

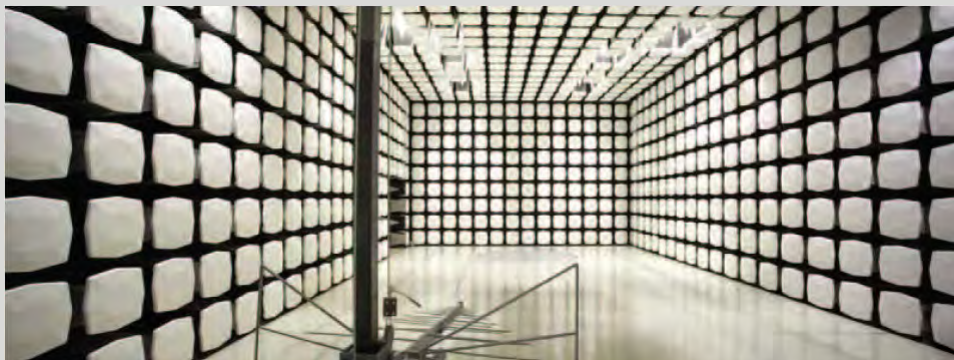


## **Synapse Product Development LLC**

**Kezar**

**FCC 15.247:2014**

**Report #: SYNA0151.1**



Report Prepared By Northwest EMC Inc.

NORTHWEST EMC – (888) 364-2378 – [www.nwemc.com](http://www.nwemc.com)

California – Minnesota – Oregon – New York – Washington

# CERTIFICATE OF TEST

**Last Date of Test: April 08, 2014**  
**Synapse Product Development LLC**  
**Model: Kezar**

## Emissions

Test Description	Specification	Test Method	Pass/Fail
Duty Cycle	FCC 15.247:2014	ANSI C63.10:2009	Pass
Occupied Bandwidth	FCC 15.247:2014	ANSI C63.10:2009	Pass
Output Power	FCC 15.247:2014	ANSI C63.10:2009	Pass
Power Spectral Density	FCC 15.247:2014	ANSI C63.10:2009	Pass
Band Edge Compliance	FCC 15.247:2014	ANSI C63.10:2009	Pass
Spurious Conducted Emissions	FCC 15.247:2014	ANSI C63.10:2009	Pass
Spurious Radiated Emissions	FCC 15.247:2014	ANSI C63.10:2009	Pass
AC Powerline Conducted Emissions	FCC 15.247:2014	ANSI C63.10:2009	Pass

## Deviations From Test Standards

None

## Approved By:



Kyle Holgate, Operations Manager



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.*

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

# REVISION HISTORY

Revision Number	Description	Date	Page Number
00	None		

## Barometric Pressure

The recorded barometric pressure has been normalized to sea level.

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## 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

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## Canada

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

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## European Union

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

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## Australia/New Zealand

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

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## Korea

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

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## Japan

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

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## 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.

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## Singapore

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

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## Hong Kong

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

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## Vietnam

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

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## Russia

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

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## 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.

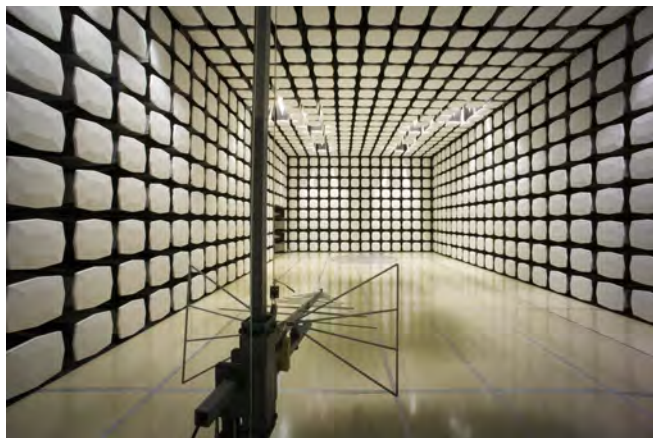
A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty (K=2) for each test is listed below. Our measurement data meets or exceeds the measurement uncertainty requirements of the applicable specification; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for estimating measurement uncertainty are based upon ETSI TR 100 028 (or CISPR 16-4-1 as applicable), and are available upon request.

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

<b>Test</b>	<b>+ MU</b>	<b>- MU</b>
Frequency Accuracy (Hz)	0.12	-0.01
Amplitude Accuracy (dB)	0.49	-0.49
Conducted Power (dB)	0.41	-0.41
Radiated Power via Substitution (dB)	0.69	-0.68
Temperature (degrees C)	0.81	-0.81
Humidity (% RH)	2.89	-2.89
Field Strength (dB)	3.80	-3.80
AC Powerline Conducted Emissions (dB)	2.94	-2.94



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







# PRODUCT DESCRIPTION

## Client and Equipment Under Test (EUT) Information

<b>Company Name:</b>	Synapse Product Development LLC
<b>Address:</b>	1511 6th Ave. 4th Floor
<b>City, State, Zip:</b>	Seattle, WA 98101
<b>Test Requested By:</b>	Adrian Fox
<b>Model:</b>	Kezar
<b>First Date of Test:</b>	February 25, 2014
<b>Last Date of Test:</b>	April 08, 2014
<b>Receipt Date of Samples:</b>	February 24, 2014
<b>Equipment Design Stage:</b>	Production
<b>Equipment Condition:</b>	No Damage

## Information Provided by the Party Requesting the Test

<b>Functional Description of the EUT (Equipment Under Test):</b>
WLAN 802.11an SISO radio device with 1 antenna
<b>Testing Objective:</b>
To demonstrate compliance under FCC 15.247 for operation in the 5.8GHz band.

## Configuration SYNA0151- 1

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Kezar Access Point	Synapse Product Development LLC	Kezar	1

Peripherals in test setup boundary			
Description	Manufacturer	Model/Part Number	Serial Number
AC/DC Power Supply	ITE Power Supply	None	None

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
Serial Cable	No	1m	No	Kezar Access Point	Client PC
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

## Configuration SYNA0151- 3

Software/Firmware Running during test	
Description	Version
Windows	7
Putty	None

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Kezar Access Point	Synapse Product Development LLC	Kezar	1

Peripherals in test setup boundary			
Description	Manufacturer	Model/Part Number	Serial Number
Laptop	Lenovo	T520	4239L65
AC/DC Adapter (lenovo)	Lenovo	42T4438	11842T4438Z1ZHY62774N6
AC/DC Adapter (kezar)	I.T.E Power Supply	CENB1060A1203F01	None

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
Serial Cable	No	1m	No	Kezar Access Point	Client PC
AC Power Cable	No	1.2m	No	AC/DC Power Adapter (kezar)	AC mains
AC Power Cable	No	1m	No	AC/DC Power Adapter (Lenovo)	AC mains
DC Power Cable	No	1.3m	Yes	AC/DC Power Adapter (kezar)	Kezar
DC Power Cable	No	1.5m	No	AC/DC Power Adapter (Lenovo)	Laptop
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					



## Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	2/25/2014	Spurious Radiated Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
2	2/28/2014	AC Powerline	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	4/07/2014	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.
4	4/07/2014	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	4/08/2014	Duty Cycle	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
6	4/08/2014	Occupied Bandwidth	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
7	4/08/2014	Output Power	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
8	4/08/2014	Power Spectral Density	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

## DUTY CYCLE

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

### TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval (mo.)
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	2/3/2014	12
MXG Analog Signal Generator	Agilent	N5181A	TIG	3/28/2014	36
Power Meter	Gigatronics	8651A	SPM	11/26/2013	24
Power Sensor	Gigatronics	80701A	SPL	7/8/2011	36
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2013	12
40GHz DC Block	Miteq	DCB4000	AMD	5/16/2013	12
Spectrum Analyzer	Agilent	E4446A	AAQ	1/21/2014	24

### TEST DESCRIPTION

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

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


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

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

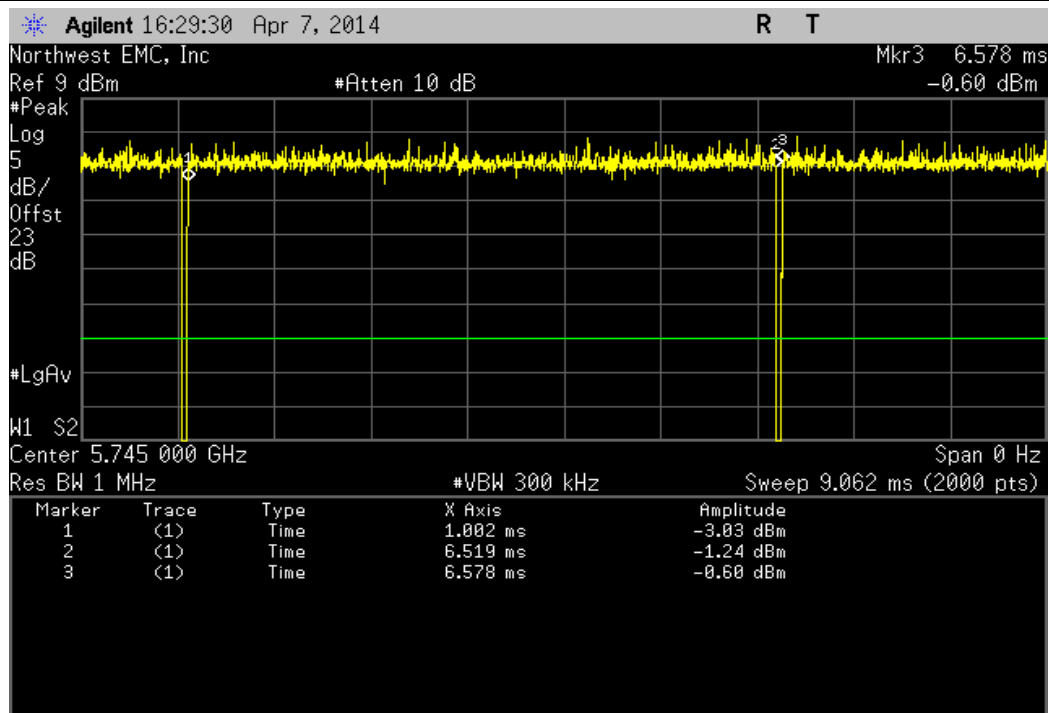


## DUTY CYCLE

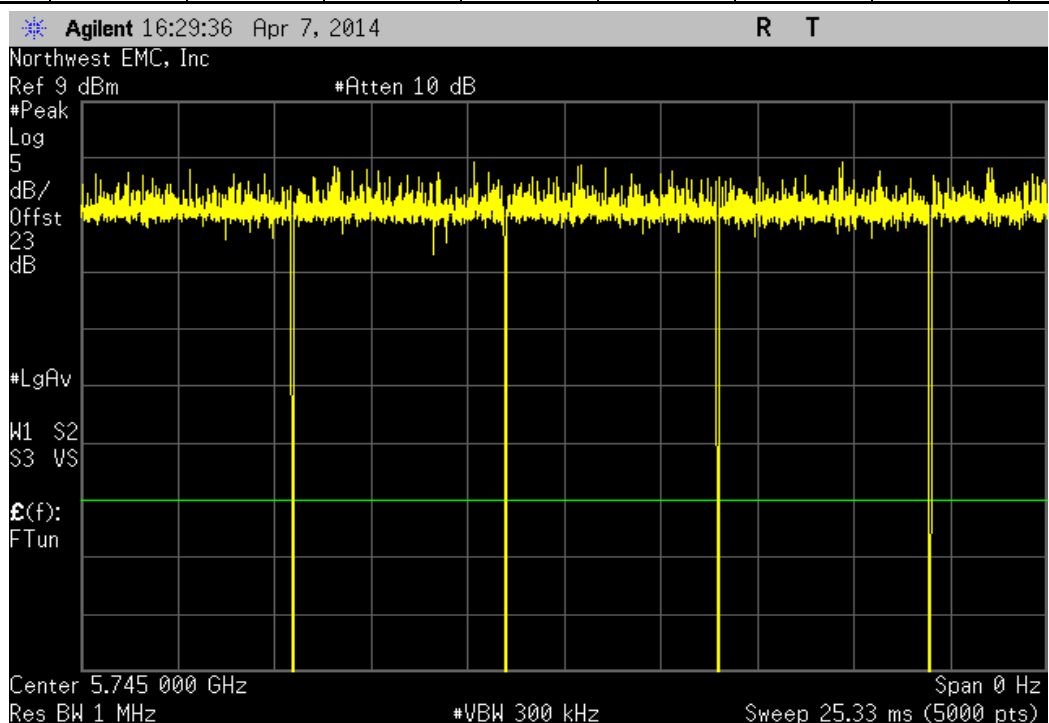
XMit 2013.08.15  
PsaTx 2013.10.23

EUT: Kezar		Work Order: SYNA0151					
Serial Number: 1		Date: 04/08/14					
Customer: Synapse Product Development LLC		Temperature: 22.4°C					
Attendees: None		Humidity: 44%					
Project: Kezar		Barometric Pres.: 1022					
Tested by: Brandon Hobbs		Power: 110VAC/60Hz					
		Job Site: EV06					
TEST SPECIFICATIONS		Test Method					
FCC 15.247:2014		ANSI C63.10:2009					
COMMENTS							
Product was test at a 17dBm maximum power level.							
DEVIATIONS FROM TEST STANDARD							
None							
Configuration #	3	Signature 					
		Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
5725 MHz - 5850 MHz Band							
802.11(a) 6 Mbps							
	Low Channel 149, 5745 MHz	5.517 mS	5.576 mS	1	98.9	N/A	N/A
	Low Channel 149, 5745 MHz	N/A	N/A	5	N/A	N/A	N/A
	Mid Channel 157, 5785 MHz	5.513 mS	5.572 mS	1	98.9	N/A	N/A
	Mid Channel 157, 5785 MHz	N/A	N/A	5	N/A	N/A	N/A
	High Channel 165, 5825 MHz	5.517 mS	5.576 mS	1	98.9	N/A	N/A
	High Channel 165, 5825 MHz	N/A	N/A	5	N/A	N/A	N/A
802.11(a) 36 Mbps							
	Low Channel 149, 5745 MHz	932.3 uS	990.6 uS	1	94.1	N/A	N/A
	Low Channel 149, 5745 MHz	N/A	N/A	5	N/A	N/A	N/A
	Mid Channel 157, 5785 MHz	930.8 uS	990.6 uS	1	94	N/A	N/A
	Mid Channel 157, 5785 MHz	N/A	N/A	5	N/A	N/A	N/A
	High Channel 165, 5825 MHz	932.3 uS	990.6 uS	1	94.1	N/A	N/A
	High Channel 165, 5825 MHz	N/A	N/A	5	N/A	N/A	N/A
802.11(a) 54 Mbps							
	Low Channel 149, 5745 MHz	624 uS	683 uS	1	91.4	N/A	N/A
	Low Channel 149, 5745 MHz	N/A	N/A	5	N/A	N/A	N/A
	Mid Channel 157, 5785 MHz	624 uS	683 uS	1	91.4	N/A	N/A
	Mid Channel 157, 5785 MHz	N/A	N/A	5	N/A	N/A	N/A
	High Channel 165, 5825 MHz	625 uS	683 uS	1	91.5	N/A	N/A
	High Channel 165, 5825 MHz	N/A	N/A	5	N/A	N/A	N/A
802.11(n) MCS0 - UNII							
	Low Channel 149, 5745 MHz	5.096 mS	5.152 mS	1	98.9	N/A	N/A
	Low Channel 149, 5745 MHz	N/A	N/A	5	N/A	N/A	N/A
	Mid Channel 157, 5785 MHz	5.096 mS	5.157 mS	1	98.8	N/A	N/A
	Mid Channel 157, 5785 MHz	N/A	N/A	5	N/A	N/A	N/A
	High Channel 165, 5825 MHz	5.096 mS	5.152 mS	1	98.9	N/A	N/A
	High Channel 165, 5825 MHz	N/A	N/A	5	N/A	N/A	N/A
802.11(n) MCS7 - UNII							
	Low Channel 149, 5745 MHz	524 uS	583 uS	1	89.9	N/A	N/A
	Low Channel 149, 5745 MHz	N/A	N/A	5	N/A	N/A	N/A
	Mid Channel 157, 5785 MHz	524 uS	582 uS	1	90	N/A	N/A
	Mid Channel 157, 5785 MHz	N/A	N/A	5	N/A	N/A	N/A
	High Channel 165, 5825 MHz	524 uS	583 uS	1	89.9	N/A	N/A
	High Channel 165, 5825 MHz	N/A	N/A	5	N/A	N/A	N/A

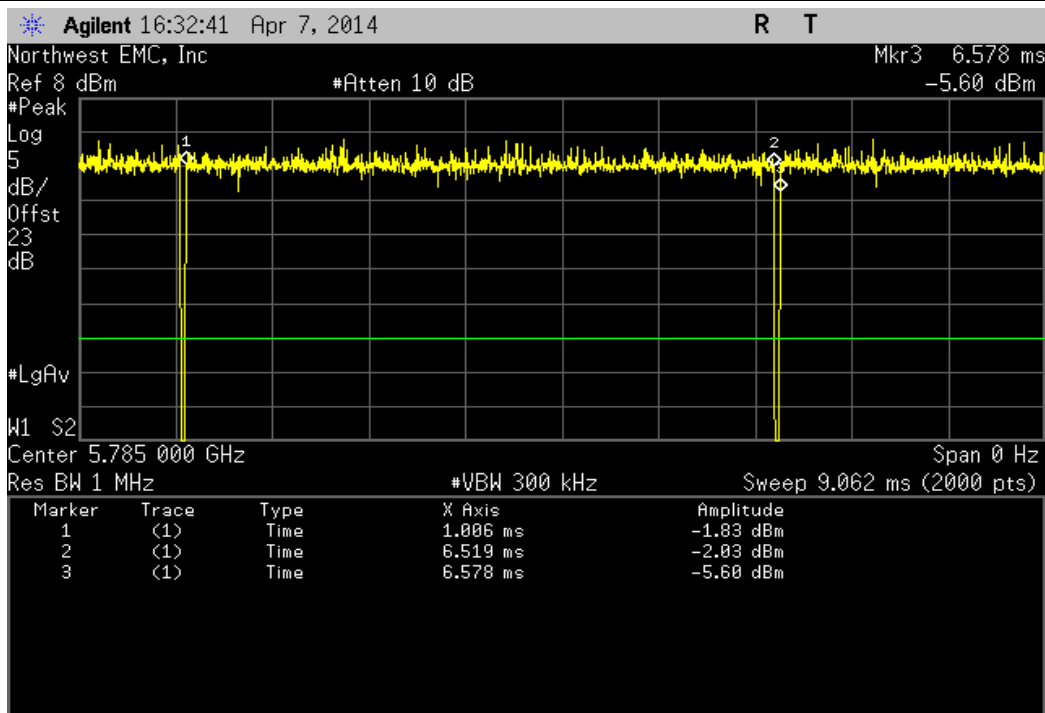
5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Low Channel 149, 5745 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
	5.517 mS	5.576 mS	1	98.9	N/A	N/A



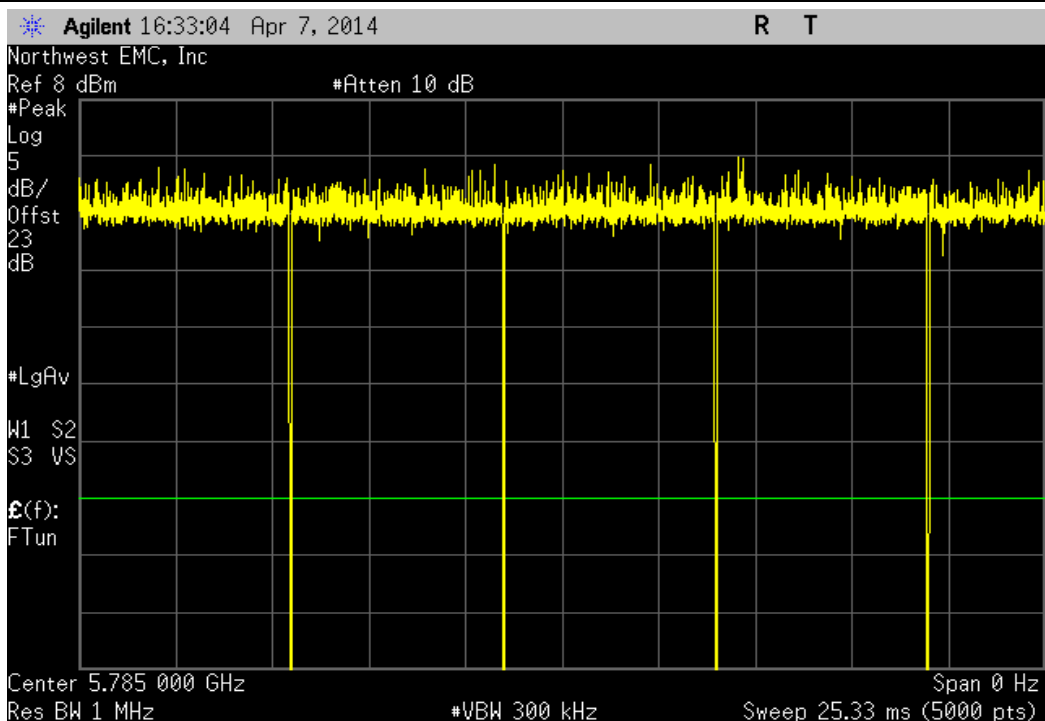
5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Low Channel 149, 5745 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
	N/A	N/A	5	N/A	N/A	N/A



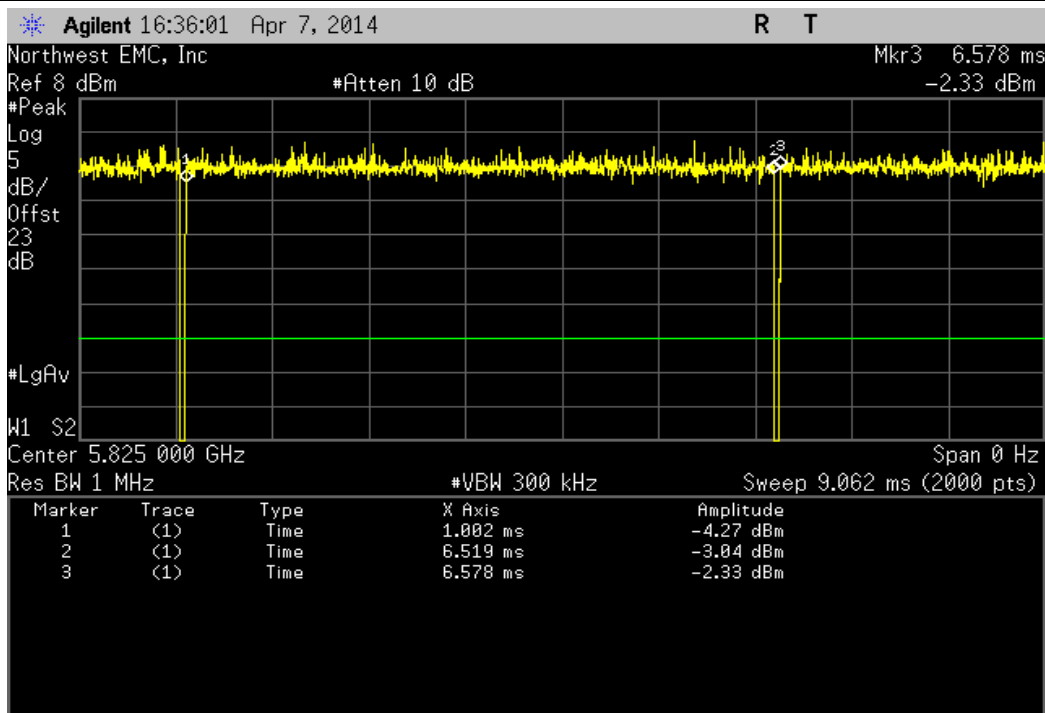
5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Mid Channel 157, 5785 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
	5.513 mS	5.572 mS	1	98.9	N/A	N/A



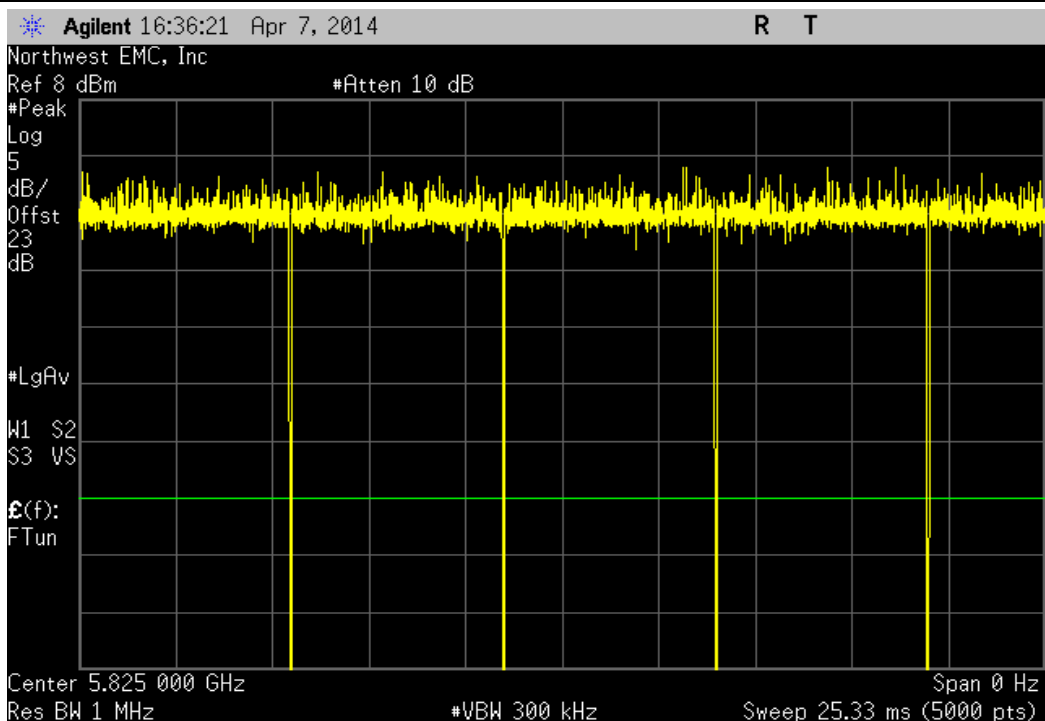
5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Mid Channel 157, 5785 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
	N/A	N/A	5	N/A	N/A	N/A



5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, High Channel 165, 5825 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
	5.517 mS	5.576 mS	1	98.9	N/A	N/A

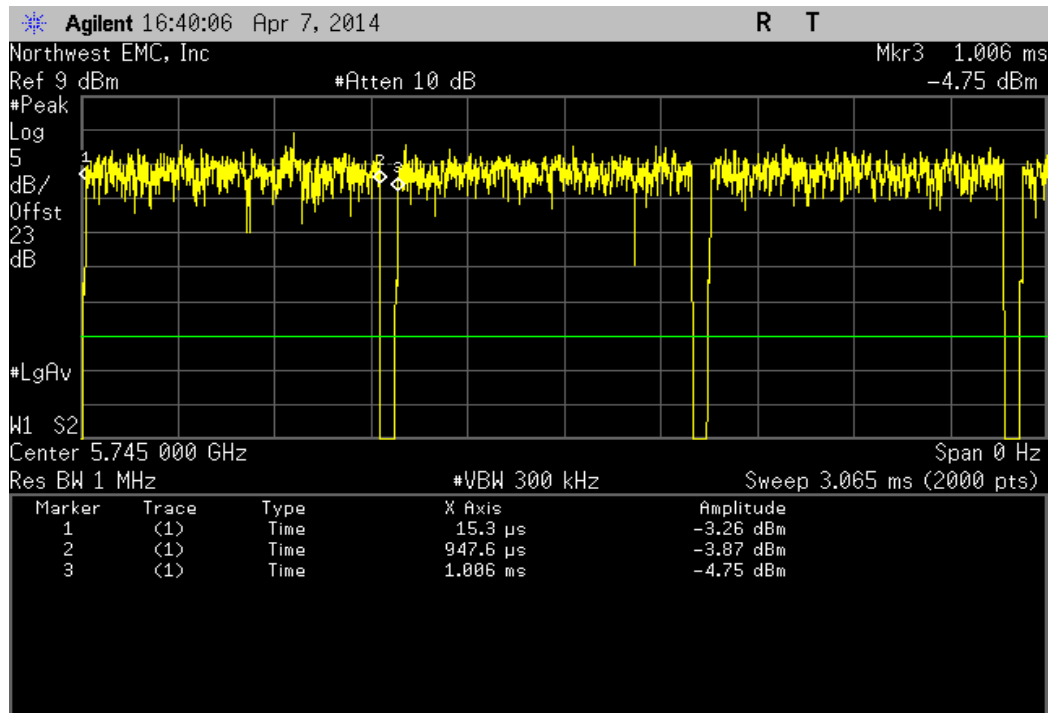


5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, High Channel 165, 5825 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
	N/A	N/A	5	N/A	N/A	N/A





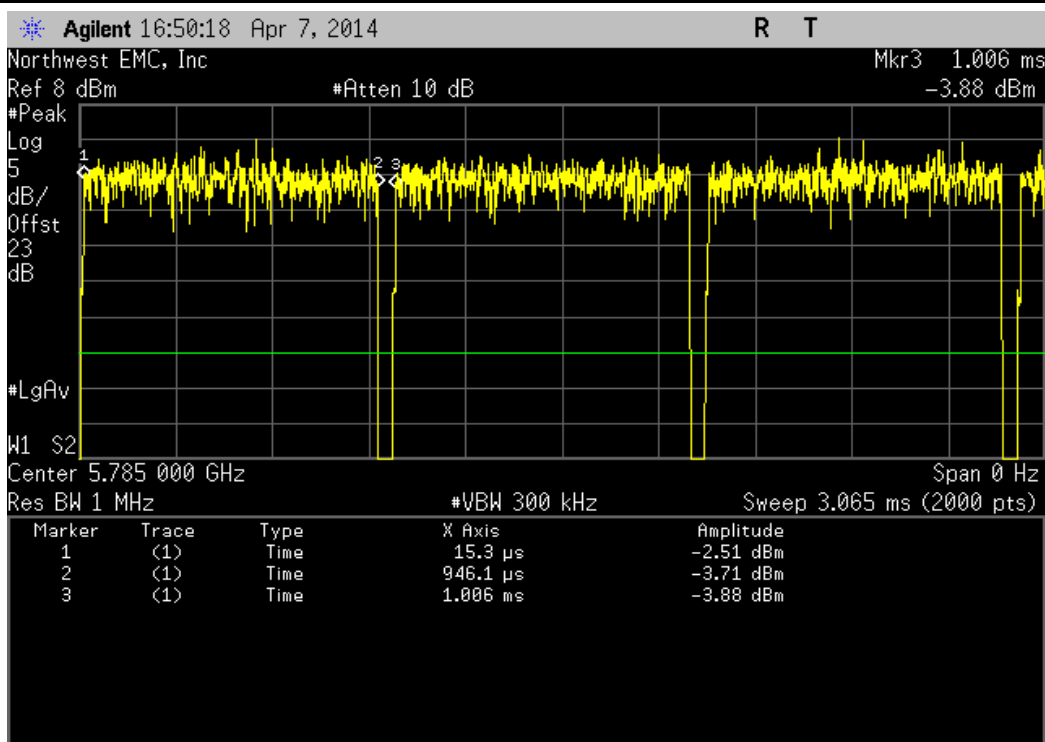
5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Low Channel 149, 5745 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result	
932.3 uS	990.6 uS	1	94.1	N/A	N/A	



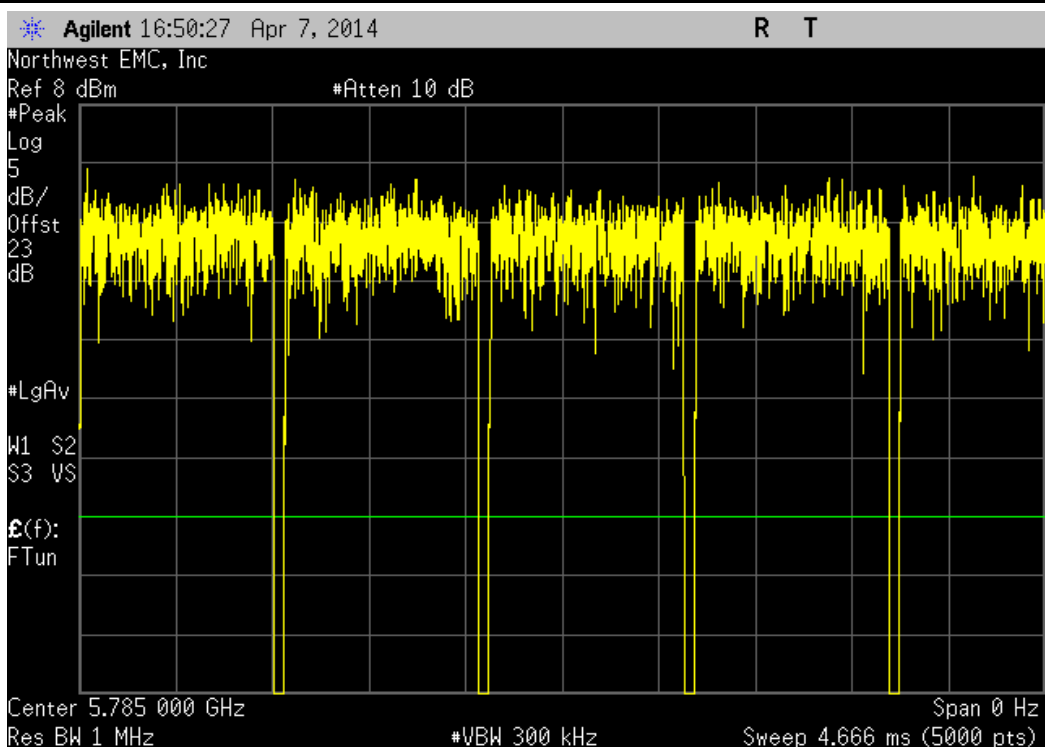
5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Low Channel 149, 5745 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result	
N/A	N/A	5	N/A	N/A	N/A	



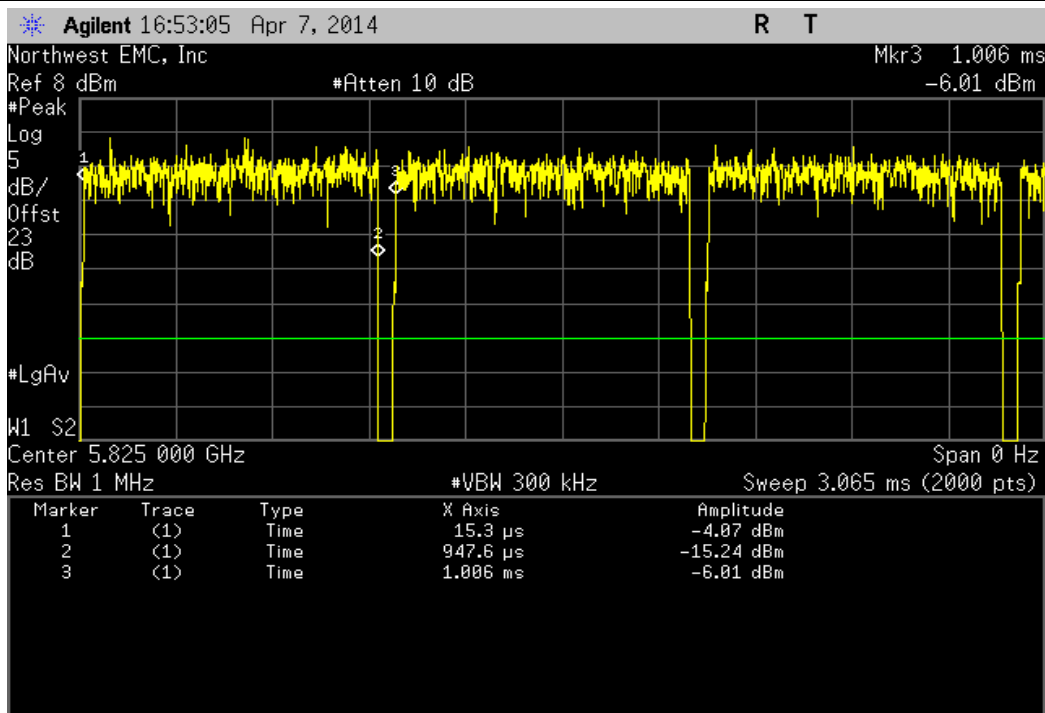
5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Mid Channel 157, 5785 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
	930.8 uS	990.6 uS	1	94	N/A	N/A



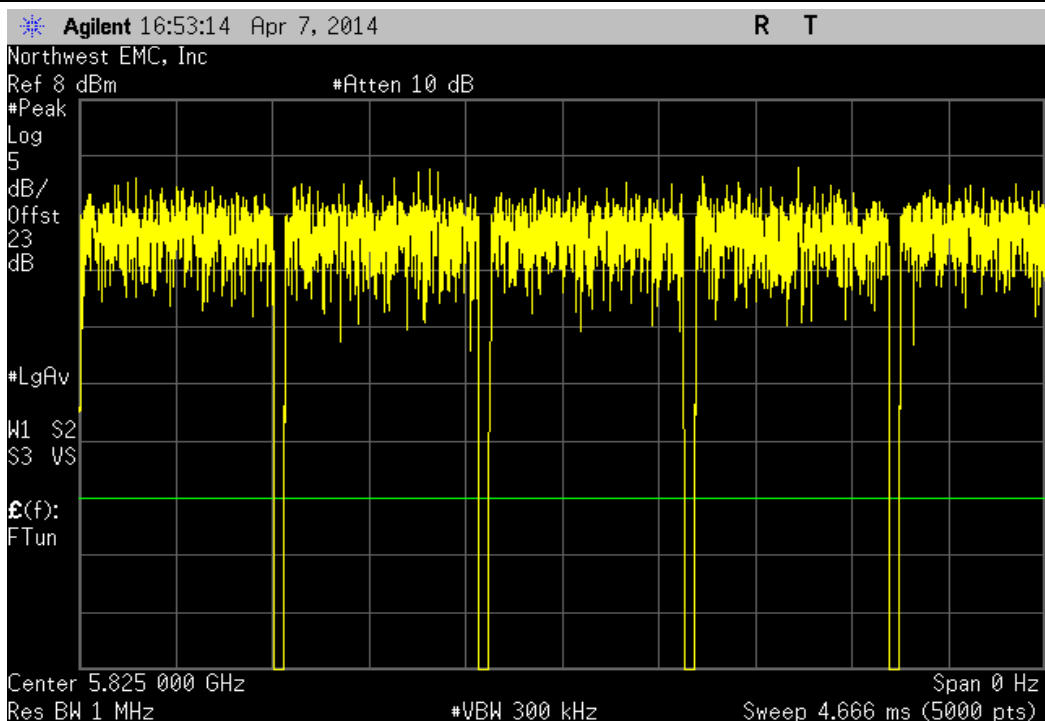
5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Mid Channel 157, 5785 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
	N/A	N/A	5	N/A	N/A	N/A



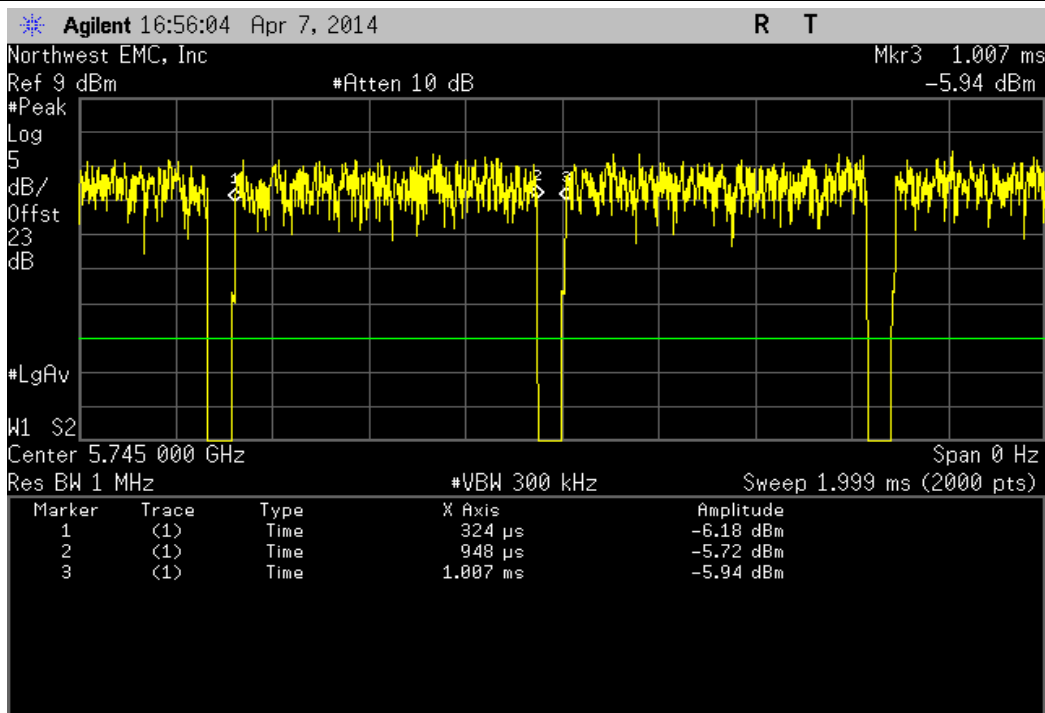
5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, High Channel 165, 5825 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result	
932.3 uS	990.6 uS	1	94.1	N/A	N/A	



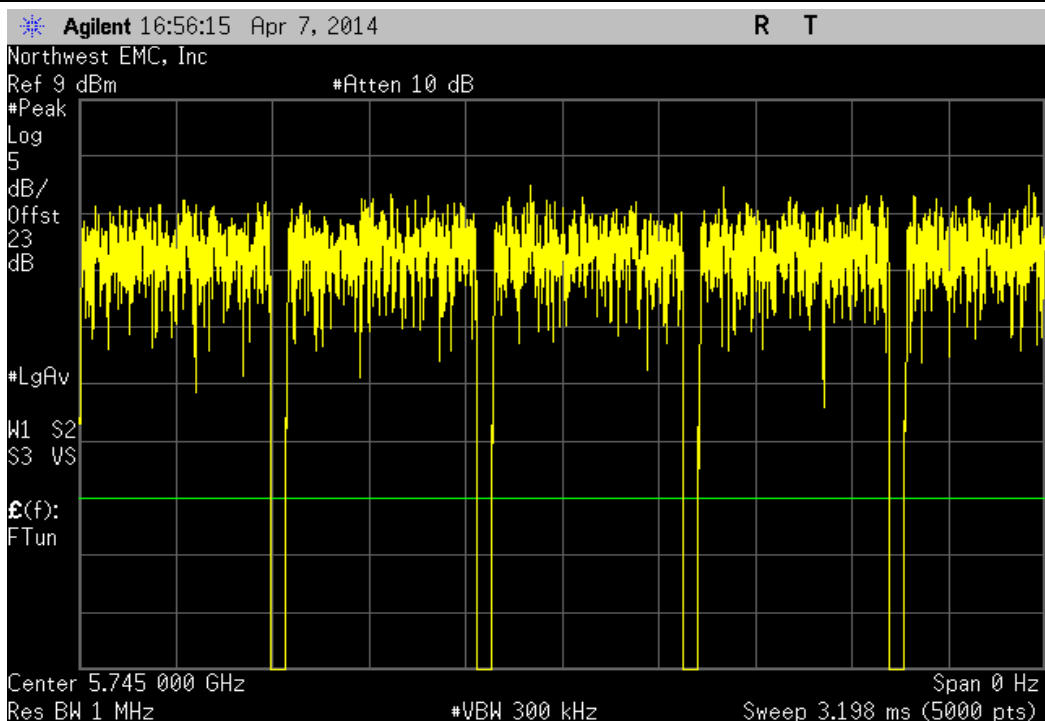
5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, High Channel 165, 5825 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result	
N/A	N/A	5	N/A	N/A	N/A	



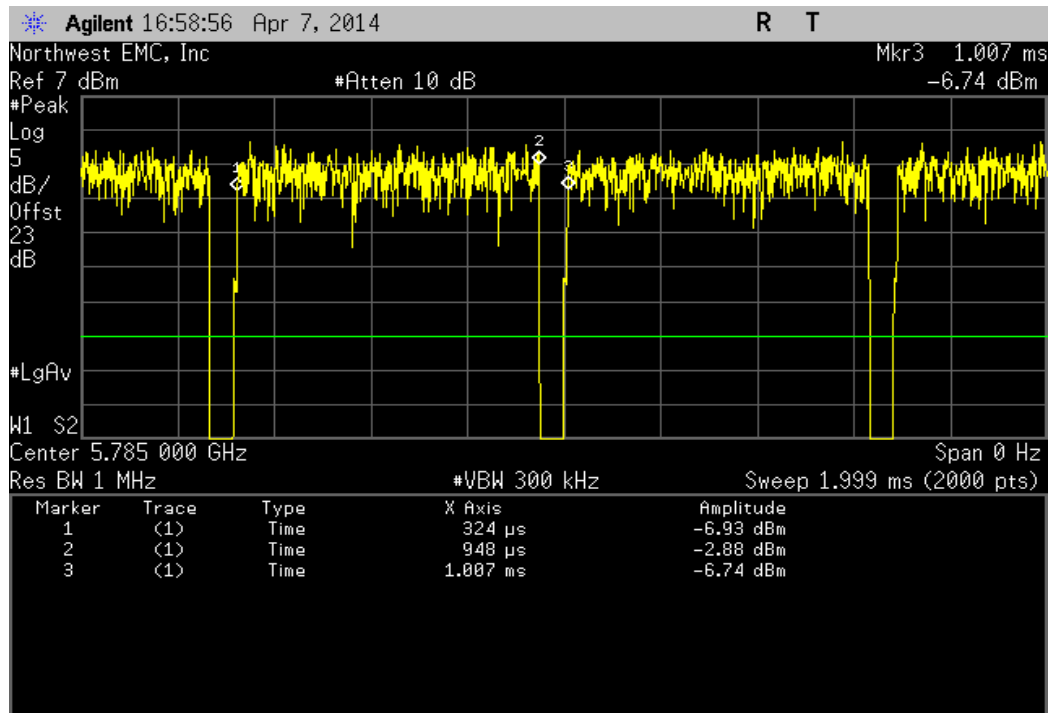
5725 MHz - 5850 MHz Band, 802.11(a) 54 Mbps, Low Channel 149, 5745 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
	624 uS	683 uS	1	91.4	N/A	N/A



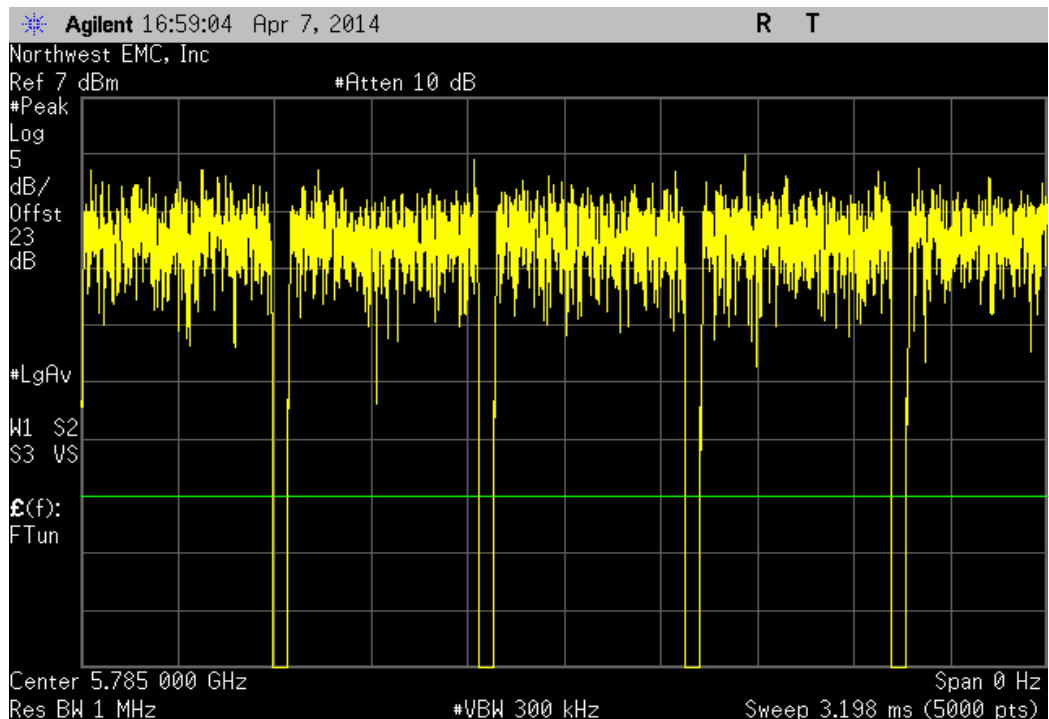
5725 MHz - 5850 MHz Band, 802.11(a) 54 Mbps, Low Channel 149, 5745 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
	N/A	N/A	5	N/A	N/A	N/A



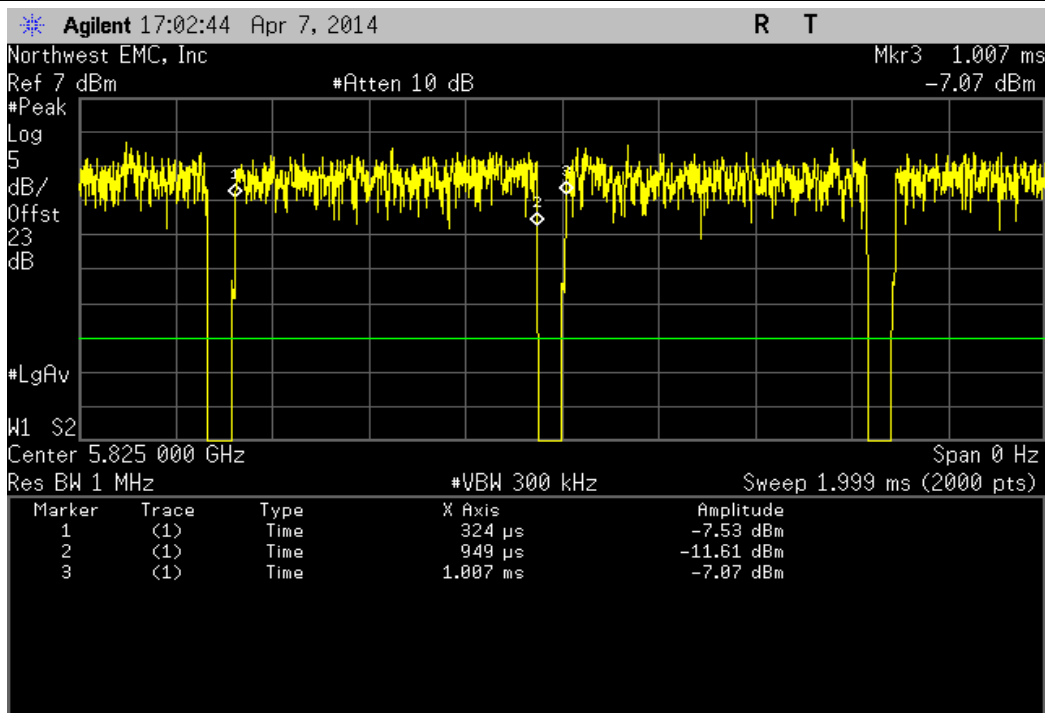
5725 MHz - 5850 MHz Band, 802.11(a) 54 Mbps, Mid Channel 157, 5785 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
	624 uS	683 uS	1	91.4	N/A	N/A



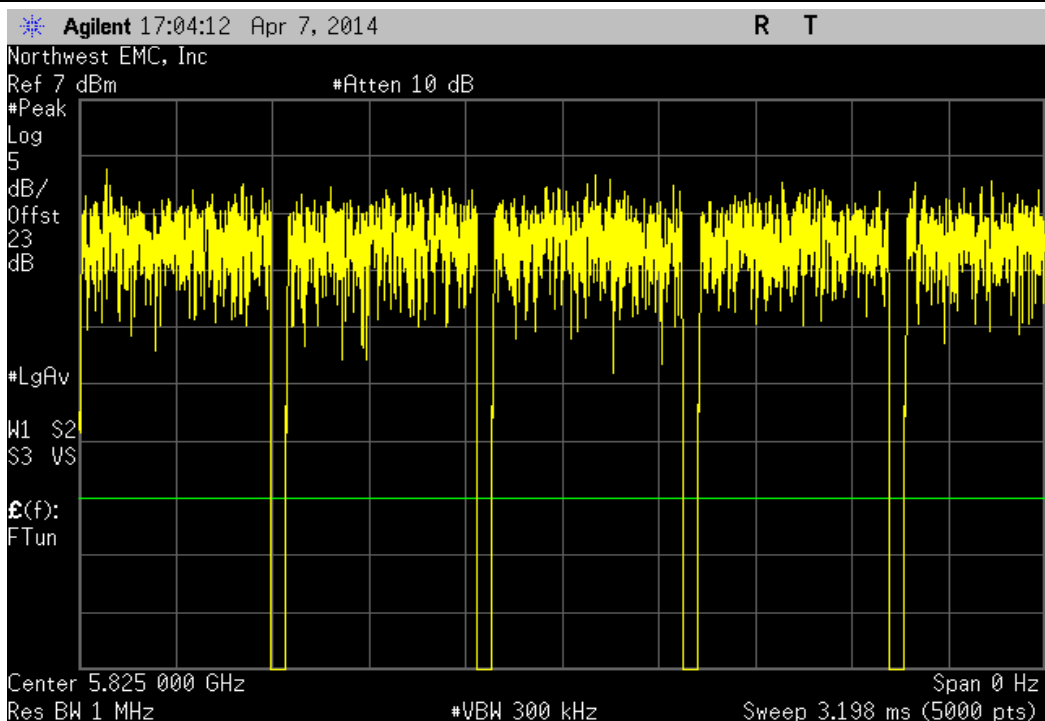
5725 MHz - 5850 MHz Band, 802.11(a) 54 Mbps, Mid Channel 157, 5785 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
	N/A	N/A	5	N/A	N/A	N/A



5725 MHz - 5850 MHz Band, 802.11(a) 54 Mbps, High Channel 165, 5825 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
	625 uS	683 uS	1	91.5	N/A	N/A

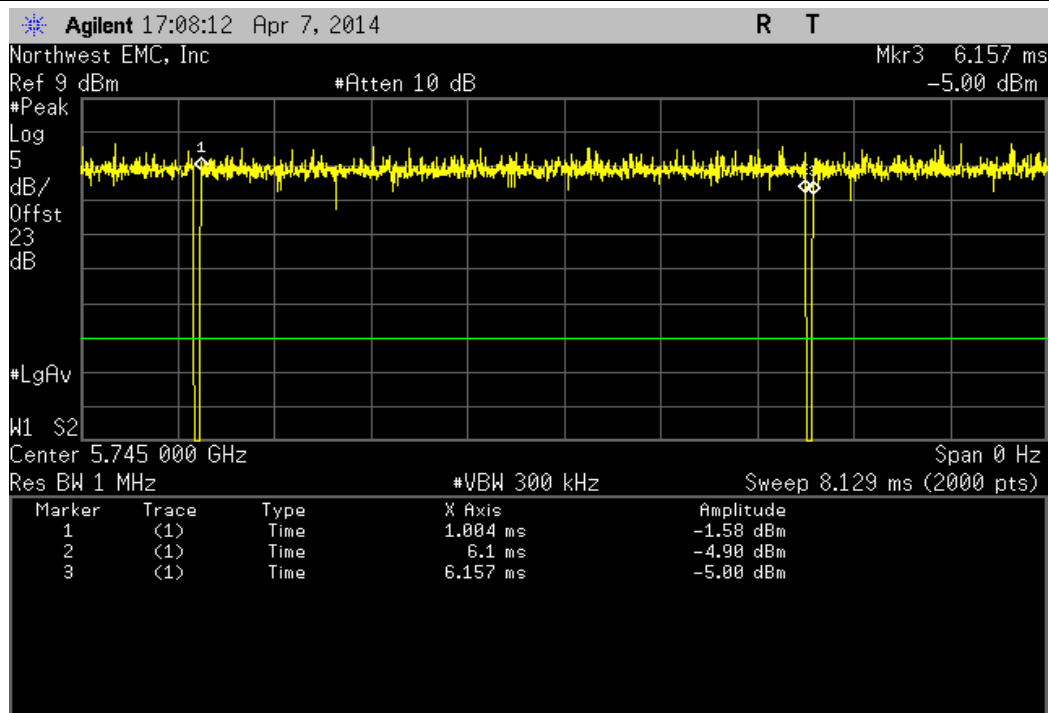


5725 MHz - 5850 MHz Band, 802.11(a) 54 Mbps, High Channel 165, 5825 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
	N/A	N/A	5	N/A	N/A	N/A

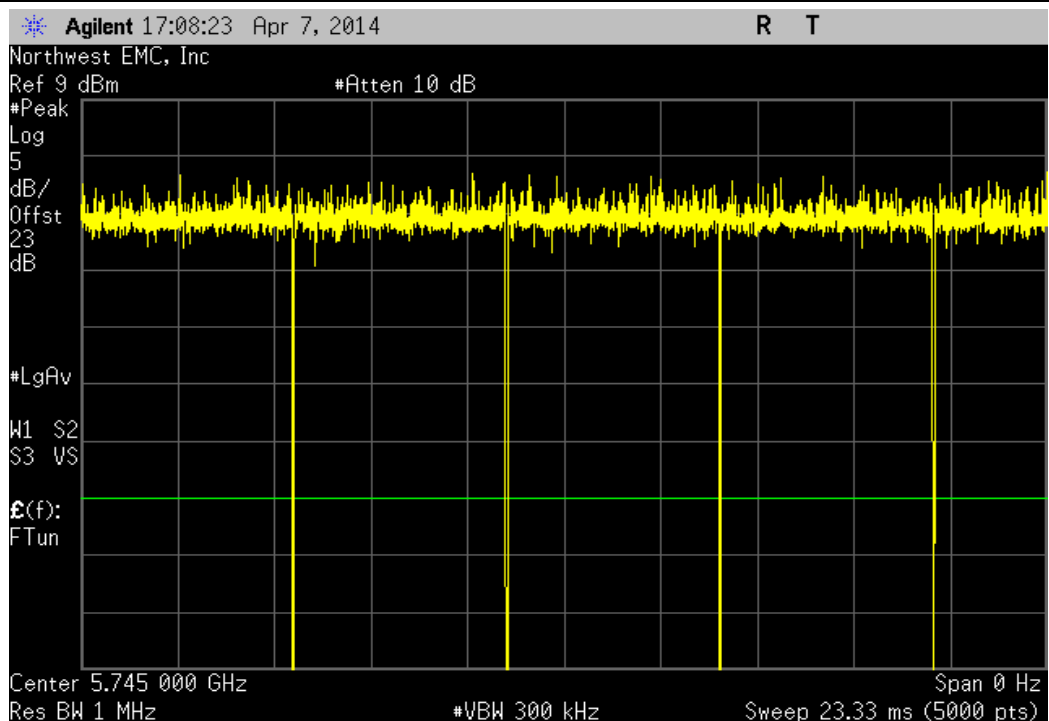




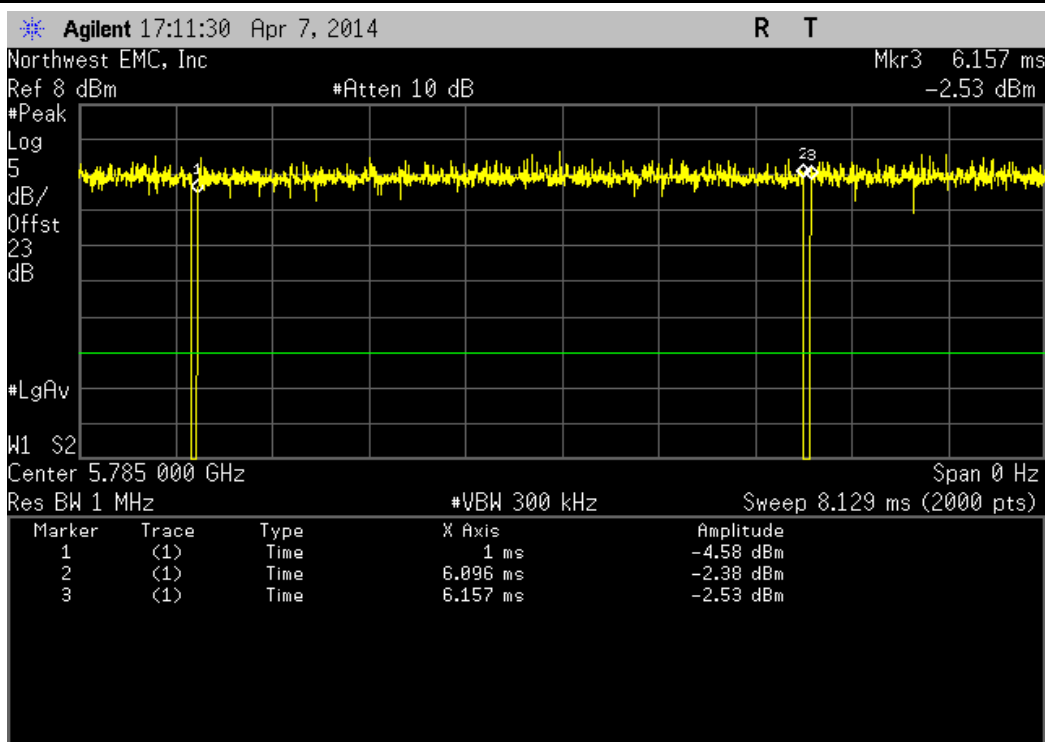
5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, Low Channel 149, 5745 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
	5.096 mS	5.152 mS	1	98.9	N/A	N/A



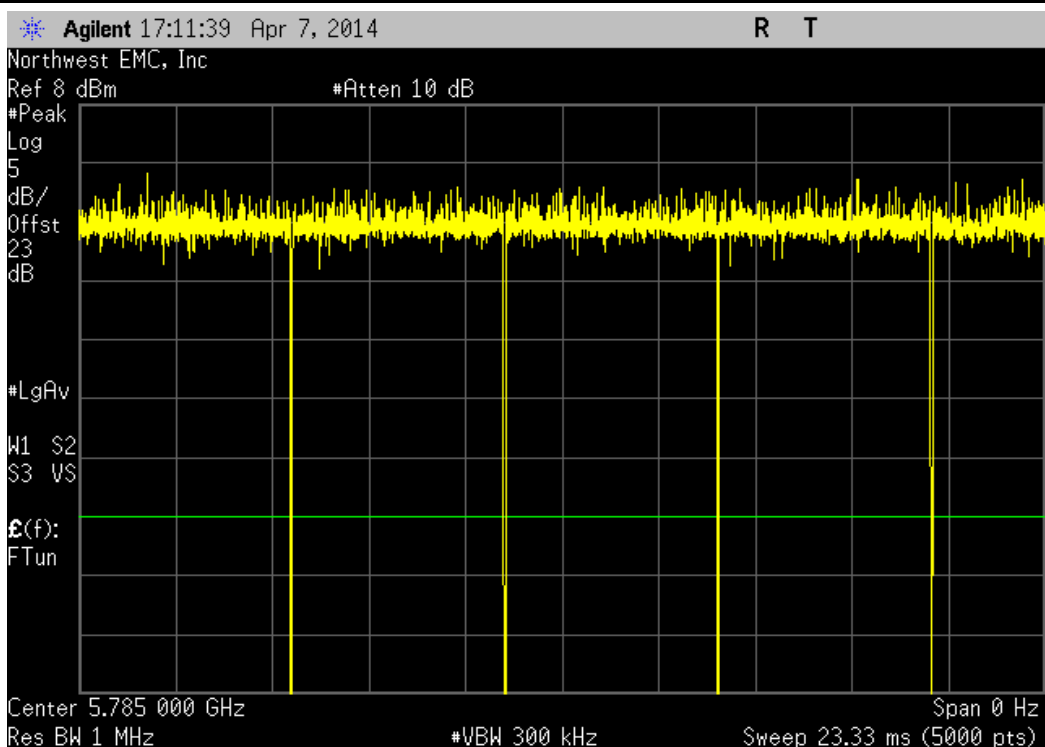
5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, Low Channel 149, 5745 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
	N/A	N/A	5	N/A	N/A	N/A



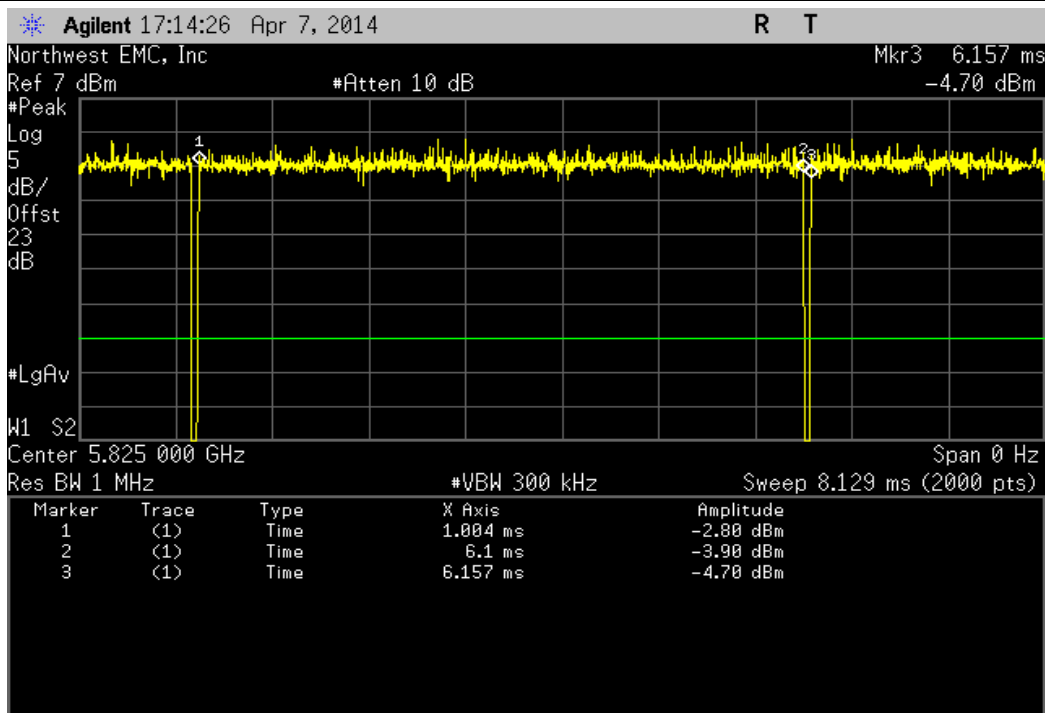
5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, Mid Channel 157, 5785 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
	5.096 mS	5.157 mS	1	98.8	N/A	N/A



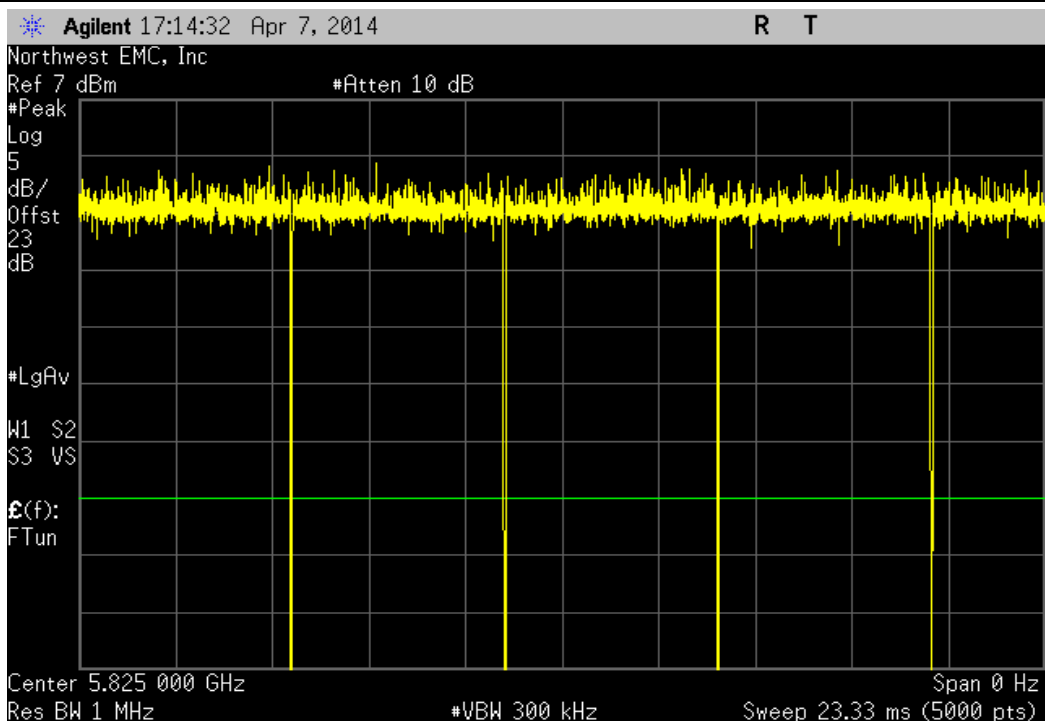
5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, Mid Channel 157, 5785 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
	N/A	N/A	5	N/A	N/A	N/A



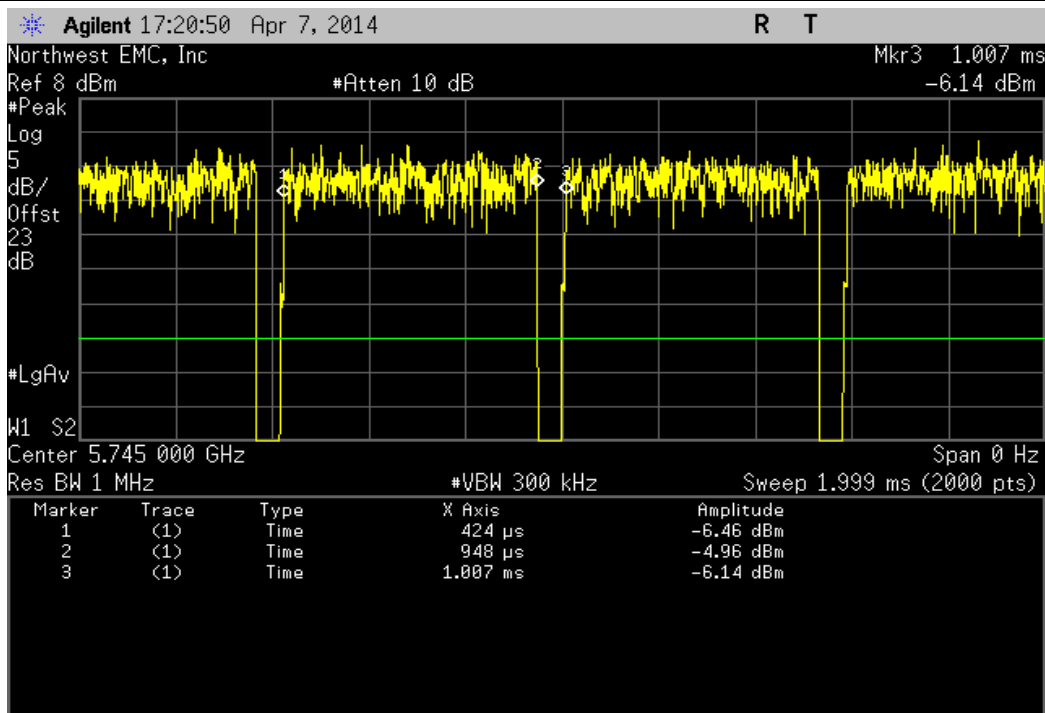
5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, High Channel 165, 5825 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
	5.096 mS	5.152 mS	1	98.9	N/A	N/A



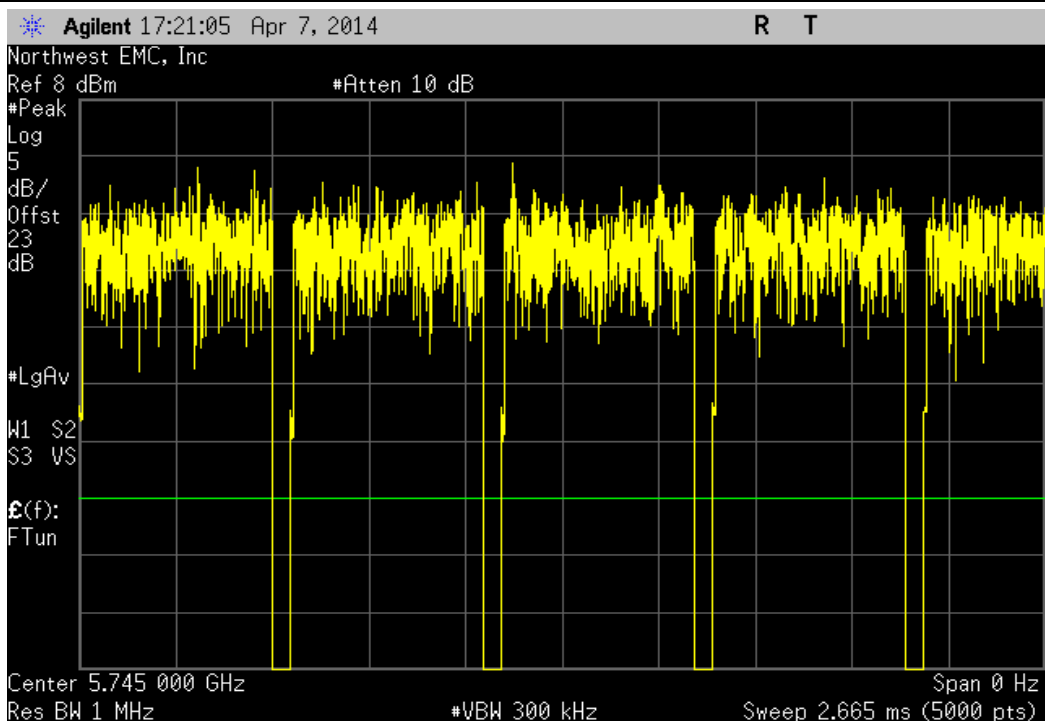
5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, High Channel 165, 5825 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
	N/A	N/A	5	N/A	N/A	N/A



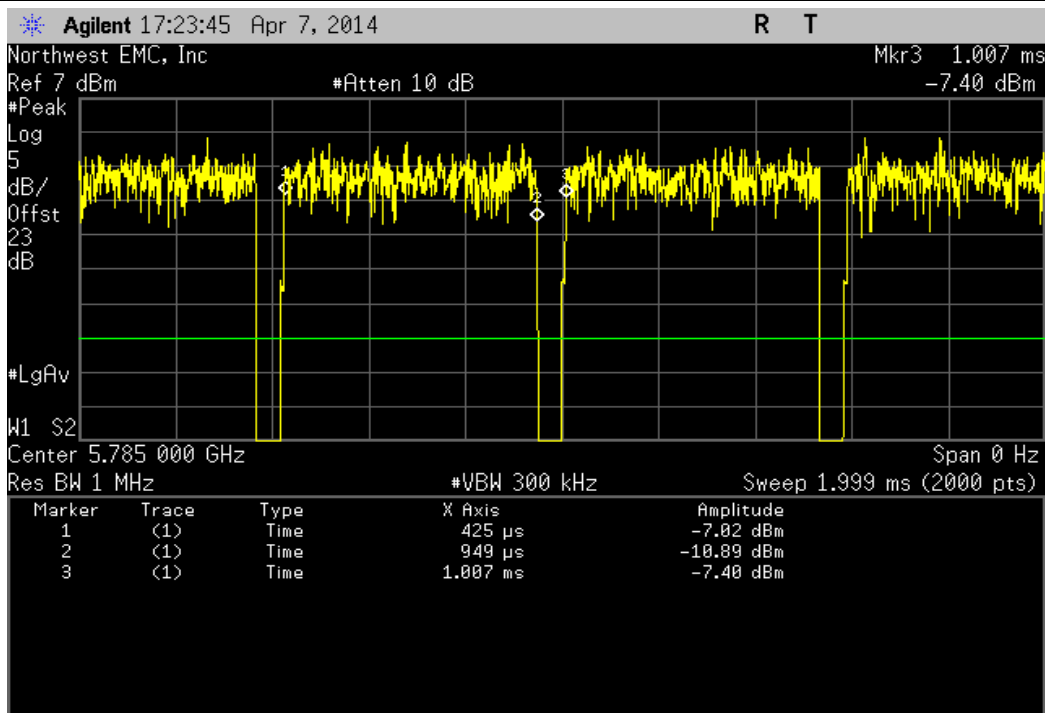
5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, Low Channel 149, 5745 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
	524 uS	583 uS	1	89.9	N/A	N/A



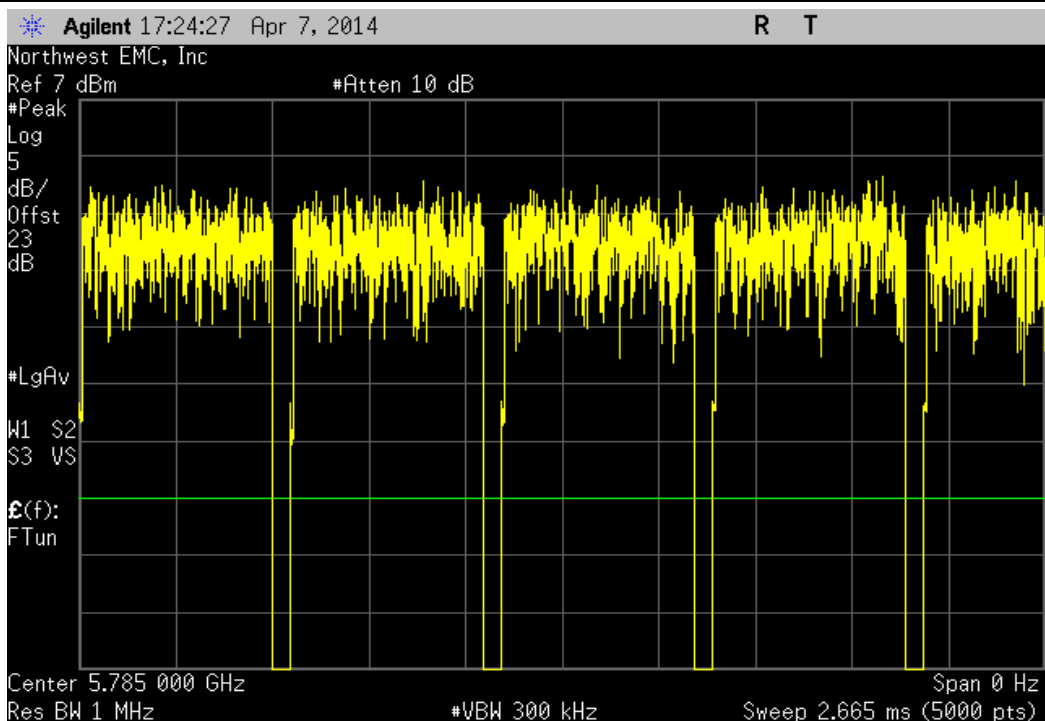
5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, Low Channel 149, 5745 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
	N/A	N/A	5	N/A	N/A	N/A



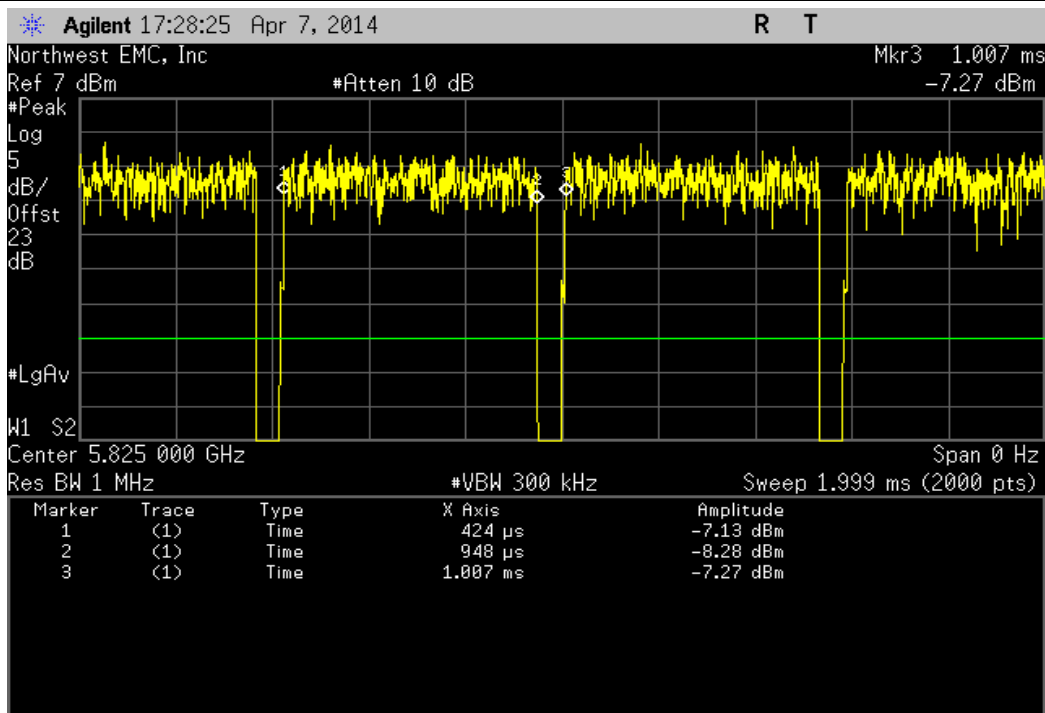
5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, Mid Channel 157, 5785 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result	
524 uS	582 uS	1	90	N/A	N/A	



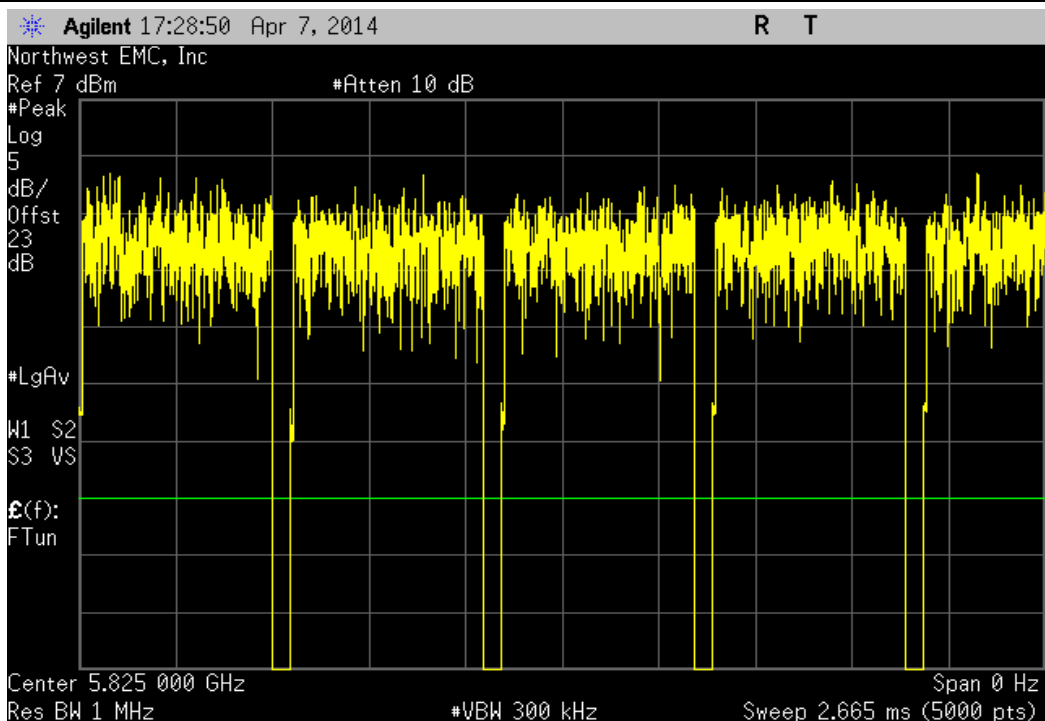
5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, Mid Channel 157, 5785 MHz						
Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result	
N/A	N/A	5	N/A	N/A	N/A	



5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, High Channel 165, 5825 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
	524 uS	583 uS	1	89.9	N/A	N/A



5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, High Channel 165, 5825 MHz						
	Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
	N/A	N/A	5	N/A	N/A	N/A





## OCCUPIED BANDWIDTH

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

### TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval (mo.)
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	2/3/2014	12
MXG Analog Signal Generator	Agilent	N5181A	TIG	3/28/2014	36
Power Meter	Gigatronics	8651A	SPM	11/26/2013	24
Power Sensor	Gigatronics	80701A	SPL	7/8/2011	36
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2013	12
40GHz DC Block	Miteq	DCB4000	AMD	5/16/2013	12
Spectrum Analyzer	Agilent	E4446A	AAQ	1/21/2014	24

### TEST DESCRIPTION


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

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



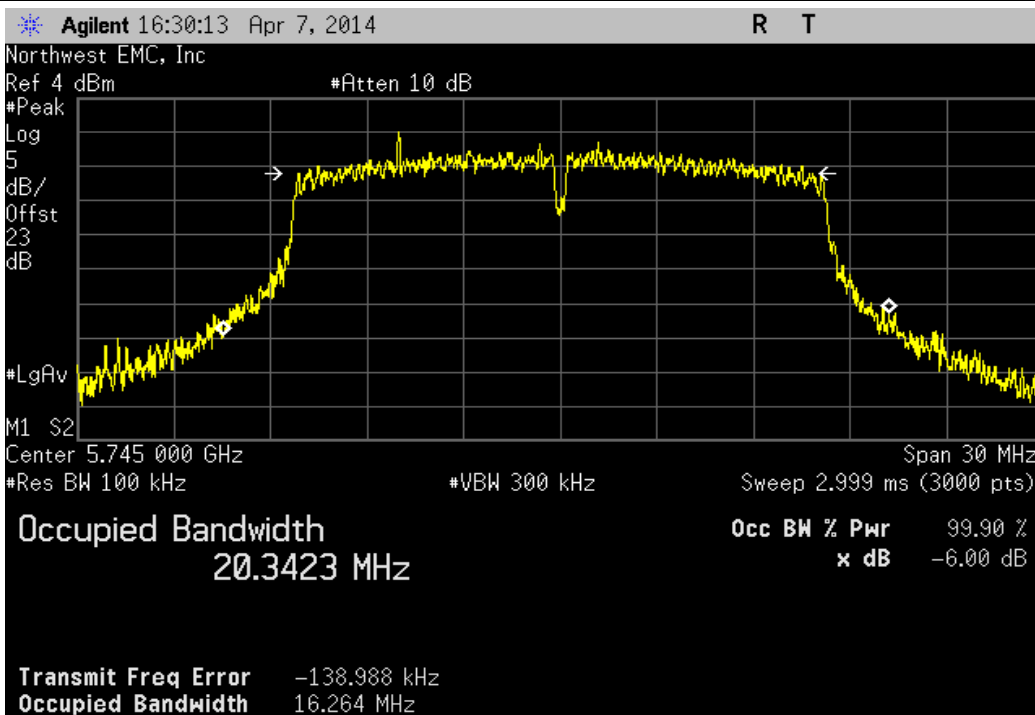
## OCCUPIED BANDWIDTH

XMit 2013.08.15  
PsaTx 2013.10.23

EUT: Kezar		Work Order: SYNA0151	
Serial Number: 1		Date: 04/08/14	
Customer: Synapse Product Development LLC		Temperature: 22.4°C	
Attendees: None		Humidity: 45%	
Project: Kezar		Barometric Pres.: 1022	
Tested by: Brandon Hobbs		Power: 110VAC/60Hz	
		Job Site: EV06	
TEST SPECIFICATIONS		Test Method	
FCC 15.247:2014		ANSI C63.10:2009	
COMMENTS			
Product was test at a 17dBm maximum power level.			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	3	Signature 	
		Value	Limit
5725 MHz - 5850 MHz Band			Result
802.11(a) 6 Mbps			
Low Channel 149, 5745 MHz		16.264 MHz	> 500 kHz Pass
Mid Channel 157, 5785 MHz		15.162 MHz	> 500 kHz Pass
High Channel 165, 5825 MHz		15.084 MHz	> 500 kHz Pass
802.11(a) 36 Mbps			
Low Channel 149, 5745 MHz		15.71 MHz	> 500 kHz Pass
Mid Channel 157, 5785 MHz		16.218 MHz	> 500 kHz Pass
High Channel 165, 5825 MHz		16.262 MHz	> 500 kHz Pass
802.11(a) 54 Mbps			
Low Channel 149, 5745 MHz		15.866 MHz	> 500 kHz Pass
Mid Channel 157, 5785 MHz		16.107 MHz	> 500 kHz Pass
High Channel 165, 5825 MHz		15.97 MHz	> 500 kHz Pass
802.11(n) MCS0 - UNII			
Low Channel 149, 5745 MHz		16.672 MHz	> 500 kHz Pass
Mid Channel 157, 5785 MHz		14.369 MHz	> 500 kHz Pass
High Channel 165, 5825 MHz		16.68 MHz	> 500 kHz Pass
802.11(n) MCS7 - UNII			
Low Channel 149, 5745 MHz		16.118 MHz	> 500 kHz Pass
Mid Channel 157, 5785 MHz		16.485 MHz	> 500 kHz Pass
High Channel 165, 5825 MHz		17.216 MHz	> 500 kHz Pass

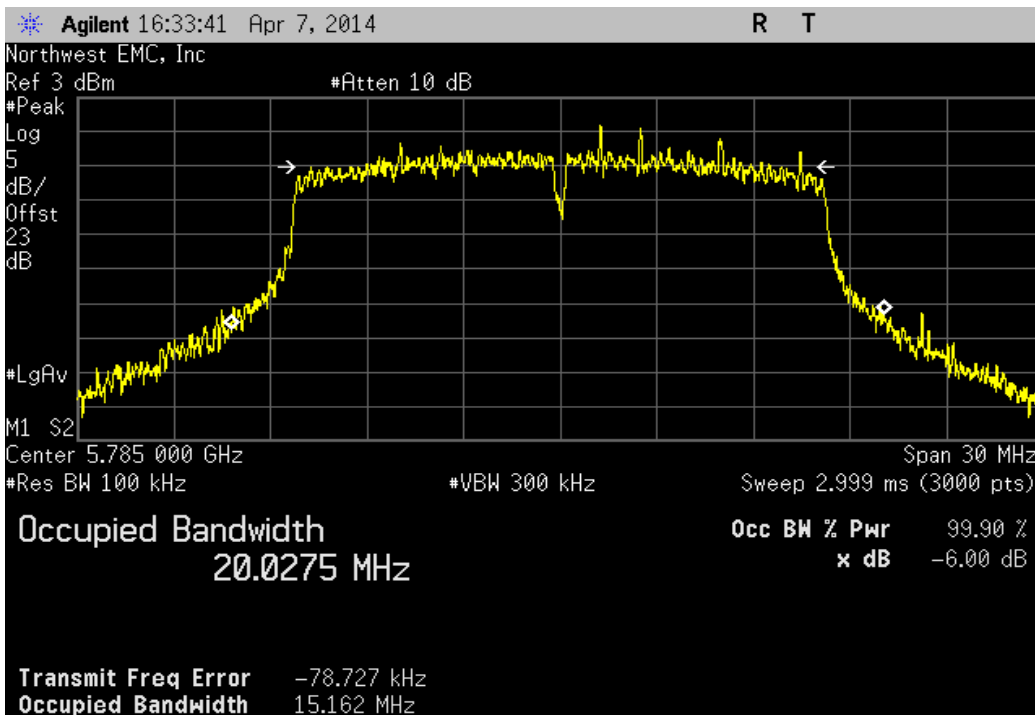
5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Low Channel 149, 5745 MHz

Value	Limit	Result
16.264 MHz	> 500 kHz	Pass



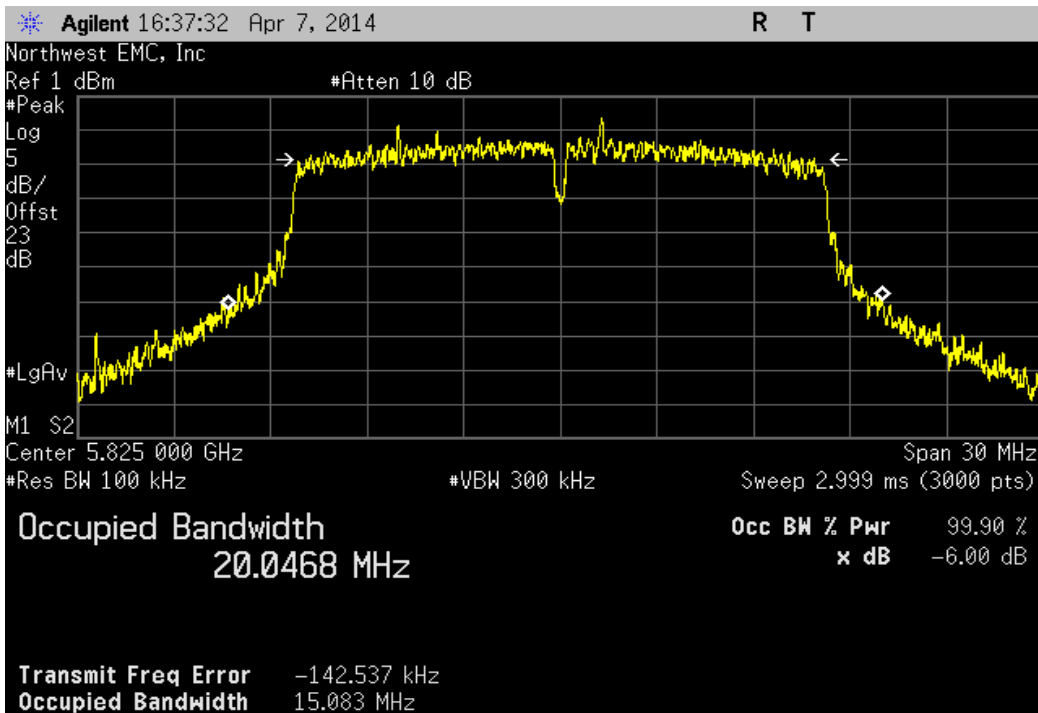
5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Mid Channel 157, 5785 MHz

Value	Limit	Result
15.162 MHz	> 500 kHz	Pass



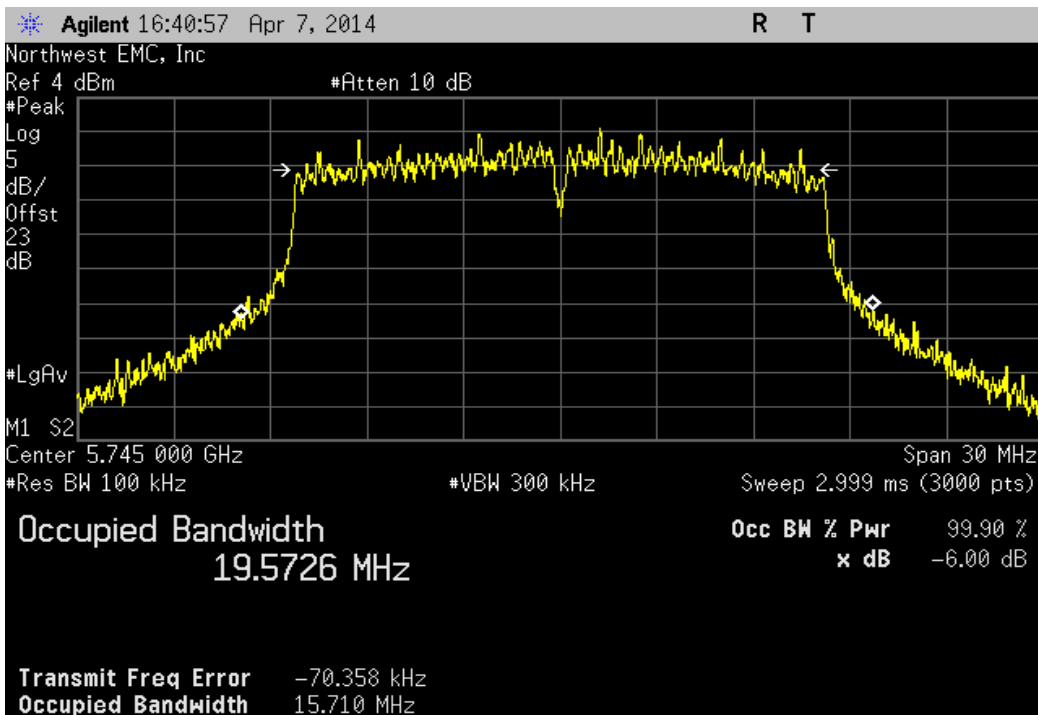
5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, High Channel 165, 5825 MHz

Value	Limit	Result
15.084 MHz	> 500 kHz	Pass



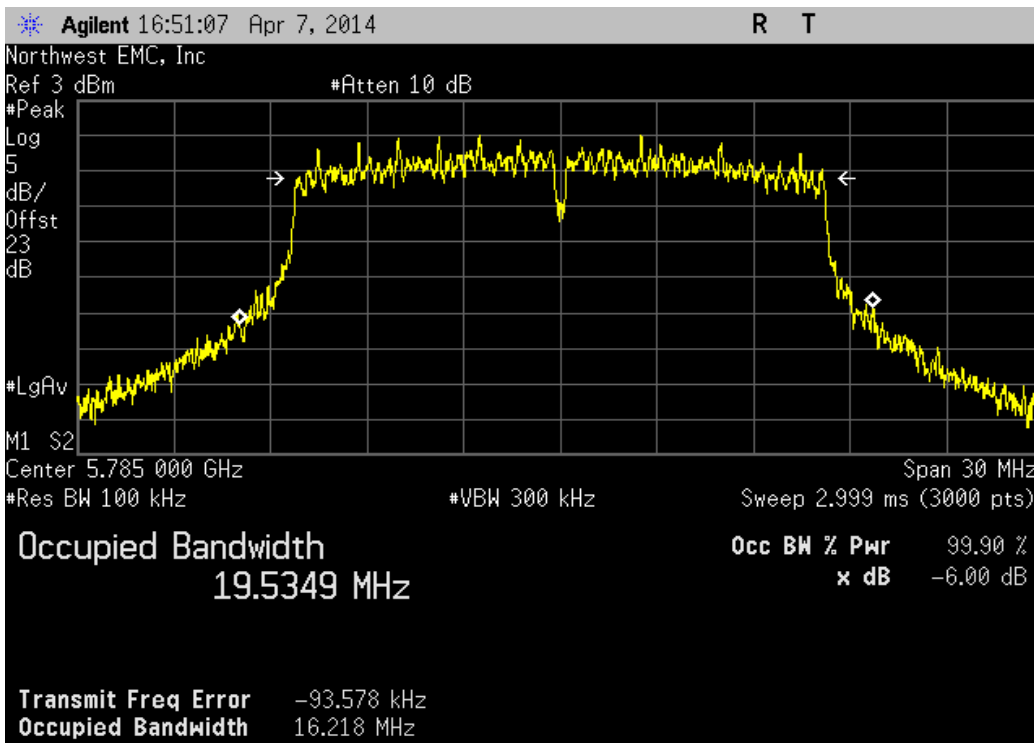
5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Low Channel 149, 5745 MHz

Value	Limit	Result
15.71 MHz	> 500 kHz	Pass



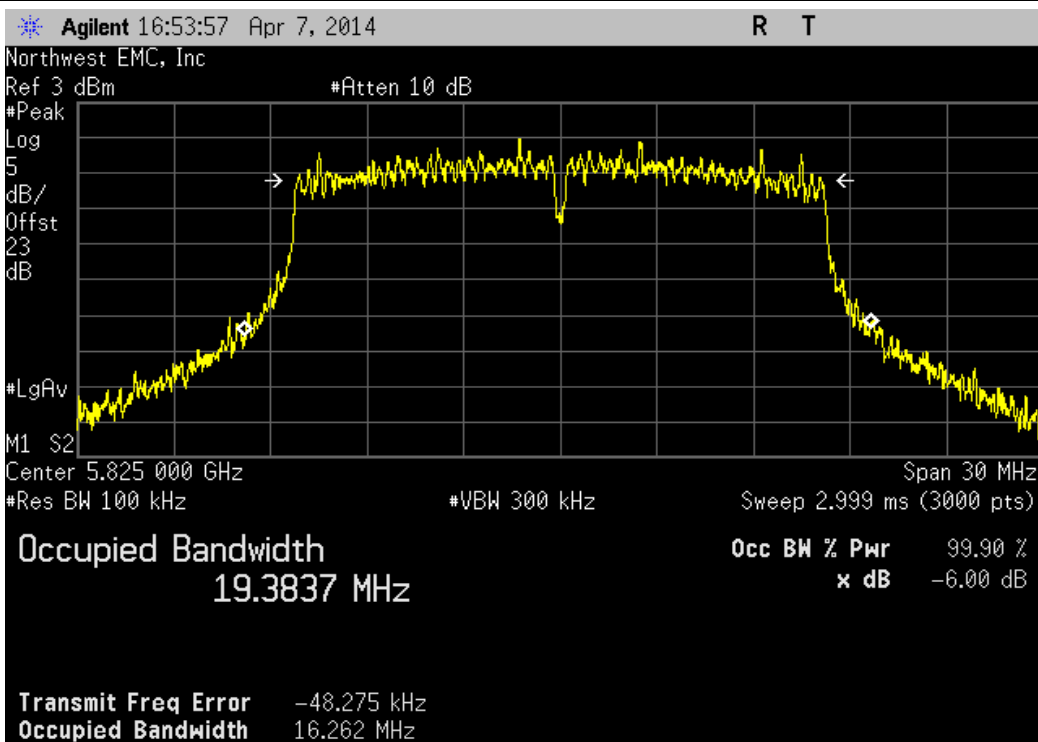
5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Mid Channel 157, 5785 MHz

				Value	Limit	Result
				16.218 MHz	> 500 kHz	Pass



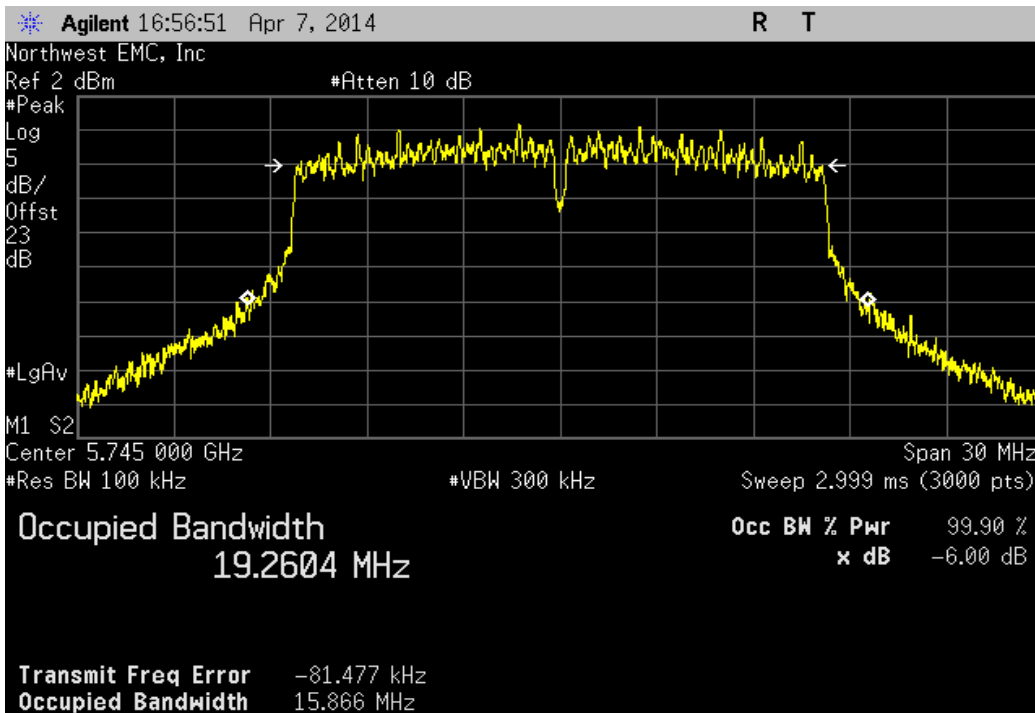
5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, High Channel 165, 5825 MHz

				Value	Limit	Result
				16.262 MHz	> 500 kHz	Pass



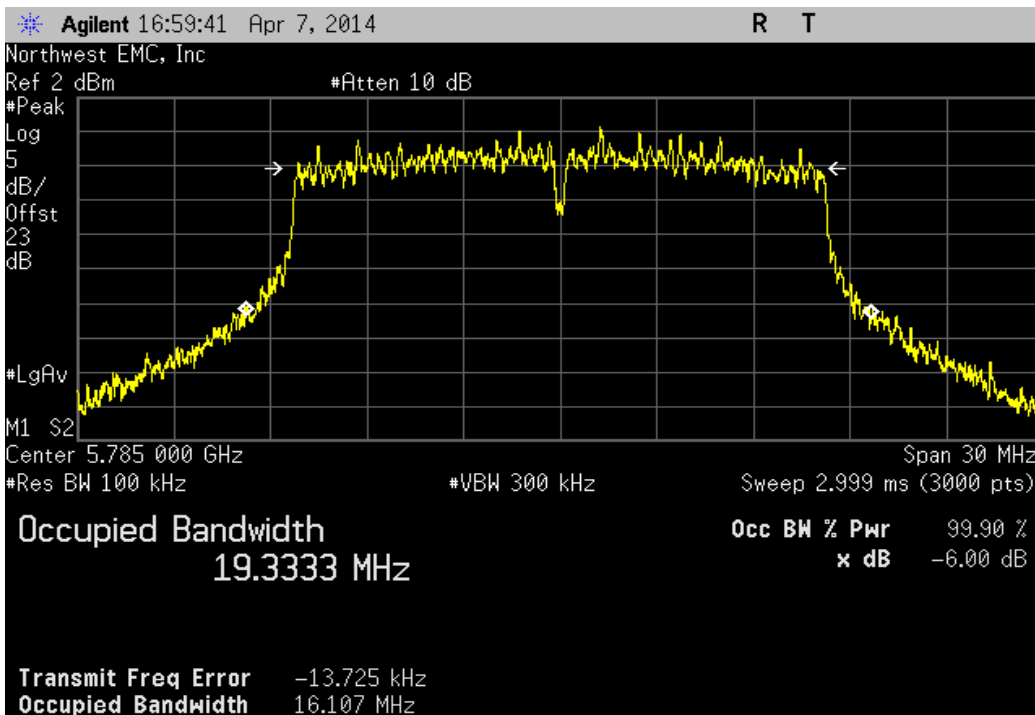
5725 MHz - 5850 MHz Band, 802.11(a) 54 Mbps, Low Channel 149, 5745 MHz

Value	Limit	Result
15.866 MHz	> 500 kHz	Pass



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

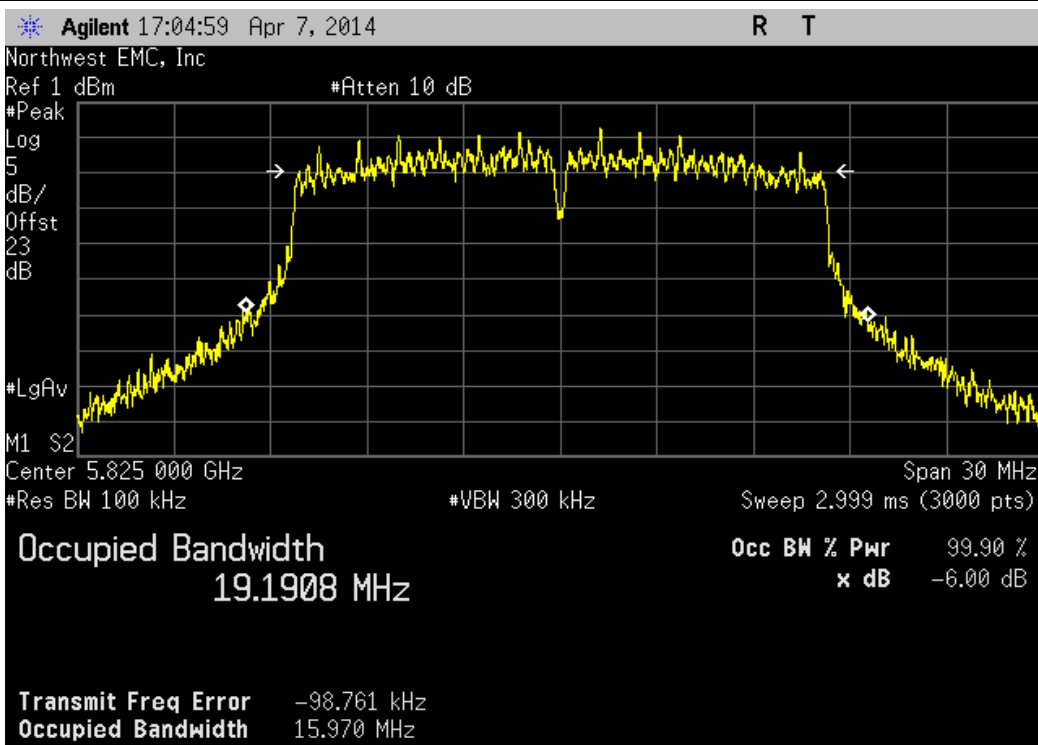
Value	Limit	Result
16.107 MHz	> 500 kHz	Pass





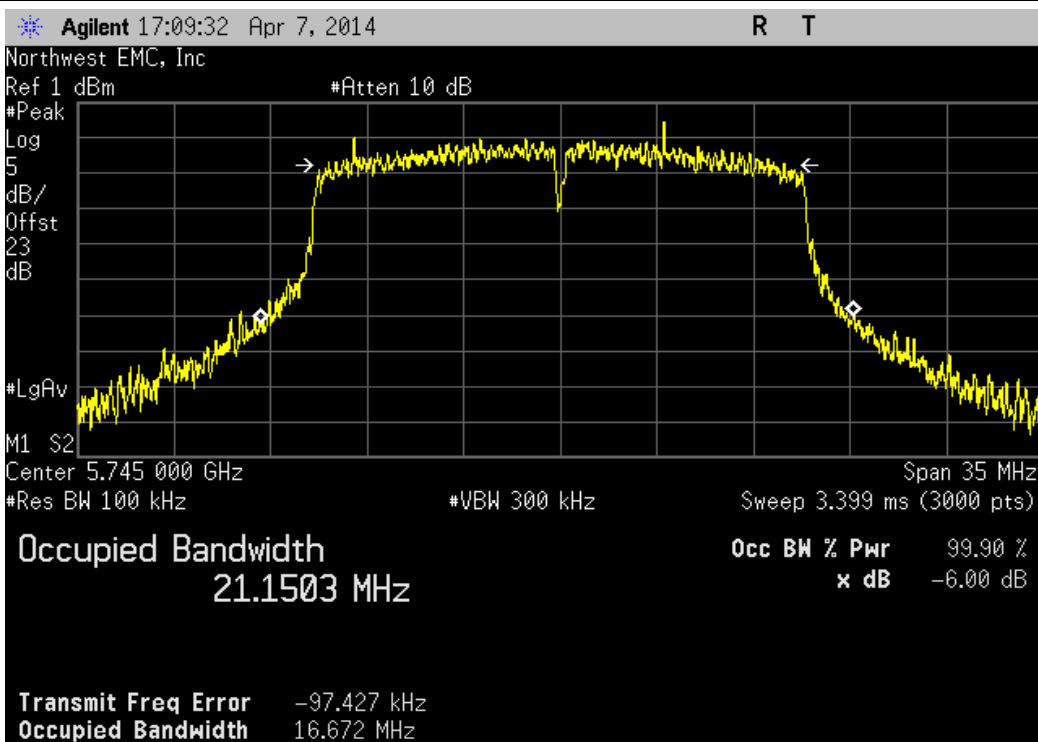
5725 MHz - 5850 MHz Band, 802.11(a) 54 Mbps, High Channel 165, 5825 MHz

				Value	Limit	Result
				15.97 MHz	> 500 kHz	Pass



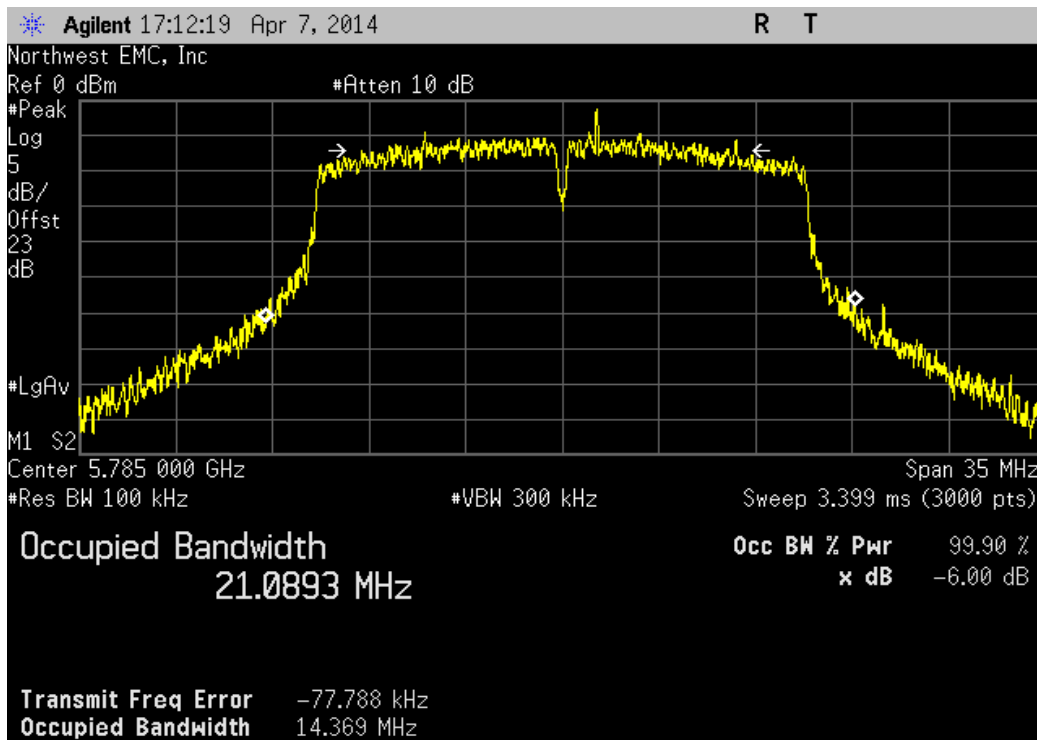
5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, Low Channel 149, 5745 MHz

				Value	Limit	Result
				16.672 MHz	> 500 kHz	Pass



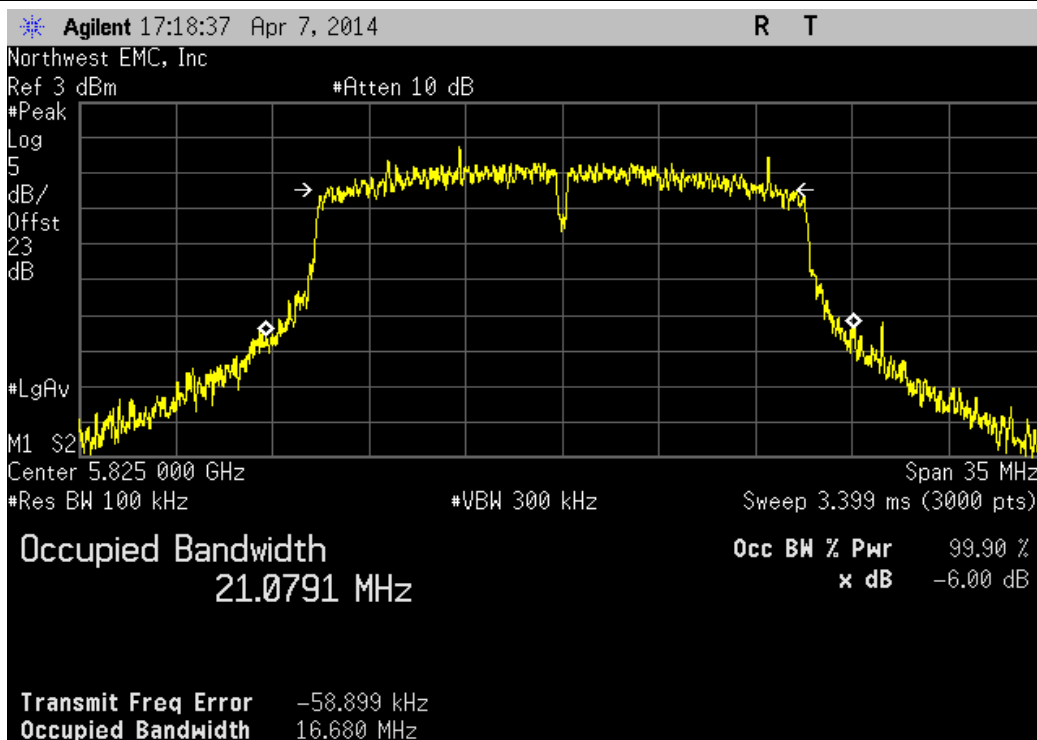
5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, Mid Channel 157, 5785 MHz

Value	Limit	Result
14.369 MHz	> 500 kHz	Pass



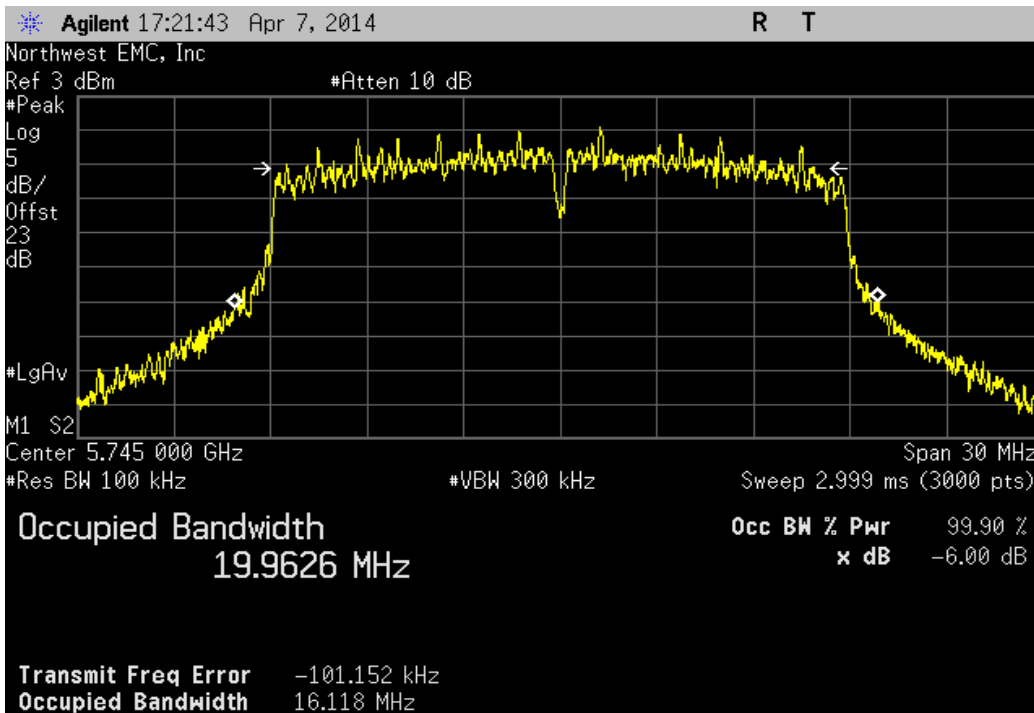
5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, High Channel 165, 5825 MHz

Value	Limit	Result
16.68 MHz	> 500 kHz	Pass



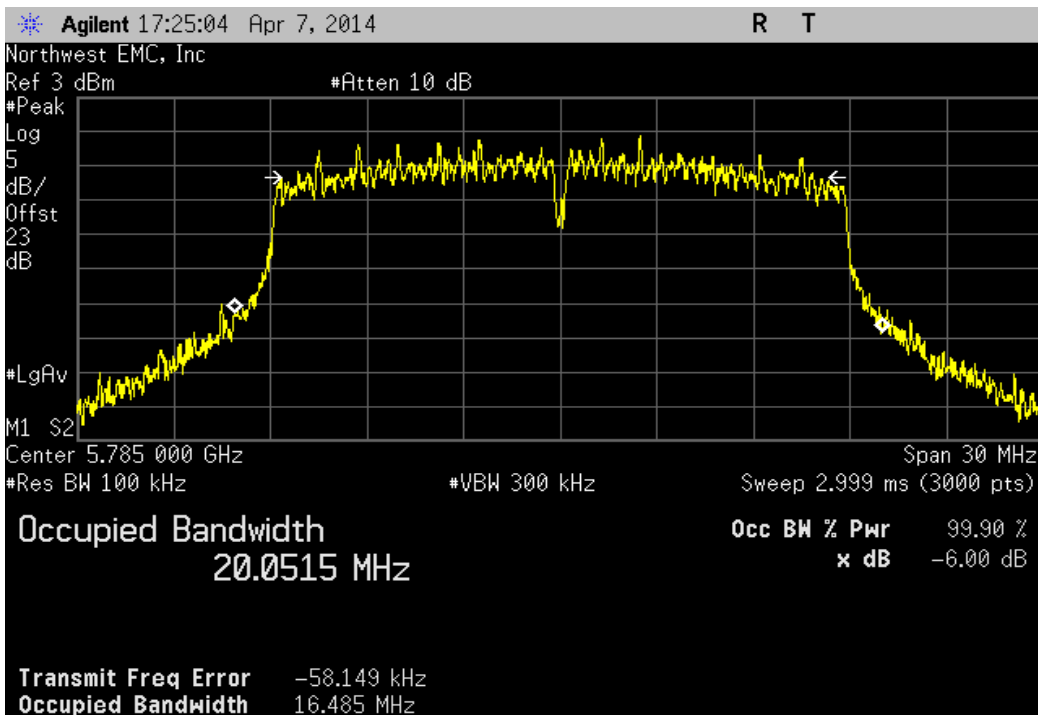
5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, Low Channel 149, 5745 MHz

Value	Limit	Result
16.118 MHz	> 500 kHz	Pass



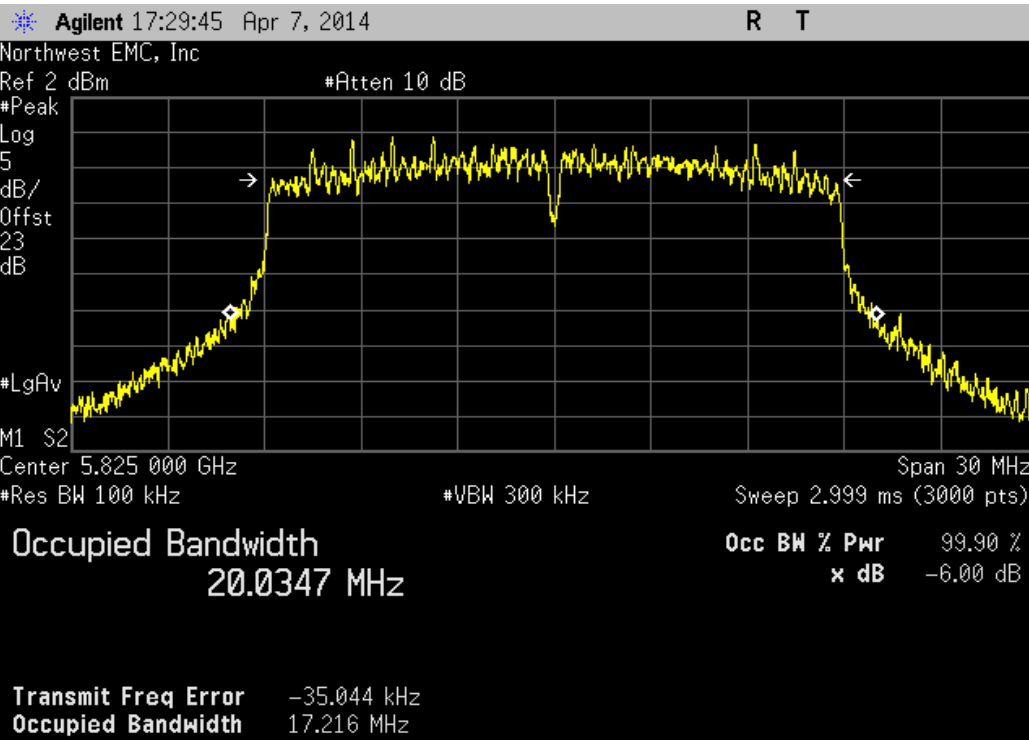
5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, Mid Channel 157, 5785 MHz

Value	Limit	Result
16.485 MHz	> 500 kHz	Pass



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

	Value	Limit	Result
	17.216 MHz	> 500 kHz	Pass



## OUTPUT POWER

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

### TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval (mo.)
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	2/3/2014	12
MXG Analog Signal Generator	Agilent	N5181A	TIG	3/28/2014	36
Power Meter	Gigatronics	8651A	SPM	11/26/2013	24
Power Sensor	Gigatronics	80701A	SPL	7/8/2011	36
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2013	12
40GHz DC Block	Miteq	DCB4000	AMD	5/16/2013	12
Spectrum Analyzer	Agilent	E4446A	AAQ	1/21/2014	24

### TEST DESCRIPTION

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

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


The channel power integration method found in KDB 558074 DTS D01 Measurement Section 9.1.2 was used because the DTS of the radio was greater than the RBW on the analyzer.

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



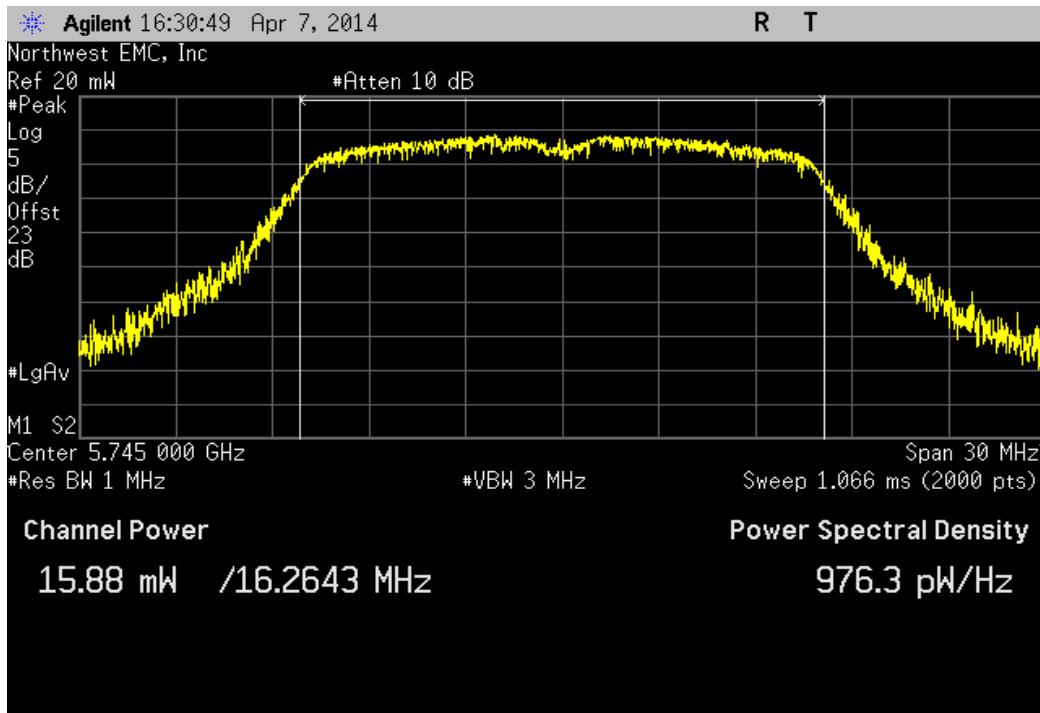
## OUTPUT POWER

XMit 2013.08.15  
PsaTx 2013.10.23

EUT: Kezar		Work Order: SYNA0151	
Serial Number: 1		Date: 04/08/14	
Customer: Synapse Product Development LLC		Temperature: 22.4°C	
Attendees: None		Humidity: 45%	
Project: Kezar		Barometric Pres.: 1022	
Tested by: Brandon Hobbs		Power: 110VAC/60Hz	
		Job Site: EV06	
TEST SPECIFICATIONS		Test Method	
FCC 15.247:2014		ANSI C63.10:2009	
COMMENTS			
Product was test at a 17dBm maximum power level.			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	3	Signature 	
		Value	Limit
5725 MHz - 5850 MHz Band			Result
802.11(a) 6 Mbps			
Low Channel 149, 5745 MHz		15.879 mW	< 1 W Pass
Mid Channel 157, 5785 MHz		11.999 mW	< 1 W Pass
High Channel 165, 5825 MHz		10.837 mW	< 1 W Pass
802.11(a) 36 Mbps			
Low Channel 149, 5745 MHz		13.795 mW	< 1 W Pass
Mid Channel 157, 5785 MHz		12.28 mW	< 1 W Pass
High Channel 165, 5825 MHz		11.462 mW	< 1 W Pass
802.11(a) 54 Mbps			
Low Channel 149, 5745 MHz		10.925 mW	< 1 W Pass
Mid Channel 157, 5785 MHz		9.667 mW	< 1 W Pass
High Channel 165, 5825 MHz		8.682 mW	< 1 W Pass
802.11(n) MCS0 - UNII			
Low Channel 149, 5745 MHz		13.967 mW	< 1 W Pass
Mid Channel 157, 5785 MHz		10.322 mW	< 1 W Pass
High Channel 165, 5825 MHz		10.75 mW	< 1 W Pass
802.11(n) MCS7 - UNII			
Low Channel 149, 5745 MHz		10.503 mW	< 1 W Pass
Mid Channel 157, 5785 MHz		9.203 mW	< 1 W Pass
High Channel 165, 5825 MHz		8.665 mW	< 1 W Pass

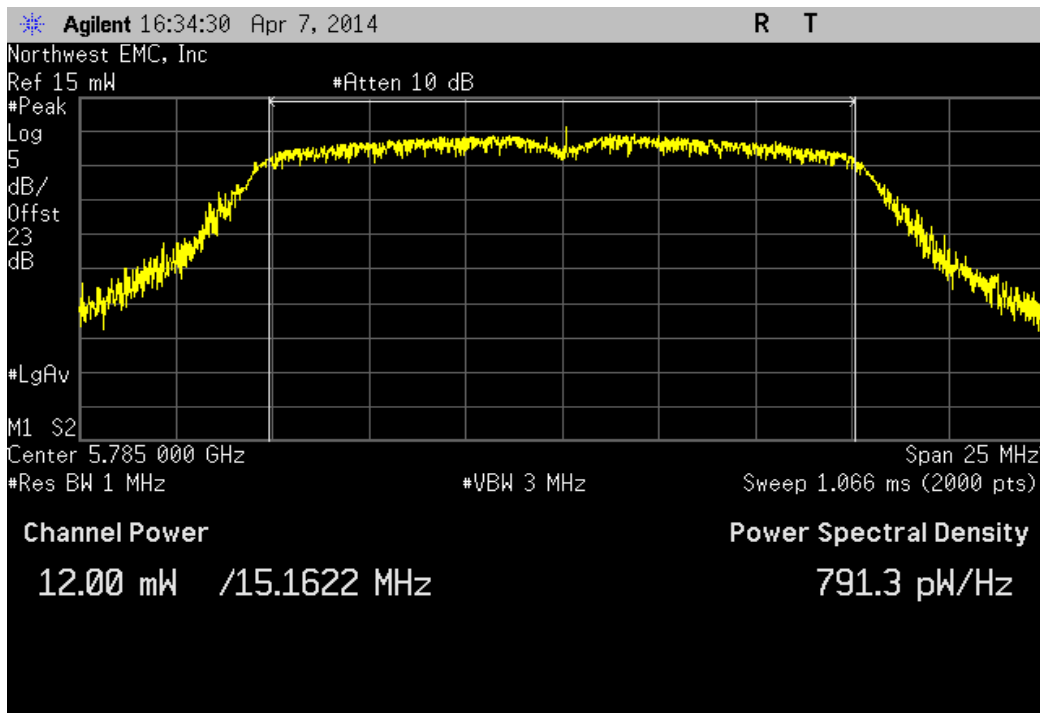
5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Low Channel 149, 5745 MHz

Value	Limit	Result
15.879 mW	< 1 W	Pass



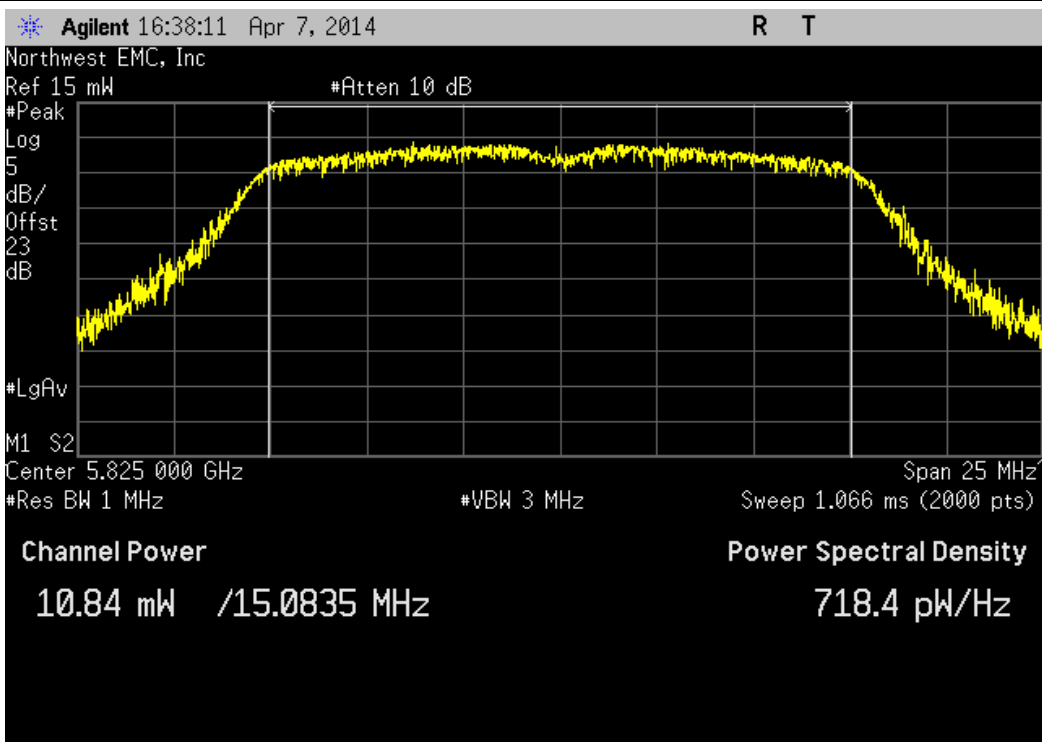
5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Mid Channel 157, 5785 MHz

Value	Limit	Result
11.999 mW	< 1 W	Pass



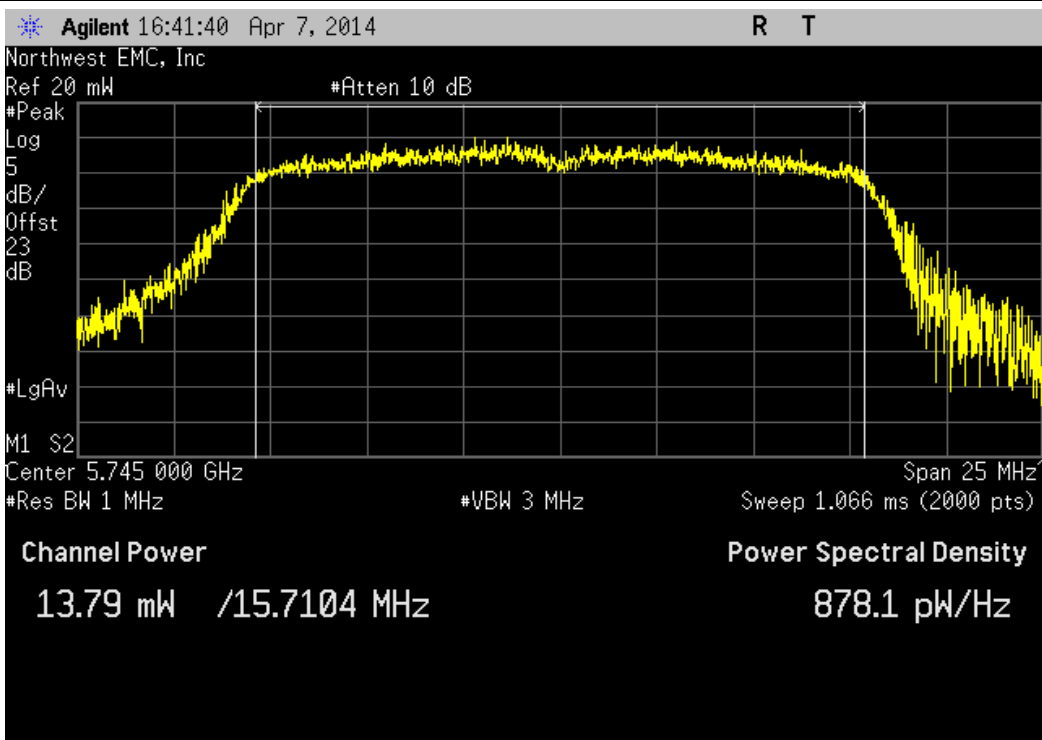
5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, High Channel 165, 5825 MHz

				Value	Limit	Result
				10.837 mW	< 1 W	Pass



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

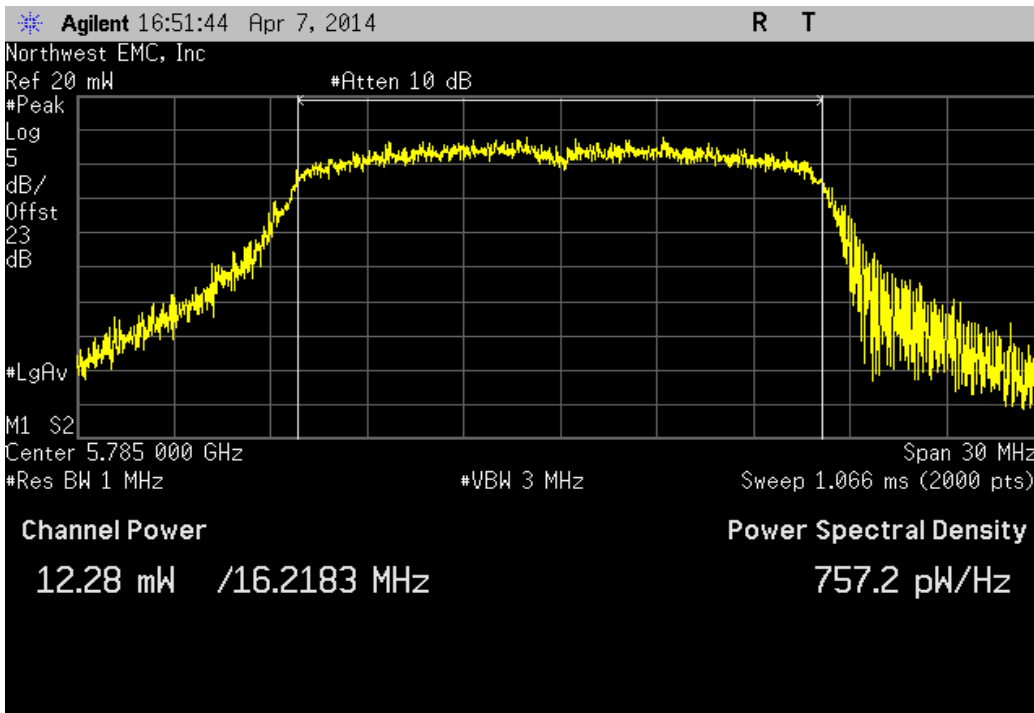
				Value	Limit	Result
				13.795 mW	< 1 W	Pass





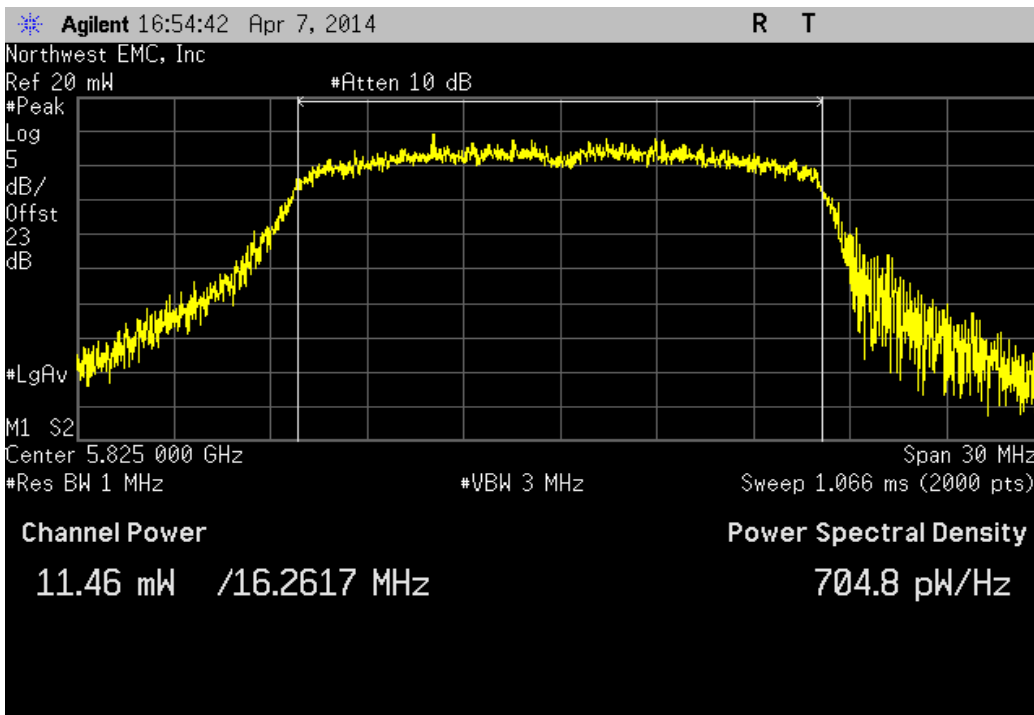
5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Mid Channel 157, 5785 MHz

Value	Limit	Result
12.28 mW	< 1 W	Pass



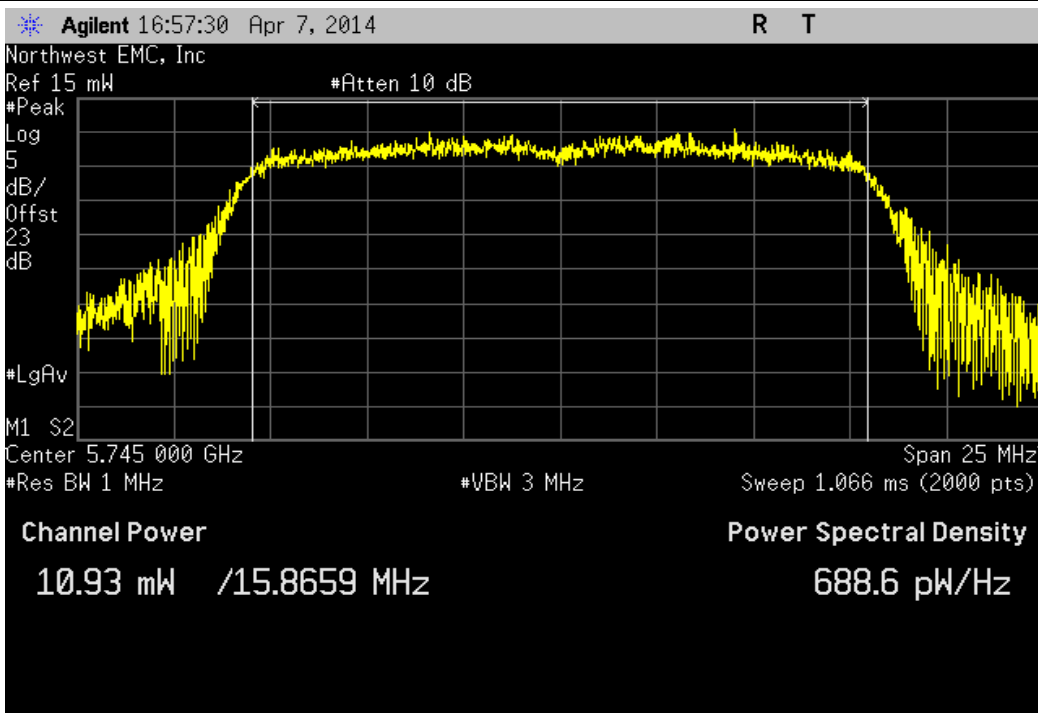
5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, High Channel 165, 5825 MHz

Value	Limit	Result
11.462 mW	< 1 W	Pass



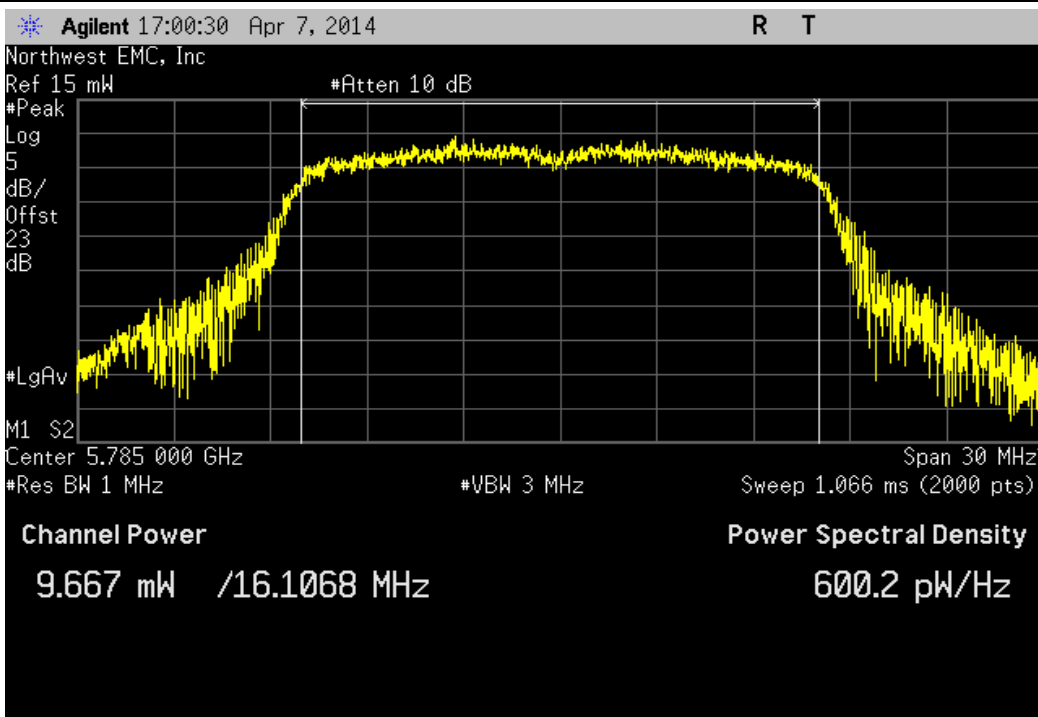
5725 MHz - 5850 MHz Band, 802.11(a) 54 Mbps, Low Channel 149, 5745 MHz

	Value	Limit	Result
	10.925 mW	< 1 W	Pass



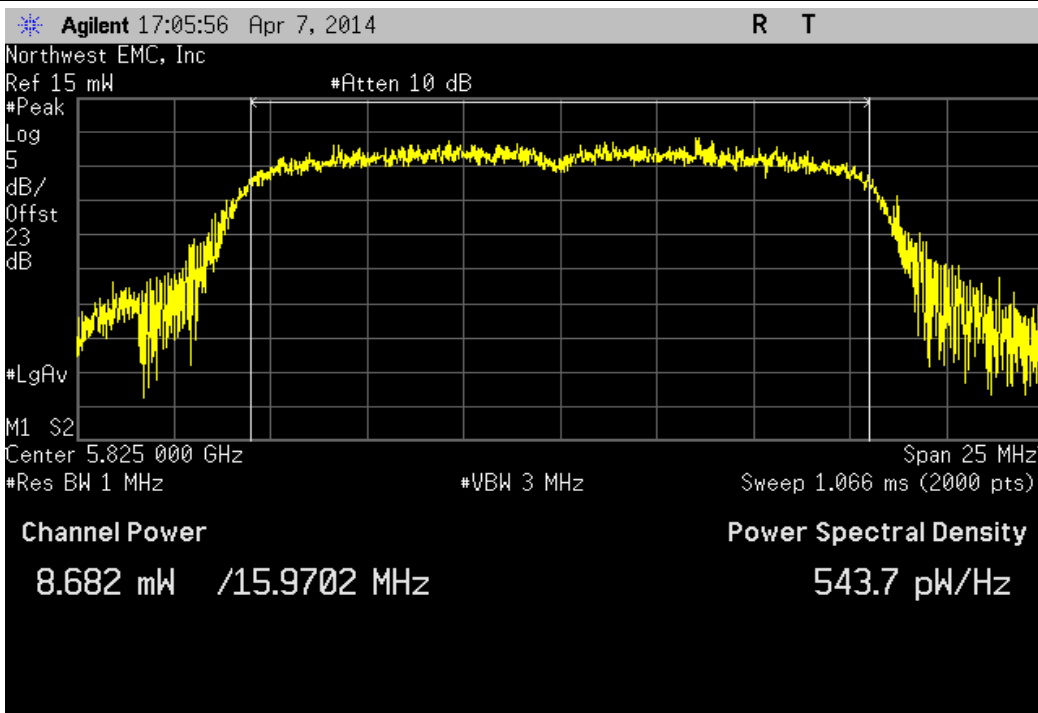
5725 MHz - 5850 MHz Band, 802.11(a) 54 Mbps, Mid Channel 157, 5785 MHz

	Value	Limit	Result
	9.667 mW	< 1 W	Pass



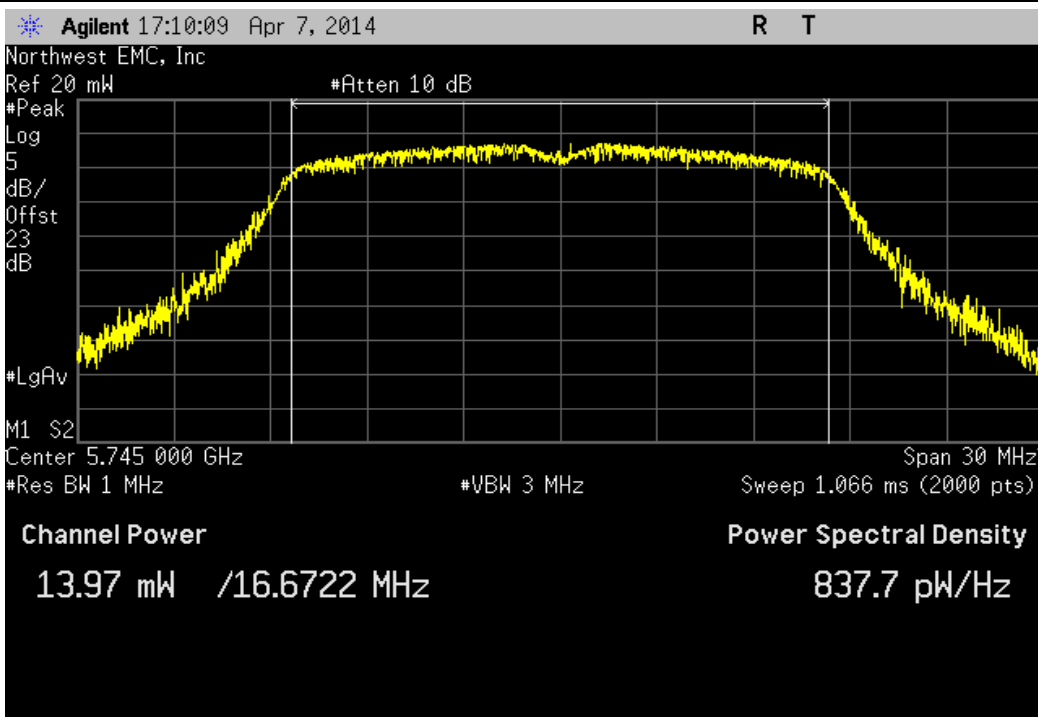
5725 MHz - 5850 MHz Band, 802.11(a) 54 Mbps, High Channel 165, 5825 MHz

	Value	Limit	Result
	8.682 mW	< 1 W	Pass



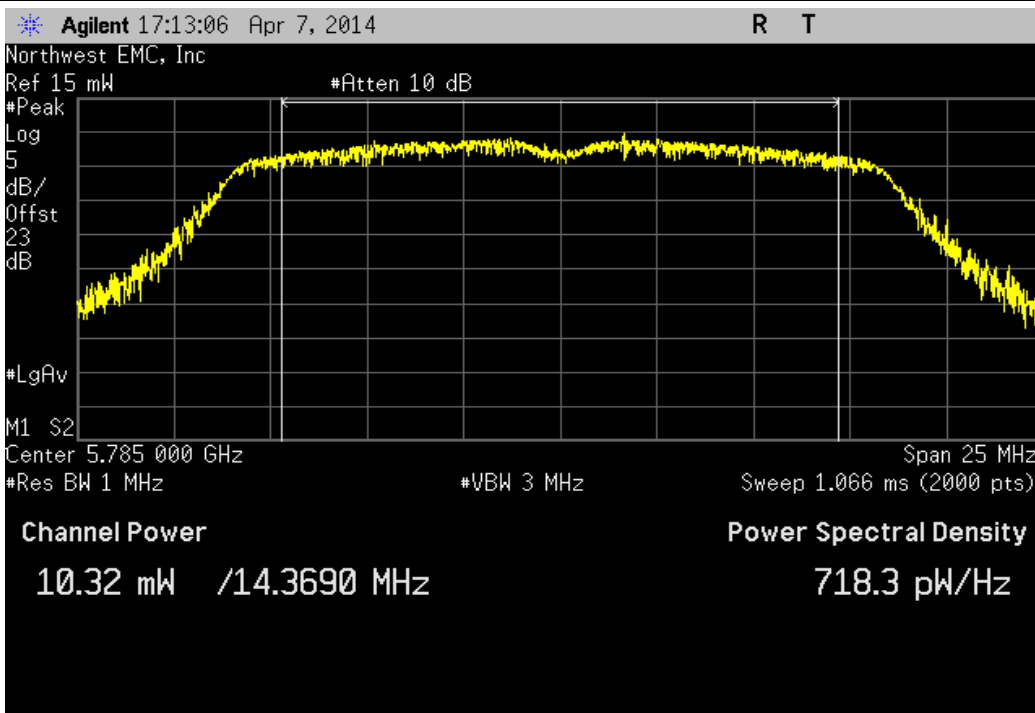
5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, Low Channel 149, 5745 MHz

	Value	Limit	Result
	13.967 mW	< 1 W	Pass



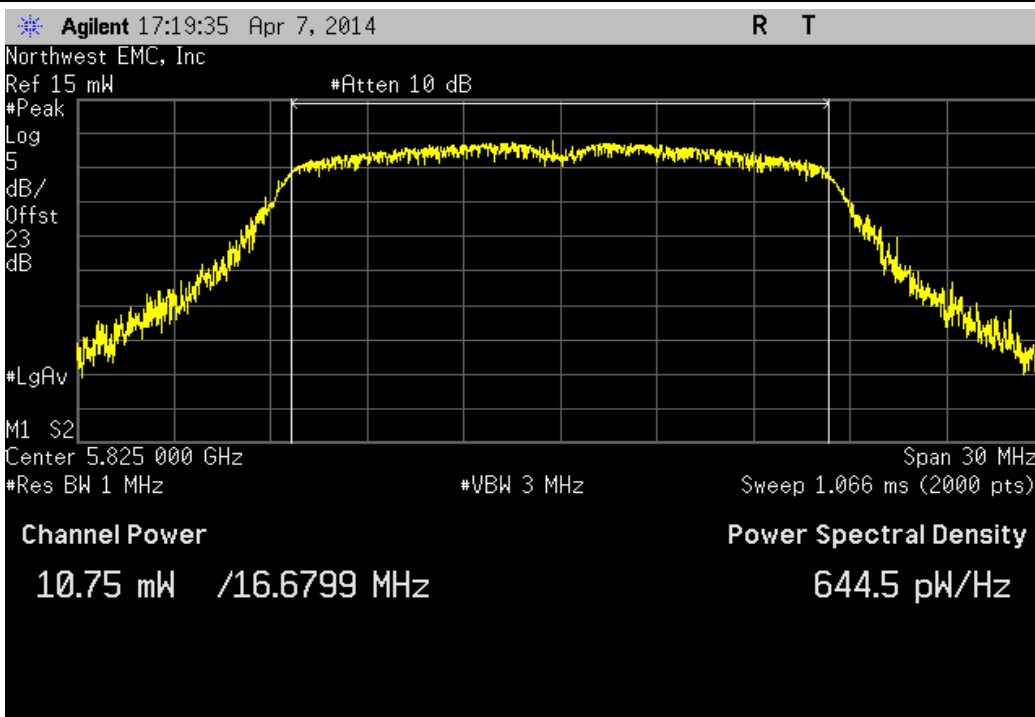
5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, Mid Channel 157, 5785 MHz

Value	Limit	Result
10.322 mW	< 1 W	Pass



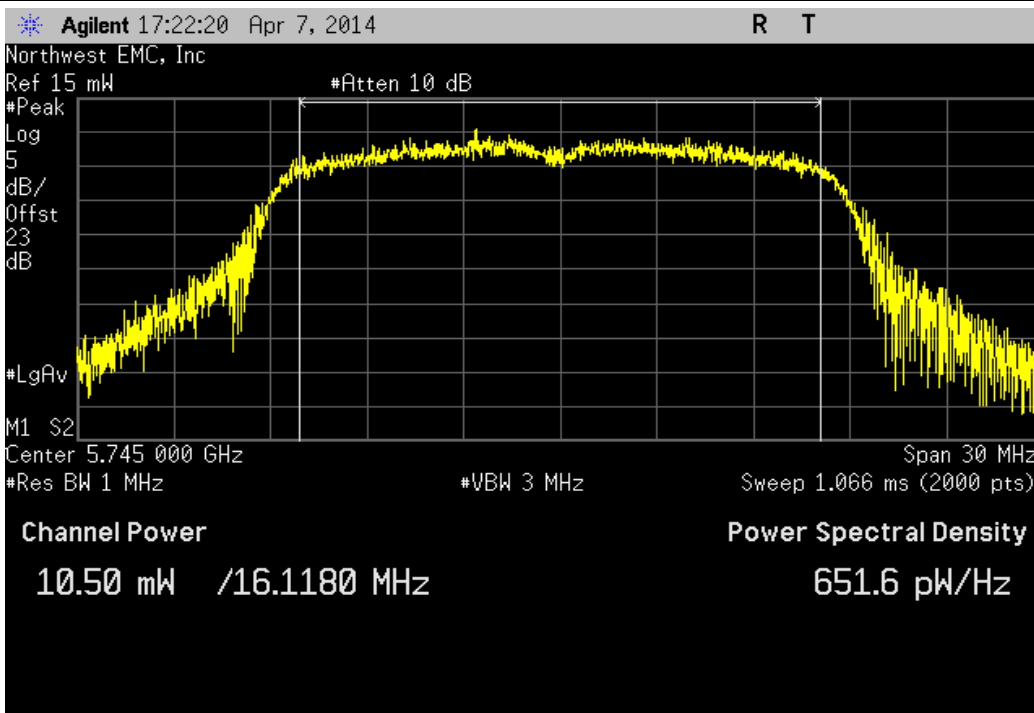
5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, High Channel 165, 5825 MHz

Value	Limit	Result
10.75 mW	< 1 W	Pass



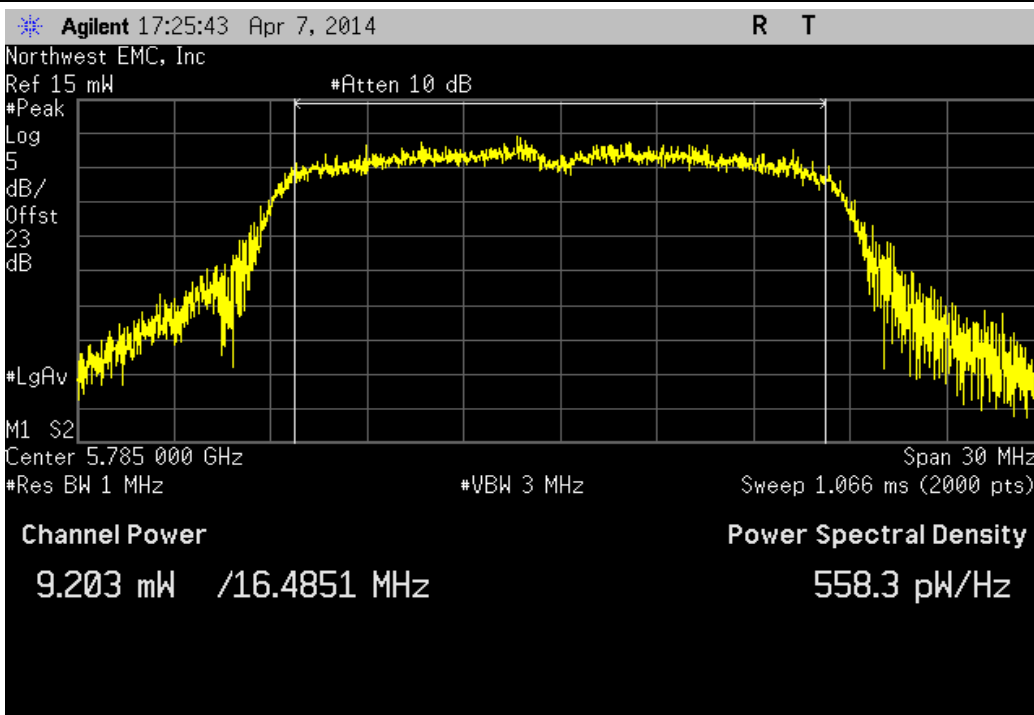
5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, Low Channel 149, 5745 MHz

Value	Limit	Result
10.503 mW	< 1 W	Pass



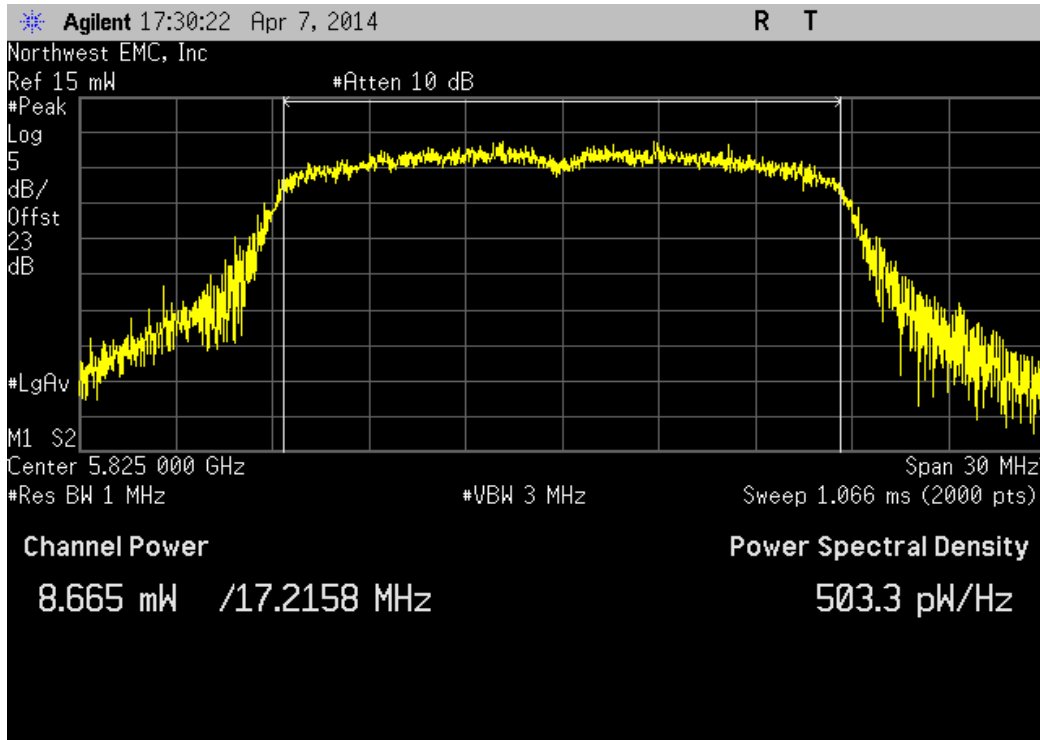
5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, Mid Channel 157, 5785 MHz

Value	Limit	Result
9.203 mW	< 1 W	Pass



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

Value	Limit	Result
8.665 mW	< 1 W	Pass



## POWER SPECTRAL DENSITY

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

### TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval (mo.)
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	2/3/2014	12
MXG Analog Signal Generator	Agilent	N5181A	TIG	3/28/2014	36
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Power Meter	Gigatronics	8651A	SPM	11/26/2013	24
Power Sensor	Gigatronics	80701A	SPL	7/8/2011	36
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2013	12
40GHz DC Block	Miteq	DCB4000	AMD	5/16/2013	12
Spectrum Analyzer	Agilent	E4446A	AAQ	1/21/2014	24

### TEST DESCRIPTION

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

Per the procedure outlined in FCC KDB 558074 D01 DTS Measurement Section 10.2, the spectrum analyzer was used as follows:

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


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

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



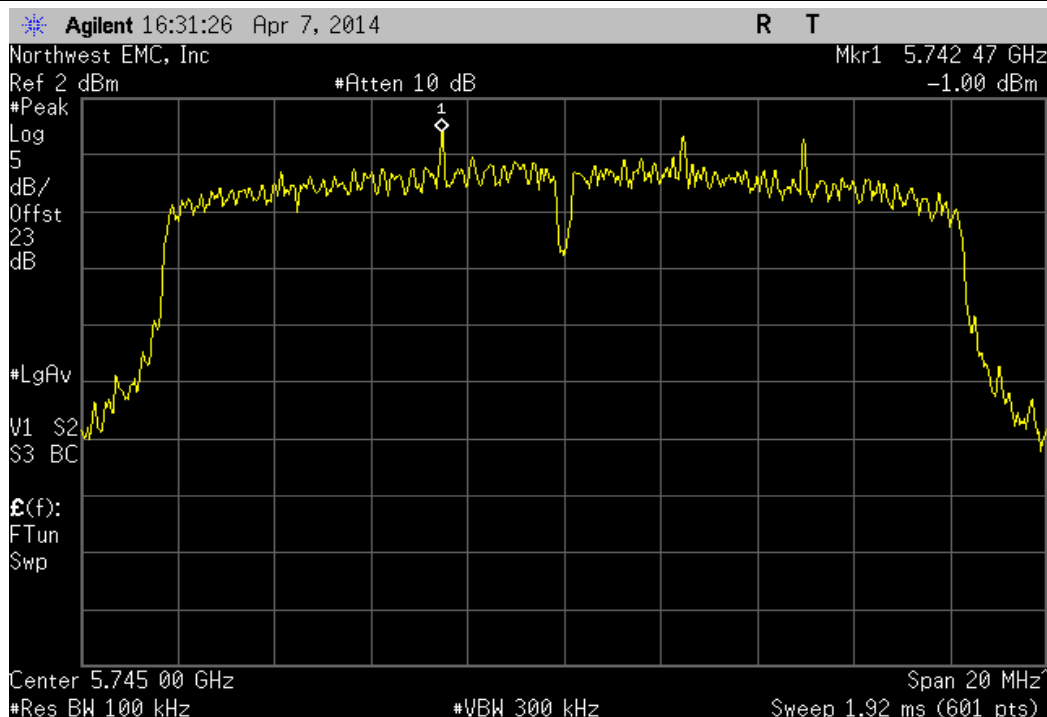
# POWER SPECTRAL DENSITY

XMit 2013.08.15  
PsaTx 2013.10.23

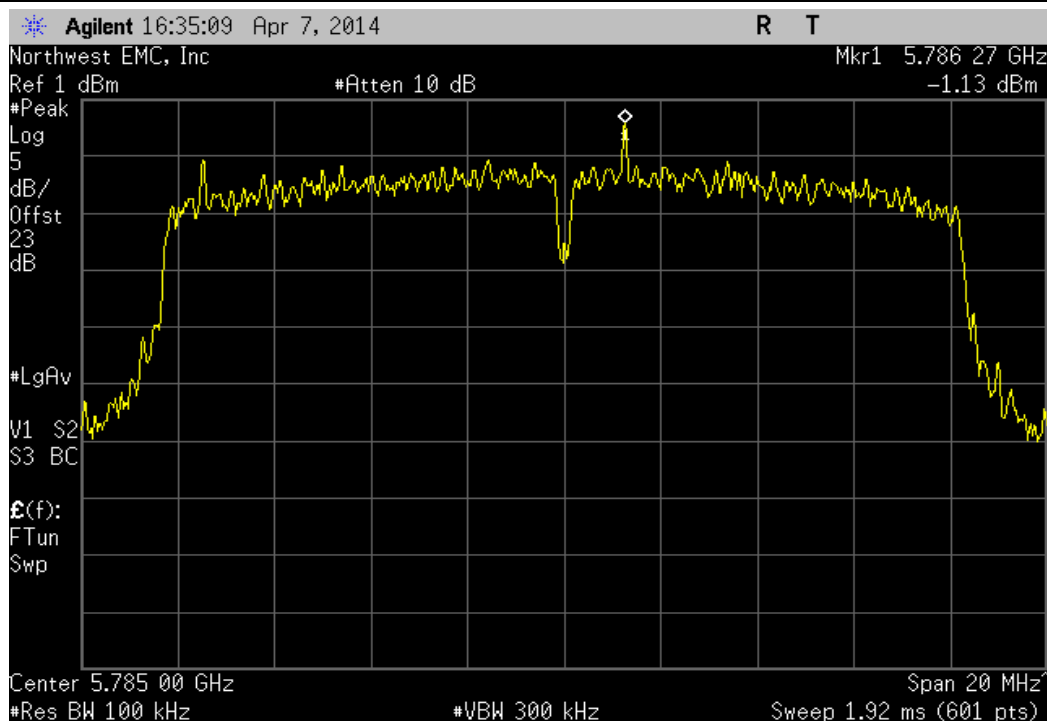
EUT: Kezar		Work Order: SYNA0151	
Serial Number: 1		Date: 04/08/14	
Customer: Synapse Product Development LLC		Temperature: 22.4°C	
Attendees: None		Humidity: 45%	
Project: Kezar		Barometric Pres.: 1022	
Tested by: Brandon Hobbs		Power: 110VAC/60Hz	
		Job Site: EV06	
TEST SPECIFICATIONS		Test Method	
FCC 15.247:2014		ANSI C63.10:2009	
COMMENTS			
Product was test at a 17dBm maximum power level.			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	3	Signature 	
		Value dBm/100kHz	Limit dBm/3kHz
5725 MHz - 5850 MHz Band			
802.11(a) 6 Mbps			
Low Channel 149, 5745 MHz	-0.995	-15.2	8
Mid Channel 157, 5785 MHz	-1.127	-15.2	8
High Channel 165, 5825 MHz	-3.356	-15.2	8
802.11(a) 36 Mbps			
Low Channel 149, 5745 MHz	-2.881	-15.2	8
Mid Channel 157, 5785 MHz	-3.12	-15.2	8
High Channel 165, 5825 MHz	-3.66	-15.2	8
802.11(a) 54 Mbps			
Low Channel 149, 5745 MHz	-4	-15.2	8
Mid Channel 157, 5785 MHz	-4.017	-15.2	8
High Channel 165, 5825 MHz	-4.615	-15.2	8
802.11(n) MCS0 - UNII			
Low Channel 149, 5745 MHz	-3.254	-15.2	8
Mid Channel 157, 5785 MHz	-2.288	-15.2	8
High Channel 165, 5825 MHz	-2.627	-15.2	8
802.11(n) MCS7 - UNII			
Low Channel 149, 5745 MHz	-3.722	-15.2	8
Mid Channel 157, 5785 MHz	-4.425	-15.2	8
High Channel 165, 5825 MHz	-4.597	-15.2	8



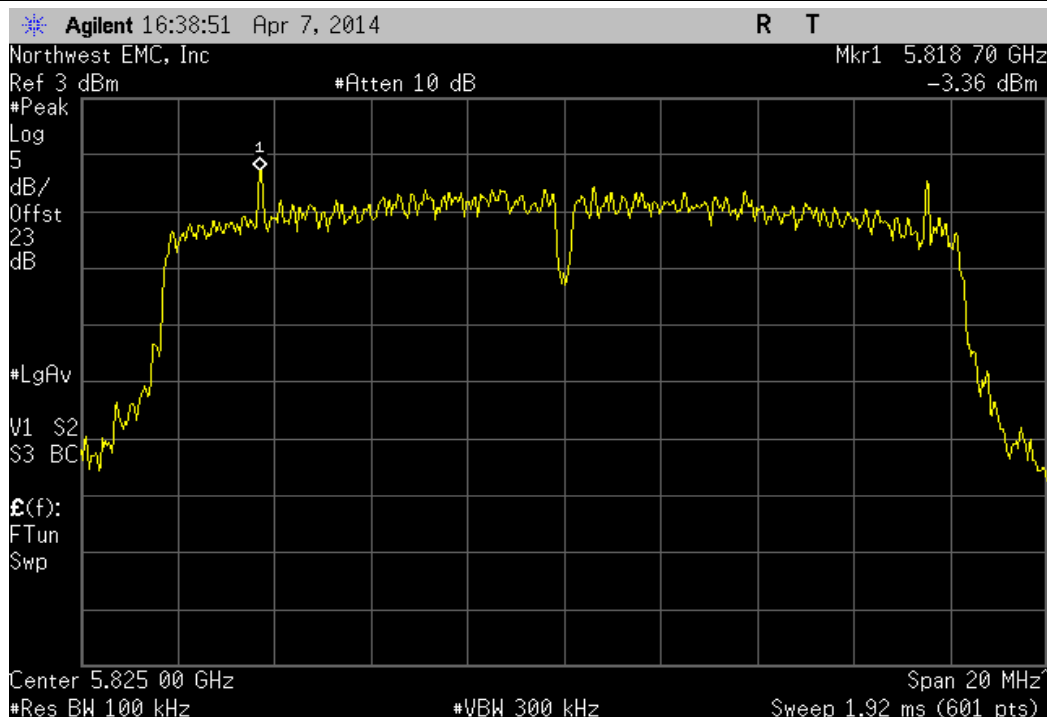
5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Low Channel 149, 5745 MHz						
	Value	dBm/100kHz	Value	Limit		
		To dBm/3kHz	dBm/3kHz	dBm/3kHz	Result	
	-0.995	-15.2	-16.195	8	Pass	



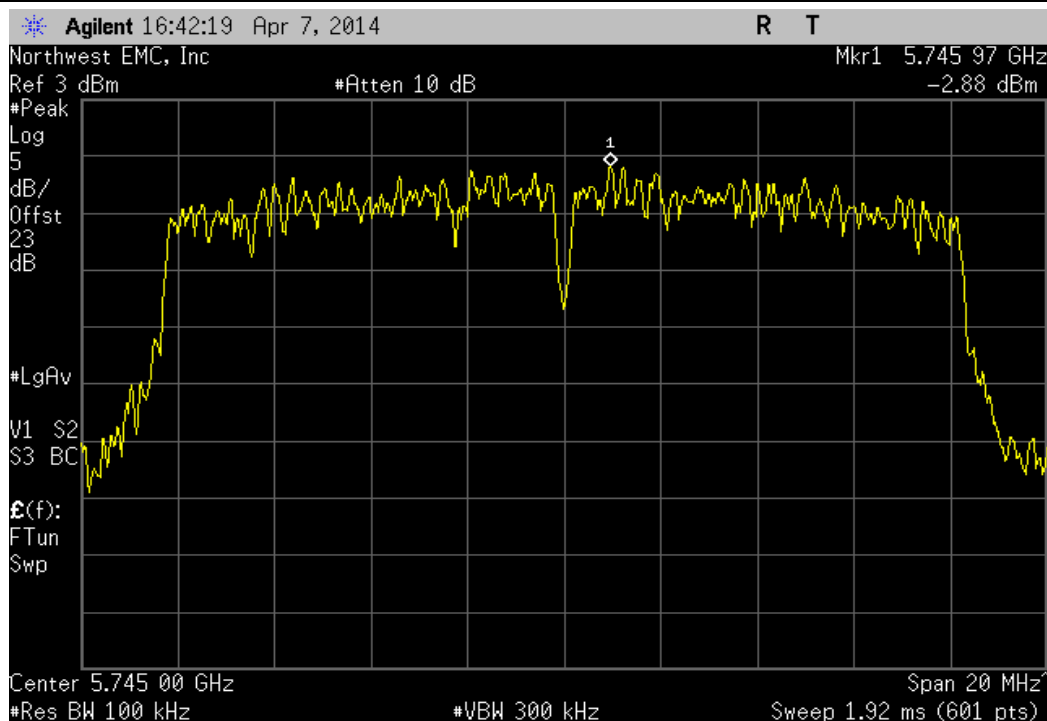
5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Mid Channel 157, 5785 MHz						
	Value	dBm/100kHz	Value	Limit		
		To dBm/3kHz	dBm/3kHz	dBm/3kHz	Result	
	-1.127	-15.2	-16.327	8	Pass	



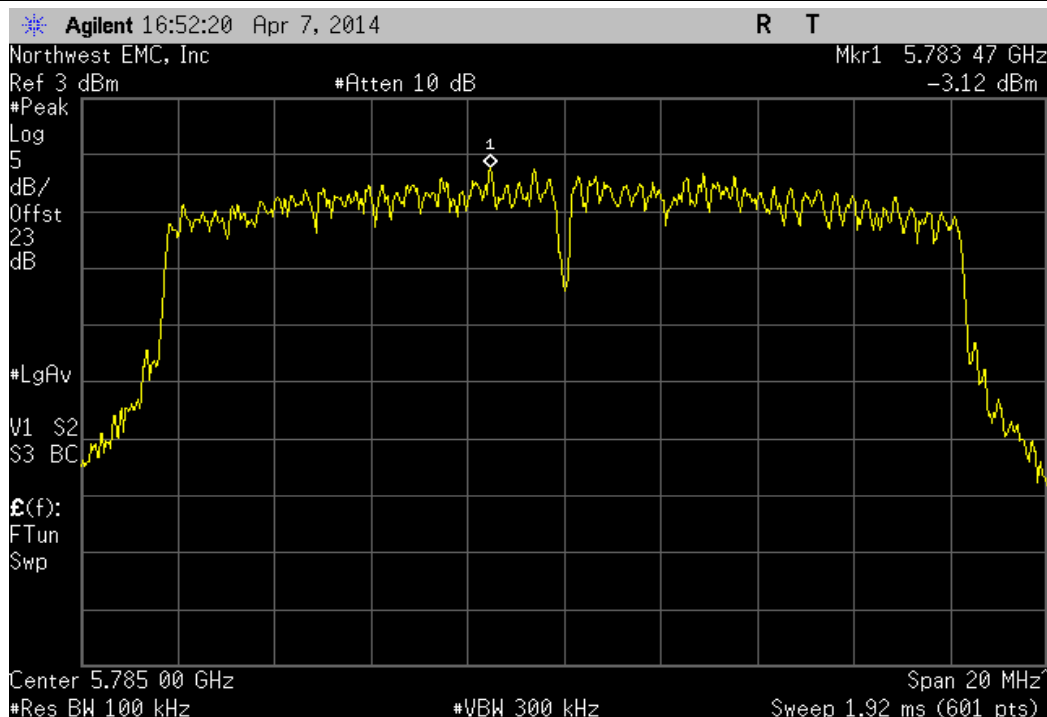
5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, High Channel 165, 5825 MHz						
	Value	dBm/100kHz	Value	Limit	Result	
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz		
	-3.356	-15.2	-18.556	8	Pass	



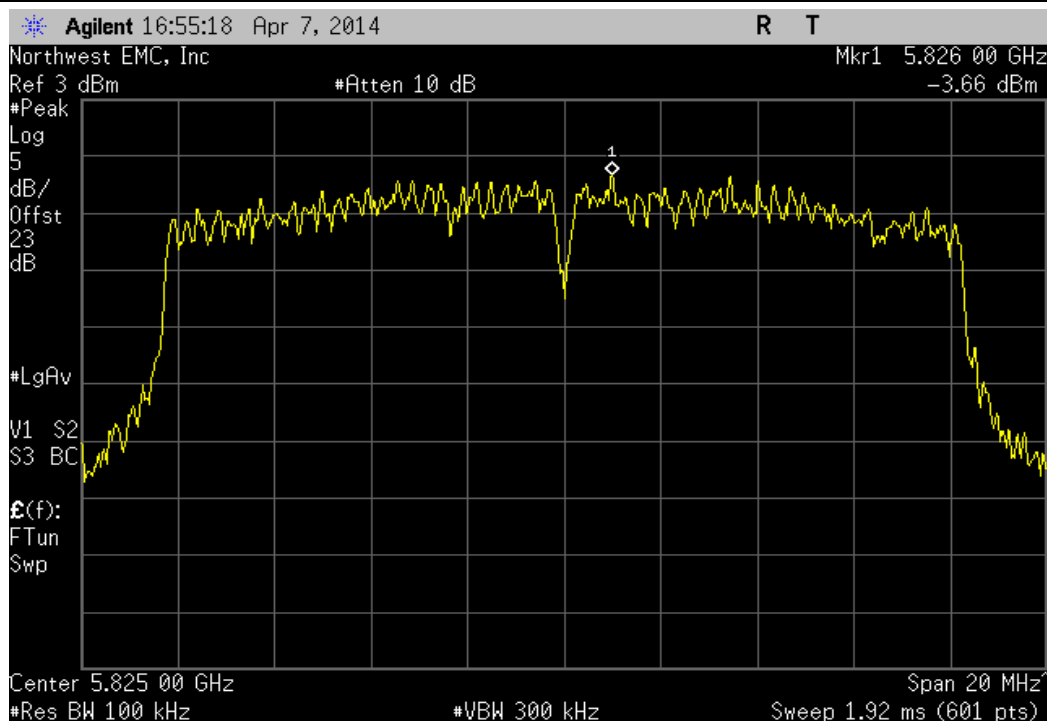
5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Low Channel 149, 5745 MHz						
	Value	dBm/100kHz	Value	Limit	Result	
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz		
	-2.881	-15.2	-18.081	8	Pass	



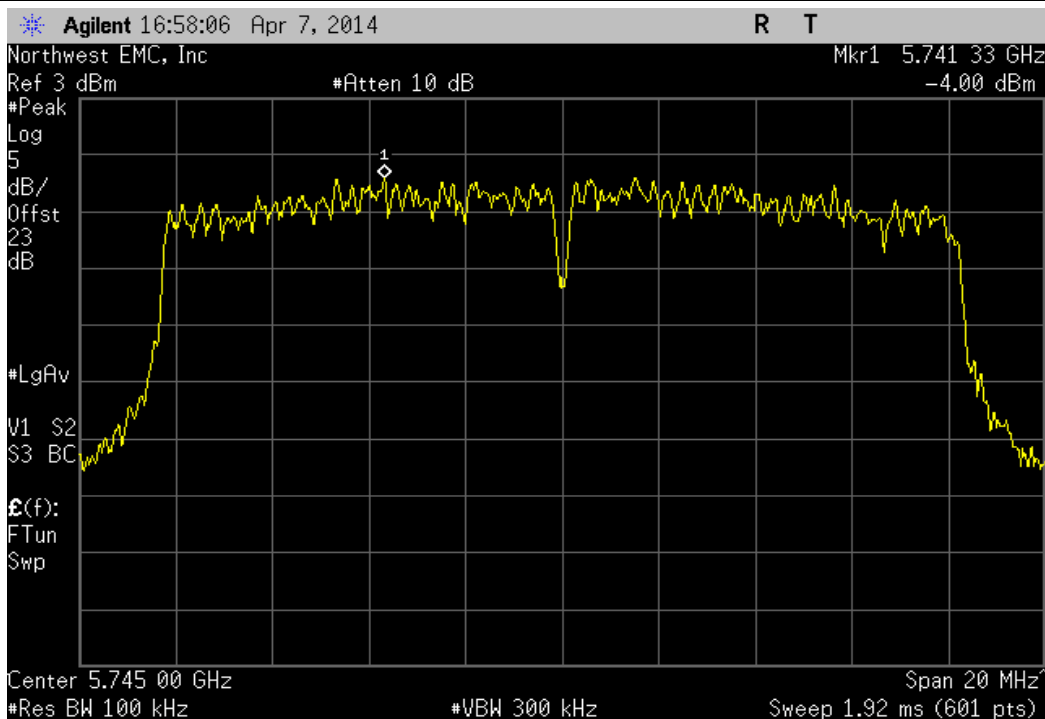
5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Mid Channel 157, 5785 MHz						
	Value	dBm/100kHz	To dBm/3kHz	Value	Limit	Result
		-3.12	-15.2	-18.32	8	Pass



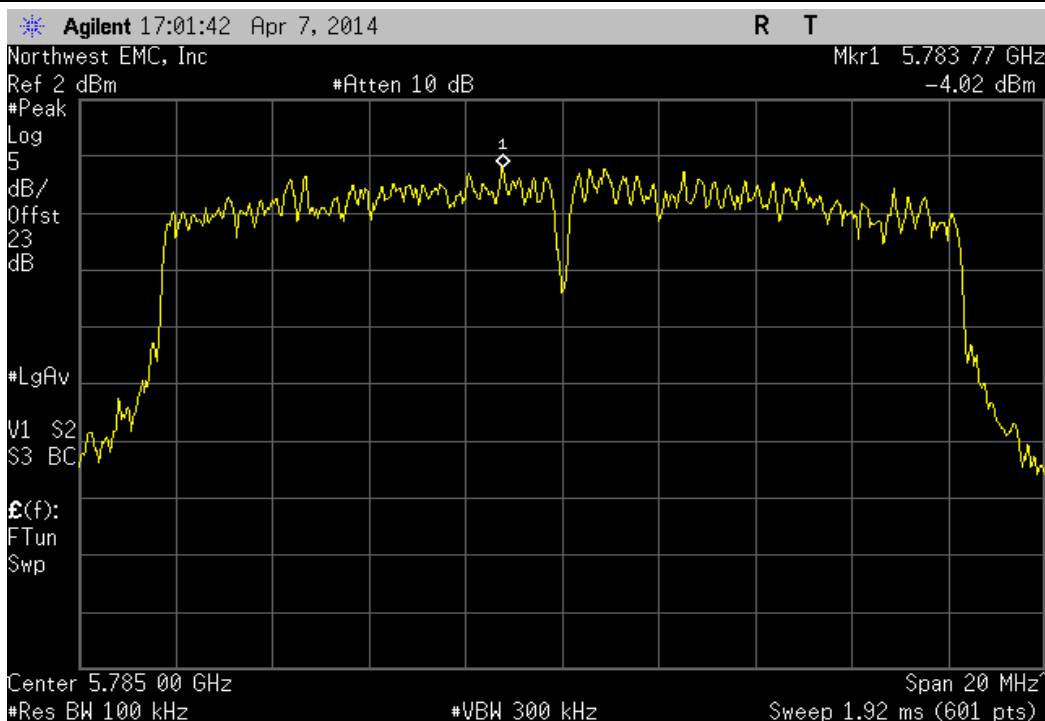
5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, High Channel 165, 5825 MHz						
	Value	dBm/100kHz	To dBm/3kHz	Value	Limit	Result
		-3.66	-15.2	-18.86	8	Pass



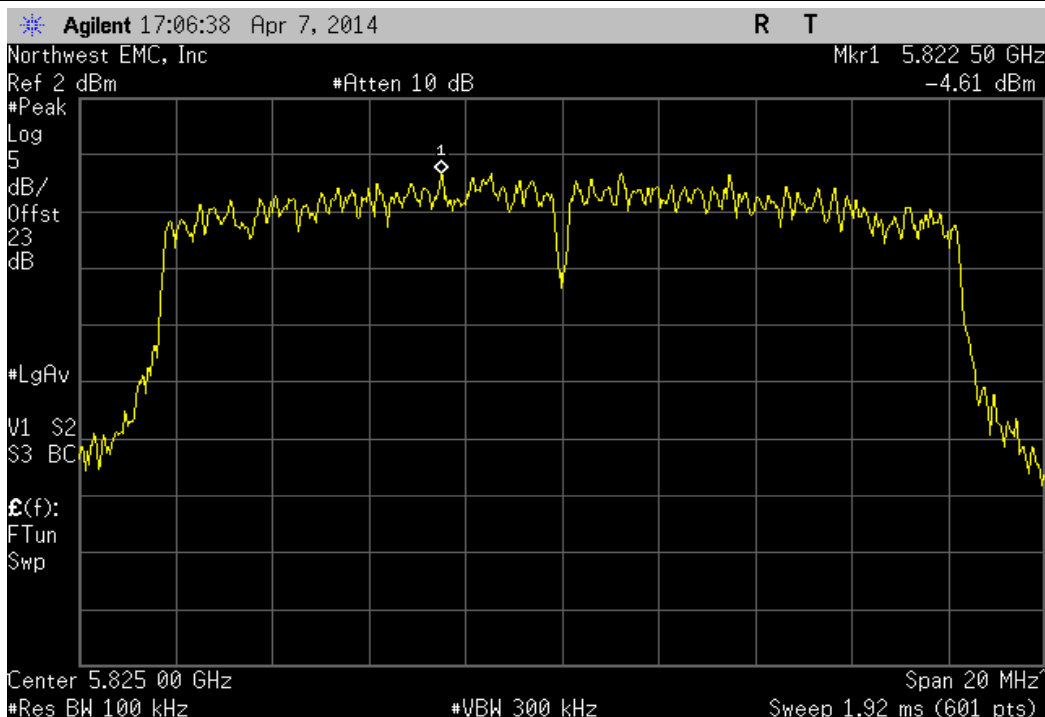
5725 MHz - 5850 MHz Band, 802.11(a) 54 Mbps, Low Channel 149, 5745 MHz						
	Value	dBm/100kHz	Value	Limit		
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	Result	
	-4	-15.2	-19.2	8	Pass	



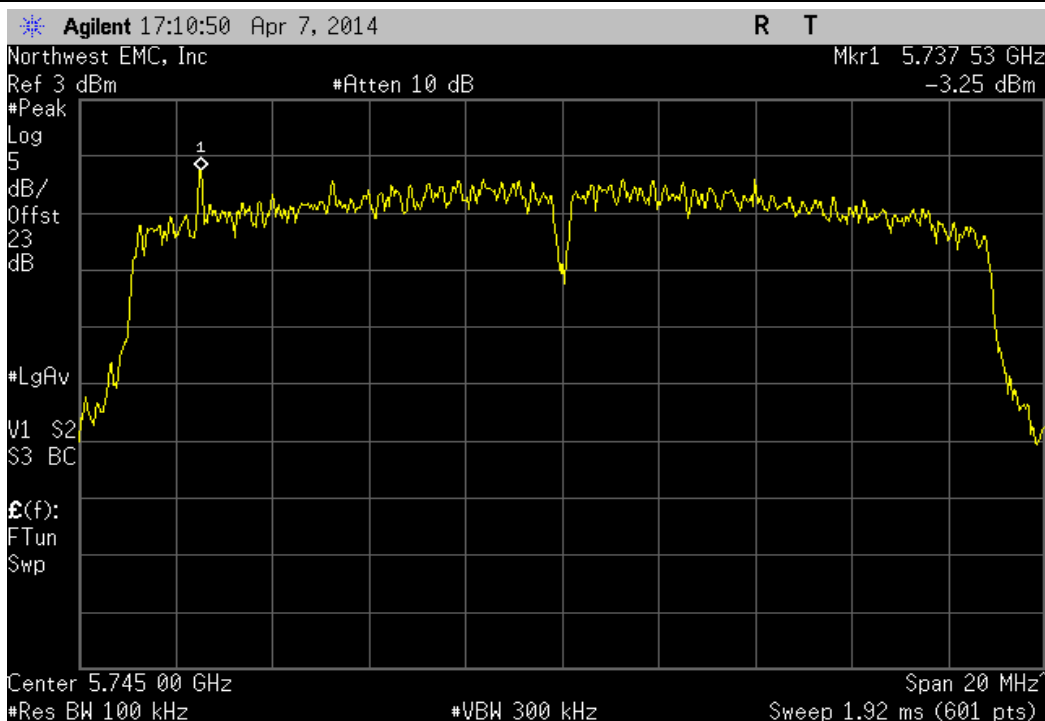
5725 MHz - 5850 MHz Band, 802.11(a) 54 Mbps, Mid Channel 157, 5785 MHz						
	Value	dBm/100kHz	Value	Limit		
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	Result	
	-4.017	-15.2	-19.217	8	Pass	



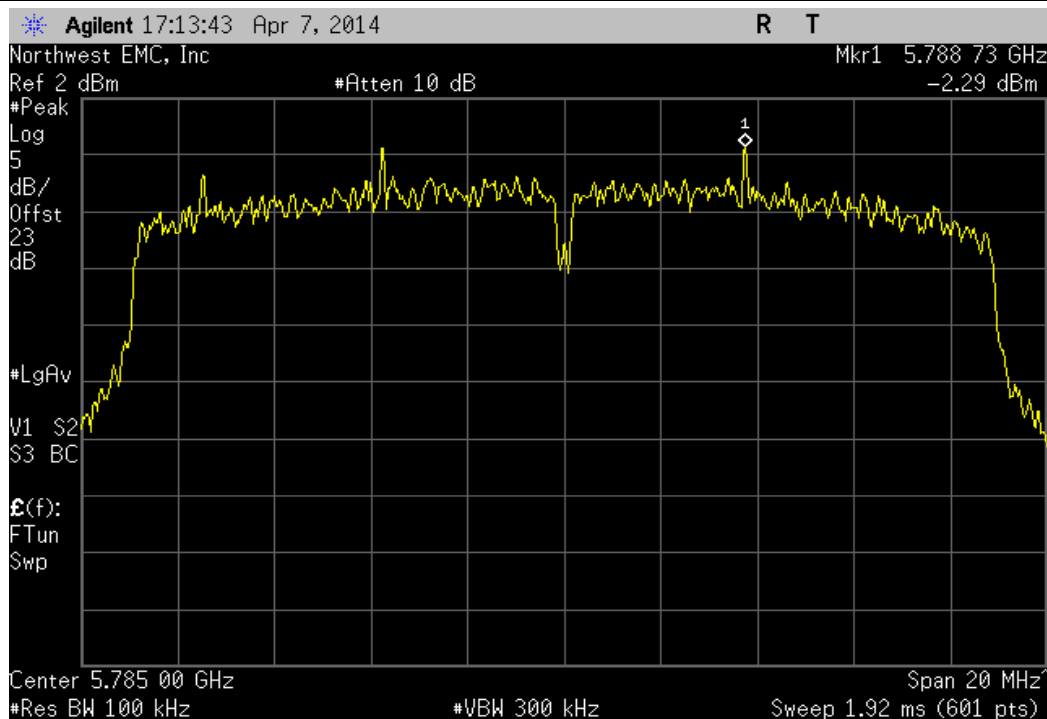
5725 MHz - 5850 MHz Band, 802.11(a) 54 Mbps, High Channel 165, 5825 MHz						
	Value	dBm/100kHz	dBm/100kHz	Value	Limit	Result
		dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
		-4.615	-15.2	-19.815	8	Pass



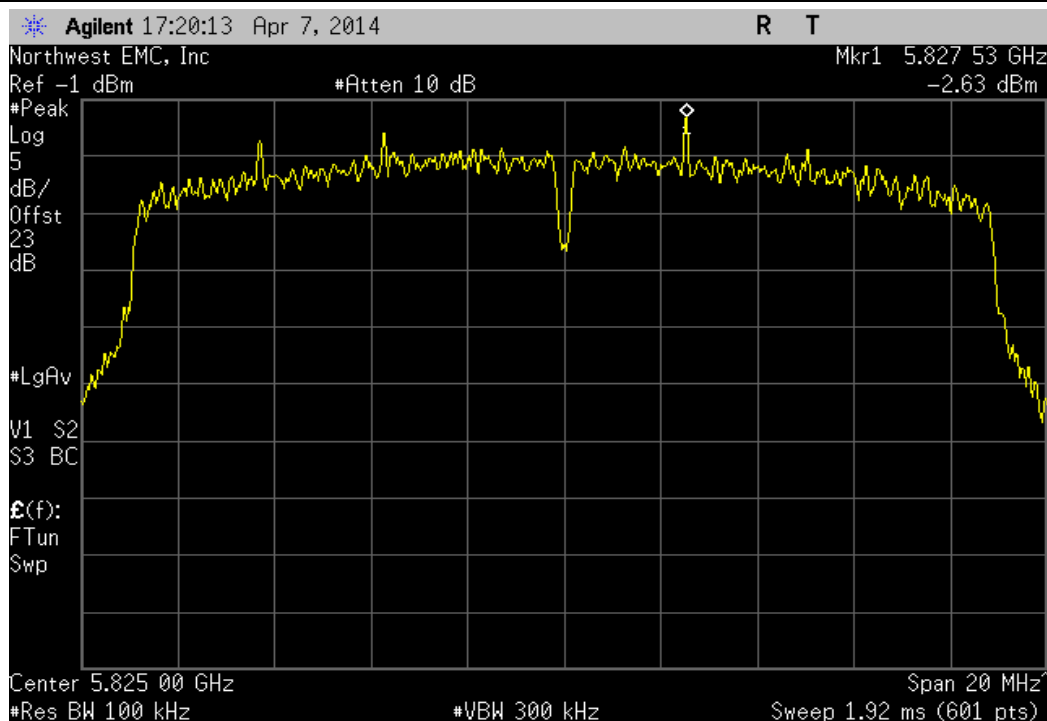
5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, Low Channel 149, 5745 MHz						
	Value	dBm/100kHz	dBm/100kHz	Value	Limit	Result
		dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
		-3.254	-15.2	-18.454	8	Pass



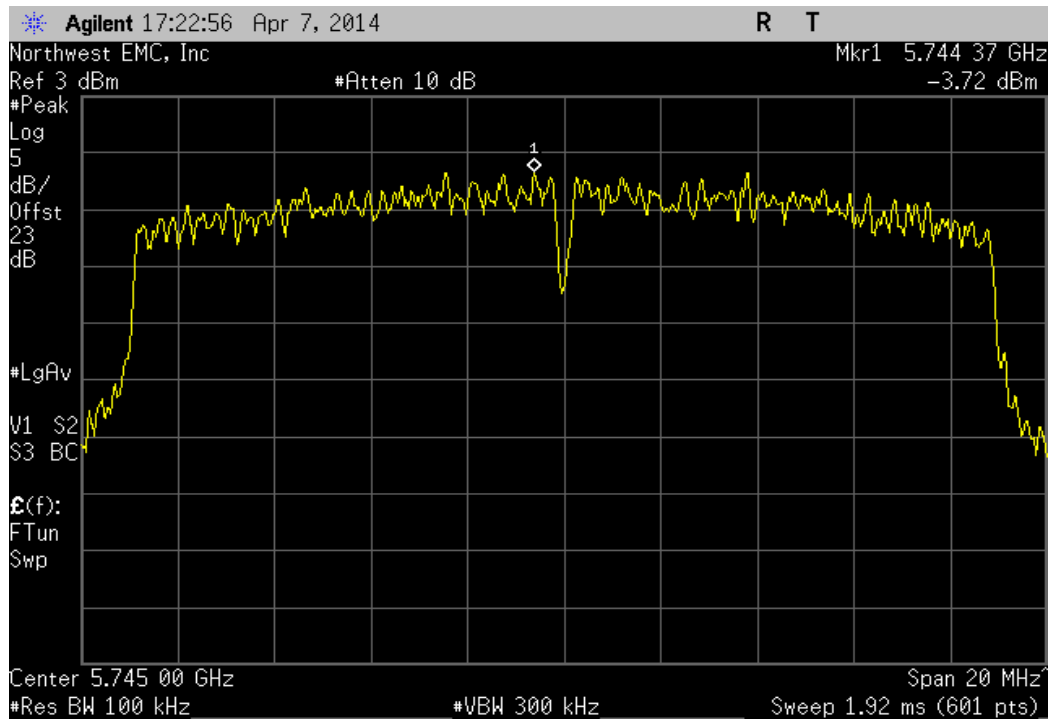
5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, Mid Channel 157, 5785 MHz						
	Value	dBm/100kHz	dBm/100kHz	Value	Limit	Result
		To dBm/3kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
		-2.288	-15.2	-17.488	8	Pass



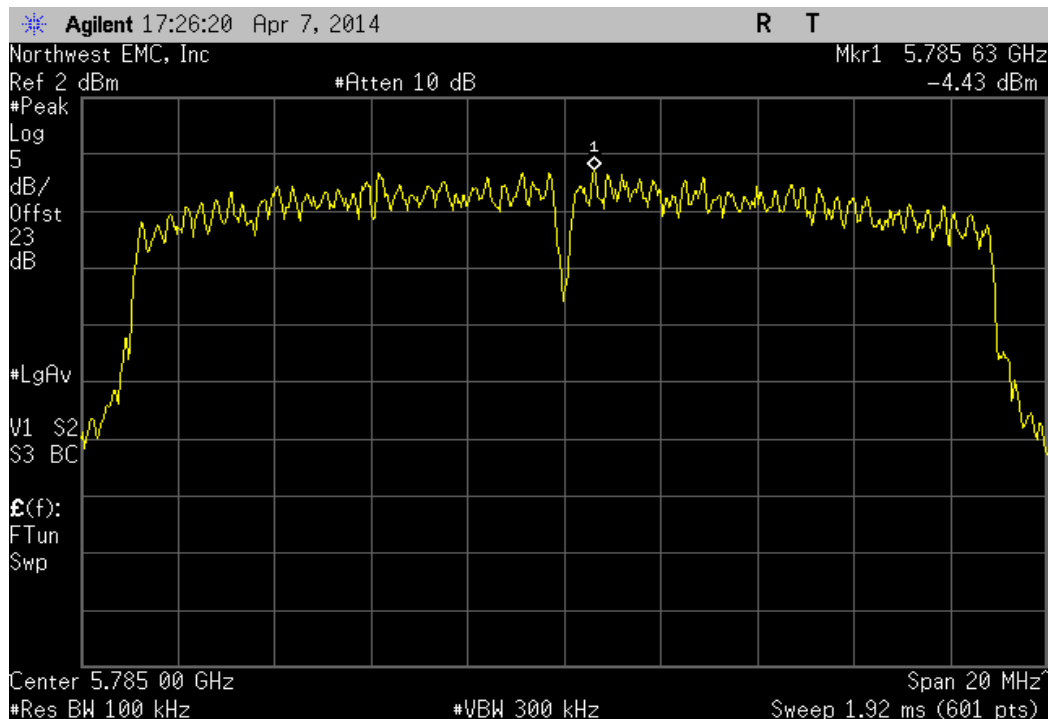
5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, High Channel 165, 5825 MHz						
	Value	dBm/100kHz	dBm/100kHz	Value	Limit	Result
		To dBm/3kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
		-2.627	-15.2	-17.827	8	Pass



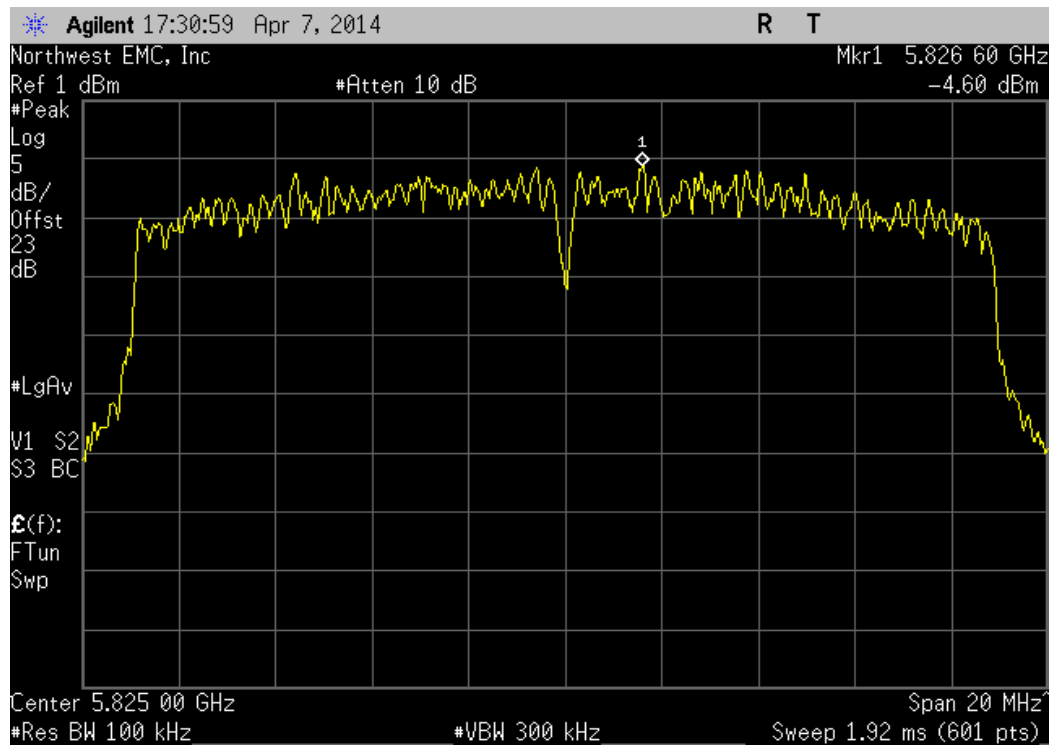
5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, Low Channel 149, 5745 MHz						
	Value	dBm/100kHz	Value	Limit		
		To dBm/3kHz	dBm/3kHz		Result	
	-3.722	-15.2	-18.922	8	Pass	



5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, Mid Channel 157, 5785 MHz						
	Value	dBm/100kHz	Value	Limit		
		To dBm/3kHz	dBm/3kHz		Result	
	-4.425	-15.2	-19.625	8	Pass	



5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, High Channel 165, 5825 MHz					
	Value	dBm/100kHz	Value	Limit	Result
	dBm/100kHz	To dBm/3kHz	dBm/3kHz	dBm/3kHz	
	-4.597	-15.2	-19.797	8	Pass





## BAND EDGE COMPLIANCE

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

### TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval (mo.)
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	2/3/2014	12
MXG Analog Signal Generator	Agilent	N5181A	TIG	3/28/2014	36
Power Meter	Gigatronics	8651A	SPM	11/26/2013	24
Power Sensor	Gigatronics	80701A	SPL	7/8/2011	36
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/30/2013	12
40GHz DC Block	Miteq	DCB4000	AMD	5/16/2013	12
Spectrum Analyzer	Agilent	E4446A	AAQ	1/21/2014	24

### TEST DESCRIPTION


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

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



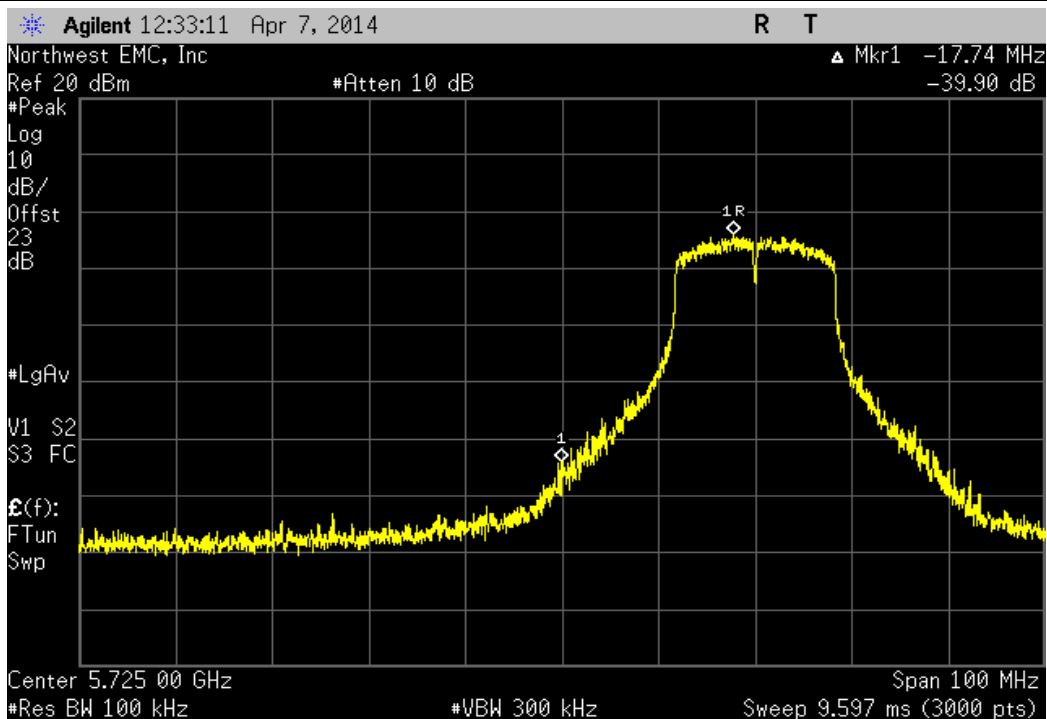
## BAND EDGE COMPLIANCE

XMit 2013.08.15  
PsaTx 2013.10.23

EUT: Kezar		Work Order: SYNA0151	
Serial Number: 1		Date: 04/07/14	
Customer: Synapse Product Development LLC		Temperature: 22.4°C	
Attendees: None		Humidity: 44%	
Project: Kezar		Barometric Pres.: 1022	
Tested by: Brandon Hobbs		Power: 110VAC/60Hz	
		Job Site: EV06	
TEST SPECIFICATIONS		Test Method	
FCC 15.247:2014		ANSI C63.10:2009	
COMMENTS			
Product was test at a 17dBm maximum power level.			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	3	Signature 	
		Value	Limit
5725 MHz - 5850 MHz Band			
802.11(a) 6 Mbps			
Low Channel 149, 5745 MHz		-39.9 dBc	≤ -20 dBc
High Channel 165, 5825 MHz		-50.69 dBc	≤ -20 dBc
802.11(a) 36 Mbps			
Low Channel 149, 5745 MHz		-45.34 dBc	≤ -20 dBc
High Channel 165, 5825 MHz		-51.68 dBc	≤ -20 dBc
802.11(a) 54 Mbps			
Low Channel 149, 5745 MHz		-47.2 dBc	≤ -20 dBc
High Channel 165, 5825 MHz		-53.48 dBc	≤ -20 dBc
802.11(n) MCS0 - UNII			
Low Channel 149, 5745 MHz		-42.55 dBc	≤ -20 dBc
High Channel 165, 5825 MHz		-50.06 dBc	≤ -20 dBc
802.11(n) MCS7 - UNII			
Low Channel 149, 5745 MHz		-45.94 dBc	≤ -20 dBc
High Channel 165, 5825 MHz		-51.92 dBc	≤ -20 dBc

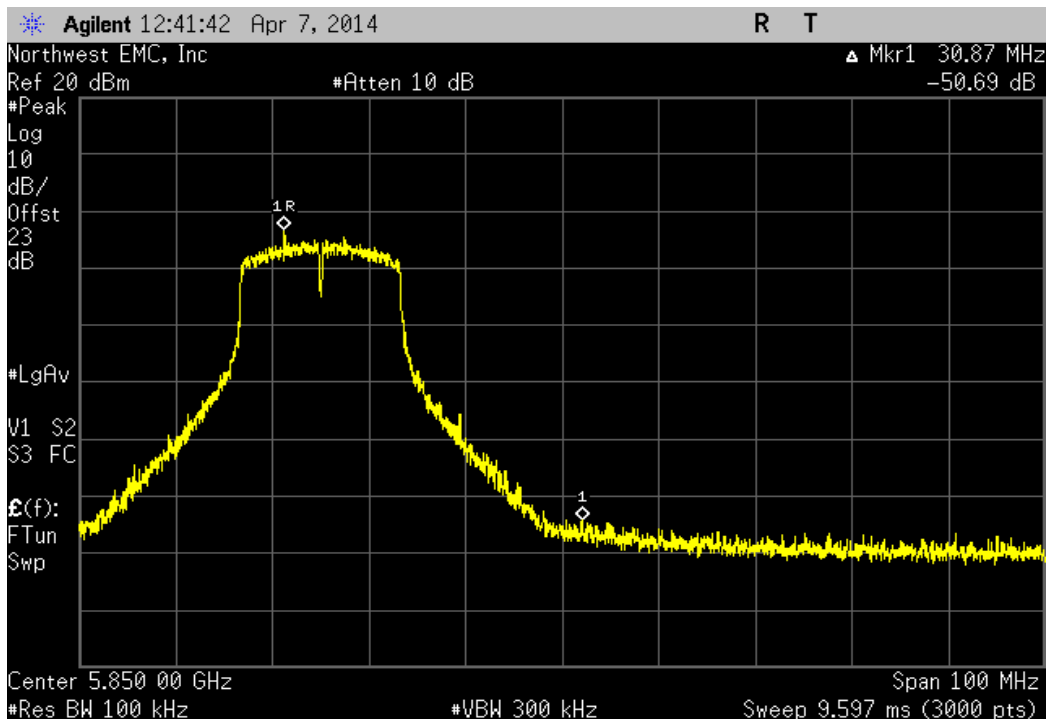
5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Low Channel 149, 5745 MHz

	Value	Limit	Result
	-39.9 dBc	≤ -20 dBc	Pass



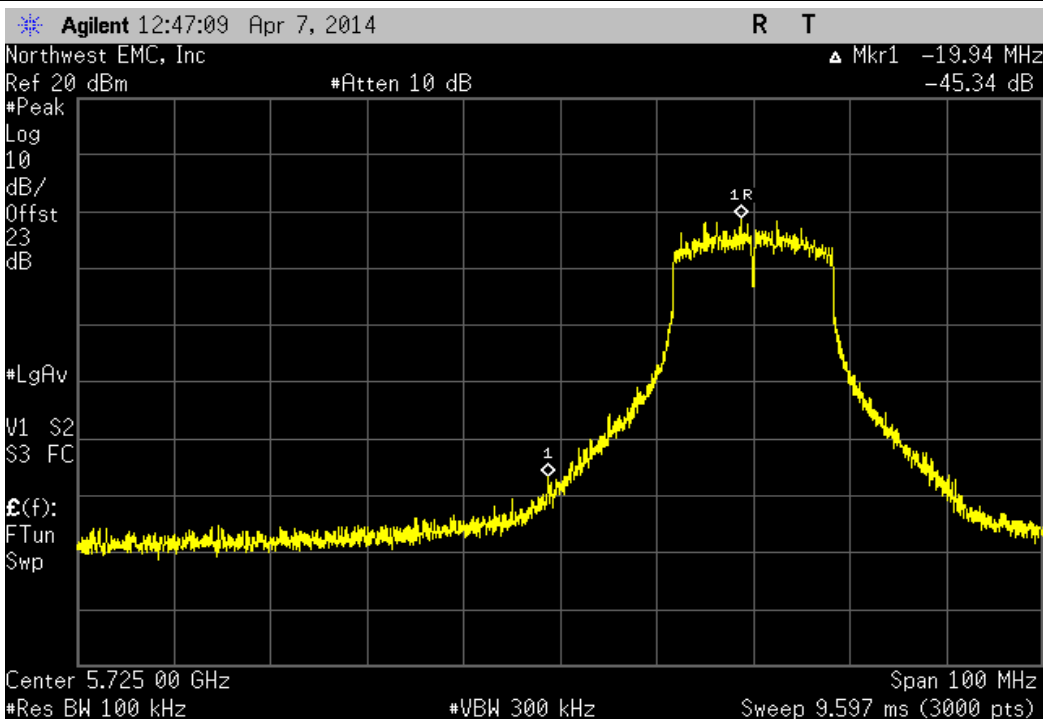
5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, High Channel 165, 5825 MHz

	Value	Limit	Result
	-50.69 dBc	≤ -20 dBc	Pass



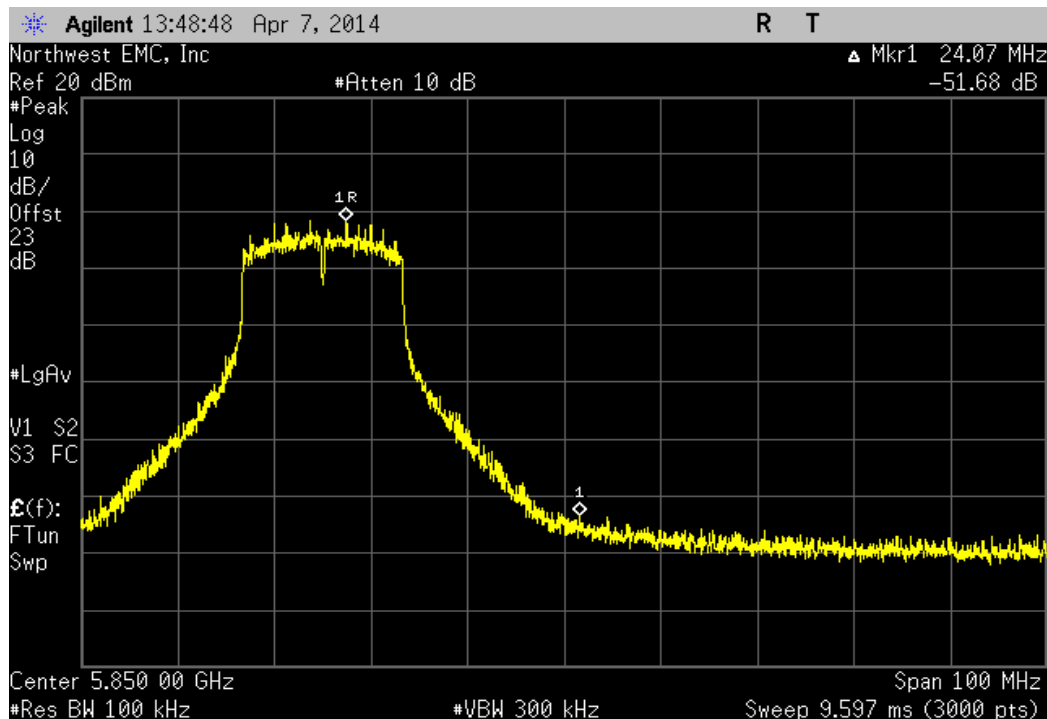
5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Low Channel 149, 5745 MHz

Value	Limit	Result
-45.34 dBc	≤ -20 dBc	Pass



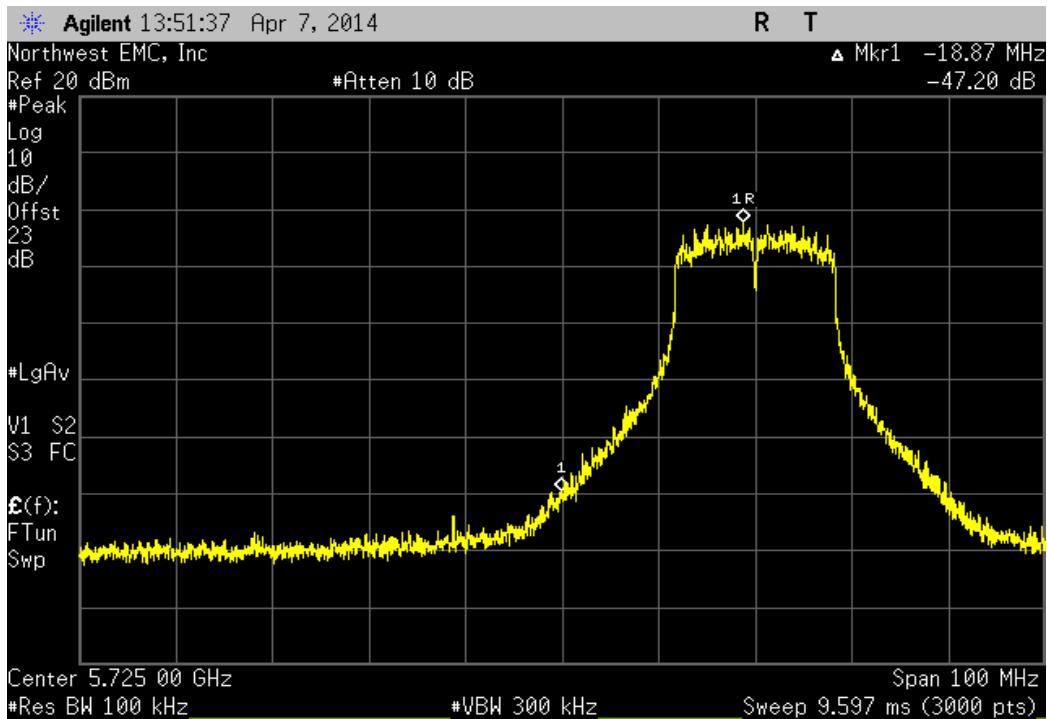
5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, High Channel 165, 5825 MHz

Value	Limit	Result
-51.68 dBc	≤ -20 dBc	Pass



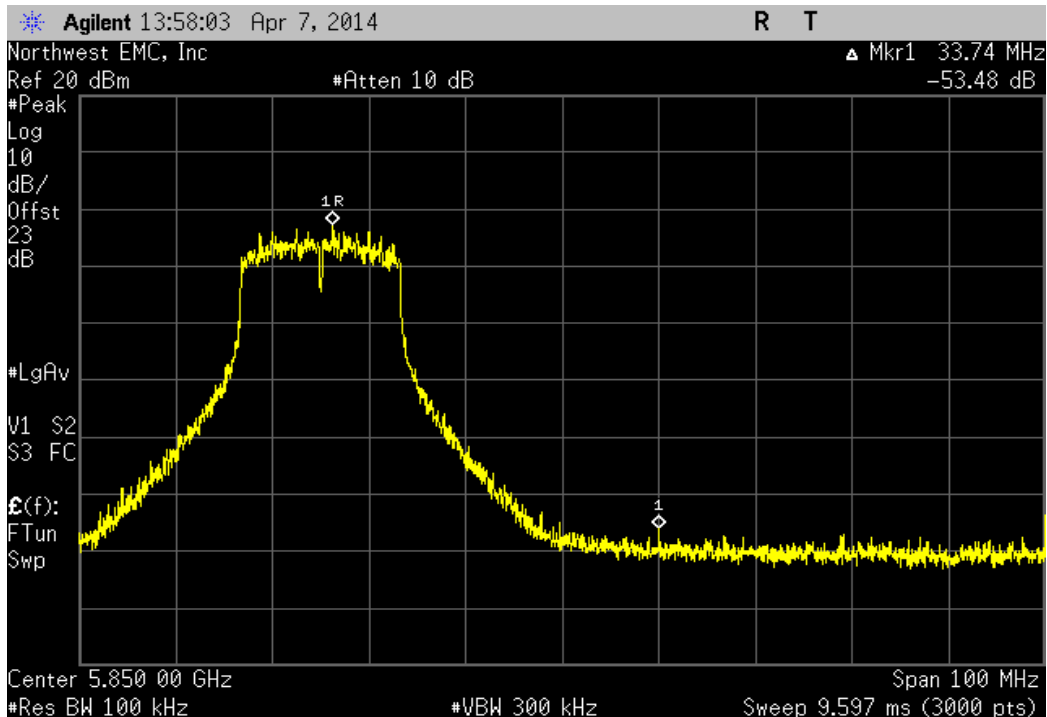
5725 MHz - 5850 MHz Band, 802.11(a) 54 Mbps, Low Channel 149, 5745 MHz

Value	Limit	Result
-47.2 dBc	≤ -20 dBc	Pass



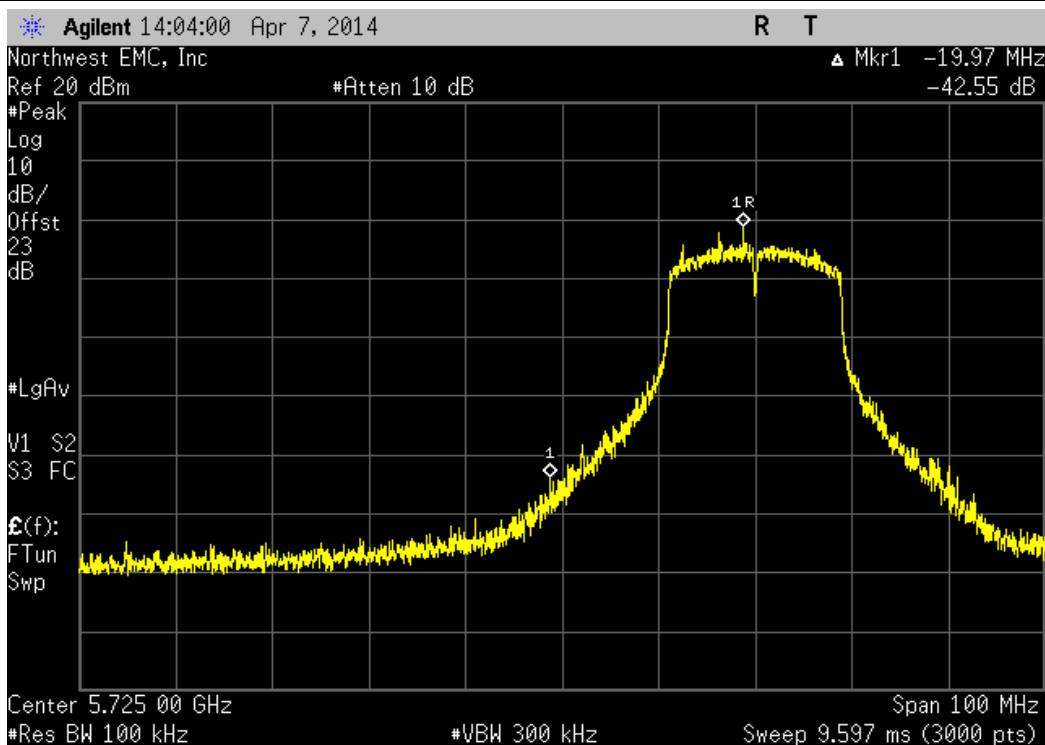
5725 MHz - 5850 MHz Band, 802.11(a) 54 Mbps, High Channel 165, 5825 MHz

Value	Limit	Result
-53.48 dBc	≤ -20 dBc	Pass



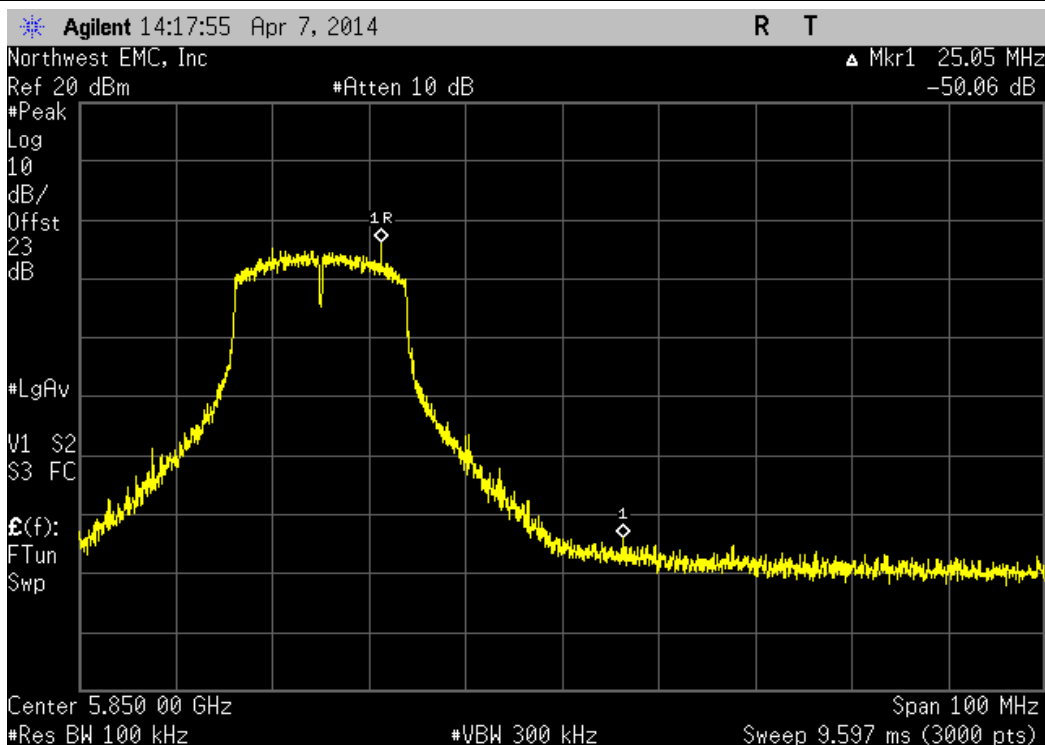
5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, Low Channel 149, 5745 MHz

				Value	Limit	Result
				-42.55 dBc	$\leq -20$ dBc	Pass



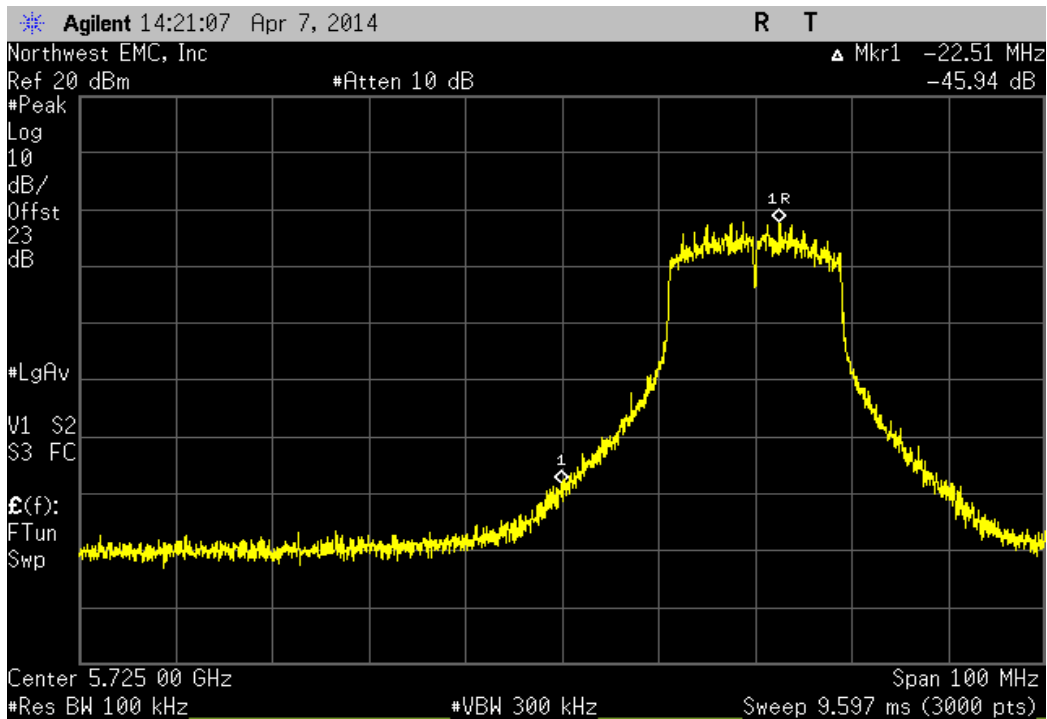
5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, High Channel 165, 5825 MHz

				Value	Limit	Result
				-50.06 dBc	$\leq -20$ dBc	Pass



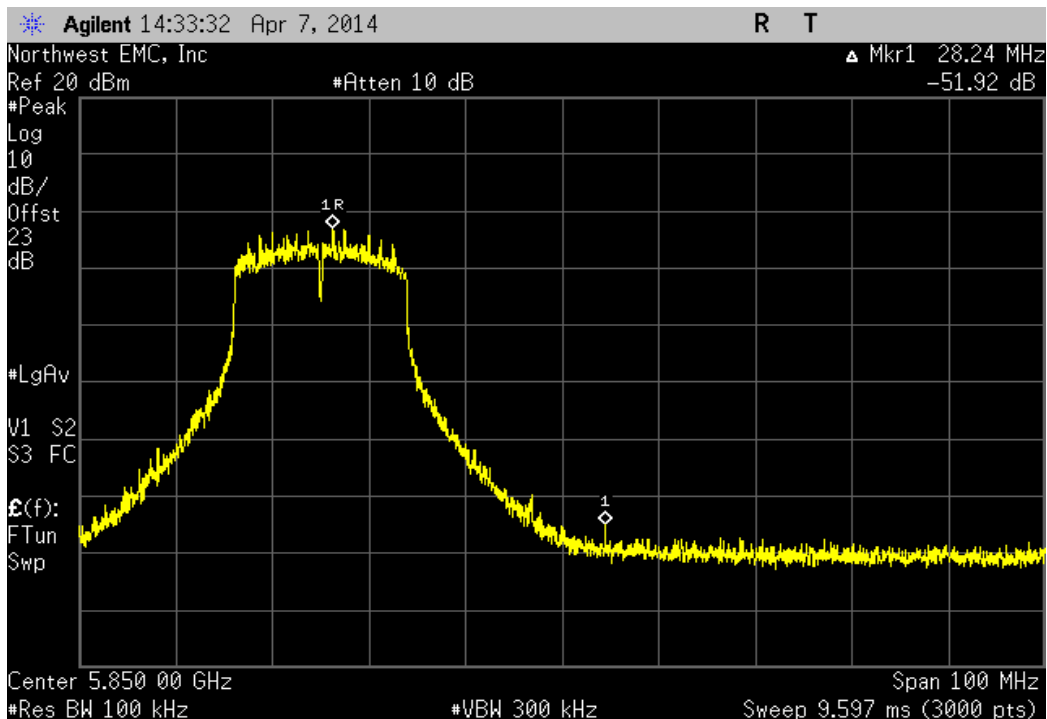
5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, Low Channel 149, 5745 MHz

Value	Limit	Result
-45.94 dBc	≤ -20 dBc	Pass



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

Value	Limit	Result
-51.92 dBc	≤ -20 dBc	Pass



# SPURIOUS CONDUCTED EMISSIONS

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

## TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval (mo.)
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	2/3/2014	12
MXG Analog Signal Generator	Agilent	N5181A	TIG	3/28/2014	36
Power Meter	Gigatronics	8651A	SPM	11/26/2013	24
Power Sensor	Gigatronics	80701A	SPL	7/8/2011	36
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
40GHz DC Block	Miteq	DCB4000	AMD	5/16/2013	12
Spectrum Analyzer	Agilent	E4446A	AAQ	1/21/2014	24

## TEST DESCRIPTION


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





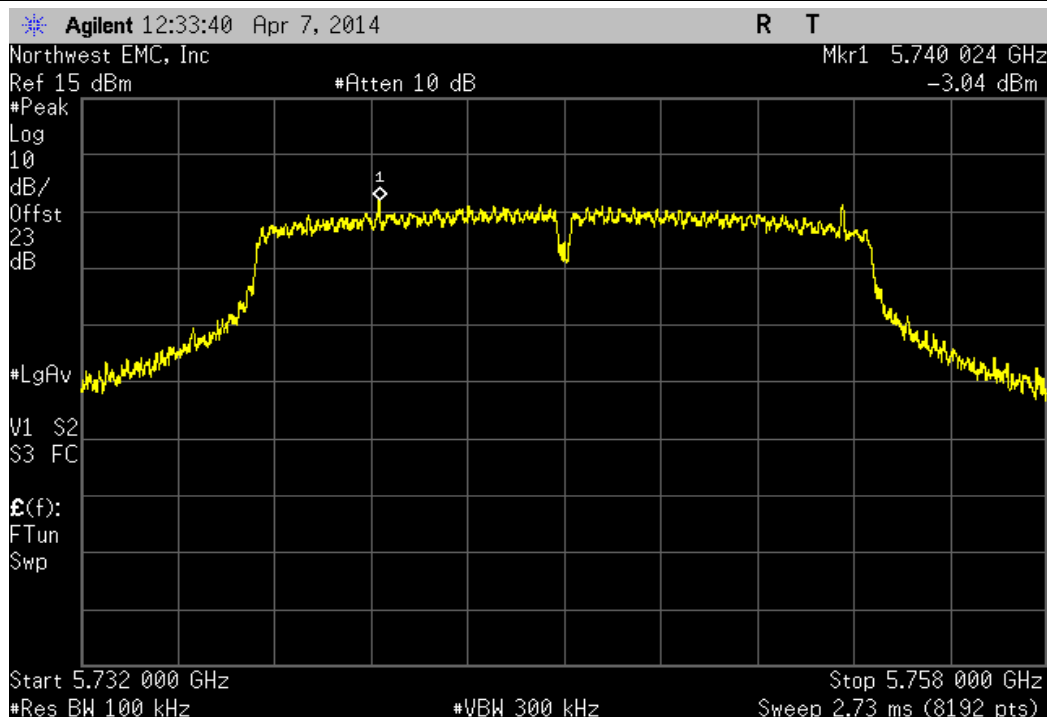
# SPURIOUS CONDUCTED EMISSIONS

XMit 2013.08.15  
PsaTx 2013.10.23

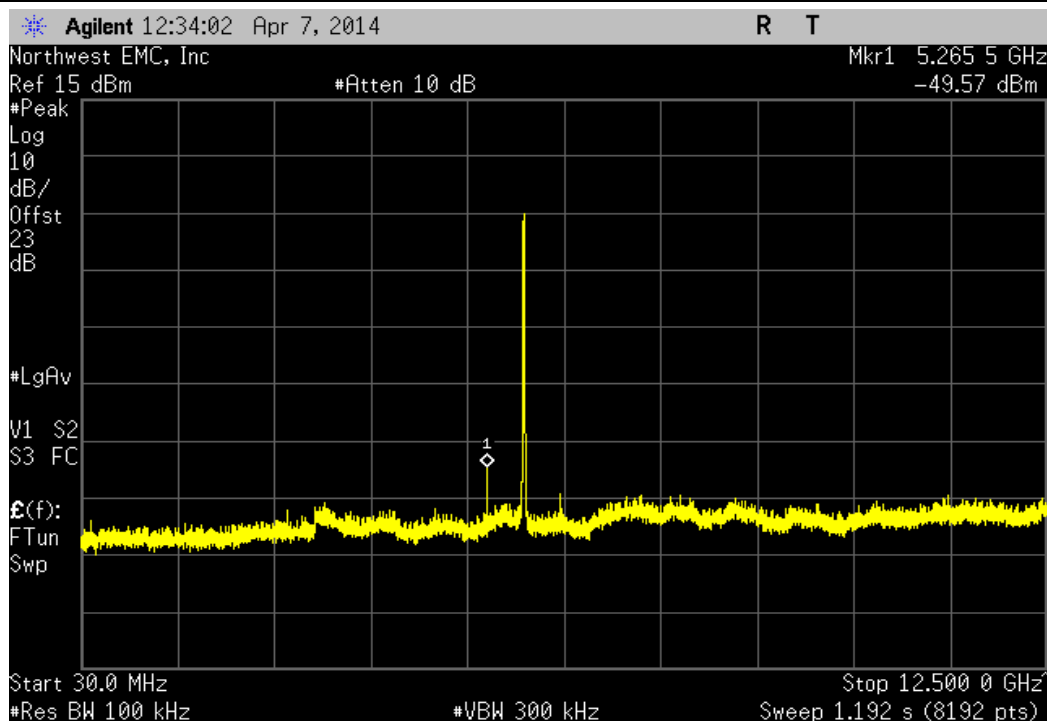
EUT: Kezar		Work Order: SYNA0151		
Serial Number: 1		Date: 04/07/14		
Customer: Synapse Product Development LLC		Temperature: 22.4°C		
Attendees: None		Humidity: 44%		
Project: Kezar		Barometric Pres.: 1022		
Tested by: Brandon Hobbs		Power: 110VAC/60Hz		
Job Site: EV06		Test Method		
FCC 15.247:2014		ANSI C63.10:2009		
COMMENTS				
Product was test at a 17dBm maximum power level.				
DEVIATIONS FROM TEST STANDARD				
None				
Configuration #	3	Signature 		
		Frequency Range	Value Limit Result	
5725 MHz - 5850 MHz Band				
802.11(a) 6 Mbps				
Low Channel 149, 5745 MHz	Fundamental	N/A	N/A	N/A
Low Channel 149, 5745 MHz	30 MHz - 12.5 GHz	-46.53 dBc	≤ -20 dBc	Pass
Low Channel 149, 5745 MHz	12.5 GHz - 25 GHz	-44.29 dBc	≤ -20 dBc	Pass
Low Channel 149, 5745 MHz	25 GHz - 32 GHz	-42.5 dBc	≤ -20 dBc	Pass
Low Channel 149, 5745 MHz	32 GHz - 40 GHz	-32.66 dBc	≤ -20 dBc	Pass
Mid Channel 157, 5785 MHz	Fundamental	N/A	N/A	N/A
Mid Channel 157, 5785 MHz	30 MHz - 12.5 GHz	-44.46 dBc	≤ -20 dBc	Pass
Mid Channel 157, 5785 MHz	12.5 GHz - 25 GHz	-42.11 dBc	≤ -20 dBc	Pass
Mid Channel 157, 5785 MHz	25 GHz - 32 GHz	-41.35 dBc	≤ -20 dBc	Pass
Mid Channel 157, 5785 MHz	32 GHz - 40 GHz	-33.04 dBc	≤ -20 dBc	Pass
High Channel 165, 5825 MHz	Fundamental	N/A	N/A	N/A
High Channel 165, 5825 MHz	30 MHz - 12.5 GHz	-45.59 dBc	≤ -20 dBc	Pass
High Channel 165, 5825 MHz	12.5 GHz - 25 GHz	-44.8 dBc	≤ -20 dBc	Pass
High Channel 165, 5825 MHz	25 GHz - 32 GHz	-43.9 dBc	≤ -20 dBc	Pass
High Channel 165, 5825 MHz	32 GHz - 40 GHz	-34.58 dBc	≤ -20 dBc	Pass
802.11(a) 36 Mbps				
Low Channel 149, 5745 MHz	Fundamental	N/A	N/A	N/A
Low Channel 149, 5745 MHz	30 MHz - 12.5 GHz	-48.58 dBc	≤ -20 dBc	Pass
Low Channel 149, 5745 MHz	12.5 GHz - 25 GHz	-46.89 dBc	≤ -20 dBc	Pass
Low Channel 149, 5745 MHz	25 GHz - 32 GHz	-44.45 dBc	≤ -20 dBc	Pass
Low Channel 149, 5745 MHz	32 GHz - 40 GHz	-35.48 dBc	≤ -20 dBc	Pass
Mid Channel 157, 5785 MHz	Fundamental	N/A	N/A	N/A
Mid Channel 157, 5785 MHz	30 MHz - 12.5 GHz	-46.68 dBc	≤ -20 dBc	Pass
Mid Channel 157, 5785 MHz	12.5 GHz - 25 GHz	-45.57 dBc	≤ -20 dBc	Pass
Mid Channel 157, 5785 MHz	25 GHz - 32 GHz	-43.19 dBc	≤ -20 dBc	Pass
Mid Channel 157, 5785 MHz	32 GHz - 40 GHz	-34.36 dBc	≤ -20 dBc	Pass
High Channel 165, 5825 MHz	Fundamental	N/A	N/A	N/A
High Channel 165, 5825 MHz	30 MHz - 12.5 GHz	-45.08 dBc	≤ -20 dBc	Pass
High Channel 165, 5825 MHz	12.5 GHz - 25 GHz	-45.93 dBc	≤ -20 dBc	Pass
High Channel 165, 5825 MHz	25 GHz - 32 GHz	-43.16 dBc	≤ -20 dBc	Pass
High Channel 165, 5825 MHz	32 GHz - 40 GHz	-34.58 dBc	≤ -20 dBc	Pass
802.11(a) 54 Mbps				
Low Channel 149, 5745 MHz	Fundamental	N/A	N/A	N/A
Low Channel 149, 5745 MHz	30 MHz - 12.5 GHz	-48.02 dBc	≤ -20 dBc	Pass
Low Channel 149, 5745 MHz	12.5 GHz - 25 GHz	-45.38 dBc	≤ -20 dBc	Pass
Low Channel 149, 5745 MHz	25 GHz - 32 GHz	-42.73 dBc	≤ -20 dBc	Pass
Low Channel 149, 5745 MHz	32 GHz - 40 GHz	-34.61 dBc	≤ -20 dBc	Pass
Mid Channel 157, 5785 MHz	Fundamental	N/A	N/A	N/A
Mid Channel 157, 5785 MHz	30 MHz - 12.5 GHz	-46.77 dBc	≤ -20 dBc	Pass
Mid Channel 157, 5785 MHz	12.5 GHz - 25 GHz	-45.17 dBc	≤ -20 dBc	Pass
Mid Channel 157, 5785 MHz	25 GHz - 32 GHz	-42.84 dBc	≤ -20 dBc	Pass
Mid Channel 157, 5785 MHz	32 GHz - 40 GHz	-33.88 dBc	≤ -20 dBc	Pass
High Channel 165, 5825 MHz	Fundamental	N/A	N/A	N/A
High Channel 165, 5825 MHz	30 MHz - 12.5 GHz	-45.38 dBc	≤ -20 dBc	Pass
High Channel 165, 5825 MHz	12.5 GHz - 25 GHz	-44.1 dBc	≤ -20 dBc	Pass
High Channel 165, 5825 MHz	25 GHz - 32 GHz	-42.66 dBc	≤ -20 dBc	Pass
High Channel 165, 5825 MHz	32 GHz - 40 GHz	-33.24 dBc	≤ -20 dBc	Pass
802.11(n) MCS0 - UNII				
Low Channel 149, 5745 MHz	Fundamental	N/A	N/A	N/A
Low Channel 149, 5745 MHz	30 MHz - 12.5 GHz	-48.59 dBc	≤ -20 dBc	Pass
Low Channel 149, 5745 MHz	12.5 GHz - 25 GHz	-46.5 dBc	≤ -20 dBc	Pass
Low Channel 149, 5745 MHz	25 GHz - 32 GHz	-44.64 dBc	≤ -20 dBc	Pass
Low Channel 149, 5745 MHz	32 GHz - 40 GHz	-35.72 dBc	≤ -20 dBc	Pass
Mid Channel 157, 5785 MHz	Fundamental	N/A	N/A	N/A
Mid Channel 157, 5785 MHz	30 MHz - 12.5 GHz	-46.54 dBc	≤ -20 dBc	Pass
Mid Channel 157, 5785 MHz	12.5 GHz - 25 GHz	-45.7 dBc	≤ -20 dBc	Pass
Mid Channel 157, 5785 MHz	25 GHz - 32 GHz	-43.89 dBc	≤ -20 dBc	Pass
Mid Channel 157, 5785 MHz	32 GHz - 40 GHz	-34.39 dBc	≤ -20 dBc	Pass
High Channel 165, 5825 MHz	Fundamental	N/A	N/A	N/A
High Channel 165, 5825 MHz	30 MHz - 12.5 GHz	-45.81 dBc	≤ -20 dBc	Pass
High Channel 165, 5825 MHz	12.5 GHz - 25 GHz	-43.81 dBc	≤ -20 dBc	Pass
High Channel 165, 5825 MHz	25 GHz - 32 GHz	-43.09 dBc	≤ -20 dBc	Pass
High Channel 165, 5825 MHz	32 GHz - 40 GHz	-34.27 dBc	≤ -20 dBc	Pass
802.11(n) MCS7 - UNII				
Low Channel 149, 5745 MHz	Fundamental	N/A	N/A	N/A
Low Channel 149, 5745 MHz	30 MHz - 12.5 GHz	-48.03 dBc	≤ -20 dBc	Pass
Low Channel 149, 5745 MHz	12.5 GHz - 25 GHz	-44.69 dBc	≤ -20 dBc	Pass
Low Channel 149, 5745 MHz	25 GHz - 32 GHz	-43.32 dBc	≤ -20 dBc	Pass
Low Channel 149, 5745 MHz	32 GHz - 40 GHz	-34.29 dBc	≤ -20 dBc	Pass
Mid Channel 157, 5785 MHz	Fundamental	N/A	N/A	N/A
Mid Channel 157, 5785 MHz	30 MHz - 12.5 GHz	-47.07 dBc	≤ -20 dBc	Pass
Mid Channel 157, 5785 MHz	12.5 GHz - 25 GHz	-44.77 dBc	≤ -20 dBc	Pass
Mid Channel 157, 5785 MHz	25 GHz - 32 GHz	-42.5 dBc	≤ -20 dBc	Pass
Mid Channel 157, 5785 MHz	32 GHz - 40 GHz	-33.61 dBc	≤ -20 dBc	Pass
High Channel 165, 5825 MHz	Fundamental	N/A	N/A	N/A
High Channel 165, 5825 MHz	30 MHz - 12.5 GHz	-45.03 dBc	≤ -20 dBc	Pass
High Channel 165, 5825 MHz	12.5 GHz - 25 GHz	-43.51 dBc	≤ -20 dBc	Pass

High Channel 165, 5825 MHz	25 GHz - 32 GHz	-43.01 dBc	≤ -20 dBc	Pass
High Channel 165, 5825 MHz	32 GHz - 40 GHz	-33.23 dBc	≤ -20 dBc	Pass

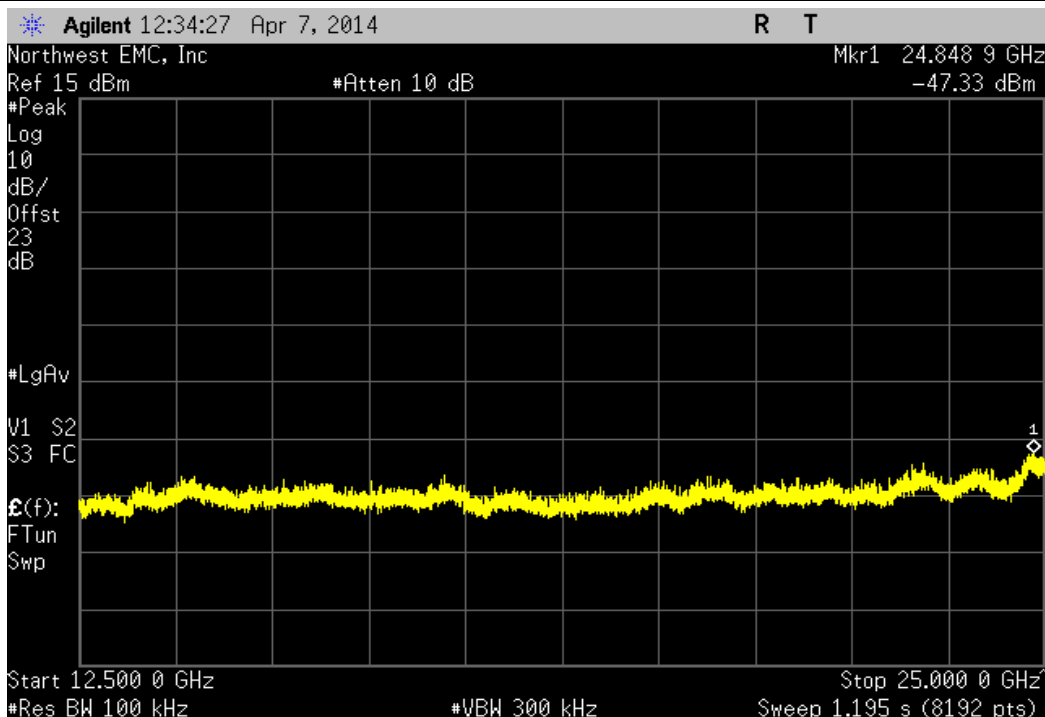
5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Low Channel 149, 5745 MHz				
Frequency Range		Value	Limit	Result
Fundamental		N/A	N/A	N/A



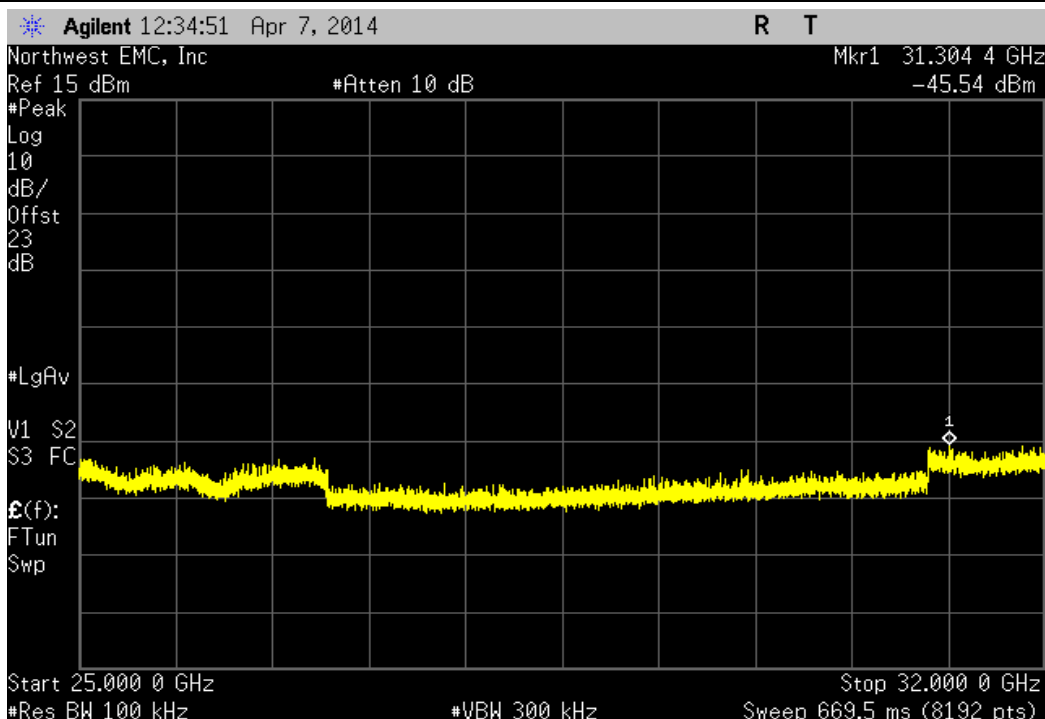
5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Low Channel 149, 5745 MHz				
Frequency Range		Value	Limit	Result
30 MHz - 12.5 GHz		-46.53 dBc	≤ -20 dBc	Pass



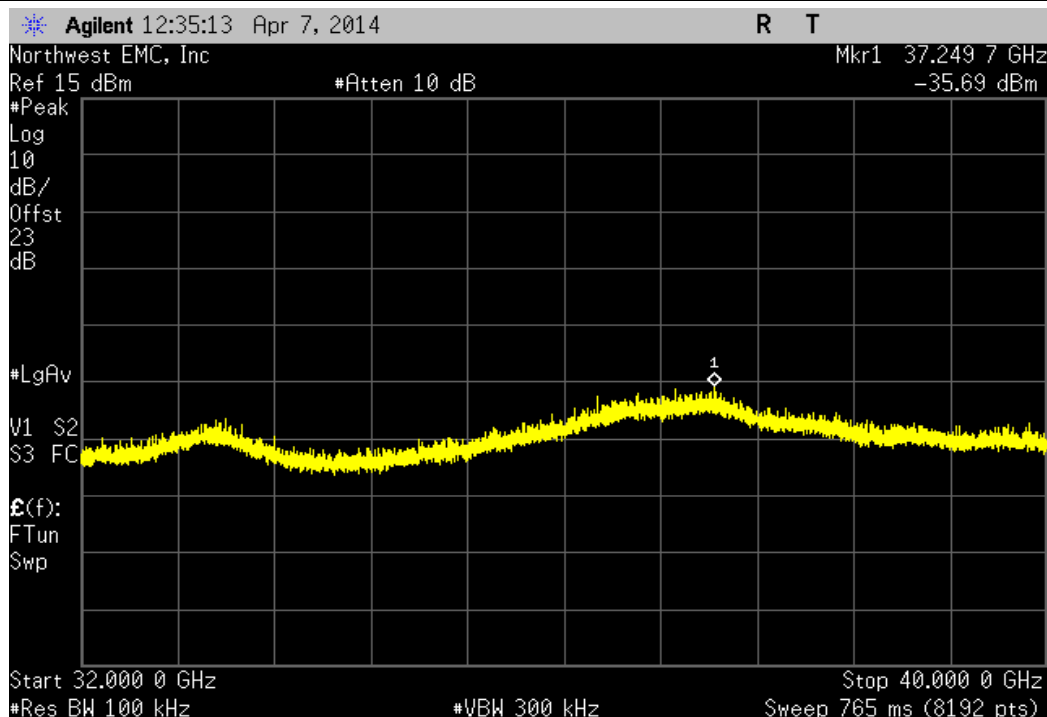
5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Low Channel 149, 5745 MHz				
Frequency Range	Value	Limit	Result	
12.5 GHz - 25 GHz	-44.29 dBc	≤ -20 dBc	Pass	



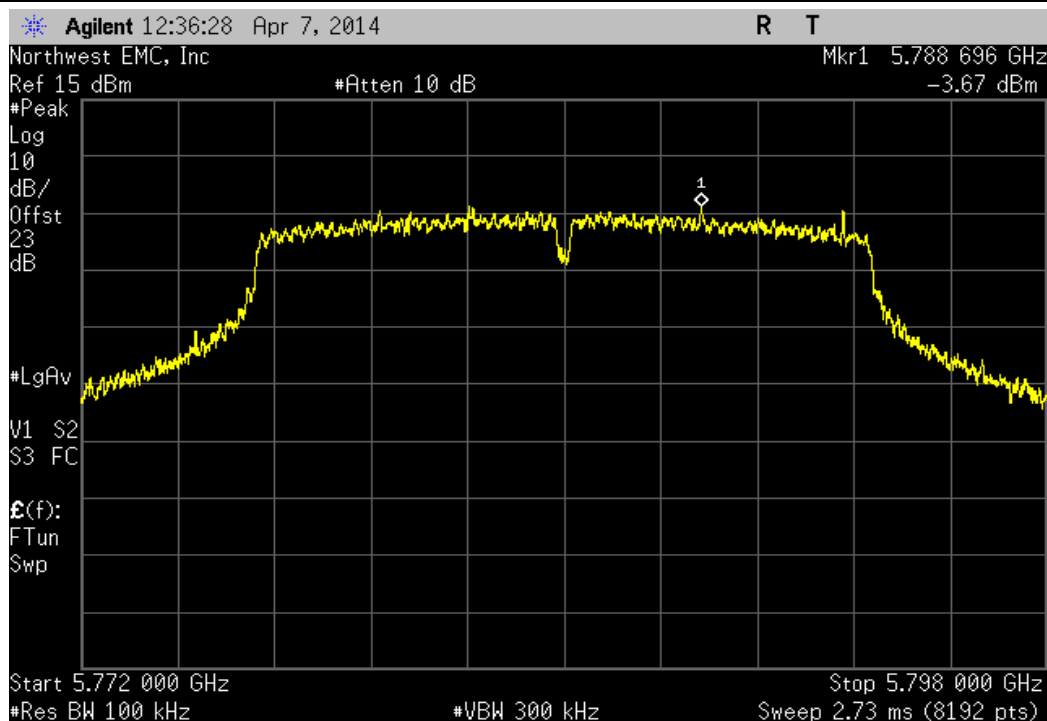
5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Low Channel 149, 5745 MHz				
Frequency Range	Value	Limit	Result	
25 GHz - 32 GHz	-42.5 dBc	≤ -20 dBc	Pass	



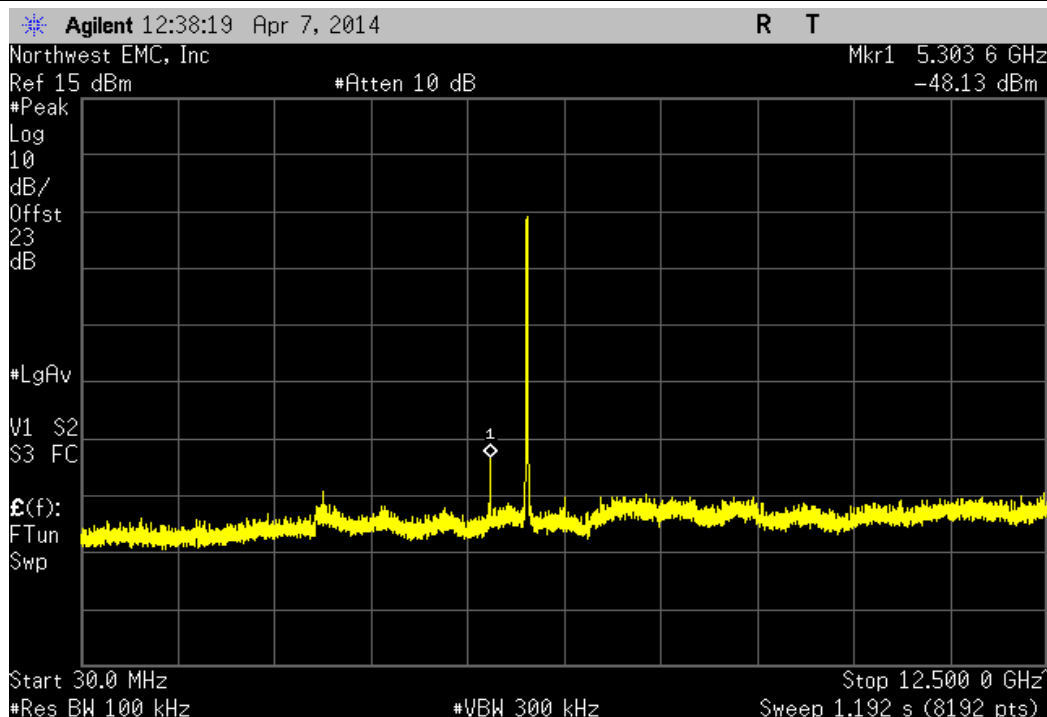
5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Low Channel 149, 5745 MHz				
Frequency Range		Value	Limit	Result
32 GHz - 40 GHz		-32.66 dBc	≤ -20 dBc	Pass



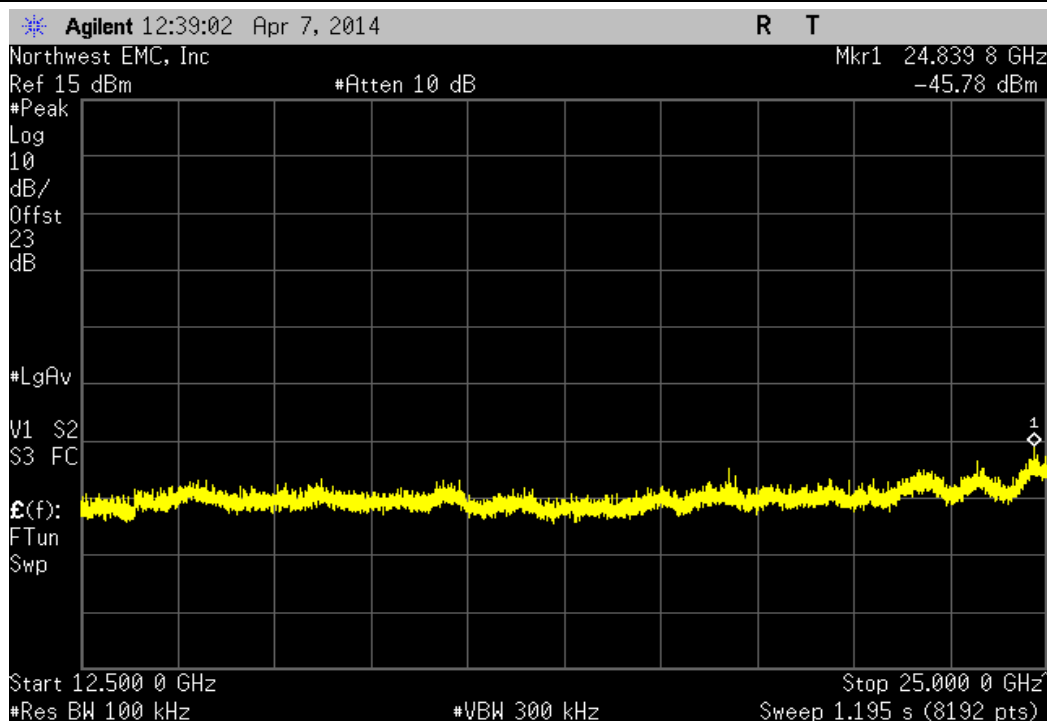
5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Mid Channel 157, 5785 MHz				
Frequency Range		Value	Limit	Result
Fundamental		N/A	N/A	N/A



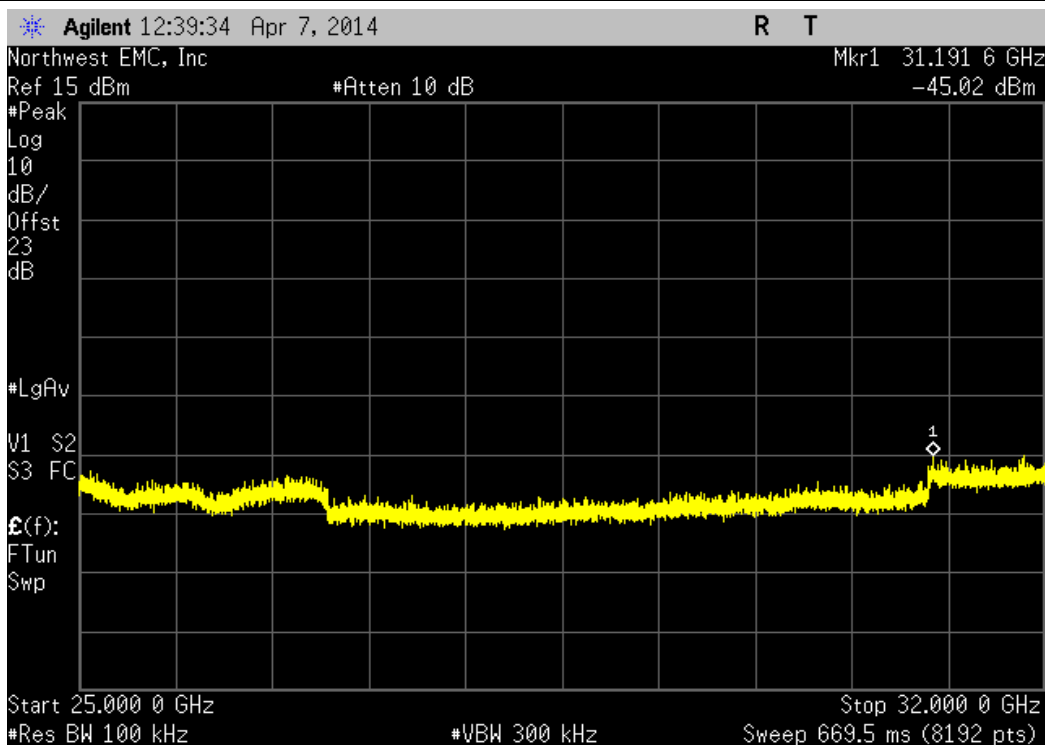
5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Mid Channel 157, 5785 MHz				
Frequency Range	Value	Limit	Result	
30 MHz - 12.5 GHz	-44.46 dBc	≤ -20 dBc	Pass	



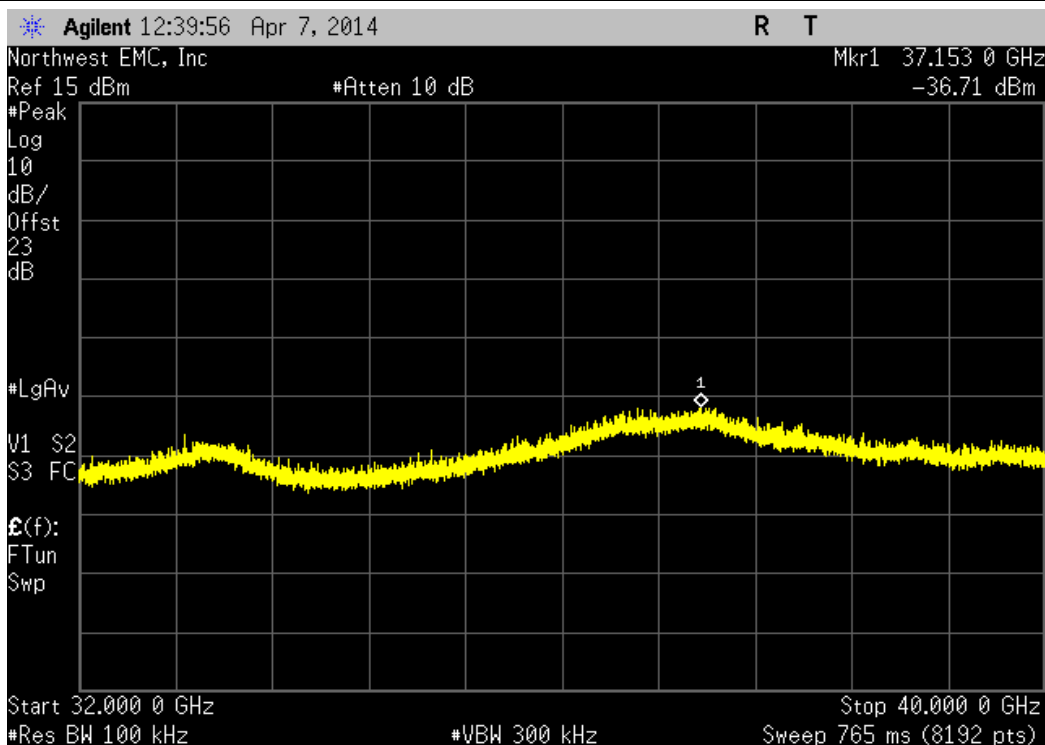
5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Mid Channel 157, 5785 MHz				
Frequency Range	Value	Limit	Result	
12.5 GHz - 25 GHz	-42.11 dBc	≤ -20 dBc	Pass	



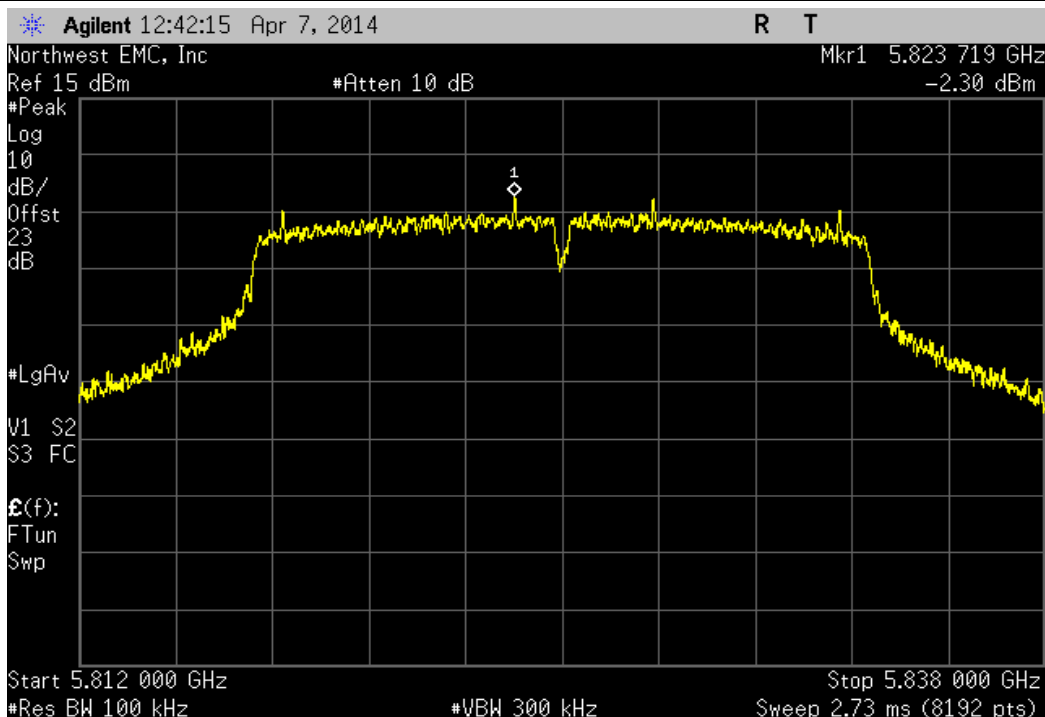
5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Mid Channel 157, 5785 MHz				
Frequency Range		Value	Limit	Result
25 GHz - 32 GHz		-41.35 dBc	≤ -20 dBc	Pass



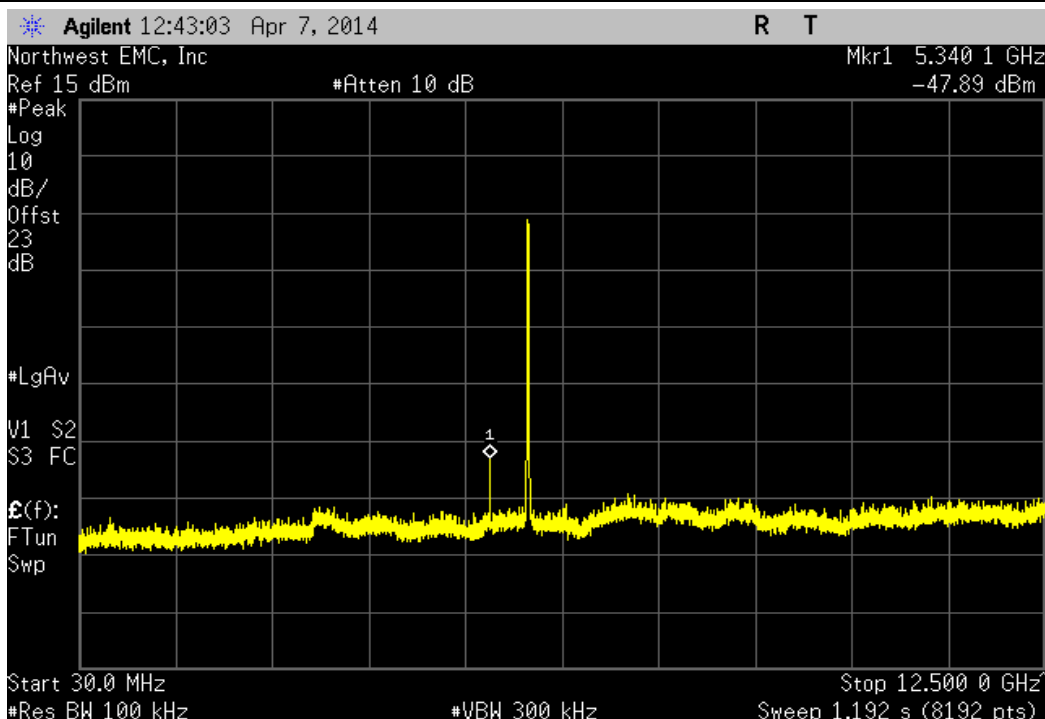
5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, Mid Channel 157, 5785 MHz				
Frequency Range		Value	Limit	Result
32 GHz - 40 GHz		-33.04 dBc	≤ -20 dBc	Pass



5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, High Channel 165, 5825 MHz				
Frequency Range		Value	Limit	Result
Fundamental		N/A	N/A	N/A

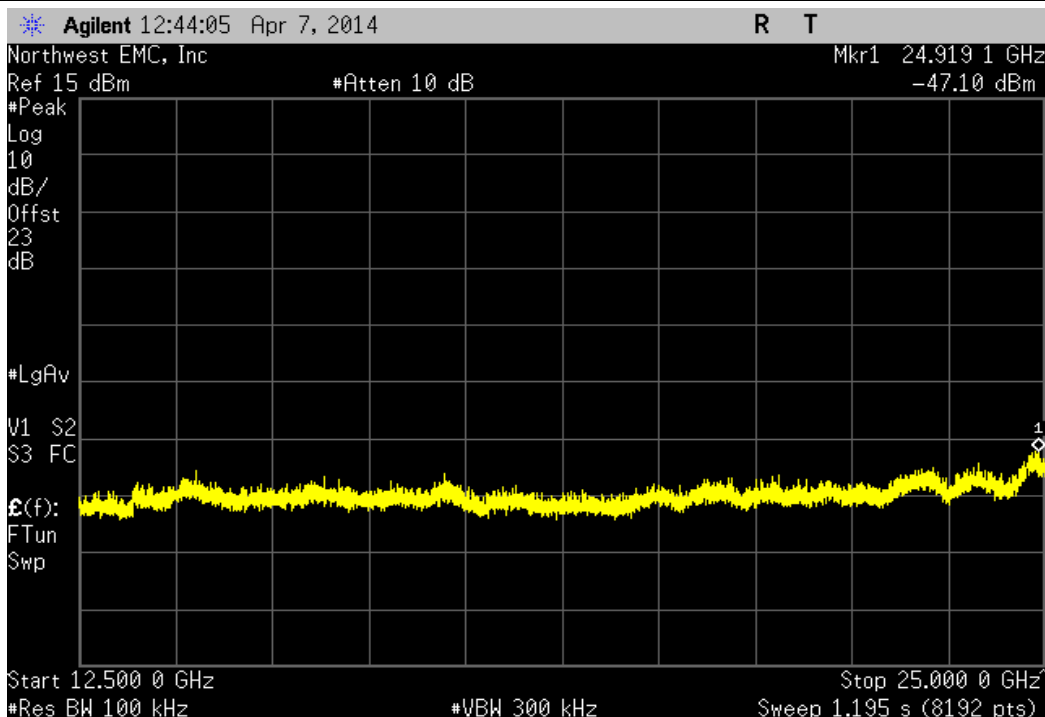


5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, High Channel 165, 5825 MHz				
Frequency Range		Value	Limit	Result
30 MHz - 12.5 GHz		-45.59 dBc	≤ -20 dBc	Pass

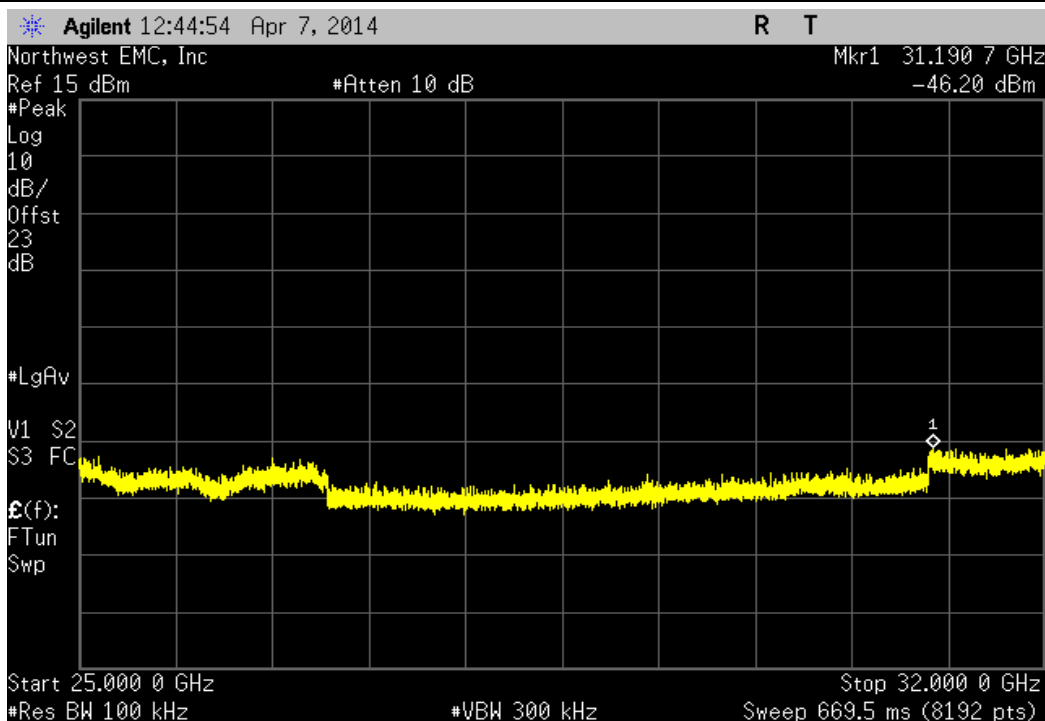




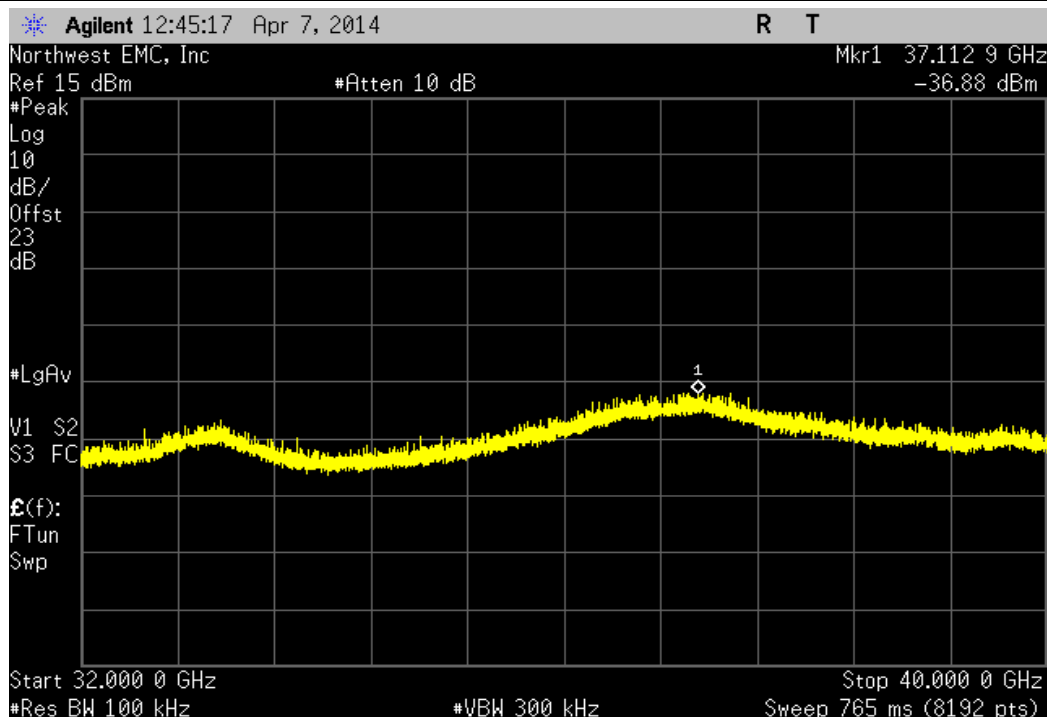
5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, High Channel 165, 5825 MHz				
Frequency Range	Value	Limit	Result	
12.5 GHz - 25 GHz	-44.8 dBc	≤ -20 dBc	Pass	



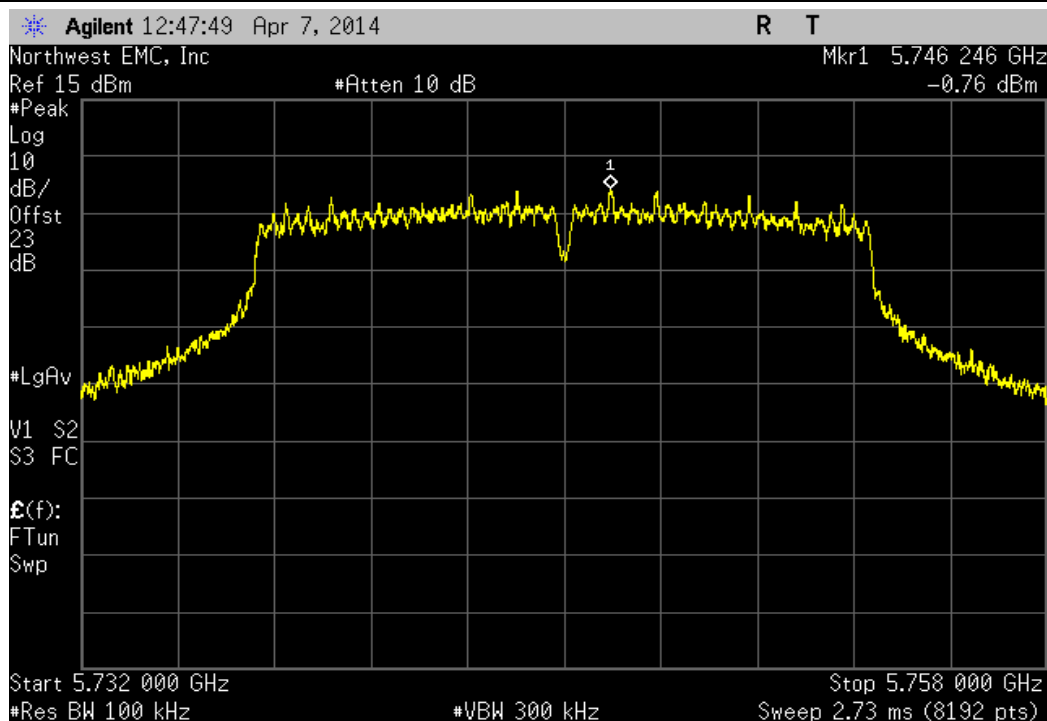
5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, High Channel 165, 5825 MHz				
Frequency Range	Value	Limit	Result	
25 GHz - 32 GHz	-43.9 dBc	≤ -20 dBc	Pass	



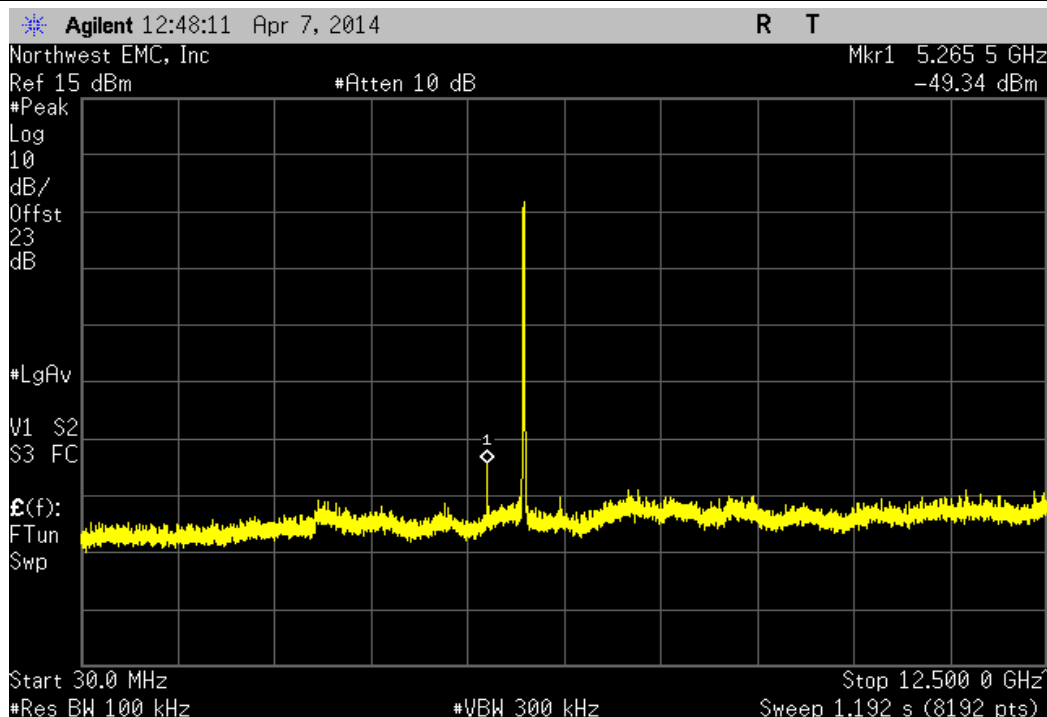
5725 MHz - 5850 MHz Band, 802.11(a) 6 Mbps, High Channel 165, 5825 MHz				
Frequency Range	Value	Limit	Result	
32 GHz - 40 GHz	-34.58 dBc	≤ -20 dBc	Pass	



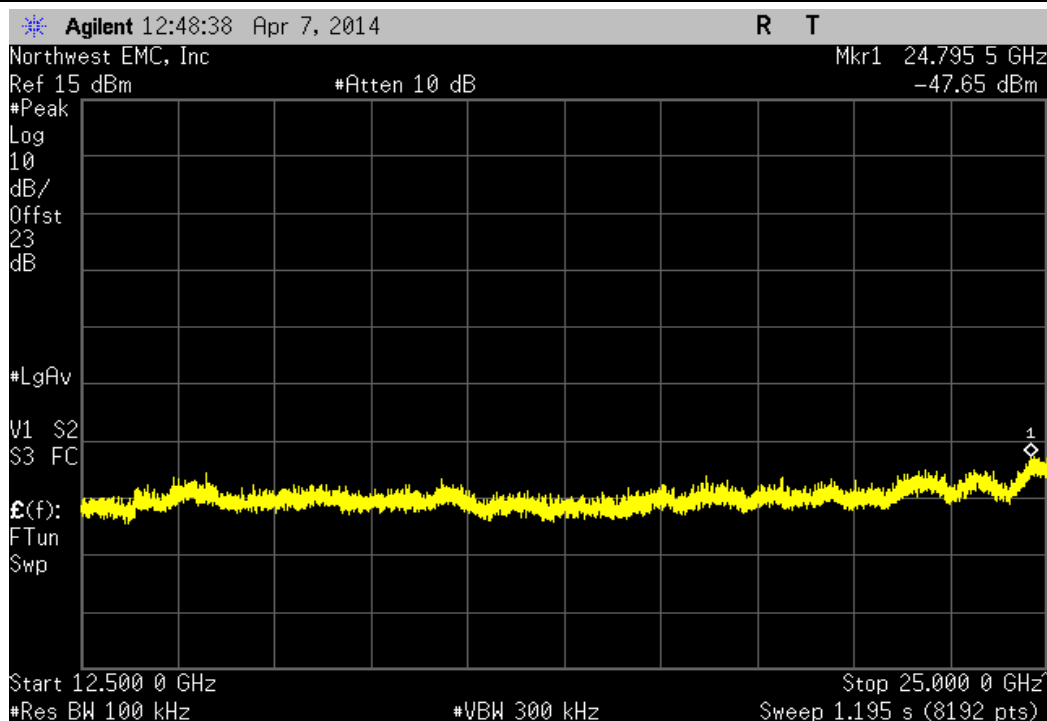
5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Low Channel 149, 5745 MHz				
Frequency Range	Value	Limit	Result	
Fundamental	N/A	N/A	N/A	



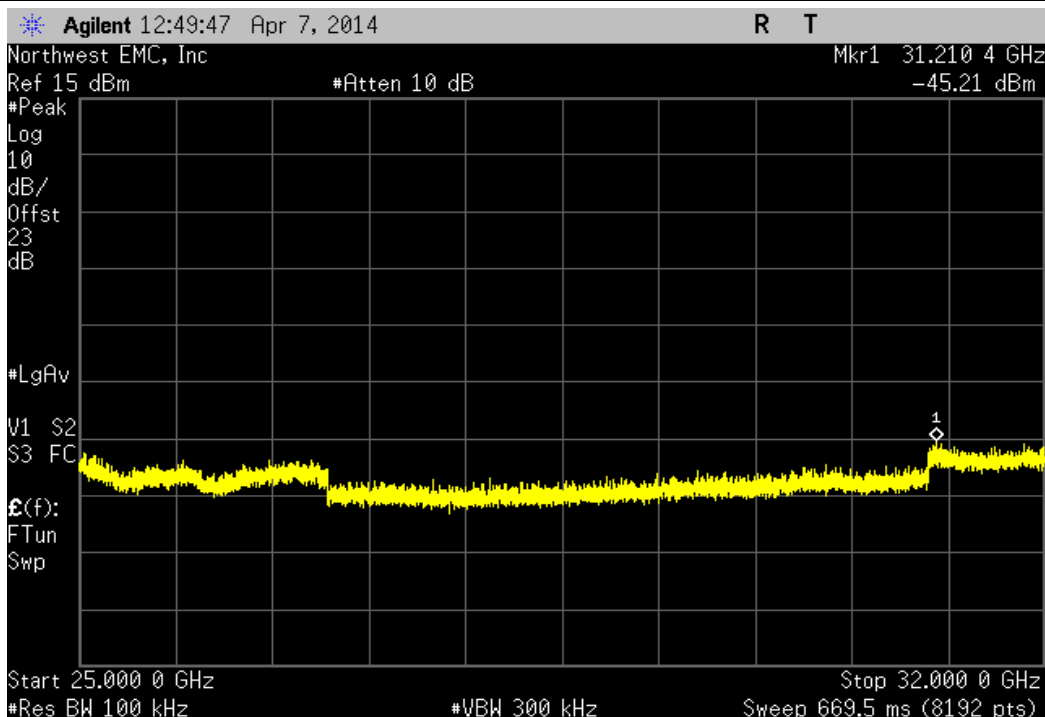
5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Low Channel 149, 5745 MHz				
Frequency Range		Value	Limit	Result
30 MHz - 12.5 GHz		-48.58 dBc	≤ -20 dBc	Pass



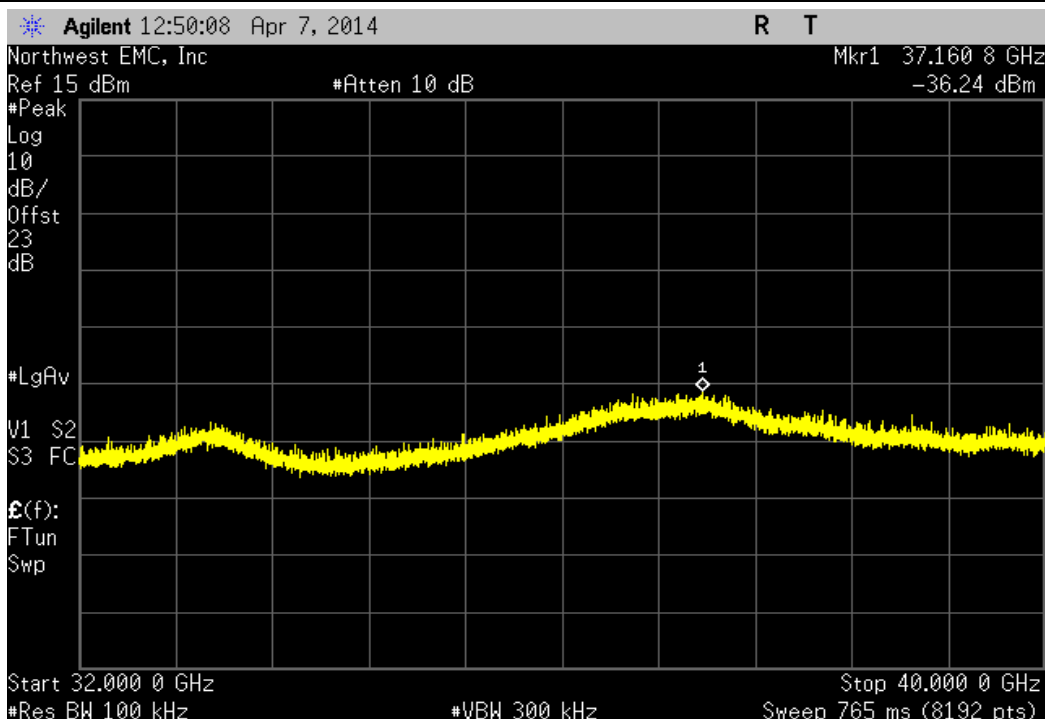
5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Low Channel 149, 5745 MHz				
Frequency Range		Value	Limit	Result
12.5 GHz - 25 GHz		-46.89 dBc	≤ -20 dBc	Pass



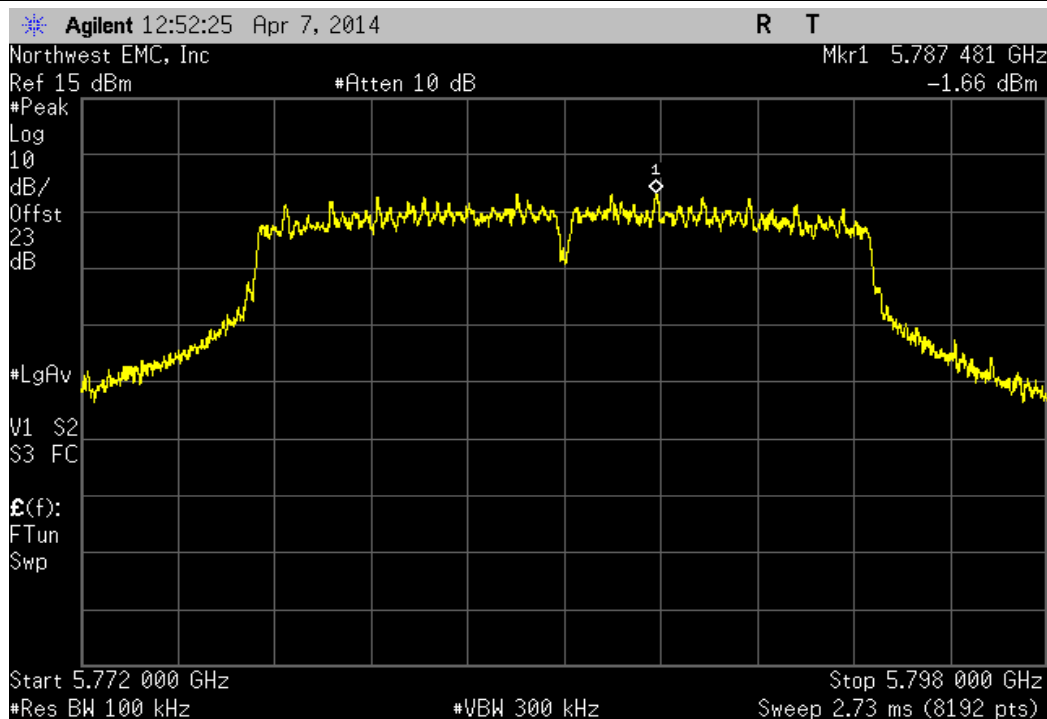
5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Low Channel 149, 5745 MHz				
Frequency Range	Value	Limit	Result	
25 GHz - 32 GHz	-44.45 dBc	≤ -20 dBc	Pass	



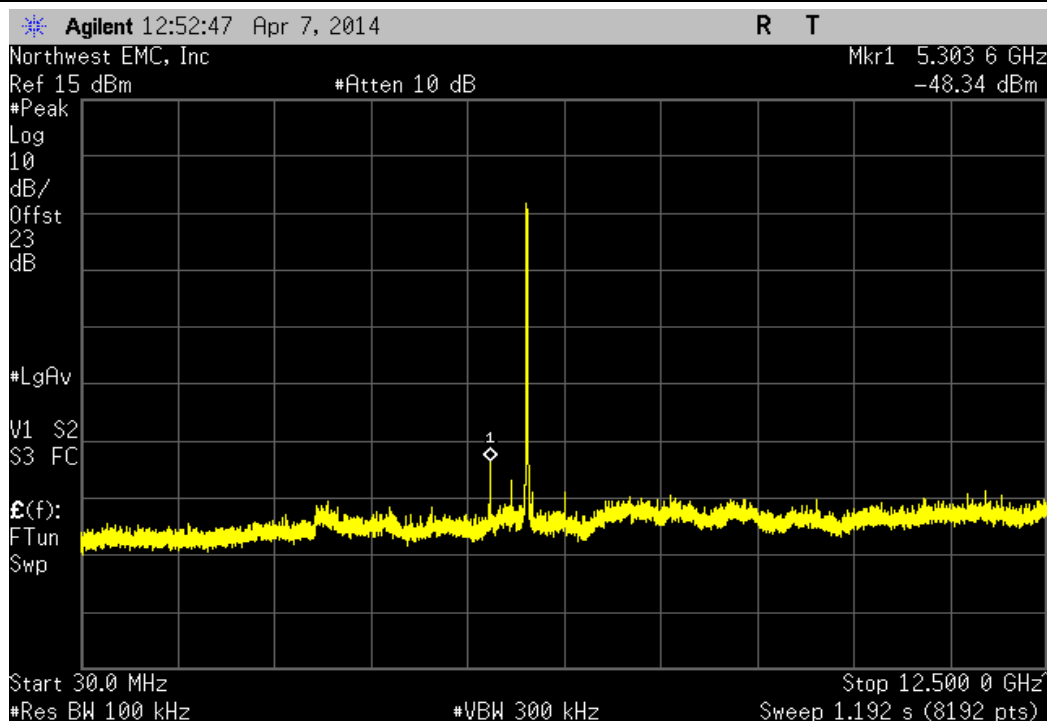
5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Low Channel 149, 5745 MHz				
Frequency Range	Value	Limit	Result	
32 GHz - 40 GHz	-35.48 dBc	≤ -20 dBc	Pass	



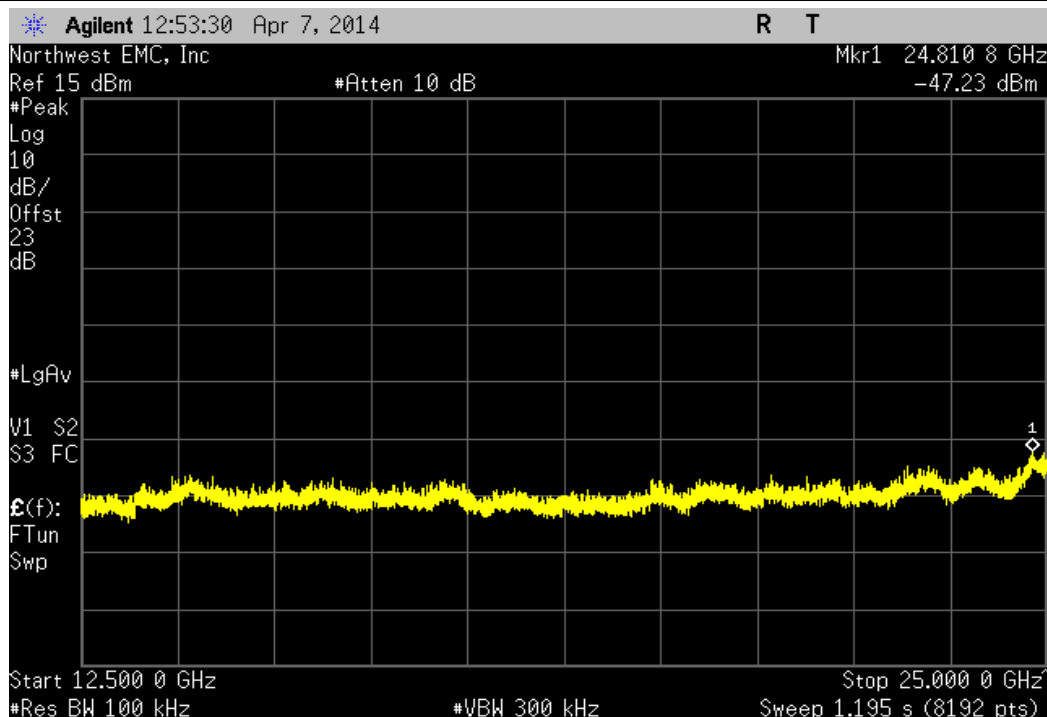
5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Mid Channel 157, 5785 MHz				
Frequency Range		Value	Limit	Result
Fundamental		N/A	N/A	N/A



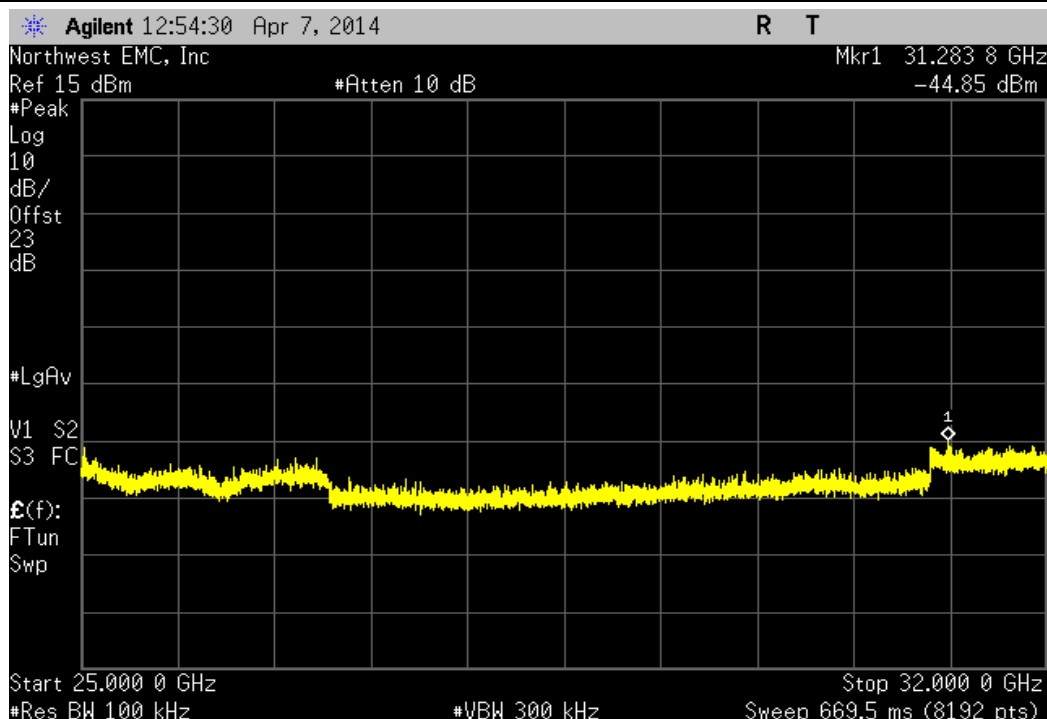
5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Mid Channel 157, 5785 MHz				
Frequency Range		Value	Limit	Result
30 MHz - 12.5 GHz		-46.68 dBc	≤ -20 dBc	Pass



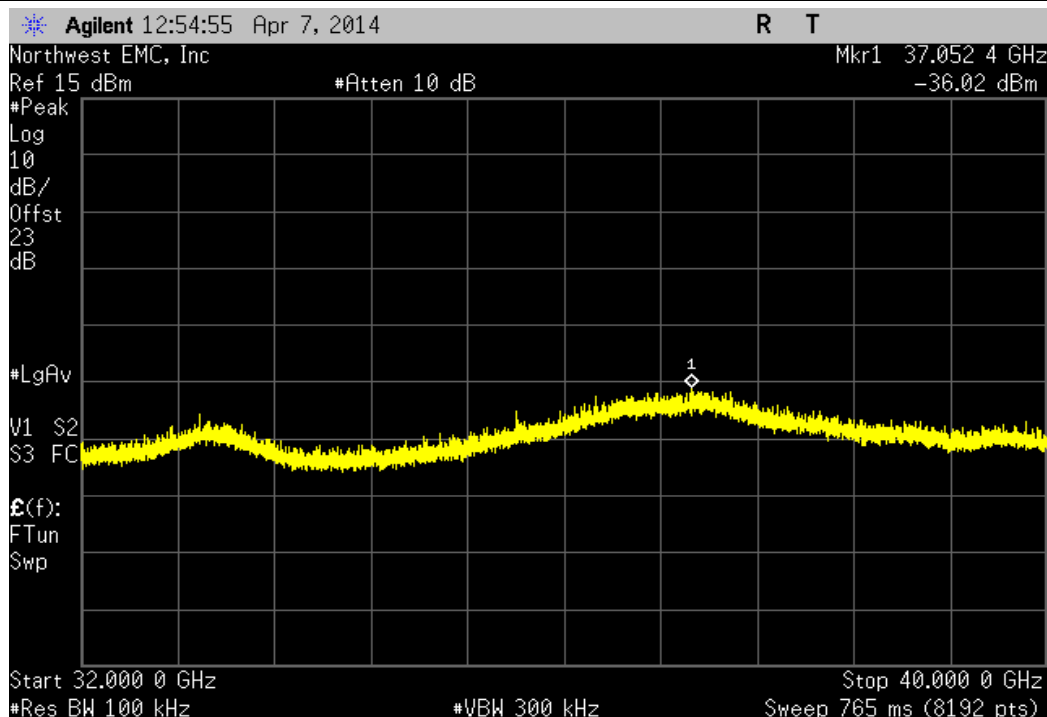
5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Mid Channel 157, 5785 MHz				
Frequency Range	Value	Limit	Result	
12.5 GHz - 25 GHz	-45.57 dBc	≤ -20 dBc	Pass	



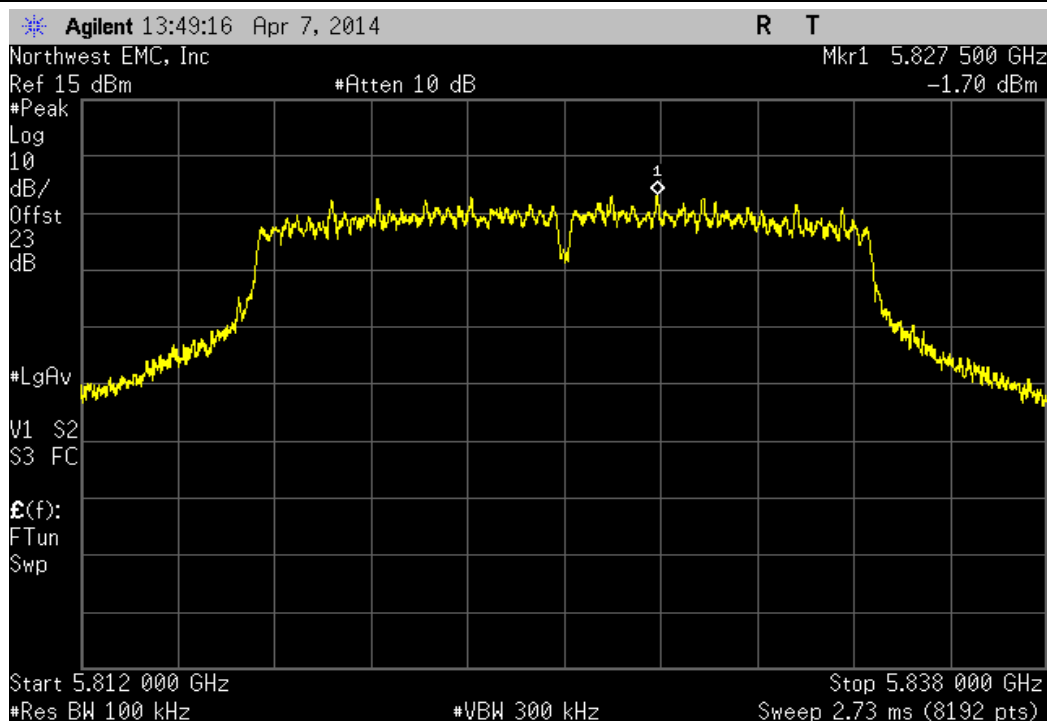
5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Mid Channel 157, 5785 MHz				
Frequency Range	Value	Limit	Result	
25 GHz - 32 GHz	-43.19 dBc	≤ -20 dBc	Pass	



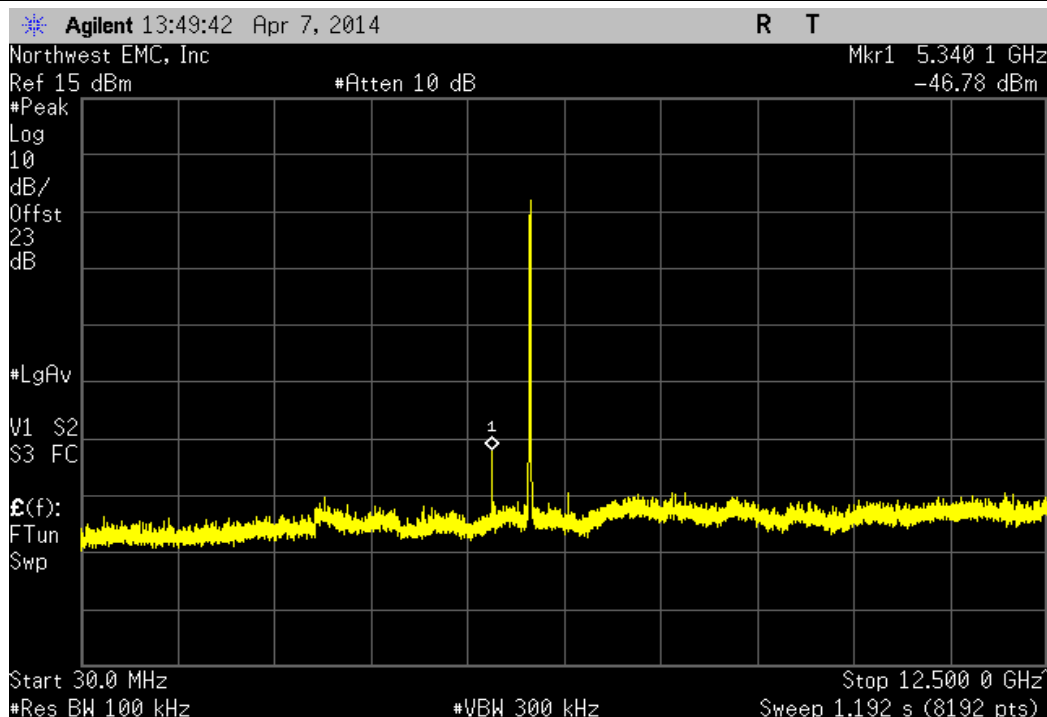
5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, Mid Channel 157, 5785 MHz				
Frequency Range	Value	Limit	Result	
32 GHz - 40 GHz	-34.36 dBc	≤ -20 dBc	Pass	



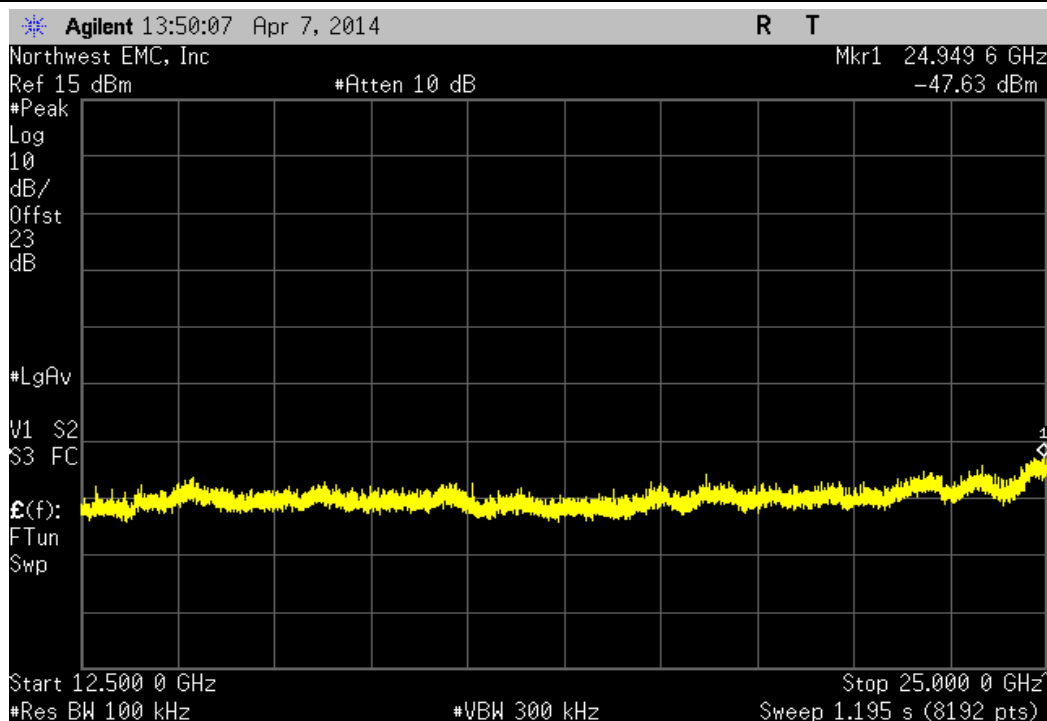
5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, High Channel 165, 5825 MHz				
Frequency Range	Value	Limit	Result	
Fundamental	N/A	N/A	N/A	



5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, High Channel 165, 5825 MHz				
Frequency Range	Value	Limit	Result	
30 MHz - 12.5 GHz	-45.08 dBc	≤ -20 dBc	Pass	

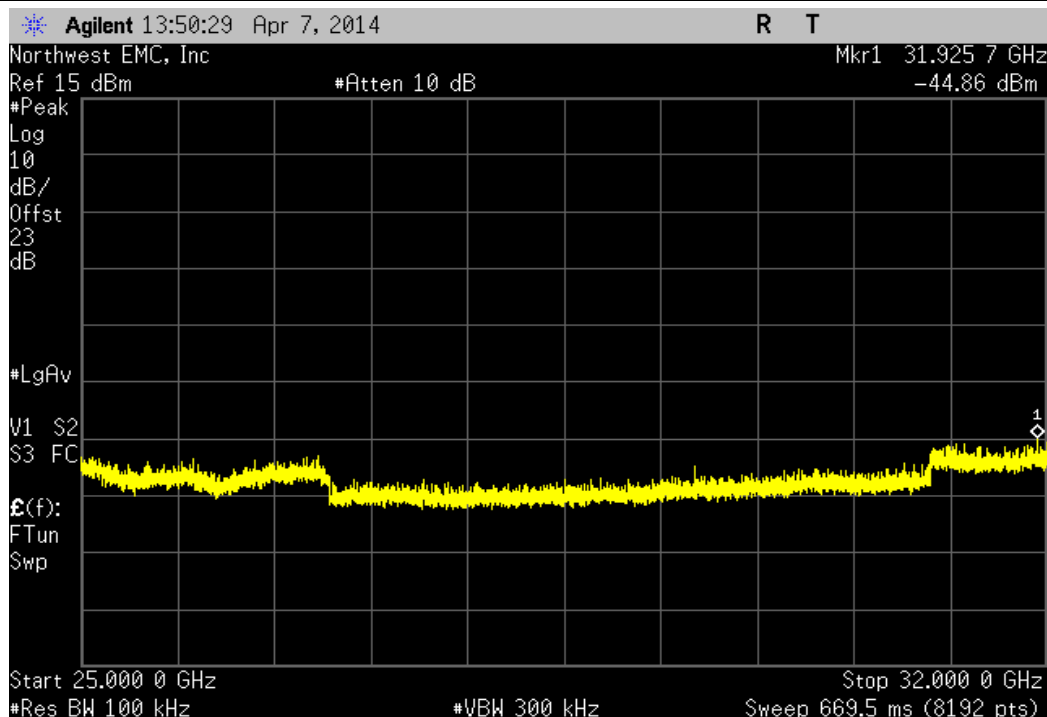


5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, High Channel 165, 5825 MHz				
Frequency Range	Value	Limit	Result	
12.5 GHz - 25 GHz	-45.93 dBc	≤ -20 dBc	Pass	

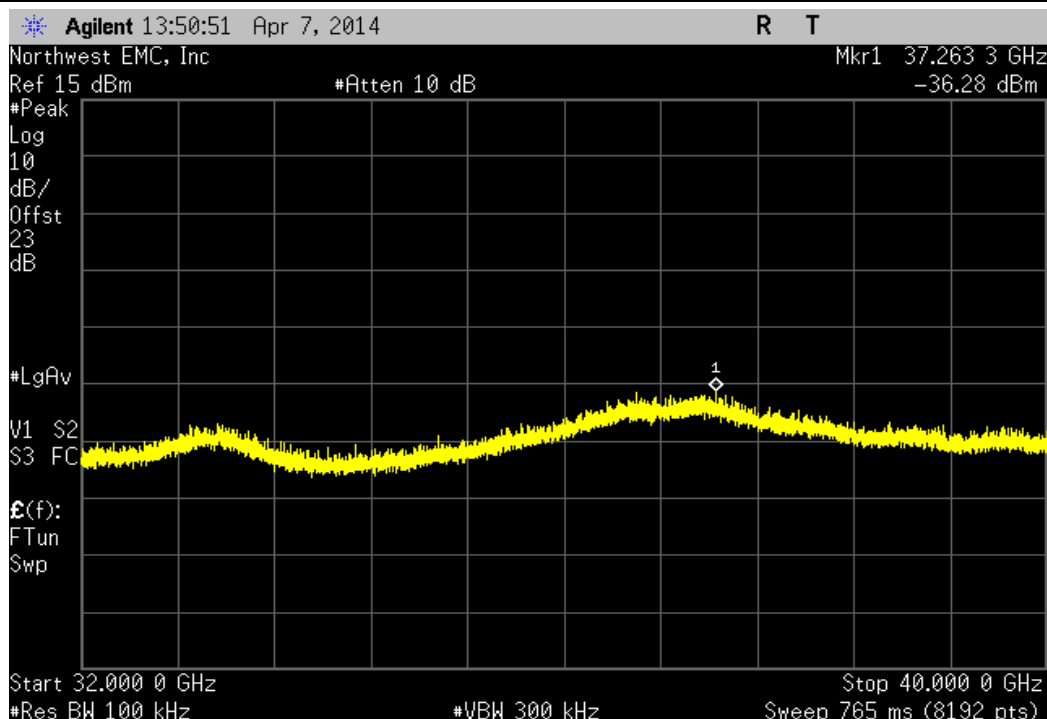




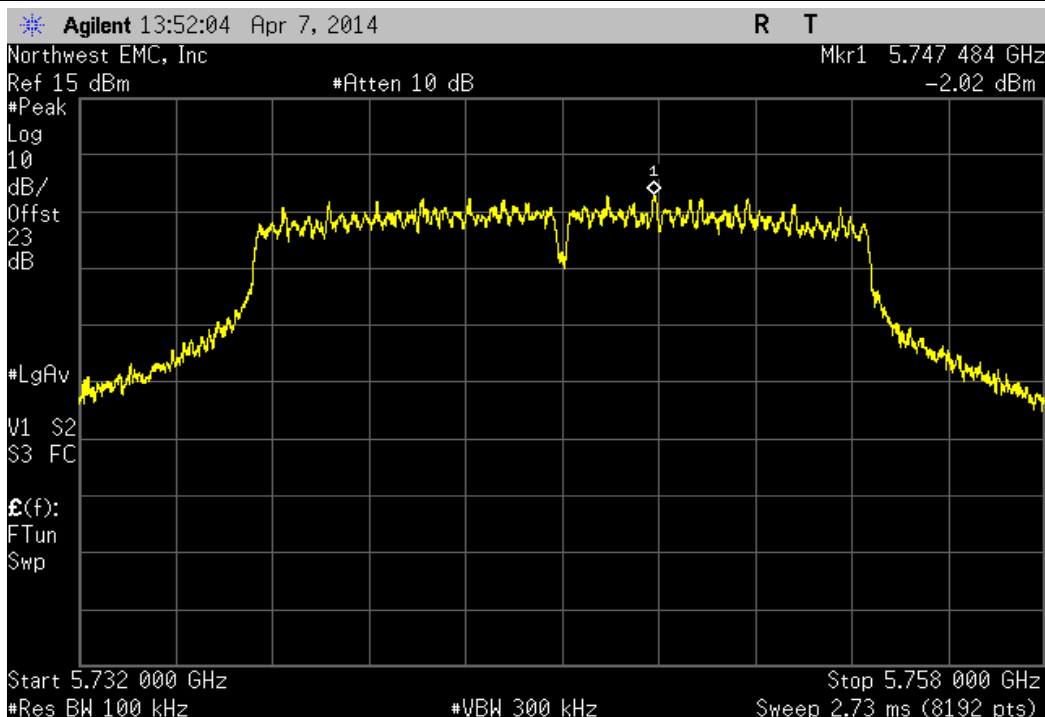
5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, High Channel 165, 5825 MHz				
Frequency Range	Value	Limit	Result	
25 GHz - 32 GHz	-43.16 dBc	≤ -20 dBc	Pass	



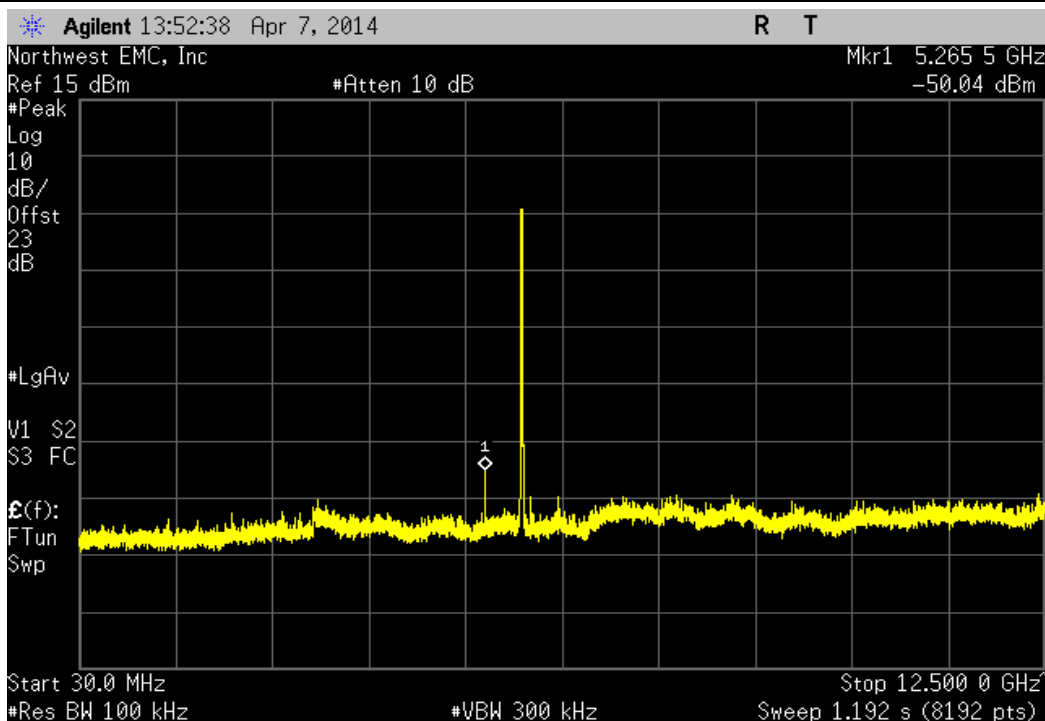
5725 MHz - 5850 MHz Band, 802.11(a) 36 Mbps, High Channel 165, 5825 MHz				
Frequency Range	Value	Limit	Result	
32 GHz - 40 GHz	-34.58 dBc	≤ -20 dBc	Pass	



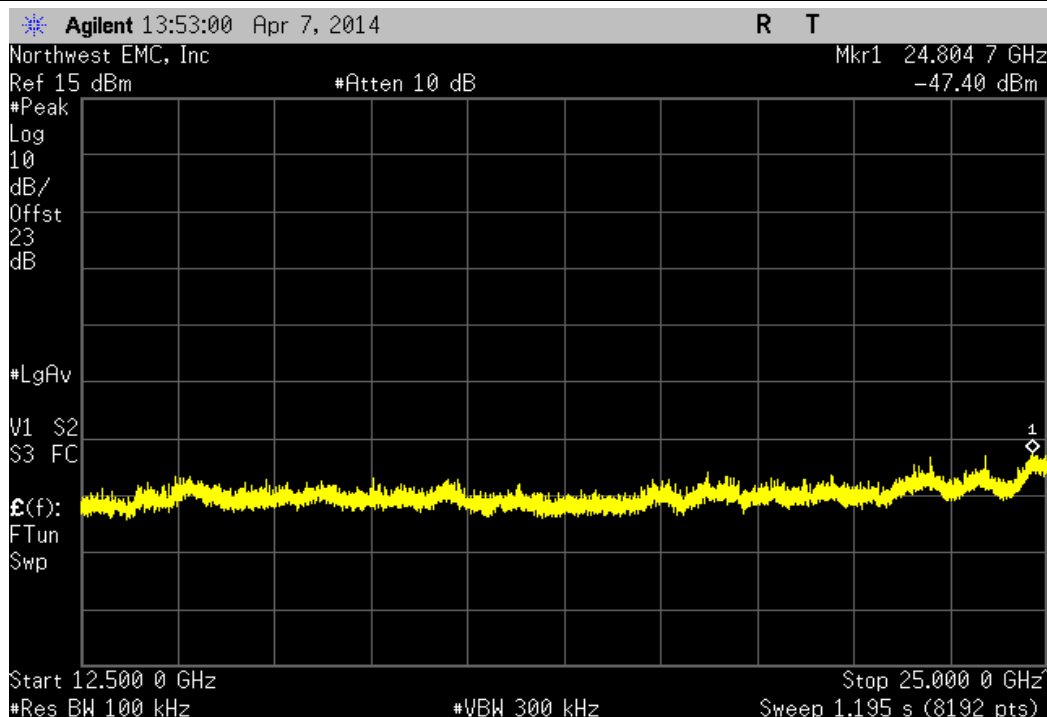
5725 MHz - 5850 MHz Band, 802.11(a) 54 Mbps, Low Channel 149, 5745 MHz				
Frequency Range		Value	Limit	Result
Fundamental		N/A	N/A	N/A



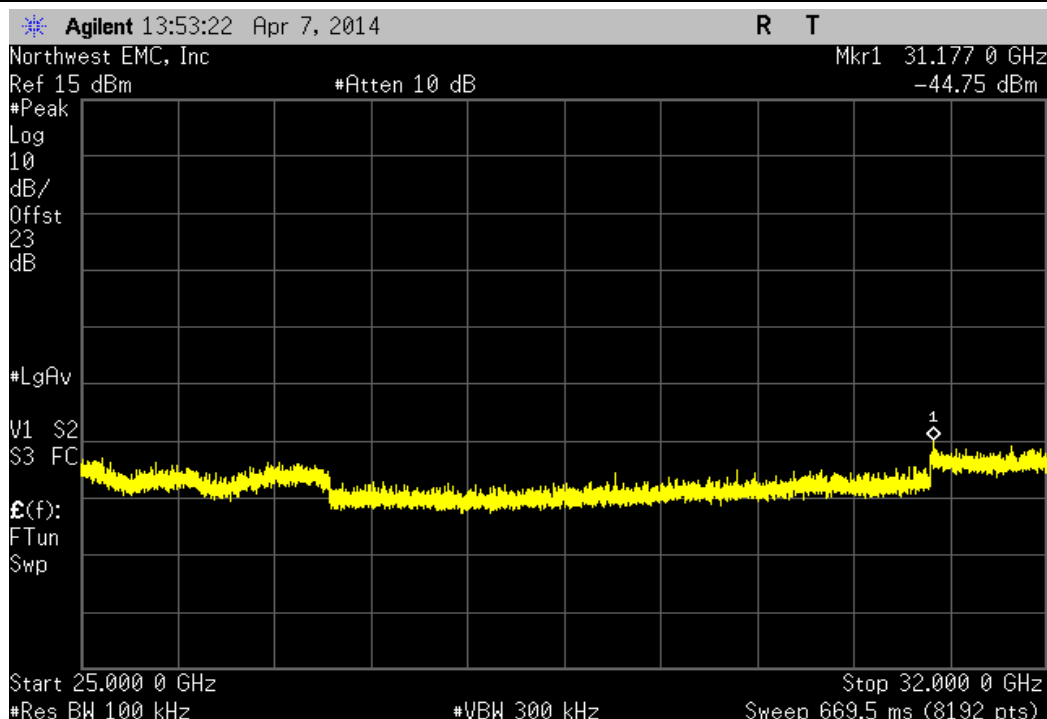
5725 MHz - 5850 MHz Band, 802.11(a) 54 Mbps, Low Channel 149, 5745 MHz				
Frequency Range		Value	Limit	Result
30 MHz - 12.5 GHz		-48.02 dBc	≤ -20 dBc	Pass



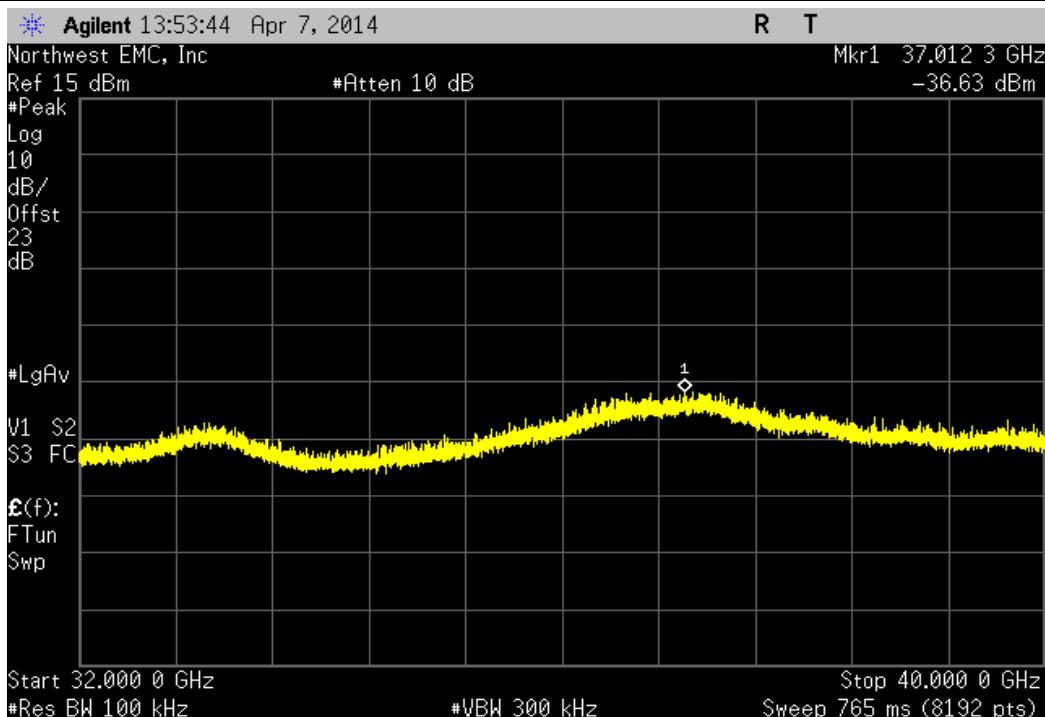
5725 MHz - 5850 MHz Band, 802.11(a) 54 Mbps, Low Channel 149, 5745 MHz				
Frequency Range	Value	Limit	Result	
12.5 GHz - 25 GHz	-45.38 dBc	≤ -20 dBc	Pass	



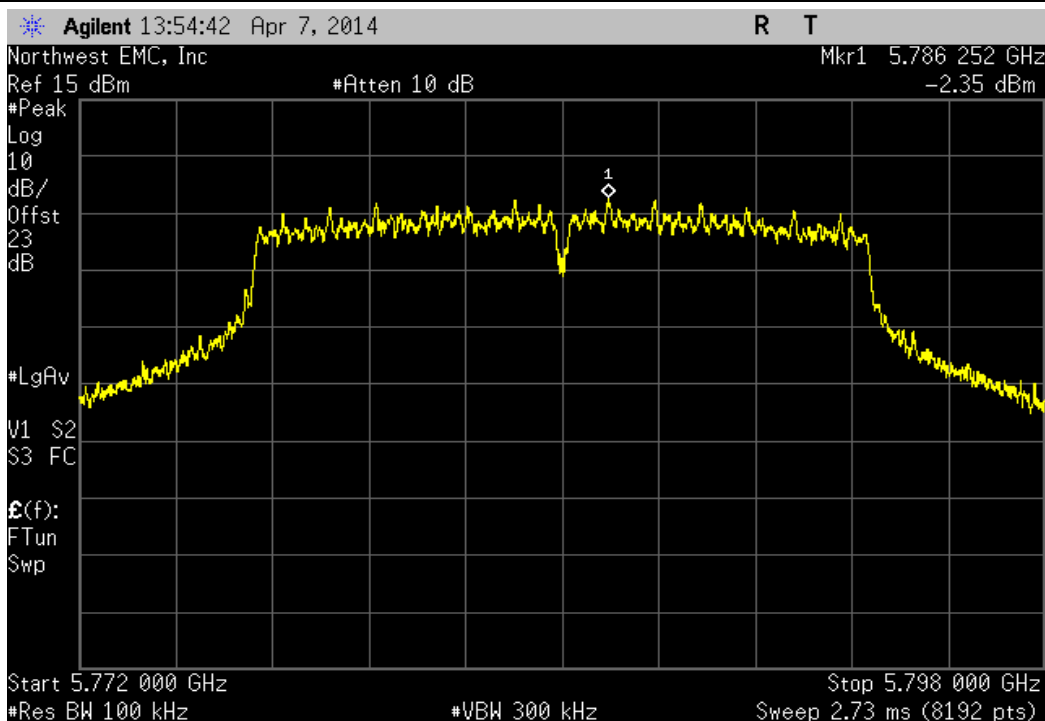
5725 MHz - 5850 MHz Band, 802.11(a) 54 Mbps, Low Channel 149, 5745 MHz				
Frequency Range	Value	Limit	Result	
25 GHz - 32 GHz	-42.73 dBc	≤ -20 dBc	Pass	



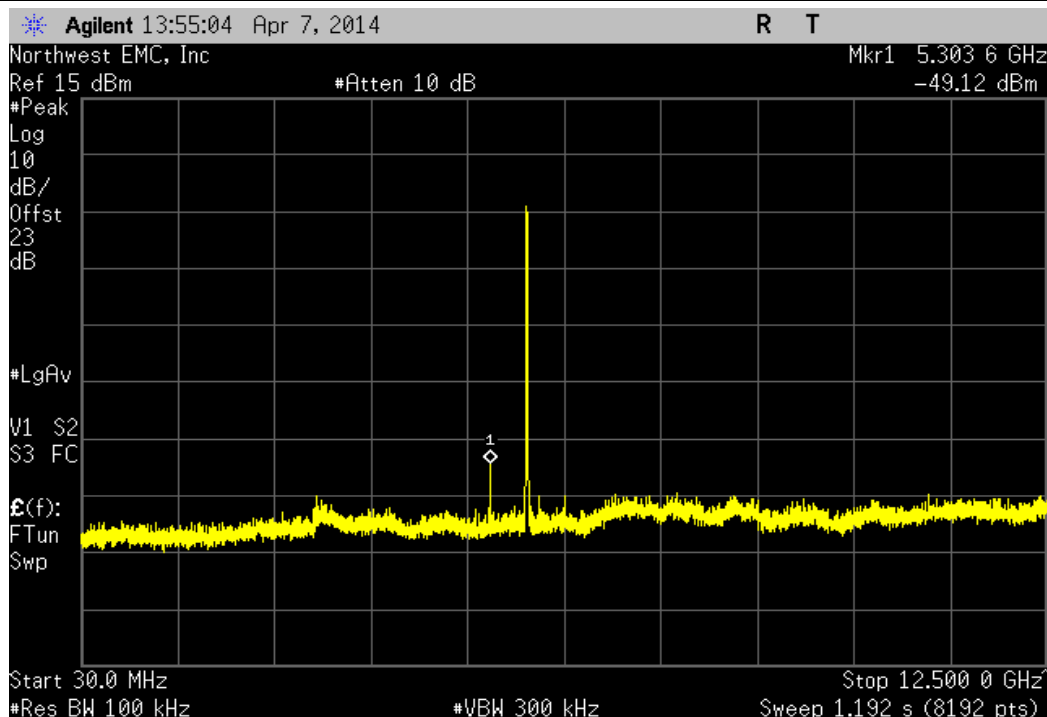
5725 MHz - 5850 MHz Band, 802.11(a) 54 Mbps, Low Channel 149, 5745 MHz				
Frequency Range		Value	Limit	Result
32 GHz - 40 GHz		-34.61 dBc	≤ -20 dBc	Pass



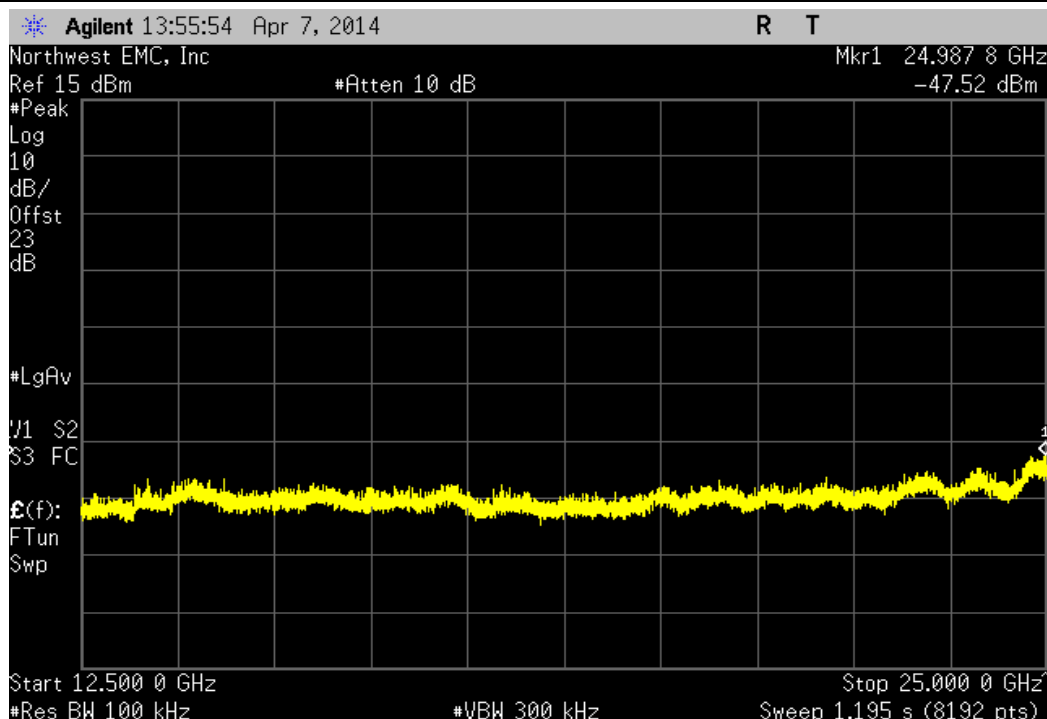
5725 MHz - 5850 MHz Band, 802.11(a) 54 Mbps, Mid Channel 157, 5785 MHz				
Frequency Range		Value	Limit	Result
Fundamental		N/A	N/A	N/A



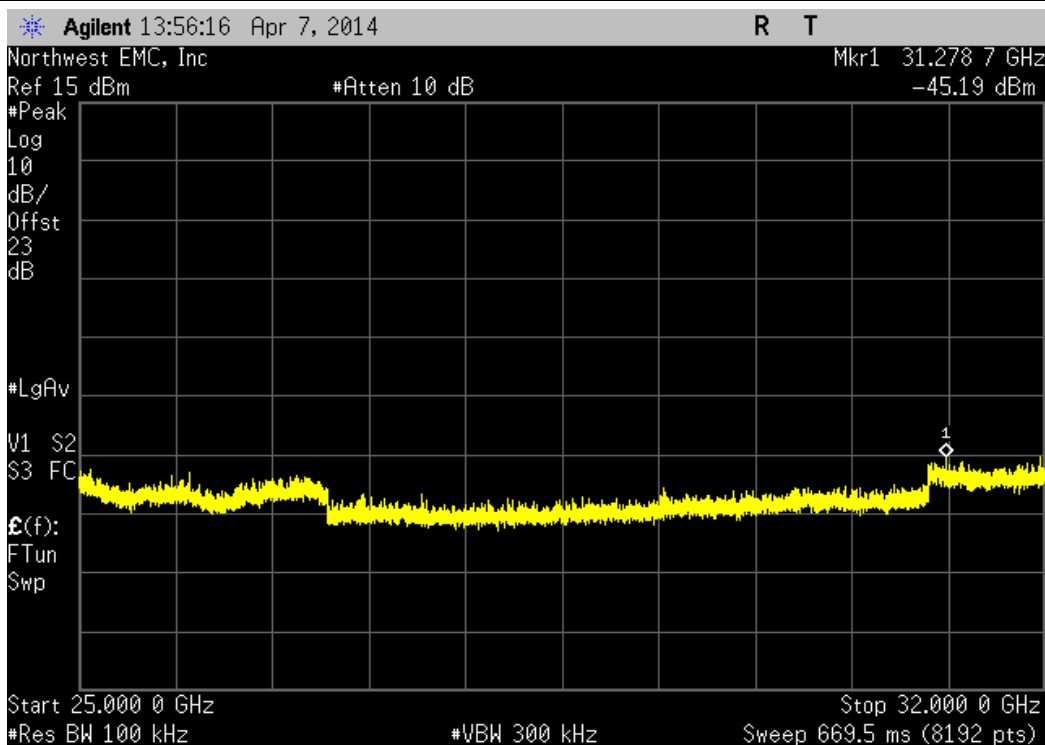
5725 MHz - 5850 MHz Band, 802.11(a) 54 Mbps, Mid Channel 157, 5785 MHz				
Frequency Range	Value	Limit	Result	
30 MHz - 12.5 GHz	-46.77 dBc	≤ -20 dBc	Pass	



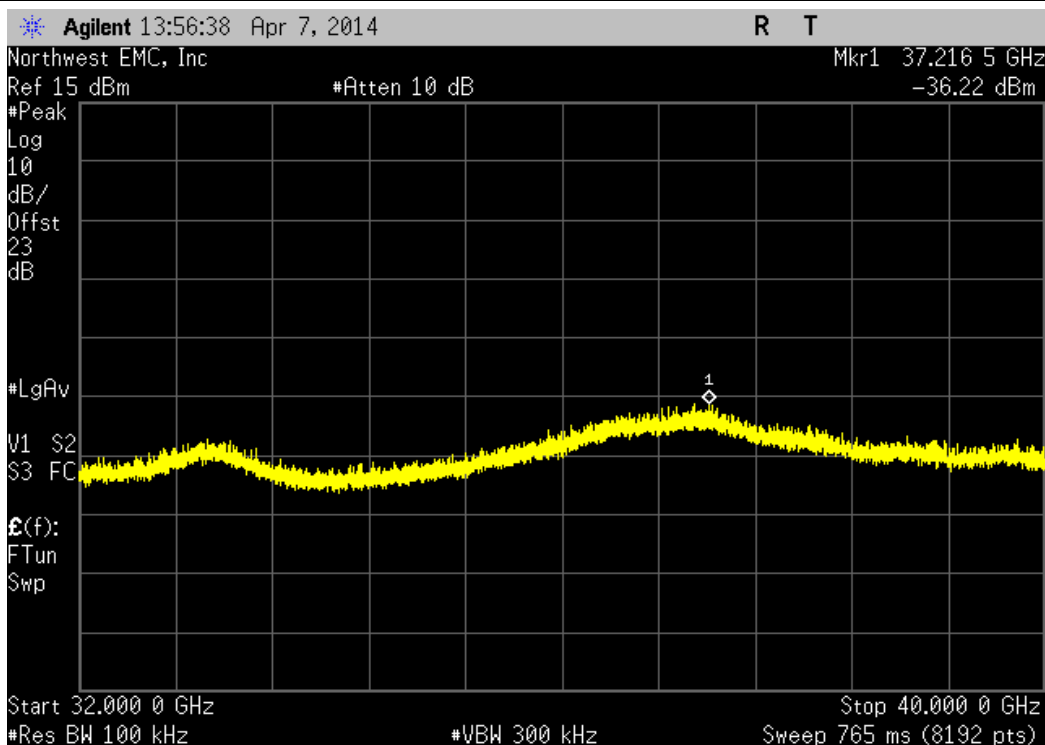
5725 MHz - 5850 MHz Band, 802.11(a) 54 Mbps, Mid Channel 157, 5785 MHz				
Frequency Range	Value	Limit	Result	
12.5 GHz - 25 GHz	-45.17 dBc	≤ -20 dBc	Pass	



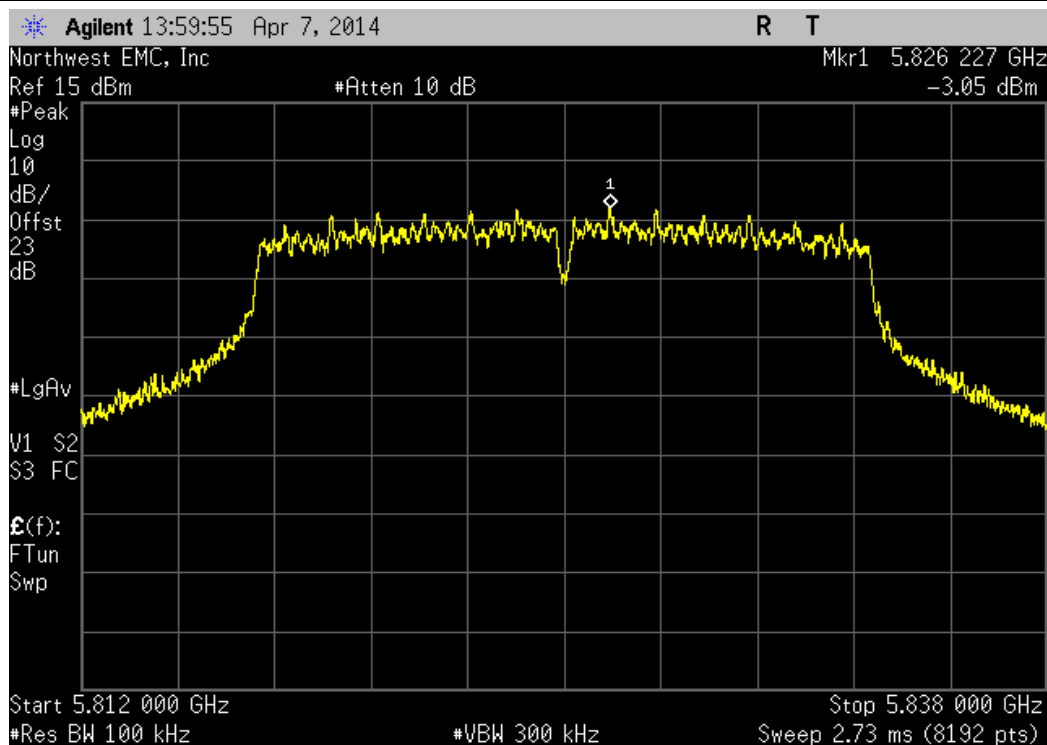
5725 MHz - 5850 MHz Band, 802.11(a) 54 Mbps, Mid Channel 157, 5785 MHz				
Frequency Range	Value	Limit	Result	
25 GHz - 32 GHz	-42.84 dBc	≤ -20 dBc	Pass	



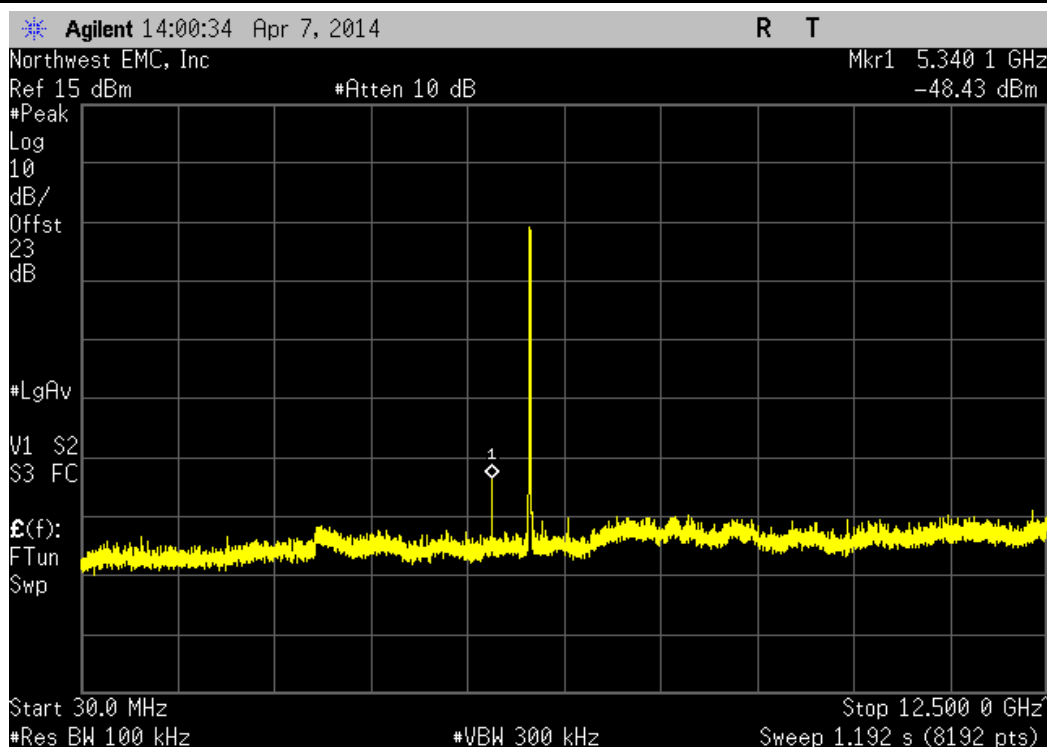
5725 MHz - 5850 MHz Band, 802.11(a) 54 Mbps, Mid Channel 157, 5785 MHz				
Frequency Range	Value	Limit	Result	
32 GHz - 40 GHz	-33.88 dBc	≤ -20 dBc	Pass	



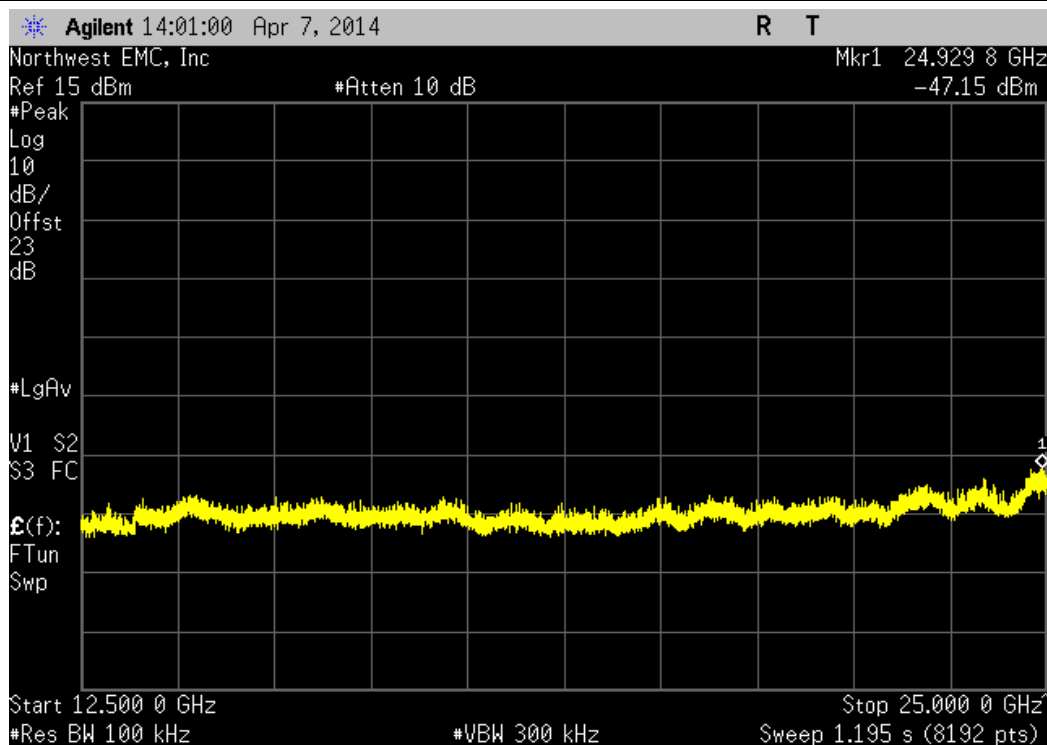
5725 MHz - 5850 MHz Band, 802.11(a) 54 Mbps, High Channel 165, 5825 MHz						
Frequency Range				Value	Limit	Result
	Fundamental			N/A	N/A	N/A



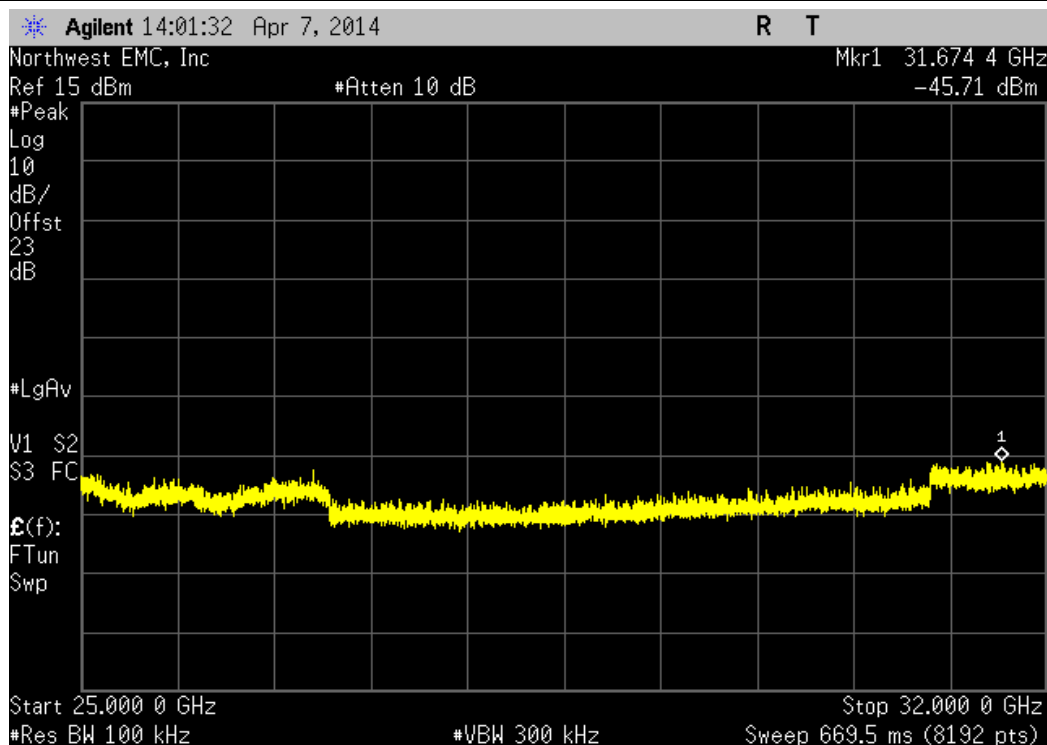
5725 MHz - 5850 MHz Band, 802.11(a) 54 Mbps, High Channel 165, 5825 MHz						
Frequency Range				Value	Limit	Result
	30 MHz - 12.5 GHz			-45.38 dBc	≤ -20 dBc	Pass



5725 MHz - 5850 MHz Band, 802.11(a) 54 Mbps, High Channel 165, 5825 MHz				
Frequency Range		Value	Limit	Result
12.5 GHz - 25 GHz		-44.1 dBc	≤ -20 dBc	Pass

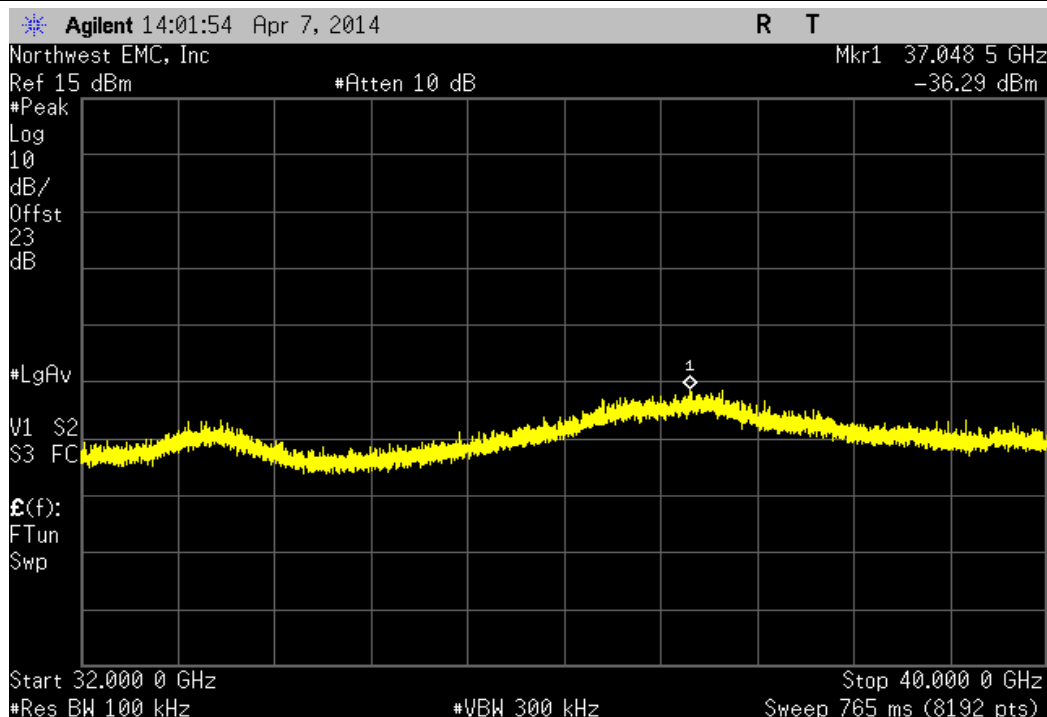


5725 MHz - 5850 MHz Band, 802.11(a) 54 Mbps, High Channel 165, 5825 MHz				
Frequency Range		Value	Limit	Result
25 GHz - 32 GHz		-42.66 dBc	≤ -20 dBc	Pass

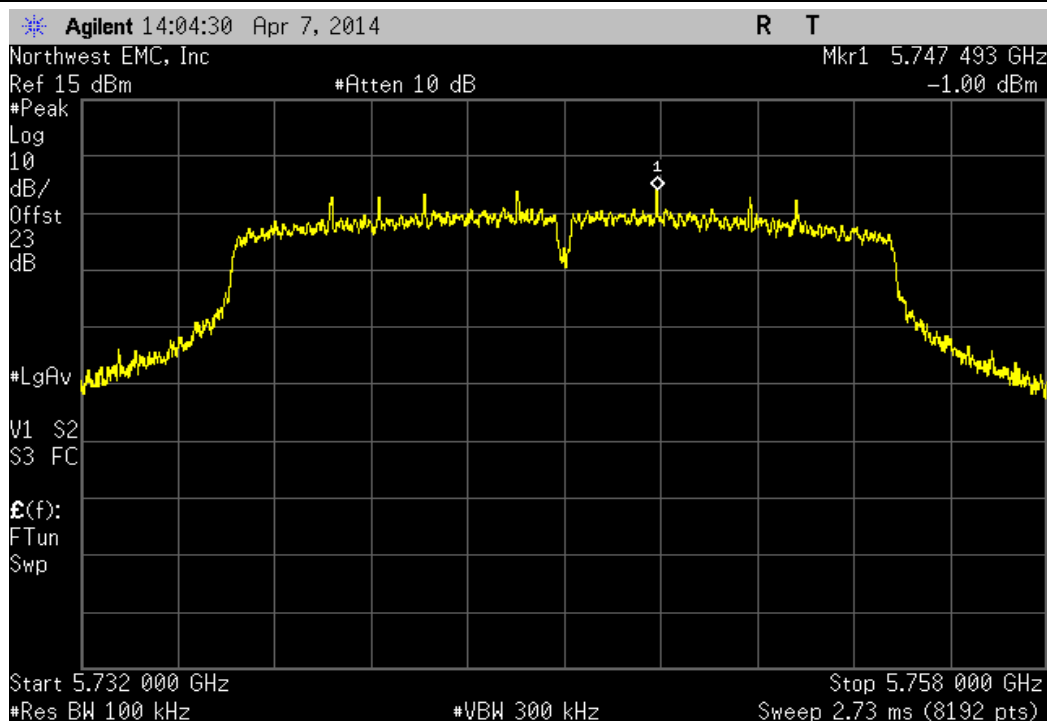




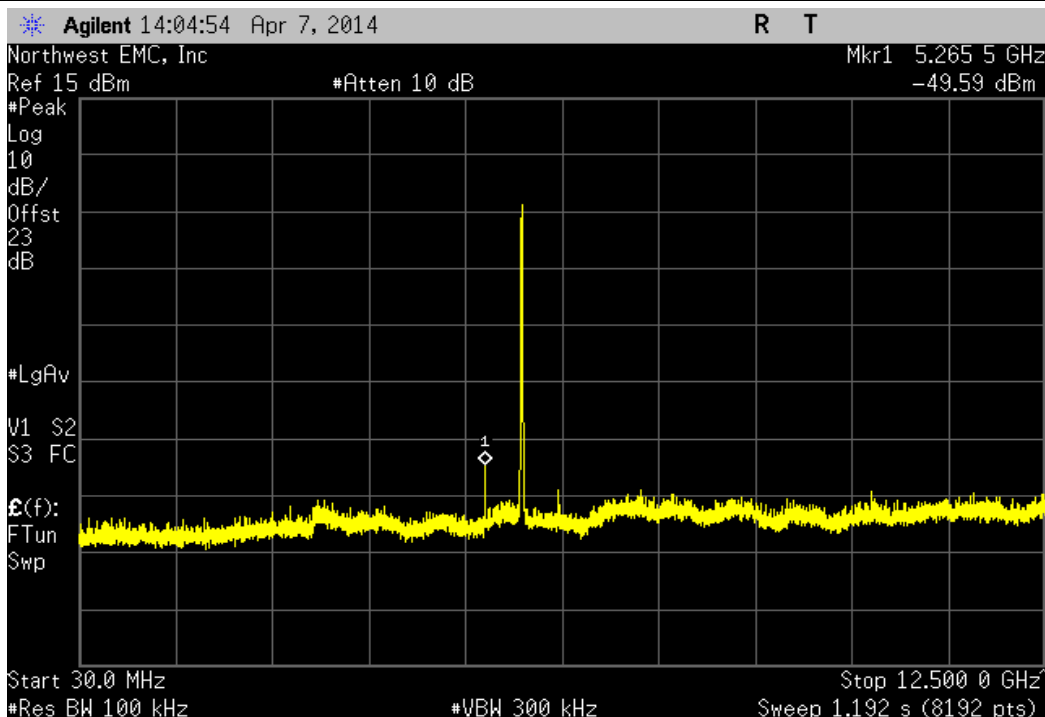
5725 MHz - 5850 MHz Band, 802.11(a) 54 Mbps, High Channel 165, 5825 MHz				
Frequency Range		Value	Limit	Result
32 GHz - 40 GHz		-33.24 dBc	≤ -20 dBc	Pass



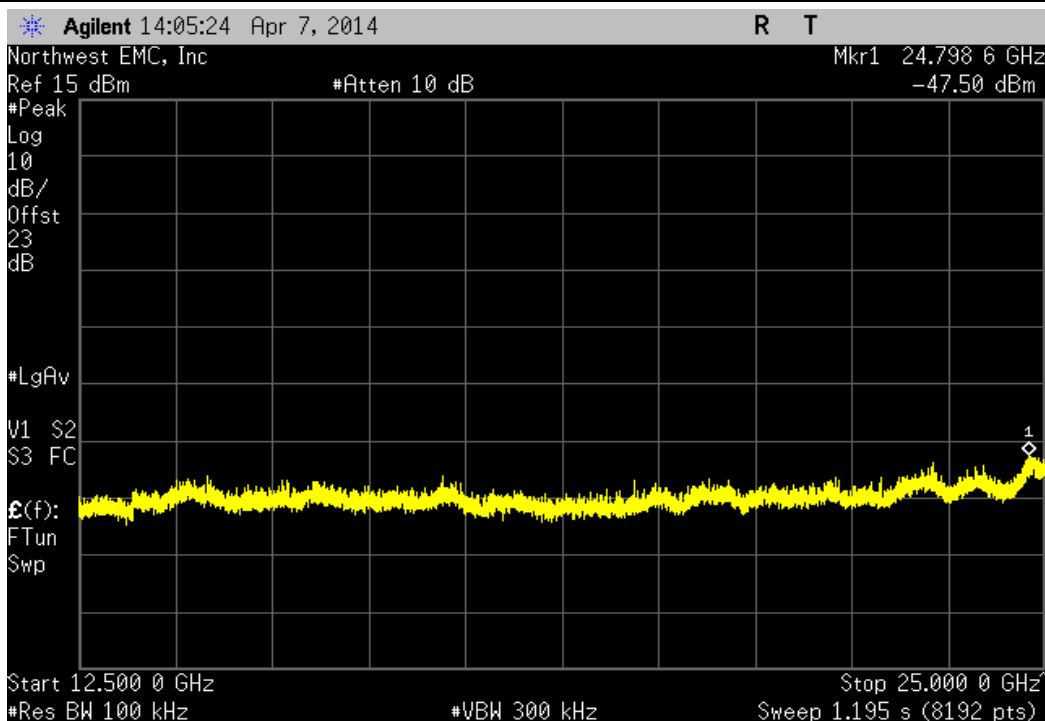
5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, Low Channel 149, 5745 MHz				
Frequency Range		Value	Limit	Result
Fundamental		N/A	N/A	N/A



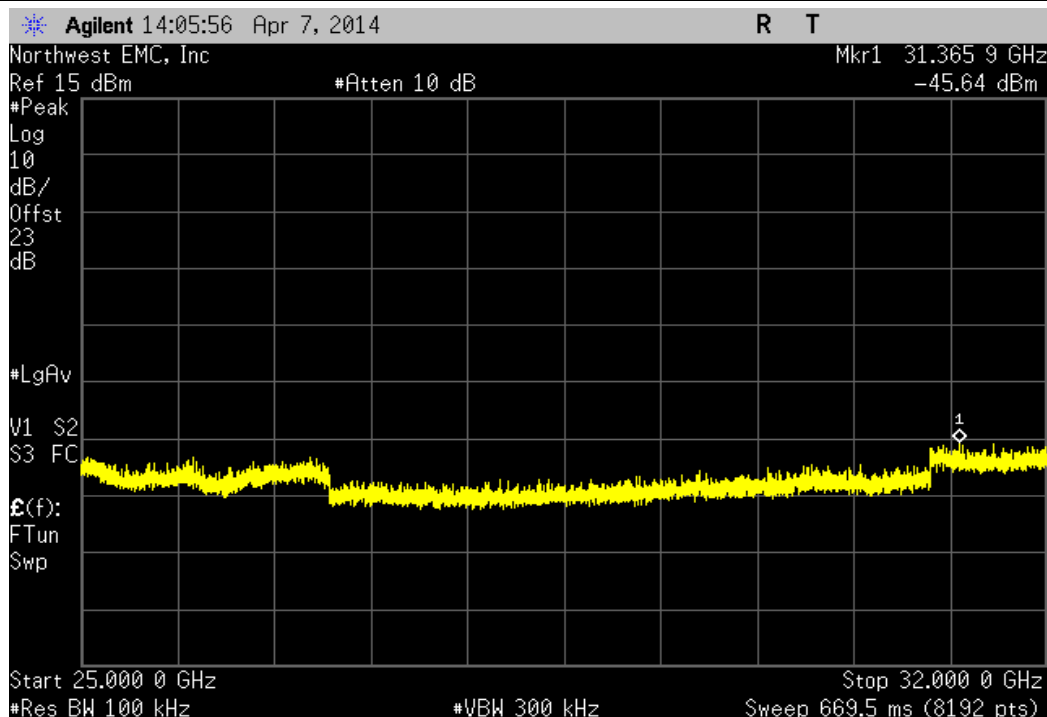
5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, Low Channel 149, 5745 MHz				
Frequency Range	Value	Limit	Result	
30 MHz - 12.5 GHz	-48.59 dBc	≤ -20 dBc	Pass	



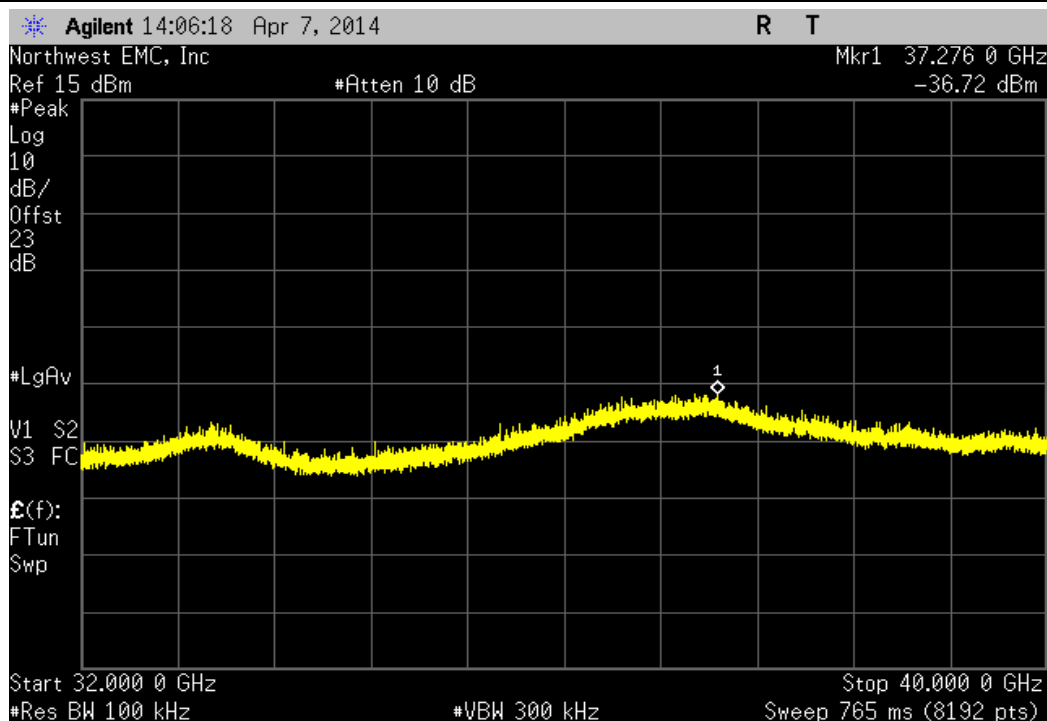
5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, Low Channel 149, 5745 MHz				
Frequency Range	Value	Limit	Result	
12.5 GHz - 25 GHz	-46.5 dBc	≤ -20 dBc	Pass	



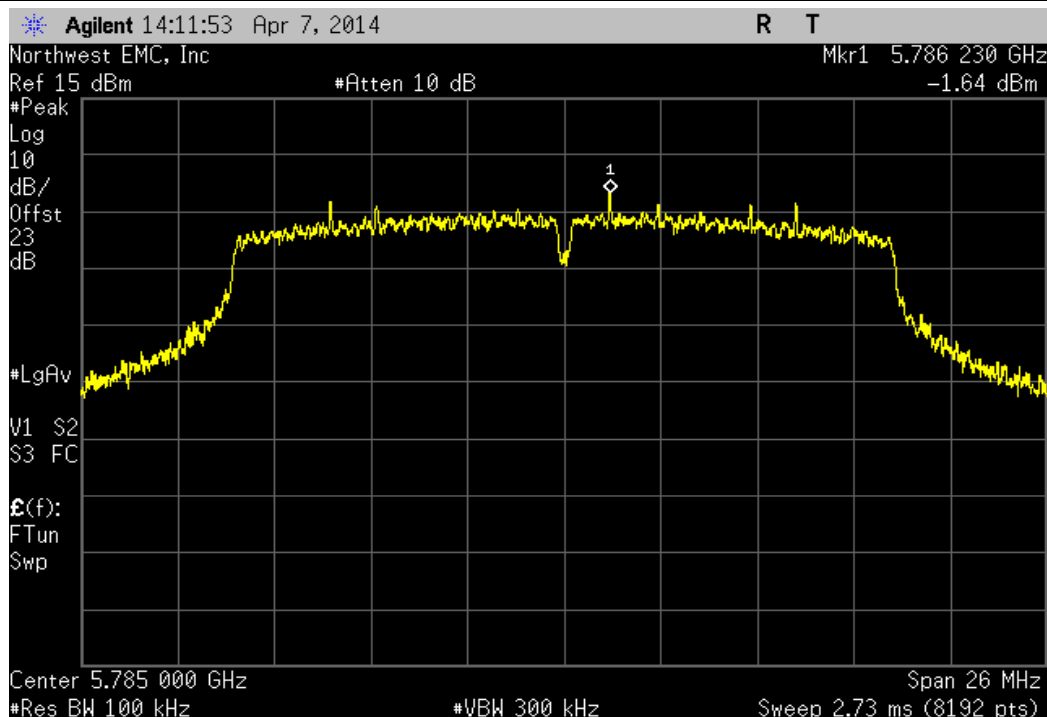
5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, Low Channel 149, 5745 MHz				
Frequency Range	Value	Limit	Result	
25 GHz - 32 GHz	-44.64 dBc	≤ -20 dBc	Pass	



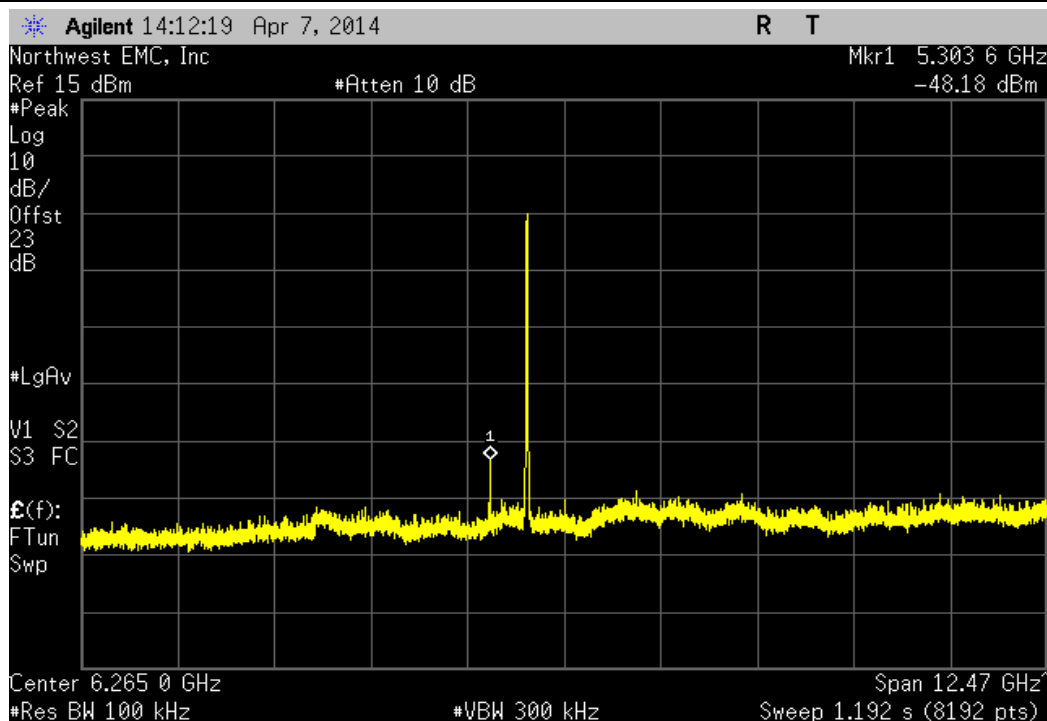
5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, Low Channel 149, 5745 MHz				
Frequency Range	Value	Limit	Result	
32 GHz - 40 GHz	-35.72 dBc	≤ -20 dBc	Pass	



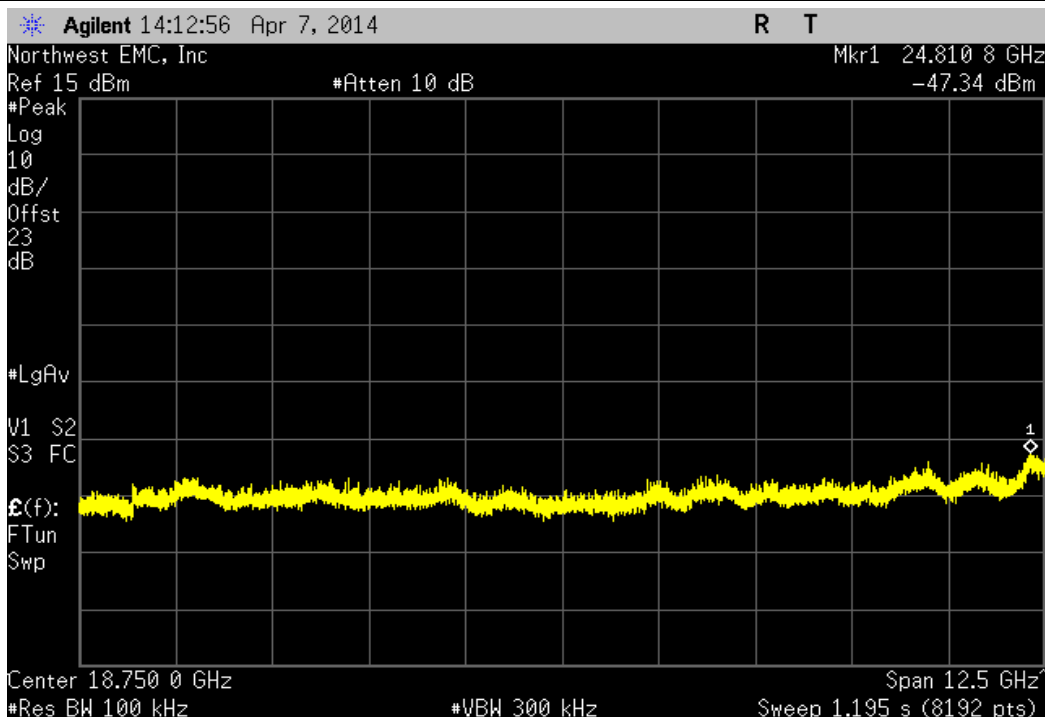
5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, Mid Channel 157, 5785 MHz				
Frequency Range		Value	Limit	Result
Fundamental		N/A	N/A	N/A



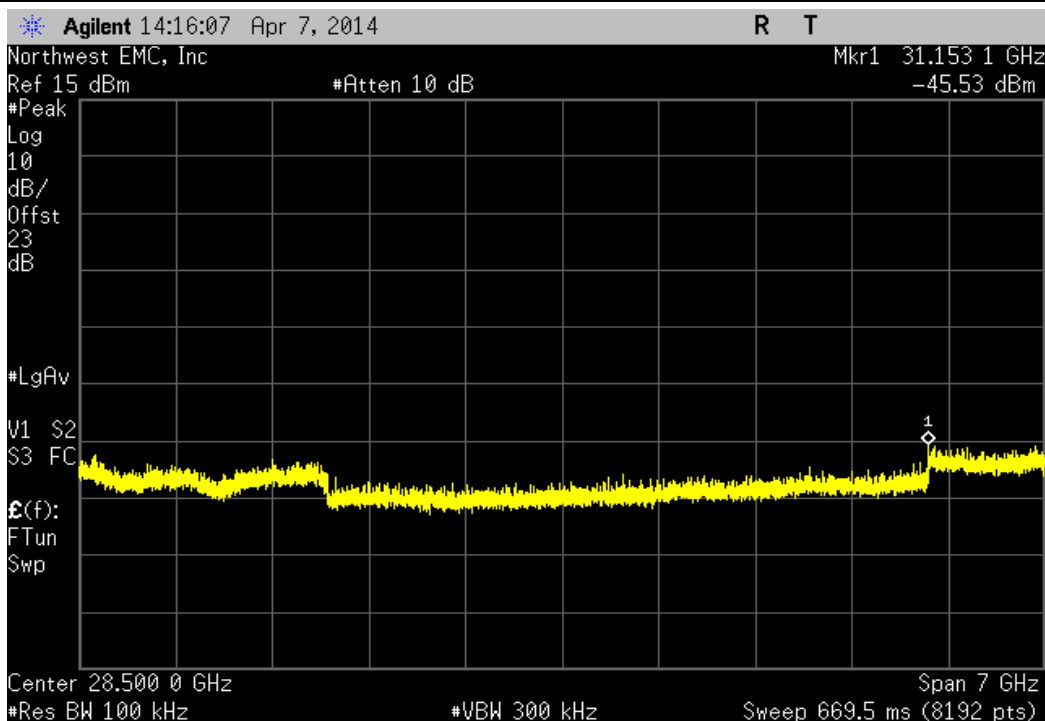
5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, Mid Channel 157, 5785 MHz				
Frequency Range		Value	Limit	Result
30 MHz - 12.5 GHz		-46.54 dBc	≤ -20 dBc	Pass



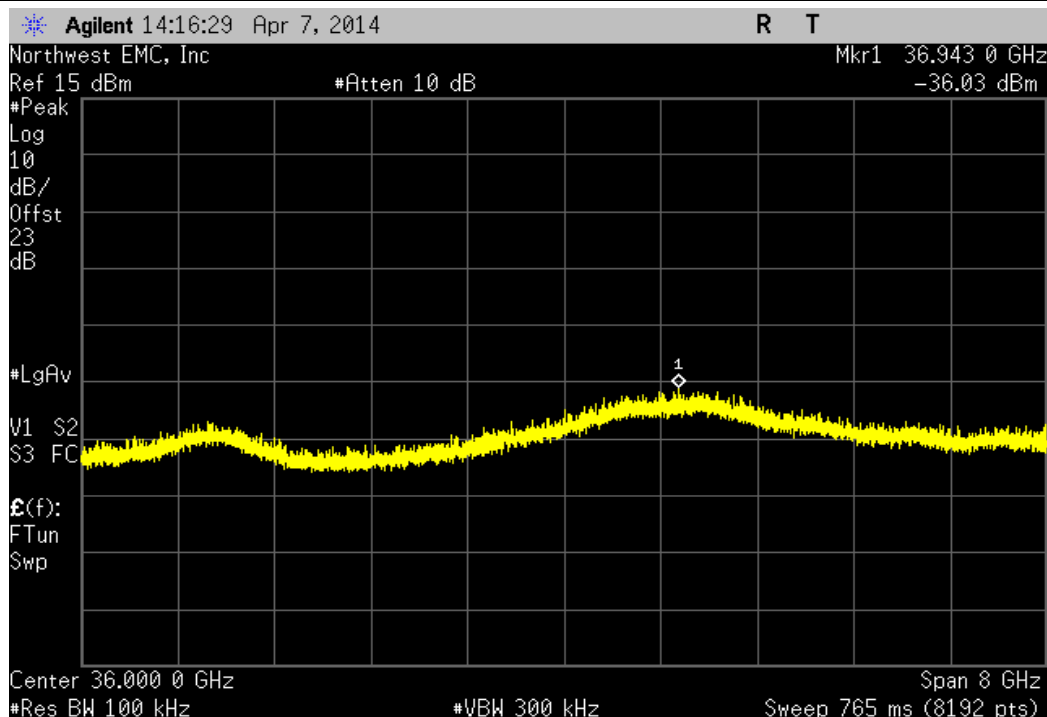
5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, Mid Channel 157, 5785 MHz				
Frequency Range		Value	Limit	Result
12.5 GHz - 25 GHz		-45.7 dBc	≤ -20 dBc	Pass



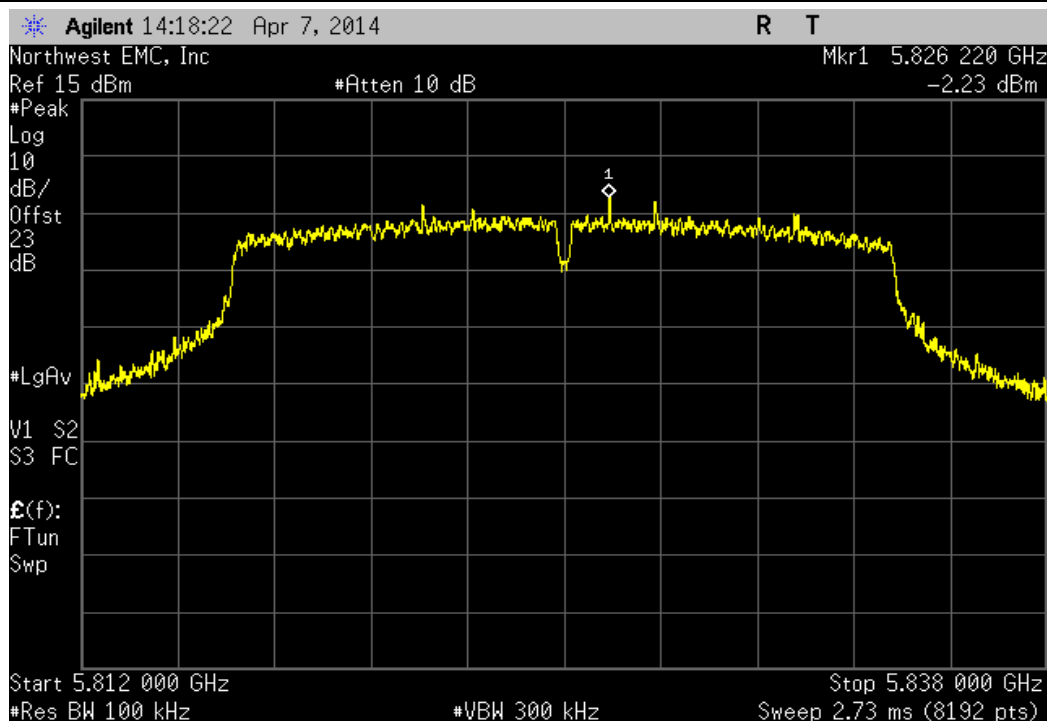
5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, Mid Channel 157, 5785 MHz				
Frequency Range		Value	Limit	Result
25 GHz - 32 GHz		-43.89 dBc	≤ -20 dBc	Pass



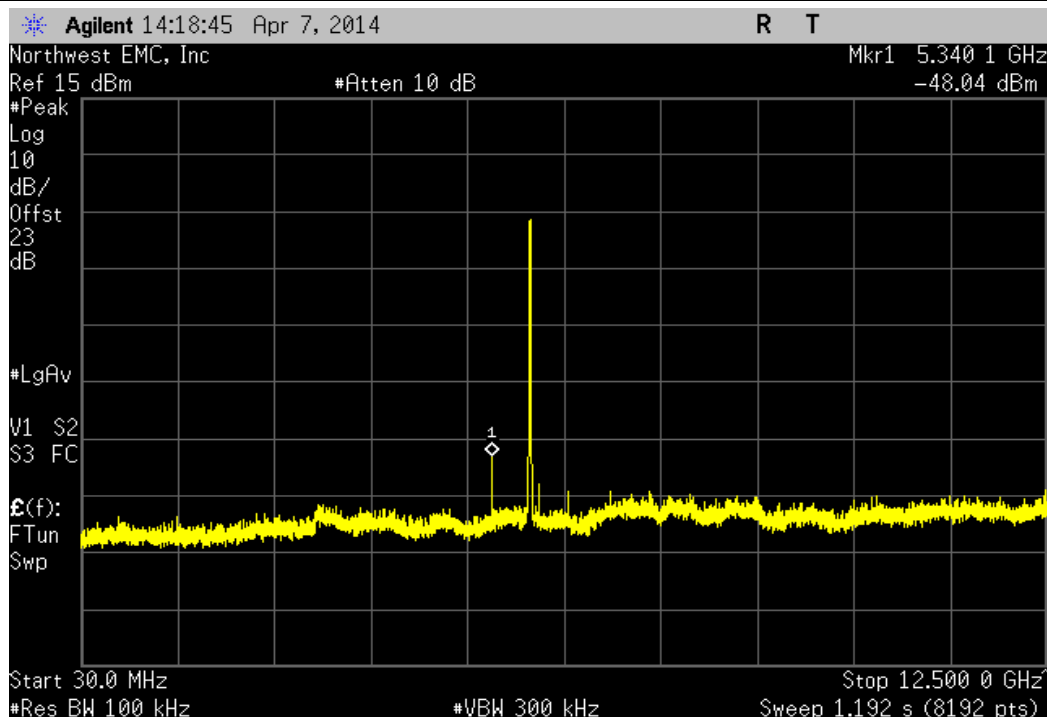
5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, Mid Channel 157, 5785 MHz				
Frequency Range		Value	Limit	Result
32 GHz - 40 GHz		-34.39 dBc	≤ -20 dBc	Pass



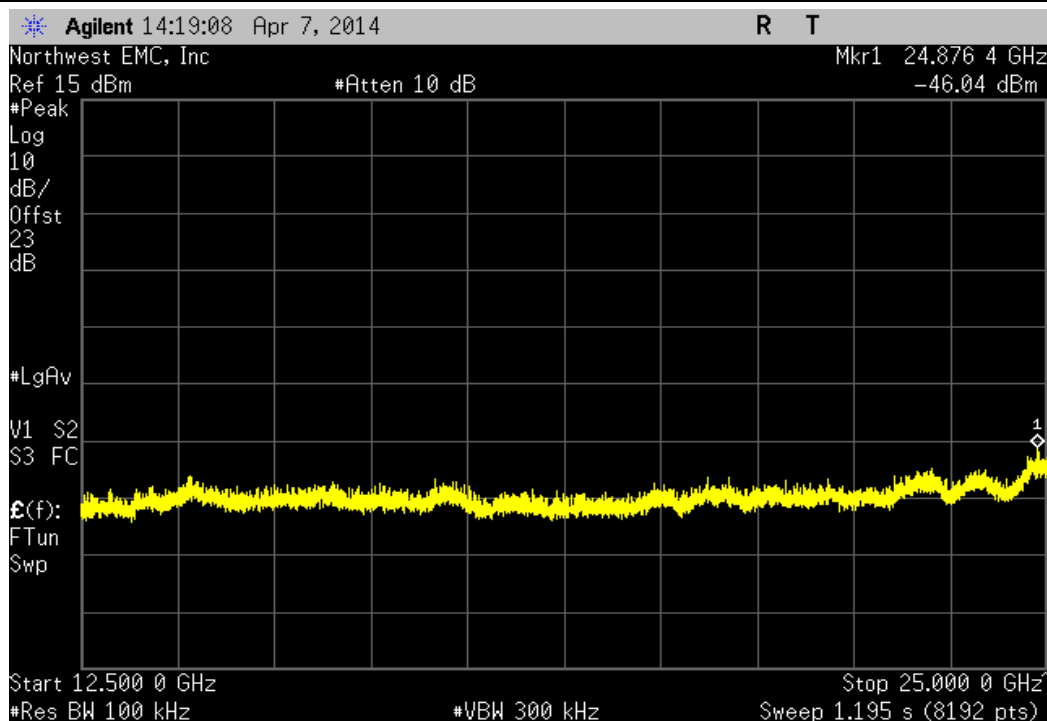
5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, High Channel 165, 5825 MHz				
Frequency Range		Value	Limit	Result
Fundamental		N/A	N/A	N/A



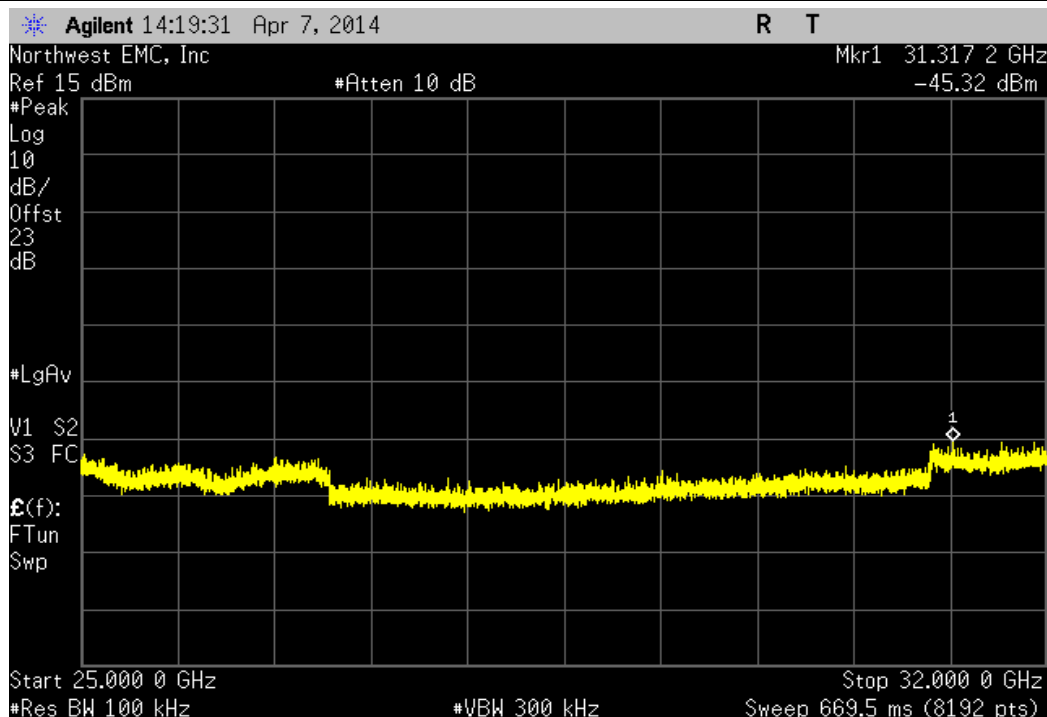
5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, High Channel 165, 5825 MHz				
Frequency Range		Value	Limit	Result
30 MHz - 12.5 GHz		-45.81 dBc	≤ -20 dBc	Pass



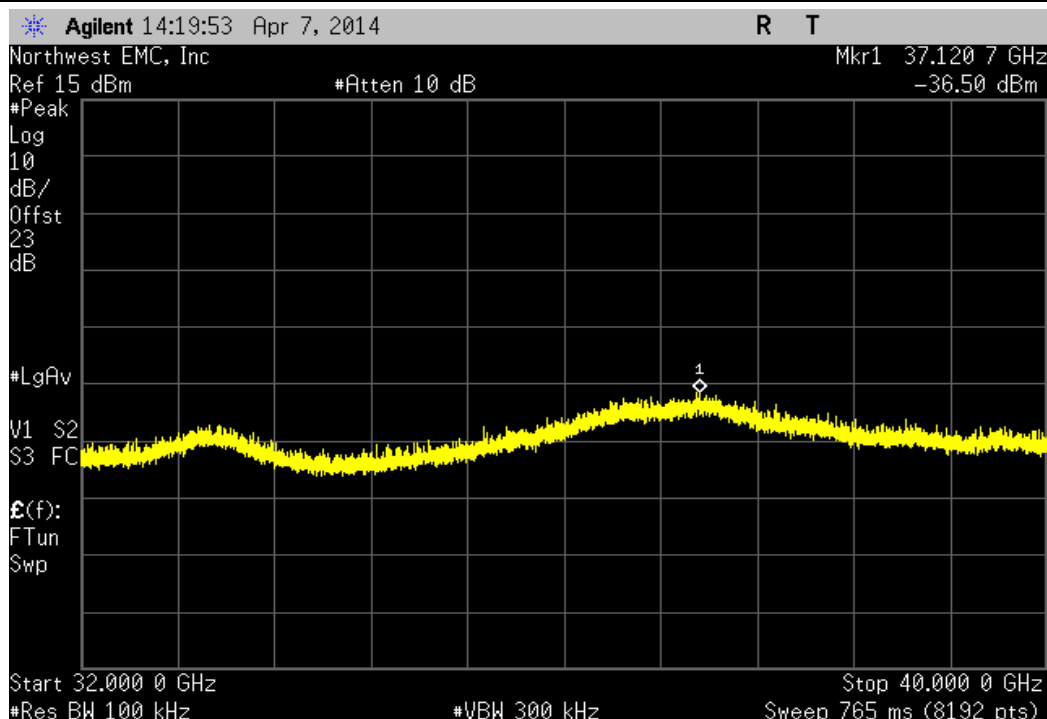
5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, High Channel 165, 5825 MHz				
Frequency Range		Value	Limit	Result
12.5 GHz - 25 GHz		-43.81 dBc	≤ -20 dBc	Pass



5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, High Channel 165, 5825 MHz				
Frequency Range	Value	Limit	Result	
25 GHz - 32 GHz	-43.09 dBc	≤ -20 dBc	Pass	

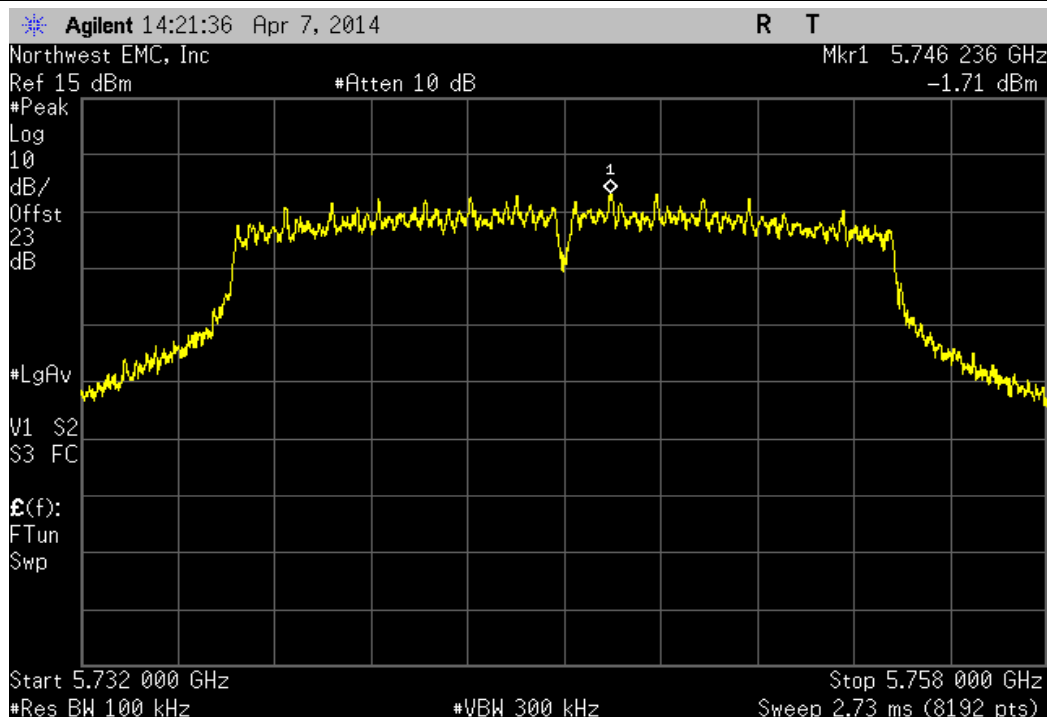


5725 MHz - 5850 MHz Band, 802.11(n) MCS0 - UNII, High Channel 165, 5825 MHz				
Frequency Range	Value	Limit	Result	
32 GHz - 40 GHz	-34.27 dBc	≤ -20 dBc	Pass	

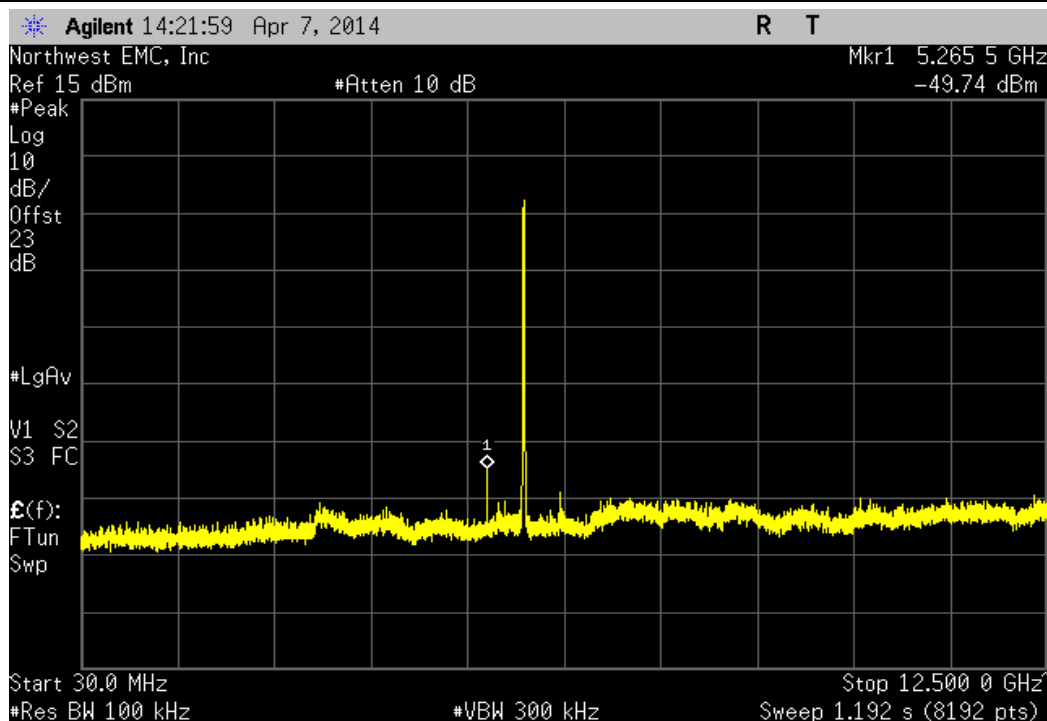




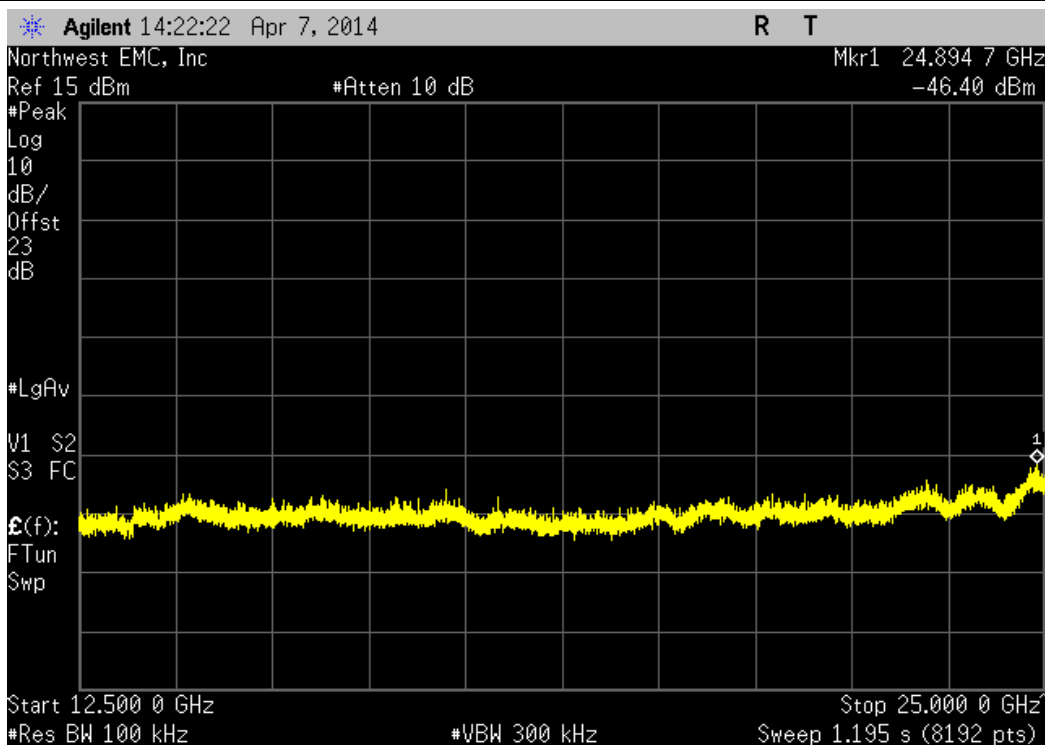
5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, Low Channel 149, 5745 MHz				
Frequency Range		Value	Limit	Result
Fundamental		N/A	N/A	N/A



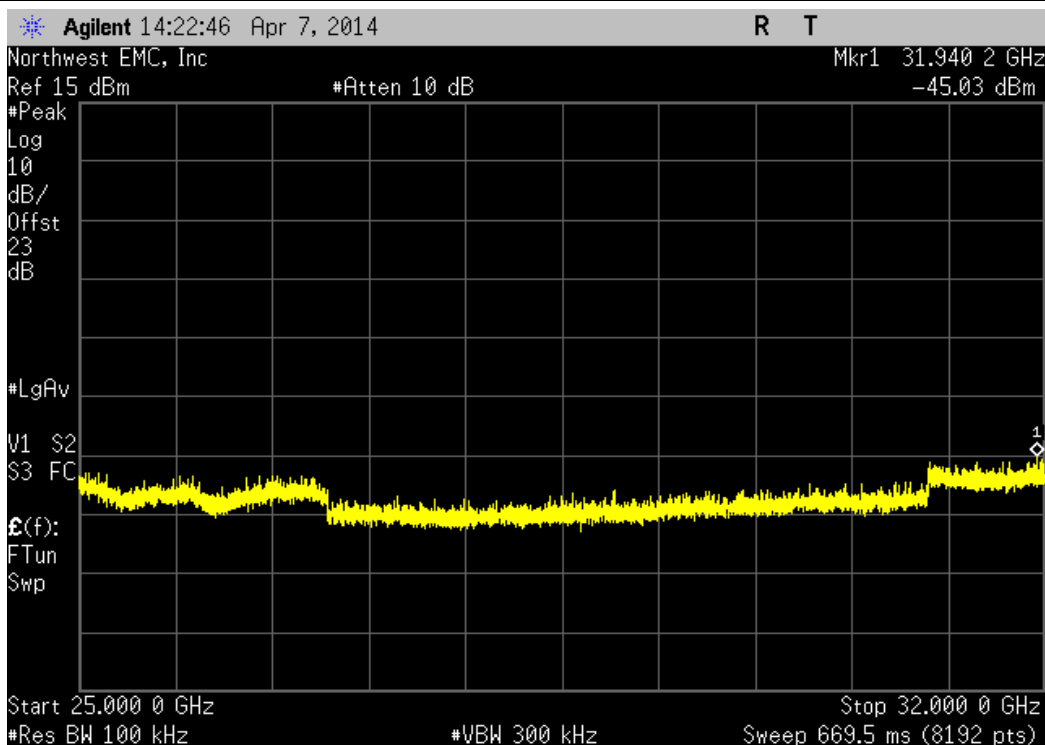
5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, Low Channel 149, 5745 MHz				
Frequency Range		Value	Limit	Result
30 MHz - 12.5 GHz		-48.03 dBc	≤ -20 dBc	Pass



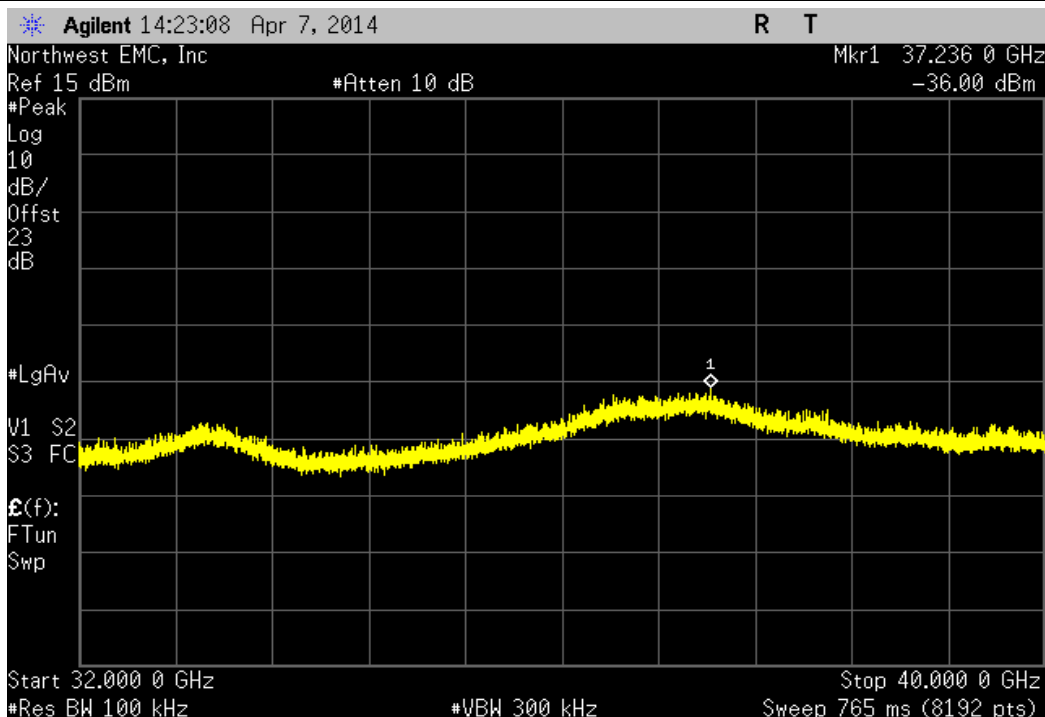
5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, Low Channel 149, 5745 MHz				
Frequency Range		Value	Limit	Result
12.5 GHz - 25 GHz		-44.69 dBc	≤ -20 dBc	Pass



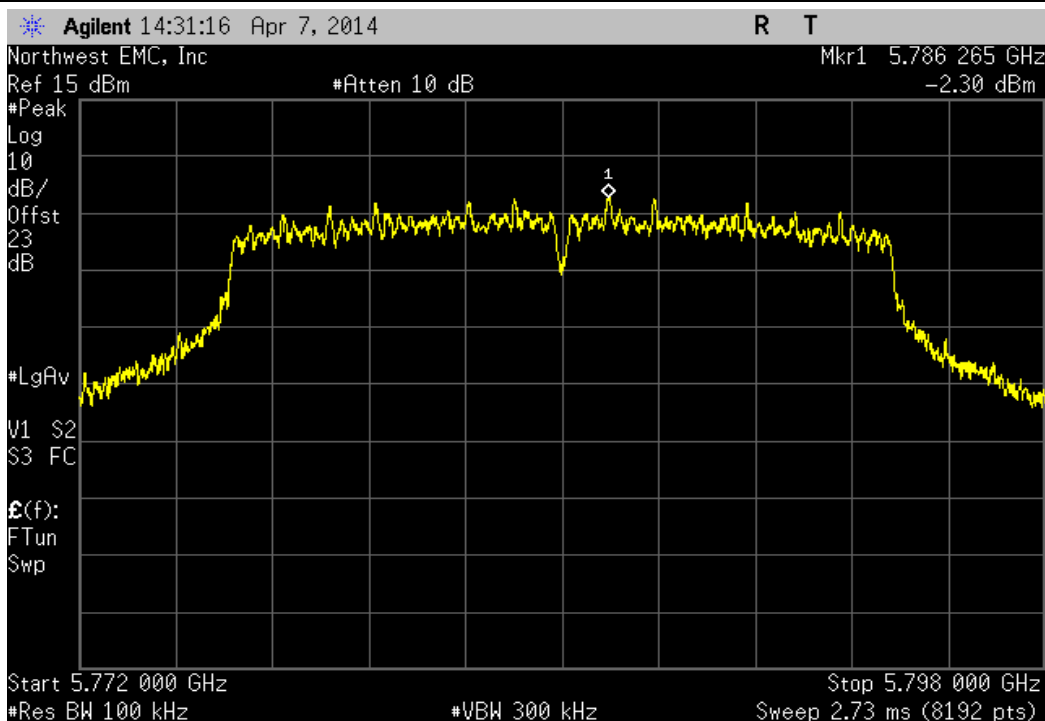
5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, Low Channel 149, 5745 MHz				
Frequency Range		Value	Limit	Result
25 GHz - 32 GHz		-43.32 dBc	≤ -20 dBc	Pass



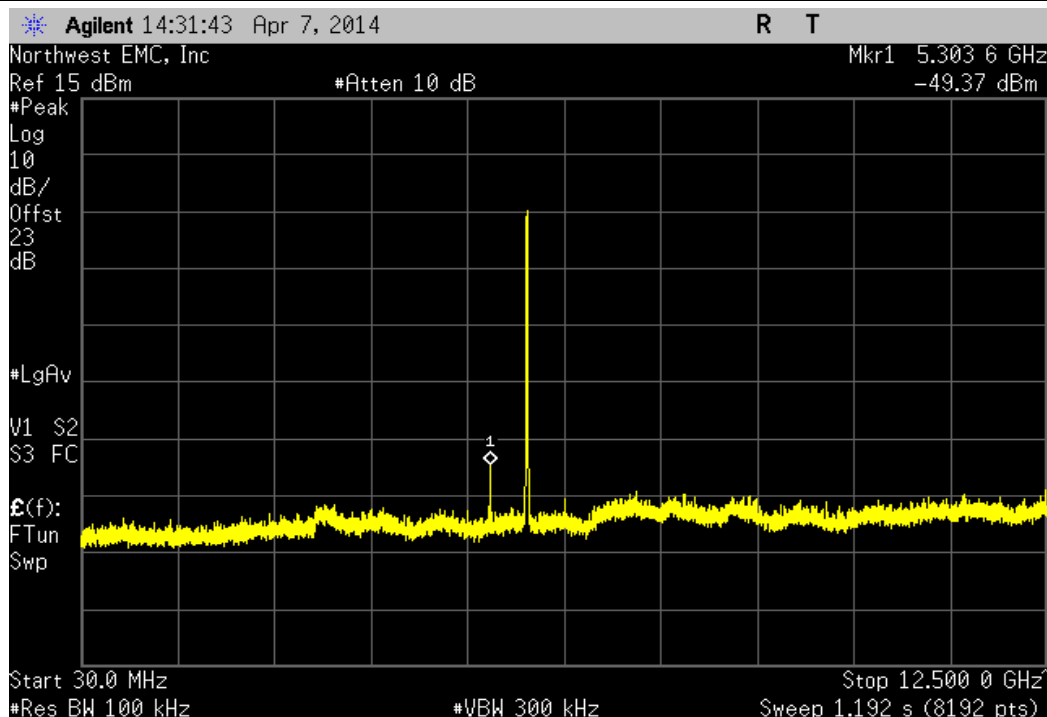
5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, Low Channel 149, 5745 MHz				
Frequency Range		Value	Limit	Result
32 GHz - 40 GHz		-34.29 dBc	≤ -20 dBc	Pass



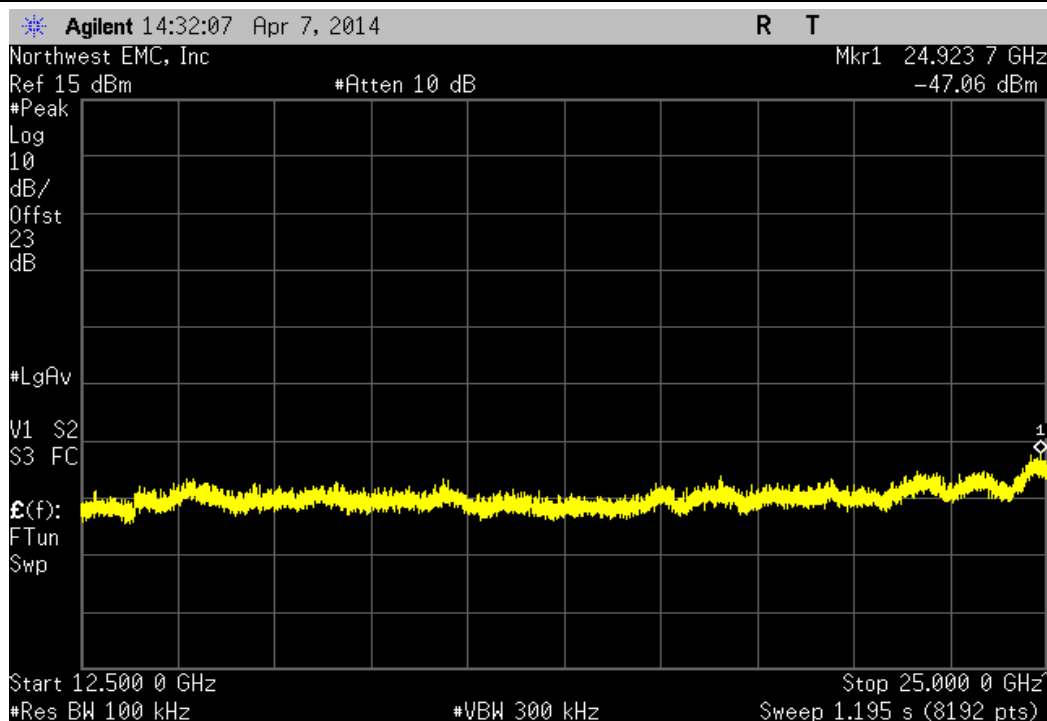
5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, Mid Channel 157, 5785 MHz				
Frequency Range		Value	Limit	Result
Fundamental		N/A	N/A	N/A



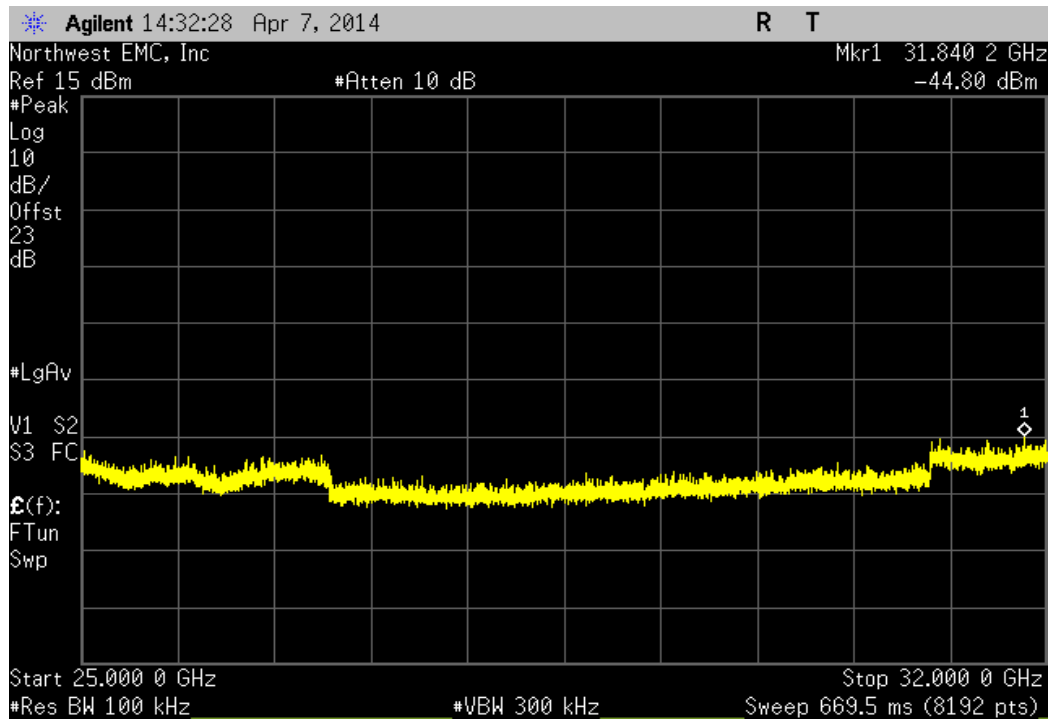
5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, Mid Channel 157, 5785 MHz				
Frequency Range		Value	Limit	Result
30 MHz - 12.5 GHz		-47.07 dBc	≤ -20 dBc	Pass



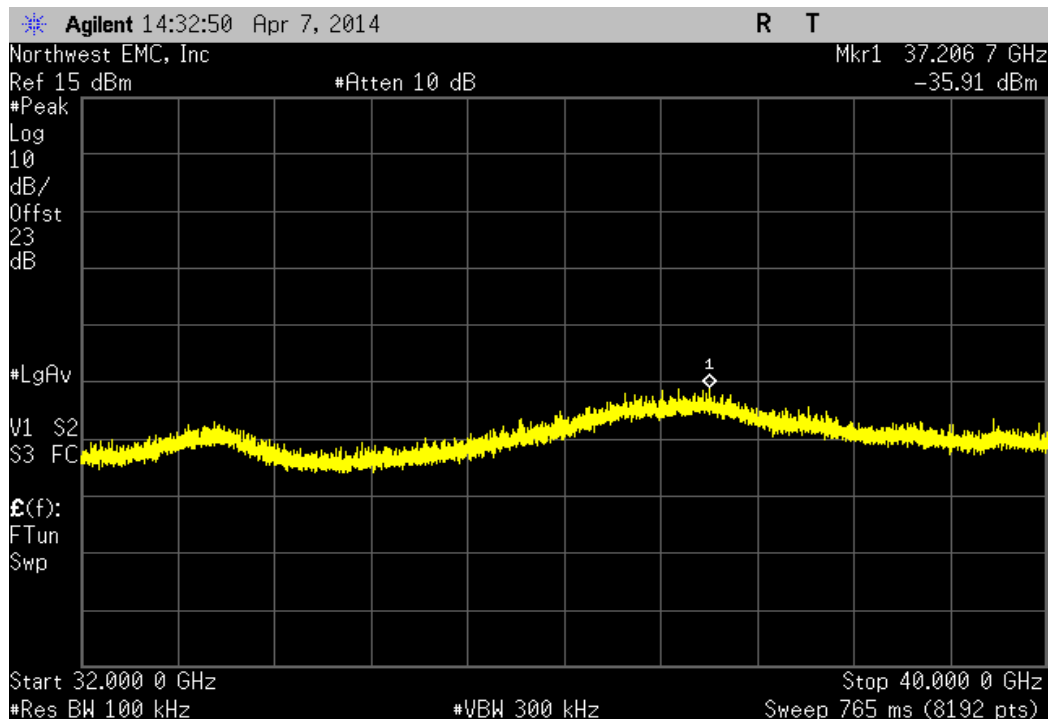
5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, Mid Channel 157, 5785 MHz				
Frequency Range		Value	Limit	Result
12.5 GHz - 25 GHz		-44.77 dBc	≤ -20 dBc	Pass



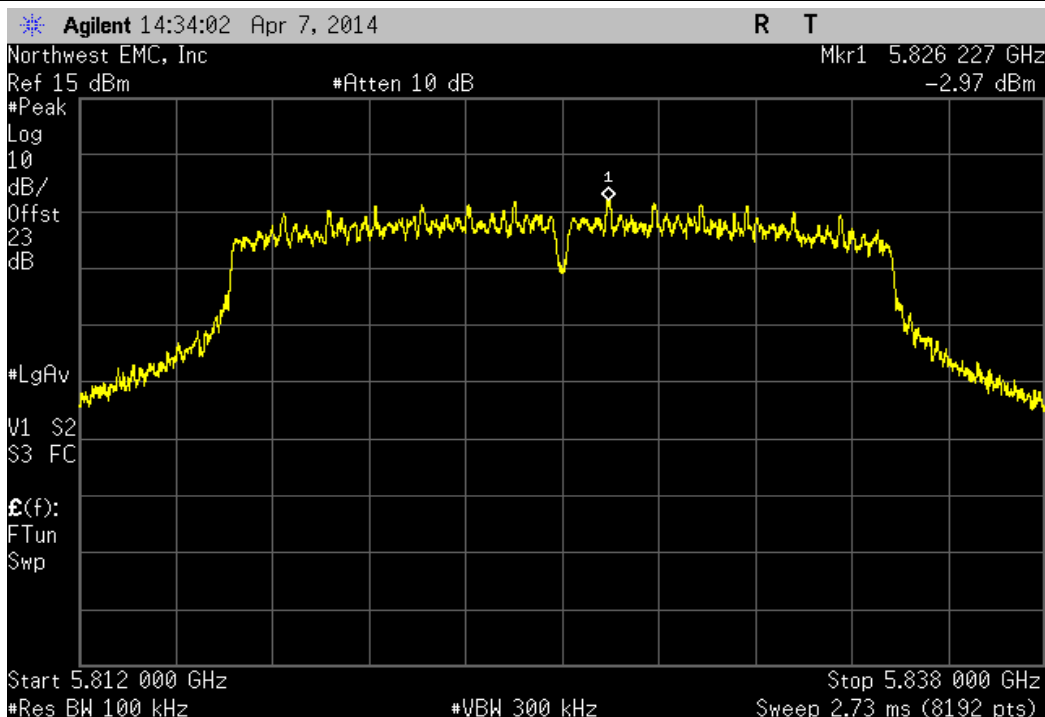
5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, Mid Channel 157, 5785 MHz				
Frequency Range		Value	Limit	Result
25 GHz - 32 GHz		-42.5 dBc	≤ -20 dBc	Pass



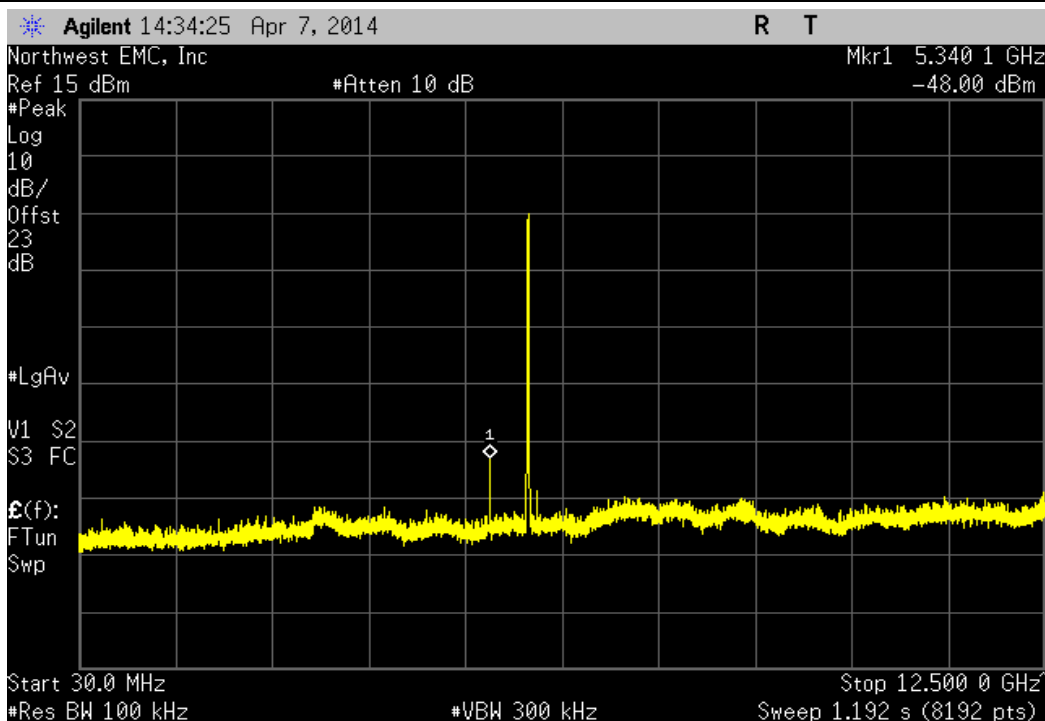
5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, Mid Channel 157, 5785 MHz				
Frequency Range		Value	Limit	Result
32 GHz - 40 GHz		-33.61 dBc	≤ -20 dBc	Pass



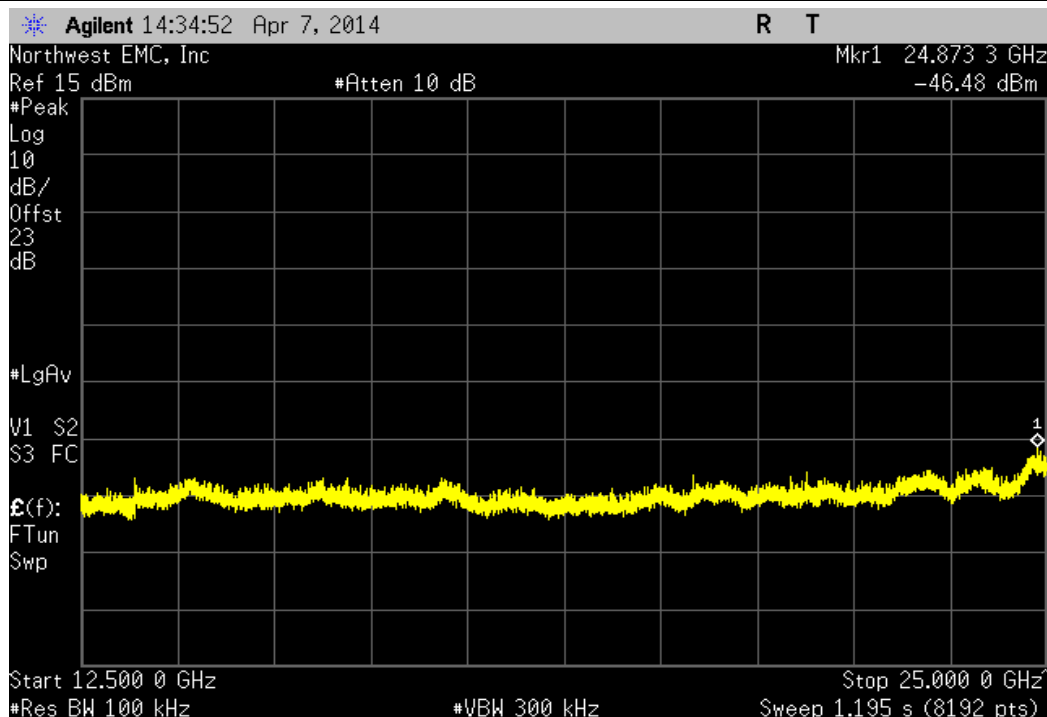
5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, High Channel 165, 5825 MHz				
Frequency Range		Value	Limit	Result
Fundamental		N/A	N/A	N/A



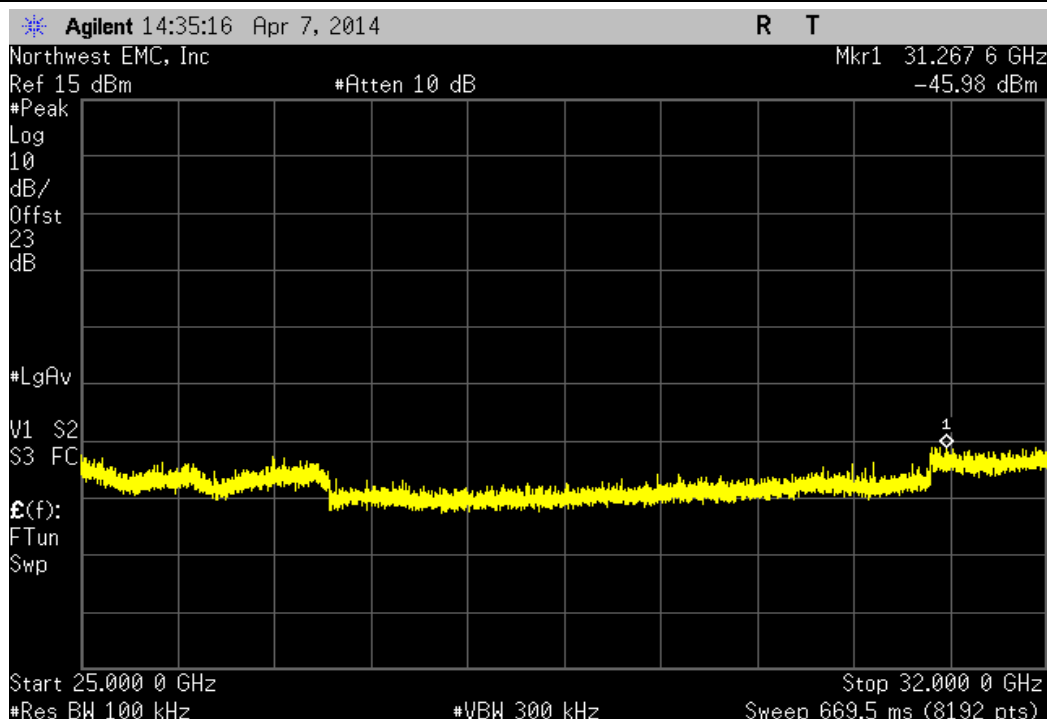
5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, High Channel 165, 5825 MHz				
Frequency Range		Value	Limit	Result
30 MHz - 12.5 GHz		-45.03 dBc	≤ -20 dBc	Pass



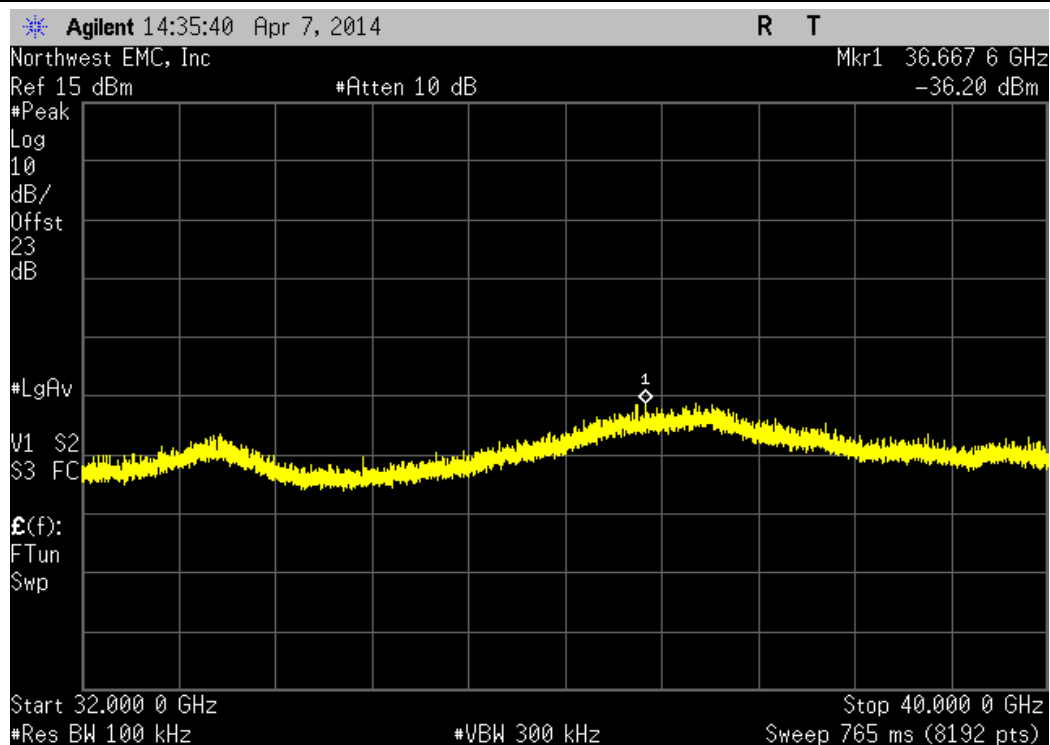
5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, High Channel 165, 5825 MHz				
Frequency Range		Value	Limit	Result
12.5 GHz - 25 GHz		-43.51 dBc	≤ -20 dBc	Pass



5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, High Channel 165, 5825 MHz				
Frequency Range		Value	Limit	Result
25 GHz - 32 GHz		-43.01 dBc	≤ -20 dBc	Pass



5725 MHz - 5850 MHz Band, 802.11(n) MCS7 - UNII, High Channel 165, 5825 MHz				
Frequency Range		Value	Limit	Result
32 GHz - 40 GHz		-33.23 dBc	≤ -20 dBc	Pass





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

## CHANNELS OF OPERATION

Ch. 149, 5745 MHz

Ch. 157, 5785 MHz

Ch. 165, 5825 MHz

## MODULATION OF OPERATION

6 Mbps

34 Mbps

54 Mbps

MCS0

MCS7

## POWER SETTINGS INVESTIGATED

Internal Battery, 12 VDC

## CONFIGURATIONS INVESTIGATED

SYNA0151 - 1

## FREQUENCY RANGE INVESTIGATED

Start Frequency 30 MHz Stop Frequency 40 GHz

## SAMPLE CALCULATIONS

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

## TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
OC Cable	ESM Cable Corp.	KMKM-72	OCV	6/24/2013	12 mo
Pre-Amplifier	Miteq	JSW45-26004000-40-5P	AVR	6/24/2013	12 mo
Antenna, Horn	ETS Lindgren	3160-10	AIW	NCR	0 mo
Cable	ESM Cable Corp.	KMKM-72	EVY	9/10/2013	12 mo
Pre-Amplifier	Miteq	AMF-6F-18002650-25-10P	AVU	9/10/2013	12 mo
Antenna, Horn	ETS Lindgren	3160-09	AIV	NCR	0 mo
Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	AVD	2/18/2014	12 mo
Antenna, Horn	ETS	3160-08	AHV	NCR	0 mo
EV01 Cables	N/A	Standard Gain Horns Cables	EVF	2/18/2014	12 mo
Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AVC	2/18/2014	12 mo
Antenna, Horn	ETS	3160-07	AHU	NCR	0 mo
EV01 Cables	N/A	Double Ridge Horn Cables	EVB	2/18/2014	12 mo
Pre-Amplifier	Miteq	AMF-4D-010100-24-10P	APW	2/18/2014	12 mo
Antenna, Horn	ETS	3115	AIZ	1/27/2014	36 mo
EV01 Cables	N/A	Bilog Cables	EVA	2/18/2014	12 mo
Pre-Amplifier	Miteq	AM-1616-1000	AOL	2/18/2014	12 mo
Antenna, Biconilog	EMCO	3141	AXG	4/10/2012	36 mo
Spectrum Analyzer	Agilent	E4440	AFE	11/4/2013	24 mo

## MEASUREMENT BANDWIDTHS

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

## TEST DESCRIPTION

The highest gain antenna of each type to be used with the EUT were tested. The EUT was configured for the lowest, a middle, and the highest transmit frequency in each operational band. For each configuration, the spectrum was scanned throughout the specified range. Measurements were made to satisfy the three requirements of 47 CFR 15.407: Field strength under 1GHz, Restricted Bands of 47 CFR 15.205, and EIRP of 47 CFR 15.407.

While scanning, emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and EUT antenna in three orthogonal axis, and adjusting the measurement antenna height and polarization (per ANSI C63.10:2009). A preamp and high pass filter (and notch filter) were used for this test in order to provide sufficient measurement sensitivity.



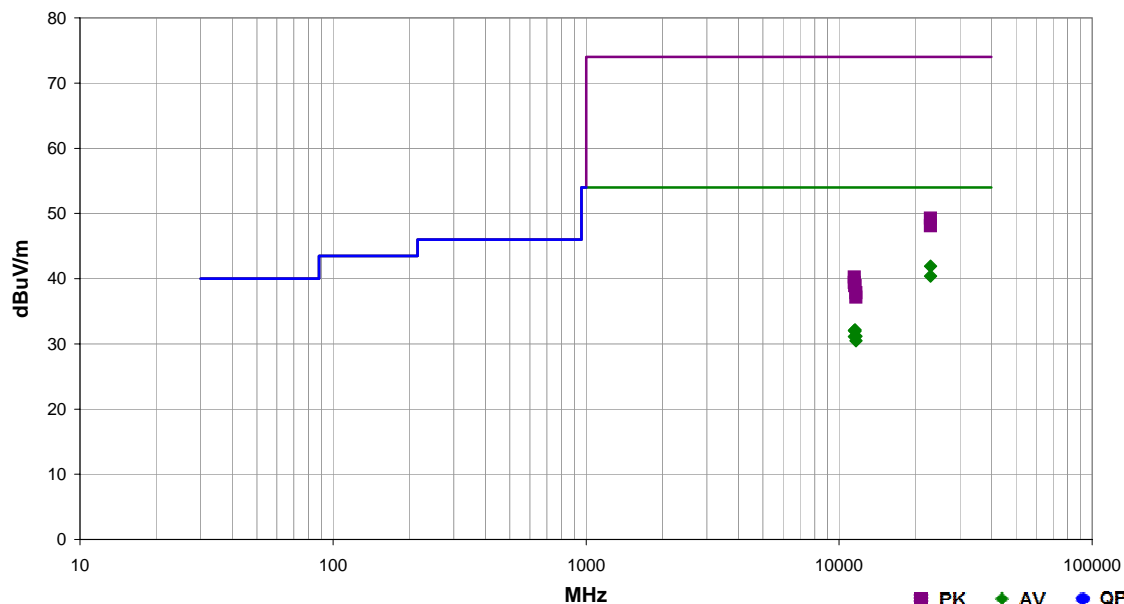
# SPURIOUS RADIATED EMISSIONS

PSA-ESCI 2012.12.14  
EmiR5 2014.02.04

Work Order:	SYNA0151	Date:	02/25/14	
Project:	Kezar	Temperature:	21.2 °C	
Job Site:	EV01	Humidity:	33.7% RH	
Serial Number:	1	Barometric Pres.:	1017.9 mbar	
Tested by: Jared Ison				
EUT:	Kezar			
Configuration:	1			
Customer:	Synapse Product Development LLC			
Attendees:	None			
EUT Power:	Internal Battery, 12 VDC			
Operating Mode:	Tx			
Deviations:	None			
Comments:	Modulation rate tested is based on previous tests that produced the highest amplitude. Please reference data comments for EUT channel, frequency and orientation.			

Test Specifications	Class B	Test Method
FCC 15.247:2014		ANSI C63.10:2009

Run #	46	Test Distance (m)	3	Antenna Height(s)	1-4m	Results	Pass
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Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
22980.030	41.9	0.0	1.3	173.0	3.0	0.0	Horz	AV	0.0	41.9	54.0	-12.1	Ch. 149, 5745MHz, 6Mbps, On Side
22979.900	40.4	0.0	1.3	300.0	3.0	0.0	Vert	AV	0.0	40.4	54.0	-13.6	Ch. 149, 5745MHz, 6Mbps, Horz
11570.000	35.8	-3.7	1.1	253.0	3.0	0.0	Horz	AV	0.0	32.1	54.0	-21.9	Ch. 157, 5785 MHz, 6Mbps On Side
11489.990	36.1	-4.1	1.0	262.0	3.0	0.0	Horz	AV	0.0	32.0	54.0	-22.0	Ch. 149, 5745 MHz, 6Mbps, On Side
11570.020	35.6	-3.7	1.2	13.0	3.0	0.0	Vert	AV	0.0	31.9	54.0	-22.1	Ch. 157, 5785 MHz, 6Mbps, Horz
11650.040	34.5	-3.3	1.1	253.0	3.0	0.0	Horz	AV	0.0	31.2	54.0	-22.8	Ch. 165, 5825 MHz, 6Mbps, On Side
11490.000	35.2	-4.1	1.0	39.0	3.0	0.0	Vert	AV	0.0	31.1	54.0	-22.9	Ch. 149, 5745 MHz, 6Mbps, Horz
11649.990	33.8	-3.3	1.2	12.0	3.0	0.0	Vert	AV	0.0	30.5	54.0	-23.5	Ch. 165, 5825 MHz, 6Mbps, Horz
22980.010	49.3	0.0	1.3	173.0	3.0	0.0	Horz	PK	0.0	49.3	74.0	-24.7	Ch. 149, 5745MHz, 6Mbps, On Side
22980.010	48.1	0.0	1.3	300.0	3.0	0.0	Vert	PK	0.0	48.1	74.0	-25.9	Ch. 149, 5745MHz, 6Mbps, Horz
11489.900	44.3	-4.1	1.0	262.0	3.0	0.0	Horz	PK	0.0	40.2	74.0	-33.8	Ch. 149, 5745 MHz, 6Mbps, On Side
11489.870	43.5	-4.1	1.0	39.0	3.0	0.0	Vert	PK	0.0	39.4	74.0	-34.6	Ch. 149, 5745 MHz, 6Mbps, Horz
11570.210	42.6	-3.7	1.1	253.0	3.0	0.0	Horz	PK	0.0	38.9	74.0	-35.1	Ch. 157, 5785 MHz, 6Mbps, On Side
11569.800	42.6	-3.7	1.2	13.0	3.0	0.0	Vert	PK	0.0	38.9	74.0	-35.1	Ch. 157, 5785 MHz, 6Mbps, Horz
11650.060	41.2	-3.3	1.1	253.0	3.0	0.0	Horz	PK	0.0	37.9	74.0	-36.1	Ch. 165, 5825 MHz, 6Mbps, On Side
11650.080	40.5	-3.3	1.2	12.0	3.0	0.0	Vert	PK	0.0	37.2	74.0	-36.8	Ch. 165, 5825 MHz, 6Mbps, Horz

# AC POWERLINE CONDUCTED EMISSIONS

## TEST DESCRIPTION

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

## TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Receiver	Rohde & Schwarz	ESCI	ARH	02/05/2014	12 mo
EV07 Cables	N/A	Conducted Cables	EVG	04/25/2013	12 mo
Attenuator	Fairview Microwave	SA6B10W-20	RKA	10/24/2013	12 mo
High Pass Filter	TTE	H97-100K-50-720B	HHD	01/22/2014	12 mo
LISN	Solar	9252-50-R-24-BNC	LIP	02/16/2014	12 mo

## MEASUREMENT UNCERTAINTY

Description		
Expanded k=2	2.94 dB	-2.94 dB

## CONFIGURATIONS INVESTIGATED

SYNA0151-1

## MODES INVESTIGATED

Tx, Ch. 149(5745MHz), 6Mbps  
Tx, Ch. 157(5785MHz), 6Mbps  
Tx, Ch. 165(5825MHz), 6Mbps

# AC POWERLINE CONDUCTED EMISSIONS

EUT:	Kezar	Work Order:	SYNA0151
Serial Number:	1	Date:	02/28/2014
Customer:	Synapse Product Development LLC	Temperature:	20.3°C
Attendees:	None	Relative Humidity:	36.6%
Customer Project:	Kezar	Bar. Pressure:	1002 mb
Tested By:	Jared Ison	Job Site:	EV07
Power:	110VAC/60Hz	Configuration:	SYNA0151-1

## TEST SPECIFICATIONS

Specification: Equipment Class B FCC 15.247:2014	Method: ANSI C63.4:2009
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## TEST PARAMETERS

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

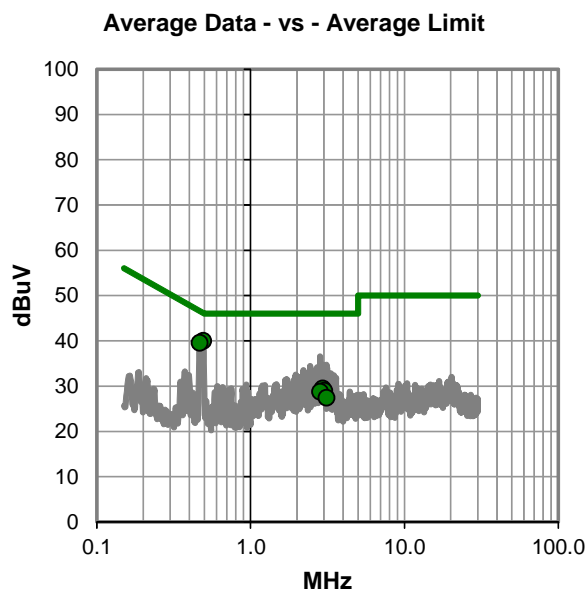
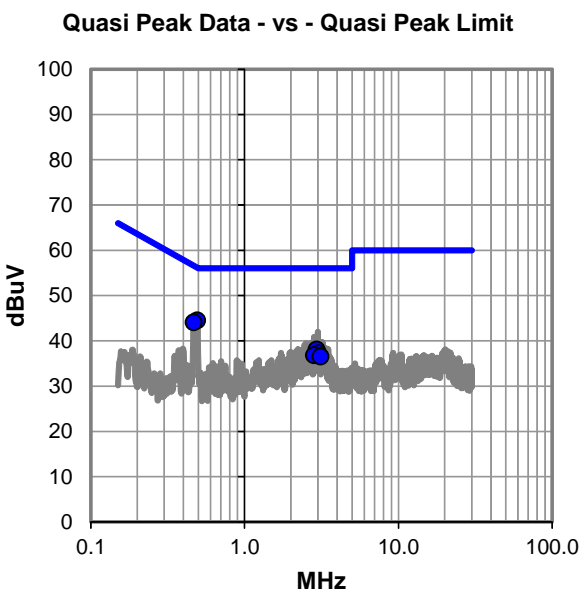
None

## EUT OPERATING MODES

Tx, Ch. 149(5745MHz), 6Mbps

## DEVIATIONS FROM TEST STANDARD

None



# AC POWERLINE CONDUCTED EMISSIONS

## RESULTS - Run #16

Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.492	24.2	20.3	44.5	56.1	-11.7
0.468	23.8	20.3	44.1	56.5	-12.5
2.948	17.6	20.5	38.1	56.0	-17.9
3.020	16.7	20.5	37.2	56.0	-18.8
2.832	16.3	20.5	36.8	56.0	-19.2
3.116	16.0	20.5	36.5	56.0	-19.5

Average Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.492	19.7	20.3	40.0	46.1	-6.2
0.468	19.3	20.3	39.6	46.5	-7.0
2.948	9.0	20.5	29.5	46.0	-16.5
3.020	8.5	20.5	29.0	46.0	-17.0
2.832	8.3	20.5	28.8	46.0	-17.2
3.116	6.9	20.5	27.4	46.0	-18.6

## CONCLUSION

Pass



Tested By

# AC POWERLINE CONDUCTED EMISSIONS

EUT:	Kezar	Work Order:	SYNA0151
Serial Number:	1	Date:	02/28/2014
Customer:	Synapse Product Development LLC	Temperature:	20.3°C
Attendees:	None	Relative Humidity:	36.6%
Customer Project:	Kezar	Bar. Pressure:	1002 mb
Tested By:	Jared Ison	Job Site:	EV07
Power:	110VAC/60Hz	Configuration:	SYNA0151-1

## TEST SPECIFICATIONS

Specification: Equipment Class B FCC 15.247:2014	Method: ANSI C63.4:2009
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## TEST PARAMETERS

Run #:	17	Line:	High Line	Ext. Attenuation (dB):	20
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## COMMENTS

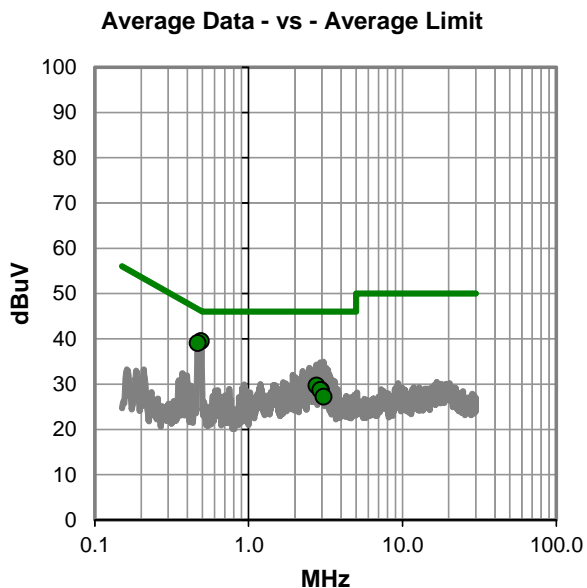
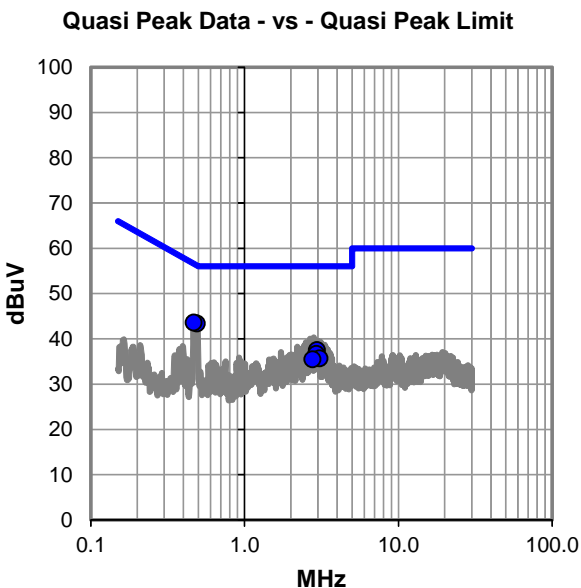
None

## EUT OPERATING MODES

Tx, Ch. 149(5745MHz), 6Mbps

## DEVIATIONS FROM TEST STANDARD

None



# AC POWERLINE CONDUCTED EMISSIONS

## RESULTS - Run #17

Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.490	23.1	20.3	43.4	56.2	-12.8
0.468	23.3	20.3	43.6	56.5	-13.0
2.952	17.0	20.5	37.5	56.0	-18.5
2.928	16.2	20.5	36.7	56.0	-19.3
3.068	15.2	20.5	35.7	56.0	-20.3
2.764	15.0	20.5	35.5	56.0	-20.5

Average Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.490	19.2	20.3	39.5	46.2	-6.7
0.468	18.8	20.3	39.1	46.5	-7.5
2.764	9.2	20.5	29.7	46.0	-16.3
2.952	8.2	20.5	28.7	46.0	-17.3
2.928	8.2	20.5	28.7	46.0	-17.3
3.068	6.7	20.5	27.2	46.0	-18.8

## CONCLUSION

Pass



Tested By

# AC POWERLINE CONDUCTED EMISSIONS

EUT:	Kezar	Work Order:	SYNA0151
Serial Number:	1	Date:	02/28/2014
Customer:	Synapse Product Development LLC	Temperature:	20.3°C
Attendees:	None	Relative Humidity:	36.6%
Customer Project:	Kezar	Bar. Pressure:	1002 mb
Tested By:	Jared Ison	Job Site:	EV07
Power:	110VAC/60Hz	Configuration:	SYNA0151-1

## TEST SPECIFICATIONS

Specification: Equipment Class B FCC 15.247:2014	Method: ANSI C63.4:2009
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## TEST PARAMETERS

Run #:	18	Line:	Neutral	Ext. Attenuation (dB):	20
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## COMMENTS

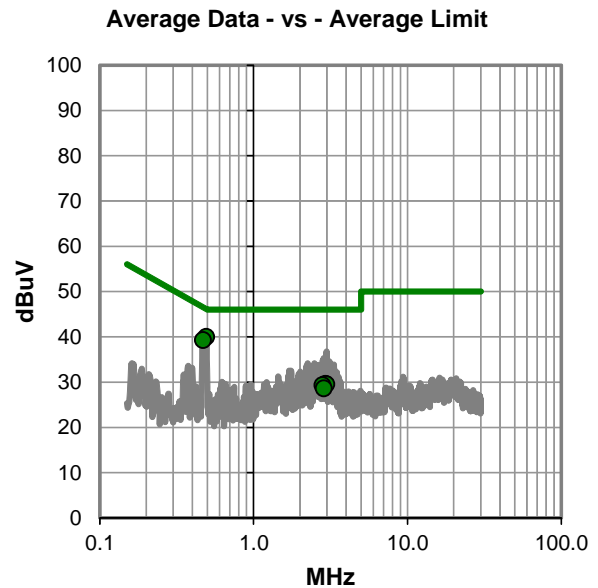
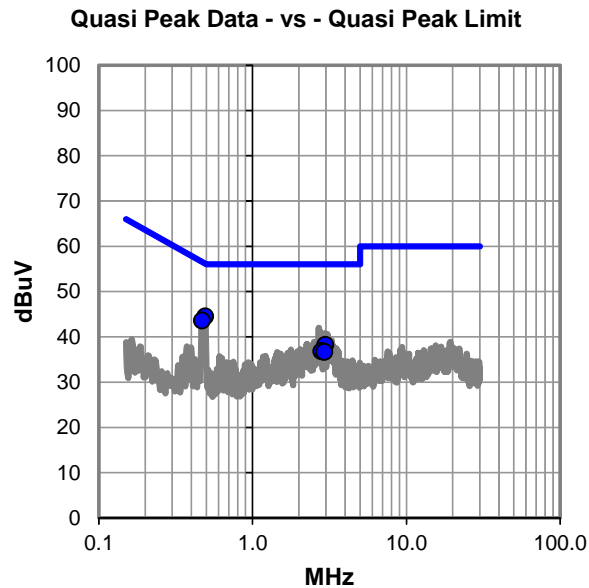
None

## EUT OPERATING MODES

Tx, Ch. 157(5785MHz), 6Mbps

## DEVIATIONS FROM TEST STANDARD

None





# AC POWERLINE CONDUCTED EMISSIONS

## RESULTS - Run #18

Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.492	24.2	20.3	44.5	56.1	-11.7
0.470	23.3	20.3	43.6	56.5	-13.0
2.972	17.7	20.5	38.2	56.0	-17.8
2.856	16.3	20.5	36.8	56.0	-19.2
2.812	16.3	20.5	36.8	56.0	-19.2
2.928	16.2	20.5	36.7	56.0	-19.3

Average Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.492	19.7	20.3	40.0	46.1	-6.2
0.470	19.0	20.3	39.3	46.5	-7.3
2.928	9.1	20.5	29.6	46.0	-16.4
2.972	9.0	20.5	29.5	46.0	-16.5
2.812	8.8	20.5	29.3	46.0	-16.7
2.856	8.1	20.5	28.6	46.0	-17.4

## CONCLUSION

Pass



Tested By

# AC POWERLINE CONDUCTED EMISSIONS

EUT:	Kezar	Work Order:	SYNA0151
Serial Number:	1	Date:	02/28/2014
Customer:	Synapse Product Development LLC	Temperature:	20.3°C
Attendees:	None	Relative Humidity:	36.6%
Customer Project:	Kezar	Bar. Pressure:	1002 mb
Tested By:	Jared Ison	Job Site:	EV07
Power:	110VAC/60Hz	Configuration:	SYNA0151-1

## TEST SPECIFICATIONS

Specification: Equipment Class B FCC 15.247:2014	Method: ANSI C63.4:2009
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## TEST PARAMETERS

Run #:	19	Line:	High Line	Ext. Attenuation (dB):	20
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## COMMENTS

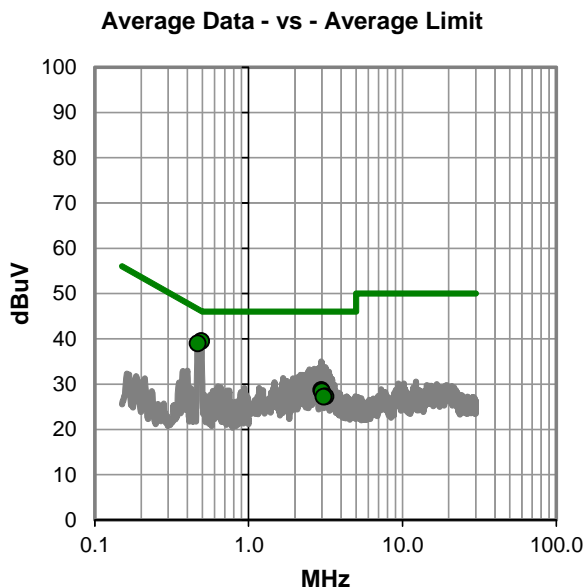
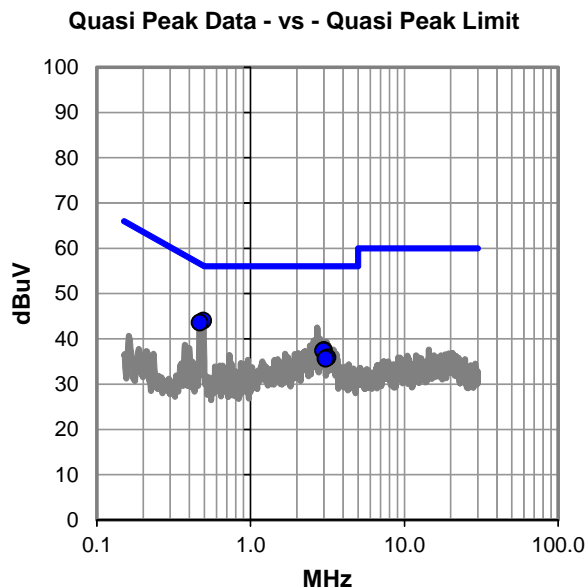
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## EUT OPERATING MODES

Tx, Ch. 157(5785MHz), 6Mbps

## DEVIATIONS FROM TEST STANDARD

None



# AC POWERLINE CONDUCTED EMISSIONS

## RESULTS - Run #19

Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.492	23.7	20.3	44.0	56.1	-12.2
0.468	23.3	20.3	43.6	56.5	-13.0
2.996	17.0	20.5	37.5	56.0	-18.5
2.976	16.9	20.5	37.4	56.0	-18.6
3.160	15.4	20.5	35.9	56.0	-20.1
3.068	15.1	20.5	35.6	56.0	-20.4

Average Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.492	19.2	20.3	39.5	46.1	-6.7
0.468	18.7	20.3	39.0	46.5	-7.6
2.976	8.2	20.5	28.7	46.0	-17.3
2.996	7.9	20.5	28.4	46.0	-17.6
3.160	6.8	20.5	27.3	46.0	-18.7
3.068	6.7	20.5	27.2	46.0	-18.8

## CONCLUSION

Pass



Tested By

# AC POWERLINE CONDUCTED EMISSIONS

EUT:	Kezar	Work Order:	SYNA0151
Serial Number:	1	Date:	02/28/2014
Customer:	Synapse Product Development LLC	Temperature:	20.3°C
Attendees:	None	Relative Humidity:	36.6%
Customer Project:	Kezar	Bar. Pressure:	1002 mb
Tested By:	Jared Ison	Job Site:	EV07
Power:	110VAC/60Hz	Configuration:	SYNA0151-1

## TEST SPECIFICATIONS

Specification: Equipment Class B FCC 15.247:2014	Method: ANSI C63.4:2009
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## TEST PARAMETERS

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

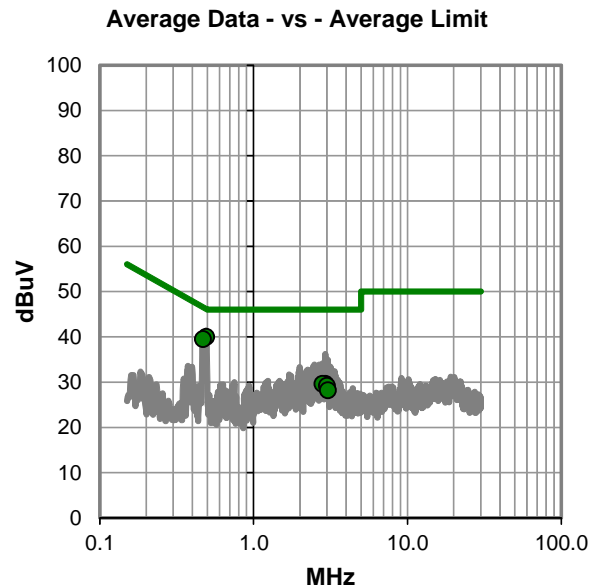
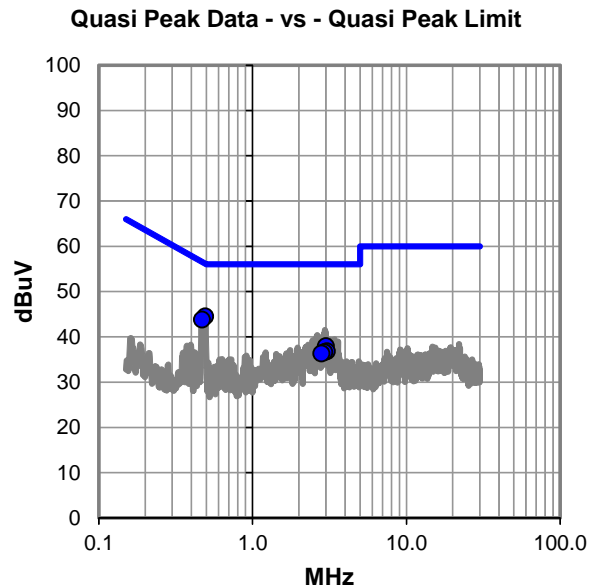
None

## EUT OPERATING MODES

Tx, Ch. 165(5825MHz), 6Mbps

## DEVIATIONS FROM TEST STANDARD

None



# AC POWERLINE CONDUCTED EMISSIONS

## RESULTS - Run #20

Quasi Peak Data - vs - Quasi Peak Limit


Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.492	24.2	20.3	44.5	56.1	-11.7
0.470	23.5	20.3	43.8	56.5	-12.8
3.000	17.4	20.5	37.9	56.0	-18.1
3.044	16.3	20.5	36.8	56.0	-19.2
2.928	16.1	20.5	36.6	56.0	-19.4
2.812	15.8	20.5	36.3	56.0	-19.7

Average Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.492	19.7	20.3	40.0	46.1	-6.2
0.470	19.2	20.3	39.5	46.5	-7.1
2.928	9.1	20.5	29.6	46.0	-16.4
2.812	9.1	20.5	29.6	46.0	-16.4
3.000	8.7	20.5	29.2	46.0	-16.8
3.044	7.7	20.5	28.2	46.0	-17.8

## CONCLUSION

Pass



Tested By

# AC POWERLINE CONDUCTED EMISSIONS

EUT:	Kezar	Work Order:	SYNA0151
Serial Number:	1	Date:	02/28/2014
Customer:	Synapse Product Development LLC	Temperature:	20.3°C
Attendees:	None	Relative Humidity:	36.6%
Customer Project:	Kezar	Bar. Pressure:	1002 mb
Tested By:	Jared Ison	Job Site:	EV07
Power:	110VAC/60Hz	Configuration:	SYNA0151-1

## TEST SPECIFICATIONS

Specification: Equipment Class B FCC 15.247:2014	Method: ANSI C63.4:2009
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## TEST PARAMETERS

Run #:	21	Line:	High Line	Ext. Attenuation (dB):	20
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## COMMENTS

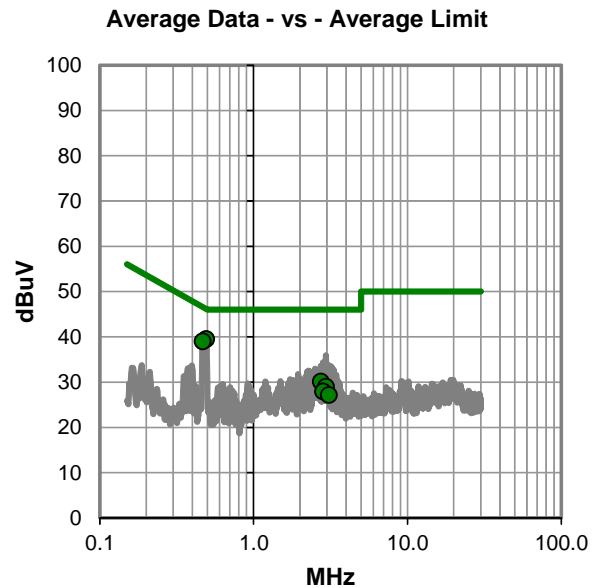
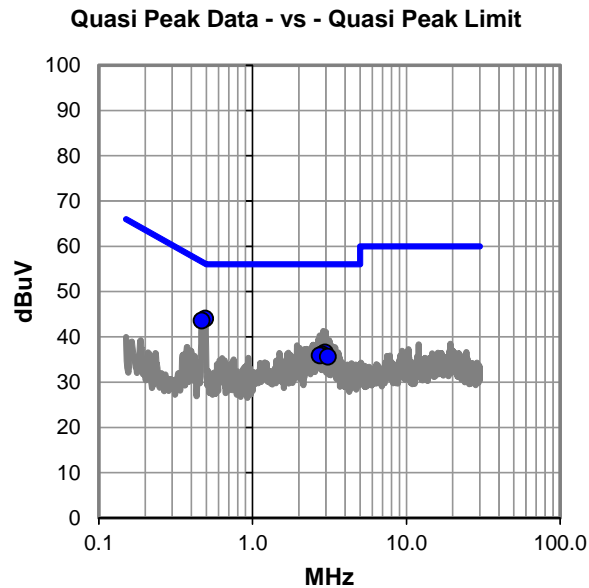
None

## EUT OPERATING MODES

Tx, Ch. 165(5825MHz), 6Mbps

## DEVIATIONS FROM TEST STANDARD

None



# AC POWERLINE CONDUCTED EMISSIONS

## RESULTS - Run #21

Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.492	23.7	20.3	44.0	56.1	-12.2
0.468	23.3	20.3	43.6	56.5	-13.0
2.952	16.0	20.5	36.5	56.0	-19.5
2.836	15.6	20.5	36.1	56.0	-19.9
2.740	15.4	20.5	35.9	56.0	-20.1
3.092	15.1	20.5	35.6	56.0	-20.4

Average Data - vs - Average Limit

Freq (MHz)	Amp. (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Margin (dB)
0.492	19.2	20.3	39.5	46.1	-6.7
0.468	18.7	20.3	39.0	46.5	-7.6
2.740	9.6	20.5	30.1	46.0	-15.9
2.952	8.5	20.5	29.0	46.0	-17.0
2.836	7.4	20.5	27.9	46.0	-18.1
3.092	6.6	20.5	27.1	46.0	-18.9

## CONCLUSION

Pass



Tested By