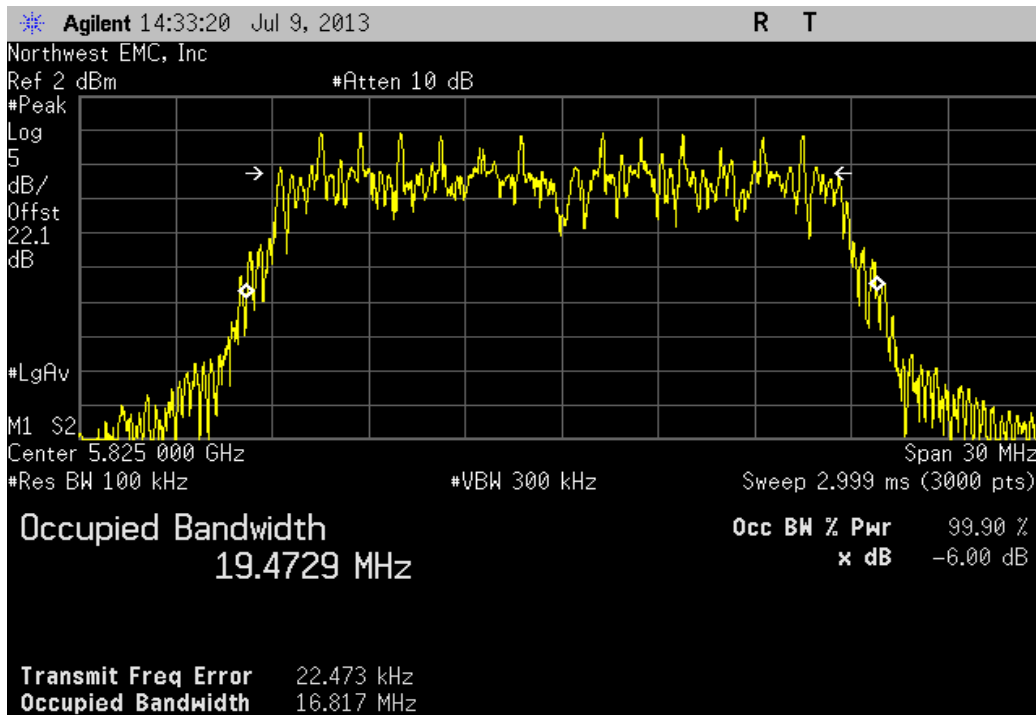
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, Mid Channel 157, 5785 MHz

Value	Limit	Result
16.768 MHz	> 500 kHz	Pass



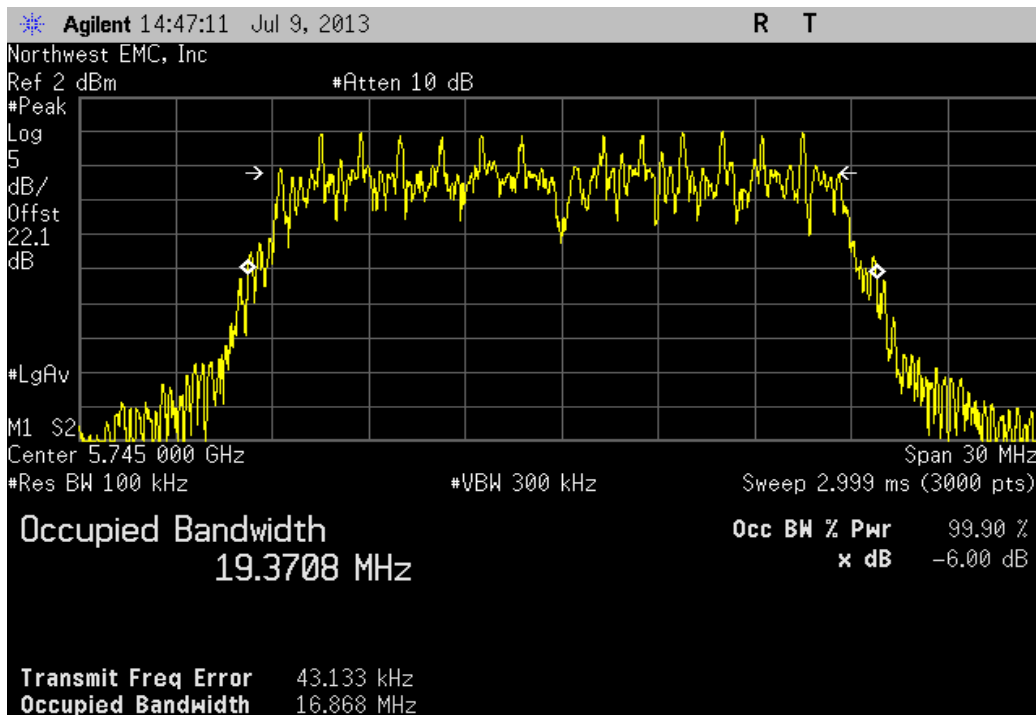
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, High Channel 165, 5825 MHz

Value	Limit	Result
16.817 MHz	> 500 kHz	Pass



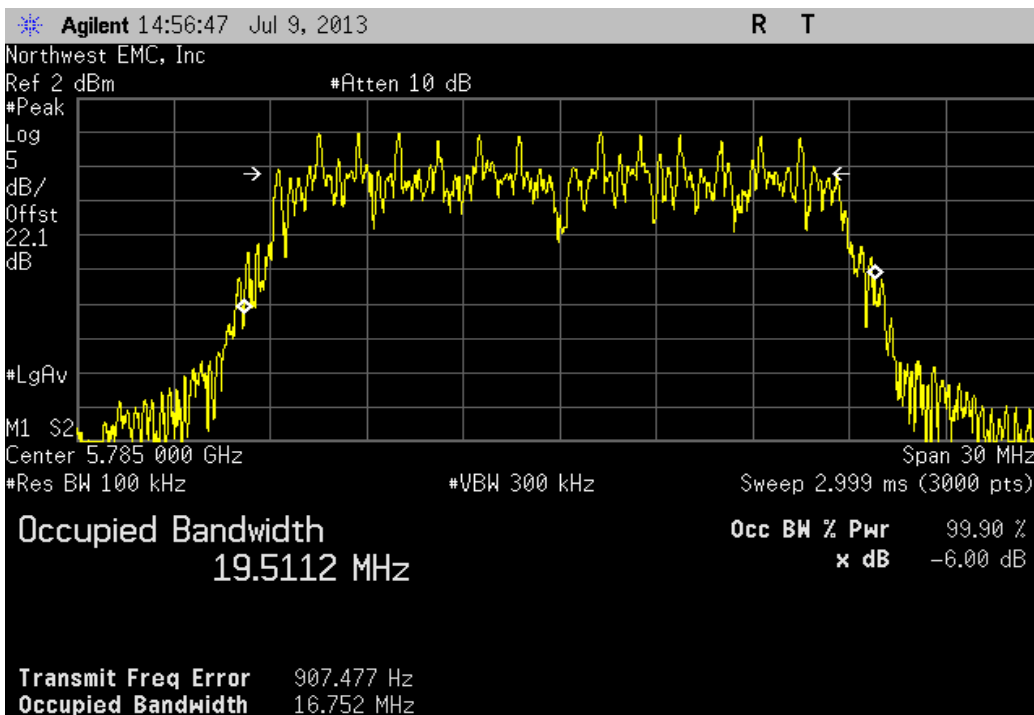
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, Low Channel 149, 5745 MHz

Value	Limit	Result
16.868 MHz	> 500 kHz	Pass



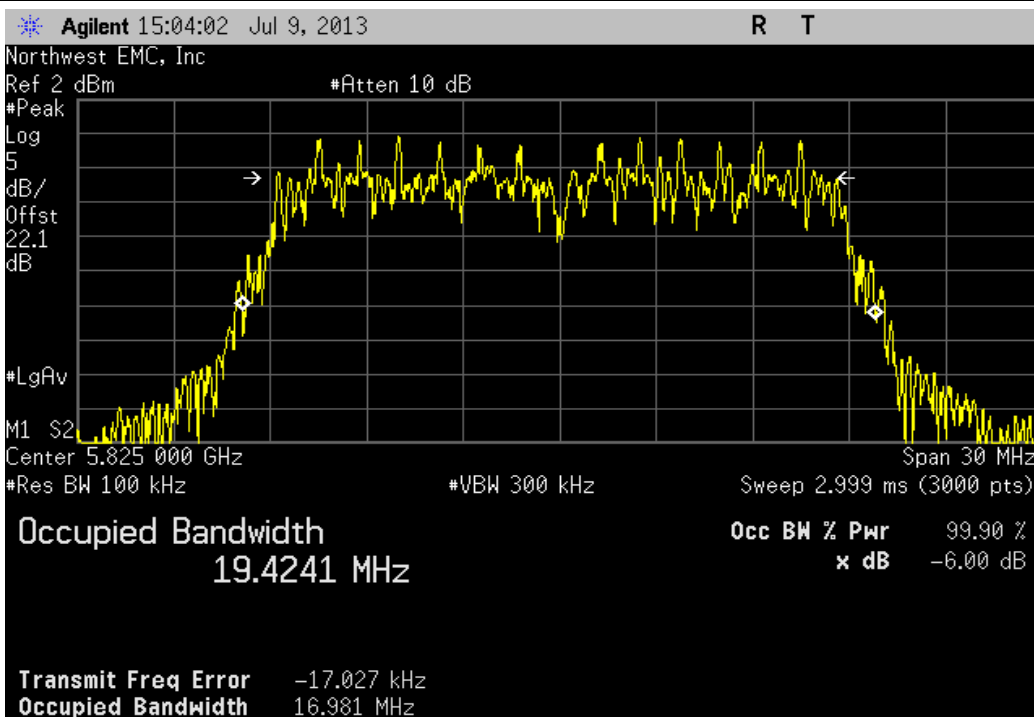
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, Mid Channel 157, 5785 MHz

Value	Limit	Result
16.752 MHz	> 500 kHz	Pass



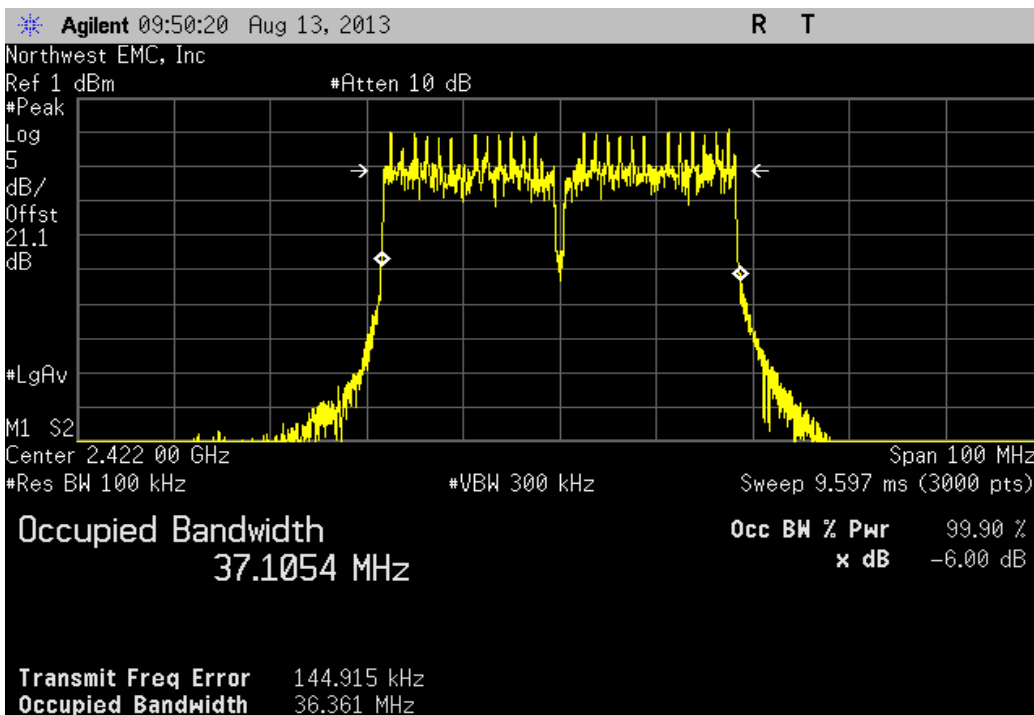
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, High Channel 165, 5825 MHz

Value	Limit	Result
16.981 MHz	> 500 kHz	Pass



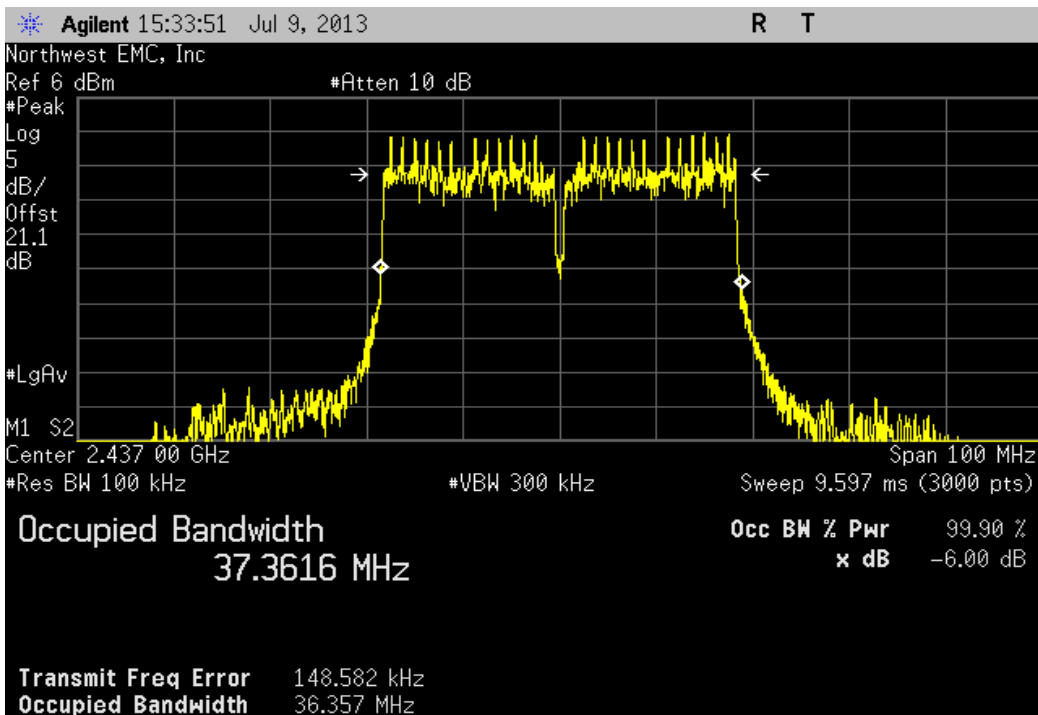
40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1/5, 2422 MHz

Value	Limit	Result
36.361 MHz	> 500 kHz	Pass



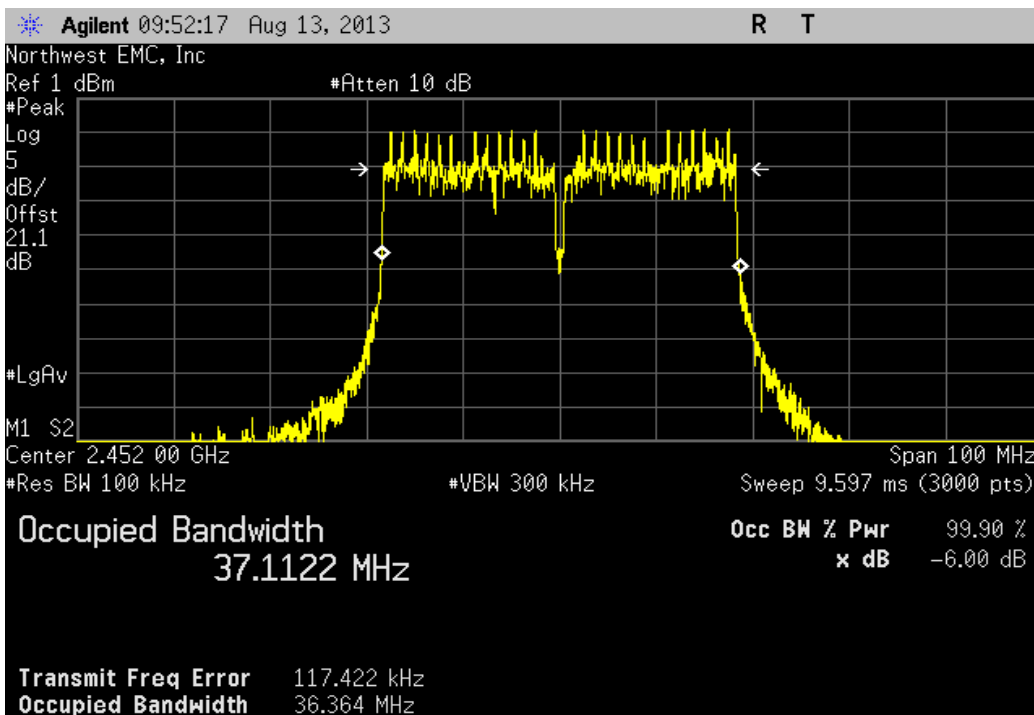
40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Mid Channel 4/8, 2437 MHz

Value	Limit	Result
36.357 MHz	> 500 kHz	Pass



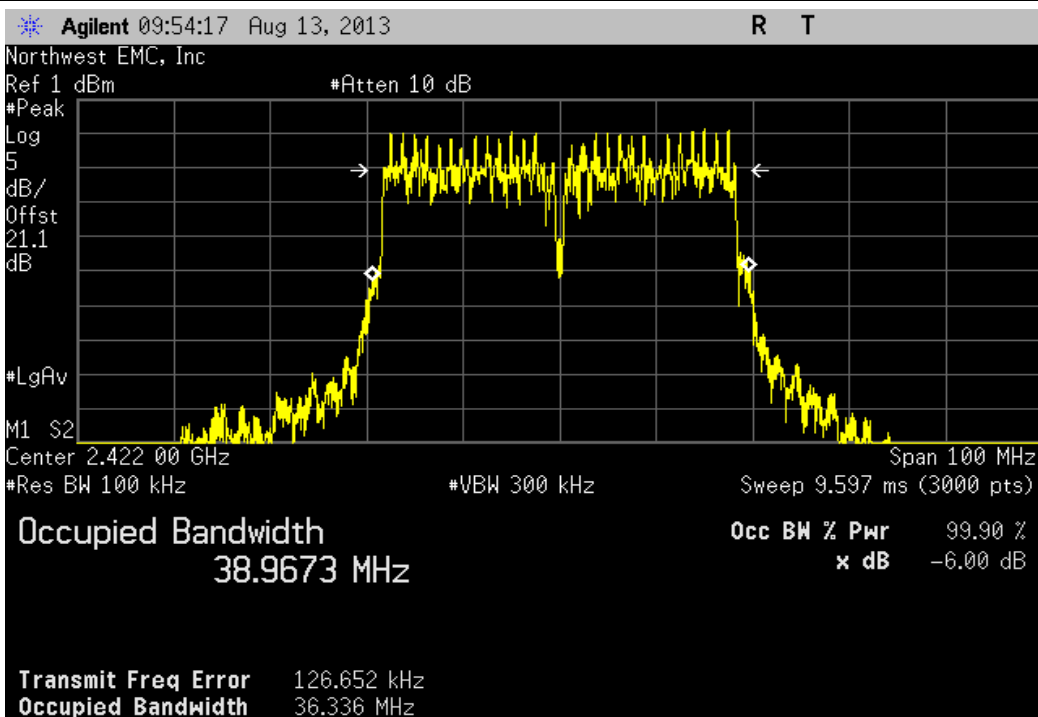
40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 7/11, 2452 MHz

Value	Limit	Result
36.364 MHz	> 500 kHz	Pass



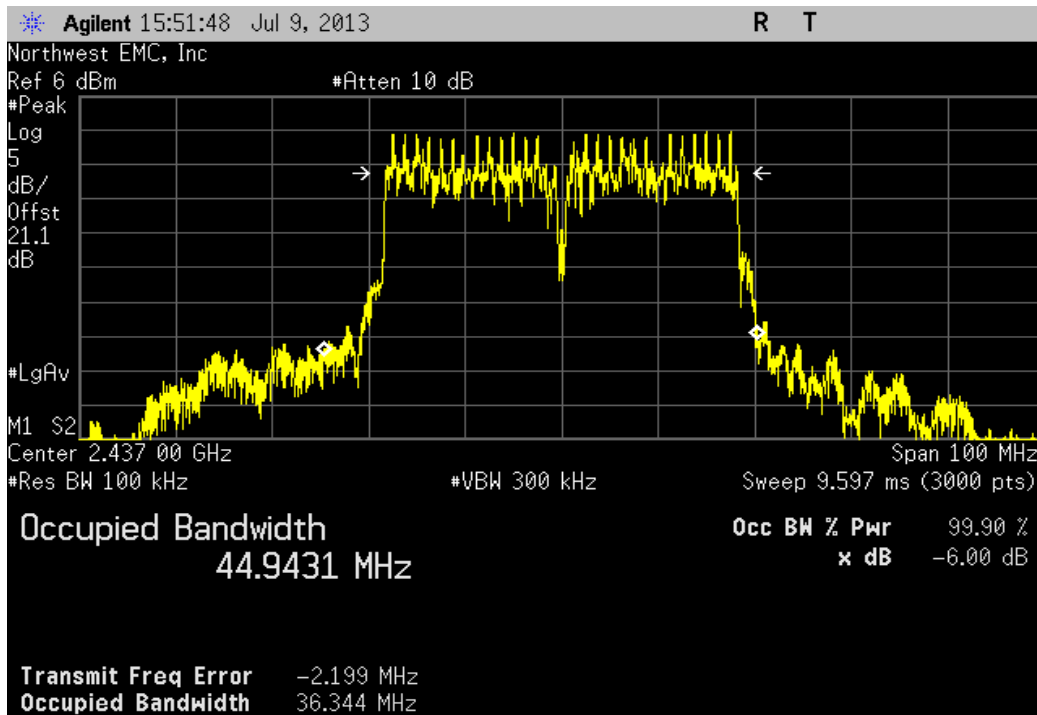
40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1/5, 2422 MHz

Value	Limit	Result
36.336 MHz	> 500 kHz	Pass



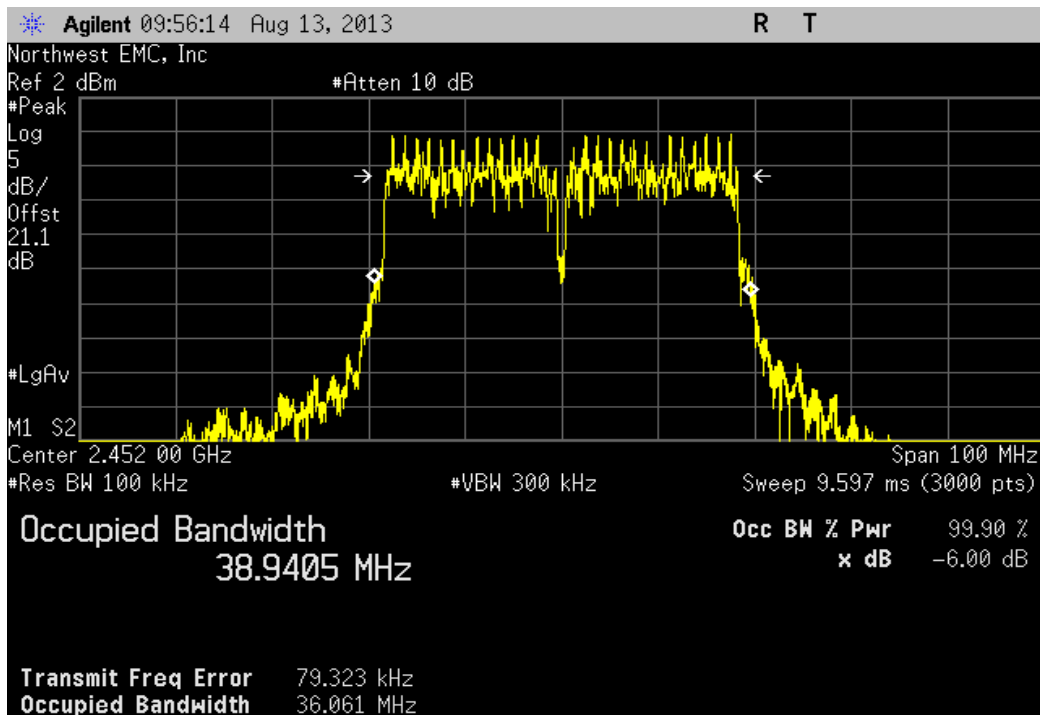
40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Mid Channel 4/8, 2437 MHz

Value	Limit	Result
36.344 MHz	> 500 kHz	Pass



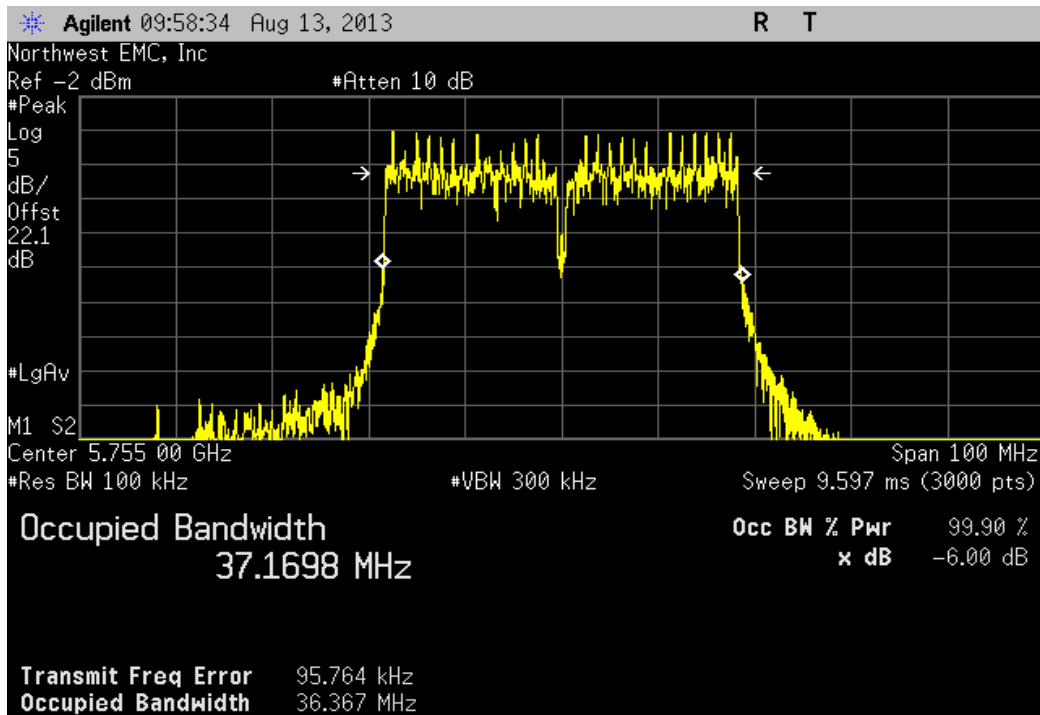
40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, High Channel 7/11, 2452 MHz

Value	Limit	Result
36.061 MHz	> 500 kHz	Pass



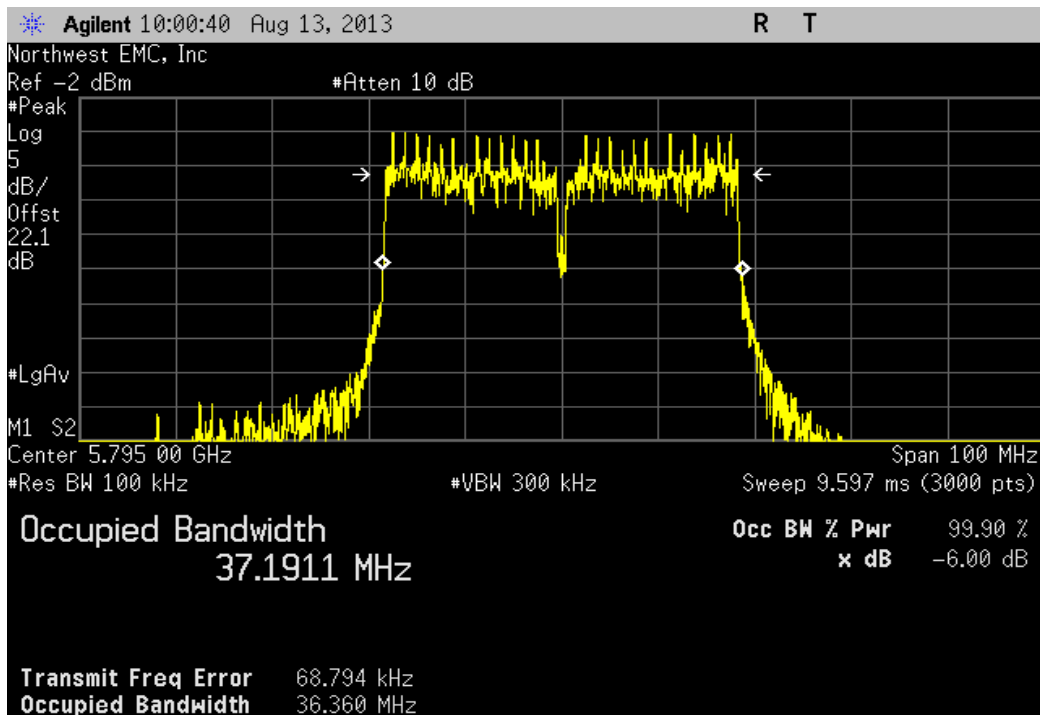
40 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, Low Channel 149/153, 5755 MHz

Value	Limit	Result
36.367 MHz	> 500 kHz	Pass



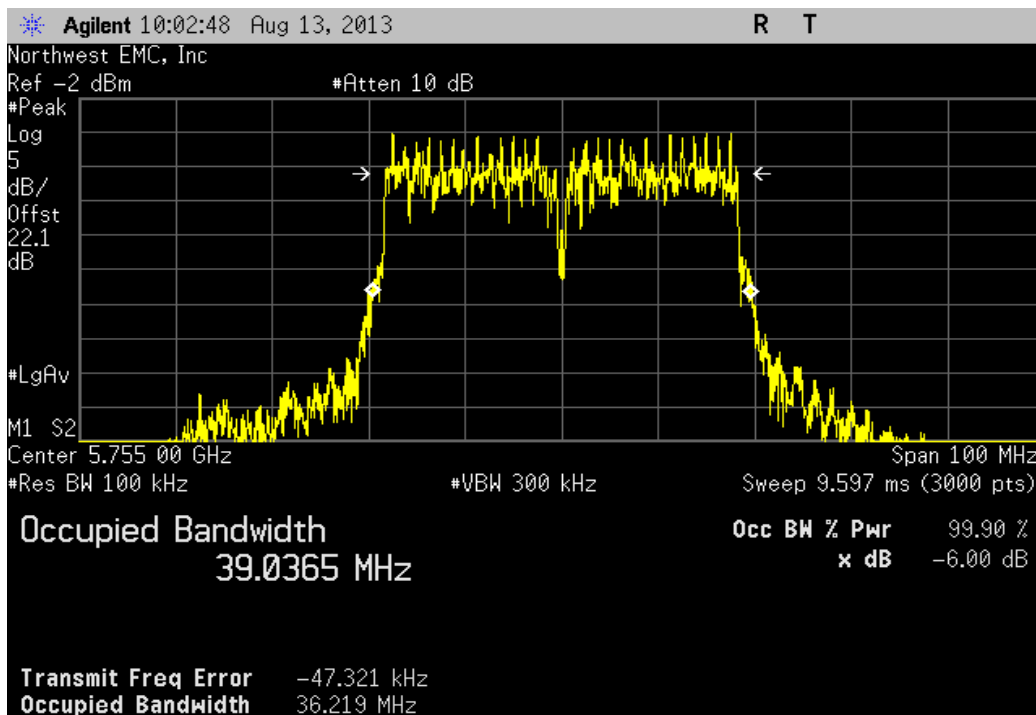
40 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, High Channel 157/161, 5795 MHz

Value	Limit	Result
36.36 MHz	> 500 kHz	Pass



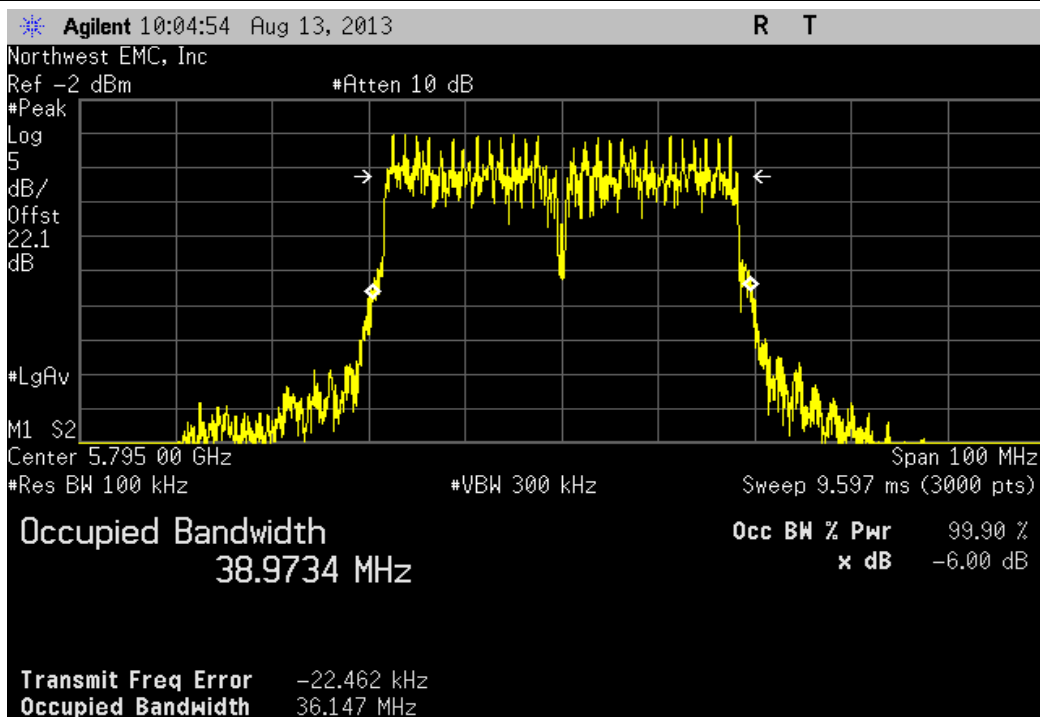
40 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, Low Channel 149/153, 5755 MHz

Value	Limit	Result
36.219 MHz	> 500 kHz	Pass



40 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, High Channel 157/161, 5795 MHz

Value	Limit	Result
36.147 MHz	> 500 kHz	Pass



Power Spectral Density - Antenna A-B

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Attenuator	Fairview Microwave	SA4014-20	TKE	2/12/2013	12
Signal Generator	Agilent	N5183A	TID	9/19/2011	36
Spectrum Analyzer	Agilent	E4446A	AAT	6/28/2012	24
NC02 Cable	ESM Cable Corp.	TTBJ-141 KMKM-72	NC5	7/3/2013	12

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 5.3.1, the spectrum analyzer was used as follows:

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

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

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

DC Block was used in-line for measurements made while under test. For channel output power levels, please refer to the accompanying power table included in this report.



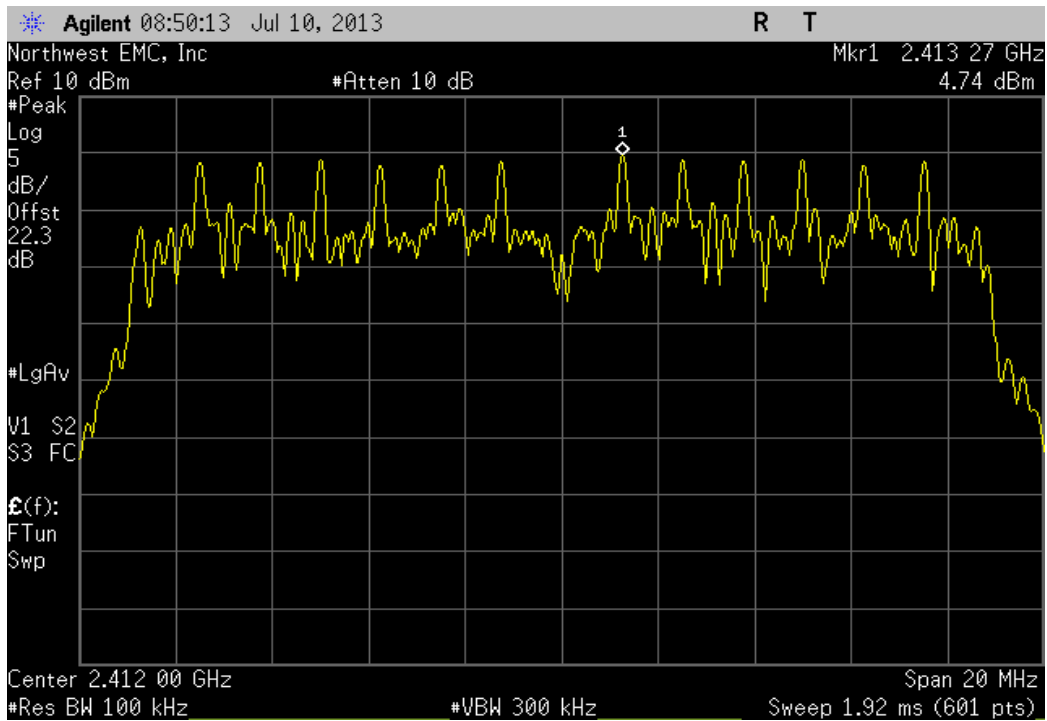
Power Spectral Density - Antenna A-B

XMit 2013.02.28
PsaTx 2013.06.07

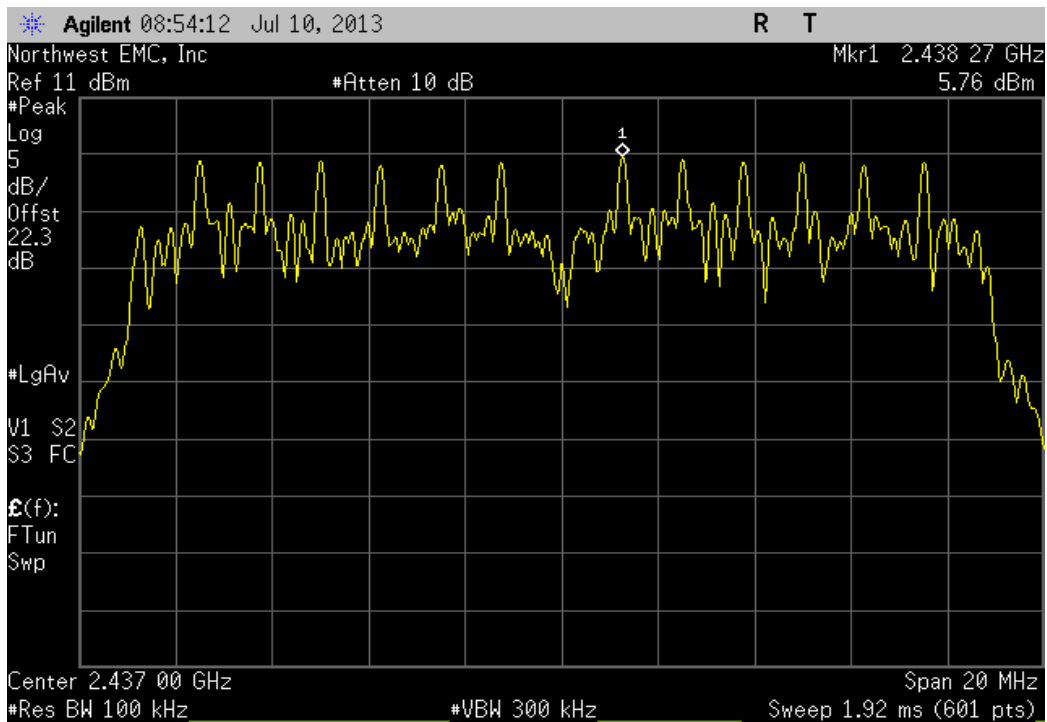
EUT: 1601			Work Order: MCSO1665				
Serial Number: 006079632553			Date: 08/13/13				
Customer: Microsoft Corporation			Temperature: 23°C				
Attendees: None			Humidity: 50%				
Project: None			Barometric Pres.: 1020mb				
Tested by: Richard Mellroth, Brandon Hobbs		Power: 110VAC/60Hz	Job Site: NC02				
TEST SPECIFICATIONS		Test Method					
FCC 15.247:2013		ANSI C63.10:2009					
COMMENTS							
EUT was operating at 100% Duty Cycle. Adapter cable loss of 0.75 dB for 2.4 GHz channels and 1.3 dB for 5.7 GHz channels was added to analyzer reference level offset.							
DEVIATIONS FROM TEST STANDARD							
None							
Configuration #	1	Signature 					
		Value dBm/100kHz	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result	
Chain A							
20 MHz							
2400 MHz - 2483.5 MHz Band							
802.11(n) MCS8							
Low Channel 1, 2412 MHz		4.742	-15.2	-10.458	8	Pass	
Mid Channel 6, 2437 MHz		5.765	-15.2	-9.435	8	Pass	
High Channel 11, 2462 MHz		5.302	-15.2	-9.898	8	Pass	
802.11(n) MCS15							
Low Channel 1, 2412 MHz		5.584	-15.2	-9.616	8	Pass	
Mid Channel 6, 2437 MHz		5.761	-15.2	-9.439	8	Pass	
High Channel 11, 2462 MHz		5.293	-15.2	-9.907	8	Pass	
5725 MHz - 5850 MHz Band							
802.11(n) MCS8							
Low Channel 149, 5745 MHz		1.075	-15.2	-14.125	8	Pass	
Mid Channel 157, 5785 MHz		1.101	-15.2	-14.099	8	Pass	
High Channel 165, 5825 MHz		0.428	-15.2	-14.772	8	Pass	
802.11(n) MCS15							
Low Channel 149, 5745 MHz		0.988	-15.2	-14.212	8	Pass	
Mid Channel 157, 5785 MHz		1.732	-15.2	-13.468	8	Pass	
High Channel 165, 5825 MHz		0.024	-15.2	-15.176	8	Pass	
40 MHz							
2400 MHz - 2483.5 MHz Band							
802.11(n) MCS8							
Low Channel 1/5, 2422 MHz		-2.184	-15.2	-17.384	8	Pass	
Mid Channel 4/8, 2437 MHz		2.915	-15.2	-12.285	8	Pass	
High Channel 7/11, 2452 MHz		-1.631	-15.2	-16.831	8	Pass	
802.11(n) MCS15							
Low Channel 1/5, 2422 MHz		-1.735	-15.2	-16.935	8	Pass	
Mid Channel 4/8, 2437 MHz		3.063	-15.2	-12.137	8	Pass	
High Channel 7/11, 2452 MHz		-1.677	-15.2	-16.877	8	Pass	
5725 MHz - 5850 MHz Band							
802.11(n) MCS8							
Low Channel 149/153, 5755 MHz		-4.203	-15.2	-19.403	8	Pass	
High Channel 157/161, 5795 MHz		-3.67	-15.2	-18.87	8	Pass	
802.11(n) MCS15							
Low Channel 149/153, 5755 MHz		-3.978	-15.2	-19.178	8	Pass	
High Channel 157/161, 5795 MHz		-3.691	-15.2	-18.891	8	Pass	
Chain B							
20 MHz							
2400 MHz - 2483.5 MHz Band							
802.11(n) MCS8							
Low Channel 1, 2412 MHz		5.347	-15.2	-9.853	8	Pass	
Mid Channel 6, 2437 MHz		4.6	-15.2	-10.6	8	Pass	
High Channel 11, 2462 MHz		4.833	-15.2	-10.367	8	Pass	
802.11(n) MCS15							
Low Channel 1, 2412 MHz		4.408	-15.2	-10.792	8	Pass	
Mid Channel 6, 2437 MHz		4.806	-15.2	-10.394	8	Pass	
High Channel 11, 2462 MHz		4.782	-15.2	-10.418	8	Pass	
5725 MHz - 5850 MHz Band							
802.11(n) MCS8							
Low Channel 149, 5745 MHz		-1.622	-15.2	-16.822	8	Pass	
Mid Channel 157, 5785 MHz		-0.88	-15.2	-16.08	8	Pass	
High Channel 165, 5825 MHz		-1.318	-15.2	-16.518	8	Pass	
802.11(n) MCS15							
Low Channel 149, 5745 MHz		-0.564	-15.2	-15.764	8	Pass	
Mid Channel 157, 5785 MHz		-0.272	-15.2	-15.472	8	Pass	
High Channel 165, 5825 MHz		-1.751	-15.2	-16.951	8	Pass	
40 MHz							
2400 MHz - 2483.5 MHz Band							
802.11(n) MCS8							
Low Channel 1/5, 2422 MHz		-2.192	-15.2	-17.392	8	Pass	
Mid Channel 4/8, 2437 MHz		2.016	-15.2	-13.184	8	Pass	
High Channel 7/11, 2452 MHz		-2.076	-15.2	-17.276	8	Pass	
802.11(n) MCS15							
Low Channel 1/5, 2422 MHz		-2.604	-15.2	-17.804	8	Pass	
Mid Channel 4/8, 2437 MHz		2.02	-15.2	-13.18	8	Pass	
High Channel 7/11, 2452 MHz		-2.039	-15.2	-17.239	8	Pass	
5725 MHz - 5850 MHz Band							
802.11(n) MCS8							
Low Channel 149/153, 5755 MHz		-5.154	-15.2	-20.354	8	Pass	
High Channel 157/161, 5795 MHz		-5.174	-15.2	-20.374	8	Pass	
802.11(n) MCS15							
Low Channel 149/153, 5755 MHz		-5.252	-15.2	-20.452	8	Pass	
High Channel 157/161, 5795 MHz		-5.329	-15.2	-20.529	8	Pass	
Chain A Summing							
20 MHz							
2400 MHz - 2483.5 MHz Band							
802.11(n) MCS8		Value dBm/100kHz	Summing Factor (dBm)	dBm/100kHz To dBm/3kHz	Value dBm/3kHz	Limit dBm/3kHz	Result
Low Channel 1, 2412 MHz		4.742	3	-15.2	-7.458	8	Pass
Mid Channel 6, 2437 MHz		5.765	3	-15.2	-6.435	8	Pass
High Channel 11, 2462 MHz		5.302	3	-15.2	-6.898	8	Pass
802.11(n) MCS15							

		Value	dBm/100kHz	Value	Limit	
		dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	Result
Chain B Summing	Low Channel 1, 2412 MHz	5.584	3	-15.2	-6.616	Pass
	Mid Channel 6, 2437 MHz	5.761	3	-15.2	-6.439	Pass
	High Channel 11, 2462 MHz	5.293	3	-15.2	-6.907	Pass
	5725 MHz - 5850 MHz Band					
	802.11(n) MCS8					
	Low Channel 149, 5745 MHz	1.075	3	-15.2	-11.125	Pass
	Mid Channel 157, 5785 MHz	1.101	3	-15.2	-11.099	Pass
	High Channel 165, 5825 MHz	0.428	3	-15.2	-11.772	Pass
	802.11(n) MCS15					
	Low Channel 149, 5745 MHz	0.988	3	-15.2	-11.212	Pass
	Mid Channel 157, 5785 MHz	1.732	3	-15.2	-10.468	Pass
	High Channel 165, 5825 MHz	0.024	3	-15.2	-12.176	Pass
	40 MHz					
	2400 MHz - 2483.5 MHz Band					
	802.11(n) MCS8					
	Low Channel 1/5, 2422 MHz	-2.184	3	-15.2	-14.384	Pass
	Mid Channel 4/8, 2437 MHz	2.915	3	-15.2	-9.285	Pass
	High Channel 7/11, 2452 MHz	-1.631	3	-15.2	-13.831	Pass
	802.11(n) MCS15					
	Low Channel 1/5, 2422 MHz	-1.735	3	-15.2	-13.935	Pass
	Mid Channel 4/8, 2437 MHz	3.063	3	-15.2	-9.137	Pass
	High Channel 7/11, 2452 MHz	-1.677	3	-15.2	-13.877	Pass
	5725 MHz - 5850 MHz Band					
	802.11(n) MCS8					
	Low Channel 149/153, 5755 MHz	-4.203	3	-15.2	-16.403	Pass
	High Channel 157/161, 5795 MHz	-3.67	3	-15.2	-15.87	Pass
	802.11(n) MCS15					
	Low Channel 149/153, 5755 MHz	-3.978	3	-15.2	-16.178	Pass
High Channel 157/161, 5795 MHz	-3.691	3	-15.2	-15.891	Pass	
Chain B Summing						
20 MHz						
2400 MHz - 2483.5 MHz Band						
802.11(n) MCS8		Value	Summing Factor	dBm/100kHz	Value	Limit
		dBm/100kHz	(dBm)	To dBm/3kHz	dBm/3kHz	dBm/3kHz
		Result				
Low Channel 1, 2412 MHz		5.347	3	-15.2	-6.853	8
Mid Channel 6, 2437 MHz		4.6	3	-15.2	-7.6	8
High Channel 11, 2462 MHz		4.833	3	-15.2	-7.367	8
802.11(n) MCS15						
Low Channel 1, 2412 MHz		4.408	3	-15.2	-7.792	8
Mid Channel 6, 2437 MHz		4.806	3	-15.2	-7.394	8
High Channel 11, 2462 MHz		4.782	3	-15.2	-7.418	8
5725 MHz - 5850 MHz Band						
802.11(n) MCS8						
Low Channel 149, 5745 MHz		-1.622	3	-15.2	-13.822	8
Mid Channel 157, 5785 MHz		-0.88	3	-15.2	-13.08	8
High Channel 165, 5825 MHz		-1.318	3	-15.2	-13.518	8
802.11(n) MCS15						
Low Channel 149, 5745 MHz		-0.564	3	-15.2	-12.764	8
Mid Channel 157, 5785 MHz		-0.272	3	-15.2	-12.472	8
High Channel 165, 5825 MHz		-1.751	3	-15.2	-13.951	8
40 MHz						
2400 MHz - 2483.5 MHz Band						
802.11(n) MCS8						
Low Channel 1/5, 2422 MHz		-2.192	3	-15.2	-14.392	8
Mid Channel 4/8, 2437 MHz		2.016	3	-15.2	-10.184	8
High Channel 7/11, 2452 MHz		-2.076	3	-15.2	-14.276	8
802.11(n) MCS15						
Low Channel 1/5, 2422 MHz		-2.604	3	-15.2	-14.804	8
Mid Channel 4/8, 2437 MHz		2.02	3	-15.2	-10.18	8
High Channel 7/11, 2452 MHz		-2.039	3	-15.2	-14.239	8
5725 MHz - 5850 MHz Band						
802.11(n) MCS8						
Low Channel 149/153, 5755 MHz		-5.154	3	-15.2	-17.354	8
High Channel 157/161, 5795 MHz		-5.174	3	-15.2	-17.374	8
802.11(n) MCS15						
Low Channel 149/153, 5755 MHz		-5.252	3	-15.2	-17.452	8
High Channel 157/161, 5795 MHz		-5.329	3	-15.2	-17.529	8

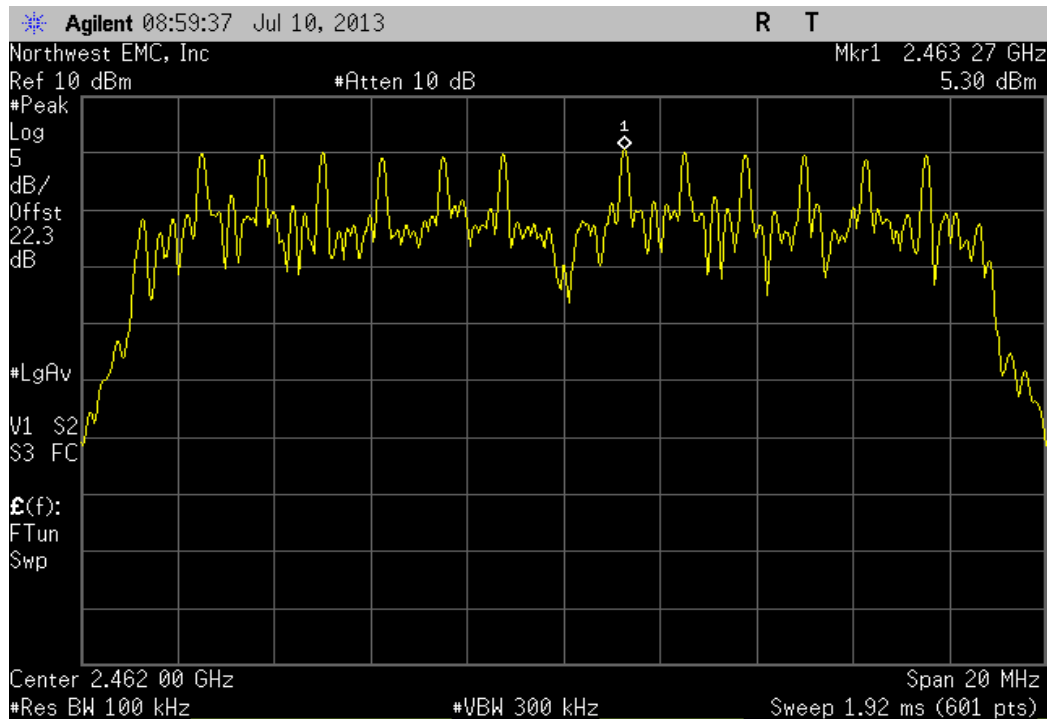
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Low Channel 1, 2412 MHz						
	Value	dBm/100kHz	Value	Limit		
		To dBm/3kHz	dBm/3kHz			
					Result	
	4.742	-15.2	-10.458	8	Pass	



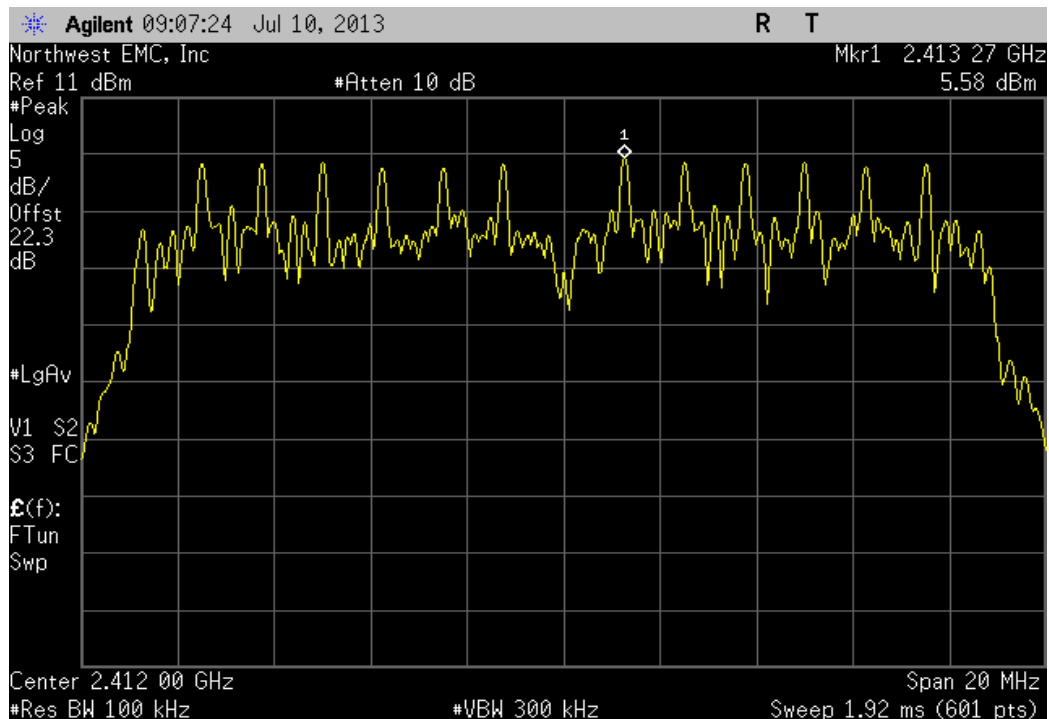
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Mid Channel 6, 2437 MHz						
	Value	dBm/100kHz	Value	Limit		
		To dBm/3kHz	dBm/3kHz			
					Result	
	5.765	-15.2	-9.435	8	Pass	



Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, High Channel 11, 2462 MHz						
	Value	dBm/100kHz	Value	Limit		
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	Result	
	5.302	-15.2	-9.898	8	Pass	

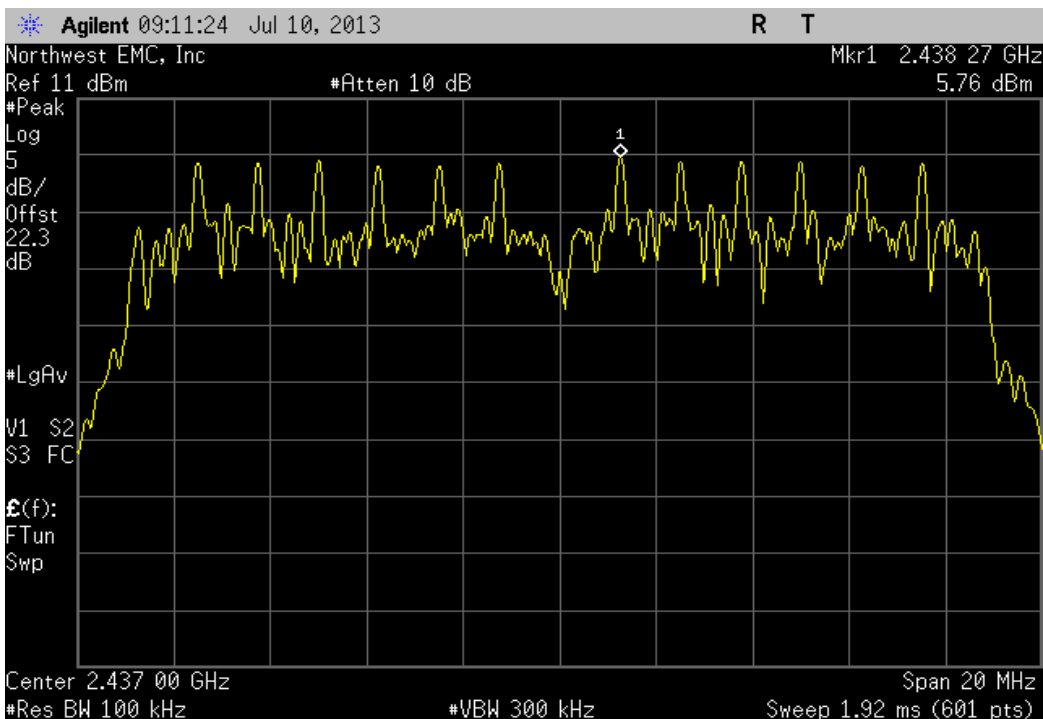


Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Low Channel 1, 2412 MHz						
	Value	dBm/100kHz	Value	Limit		
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	Result	
	5.584	-15.2	-9.616	8	Pass	



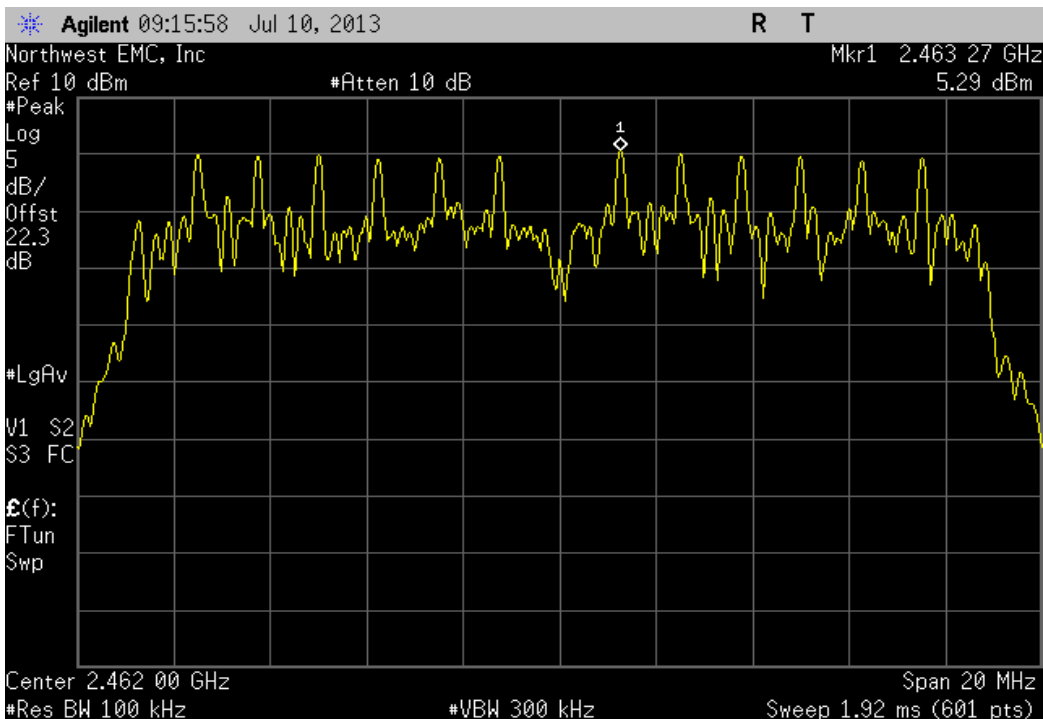
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Mid Channel 6, 2437 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
5.761	-15.2	-9.439	8	Pass



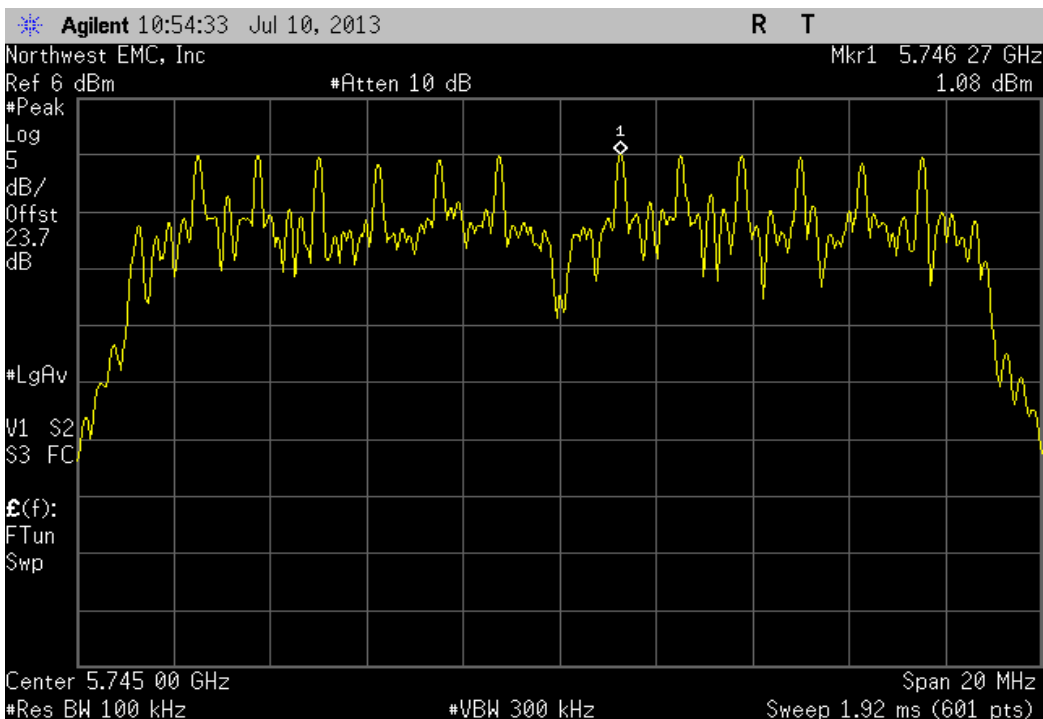
Chain A, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, High Channel 11, 2462 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
5.293	-15.2	-9.907	8	Pass



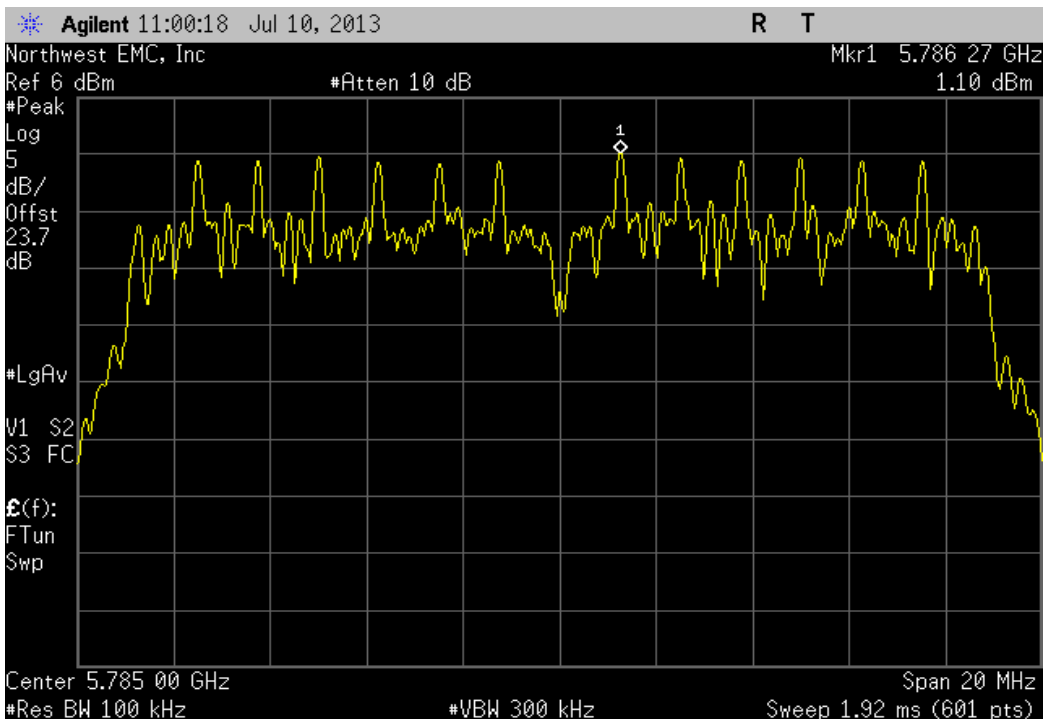
Chain A, 20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS8, Low Channel 149, 5745 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
1.075	-15.2	-14.125	8	Pass



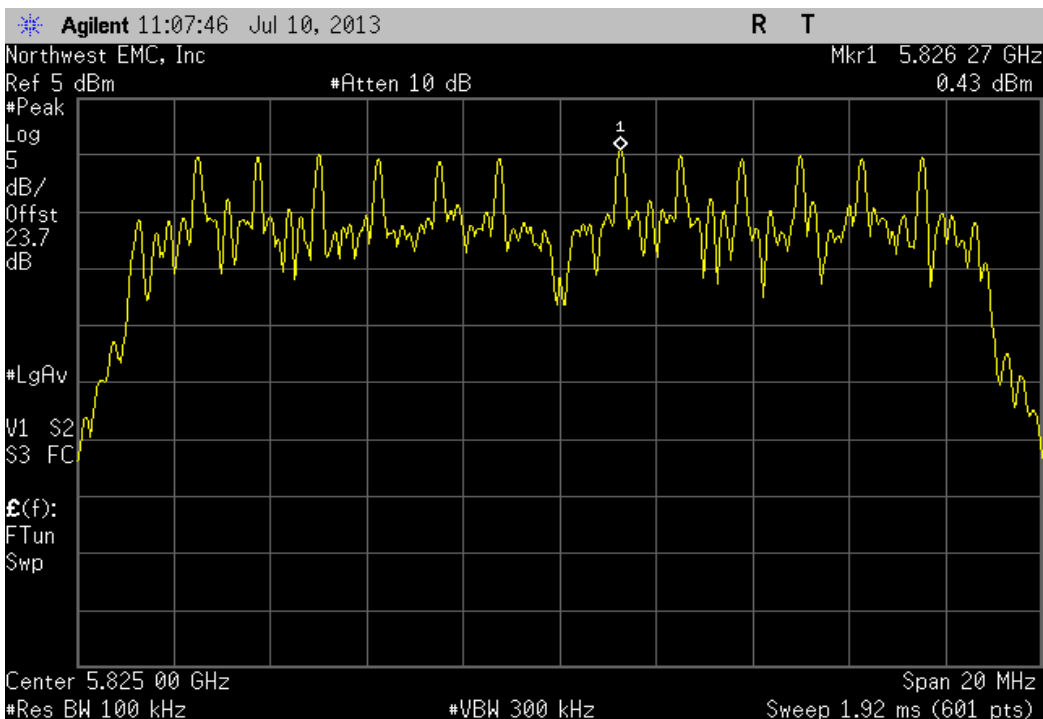
Chain A, 20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS8, Mid Channel 157, 5785 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
1.101	-15.2	-14.099	8	Pass



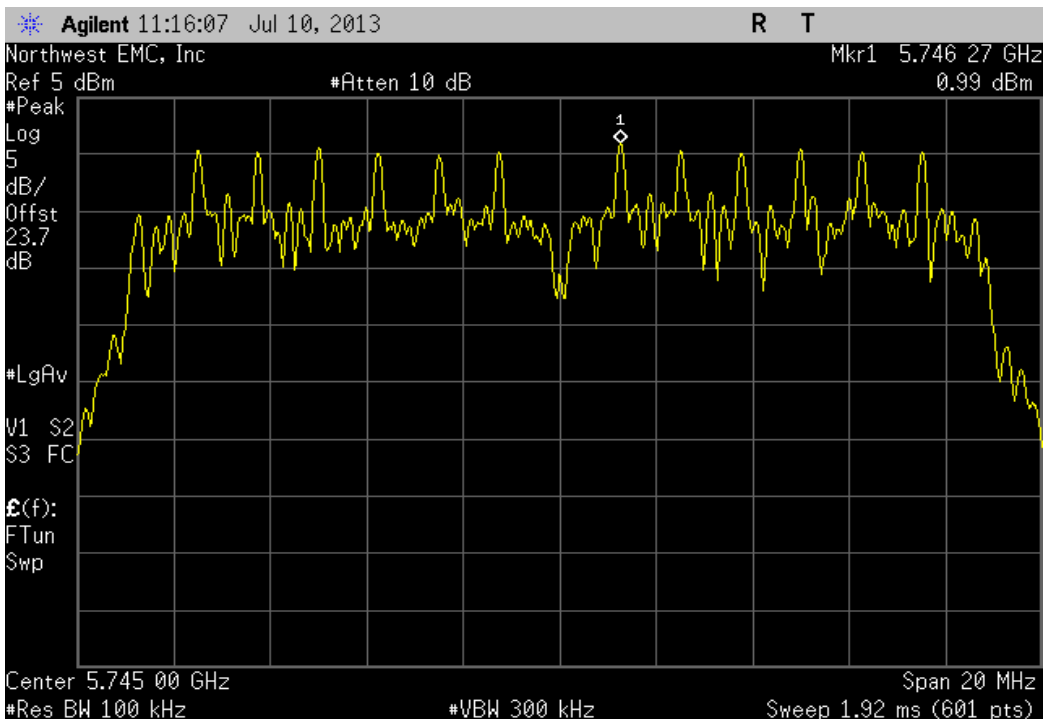
Chain A, 20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS8, High Channel 165, 5825 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
0.428	-15.2	-14.772	8	Pass



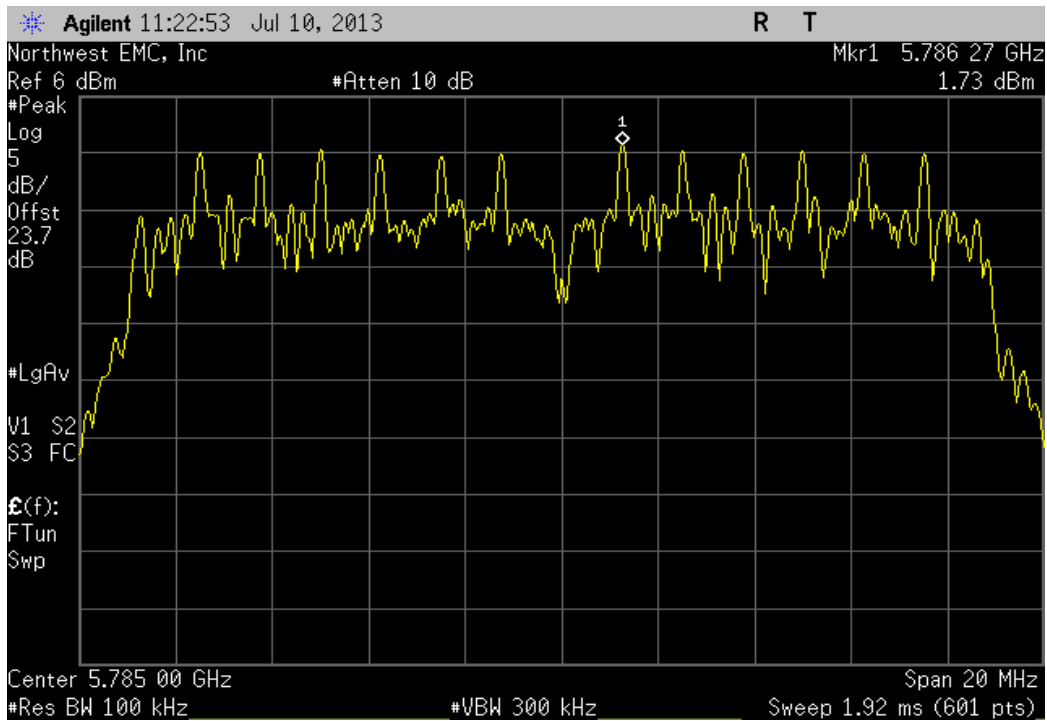
Chain A, 20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS15, Low Channel 149, 5745 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
0.988	-15.2	-14.212	8	Pass



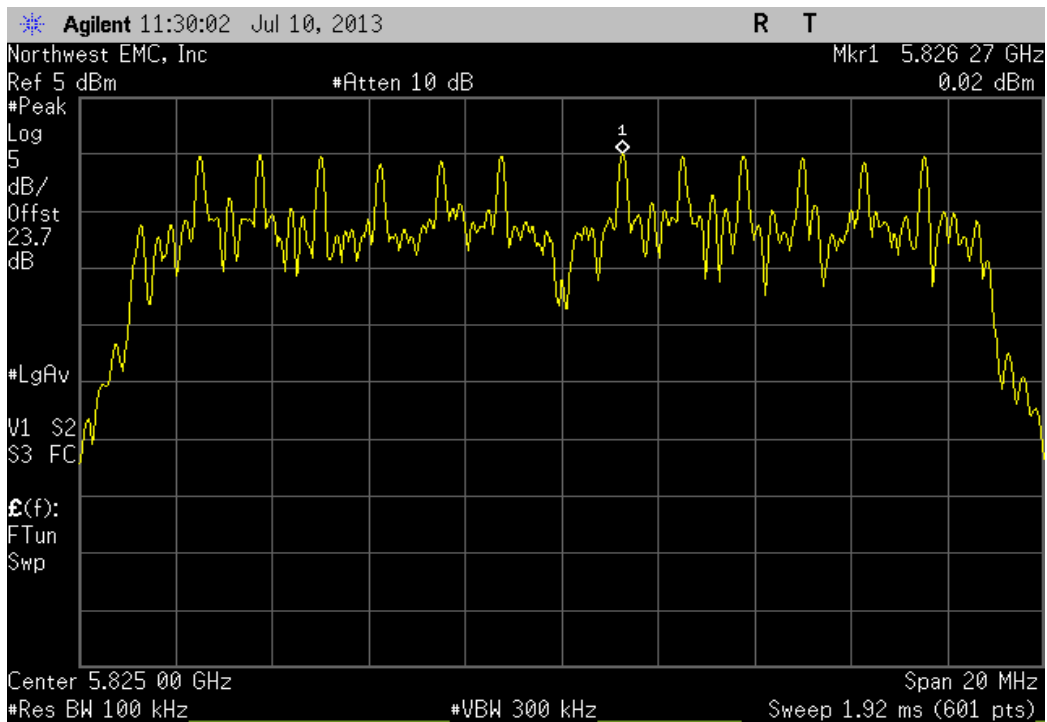
Chain A, 20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS15, Mid Channel 157, 5785 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
1.732	-15.2	-13.468	8	Pass



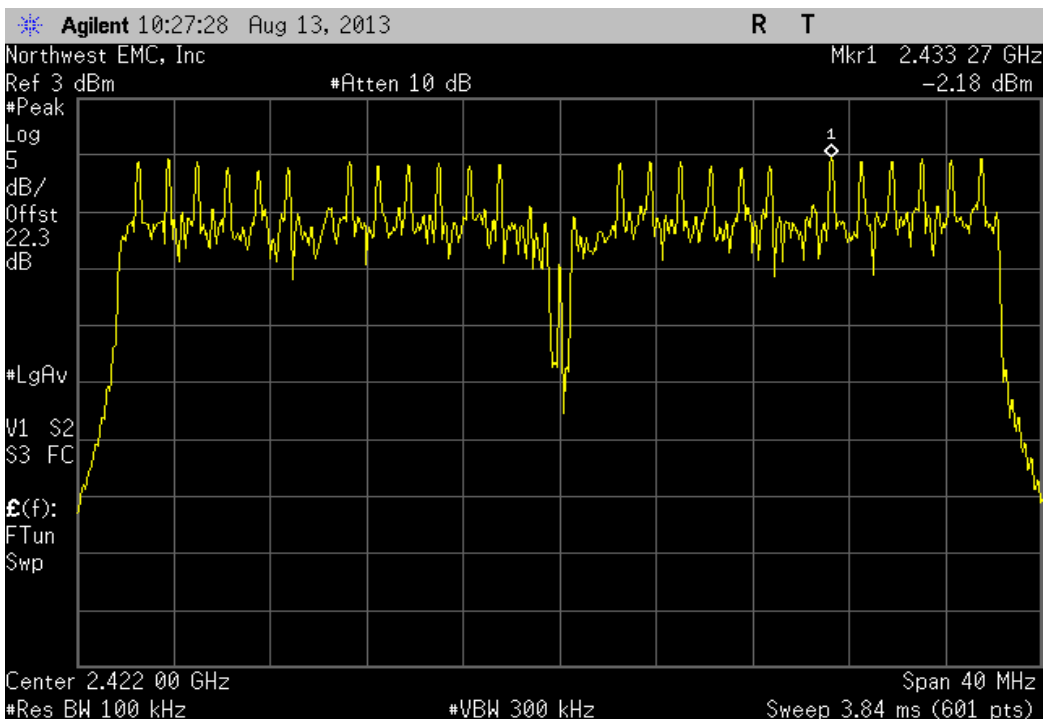
Chain A, 20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS15, High Channel 165, 5825 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
0.024	-15.2	-15.176	8	Pass



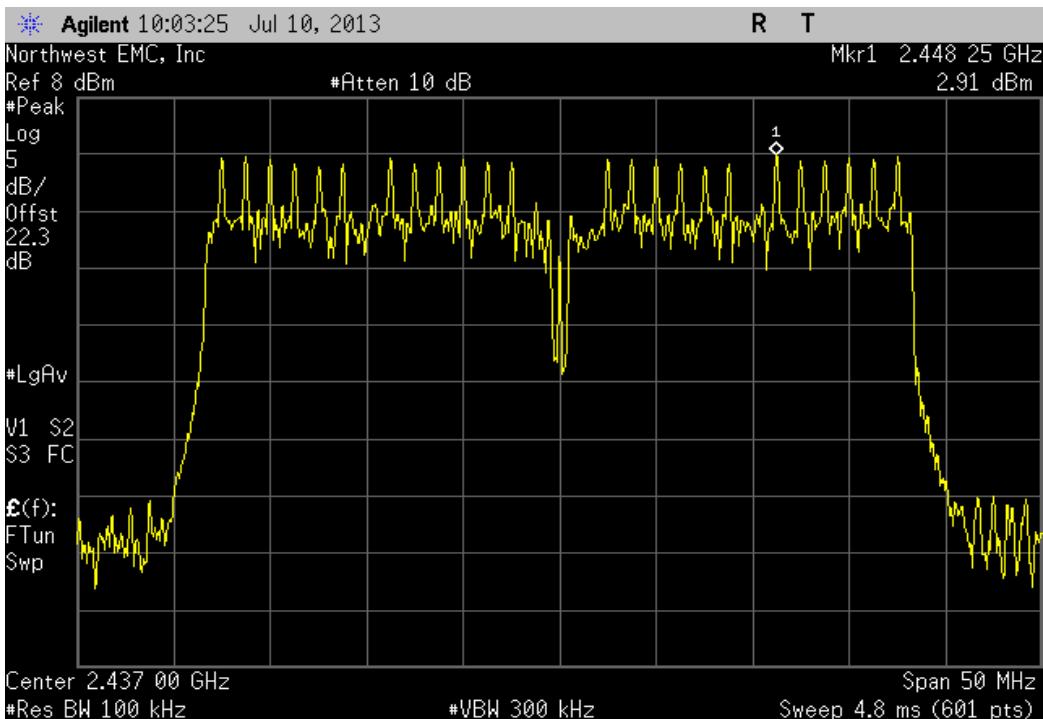
Chain A, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Low Channel 1/5, 2422 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
-2.184	-15.2	-17.384	8	Pass



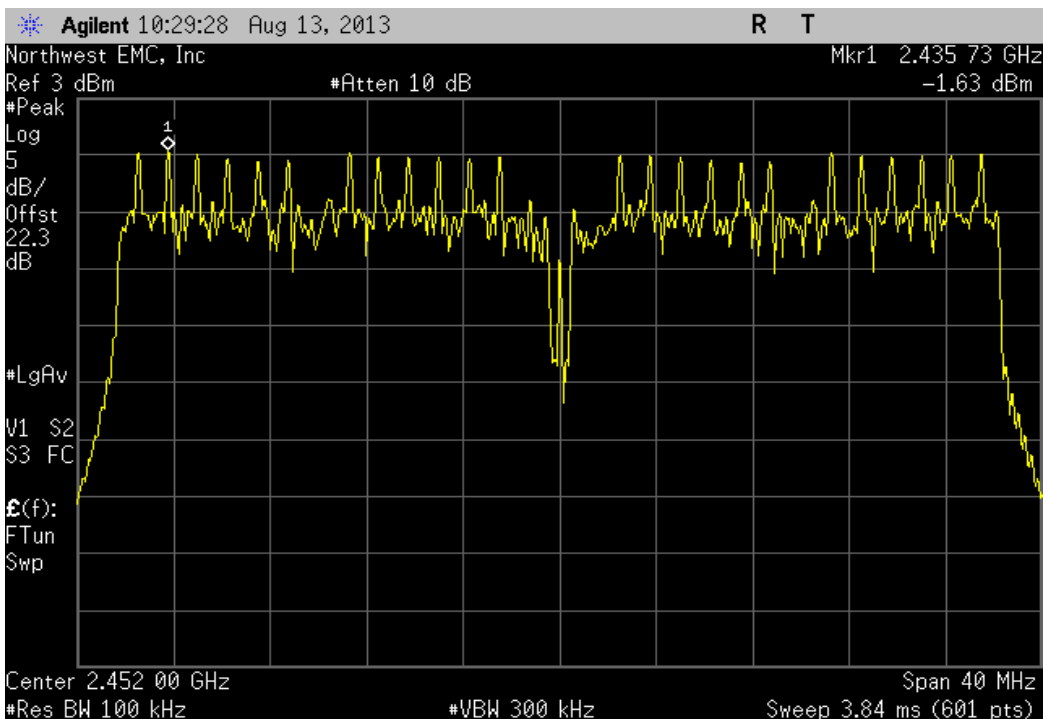
Chain A, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Mid Channel 4/8, 2437 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
2.915	-15.2	-12.285	8	Pass



Chain A, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, High Channel 7/11, 2452 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
-1.631	-15.2	-16.831	8	Pass



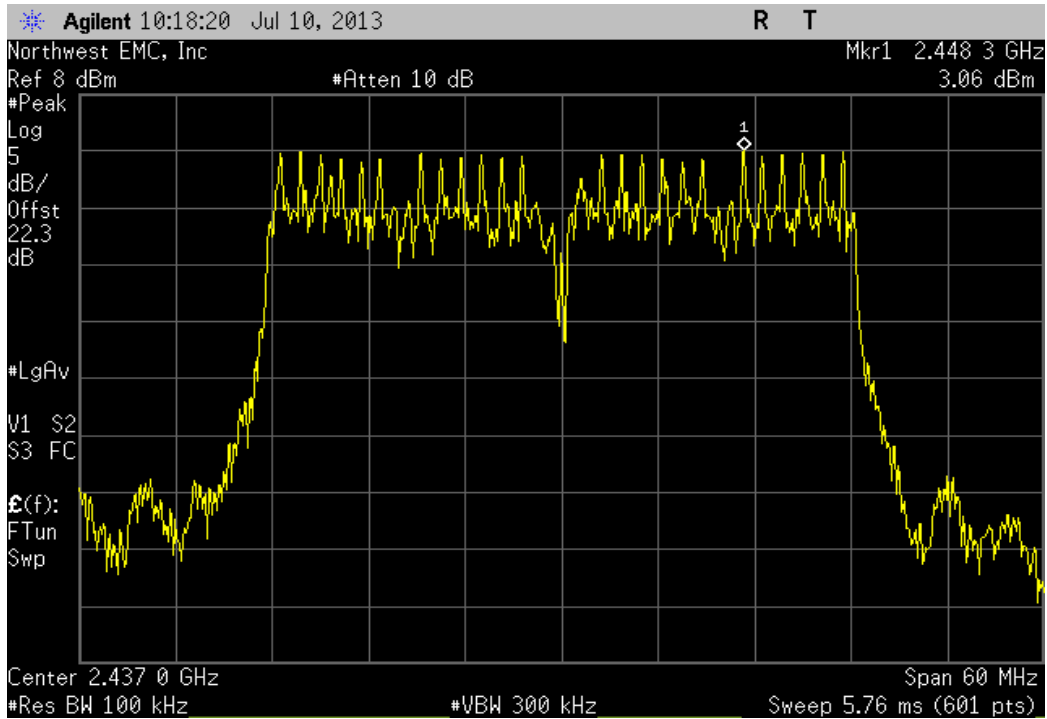
Chain A, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Low Channel 1/5, 2422 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
-1.735	-15.2	-16.935	8	Pass



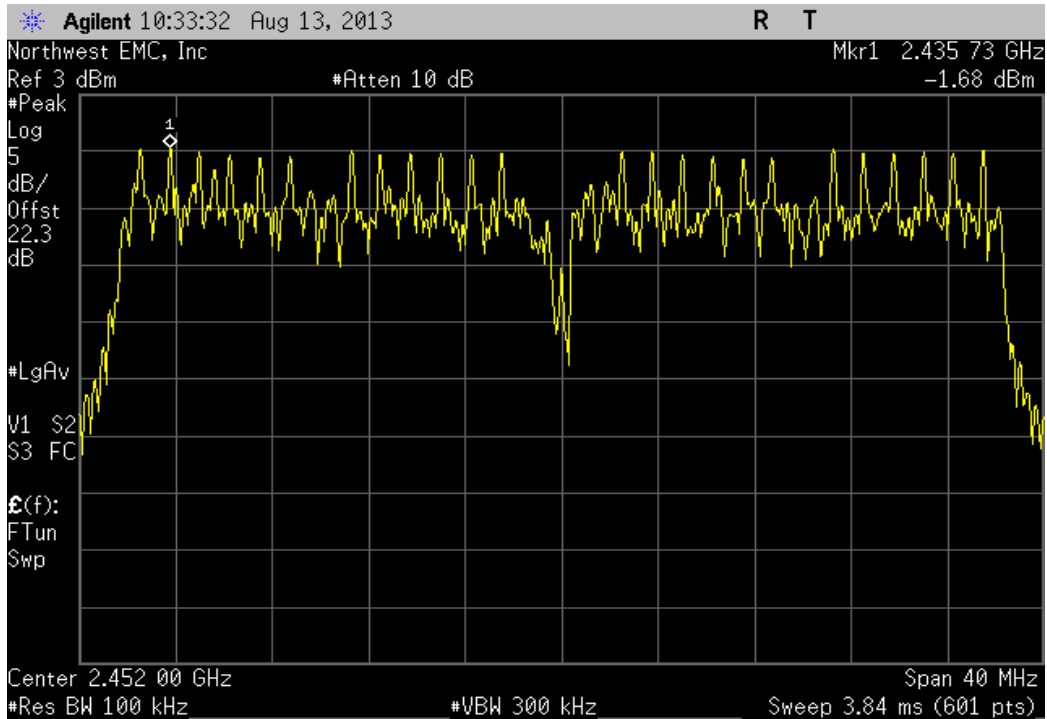
Chain A, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Mid Channel 4/8, 2437 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
3.063	-15.2	-12.137	8	Pass



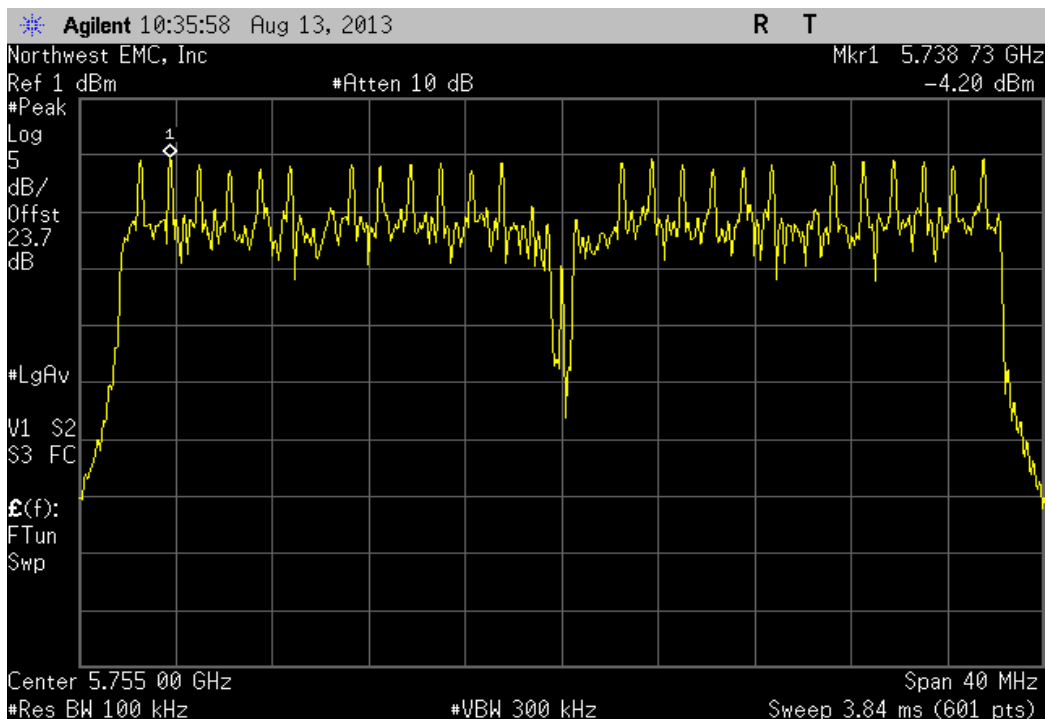
Chain A, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, High Channel 7/11, 2452 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
-1.677	-15.2	-16.877	8	Pass



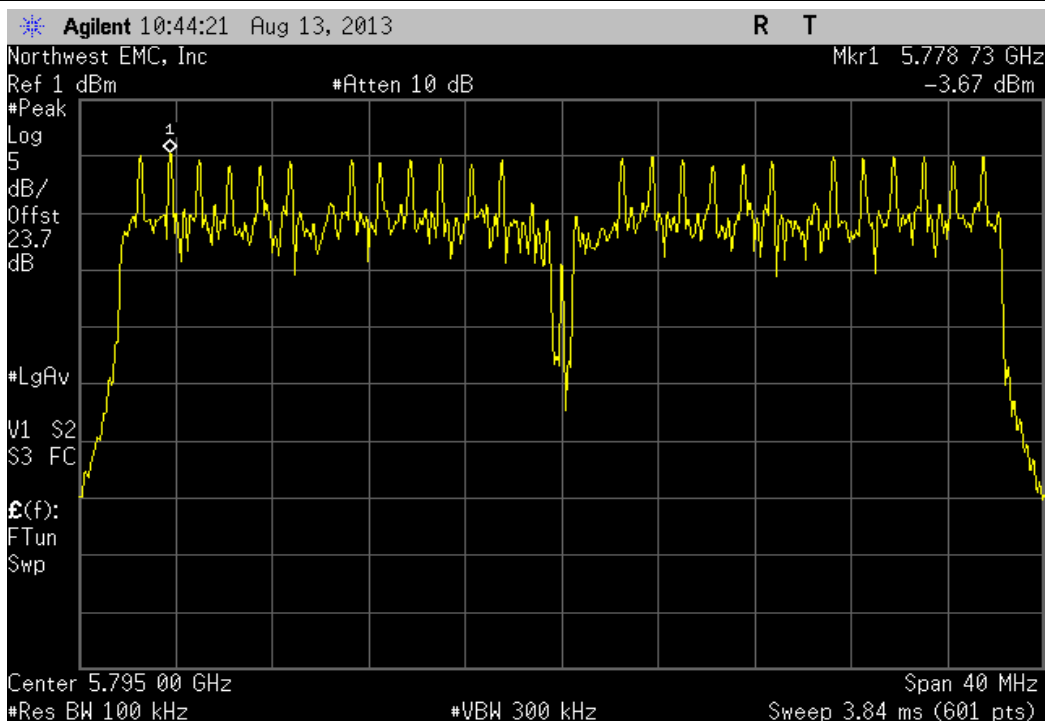
Chain A, 40 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS8, Low Channel 149/153, 5755 MHz

Value	dBm/100kHz	Value	Limit	Result
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	
-4.203	-15.2	-19.403	8	Pass



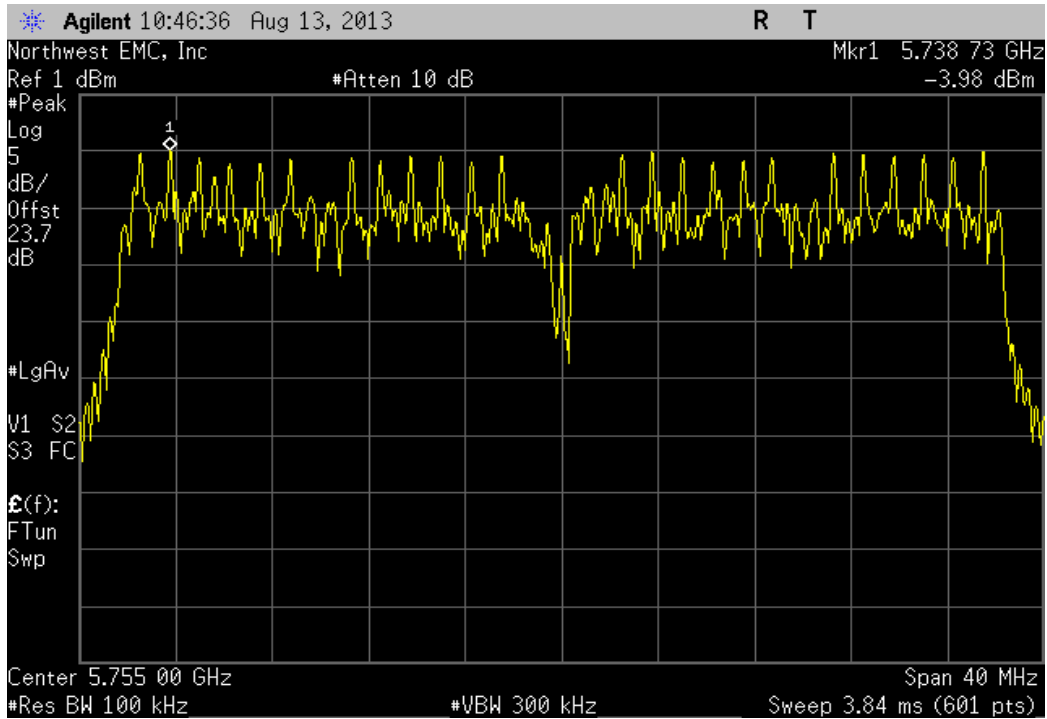
Chain A, 40 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS8, High Channel 157/161, 5795 MHz

Value	dBm/100kHz	Value	Limit	Result
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	
-3.67	-15.2	-18.87	8	Pass



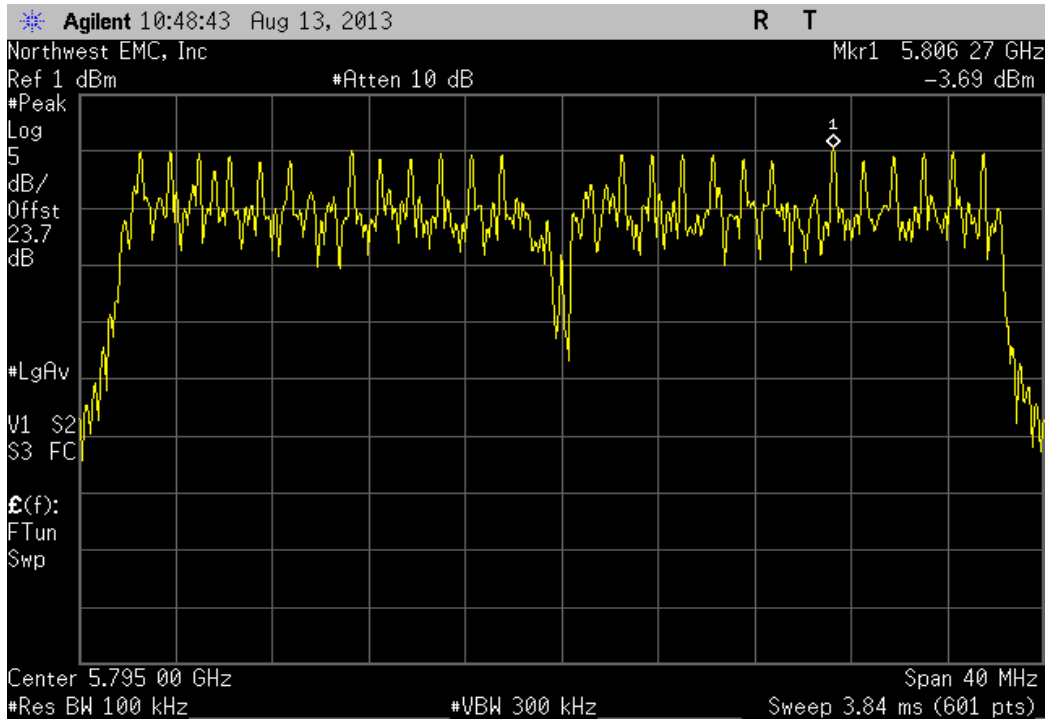
Chain A, 40 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS15, Low Channel 149/153, 5755 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
-3.978	-15.2	-19.178	8	Pass



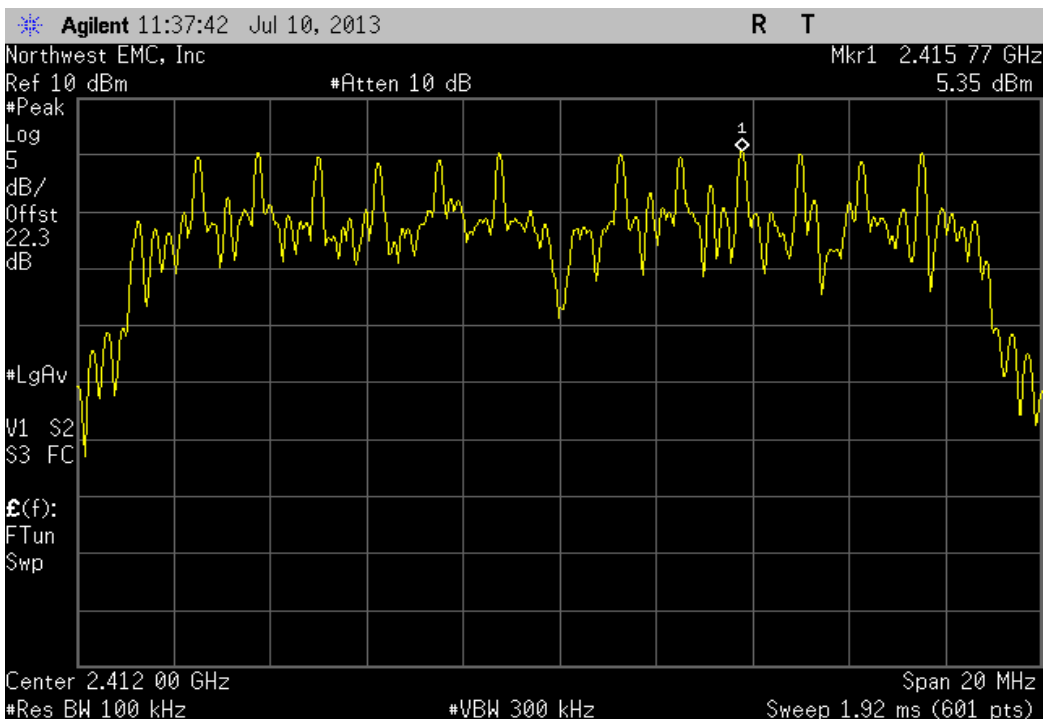
Chain A, 40 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS15, High Channel 157/161, 5795 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
-3.691	-15.2	-18.891	8	Pass



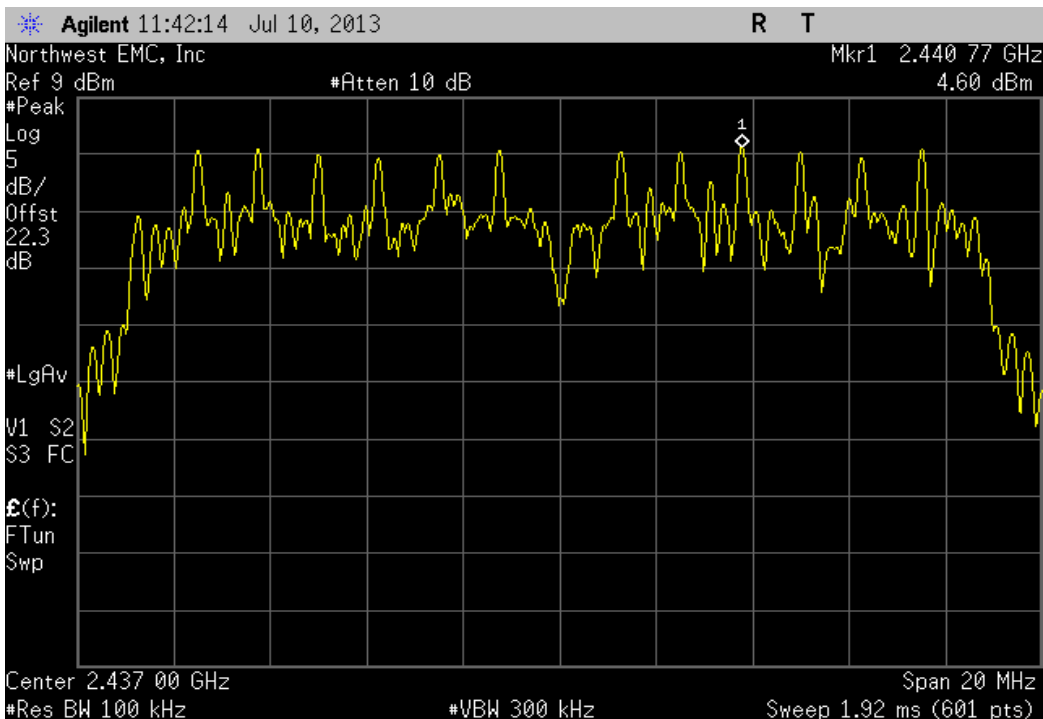
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Low Channel 1, 2412 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
5.347	-15.2	-9.853	8	Pass



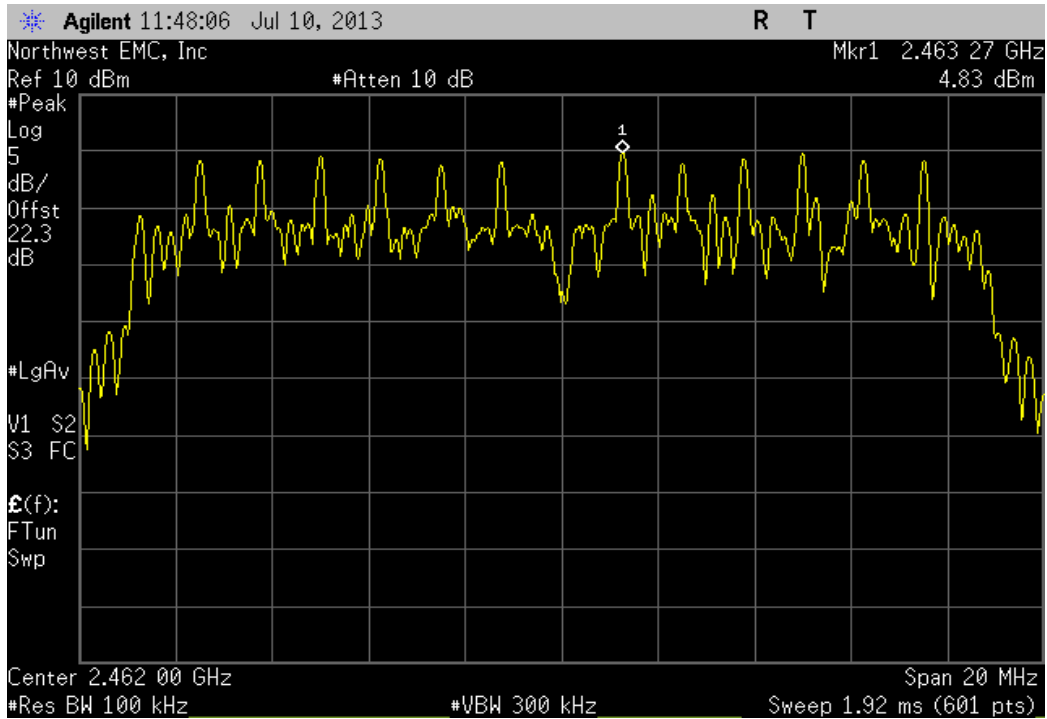
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Mid Channel 6, 2437 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
4.6	-15.2	-10.6	8	Pass



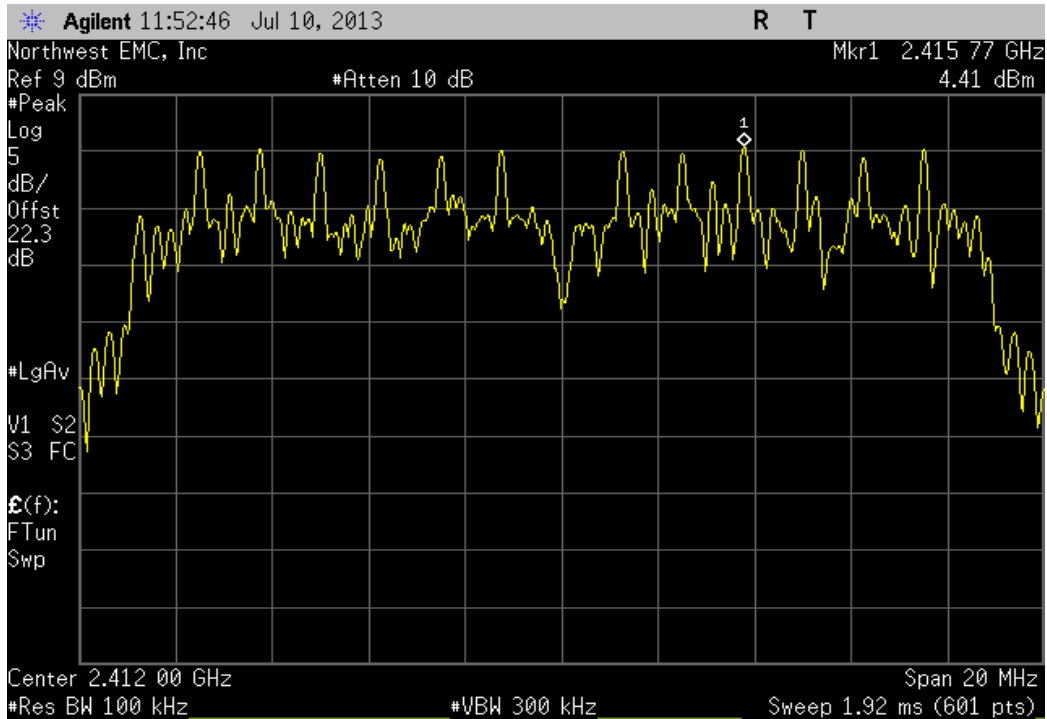
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, High Channel 11, 2462 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
4.833	-15.2	-10.367	8	Pass



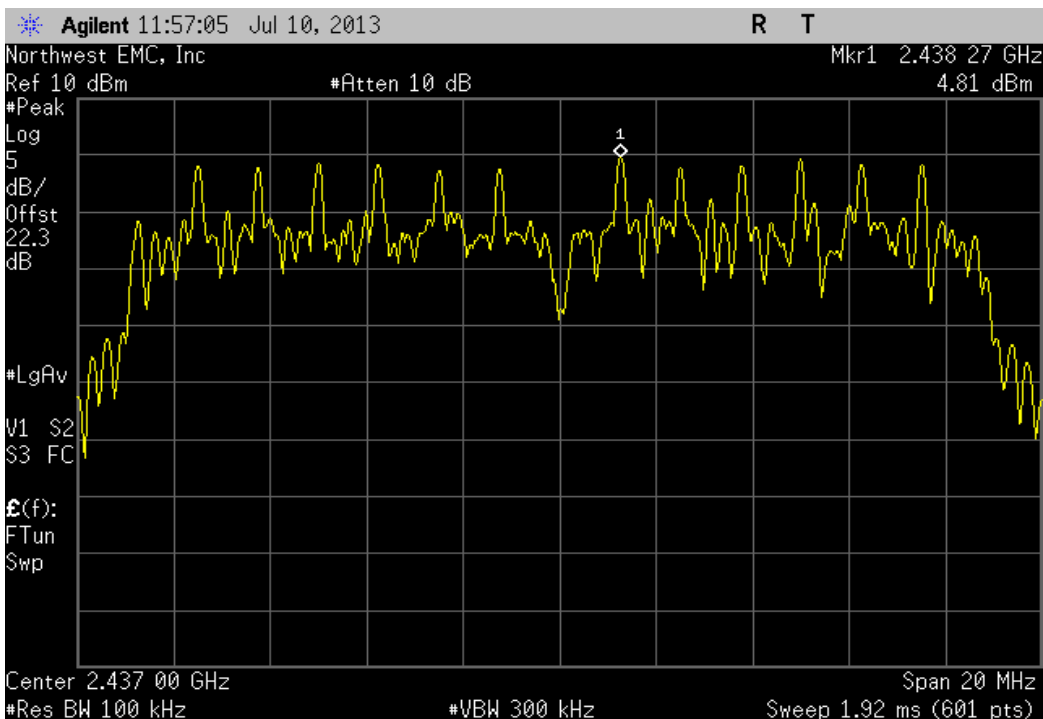
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Low Channel 1, 2412 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
4.408	-15.2	-10.792	8	Pass



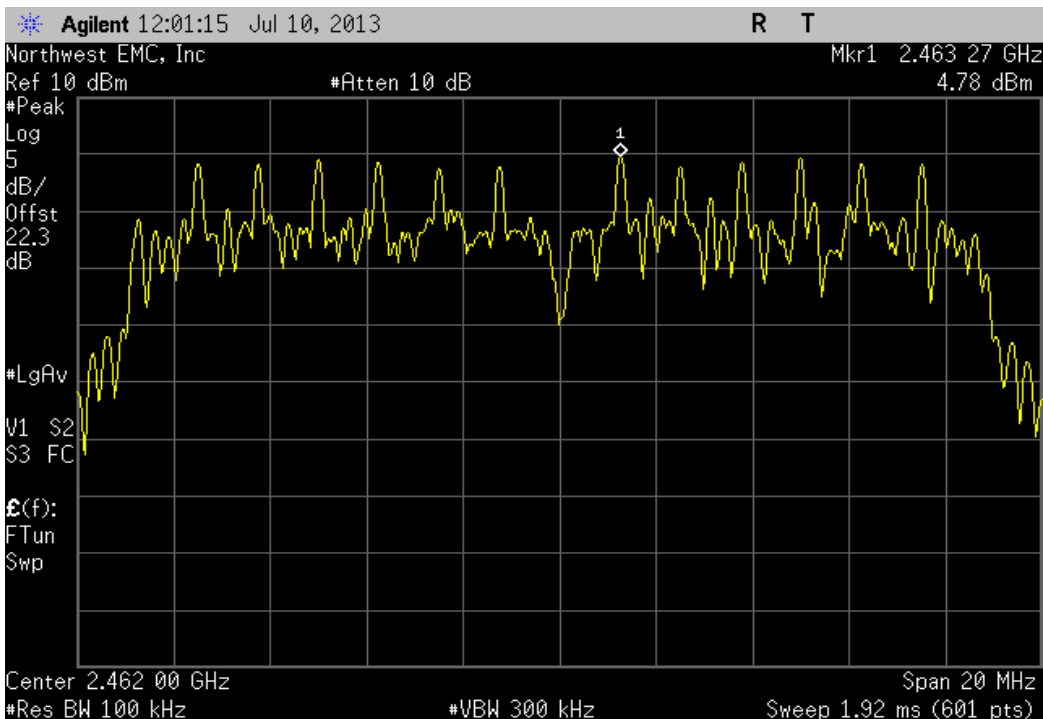
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Mid Channel 6, 2437 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
4.806	-15.2	-10.394	8	Pass



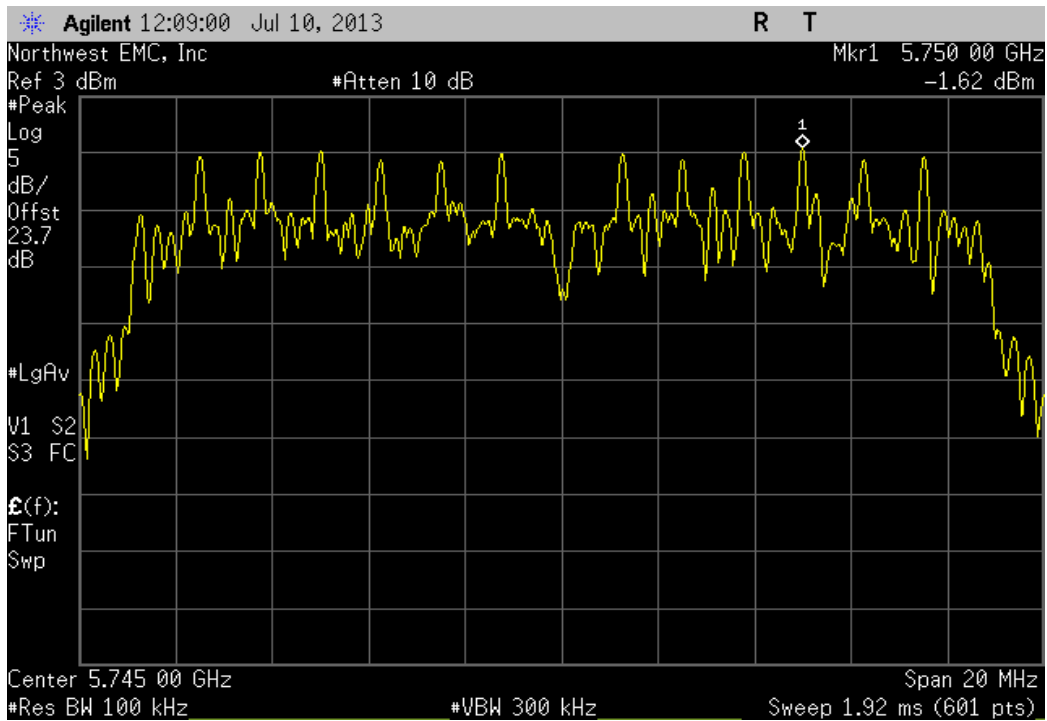
Chain B, 20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, High Channel 11, 2462 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
4.782	-15.2	-10.418	8	Pass



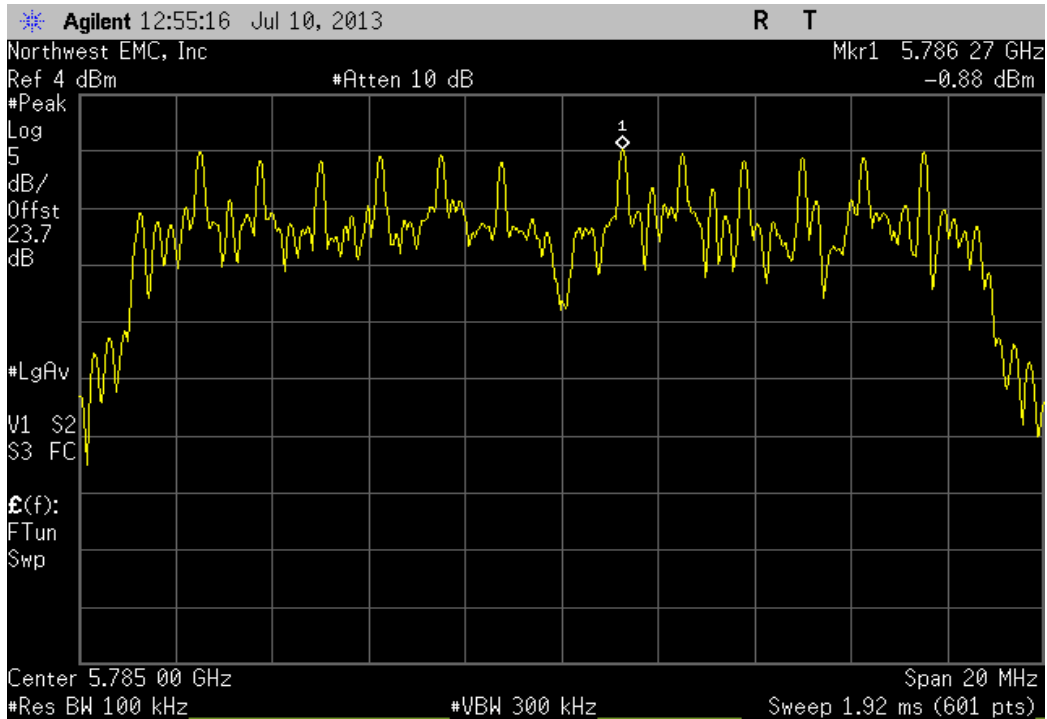
Chain B, 20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS8, Low Channel 149, 5745 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
-1.622	-15.2	-16.822	8	Pass



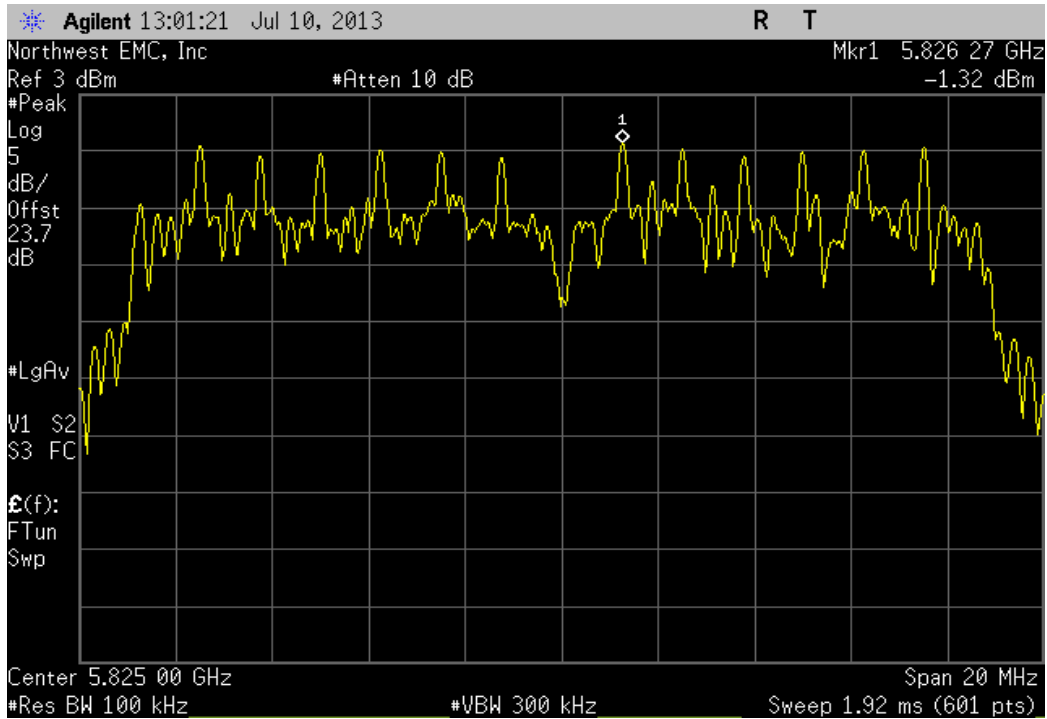
Chain B, 20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS8, Mid Channel 157, 5785 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
-0.88	-15.2	-16.08	8	Pass



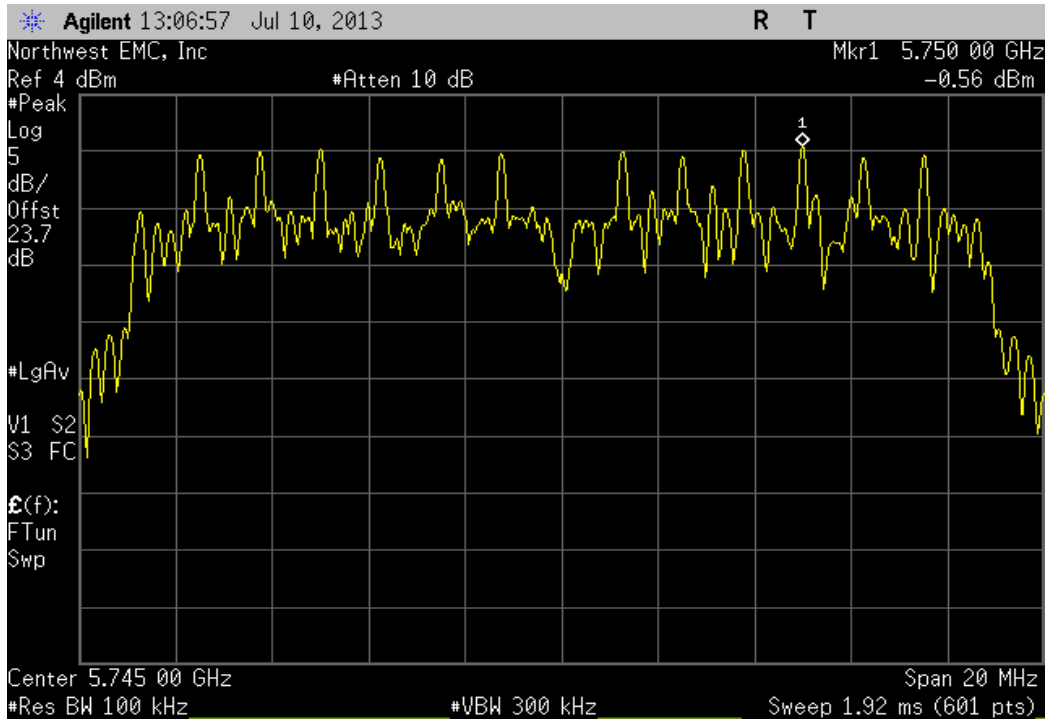
Chain B, 20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS8, High Channel 165, 5825 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
-1.318	-15.2	-16.518	8	Pass



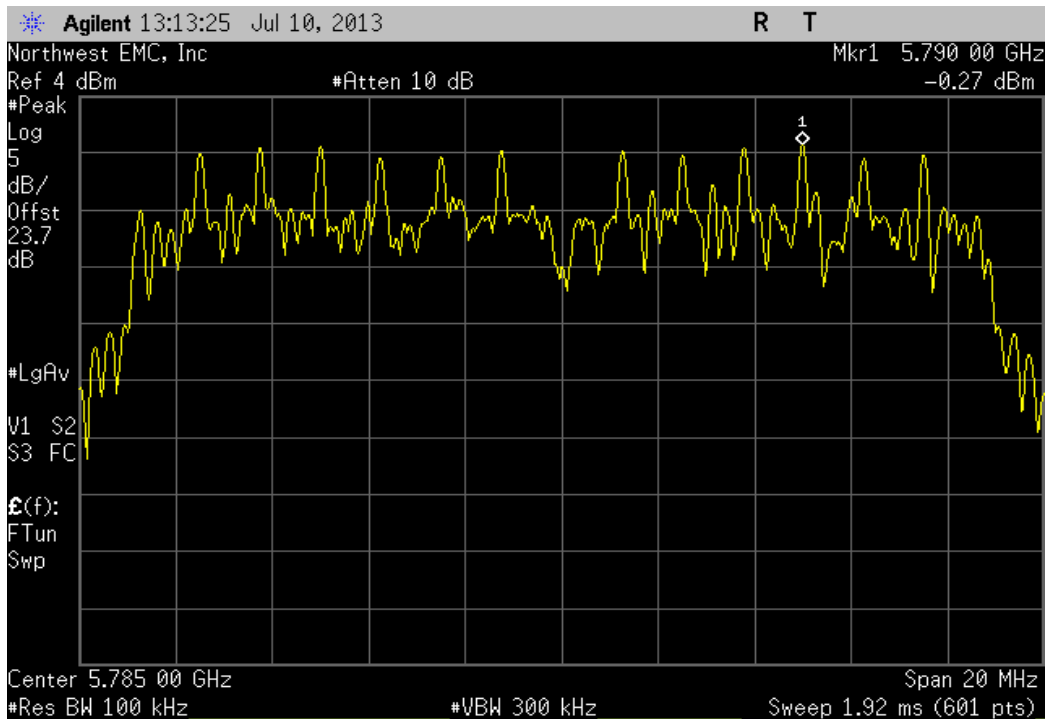
Chain B, 20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS15, Low Channel 149, 5745 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
-0.564	-15.2	-15.764	8	Pass



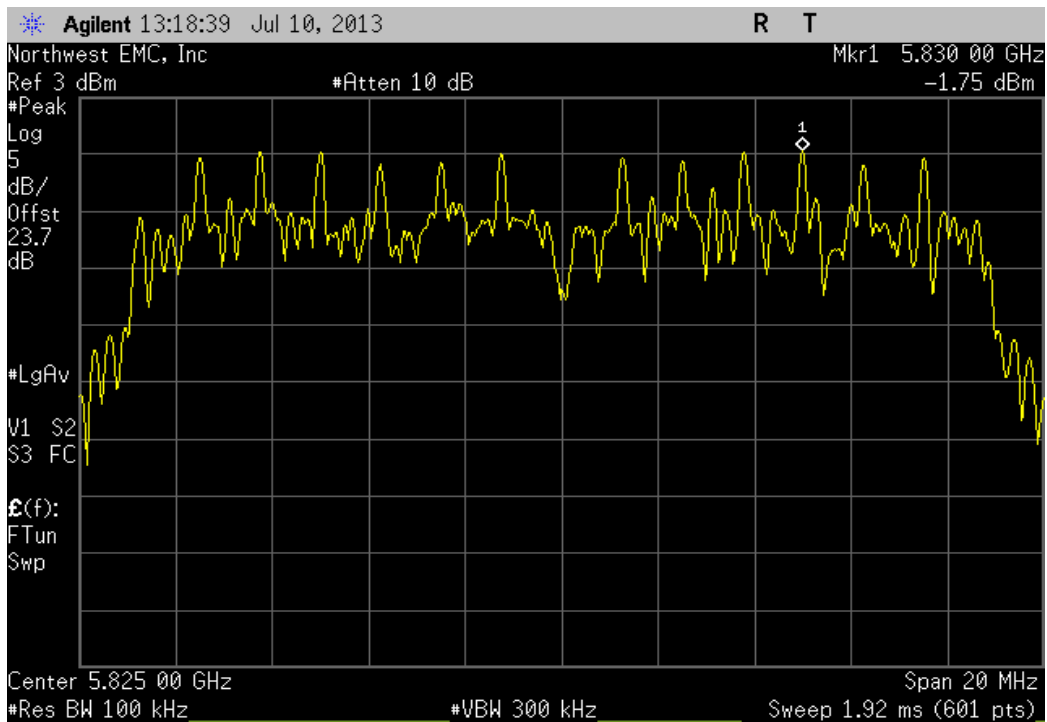
Chain B, 20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS15, Mid Channel 157, 5785 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
-0.272	-15.2	-15.472	8	Pass



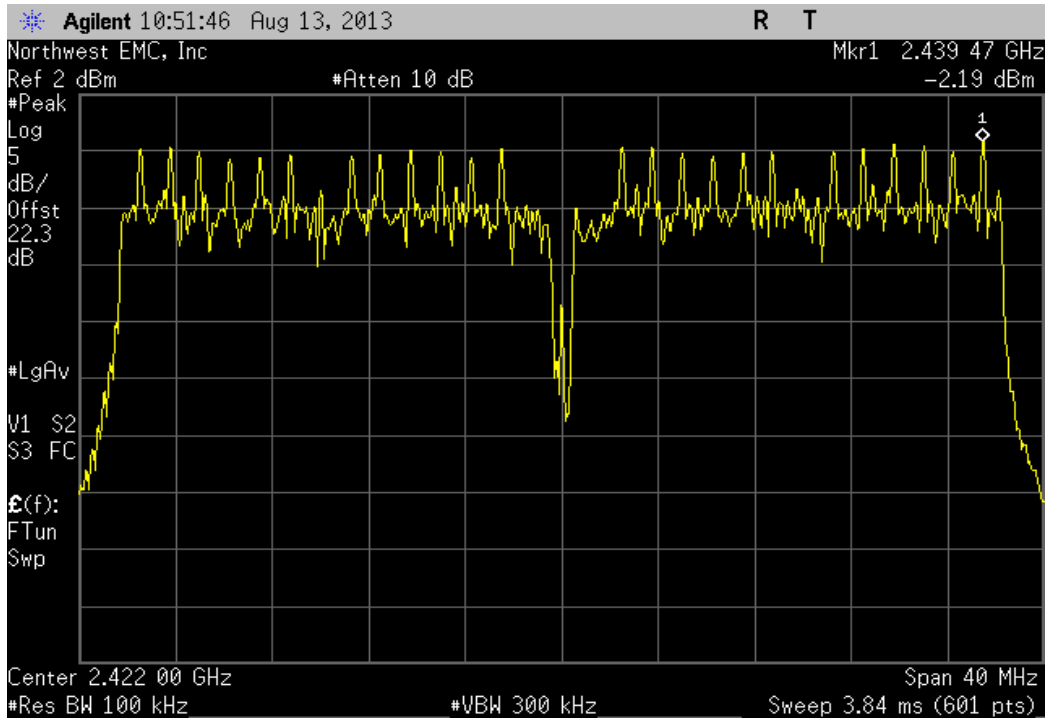
Chain B, 20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS15, High Channel 165, 5825 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
-1.751	-15.2	-16.951	8	Pass



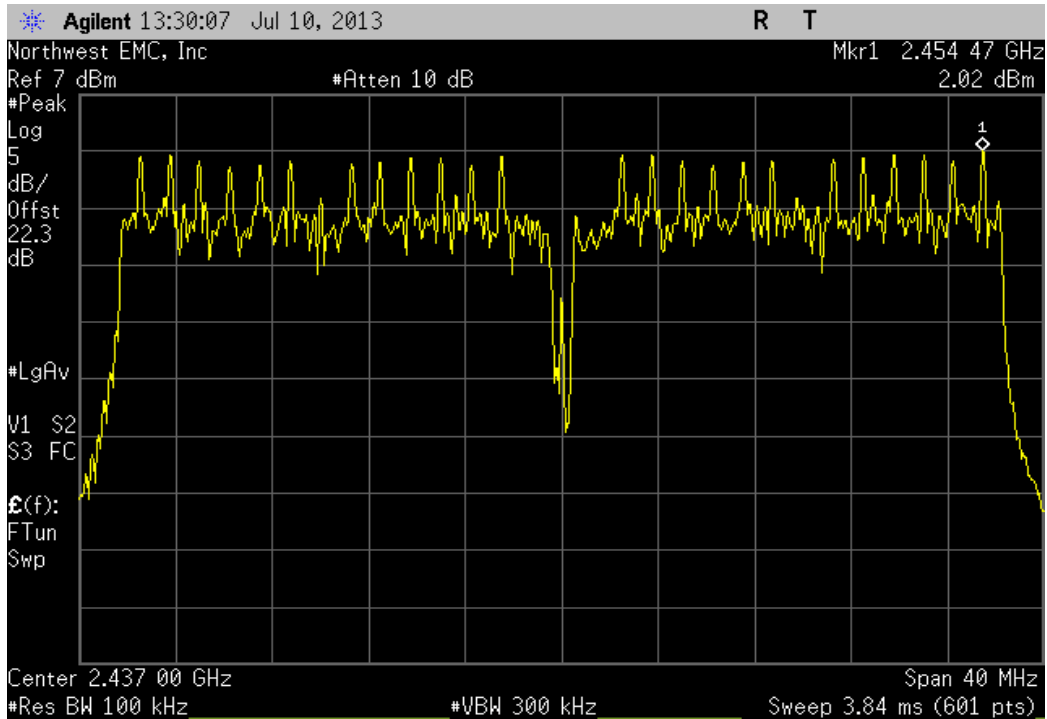
Chain B, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Low Channel 1/5, 2422 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
-2.192	-15.2	-17.392	8	Pass

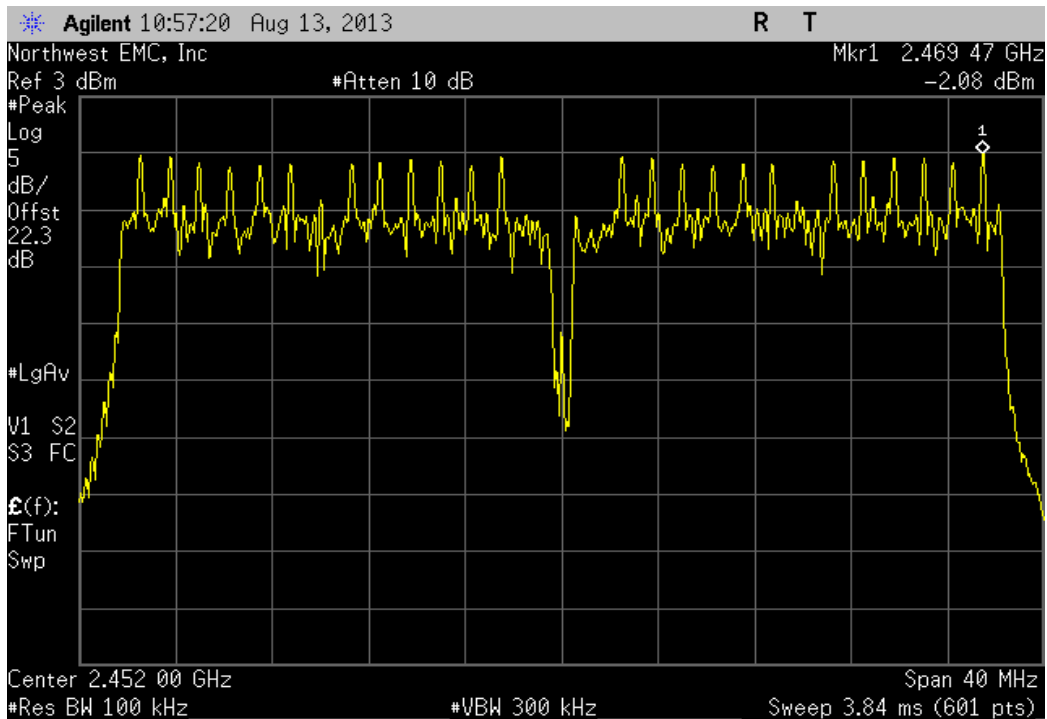


Chain B, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, Mid Channel 4/8, 2437 MHz

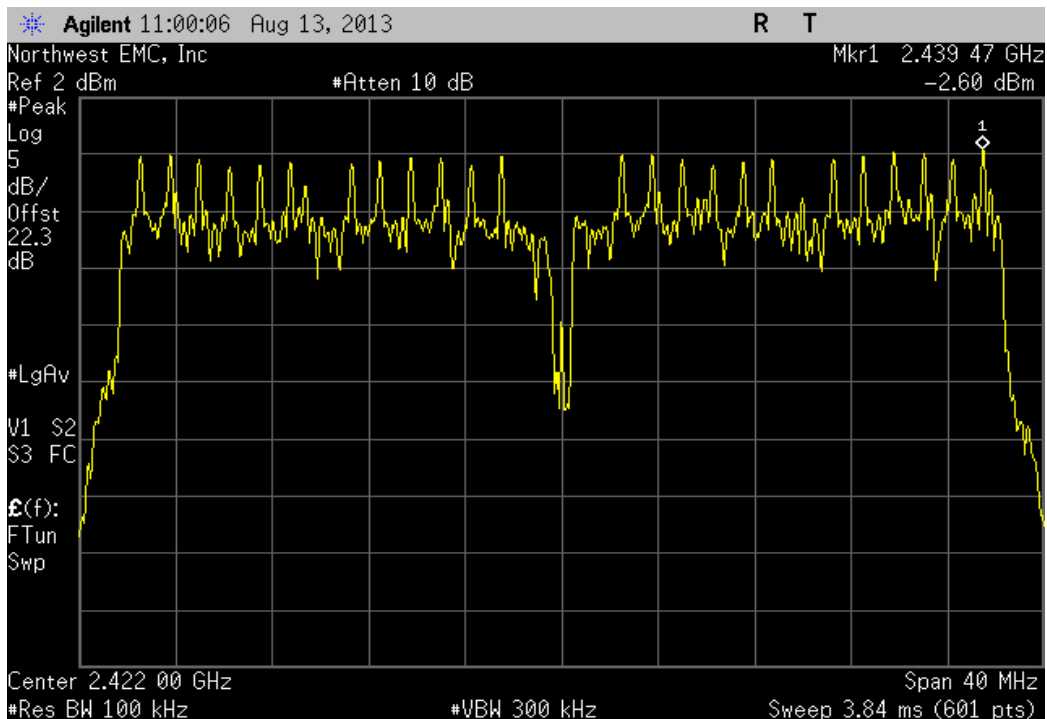
Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
2.016	-15.2	-13.184	8	Pass



Chain B, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS8, High Channel 7/11, 2452 MHz					
	Value	dBm/100kHz	Value	Limit	
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	Result
	-2.076	-15.2	-17.276	8	Pass

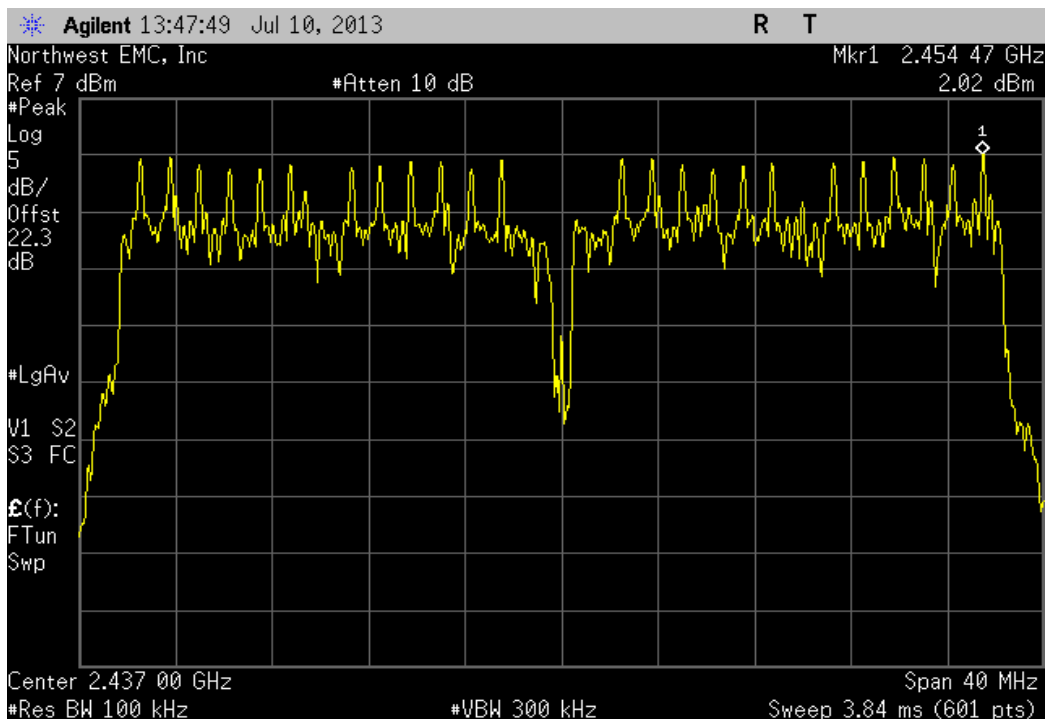


Chain B, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Low Channel 1/5, 2422 MHz					
	Value	dBm/100kHz	Value	Limit	
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	Result
	-2.604	-15.2	-17.804	8	Pass



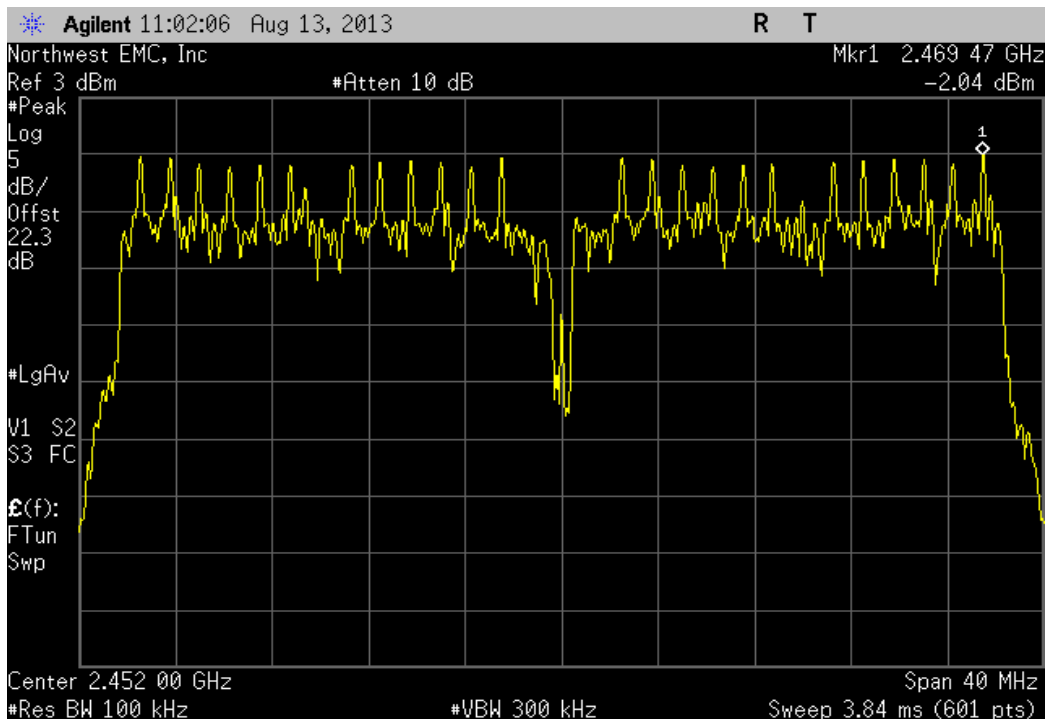
Chain B, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, Mid Channel 4/8, 2437 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
2.02	-15.2	-13.18	8	Pass



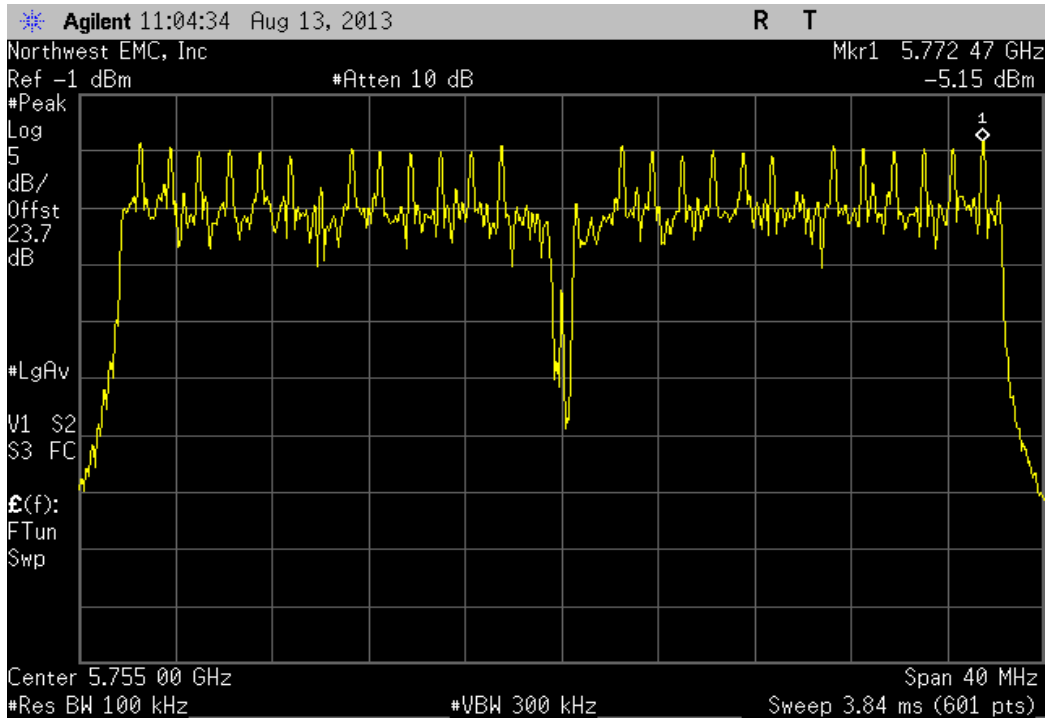
Chain B, 40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS15, High Channel 7/11, 2452 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
-2.039	-15.2	-17.239	8	Pass



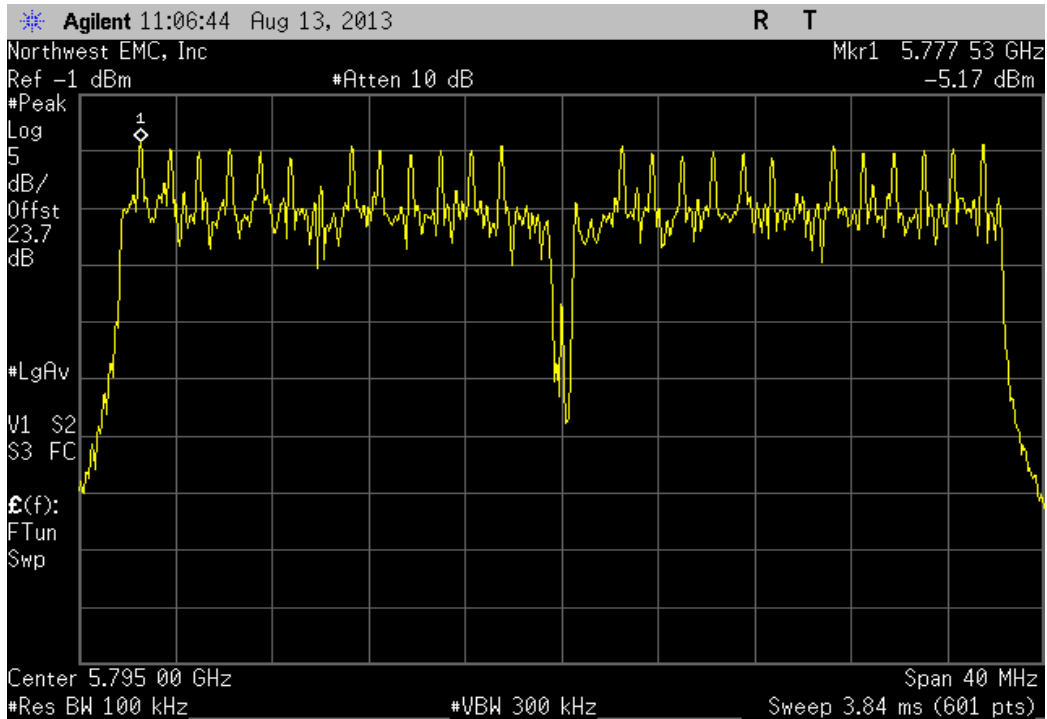
Chain B, 40 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS8, Low Channel 149/153, 5755 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
-5.154	-15.2	-20.354	8	Pass



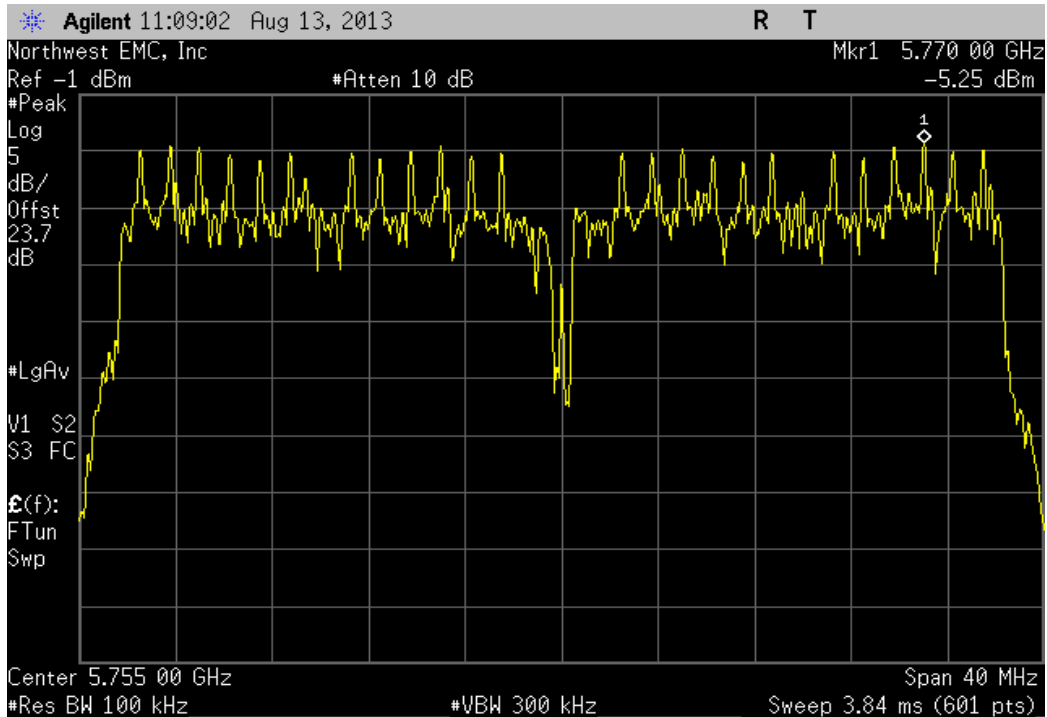
Chain B, 40 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS8, High Channel 157/161, 5795 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
-5.174	-15.2	-20.374	8	Pass



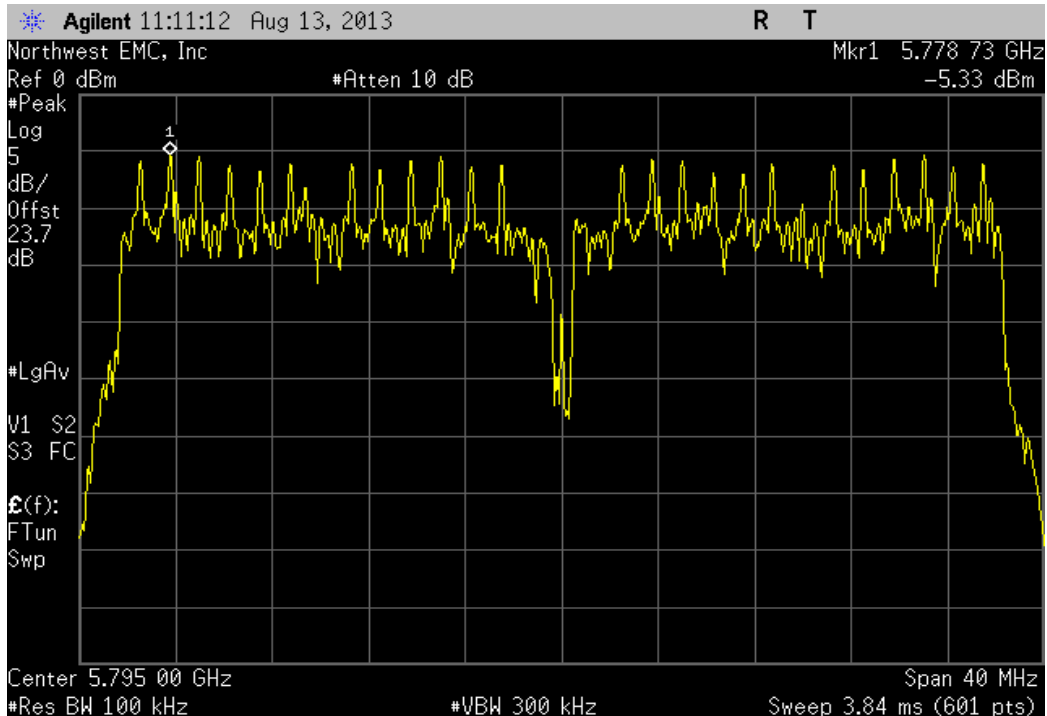
Chain B, 40 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS15, Low Channel 149/153, 5755 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
-5.252	-15.2	-20.452	8	Pass



Chain B, 40 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS15, High Channel 157/161, 5795 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
-5.329	-15.2	-20.529	8	Pass



Power Spectral Density - Antenna A

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Attenuator	Fairview Microwave	SA4014-20	TKE	2/12/2013	12
Spectrum Analyzer	Agilent	E4446A	AAT	6/28/2012	24
Signal Generator	Agilent	N5183A	TID	9/19/2011	36
NC02 Cable	ESM Cable Corp.	TTBJ-141 KMKM-72	NC5	7/3/2013	12

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 5.3.1, the spectrum analyzer was used as follows:

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

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

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

DC Block was used in-line for measurements made while under test. For channel output power levels, please refer to the accompanying power table included in this report.

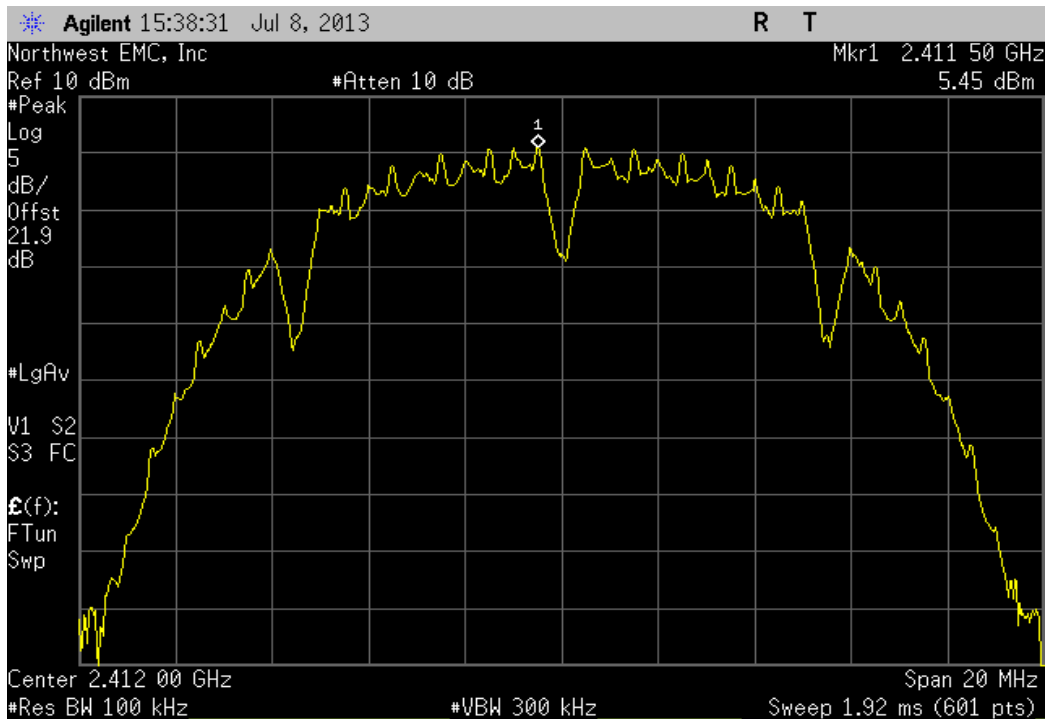


Power Spectral Density - Antenna A

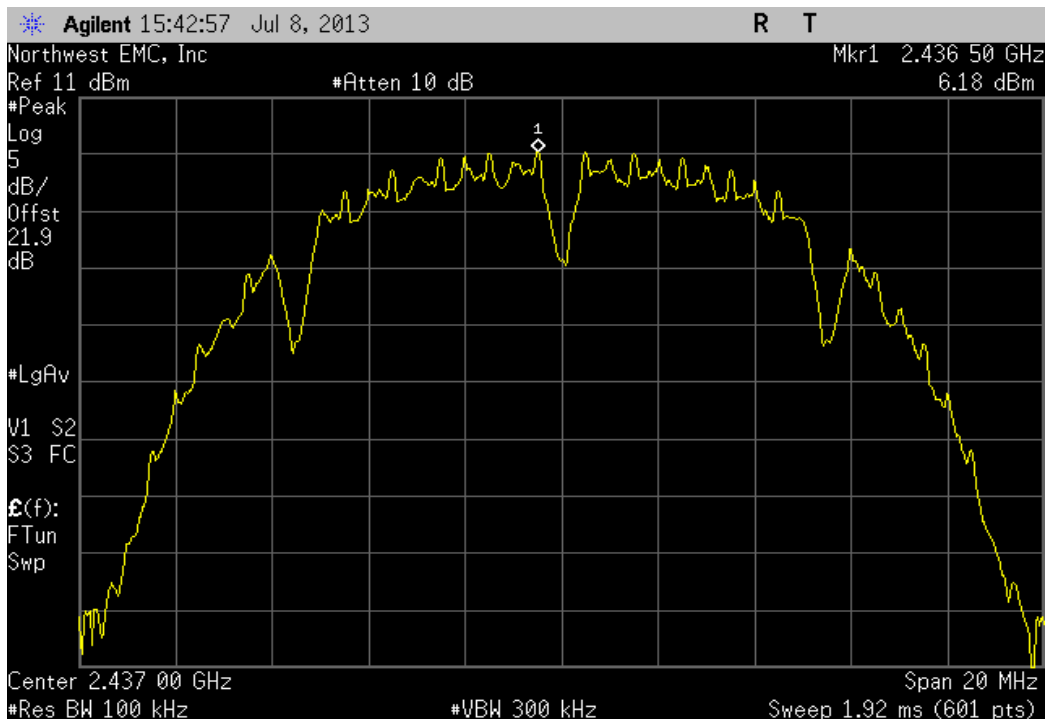
XMit 2013.02.28
PsaTx 2013.06.07

EUT: 1601		Work Order: MCSO1665				
Serial Number: 006079632553		Date: 08/13/13				
Customer: Microsoft Corporation		Temperature: 23°C				
Attendees: None		Humidity: 50%				
Project: None		Barometric Pres.: 1020mb				
Tested by: Richard Mellroth, Brandon Hobbs		Power: 110VAC/60Hz				
Job Site: NC02		Test Method				
FCC 15.247:2013		ANSI C63.10:2009				
COMMENTS						
EUT was operating at 100% Duty Cycle. Adapter cable loss of 0.75 dB for 2.4 GHz channels and 1.3 dB for 5.7 GHz channels was added to analyzer reference level offset.						
DEVIATIONS FROM TEST STANDARD						
None						
Configuration #	1	Signature 				
		Value	dBm/100kHz	Value	Limit	
		dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	Result
20 MHz						
2400 MHz - 2483.5 MHz Band						
802.11(b) 1 Mbps						
	Low Channel 1, 2412 MHz	5.447	-15.2	-9.753	8	Pass
	Mid Channel 6, 2437 MHz	6.179	-15.2	-9.021	8	Pass
	High Channel 11, 2462 MHz	5.25	-15.2	-9.95	8	Pass
802.11(b) 11 Mbps						
	Low Channel 1, 2412 MHz	7.005	-15.2	-8.195	8	Pass
	Mid Channel 6, 2437 MHz	7.711	-15.2	-7.489	8	Pass
	High Channel 11, 2462 MHz	6.758	-15.2	-8.442	8	Pass
802.11(g) 6 Mbps						
	Low Channel 1, 2412 MHz	5.053	-15.2	-10.147	8	Pass
	Mid Channel 6, 2437 MHz	5.239	-15.2	-9.961	8	Pass
	High Channel 11, 2462 MHz	4.677	-15.2	-10.523	8	Pass
802.11(g) 36 Mbps						
	Low Channel 1, 2412 MHz	5.466	-15.2	-9.734	8	Pass
	Mid Channel 6, 2437 MHz	5.686	-15.2	-9.514	8	Pass
	High Channel 11, 2462 MHz	4.721	-15.2	-10.479	8	Pass
802.11(g) 54 Mbps						
	Low Channel 1, 2412 MHz	5.457	-15.2	-9.743	8	Pass
	Mid Channel 6, 2437 MHz	5.643	-15.2	-9.557	8	Pass
	High Channel 11, 2462 MHz	4.707	-15.2	-10.493	8	Pass
802.11(n) MCS0						
	Low Channel 1, 2412 MHz	5.537	-15.2	-9.663	8	Pass
	Mid Channel 6, 2437 MHz	5.299	-15.2	-9.901	8	Pass
	High Channel 11, 2462 MHz	4.761	-15.2	-10.439	8	Pass
802.11(n) MCS7						
	Low Channel 1, 2412 MHz	5.096	-15.2	-10.104	8	Pass
	Mid Channel 6, 2437 MHz	5.692	-15.2	-9.508	8	Pass
	High Channel 11, 2462 MHz	5.288	-15.2	-9.912	8	Pass
5725 MHz - 5850 MHz Band						
802.11(a) 6 Mbps						
	Low Channel 149, 5745 MHz	-0.318	-15.2	-15.518	8	Pass
	Mid Channel 157, 5785 MHz	1.103	-15.2	-14.097	8	Pass
	High Channel 165, 5825 MHz	-0.672	-15.2	-15.872	8	Pass
802.11(a) 36 Mbps						
	Low Channel 149, 5745 MHz	0.766	-15.2	-14.434	8	Pass
	Mid Channel 157, 5785 MHz	0.755	-15.2	-14.445	8	Pass
	High Channel 165, 5825 MHz	-0.041	-15.2	-15.241	8	Pass
802.11(a) 54 Mbps						
	Low Channel 149, 5745 MHz	0.075	-15.2	-15.125	8	Pass
	Mid Channel 157, 5785 MHz	0.793	-15.2	-14.407	8	Pass
	High Channel 165, 5825 MHz	-0.103	-15.2	-15.303	8	Pass
802.11(n) MCS0 - UNII						
	Low Channel 149, 5745 MHz	0.482	-15.2	-14.718	8	Pass
	Mid Channel 157, 5785 MHz	1.072	-15.2	-14.128	8	Pass
	High Channel 165, 5825 MHz	-0.016	-15.2	-15.216	8	Pass
802.11(n) MCS7 - UNII						
	Low Channel 149, 5745 MHz	0.498	-15.2	-14.702	8	Pass
	Mid Channel 157, 5785 MHz	1.025	-15.2	-14.175	8	Pass
	High Channel 165, 5825 MHz	-0.006	-15.2	-15.206	8	Pass
40 MHz						
2400 MHz - 2483.5 MHz Band						
802.11(n) MCS0						
	Low Channel 1/5, 2422 MHz	-2.52	-15.2	-17.72	8	Pass
	Mid Channel 4/8, 2437 MHz	2.252	-15.2	-12.948	8	Pass
	High Channel 7/11, 2452 MHz	-2.505	-15.2	-17.705	8	Pass
802.11(n) MCS7						
	Low Channel 1/5, 2422 MHz	-2.478	-15.2	-17.678	8	Pass
	Mid Channel 4/8, 2437 MHz	2.334	-15.2	-12.866	8	Pass
	High Channel 7/11, 2452 MHz	-2.465	-15.2	-17.665	8	Pass
5725 MHz - 5850 MHz Band						
802.11(n) MCS0 - UNII						
	Low Channel 149/153, 5755 MHz	-4.391	-15.2	-19.591	8	Pass
	High Channel 157/161, 5795 MHz	-4.24	-15.2	-19.44	8	Pass
802.11(n) MCS7 - UNII						
	Low Channel 149/153, 5755 MHz	-4.451	-15.2	-19.651	8	Pass
	High Channel 157/161, 5795 MHz	-3.843	-15.2	-19.043	8	Pass

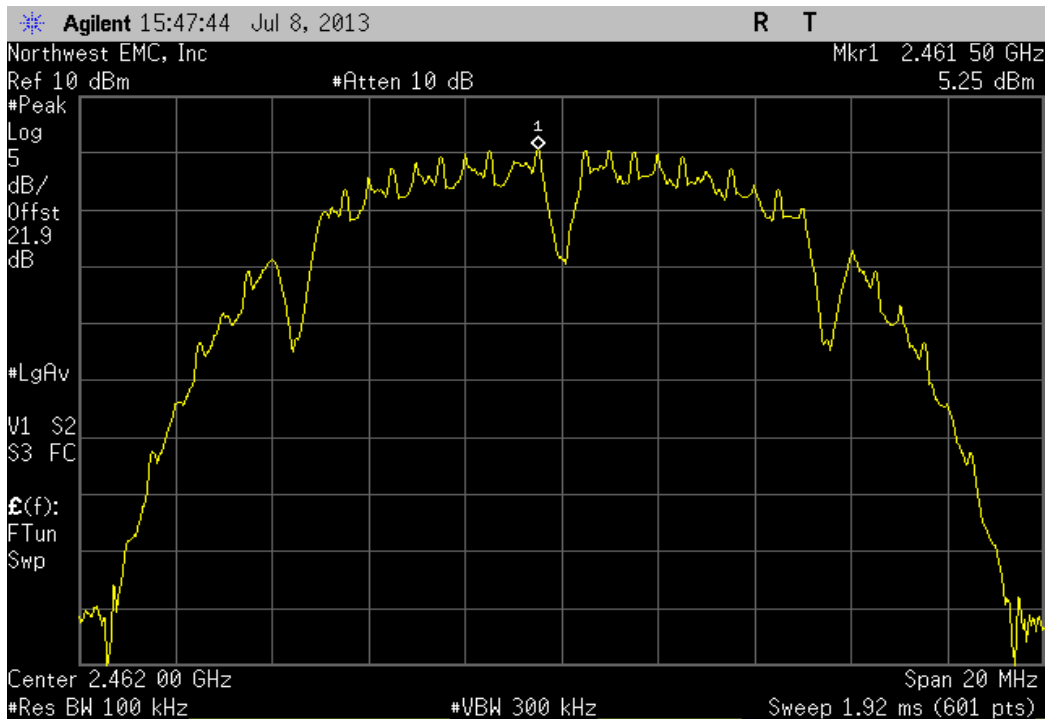
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz					
	Value	dBm/100kHz	Value	Limit	Result
		To dBm/3kHz	dBm/3kHz		
	5.447	-15.2	-9.753	8	Pass



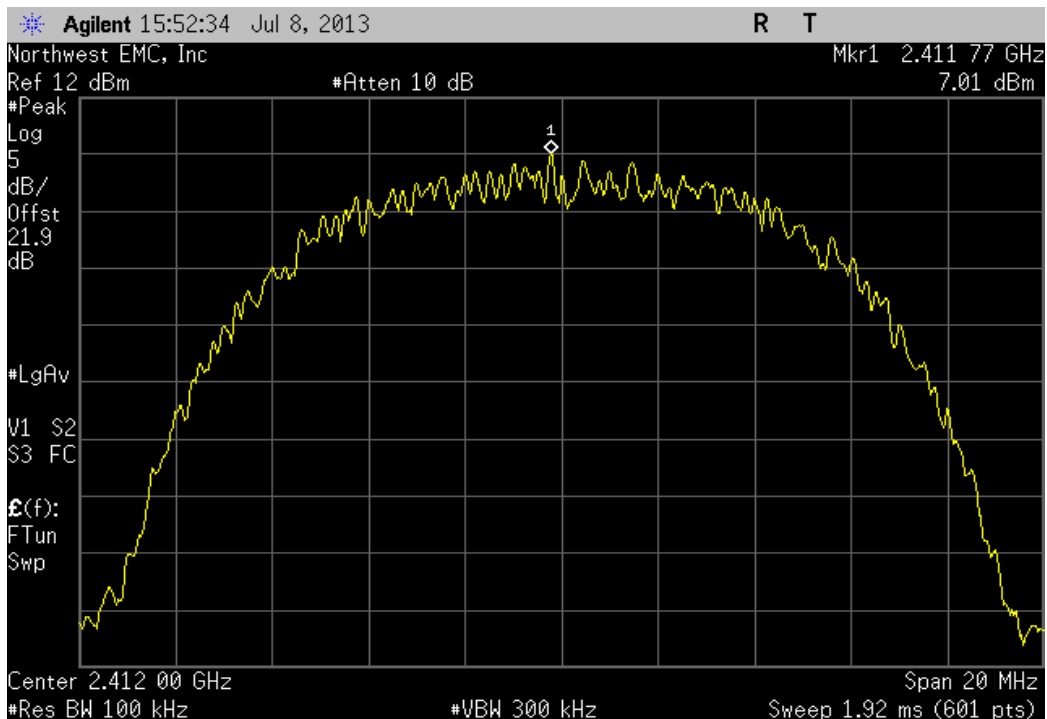
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz					
	Value	dBm/100kHz	Value	Limit	Result
		To dBm/3kHz	dBm/3kHz		
	6.179	-15.2	-9.021	8	Pass



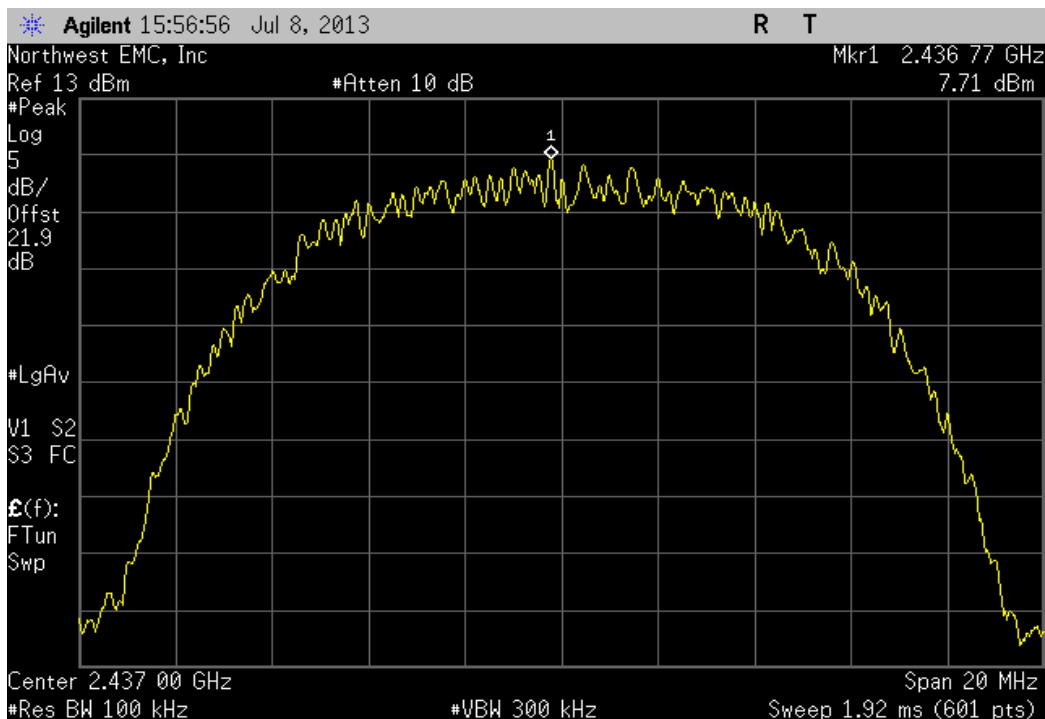
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz						
	Value	dBm/100kHz	Value	Limit		
		To dBm/3kHz	dBm/3kHz			
	5.25	-15.2	-9.95	8	Pass	



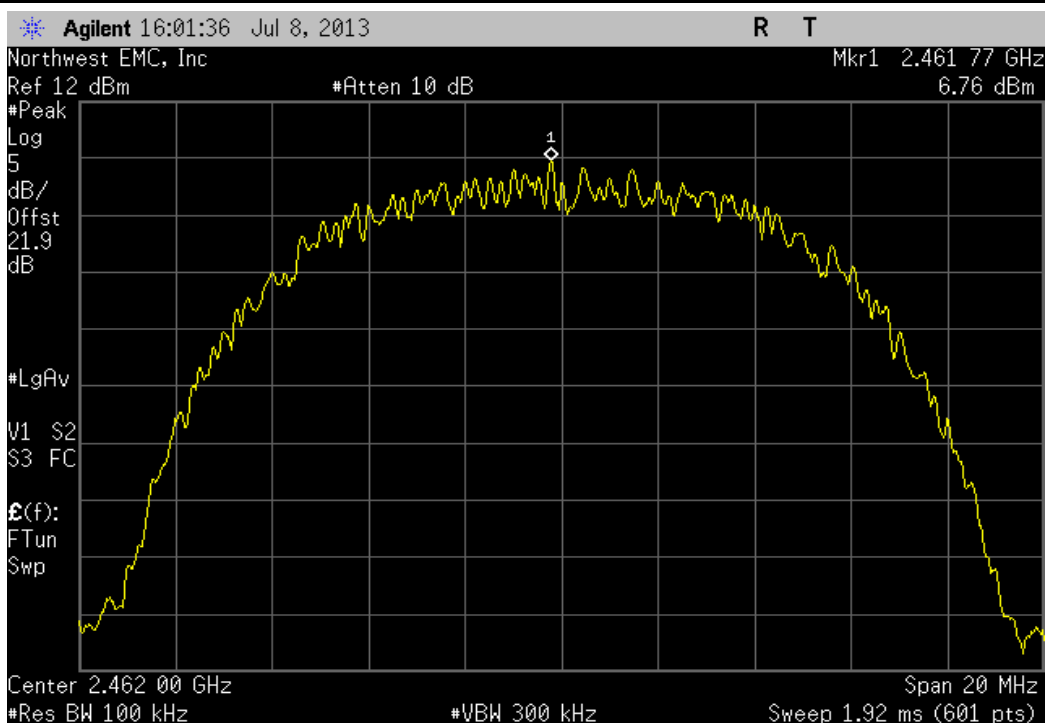
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz						
	Value	dBm/100kHz	Value	Limit		
		To dBm/3kHz	dBm/3kHz			
	7.005	-15.2	-8.195	8	Pass	



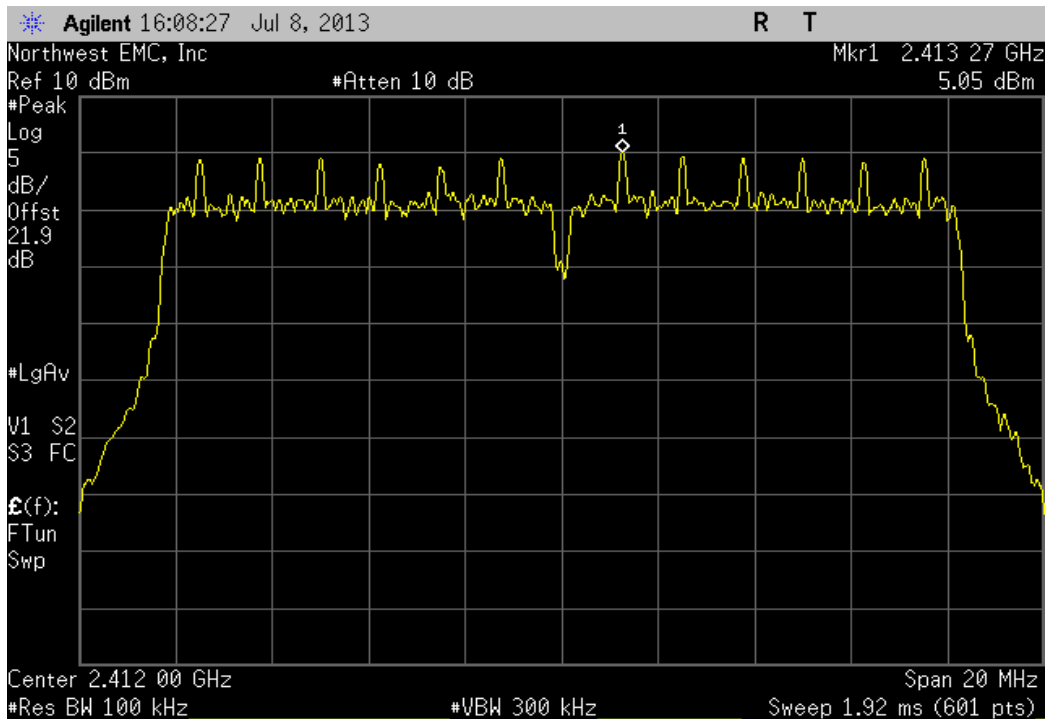
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Mid Channel 6, 2437 MHz					
	Value	dBm/100kHz	Value	Limit	Result
		To dBm/3kHz	dBm/3kHz		
	7.711	-15.2	-7.489	8	Pass



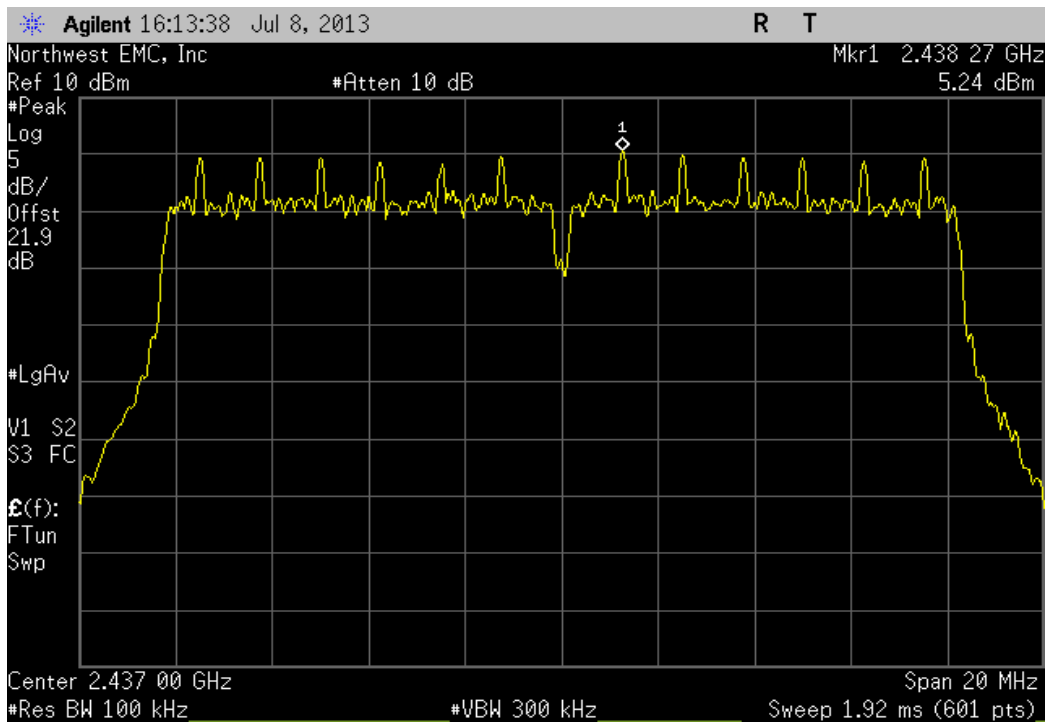
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz					
	Value	dBm/100kHz	Value	Limit	Result
		To dBm/3kHz	dBm/3kHz		
	6.758	-15.2	-8.442	8	Pass



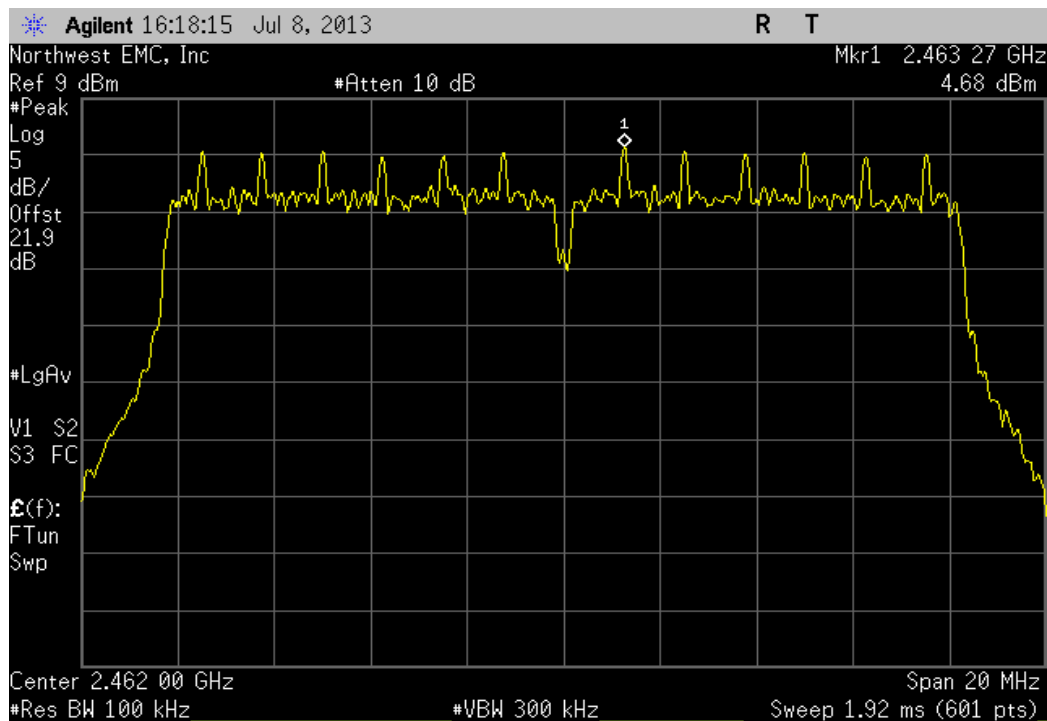
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz					
	Value	dBm/100kHz	Value	Limit	Result
		To dBm/3kHz	dBm/3kHz		
	5.053	-15.2	-10.147	8	Pass



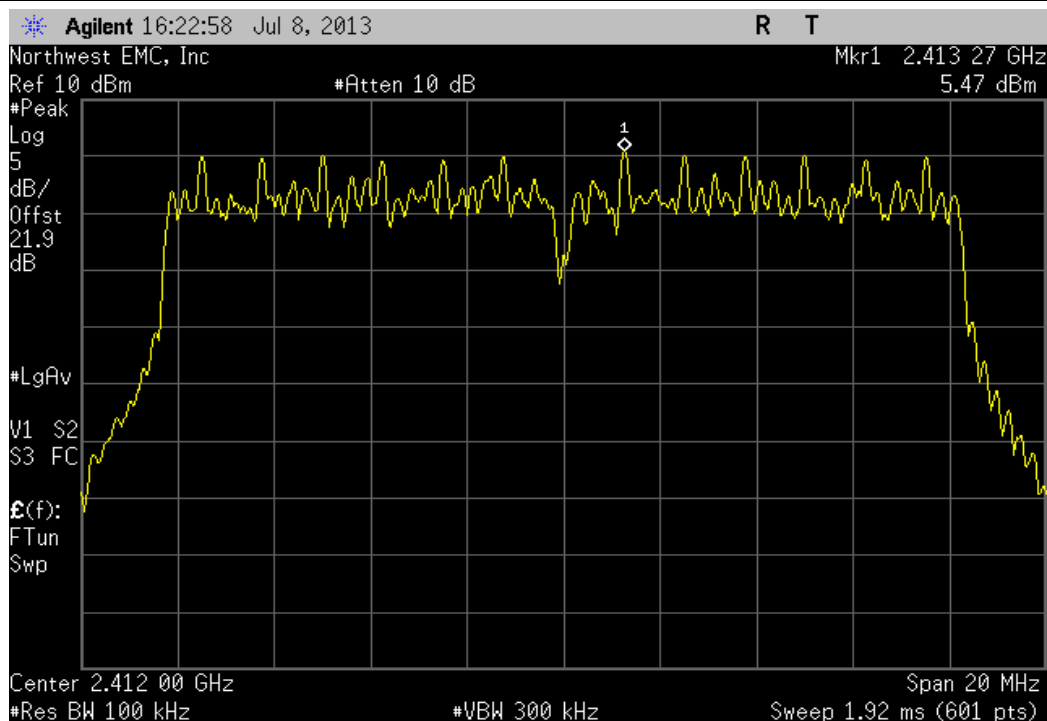
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz					
	Value	dBm/100kHz	Value	Limit	Result
		To dBm/3kHz	dBm/3kHz		
	5.239	-15.2	-9.961	8	Pass



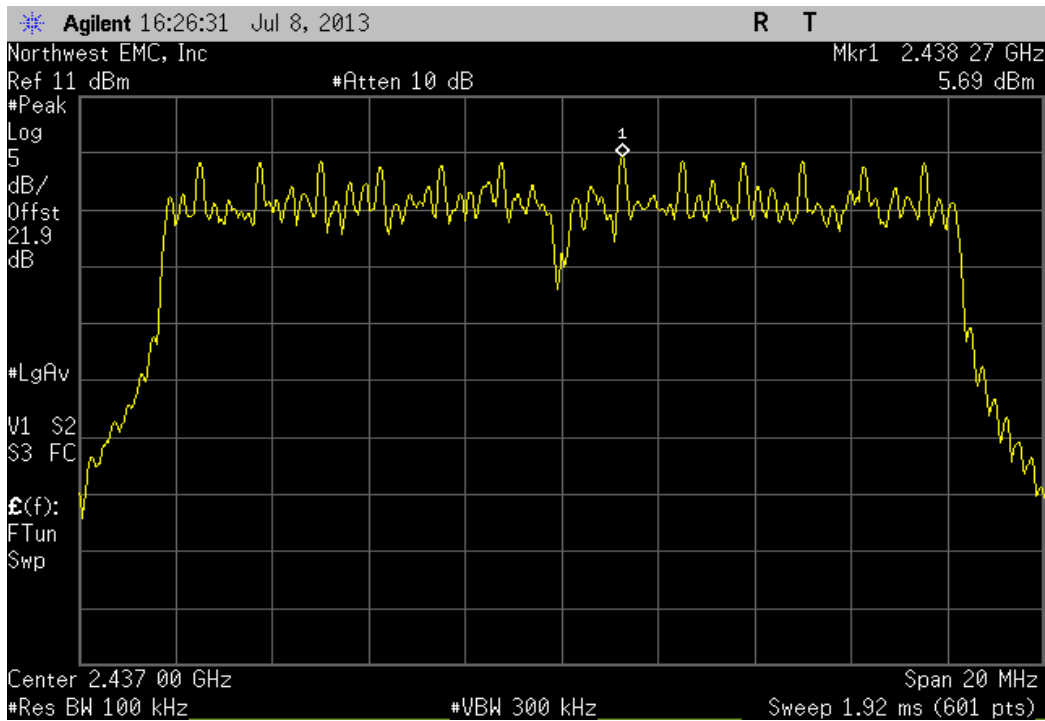
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz					
	Value	dBm/100kHz	Value	Limit	Result
		To dBm/3kHz	dBm/3kHz		
	4.677	-15.2	-10.523	8	Pass



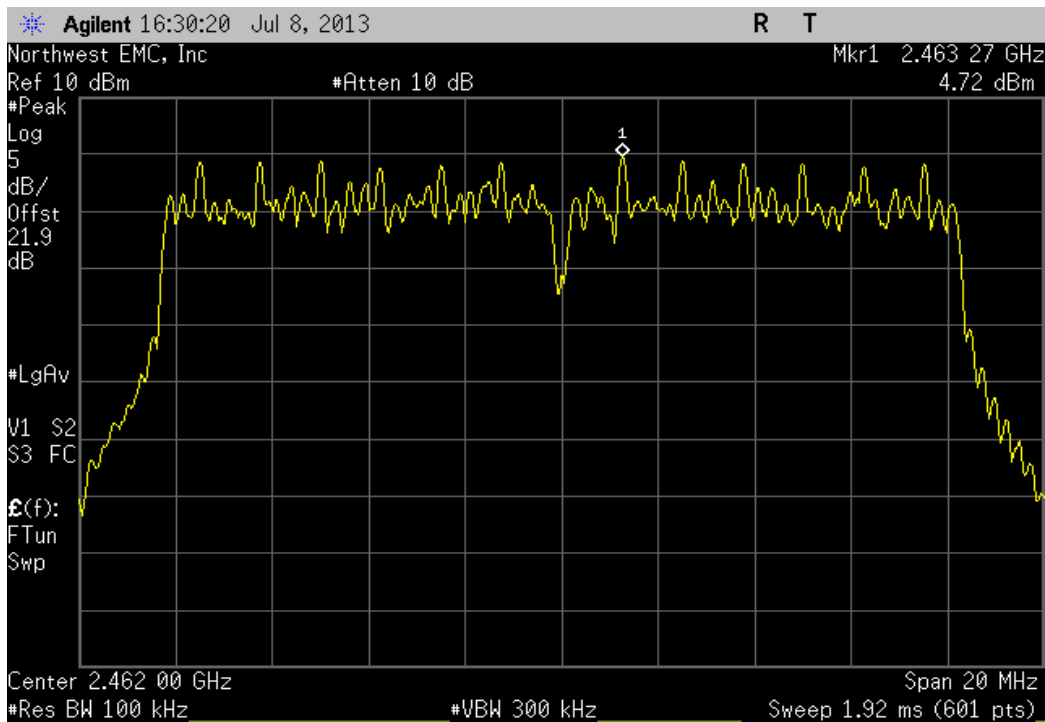
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz					
	Value	dBm/100kHz	Value	Limit	Result
		To dBm/3kHz	dBm/3kHz		
	5.466	-15.2	-9.734	8	Pass



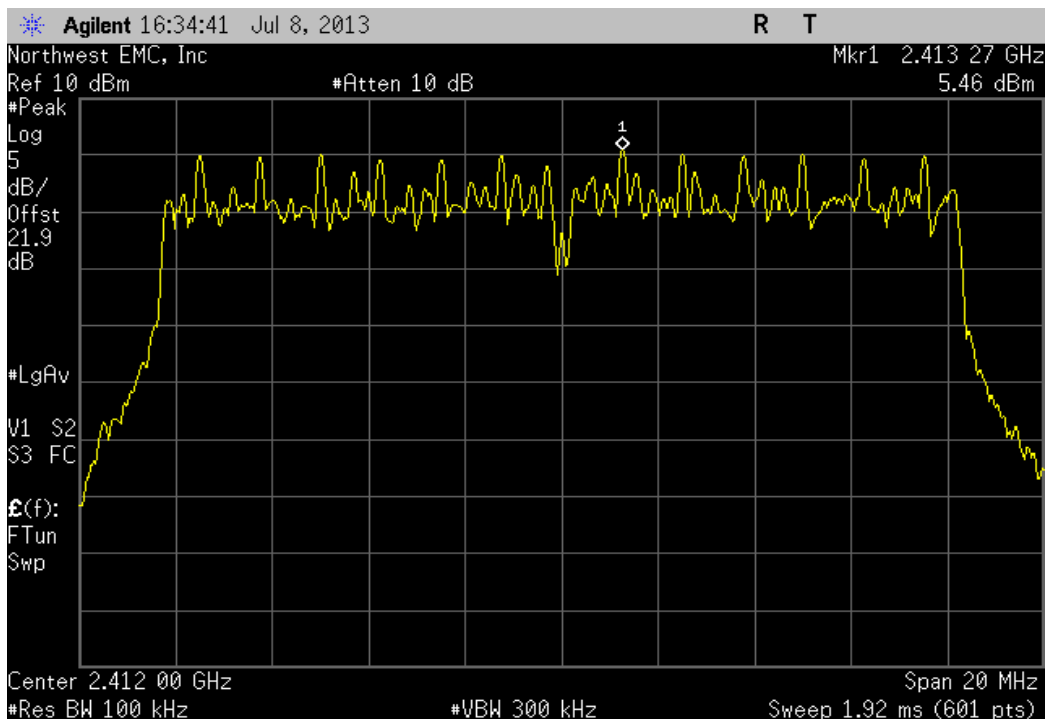
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Mid Channel 6, 2437 MHz					
	Value	dBm/100kHz	Value	Limit	Result
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
	5.686	-15.2	-9.514	8	Pass



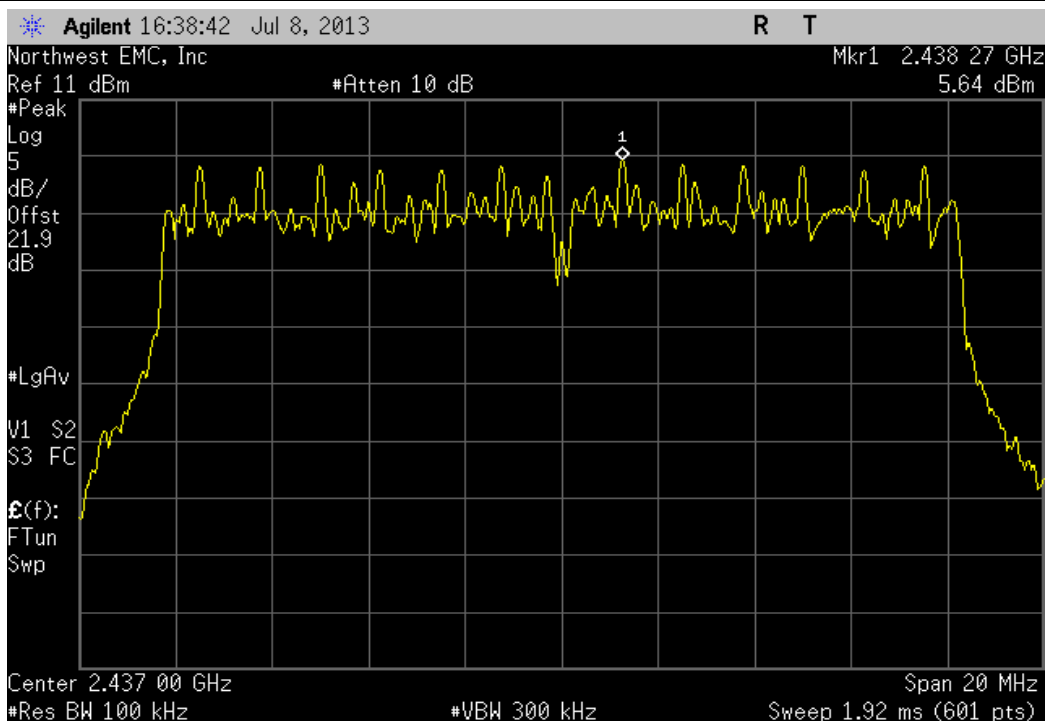
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz					
	Value	dBm/100kHz	Value	Limit	Result
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
	4.721	-15.2	-10.479	8	Pass



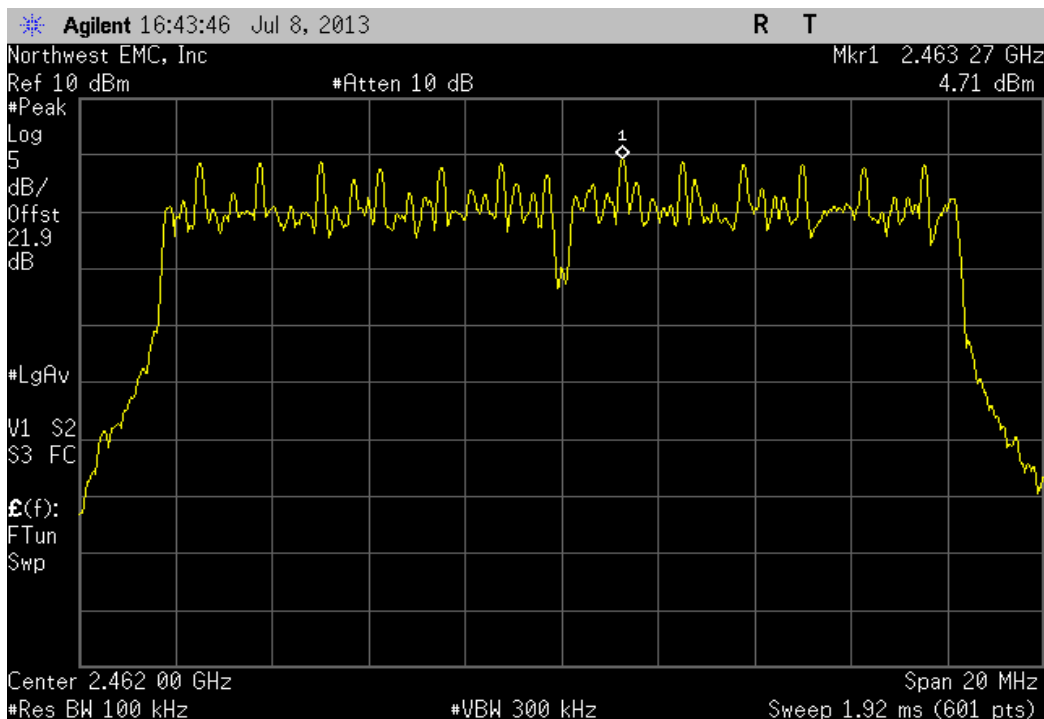
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz					
	Value	dBm/100kHz	Value	Limit	Result
		To dBm/3kHz	dBm/3kHz		
	5.457	-15.2	-9.743	8	Pass



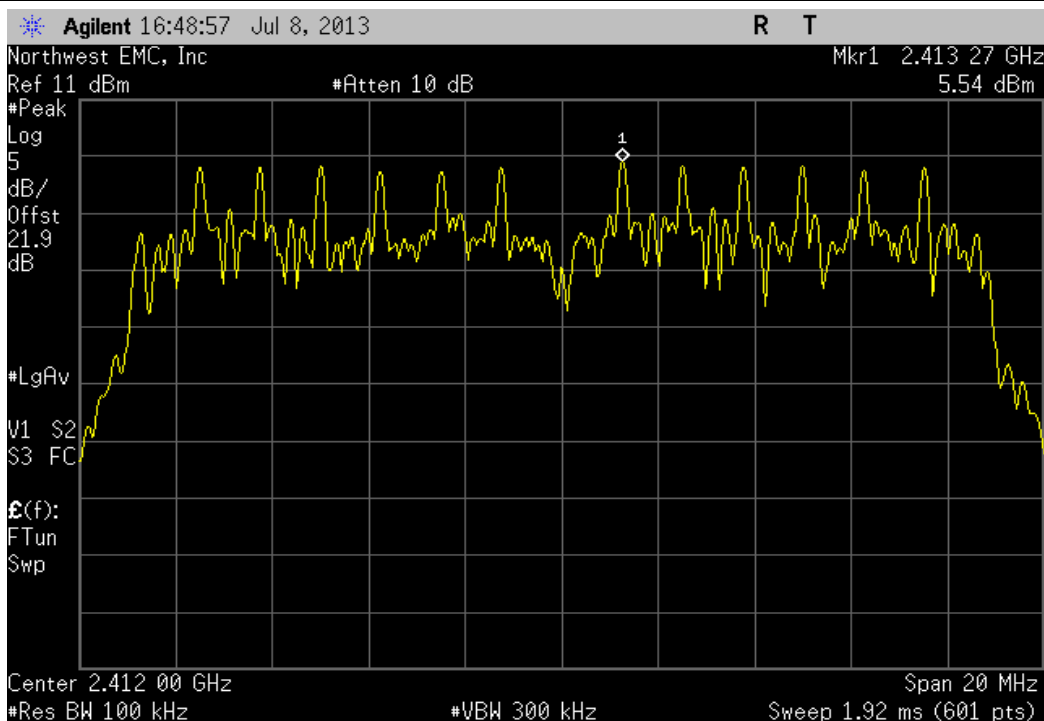
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz					
	Value	dBm/100kHz	Value	Limit	Result
		To dBm/3kHz	dBm/3kHz		
	5.643	-15.2	-9.557	8	Pass



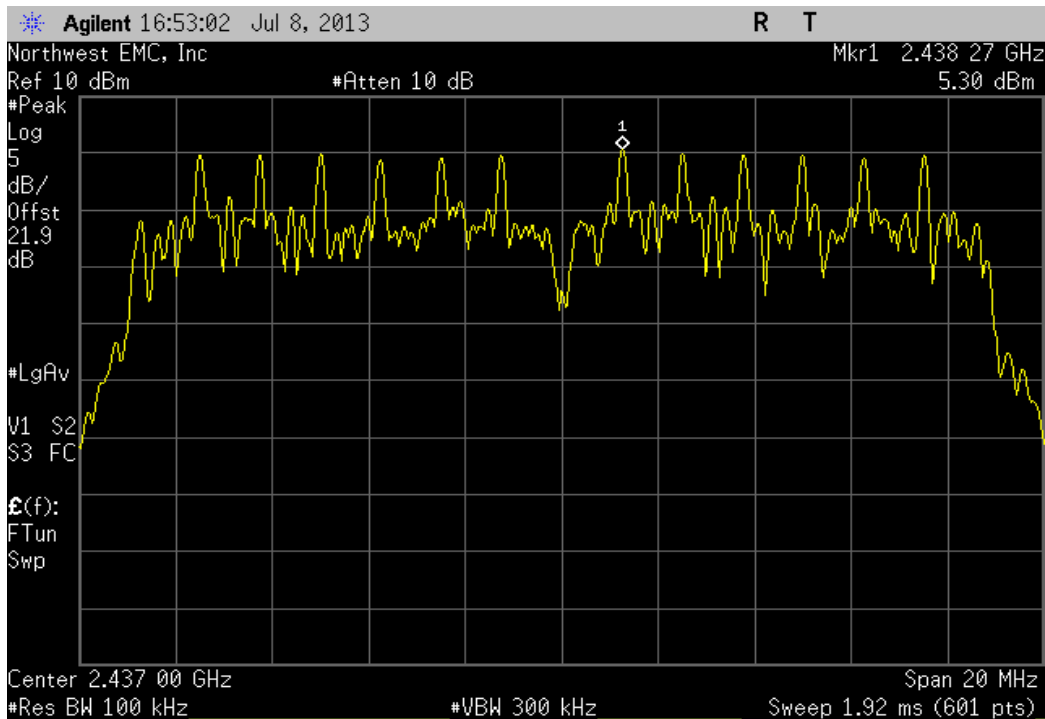
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz					
	Value	dBm/100kHz	Value	Limit	Result
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
	4.707	-15.2	-10.493	8	Pass



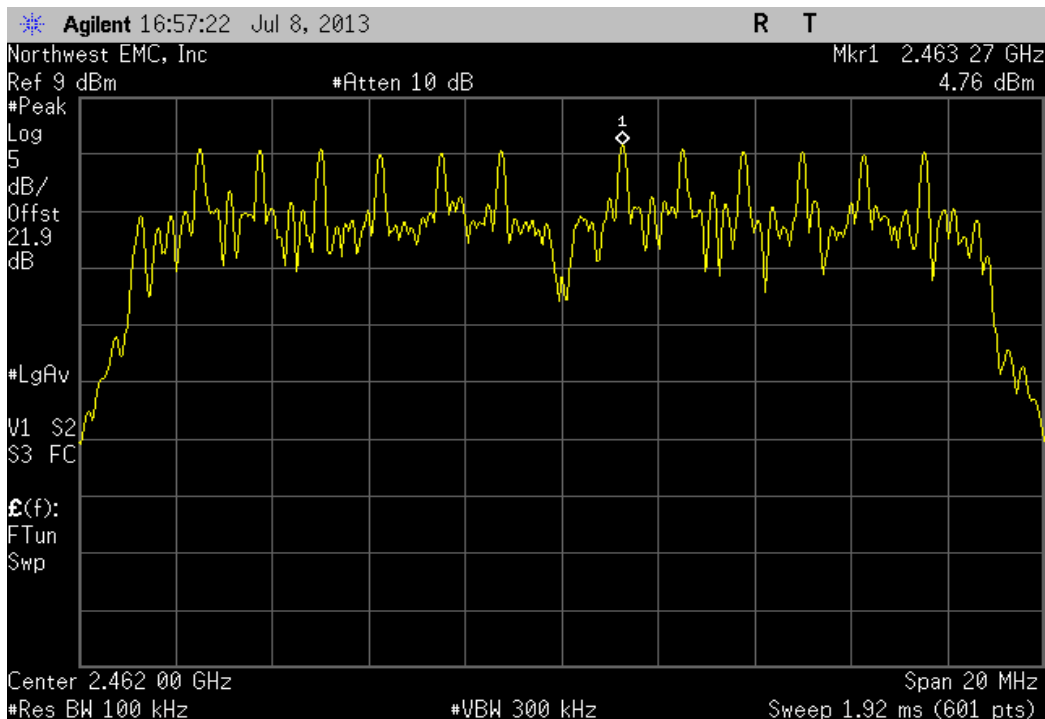
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1, 2412 MHz					
	Value	dBm/100kHz	Value	Limit	Result
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
	5.537	-15.2	-9.663	8	Pass



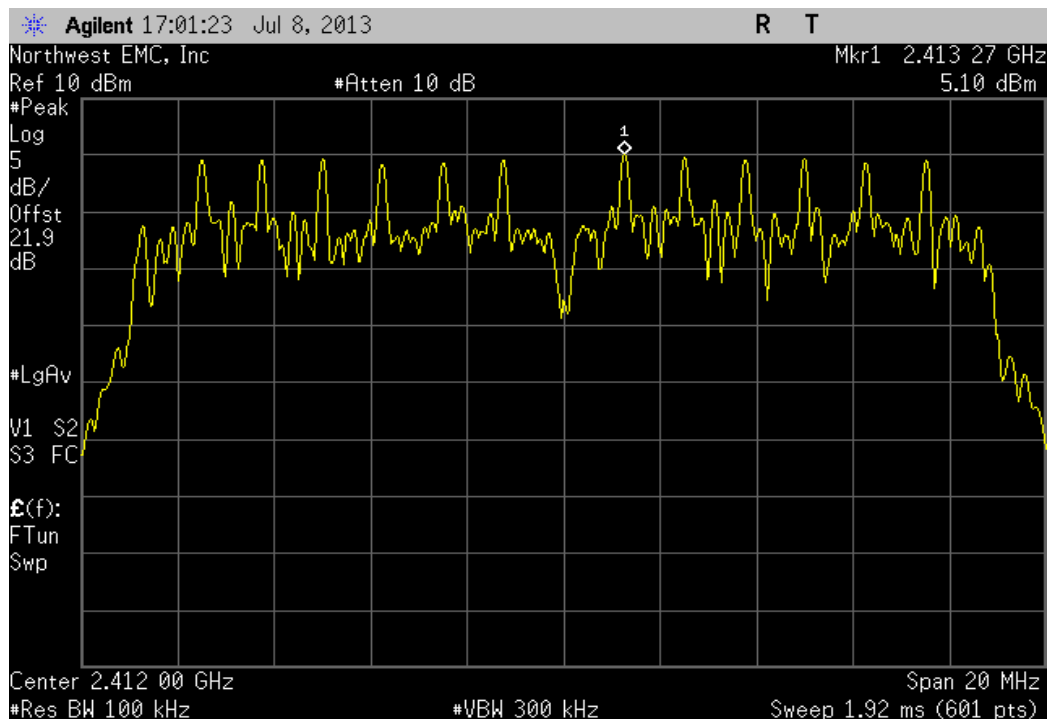
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Mid Channel 6, 2437 MHz						
	Value	dBm/100kHz	Value	Limit		
		To dBm/3kHz	dBm/3kHz	dBm/3kHz		
Result	5.299	-15.2	-9.901	8	Pass	



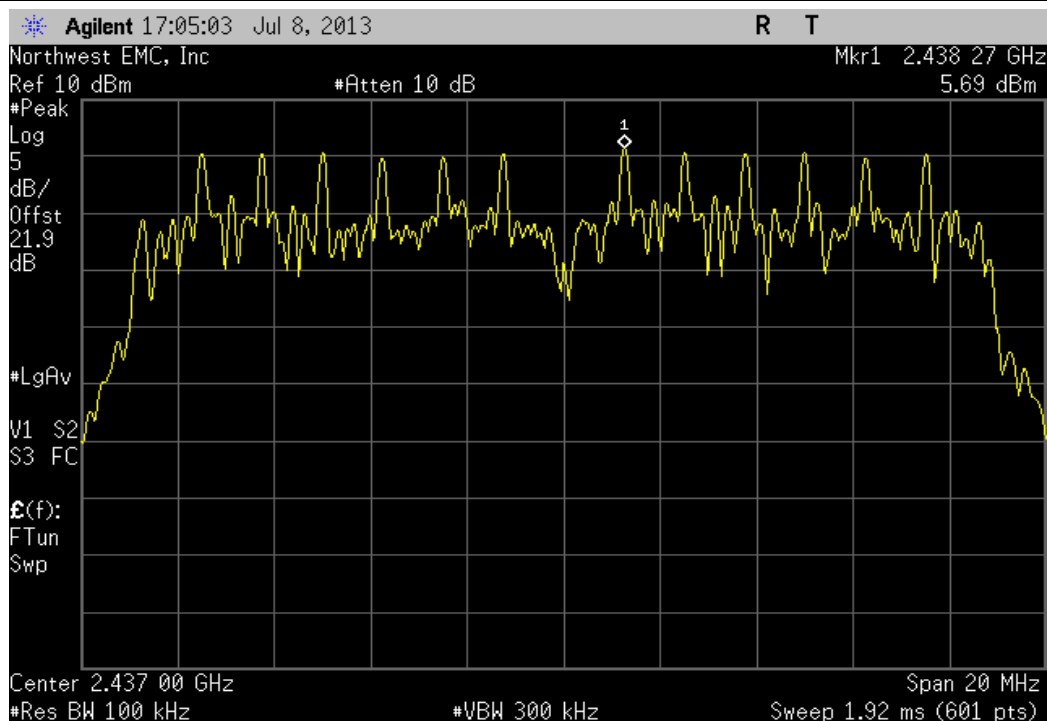
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 11, 2462 MHz						
	Value	dBm/100kHz	Value	Limit		
		To dBm/3kHz	dBm/3kHz	dBm/3kHz		
Result	4.761	-15.2	-10.439	8	Pass	



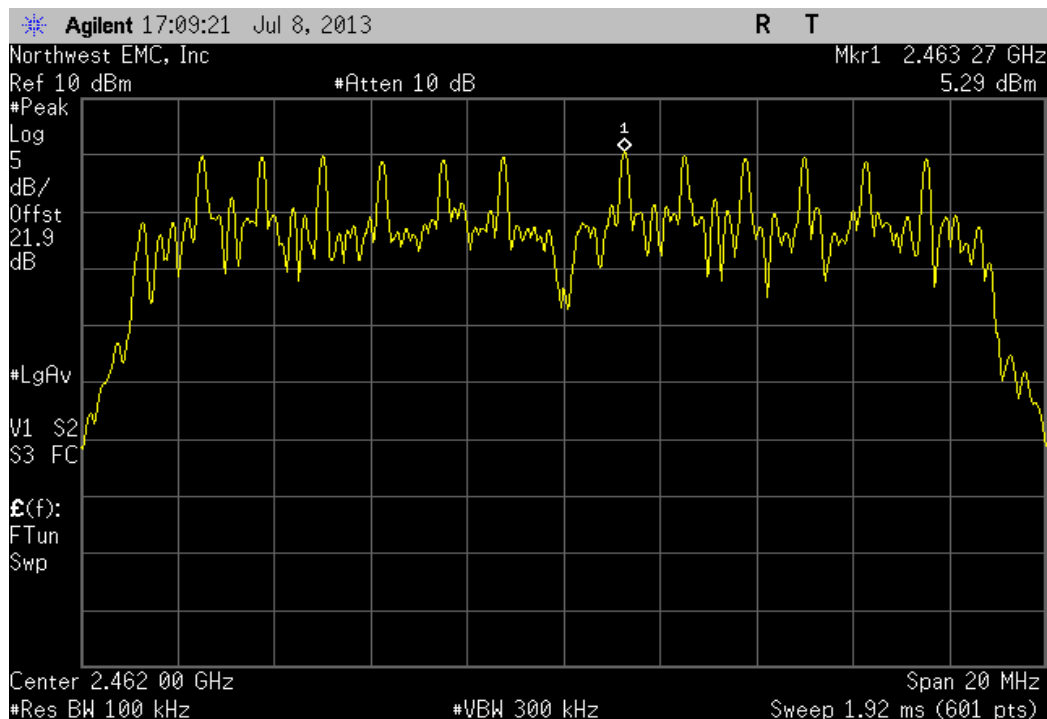
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1, 2412 MHz						
	Value	dBm/100kHz	Value	Limit	Result	
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz		
	5.096	-15.2	-10.104	8	Pass	



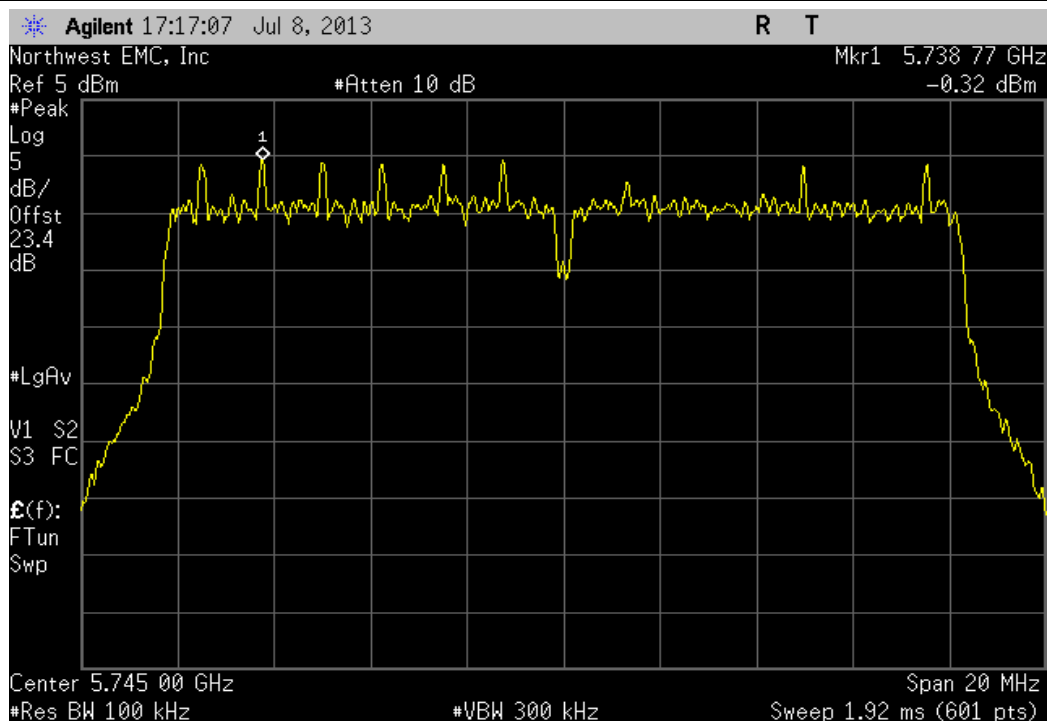
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Mid Channel 6, 2437 MHz						
	Value	dBm/100kHz	Value	Limit	Result	
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz		
	5.692	-15.2	-9.508	8	Pass	



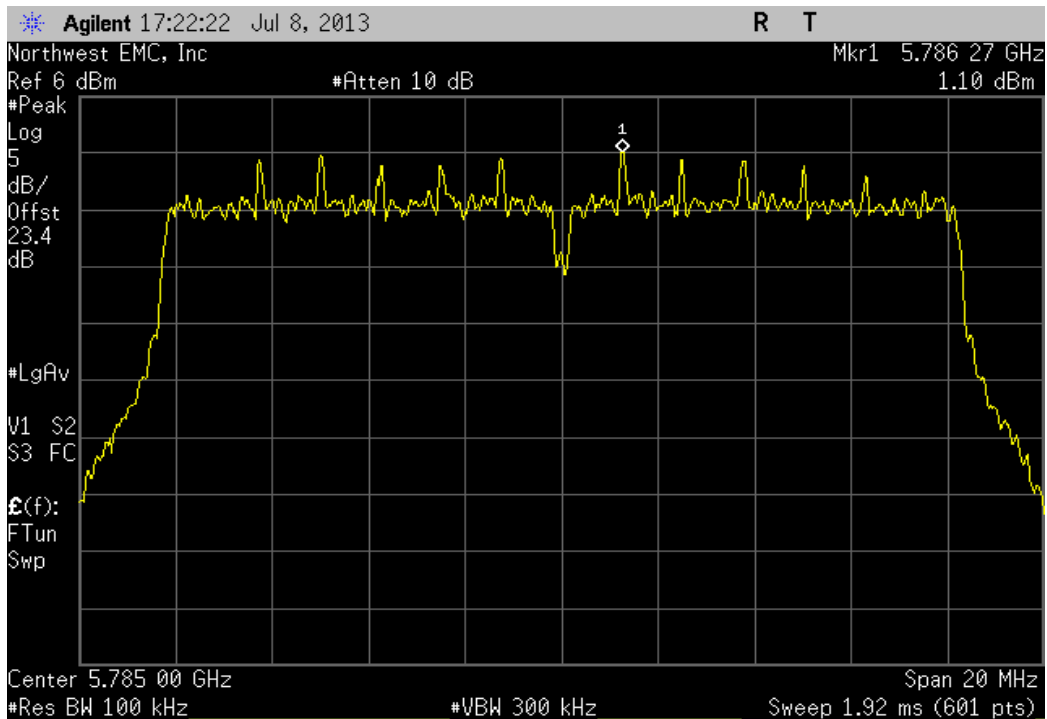
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, High Channel 11, 2462 MHz						
	Value	dBm/100kHz	Value	Limit		
		To dBm/3kHz	dBm/3kHz			
					Result	
	5.288	-15.2	-9.912	8	Pass	



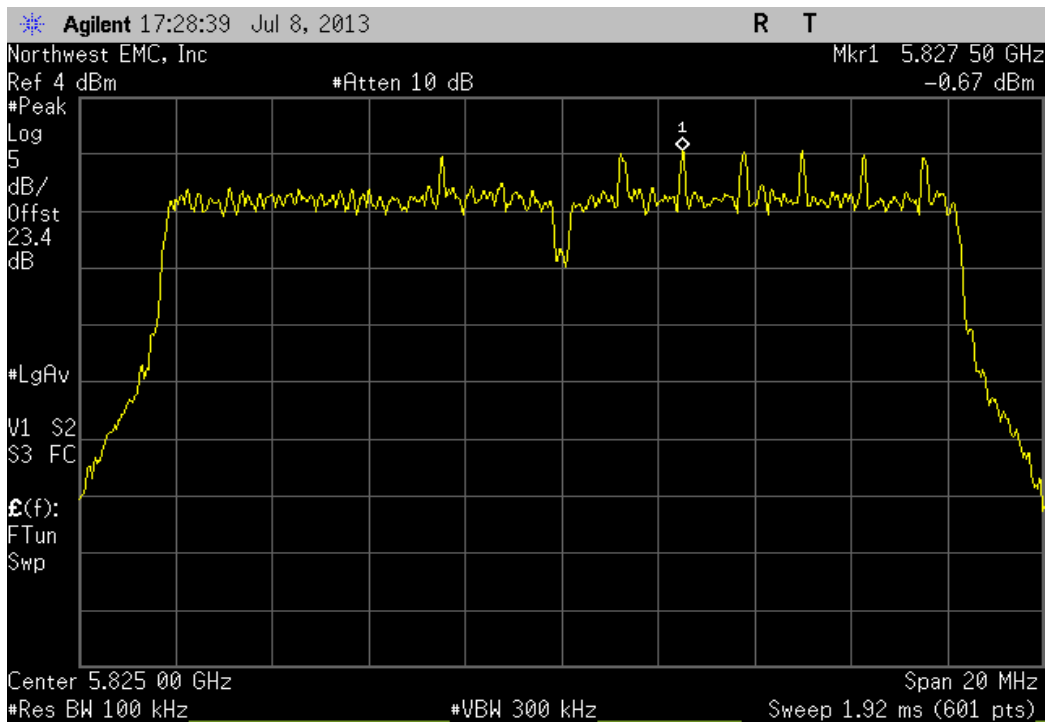
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Low Channel 149, 5745 MHz						
	Value	dBm/100kHz	Value	Limit		
		To dBm/3kHz	dBm/3kHz			
					Result	
	-0.318	-15.2	-15.518	8	Pass	



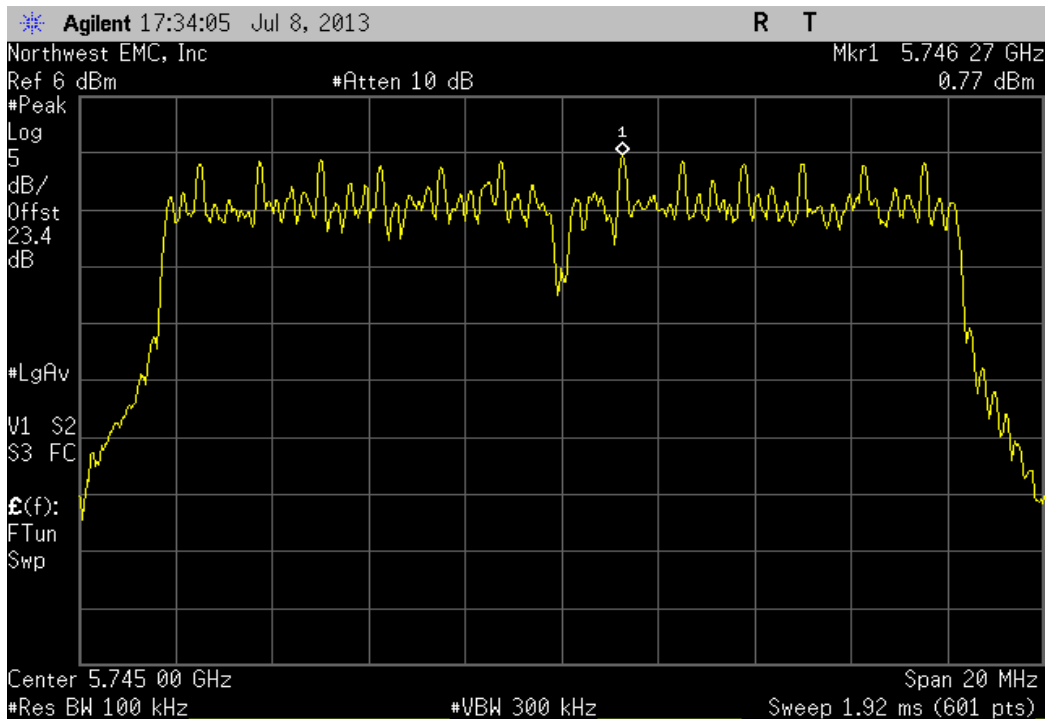
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Mid Channel 157, 5785 MHz						
	Value	dBm/100kHz	Value	Limit		
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	Result	
	1.103	-15.2	-14.097	8	Pass	



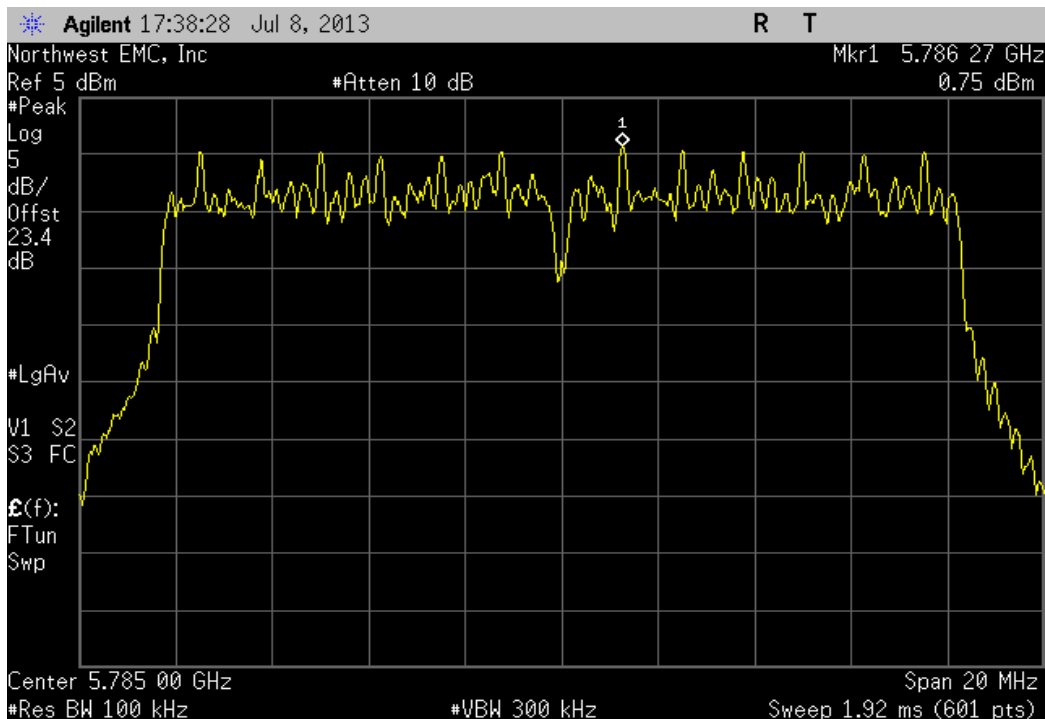
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, High Channel 165, 5825 MHz						
	Value	dBm/100kHz	Value	Limit		
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	Result	
	-0.672	-15.2	-15.872	8	Pass	



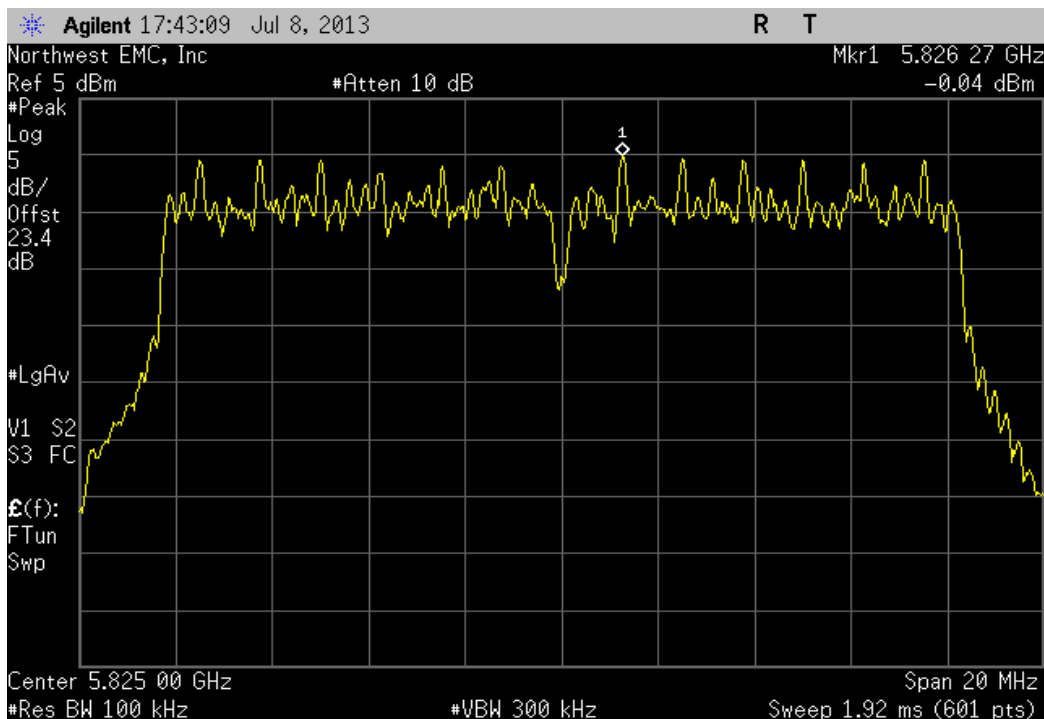
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Low Channel 149, 5745 MHz						
	Value	dBm/100kHz	Value	Limit		
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	Result	
	0.766	-15.2	-14.434	8	Pass	



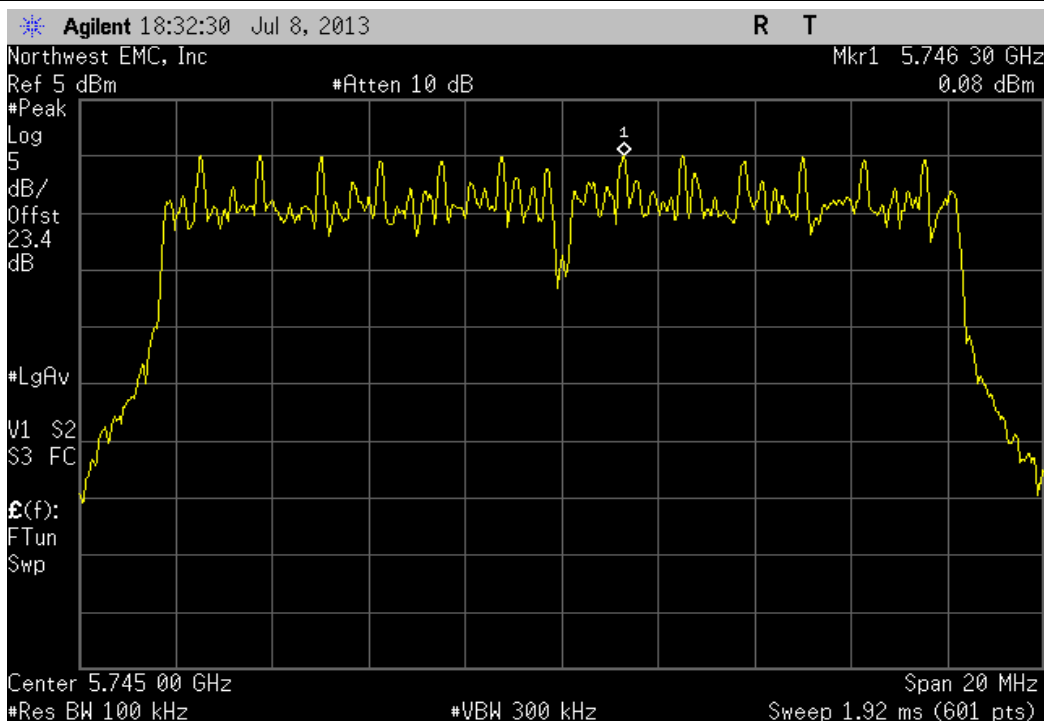
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Mid Channel 157, 5785 MHz						
	Value	dBm/100kHz	Value	Limit		
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	Result	
	0.755	-15.2	-14.445	8	Pass	



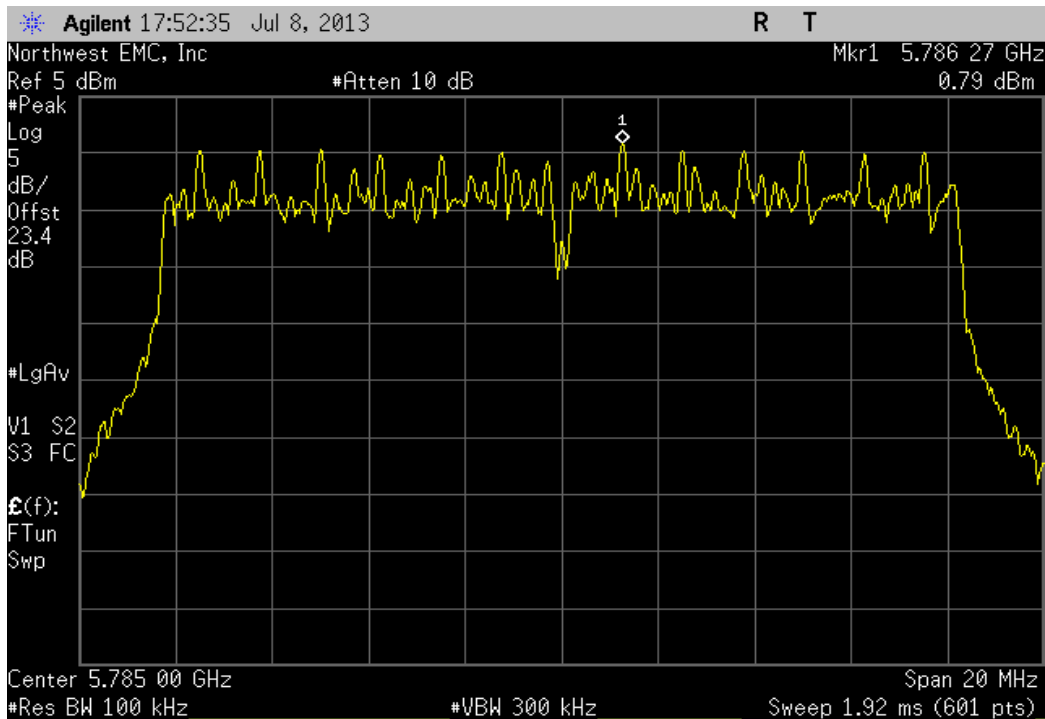
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, High Channel 165, 5825 MHz						
	Value	dBm/100kHz	Value	Limit	Result	
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz		
	-0.041	-15.2	-15.241	8	Pass	



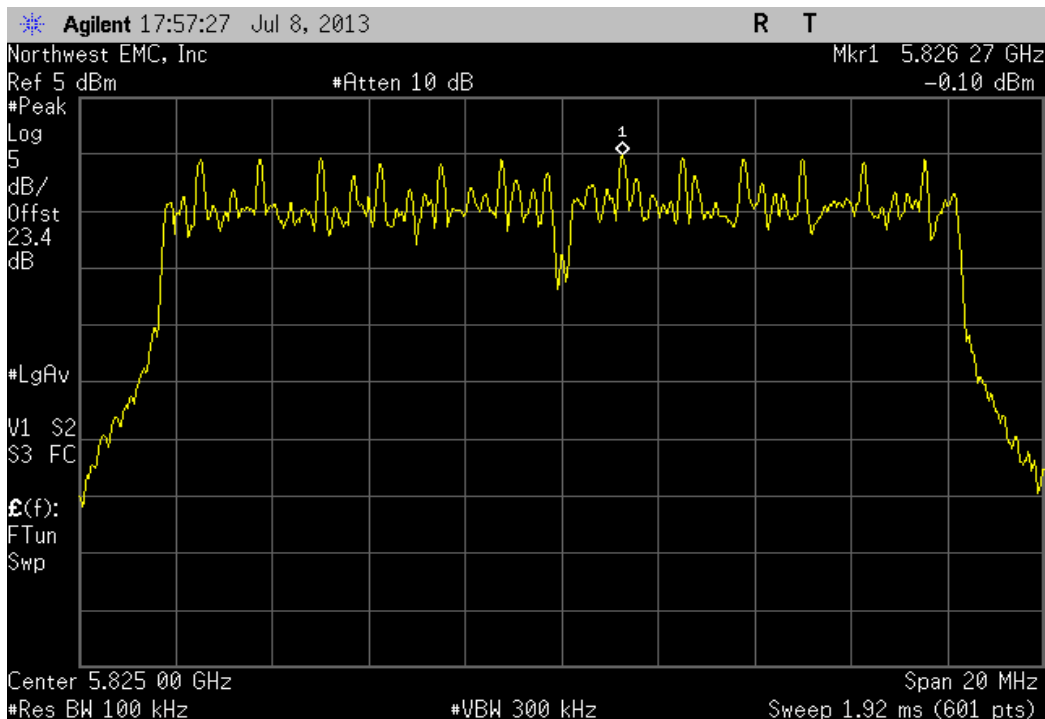
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 54 Mbps, Low Channel 149, 5745 MHz						
	Value	dBm/100kHz	Value	Limit	Result	
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz		
	0.075	-15.2	-15.125	8	Pass	



20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 54 Mbps, Mid Channel 157, 5785 MHz						
	Value	dBm/100kHz	Value	Limit		
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	Result	
	0.793	-15.2	-14.407	8	Pass	

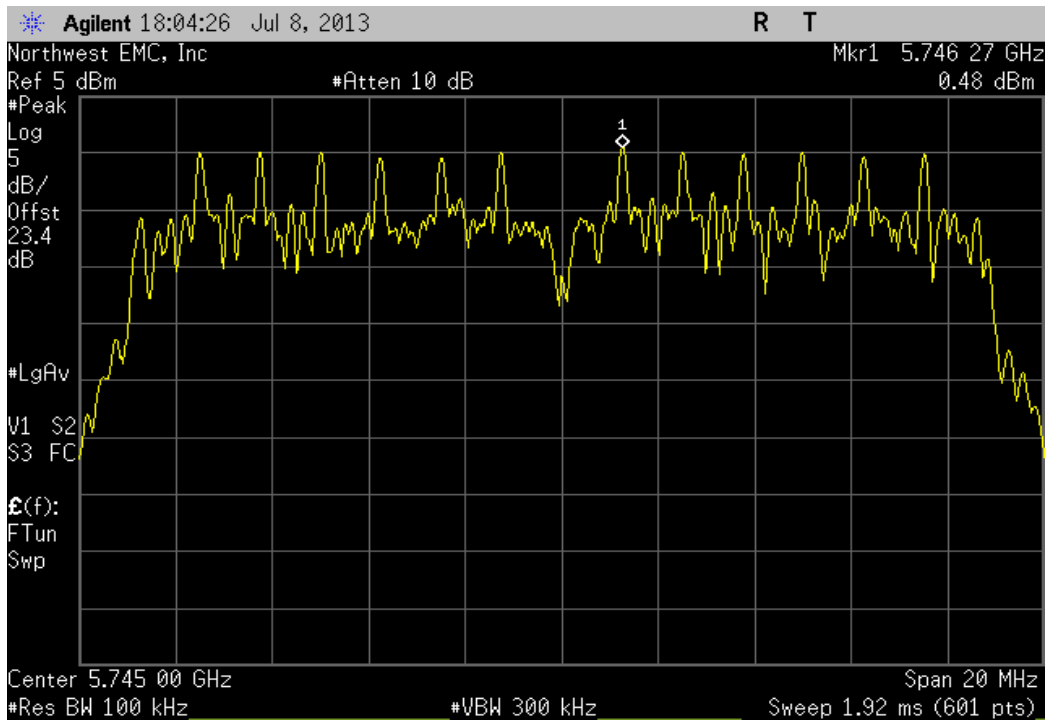


20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 54 Mbps, High Channel 165, 5825 MHz						
	Value	dBm/100kHz	Value	Limit		
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	Result	
	-0.103	-15.2	-15.303	8	Pass	



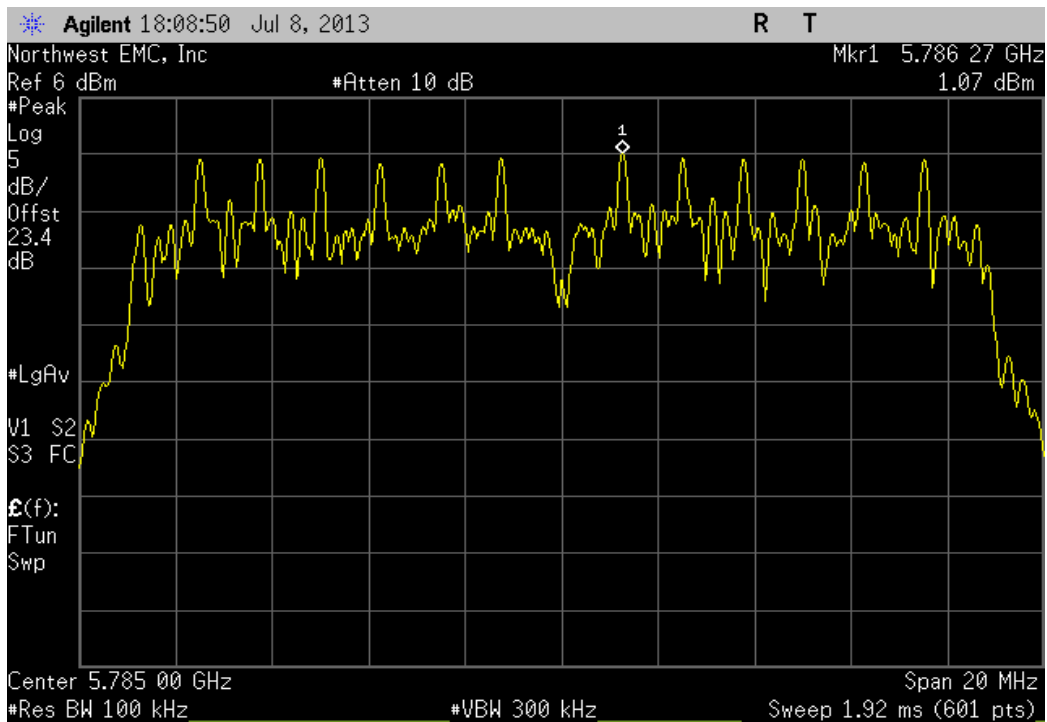
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, Low Channel 149, 5745 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
0.482	-15.2	-14.718	8	Pass



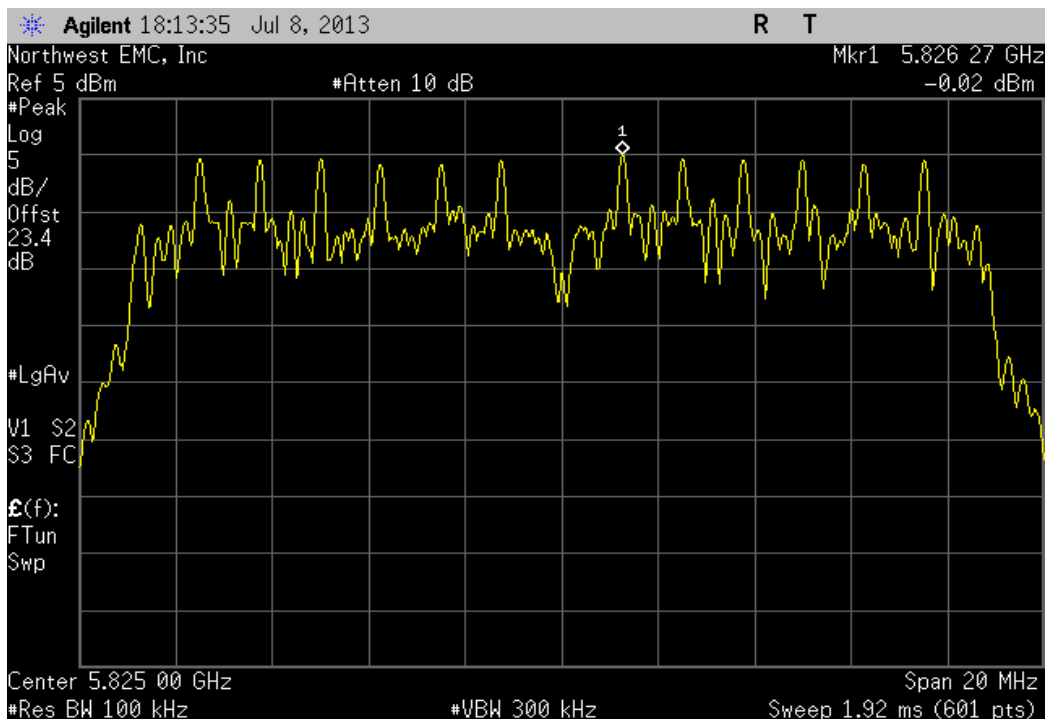
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, Mid Channel 157, 5785 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
1.072	-15.2	-14.128	8	Pass



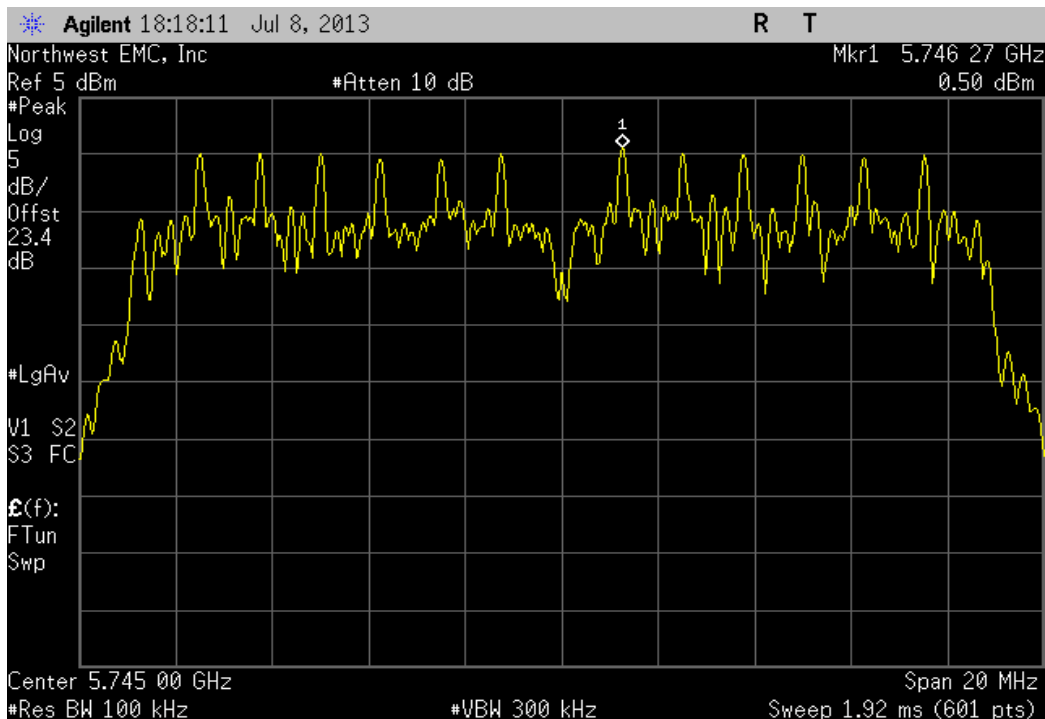
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, High Channel 165, 5825 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
-0.016	-15.2	-15.216	8	Pass

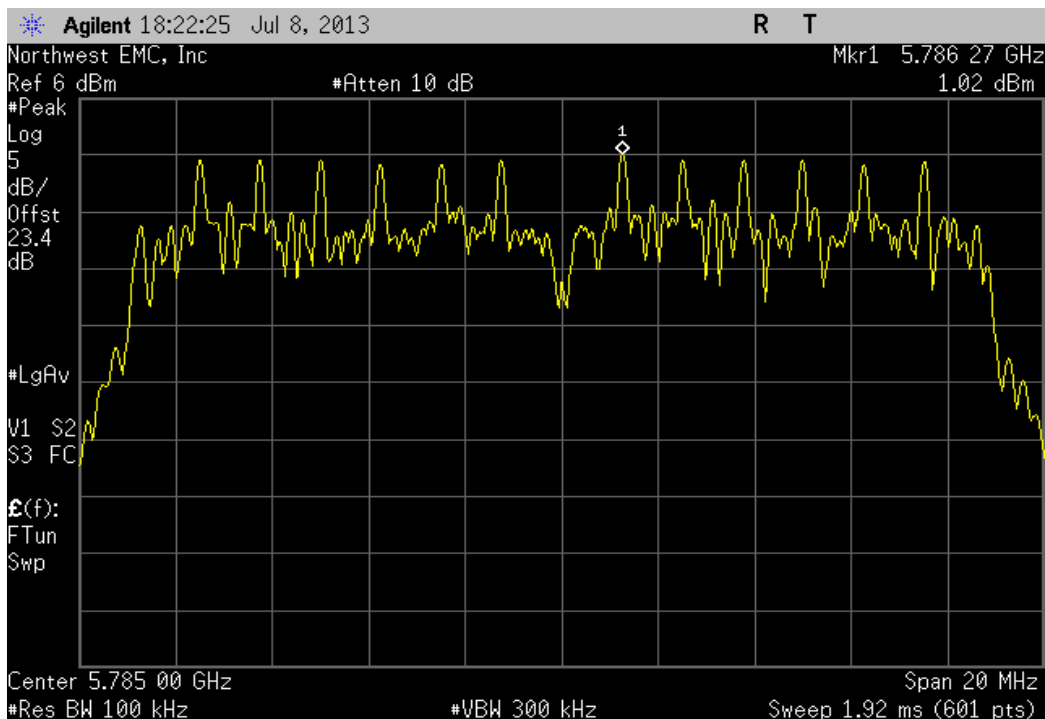


20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, Low Channel 149, 5745 MHz

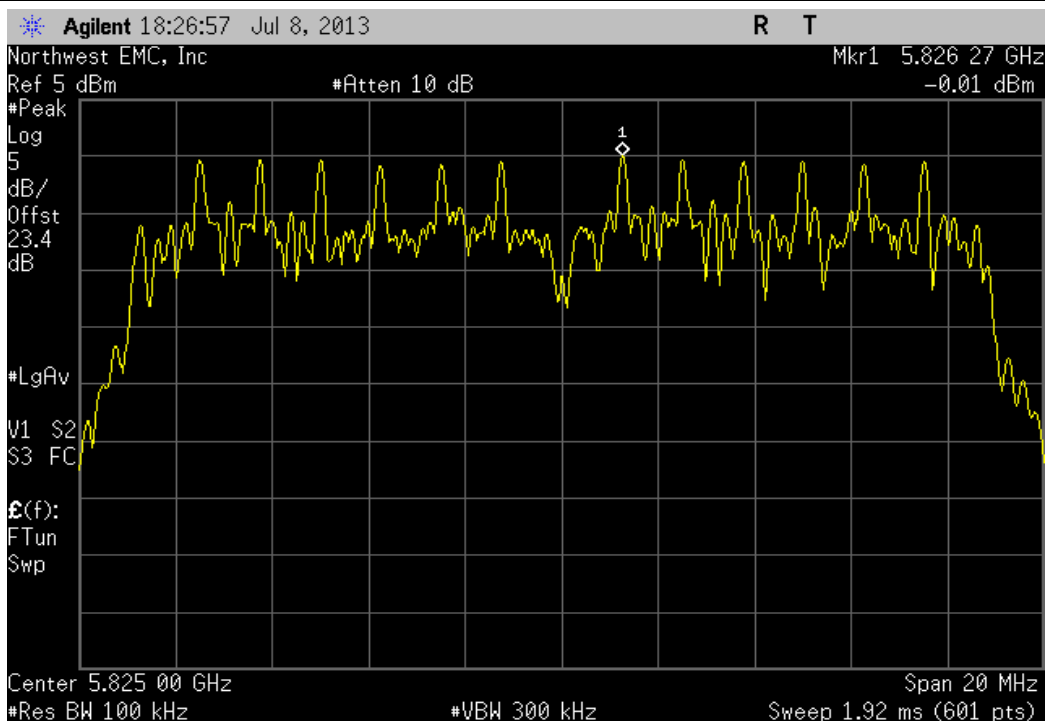
Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
0.498	-15.2	-14.702	8	Pass



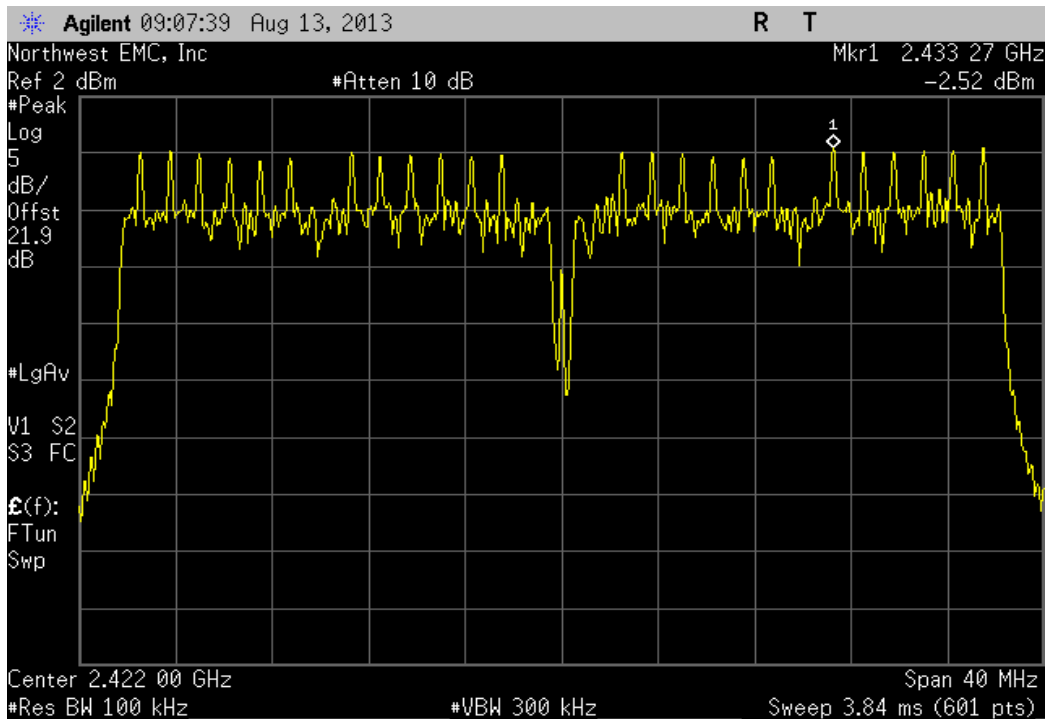
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, Mid Channel 157, 5785 MHz						
	Value	dBm/100kHz	Value	Limit		
		To dBm/3kHz	dBm/3kHz		Result	
	1.025	-15.2	-14.175	8	Pass	



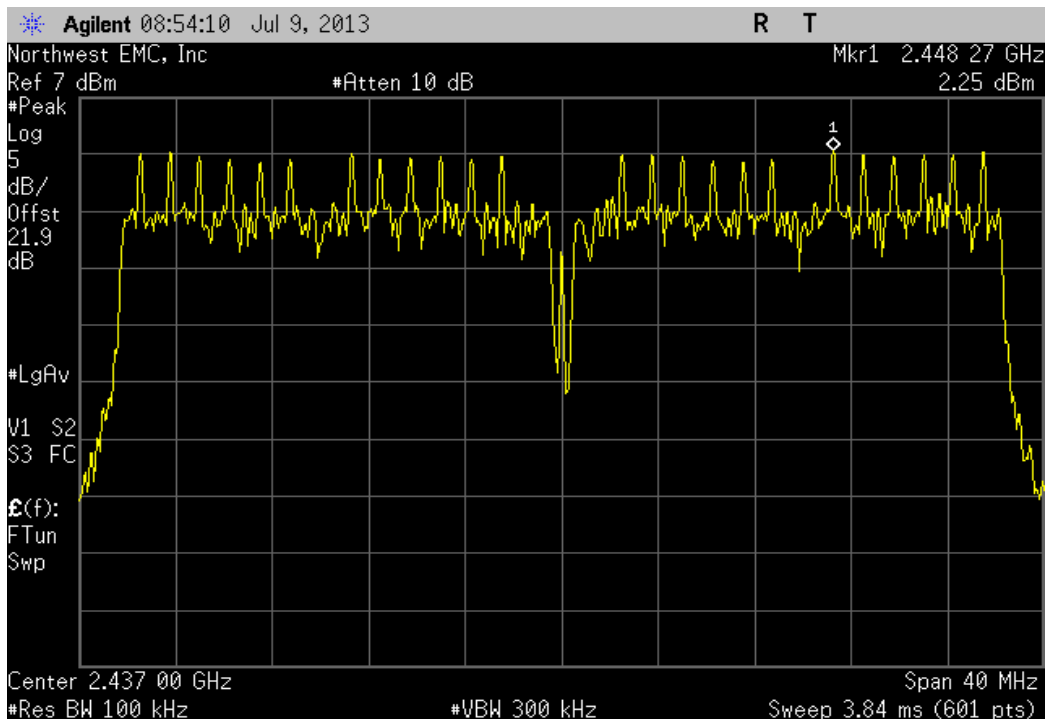
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, High Channel 165, 5825 MHz						
	Value	dBm/100kHz	Value	Limit		
		To dBm/3kHz	dBm/3kHz		Result	
	-0.006	-15.2	-15.206	8	Pass	



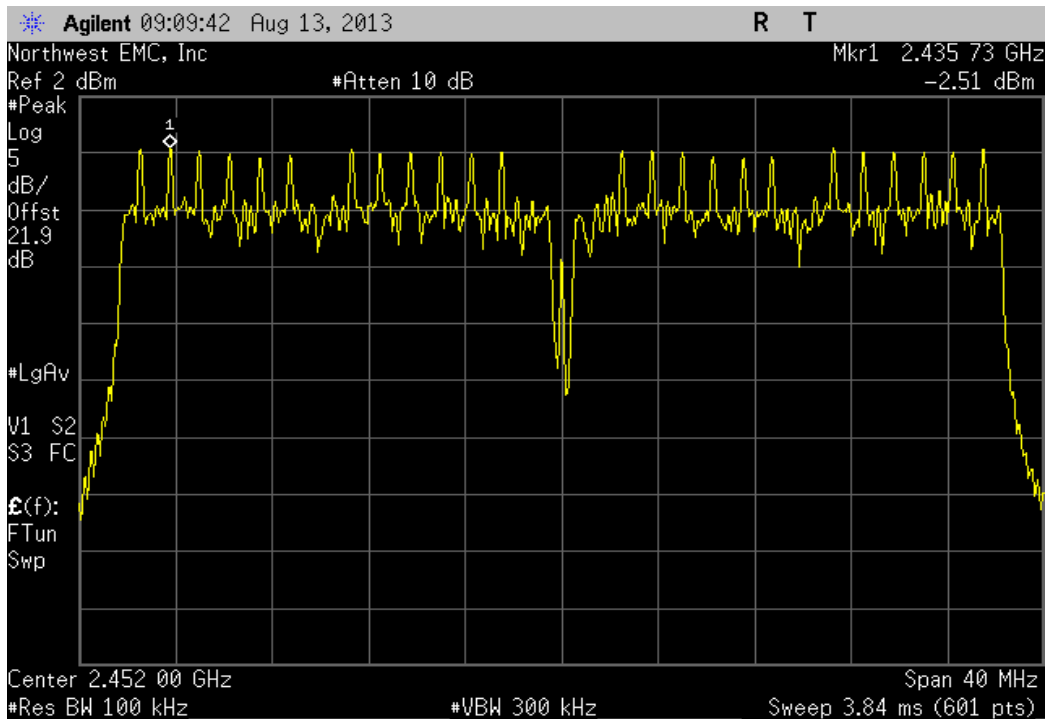
40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1/5, 2422 MHz					
	Value	dBm/100kHz	Value	Limit	Result
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
	-2.52	-15.2	-17.72	8	Pass



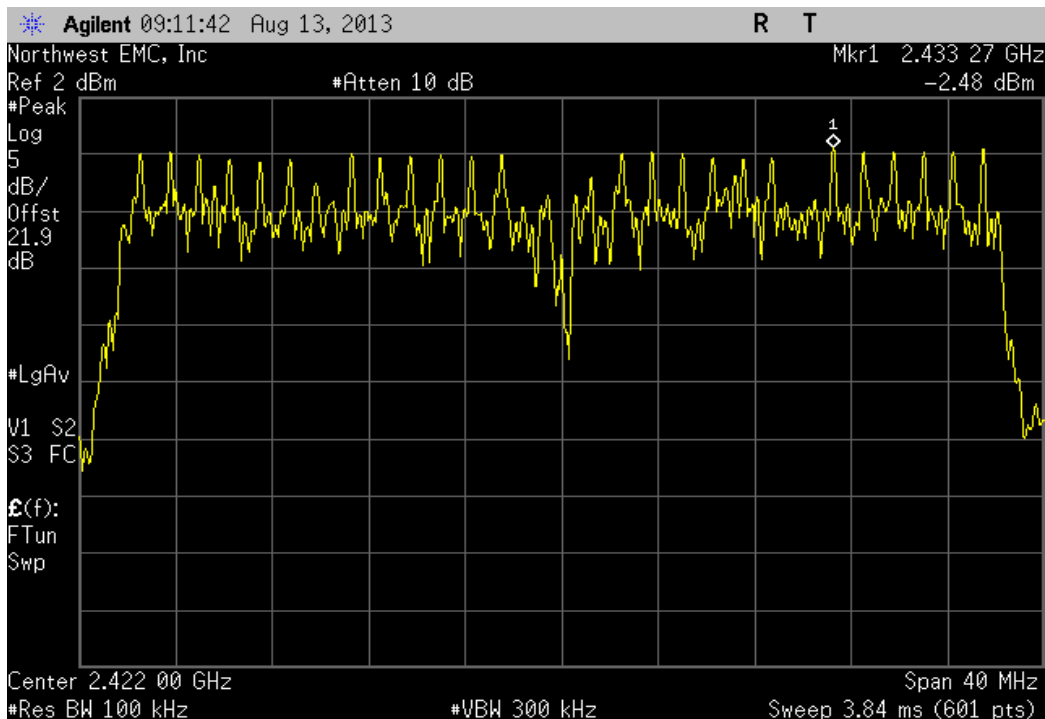
40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Mid Channel 4/8, 2437 MHz					
	Value	dBm/100kHz	Value	Limit	Result
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
	2.252	-15.2	-12.948	8	Pass



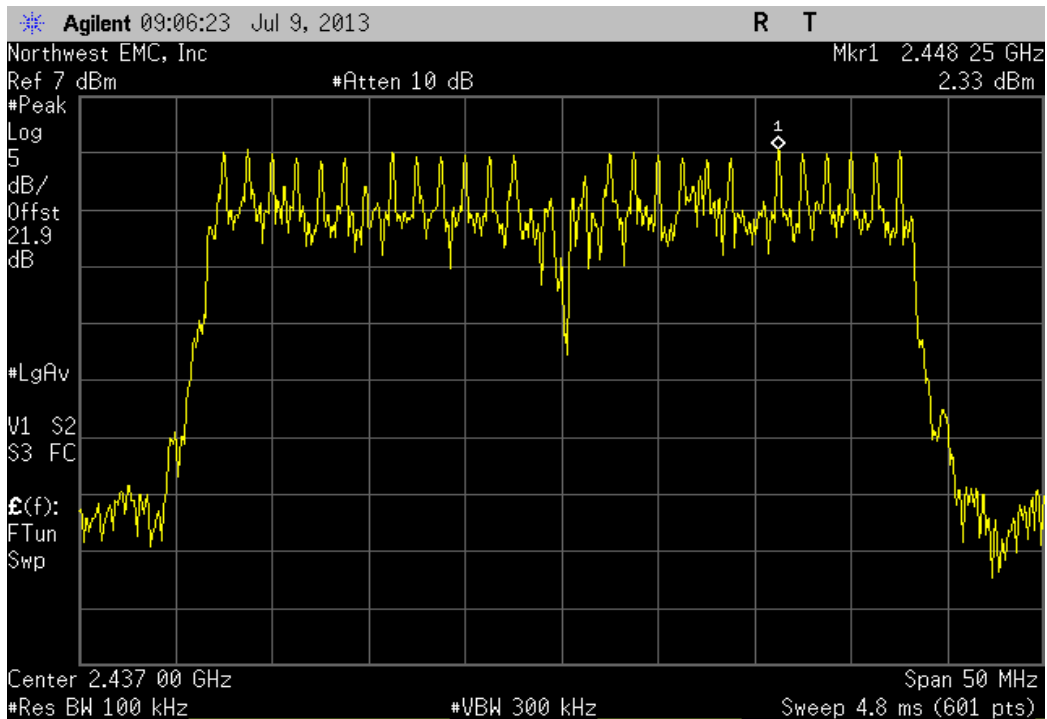
40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 7/11, 2452 MHz					
	Value	dBm/100kHz	Value	Limit	
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	Result
	-2.505	-15.2	-17.705	8	Pass



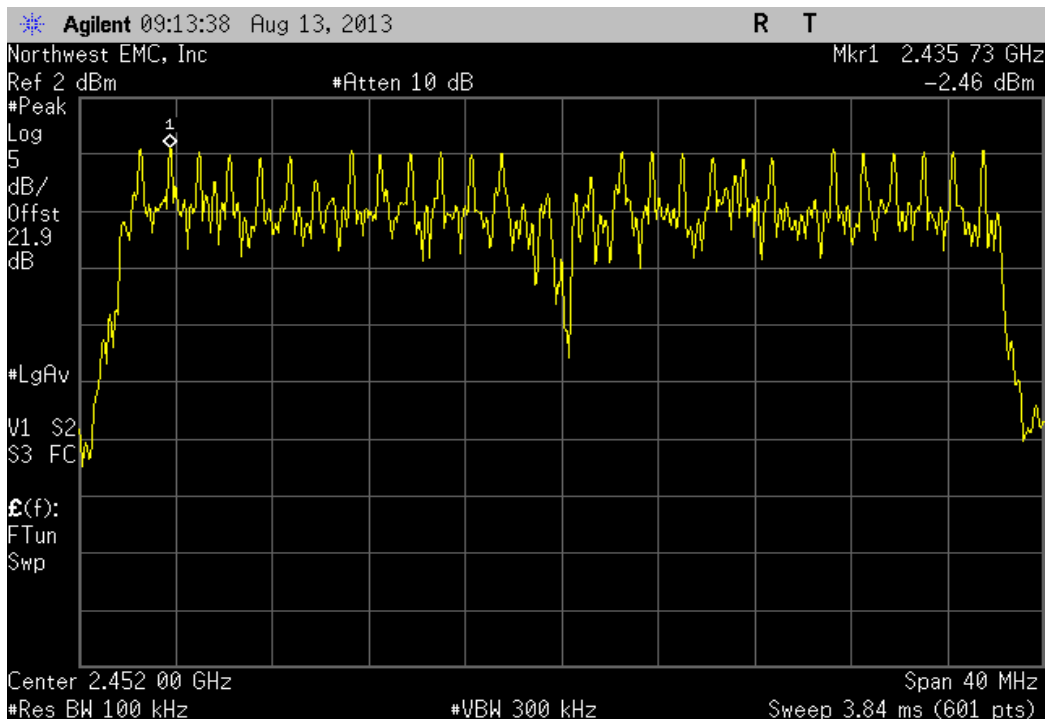
40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1/5, 2422 MHz					
	Value	dBm/100kHz	Value	Limit	
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	Result
	-2.478	-15.2	-17.678	8	Pass



40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Mid Channel 4/8, 2437 MHz						
	Value	dBm/100kHz	Value	Limit	Result	
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz		
	2.334	-15.2	-12.866	8	Pass	

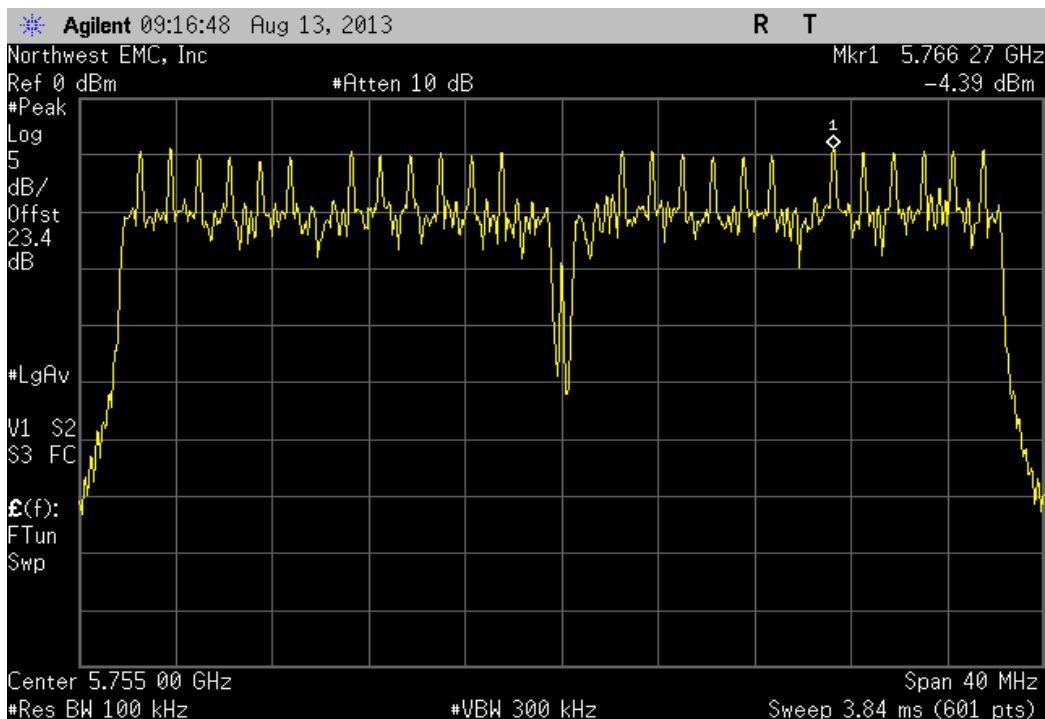


40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, High Channel 7/11, 2452 MHz						
	Value	dBm/100kHz	Value	Limit	Result	
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz		
	-2.465	-15.2	-17.665	8	Pass	



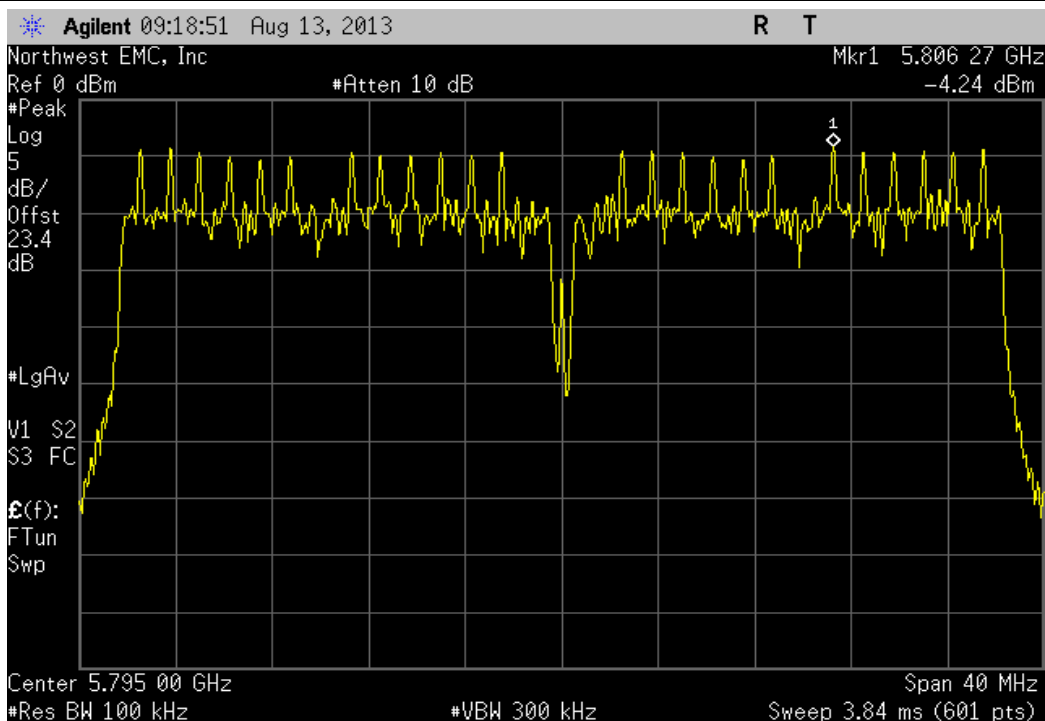
40 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, Low Channel 149/153, 5755 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
-4.391	-15.2	-19.591	8	Pass



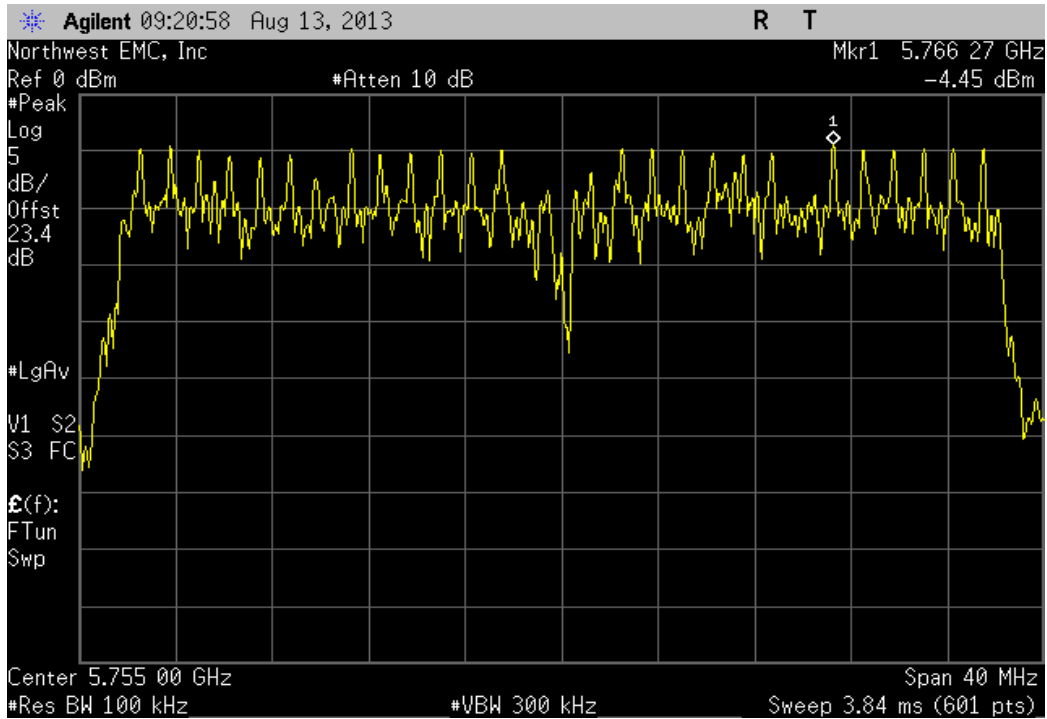
40 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, High Channel 157/161, 5795 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
-4.24	-15.2	-19.44	8	Pass



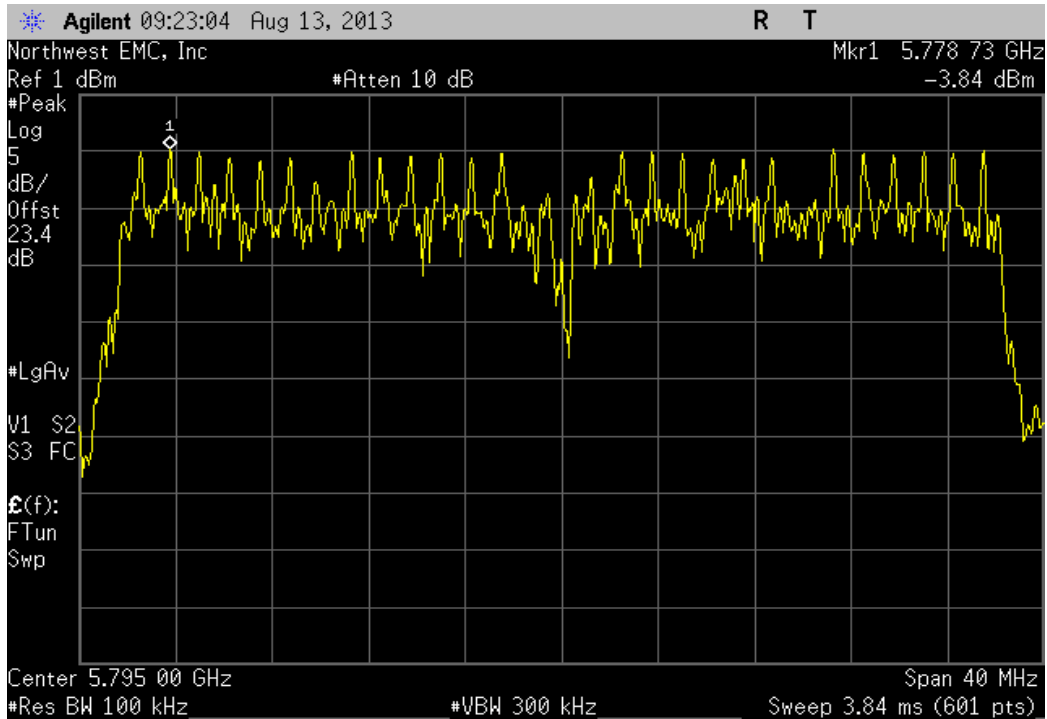
40 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, Low Channel 149/153, 5755 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
-4.451	-15.2	-19.651	8	Pass



40 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, High Channel 157/161, 5795 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
-3.843	-15.2	-19.043	8	Pass



Power Spectral Density - Antenna B

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
Signal Generator	Agilent	N5183A	TID	9/19/2011	36
Attenuator	Fairview Microwave	SA4014-20	TKE	2/12/2013	12
Spectrum Analyzer	Agilent	E4446A	AAT	6/28/2012	24
NC02 Cable	ESM Cable Corp.	TTBJ-141 KMKM-72	NC5	7/3/2013	12

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 5.3.1, the spectrum analyzer was used as follows:

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

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

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

DC Block was used in-line for measurements made while under test. For channel output power levels, please refer to the accompanying power table included in this report.

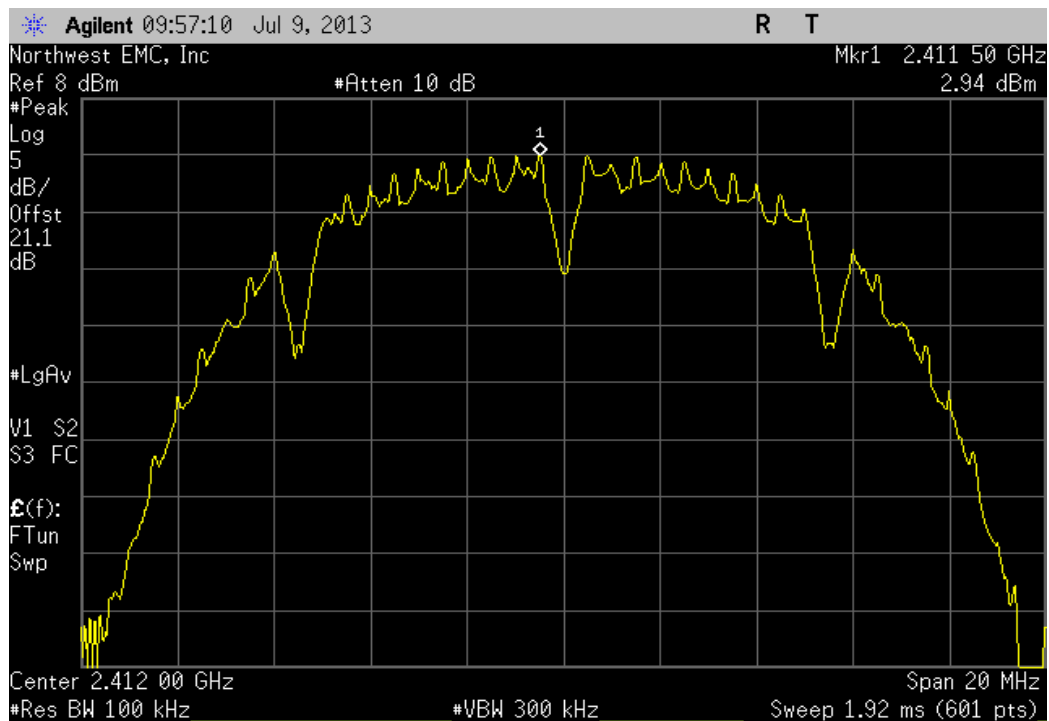


Power Spectral Density - Antenna B

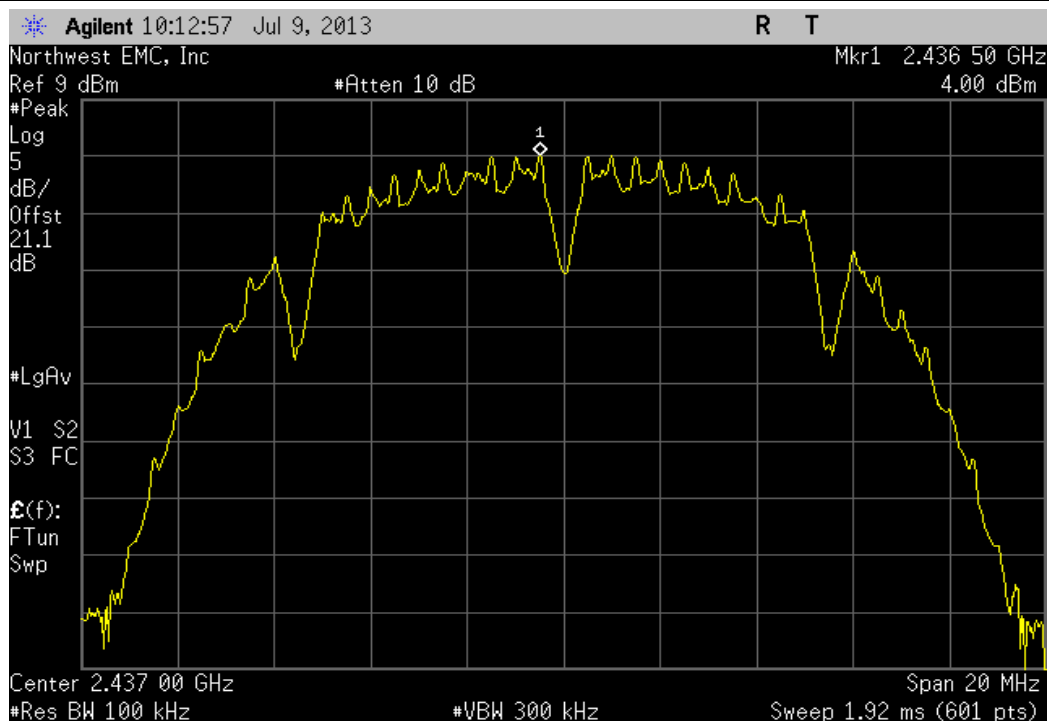
XMit 2013.02.28
PsaTx 2013.06.07

EUT: 1601		Work Order: MCSO1665				
Serial Number: 006079632553		Date: 08/13/13				
Customer: Microsoft Corporation		Temperature: 23°C				
Attendees: None		Humidity: 50%				
Project: None		Barometric Pres.: 1020mb				
Tested by: Richard Mellroth, Brandon Hobbs		Power: 110VAC/60Hz				
Job Site: NC02		Test Method				
FCC 15.247:2013		ANSI C63.10:2009				
COMMENTS						
EUT was operating at 100% Duty Cycle. Adapter cable loss of 0.75 dB for 2.4 GHz channels and 1.3 dB for 5.7 GHz channels was added to analyzer reference level offset.						
DEVIATIONS FROM TEST STANDARD						
None						
Configuration #	1	Signature 				
		Value	dBm/100kHz	Value	Limit	
		dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	Result
20 MHz						
2400 MHz - 2483.5 MHz Band						
802.11(b) 1 Mbps						
		Low Channel 1, 2412 MHz	2.938	-15.2	-12.262	8 Pass
		Mid Channel 6, 2437 MHz	3.998	-15.2	-11.202	8 Pass
		High Channel 11, 2462 MHz	4.156	-15.2	-11.044	8 Pass
802.11(b) 11 Mbps						
		Low Channel 1, 2412 MHz	5.344	-15.2	-9.856	8 Pass
		Mid Channel 6, 2437 MHz	5.686	-15.2	-9.514	8 Pass
		High Channel 11, 2462 MHz	5.844	-15.2	-9.356	8 Pass
802.11(g) 6 Mbps						
		Low Channel 1, 2412 MHz	3.079	-15.2	-12.121	8 Pass
		Mid Channel 6, 2437 MHz	3.328	-15.2	-11.872	8 Pass
		High Channel 11, 2462 MHz	3.49	-15.2	-11.71	8 Pass
802.11(g) 36 Mbps						
		Low Channel 1, 2412 MHz	3.129	-15.2	-12.071	8 Pass
		Mid Channel 6, 2437 MHz	3.377	-15.2	-11.823	8 Pass
		High Channel 11, 2462 MHz	3.6	-15.2	-11.6	8 Pass
802.11(g) 54 Mbps						
		Low Channel 1, 2412 MHz	3.165	-15.2	-12.035	8 Pass
		Mid Channel 6, 2437 MHz	3.395	-15.2	-11.805	8 Pass
		High Channel 11, 2462 MHz	3.552	-15.2	-11.648	8 Pass
802.11(n) MCS0						
		Low Channel 1, 2412 MHz	3.306	-15.2	-11.894	8 Pass
		Mid Channel 6, 2437 MHz	3.559	-15.2	-11.641	8 Pass
		High Channel 11, 2462 MHz	3.693	-15.2	-11.507	8 Pass
802.11(n) MCS7						
		Low Channel 1, 2412 MHz	3.351	-15.2	-11.849	8 Pass
		Mid Channel 6, 2437 MHz	3.607	-15.2	-11.593	8 Pass
		High Channel 11, 2462 MHz	3.331	-15.2	-11.869	8 Pass
5725 MHz - 5850 MHz Band						
802.11(a) 6 Mbps						
		Low Channel 149, 5745 MHz	-3.069	-15.2	-18.269	8 Pass
		Mid Channel 157, 5785 MHz	-3.016	-15.2	-18.216	8 Pass
		High Channel 165, 5825 MHz	-3.143	-15.2	-18.343	8 Pass
802.11(a) 36 Mbps						
		Low Channel 149, 5745 MHz	-2.88	-15.2	-18.08	8 Pass
		Mid Channel 157, 5785 MHz	-2.484	-15.2	-17.684	8 Pass
		High Channel 165, 5825 MHz	-3.546	-15.2	-18.746	8 Pass
802.11(a) 54 Mbps						
		Low Channel 149, 5745 MHz	-2.561	-15.2	-17.761	8 Pass
		Mid Channel 157, 5785 MHz	-2.774	-15.2	-17.974	8 Pass
		High Channel 165, 5825 MHz	-3.267	-15.2	-18.467	8 Pass
802.11(n) MCS0 - UNII						
		Low Channel 149, 5745 MHz	-2.85	-15.2	-18.05	8 Pass
		Mid Channel 157, 5785 MHz	-2.472	-15.2	-17.672	8 Pass
		High Channel 165, 5825 MHz	-3.491	-15.2	-18.691	8 Pass
802.11(n) MCS7 - UNII						
		Low Channel 149, 5745 MHz	-2.881	-15.2	-18.081	8 Pass
		Mid Channel 157, 5785 MHz	-2.541	-15.2	-17.741	8 Pass
		High Channel 165, 5825 MHz	-3.532	-15.2	-18.732	8 Pass
40 MHz						
2400 MHz - 2483.5 MHz Band						
802.11(n) MCS0						
		Low Channel 1/5, 2422 MHz	-3.472	-15.2	-18.672	8 Pass
		Mid Channel 4/8, 2437 MHz	0.653	-15.2	-14.547	8 Pass
		High Channel 7/11, 2452 MHz	-3.389	-15.2	-18.589	8 Pass
802.11(n) MCS7						
		Low Channel 1/5, 2422 MHz	-3.351	-15.2	-18.551	8 Pass
		Mid Channel 4/8, 2437 MHz	0.783	-15.2	-14.417	8 Pass
		High Channel 7/11, 2452 MHz	-3.276	-15.2	-18.476	8 Pass
5725 MHz - 5850 MHz Band						
802.11(n) MCS0 - UNII						
		Low Channel 149/153, 5755 MHz	-7.117	-15.2	-22.317	8 Pass
		High Channel 157/161, 5795 MHz	-6.998	-15.2	-22.198	8 Pass
802.11(n) MCS7 - UNII						
		Low Channel 149/153, 5755 MHz	-7.066	-15.2	-22.266	8 Pass
		High Channel 157/161, 5795 MHz	-7.024	-15.2	-22.224	8 Pass

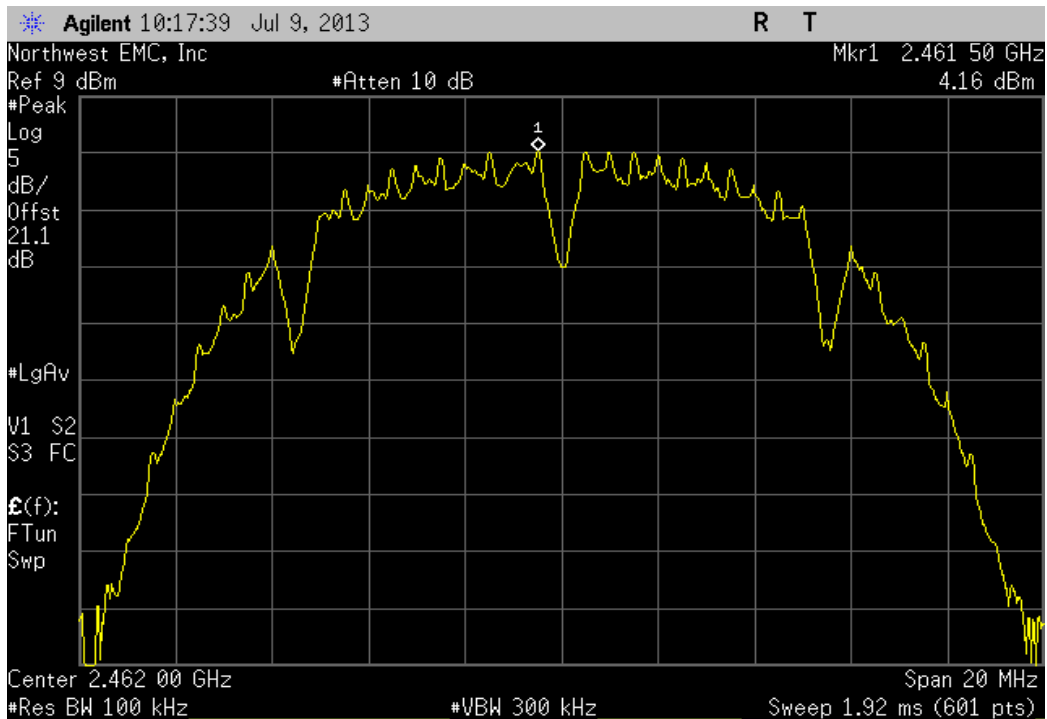
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Low Channel 1, 2412 MHz						
	Value	dBm/100kHz	Value	Limit		
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	Result	
	2.938	-15.2	-12.262	8	Pass	



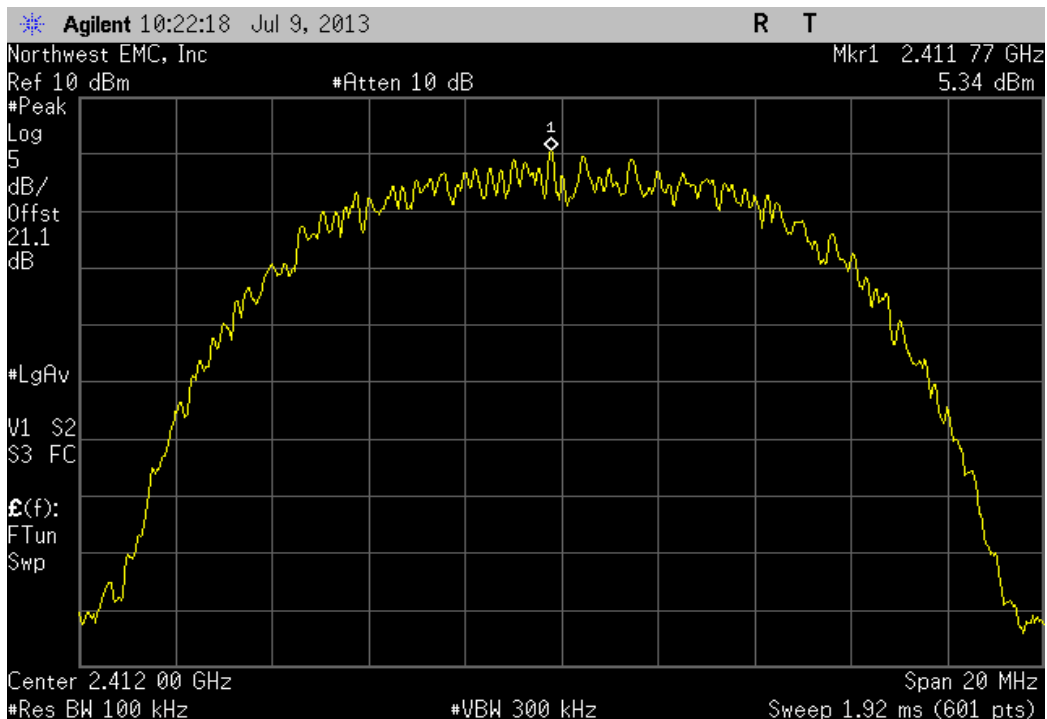
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, Mid Channel 6, 2437 MHz						
	Value	dBm/100kHz	Value	Limit		
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	Result	
	3.998	-15.2	-11.202	8	Pass	



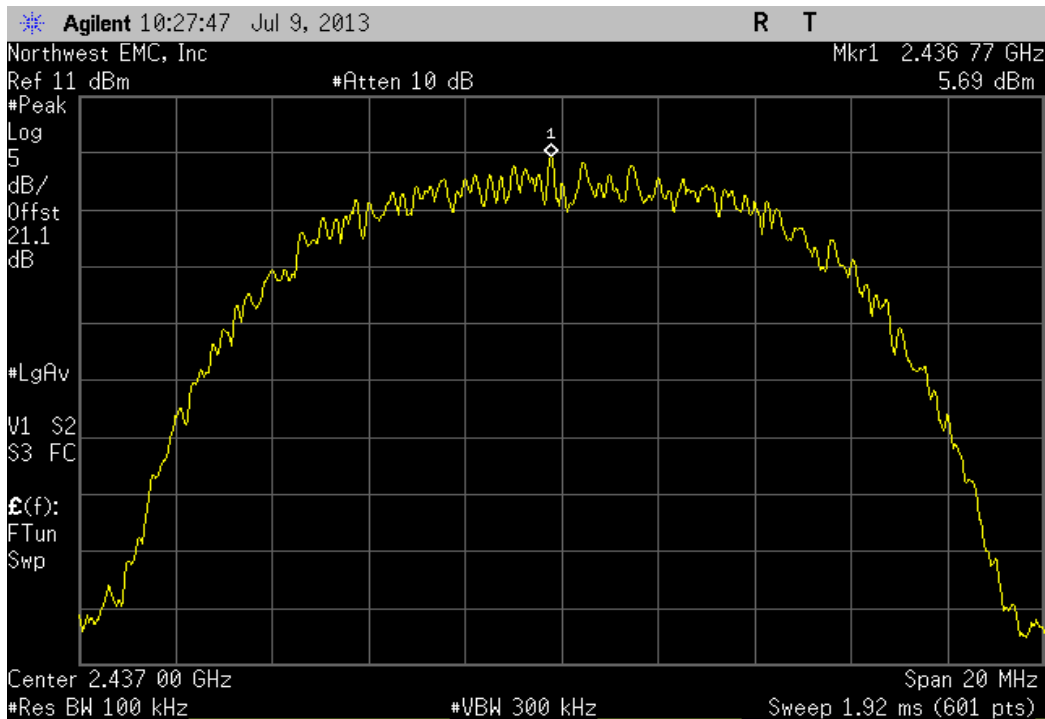
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 1 Mbps, High Channel 11, 2462 MHz					
	Value	dBm/100kHz	Value	Limit	Result
		To dBm/3kHz	dBm/3kHz		
	4.156	-15.2	-11.044	8	Pass



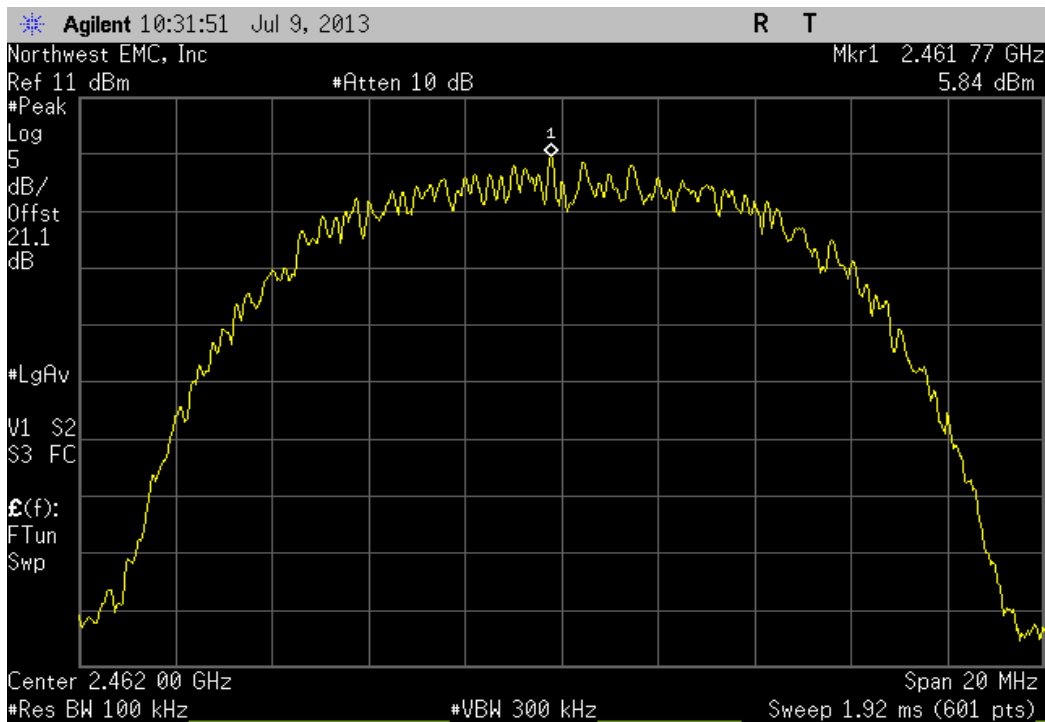
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Low Channel 1, 2412 MHz					
	Value	dBm/100kHz	Value	Limit	Result
		To dBm/3kHz	dBm/3kHz		
	5.344	-15.2	-9.856	8	Pass



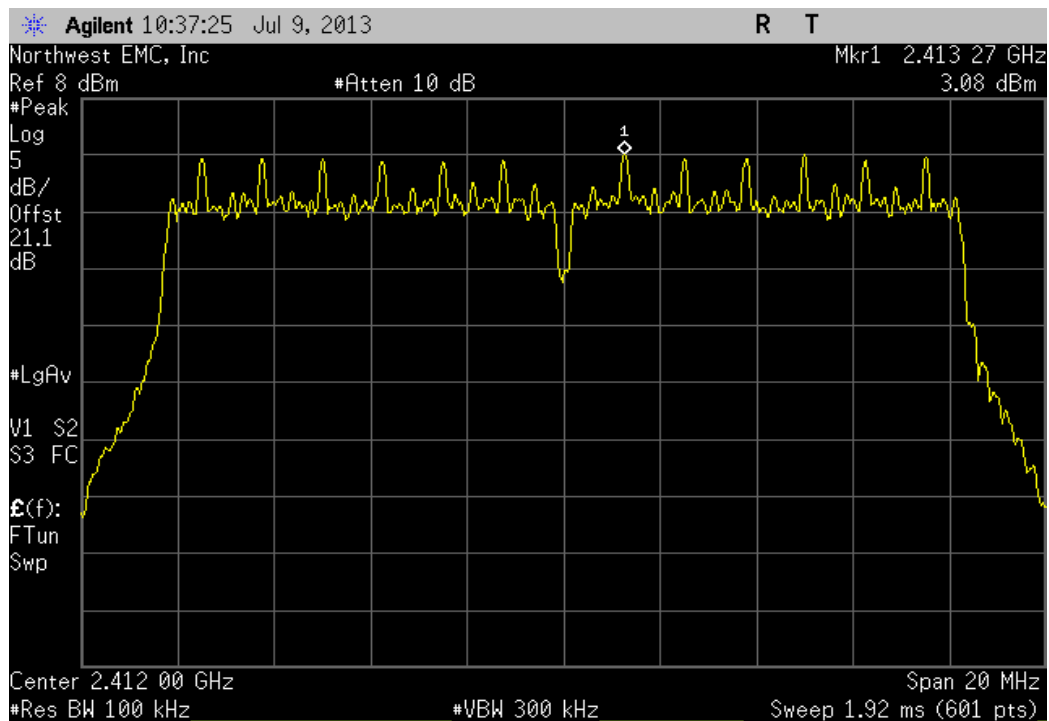
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, Mid Channel 6, 2437 MHz					
	Value	dBm/100kHz	Value	Limit	Result
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
	5.686	-15.2	-9.514	8	Pass



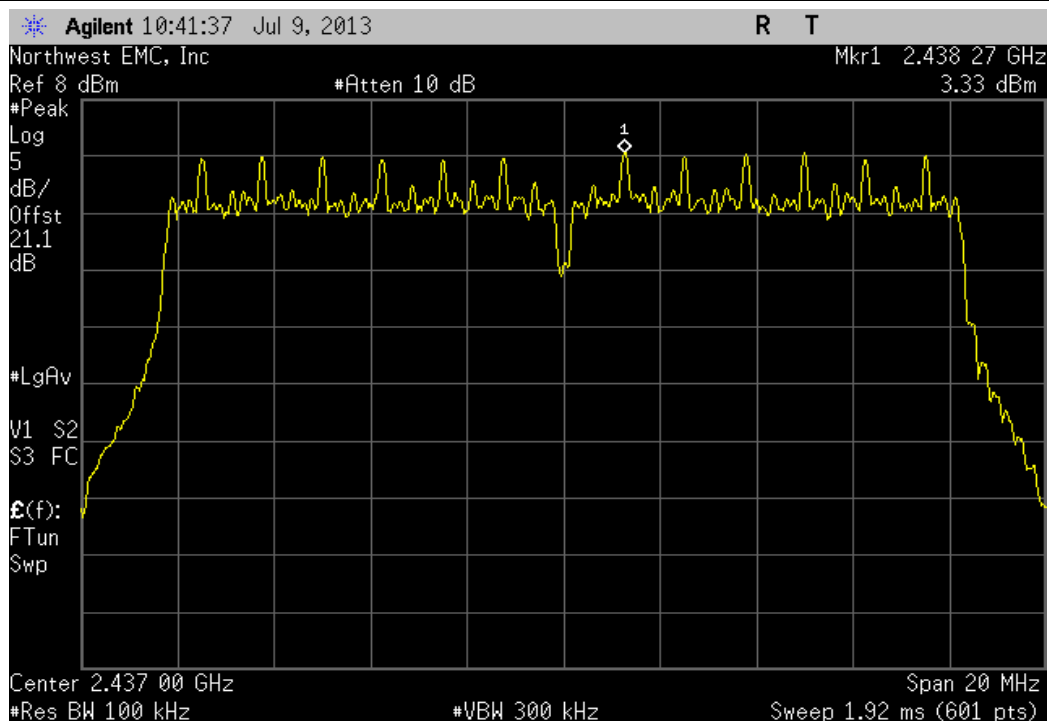
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(b) 11 Mbps, High Channel 11, 2462 MHz					
	Value	dBm/100kHz	Value	Limit	Result
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
	5.844	-15.2	-9.356	8	Pass



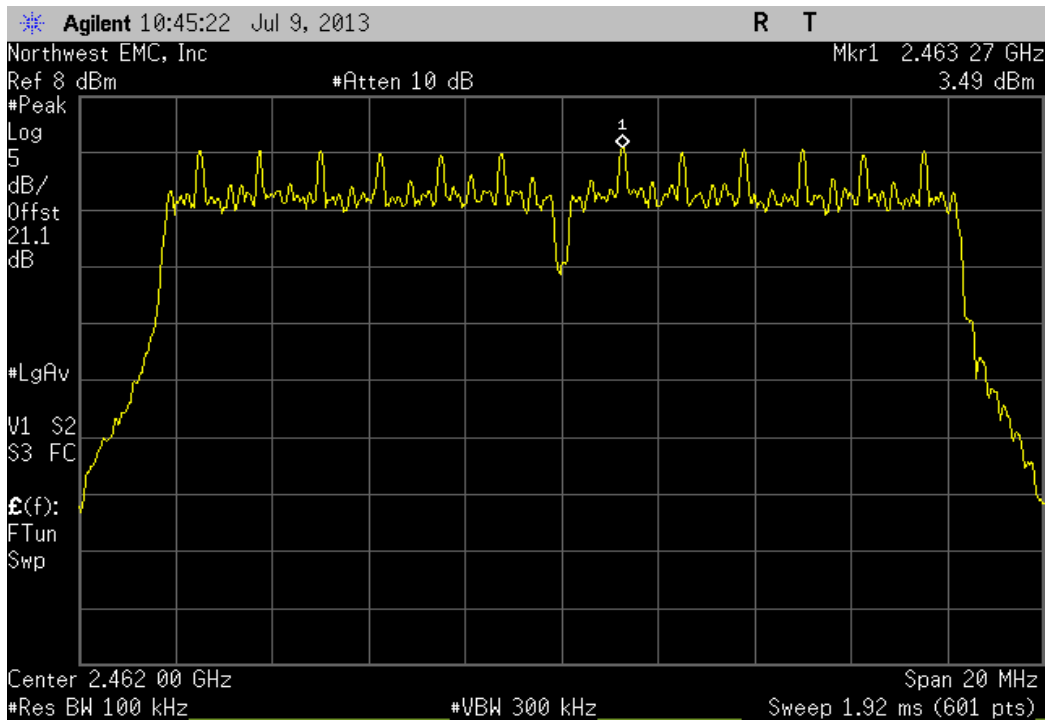
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Low Channel 1, 2412 MHz						
	Value	dBm/100kHz	Value	Limit		
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	Result	
	3.079	-15.2	-12.121	8	Pass	



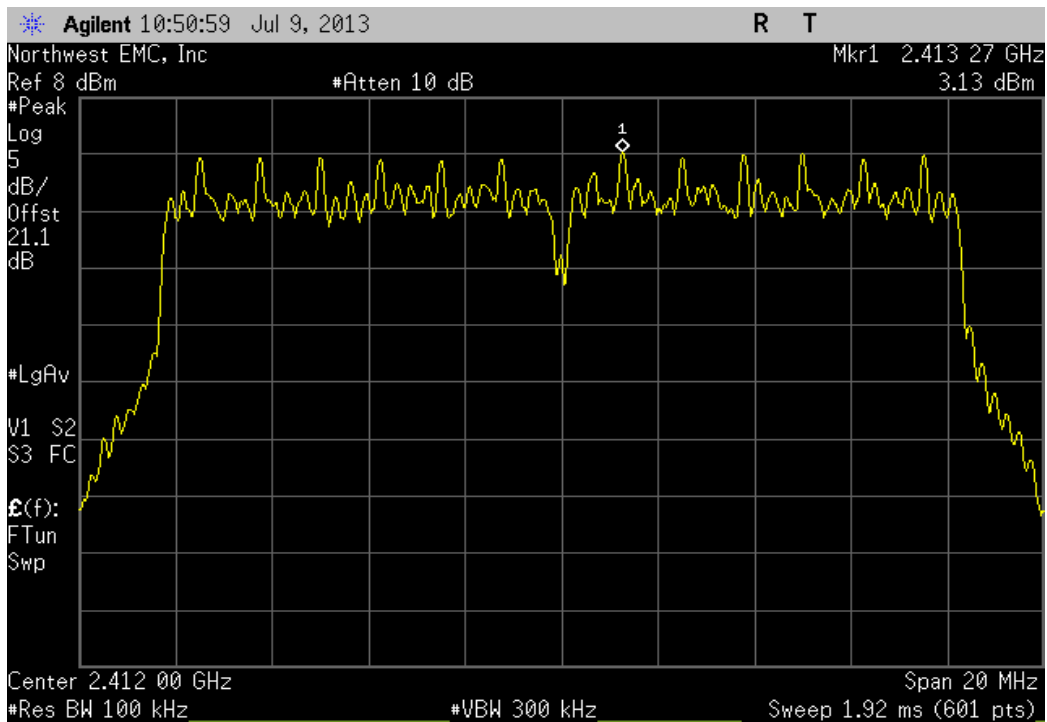
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, Mid Channel 6, 2437 MHz						
	Value	dBm/100kHz	Value	Limit		
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	Result	
	3.328	-15.2	-11.872	8	Pass	



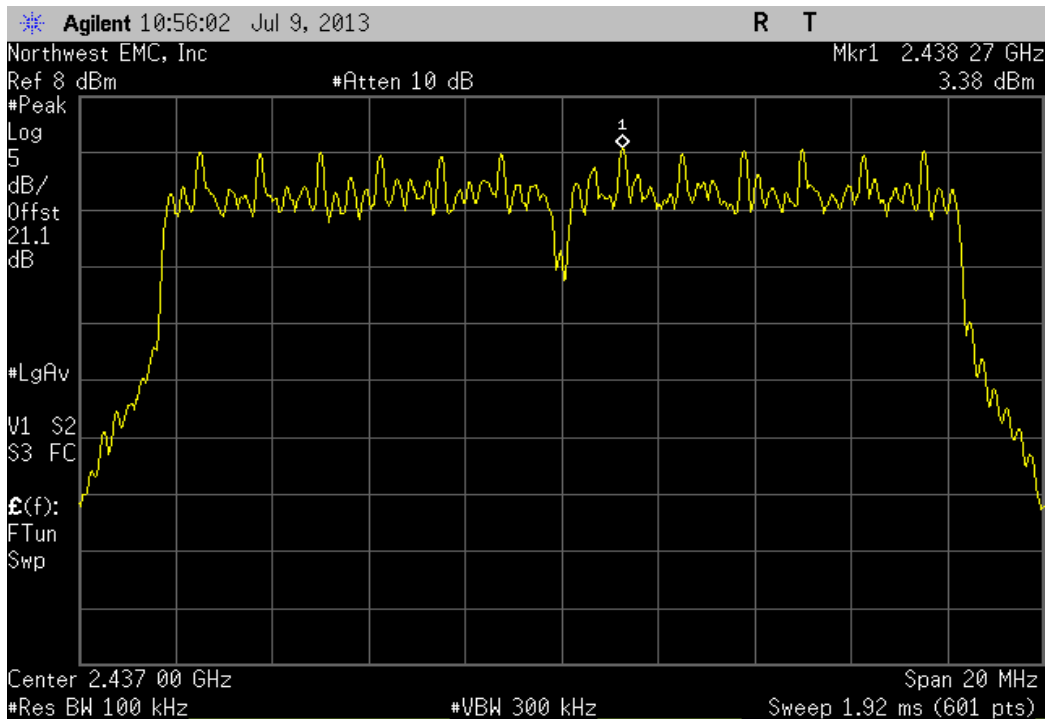
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 6 Mbps, High Channel 11, 2462 MHz					
	Value	dBm/100kHz	Value	Limit	Result
		To dBm/3kHz	dBm/3kHz		
	3.49	-15.2	-11.71	8	Pass



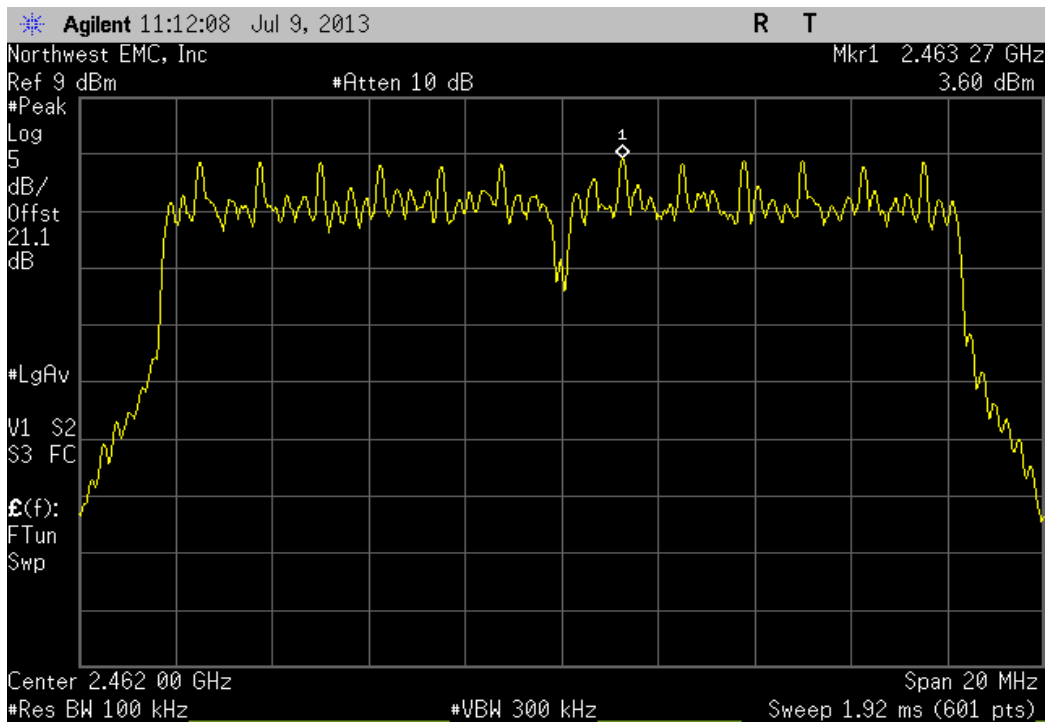
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Low Channel 1, 2412 MHz					
	Value	dBm/100kHz	Value	Limit	Result
		To dBm/3kHz	dBm/3kHz		
	3.129	-15.2	-12.071	8	Pass



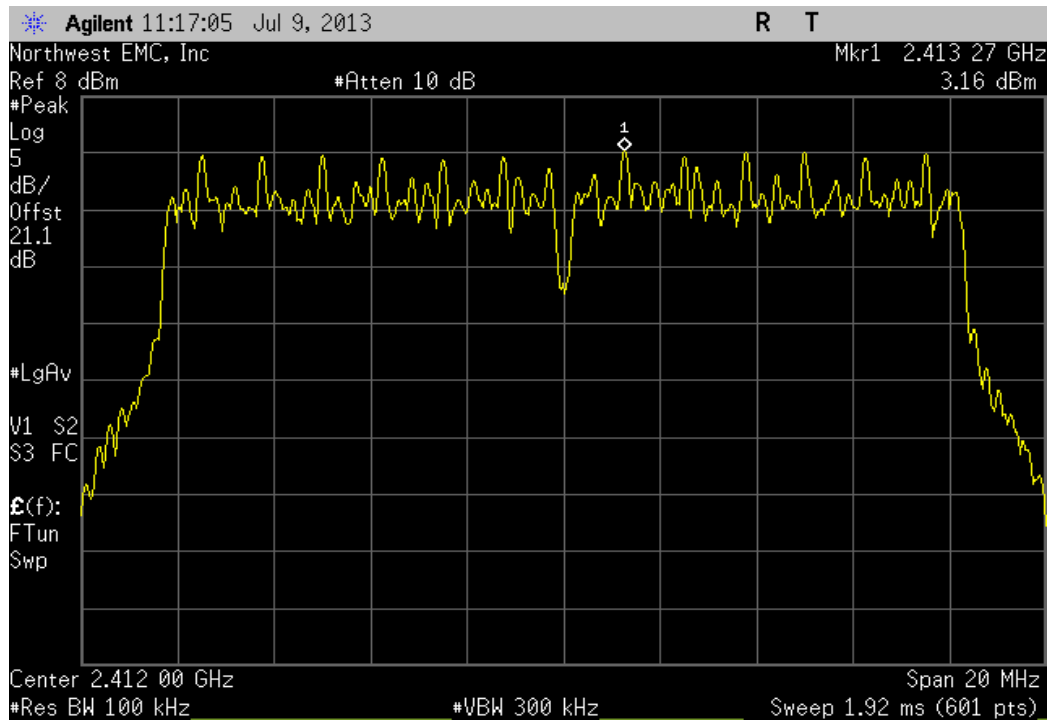
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, Mid Channel 6, 2437 MHz					
	Value	dBm/100kHz	Value	Limit	Result
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
	3.377	-15.2	-11.823	8	Pass



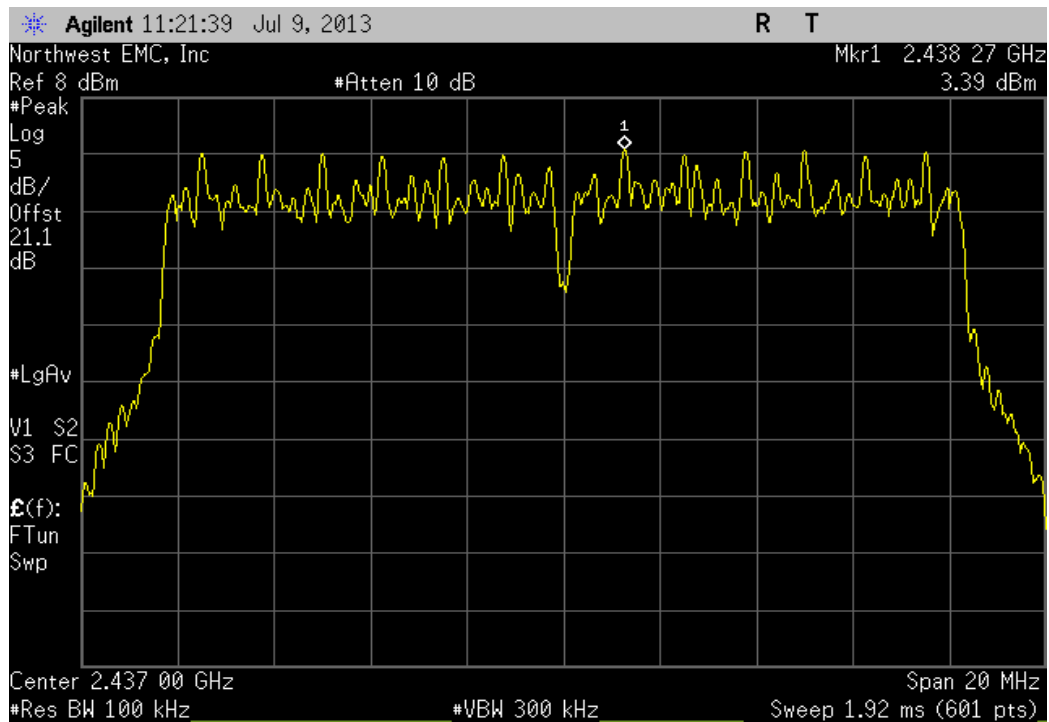
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 36 Mbps, High Channel 11, 2462 MHz					
	Value	dBm/100kHz	Value	Limit	Result
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
	3.6	-15.2	-11.6	8	Pass



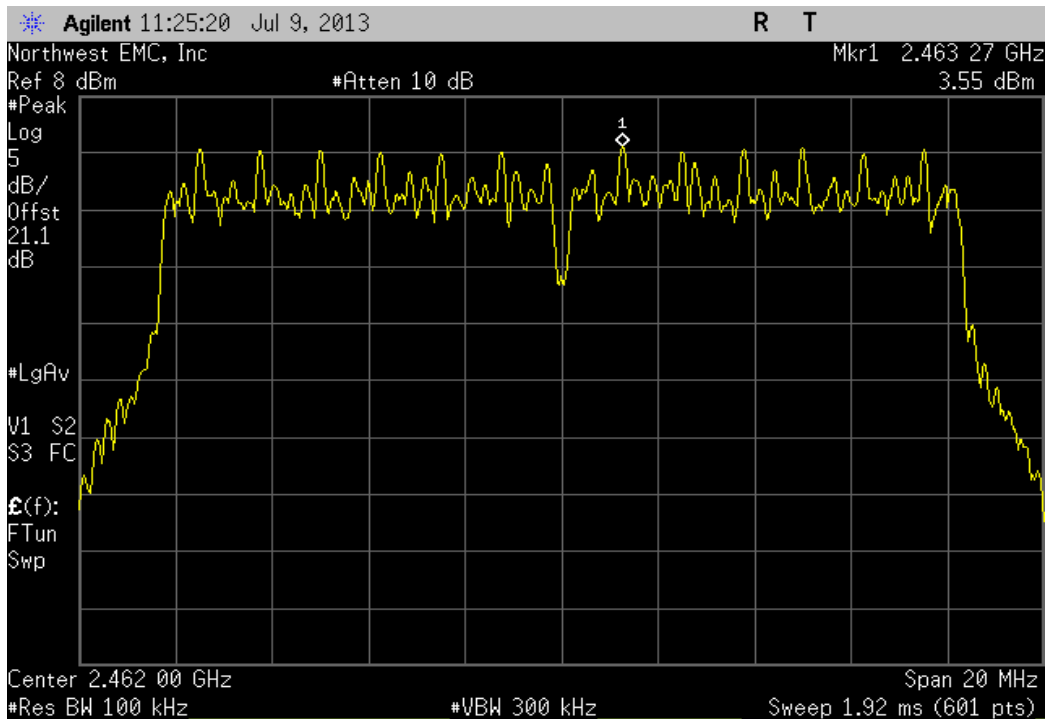
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Low Channel 1, 2412 MHz					
	Value	dBm/100kHz	Value	Limit	Result
		To dBm/3kHz	dBm/3kHz		
	3.165	-15.2	-12.035	8	Pass



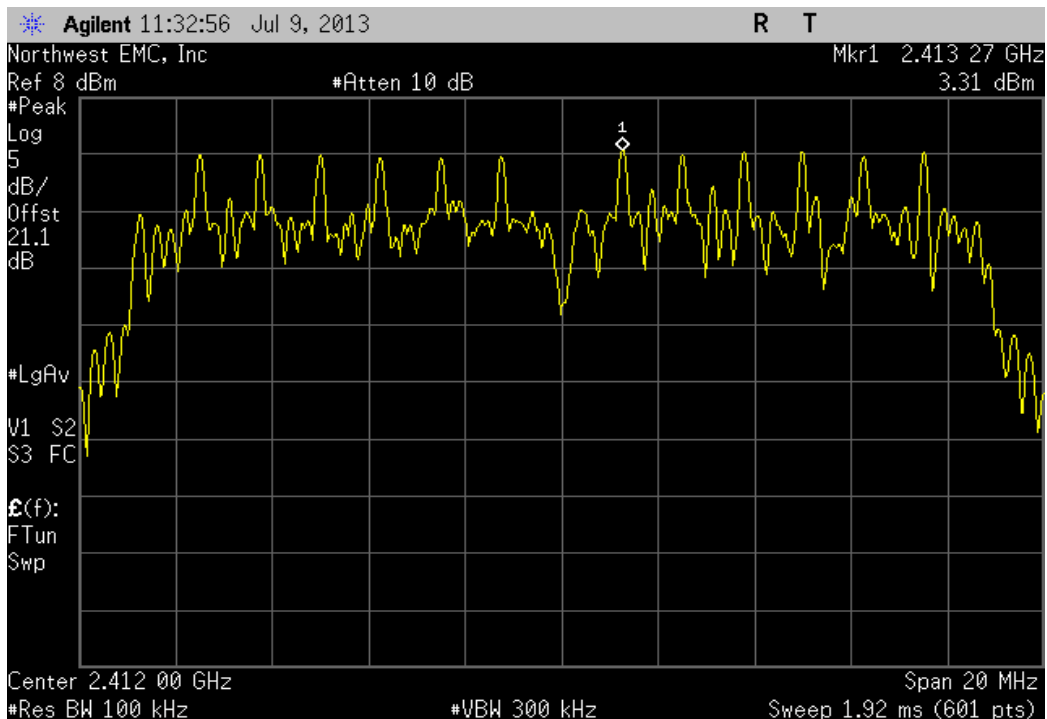
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, Mid Channel 6, 2437 MHz					
	Value	dBm/100kHz	Value	Limit	Result
		To dBm/3kHz	dBm/3kHz		
	3.395	-15.2	-11.805	8	Pass



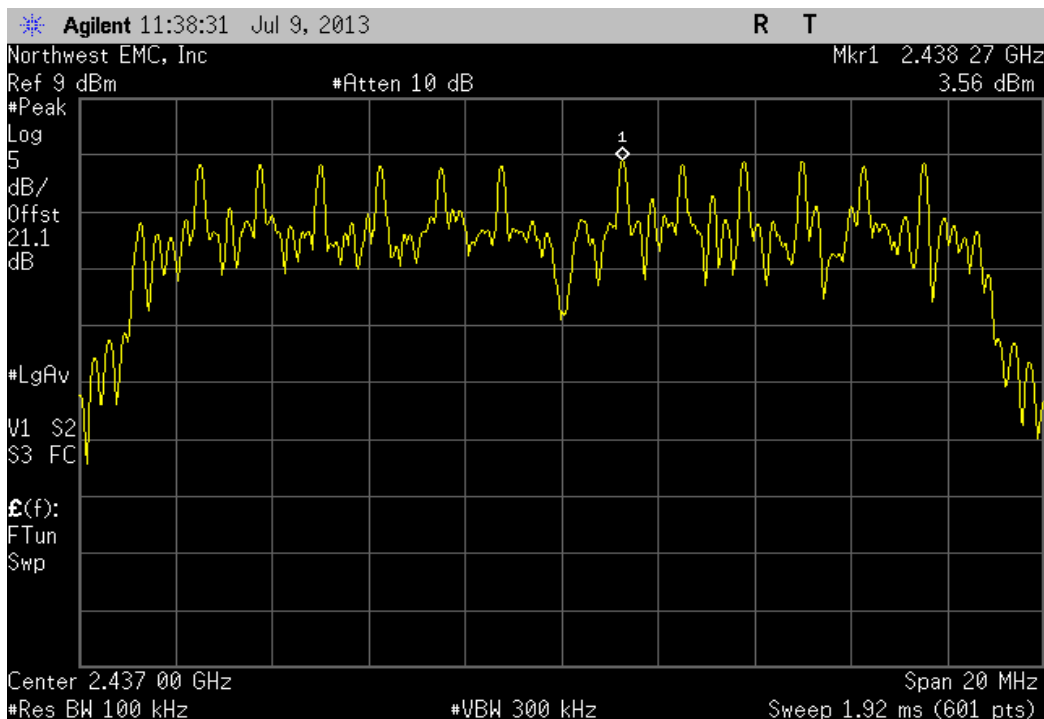
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(g) 54 Mbps, High Channel 11, 2462 MHz						
	Value	dBm/100kHz	Value	Limit		
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	Result	
	3.552	-15.2	-11.648	8	Pass	



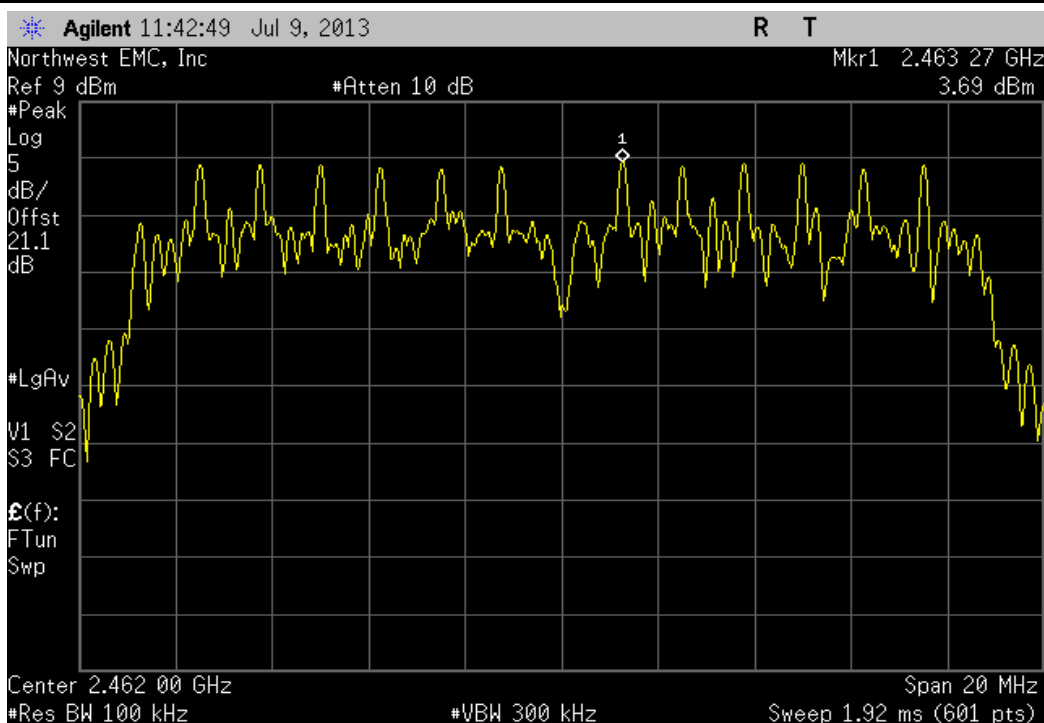
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1, 2412 MHz						
	Value	dBm/100kHz	Value	Limit		
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	Result	
	3.306	-15.2	-11.894	8	Pass	



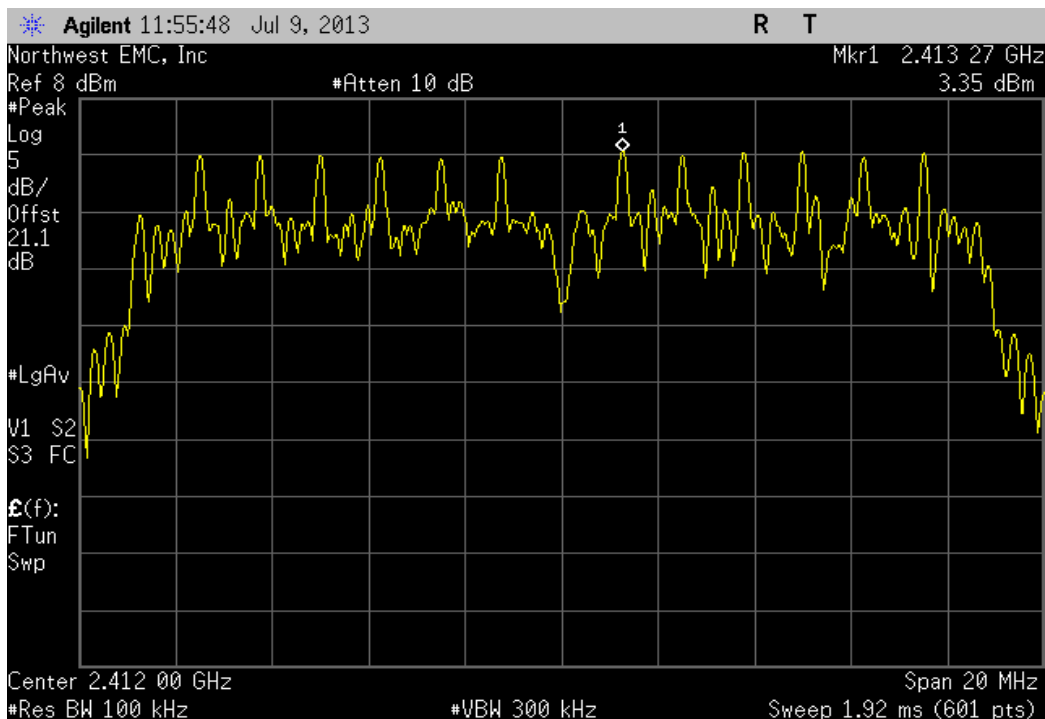
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Mid Channel 6, 2437 MHz						
	Value	dBm/100kHz	Value	Limit		
		To dBm/3kHz	dBm/3kHz	dBm/3kHz	Result	
	3.559	-15.2	-11.641	8	Pass	



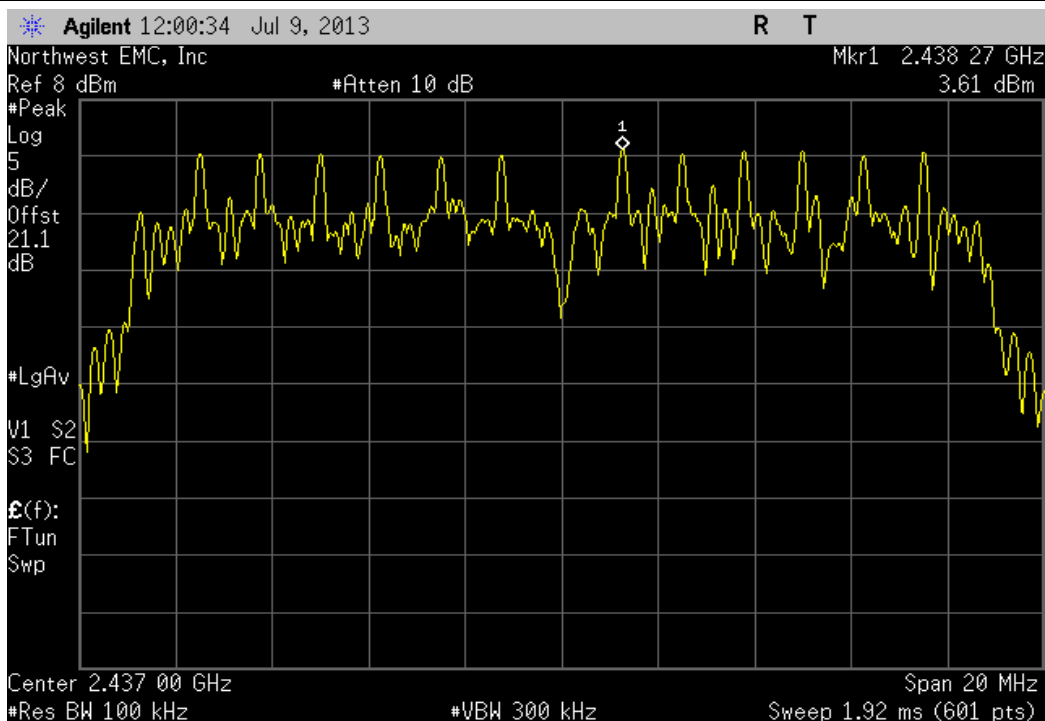
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 11, 2462 MHz						
	Value	dBm/100kHz	Value	Limit		
		To dBm/3kHz	dBm/3kHz	dBm/3kHz	Result	
	3.693	-15.2	-11.507	8	Pass	



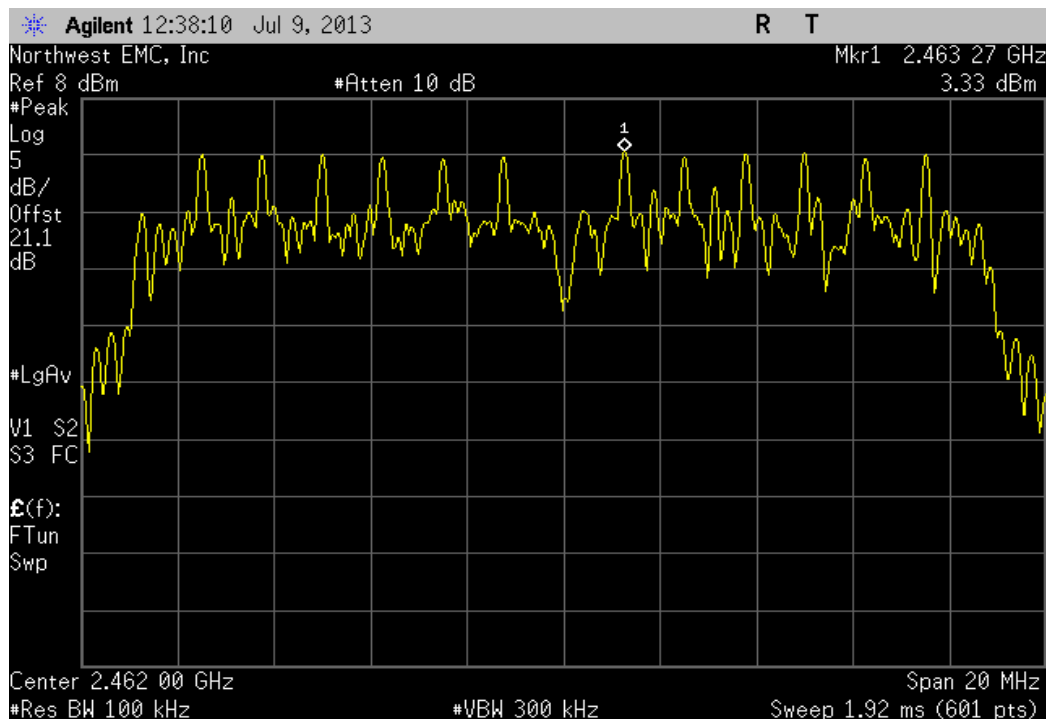
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1, 2412 MHz					
	Value	dBm/100kHz	Value	Limit	
		To dBm/3kHz	dBm/3kHz		Result
	3.351	-15.2	-11.849	8	Pass



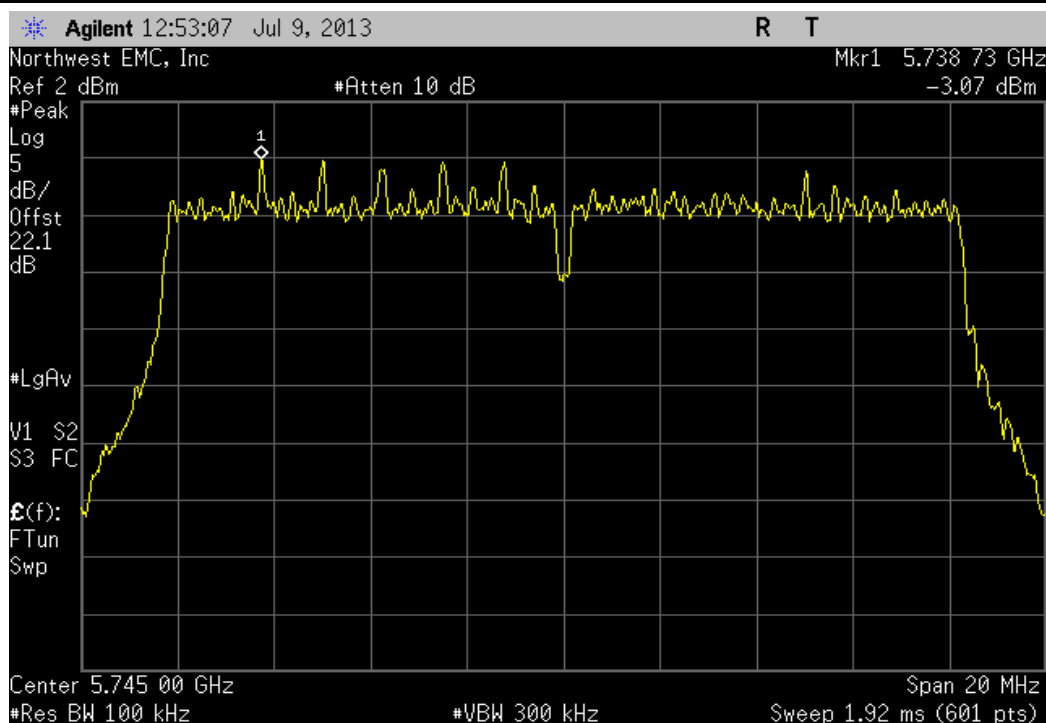
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Mid Channel 6, 2437 MHz					
	Value	dBm/100kHz	Value	Limit	
		To dBm/3kHz	dBm/3kHz		Result
	3.607	-15.2	-11.593	8	Pass



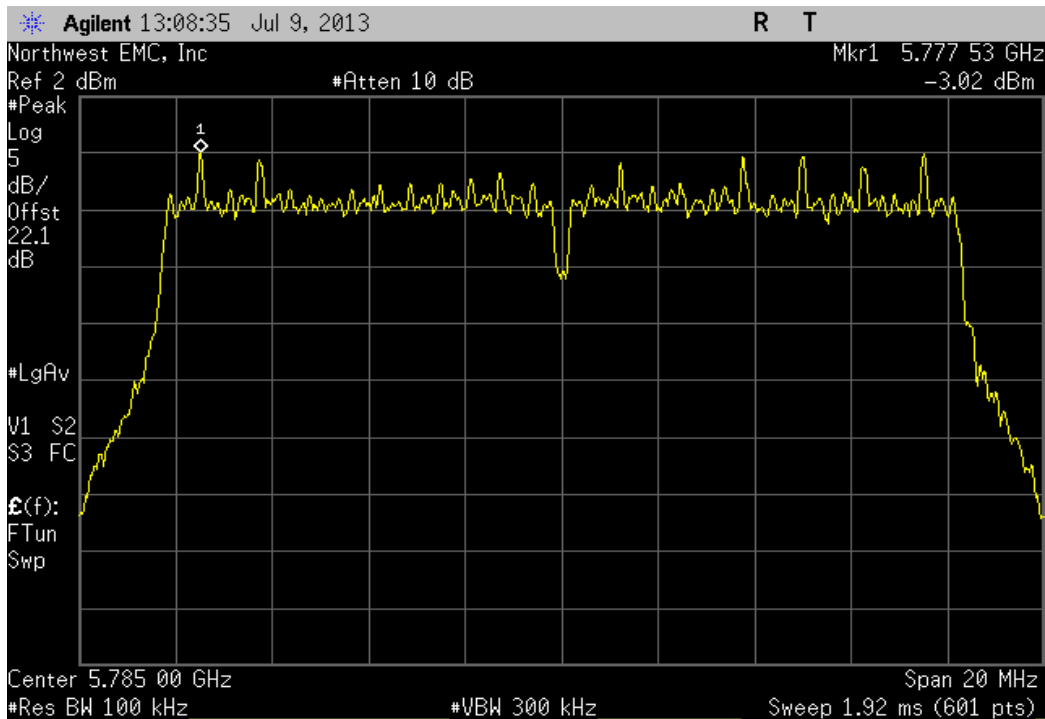
20 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, High Channel 11, 2462 MHz					
	Value	dBm/100kHz	Value	Limit	Result
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
	3.331	-15.2	-11.869	8	Pass



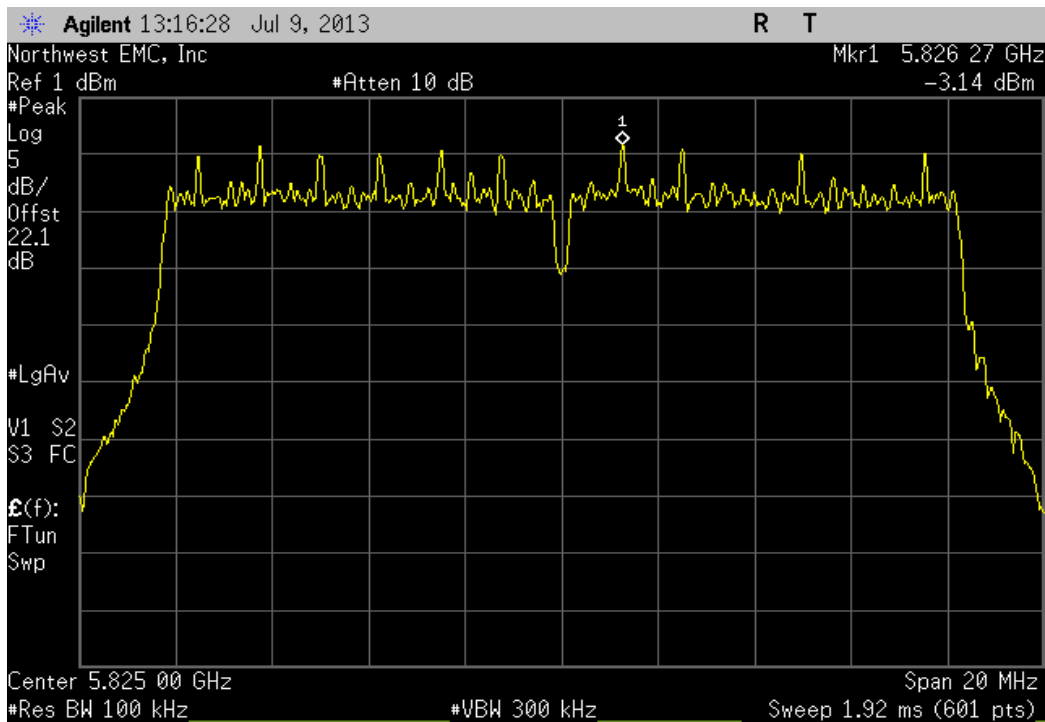
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Low Channel 149, 5745 MHz					
	Value	dBm/100kHz	Value	Limit	Result
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
	-3.069	-15.2	-18.269	8	Pass



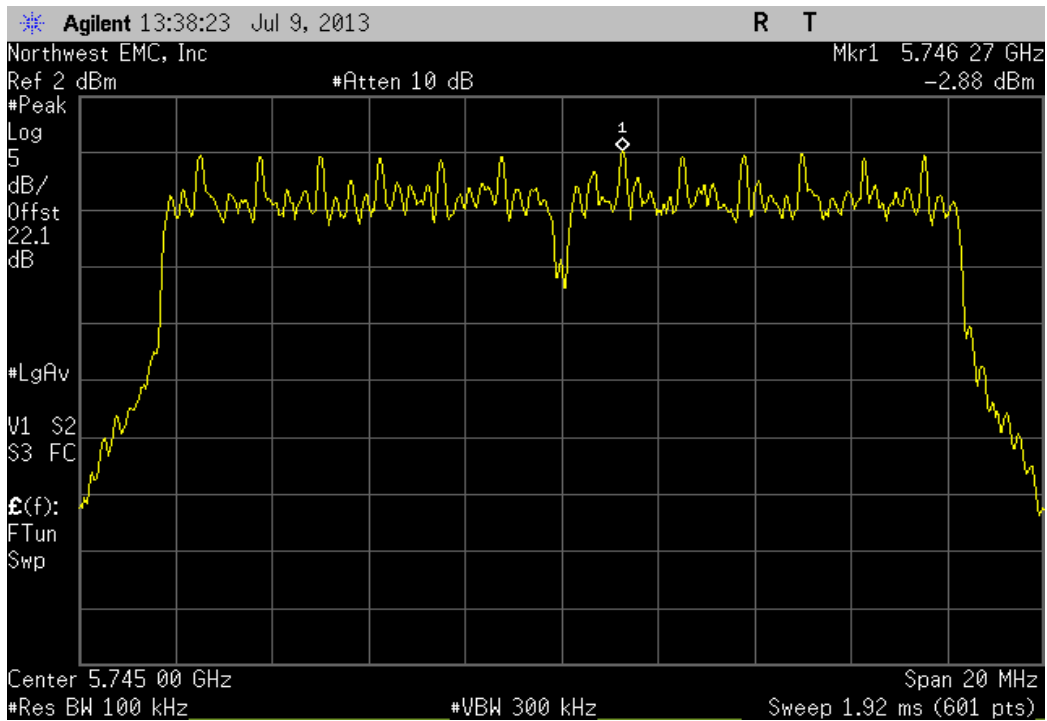
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Mid Channel 157, 5785 MHz						
	Value	dBm/100kHz	Value	Limit		
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	Result	
	-3.016	-15.2	-18.216	8	Pass	



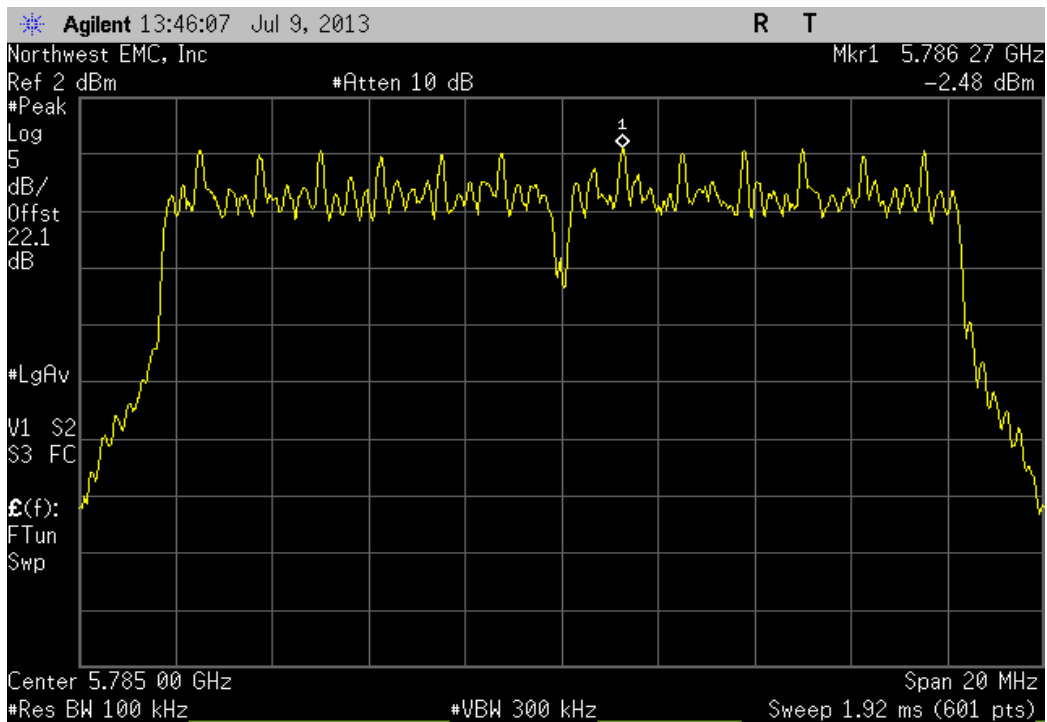
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, High Channel 165, 5825 MHz						
	Value	dBm/100kHz	Value	Limit		
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	Result	
	-3.143	-15.2	-18.343	8	Pass	



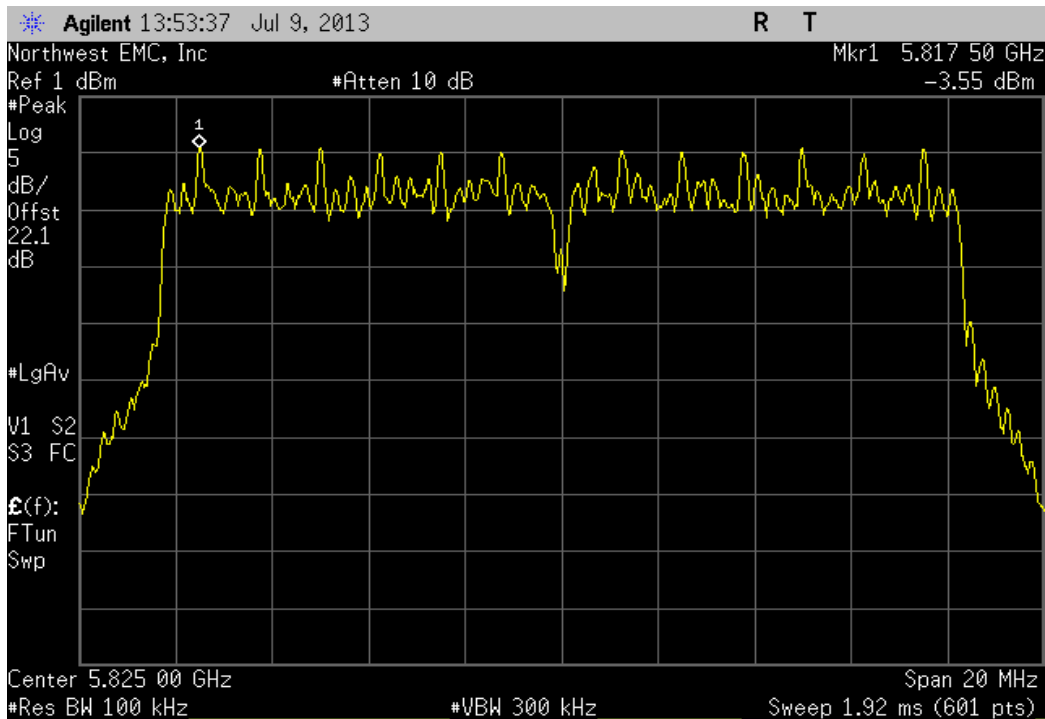
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Low Channel 149, 5745 MHz					
	Value	dBm/100kHz	Value	Limit	Result
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
	-2.88	-15.2	-18.08	8	Pass



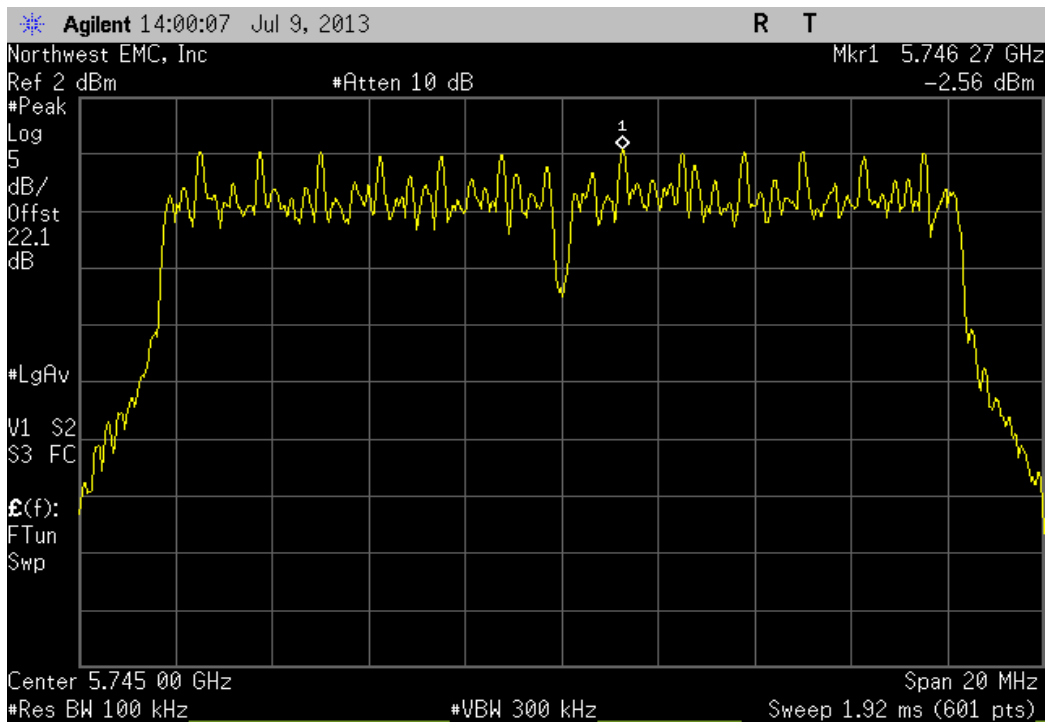
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Mid Channel 157, 5785 MHz					
	Value	dBm/100kHz	Value	Limit	Result
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
	-2.484	-15.2	-17.684	8	Pass



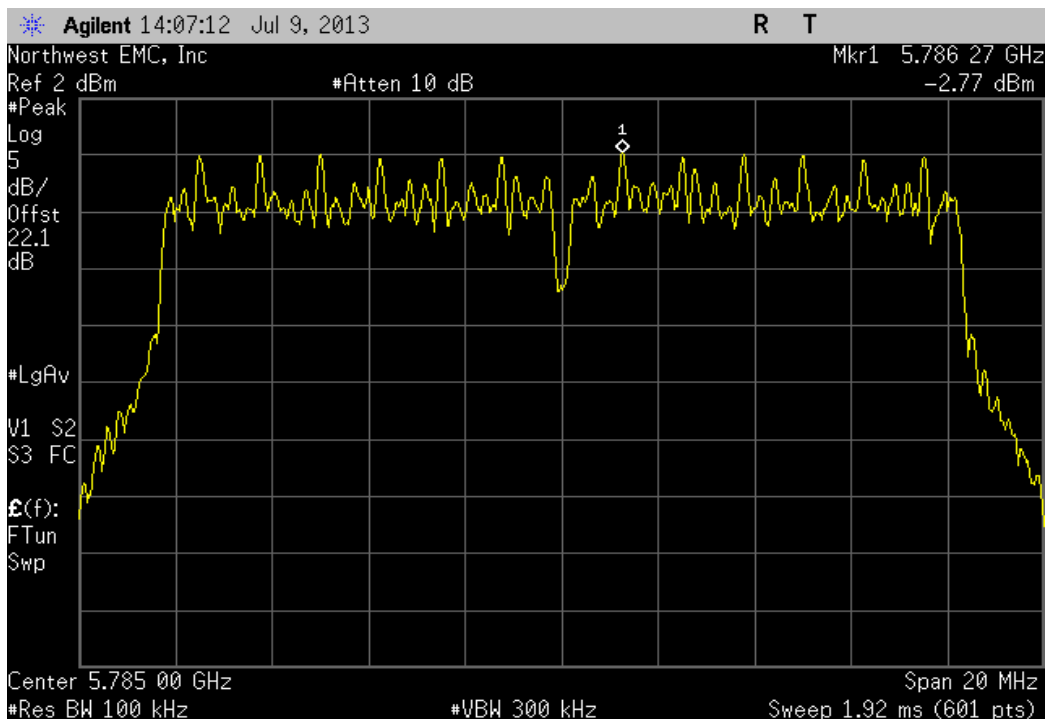
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, High Channel 165, 5825 MHz						
	Value	dBm/100kHz	Value	Limit		
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	Result	
	-3.546	-15.2	-18.746	8	Pass	



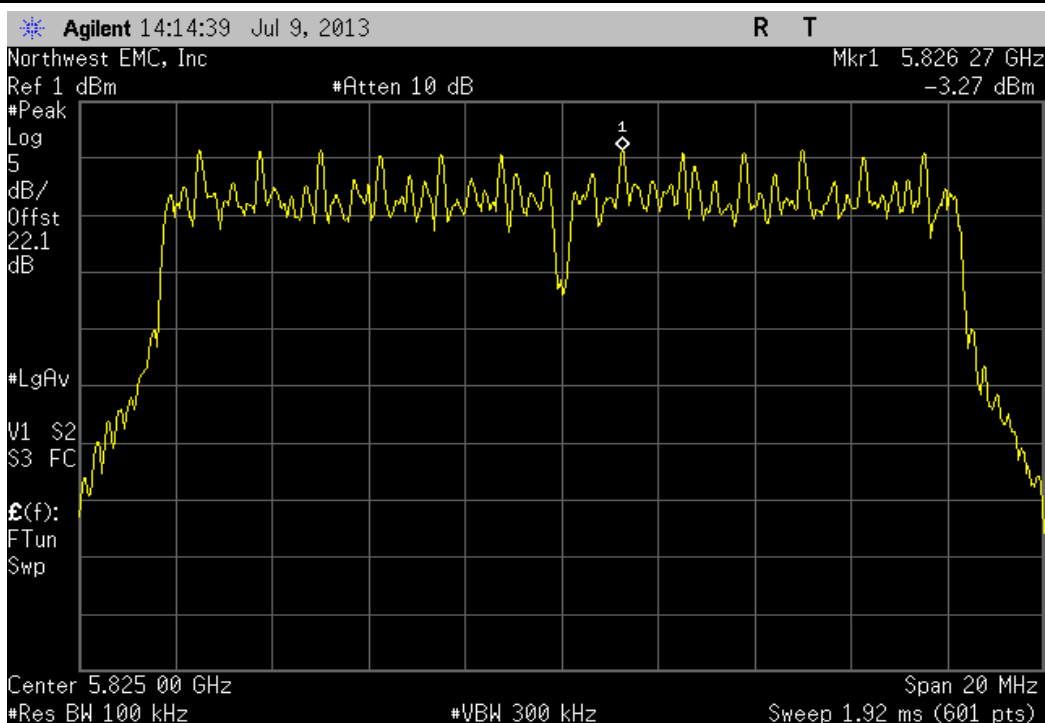
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 54 Mbps, Low Channel 149, 5745 MHz						
	Value	dBm/100kHz	Value	Limit		
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	Result	
	-2.561	-15.2	-17.761	8	Pass	



20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 54 Mbps, Mid Channel 157, 5785 MHz					
	Value	dBm/100kHz	Value	Limit	Result
		To dBm/3kHz	dBm/3kHz		
	-2.774	-15.2	-17.974	8	Pass

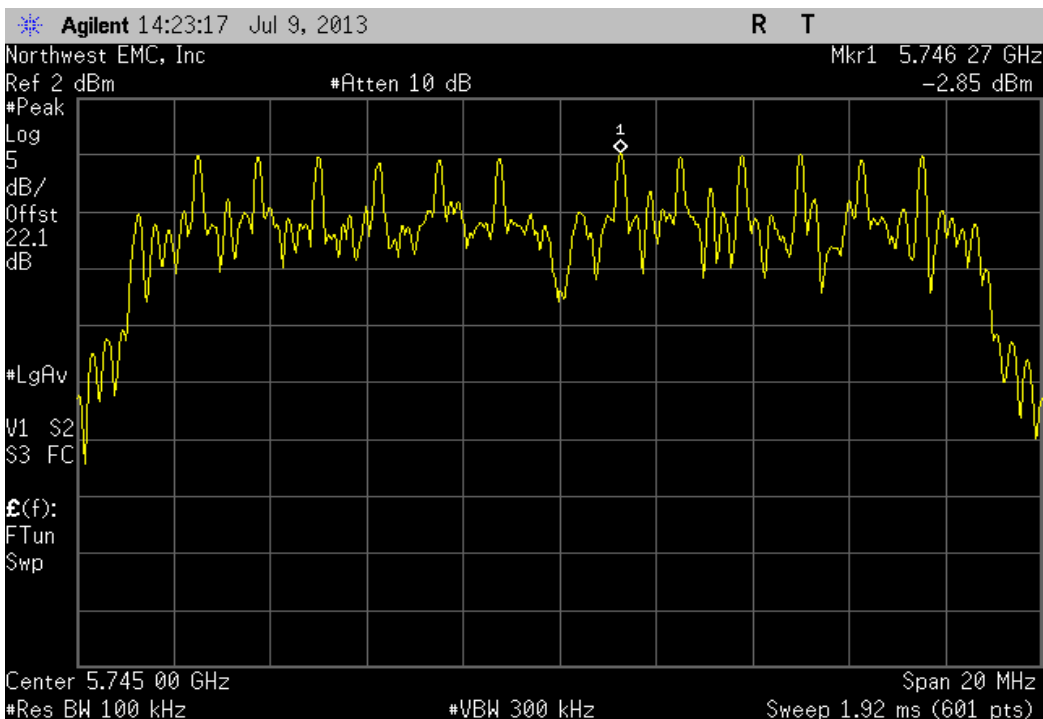


20 MHz, 5725 MHz - 5850 MHz Band, 802.11(a) 54 Mbps, High Channel 165, 5825 MHz					
	Value	dBm/100kHz	Value	Limit	Result
		To dBm/3kHz	dBm/3kHz		
	-3.267	-15.2	-18.467	8	Pass



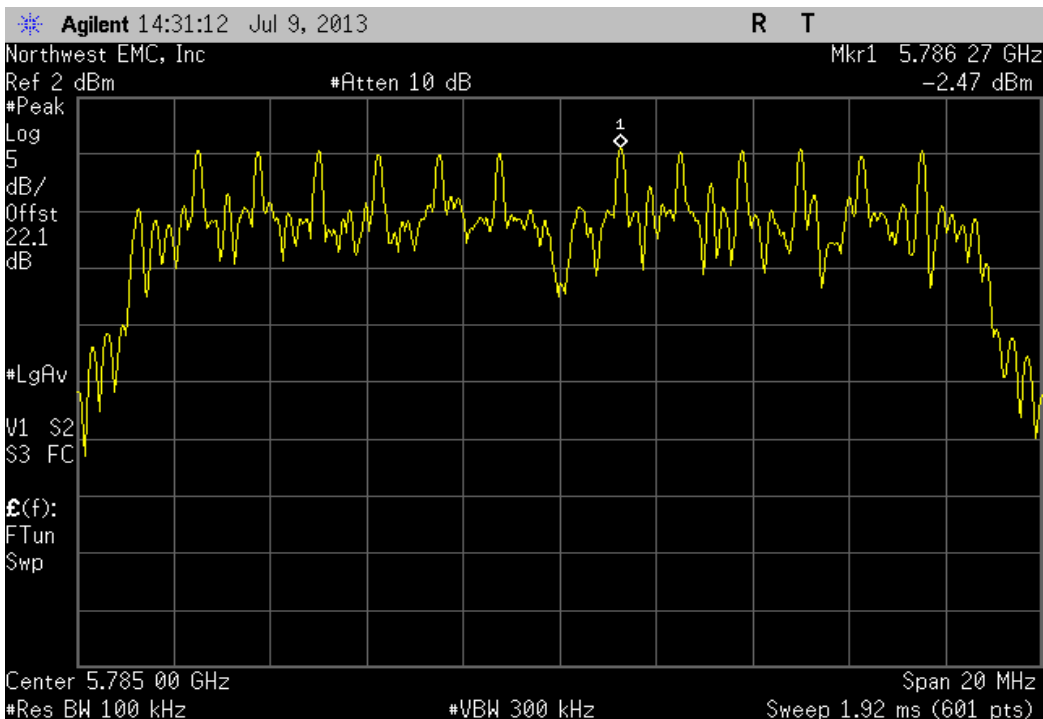
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, Low Channel 149, 5745 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
-2.85	-15.2	-18.05	8	Pass



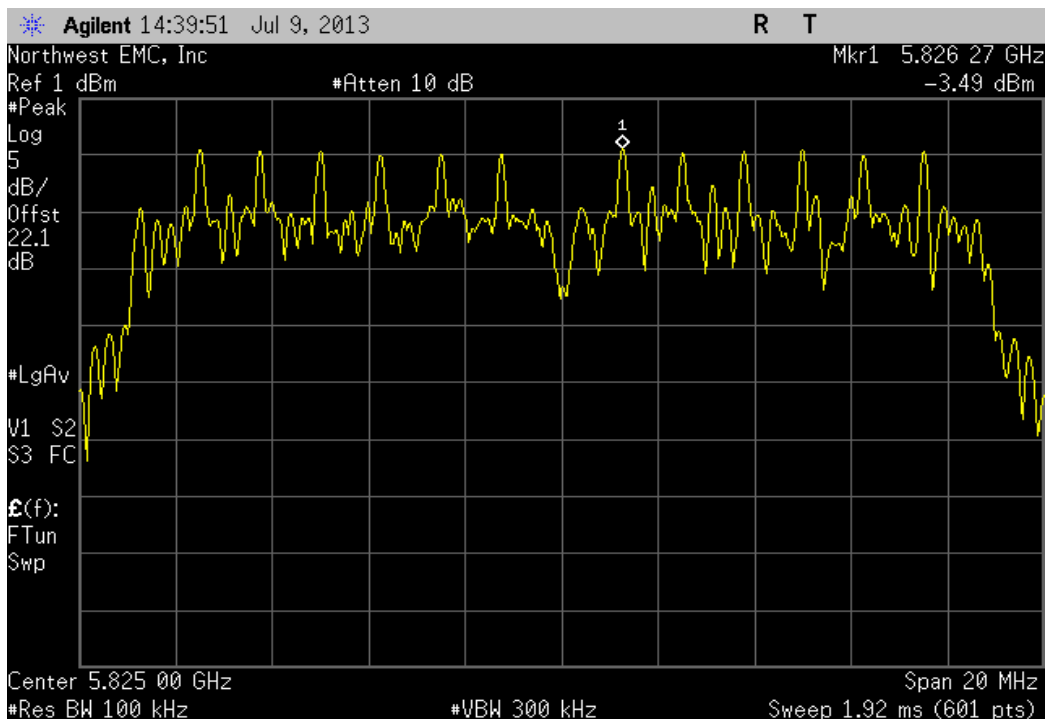
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, Mid Channel 157, 5785 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
-2.472	-15.2	-17.672	8	Pass



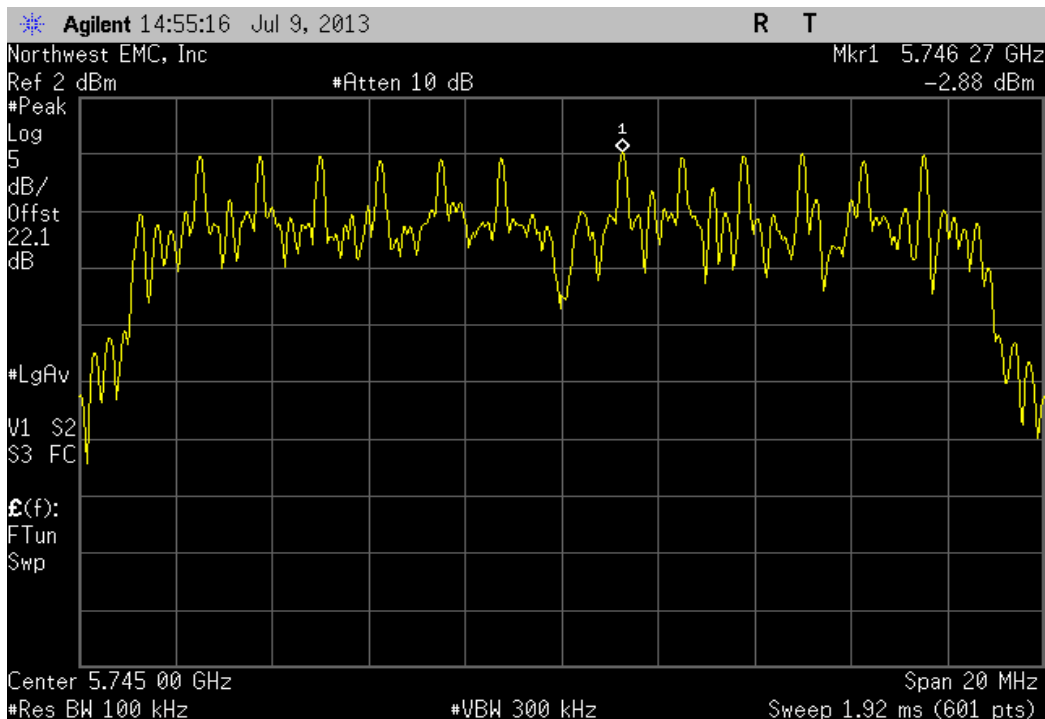
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, High Channel 165, 5825 MHz

Value	dBm/100kHz	Value	Limit	Result
	To dBm/3kHz	dBm/3kHz		
-3.491	-15.2	-18.691	8	Pass

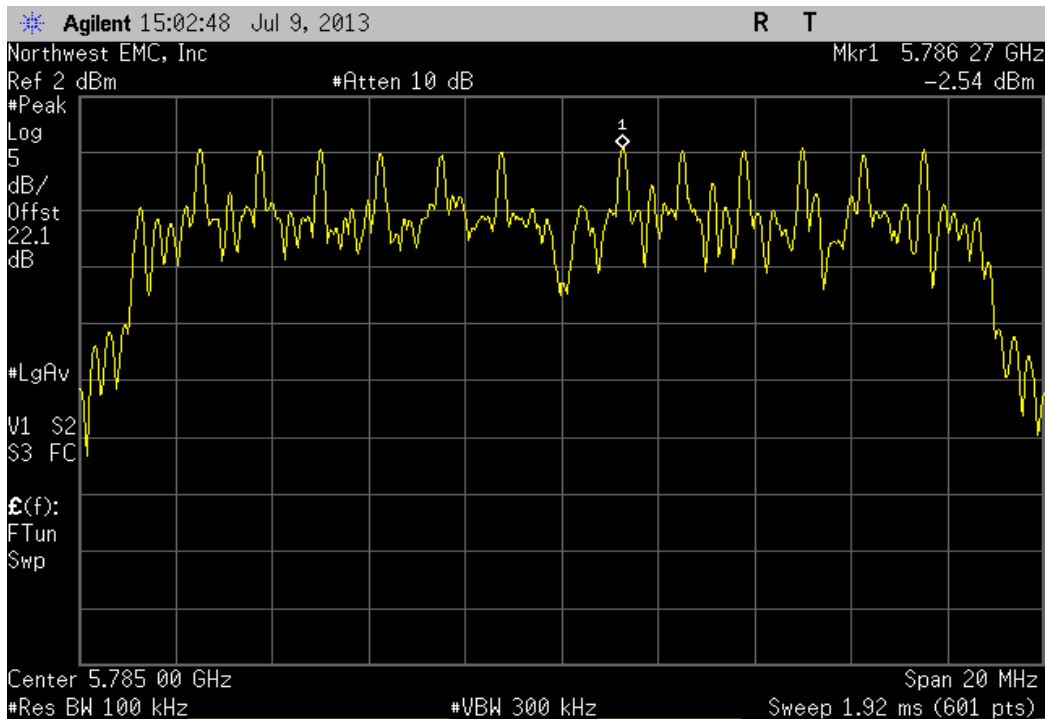


20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, Low Channel 149, 5745 MHz

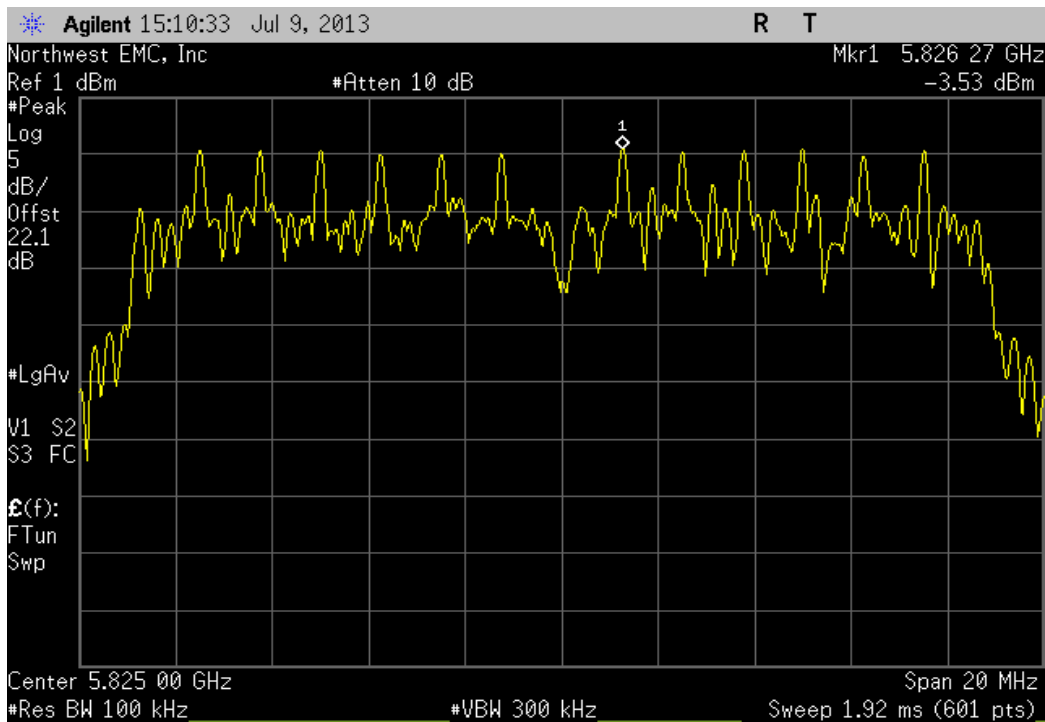
Value	dBm/100kHz	Value	Limit	Result
	To dBm/3kHz	dBm/3kHz		
-2.881	-15.2	-18.081	8	Pass



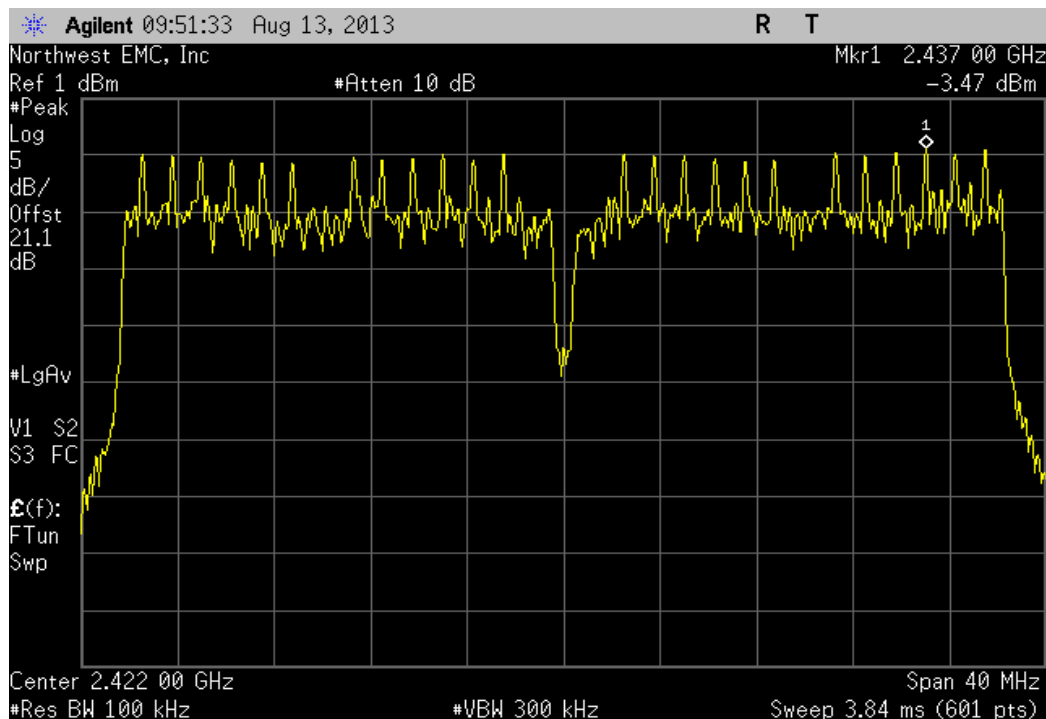
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, Mid Channel 157, 5785 MHz						
	Value	dBm/100kHz	To dBm/3kHz	Value	Limit	Result
		-2.541	-15.2	-17.741	8	Pass



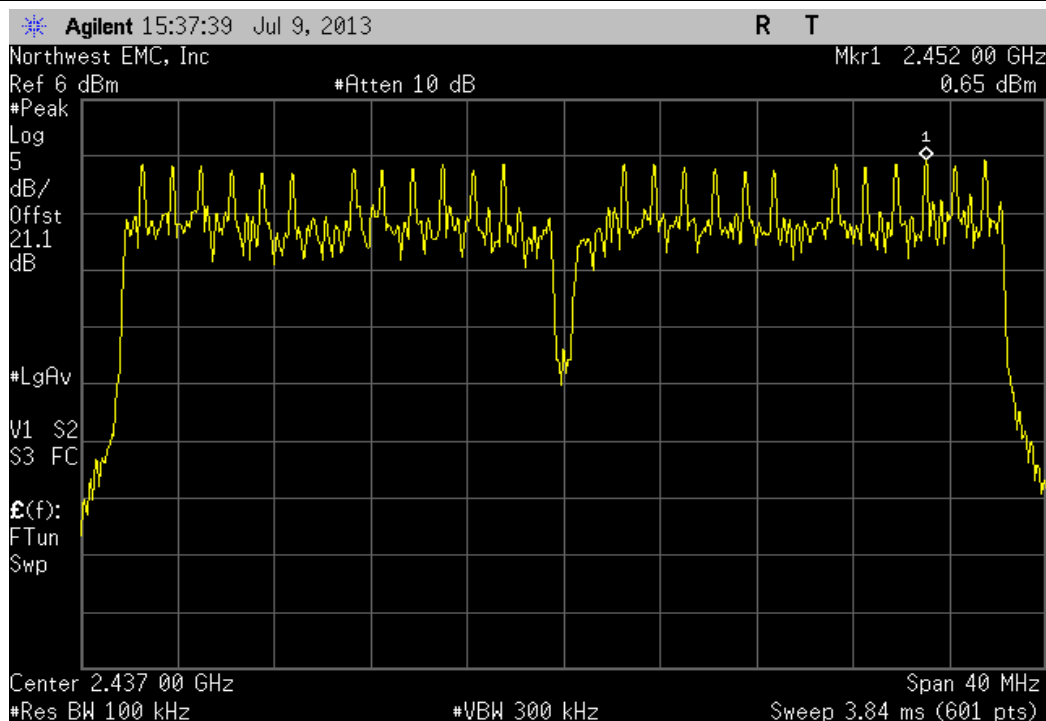
20 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, High Channel 165, 5825 MHz						
	Value	dBm/100kHz	To dBm/3kHz	Value	Limit	Result
		-3.532	-15.2	-18.732	8	Pass



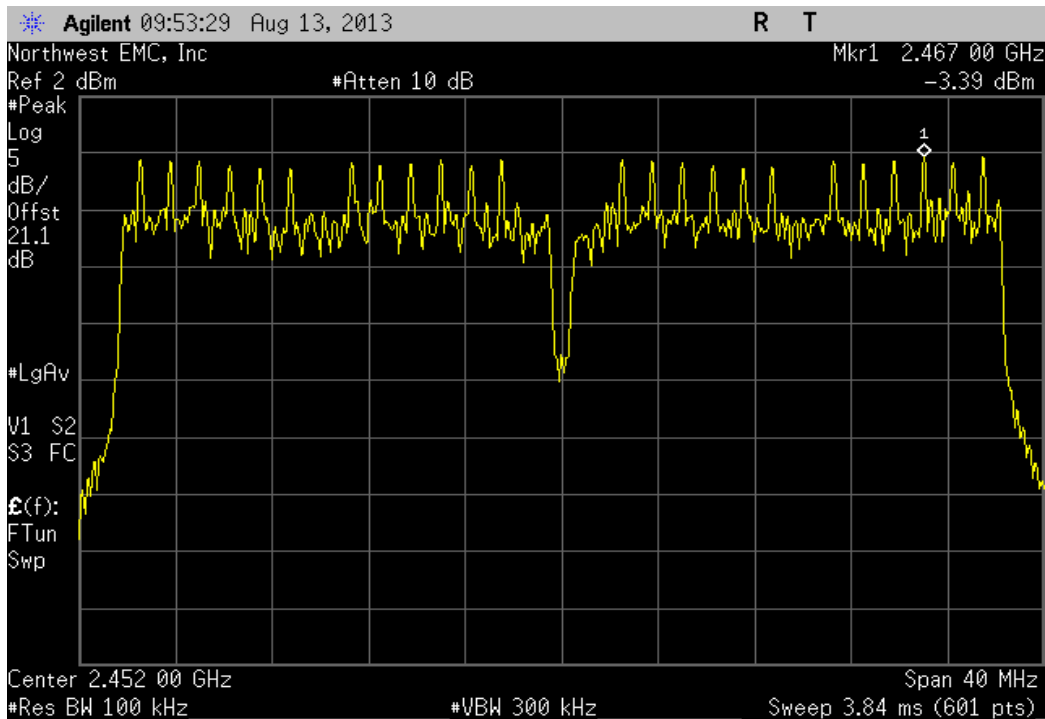
40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Low Channel 1/5, 2422 MHz					
	Value	dBm/100kHz	Value	Limit	Result
		To dBm/3kHz	dBm/3kHz		
	-3.472	-15.2	-18.672	8	Pass



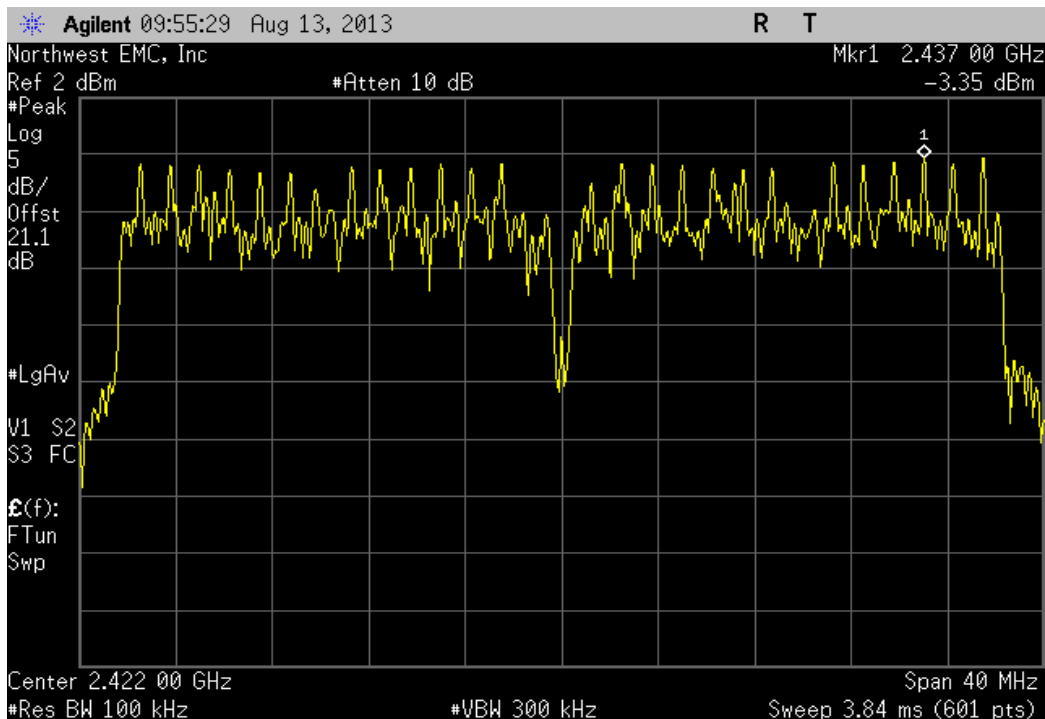
40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, Mid Channel 4/8, 2437 MHz					
	Value	dBm/100kHz	Value	Limit	Result
		To dBm/3kHz	dBm/3kHz		
	0.653	-15.2	-14.547	8	Pass



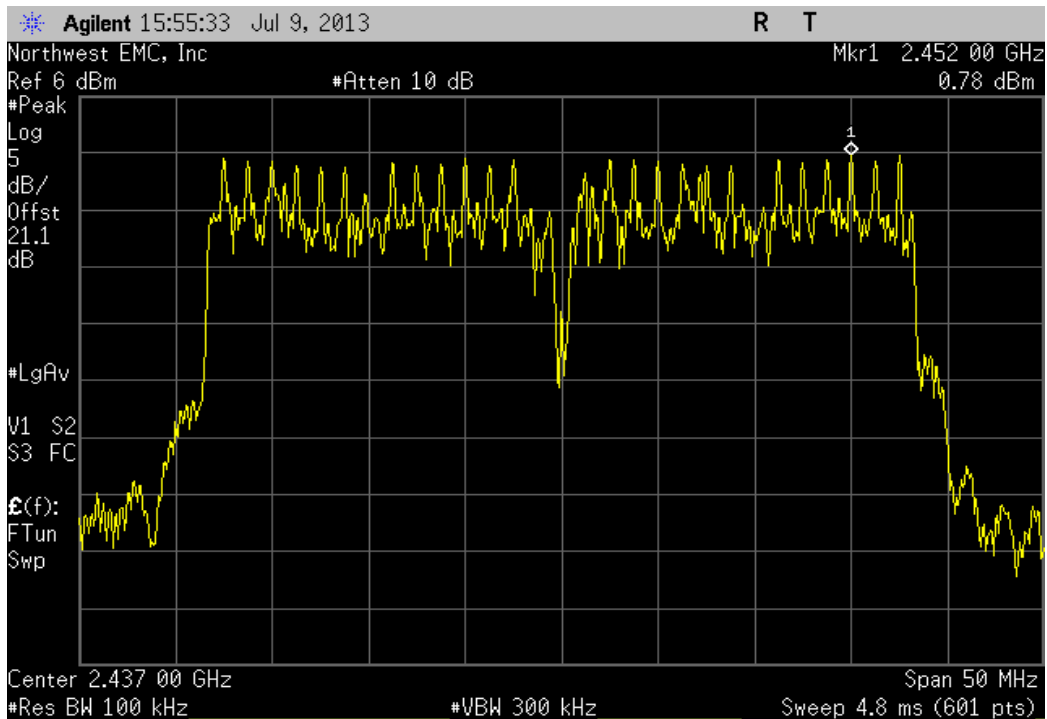
40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS0, High Channel 7/11, 2452 MHz						
	Value	dBm/100kHz	Value	Limit		
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	Result	
	-3.389	-15.2	-18.589	8	Pass	



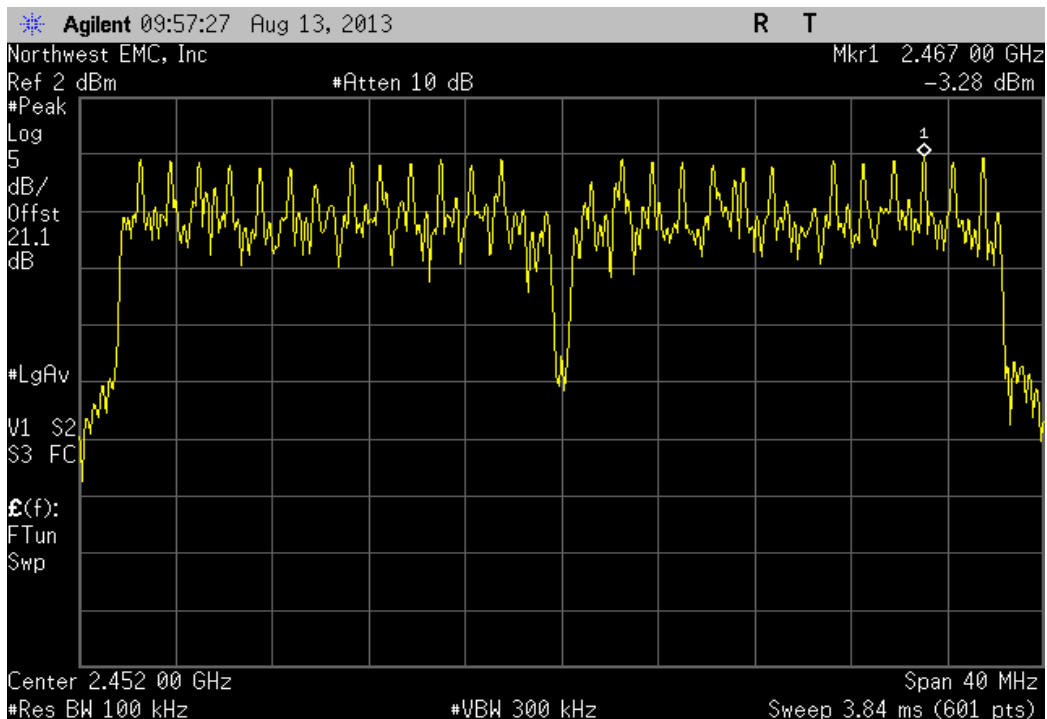
40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Low Channel 1/5, 2422 MHz						
	Value	dBm/100kHz	Value	Limit		
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	Result	
	-3.351	-15.2	-18.551	8	Pass	



40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, Mid Channel 4/8, 2437 MHz						
	Value	dBm/100kHz	Value	Limit		
		To dBm/3kHz	dBm/3kHz	dBm/3kHz		
Result		0.783	-15.2	-14.417	8	Pass

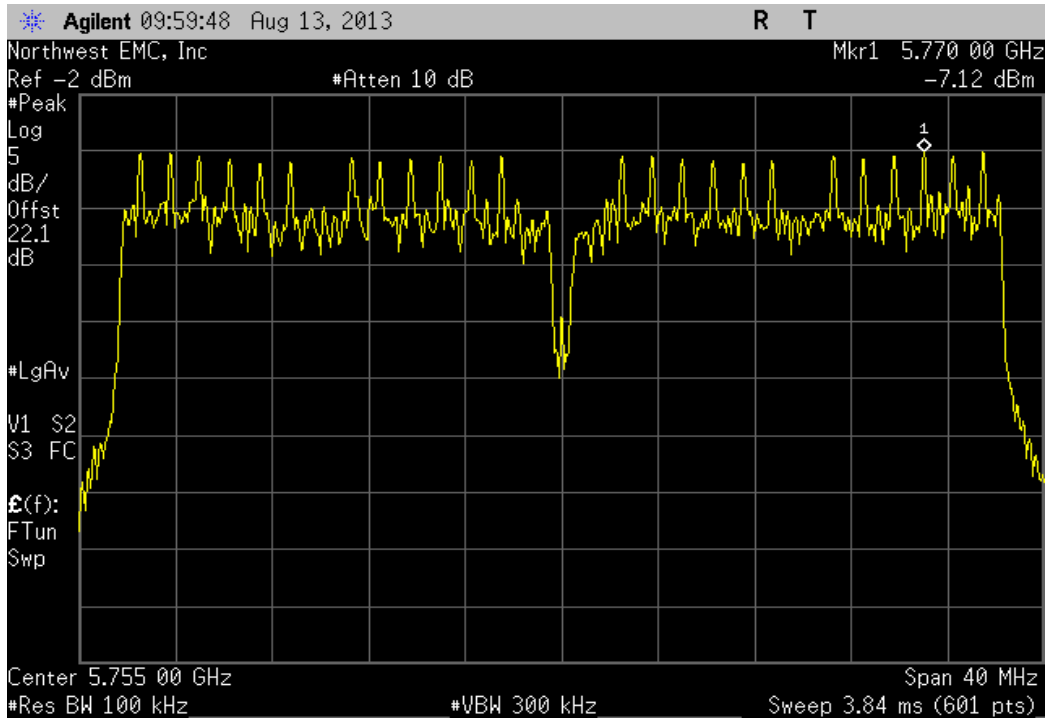


40 MHz, 2400 MHz - 2483.5 MHz Band, 802.11(n) MCS7, High Channel 7/11, 2452 MHz						
	Value	dBm/100kHz	Value	Limit		
		To dBm/3kHz	dBm/3kHz	dBm/3kHz		
Result		-3.276	-15.2	-18.476	8	Pass



40 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, Low Channel 149/153, 5755 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
-7.117	-15.2	-22.317	8	Pass



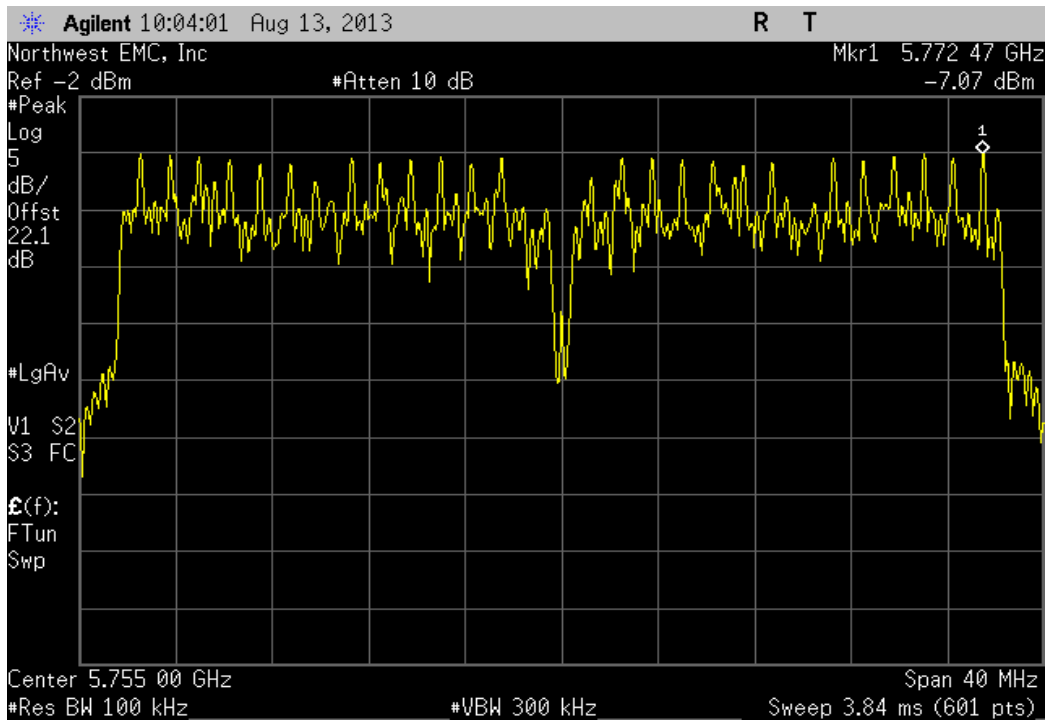
40 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, High Channel 157/161, 5795 MHz

Value	dBm/100kHz	Value	Limit	Result
dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
-6.998	-15.2	-22.198	8	Pass



40 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, Low Channel 149/153, 5755 MHz

Value	dBm/100kHz	Value	Limit	Result
	To dBm/3kHz	dBm/3kHz		
-7.066	-15.2	-22.266	8	Pass



40 MHz, 5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, High Channel 157/161, 5795 MHz

Value	dBm/100kHz	Value	Limit	Result
	To dBm/3kHz	dBm/3kHz		
-7.024	-15.2	-22.224	8	Pass

