



FreeWave Technologies, Inc.
WavePoint - 5GHz Radio (W5800-01)

Report # FREW0040



NVLAP Lab Code: 200630-0

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

Last Date of Test: November 14, 2014
FreeWave Technologies, Inc.
Model: WavePoint - 5GHz Radio (W5800-01)

Radio Equipment Testing

Standards

Specification	Method
FCC 15.247:2014	ANSI C63.10:2009

Results

Method Clause	Test Description	Applied	Results	Comments
6.5, 6.6	Spurious Radiated Emissions	No	N/A	Not required.
6.7	Band Edge Compliance	Yes	Pass	
6.7	Spurious Conducted Emissions	Yes	Pass	
6.9.1	Occupied Bandwidth	Yes	Pass	
6.10.2	Output Power	Yes	Pass	
6.11.2	Power Spectral Density	Yes	Pass	
7.5	Duty Cycle	Yes	Pass	

Deviations From Test Standards

None

Approved By:



Kyle Holgate, Operations Manager

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

Revision Number	Description	Date	Page Number
00	None		

Barometric Pressure

The recorded barometric pressure has been normalized to sea level.

United States

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

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

NVLAP - Each laboratory is accredited by NVLAP to ISO 17025

Canada

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

European Union

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

Australia/New Zealand

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

Korea

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

Japan

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

Taiwan

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

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

Singapore

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

Israel

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

Hong Kong

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

Vietnam

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

SCOPE

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

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

Measurement Uncertainty

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

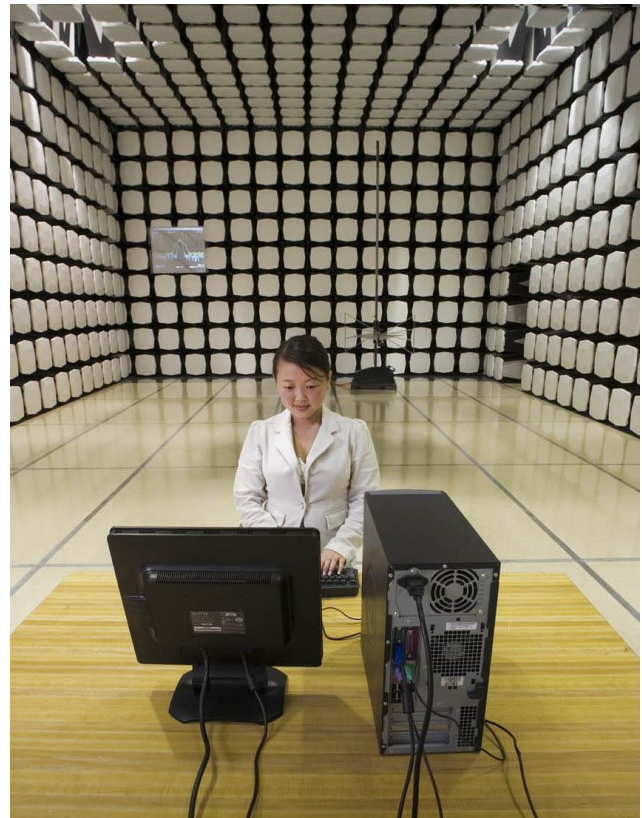
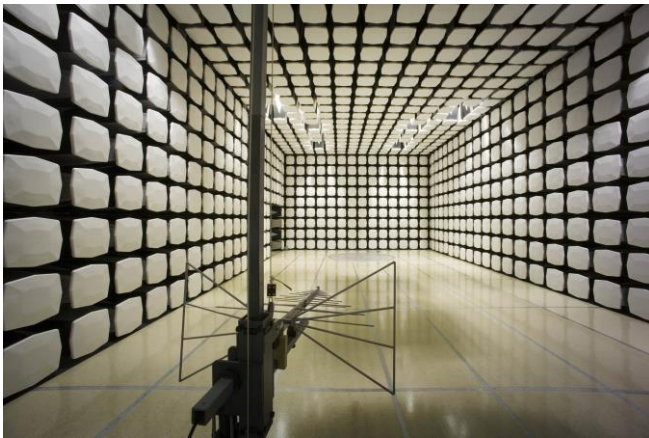
A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty (K=2) for each test is on each data sheet. Our measurement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

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

Test	+ MU	- MU
Frequency Accuracy (Hz)	0.12	-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)	4.00	-4.00
AC Powerline Conducted Emissions (dB)	2.70	-2.70



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	2834F-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:	FreeWave Technologies, Inc.
Address:	5395 Pearl Parkway, Suite 100
City, State, Zip:	Boulder, CO 80301
Test Requested By:	Dean Busch
Model:	WavePoint - 5GHz Radio (W5800-01)
First Date of Test:	June 03, 2014
Last Date of Test:	November 14, 2014
Receipt Date of Samples:	June 03, 2014
Equipment Design Stage:	Production
Equipment Condition:	No Damage

Information Provided by the Party Requesting the Test

Functional Description of the EUT:	Wireless Router 5.8 GHz Radio
Testing Objective:	To demonstrate compliance to FCC 15.247 requirements for a Class II Permissive Change to add these additional channel bandwidths to the grant.

Configuration FREW0028- 1

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Wireless Router 5GHz Radio	FreeWave Technologies, Inc.	W5800-01	00:07::E7:A0:01:F1

Peripherals in test setup boundary			
Description	Manufacturer	Model/Part Number	Serial Number
AC/DC Power Supply	Septre Power	PS-1230APL05	None
Laptop	Lenovo	T520	R9-KVPNV 11/12
AC/DC Adapter (Lenovo)	Lenovo	42T4438	None

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
RS-232 Cable	No	.9m	No	Wireless Router	Serial/USB cable
Serial/USB Cable	No	1m	No	RS-232 Cable	Remote PC
Ethernet Cable	No	1m	No	Wireless Router	Remote PC
DC Power Cable	Unknown	1.5m	Unknown	AC/DC Power Adapter	Wireless Router
AC Power Cable	No	1.4m	No	AC mains	AC/DC Power Adapter
SMA/MMCX Cable Adapter	No	.1m	No	SMA Cable	Wireless Router
DC Power Cable	Unknown	1.2m	Unknown	AC/DC Power Adapter	Laptop
AC Power Cable	No	1m	No	AC mains	AC/DC Power Adapter (Lenovo)

Configuration FREW0041- 1

Software/Firmware Running during test	
Description	Version
Tera Term VT	3.2

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Wireless Router 5GHz Radio	FreeWave Technologies, Inc.	W5800-01	00:07::E7:A0:01:B6

Peripherals in test setup boundary			
Description	Manufacturer	Model/Part Number	Serial Number
AC/DC Power Supply	Septre Power	PS-1230APL05	None
Laptop	Lenovo	T520	R9-KVPMV 11/12
AC/DC Adapter (Lenovo)	Lenovo	42T4438	None

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
RS-232 Cable	No	.9m	No	Wireless Router	Serial/USB cable
Serial/USB Cable	No	1m	No	RS-232 Cable	Remote PC
Ethernet Cable	No	1m	No	Wireless Router	Remote PC
DC Power Cable	Unknown	1.5m	Unknown	AC/DC Power Adapter	Wireless Router
AC Power Cable	No	1.4m	No	AC mains	AC/DC Power Adapter
DC Power Cable	Unknown	1.2m	Unknown	AC/DC Power Adapter	Laptop
AC Power Cable	No	1m	No	AC mains	AC/DC Power Adapter (Lenovo)

Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	6/03/2014	Band Edge Compliance	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
2	6/03/2014	Occupied Bandwidth	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
3	6/03/2014	Power Spectral Density	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
4	6/03/2014	Spurious Conducted Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
5	6/03/2014	Output Power	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
6	6/03/2014	Duty Cycle	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.
7	11/14/2014	Band Edge Compliance	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
8	11/14/2014	Spurious Conducted Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

TEST SOFTWARE POWER SETTING TABLE

Channel Bandwidth SISO Chain A										
		2.5MHz			5MHz			10MHz		
Channel	(MHz)	Mode	Setting	(MHz)	Mode	Setting	(MHz)	Mode	Setting	
Low	5738	BPSK, 1/2	23	5739	BPSK, 1/2	22	5742	BPSK, 1/2	24	
		16-QAM, 3/4	23		16-QAM, 3/4	22		16-QAM, 3/4	24	
		64-QAM, 3/4	23		64-QAM, 3/4	22		64-QAM, 3/4	24	
		BPSK, 1/2	16		BPSK, 1/2	15		BPSK, 1/2	24	
		64-QAM, 5/6	16		64-QAM, 5/6	15		64-QAM, 5/6	24	
Mid	5783	BPSK, 1/2	23	5784	BPSK, 1/2	22	5782	BPSK, 1/2	24	
		16-QAM, 3/4	23		16-QAM, 3/4	22		16-QAM, 3/4	24	
		64-QAM, 3/4	23		64-QAM, 3/4	22		64-QAM, 3/4	24	
		BPSK, 1/2	16		BPSK, 1/2	15		BPSK, 1/2	24	
		64-QAM, 5/6	16		64-QAM, 5/6	15		64-QAM, 5/6	24	
High	5831	BPSK, 1/2	23	5829	BPSK, 1/2	22	2464	BPSK, 1/2	24	
		16-QAM, 3/4	23		16-QAM, 3/4	22		16-QAM, 3/4	24	
		64-QAM, 3/4	23		64-QAM, 3/4	22		64-QAM, 3/4	24	
		BPSK, 1/2	16		BPSK, 1/2	15		BPSK, 1/2	24	
		64-QAM, 5/6	16		64-QAM, 5/6	15		64-QAM, 5/6	24	

Channel Bandwidth 2x2 MIMO Chain A										
		2.5MHz			5MHz			10MHz		
Channel	(MHz)	Mode	Setting	(MHz)	Mode	Setting	(MHz)	Mode	Setting	
Low	5738	BPSK, 1/2	14	5739	BPSK, 1/2	13	5742	BPSK, 1/2	19	
		64-QAM, 5/6	14		64-QAM, 5/6	13		64-QAM, 5/6	19	
Mid	5783	BPSK, 1/2	14	5784	BPSK, 1/2	13	5782	BPSK, 1/2	19	
		64-QAM, 5/6	14		64-QAM, 5/6	13		64-QAM, 5/6	19	
High	5831	BPSK, 1/2	14	5829	BPSK, 1/2	13	2464	BPSK, 1/2	19	
		64-QAM, 5/6	14		64-QAM, 5/6	13		64-QAM, 5/6	19	

Channel Bandwidth 2x2 MIMO Chain B										
		2.5MHz			5MHz			10MHz		
Channel	(MHz)	Mode	Setting	(MHz)	Mode	Setting	(MHz)	Mode	Setting	
Low	5738	BPSK, 1/2	12	5739	BPSK, 1/2	11	5742	BPSK, 1/2	19	
		64-QAM, 5/6	12		64-QAM, 5/6	11		64-QAM, 5/6	19	
Mid	5783	BPSK, 1/2	12	5784	BPSK, 1/2	11	5782	BPSK, 1/2	19	
		64-QAM, 5/6	12		64-QAM, 5/6	11		64-QAM, 5/6	19	
High	5831	BPSK, 1/2	12	5829	BPSK, 1/2	11	2464	BPSK, 1/2	19	
		64-QAM, 5/6	12		64-QAM, 5/6	11		64-QAM, 5/6	19	

Channel Bandwidth 3x3 MIMO Chain A										
		2.5MHz			5MHz			10MHz		
Channel	(MHz)	Mode	Setting	(MHz)	Mode	Setting	(MHz)	Mode	Setting	
Low	5738	BPSK, 1/2	12	5739	BPSK, 1/2	11	5742	BPSK, 1/2	19	
		64-QAM, 5/6	12		64-QAM, 5/6	11		64-QAM, 5/6	19	
Mid	5783	BPSK, 1/2	12	5784	BPSK, 1/2	11	5782	BPSK, 1/2	19	
		64-QAM, 5/6	12		64-QAM, 5/6	11		64-QAM, 5/6	19	
High	5831	BPSK, 1/2	12	5829	BPSK, 1/2	11	2464	BPSK, 1/2	19	
		64-QAM, 5/6	12		64-QAM, 5/6	11		64-QAM, 5/6	19	

TEST SOFTWARE POWER SETTING TABLE

Channel Bandwidth 3x3 MIMO Chain B									
	2.5MHz			5MHz			10MHz		
Channel	(MHz)	Mode	Setting	(MHz)	Mode	Setting	(MHz)	Mode	Setting
Low	5738	BPSK, 1/2	9	5739	BPSK, 1/2	9	5742	BPSK, 1/2	18
		64-QAM, 5/6	9		64-QAM, 5/6	9		64-QAM, 5/6	18
Mid	5783	BPSK, 1/2	9	5784	BPSK, 1/2	9	5782	BPSK, 1/2	18
		64-QAM, 5/6	9		64-QAM, 5/6	9		64-QAM, 5/6	18
High	5831	BPSK, 1/2	9	5829	BPSK, 1/2	9	2464	BPSK, 1/2	18
		64-QAM, 5/6	9		64-QAM, 5/6	9		64-QAM, 5/6	18

Channel Bandwidth 3x3 MIMO Chain C									
	2.5MHz			5MHz			10MHz		
Channel	(MHz)	Mode	Setting	(MHz)	Mode	Setting	(MHz)	Mode	Setting
Low	5738	BPSK, 1/2	9	5739	BPSK, 1/2	8	5742	BPSK, 1/2	18
		64-QAM, 5/6	9		64-QAM, 5/6	8		64-QAM, 5/6	18
Mid	5783	BPSK, 1/2	9	5784	BPSK, 1/2	8	5782	BPSK, 1/2	18
		64-QAM, 5/6	9		64-QAM, 5/6	8		64-QAM, 5/6	18
High	5831	BPSK, 1/2	9	5829	BPSK, 1/2	8	2464	BPSK, 1/2	18
		64-QAM, 5/6	9		64-QAM, 5/6	8		64-QAM, 5/6	18

BAND EDGE COMPLIANCE - SISO

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval (mo)
40GHz DC Block	Miteq	DCB4000	AMD	4/28/2014	12
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2013	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Attenuator 6 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-6	AUX	7/30/2013	12
Power Meter	Agilent	N1913A	SQR	4/29/2013	36
Power Sensor	Agilent	E9300H	SQO	4/29/2013	36
Spectrum Analyzer	Agilent	E4446A	AAQ	1/21/2014	24
MXG MW Analog Signal Generator 40 Gig	Agilent	N5183A	TID	9/19/2011	36

TEST DESCRIPTION

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

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

EUT: WavePoint - 5GHz Radio (W5800-01)		Work Order: FREW0028
Serial Number: 00:07:E7:A0:01:F1		Date: 06/03/14
Customer: FreeWave Technologies, Inc.		Temperature: 22.6°C
Attendees: Dean Busch		Humidity: 43%
Project: None		Barometric Pres.: 1018.7
Tested by: Brandon Hobbs, Jared Ison		Power: 110VAC/60Hz
		Job Site: EV06
TEST SPECIFICATIONS		Test Method
FCC 15.247:2014		ANSI C63.10:2009

COMMENTS
The High and Low Channels were measured using the worst case modulation found for 8011a/n modes. An additional 10dB 5watt attenuator was used inline for all measurements made while under test. Please reference the power table for power settings used while under test.

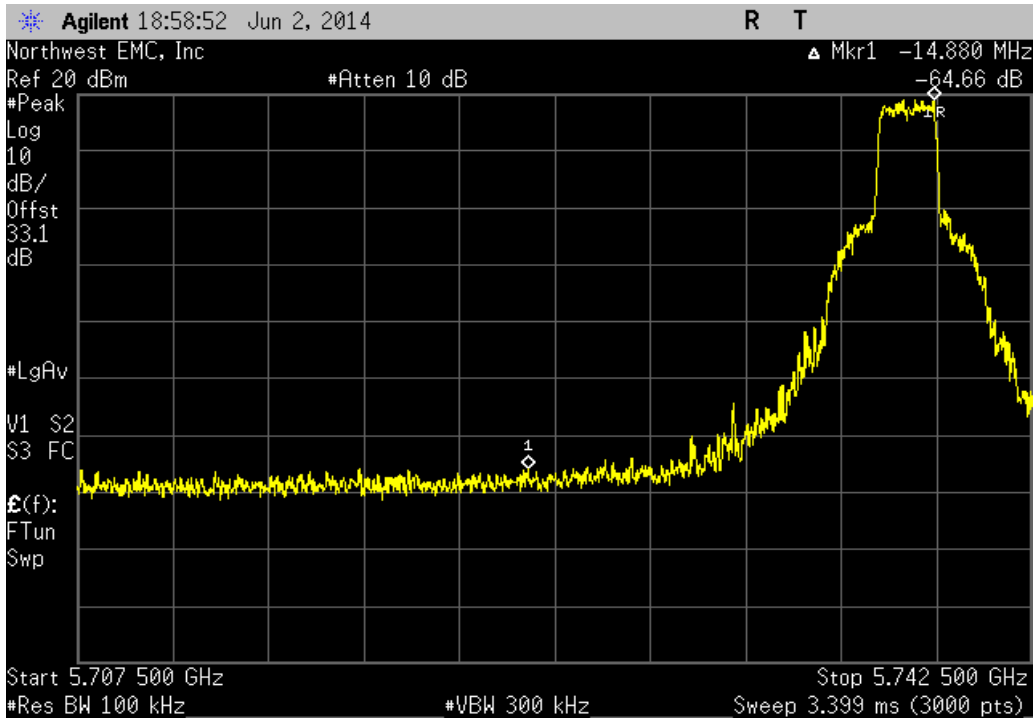
DEVIATIONS FROM TEST STANDARD

Configuration #	1	Signature 
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		Value	Limit	Result
Chain 1	5725 MHz - 5825 MHz Band			
	2.5 MHz			
	Modulation Type, 16-QAM, Coding Rate, 3/4.			
	Low Channel 5738 MHz	-64.66 dBc	≤ -20 dBc	Pass
	High Channel 5831 MHz	-64.17 dBc	≤ -20 dBc	Pass
	Modulation Type, 64-QAM, Coding Rate, 5/6.			
	Low Channel 5738 MHz	-65.17 dBc	≤ -20 dBc	Pass
	High Channel 5831 MHz	-64.62 dBc	≤ -20 dBc	Pass
	5 MHz			
	Modulation Type, 16-QAM, Coding Rate, 3/4.			
	Low Channel 5739 MHz	-60.73 dBc	≤ -20 dBc	Pass
	High Channel 5829 MHz	-58.66 dBc	≤ -20 dBc	Pass
	Modulation Type, 64-QAM, Coding Rate, 5/6.			
	Low Channel 5739 MHz	-59.17 dBc	≤ -20 dBc	Pass
	High Channel 5829 MHz	-58.22 dBc	≤ -20 dBc	Pass
	10 MHz			
	Modulation Type, 16-QAM, Coding Rate, 3/4.			
	Low Channel 5742 MHz	-46.47 dBc	≤ -20 dBc	Pass
	High Channel 5827 MHz	-59.39 dBc	≤ -20 dBc	Pass
	Modulation Type, 64-QAM, Coding Rate, 5/6.			
	Low Channel 5742 MHz	-43.83 dBc	≤ -20 dBc	Pass
	High Channel 5827 MHz	-60.12 dBc	≤ -20 dBc	Pass

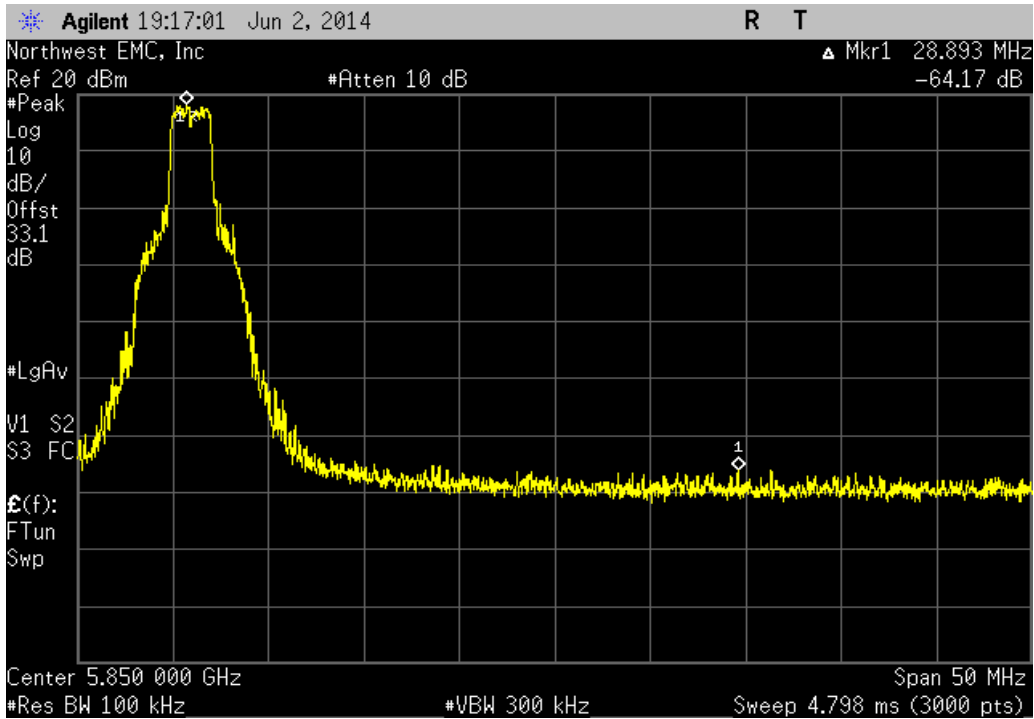
Chain 1, 5725 MHz - 5825 MHz Band, 2.5 MHz, Modulation Type, 16-QAM, Coding Rate, 3/4., Low Channel 5738 MHz

Value	Limit	Result
-64.66 dBc	≤ -20 dBc	Pass



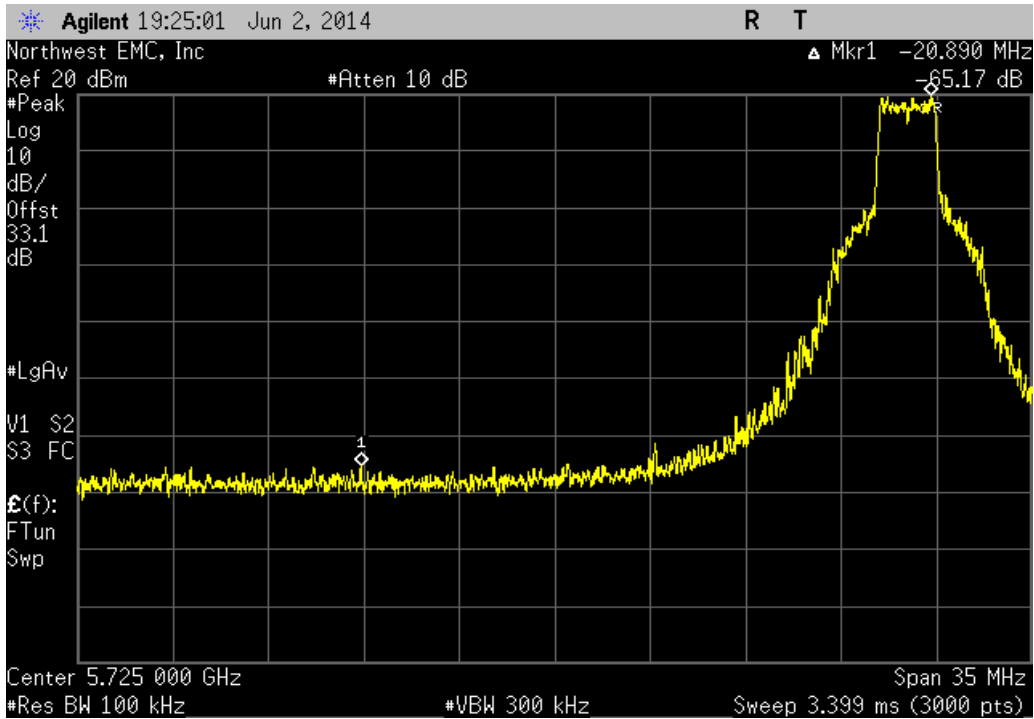
Chain 1, 5725 MHz - 5825 MHz Band, 2.5 MHz, Modulation Type, 16-QAM, Coding Rate, 3/4., High Channel 5831 MHz

Value	Limit	Result
-64.17 dBc	≤ -20 dBc	Pass



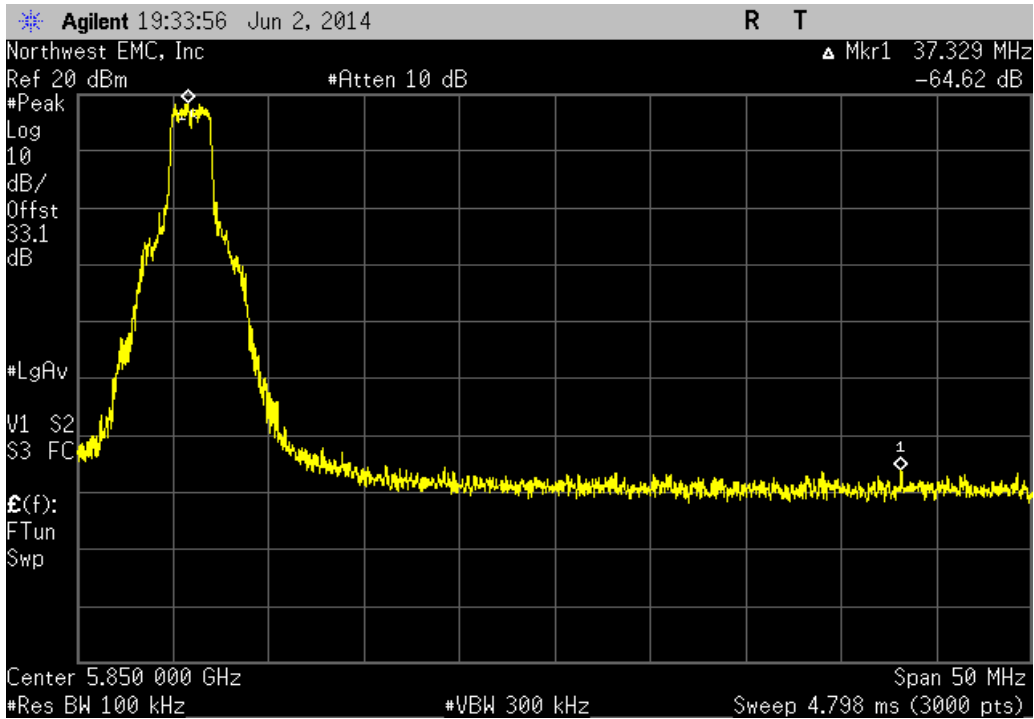
Chain 1, 5725 MHz - 5825 MHz Band, 2.5 MHz, Modulation Type, 64-QAM, Coding Rate, 5/6., Low Channel 5738 MHz

Value	Limit	Result
-65.17 dBc	≤ -20 dBc	Pass



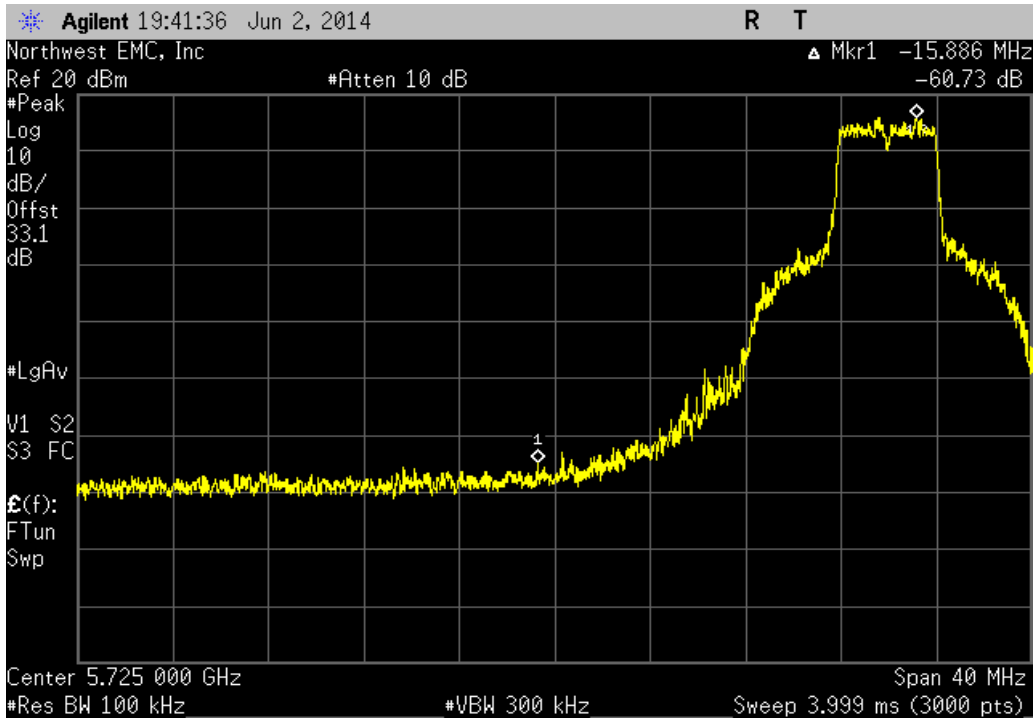
Chain 1, 5725 MHz - 5825 MHz Band, 2.5 MHz, Modulation Type, 64-QAM, Coding Rate, 5/6., High Channel 5831 MHz

Value	Limit	Result
-64.62 dBc	≤ -20 dBc	Pass



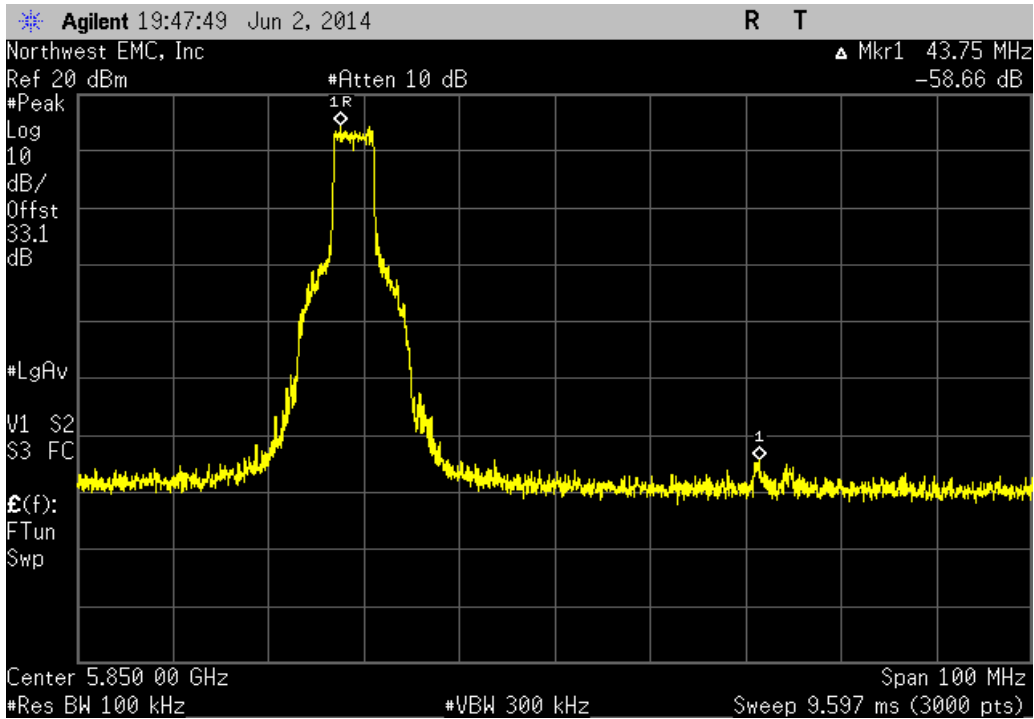
Chain 1, 5725 MHz - 5825 MHz Band, 5 MHz, Modulation Type, 16-QAM, Coding Rate, 3/4., Low Channel 5739 MHz

	Value	Limit	Result
	-60.73 dBc	≤ -20 dBc	Pass



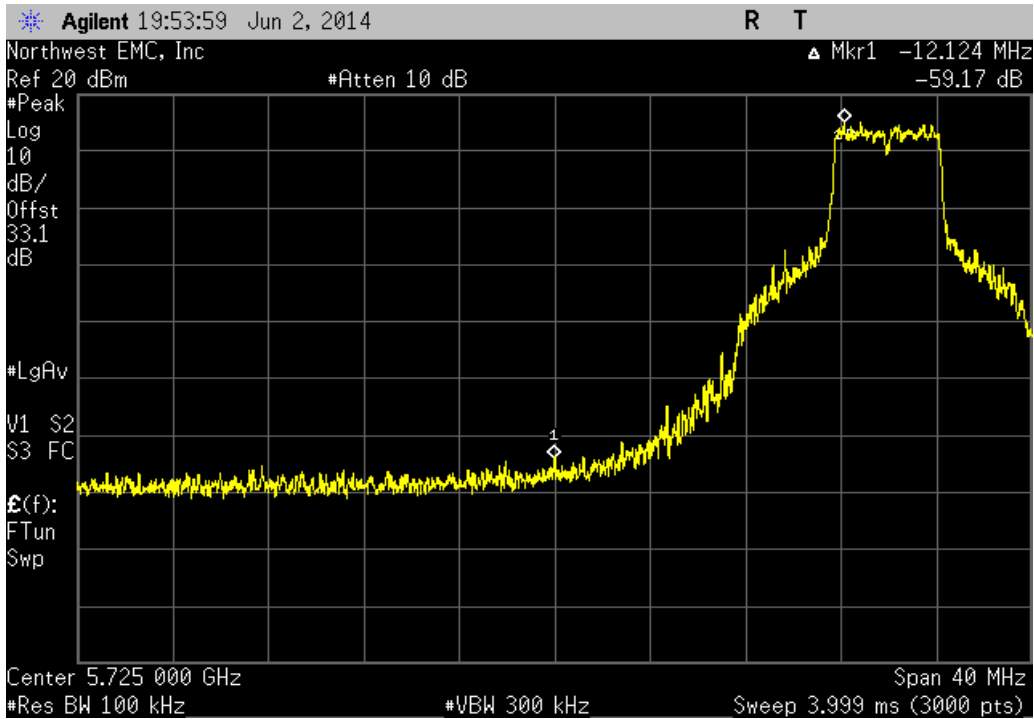
Chain 1, 5725 MHz - 5825 MHz Band, 5 MHz, Modulation Type, 16-QAM, Coding Rate, 3/4., High Channel 5829 MHz

	Value	Limit	Result
	-58.66 dBc	≤ -20 dBc	Pass



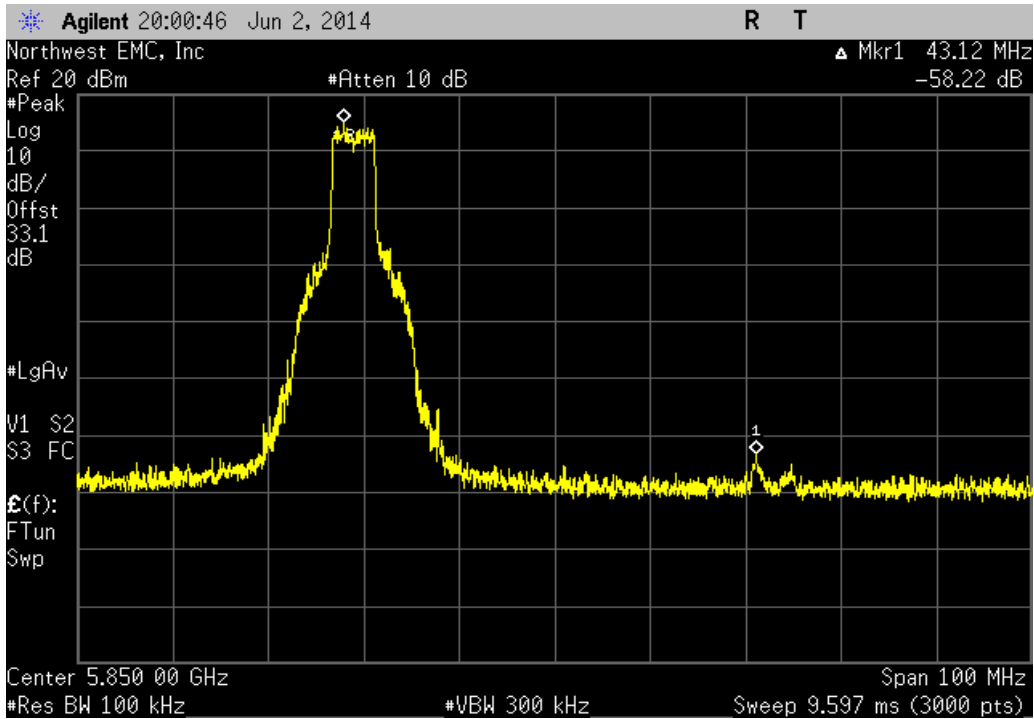
Chain 1, 5725 MHz - 5825 MHz Band, 5 MHz, Modulation Type, 64-QAM, Coding Rate, 5/6., Low Channel 5739 MHz

Value	Limit	Result
-59.17 dBc	≤ -20 dBc	Pass



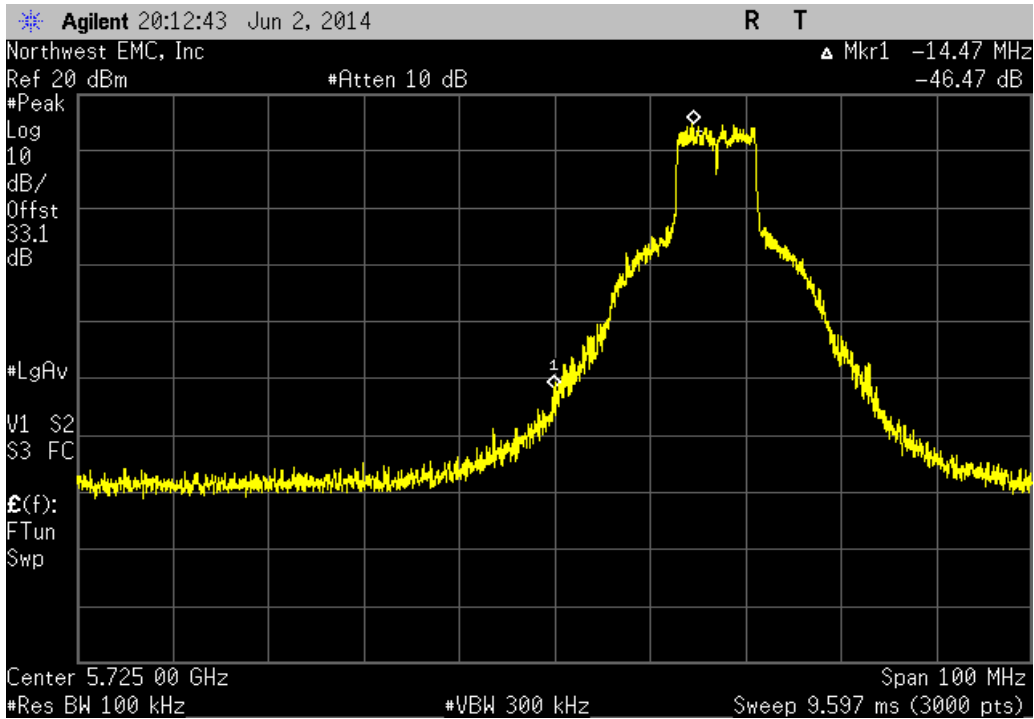
Chain 1, 5725 MHz - 5825 MHz Band, 5 MHz, Modulation Type, 64-QAM, Coding Rate, 5/6., High Channel 5829 MHz

Value	Limit	Result
-58.22 dBc	≤ -20 dBc	Pass



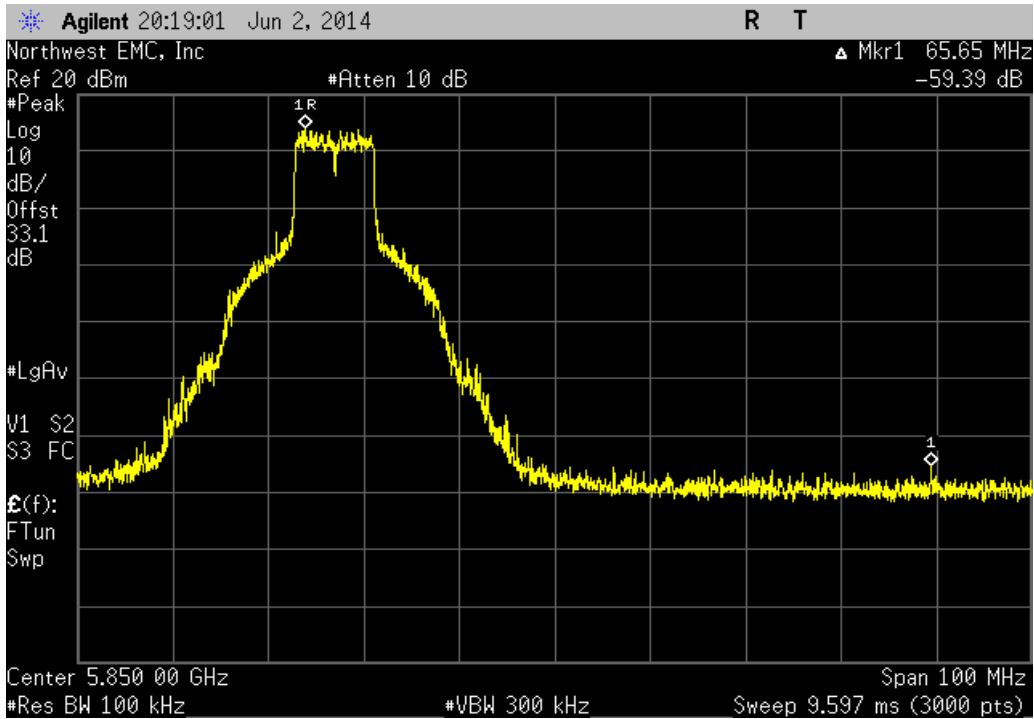
Chain 1, 5725 MHz - 5825 MHz Band, 10 MHz, Modulation Type, 16-QAM, Coding Rate, 3/4., Low Channel 5742 MHz

Value	Limit	Result
-46.47 dBc	≤ -20 dBc	Pass



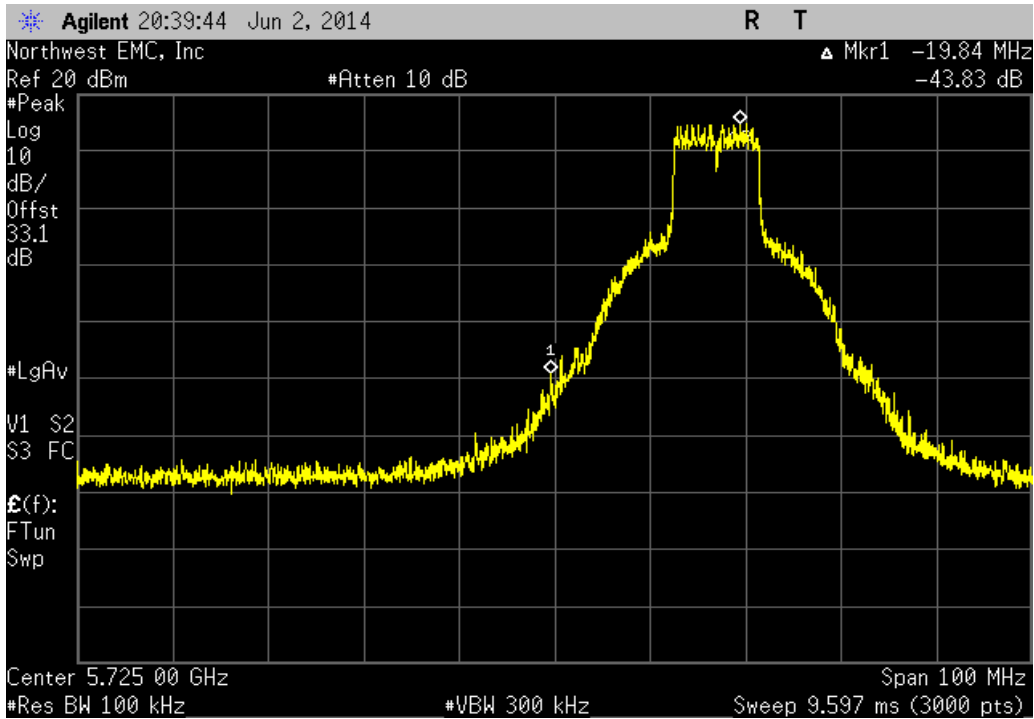
Chain 1, 5725 MHz - 5825 MHz Band, 10 MHz, Modulation Type, 16-QAM, Coding Rate, 3/4., High Channel 5827 MHz

Value	Limit	Result
-59.39 dBc	≤ -20 dBc	Pass



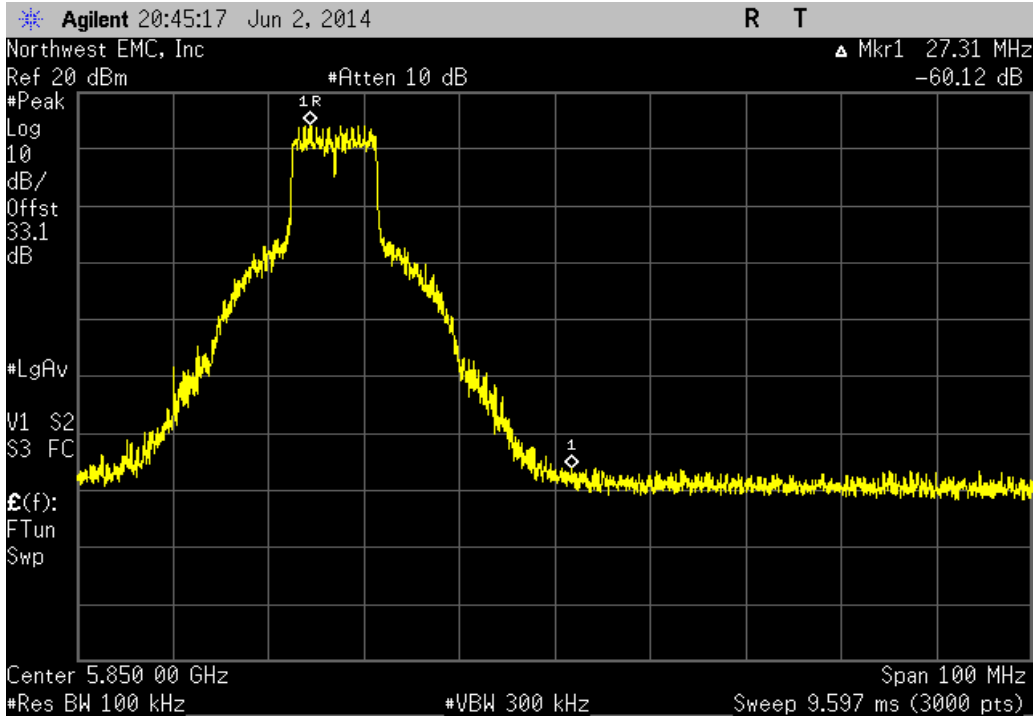
Chain 1, 5725 MHz - 5825 MHz Band, 10 MHz, Modulation Type, 64-QAM, Coding Rate, 5/6., Low Channel 5742 MHz

Value	Limit	Result
-43.83 dBc	≤ -20 dBc	Pass



Chain 1, 5725 MHz - 5825 MHz Band, 10 MHz, Modulation Type, 64-QAM, Coding Rate, 5/6., High Channel 5827 MHz

Value	Limit	Result
-60.12 dBc	≤ -20 dBc	Pass



**BAND EDGE COMPLIANCE
MIMO 2x2**

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval (mo)
Attenuator, 'Precision N'	S.M. Electronics	SA18N-06/SM4032	REE	10/20/2014	12
MXG Analog Signal Generator	Agilent	N5181A	TIG	3/28/2014	36
Power Meter	Gigatronics	8651A	SPM	9/17/2014	12
Power Sensor	Gigatronics	80701A	SPL	5/28/2014	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2014	12
Spectrum Analyzer	Agilent	E4446A	AAQ	1/21/2014	12

TEST DESCRIPTION

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

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



BAND EDGE COMPLIANCE MIMO 2x2

XMit 2014.02.07
NweTx 2014.07.18.4

EUT: WavePoint - 5GHz Radio (W5800-01)		Work Order: FREW0028
Serial Number: 00:07:E7:A0:01:B6		Date: 11/14/14
Customer: FreeWave Technologies, Inc.		Temperature: 23.0°C
Attendees: None		Humidity: 25%
Project: None		Barometric Pres.: 1012.64
Tested by: Brandon Hobbs		Power: 110VAC/60Hz
		Job Site: EV06

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

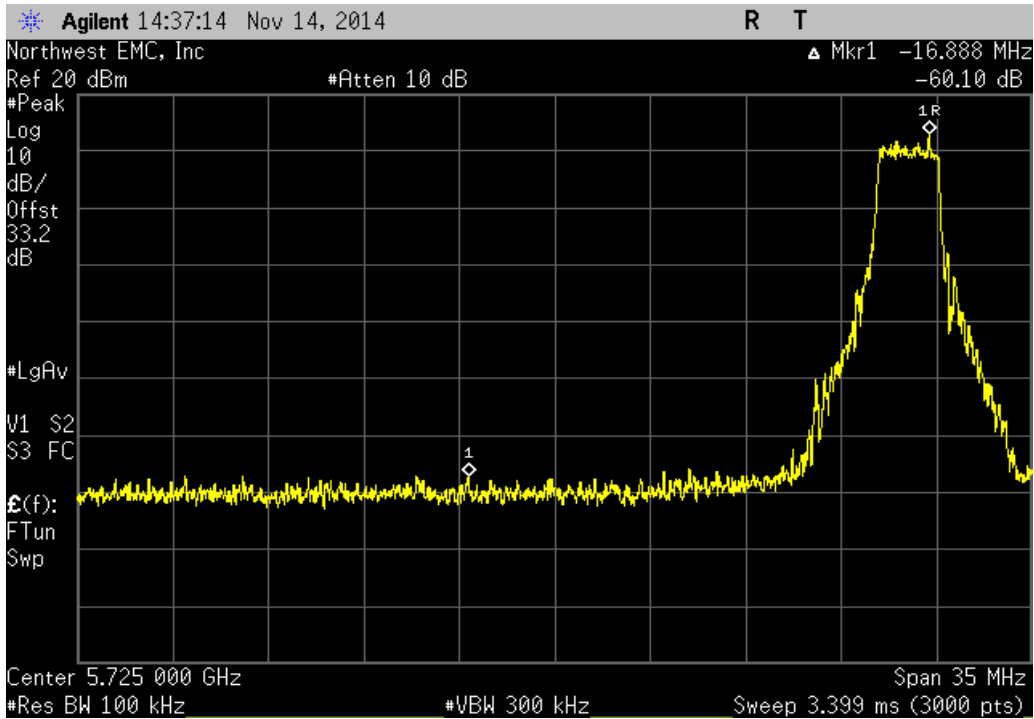
COMMENTS
The High and Low Channels were measured using the worst case modulation found for 8011(n) MIMO modes. An additional 40GHz DC block and 10dB 5watt attenuator were used inline for all measurements made while under test. Please reference the power table for power settings used while under test.

DEVIATIONS FROM TEST STANDARD
None

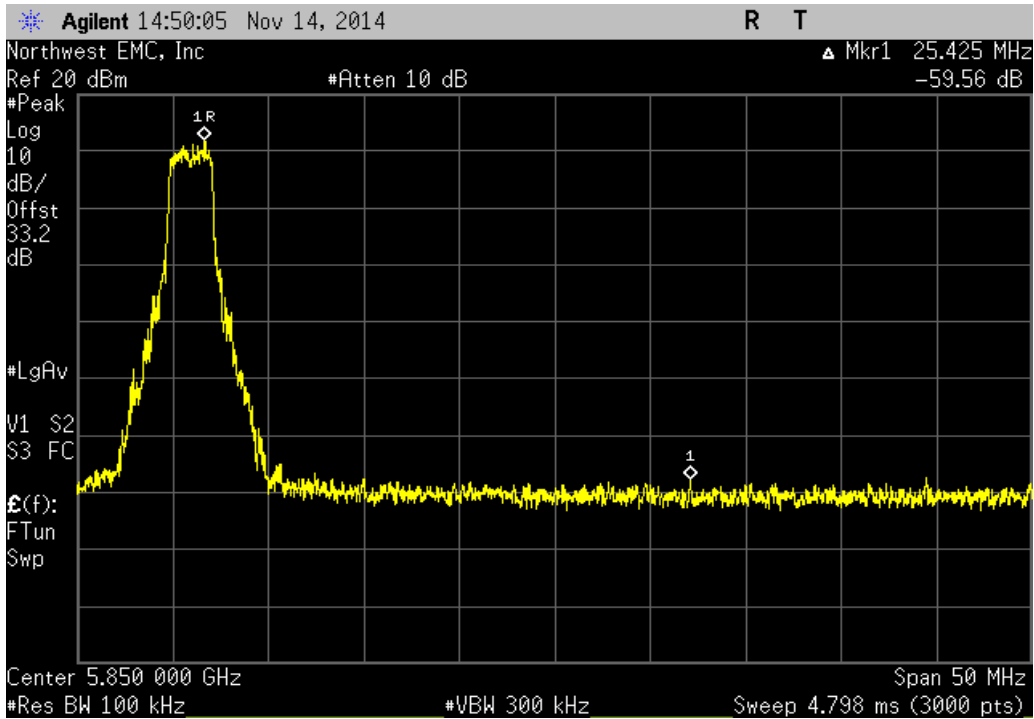
Configuration #	1	Signature 
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		Value (dBc)	Limit ≤ (dBc)	Result
Chain 2	2.5MHz Bandwidth			
	2x2 Modulation Type, 64-QAM, Coding Rate, 5/6			
	Low Channel 5738MHz	-60.1	-20	Pass
	High Channel 5831MHz	-59.57	-20	Pass
	5MHz Bandwidth			
	2x2 Modulation Type, 64-QAM, Coding Rate, 5/6			
	Low Channel 5739MHz	-57.53	-20	Pass
	High Channel 5829MHz	-53.99	-20	Pass
	10MHz Bandwidth			
	2x2 Modulation Type, 64-QAM, Coding Rate, 5/6			
	Low Channel 5742MHz	-50.05	-20	Pass
	High Channel 5827MHz	-56.35	-20	Pass

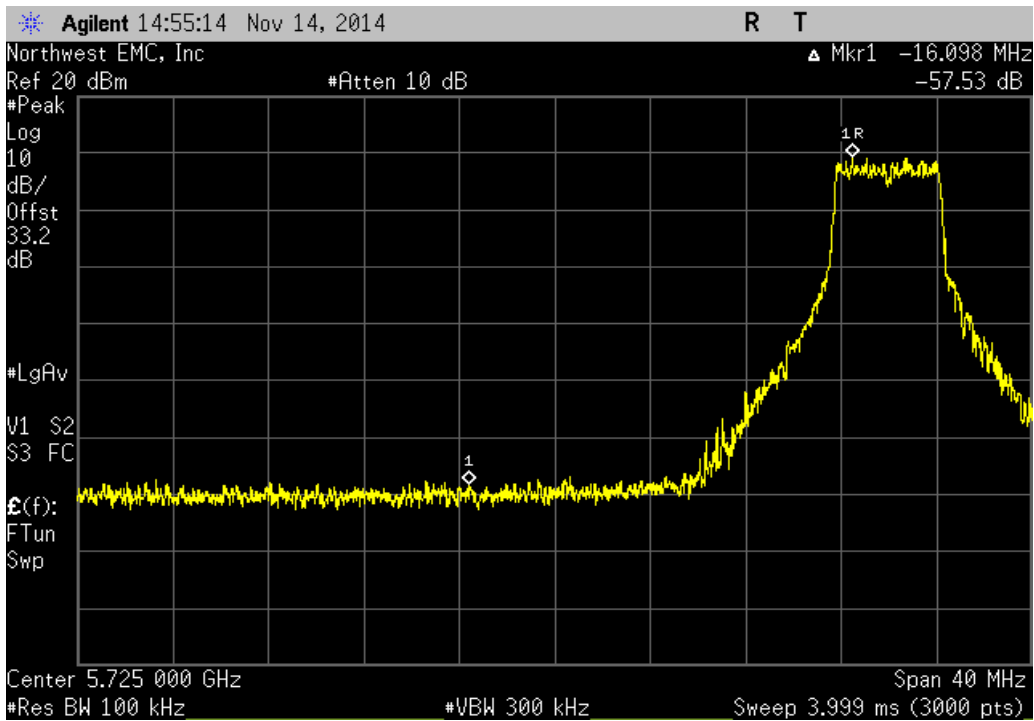
Chain 2, 2.5MHz Bandwidth , 2x2 Modulation Type, 64-QAM, Coding Rate, 5/6, Low Channel 5738MHz			
	Value (dBc)	Limit ≤ (dBc)	Result
	-60.1	-20	Pass



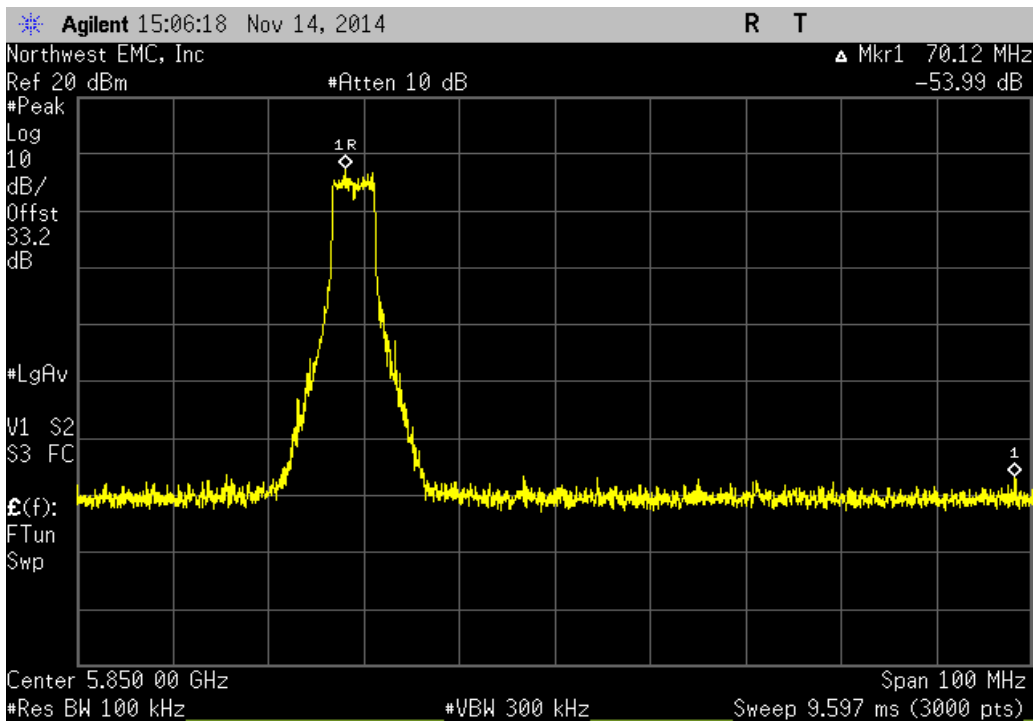
Chain 2, 2.5MHz Bandwidth , 2x2 Modulation Type, 64-QAM, Coding Rate, 5/6, High Channel 5831MHz			
	Value (dBc)	Limit ≤ (dBc)	Result
	-59.57	-20	Pass



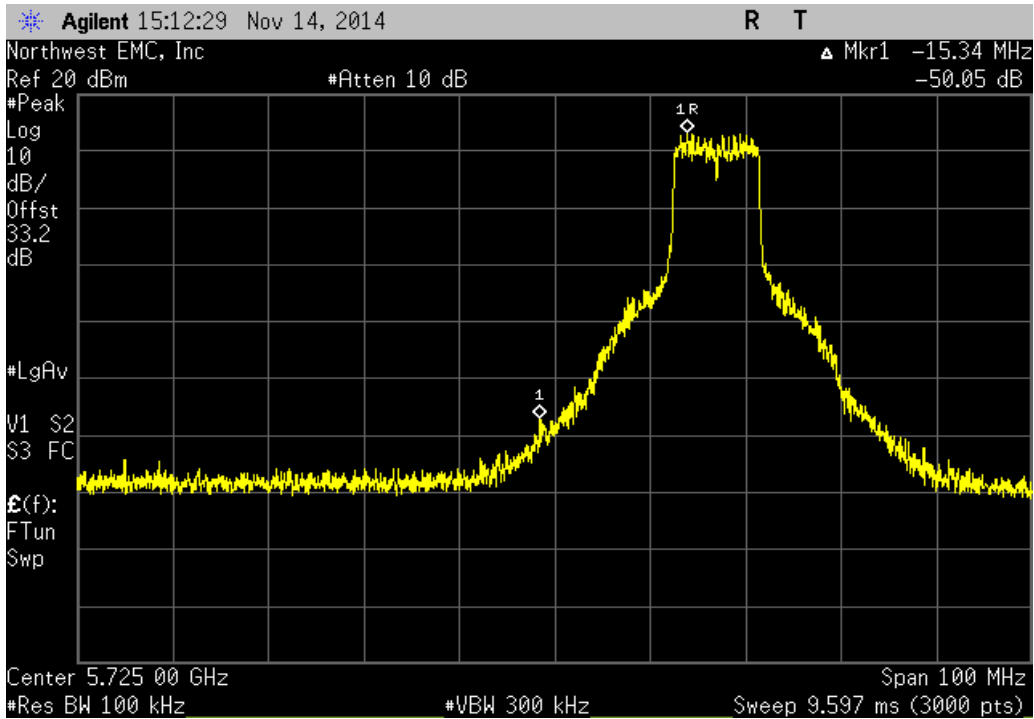
Chain 2, 5MHz Bandwidth , 2x2 Modulation Type, 64-QAM, Coding Rate, 5/6, Low Channel 5739MHz			
	Value (dBc)	Limit ≤ (dBc)	Result
	-57.53	-20	Pass



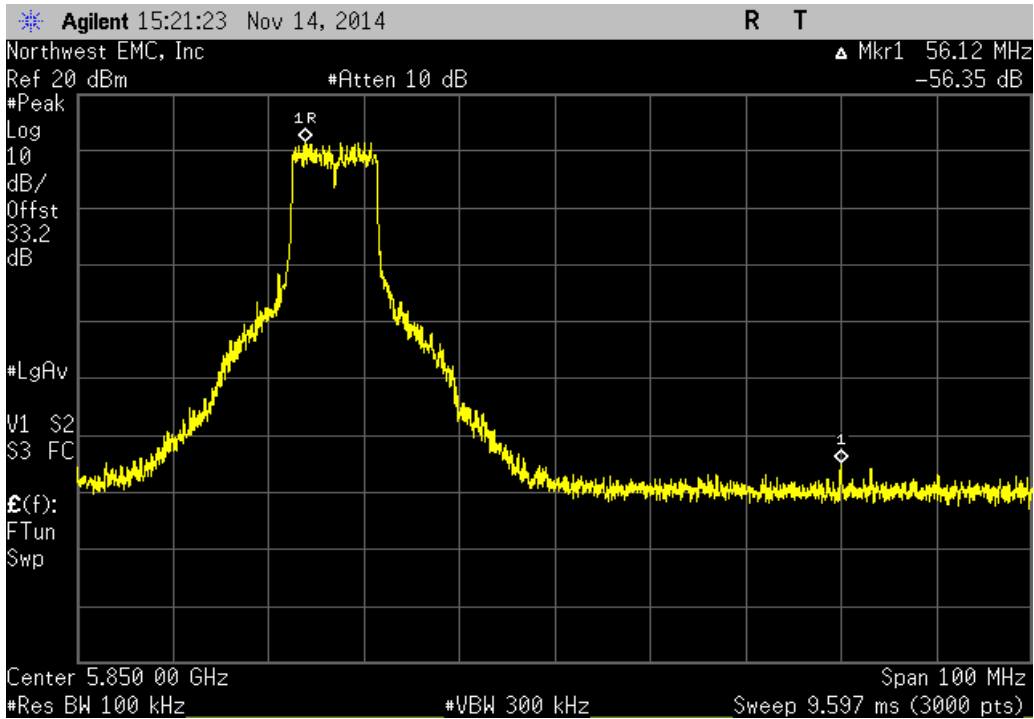
Chain 2, 5MHz Bandwidth , 2x2 Modulation Type, 64-QAM, Coding Rate, 5/6, High Channel 5829MHz			
	Value (dBc)	Limit ≤ (dBc)	Result
	-53.99	-20	Pass



Chain 2, 10MHz Bandwidth , 2x2 Modulation Type, 64-QAM, Coding Rate, 5/6, Low Channel 5742MHz			
	Value (dBc)	Limit ≤ (dBc)	Result
	-50.05	-20	Pass



Chain 2, 10MHz Bandwidth , 2x2 Modulation Type, 64-QAM, Coding Rate, 5/6, High Channel 5827MHz			
	Value (dBc)	Limit ≤ (dBc)	Result
	-56.35	-20	Pass



**BAND EDGE COMPLIANCE
MIMO 3x3**

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval (mo)
Attenuator, 'Precision N'	S.M. Electronics	SA18N-06/SM4032	REE	10/20/2014	12
MXG Analog Signal Generator	Agilent	N5181A	TIG	3/28/2014	36
Power Meter	Gigatronics	8651A	SPM	9/17/2014	12
Power Sensor	Gigatronics	80701A	SPL	5/28/2014	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2014	12
Spectrum Analyzer	Agilent	E4446A	AAQ	1/21/2014	12

TEST DESCRIPTION

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

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



BAND EDGE COMPLIANCE MIMO 3x3

XMit 2014.02.07
NweTx 2014.07.18.4

EUT: WavePoint - 5GHz Radio (W5800-01)		Work Order: FREW0041
Serial Number: 00:07:E7:A0:01:B6		Date: 11/14/14
Customer: FreeWave Technologies, Inc.		Temperature: 23.0°C
Attendees: None		Humidity: 25%
Project: None		Barometric Pres.: 1012.64
Tested by: Brandon Hobbs		Power: 110VAC/60Hz
		Job Site: EV06

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

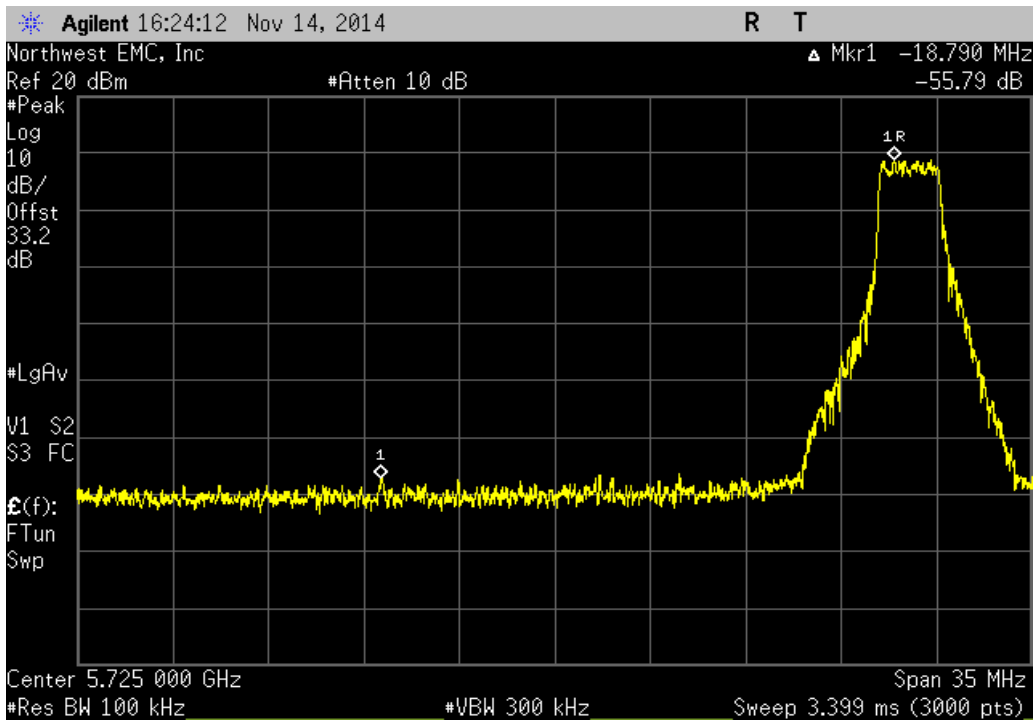
COMMENTS
The High and Low Channels were measured using the worst case modulation found for 8011(n) MIMO modes. An additional 40GHz DC block and 10dB 5watt attenuator were used inline for all measurements made while under test. Please reference the power table for power settings used while under test.

DEVIATIONS FROM TEST STANDARD
None

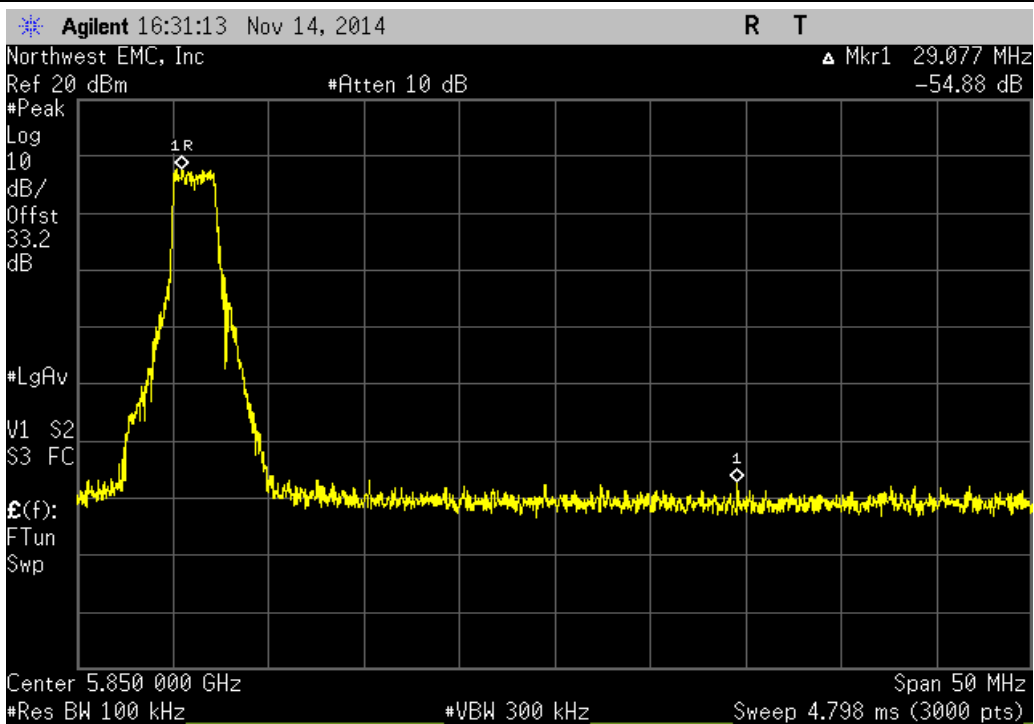
Configuration #	1	Signature 
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		Value (dBc)	Limit ≤ (dBc)	Result
Chain 3				
2.5MHz Bandwidth				
3x3 Modulation Type, 64-QAM, Coding Rate, 5/6				
	Low Channel 5738MHz	-55.79	-20	Pass
	High Channel 5831MHz	-54.88	-20	Pass
5MHz Bandwidth				
3x3 Modulation Type, 64-QAM, Coding Rate, 5/6				
	Low Channel 5739MHz	-52.61	-20	Pass
	High Channel 5829MHz	-51.23	-20	Pass
10MHz Bandwidth				
3x3 Modulation Type, 64-QAM, Coding Rate, 5/6				
	Low Channel 5742MHz	-53.6	-20	Pass
	High Channel 5827MHz	-55.44	-20	Pass

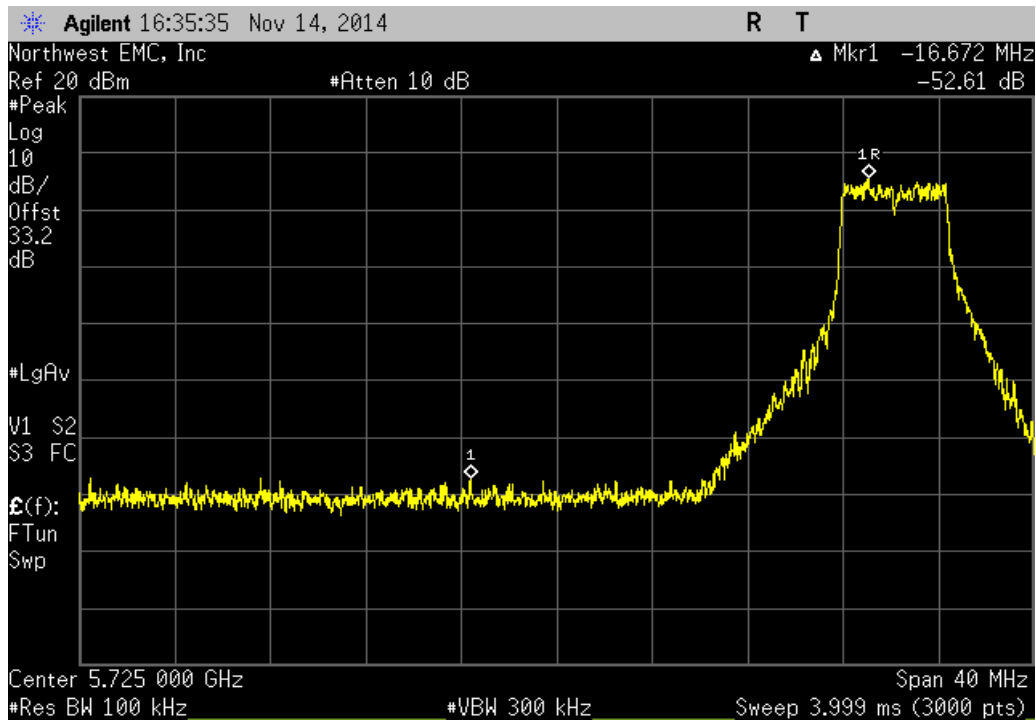
Chain 3, 2.5MHz Bandwidth , 3x3 Modulation Type, 64-QAM, Coding Rate, 5/6, Low Channel 5738MHz			
	Value (dBc)	Limit ≤ (dBc)	Result
	-55.79	-20	Pass



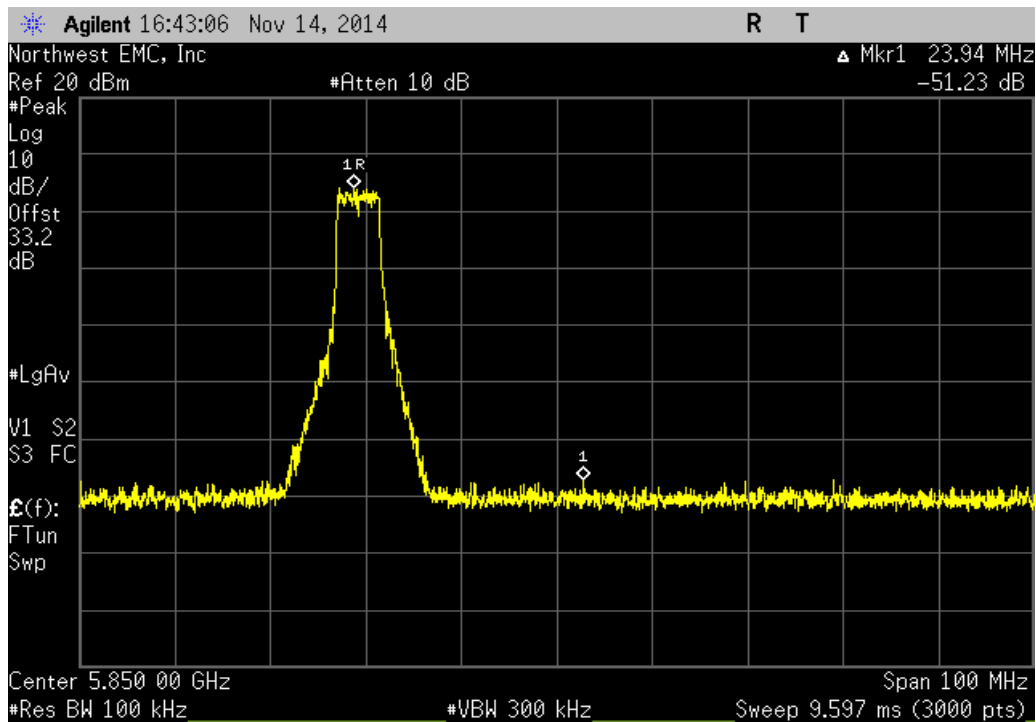
Chain 3, 2.5MHz Bandwidth , 3x3 Modulation Type, 64-QAM, Coding Rate, 5/6, High Channel 5831MHz			
	Value (dBc)	Limit ≤ (dBc)	Result
	-54.88	-20	Pass



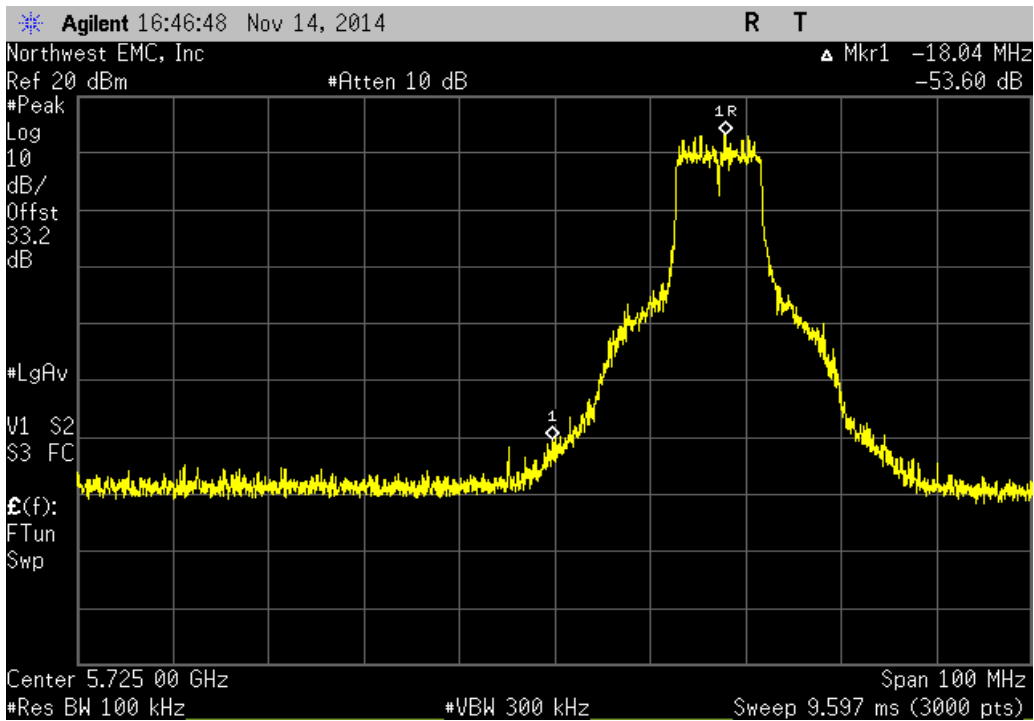
Chain 3, 5MHz Bandwidth , 3x3 Modulation Type, 64-QAM, Coding Rate, 5/6, Low Channel 5739MHz			
	Value (dBc)	Limit ≤ (dBc)	Result
	-52.61	-20	Pass



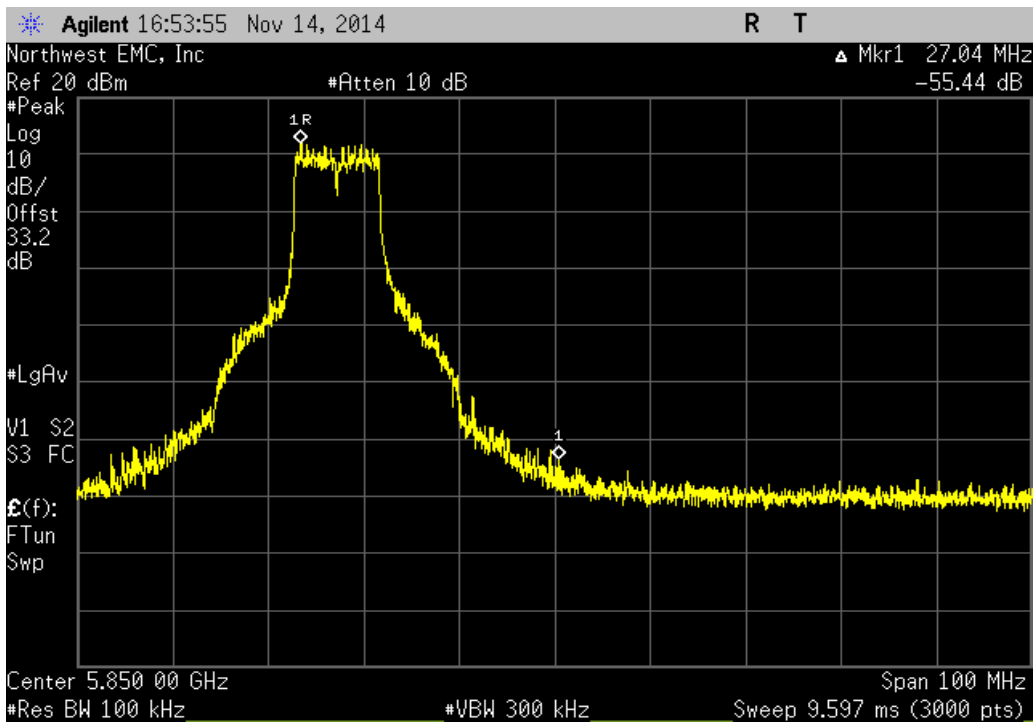
Chain 3, 5MHz Bandwidth , 3x3 Modulation Type, 64-QAM, Coding Rate, 5/6, High Channel 5829MHz			
	Value (dBc)	Limit ≤ (dBc)	Result
	-51.23	-20	Pass



Chain 3, 10MHz Bandwidth , 3x3 Modulation Type, 64-QAM, Coding Rate, 5/6, Low Channel 5742MHz			
	Value (dBc)	Limit ≤ (dBc)	Result
	-53.6	-20	Pass



Chain 3, 10MHz Bandwidth , 3x3 Modulation Type, 64-QAM, Coding Rate, 5/6, High Channel 5827MHz			
	Value (dBc)	Limit ≤ (dBc)	Result
	-55.44	-20	Pass



SPURIOUS CONDUCTED EMISSIONS - SISO

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval (mo)
40GHz DC Block	Miteq	DCB4000	AMD	4/28/2014	12
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2013	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Attenuator 6 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-6	AUX	7/30/2013	12
Power Meter	Agilent	N1913A	SQR	4/29/2013	36
Power Sensor	Agilent	E9300H	SQO	4/29/2013	36
Spectrum Analyzer	Agilent	E4446A	AAQ	1/21/2014	24
MXG MW Analog Signal Generator 40 Gig	Agilent	N5183A	TID	9/19/2011	36

TEST DESCRIPTION

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

EUT: WavePoint - 5GHz Radio (W5800-01)	Work Order: FREW0028
Serial Number: 00-07-E7-A0-01-F1	Date: 06/03/14
Customer: FreeWave Technologies, Inc.	Temperature: 22.6°C
Attendees: Dean Busch	Humidity: 43%
Project: None	Barometric Pres.: 1018.7
Tested by: Brandon Hobbs, Jared Ison	Power: 110VAC/60Hz
Power: 110VAC/60Hz	Job Site: EV06

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

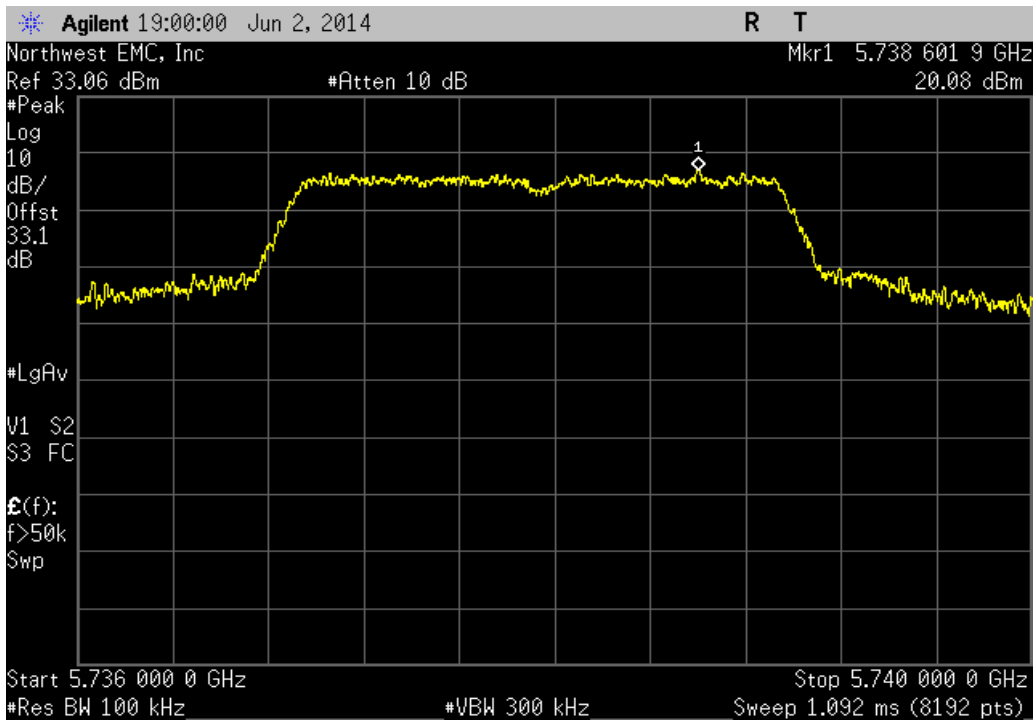
COMMENTS
The High and Low Channels were measured using the worst case modulation found for 8011a/n modes. An additional 10dB 5watt attenuater was used inline for all measurements made while under test. Please reference the power table for power settings used while under test.

DEVIATIONS FROM TEST STANDARD

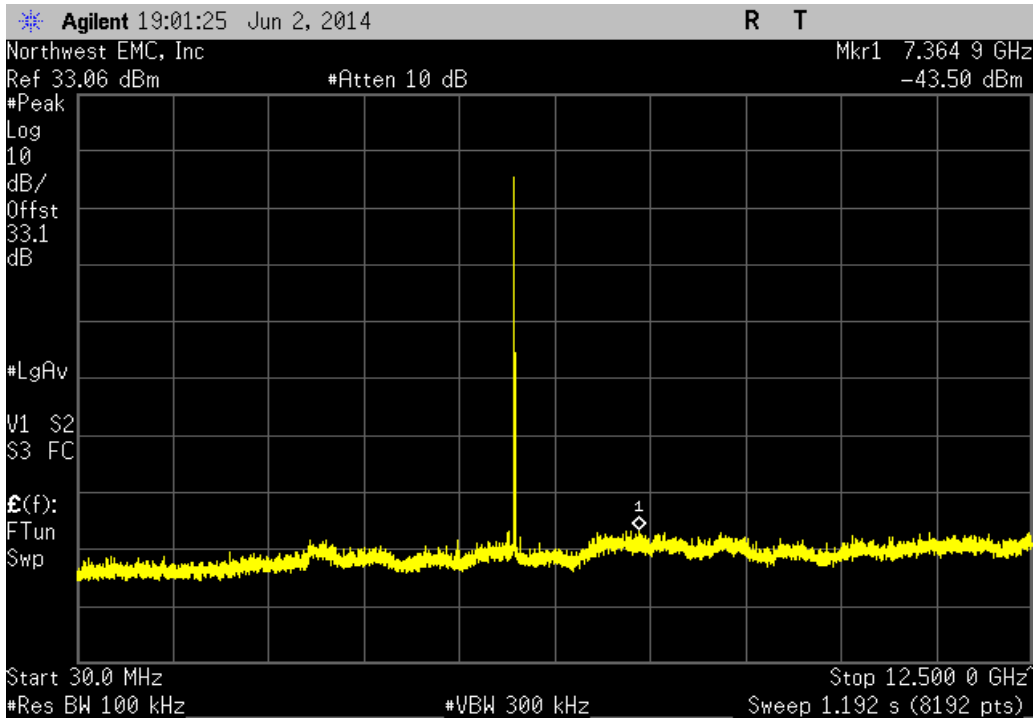
Configuration #	1	Signature	
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Chain	Frequency Range	Value	Limit	Result
Chain 1	5725 MHz - 5825 MHz Band 2.5 MHz			
	802.11(a) 36 Mbps			
	Low Channel 5738 MHz	Fundamental	N/A	N/A
	Low Channel 5738 MHz	30 MHz - 12.5 GHz	-63.31 dBc	≤ -20 dBc
	Low Channel 5738 MHz	12.5 GHz - 25 GHz	-56.12 dBc	≤ -20 dBc
	Low Channel 5738 MHz	25 GHz - 32 GHz	-55.31 dBc	≤ -20 dBc
	Low Channel 5738 MHz	32 GHz - 40 GHz	-45.8 dBc	≤ -20 dBc
	Mid Channel 5783 MHz	Fundamental	N/A	N/A
	Mid Channel 5783 MHz	30 MHz - 12.5 GHz	-61.07 dBc	≤ -20 dBc
	Mid Channel 5783 MHz	12.5 GHz - 25 GHz	-54.41 dBc	≤ -20 dBc
	Mid Channel 5783 MHz	25 GHz - 32 GHz	-54.46 dBc	≤ -20 dBc
	Mid Channel 5783 MHz	32 GHz - 40 GHz	-45.29 dBc	≤ -20 dBc
	High Channel 5831 MHz	Fundamental	N/A	N/A
	High Channel 5831 MHz	30 MHz - 12.5 GHz	-60.45 dBc	≤ -20 dBc
	High Channel 5831 MHz	12.5 GHz - 25 GHz	-55.53 dBc	≤ -20 dBc
	High Channel 5831 MHz	25 GHz - 32 GHz	-54.2 dBc	≤ -20 dBc
	High Channel 5831 MHz	32 GHz - 40 GHz	-44.86 dBc	≤ -20 dBc
	802.11(n) MCS7 - UNII			
	Low Channel 5738 MHz	Fundamental	N/A	N/A
	Low Channel 5738 MHz	30 MHz - 12.5 GHz	-64.01 dBc	≤ -20 dBc
	Low Channel 5738 MHz	12.5 GHz - 25 GHz	-57.28 dBc	≤ -20 dBc
	Low Channel 5738 MHz	25 GHz - 32 GHz	-55.93 dBc	≤ -20 dBc
	Low Channel 5738 MHz	32 GHz - 40 GHz	-45.73 dBc	≤ -20 dBc
	Mid Channel 5783 MHz	Fundamental	N/A	N/A
	Mid Channel 5783 MHz	30 MHz - 12.5 GHz	-55.35 dBc	≤ -20 dBc
	Mid Channel 5783 MHz	12.5 GHz - 25 GHz	-48.24 dBc	≤ -20 dBc
	Mid Channel 5783 MHz	25 GHz - 32 GHz	-47.13 dBc	≤ -20 dBc
	Mid Channel 5783 MHz	32 GHz - 40 GHz	-38.1 dBc	≤ -20 dBc
	High Channel 5831 MHz	Fundamental	N/A	N/A
	High Channel 5831 MHz	30 MHz - 12.5 GHz	-60.77 dBc	≤ -20 dBc
	High Channel 5831 MHz	12.5 GHz - 25 GHz	-54.32 dBc	≤ -20 dBc
	High Channel 5831 MHz	25 GHz - 32 GHz	-53.83 dBc	≤ -20 dBc
	High Channel 5831 MHz	32 GHz - 40 GHz	-44.25 dBc	≤ -20 dBc
	5 MHz			
	802.11(g) 36 Mbps			
	Low Channel 5739 MHz	Fundamental	N/A	N/A
	Low Channel 5739 MHz	30 MHz - 12.5 GHz	-58.27 dBc	≤ -20 dBc
	Low Channel 5739 MHz	12.5 GHz - 25 GHz	-51.76 dBc	≤ -20 dBc
	Low Channel 5739 MHz	25 GHz - 32 GHz	-51.43 dBc	≤ -20 dBc
	Low Channel 5739 MHz	32 GHz - 40 GHz	-41.85 dBc	≤ -20 dBc
	Mid Channel 5784 MHz	Fundamental	N/A	N/A
	Mid Channel 5784 MHz	30 MHz - 12.5 GHz	-55.99 dBc	≤ -20 dBc
	Mid Channel 5784 MHz	12.5 GHz - 25 GHz	-51.41 dBc	≤ -20 dBc
	Mid Channel 5784 MHz	25 GHz - 32 GHz	-50.13 dBc	≤ -20 dBc
	Mid Channel 5784 MHz	32 GHz - 40 GHz	-40.92 dBc	≤ -20 dBc
	High Channel 5829 MHz	Fundamental	N/A	N/A
	High Channel 5829 MHz	30 MHz - 12.5 GHz	-56.81 dBc	≤ -20 dBc
	High Channel 5829 MHz	12.5 GHz - 25 GHz	-51.69 dBc	≤ -20 dBc
	High Channel 5829 MHz	25 GHz - 32 GHz	-50.52 dBc	≤ -20 dBc
	High Channel 5829 MHz	32 GHz - 40 GHz	-40.93 dBc	≤ -20 dBc
	802.11(n) MCS7 - UNII			
	Low Channel 5739 MHz	Fundamental	N/A	N/A
	Low Channel 5739 MHz	30 MHz - 12.5 GHz	-59.06 dBc	≤ -20 dBc
	Low Channel 5739 MHz	12.5 GHz - 25 GHz	-52.87 dBc	≤ -20 dBc
	Low Channel 5739 MHz	25 GHz - 32 GHz	-51.85 dBc	≤ -20 dBc
	Low Channel 5739 MHz	32 GHz - 40 GHz	-42.41 dBc	≤ -20 dBc
	Mid Channel 5784 MHz	Fundamental	N/A	N/A
	Mid Channel 5784 MHz	30 MHz - 12.5 GHz	-52.36 dBc	≤ -20 dBc
	Mid Channel 5784 MHz	12.5 GHz - 25 GHz	-45.21 dBc	≤ -20 dBc
	Mid Channel 5784 MHz	25 GHz - 32 GHz	-43.56 dBc	≤ -20 dBc
	Mid Channel 5784 MHz	32 GHz - 40 GHz	-34.92 dBc	≤ -20 dBc
	High Channel 5829 MHz	Fundamental	N/A	N/A
	High Channel 5829 MHz	30 MHz - 12.5 GHz	-56.02 dBc	≤ -20 dBc
	High Channel 5829 MHz	12.5 GHz - 25 GHz	-50.82 dBc	≤ -20 dBc
	High Channel 5829 MHz	25 GHz - 32 GHz	-48.77 dBc	≤ -20 dBc
	High Channel 5829 MHz	32 GHz - 40 GHz	-41.21 dBc	≤ -20 dBc
	10 MHz			
	802.11(a) 36 Mbps			
	Low Channel 5742 MHz	Fundamental	N/A	N/A
	Low Channel 5742 MHz	30 MHz - 12.5 GHz	-55.95 dBc	≤ -20 dBc
	Low Channel 5742 MHz	12.5 GHz - 25 GHz	-51.79 dBc	≤ -20 dBc
	Low Channel 5742 MHz	25 GHz - 32 GHz	-49.96 dBc	≤ -20 dBc
	Low Channel 5742 MHz	32 GHz - 40 GHz	-40.36 dBc	≤ -20 dBc
	Mid Channel 5782 MHz	Fundamental	N/A	N/A
	Mid Channel 5782 MHz	30 MHz - 12.5 GHz	-56.66 dBc	≤ -20 dBc
	Mid Channel 5782 MHz	12.5 GHz - 25 GHz	-50.37 dBc	≤ -20 dBc
	Mid Channel 5782 MHz	25 GHz - 32 GHz	-48.86 dBc	≤ -20 dBc
	Mid Channel 5782 MHz	32 GHz - 40 GHz	-38.8 dBc	≤ -20 dBc
	High Channel 5827 MHz	Fundamental	N/A	N/A
	High Channel 5827 MHz	30 MHz - 12.5 GHz	-52.51 dBc	≤ -20 dBc
	High Channel 5827 MHz	12.5 GHz - 25 GHz	-49.66 dBc	≤ -20 dBc
	High Channel 5827 MHz	25 GHz - 32 GHz	-48.87 dBc	≤ -20 dBc
	High Channel 5827 MHz	32 GHz - 40 GHz	-40.06 dBc	≤ -20 dBc
	802.11(n) MCS7 - UNII			
	Low Channel 5742 MHz	Fundamental	N/A	N/A
	Low Channel 5742 MHz	30 MHz - 12.5 GHz	-56.16 dBc	≤ -20 dBc
	Low Channel 5742 MHz	12.5 GHz - 25 GHz	-51.04 dBc	≤ -20 dBc
	Low Channel 5742 MHz	25 GHz - 32 GHz	-50.1 dBc	≤ -20 dBc
	Low Channel 5742 MHz	32 GHz - 40 GHz	-40.92 dBc	≤ -20 dBc
	Mid Channel 5782 MHz	Fundamental	N/A	N/A
	Mid Channel 5782 MHz	30 MHz - 12.5 GHz	-55.67 dBc	≤ -20 dBc
	Mid Channel 5782 MHz	12.5 GHz - 25 GHz	-50.6 dBc	≤ -20 dBc
	Mid Channel 5782 MHz	25 GHz - 32 GHz	-49.47 dBc	≤ -20 dBc
	Mid Channel 5782 MHz	32 GHz - 40 GHz	-39.21 dBc	≤ -20 dBc
	High Channel 5827 MHz	Fundamental	N/A	N/A
	High Channel 5827 MHz	30 MHz - 12.5 GHz	-56.43 dBc	≤ -20 dBc
	High Channel 5827 MHz	12.5 GHz - 25 GHz	-50.81 dBc	≤ -20 dBc
	High Channel 5827 MHz	25 GHz - 32 GHz	-49.52 dBc	≤ -20 dBc
	High Channel 5827 MHz	32 GHz - 40 GHz	-39.82 dBc	≤ -20 dBc

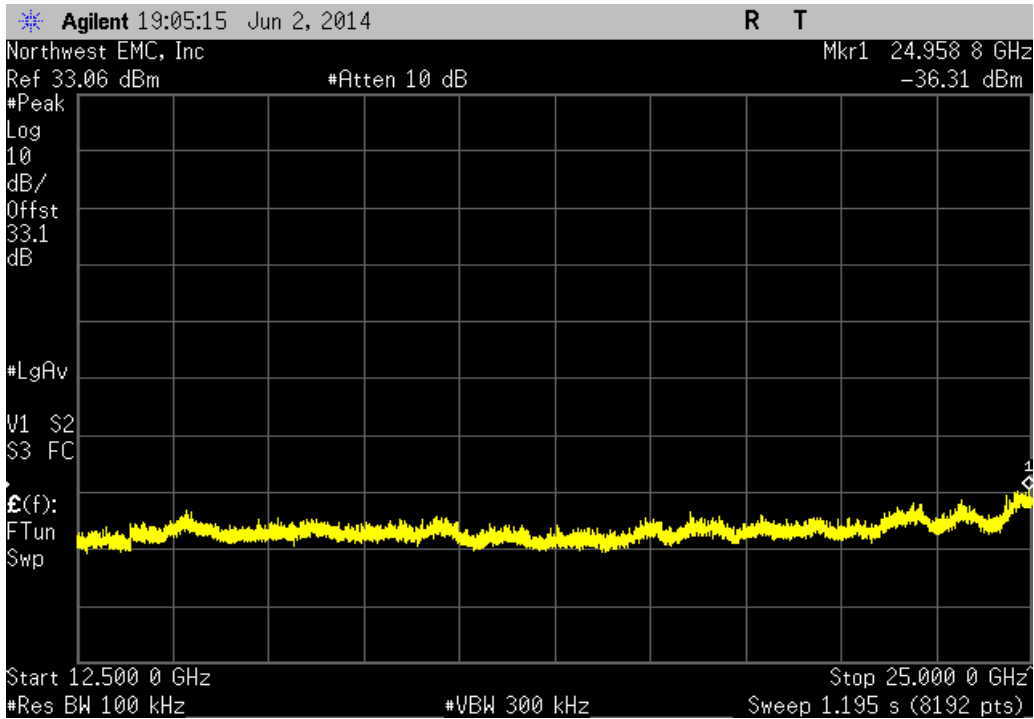
Chain 1, 5725 MHz - 5825 MHz Band, 2.5 MHz, 802.11(g) 36 Mbps, Low Channel 5738 MHz				
Frequency Range		Value	Limit	Result
Fundamental		N/A	N/A	N/A



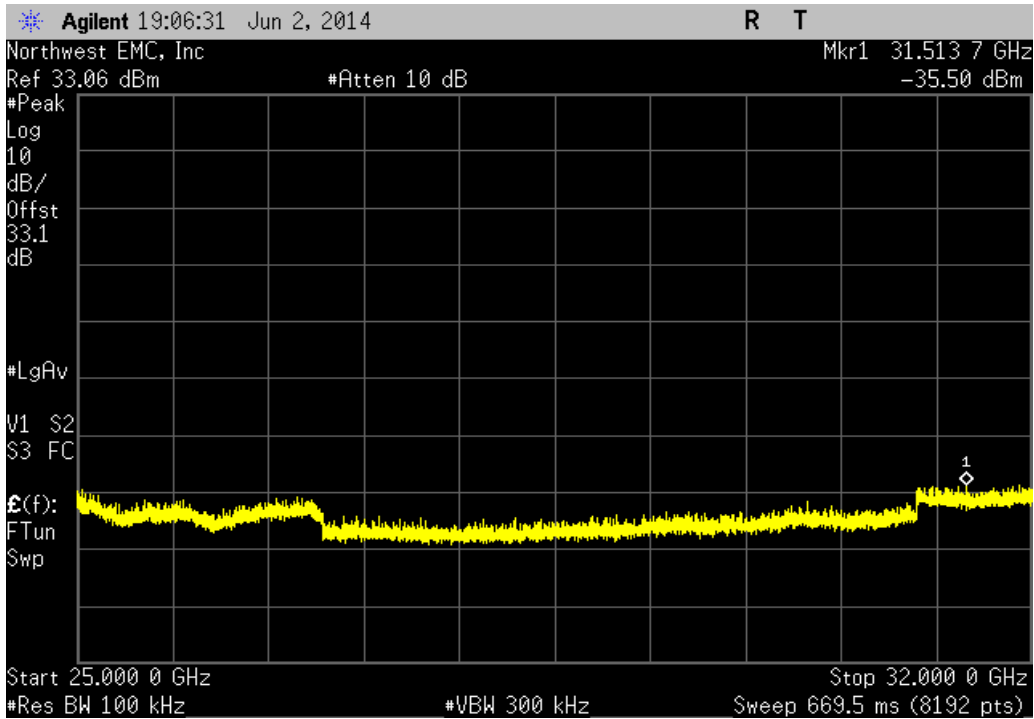
Chain 1, 5725 MHz - 5825 MHz Band, 2.5 MHz, 802.11(g) 36 Mbps, Low Channel 5738 MHz				
Frequency Range		Value	Limit	Result
30 MHz - 12.5 GHz		-63.31 dBc	≤ -20 dBc	Pass



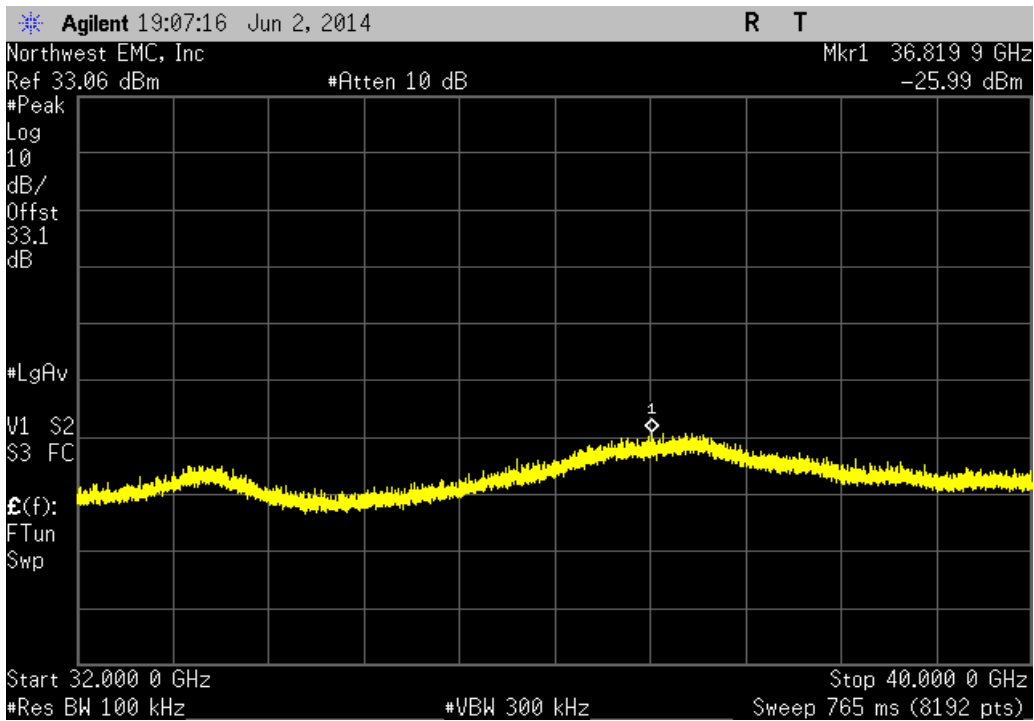
Chain 1, 5725 MHz - 5825 MHz Band, 2.5 MHz, 802.11(g) 36 Mbps, Low Channel 5738 MHz				
Frequency Range		Value	Limit	Result
12.5 GHz - 25 GHz		-56.12 dBc	≤ -20 dBc	Pass



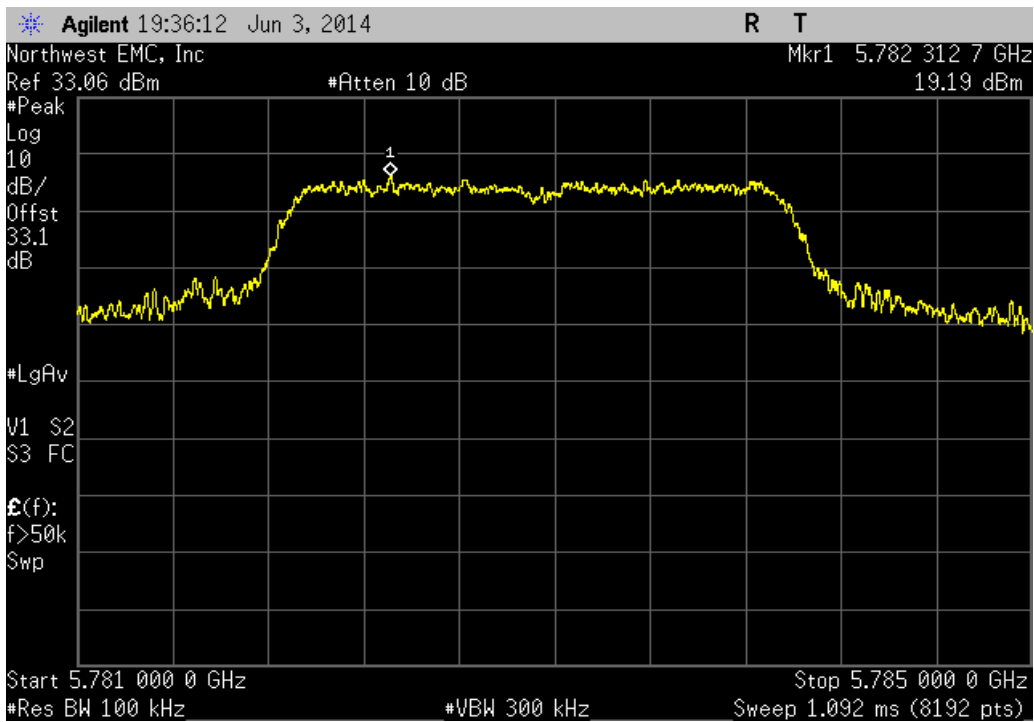
Chain 1, 5725 MHz - 5825 MHz Band, 2.5 MHz, 802.11(g) 36 Mbps, Low Channel 5738 MHz				
Frequency Range		Value	Limit	Result
25 GHz - 32 GHz		-55.31 dBc	≤ -20 dBc	Pass



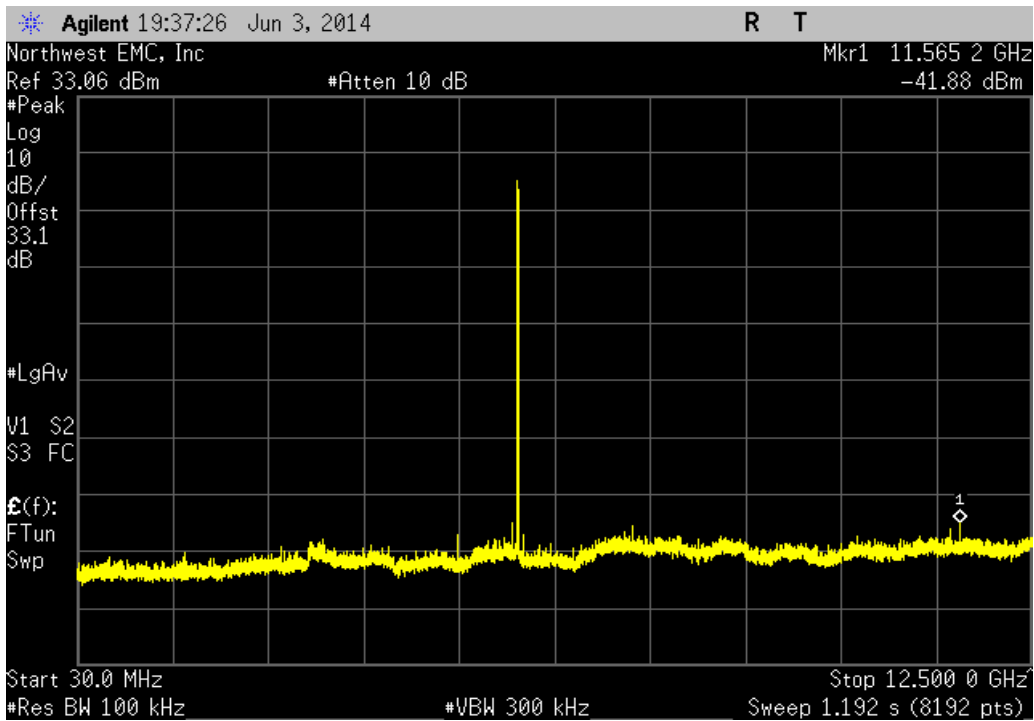
Chain 1, 5725 MHz - 5825 MHz Band, 2.5 MHz, 802.11(g) 36 Mbps, Low Channel 5738 MHz			
Frequency Range	Value	Limit	Result
32 GHz - 40 GHz	-45.8 dBc	≤ -20 dBc	Pass



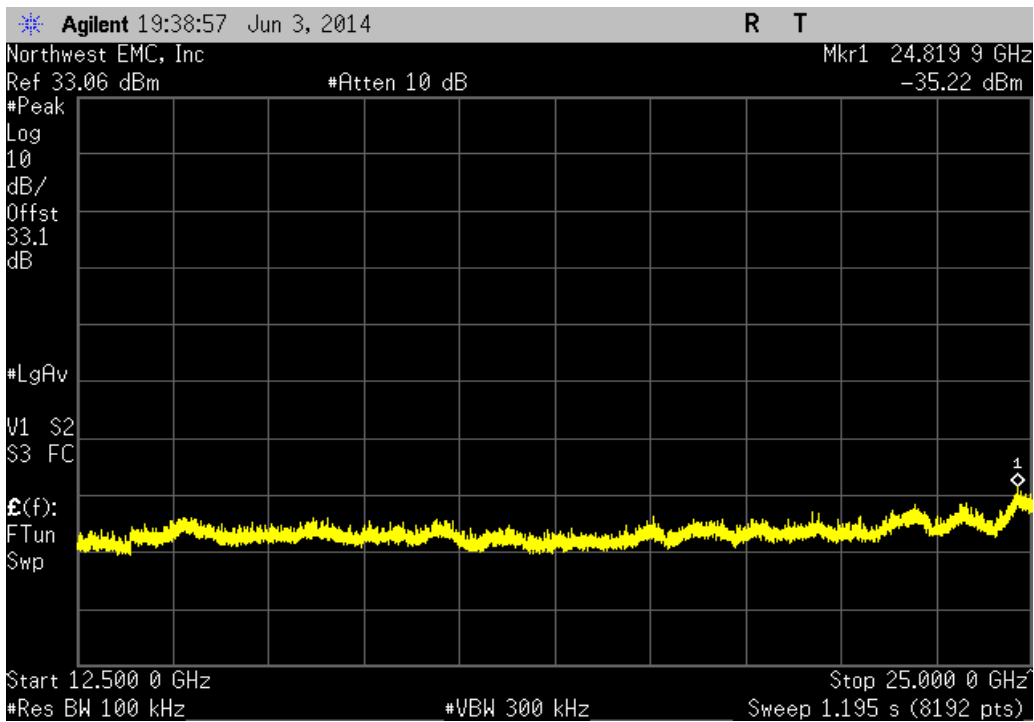
Chain 1, 5725 MHz - 5825 MHz Band, 2.5 MHz, 802.11(g) 36 Mbps, Mid Channel 5783 MHz			
Frequency Range	Value	Limit	Result
Fundamental	N/A	N/A	N/A



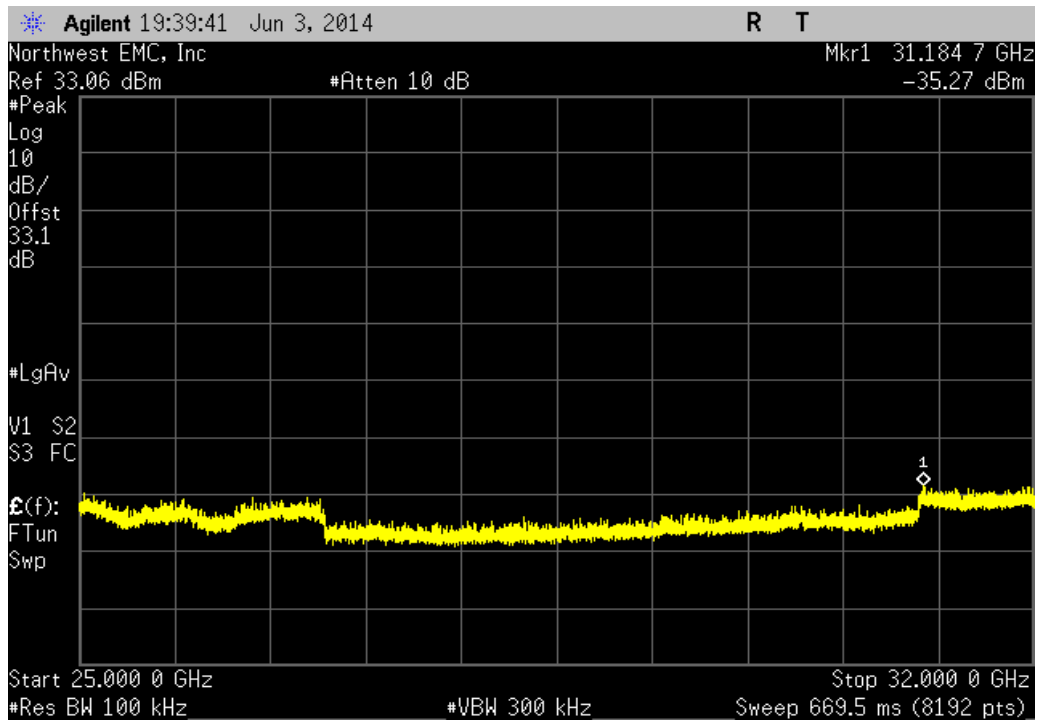
Chain 1, 5725 MHz - 5825 MHz Band, 2.5 MHz, 802.11(g) 36 Mbps, Mid Channel 5783 MHz			
Frequency Range	Value	Limit	Result
30 MHz - 12.5 GHz	-61.07 dBc	≤ -20 dBc	Pass



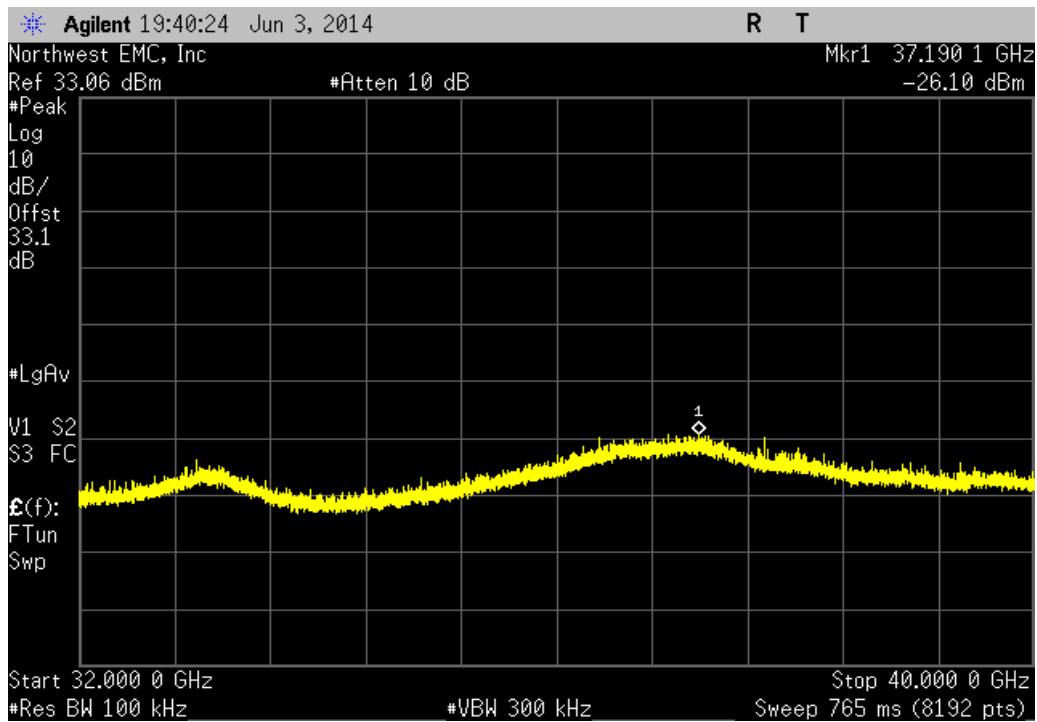
Chain 1, 5725 MHz - 5825 MHz Band, 2.5 MHz, 802.11(g) 36 Mbps, Mid Channel 5783 MHz			
Frequency Range	Value	Limit	Result
12.5 GHz - 25 GHz	-54.41 dBc	≤ -20 dBc	Pass



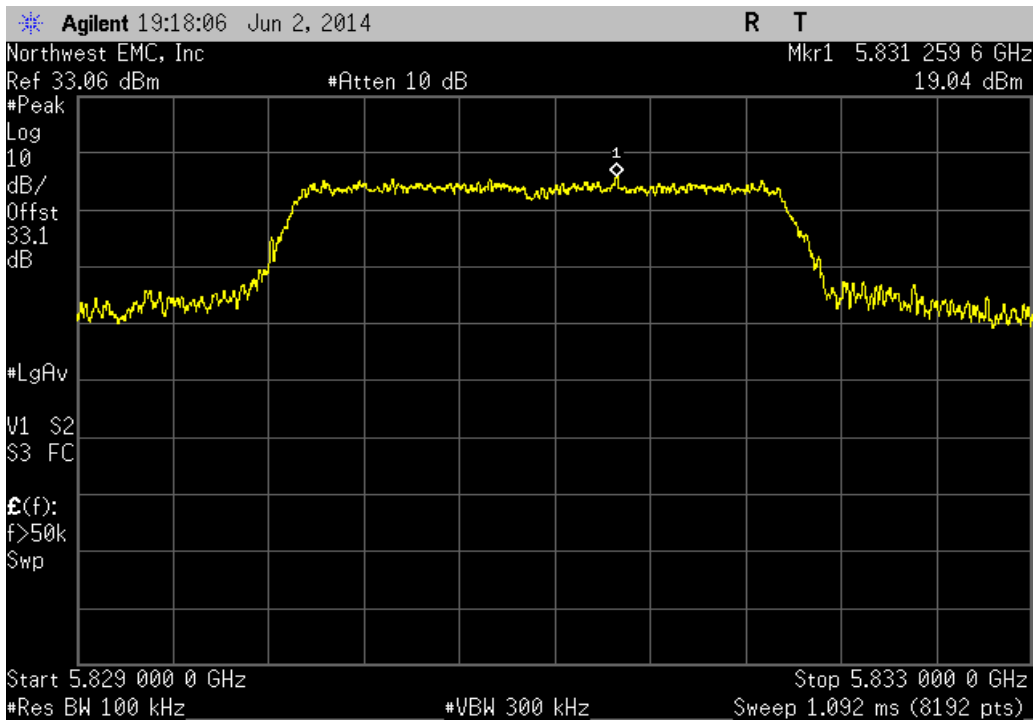
Chain 1, 5725 MHz - 5825 MHz Band, 2.5 MHz, 802.11(g) 36 Mbps, Mid Channel 5783 MHz			
Frequency Range	Value	Limit	Result
25 GHz - 32 GHz	-54.46 dBc	≤ -20 dBc	Pass



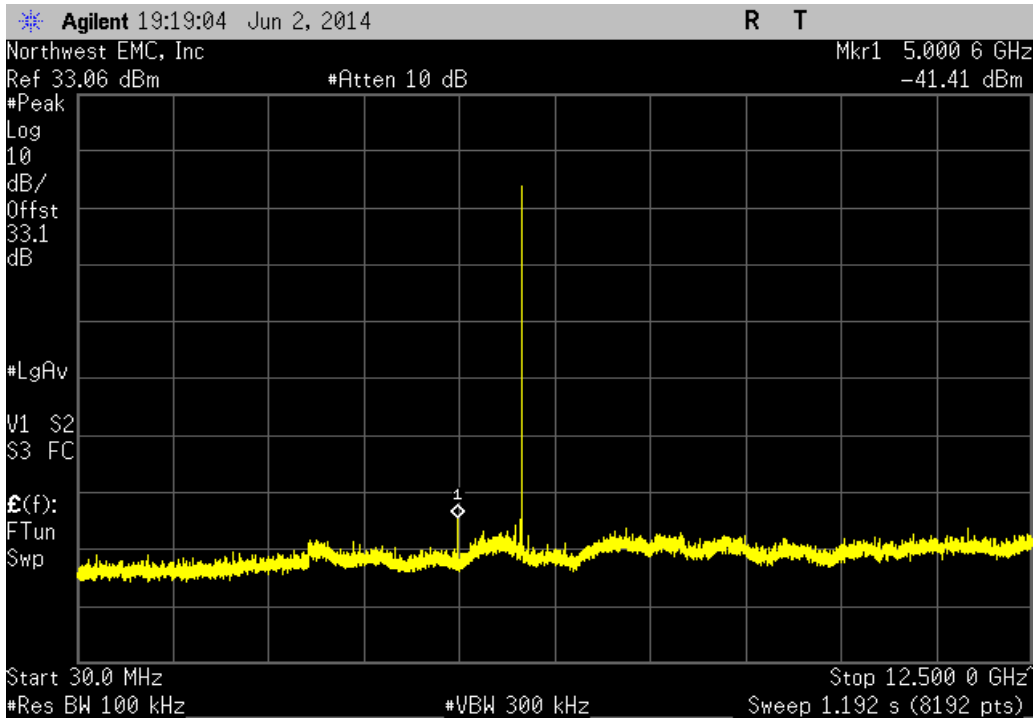
Chain 1, 5725 MHz - 5825 MHz Band, 2.5 MHz, 802.11(g) 36 Mbps, Mid Channel 5783 MHz			
Frequency Range	Value	Limit	Result
32 GHz - 40 GHz	-45.29 dBc	≤ -20 dBc	Pass



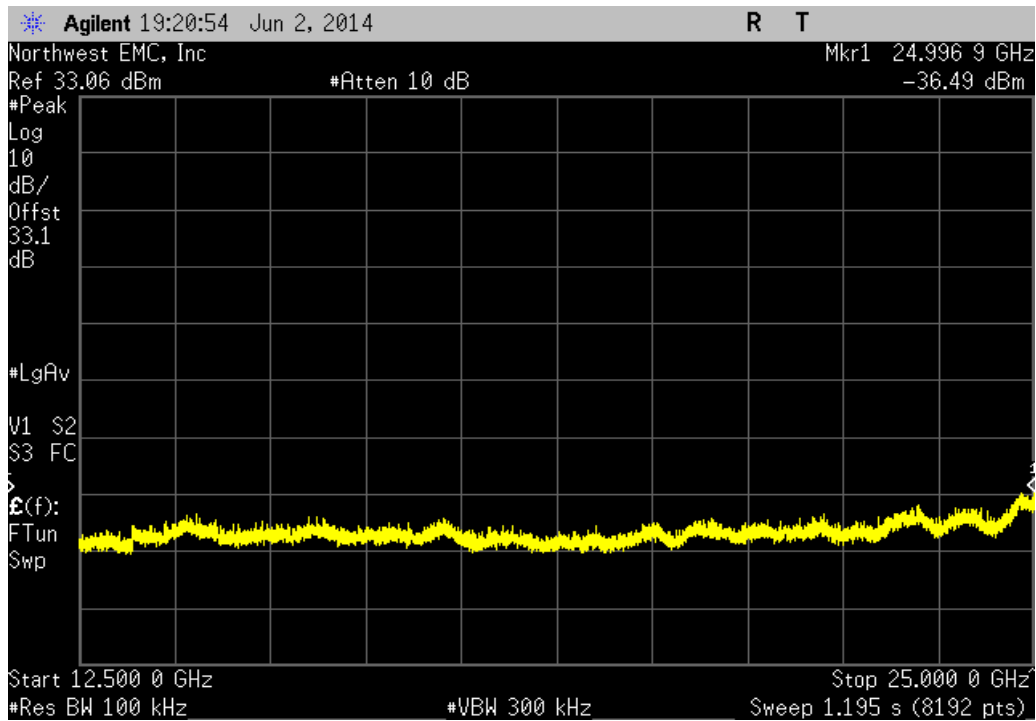
Chain 1, 5725 MHz - 5825 MHz Band, 2.5 MHz, 802.11(g) 36 Mbps, High Channel 5831 MHz						
Frequency Range		Value	Limit	Result		
Fundamental		N/A	N/A	N/A		



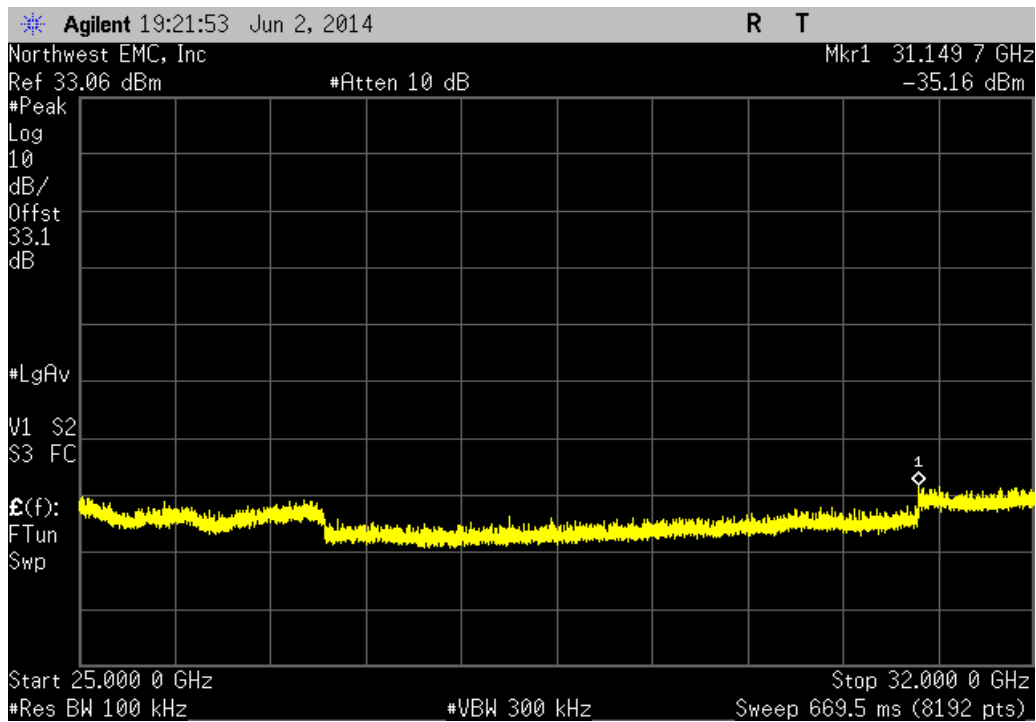
Chain 1, 5725 MHz - 5825 MHz Band, 2.5 MHz, 802.11(g) 36 Mbps, High Channel 5831 MHz						
Frequency Range		Value	Limit	Result		
30 MHz - 12.5 GHz		-60.45 dBc	≤ -20 dBc	Pass		



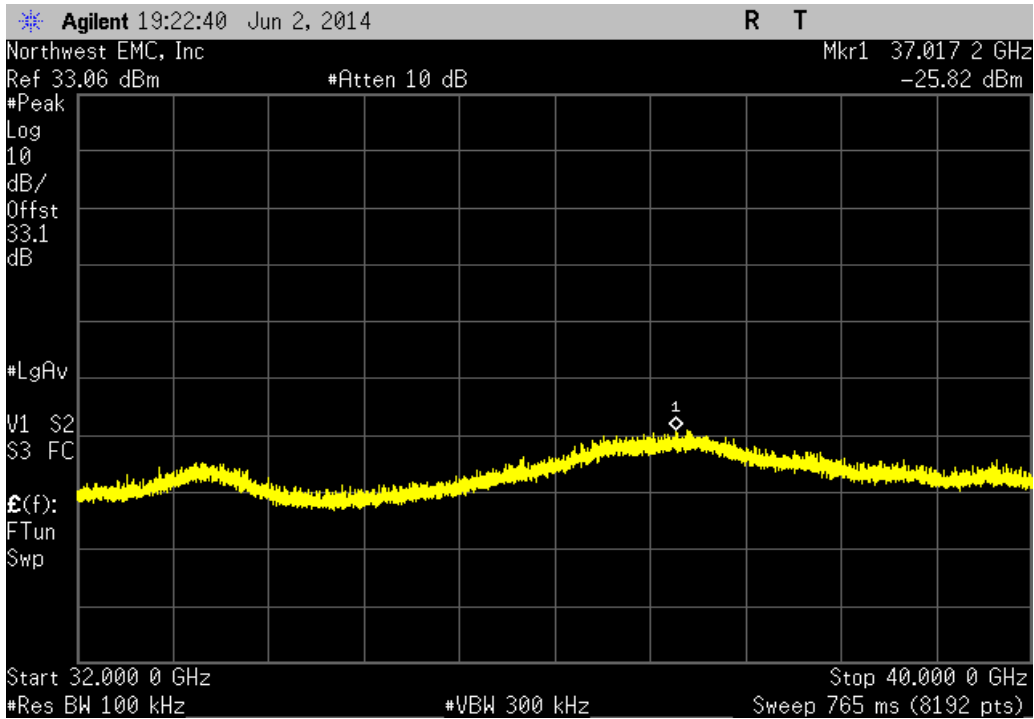
Chain 1, 5725 MHz - 5825 MHz Band, 2.5 MHz, 802.11(g) 36 Mbps, High Channel 5831 MHz				
Frequency Range		Value	Limit	Result
12.5 GHz - 25 GHz		-55.53 dBc	≤ -20 dBc	Pass



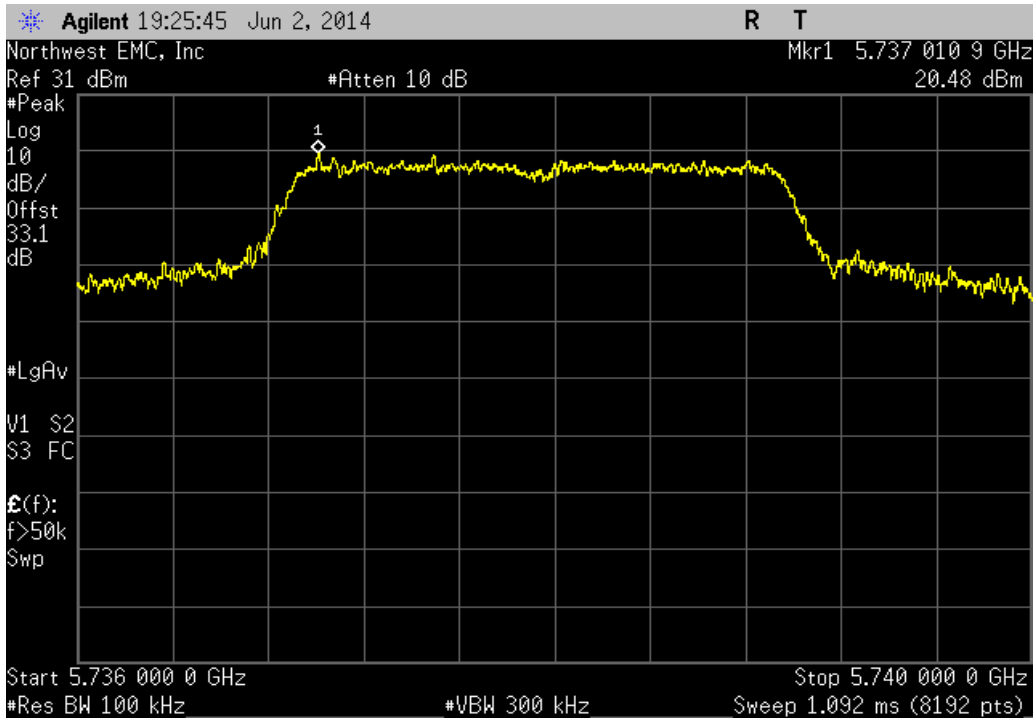
Chain 1, 5725 MHz - 5825 MHz Band, 2.5 MHz, 802.11(g) 36 Mbps, High Channel 5831 MHz				
Frequency Range		Value	Limit	Result
25 GHz - 32 GHz		-54.2 dBc	≤ -20 dBc	Pass



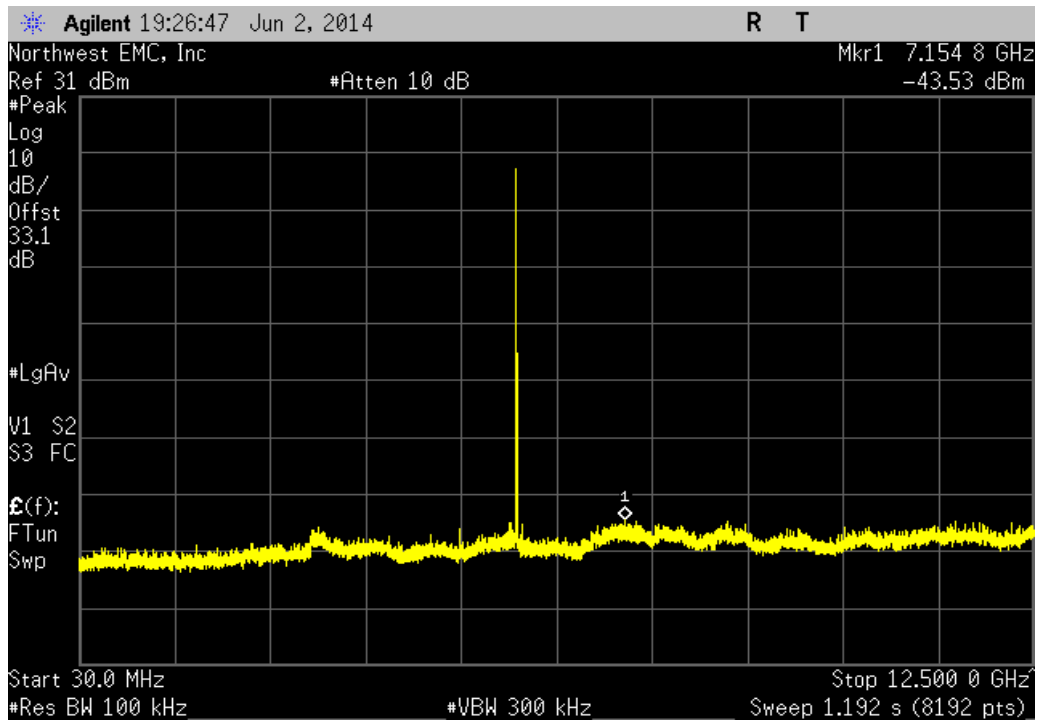
Chain 1, 5725 MHz - 5825 MHz Band, 2.5 MHz, 802.11(g) 36 Mbps, High Channel 5831 MHz			
Frequency Range	Value	Limit	Result
32 GHz - 40 GHz	-44.86 dBc	≤ -20 dBc	Pass



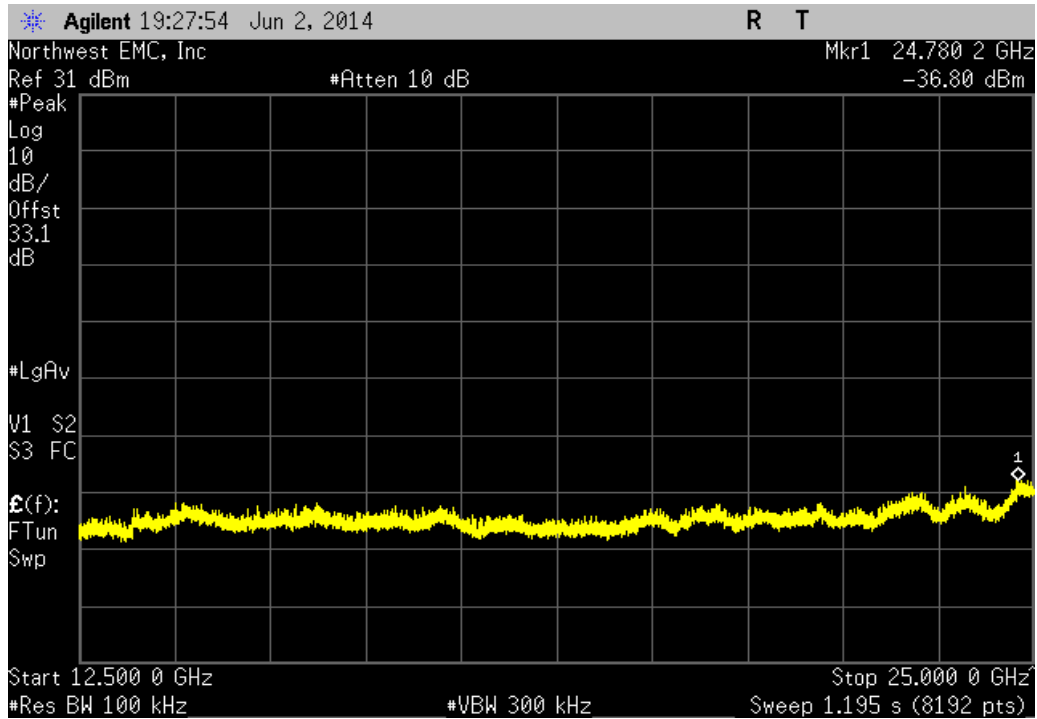
Chain 1, 5725 MHz - 5825 MHz Band, 2.5 MHz, 802.11(n) MCS7 - UNII, Low Channel 5738 MHz			
Frequency Range	Value	Limit	Result
Fundamental	N/A	N/A	N/A



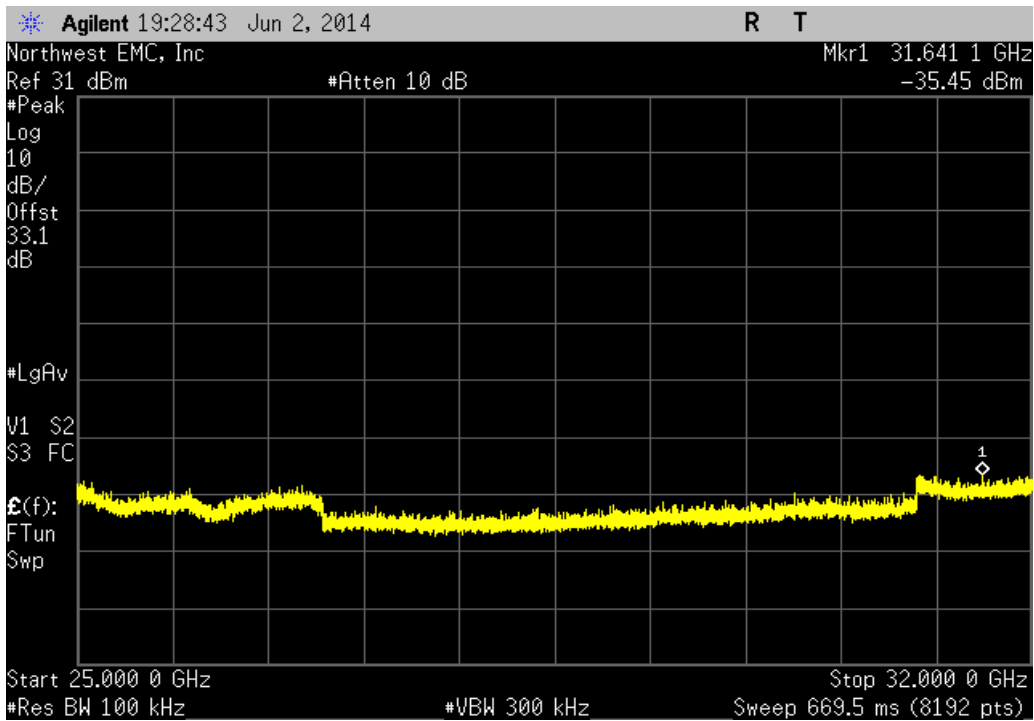
Chain 1, 5725 MHz - 5825 MHz Band, 2.5 MHz, 802.11(n) MCS7 - UNII, Low Channel 5738 MHz				
Frequency Range		Value	Limit	Result
30 MHz - 12.5 GHz		-64.01 dBc	≤ -20 dBc	Pass



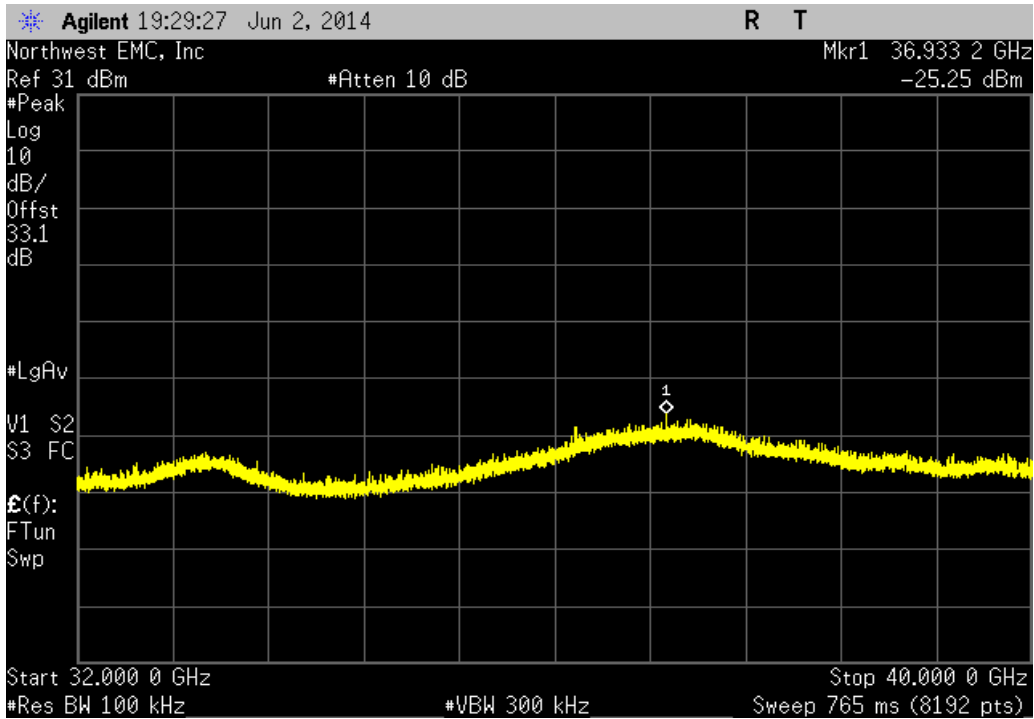
Chain 1, 5725 MHz - 5825 MHz Band, 2.5 MHz, 802.11(n) MCS7 - UNII, Low Channel 5738 MHz				
Frequency Range		Value	Limit	Result
12.5 GHz - 25 GHz		-57.28 dBc	≤ -20 dBc	Pass



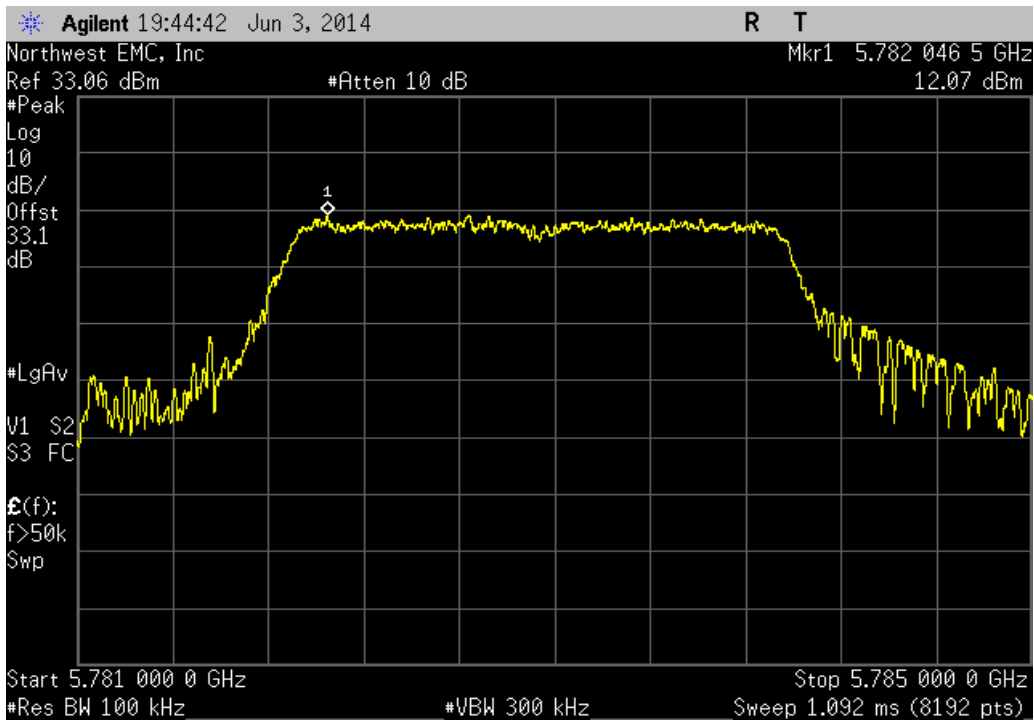
Chain 1, 5725 MHz - 5825 MHz Band, 2.5 MHz, 802.11(n) MCS7 - UNII, Low Channel 5738 MHz				
Frequency Range		Value	Limit	Result
25 GHz - 32 GHz		-55.93 dBc	≤ -20 dBc	Pass



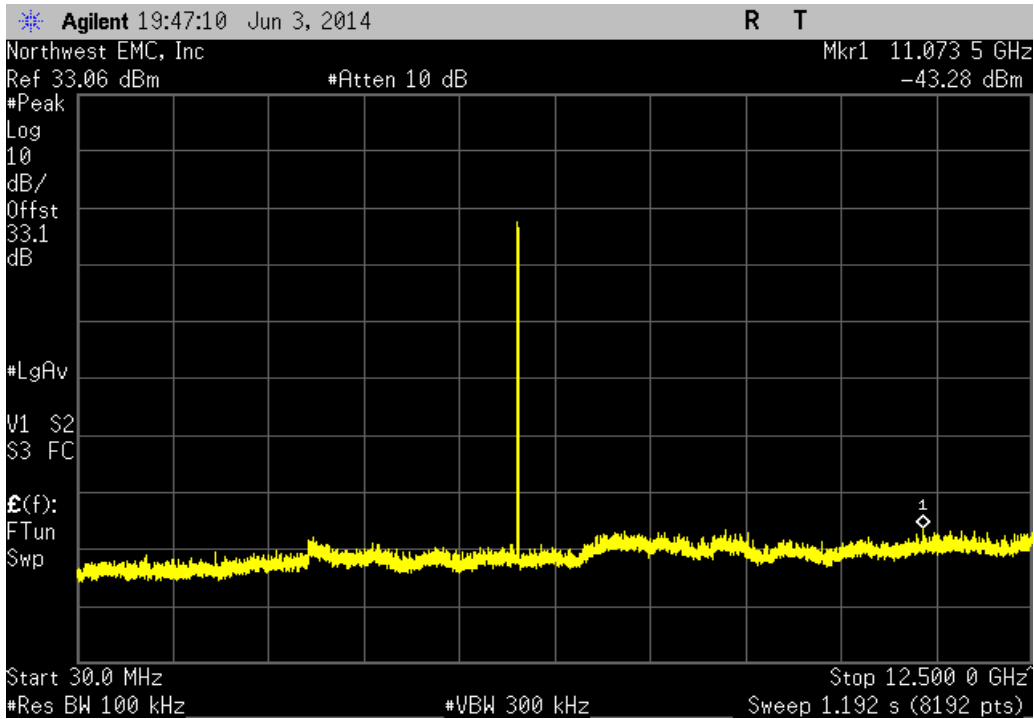
Chain 1, 5725 MHz - 5825 MHz Band, 2.5 MHz, 802.11(n) MCS7 - UNII, Low Channel 5738 MHz				
Frequency Range		Value	Limit	Result
32 GHz - 40 GHz		-45.73 dBc	≤ -20 dBc	Pass



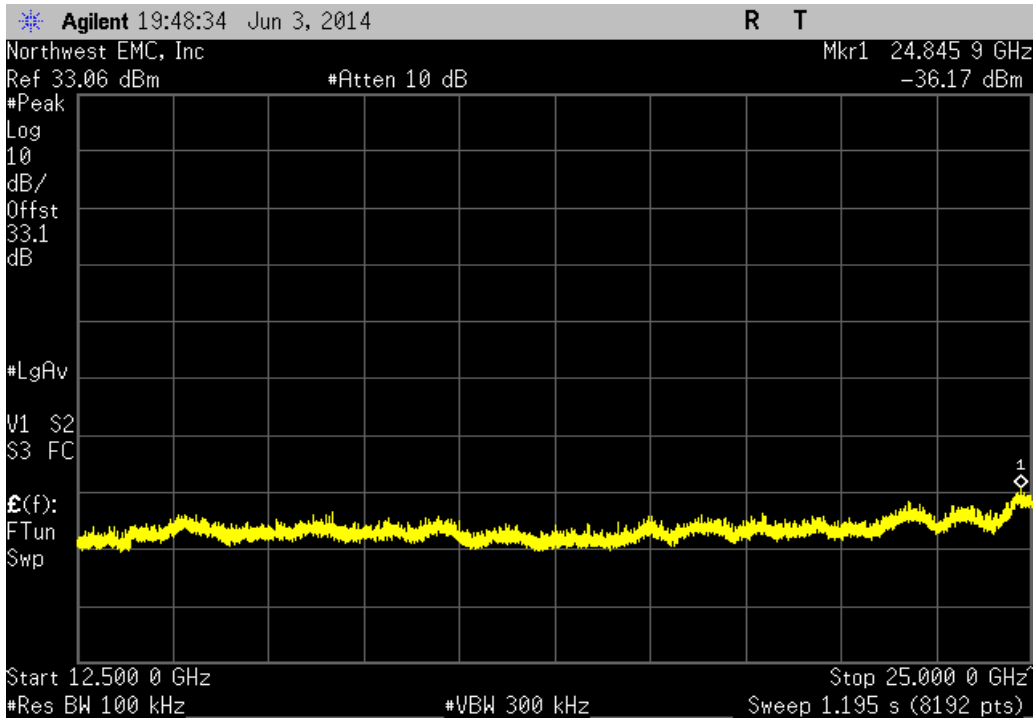
Chain 1, 5725 MHz - 5825 MHz Band, 2.5 MHz, 802.11(n) MCS7 - UNII, Mid Channel 5783 MHz				
Frequency Range		Value	Limit	Result
Fundamental		N/A	N/A	N/A



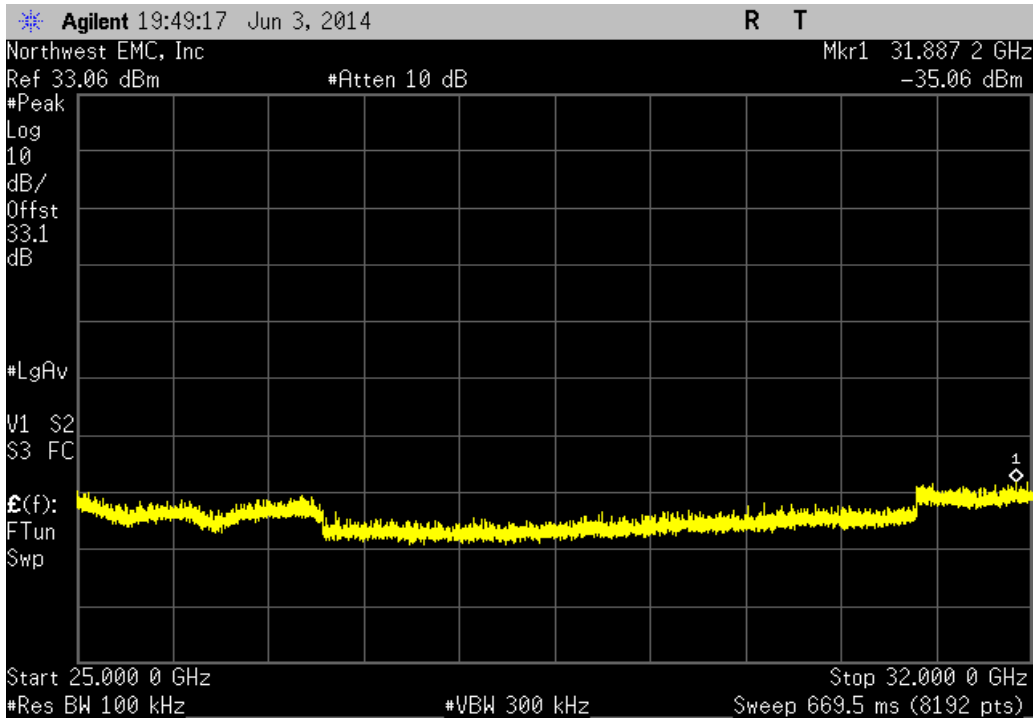
Chain 1, 5725 MHz - 5825 MHz Band, 2.5 MHz, 802.11(n) MCS7 - UNII, Mid Channel 5783 MHz				
Frequency Range		Value	Limit	Result
30 MHz - 12.5 GHz		-55.35 dBc	≤ -20 dBc	Pass



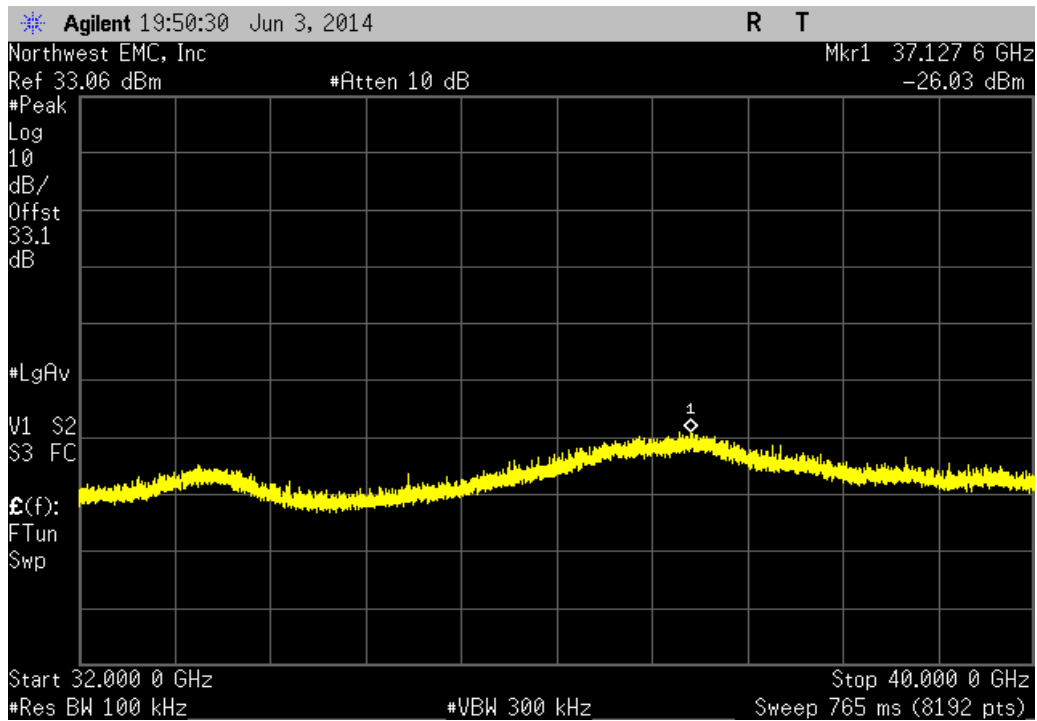
Chain 1, 5725 MHz - 5825 MHz Band, 2.5 MHz, 802.11(n) MCS7 - UNII, Mid Channel 5783 MHz			
Frequency Range	Value	Limit	Result
12.5 GHz - 25 GHz	-48.24 dBc	≤ -20 dBc	Pass



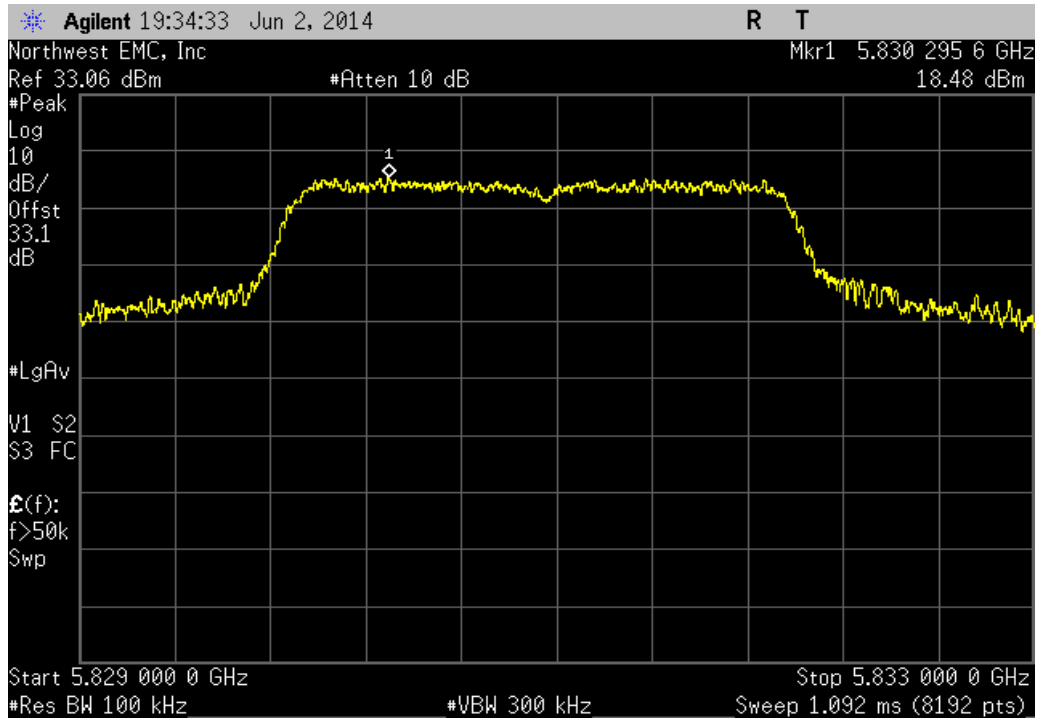
Chain 1, 5725 MHz - 5825 MHz Band, 2.5 MHz, 802.11(n) MCS7 - UNII, Mid Channel 5783 MHz			
Frequency Range	Value	Limit	Result
25 GHz - 32 GHz	-47.13 dBc	≤ -20 dBc	Pass



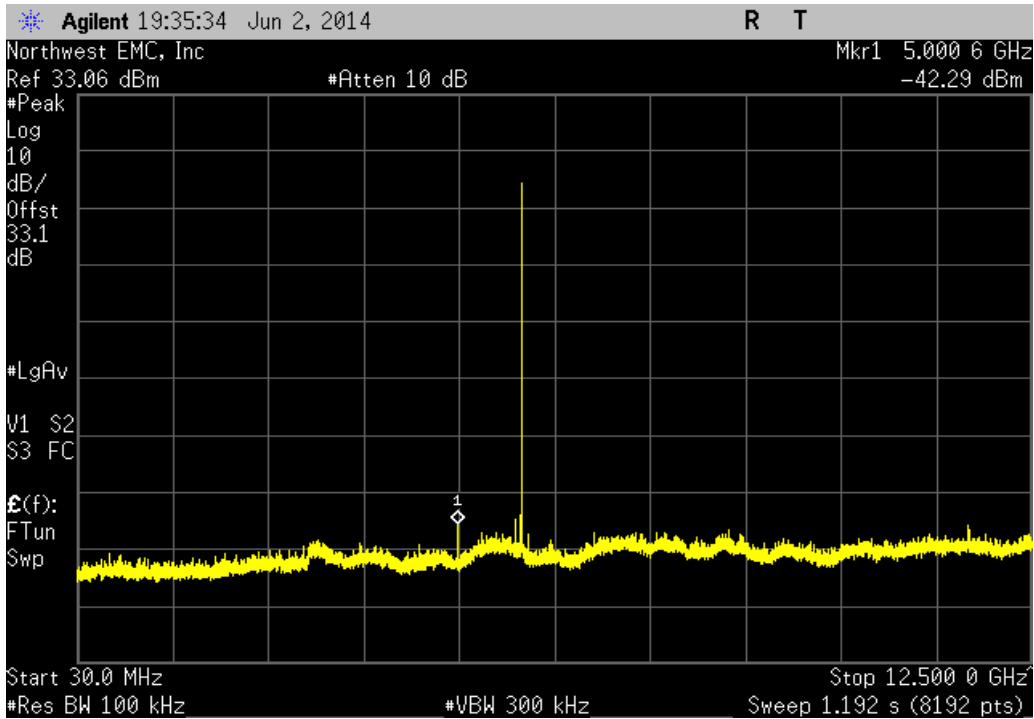
Chain 1, 5725 MHz - 5825 MHz Band, 2.5 MHz, 802.11(n) MCS7 - UNII, Mid Channel 5783 MHz			
Frequency Range	Value	Limit	Result
32 GHz - 40 GHz	-38.1 dBc	≤ -20 dBc	Pass



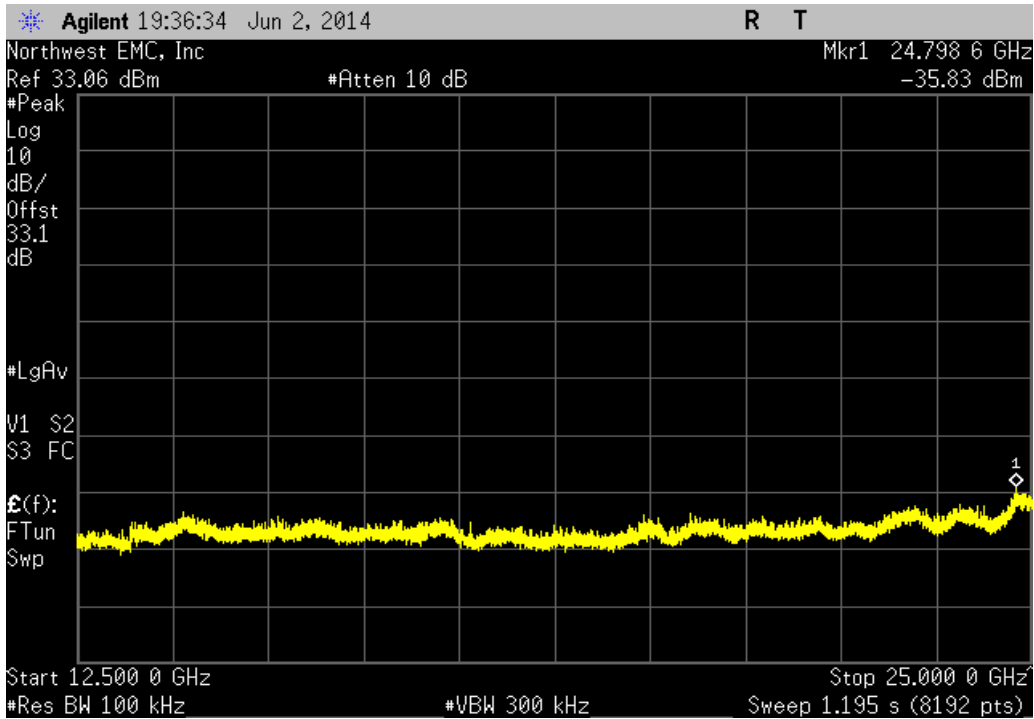
Chain 1, 5725 MHz - 5825 MHz Band, 2.5 MHz, 802.11(n) MCS7 - UNII, High Channel 5831 MHz			
Frequency Range	Value	Limit	Result
Fundamental	N/A	N/A	N/A



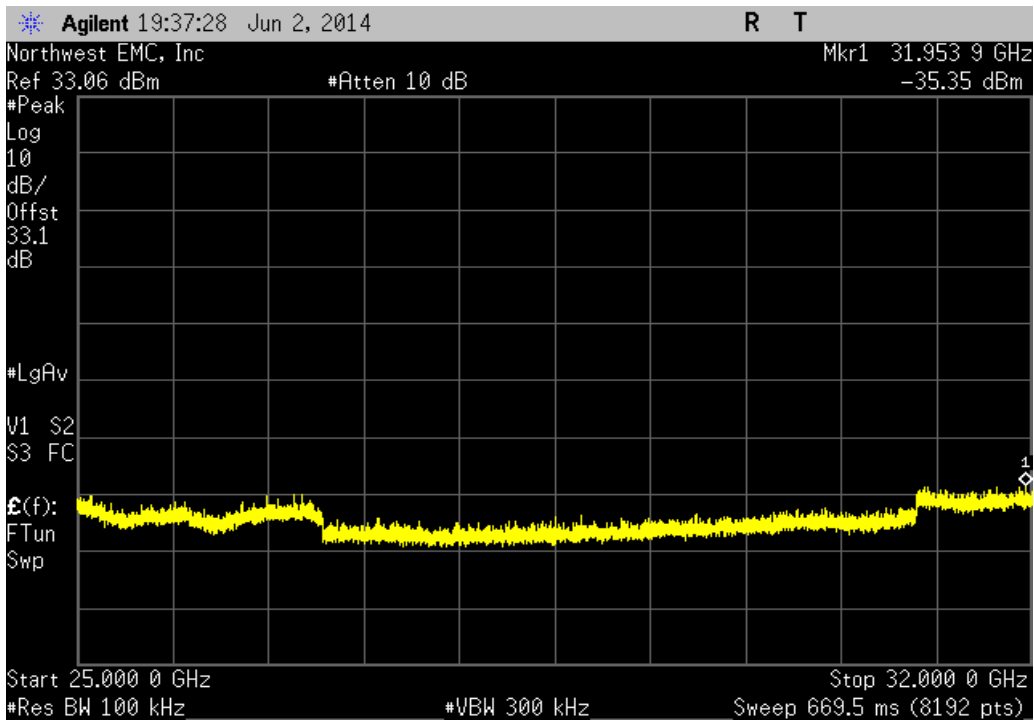
Chain 1, 5725 MHz - 5825 MHz Band, 2.5 MHz, 802.11(n) MCS7 - UNII, High Channel 5831 MHz			
Frequency Range	Value	Limit	Result
30 MHz - 12.5 GHz	-60.77 dBc	≤ -20 dBc	Pass



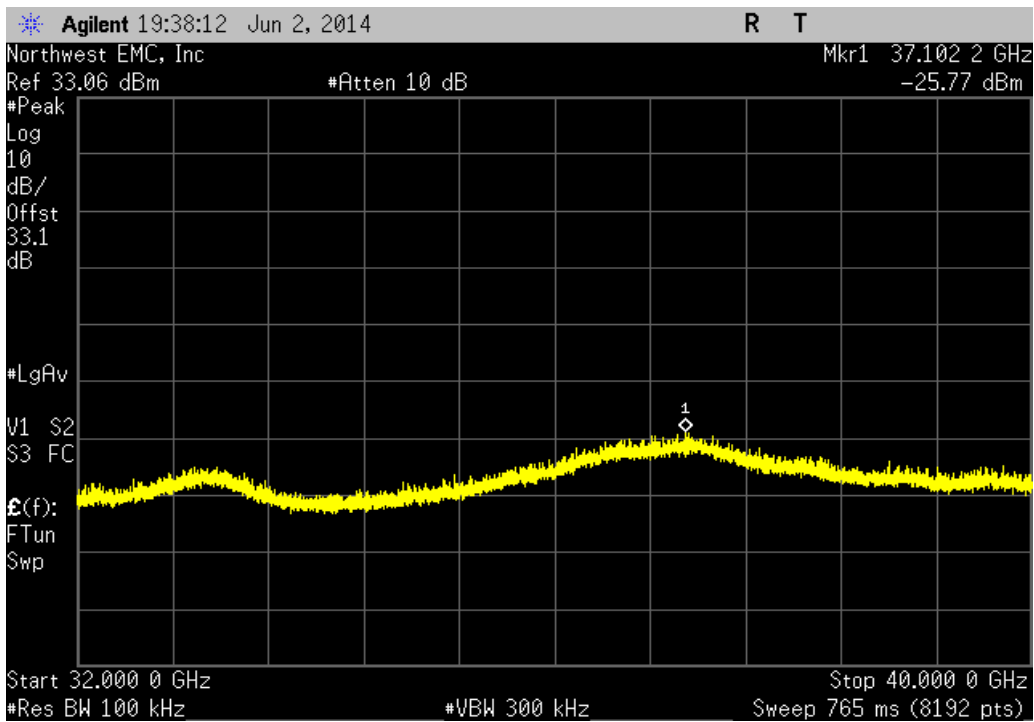
Chain 1, 5725 MHz - 5825 MHz Band, 2.5 MHz, 802.11(n) MCS7 - UNII, High Channel 5831 MHz			
Frequency Range	Value	Limit	Result
12.5 GHz - 25 GHz	-54.32 dBc	≤ -20 dBc	Pass



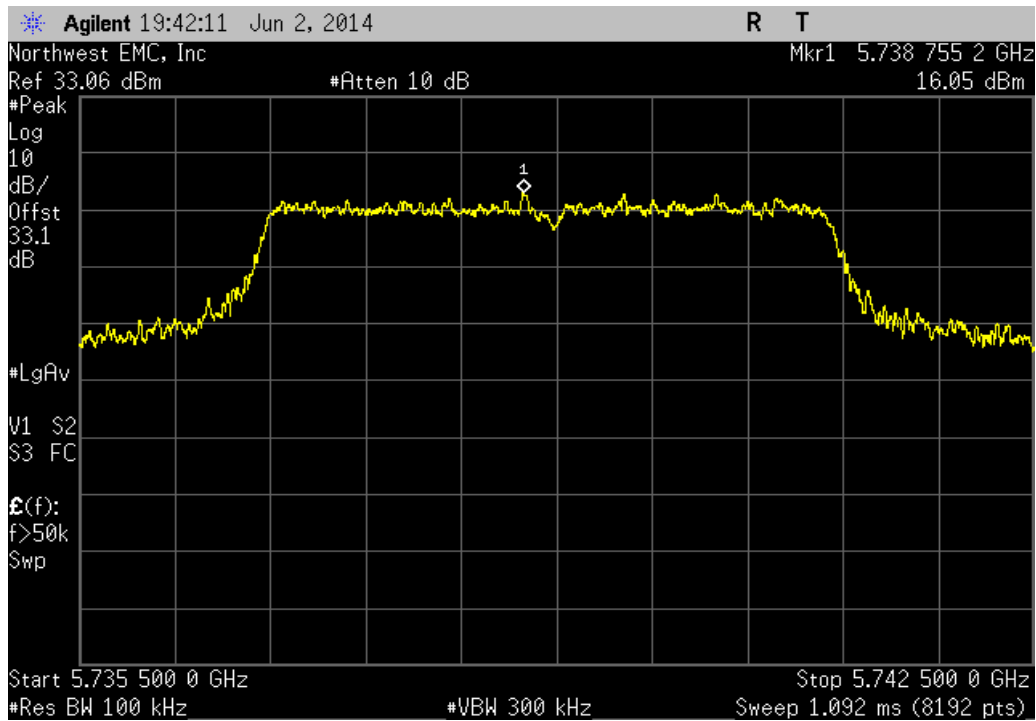
Chain 1, 5725 MHz - 5825 MHz Band, 2.5 MHz, 802.11(n) MCS7 - UNII, High Channel 5831 MHz			
Frequency Range	Value	Limit	Result
25 GHz - 32 GHz	-53.83 dBc	≤ -20 dBc	Pass



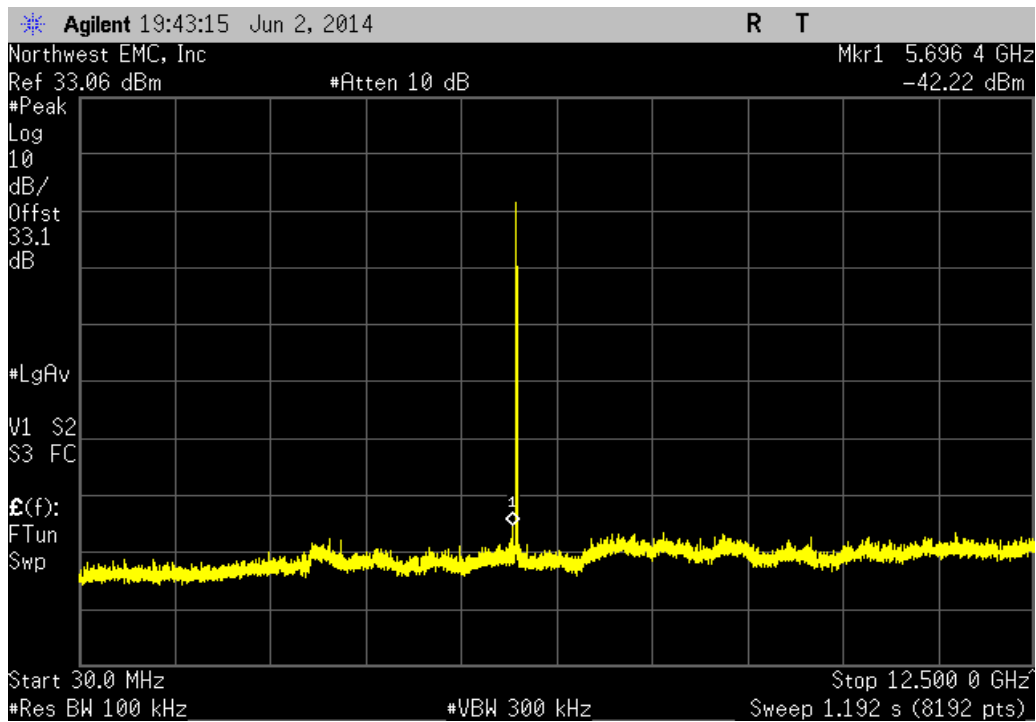
Chain 1, 5725 MHz - 5825 MHz Band, 2.5 MHz, 802.11(n) MCS7 - UNII, High Channel 5831 MHz			
Frequency Range	Value	Limit	Result
32 GHz - 40 GHz	-44.25 dBc	≤ -20 dBc	Pass



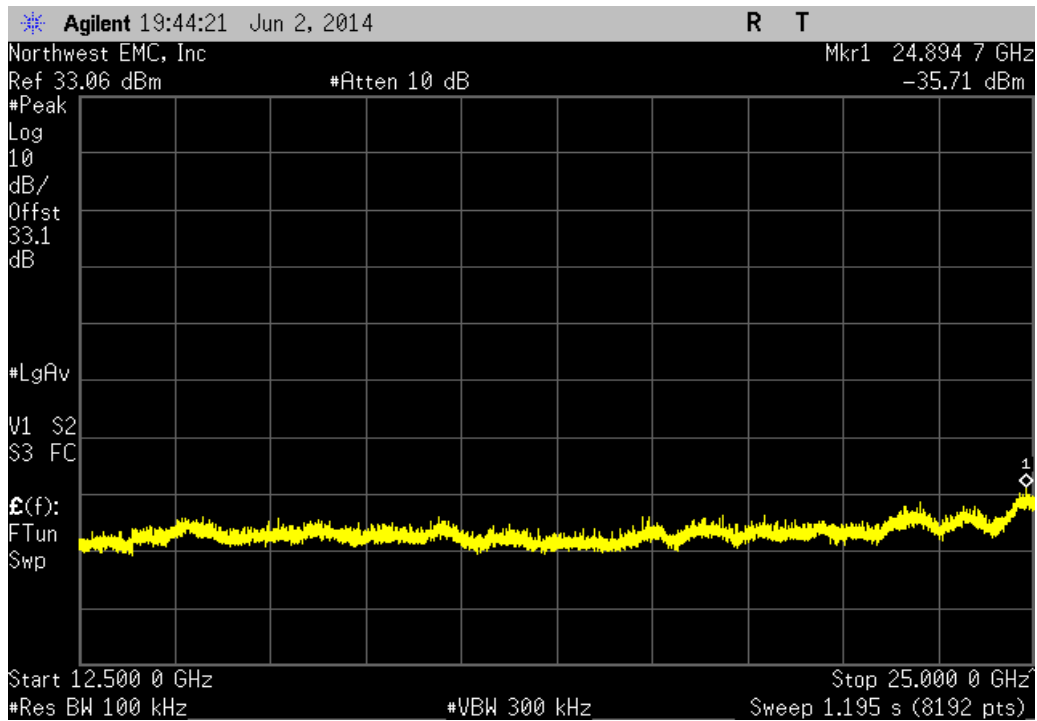
Chain 1, 5725 MHz - 5825 MHz Band, 5 MHz, 802.11(g) 36 Mbps, Low Channel 5739 MHz						
Frequency Range		Value	Limit	Result		
Fundamental		N/A	N/A	N/A		



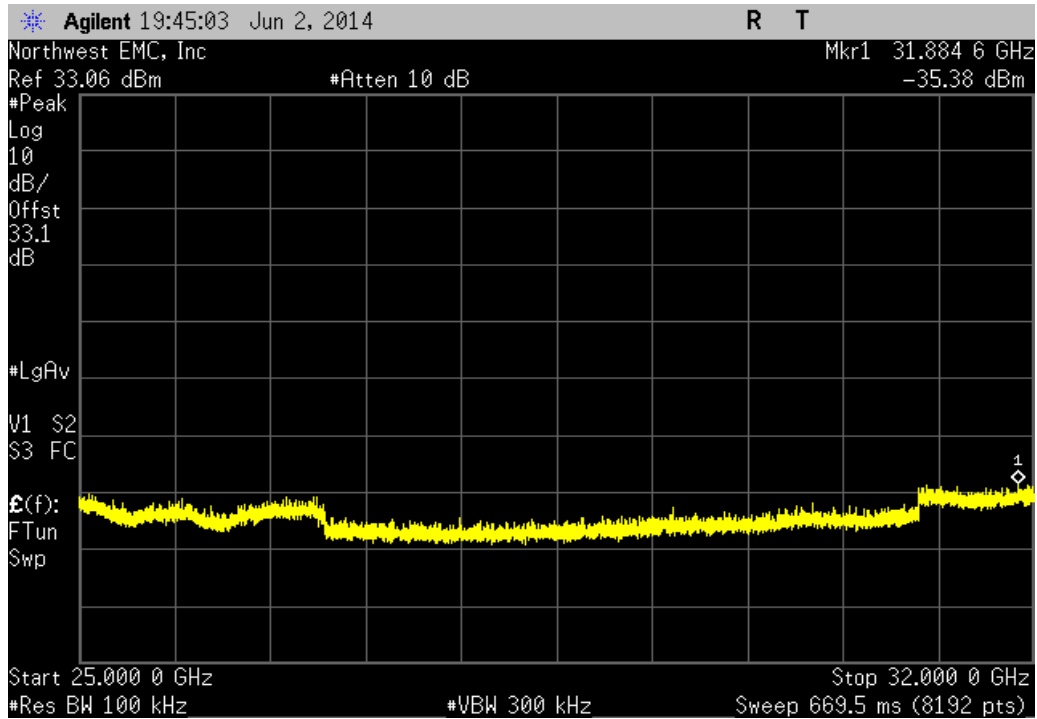
Chain 1, 5725 MHz - 5825 MHz Band, 5 MHz, 802.11(g) 36 Mbps, Low Channel 5739 MHz						
Frequency Range		Value	Limit	Result		
30 MHz - 12.5 GHz		-58.27 dBc	≤ -20 dBc	Pass		



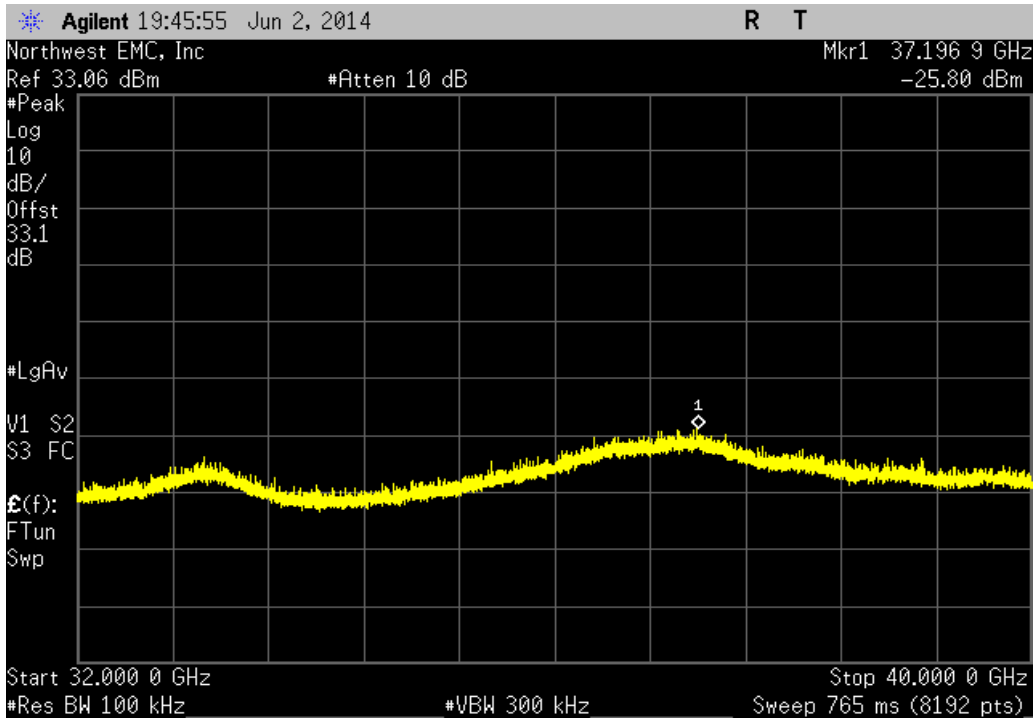
Chain 1, 5725 MHz - 5825 MHz Band, 5 MHz, 802.11(g) 36 Mbps, Low Channel 5739 MHz			
Frequency Range	Value	Limit	Result
12.5 GHz - 25 GHz	-51.76 dBc	≤ -20 dBc	Pass



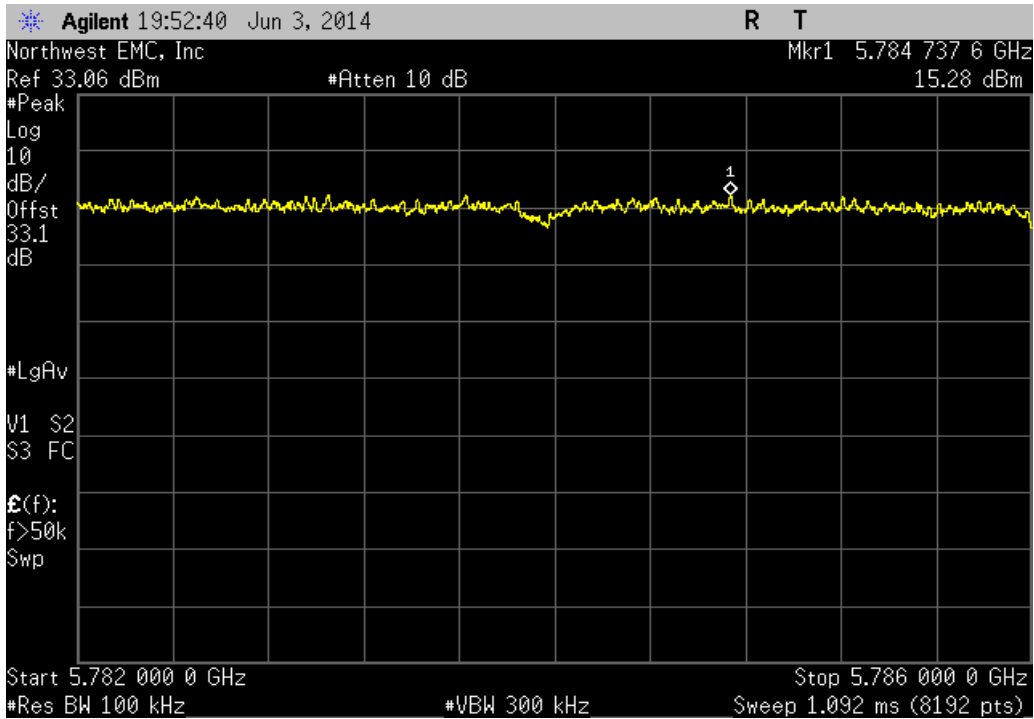
Chain 1, 5725 MHz - 5825 MHz Band, 5 MHz, 802.11(g) 36 Mbps, Low Channel 5739 MHz			
Frequency Range	Value	Limit	Result
25 GHz - 32 GHz	-51.43 dBc	≤ -20 dBc	Pass



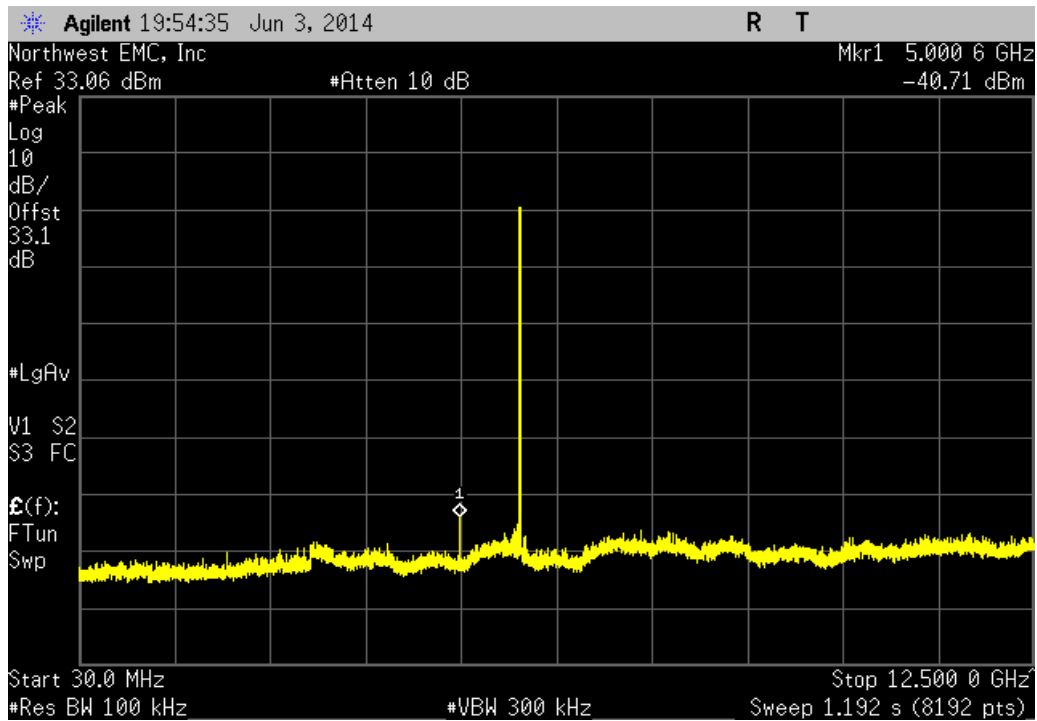
Chain 1, 5725 MHz - 5825 MHz Band, 5 MHz, 802.11(g) 36 Mbps, Low Channel 5739 MHz			
Frequency Range	Value	Limit	Result
32 GHz - 40 GHz	-41.85 dBc	≤ -20 dBc	Pass



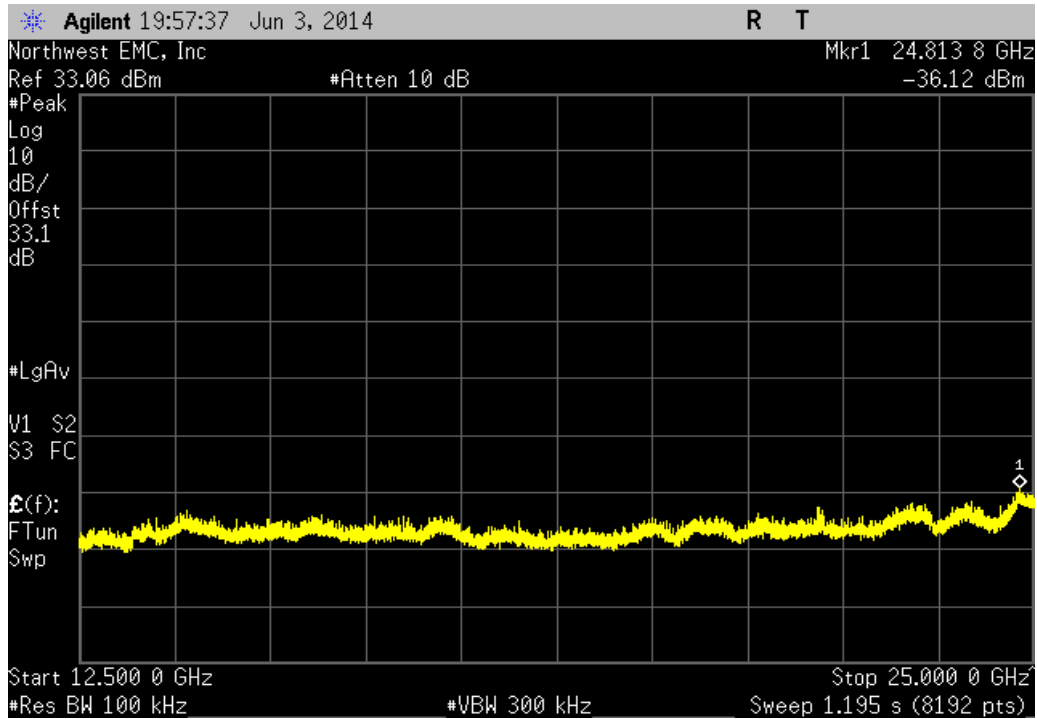
Chain 1, 5725 MHz - 5825 MHz Band, 5 MHz, 802.11(g) 36 Mbps, Mid Channel 5784 MHz			
Frequency Range	Value	Limit	Result
Fundamental	N/A	N/A	N/A



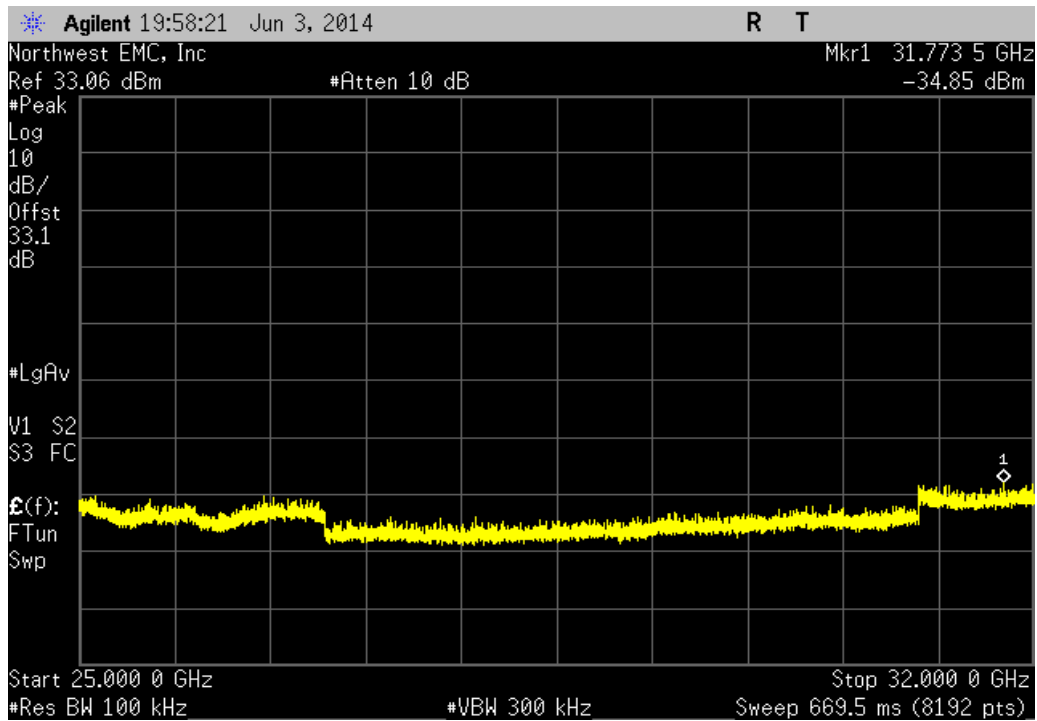
Chain 1, 5725 MHz - 5825 MHz Band, 5 MHz, 802.11(g) 36 Mbps, Mid Channel 5784 MHz			
Frequency Range	Value	Limit	Result
30 MHz - 12.5 GHz	-55.99 dBc	≤ -20 dBc	Pass



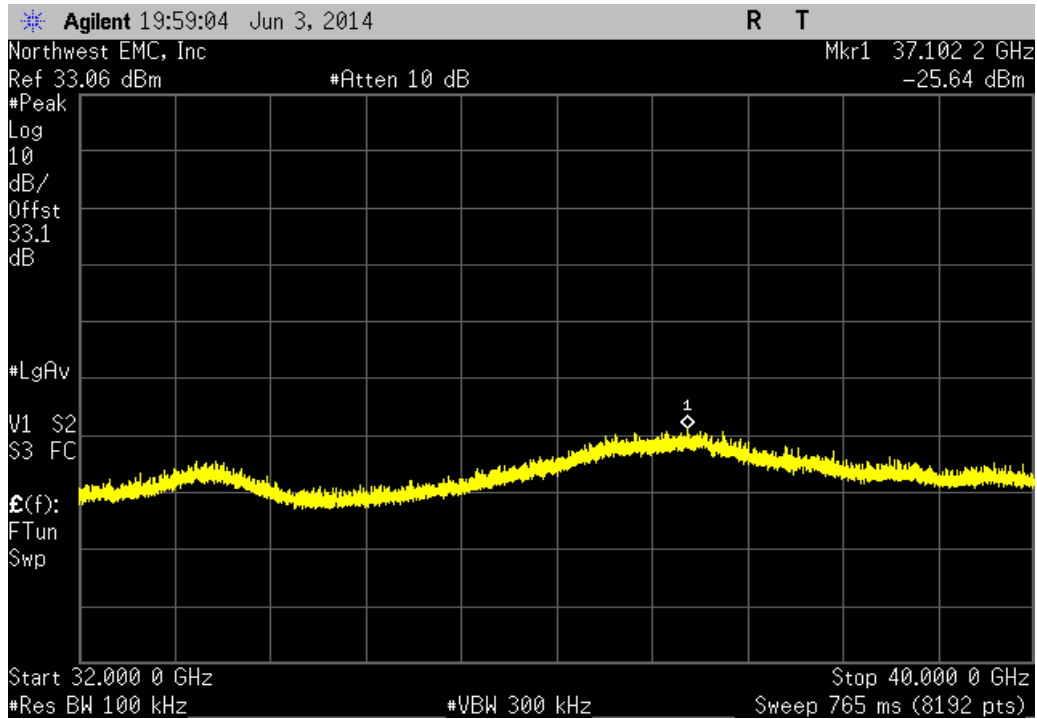
Chain 1, 5725 MHz - 5825 MHz Band, 5 MHz, 802.11(g) 36 Mbps, Mid Channel 5784 MHz			
Frequency Range	Value	Limit	Result
12.5 GHz - 25 GHz	-51.41 dBc	≤ -20 dBc	Pass



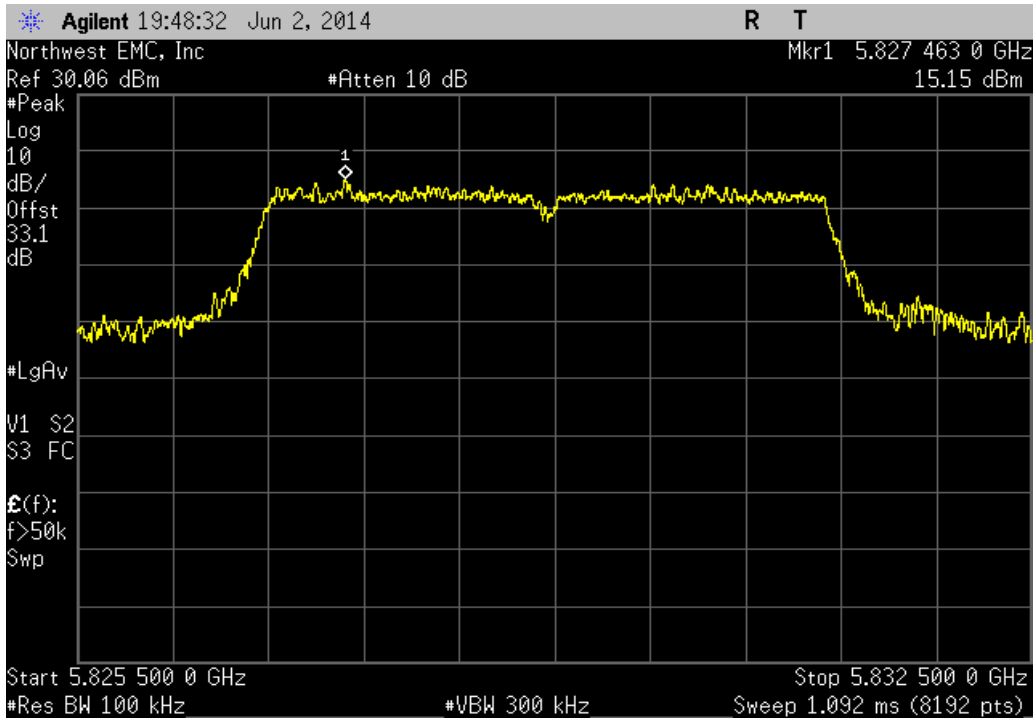
Chain 1, 5725 MHz - 5825 MHz Band, 5 MHz, 802.11(g) 36 Mbps, Mid Channel 5784 MHz			
Frequency Range	Value	Limit	Result
25 GHz - 32 GHz	-50.13 dBc	≤ -20 dBc	Pass



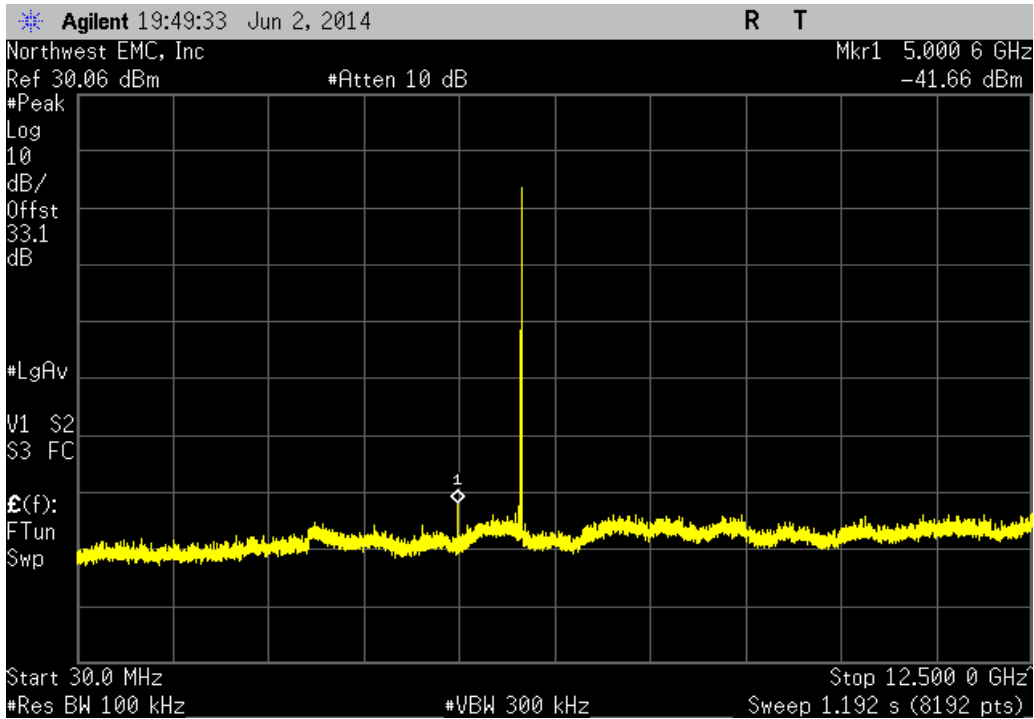
Chain 1, 5725 MHz - 5825 MHz Band, 5 MHz, 802.11(g) 36 Mbps, Mid Channel 5784 MHz			
Frequency Range	Value	Limit	Result
32 GHz - 40 GHz	-40.92 dBc	≤ -20 dBc	Pass



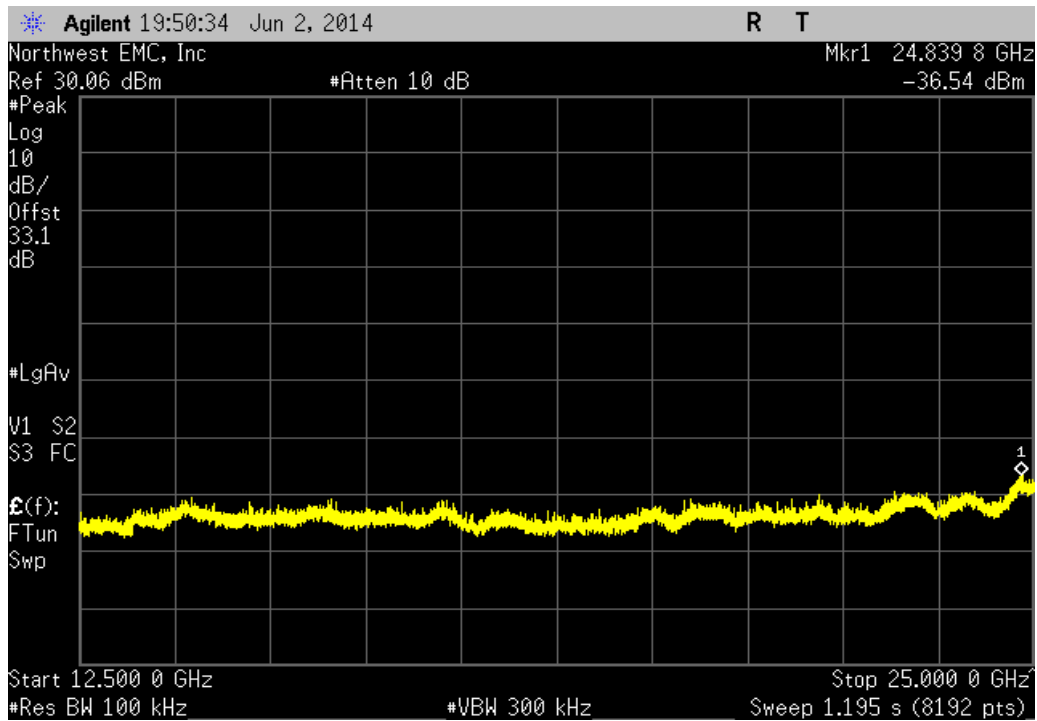
Chain 1, 5725 MHz - 5825 MHz Band, 5 MHz, 802.11(g) 36 Mbps, High Channel 5829 MHz				
Frequency Range		Value	Limit	Result
Fundamental		N/A	N/A	N/A



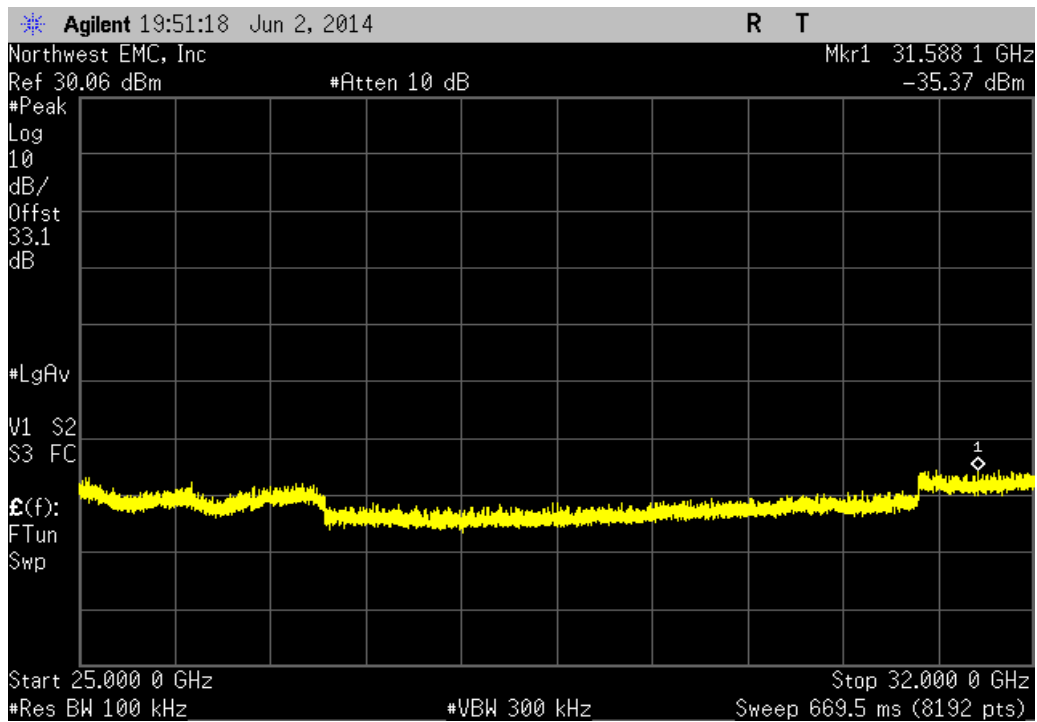
Chain 1, 5725 MHz - 5825 MHz Band, 5 MHz, 802.11(g) 36 Mbps, High Channel 5829 MHz				
Frequency Range		Value	Limit	Result
30 MHz - 12.5 GHz		-56.81 dBc	≤ -20 dBc	Pass



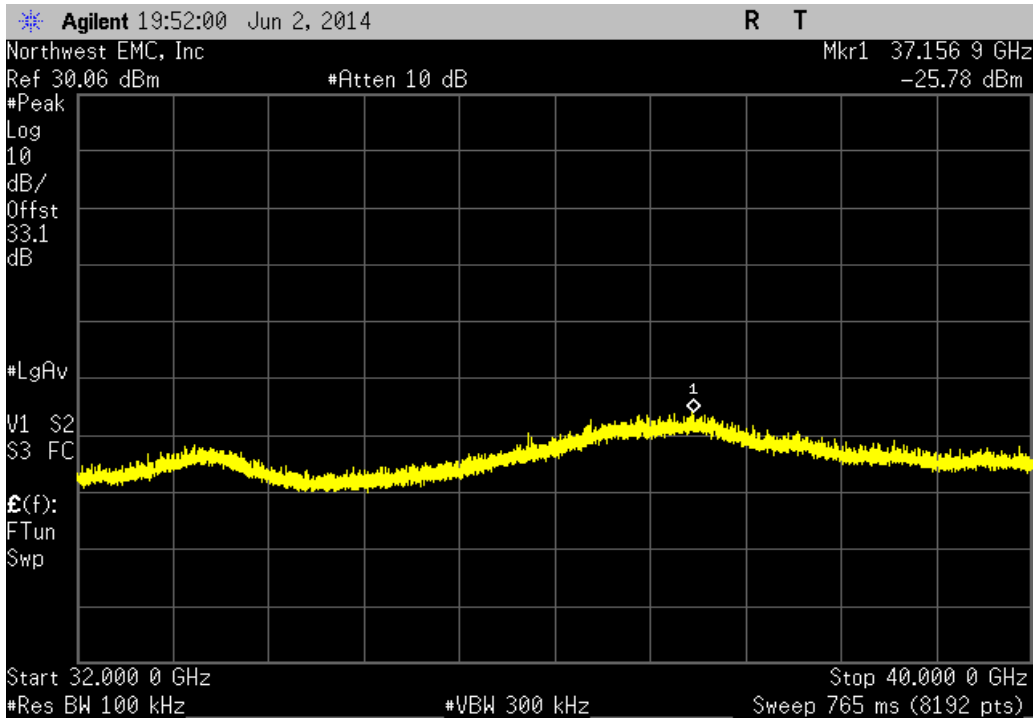
Chain 1, 5725 MHz - 5825 MHz Band, 5 MHz, 802.11(g) 36 Mbps, High Channel 5829 MHz			
Frequency Range	Value	Limit	Result
12.5 GHz - 25 GHz	-51.69 dBc	≤ -20 dBc	Pass



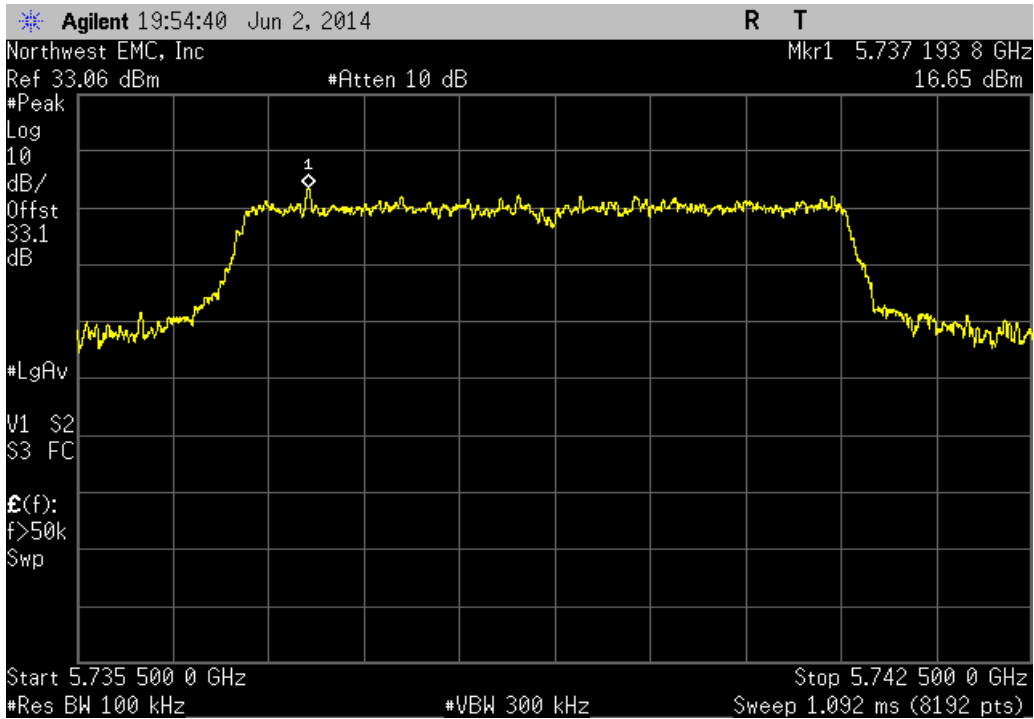
Chain 1, 5725 MHz - 5825 MHz Band, 5 MHz, 802.11(g) 36 Mbps, High Channel 5829 MHz			
Frequency Range	Value	Limit	Result
25 GHz - 32 GHz	-50.52 dBc	≤ -20 dBc	Pass



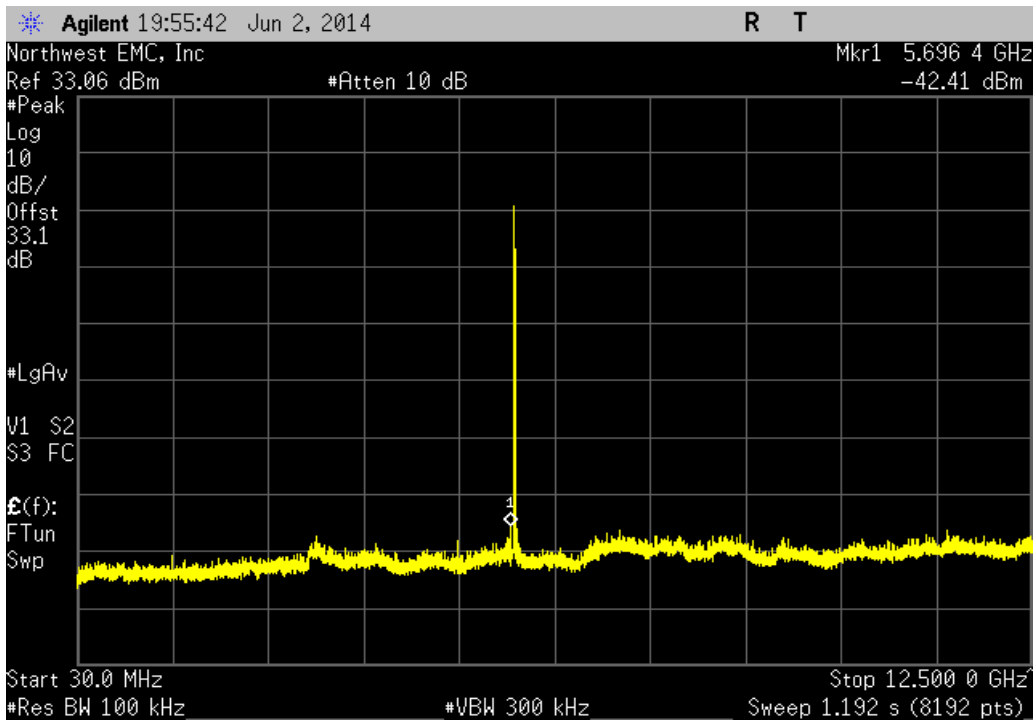
Chain 1, 5725 MHz - 5825 MHz Band, 5 MHz, 802.11(g) 36 Mbps, High Channel 5829 MHz			
Frequency Range	Value	Limit	Result
32 GHz - 40 GHz	-40.93 dBc	≤ -20 dBc	Pass



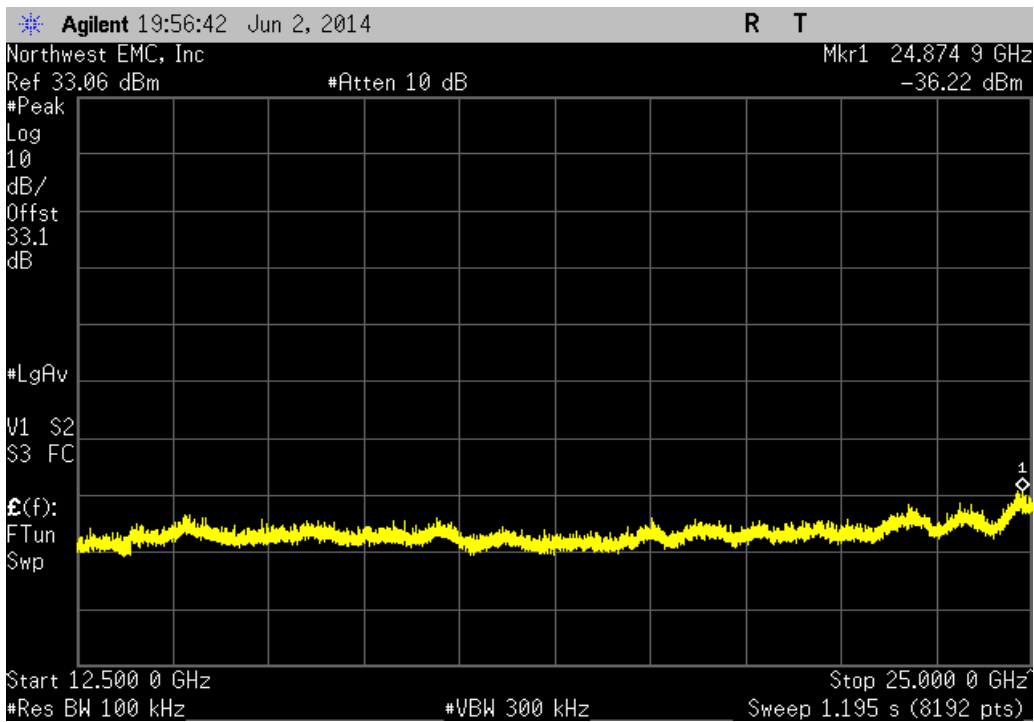
Chain 1, 5725 MHz - 5825 MHz Band, 5 MHz, 802.11(n) MCS7 - UNII, Low Channel 5739 MHz			
Frequency Range	Value	Limit	Result
Fundamental	N/A	N/A	N/A



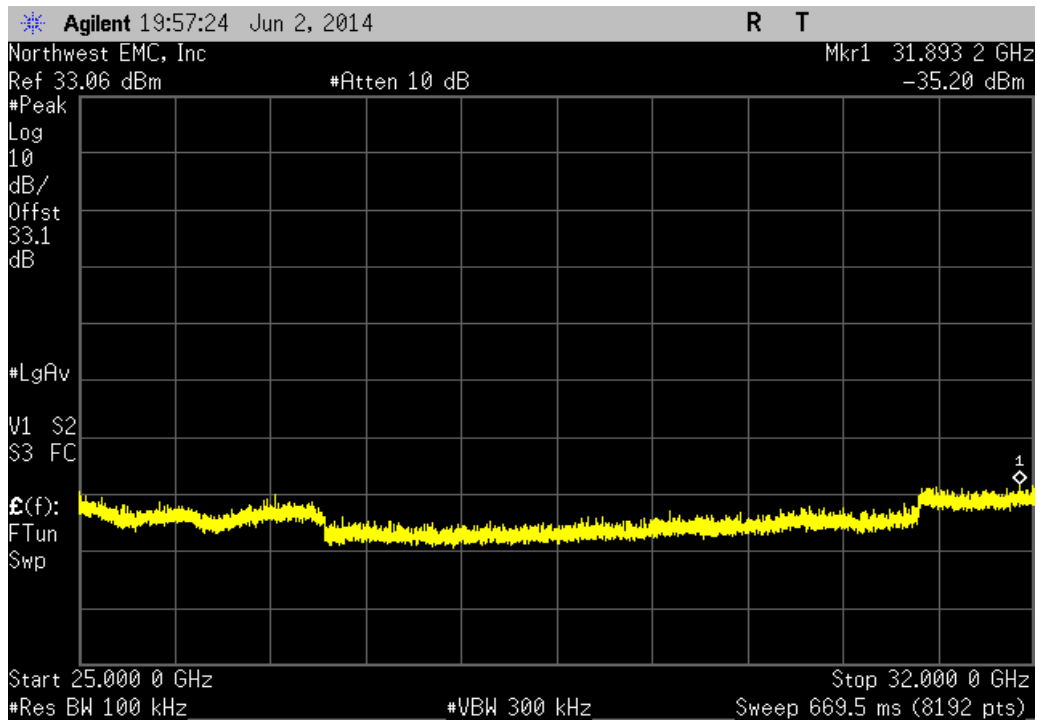
Chain 1, 5725 MHz - 5825 MHz Band, 5 MHz, 802.11(n) MCS7 - UNII, Low Channel 5739 MHz			
Frequency Range	Value	Limit	Result
30 MHz - 12.5 GHz	-59.06 dBc	≤ -20 dBc	Pass



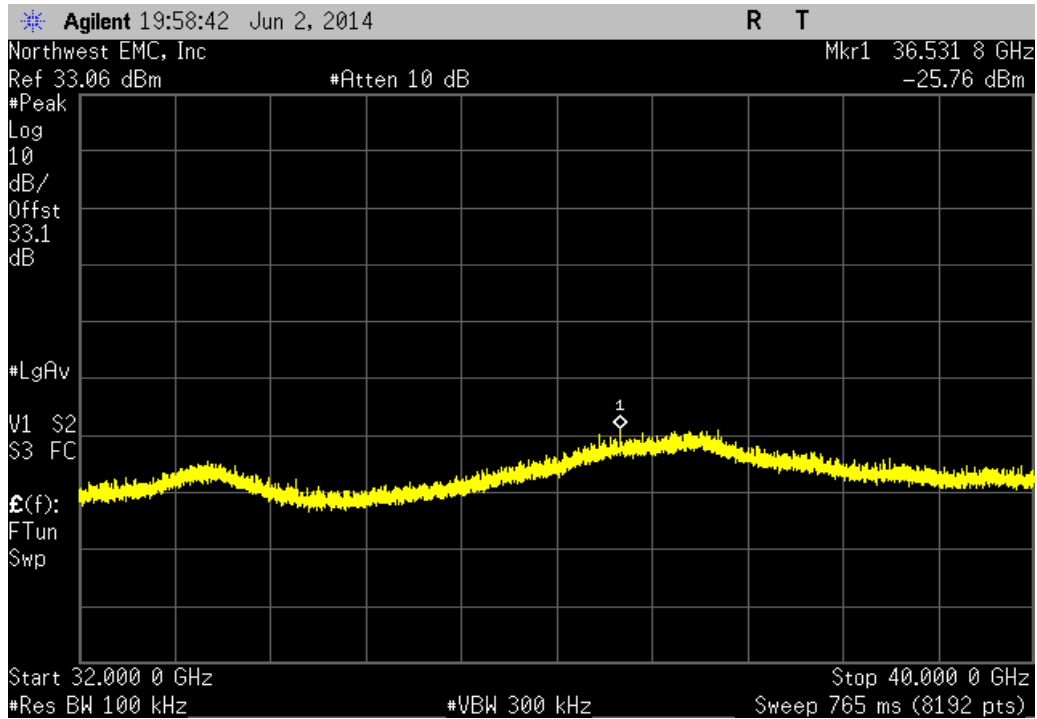
Chain 1, 5725 MHz - 5825 MHz Band, 5 MHz, 802.11(n) MCS7 - UNII, Low Channel 5739 MHz			
Frequency Range	Value	Limit	Result
12.5 GHz - 25 GHz	-52.87 dBc	≤ -20 dBc	Pass



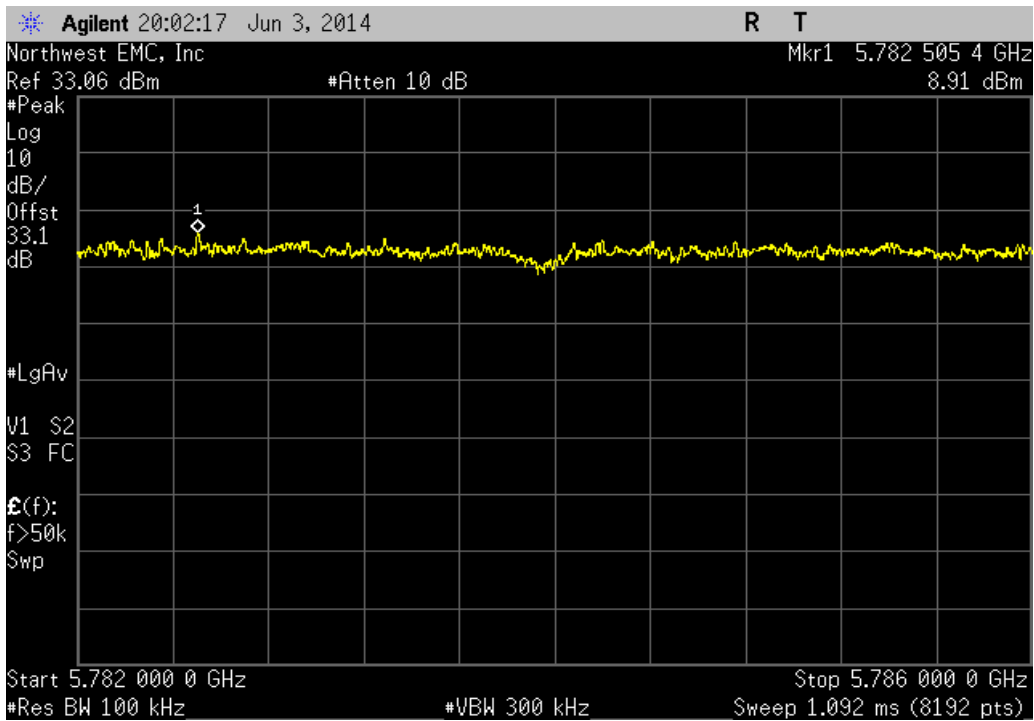
Chain 1, 5725 MHz - 5825 MHz Band, 5 MHz, 802.11(n) MCS7 - UNII, Low Channel 5739 MHz			
Frequency Range	Value	Limit	Result
25 GHz - 32 GHz	-51.85 dBc	≤ -20 dBc	Pass



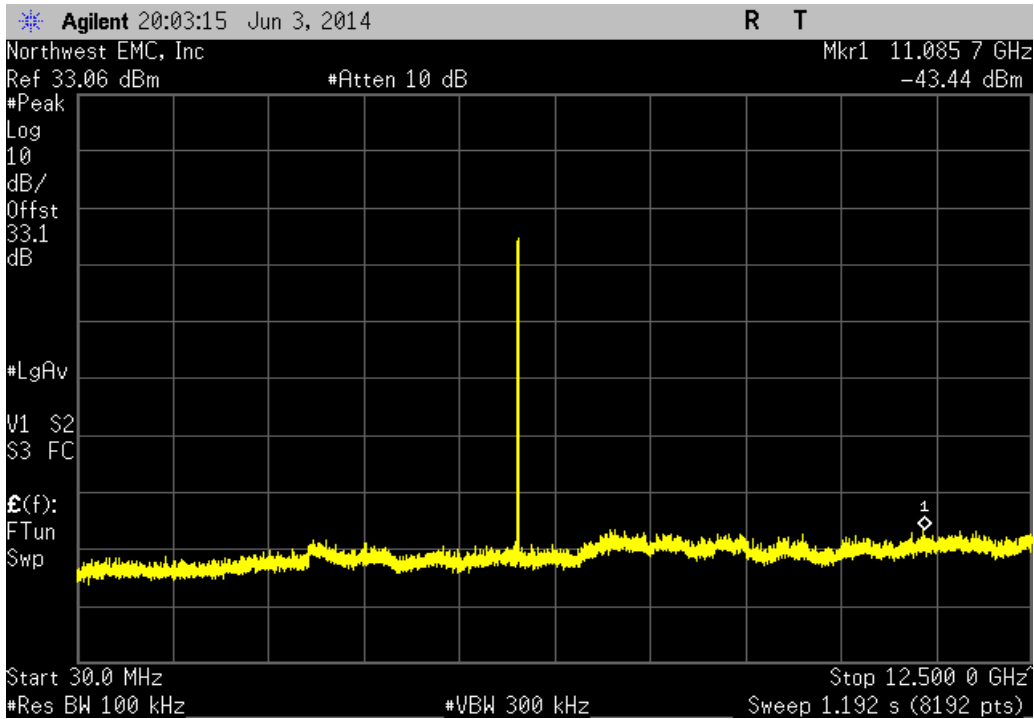
Chain 1, 5725 MHz - 5825 MHz Band, 5 MHz, 802.11(n) MCS7 - UNII, Low Channel 5739 MHz			
Frequency Range	Value	Limit	Result
32 GHz - 40 GHz	-42.41 dBc	≤ -20 dBc	Pass



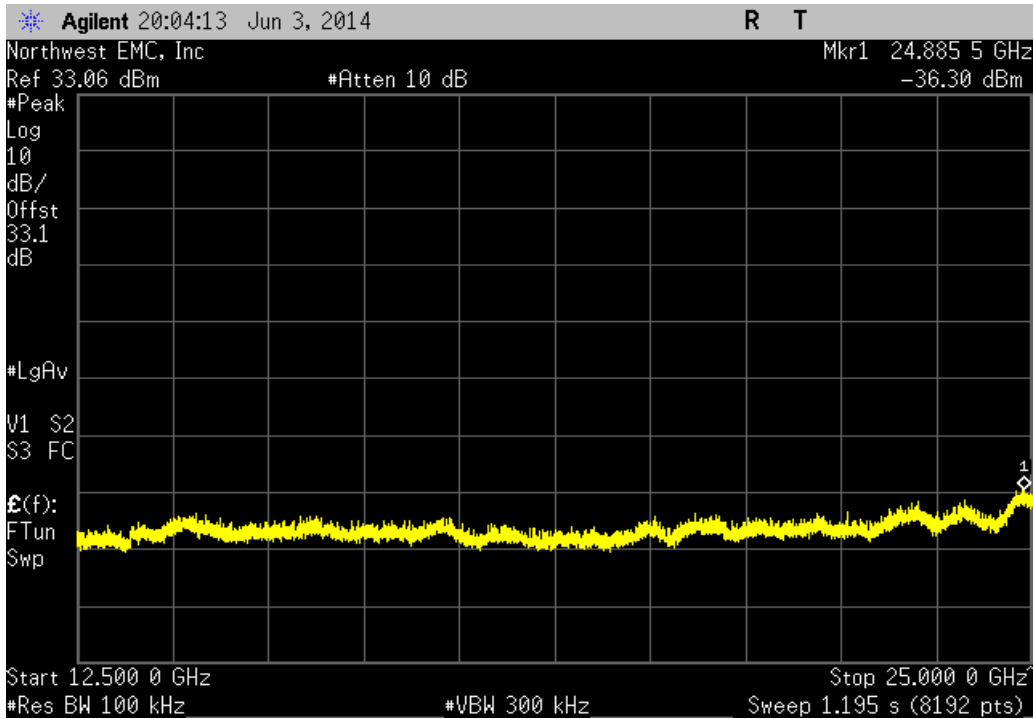
Chain 1, 5725 MHz - 5825 MHz Band, 5 MHz, 802.11(n) MCS7 - UNII, Mid Channel 5784 MHz						
Frequency Range		Value	Limit	Result		
Fundamental		N/A	N/A	N/A		



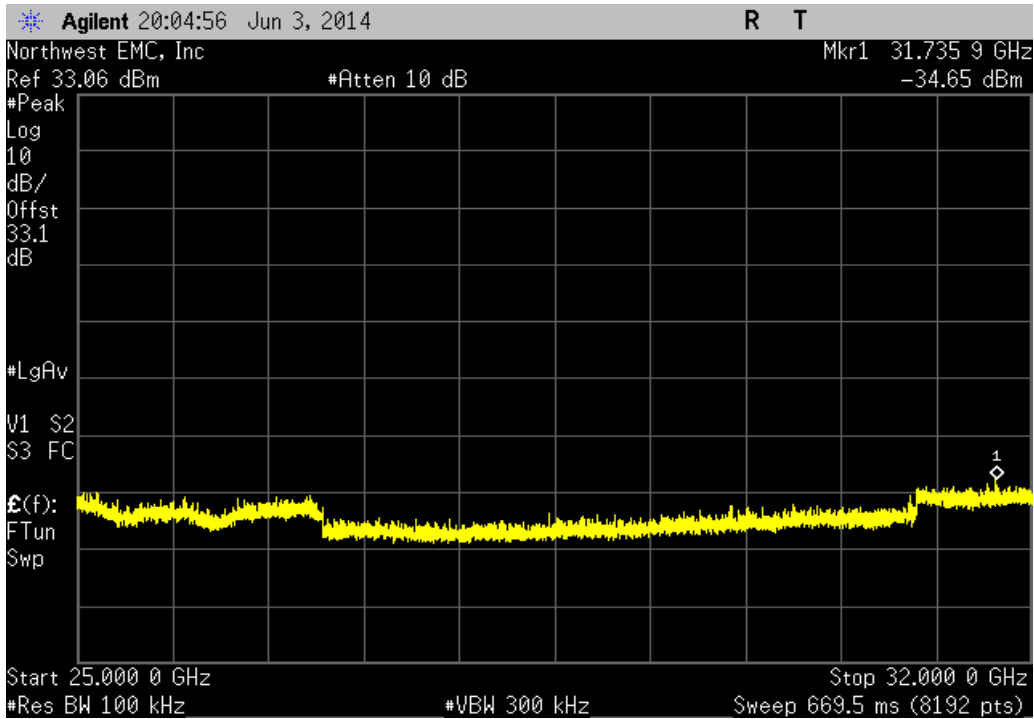
Chain 1, 5725 MHz - 5825 MHz Band, 5 MHz, 802.11(n) MCS7 - UNII, Mid Channel 5784 MHz						
Frequency Range		Value	Limit	Result		
30 MHz - 12.5 GHz		-52.36 dBc	≤ -20 dBc	Pass		



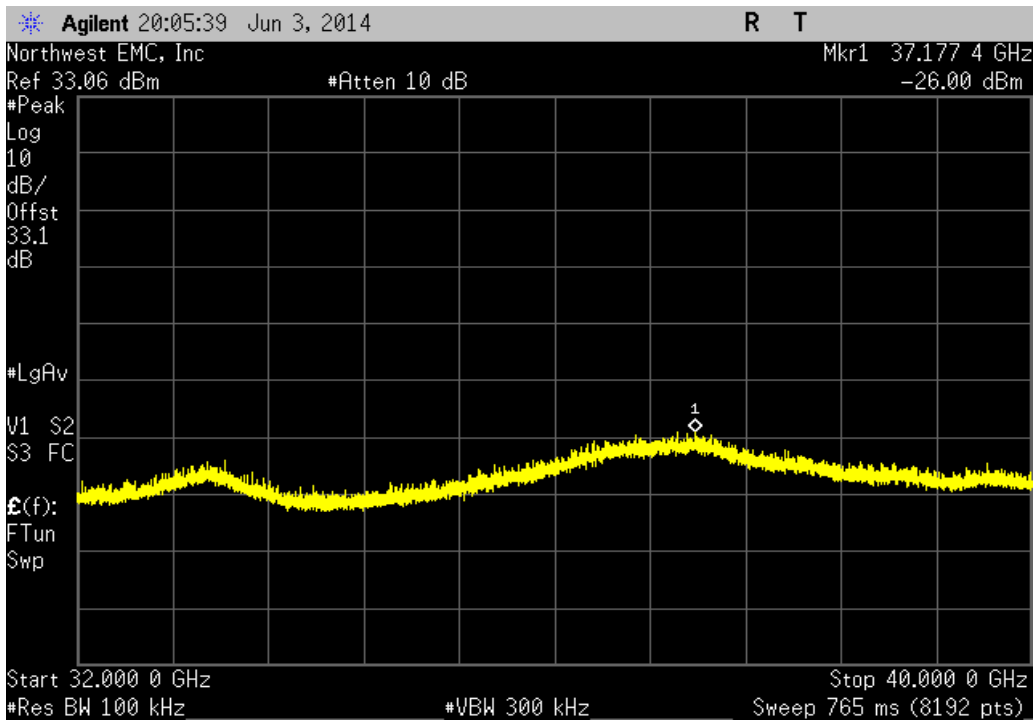
Chain 1, 5725 MHz - 5825 MHz Band, 5 MHz, 802.11(n) MCS7 - UNII, Mid Channel 5784 MHz			
Frequency Range	Value	Limit	Result
12.5 GHz - 25 GHz	-45.21 dBc	≤ -20 dBc	Pass



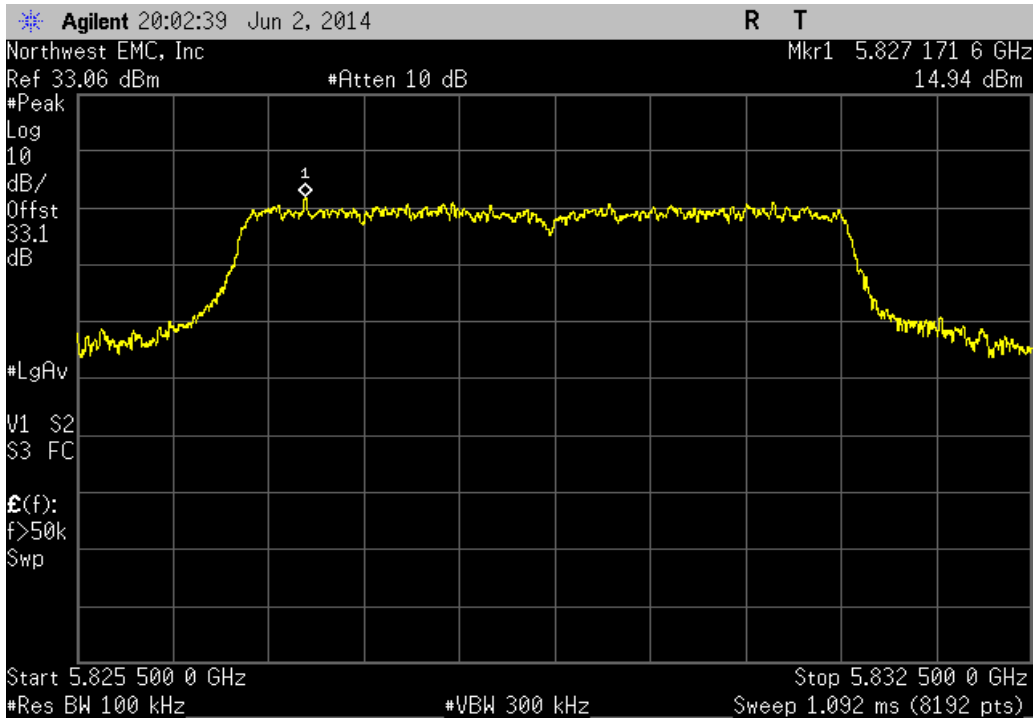
Chain 1, 5725 MHz - 5825 MHz Band, 5 MHz, 802.11(n) MCS7 - UNII, Mid Channel 5784 MHz			
Frequency Range	Value	Limit	Result
25 GHz - 32 GHz	-43.56 dBc	≤ -20 dBc	Pass



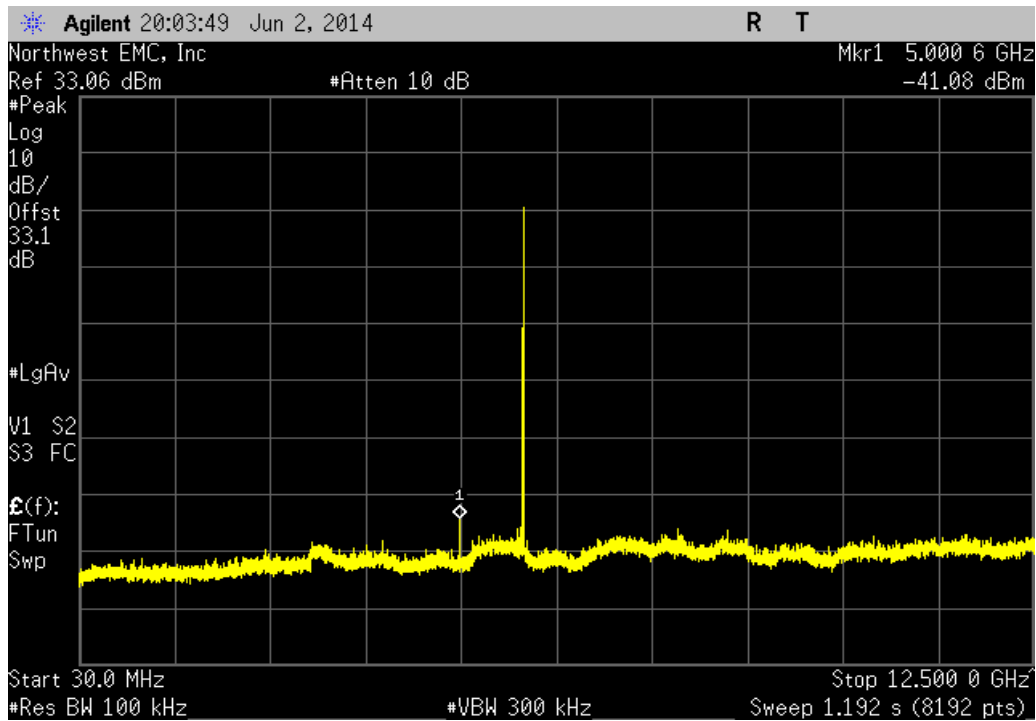
Chain 1, 5725 MHz - 5825 MHz Band, 5 MHz, 802.11(n) MCS7 - UNII, Mid Channel 5784 MHz				
Frequency Range		Value	Limit	Result
32 GHz - 40 GHz		-34.92 dBc	≤ -20 dBc	Pass



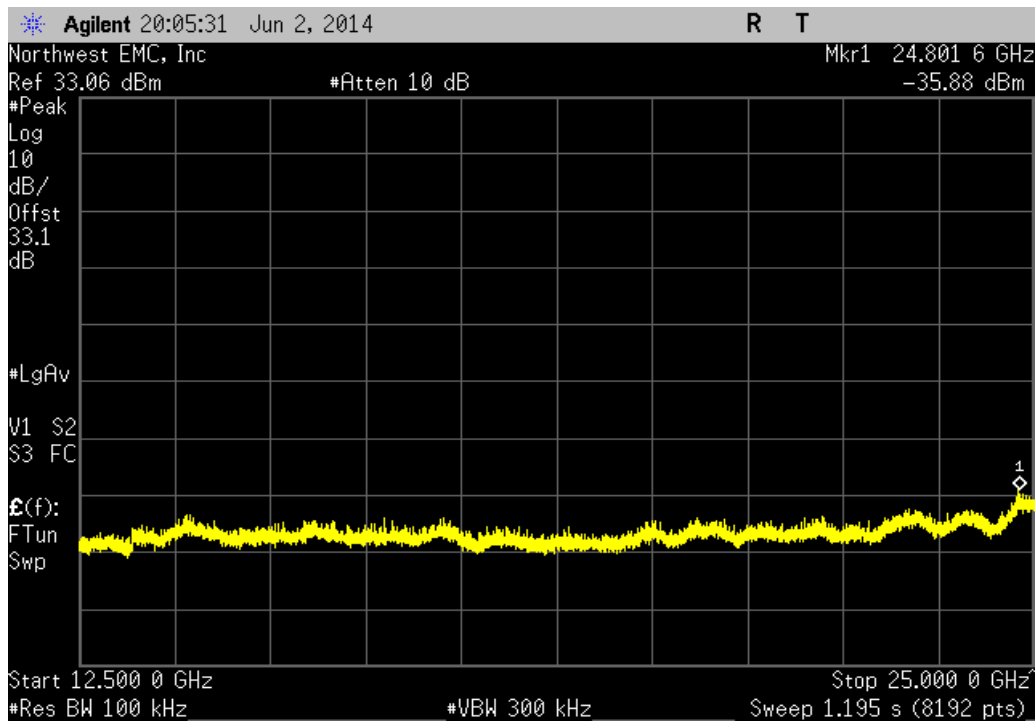
Chain 1, 5725 MHz - 5825 MHz Band, 5 MHz, 802.11(n) MCS7 - UNII, High Channel 5829 MHz				
Frequency Range		Value	Limit	Result
Fundamental		N/A	N/A	N/A



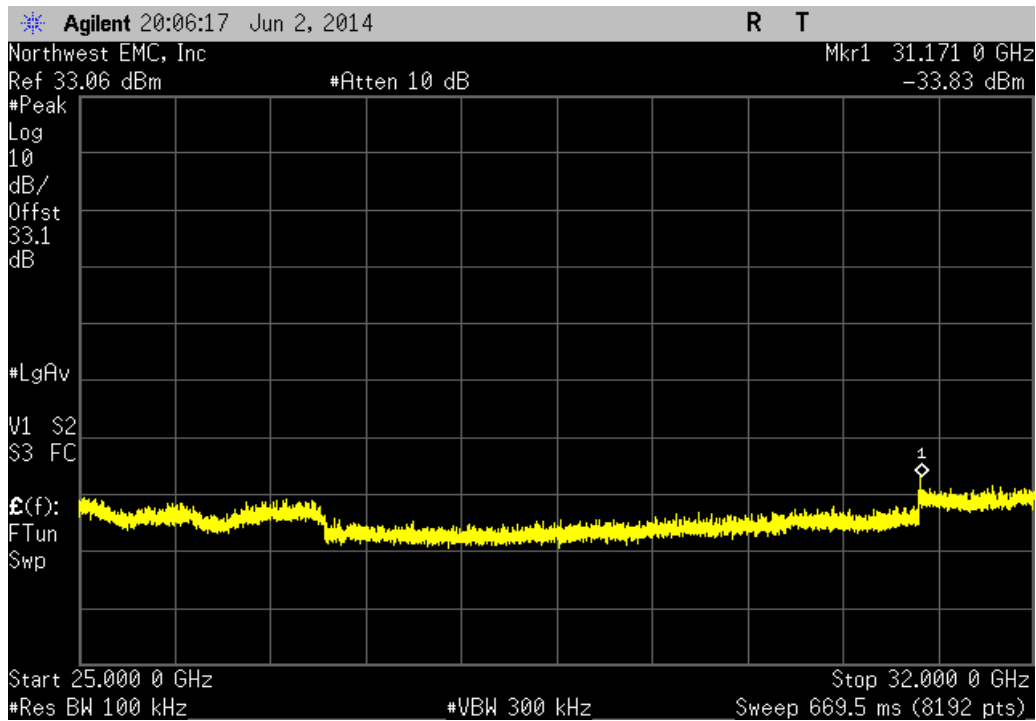
Chain 1, 5725 MHz - 5825 MHz Band, 5 MHz, 802.11(n) MCS7 - UNII, High Channel 5829 MHz			
Frequency Range	Value	Limit	Result
30 MHz - 12.5 GHz	-56.02 dBc	≤ -20 dBc	Pass



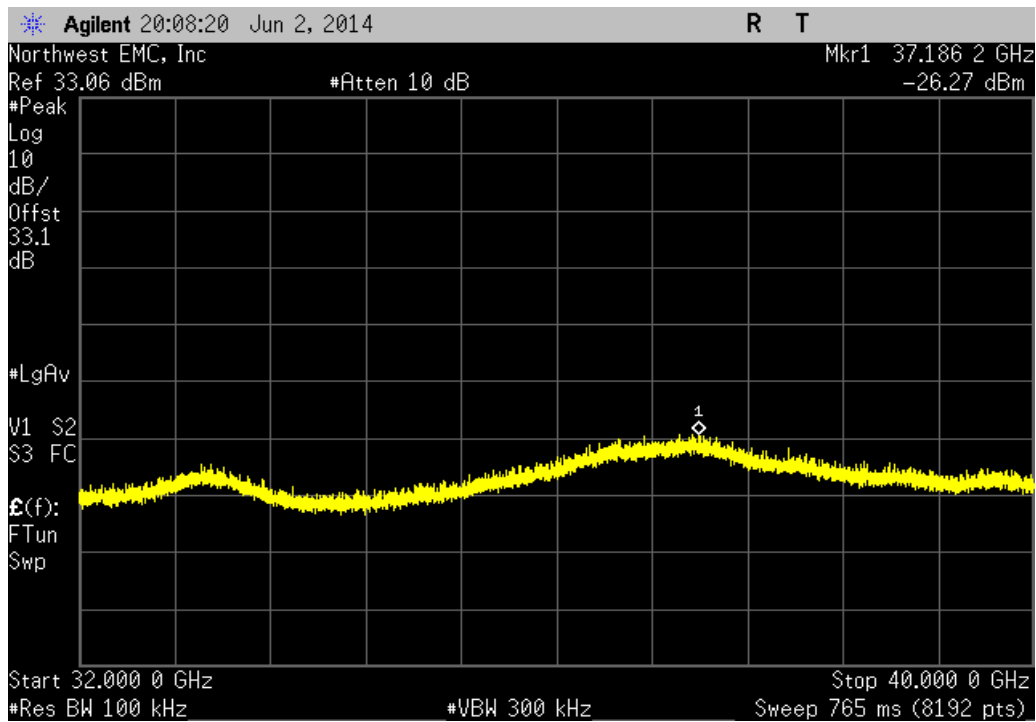
Chain 1, 5725 MHz - 5825 MHz Band, 5 MHz, 802.11(n) MCS7 - UNII, High Channel 5829 MHz			
Frequency Range	Value	Limit	Result
12.5 GHz - 25 GHz	-50.82 dBc	≤ -20 dBc	Pass



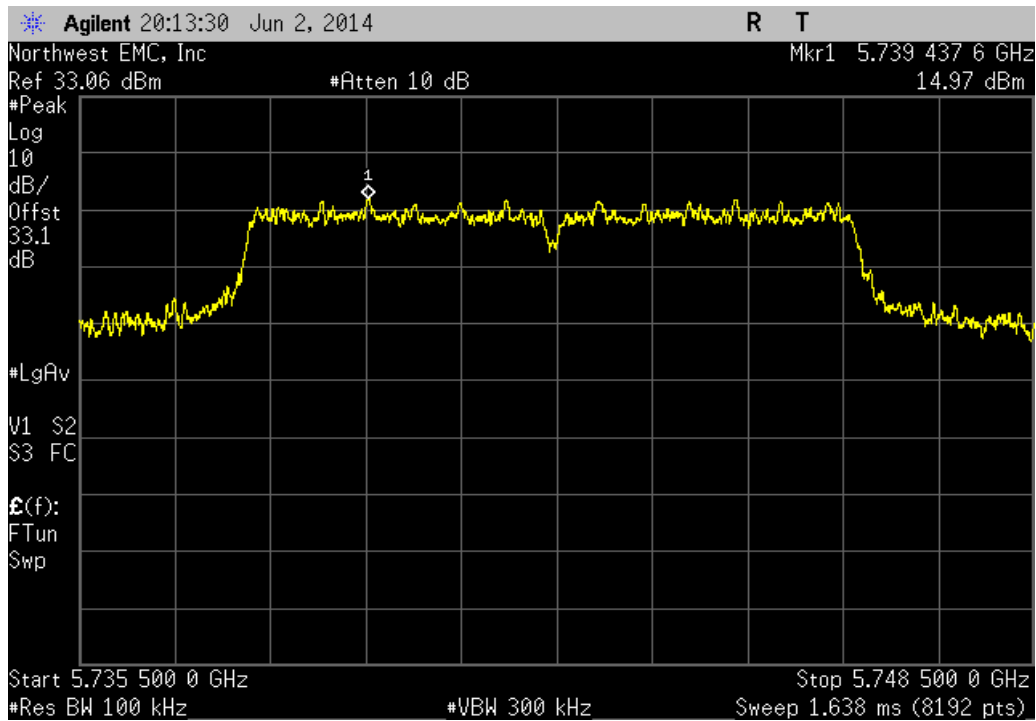
Chain 1, 5725 MHz - 5825 MHz Band, 5 MHz, 802.11(n) MCS7 - UNII, High Channel 5829 MHz			
Frequency Range	Value	Limit	Result
25 GHz - 32 GHz	-48.77 dBc	≤ -20 dBc	Pass



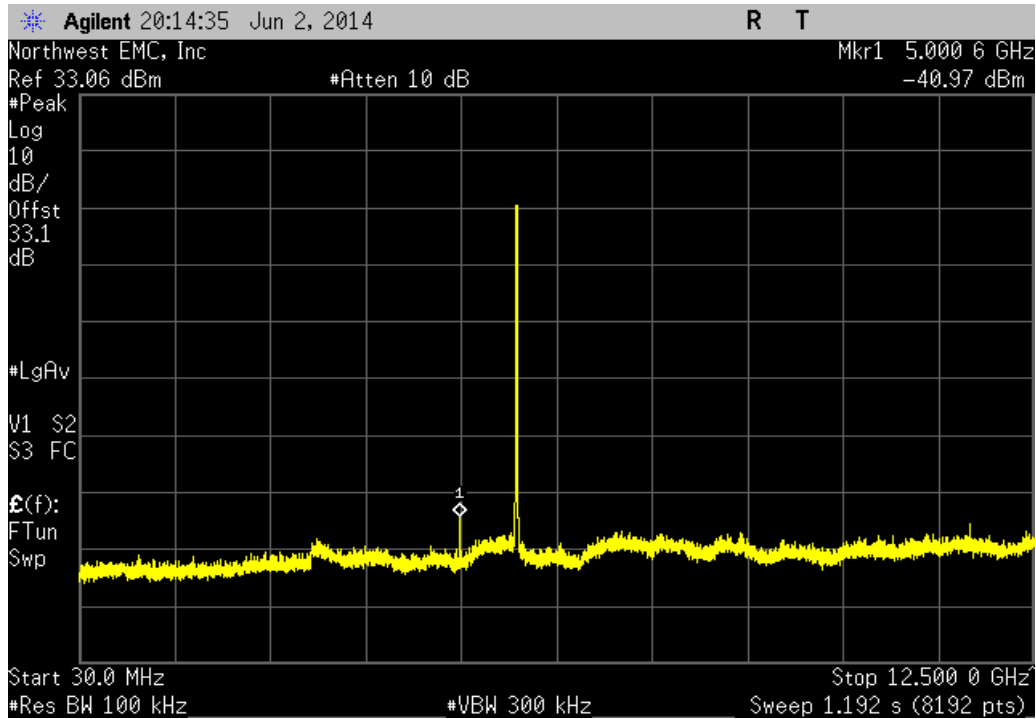
Chain 1, 5725 MHz - 5825 MHz Band, 5 MHz, 802.11(n) MCS7 - UNII, High Channel 5829 MHz			
Frequency Range	Value	Limit	Result
32 GHz - 40 GHz	-41.21 dBc	≤ -20 dBc	Pass



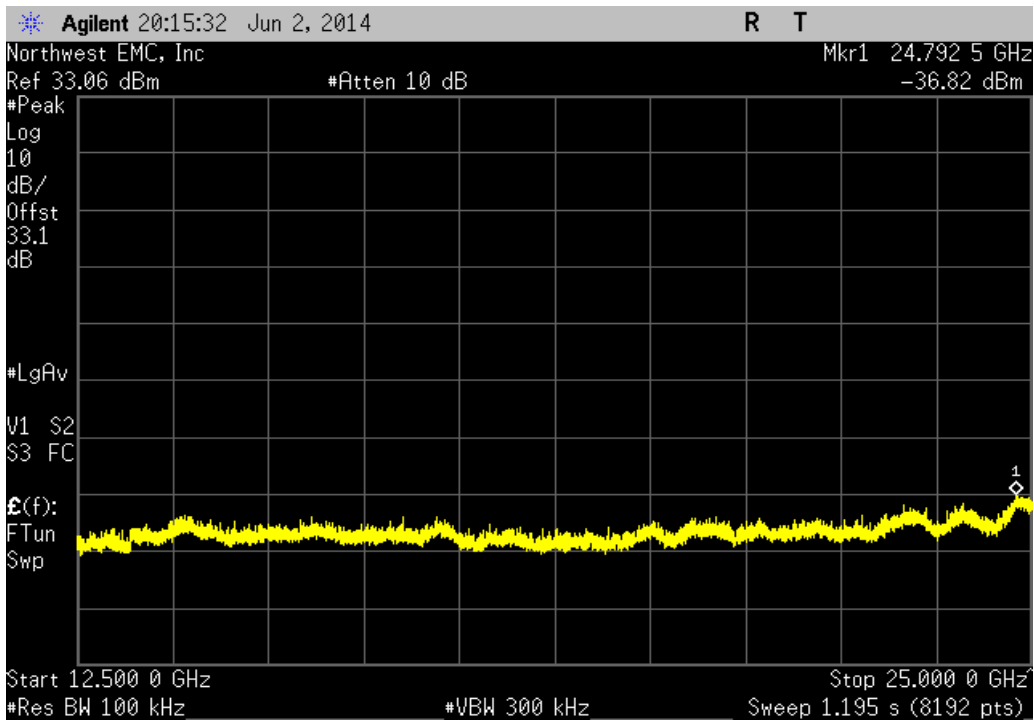
Chain 1, 5725 MHz - 5825 MHz Band, 10 MHz, 802.11(g) 36 Mbps, Low Channel 5742 MHz				
Frequency Range		Value	Limit	Result
Fundamental		N/A	N/A	N/A



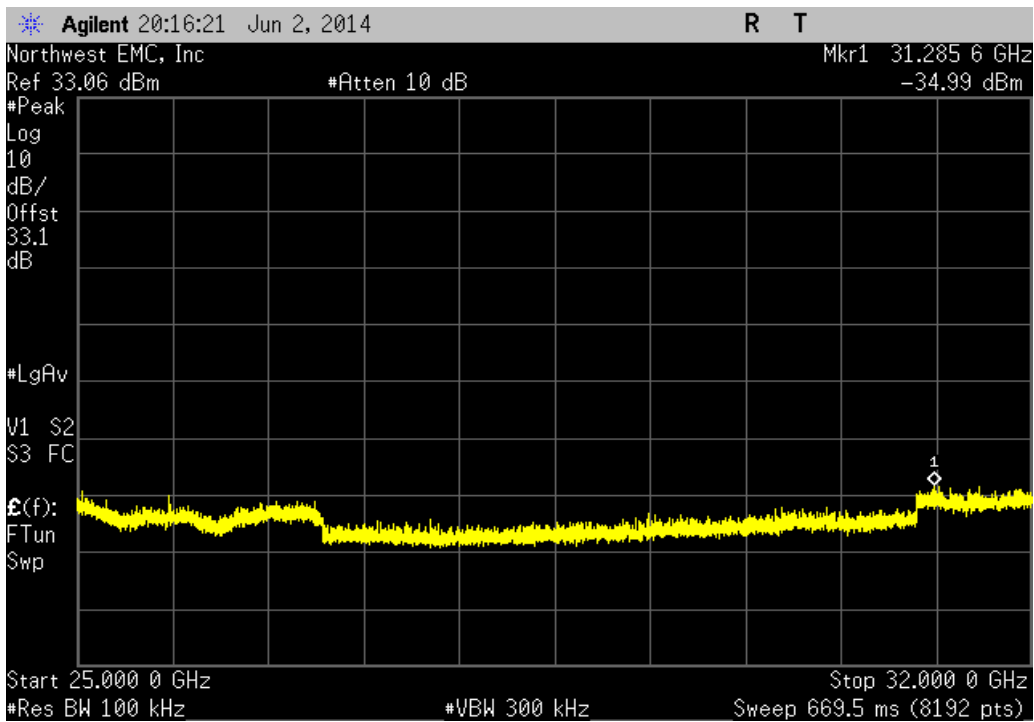
Chain 1, 5725 MHz - 5825 MHz Band, 10 MHz, 802.11(g) 36 Mbps, Low Channel 5742 MHz				
Frequency Range		Value	Limit	Result
30 MHz - 12.5 GHz		-55.95 dBc	≤ -20 dBc	Pass



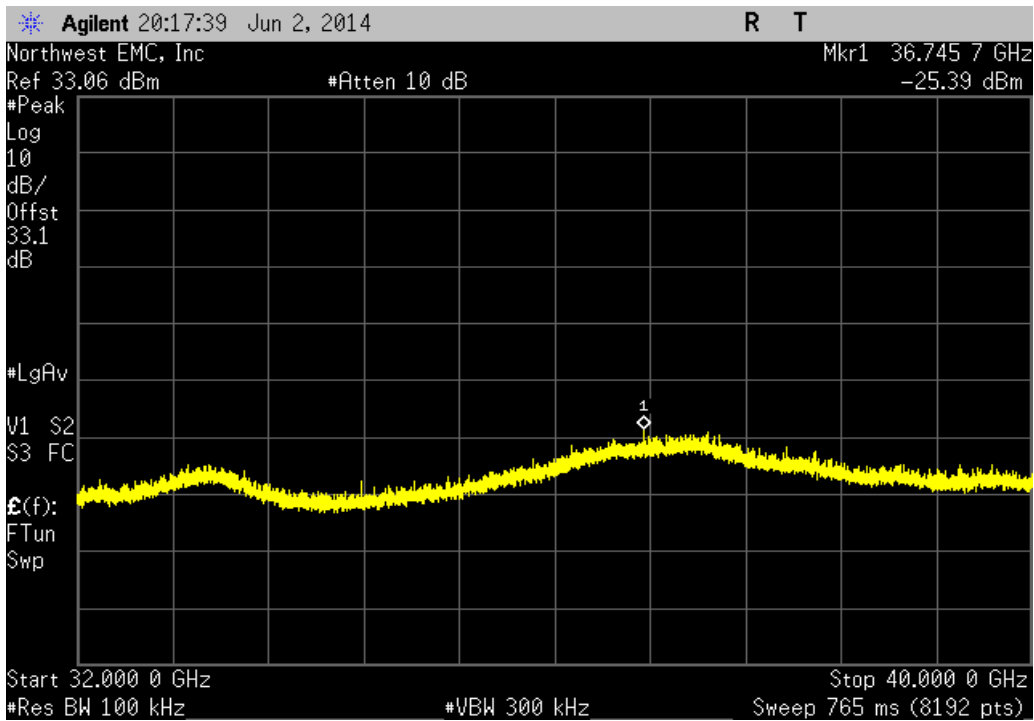
Chain 1, 5725 MHz - 5825 MHz Band, 10 MHz, 802.11(g) 36 Mbps, Low Channel 5742 MHz				
Frequency Range		Value	Limit	Result
12.5 GHz - 25 GHz		-51.79 dBc	≤ -20 dBc	Pass



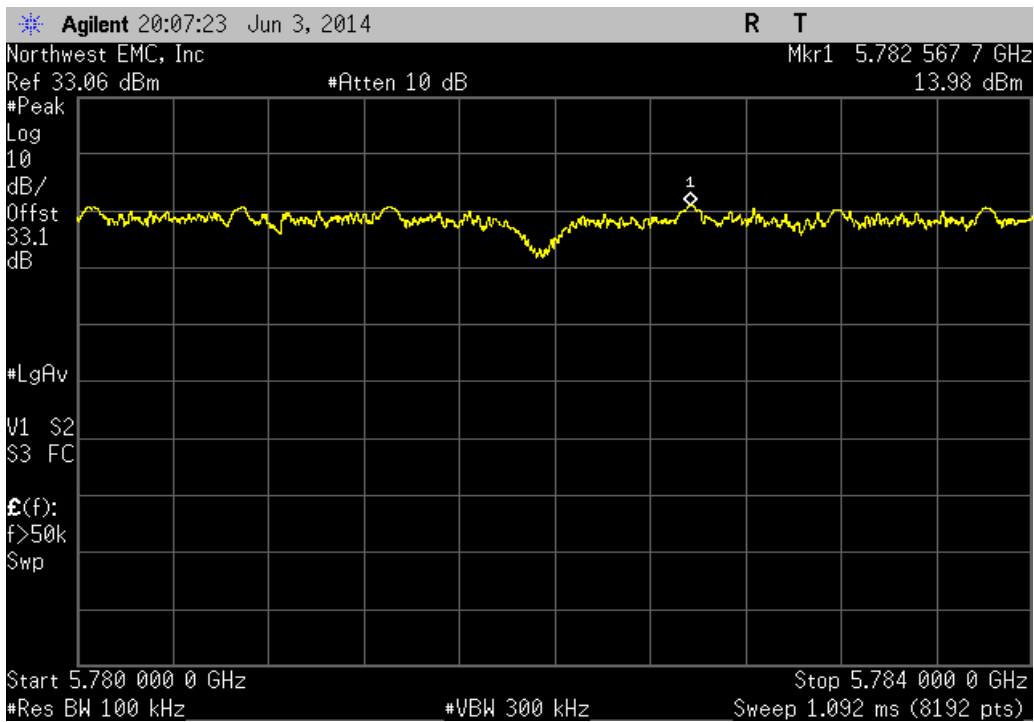
Chain 1, 5725 MHz - 5825 MHz Band, 10 MHz, 802.11(g) 36 Mbps, Low Channel 5742 MHz				
Frequency Range		Value	Limit	Result
25 GHz - 32 GHz		-49.96 dBc	≤ -20 dBc	Pass



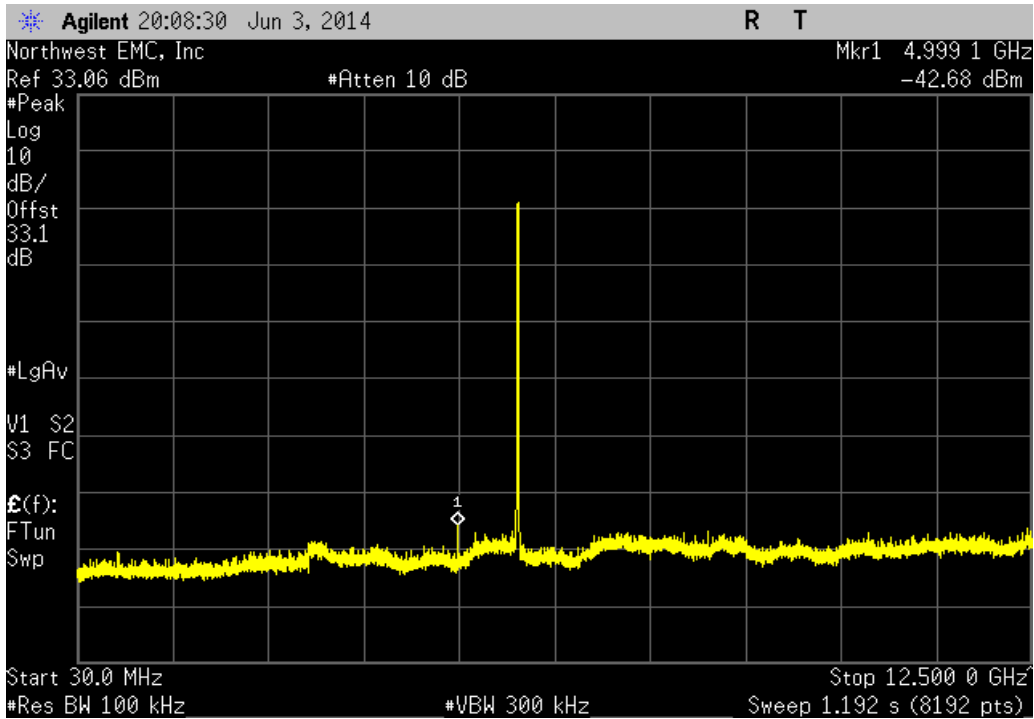
Chain 1, 5725 MHz - 5825 MHz Band, 10 MHz, 802.11(g) 36 Mbps, Low Channel 5742 MHz				
Frequency Range		Value	Limit	Result
32 GHz - 40 GHz		-40.36 dBc	≤ -20 dBc	Pass



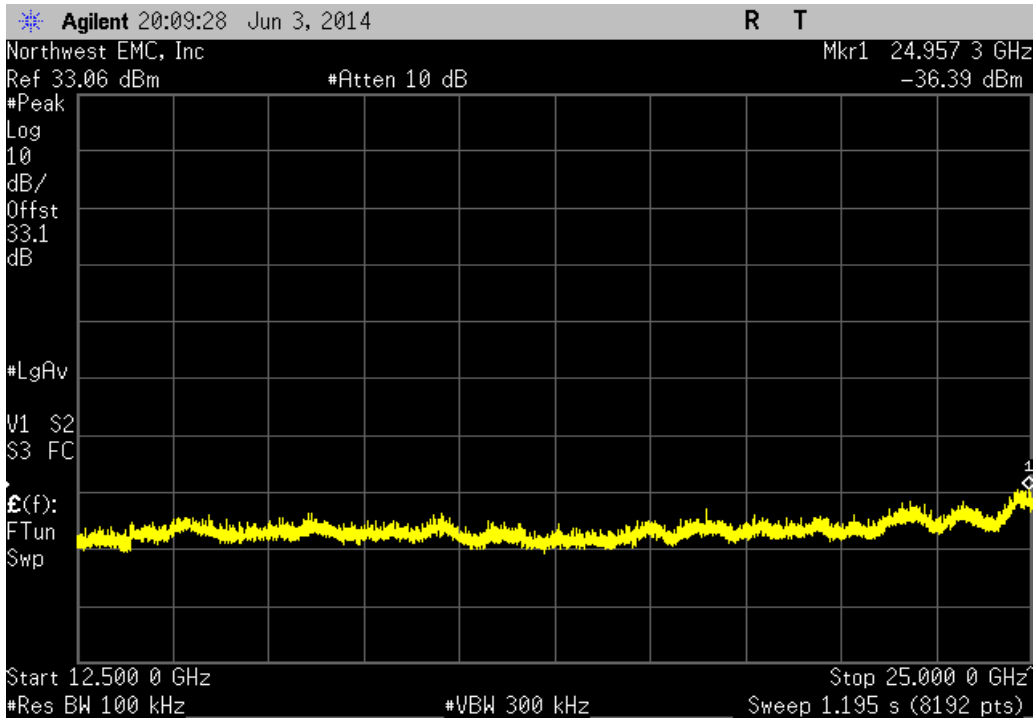
Chain 1, 5725 MHz - 5825 MHz Band, 10 MHz, 802.11(g) 36 Mbps, Mid Channel 5782 MHz				
Frequency Range		Value	Limit	Result
Fundamental		N/A	N/A	N/A



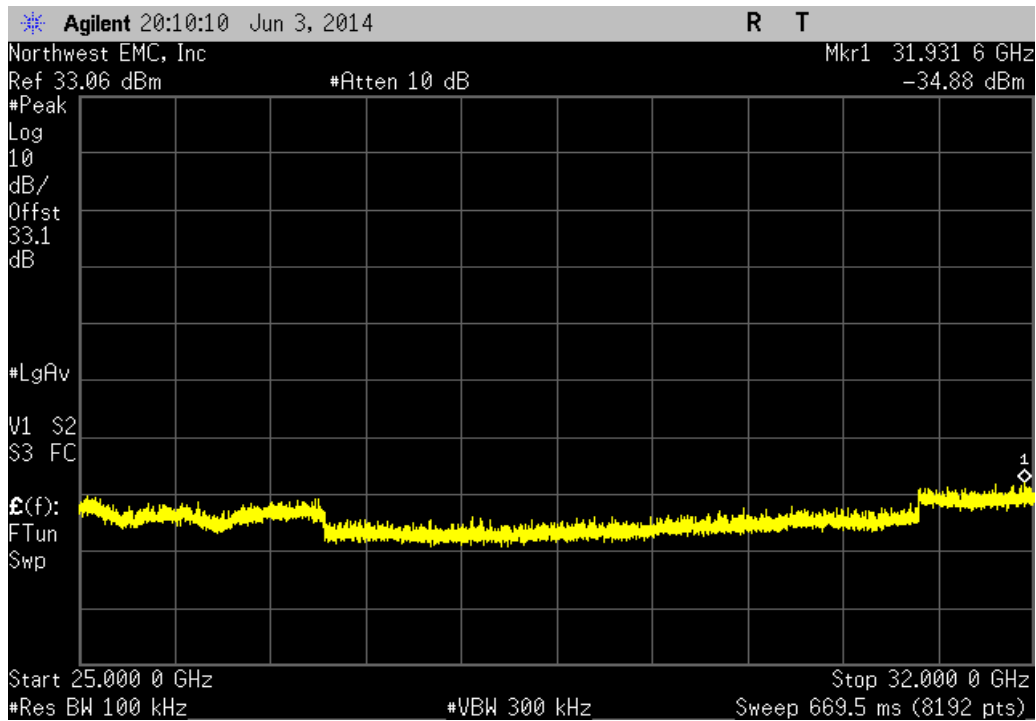
Chain 1, 5725 MHz - 5825 MHz Band, 10 MHz, 802.11(g) 36 Mbps, Mid Channel 5782 MHz			
Frequency Range	Value	Limit	Result
30 MHz - 12.5 GHz	-56.66 dBc	≤ -20 dBc	Pass



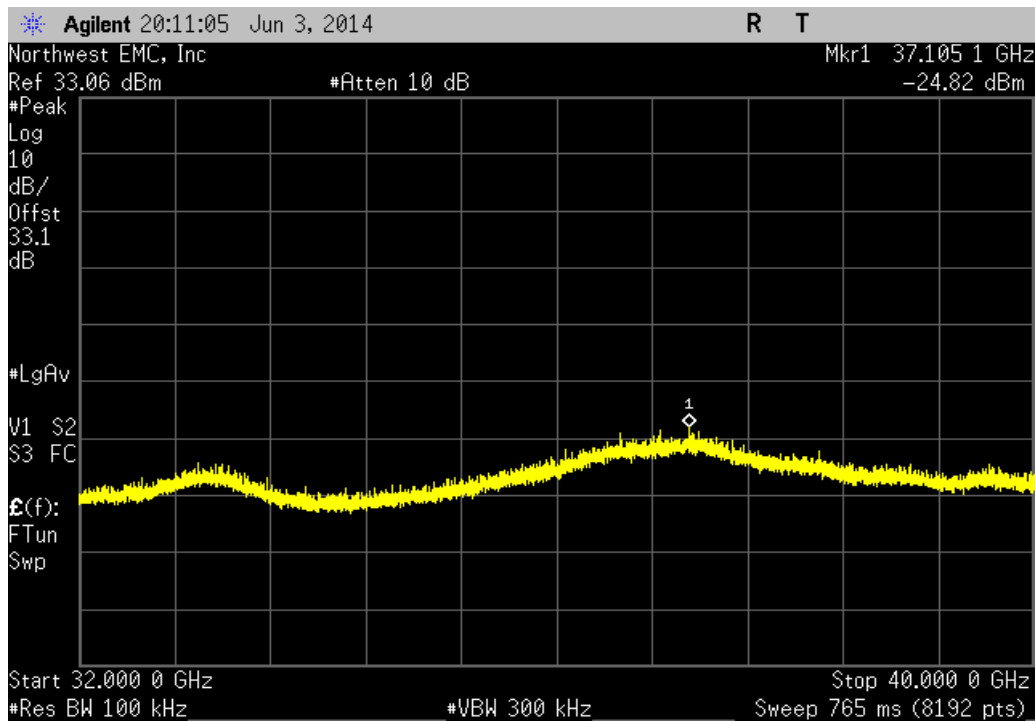
Chain 1, 5725 MHz - 5825 MHz Band, 10 MHz, 802.11(g) 36 Mbps, Mid Channel 5782 MHz			
Frequency Range	Value	Limit	Result
12.5 GHz - 25 GHz	-50.37 dBc	≤ -20 dBc	Pass



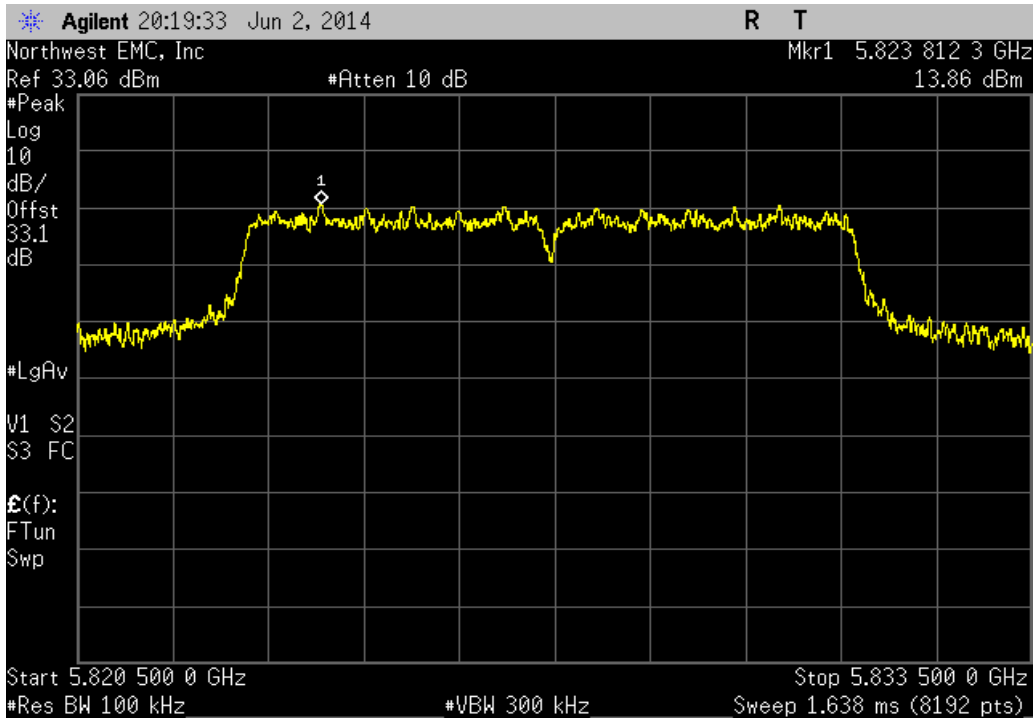
Chain 1, 5725 MHz - 5825 MHz Band, 10 MHz, 802.11(g) 36 Mbps, Mid Channel 5782 MHz				
Frequency Range		Value	Limit	Result
25 GHz - 32 GHz		-48.86 dBc	≤ -20 dBc	Pass



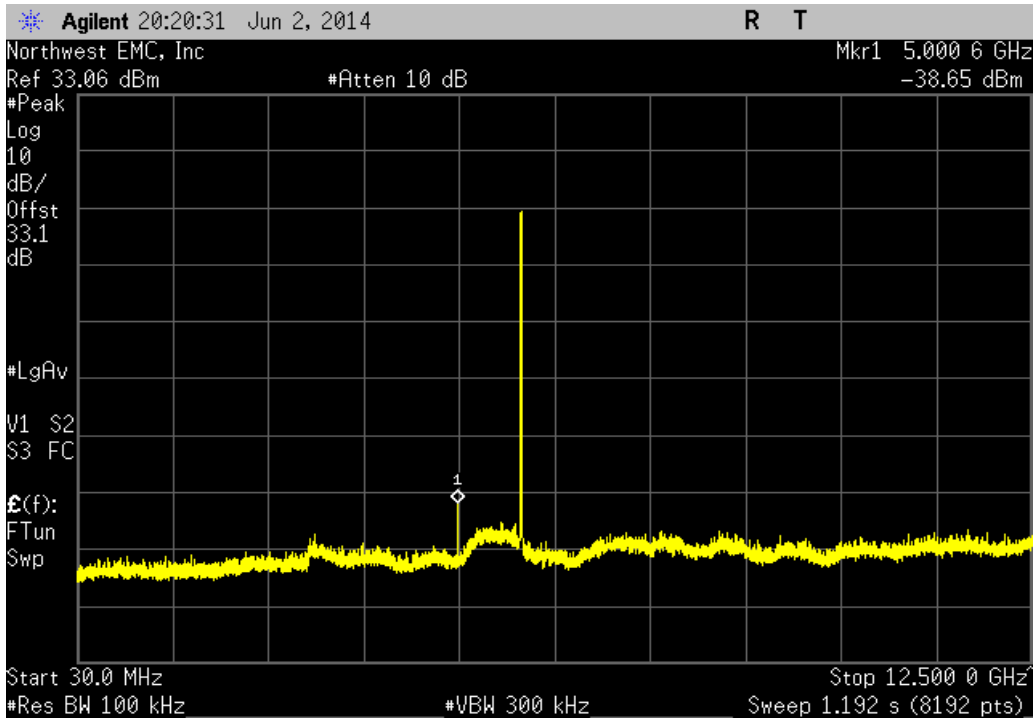
Chain 1, 5725 MHz - 5825 MHz Band, 10 MHz, 802.11(g) 36 Mbps, Mid Channel 5782 MHz				
Frequency Range		Value	Limit	Result
32 GHz - 40 GHz		-38.8 dBc	≤ -20 dBc	Pass



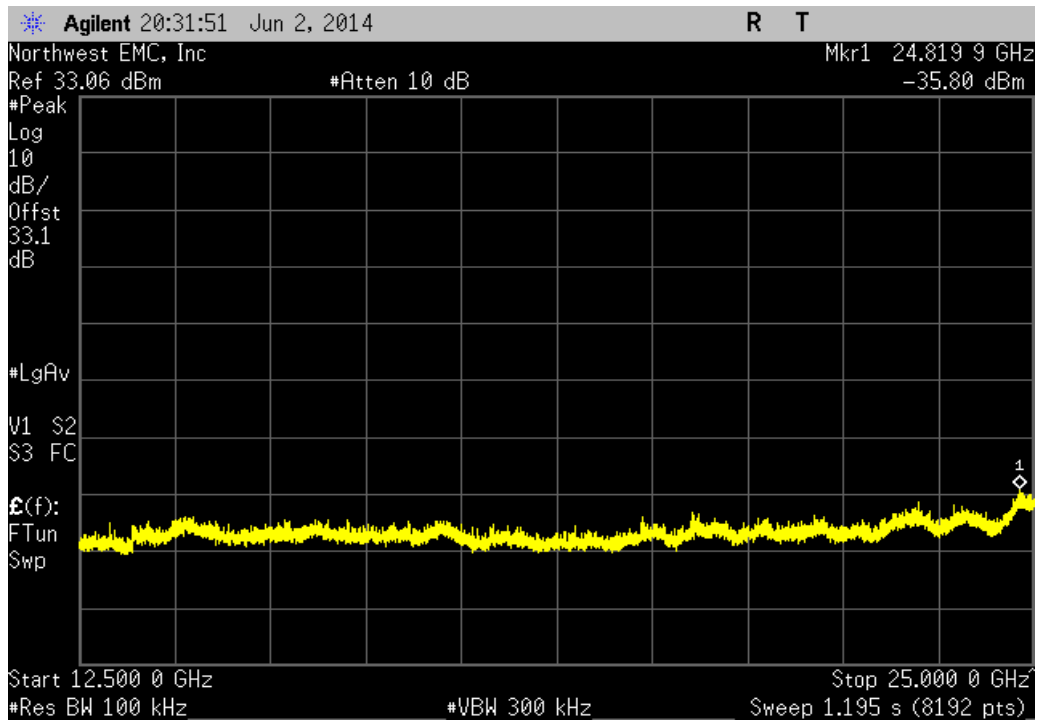
Chain 1, 5725 MHz - 5825 MHz Band, 10 MHz, 802.11(g) 36 Mbps, High Channel 5827 MHz						
Frequency Range		Value	Limit	Result		
Fundamental		N/A	N/A	N/A		



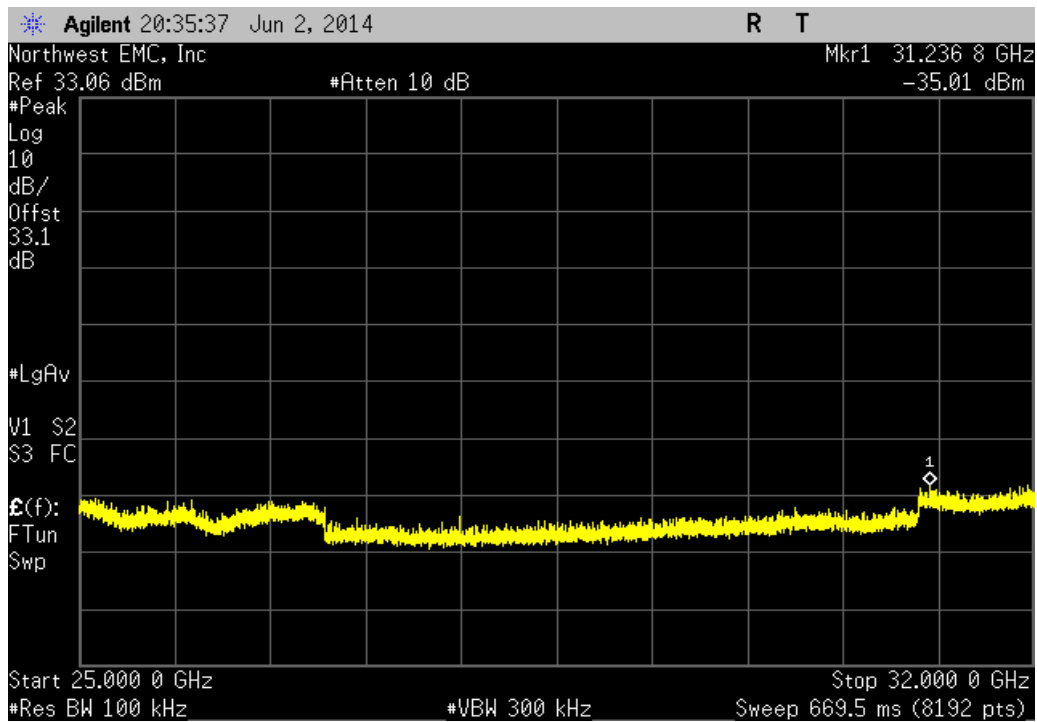
Chain 1, 5725 MHz - 5825 MHz Band, 10 MHz, 802.11(g) 36 Mbps, High Channel 5827 MHz						
Frequency Range		Value	Limit	Result		
30 MHz - 12.5 GHz		-52.51 dBc	≤ -20 dBc	Pass		



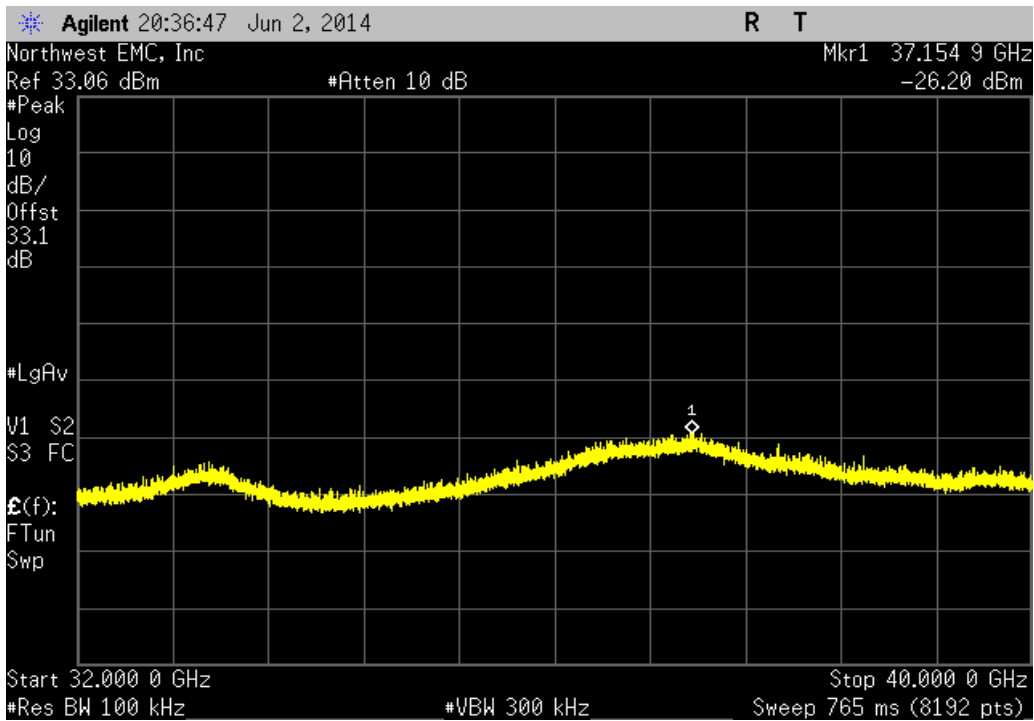
Chain 1, 5725 MHz - 5825 MHz Band, 10 MHz, 802.11(g) 36 Mbps, High Channel 5827 MHz				
Frequency Range		Value	Limit	Result
12.5 GHz - 25 GHz		-49.66 dBc	≤ -20 dBc	Pass



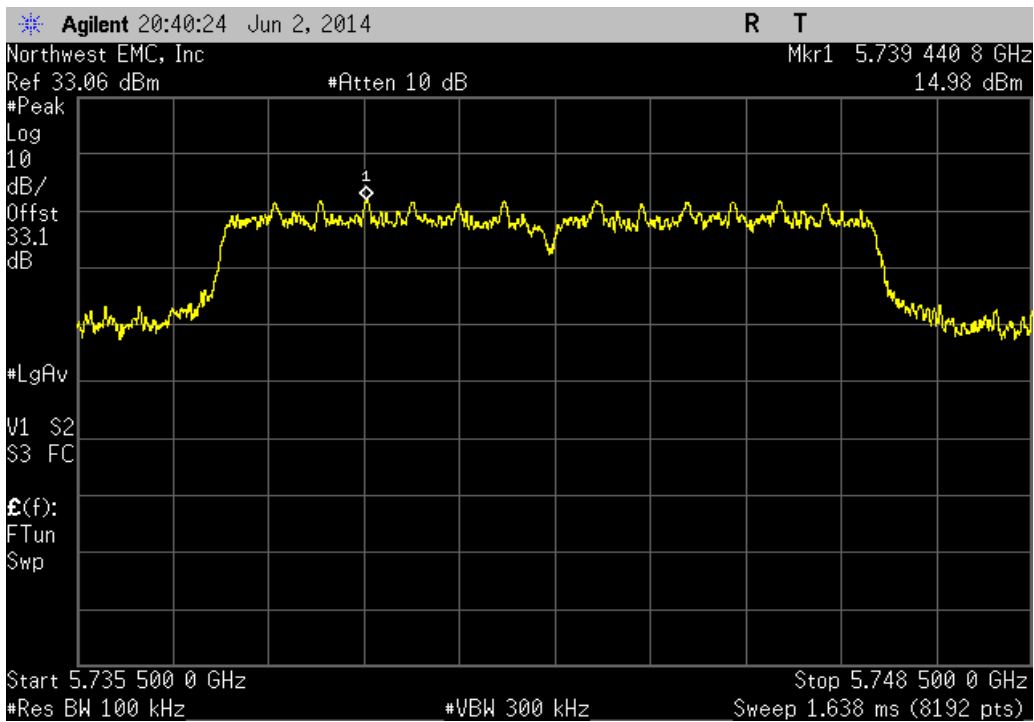
Chain 1, 5725 MHz - 5825 MHz Band, 10 MHz, 802.11(g) 36 Mbps, High Channel 5827 MHz				
Frequency Range		Value	Limit	Result
25 GHz - 32 GHz		-48.87 dBc	≤ -20 dBc	Pass



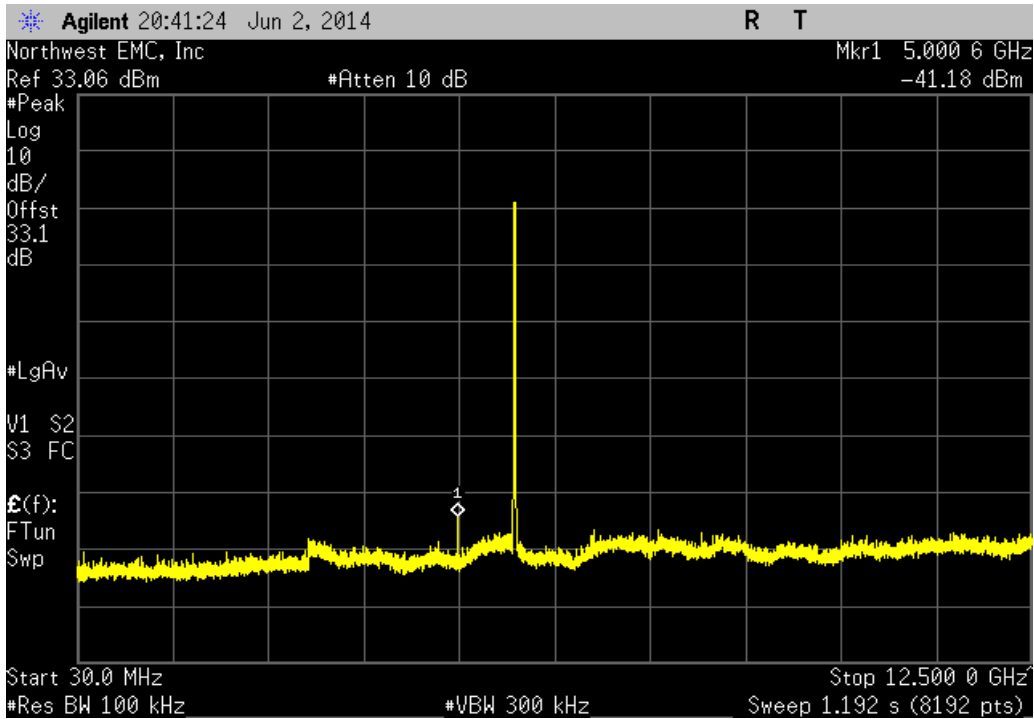
Chain 1, 5725 MHz - 5825 MHz Band, 10 MHz, 802.11(g) 36 Mbps, High Channel 5827 MHz				
Frequency Range		Value	Limit	Result
32 GHz - 40 GHz		-40.06 dBc	≤ -20 dBc	Pass



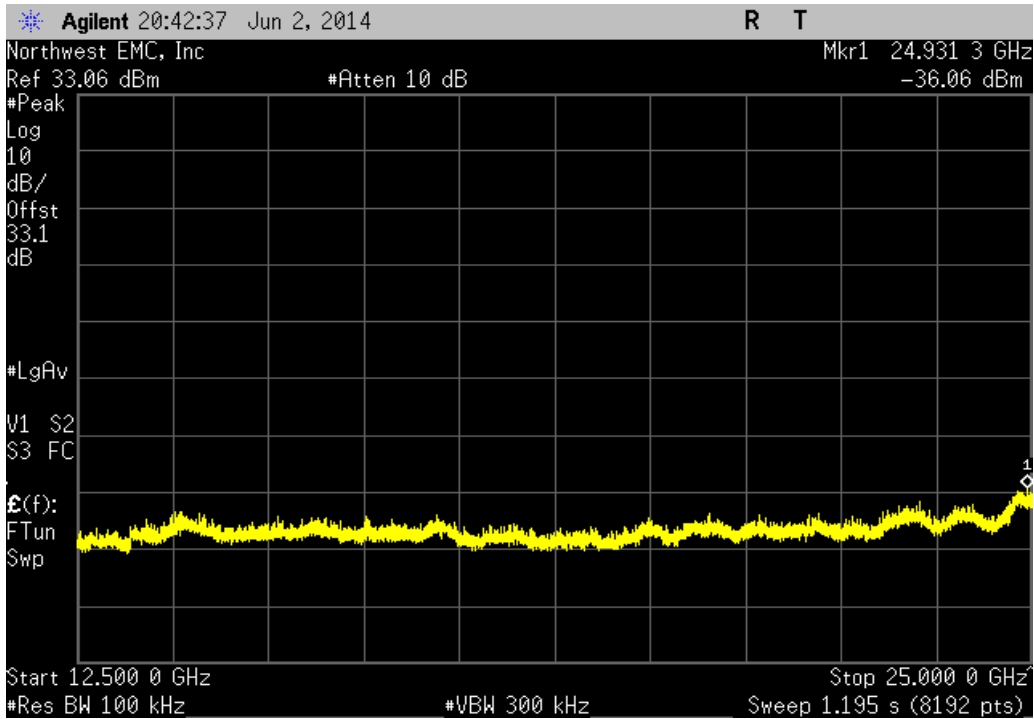
Chain 1, 5725 MHz - 5825 MHz Band, 10 MHz, 802.11(n) MCS7 - UNII, Low Channel 5742 MHz				
Frequency Range		Value	Limit	Result
Fundamental		N/A	N/A	N/A



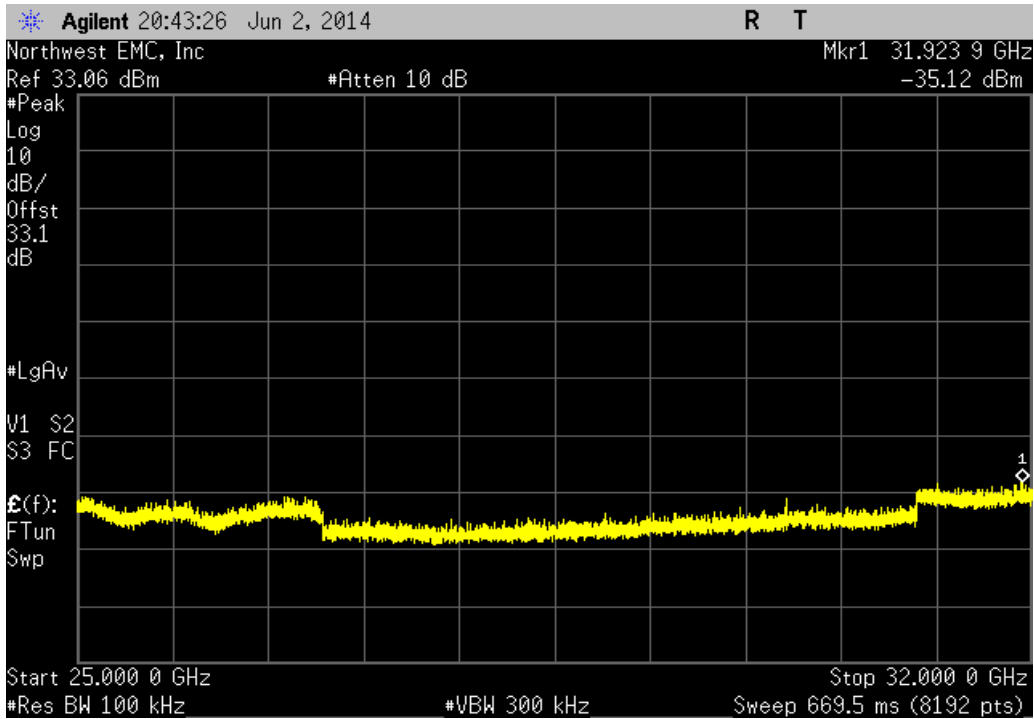
Chain 1, 5725 MHz - 5825 MHz Band, 10 MHz, 802.11(n) MCS7 - UNII, Low Channel 5742 MHz			
Frequency Range	Value	Limit	Result
30 MHz - 12.5 GHz	-56.16 dBc	≤ -20 dBc	Pass



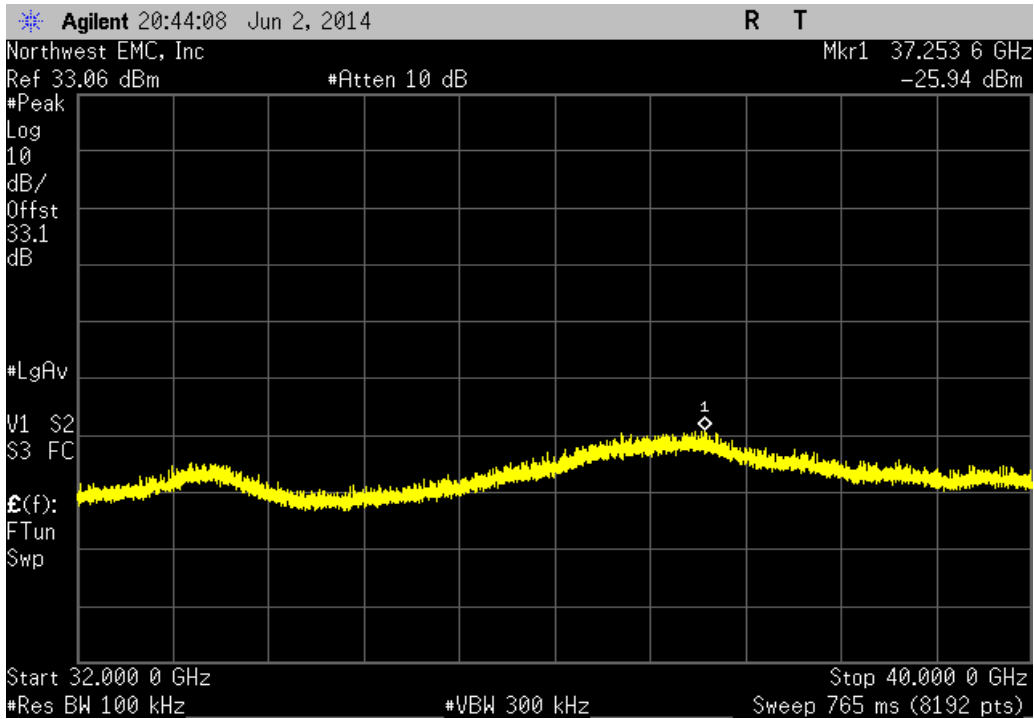
Chain 1, 5725 MHz - 5825 MHz Band, 10 MHz, 802.11(n) MCS7 - UNII, Low Channel 5742 MHz			
Frequency Range	Value	Limit	Result
12.5 GHz - 25 GHz	-51.04 dBc	≤ -20 dBc	Pass



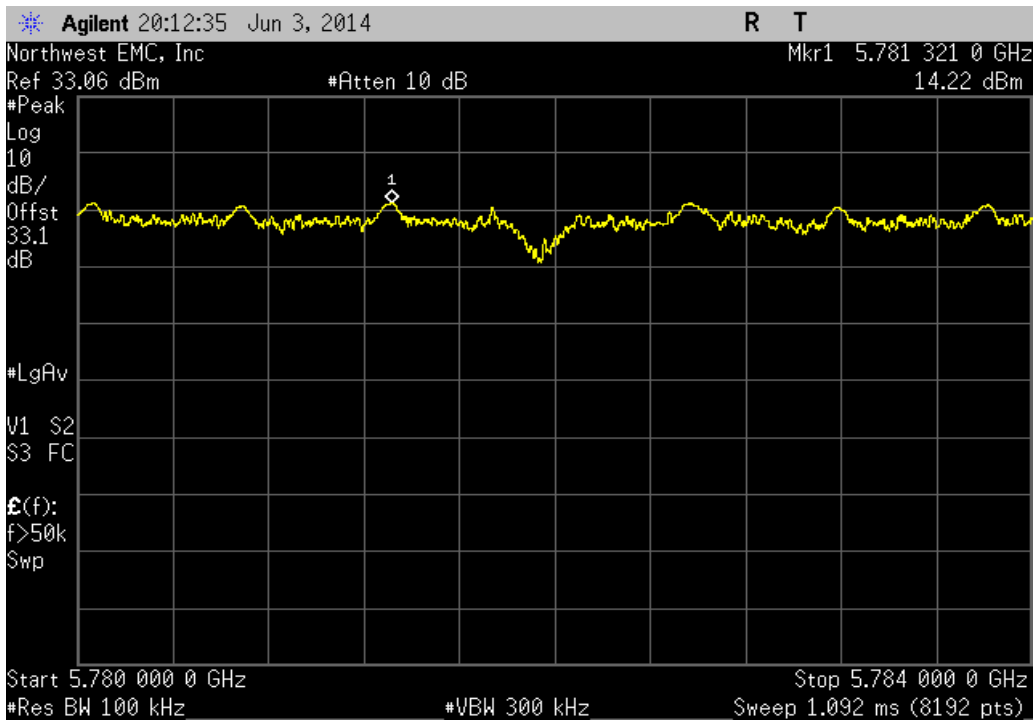
Chain 1, 5725 MHz - 5825 MHz Band, 10 MHz, 802.11(n) MCS7 - UNII, Low Channel 5742 MHz				
Frequency Range		Value	Limit	Result
25 GHz - 32 GHz		-50.1 dBc	≤ -20 dBc	Pass



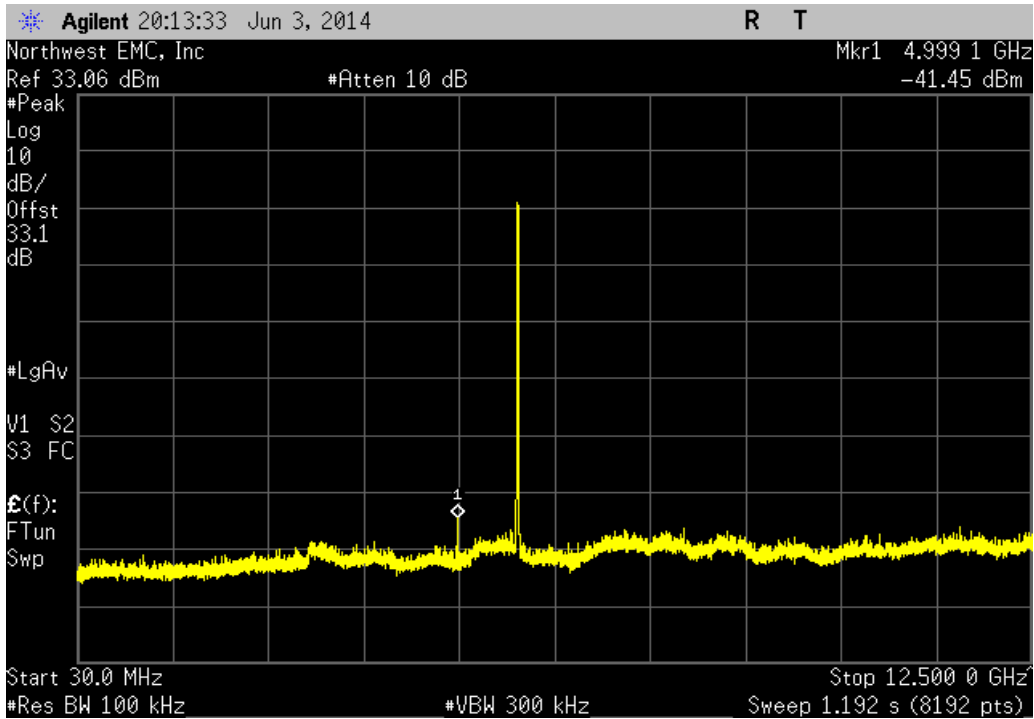
Chain 1, 5725 MHz - 5825 MHz Band, 10 MHz, 802.11(n) MCS7 - UNII, Low Channel 5742 MHz				
Frequency Range		Value	Limit	Result
32 GHz - 40 GHz		-40.92 dBc	≤ -20 dBc	Pass



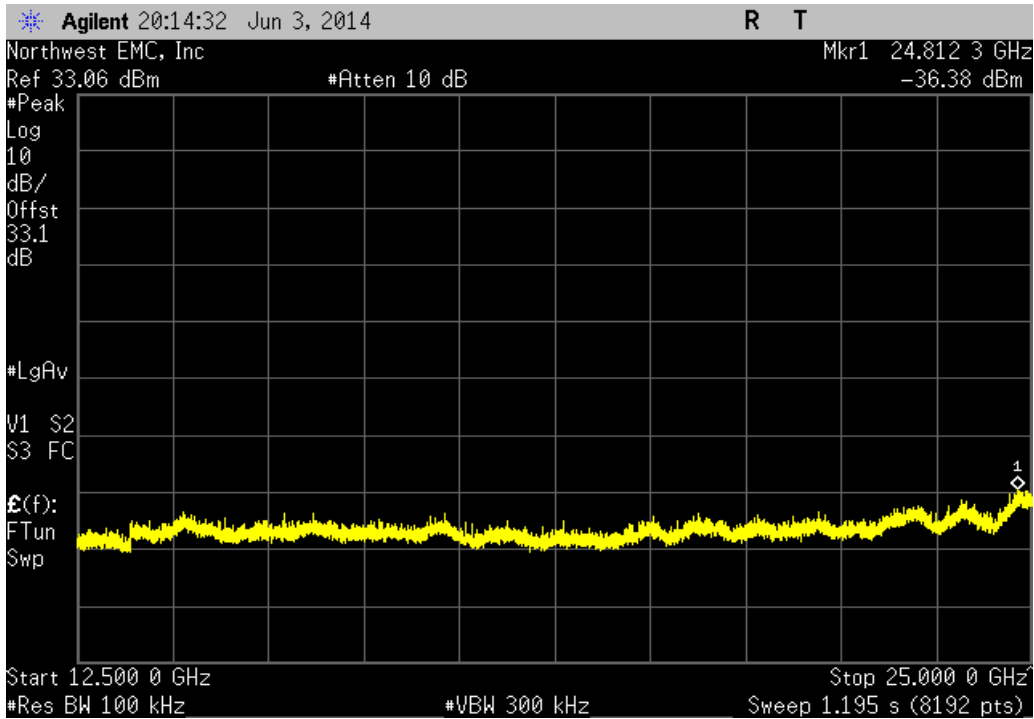
Chain 1, 5725 MHz - 5825 MHz Band, 10 MHz, 802.11(n) MCS7 - UNII, Mid Channel 5782 MHz						
Frequency Range		Value	Limit	Result		
Fundamental		N/A	N/A	N/A		



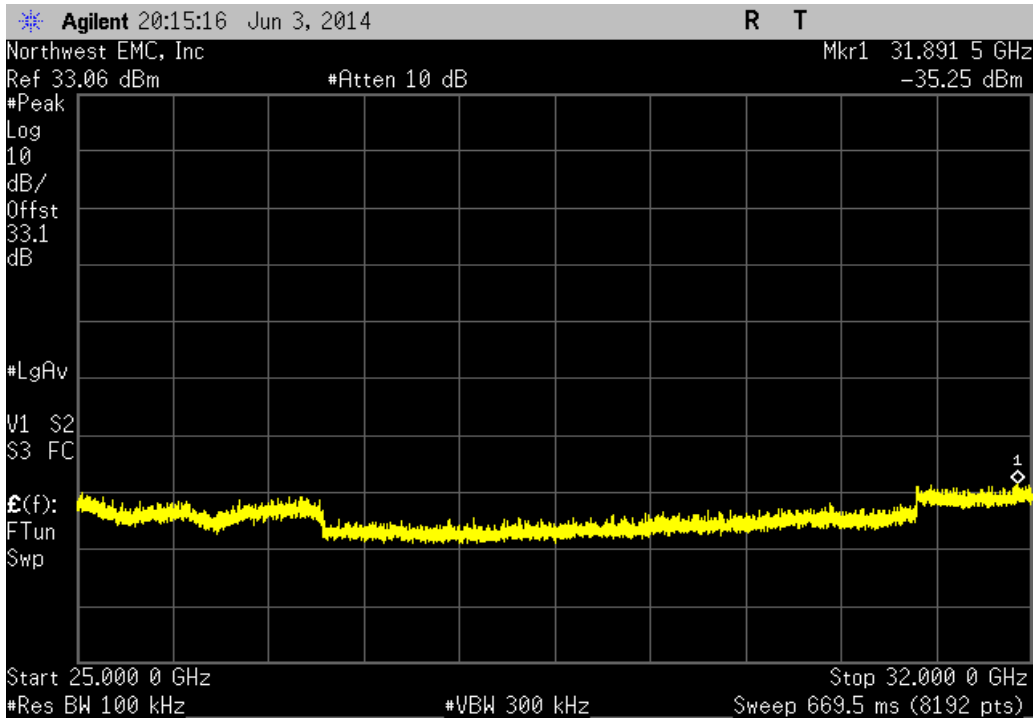
Chain 1, 5725 MHz - 5825 MHz Band, 10 MHz, 802.11(n) MCS7 - UNII, Mid Channel 5782 MHz						
Frequency Range		Value	Limit	Result		
30 MHz - 12.5 GHz		-55.67 dBc	≤ -20 dBc	Pass		



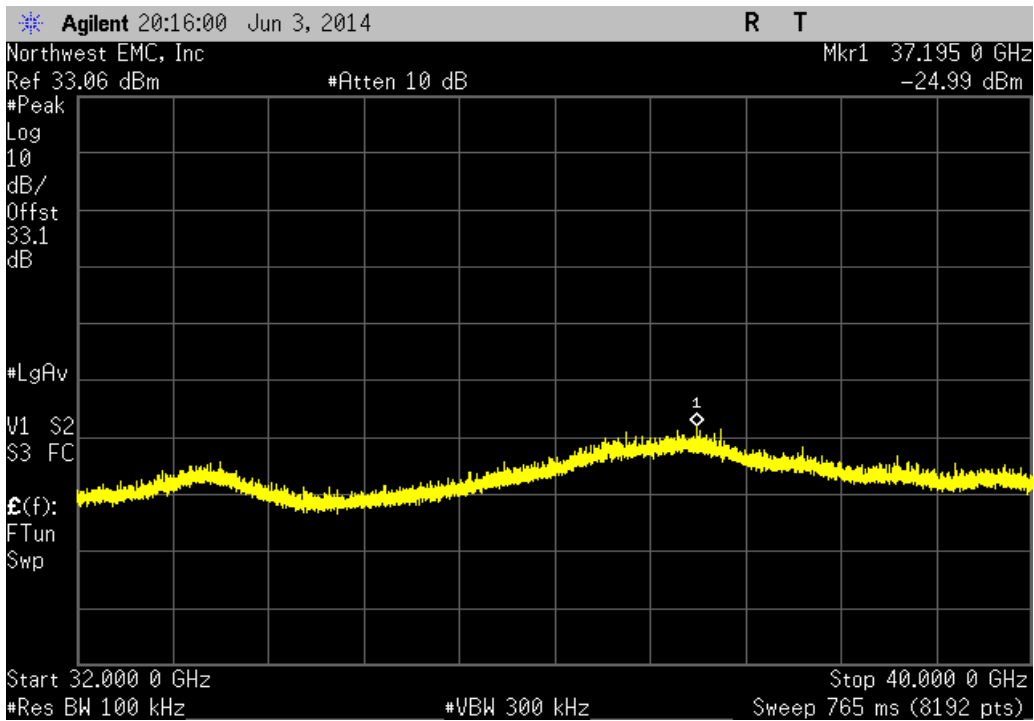
Chain 1, 5725 MHz - 5825 MHz Band, 10 MHz, 802.11(n) MCS7 - UNII, Mid Channel 5782 MHz				
Frequency Range		Value	Limit	Result
12.5 GHz - 25 GHz		-50.6 dBc	≤ -20 dBc	Pass



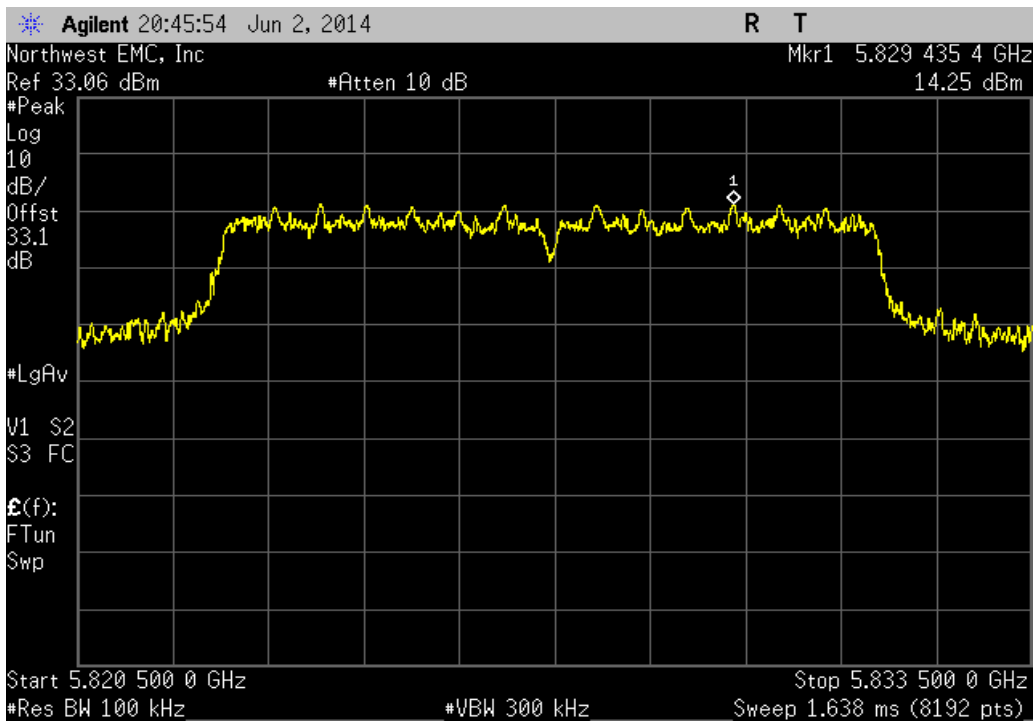
Chain 1, 5725 MHz - 5825 MHz Band, 10 MHz, 802.11(n) MCS7 - UNII, Mid Channel 5782 MHz				
Frequency Range		Value	Limit	Result
25 GHz - 32 GHz		-49.47 dBc	≤ -20 dBc	Pass



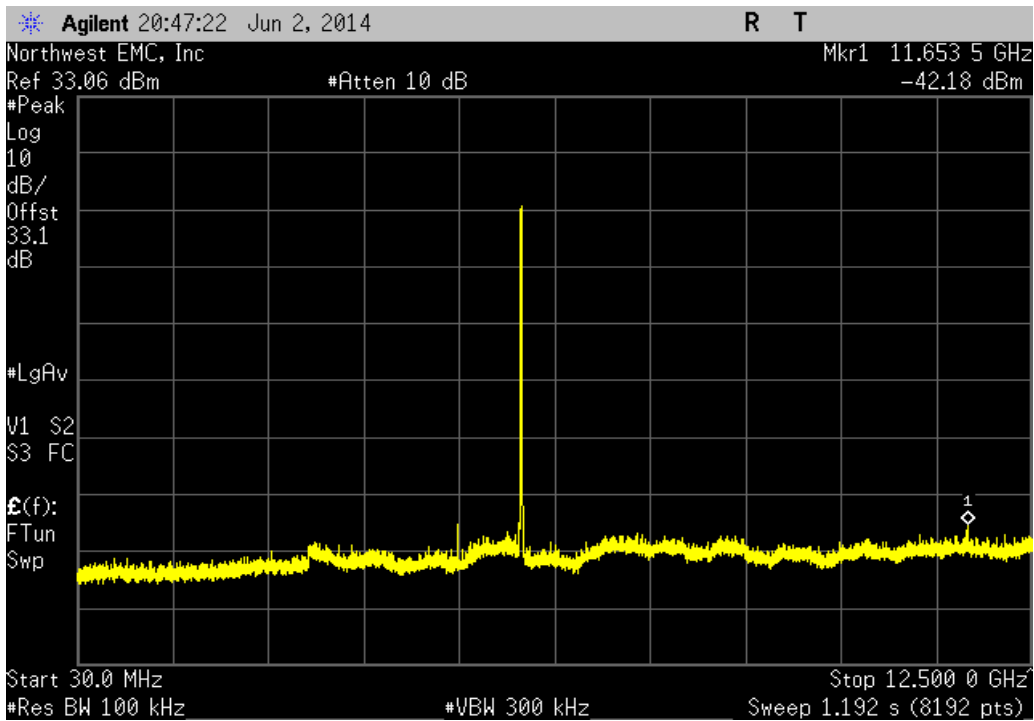
Chain 1, 5725 MHz - 5825 MHz Band, 10 MHz, 802.11(n) MCS7 - UNII, Mid Channel 5782 MHz				
Frequency Range		Value	Limit	Result
32 GHz - 40 GHz		-39.21 dBc	≤ -20 dBc	Pass



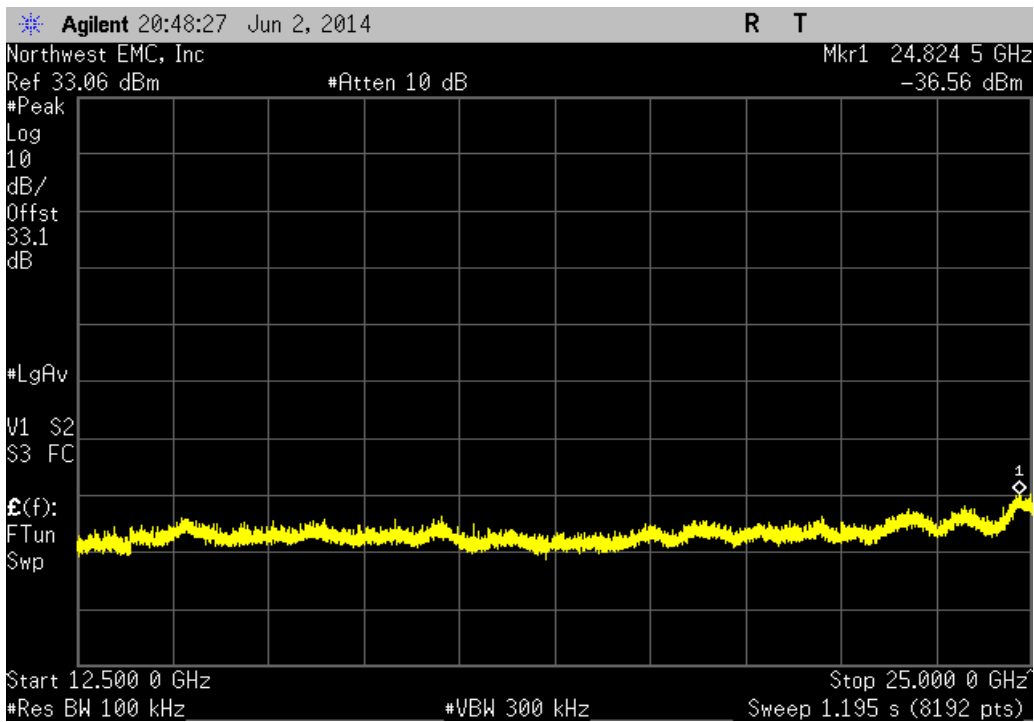
Chain 1, 5725 MHz - 5825 MHz Band, 10 MHz, 802.11(n) MCS7 - UNII, High Channel 5827 MHz				
Frequency Range		Value	Limit	Result
Fundamental		N/A	N/A	N/A



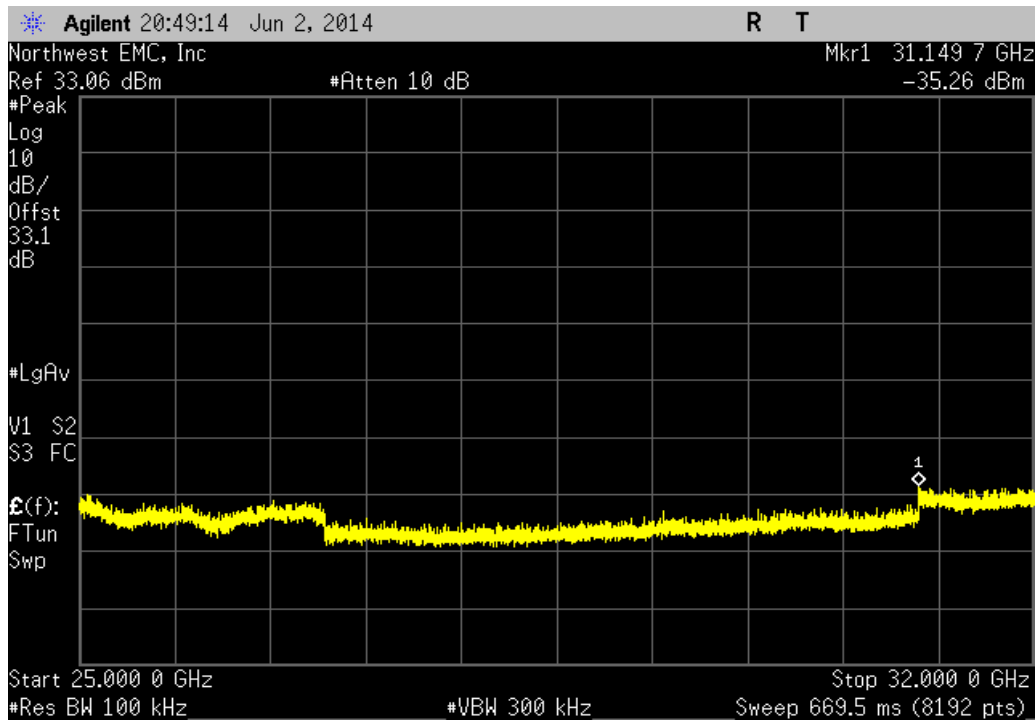
Chain 1, 5725 MHz - 5825 MHz Band, 10 MHz, 802.11(n) MCS7 - UNII, High Channel 5827 MHz			
Frequency Range	Value	Limit	Result
30 MHz - 12.5 GHz	-56.43 dBc	≤ -20 dBc	Pass



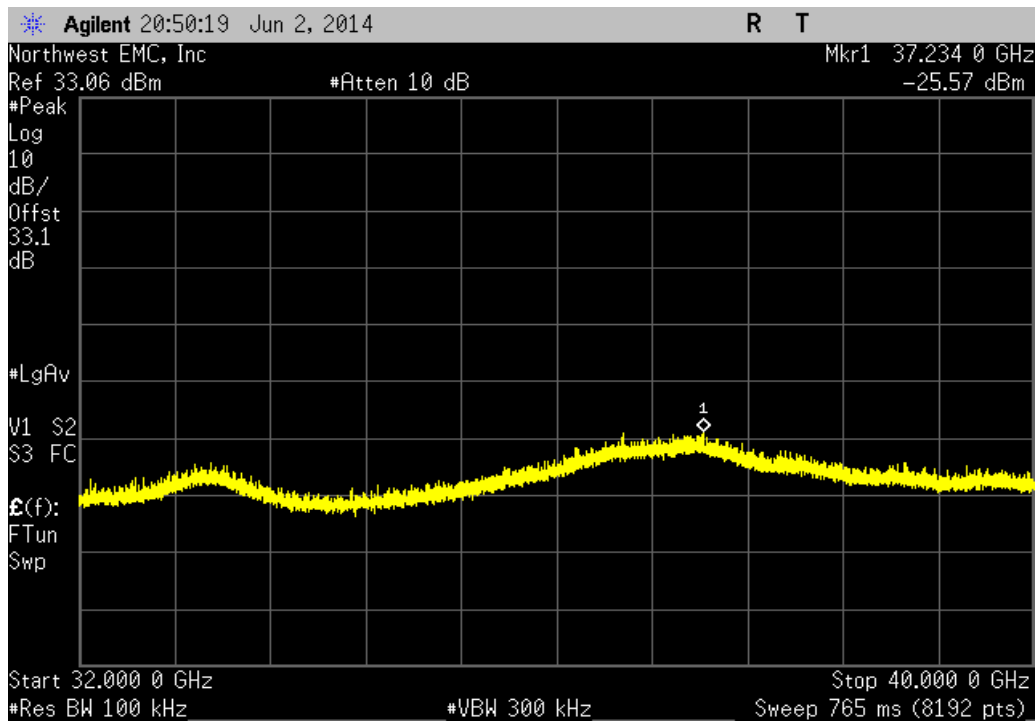
Chain 1, 5725 MHz - 5825 MHz Band, 10 MHz, 802.11(n) MCS7 - UNII, High Channel 5827 MHz			
Frequency Range	Value	Limit	Result
12.5 GHz - 25 GHz	-50.81 dBc	≤ -20 dBc	Pass



Chain 1, 5725 MHz - 5825 MHz Band, 10 MHz, 802.11(n) MCS7 - UNII, High Channel 5827 MHz				
Frequency Range		Value	Limit	Result
25 GHz - 32 GHz		-49.52 dBc	≤ -20 dBc	Pass



Chain 1, 5725 MHz - 5825 MHz Band, 10 MHz, 802.11(n) MCS7 - UNII, High Channel 5827 MHz				
Frequency Range		Value	Limit	Result
32 GHz - 40 GHz		-39.82 dBc	≤ -20 dBc	Pass



**SPURIOUS CONDUCTED
EMISSIONS MIMO 2x2**

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval (mo)
Attenuator, 'Precision N'	S.M. Electronics	SA18N-06/SM4032	REE	10/20/2014	12
MXG Analog Signal Generator	Agilent	N5181A	TIG	3/28/2014	36
Power Meter	Gigatronics	8651A	SPM	9/17/2014	12
Power Sensor	Gigatronics	80701A	SPL	5/28/2014	12
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2014	12
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Spectrum Analyzer	Agilent	E4446A	AAQ	1/21/2014	12

TEST DESCRIPTION

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



SPURIOUS CONDUCTED EMISSIONS MIMO 2x2

XMit 2014.02.07
NweTx 2014.07.18.4

EUT: WavePoint - 5GHz Radio (W5800-01)	Work Order: FREW0041
Serial Number: 00:07:E7:A0:01:B6	Date: 11/14/14
Customer: FreeWave Technologies, Inc.	Temperature: 23.0°C
Attendees: None	Humidity: 25%
Project: None	Barometric Pres.: 1012.64
Tested by: Brandon Hobbs	Power: 110VAC/60Hz
	Job Site: EV06

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

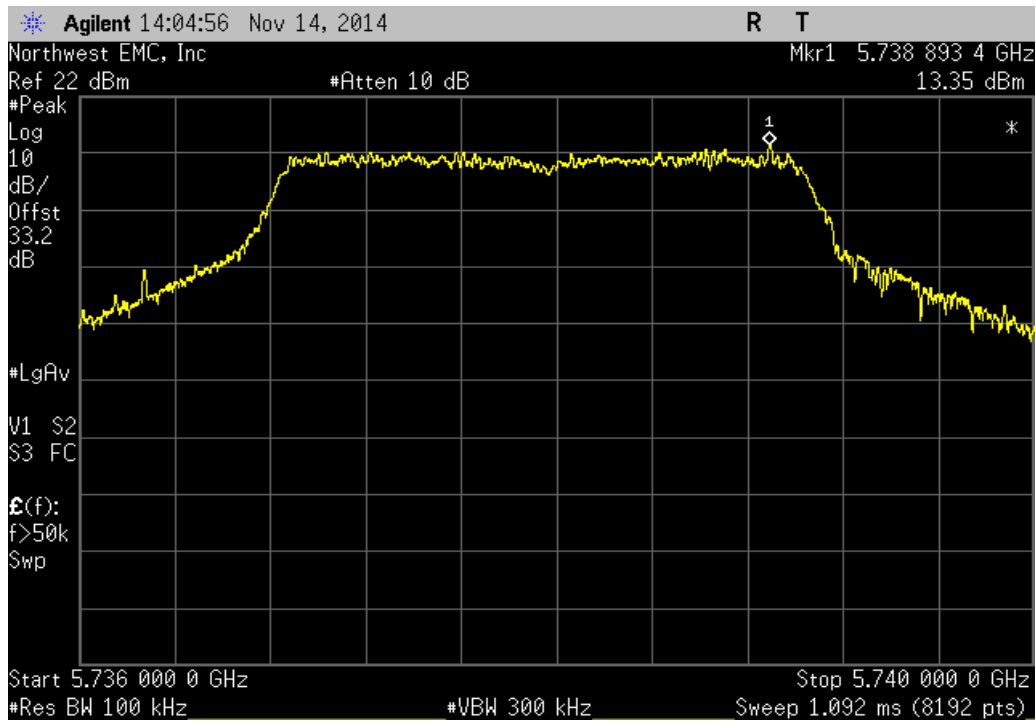
COMMENTS
The High and Low Channels were measured using the worst case modulation found for 8011(n) MIMO modes. An additional 40GHz DC block and 10dB 5watt attenuator were used inline for all measurements made while under test. Please reference the power table for power settings used while under test.

DEVIATIONS FROM TEST STANDARD
None

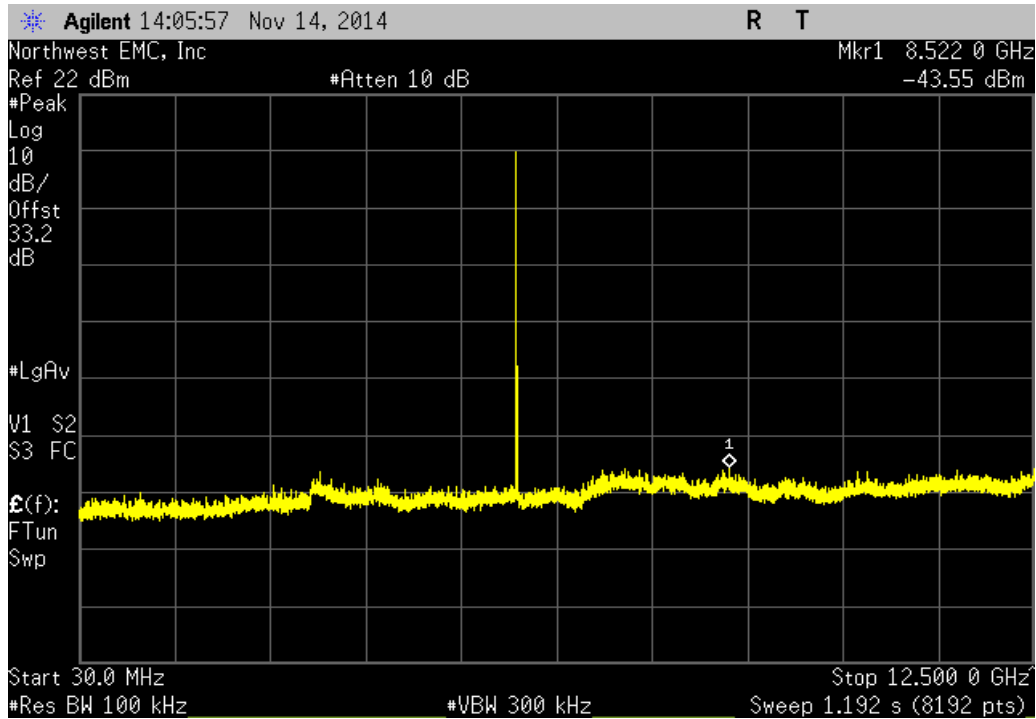
Configuration #	1	Signature
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Chain	Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result
2.5MHz Bandwidth				
2x2 Modulation Type, 64-QAM, Coding Rate, 5/6				
Low Channel 5738MHz	Fundamental	N/A	N/A	N/A
Low Channel 5738MHz	30 MHz - 12.5 GHz	-56.9	-20	Pass
Low Channel 5738MHz	12.5 GHz - 25 GHz	-49.46	-20	Pass
Low Channel 5738MHz	25 GHz - 32 GHz	-47.77	-20	Pass
Low Channel 5738MHz	32 GHz - 40 GHz	-38.23	-20	Pass
Mid Channel 5783MHz	Fundamental	N/A	N/A	N/A
Mid Channel 5783MHz	30 MHz - 12.5 GHz	-56.1	-20	Pass
Mid Channel 5783MHz	12.5 GHz - 25 GHz	-49.13	-20	Pass
Mid Channel 5783MHz	25 GHz - 32 GHz	-47.22	-20	Pass
Mid Channel 5783MHz	32 GHz - 40 GHz	-38.11	-20	Pass
High Channel 5831MHz	Fundamental	N/A	N/A	N/A
High Channel 5831MHz	30 MHz - 12.5 GHz	-55.13	-20	Pass
High Channel 5831MHz	12.5 GHz - 25 GHz	-47.53	-20	Pass
High Channel 5831MHz	25 GHz - 32 GHz	-46.11	-20	Pass
High Channel 5831MHz	32 GHz - 40 GHz	-37.21	-20	Pass
5MHz Bandwidth				
2x2 Modulation Type, 64-QAM, Coding Rate, 5/6				
Low Channel 5739MHz	Fundamental	N/A	N/A	N/A
Low Channel 5739MHz	30 MHz - 12.5 GHz	-52.91	-20	Pass
Low Channel 5739MHz	12.5 GHz - 25 GHz	-45.53	-20	Pass
Low Channel 5739MHz	25 GHz - 32 GHz	-43.2	-20	Pass
Low Channel 5739MHz	32 GHz - 40 GHz	-34.51	-20	Pass
Mid Channel 5784MHz	Fundamental	N/A	N/A	N/A
Mid Channel 5784MHz	30 MHz - 12.5 GHz	-51.95	-20	Pass
Mid Channel 5784MHz	12.5 GHz - 25 GHz	-45.55	-20	Pass
Mid Channel 5784MHz	25 GHz - 32 GHz	-43.82	-20	Pass
Mid Channel 5784MHz	32 GHz - 40 GHz	-33.52	-20	Pass
High Channel 5829MHz	Fundamental	N/A	N/A	N/A
High Channel 5829MHz	30 MHz - 12.5 GHz	-52.4	-20	Pass
High Channel 5829MHz	12.5 GHz - 25 GHz	-45.96	-20	Pass
High Channel 5829MHz	25 GHz - 32 GHz	-43.34	-20	Pass
High Channel 5829MHz	32 GHz - 40 GHz	-34.63	-20	Pass
10MHz Bandwidth				
2x2 Modulation Type, 64-QAM, Coding Rate, 5/6				
Low Channel 5742MHz	Fundamental	N/A	N/A	N/A
Low Channel 5742MHz	30 MHz - 12.5 GHz	-56.8	-20	Pass
Low Channel 5742MHz	12.5 GHz - 25 GHz	-50.28	-20	Pass
Low Channel 5742MHz	25 GHz - 32 GHz	-48.45	-20	Pass
Low Channel 5742MHz	32 GHz - 40 GHz	-39.6	-20	Pass
Mid Channel 5782MHz	Fundamental	N/A	N/A	N/A
Mid Channel 5782MHz	30 MHz - 12.5 GHz	-54.75	-20	Pass
Mid Channel 5782MHz	12.5 GHz - 25 GHz	-49.14	-20	Pass
Mid Channel 5782MHz	25 GHz - 32 GHz	-48.77	-20	Pass
Mid Channel 5782MHz	32 GHz - 40 GHz	-39.29	-20	Pass
High Channel 5827MHz	Fundamental	N/A	N/A	N/A
High Channel 5827MHz	30 MHz - 12.5 GHz	-53.18	-20	Pass
High Channel 5827MHz	12.5 GHz - 25 GHz	-48.68	-20	Pass
High Channel 5827MHz	25 GHz - 32 GHz	-47.28	-20	Pass
High Channel 5827MHz	32 GHz - 40 GHz	-37.68	-20	Pass

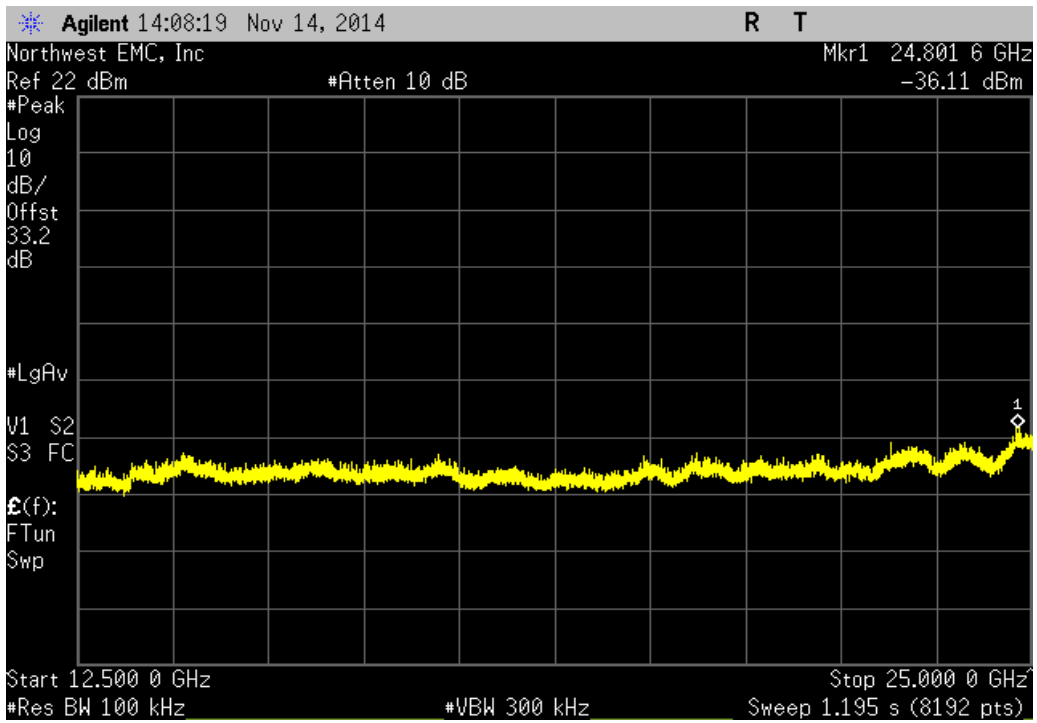
Chain 2, 2.5MHz Bandwidth , 2x2 Modulation Type, 64-QAM, Coding Rate, 5/6, Low Channel 5738MHz						
Frequency Range		Value (dBc)	Limit ≤ (dBc)	Result		
Fundamental		N/A	N/A	N/A		



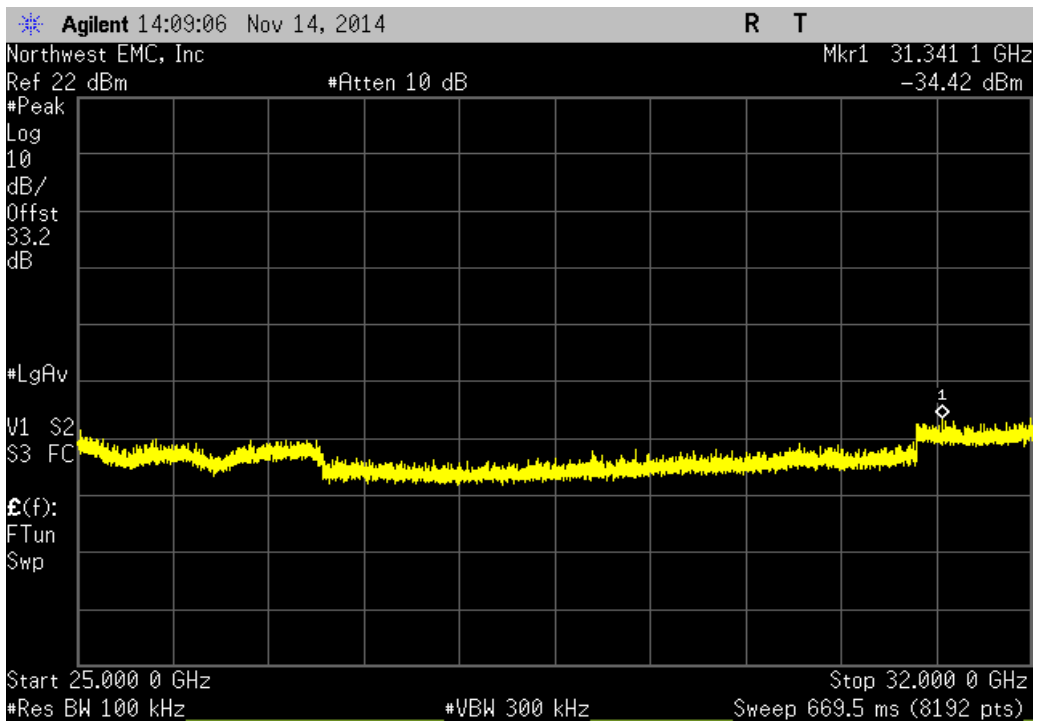
Chain 2, 2.5MHz Bandwidth , 2x2 Modulation Type, 64-QAM, Coding Rate, 5/6, Low Channel 5738MHz						
Frequency Range		Value (dBc)	Limit ≤ (dBc)	Result		
30 MHz - 12.5 GHz		-56.9	-20	Pass		



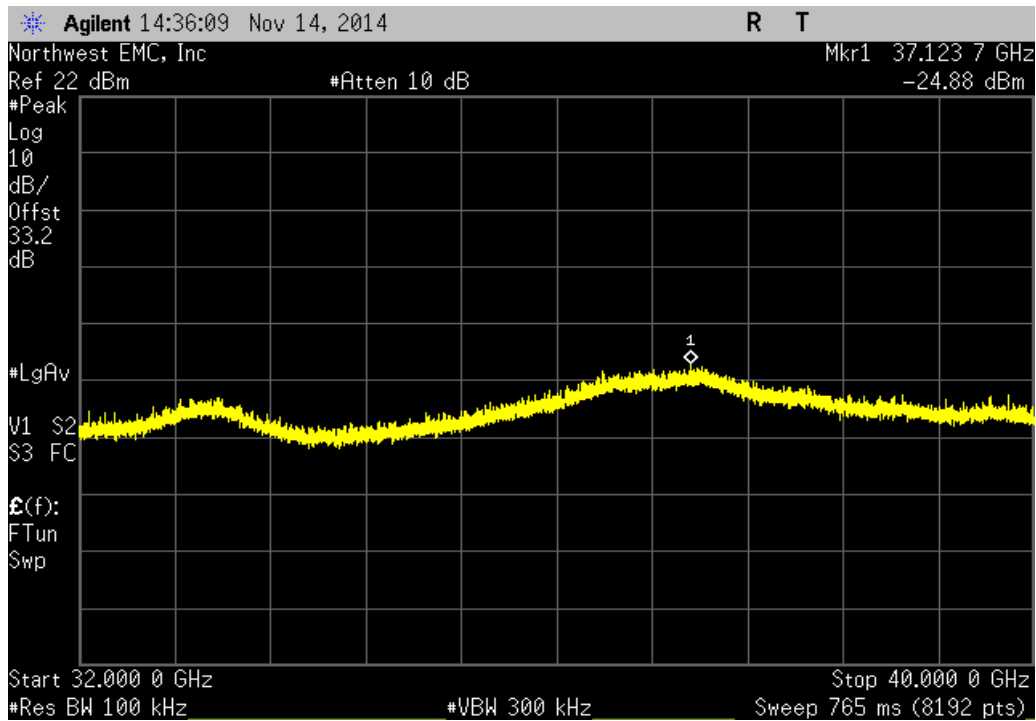
Chain 2, 2.5MHz Bandwidth , 2x2 Modulation Type, 64-QAM, Coding Rate, 5/6, Low Channel 5738MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	-49.46	-20	Pass	



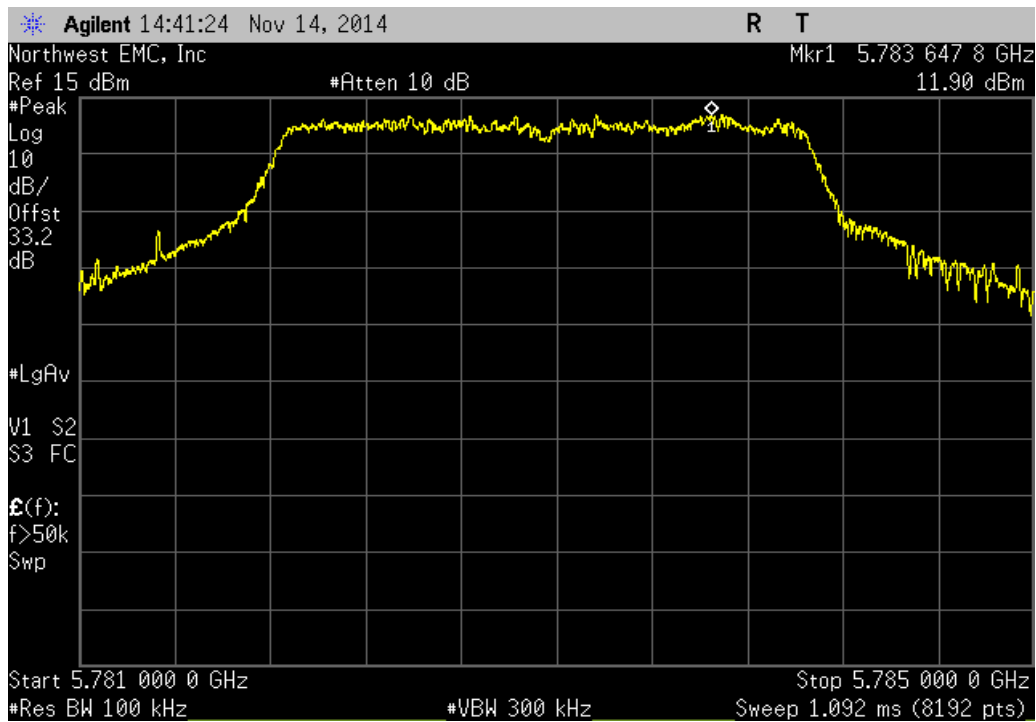
Chain 2, 2.5MHz Bandwidth , 2x2 Modulation Type, 64-QAM, Coding Rate, 5/6, Low Channel 5738MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
25 GHz - 32 GHz	-47.77	-20	Pass	



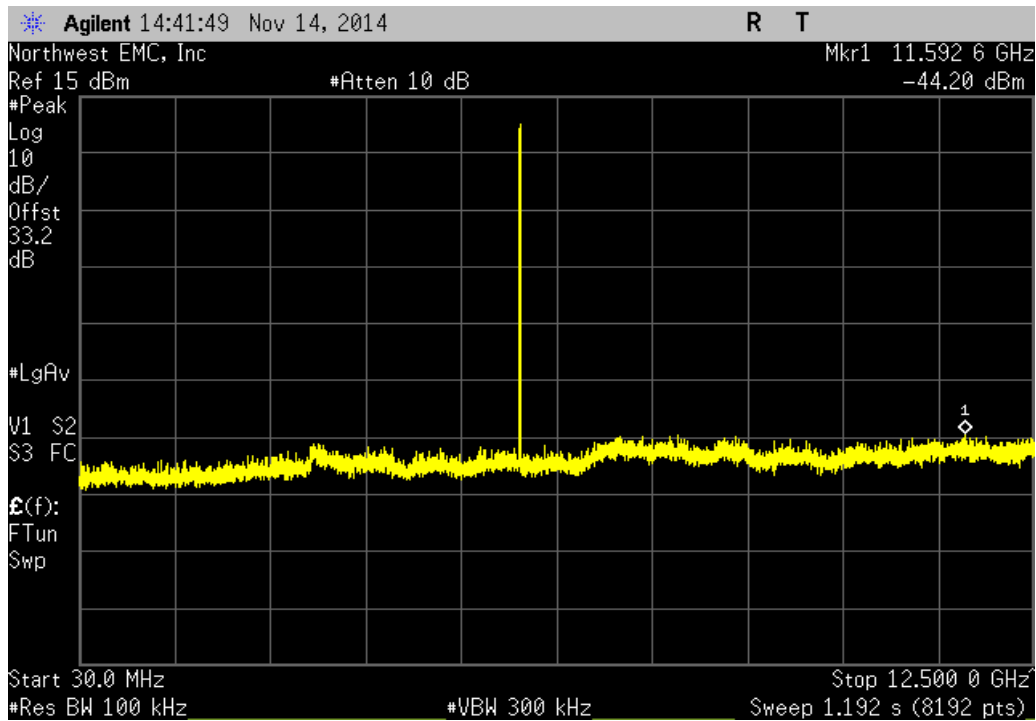
Chain 2, 2.5MHz Bandwidth , 2x2 Modulation Type, 64-QAM, Coding Rate, 5/6, Low Channel 5738MHz			
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result
32 GHz - 40 GHz	-38.23	-20	Pass



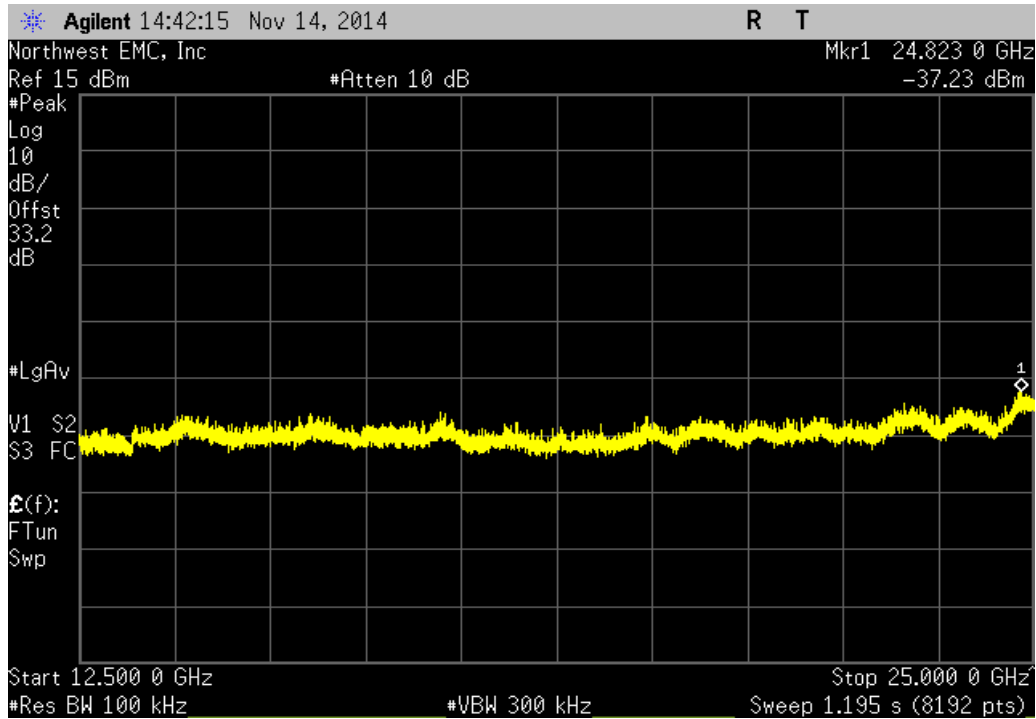
Chain 2, 2.5MHz Bandwidth , 2x2 Modulation Type, 64-QAM, Coding Rate, 5/6, Mid Channel 5783MHz			
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result
Fundamental	N/A	N/A	N/A



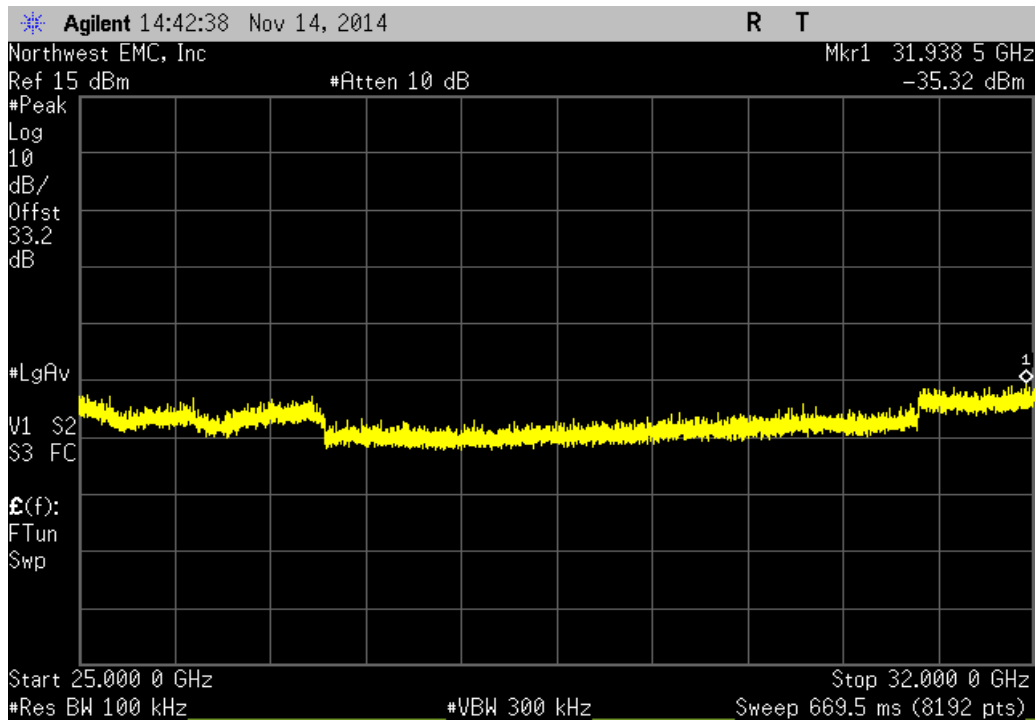
Chain 2, 2.5MHz Bandwidth , 2x2 Modulation Type, 64-QAM, Coding Rate, 5/6, Mid Channel 5783MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz	-56.1	-20	Pass	



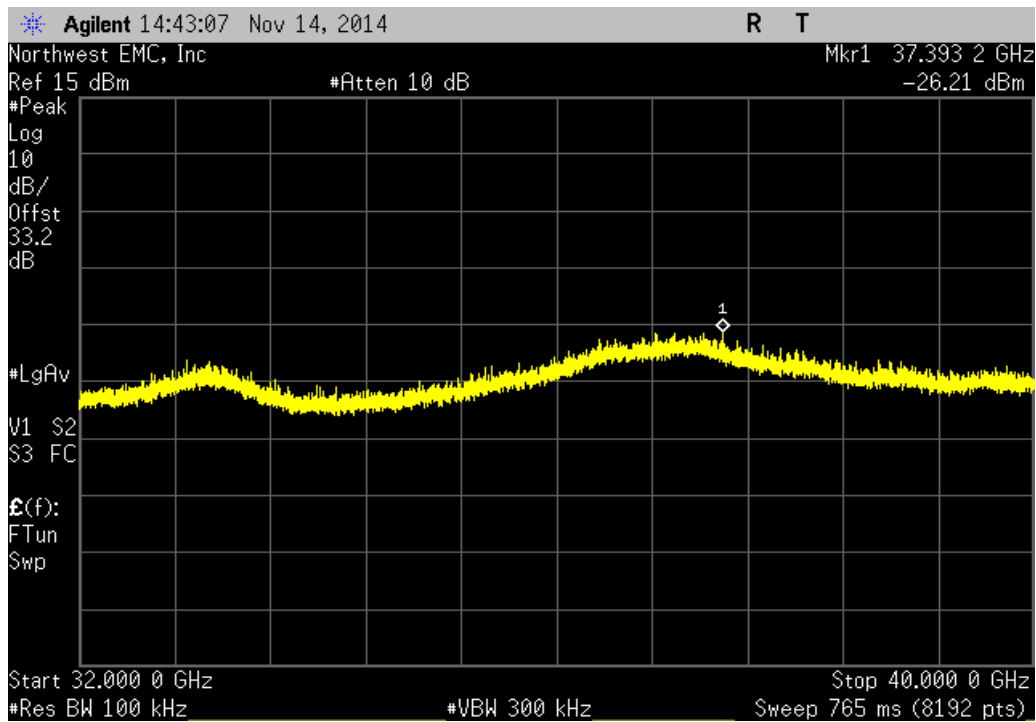
Chain 2, 2.5MHz Bandwidth , 2x2 Modulation Type, 64-QAM, Coding Rate, 5/6, Mid Channel 5783MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	-49.13	-20	Pass	



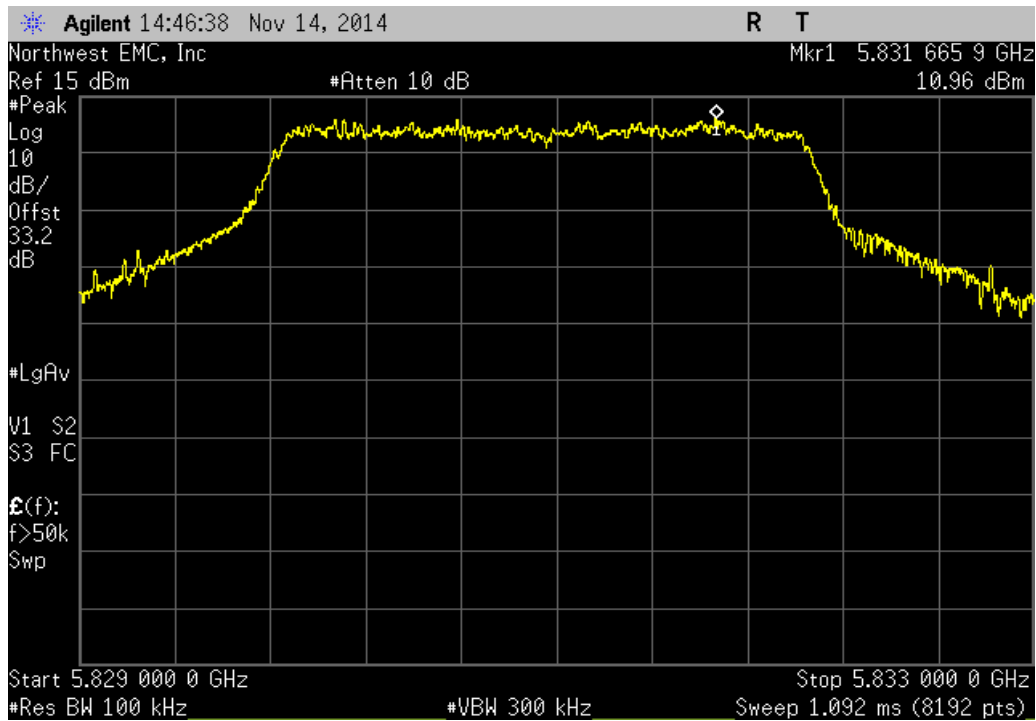
Chain 2, 2.5MHz Bandwidth , 2x2 Modulation Type, 64-QAM, Coding Rate, 5/6, Mid Channel 5783MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
25 GHz - 32 GHz	-47.22	-20	Pass	



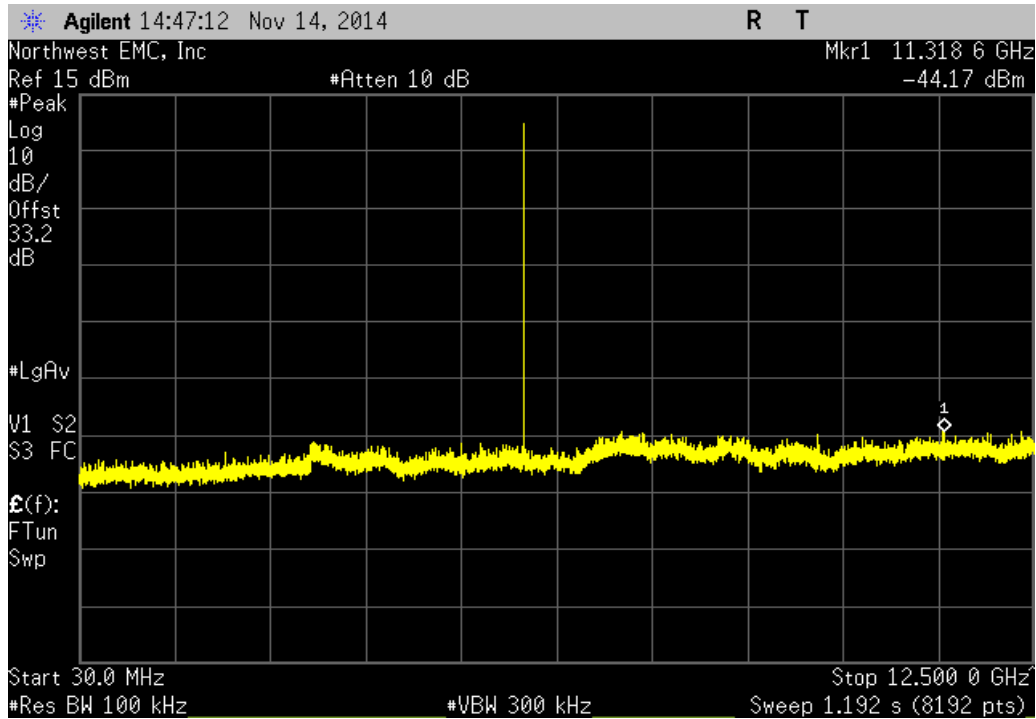
Chain 2, 2.5MHz Bandwidth , 2x2 Modulation Type, 64-QAM, Coding Rate, 5/6, Mid Channel 5783MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
32 GHz - 40 GHz	-38.11	-20	Pass	



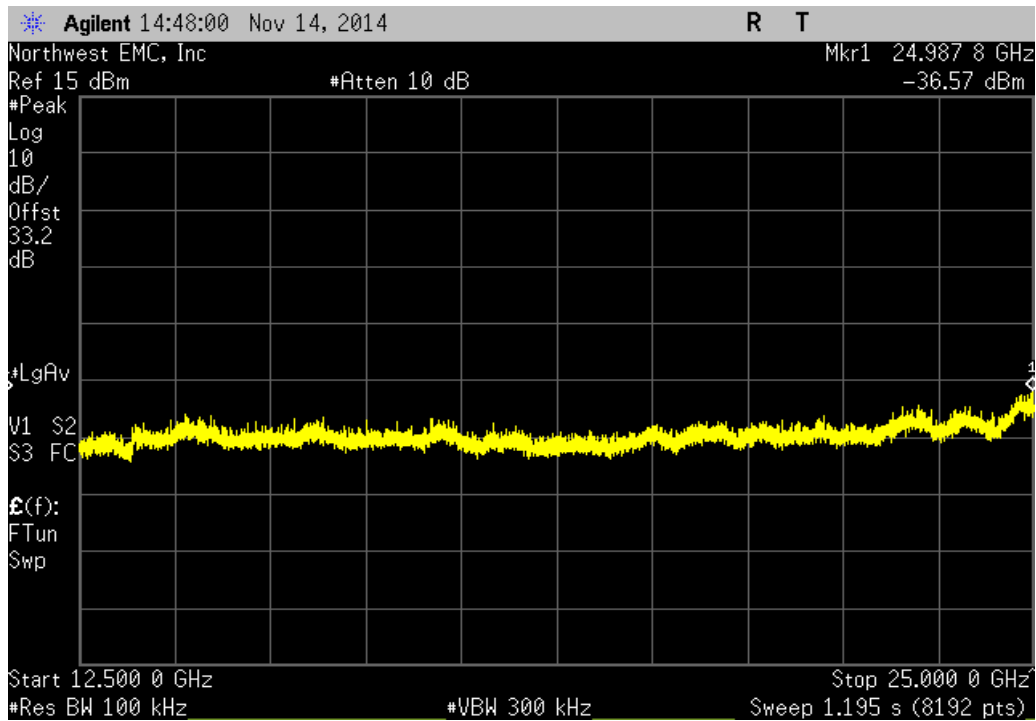
Chain 2, 2.5MHz Bandwidth , 2x2 Modulation Type, 64-QAM, Coding Rate, 5/6, High Channel 5831MHz			
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result
Fundamental	N/A	N/A	N/A



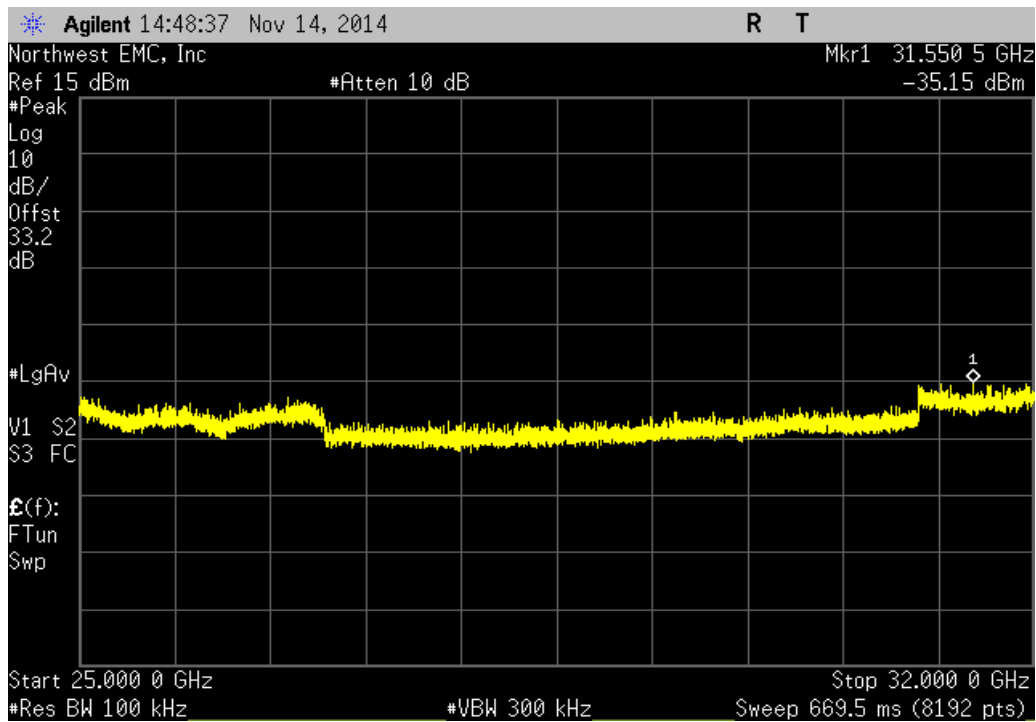
Chain 2, 2.5MHz Bandwidth , 2x2 Modulation Type, 64-QAM, Coding Rate, 5/6, High Channel 5831MHz			
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz	-55.13	-20	Pass



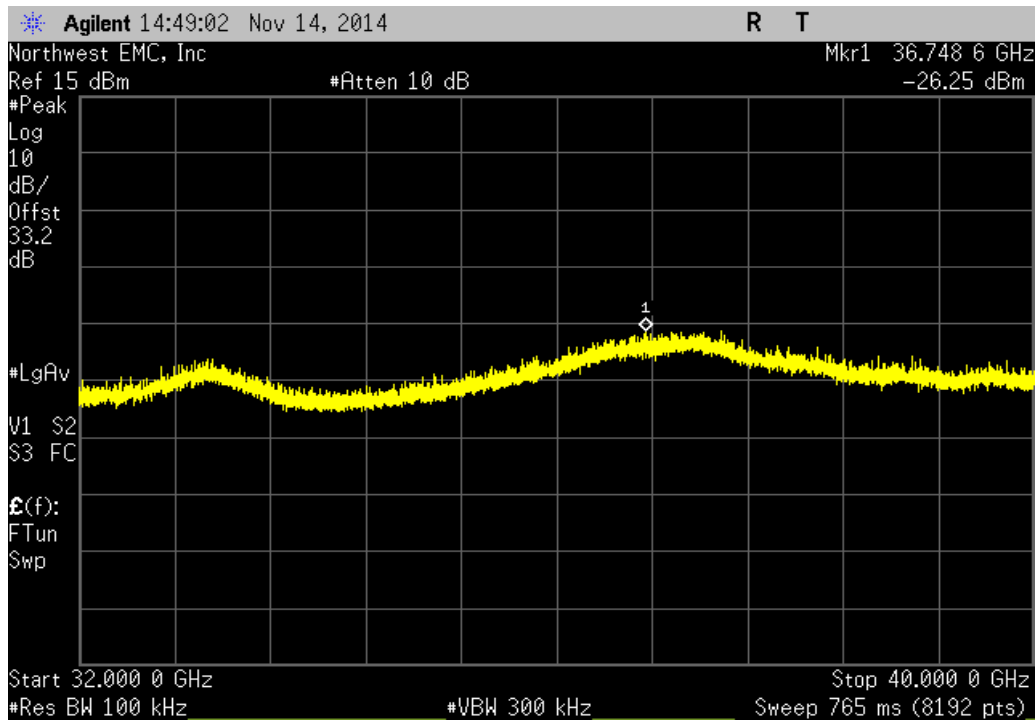
Chain 2, 2.5MHz Bandwidth , 2x2 Modulation Type, 64-QAM, Coding Rate, 5/6, High Channel 5831MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	-47.53	-20	Pass	



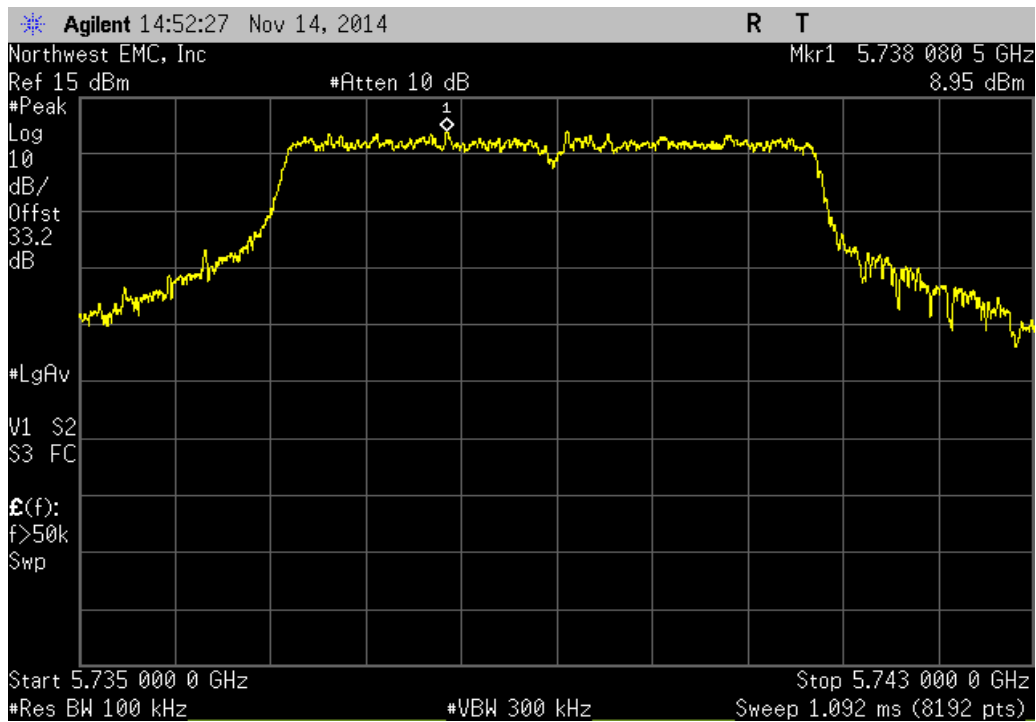
Chain 2, 2.5MHz Bandwidth , 2x2 Modulation Type, 64-QAM, Coding Rate, 5/6, High Channel 5831MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
25 GHz - 32 GHz	-46.11	-20	Pass	



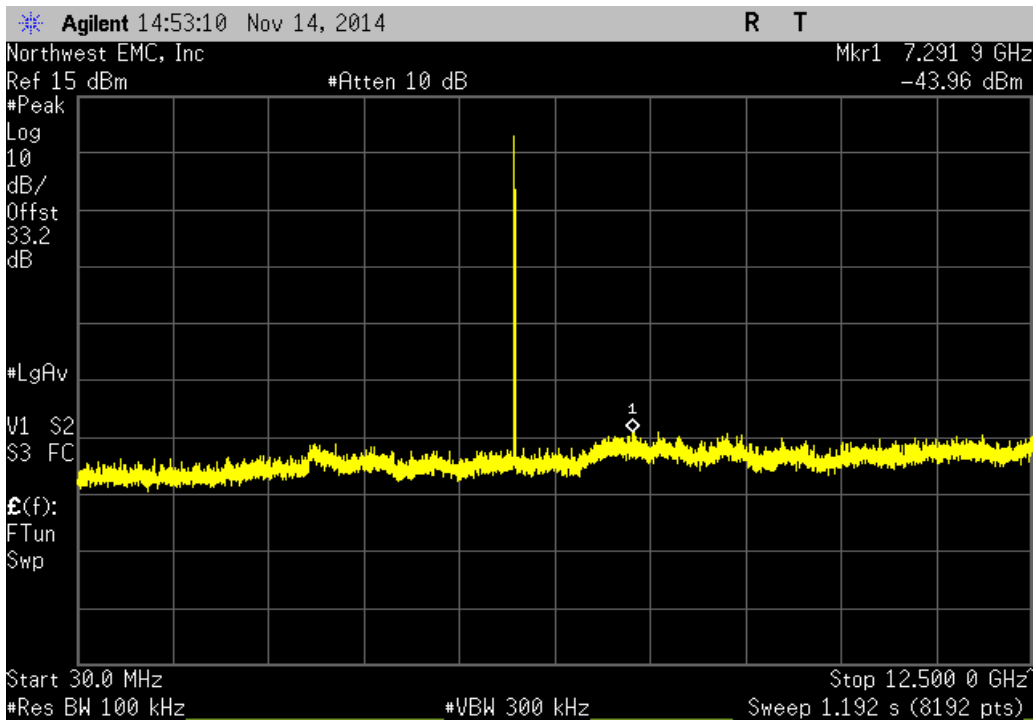
Chain 2, 2.5MHz Bandwidth , 2x2 Modulation Type, 64-QAM, Coding Rate, 5/6, High Channel 5831MHz			
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result
32 GHz - 40 GHz	-37.21	-20	Pass



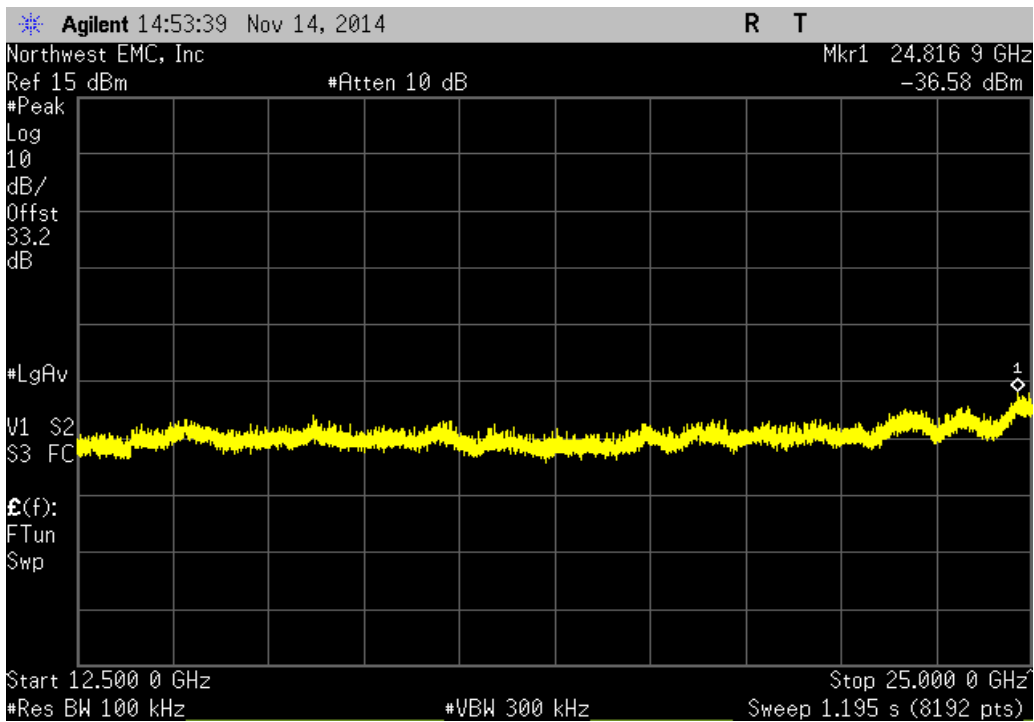
Chain 2, 5MHz Bandwidth , 2x2 Modulation Type, 64-QAM, Coding Rate, 5/6, Low Channel 5739MHz			
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result
Fundamental	N/A	N/A	N/A



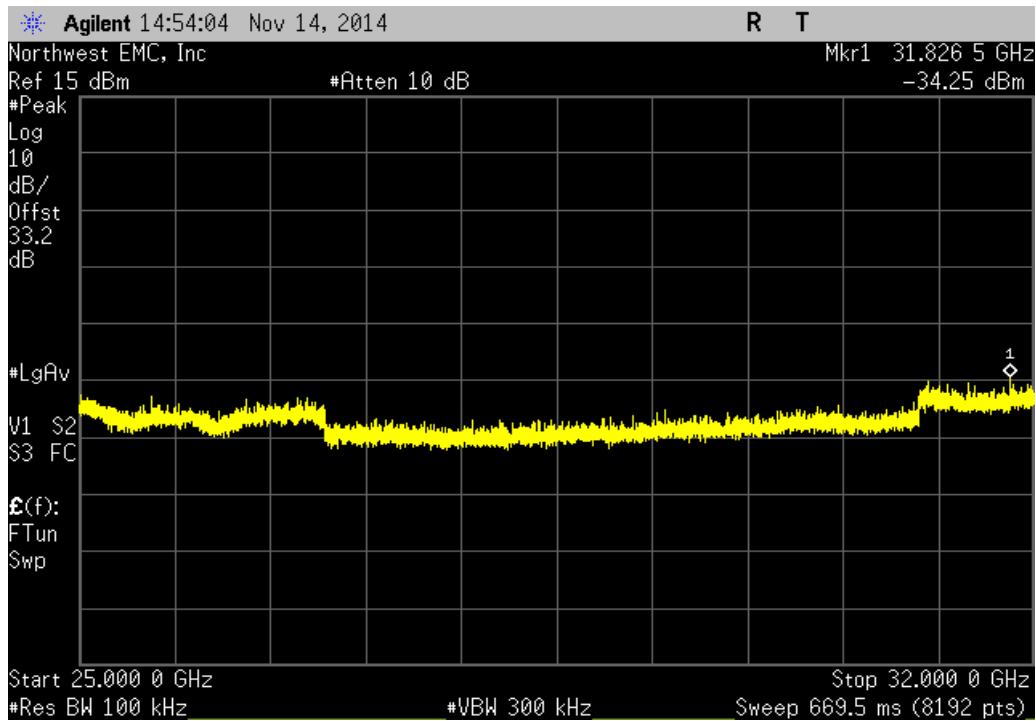
Chain 2, 5MHz Bandwidth , 2x2 Modulation Type, 64-QAM, Coding Rate, 5/6, Low Channel 5739MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz	-52.91	-20	Pass	



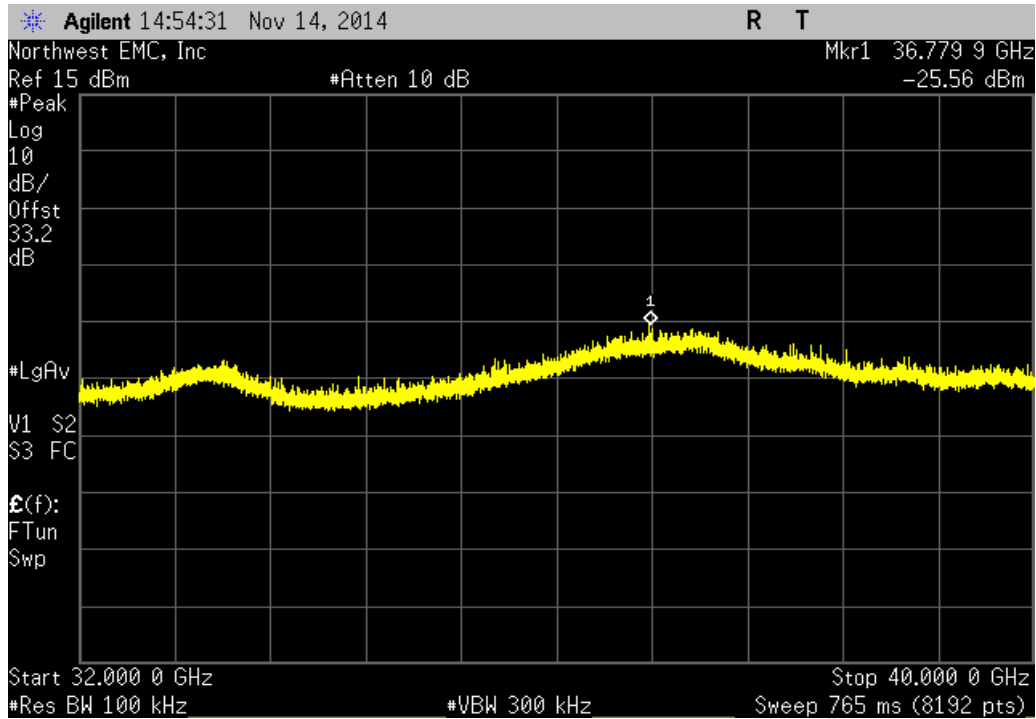
Chain 2, 5MHz Bandwidth , 2x2 Modulation Type, 64-QAM, Coding Rate, 5/6, Low Channel 5739MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	-45.53	-20	Pass	



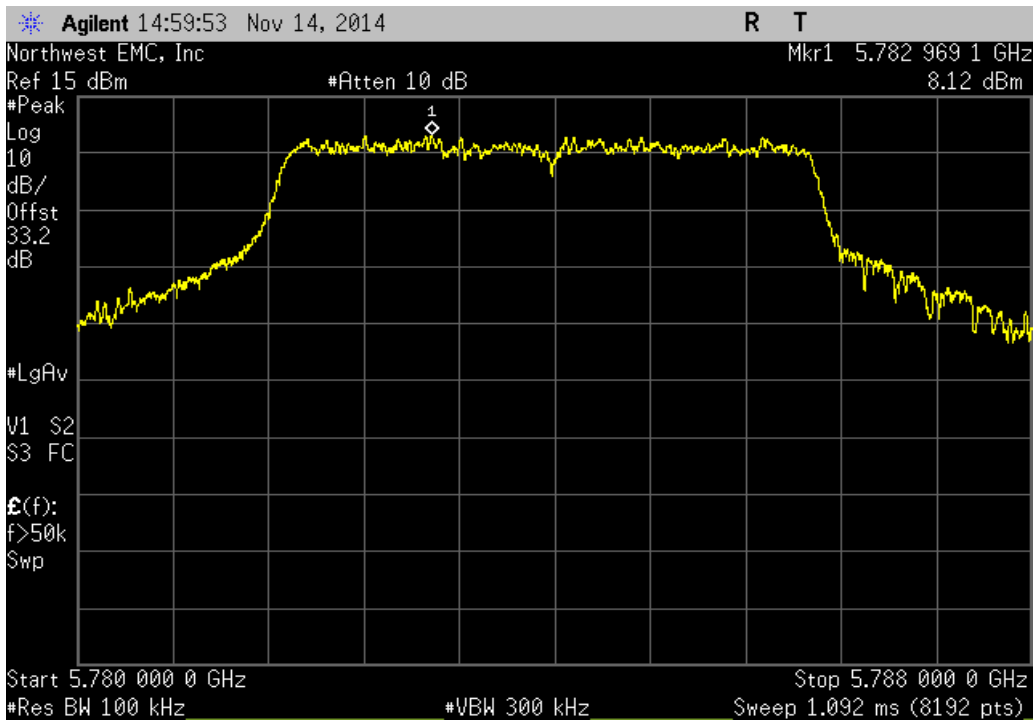
Chain 2, 5MHz Bandwidth , 2x2 Modulation Type, 64-QAM, Coding Rate, 5/6, Low Channel 5739MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
25 GHz - 32 GHz	-43.2	-20	Pass	



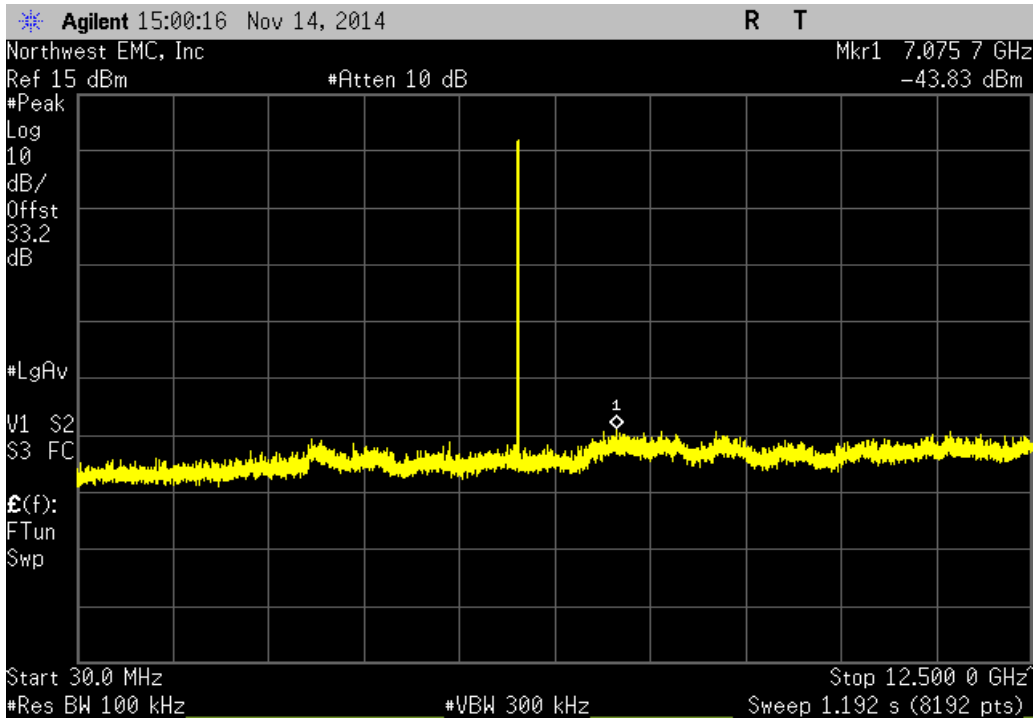
Chain 2, 5MHz Bandwidth , 2x2 Modulation Type, 64-QAM, Coding Rate, 5/6, Low Channel 5739MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
32 GHz - 40 GHz	-34.51	-20	Pass	



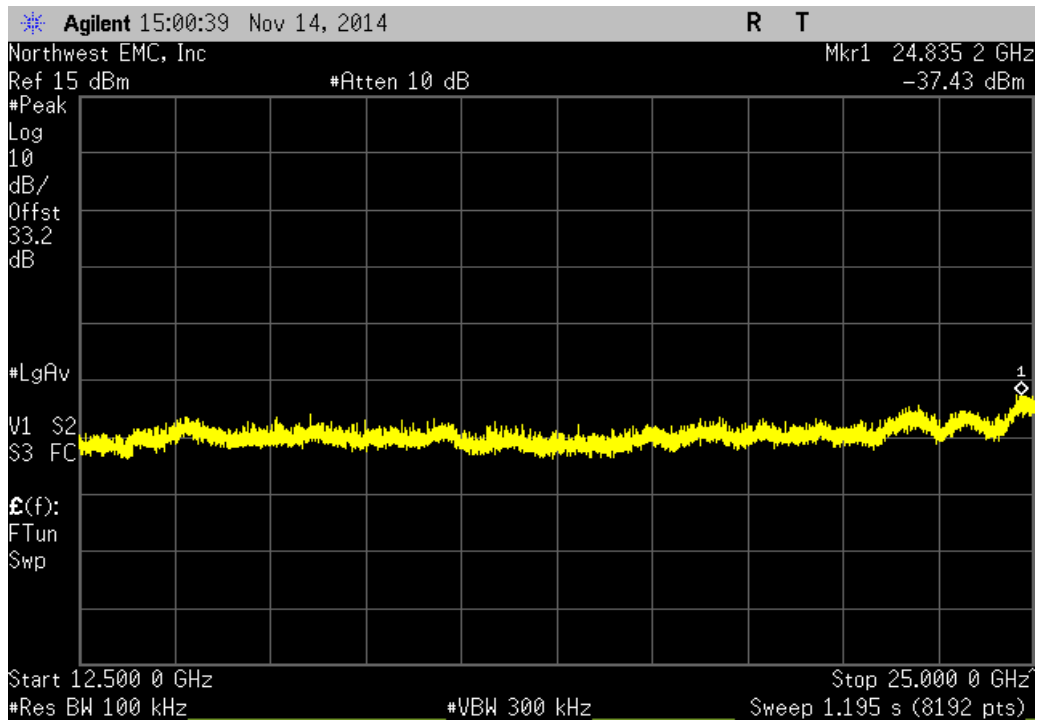
Chain 2, 5MHz Bandwidth , 2x2 Modulation Type, 64-QAM, Coding Rate, 5/6, Mid Channel 5784MHz			
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result
Fundamental	N/A	N/A	N/A



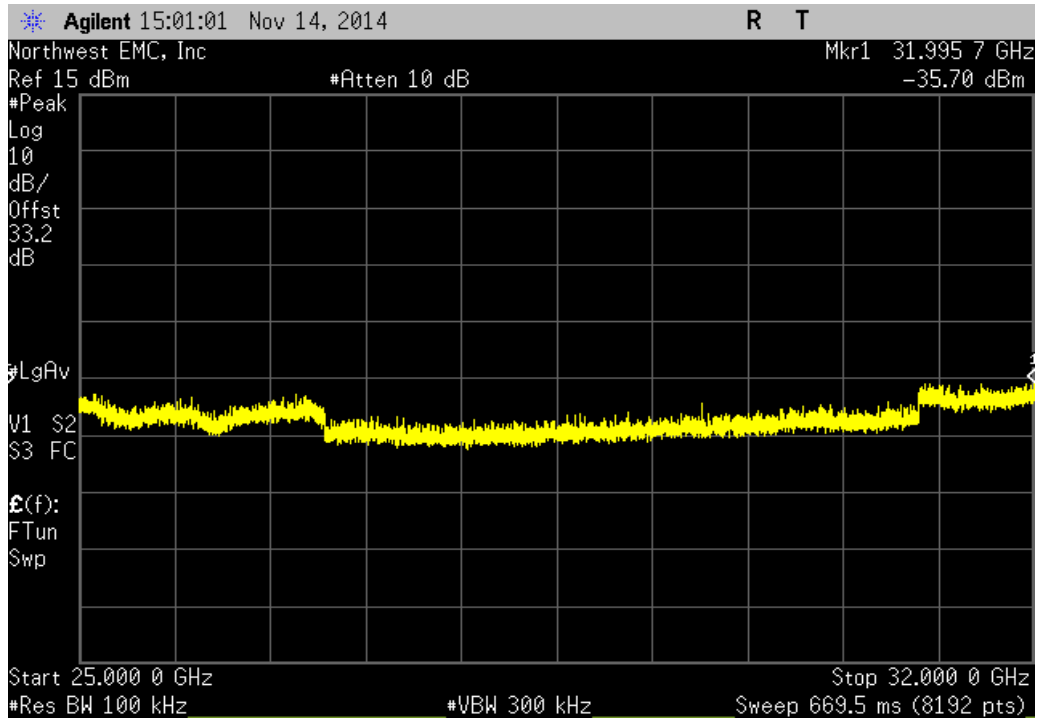
Chain 2, 5MHz Bandwidth , 2x2 Modulation Type, 64-QAM, Coding Rate, 5/6, Mid Channel 5784MHz			
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz	-51.95	-20	Pass



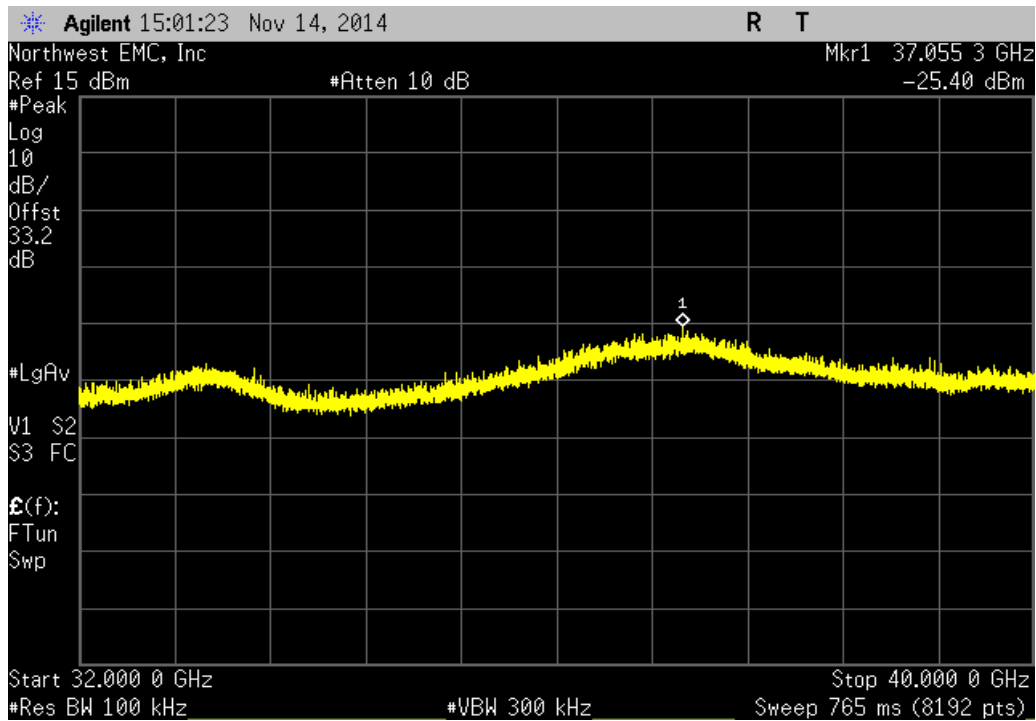
Chain 2, 5MHz Bandwidth , 2x2 Modulation Type, 64-QAM, Coding Rate, 5/6, Mid Channel 5784MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	-45.55	-20	Pass	



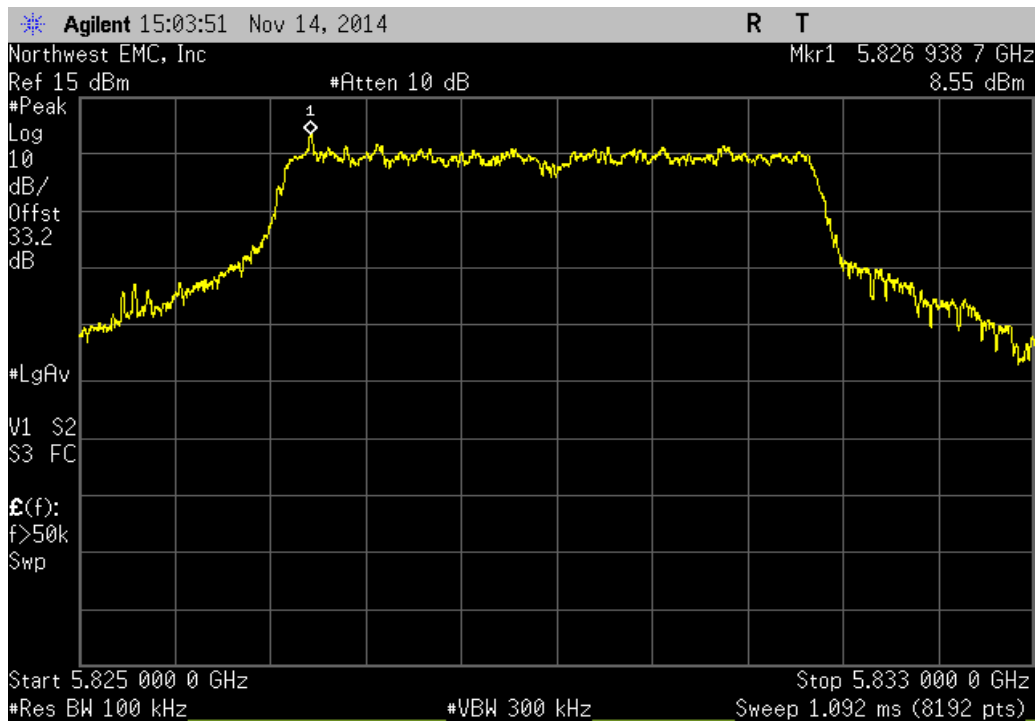
Chain 2, 5MHz Bandwidth , 2x2 Modulation Type, 64-QAM, Coding Rate, 5/6, Mid Channel 5784MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
25 GHz - 32 GHz	-43.82	-20	Pass	



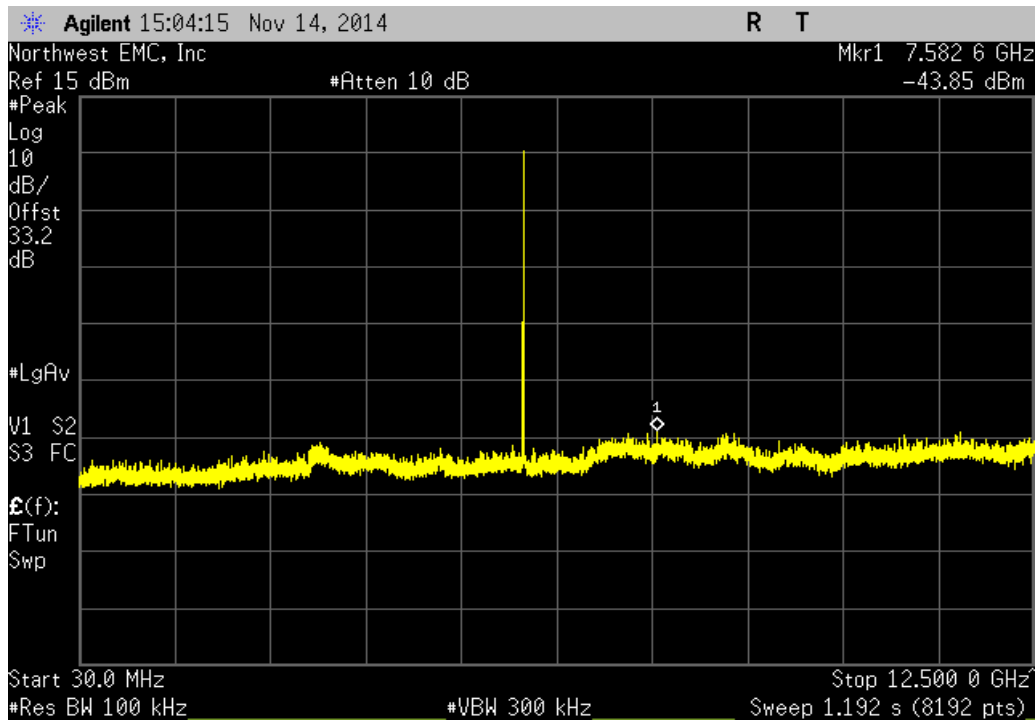
Chain 2, 5MHz Bandwidth , 2x2 Modulation Type, 64-QAM, Coding Rate, 5/6, Mid Channel 5784MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
32 GHz - 40 GHz	-33.52	-20	Pass	



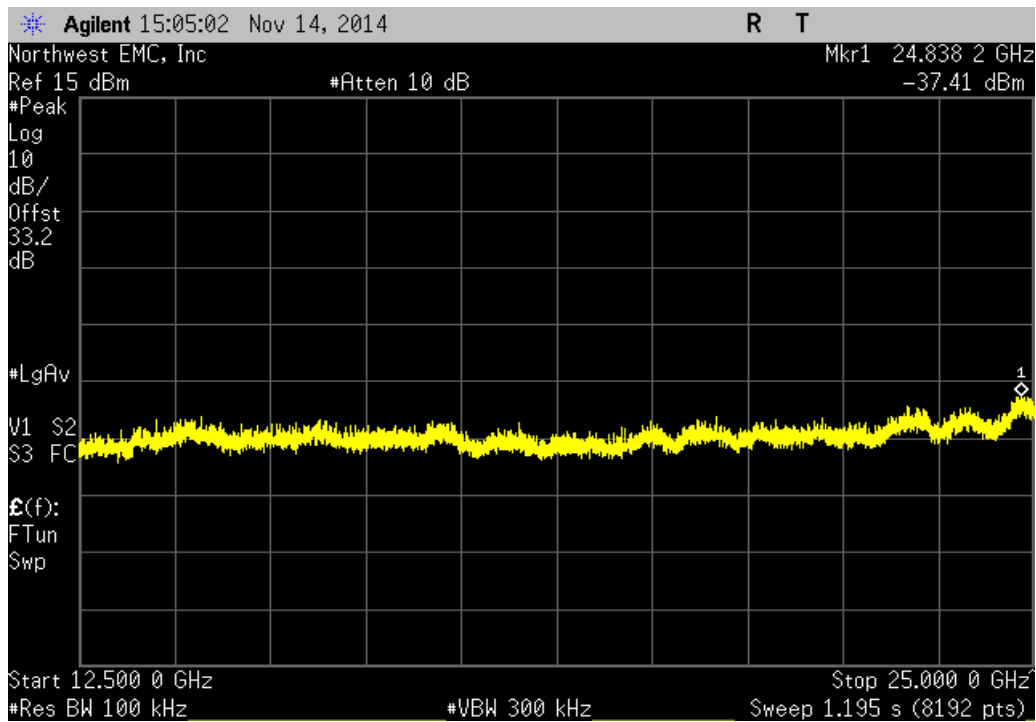
Chain 2, 5MHz Bandwidth , 2x2 Modulation Type, 64-QAM, Coding Rate, 5/6, High Channel 5829MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	N/A	N/A	N/A	



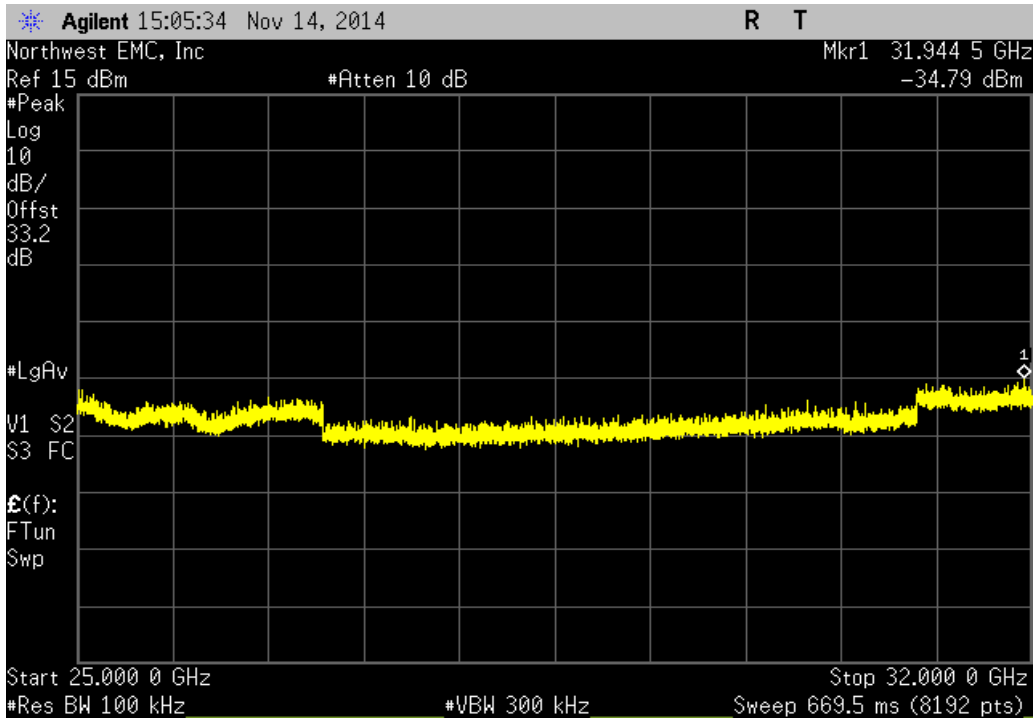
Chain 2, 5MHz Bandwidth , 2x2 Modulation Type, 64-QAM, Coding Rate, 5/6, High Channel 5829MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz	-52.4	-20	Pass	



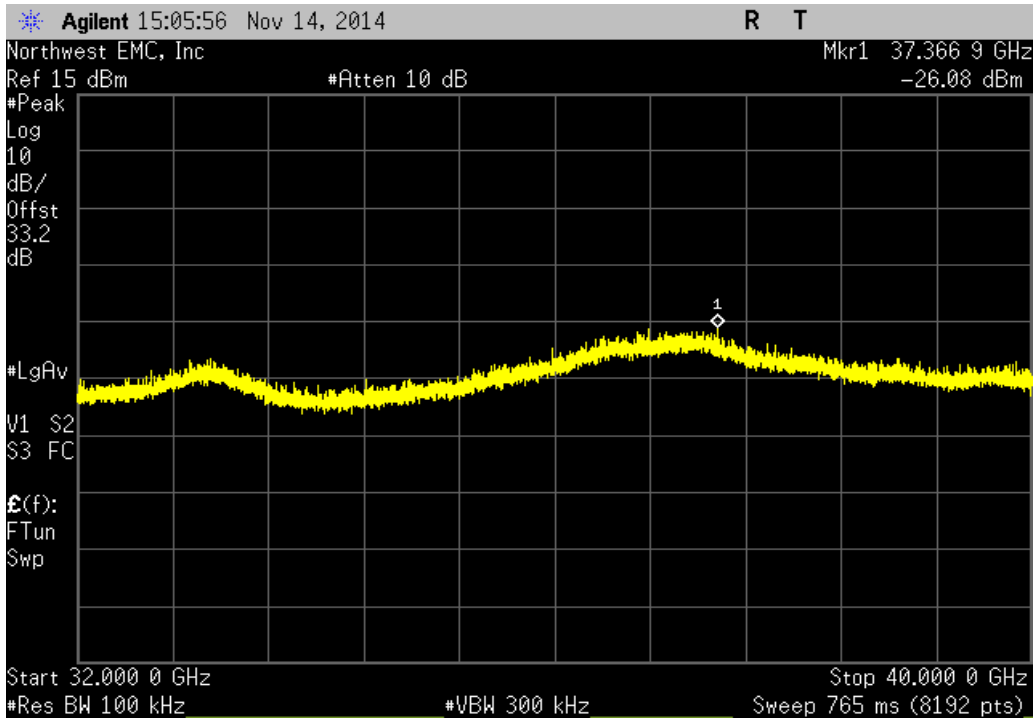
Chain 2, 5MHz Bandwidth , 2x2 Modulation Type, 64-QAM, Coding Rate, 5/6, High Channel 5829MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	-45.96	-20	Pass	



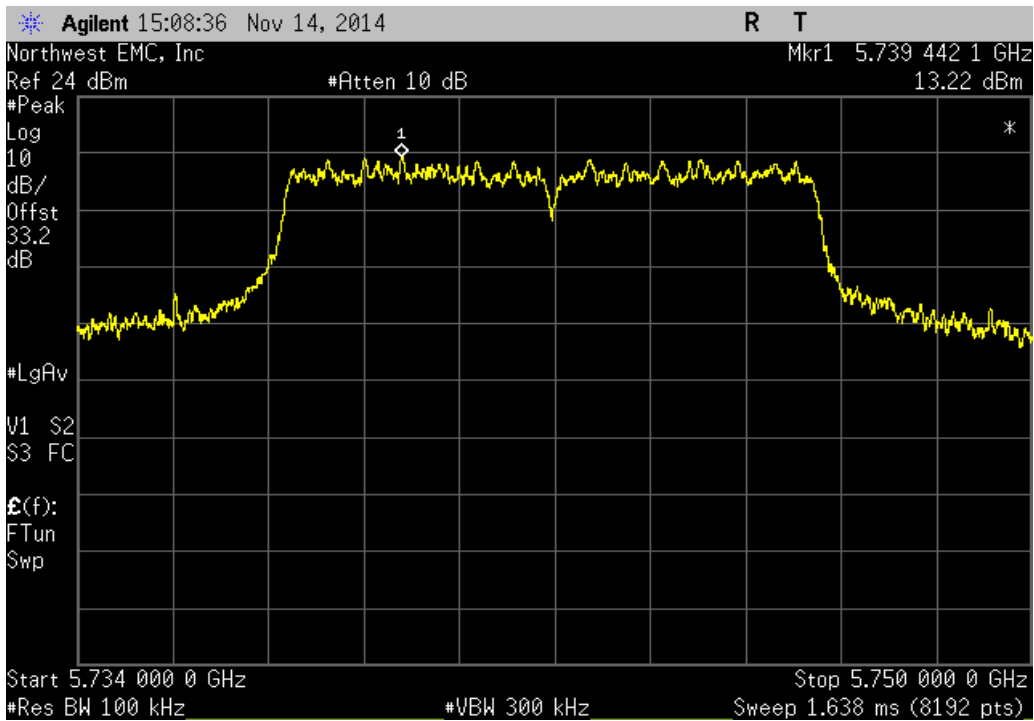
Chain 2, 5MHz Bandwidth , 2x2 Modulation Type, 64-QAM, Coding Rate, 5/6, High Channel 5829MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
25 GHz - 32 GHz	-43.34	-20	Pass	



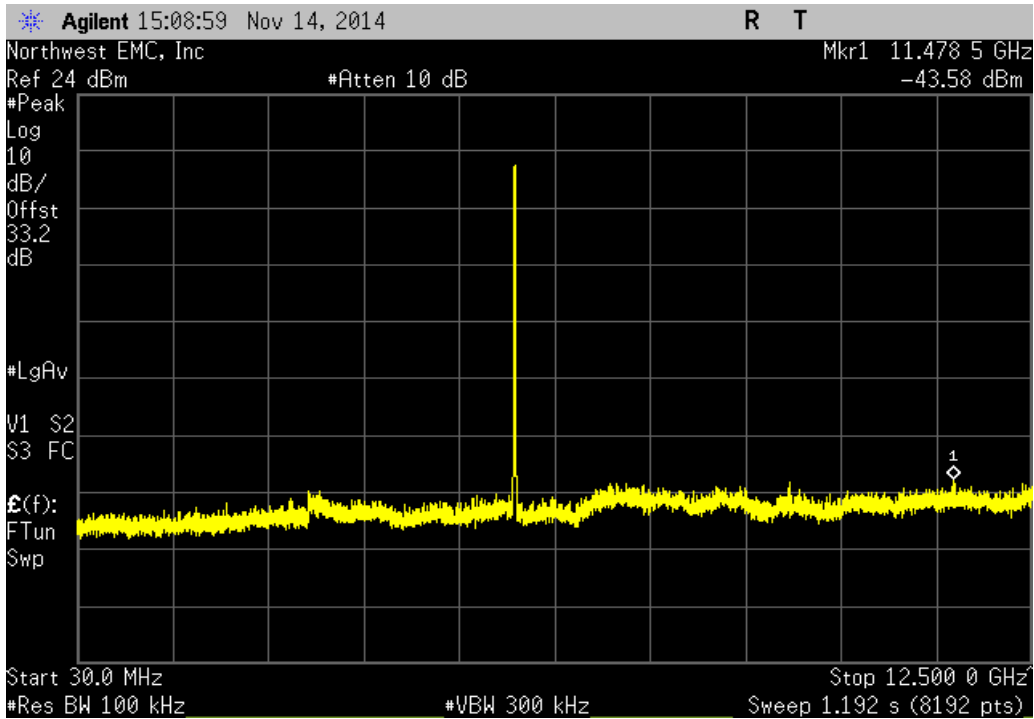
Chain 2, 5MHz Bandwidth , 2x2 Modulation Type, 64-QAM, Coding Rate, 5/6, High Channel 5829MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
32 GHz - 40 GHz	-34.63	-20	Pass	



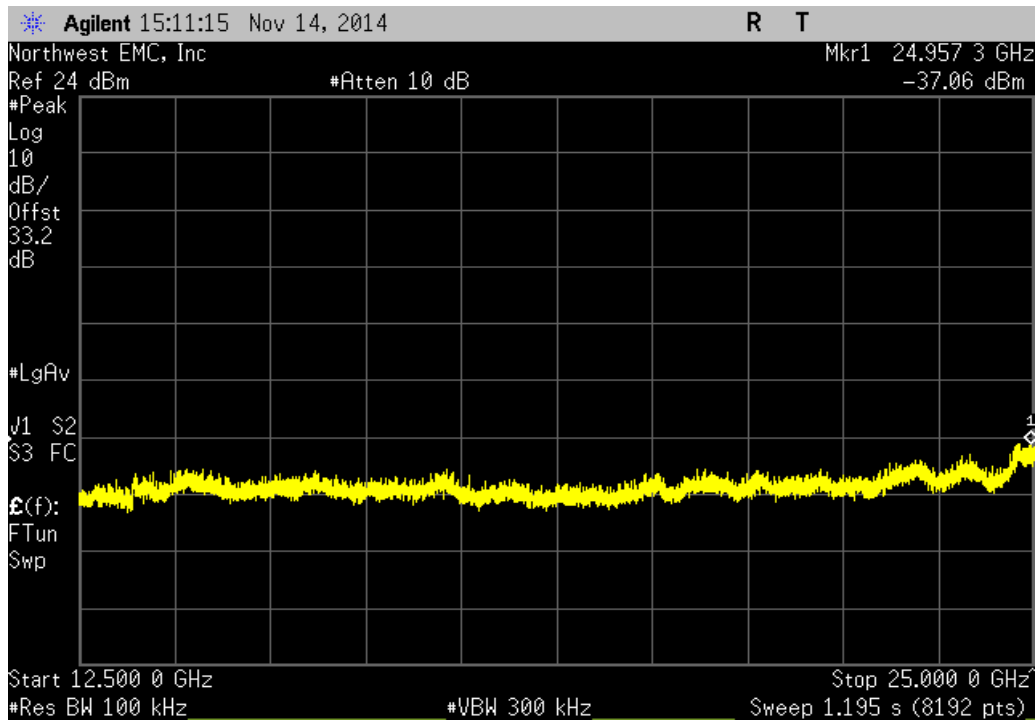
Chain 2, 10MHz Bandwidth , 2x2 Modulation Type, 64-QAM, Coding Rate, 5/6, Low Channel 5742MHz			
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result
Fundamental	N/A	N/A	N/A



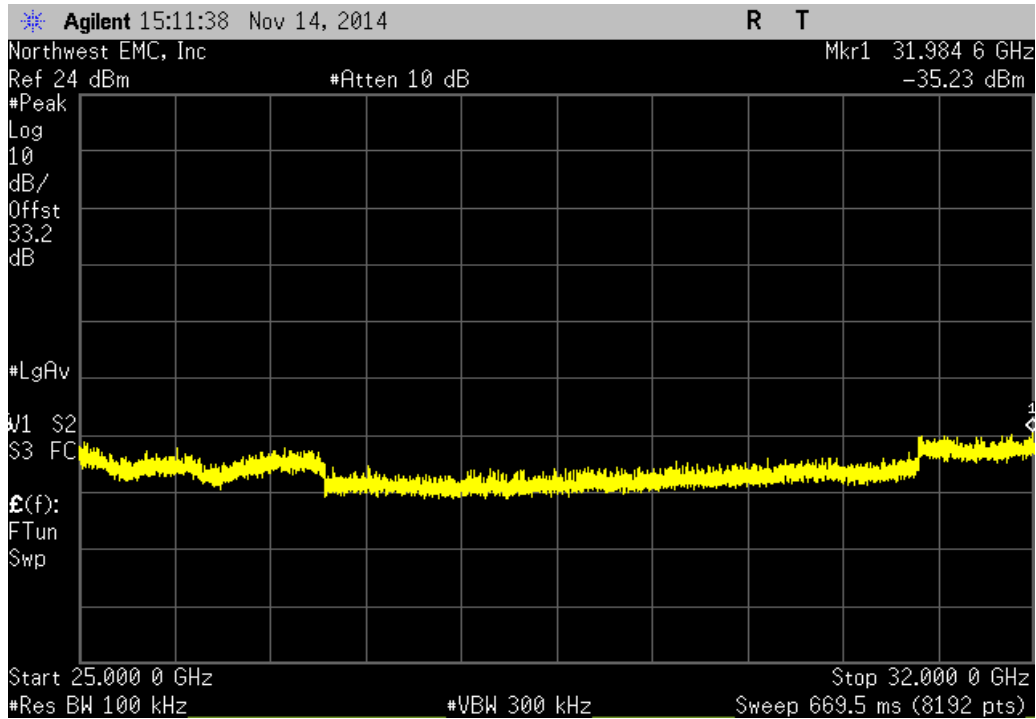
Chain 2, 10MHz Bandwidth , 2x2 Modulation Type, 64-QAM, Coding Rate, 5/6, Low Channel 5742MHz			
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz	-56.8	-20	Pass



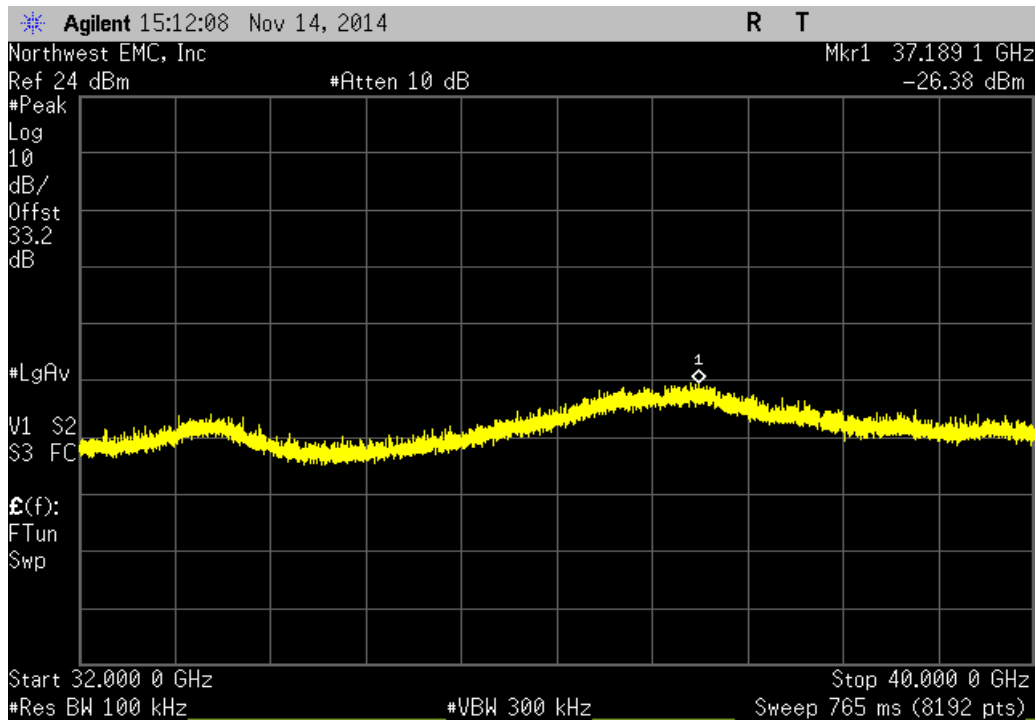
Chain 2, 10MHz Bandwidth , 2x2 Modulation Type, 64-QAM, Coding Rate, 5/6, Low Channel 5742MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	-50.28	-20	Pass	



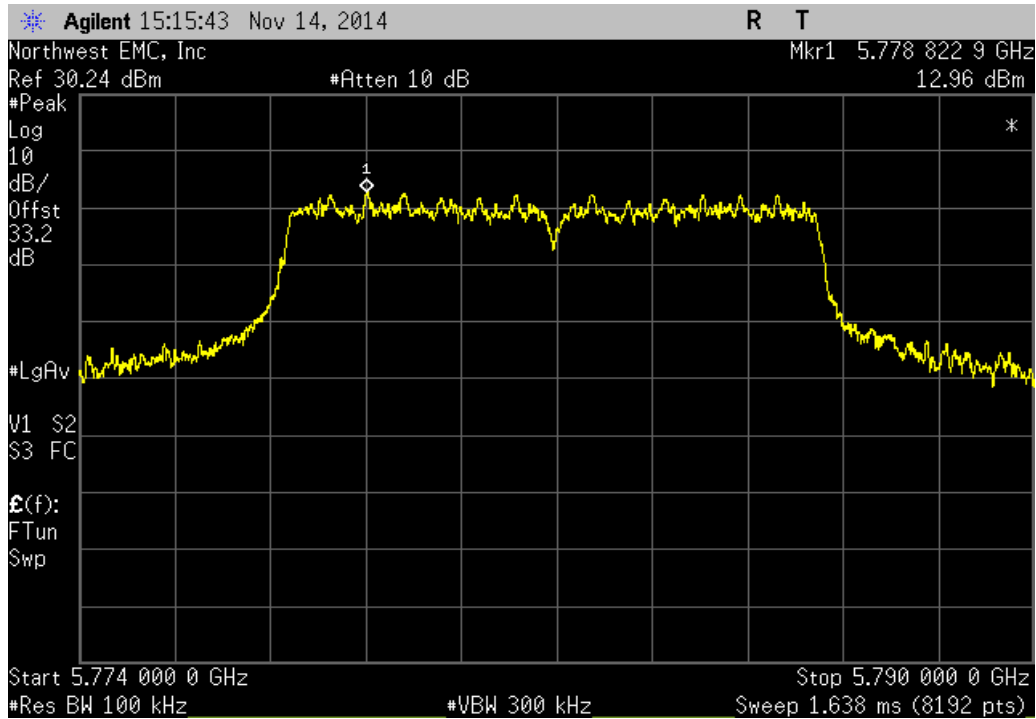
Chain 2, 10MHz Bandwidth , 2x2 Modulation Type, 64-QAM, Coding Rate, 5/6, Low Channel 5742MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
25 GHz - 32 GHz	-48.45	-20	Pass	



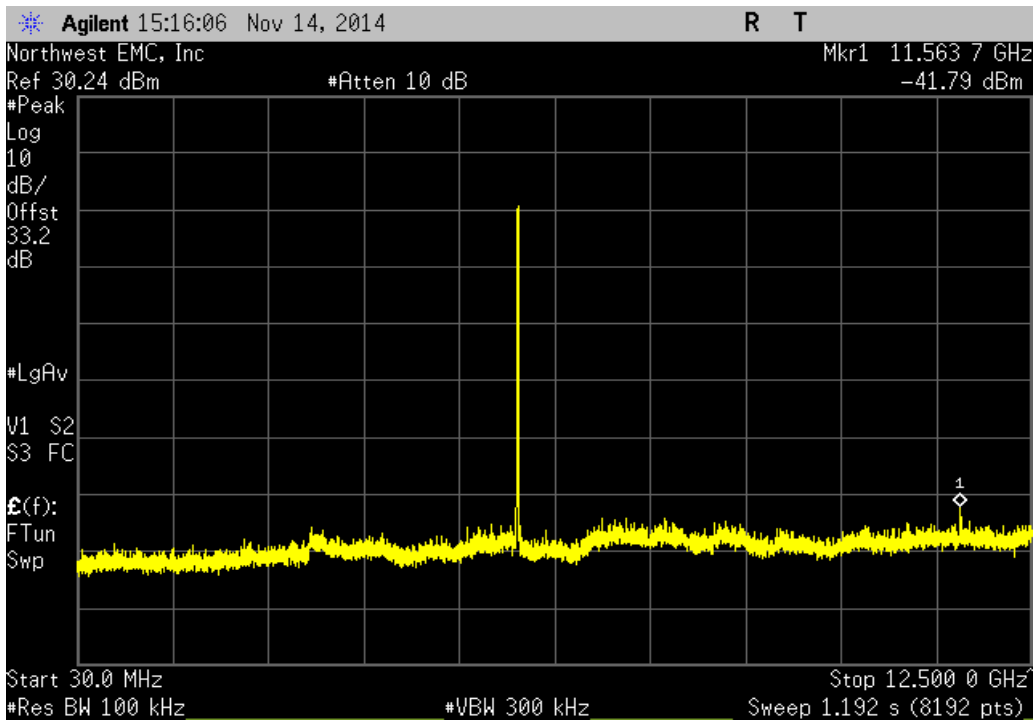
Chain 2, 10MHz Bandwidth , 2x2 Modulation Type, 64-QAM, Coding Rate, 5/6, Low Channel 5742MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
32 GHz - 40 GHz	-39.6	-20	Pass	



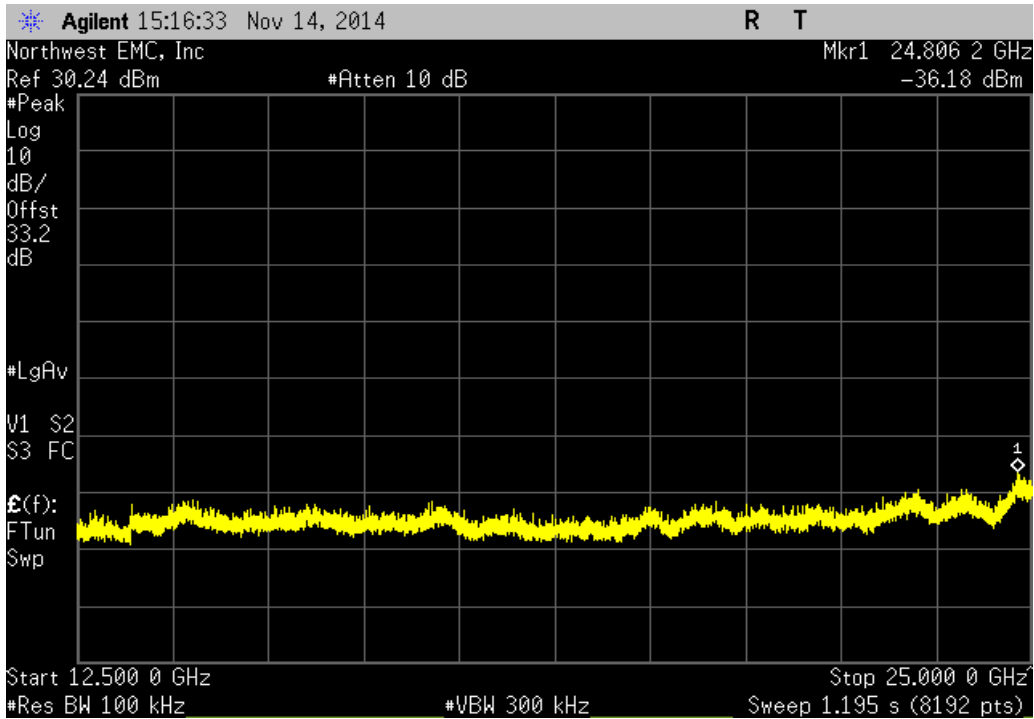
Chain 2, 10MHz Bandwidth , 2x2 Modulation Type, 64-QAM, Coding Rate, 5/6, Mid Channel 5782MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
Fundamental	N/A	N/A	N/A	



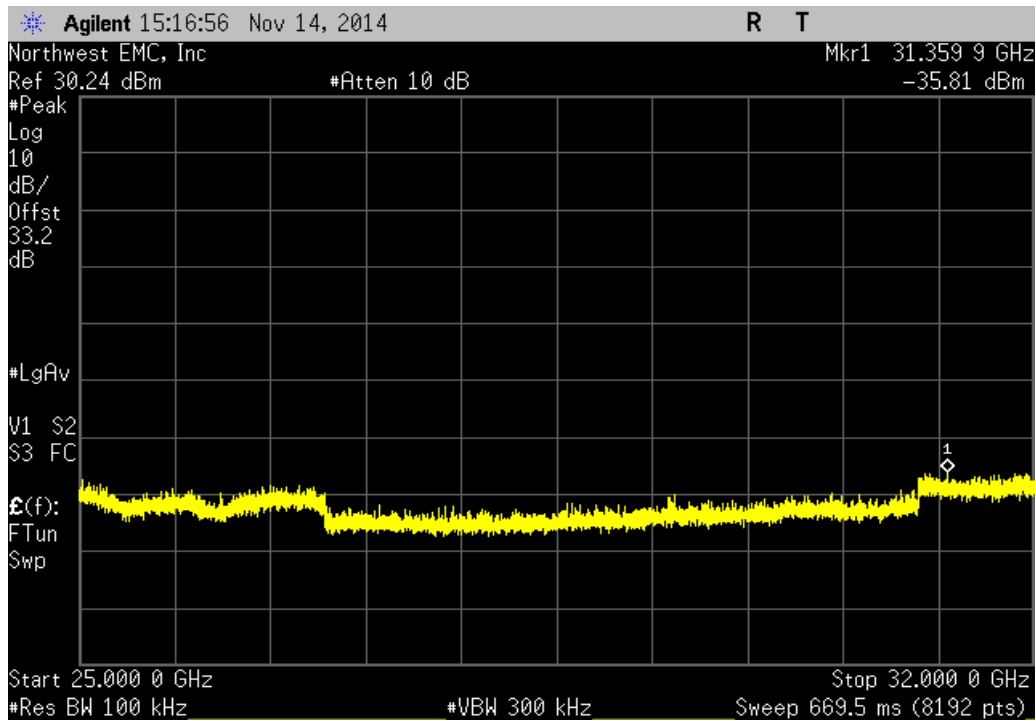
Chain 2, 10MHz Bandwidth , 2x2 Modulation Type, 64-QAM, Coding Rate, 5/6, Mid Channel 5782MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
30 MHz - 12.5 GHz	-54.75	-20	Pass	



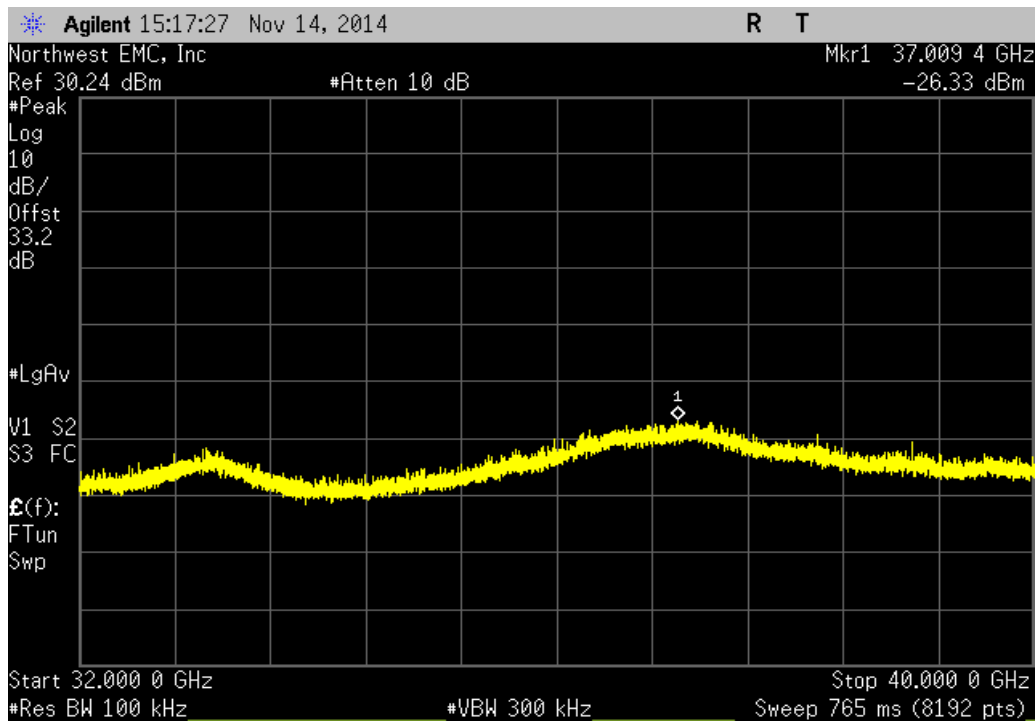
Chain 2, 10MHz Bandwidth , 2x2 Modulation Type, 64-QAM, Coding Rate, 5/6, Mid Channel 5782MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	-49.14	-20	Pass	



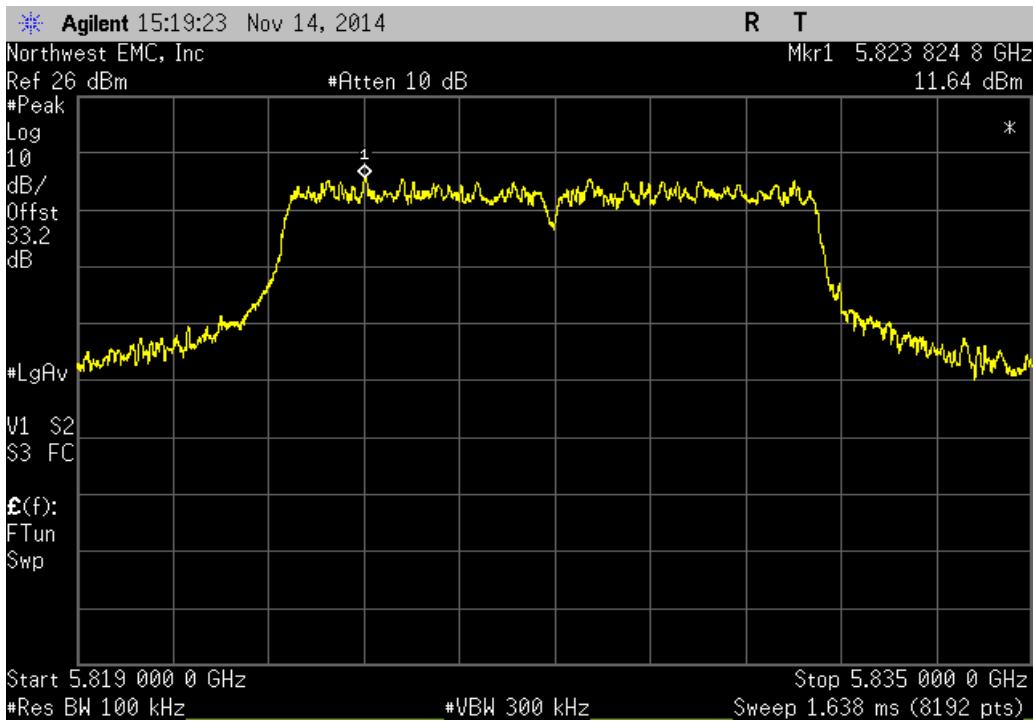
Chain 2, 10MHz Bandwidth , 2x2 Modulation Type, 64-QAM, Coding Rate, 5/6, Mid Channel 5782MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
25 GHz - 32 GHz	-48.77	-20	Pass	



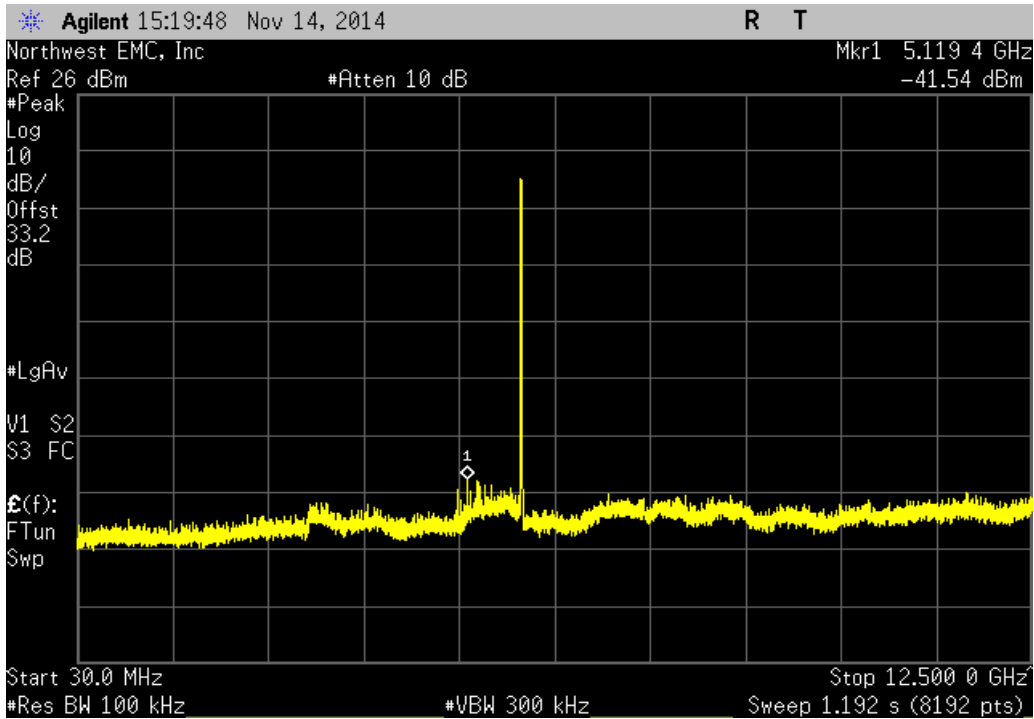
Chain 2, 10MHz Bandwidth , 2x2 Modulation Type, 64-QAM, Coding Rate, 5/6, Mid Channel 5782MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
32 GHz - 40 GHz	-39.29	-20	Pass	



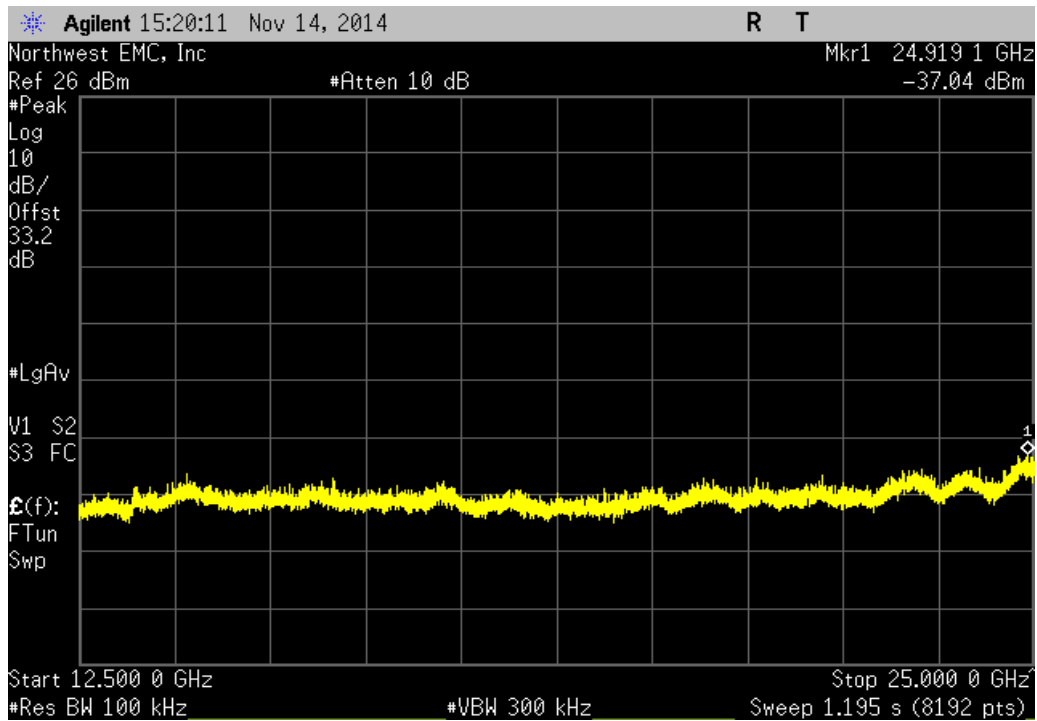
Chain 2, 10MHz Bandwidth , 2x2 Modulation Type, 64-QAM, Coding Rate, 5/6, High Channel 5827MHz			
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result
Fundamental	N/A	N/A	N/A



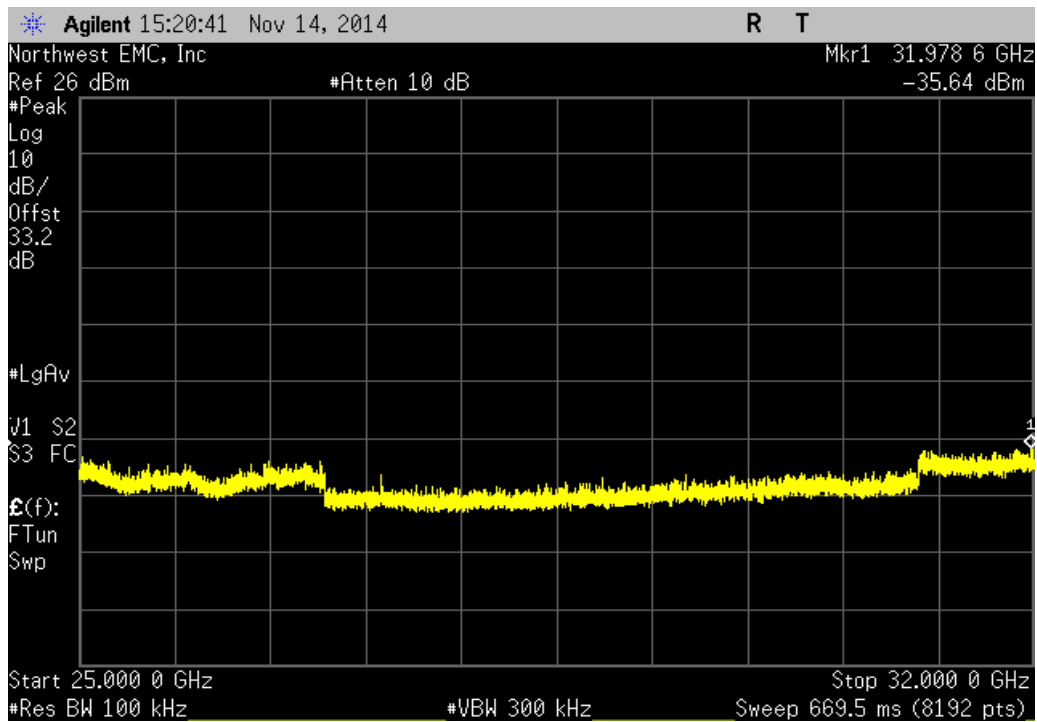
Chain 2, 10MHz Bandwidth , 2x2 Modulation Type, 64-QAM, Coding Rate, 5/6, High Channel 5827MHz			
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result
30 MHz - 12.5 GHz	-53.18	-20	Pass



Chain 2, 10MHz Bandwidth , 2x2 Modulation Type, 64-QAM, Coding Rate, 5/6, High Channel 5827MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
12.5 GHz - 25 GHz	-48.68	-20	Pass	



Chain 2, 10MHz Bandwidth , 2x2 Modulation Type, 64-QAM, Coding Rate, 5/6, High Channel 5827MHz				
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result	
25 GHz - 32 GHz	-47.28	-20	Pass	



Chain 2, 10MHz Bandwidth , 2x2 Modulation Type, 64-QAM, Coding Rate, 5/6, High Channel 5827MHz			
Frequency Range	Value (dBc)	Limit ≤ (dBc)	Result
32 GHz - 40 GHz	-37.68	-20	Pass

