Summit Semiconductor

Model 444-2224 (Athena 4X)

FCC 15.407:2013

Report #: FOCU0141.1

Report Prepared By Northwest EMC Inc.

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

California – Minnesota – Oregon – New York – Washington

CERTIFICATE OF TEST

WTD 12.5.23

Last Date of Test: May 16, 2013
Summit Semiconductor
Model: Model 444-2224 (Athena 4X)

Emissions

Test Description	Specification	Test Method	Pass/Fail
Transmissions Burst Duration	FCC 15.407:2013	ANSI C63.10:2009	Pass
Peak Transmit Power	FCC 15.407:2013	ANSI C63.10:2009	Pass
Peak Power Spectral Density	FCC 15.407:2013	ANSI C63.10:2009	Pass
Emission Bandwidth	FCC 15.407:2013	ANSI C63.10:2009	Pass
Peak Excursion	FCC 15.407:2013	ANSI C63.10:2009	Pass
Frequency Stability	FCC 15.407:2013	ANSI C63.10:2009	Pass
Spurious Radiated Emissions	FCC 15.407:2013	ANSI C63.10:2009	Pass
AC Powerline Conducted Emissions	FCC 15.407:2013	ANSI C63.10:2009	Pass

Deviations From Test Standards

None

Approved By:

Tim O'Shea, Operations Manager

NVLAP Lab Code: 200630-0

Test Facility

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

Northwest EMC, Inc.
22975 NW Evergreen Parkway, Suite 400
Hillsboro, OR 97124

Phone: (503) 844-4066 Fax: 844-3826

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

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

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

REVISION HISTORY

REV 2012.08.02

Revision Number	Description	Date	Page Number
00	None		

Barometric Pressure

The recorded barometric pressure has been normalized to sea level.

NORTHWEST EMC

REV 2012.05.24

ACCREDITATIONS AND AUTHORIZATIONS

United States

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

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

NVLAP - Each laboratory is accredited by NVLAP to ISO 17025

Canada

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

European Union

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

Australia/New Zealand

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

Korea

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

Japan

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

Taiwan

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

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

Singapore

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

Hong Kong

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

Vietnam

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

Russia

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

SCOPE

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

MEASUREMENT UNCERTAINTY

Measurement Uncertainty

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

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

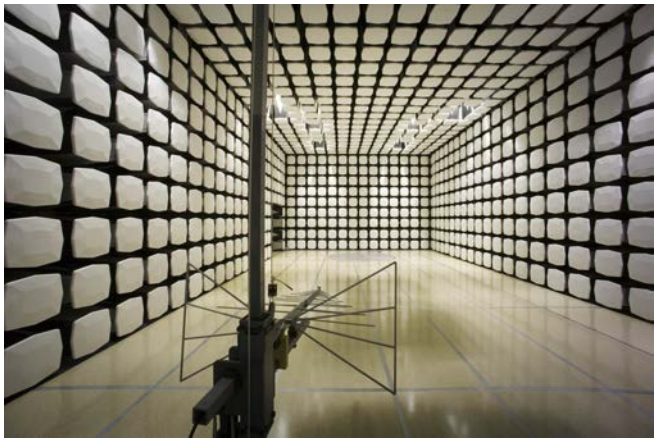
The following table represents the Measurement Uncertainty (MU) budgets for each of the tests that may be contained in this report.

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

LOCATIONS

REV 2013.02.26

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



PRODUCT DESCRIPTION

Client and Equipment Under Test (EUT) Information

Company Name:	Summit Semiconductor
Address:	22867 NW Bennett St, Suite 200
City, State, Zip:	Hillsboro, OR 97124
Test Requested By:	Ponnappa Pasura
Model:	Model 444-2224 (Athena 4X)
First Date of Test:	May 1, 2013
Last Date of Test:	May 7, 2013
Receipt Date of Samples:	May 1, 2013
Equipment Design Stage:	Production
Equipment Condition:	No Damage

Information Provided by the Party Requesting the Test

Functional Description of the EUT (Equipment Under Test):

Digital wireless Audio client device (Athena 4X).

The radios and RF path of the Model 444-2224 (Athena 4x) and Model 444-2225 (Athena UFL) are identical, including antenna matching components and test points, up to the integral antennas on the Model 444-2224 and the u.fl connectors on the Model 444-2225. All radio operations are identical.

Testing Objective:

Seeking modular approval of the client under FCC 15.407 for operation in the 5.2, 5.3, and 5.6 GHz bands.

CONFIGURATIONS

Configuration FOCU0140- 4

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Athena UFL	Summit Semiconductor	444-2225	02EA4D000027

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Topward DC Power Supply	Topward Electronic Instruments Co., LTD.	TPS-2000	946425
Laptop DC Power Supply	Dell	AC-PA-10	Unknown

Remote Equipment Outside of Test Setup Boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Laptop	Dell	Latitude D820	26000021917

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
RS232	Yes	1.7m	No	I/O to Serial Adapter	Laptop
DC Power	No	1.1m	Yes	Laptop DC Power Supply	Laptop
AC Power	No	0.8	No	AC Mains	Laptop DC Power Supply
AC Power	No	1.4m	No	AC Mains	Topward DC Supply
I/O to Serial Adapter	No	.1m	No	RS232	Athena
DC Power Cable x1	No	1.5m	No	Topward DC Power Supply	Athena
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

CONFIGURATIONS

Configuration FOCU0140- 5

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Athena UFL	Summit Semiconductor	444-2225	02EA4D000027

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Laptop DC Power Supply	Dell	AC-PA-10	Unknown

Remote Equipment Outside of Test Setup Boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Laptop	Dell	Latitude D820	26000021917

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
RS232	Yes	1.7m	No	I/O to Serial Adapter	Laptop
DC Power	No	1.1m	Yes	Laptop DC Power Supply	Laptop
AC Power	No	0.8	No	AC Mains	Laptop DC Power Supply
I/O to Serial Adapter	No	.1m	No	RS232	Athena
AC/DC Power Adapter Cable	PA	1.5m	Yes	AC Mains	Athena

PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.

CONFIGURATIONS

Configuration FOCU0140- 7

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Athena UFL	Summit Semiconductor	444-2225	02EA4D000003

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Inverted F Antenna	Tyco	Unknown	Unknown
Topward DC Power Supply	Topward Electronic Instruments Co., LTD.	TPS-2000	946425

Remote Equipment Outside of Test Setup Boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Laptop	Dell	Latitude D820	26000021917

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
Antenna Wires x 4	No	0.36m	No	Athena UFL	Inverted F Antenna
RS232	Yes	1.7m	No	I/O to Serial Adapter	Laptop
DC Power	No	1.1m	Yes	Laptop DC Power Supply	Laptop
AC Power	No	0.8	No	AC Mains	Laptop DC Power Supply
AC Power	No	1.4m	No	AC Mains	Topward DC Supply
I/O to Serial Adapter	No	.1m	No	RS232	Athena
DC Power Cable x1	No	1.5m	No	Topward DC Power Supply	Athena
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

CONFIGURATIONS

Configuration FOCU0141- 1

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Radio Board (Athena 4X)	Summit Semiconductor	444-2224	202EA4C0001C4

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
DC Power Supply	Topward Electronic Instruments Co., LTD.	TPS-2000	946425

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
DC Power	No	2.8m	No	DC Power Supply	Radio Board (Athena 4X)
AC Power	No	1.4m	No	AC Mains	DC Power Supply
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

MODIFICATIONS

WTD 12.5.23

Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	5/2/2013	Spurious Radiated Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
2	5/3/2013	Transmissions Burst Duration	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	5/3/2013	Peak Power Spectral Density	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
4	5/3/2013	Peak Excursion	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	5/3/2013	Peak Transmit Power	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
6	5/3/2013	Emission 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	5/7/2013	Frequency Stability	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	5/16/2013	AC Powerline Conducted Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

Transmissions Burst Duration

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
Power Sensor	Gigatronics	80701A	SPL	7/8/2011	24
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	3/25/2013	12
MXG Vector Signal Generator	Agilent	N5182A	TIF	NCR	0
Power Meter	Gigatronics	8651A	SPM	1/9/2012	24
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Attenuator, 6 dB, 'SMA'	N/A	93459 3330A-6	AUF	3/5/2013	12
40GHz DC Block	Miteq	DCB4000	AMD	6/25/2012	12
Spectrum Analyzer	Agilent	E4446A	AAQ	2/7/2012	24

TEST DESCRIPTION

The transmission pulse duration (T) and Duty Cycle (x) were measured for each of the EUT operating modes per the FCC KDB 789033 D01 General UNII Test Procedures.

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 only measure during the burst duration.

Transmissions Burst Duration

EUT:	Model 444-2225 (Athena UFL)			**Work Order:**	FOCU0140
Serial Number:	02EA4D000027			**Date:**	05/03/13
Customer:	Summit Semiconductor			**Temperature:**	24°C
Attendees:	None			**Humidity:**	30%
Project:	None			**Barometric Pres.:**	1023
Tested by:	Brandon Hobbs	**Power:**	3.3V DC	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.407:2013	ANSI C63.10:2009

COMMENTS

All testing was completed on the highest output power antenna port A2.

DEVIATIONS FROM TEST STANDARD

None

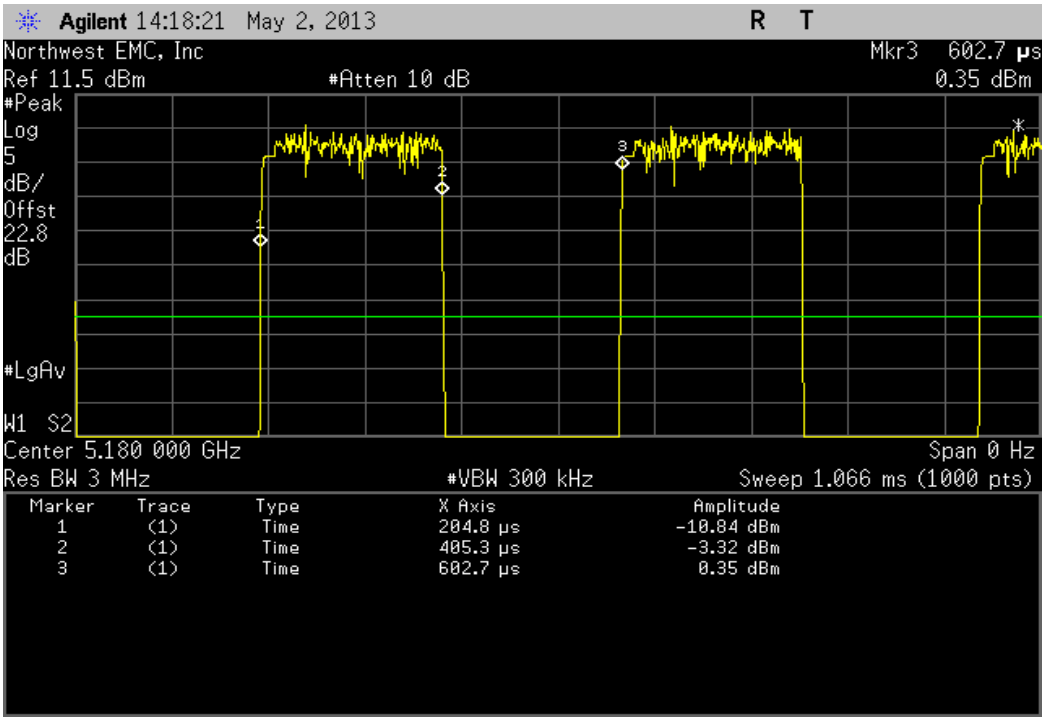
Configuration #	5	*Signature*

		Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
802.11(a) 6 Mbps							
	5150 - 5250 MHz Band						
	Channel 36, Low Channel 5180 MHz	200.516 uS	397.884 uS	1	50.4	N/A	N/A
	Channel 36, Low Channel 5180 MHz	N/A	N/A	5	N/A	N/A	N/A
	Channel 48, High Channel 5240 MHz	199.449 uS	396.8 uS	1	50.3	N/A	N/A
	Channel 48, High Channel 5240 MHz	N/A	N/A	5	N/A	N/A	N/A
	5250 - 5350 MHz Band						
	Channel 52, Low Channel 5260 MHz	199.449 uS	396.783 uS	1	50.3	N/A	N/A
	Channel 52, Low Channel 5260 MHz	N/A	N/A	5	N/A	N/A	N/A
	Channel 64, High Channel 5320 MHz	200.551 uS	396.817 uS	1	50.5	N/A	N/A
	Channel 64, High Channel 5320 MHz	N/A	N/A	5	N/A	N/A	N/A
	5470 - 5725 MHz Band						
	Channel 100, Low Channel 5500 MHz	200.516 uS	396.817 uS	1	50.5	N/A	N/A
	Channel 100, Low Channel 5500 MHz	N/A	N/A	5	N/A	N/A	N/A
	Channel 116, Mid Channel 5580 MHz	199.484 uS	396.8 uS	1	50.3	N/A	N/A
	Channel 116, Mid Channel 5580 MHz	N/A	N/A	5	N/A	N/A	N/A
	Channel 140, High Channel5700 MHz	200.516 uS	397.867 uS	1	50.4	N/A	N/A
	Channel 140, High Channel5700 MHz	N/A	N/A	5	N/A	N/A	N/A
802.11(a) 18 Mbps							
	5150 - 5250 MHz Band						
	Channel 36, Low Channel 5180 MHz	87.484 uS	284.8 uS	1	30.7	N/A	N/A
	Channel 36, Low Channel 5180 MHz	N/A	N/A	5	N/A	N/A	N/A
	Channel 48, High Channel 5240 MHz	88.516 uS	284.766 uS	1	31.1	N/A	N/A
	Channel 48, High Channel 5240 MHz	N/A	N/A	5	N/A	N/A	N/A
	5250 - 5350 MHz Band						
	Channel 52, Low Channel 5260 MHz	87.449 uS	293.333 uS	1	29.8	N/A	N/A
	Channel 52, Low Channel 5260 MHz	N/A	N/A	5	N/A	N/A	N/A
	Channel 64, High Channel 5320 MHz	87.501 uS	283.733 uS	1	30.8	N/A	N/A
	Channel 64, High Channel 5320 MHz	N/A	N/A	5	N/A	N/A	N/A
	5470 - 5725 MHz Band						
	Channel 100, Low Channel 5500 MHz	88.516 uS	284.8 uS	1	31.1	N/A	N/A
	Channel 100, Low Channel 5500 MHz	N/A	N/A	5	N/A	N/A	N/A
	Channel 116, Mid Channel 5580 MHz	87.501 uS	284.8 uS	1	30.7	N/A	N/A
	Channel 116, Mid Channel 5580 MHz	N/A	N/A	5	N/A	N/A	N/A
	Channel 140, High Channel 5700 MHz	88.568 uS	284.8 uS	1	31.1	N/A	N/A
	Channel 140, High Channel 5700 MHz	N/A	N/A	5	N/A	N/A	N/A

Transmissions Burst Duration

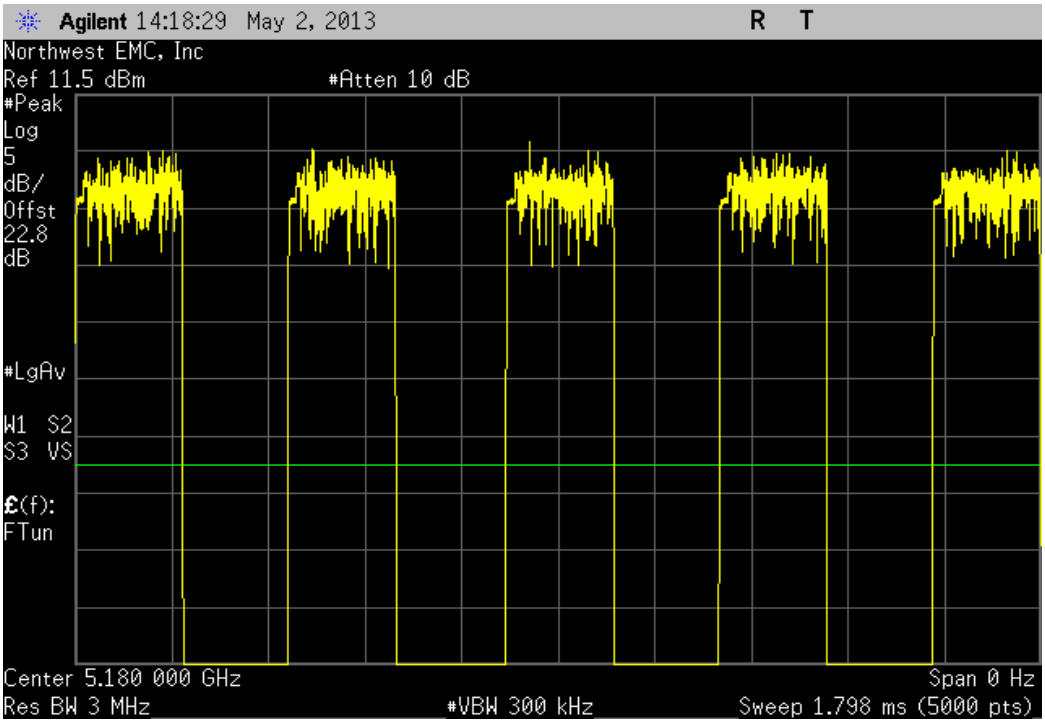
802.11(a) 6 Mbps, 5150 - 5250 MHz Band, Channel 36, Low Channel 5180 MHz

Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
200.516 uS	397.884 uS	1	50.4	N/A	N/A



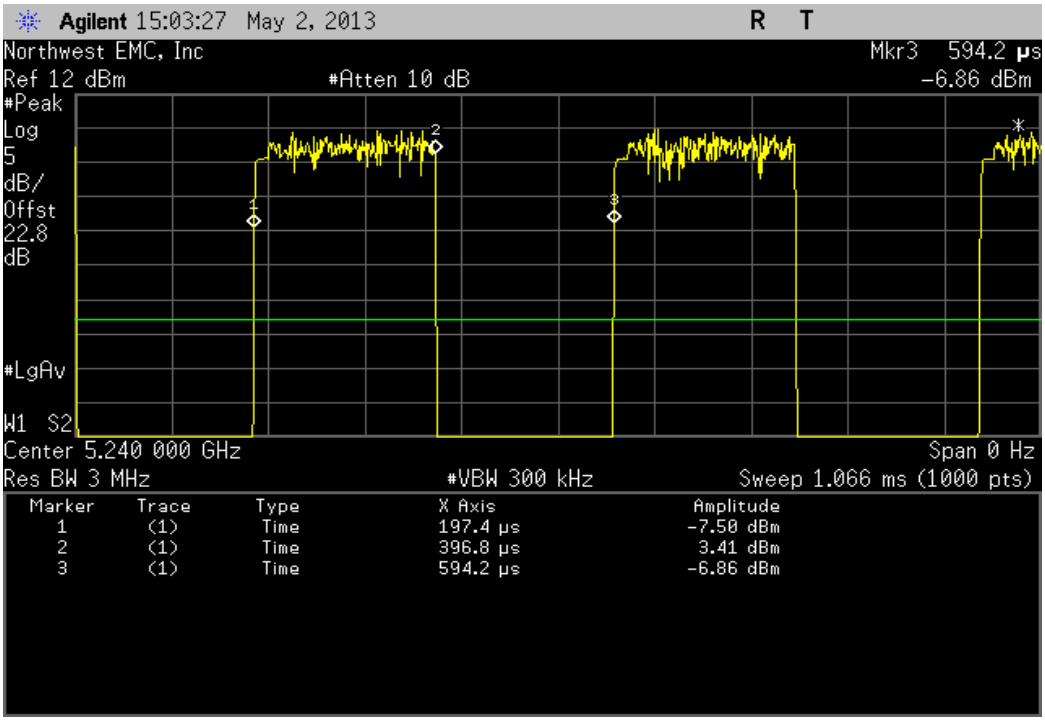
802.11(a) 6 Mbps, 5150 - 5250 MHz Band, Channel 36, Low Channel 5180 MHz

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



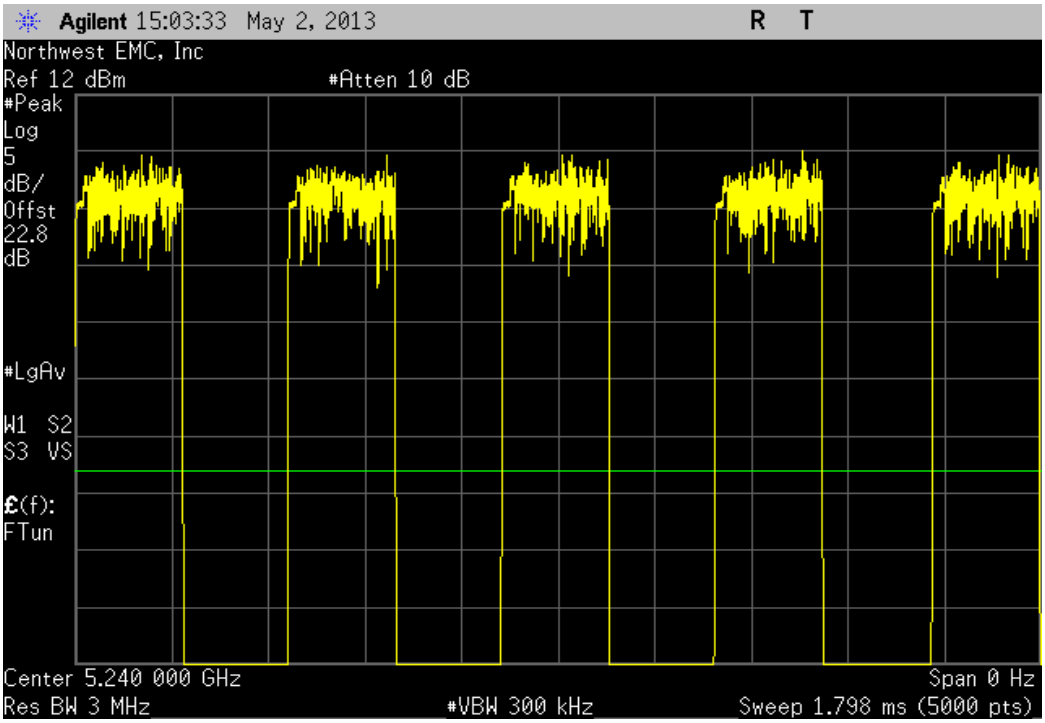
802.11(a) 6 Mbps, 5150 - 5250 MHz Band, Channel 48, High Channel 5240 MHz

Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
199.449 uS	396.8 uS	1	50.3	N/A	N/A



802.11(a) 6 Mbps, 5150 - 5250 MHz Band, Channel 48, High Channel 5240 MHz

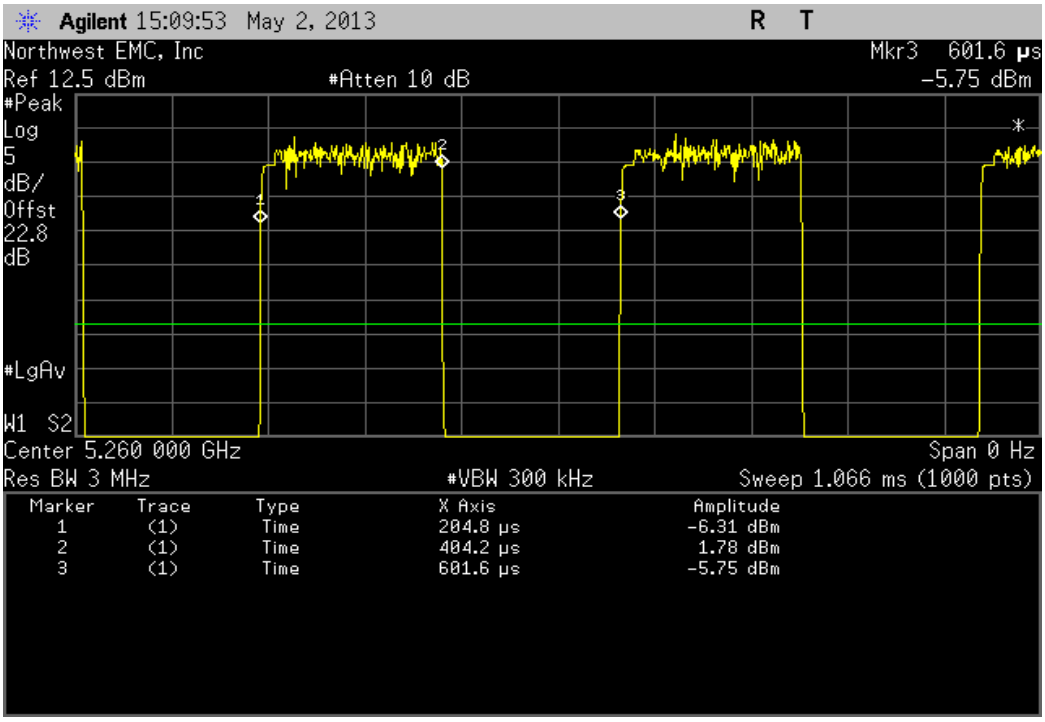
Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
N/A	N/A	5	N/A	N/A	N/A



Transmissions Burst Duration

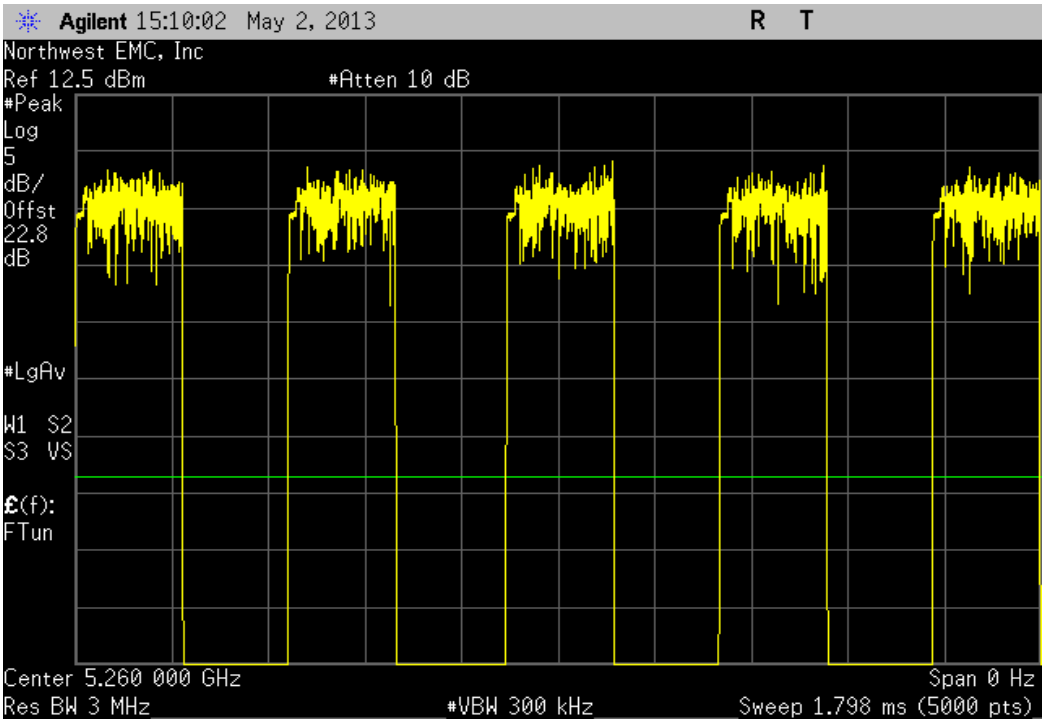
802.11(a) 6 Mbps, 5250 - 5350 MHz Band, Channel 52, Low Channel 5260 MHz

	Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
	199.449 uS	396.783 uS	1	50.3	N/A	N/A



802.11(a) 6 Mbps, 5250 - 5350 MHz Band, Channel 52, Low Channel 5260 MHz

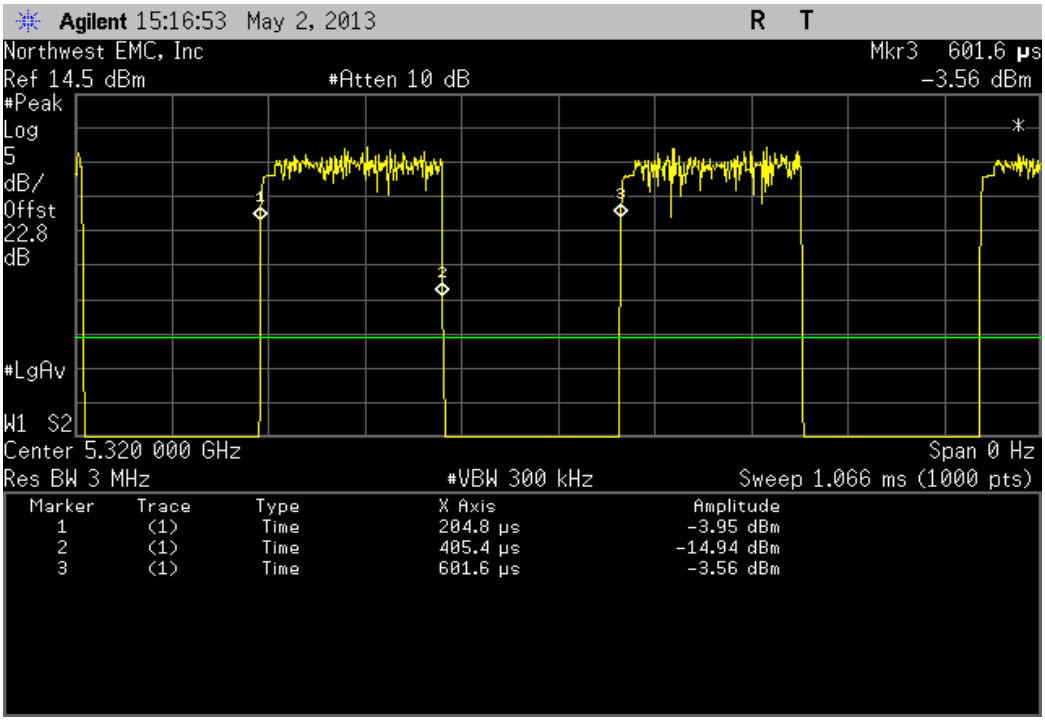
	Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
	N/A	N/A	5	N/A	N/A	N/A



Transmissions Burst Duration

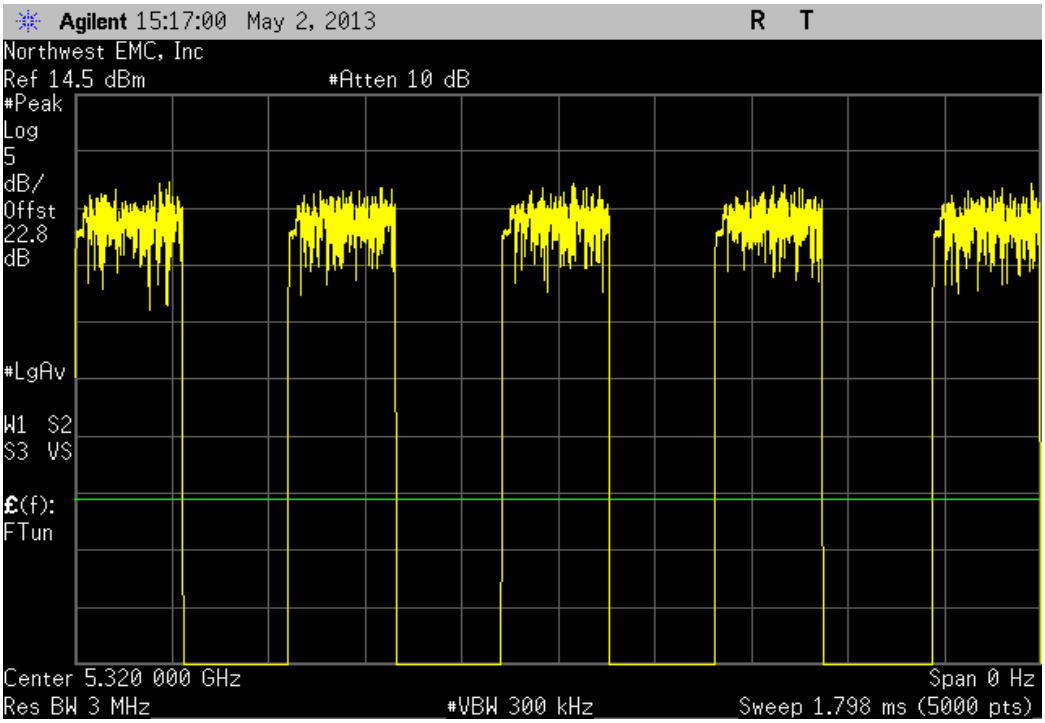
802.11(a) 6 Mbps, 5250 - 5350 MHz Band, Channel 64, High Channel 5320 MHz

	Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
	200.551 uS	396.817 uS	1	50.5	N/A	N/A



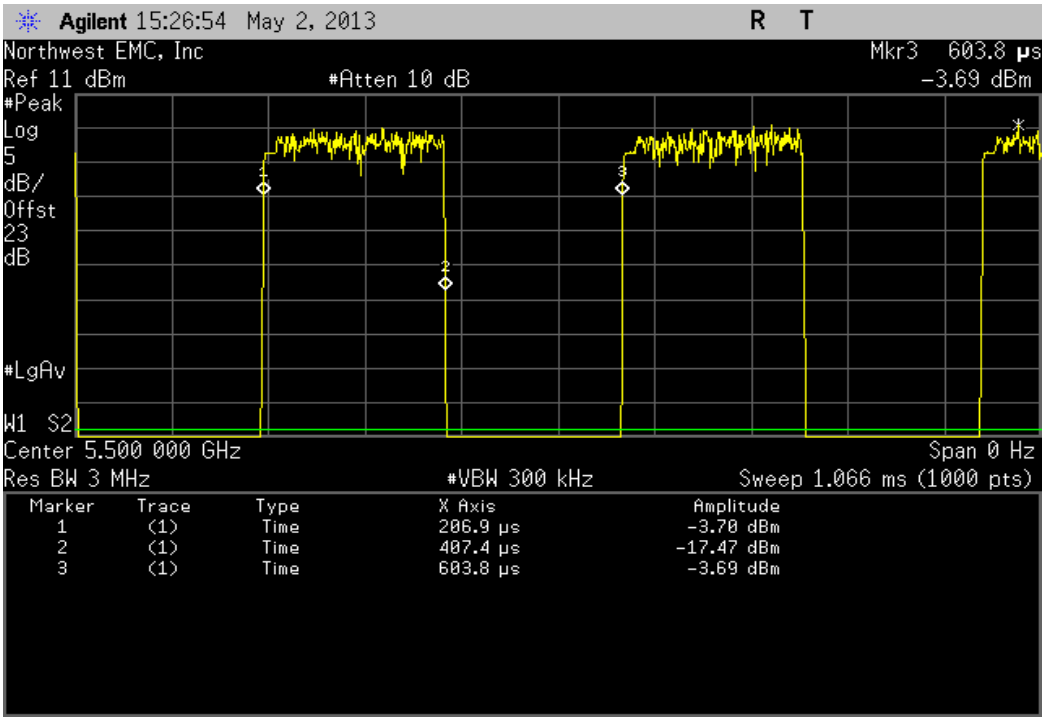
802.11(a) 6 Mbps, 5250 - 5350 MHz Band, Channel 64, High Channel 5320 MHz

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



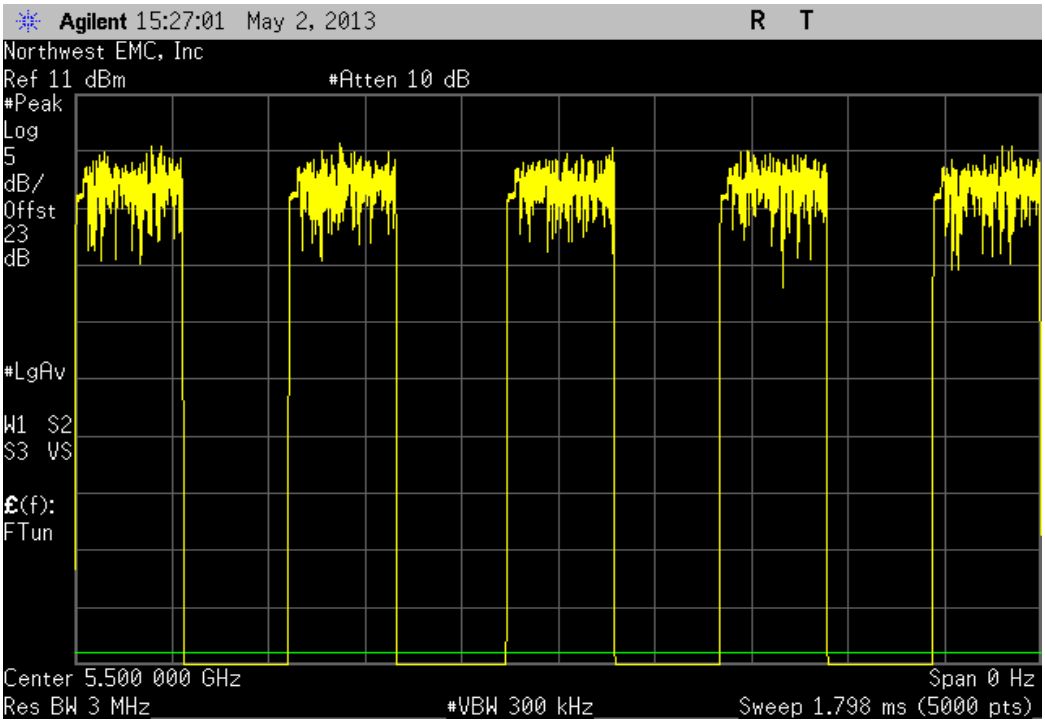
802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 100, Low Channel 5500 MHz

Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
200.516 uS	396.817 uS	1	50.5	N/A	N/A



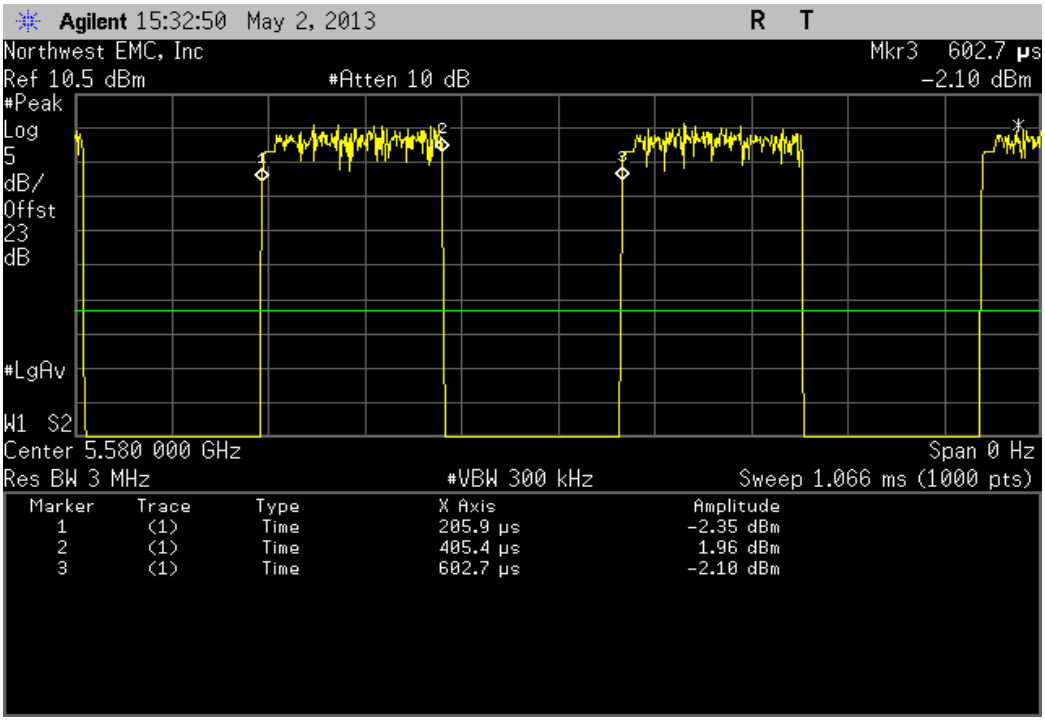
802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 100, Low Channel 5500 MHz

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



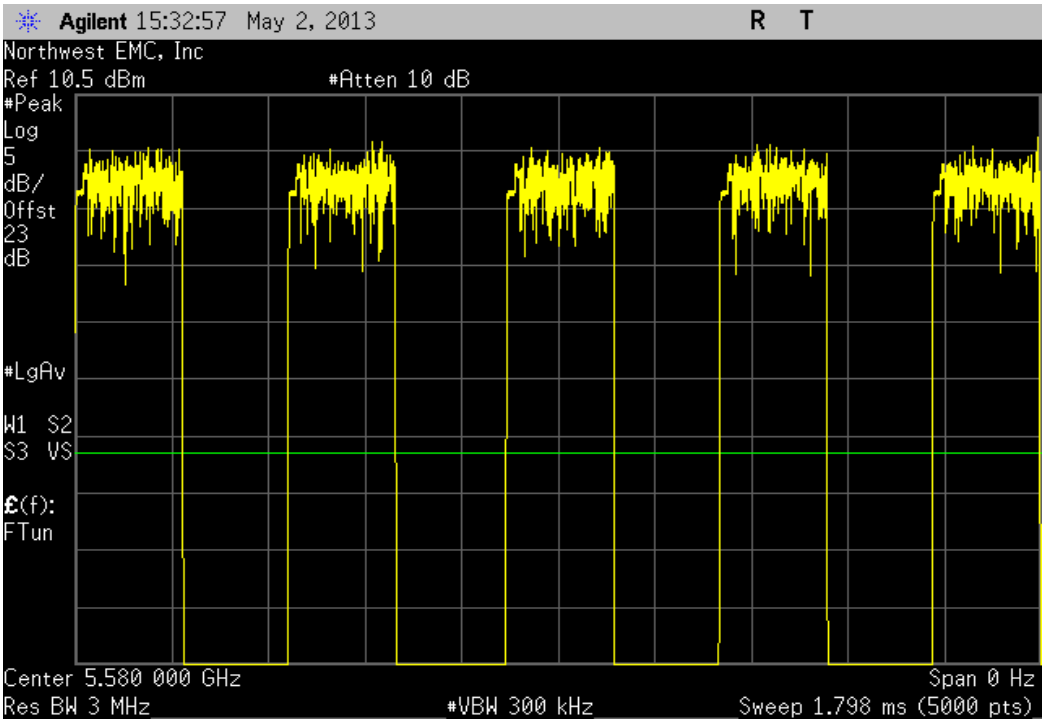
802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 116, Mid Channel 5580 MHz

Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
199.484 uS	396.8 uS	1	50.3	N/A	N/A



802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 116, Mid Channel 5580 MHz

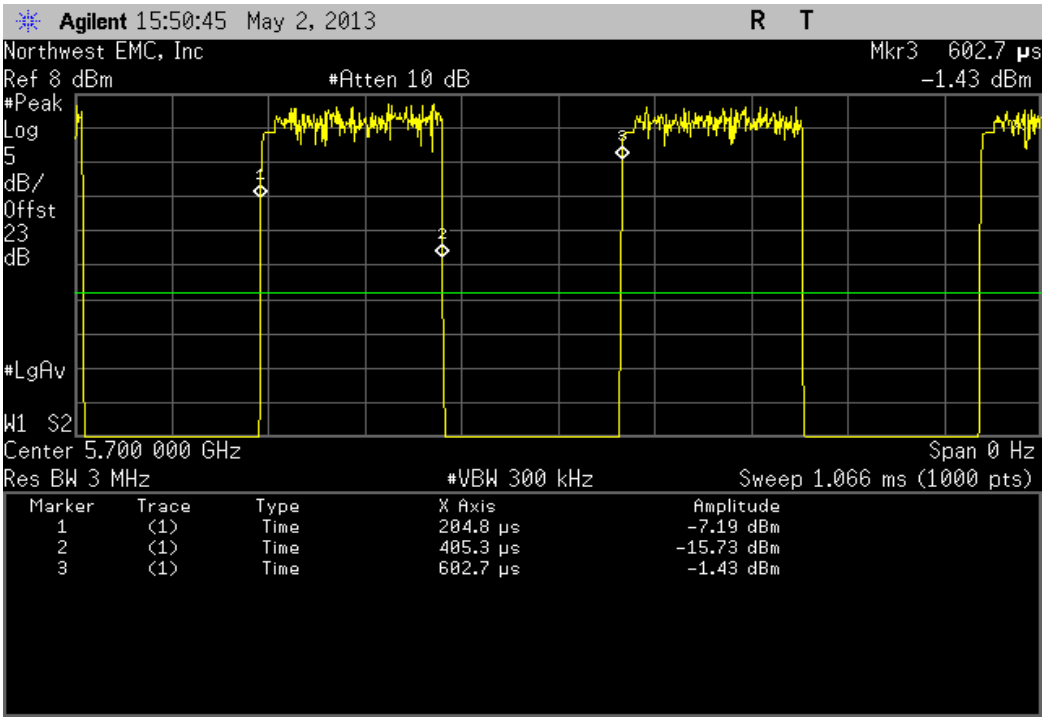
Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
N/A	N/A	5	N/A	N/A	N/A



Transmissions Burst Duration

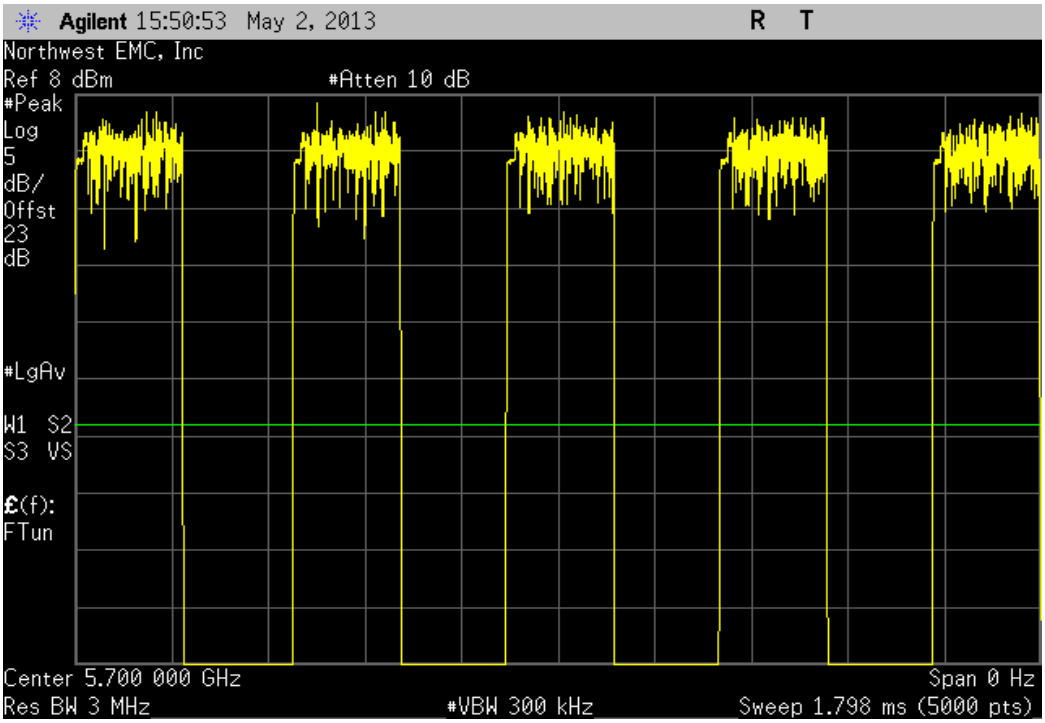
802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 140, High Channel5700 MHz

	Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
	200.516 uS	397.867 uS	1	50.4	N/A	N/A



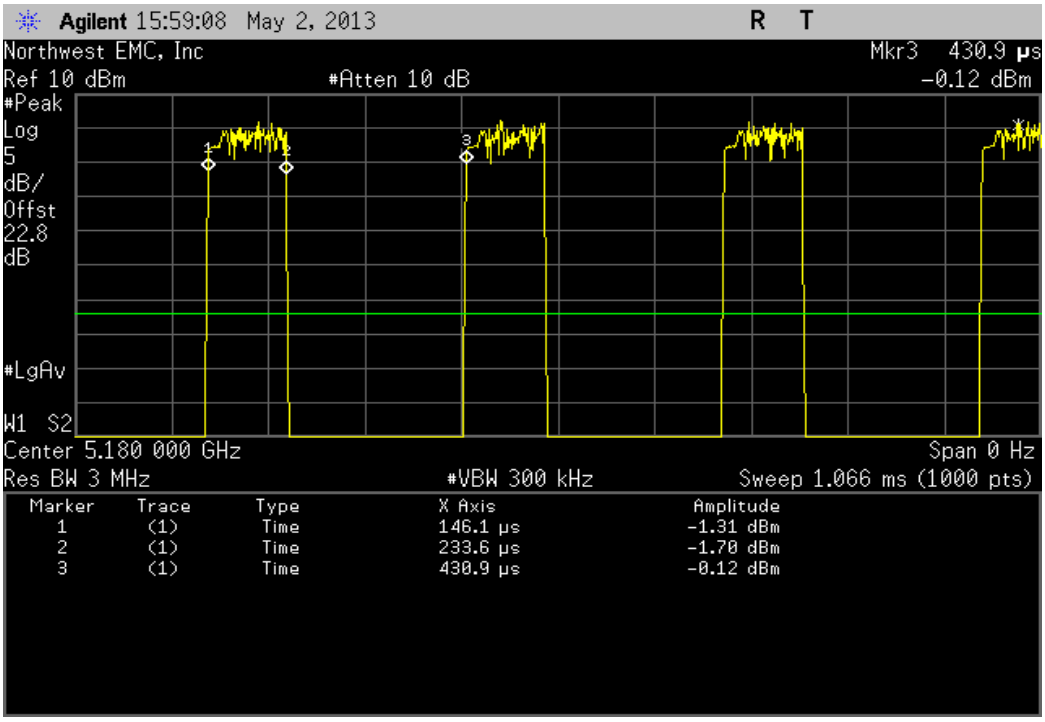
802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 140, High Channel5700 MHz

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



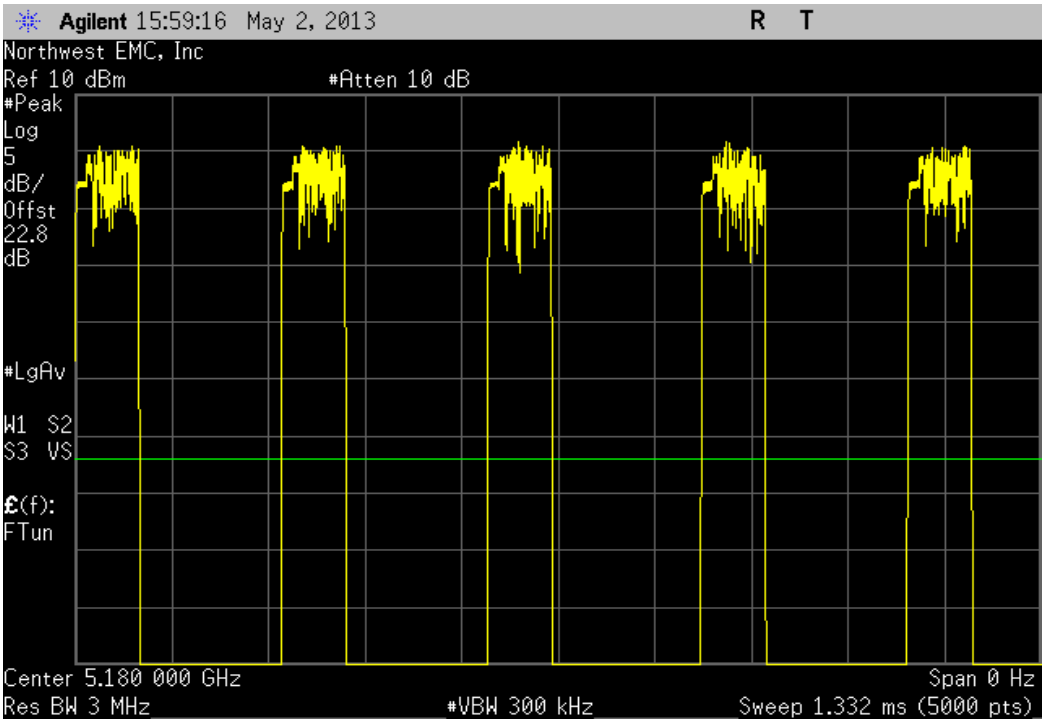
802.11(a) 18 Mbps, 5150 - 5250 MHz Band, Channel 36, Low Channel 5180 MHz

	Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
	87.484 uS	284.8 uS	1	30.7	N/A	N/A



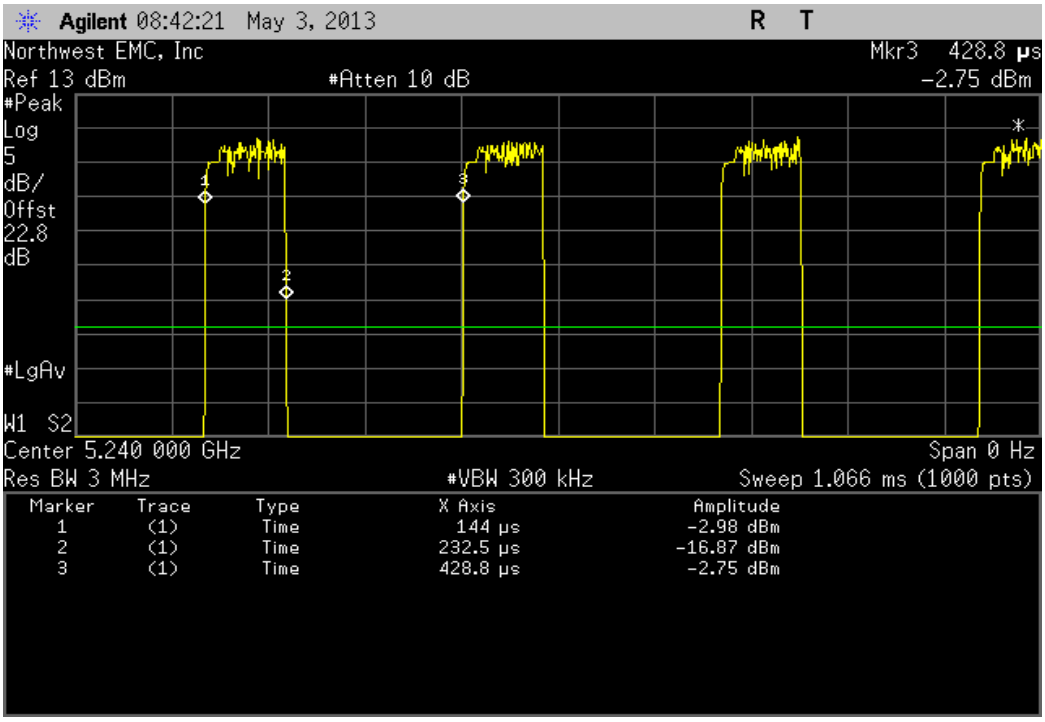
802.11(a) 18 Mbps, 5150 - 5250 MHz Band, Channel 36, Low Channel 5180 MHz

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



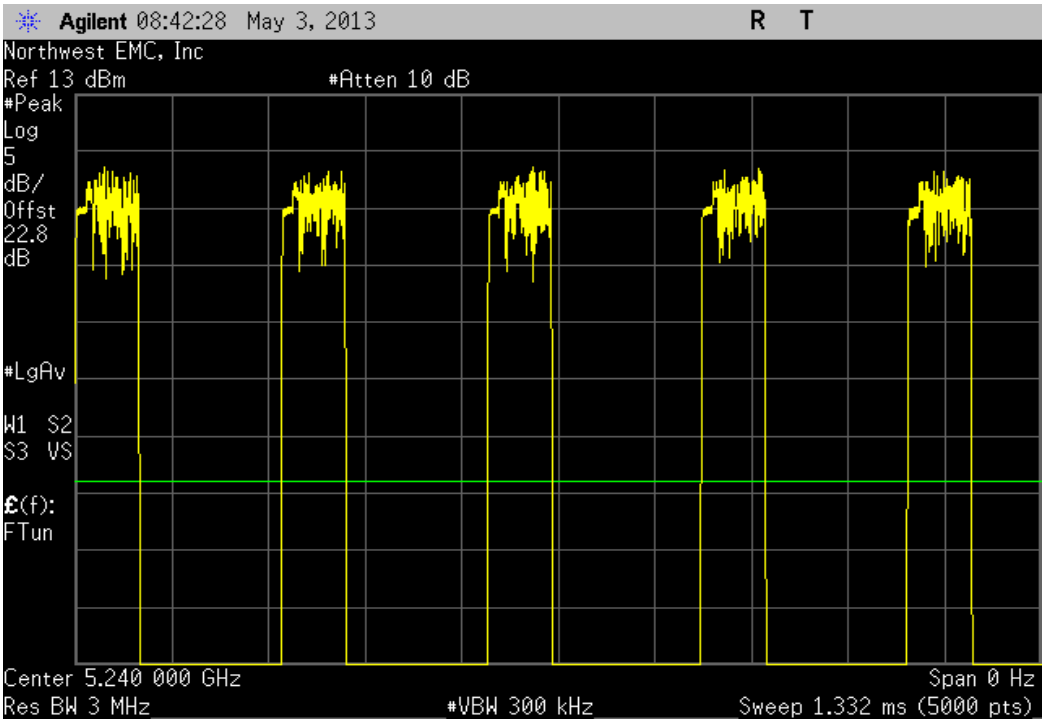
802.11(a) 18 Mbps, 5150 - 5250 MHz Band, Channel 48, High Channel 5240 MHz

Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
88.516 uS	284.766 uS	1	31.1	N/A	N/A



802.11(a) 18 Mbps, 5150 - 5250 MHz Band, Channel 48, High Channel 5240 MHz

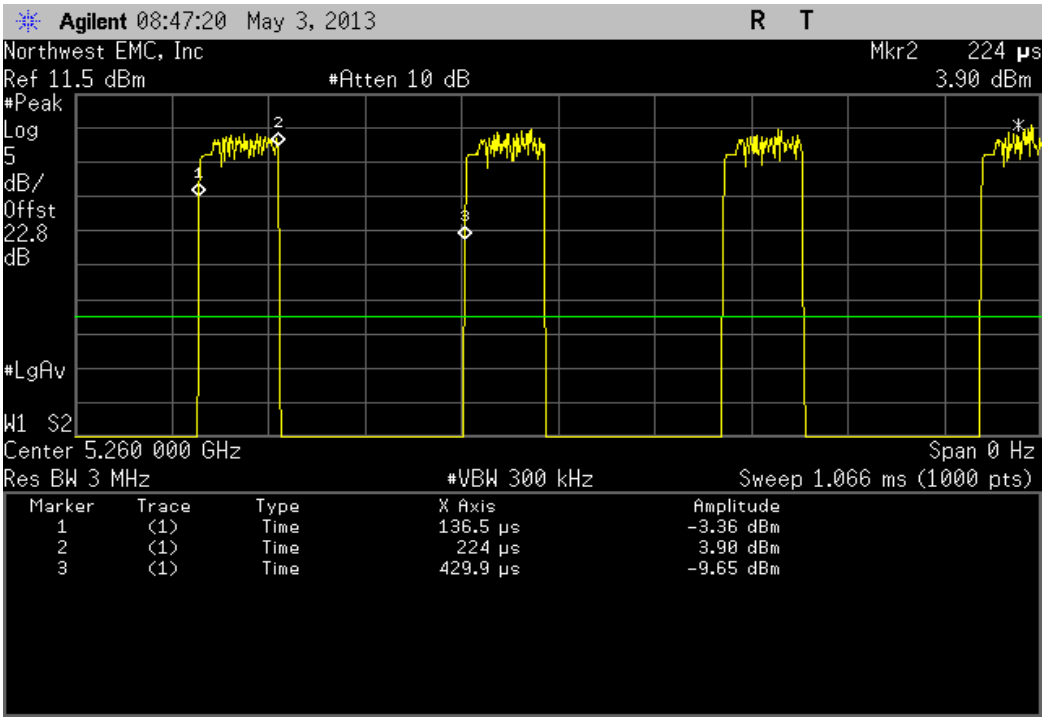
Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
N/A	N/A	5	N/A	N/A	N/A



Transmissions Burst Duration

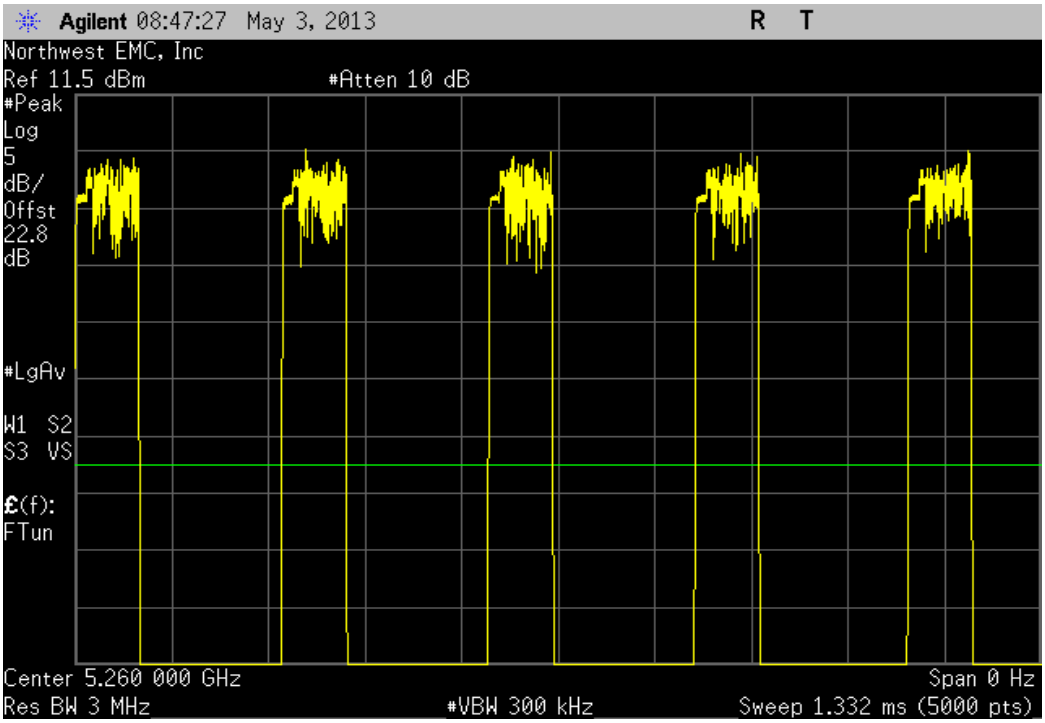
802.11(a) 18 Mbps, 5250 - 5350 MHz Band, Channel 52, Low Channel 5260 MHz

	Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
	87.449 uS	293.333 uS	1	29.8	N/A	N/A



802.11(a) 18 Mbps, 5250 - 5350 MHz Band, Channel 52, Low Channel 5260 MHz

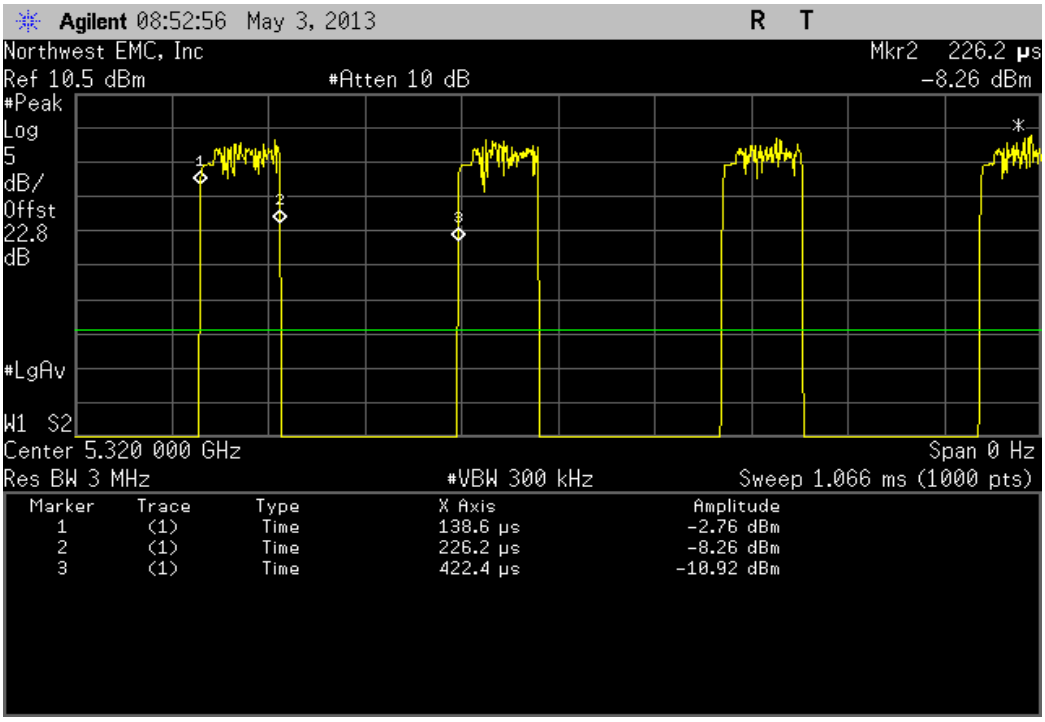
	Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
	N/A	N/A	5	N/A	N/A	N/A



Transmissions Burst Duration

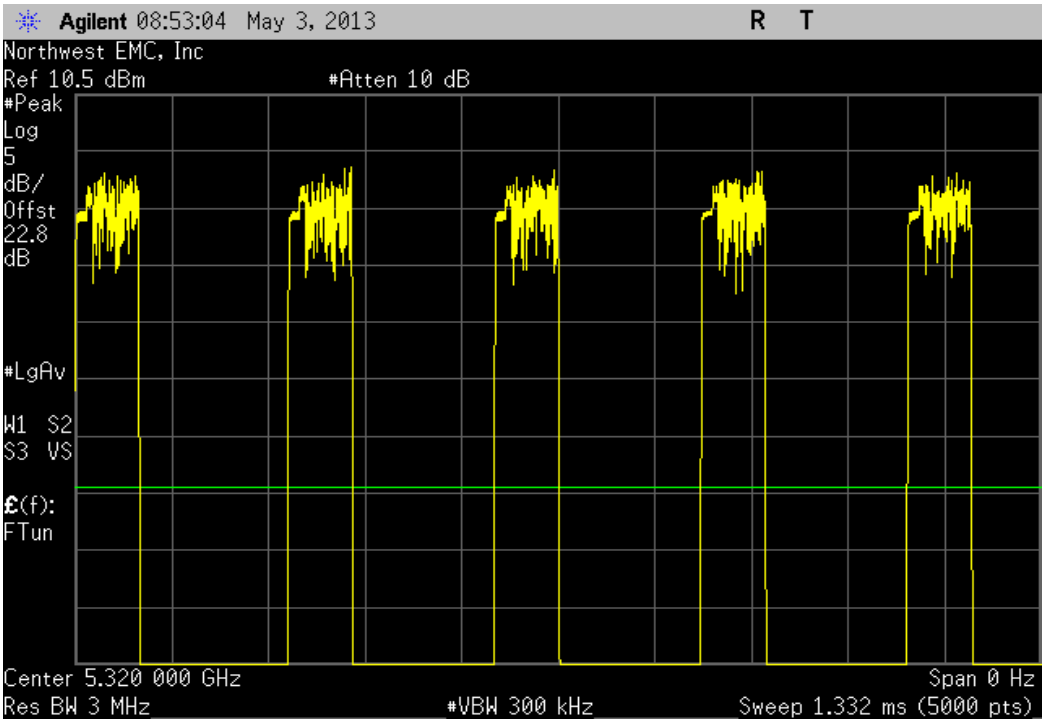
802.11(a) 18 Mbps, 5250 - 5350 MHz Band, Channel 64, High Channel 5320 MHz

Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
87.501 uS	283.733 uS	1	30.8	N/A	N/A



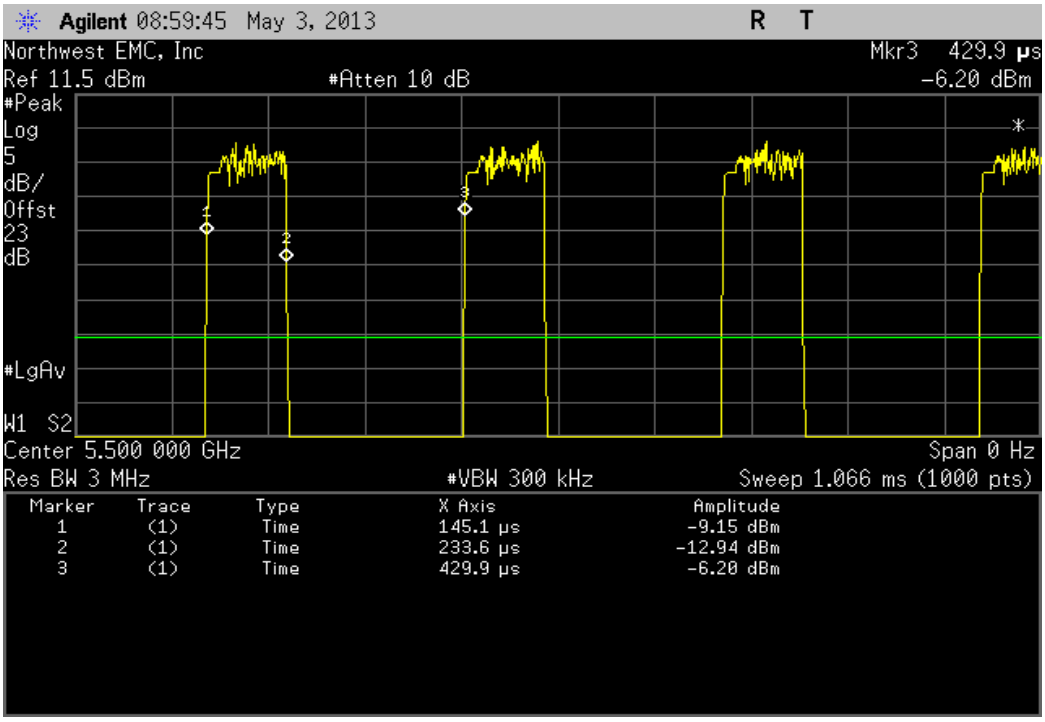
802.11(a) 18 Mbps, 5250 - 5350 MHz Band, Channel 64, High Channel 5320 MHz

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



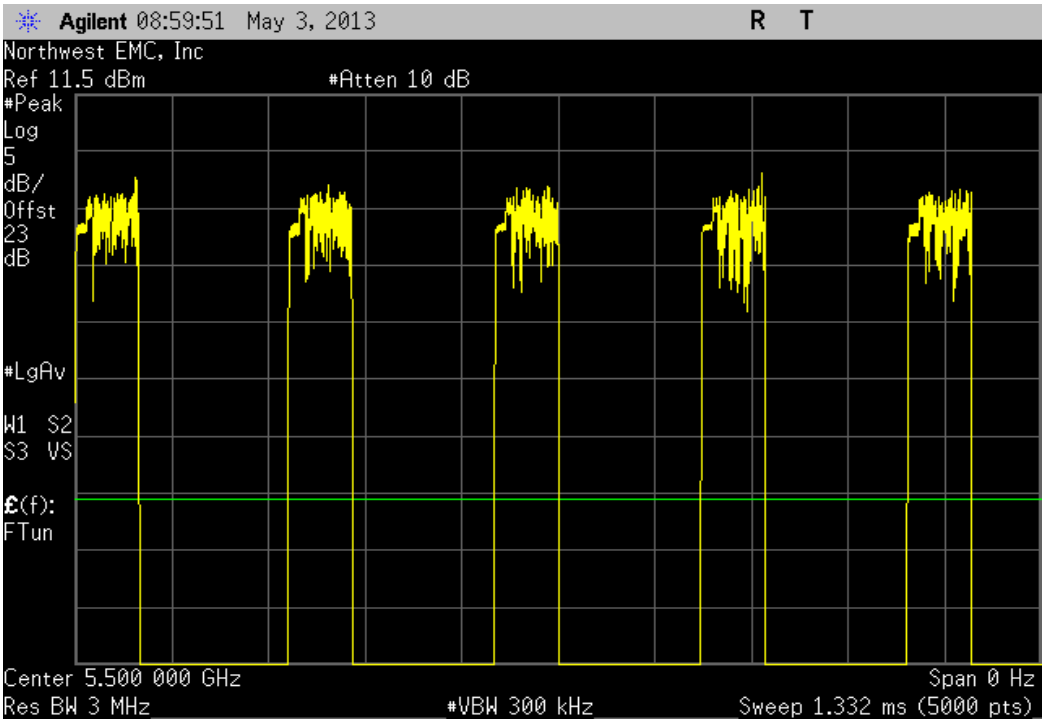
802.11(a) 18 Mbps, 5470 - 5725 MHz Band, Channel 100, Low Channel 5500 MHz

	Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
	88.516 uS	284.8 uS	1	31.1	N/A	N/A



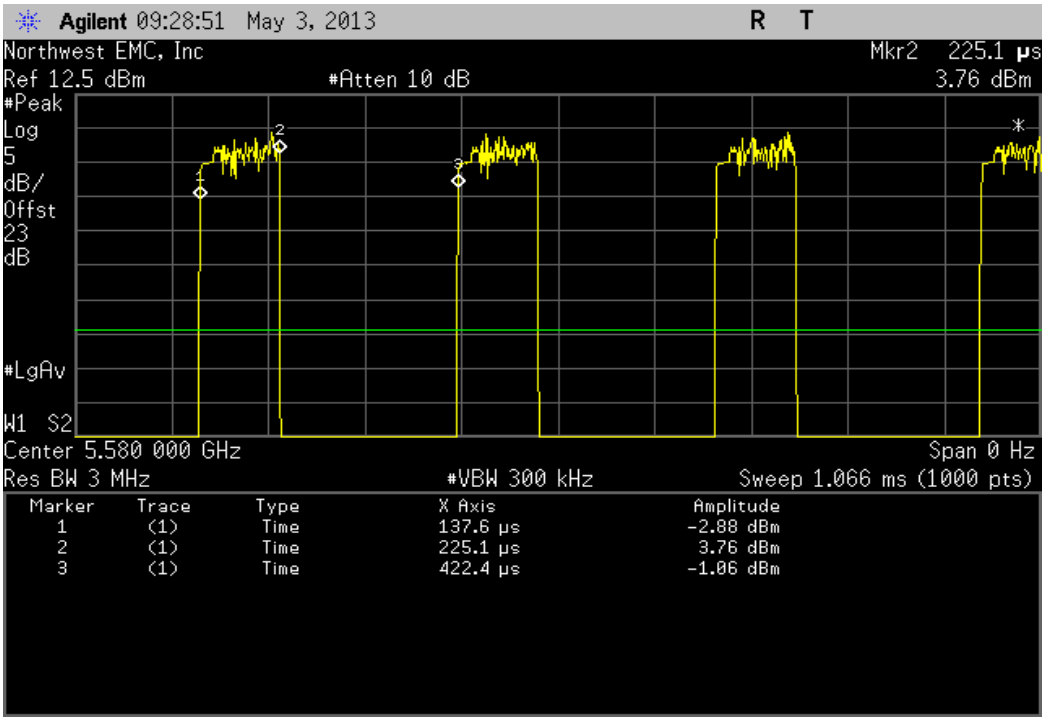
802.11(a) 18 Mbps, 5470 - 5725 MHz Band, Channel 100, Low Channel 5500 MHz

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



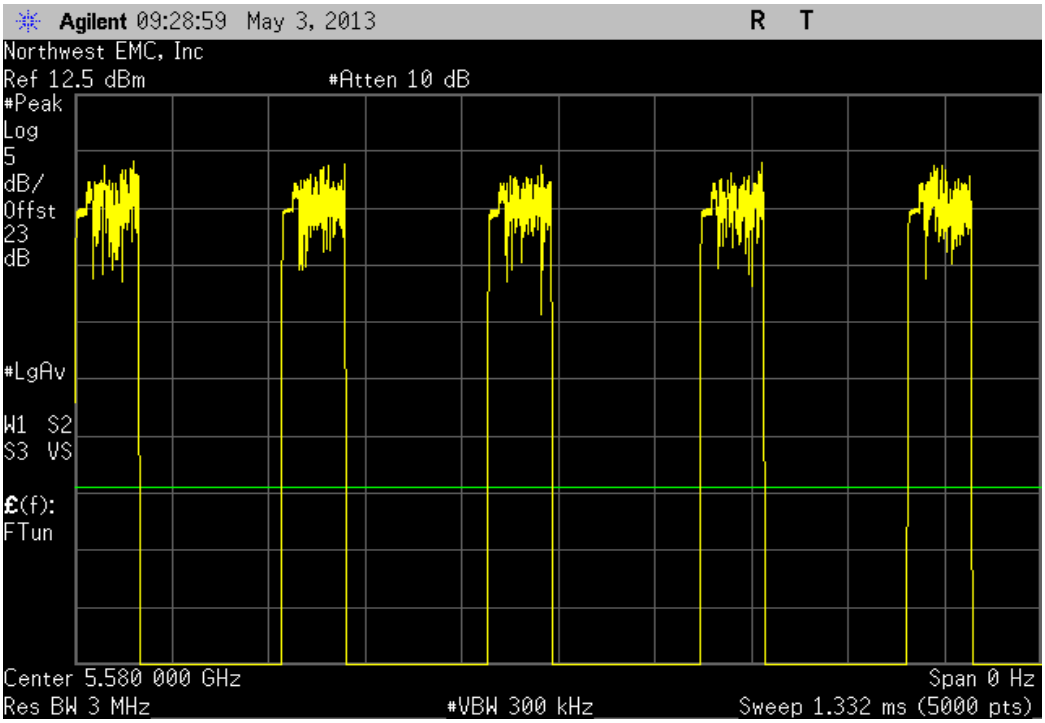
802.11(a) 18 Mbps, 5470 - 5725 MHz Band, Channel 116, Mid Channel 5580 MHz

Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
87.501 uS	284.8 uS	1	30.7	N/A	N/A



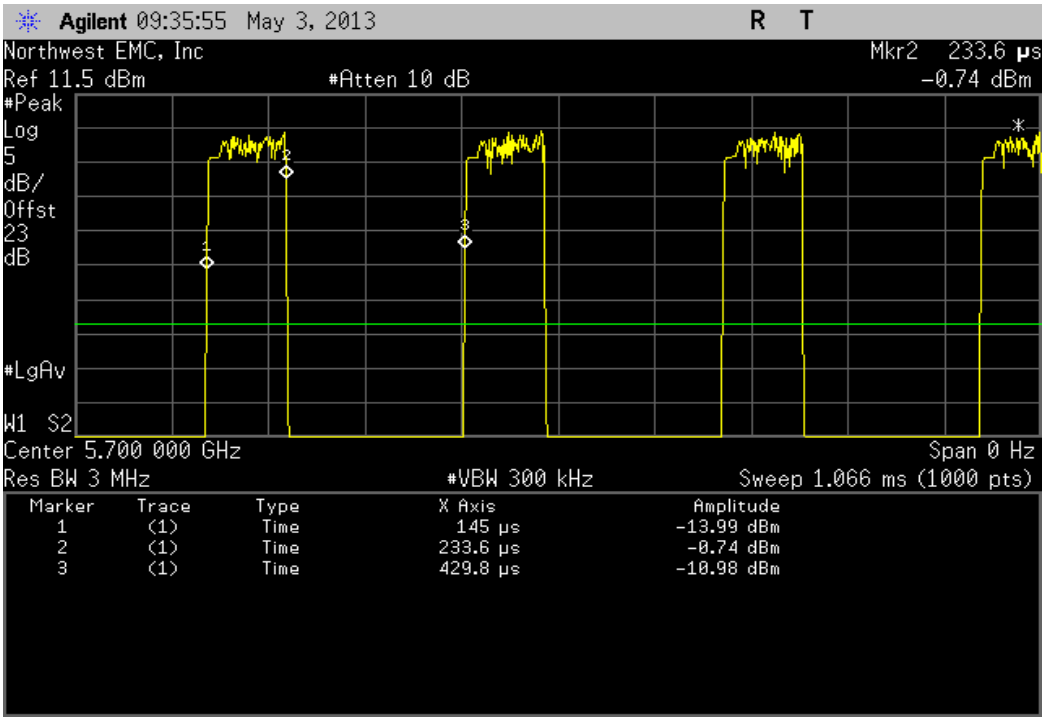
802.11(a) 18 Mbps, 5470 - 5725 MHz Band, Channel 116, Mid Channel 5580 MHz

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



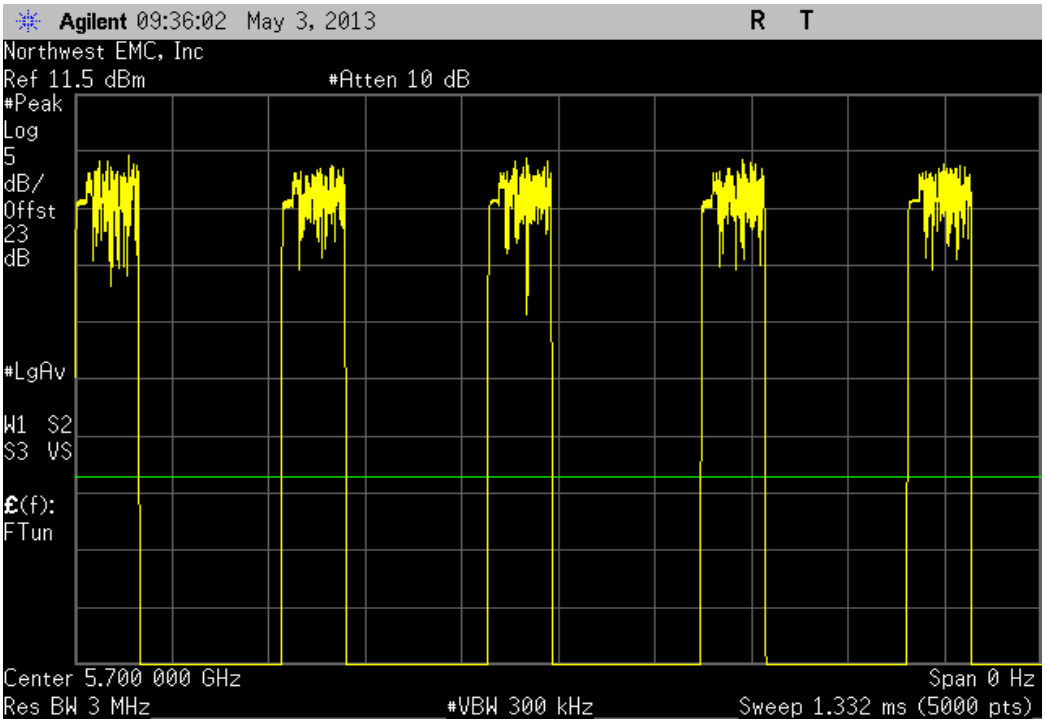
802.11(a) 18 Mbps, 5470 - 5725 MHz Band, Channel 140, High Channel 5700 MHz

Pulse Width	Period	Number of Pulses	Value (%)	Limit	Result
88.568 uS	284.8 uS	1	31.1	N/A	N/A



802.11(a) 18 Mbps, 5470 - 5725 MHz Band, Channel 140, High Channel 5700 MHz

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



Peak Transmit Power

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	3/25/2013	12
MXG Vector Signal Generator	Agilent	N5182A	TIF	NCR	0
Power Meter	Gigatronics	8651A	SPM	1/9/2012	24
Power Sensor	Gigatronics	80701A	SPL	7/8/2011	24
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Attenuator, 6 dB, 'SMA'	N/A	93459 3330A-6	AUF	3/5/2013	12
40GHz DC Block	Miteq	DCB4000	AMD	6/25/2012	12
Spectrum Analyzer	Agilent	E4446A	AAQ	2/7/2012	24

TEST DESCRIPTION

FCC KDB 789033 D01 General UNII Test Procedures Section E was followed. The transmit frequency was set to the required channels in each band. The transmit power was set to its default maximum. The data rate(s) listed in the datasheet were tested. 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 power spectral density, the transmission pulse duration (T) was measured. The transmission pulse duration and the associated data are found elsewhere in this test report.

The spectrum analyzer settings were as follows:

- The span was set to encompass entire emission bandwidth (B), centered on the transmit channel.
- RBW = 1 MHz, VBW ≥ 3 MHz
- Sample detector was used because Method SA-1 Alternate was used to measure the Maximum Conducted Output Power.
- Trace average 100 traces in power averaging mode (not video averaging).

The peak power spectral density (PPSD) was determined to be the highest level found across the emission in any 1 MHz band after 100 sweeps of power averaging (not video averaging).

Peak Transmit Power

EUT:	Model 444-2225 (Athena UFL)			**Work Order:**	FOCU0140
Serial Number:	02EA4D000027			**Date:**	05/03/13
Customer:	Summit Semiconductor			**Temperature:**	24°C
Attendees:	None			**Humidity:**	30%
Project:	None			**Barometric Pres.:**	1023
Tested by:	Brandon Hobbs	**Power:**	3.3V DC	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.407:2013	ANSI C63.10:2009

COMMENTS

All testing was completed on the highest output power antenna port A2.

DEVIATIONS FROM TEST STANDARD

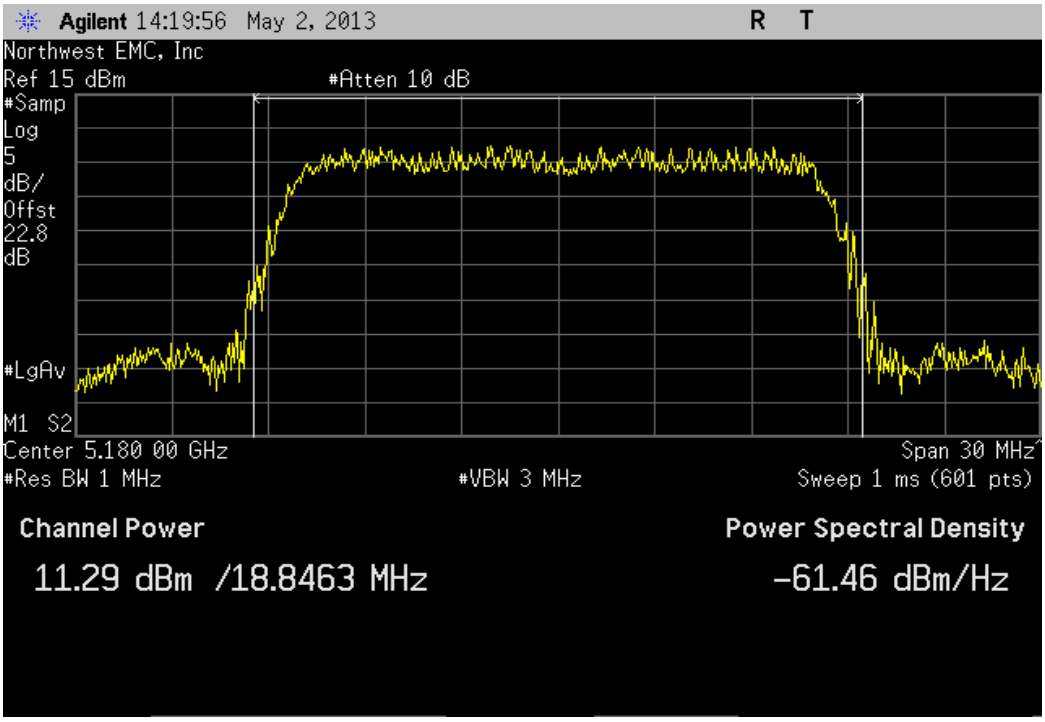
None

Configuration #	5	Signature

		Value	Limit	Result
802.11(a) 6 Mbps				
	5150 - 5250 MHz Band			
	Channel 36, Low Channel 5180 MHz	11.292 dBm	< 17 dBm	Pass
	Channel 48, High Channel 5240 MHz	11.465 dBm	< 17 dBm	Pass
	5250 - 5350 MHz Band			
	Channel 52, Low Channel 5260 MHz	11.037 dBm	< 24 dBm	Pass
	Channel 64, High Channel 5320 MHz	11.419 dBm	< 24 dBm	Pass
	5470 - 5725 MHz Band			
	Channel 100, Low Channel 5500 MHz	11.275 dBm	< 24 dBm	Pass
	Channel 116, Mid Channel 5580 MHz	11.051 dBm	< 24 dBm	Pass
	Channel 140, High Channel5700 MHz	11.267 dBm	< 24 dBm	Pass
802.11(a) 18 Mbps				
	5150 - 5250 MHz Band			
	Channel 36, Low Channel 5180 MHz	11.049 dBm	< 17 dBm	Pass
	Channel 48, High Channel 5240 MHz	11.712 dBm	< 17 dBm	Pass
	5250 - 5350 MHz Band			
	Channel 52, Low Channel 5260 MHz	11.294 dBm	< 24 dBm	Pass
	Channel 64, High Channel 5320 MHz	11.729 dBm	< 24 dBm	Pass
	5470 - 5725 MHz Band			
	Channel 100, Low Channel 5500 MHz	11.421 dBm	< 24 dBm	Pass
	Channel 116, Mid Channel 5580 MHz	11.279 dBm	< 24 dBm	Pass
	Channel 140, High Channel 5700 MHz	10.984 dBm	< 24 dBm	Pass

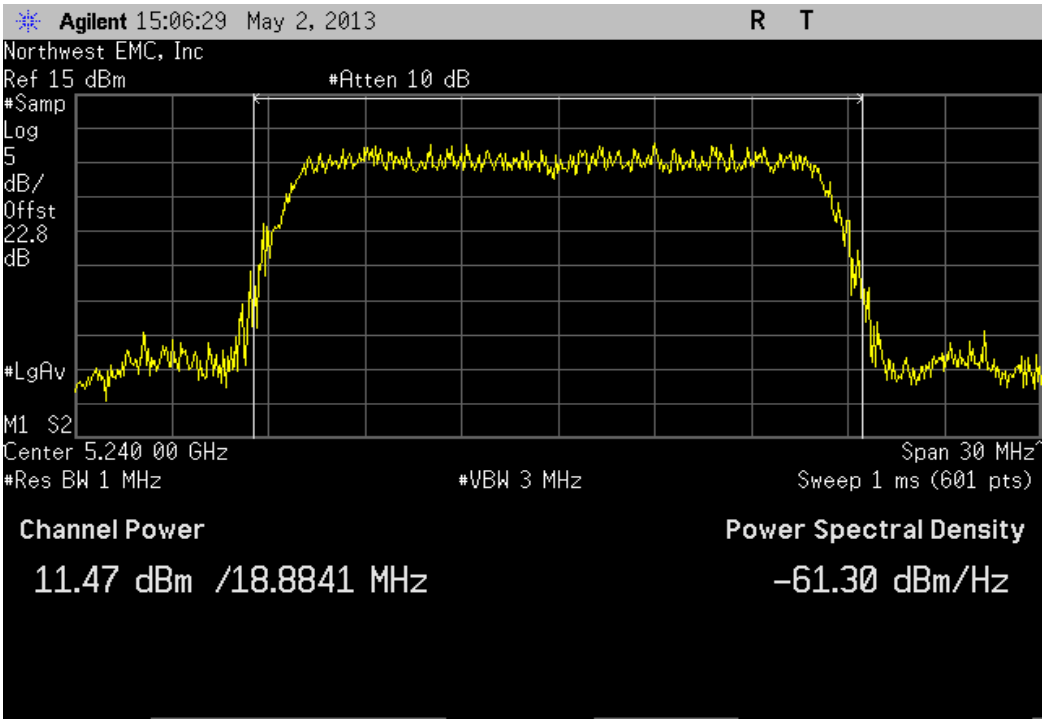
802.11(a) 6 Mbps, 5150 - 5250 MHz Band, Channel 36, Low Channel 5180 MHz

				Value	Limit	Result
				11.292 dBm	< 17 dBm	Pass



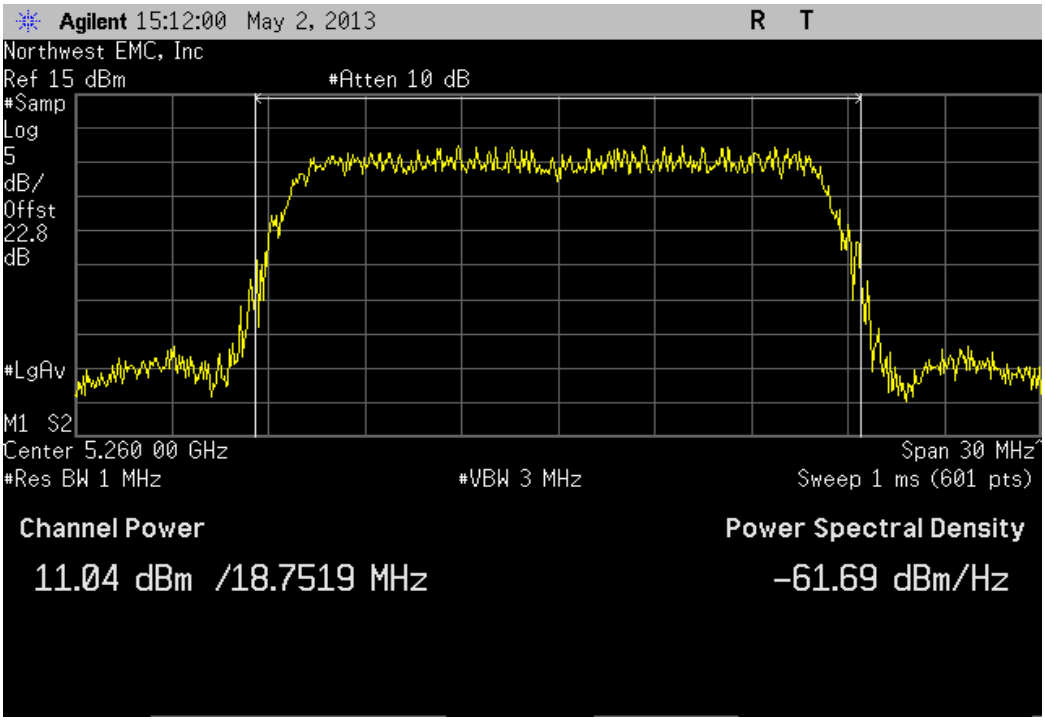
802.11(a) 6 Mbps, 5150 - 5250 MHz Band, Channel 48, High Channel 5240 MHz

				Value	Limit	Result
				11.465 dBm	< 17 dBm	Pass



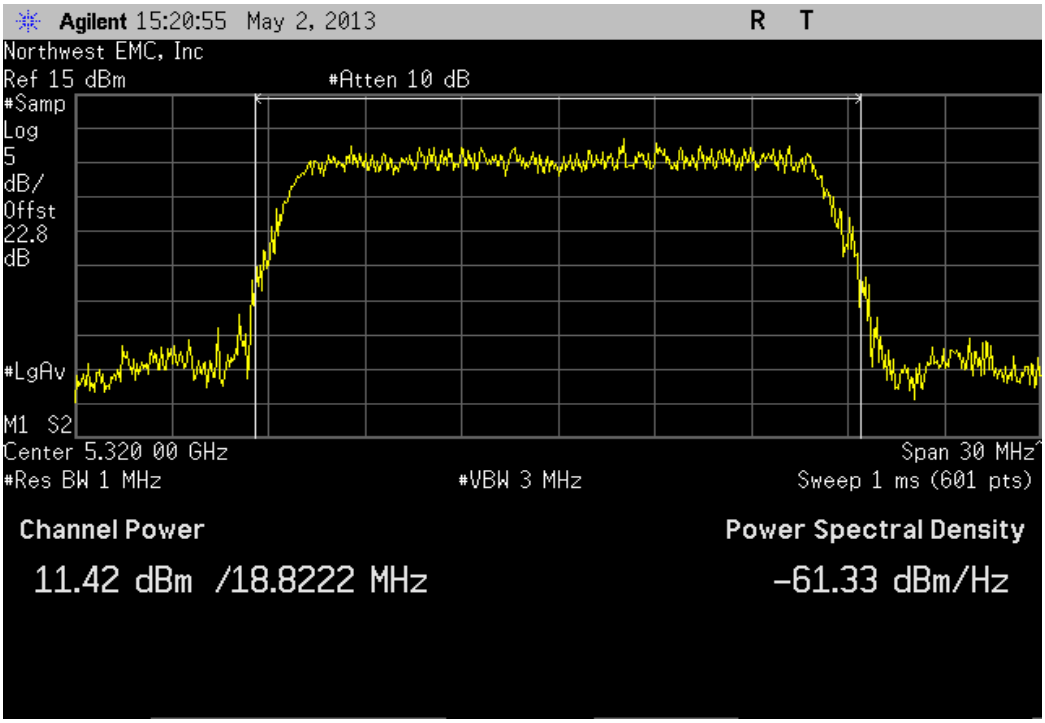
802.11(a) 6 Mbps, 5250 - 5350 MHz Band, Channel 52, Low Channel 5260 MHz

				Value	Limit	Result
				11.037 dBm	< 24 dBm	Pass



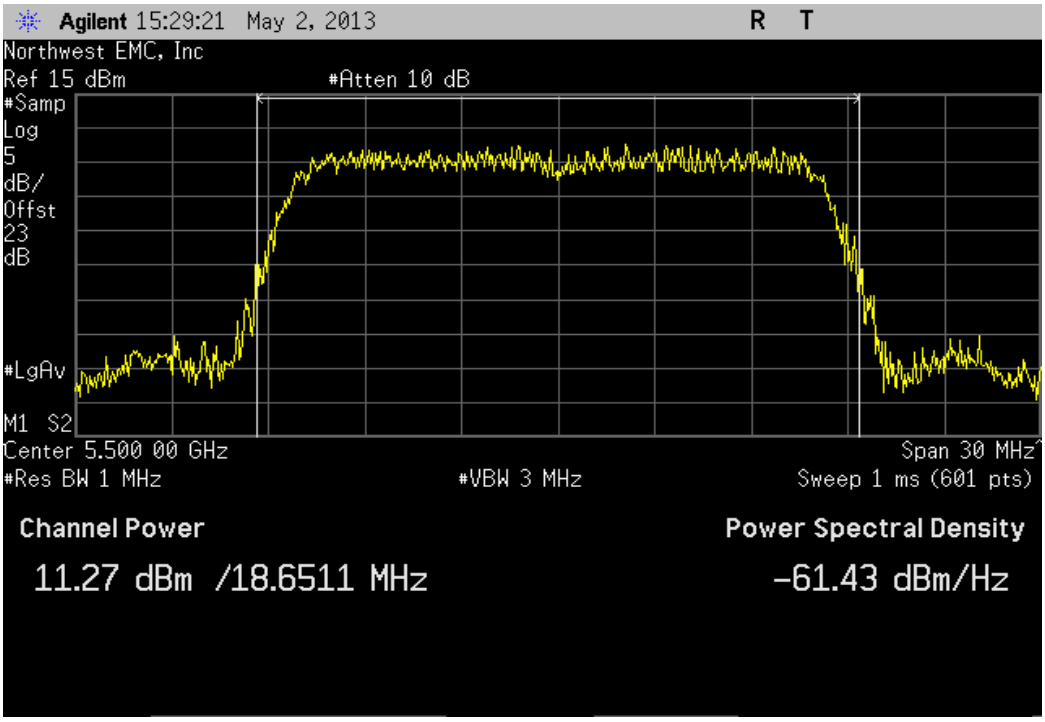
802.11(a) 6 Mbps, 5250 - 5350 MHz Band, Channel 64, High Channel 5320 MHz

				Value	Limit	Result
				11.419 dBm	< 24 dBm	Pass



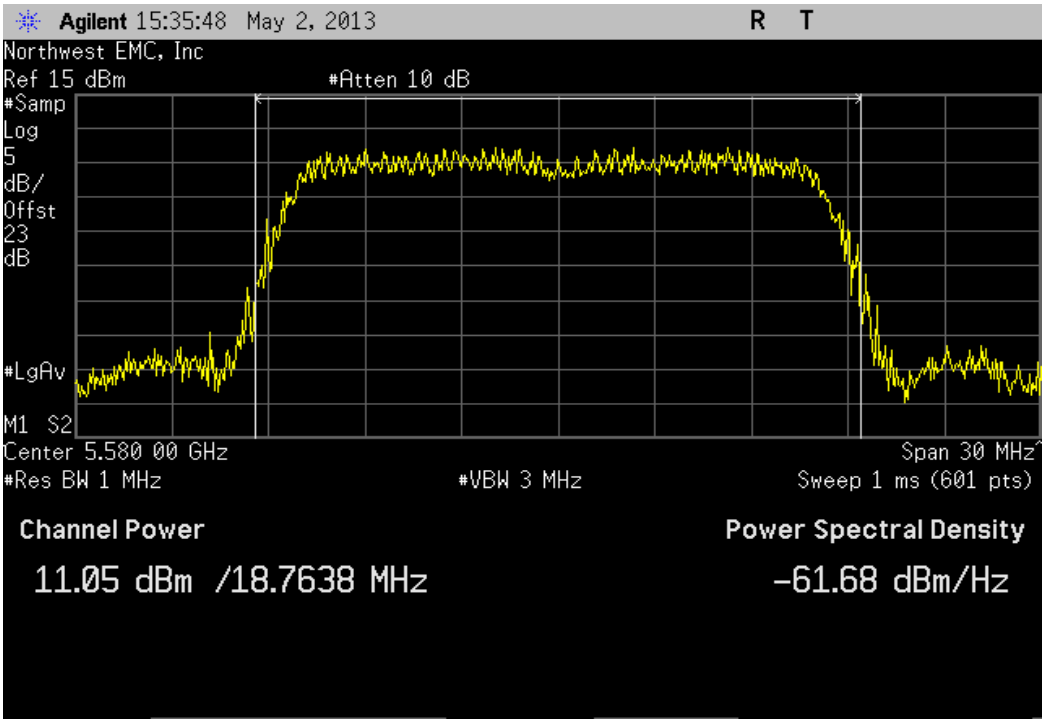
802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 100, Low Channel 5500 MHz

				Value	Limit	Result
				11.275 dBm	< 24 dBm	Pass



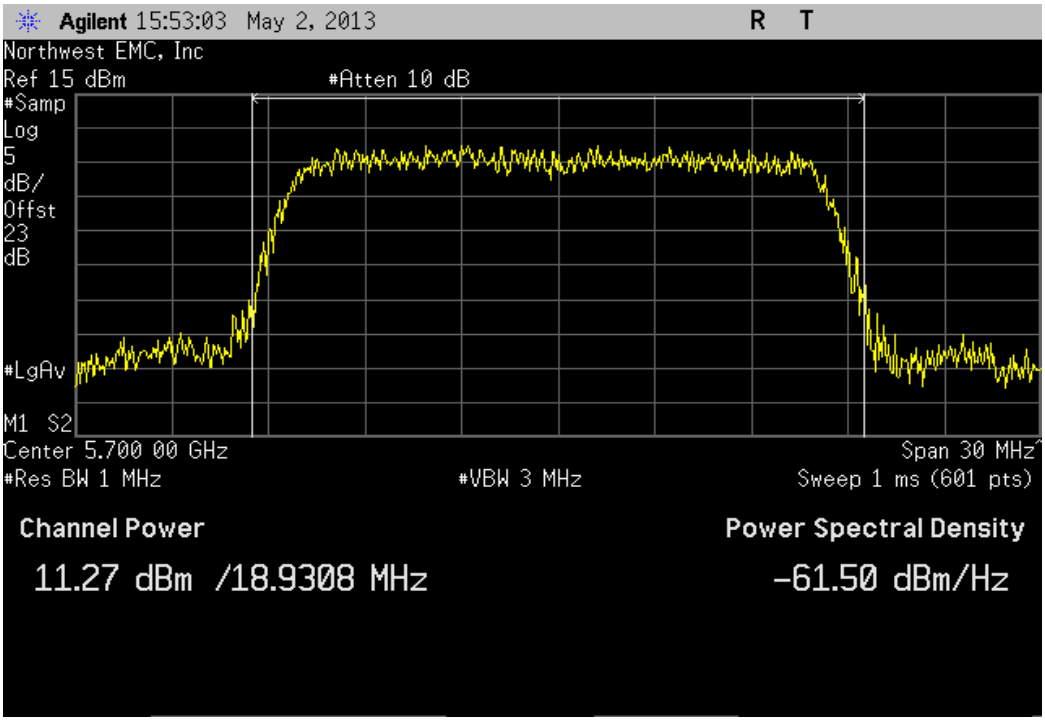
802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 116, Mid Channel 5580 MHz

				Value	Limit	Result
				11.051 dBm	< 24 dBm	Pass



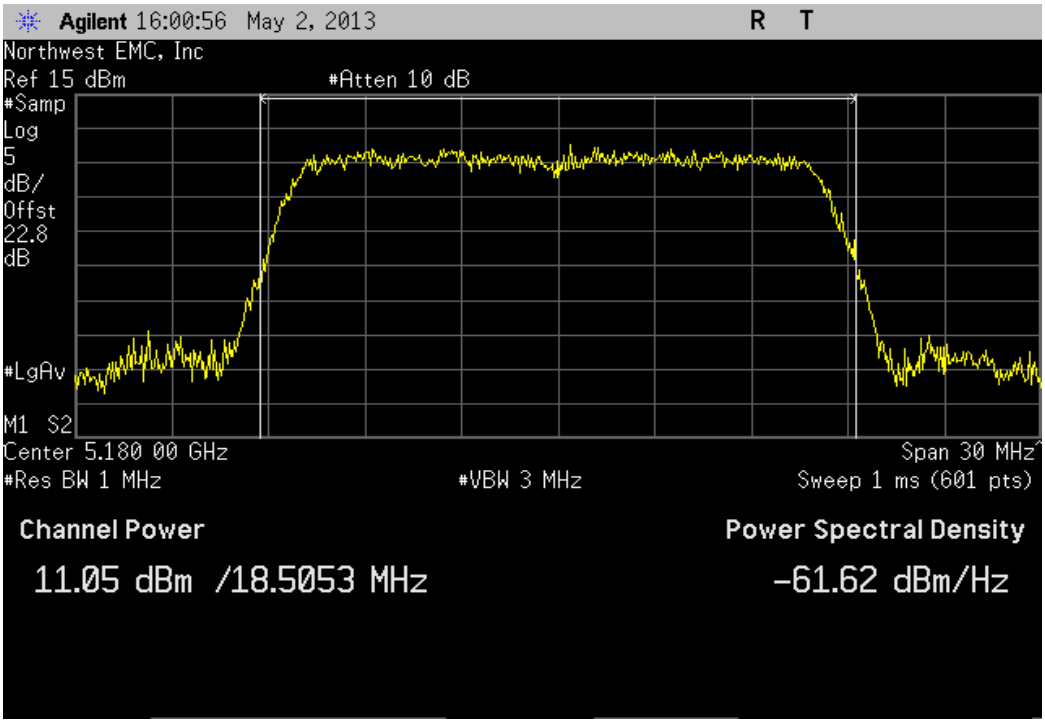
802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 140, High Channel5700 MHz

				Value	Limit	Result
				11.267 dBm	< 24 dBm	Pass



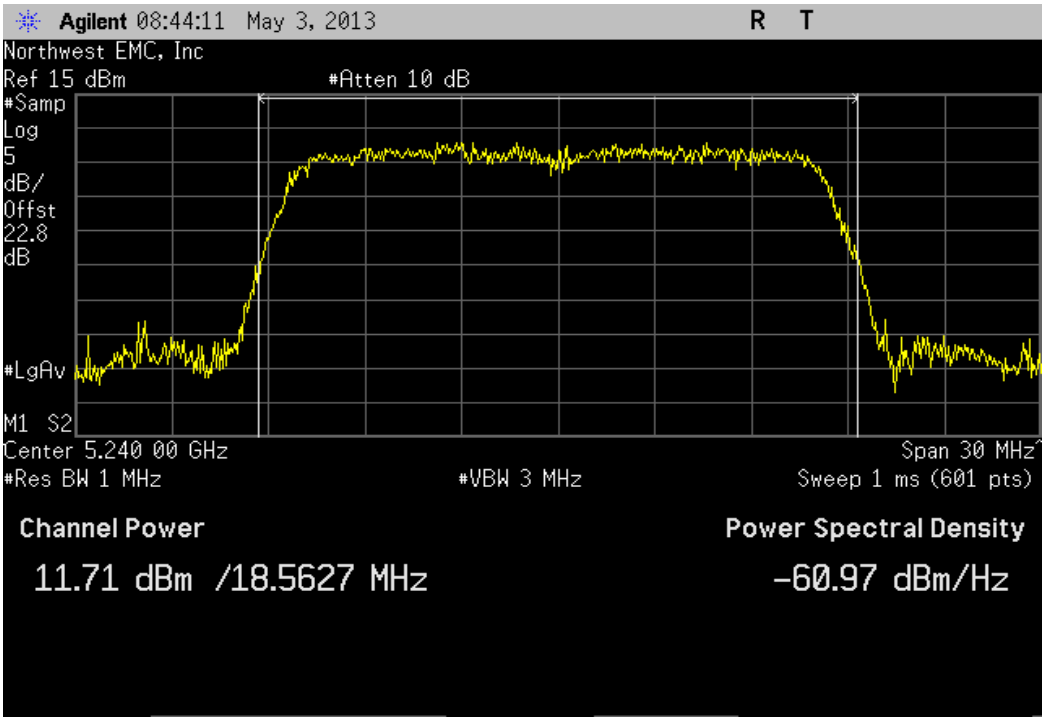
802.11(a) 18 Mbps, 5150 - 5250 MHz Band, Channel 36, Low Channel 5180 MHz

				Value	Limit	Result
				11.049 dBm	< 17 dBm	Pass



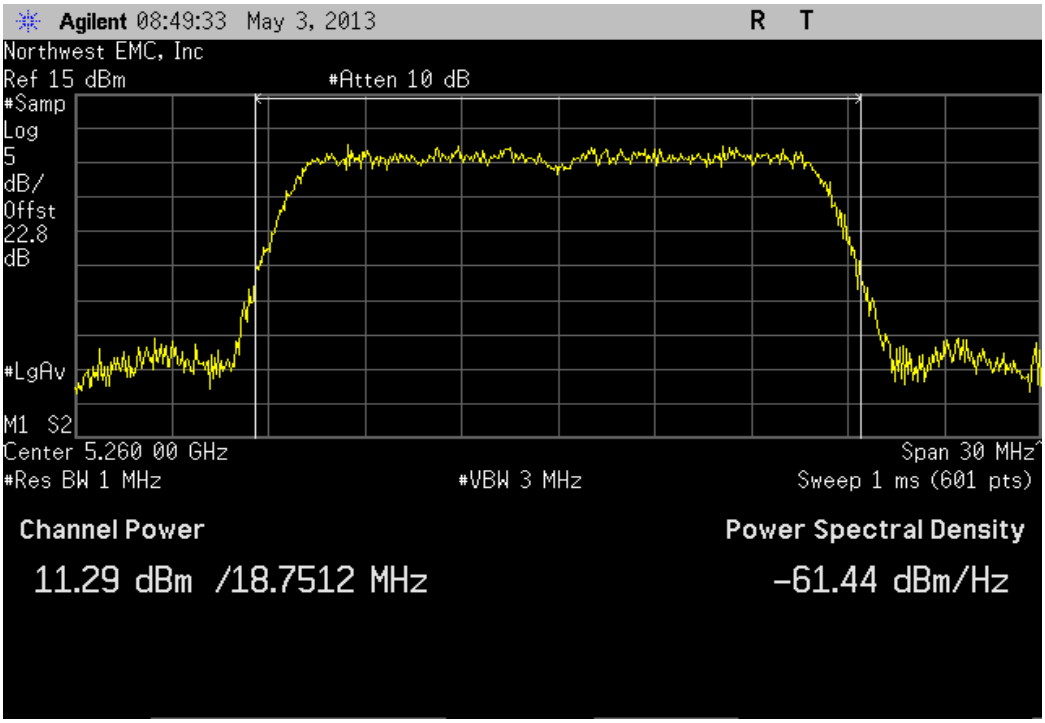
802.11(a) 18 Mbps, 5150 - 5250 MHz Band, Channel 48, High Channel 5240 MHz

				Value	Limit	Result
				11.712 dBm	< 17 dBm	Pass



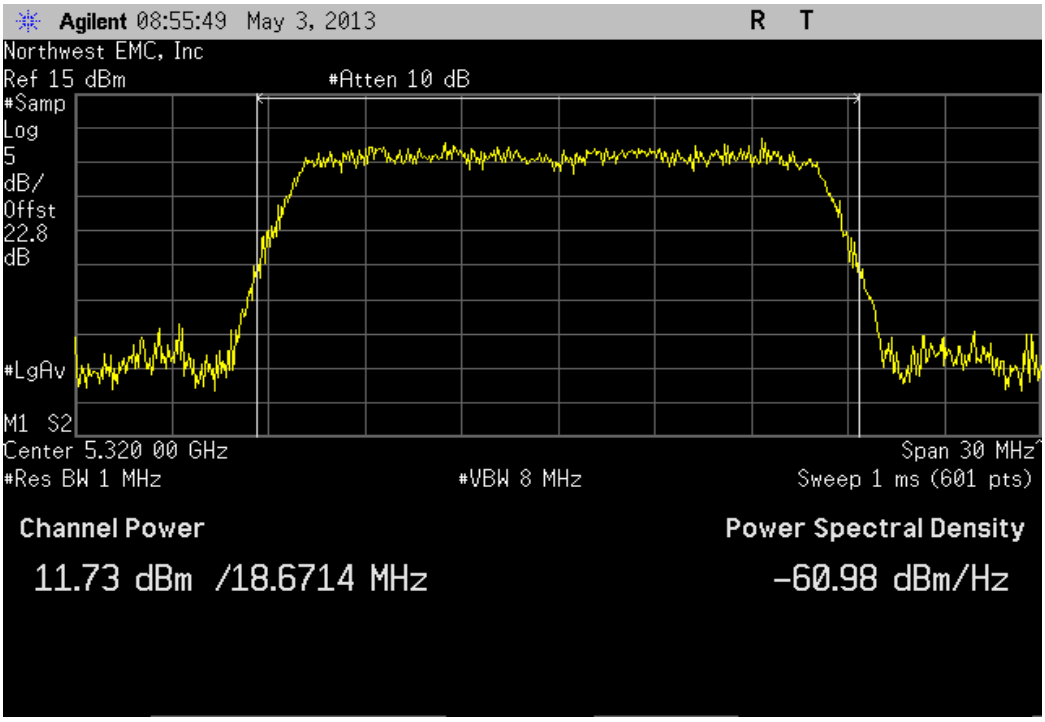
802.11(a) 18 Mbps, 5250 - 5350 MHz Band, Channel 52, Low Channel 5260 MHz

				Value	Limit	Result
				11.294 dBm	< 24 dBm	Pass



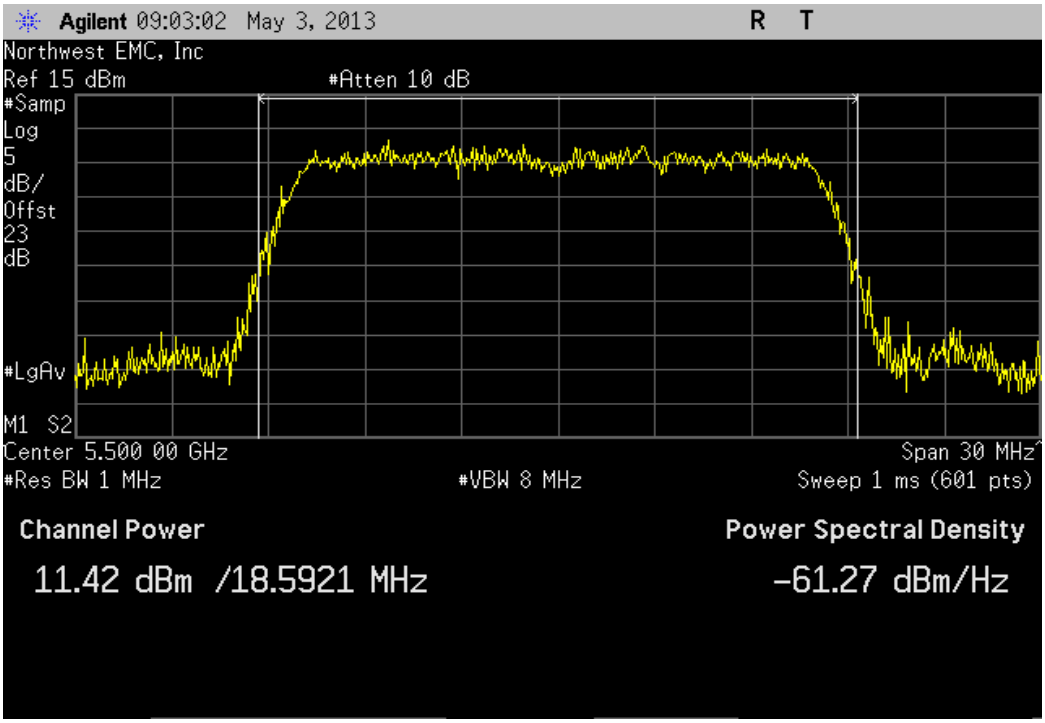
802.11(a) 18 Mbps, 5250 - 5350 MHz Band, Channel 64, High Channel 5320 MHz

				Value	Limit	Result
				11.729 dBm	< 24 dBm	Pass



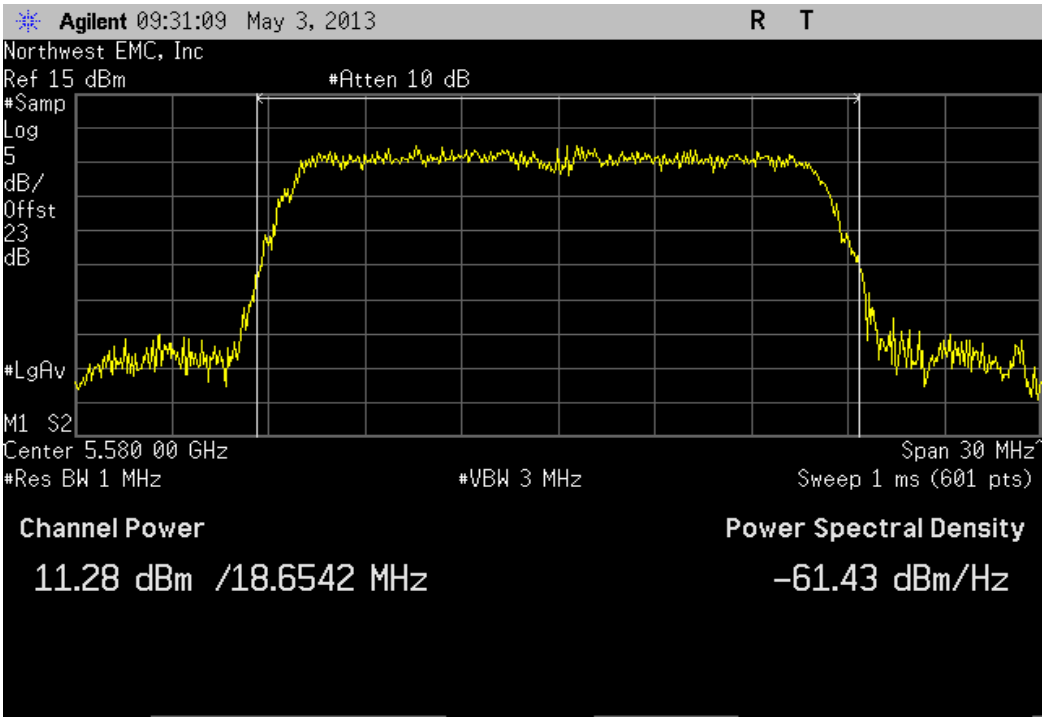
802.11(a) 18 Mbps, 5470 - 5725 MHz Band, Channel 100, Low Channel 5500 MHz

				Value	Limit	Result
				11.421 dBm	< 24 dBm	Pass



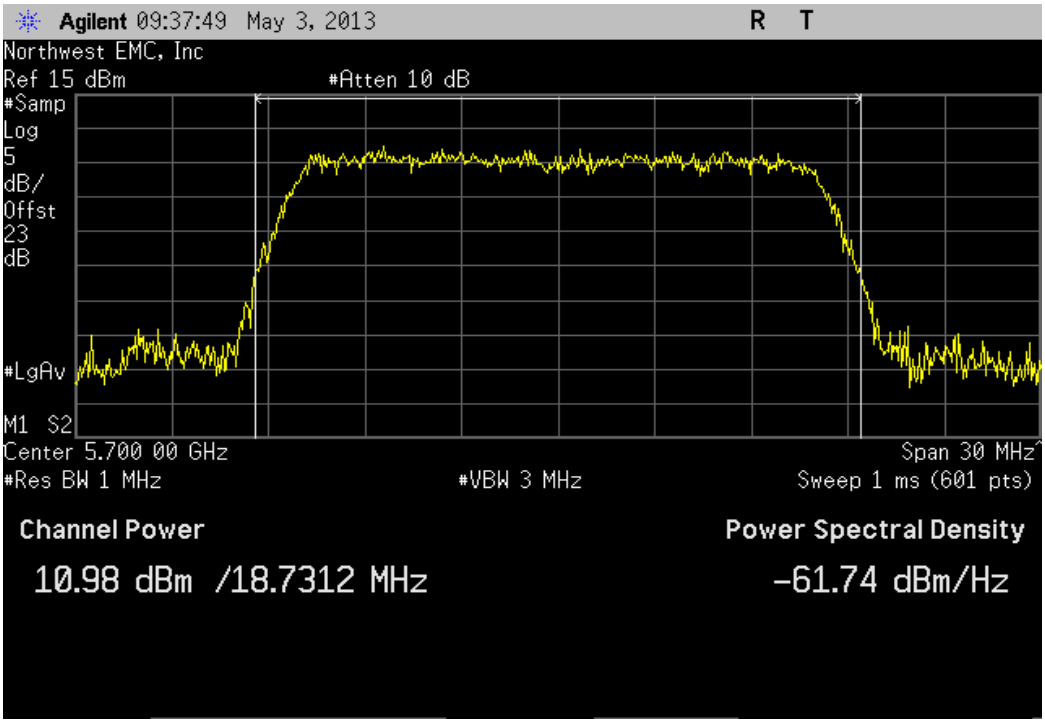
802.11(a) 18 Mbps, 5470 - 5725 MHz Band, Channel 116, Mid Channel 5580 MHz

				Value	Limit	Result
				11.279 dBm	< 24 dBm	Pass



802.11(a) 18 Mbps, 5470 - 5725 MHz Band, Channel 140, High Channel 5700 MHz

				Value	Limit	Result
				10.984 dBm	< 24 dBm	Pass



Peak Power Spectral Density

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	3/25/2013	12
MXG Vector Signal Generator	Agilent	N5182A	TIF	NCR	0
Power Meter	Gigatronics	8651A	SPM	1/9/2012	24
Power Sensor	Gigatronics	80701A	SPL	7/8/2011	24
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Attenuator, 6 dB, 'SMA'	N/A	93459 3330A-6	AUF	3/5/2013	12
40GHz DC Block	Miteq	DCB4000	AMD	6/25/2012	12
Spectrum Analyzer	Agilent	E4446A	AAQ	2/7/2012	24

TEST DESCRIPTION

FCC KDB 789033 D01 General UNII Test Procedures Section F was followed. The transmit frequency was set to the required channels in each band. The transmit power was set to its default maximum. The data rate(s) listed in the datasheet were tested. 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 power spectral density, the transmission pulse duration (T) was measured. The transmission pulse duration and the associated data are found elsewhere in this test report.

The spectrum analyzer settings were as follows:

- The span was set to encompass entire emission bandwidth (B), centered on the transmit channel.
- RBW = 1 MHz, VBW ≥ 3 MHz
- Sample detector was used because Method SA-1 Alternate was used to measure the Maximum Conducted Output Power.
- Trace average 100 traces in power averaging mode (not video averaging).

The peak power spectral density (PPSD) was determined to be the highest level found across the emission in any 1 MHz band after 100 sweeps of power averaging (not video averaging).

Peak Power Spectral Density

EUT:	Model 444-2225 (Athena UFL)			**Work Order:**	FOCU0140
Serial Number:	02EA4D000027			**Date:**	05/03/13
Customer:	Summit Semiconductor			**Temperature:**	24°C
Attendees:	None			**Humidity:**	30%
Project:	None			**Barometric Pres.:**	1023
Tested by:	Brandon Hobbs	**Power:**	3.3V DC	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.407:2013	ANSI C63.10:2009

COMMENTS

All testing was completed on the highest output power antenna port A2.

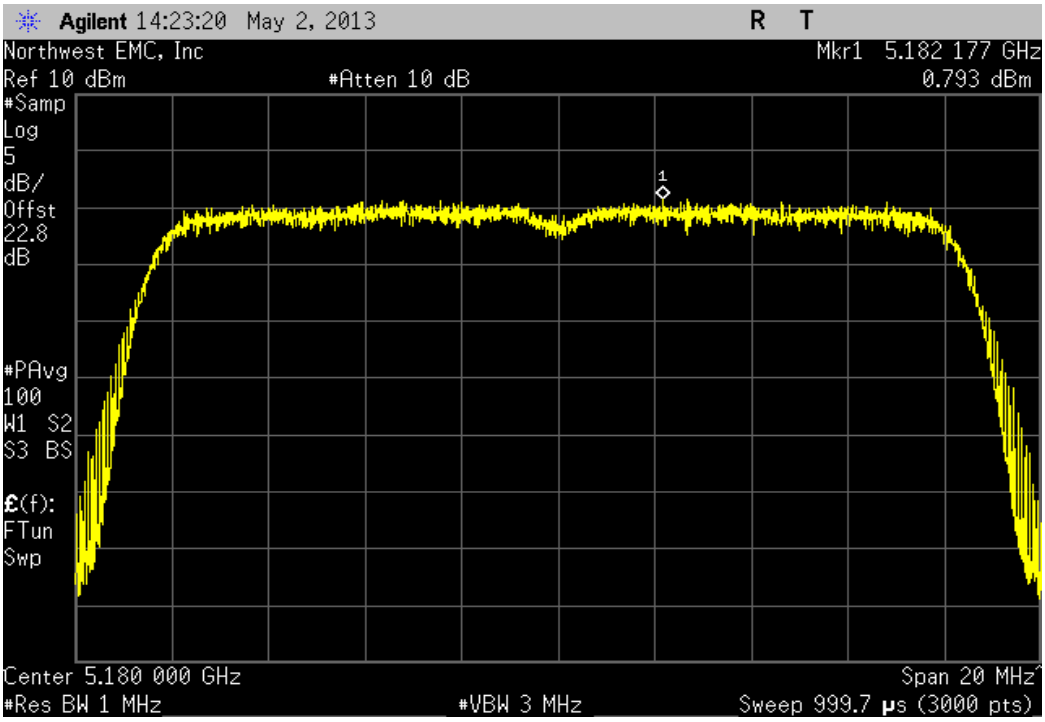
DEVIATIONS FROM TEST STANDARD

None

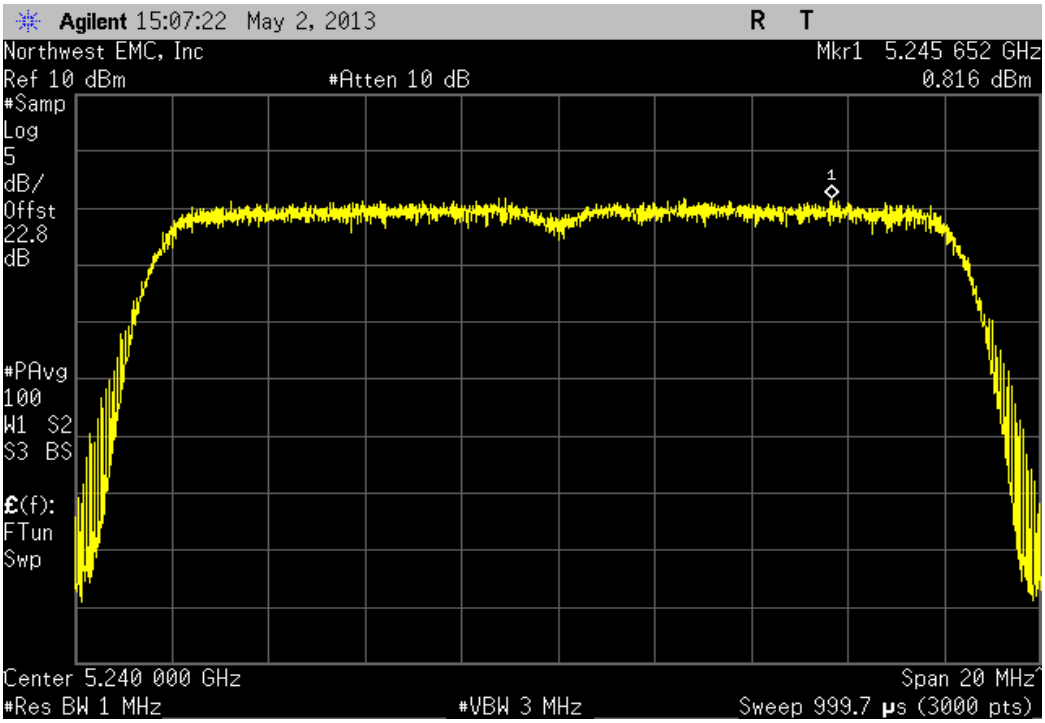
Configuration #	5	Signature

		Value (dBm / MHz)	Limit (dBm / MHz)	Result
802.11(a) 6 Mbps				
	5150 - 5250 MHz Band			
	Channel 36, Low Channel 5180 MHz	0.793	4	Pass
	Channel 48, High Channel 5240 MHz	0.816	4	Pass
	5250 - 5350 MHz Band			
	Channel 52, Low Channel 5260 MHz	0.993	4	Pass
	Channel 64, High Channel 5320 MHz	1.198	4	Pass
	5470 - 5725 MHz Band			
	Channel 100, Low Channel 5500 MHz	0.671	4	Pass
	Channel 116, Mid Channel 5580 MHz	0.824	4	Pass
	Channel 140, High Channel5700 MHz	1.354	4	Pass
802.11(a) 18 Mbps				
	5150 - 5250 MHz Band			
	Channel 36, Low Channel 5180 MHz	1.47	4	Pass
	Channel 48, High Channel 5240 MHz	2.758	4	Pass
	5250 - 5350 MHz Band			
	Channel 52, Low Channel 5260 MHz	2.039	4	Pass
	Channel 64, High Channel 5320 MHz	3.791	4	Pass
	5470 - 5725 MHz Band			
	Channel 100, Low Channel 5500 MHz	2.419	4	Pass
	Channel 116, Mid Channel 5580 MHz	2.414	4	Pass
	Channel 140, High Channel 5700 MHz	2.179	4	Pass

802.11(a) 6 Mbps, 5150 - 5250 MHz Band, Channel 36, Low Channel 5180 MHz							
					Value (dBm / MHz)	Limit (dBm / MHz)	Result
					0.793	4	Pass



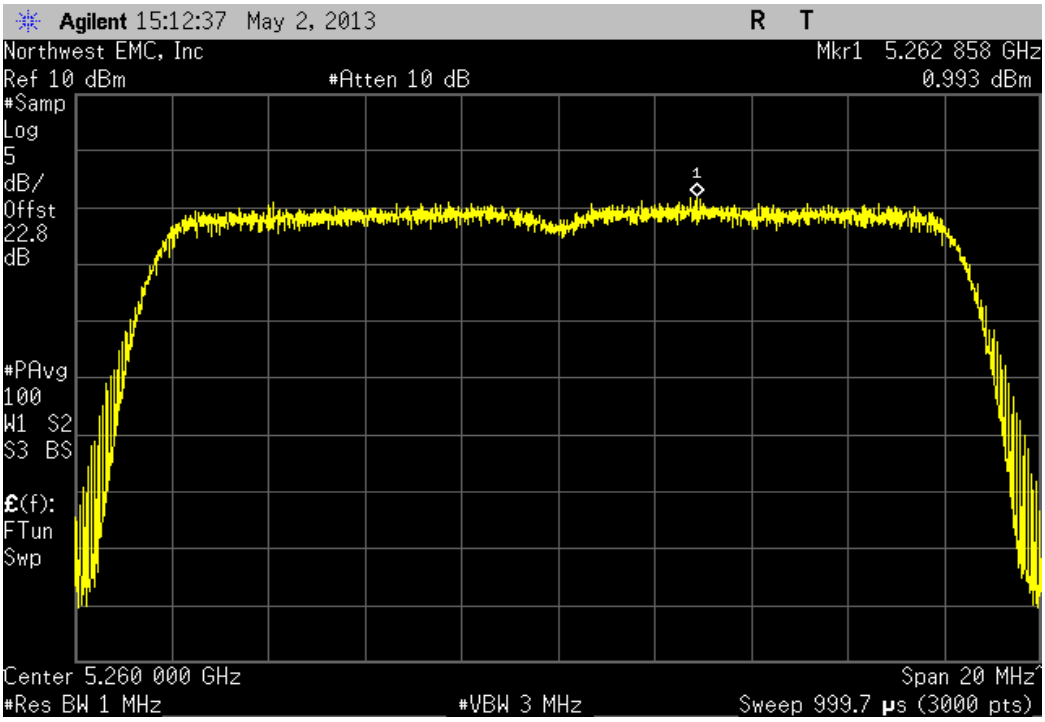
802.11(a) 6 Mbps, 5150 - 5250 MHz Band, Channel 48, High Channel 5240 MHz							
					Value (dBm / MHz)	Limit (dBm / MHz)	Result
					0.816	4	Pass



Peak Power Spectral Density

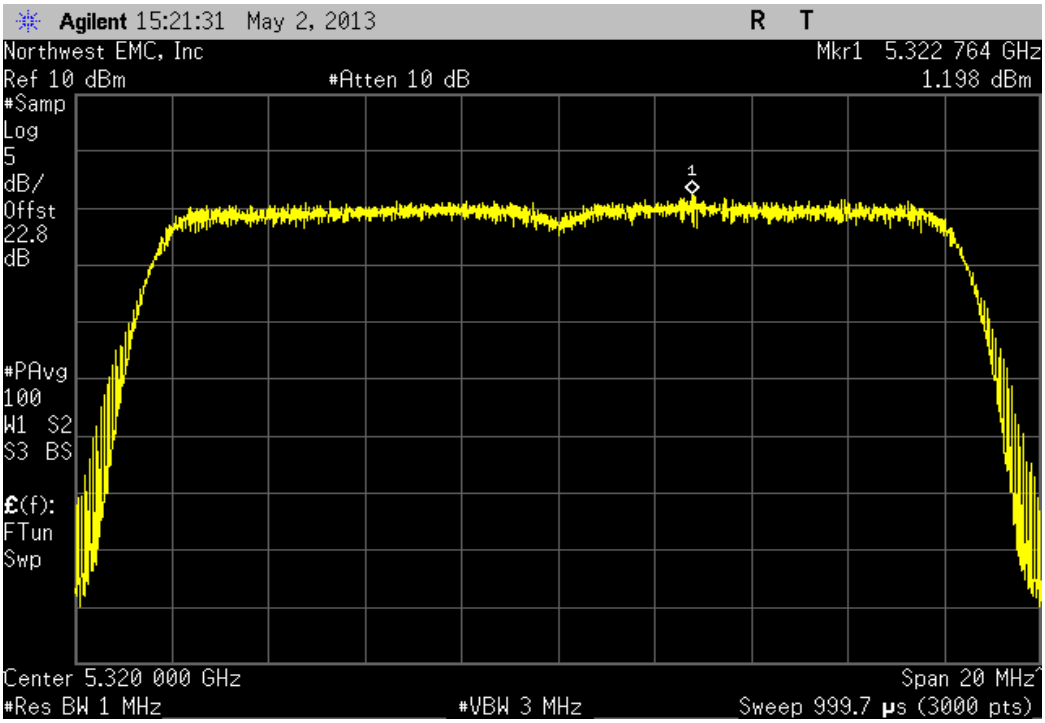
802.11(a) 6 Mbps, 5250 - 5350 MHz Band, Channel 52, Low Channel 5260 MHz

				Value (dBm / MHz)	Limit (dBm / MHz)	Result
				0.993	4	Pass



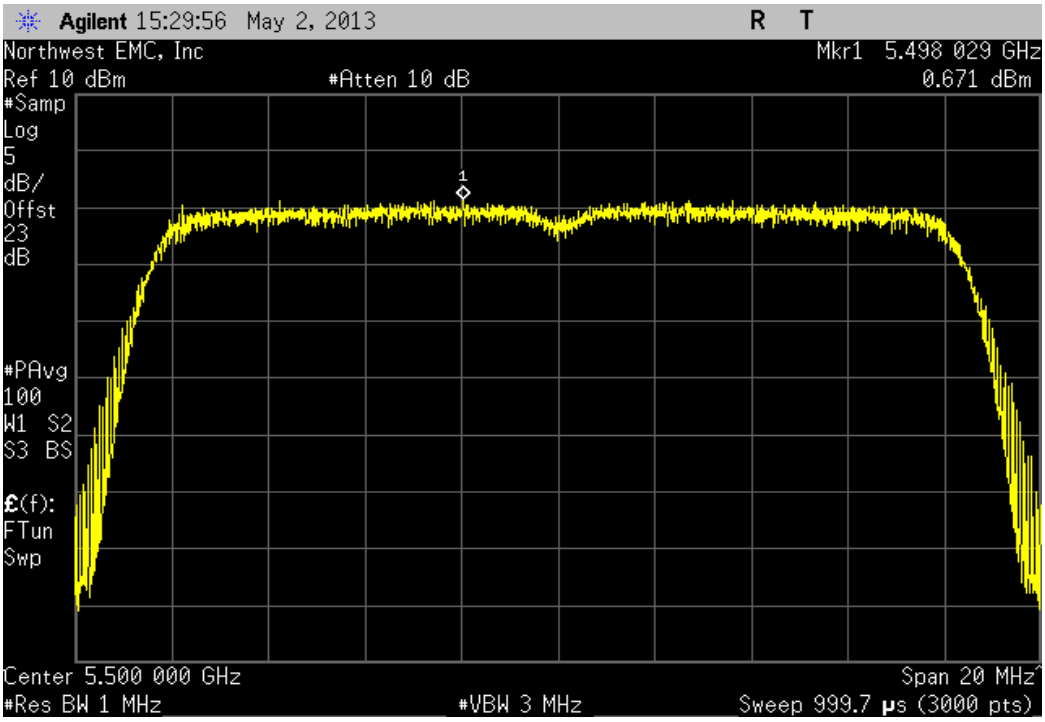
802.11(a) 6 Mbps, 5250 - 5350 MHz Band, Channel 64, High Channel 5320 MHz

				Value (dBm / MHz)	Limit (dBm / MHz)	Result
				1.198	4	Pass

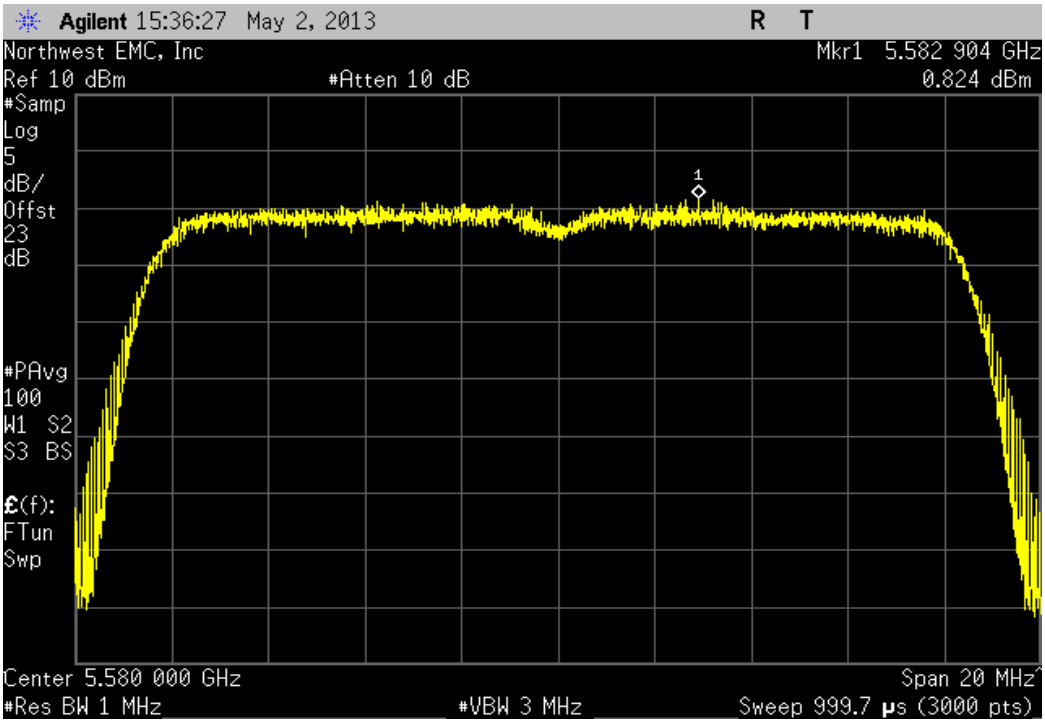


Peak Power Spectral Density

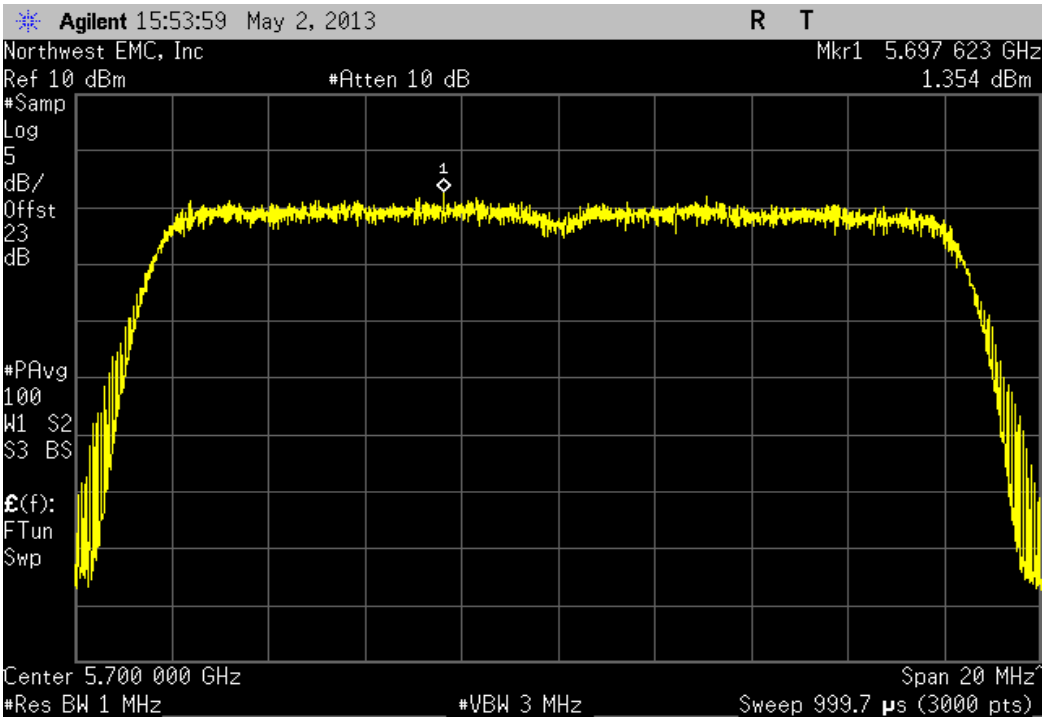
802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 100, Low Channel 5500 MHz						
				Value (dBm / MHz)	Limit (dBm / MHz)	Result
				0.671	4	Pass



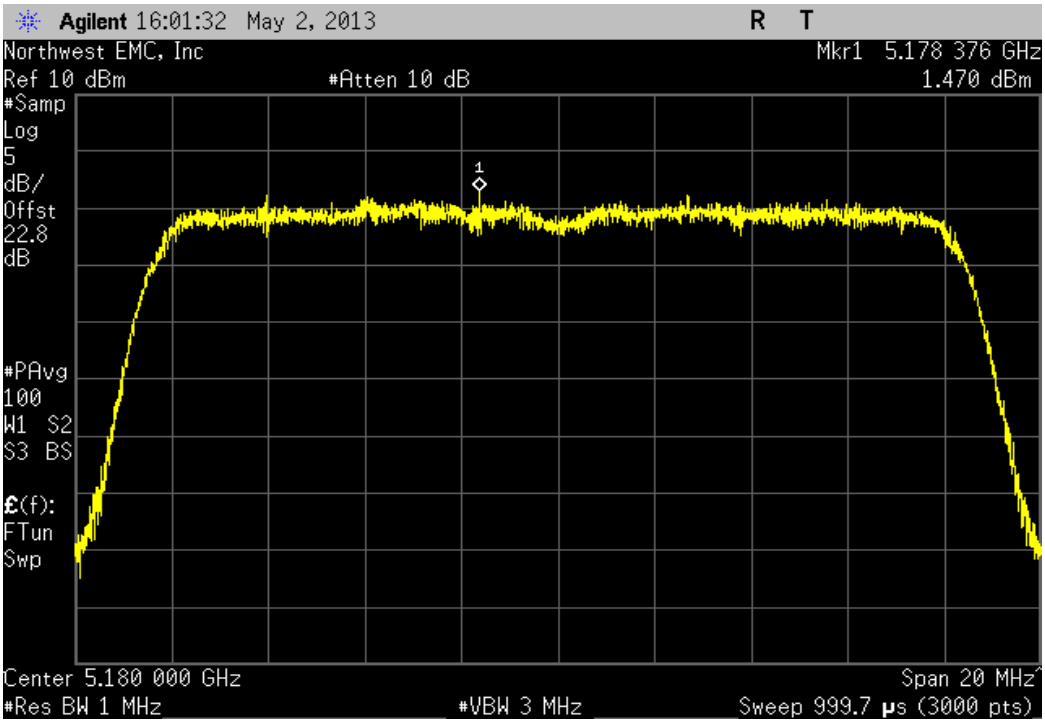
802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 116, Mid Channel 5580 MHz						
				Value (dBm / MHz)	Limit (dBm / MHz)	Result
				0.824	4	Pass



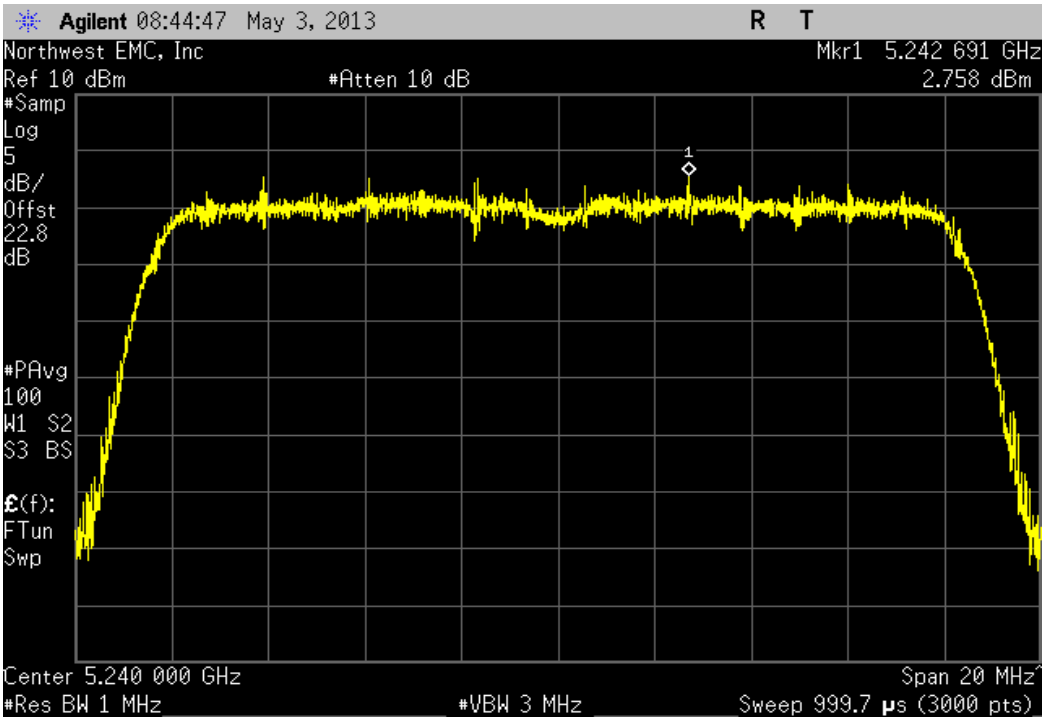
802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 140, High Channel5700 MHz							
					Value (dBm / MHz)	Limit (dBm / MHz)	Result
					1.354	4	Pass



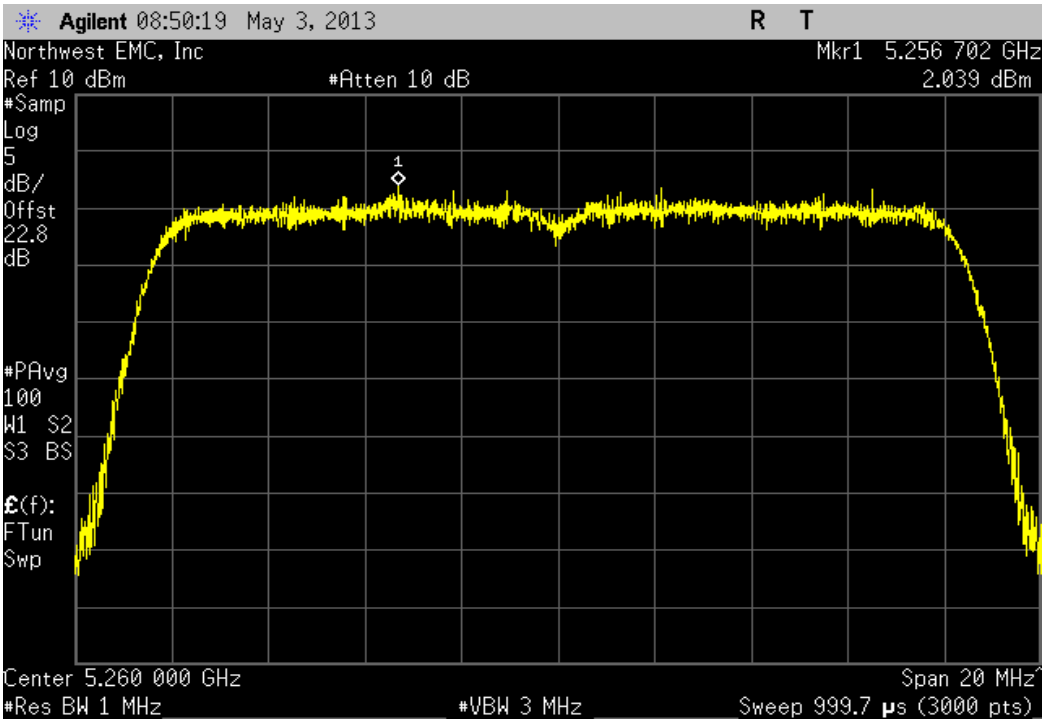
802.11(a) 18 Mbps, 5150 - 5250 MHz Band, Channel 36, Low Channel 5180 MHz							
					Value (dBm / MHz)	Limit (dBm / MHz)	Result
					1.47	4	Pass



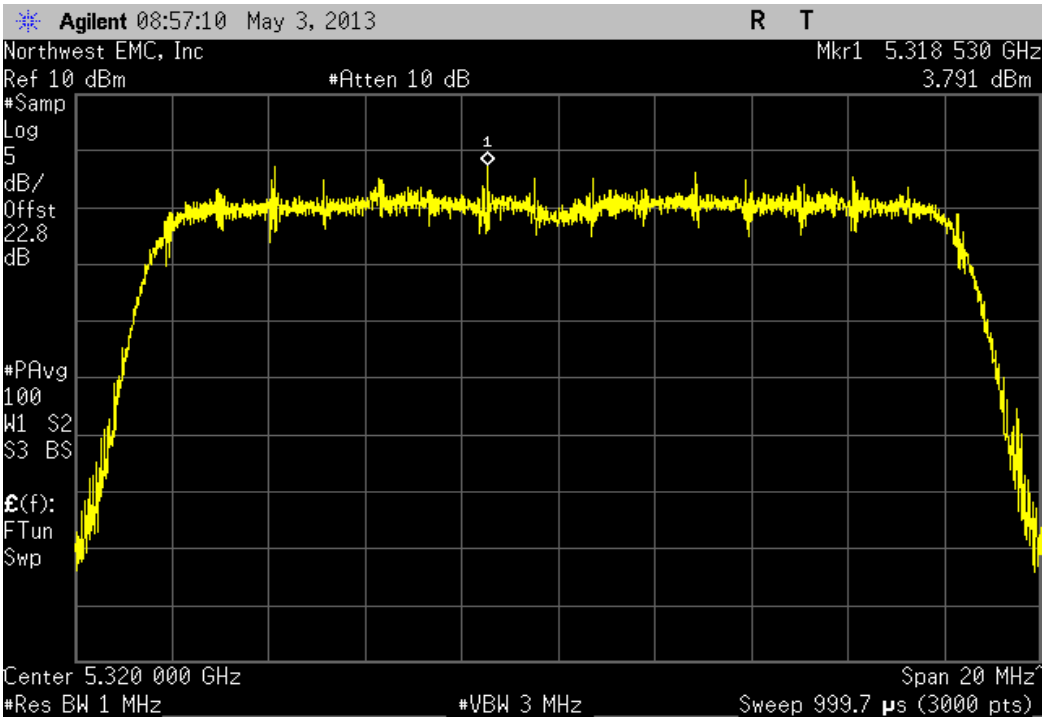
802.11(a) 18 Mbps, 5150 - 5250 MHz Band, Channel 48, High Channel 5240 MHz							
					Value (dBm / MHz)	Limit (dBm / MHz)	Result
					2.758	4	Pass



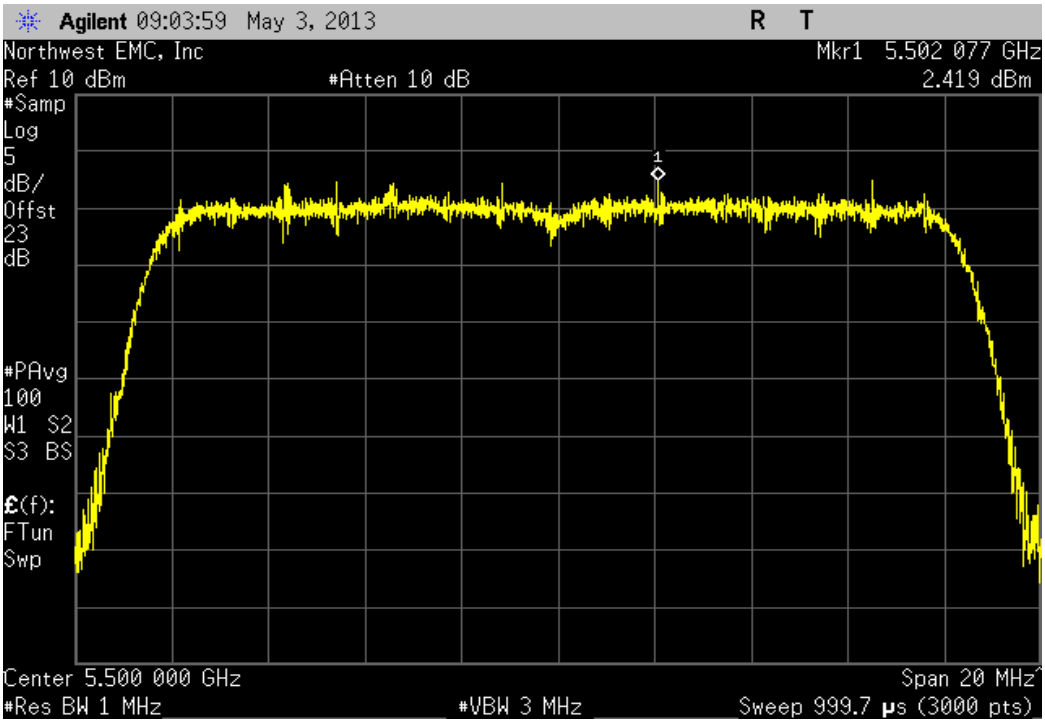
802.11(a) 18 Mbps, 5250 - 5350 MHz Band, Channel 52, Low Channel 5260 MHz							
					Value (dBm / MHz)	Limit (dBm / MHz)	Result
					2.039	4	Pass



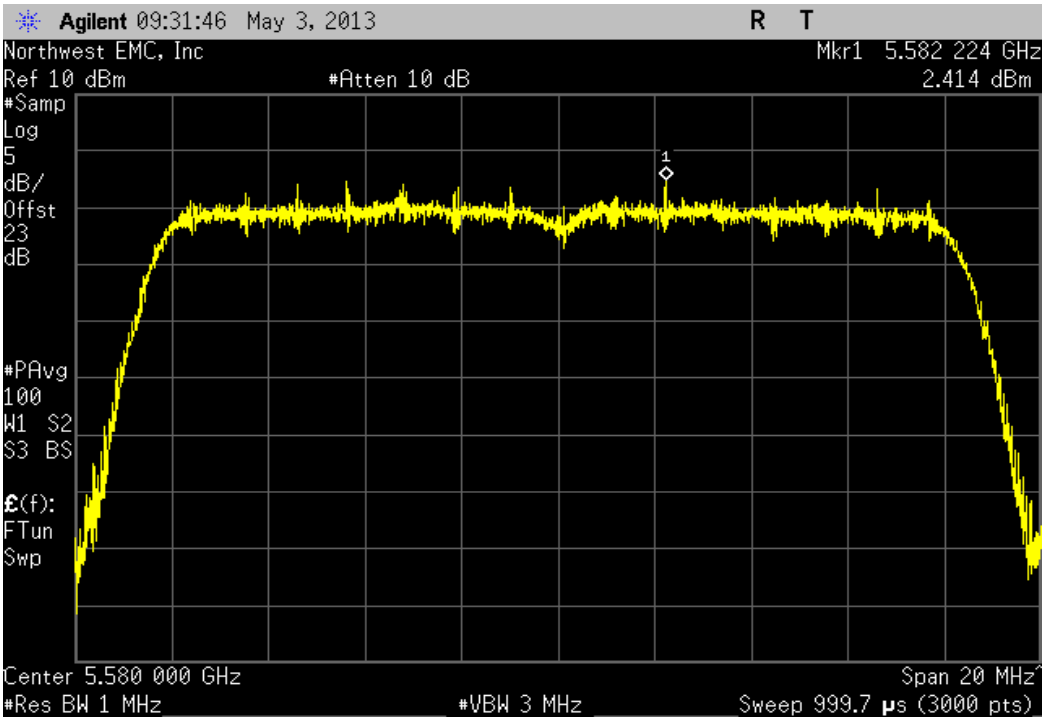
802.11(a) 18 Mbps, 5250 - 5350 MHz Band, Channel 64, High Channel 5320 MHz							
					Value (dBm / MHz)	Limit (dBm / MHz)	Result
					3.791	4	Pass



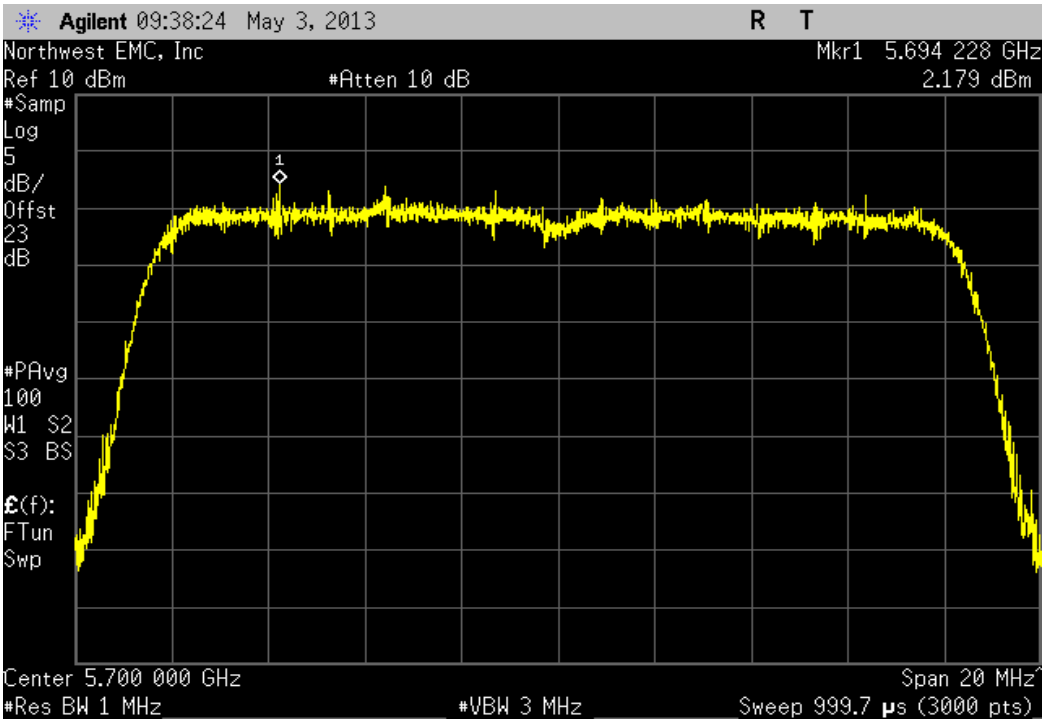
802.11(a) 18 Mbps, 5470 - 5725 MHz Band, Channel 100, Low Channel 5500 MHz							
					Value (dBm / MHz)	Limit (dBm / MHz)	Result
					2.419	4	Pass



802.11(a) 18 Mbps, 5470 - 5725 MHz Band, Channel 116, Mid Channel 5580 MHz							
					Value (dBm / MHz)	Limit (dBm / MHz)	Result
					2.414	4	Pass



802.11(a) 18 Mbps, 5470 - 5725 MHz Band, Channel 140, High Channel 5700 MHz							
					Value (dBm / MHz)	Limit (dBm / MHz)	Result
					2.179	4	Pass



Emission Bandwidth

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	3/25/2013	12
MXG Vector Signal Generator	Agilent	N5182A	TIF	NCR	0
Power Meter	Gigatronics	8651A	SPM	1/9/2012	24
Power Sensor	Gigatronics	80701A	SPL	7/8/2011	24
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Attenuator, 6 dB, 'SMA'	N/A	93459 3330A-6	AUF	3/5/2013	12
40GHz DC Block	Miteq	DCB4000	AMD	6/25/2012	12
Spectrum Analyzer	Agilent	E4446A	AAQ	2/7/2012	24

TEST DESCRIPTION

FCC KDB 789033 D01 General UNII Test Procedures Section C was followed. The transmit frequency was set to the lowest, a medium, and the highest channels in each band. The transmit power was set to its default maximum. The data rate(s) listed in the datasheet were measured. 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.

The spectrum analyzer settings were as follows:
- Span = approximately 1.5 to 2 times the emission bandwidth, centered on the transmit channel.
- RBW = Approx. 1% of the emission bandwidth (B). This was an iterative process to determine the RBW based on the emissions bandwidth (B).
- A peak detector was used.

The spectrum analyzer Occupied Bandwidth measurement function was then used to measure 26 dB emission bandwidth.

Emission Bandwidth

EUT:	Model 444-2225 (Athena UFL)			**Work Order:**	FOCU0140
Serial Number:	02EA4D000027			**Date:**	05/03/13
Customer:	Summit Semiconductor			**Temperature:**	24°C
Attendees:	None			**Humidity:**	30%
Project:	None			**Barometric Pres.:**	1023
Tested by:	Brandon Hobbs	**Power:**	3.3V DC	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.407:2013	ANSI C63.10:2009

COMMENTS

All testing was completed on the highest output power antenna port A2.

DEVIATIONS FROM TEST STANDARD

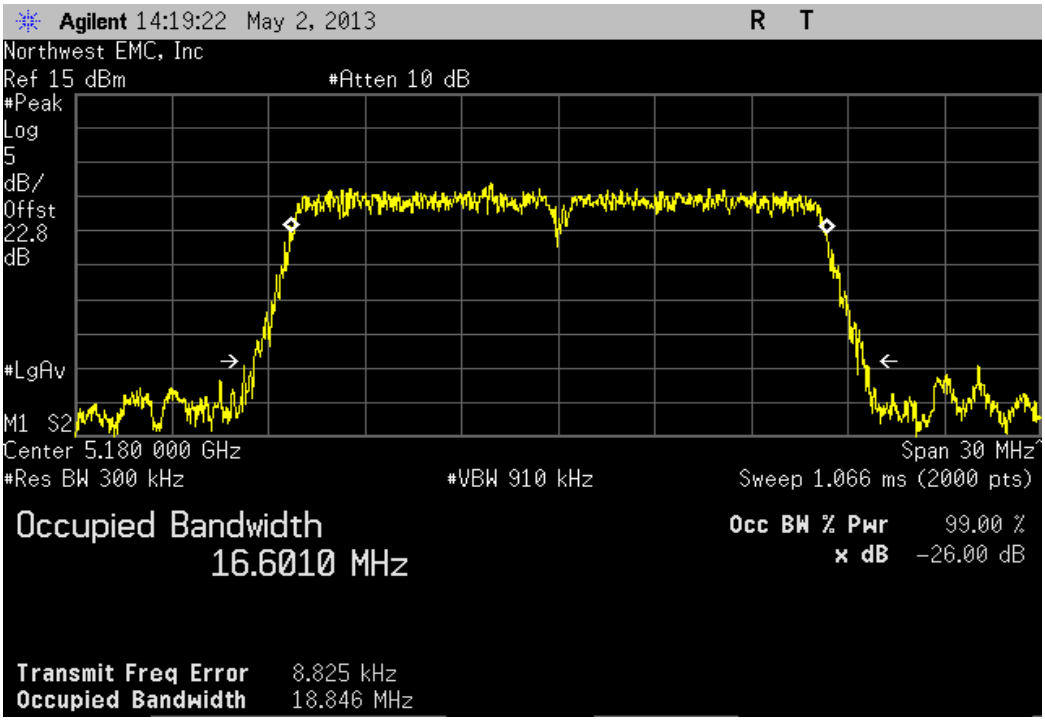
None

Configuration #	5	Signature

		Value	Limit	Result
802.11(a) 6 Mbps				
	5150 - 5250 MHz Band			
	Channel 36, Low Channel 5180 MHz	18.846 MHz	> 500 kHz	Pass
	Channel 48, High Channel 5240 MHz	18.884 MHz	> 500 kHz	Pass
	5250 - 5350 MHz Band			
	Channel 52, Low Channel 5260 MHz	18.752 MHz	> 500 kHz	Pass
	Channel 64, High Channel 5320 MHz	18.822 MHz	> 500 kHz	Pass
	5470 - 5725 MHz Band			
	Channel 100, Low Channel 5500 MHz	18.651 MHz	> 500 kHz	Pass
	Channel 116, Mid Channel 5580 MHz	18.764 MHz	> 500 kHz	Pass
	Channel 140, High Channel5700 MHz	18.931 MHz	> 500 kHz	Pass
802.11(a) 18 Mbps				
	5150 - 5250 MHz Band			
	Channel 36, Low Channel 5180 MHz	18.505 MHz	> 500 kHz	Pass
	Channel 48, High Channel 5240 MHz	18.563 MHz	> 500 kHz	Pass
	5250 - 5350 MHz Band			
	Channel 52, Low Channel 5260 MHz	18.751 MHz	> 500 kHz	Pass
	Channel 64, High Channel 5320 MHz	18.671 MHz	> 500 kHz	Pass
	5470 - 5725 MHz Band			
	Channel 100, Low Channel 5500 MHz	18.592 MHz	> 500 kHz	Pass
	Channel 116, Mid Channel 5580 MHz	18.654 MHz	> 500 kHz	Pass
	Channel 140, High Channel 5700 MHz	18.731 MHz	> 500 kHz	Pass

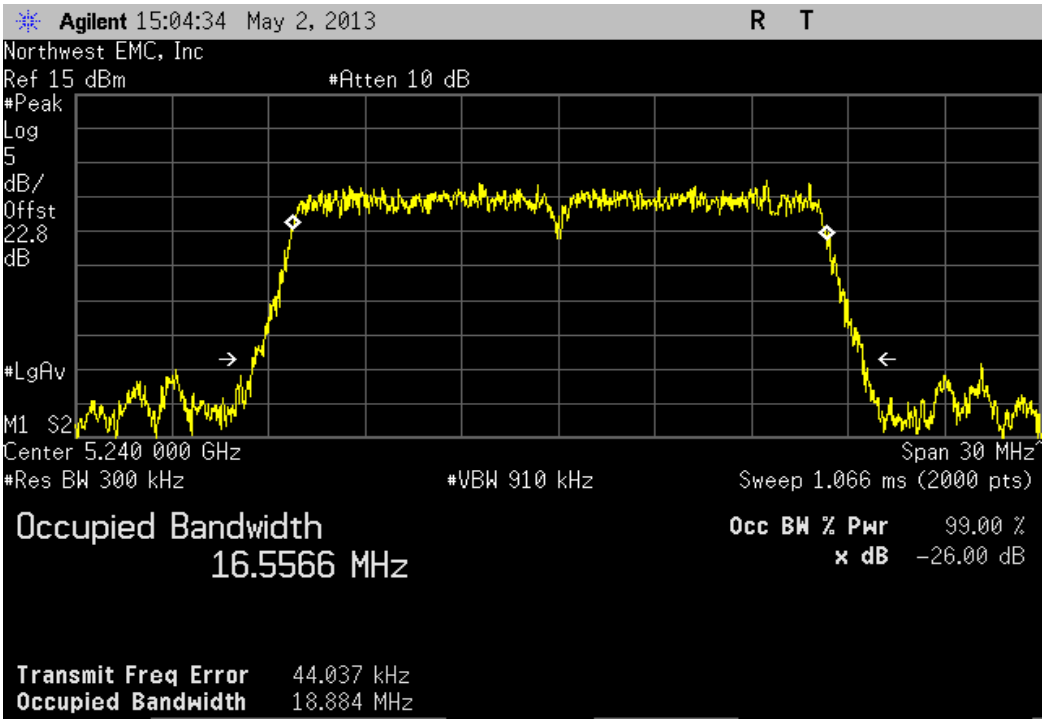
802.11(a) 6 Mbps, 5150 - 5250 MHz Band, Channel 36, Low Channel 5180 MHz

				Value	Limit	Result
				18.846 MHz	> 500 kHz	Pass



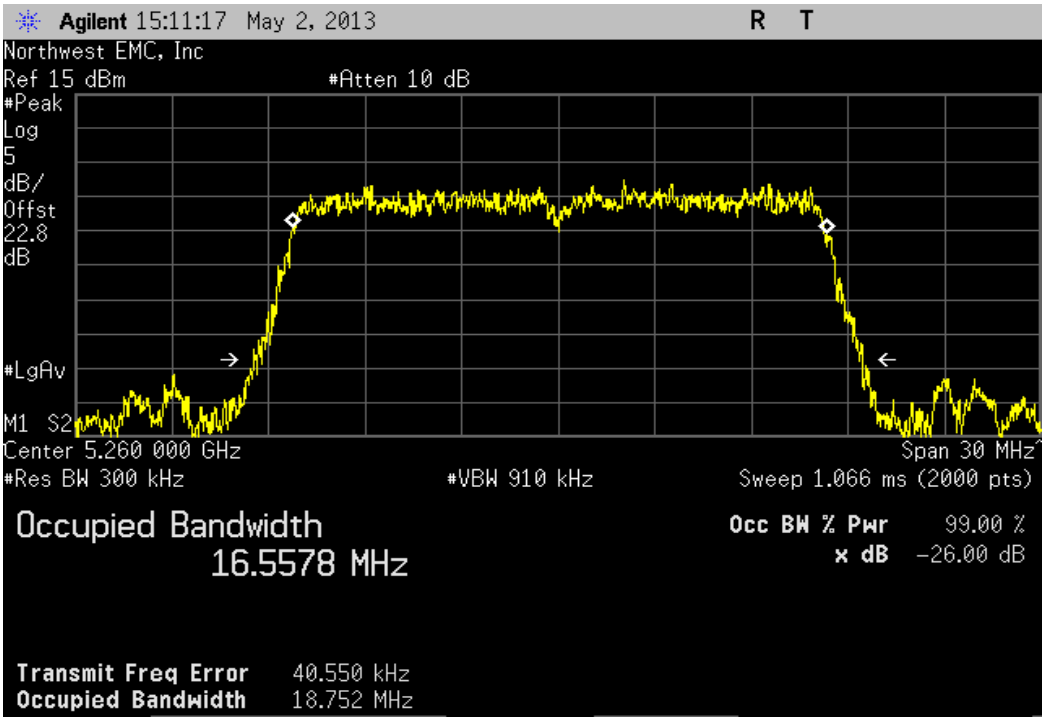
802.11(a) 6 Mbps, 5150 - 5250 MHz Band, Channel 48, High Channel 5240 MHz

				Value	Limit	Result
				18.884 MHz	> 500 kHz	Pass



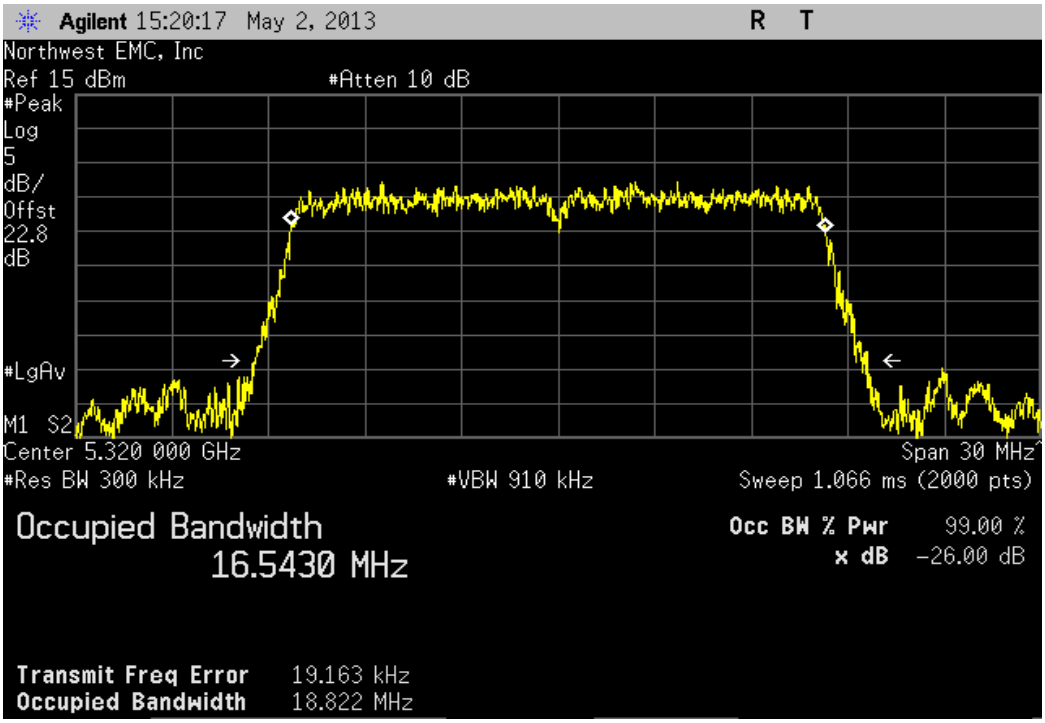
802.11(a) 6 Mbps, 5250 - 5350 MHz Band, Channel 52, Low Channel 5260 MHz

				Value	Limit	Result
				18.752 MHz	> 500 kHz	Pass



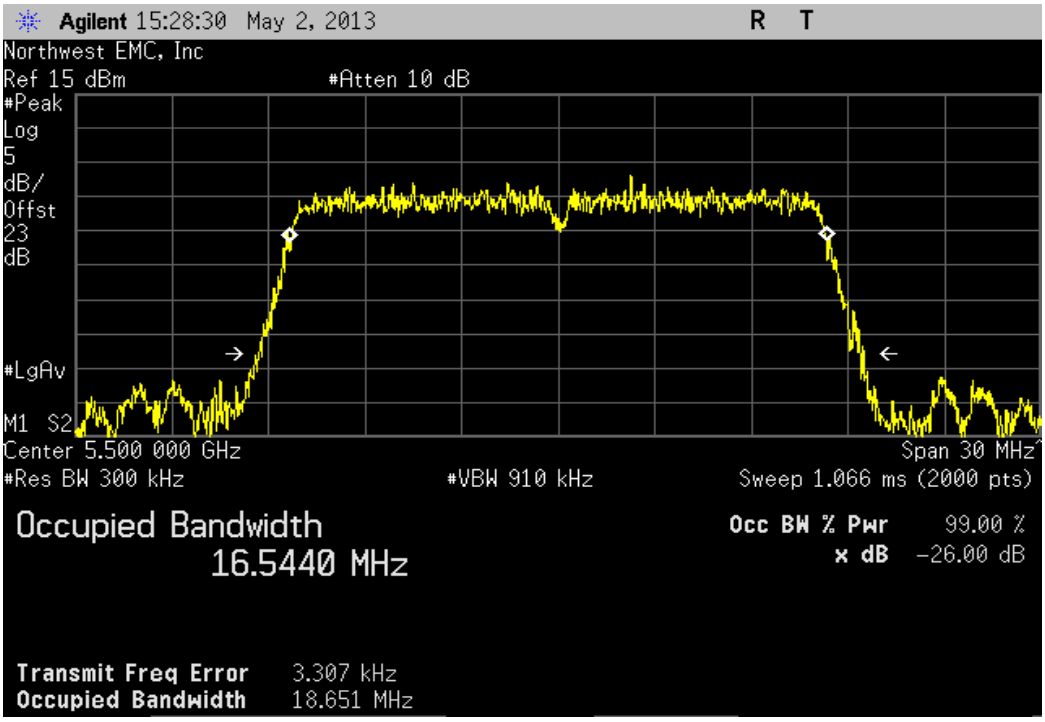
802.11(a) 6 Mbps, 5250 - 5350 MHz Band, Channel 64, High Channel 5320 MHz

				Value	Limit	Result
				18.822 MHz	> 500 kHz	Pass



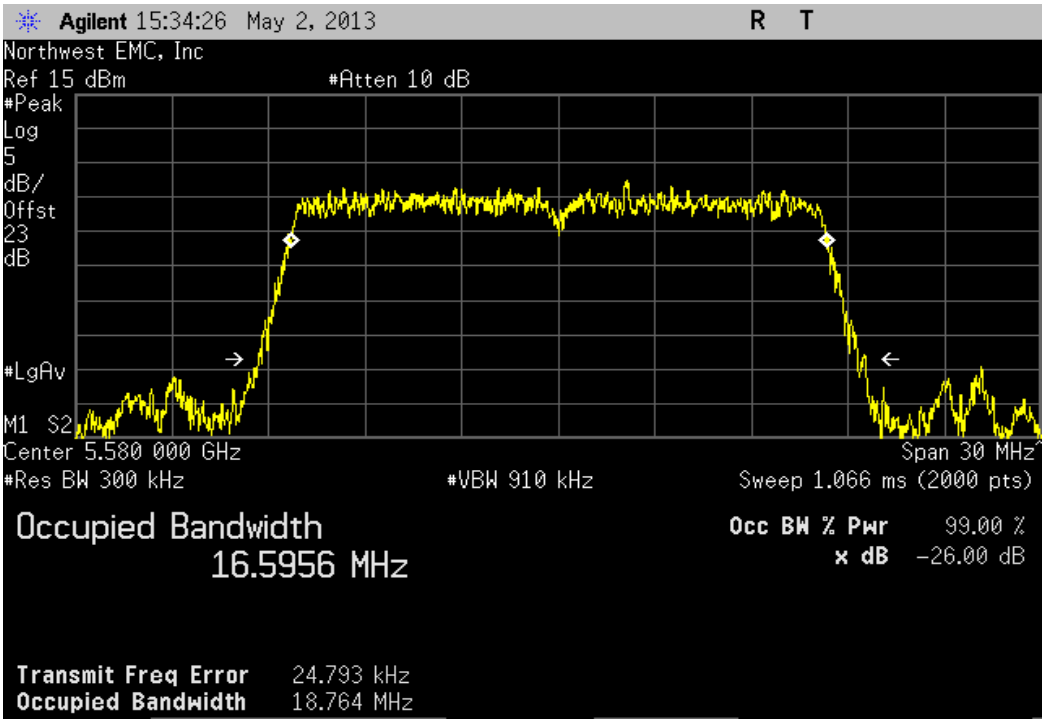
802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 100, Low Channel 5500 MHz

				Value	Limit	Result
				18.651 MHz	> 500 kHz	Pass



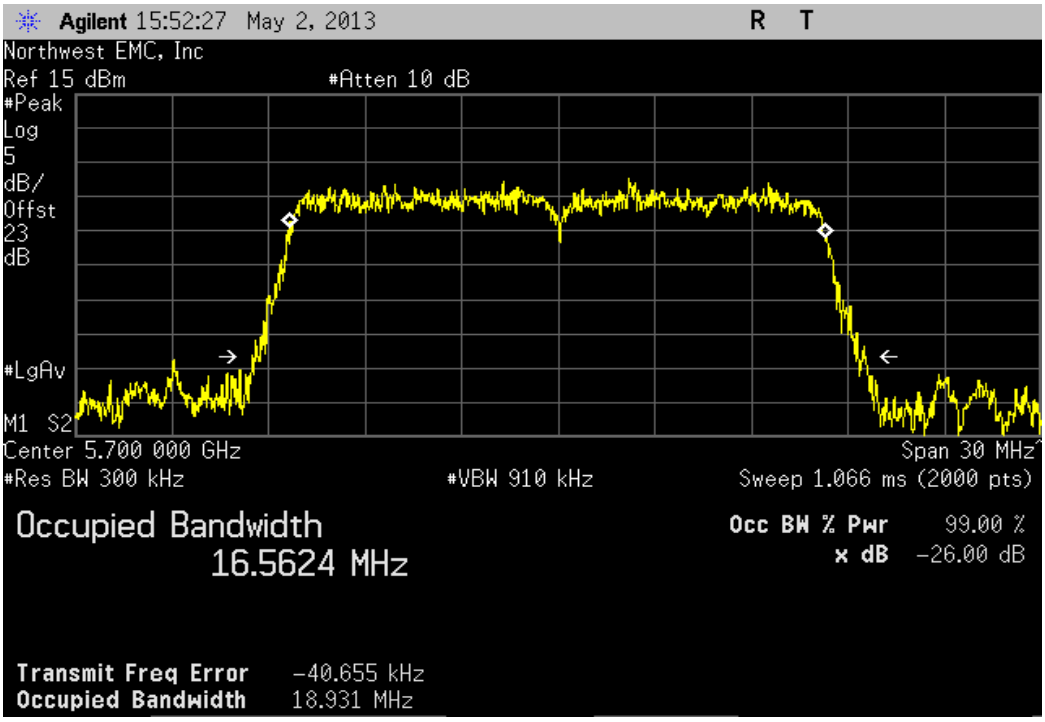
802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 116, Mid Channel 5580 MHz

				Value	Limit	Result
				18.764 MHz	> 500 kHz	Pass



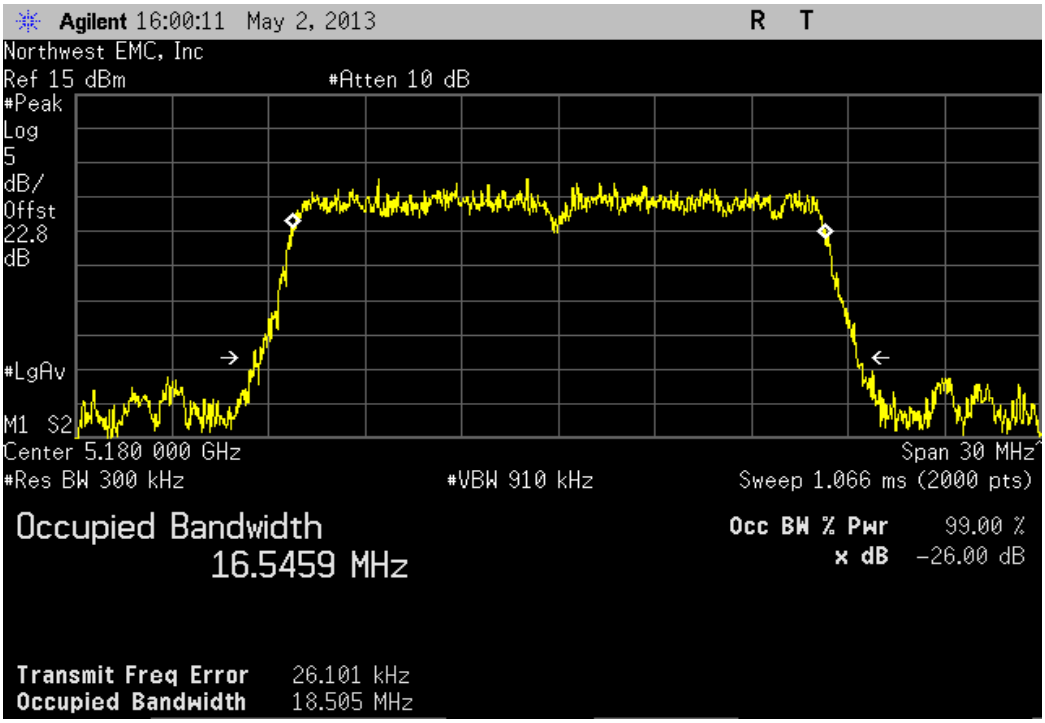
802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 140, High Channel5700 MHz

				Value	Limit	Result
				18.931 MHz	> 500 kHz	Pass



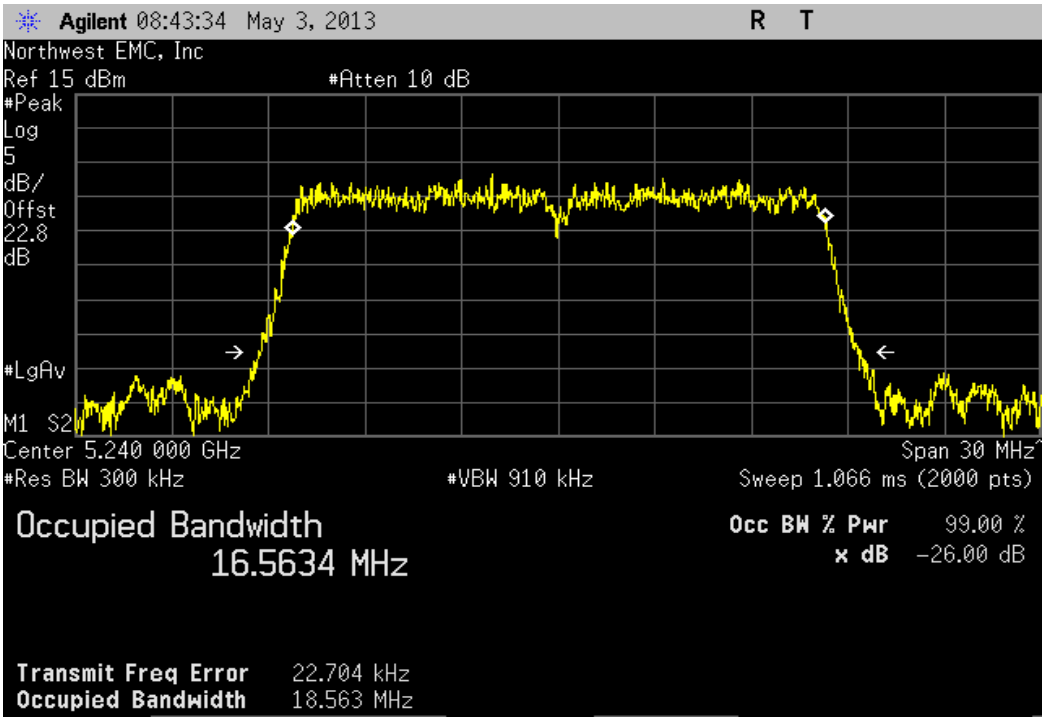
802.11(a) 18 Mbps, 5150 - 5250 MHz Band, Channel 36, Low Channel 5180 MHz

				Value	Limit	Result
				18.505 MHz	> 500 kHz	Pass



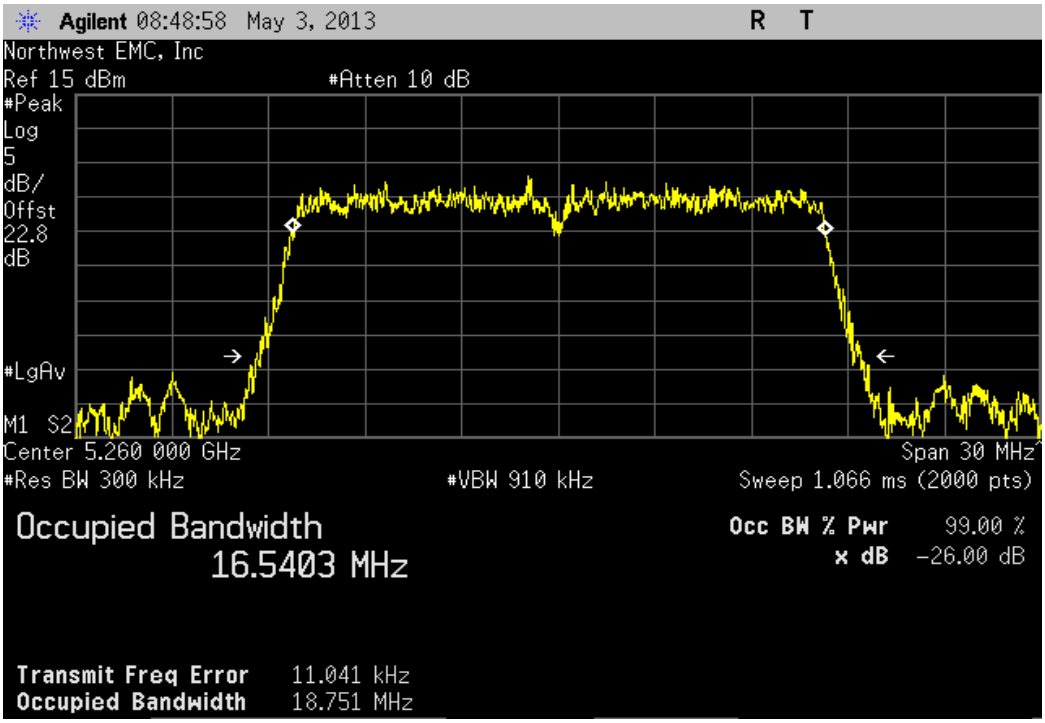
802.11(a) 18 Mbps, 5150 - 5250 MHz Band, Channel 48, High Channel 5240 MHz

				Value	Limit	Result
				18.563 MHz	> 500 kHz	Pass



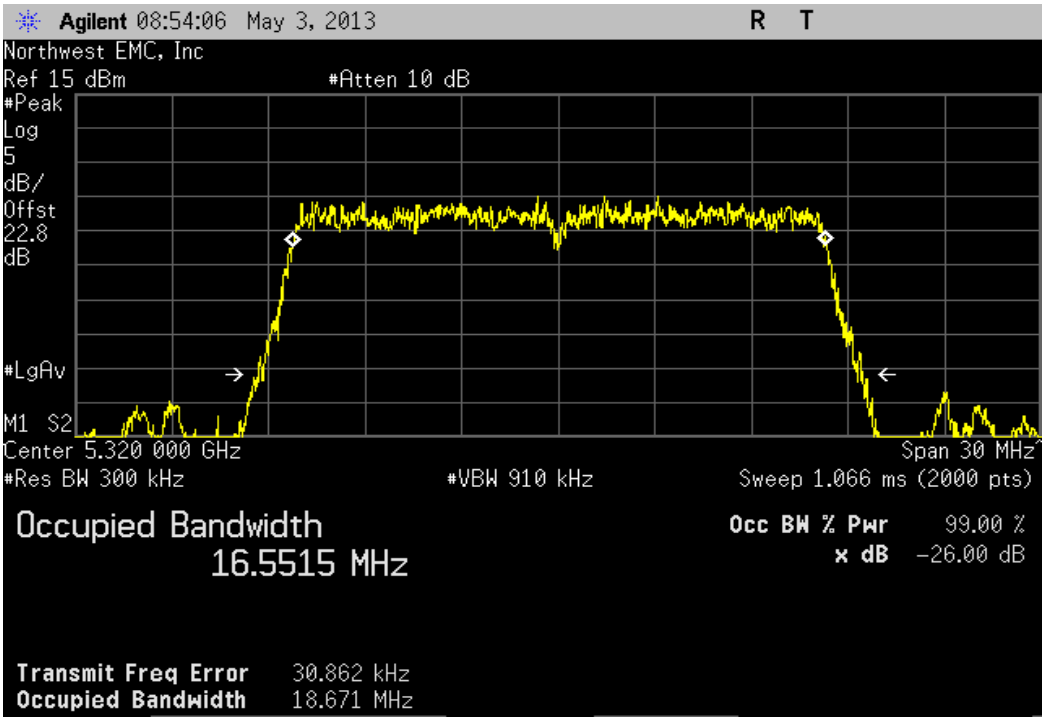
802.11(a) 18 Mbps, 5250 - 5350 MHz Band, Channel 52, Low Channel 5260 MHz

				Value	Limit	Result
				18.751 MHz	> 500 kHz	Pass



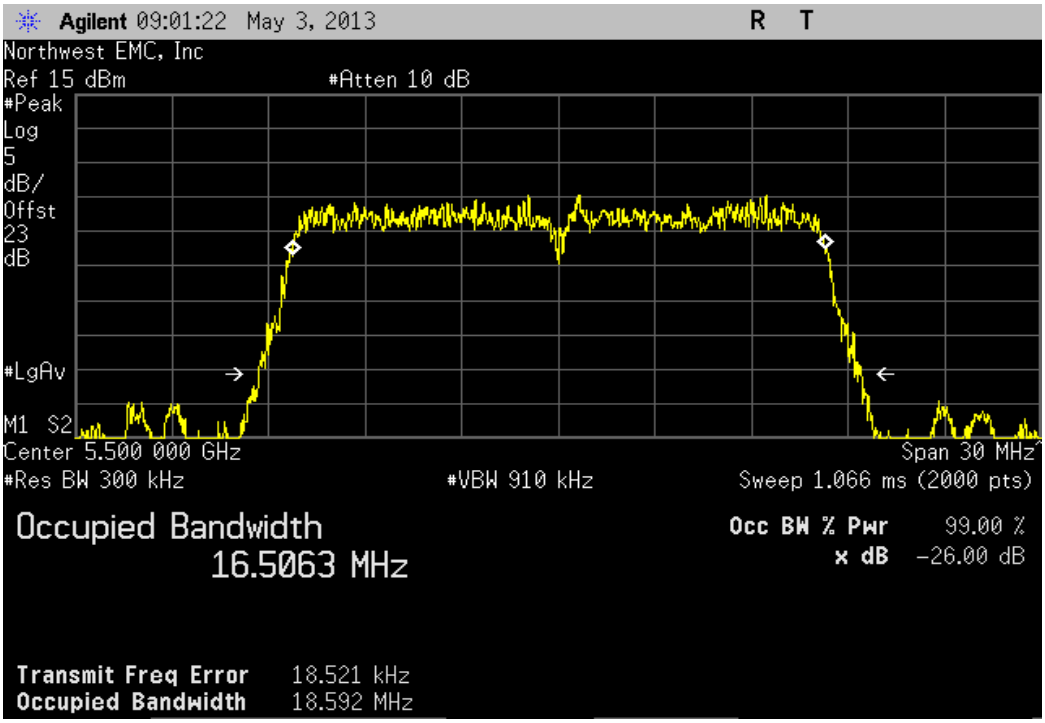
802.11(a) 18 Mbps, 5250 - 5350 MHz Band, Channel 64, High Channel 5320 MHz

				Value	Limit	Result
				18.671 MHz	> 500 kHz	Pass



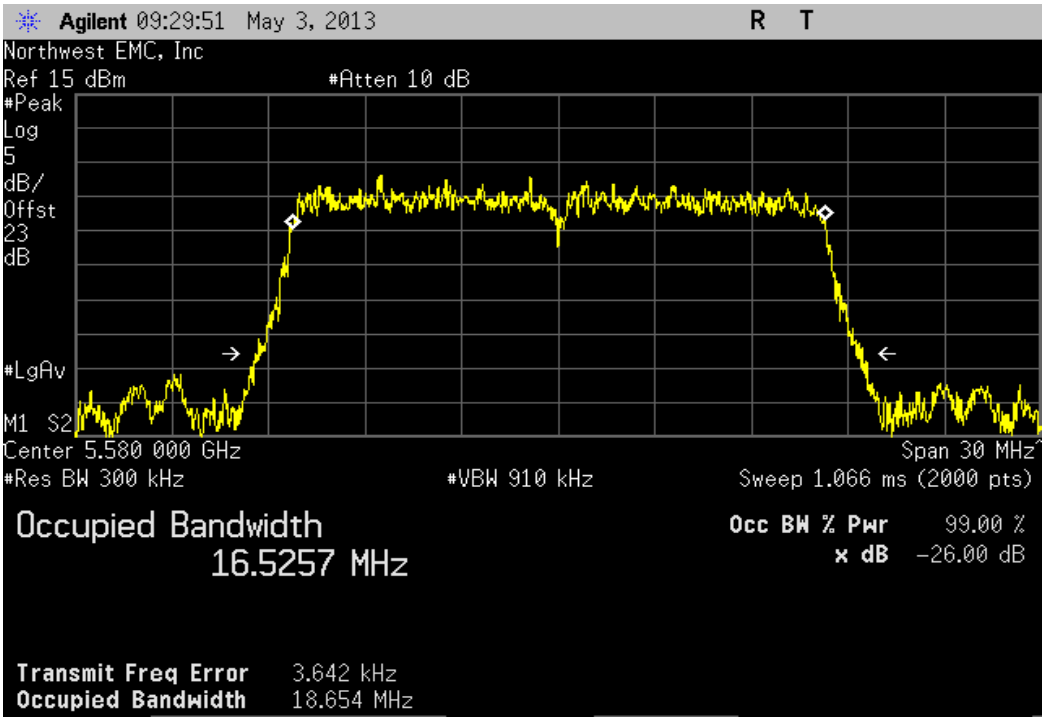
802.11(a) 18 Mbps, 5470 - 5725 MHz Band, Channel 100, Low Channel 5500 MHz

				Value	Limit	Result
				18.592 MHz	> 500 kHz	Pass



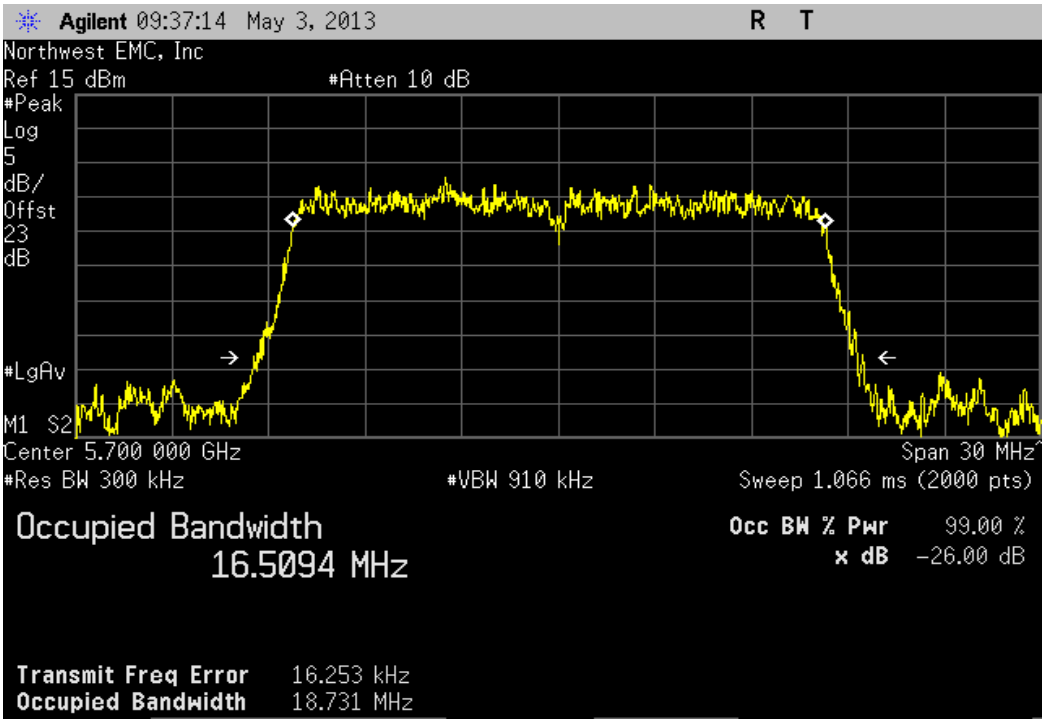
802.11(a) 18 Mbps, 5470 - 5725 MHz Band, Channel 116, Mid Channel 5580 MHz

				Value	Limit	Result
				18.654 MHz	> 500 kHz	Pass



802.11(a) 18 Mbps, 5470 - 5725 MHz Band, Channel 140, High Channel 5700 MHz

				Value	Limit	Result
				18.731 MHz	> 500 kHz	Pass



Peak Excursion

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	3/25/2013	12
MXG Vector Signal Generator	Agilent	N5182A	TIF	NCR	0
Power Meter	Gigatronics	8651A	SPM	1/9/2012	24
Power Sensor	Gigatronics	80701A	SPL	7/8/2011	24
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Attenuator, 6 dB, 'SMA'	N/A	93459 3330A-6	AUF	3/5/2013	12
40GHz DC Block	Miteq	DCB4000	AMD	6/25/2012	12
Spectrum Analyzer	Agilent	E4446A	AAQ	2/7/2012	24

TEST DESCRIPTION

FCC KDB 789033 D01 General UNII Test Procedures Section G was followed to show that the radio of the maximum peak-max-hold spectrum to the maximum of the average spectrum does not exceed 13 dBm.

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.

The spectrum analyzer settings were as follows:

Span set to encompass the entire emission bandwidth (B), centered on the transmit channel.

Using the marker delta function, the largest difference between the following two traces was measured:

- 1st Trace: RBW = 1 MHz, VBW >= 3 MHz with peak detector and trace max-hold..
- 2nd Trace: The same procedure and settings as was used for peak power spectral density

Peak Excursion

EUT:	Model 444-2225 (Athena UFL)			**Work Order:**	FOCU0140
Serial Number:	02EA4D000027			**Date:**	05/03/13
Customer:	Summit Semiconductor			**Temperature:**	24°C
Attendees:	None			**Humidity:**	30%
Project:	None			**Barometric Pres.:**	1023
Tested by:	Brandon Hobbs	**Power:**	3.3V DC	**Job Site:**	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.407:2013	ANSI C63.10:2009

COMMENTS

All testing was completed on the highest output power antenna port A2.

DEVIATIONS FROM TEST STANDARD

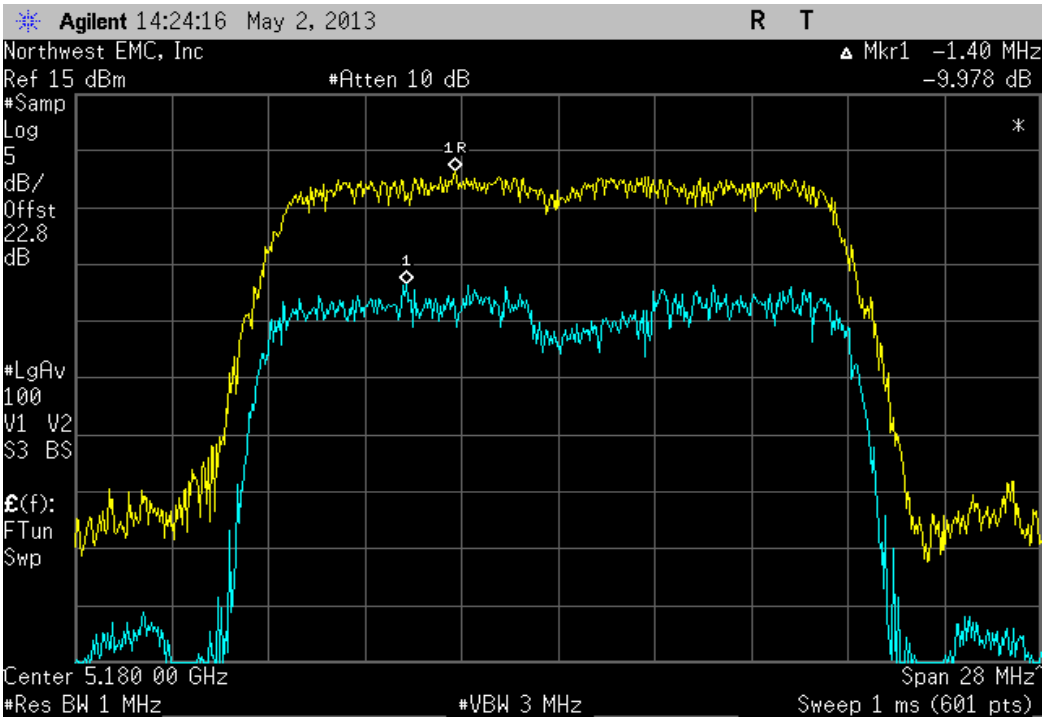
None

Configuration #	5	Signature

		Value	Limit	Result
802.11(a) 6 Mbps				
	5150 - 5250 MHz Band			
	Channel 36, Low Channel 5180 MHz	9.978 dB	≤ 13 dB	Pass
	Channel 48, High Channel 5240 MHz	9.73 dB	≤ 13 dB	Pass
	5250 - 5350 MHz Band			
	Channel 52, Low Channel 5260 MHz	10.042 dB	≤ 13 dB	Pass
	Channel 64, High Channel 5320 MHz	8.536 dB	≤ 13 dB	Pass
	5470 - 5725 MHz Band			
	Channel 100, Low Channel 5500 MHz	9.138 dB	≤ 13 dB	Pass
	Channel 116, Mid Channel 5580 MHz	8.704 dB	≤ 13 dB	Pass
	Channel 140, High Channel5700 MHz	9.266 dB	≤ 13 dB	Pass
802.11(a) 18 Mbps				
	5150 - 5250 MHz Band			
	Channel 36, Low Channel 5180 MHz	10.315 dB	≤ 13 dB	Pass
	Channel 48, High Channel 5240 MHz	9.843 dB	≤ 13 dB	Pass
	5250 - 5350 MHz Band			
	Channel 52, Low Channel 5260 MHz	10.34 dB	≤ 13 dB	Pass
	Channel 64, High Channel 5320 MHz	10.866 dB	≤ 13 dB	Pass
	5470 - 5725 MHz Band			
	Channel 100, Low Channel 5500 MHz	9.712 dB	≤ 13 dB	Pass
	Channel 116, Mid Channel 5580 MHz	9.036 dB	≤ 13 dB	Pass
	Channel 140, High Channel 5700 MHz	10.042 dB	≤ 13 dB	Pass

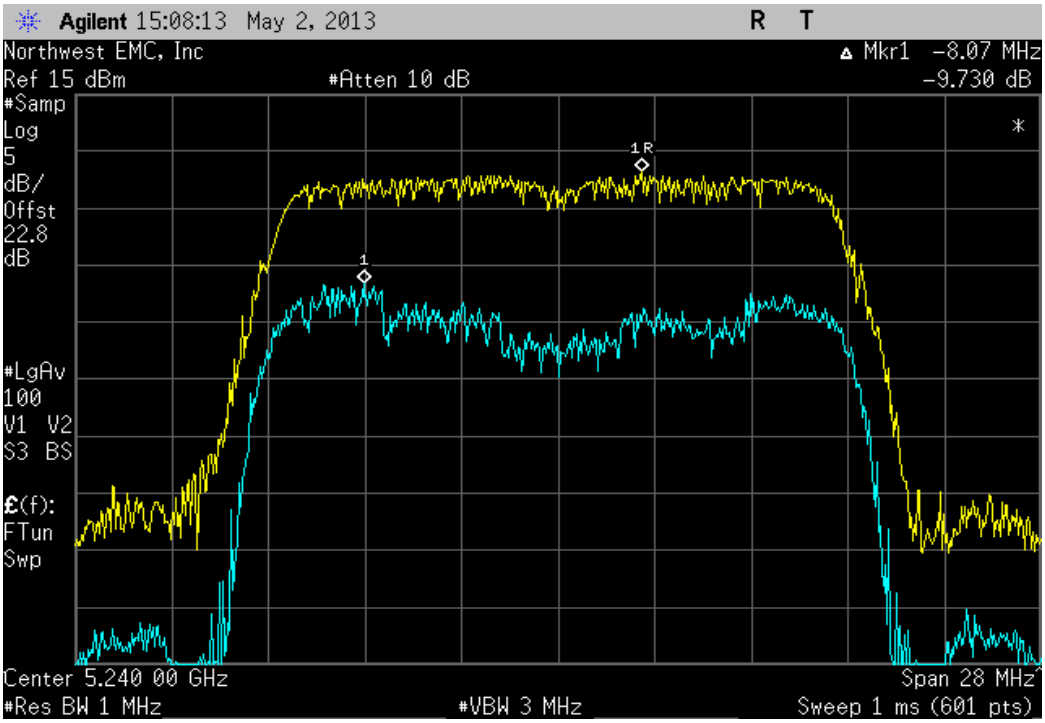
802.11(a) 6 Mbps, 5150 - 5250 MHz Band, Channel 36, Low Channel 5180 MHz

				Value	Limit	Result
				9.978 dB	≤ 13 dB	Pass



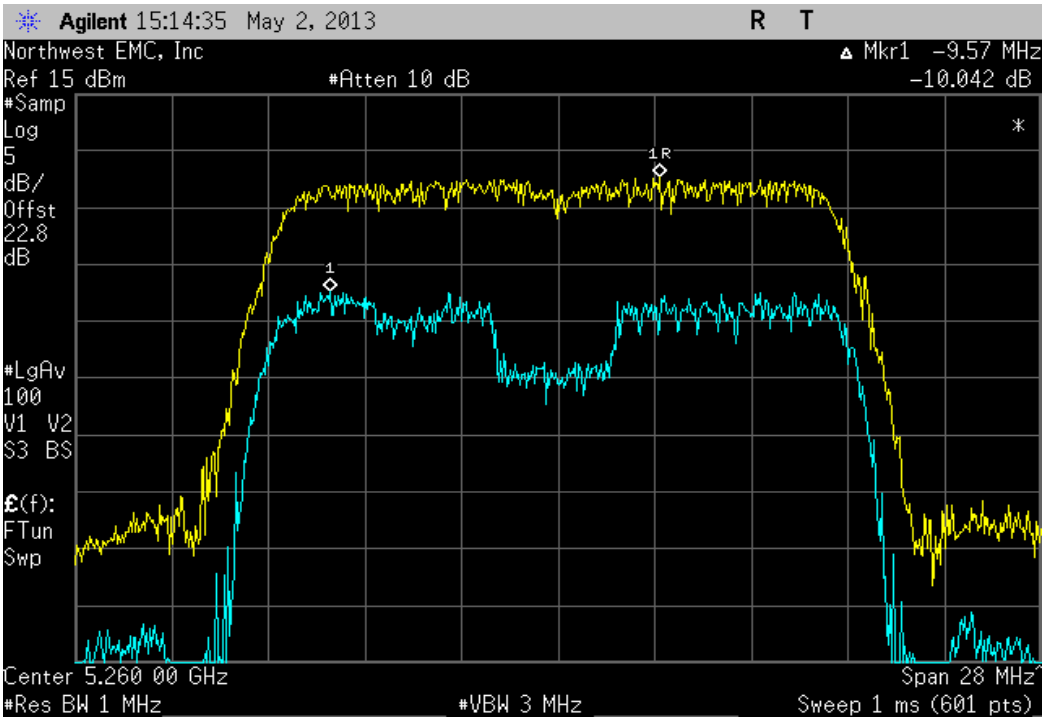
802.11(a) 6 Mbps, 5150 - 5250 MHz Band, Channel 48, High Channel 5240 MHz

				Value	Limit	Result
				9.73 dB	≤ 13 dB	Pass



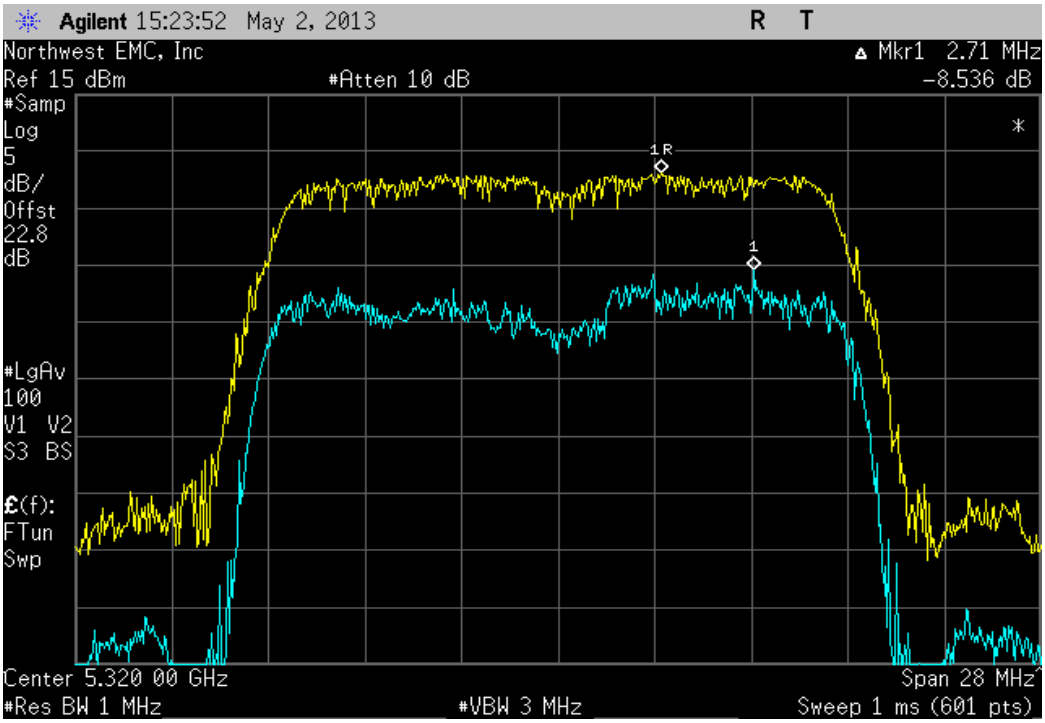
802.11(a) 6 Mbps, 5250 - 5350 MHz Band, Channel 52, Low Channel 5260 MHz

				Value	Limit	Result
				10.042 dB	≤ 13 dB	Pass



802.11(a) 6 Mbps, 5250 - 5350 MHz Band, Channel 64, High Channel 5320 MHz

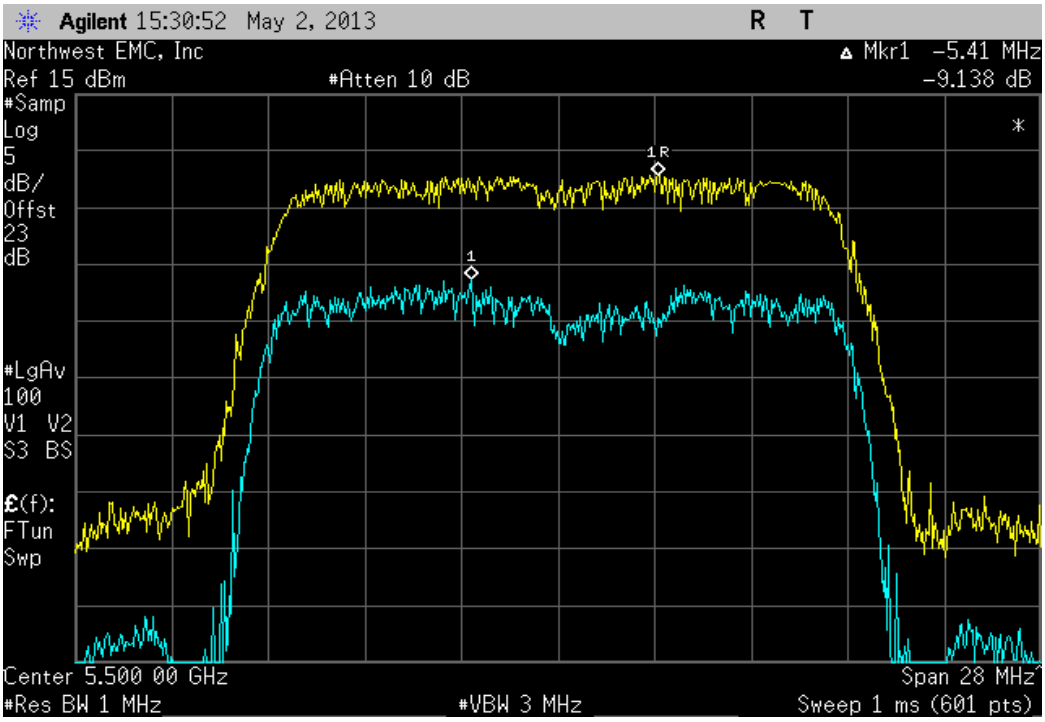
				Value	Limit	Result
				8.536 dB	≤ 13 dB	Pass



Peak Excursion

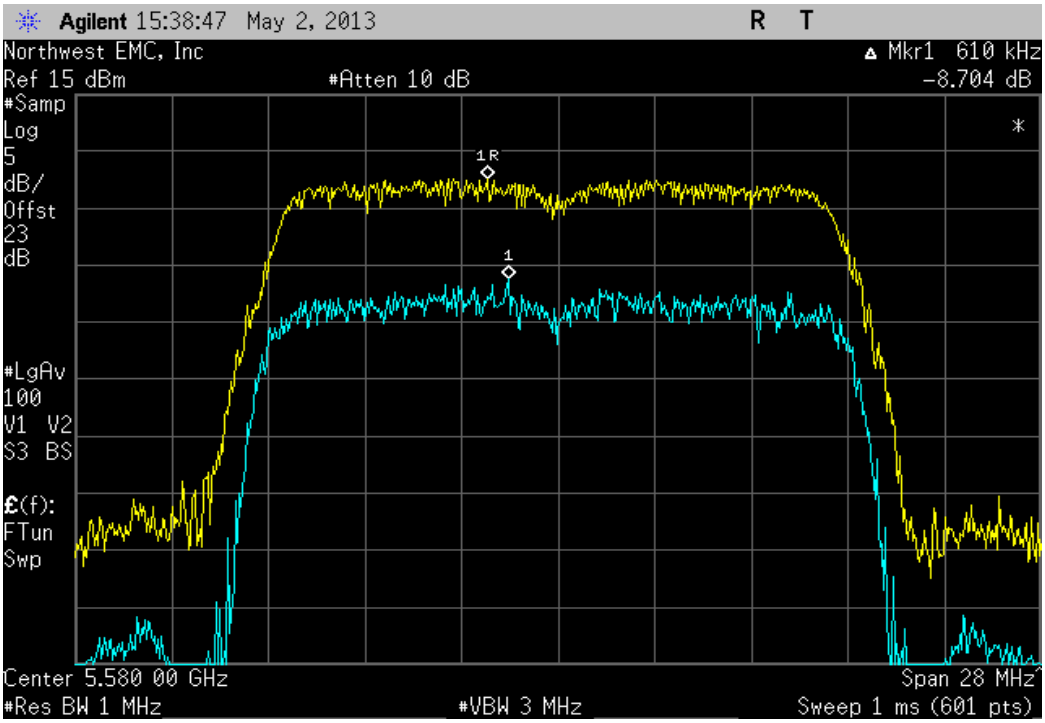
802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 100, Low Channel 5500 MHz

				Value	Limit	Result
				9.138 dB	≤ 13 dB	Pass



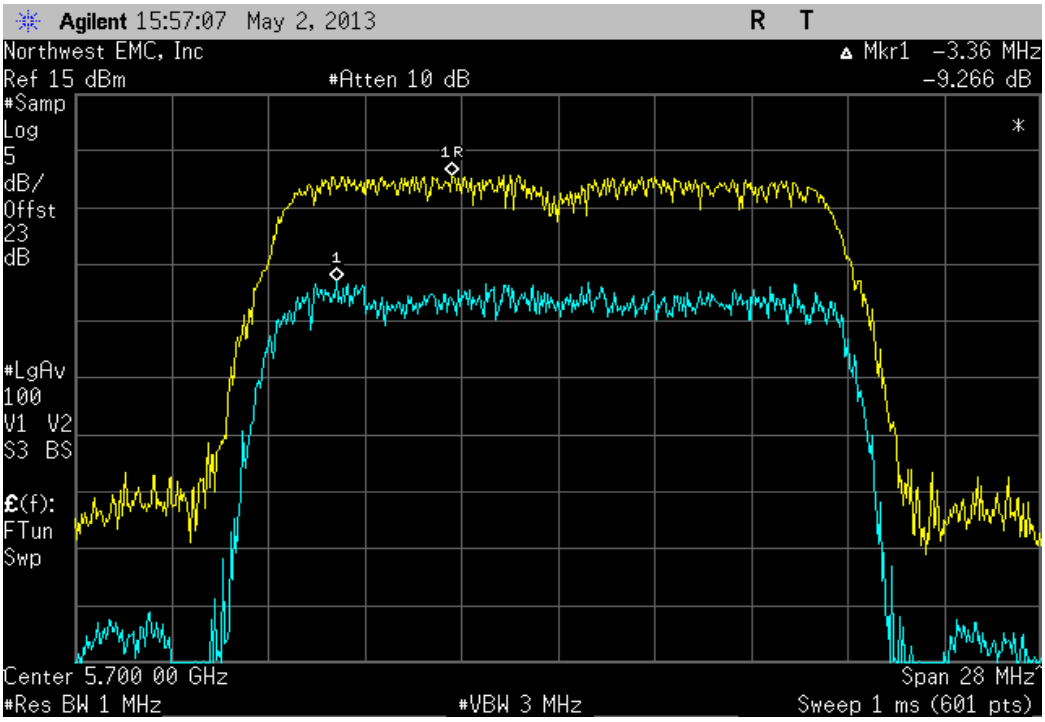
802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 116, Mid Channel 5580 MHz

				Value	Limit	Result
				8.704 dB	≤ 13 dB	Pass



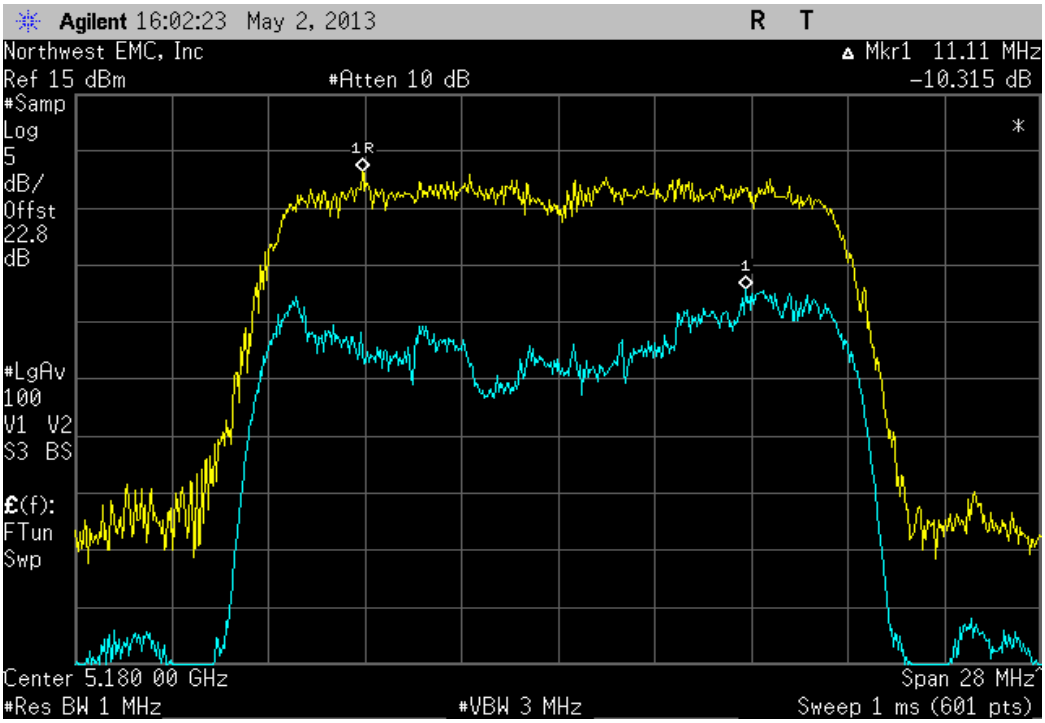
802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 140, High Channel5700 MHz

				Value	Limit	Result
				9.266 dB	≤ 13 dB	Pass



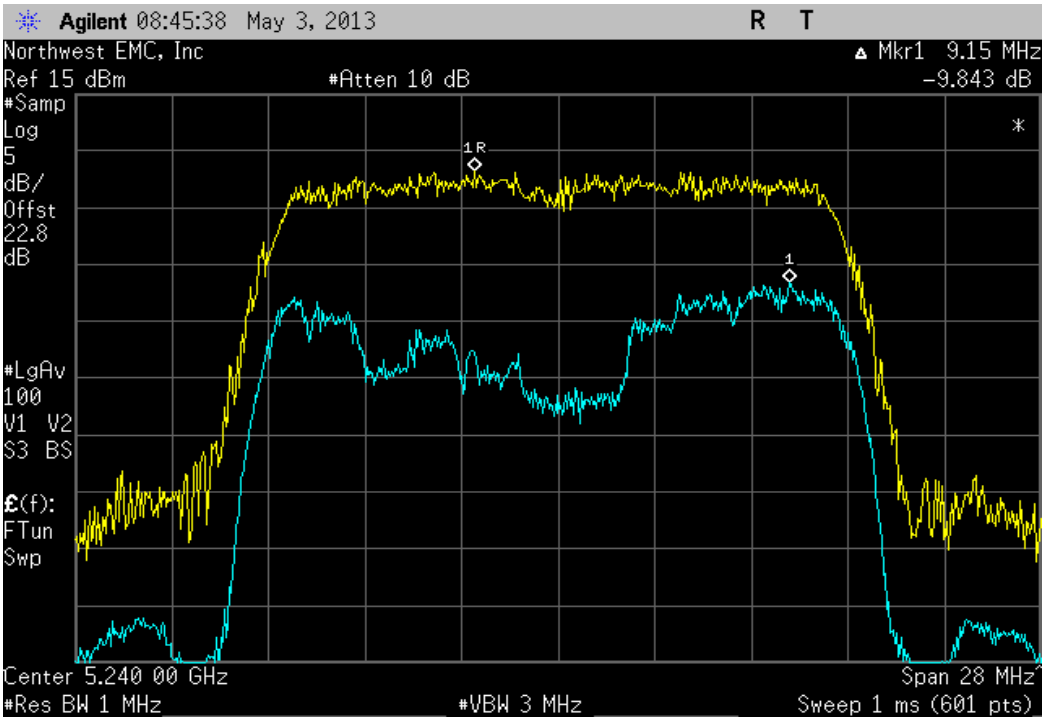
802.11(a) 18 Mbps, 5150 - 5250 MHz Band, Channel 36, Low Channel 5180 MHz

				Value	Limit	Result
				10.315 dB	≤ 13 dB	Pass



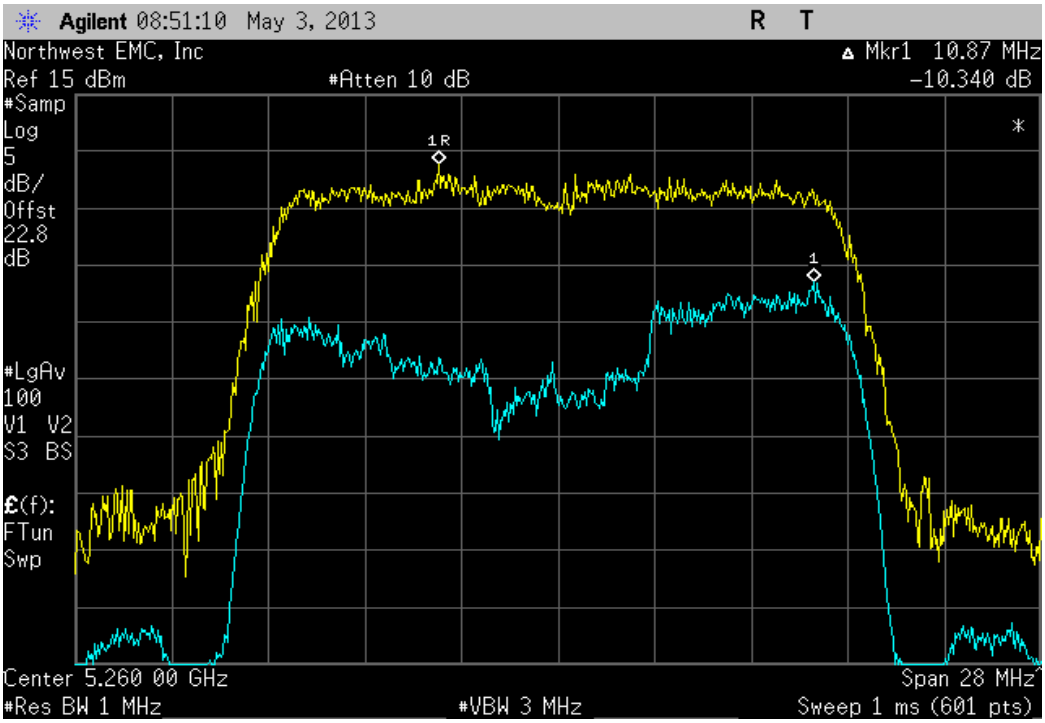
802.11(a) 18 Mbps, 5150 - 5250 MHz Band, Channel 48, High Channel 5240 MHz

				Value	Limit	Result
				9.843 dB	≤ 13 dB	Pass



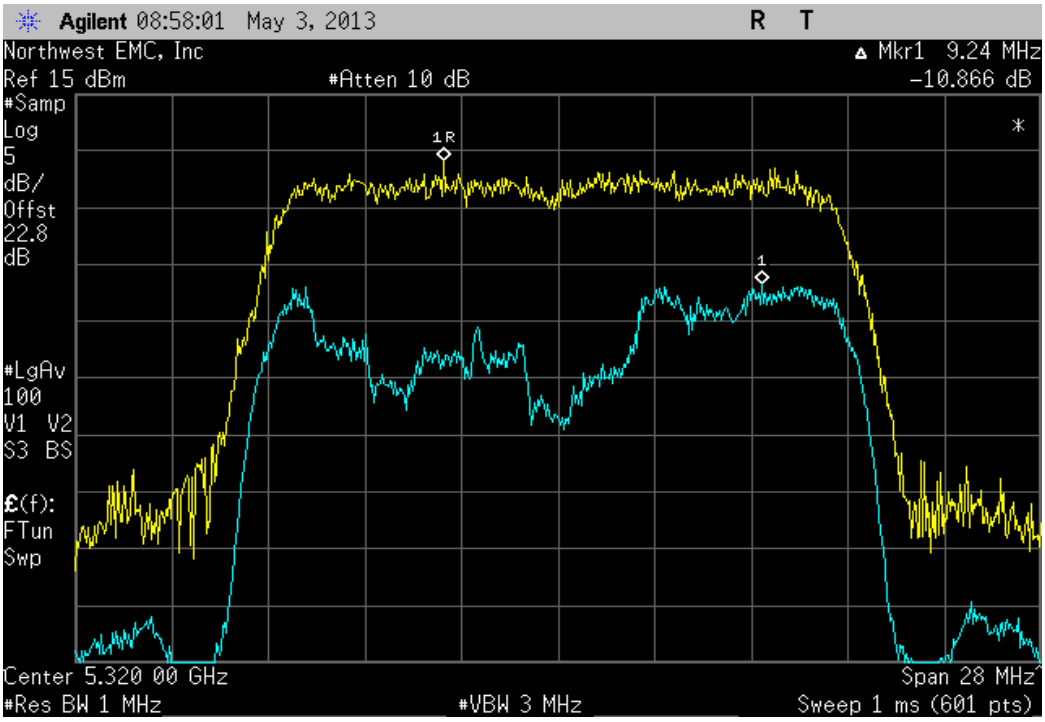
802.11(a) 18 Mbps, 5250 - 5350 MHz Band, Channel 52, Low Channel 5260 MHz

				Value	Limit	Result
				10.34 dB	≤ 13 dB	Pass



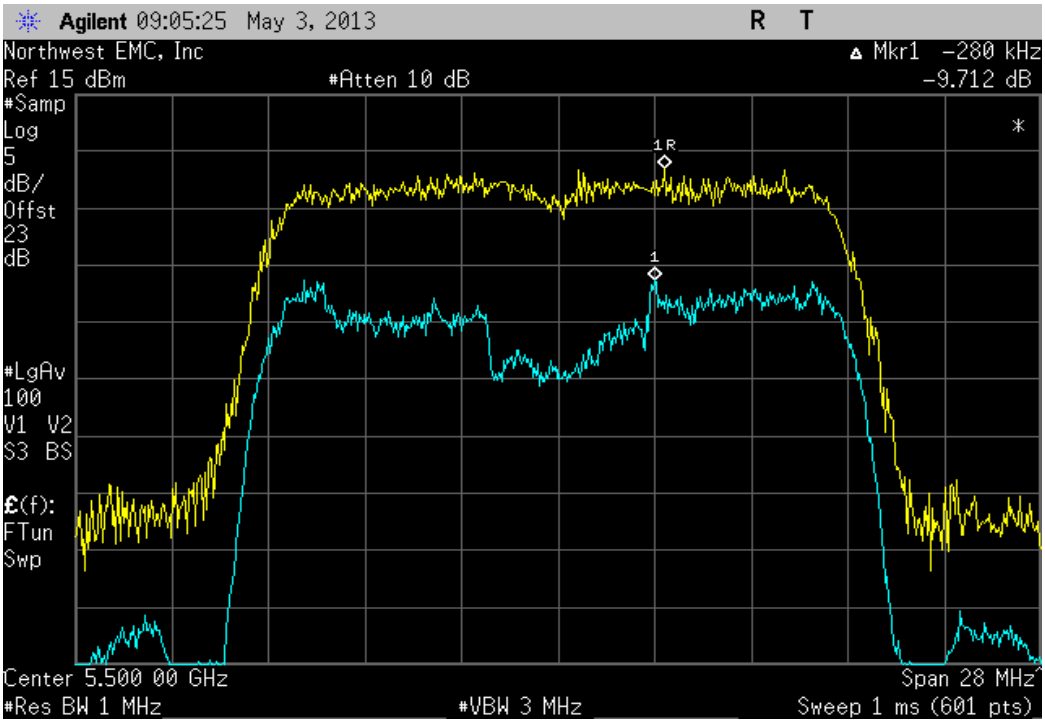
802.11(a) 18 Mbps, 5250 - 5350 MHz Band, Channel 64, High Channel 5320 MHz

				Value	Limit	Result
				10.866 dB	≤ 13 dB	Pass



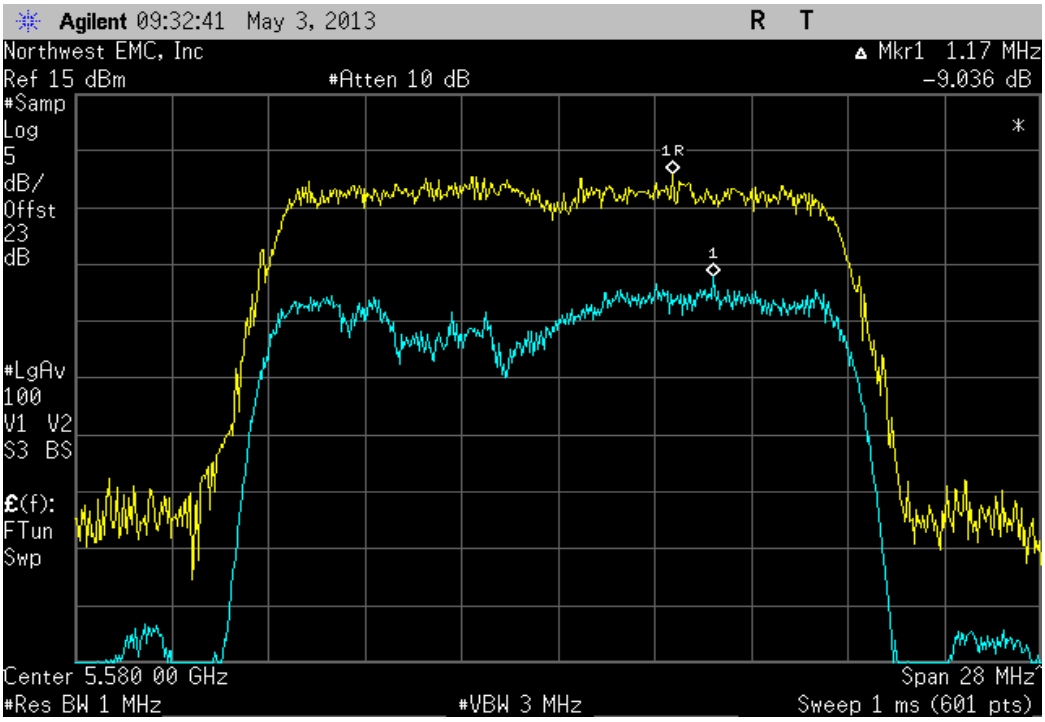
802.11(a) 18 Mbps, 5470 - 5725 MHz Band, Channel 100, Low Channel 5500 MHz

				Value	Limit	Result
				9.712 dB	≤ 13 dB	Pass



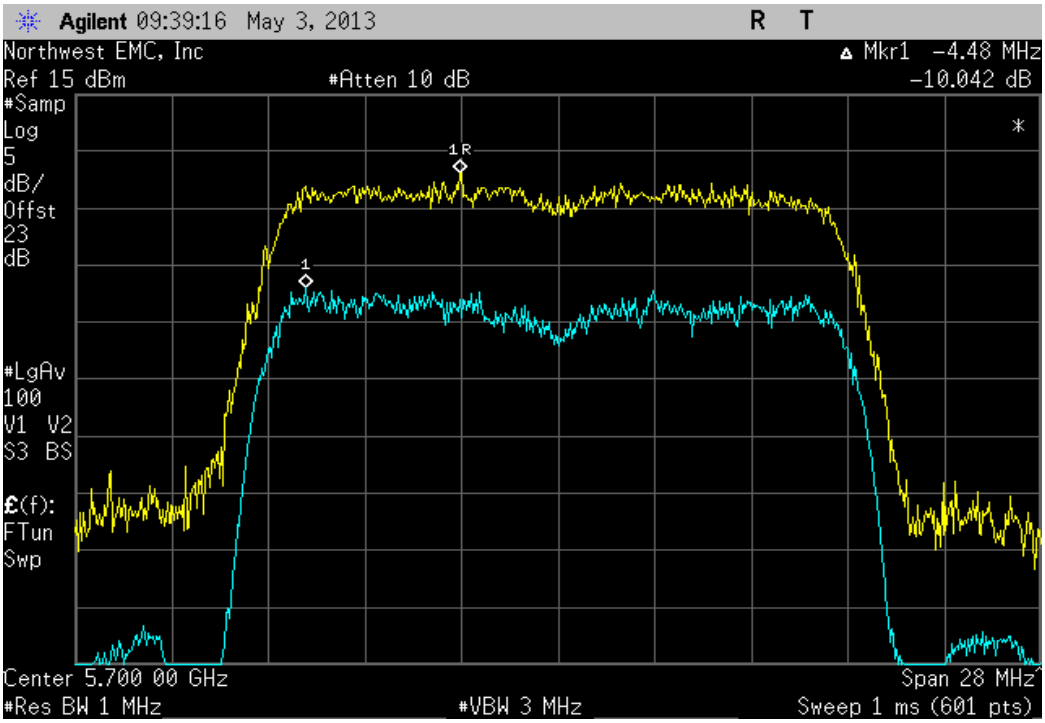
802.11(a) 18 Mbps, 5470 - 5725 MHz Band, Channel 116, Mid Channel 5580 MHz

				Value	Limit	Result
				9.036 dB	≤ 13 dB	Pass



802.11(a) 18 Mbps, 5470 - 5725 MHz Band, Channel 140, High Channel 5700 MHz

				Value	Limit	Result
				10.042 dB	≤ 13 dB	Pass



Frequency Stability

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
Temp./Humidity Chamber	Cincinnati Sub Zero (CSZ)	ZH-32-2-2-H/AC	TBA	NCR	0
DC Power Supply	MPJA	9950 PS	TQA	NCR	0
Multimeter	Tektronix	DMM912	MMH	2/5/2013	24
Humidity Temperature Meter	Omegaette	HH311	DTY	3/29/2011	36
Attenuator, 6dB	S.M. Electronics	18N-06	AWN	3/25/2013	12
MXG Vector Signal Generator	Agilent	N5182A	TIF	NCR	0
Power Meter	Gigatronics	8651A	SPM	1/9/2012	24
Power Sensor	Gigatronics	80701A	SPL	7/8/2011	24
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Attenuator, 6 dB, 'SMA'	N/A	93459 3330A-6	AUF	3/5/2013	12
40GHz DC Block	Miteq	DCB4000	AMD	6/25/2012	12
Spectrum Analyzer	Agilent	E4446A	AAQ	2/7/2012	24

TEST DESCRIPTION

Variation of Supply Voltage

The primary supply voltage was varied from 85 % to 115% of the nominal voltage

Variation of Ambient Temperature

Using a temperature chamber, the transmit frequency was recorded at the extremes of the specified temperature range (-30 ° to +50° C) and at 10°C intervals.

A direct connect measurement was made between the EUT's antenna cable and a spectrum analyzer. The spectrum analyzer is equipped with a precision frequency reference that exceeds the stability requirement of the EUT. Measurements were made at the mid channel of each band to determine frequency stability. If the frequency variation is less than 100 ppm, the EUT will meet the requirement of 15.407(g), that the emissions are maintained within the band of operation.

Frequency Stability

EUT:	Model 444-2225 (Athena UFL)	**Work Order:**	FOCU0140
Serial Number:	02EA4D000027	**Date:**	05/07/13
Customer:	Summit Semiconductor	**Temperature:**	24°C
Attendees:	None	**Humidity:**	37%
Project:	None	**Barometric Pres.:**	1014
Tested by:	Brandon Hobbs	**Power:** 3.3 VDC	**Job Site:** EV06

TEST SPECIFICATIONS	Test Method
FCC 15.407:2013	ANSI C63.10:2009

COMMENTS

All testing was completed on the highest output power antenna port A2.

DEVIATIONS FROM TEST STANDARD

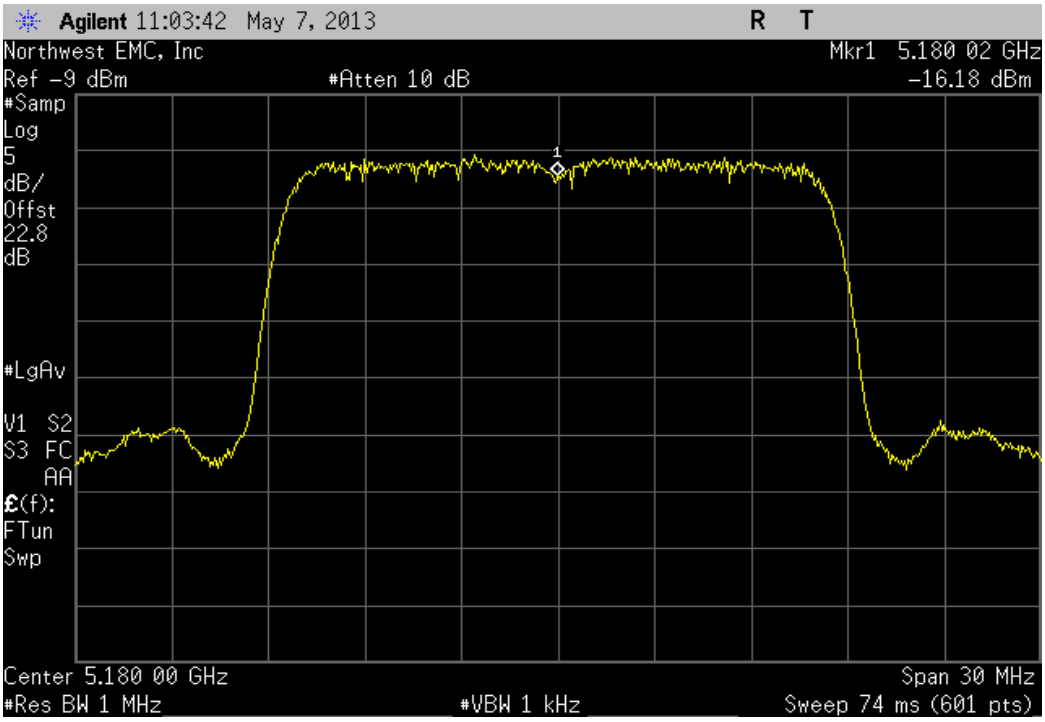
None

Configuration #	4	Signature

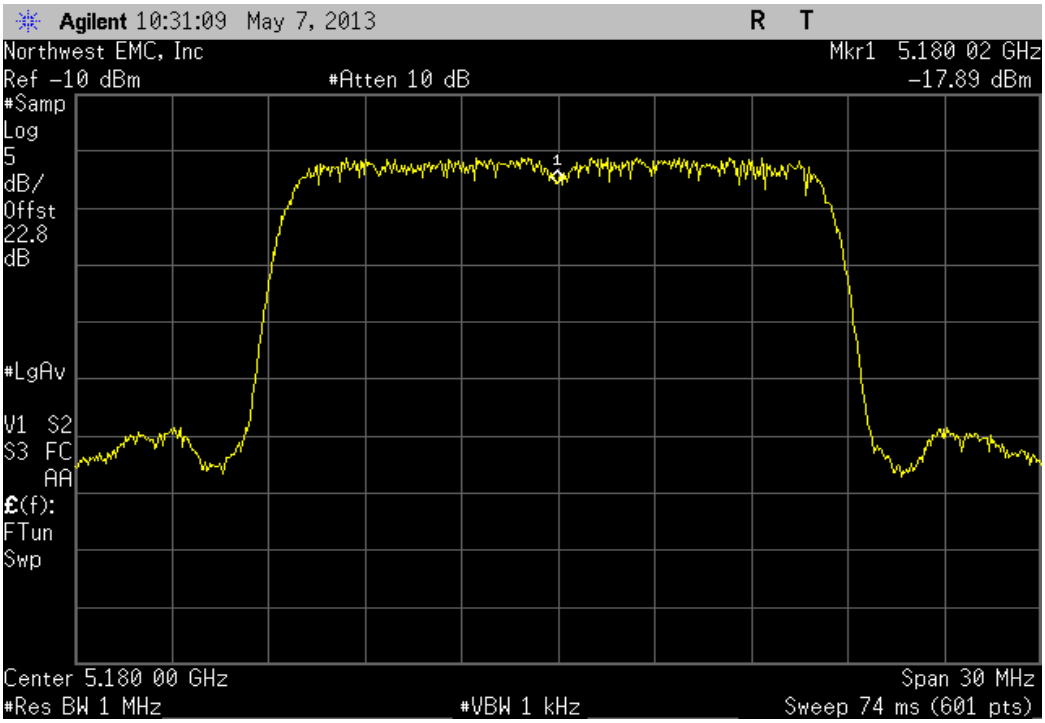
	Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
6 Mbps					
5150 MHz - 5250 MHz - Low Channel, 5180 MHz					
Voltage: 115%	5180.02	5180	3.9	100	Pass
Voltage: 100%	5180.02	5180	3.9	100	Pass
Voltage: 85%	5180	5180	0	100	Pass
Temperature: +50°	5180.02	5180	3.9	100	Pass
Temperature: +40°	5180.02	5180	3.9	100	Pass
Temperature: +30°	5180.02	5180	3.9	100	Pass
Temperature: +20°	5180.02	5180	3.9	100	Pass
Temperature: +10°	5180.02	5180	3.9	100	Pass
Temperature: 0°	5180.08	5180	15.4	100	Pass
Temperature: -10°	5180.05	5180	9.6	100	Pass
Temperature: -20°	5180.05	5180	9.6	100	Pass
Temperature: -30°	5180	5180	0	100	Pass
5150 MHz - 5250 MHz - High Channel, 5240 MHz					
Voltage: 115%	5239.98	5240	3.8	100	Pass
Voltage: 100%	5240.02	5240	3.8	100	Pass
Voltage: 85%	5240.02	5240	3.8	100	Pass
Temperature: +50°	5240.02	5240	3.8	100	Pass
Temperature: +40°	5240.02	5240	3.8	100	Pass
Temperature: +30°	5240.02	5240	3.8	100	Pass
Temperature: +20°	5240.02	5240	3.8	100	Pass
Temperature: +10°	5240.05	5240	9.5	100	Pass
Temperature: 0°	5240.02	5240	3.8	100	Pass
Temperature: -10°	5240.02	5240	3.8	100	Pass
Temperature: -20°	5240.02	5240	3.8	100	Pass
Temperature: -30°	5239.98	5240	3.8	100	Pass
5150 MHz - 5250 MHz - Low Channel, 5260 MHz					
Voltage: 115%	5260.02	5260	3.8	100	Pass
Voltage: 100%	5260.02	5260	3.8	100	Pass
Voltage: 85%	5260.02	5260	3.8	100	Pass
Temperature: +50°	5260.02	5260	3.8	100	Pass
Temperature: +40°	5260.02	5260	3.8	100	Pass
Temperature: +30°	5260.02	5260	3.8	100	Pass
Temperature: +20°	5260.02	5260	3.8	100	Pass
Temperature: +10°	5260.05	5260	9.5	100	Pass
Temperature: 0°	5260.05	5260	9.5	100	Pass
Temperature: -10°	5260.02	5260	3.8	100	Pass
Temperature: -20°	5260.02	5260	3.8	100	Pass
Temperature: -30°	5260.02	5260	3.8	100	Pass
5250 MHz - 5350 MHz - High Channel, 5320 MHz					
Voltage: 115%	5320.02	5320	3.8	100	Pass
Voltage: 100%	5320.05	5320	9.4	100	Pass
Voltage: 85%	5320.02	5320	3.8	100	Pass
Temperature: +50°	5320.02	5320	3.8	100	Pass
Temperature: +40°	5320.02	5320	3.8	100	Pass
Temperature: +30°	5320	5320	0	100	Pass
Temperature: +20°	5320.02	5320	3.8	100	Pass
Temperature: +10°	5320.02	5320	3.8	100	Pass
Temperature: 0°	5320.08	5320	15	100	Pass
Temperature: -10°	5320.02	5320	3.8	100	Pass
Temperature: -20°	5320.02	5320	3.8	100	Pass
Temperature: -30°	5320.02	5320	3.8	100	Pass
5470 MHz - 5725 MHz - Low Channel, 5500 MHz					
Voltage: 115%	5500.02	5500	3.6	100	Pass
Voltage: 100%	5500.02	5500	3.6	100	Pass
Voltage: 85%	5500.05	5500	9.1	100	Pass
Temperature: +50°	5500.02	5500	3.6	100	Pass
Temperature: +40°	5500.02	5500	3.6	100	Pass
Temperature: +30°	5500.05	5500	9.1	100	Pass
Temperature: +20°	5500.02	5500	3.6	100	Pass
Temperature: +10°	5500.02	5500	3.6	100	Pass
Temperature: 0°	5500.05	5500	9.1	100	Pass
Temperature: -10°	5500	5500	0	100	Pass
Temperature: -20°	5500	5500	0	100	Pass
Temperature: -30°	5500	5500	0	100	Pass
5470 MHz - 5725 MHz - High Channel, 5700 MHz					
Voltage: 115%	5700	5700	0	100	Pass
Voltage: 100%	5700.02	5700	3.5	100	Pass
Voltage: 85%	5700	5700	0	100	Pass
Temperature: +50°	5700.02	5700	3.5	100	Pass
Temperature: +40°	5700.02	5700	3.5	100	Pass
Temperature: +30°	5700.05	5700	8.8	100	Pass
Temperature: +20°	5700.02	5700	3.5	100	Pass
Temperature: +10°	5700.02	5700	3.5	100	Pass
Temperature: 0°	5700.02	5700	3.5	100	Pass
Temperature: -10°	5700.05	5700	8.8	100	Pass
Temperature: -20°	5700.02	5700	3.5	100	Pass
Temperature: -30°	5700	5700	0	100	Pass

18 Mbps					
5150 MHz - 5250 MHz - Low Channel, 5180 MHz					
Voltage: 115%	5180.05	5180	9.6	100	Pass
Voltage: 100%	5180.02	5180	3.9	100	Pass
Voltage: 85%	5180.02	5180	3.9	100	Pass
Temperature: +50°	5180.02	5180	3.9	100	Pass
Temperature: +40°	5180	5180	0	100	Pass
Temperature: +30°	5180.02	5180	3.9	100	Pass
Temperature: +20°	5180.05	5180	9.6	100	Pass
Temperature: +10°	5180.05	5180	9.6	100	Pass
Temperature: 0°	5180.05	5180	9.6	100	Pass
Temperature: -10°	5180.05	5180	9.6	100	Pass
Temperature: -20°	5180.02	5180	3.9	100	Pass
Temperature: -30°	5179.98	5180	3.9	100	Pass
5150 MHz - 5250 MHz - High Channel, 5240 MHz					
Voltage: 115%	5240.02	5240	3.8	100	Pass
Voltage: 100%	5240.02	5240	3.8	100	Pass
Voltage: 85%	5240	5240	0	100	Pass
Temperature: +50°	5240.02	5240	3.8	100	Pass
Temperature: +40°	5240	5240	0	100	Pass
Temperature: +30°	5240	5240	0	100	Pass
Temperature: +20°	5240.02	5240	3.8	100	Pass
Temperature: +10°	5240.05	5240	9.5	100	Pass
Temperature: 0°	5240.05	5240	9.5	100	Pass
Temperature: -10°	5240.08	5240	15.3	100	Pass
Temperature: -20°	5240.05	5240	9.5	100	Pass
Temperature: -30°	5239.98	5240	3.8	100	Pass
5150 MHz - 5250 MHz - Low Channel, 5260 MHz					
Voltage: 115%	5260.02	5260	3.8	100	Pass
Voltage: 100%	5260.02	5260	3.8	100	Pass
Voltage: 85%	5260.05	5260	9.5	100	Pass
Temperature: +50°	5260.02	5260	3.8	100	Pass
Temperature: +40°	5260.02	5260	3.8	100	Pass
Temperature: +30°	5260.02	5260	3.8	100	Pass
Temperature: +20°	5260.05	5260	9.5	100	Pass
Temperature: +10°	5260.02	5260	3.8	100	Pass
Temperature: 0°	5260.12	5260	22.8	100	Pass
Temperature: -10°	5260.02	5260	3.8	100	Pass
Temperature: -20°	5260.05	5260	9.5	100	Pass
Temperature: -30°	5259.98	5260	3.8	100	Pass
5250 MHz - 5350 MHz - High Channel, 5320 MHz					
Voltage: 115%	5320	5320	0	100	Pass
Voltage: 100%	5320.05	5320	9.4	100	Pass
Voltage: 85%	5320.08	5320	15	100	Pass
Temperature: +50°	5320.05	5320	9.4	100	Pass
Temperature: +40°	5320.05	5320	9.4	100	Pass
Temperature: +30°	5320.02	5320	3.8	100	Pass
Temperature: +20°	5320.02	5320	3.8	100	Pass
Temperature: +10°	5320.02	5320	3.8	100	Pass
Temperature: 0°	5320.05	5320	9.4	100	Pass
Temperature: -10°	5320.02	5320	3.8	100	Pass
Temperature: -20°	5320	5320	0	100	Pass
Temperature: -30°	5320	5320	0	100	Pass
5470 MHz - 5725 MHz - Low Channel, 5500 MHz					
Voltage: 115%	5500.05	5500	9.1	100	Pass
Voltage: 100%	5500.05	5500	9.1	100	Pass
Voltage: 85%	5500.02	5500	3.6	100	Pass
Temperature: +50°	5500.02	5500	3.6	100	Pass
Temperature: +40°	5500	5500	0	100	Pass
Temperature: +30°	5500	5500	0	100	Pass
Temperature: +20°	5500.02	5500	3.6	100	Pass
Temperature: +10°	5500.05	5500	9.1	100	Pass
Temperature: 0°	5500.05	5500	9.1	100	Pass
Temperature: -10°	5500.08	5500	14.6	100	Pass
Temperature: -20°	5500	5500	0	100	Pass
Temperature: -30°	5499.92	5500	14.6	100	Pass
5470 MHz - 5725 MHz - High Channel, 5700 MHz					
Voltage: 115%	5700	5700	0	100	Pass
Voltage: 100%	5700.02	5700	3.5	100	Pass
Voltage: 85%	5700.18	5700	31.6	100	Pass
Temperature: +50°	5700.02	5700	3.5	100	Pass
Temperature: +40°	5700.02	5700	3.5	100	Pass
Temperature: +30°	5700.02	5700	3.5	100	Pass
Temperature: +20°	5700.05	5700	8.8	100	Pass
Temperature: +10°	5700.05	5700	8.8	100	Pass
Temperature: 0°	5700.02	5700	3.5	100	Pass
Temperature: -10°	5700.05	5700	8.8	100	Pass
Temperature: -20°	5700.02	5700	3.5	100	Pass
Temperature: -30°	5699.98	5700	3.5	100	Pass

6 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Voltage: 115%						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5180.02	5180	3.9	100	Pass

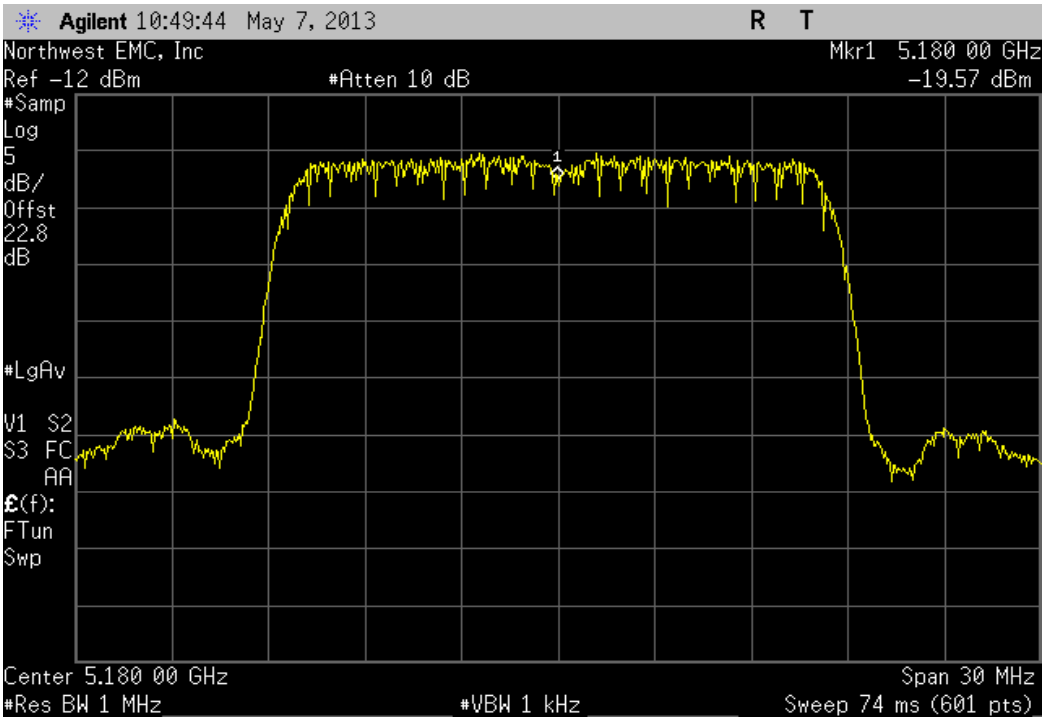


6 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Voltage: 100%						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5180.02	5180	3.9	100	Pass

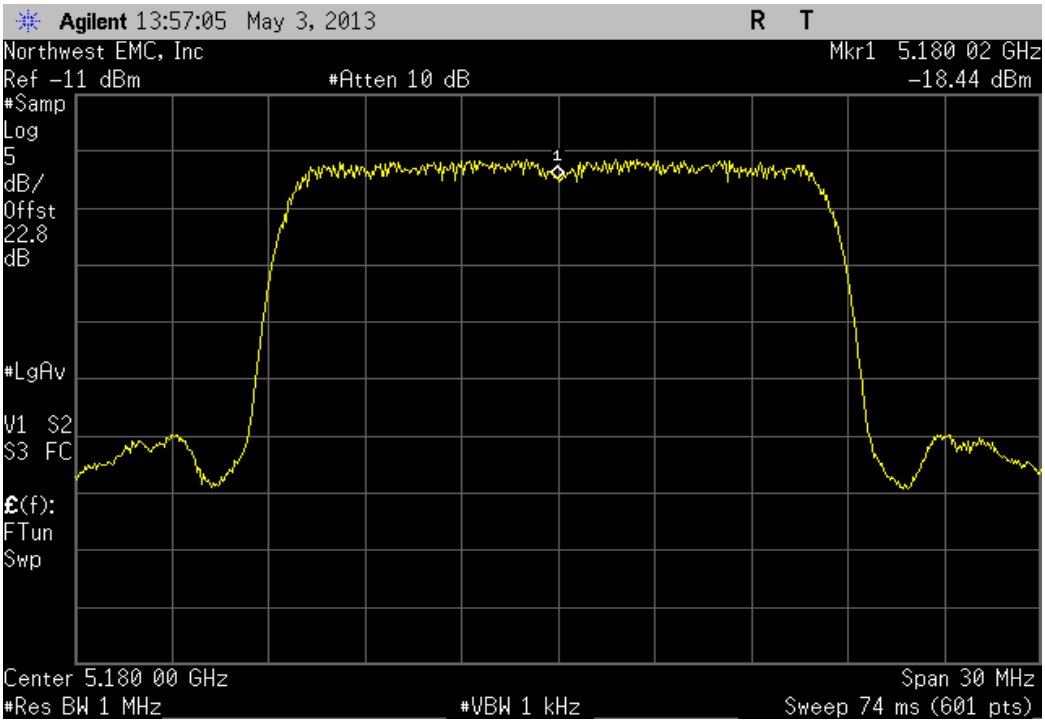


Frequency Stability

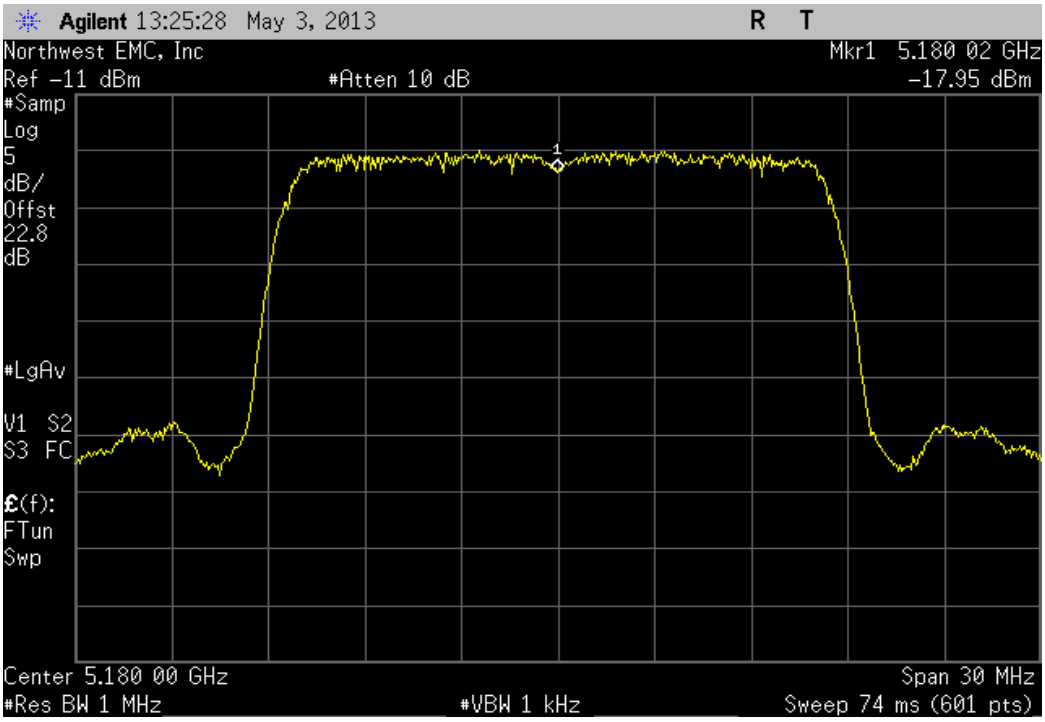
6 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Voltage: 85%						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5180	5180	0	100	Pass



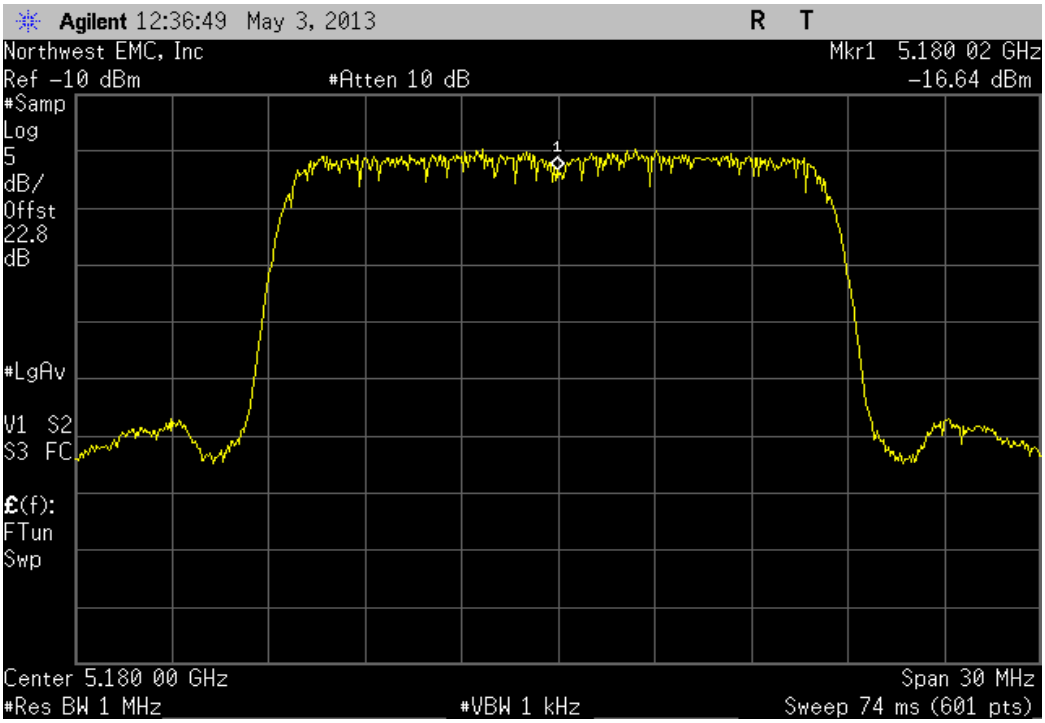
6 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: +50°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5180.02	5180	3.9	100	Pass



6 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: +40°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5180.02	5180	3.9	100	Pass

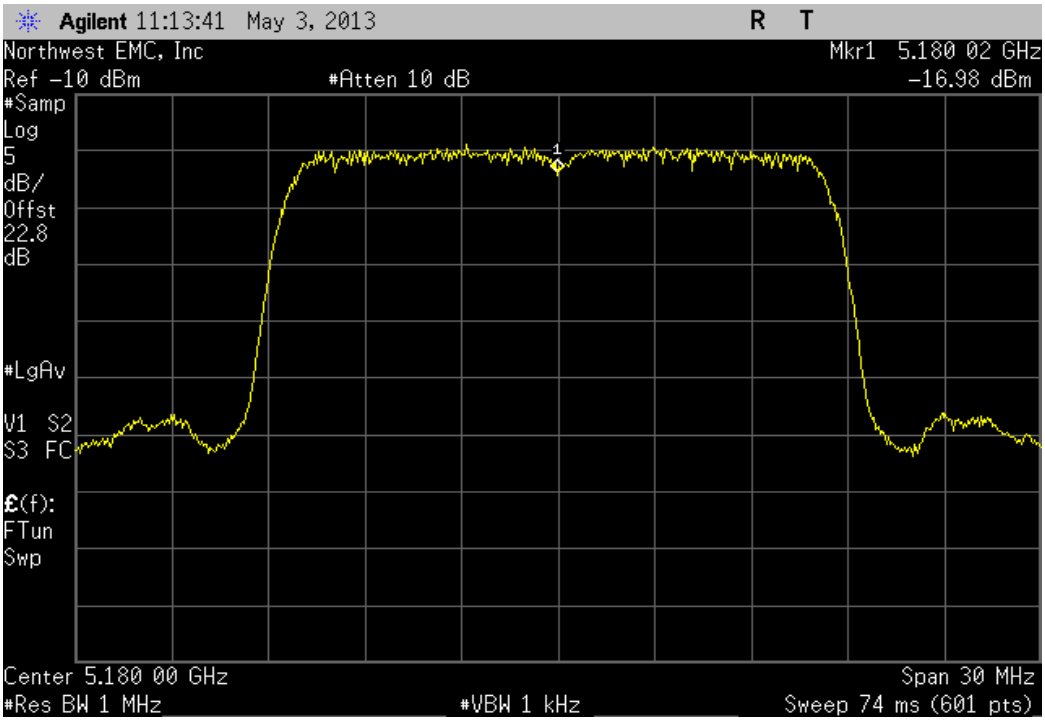


6 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: +30°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5180.02	5180	3.9	100	Pass

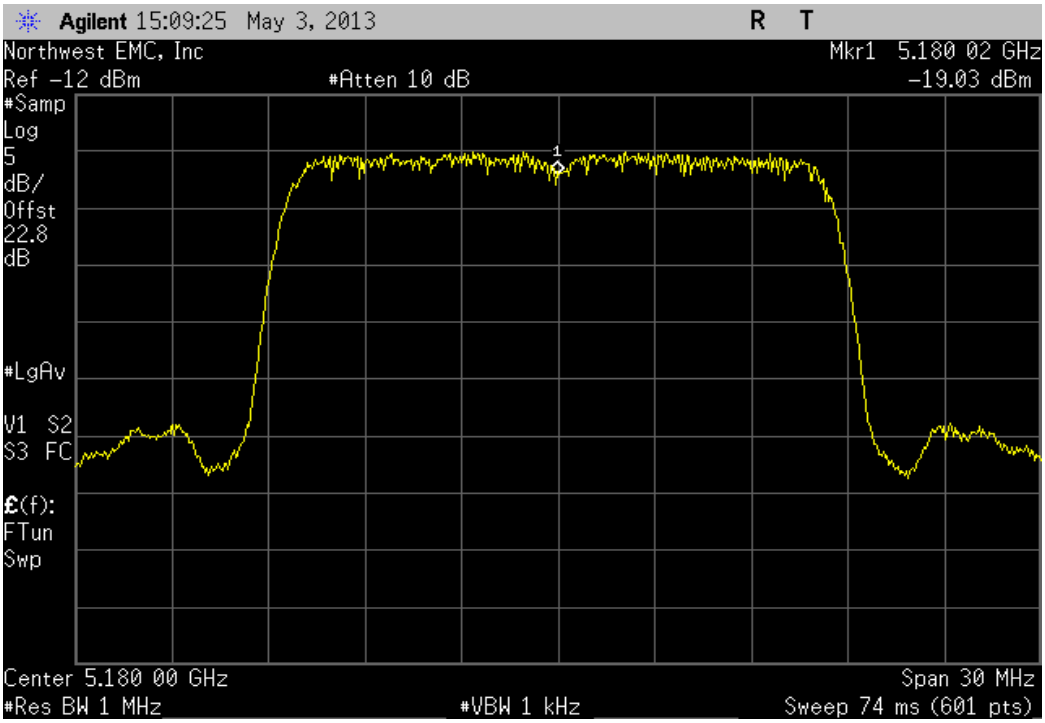


Frequency Stability

6 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: +20°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5180.02	5180	3.9	100	Pass

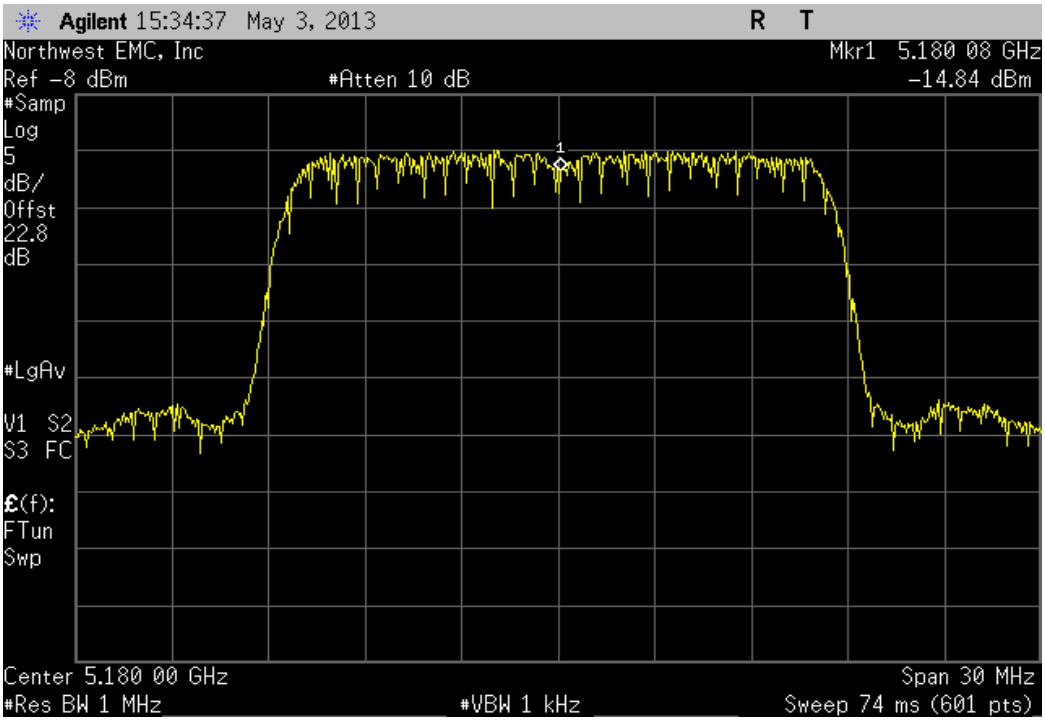


6 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: +10°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5180.02	5180	3.9	100	Pass

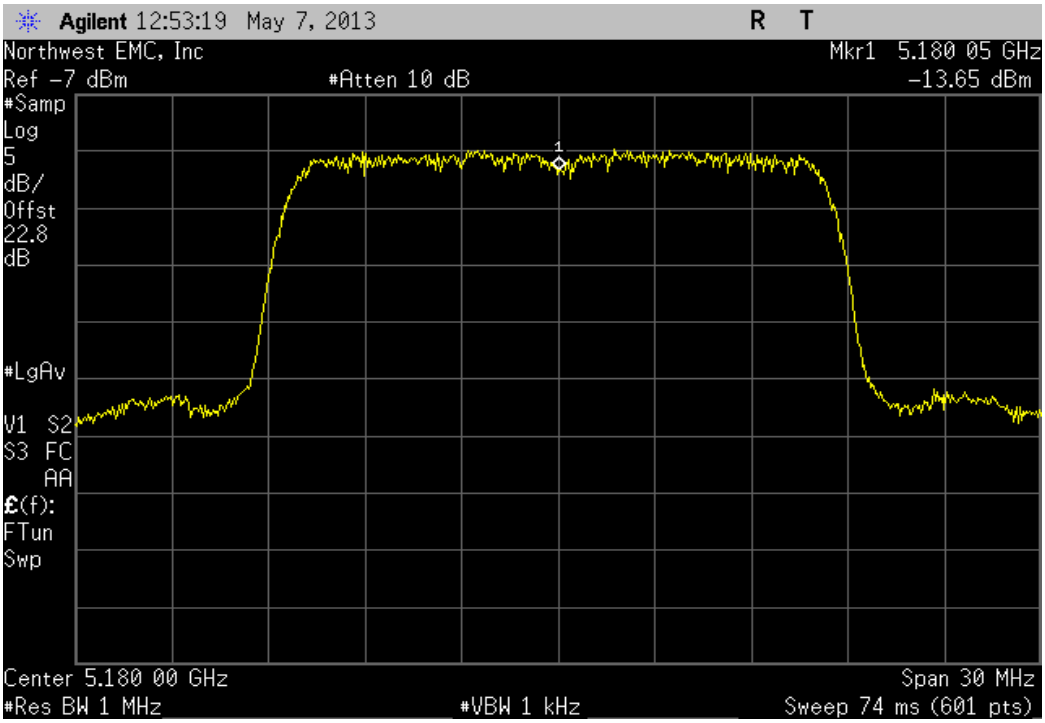


Frequency Stability

6 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: 0°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5180.08	5180	15.4	100	Pass

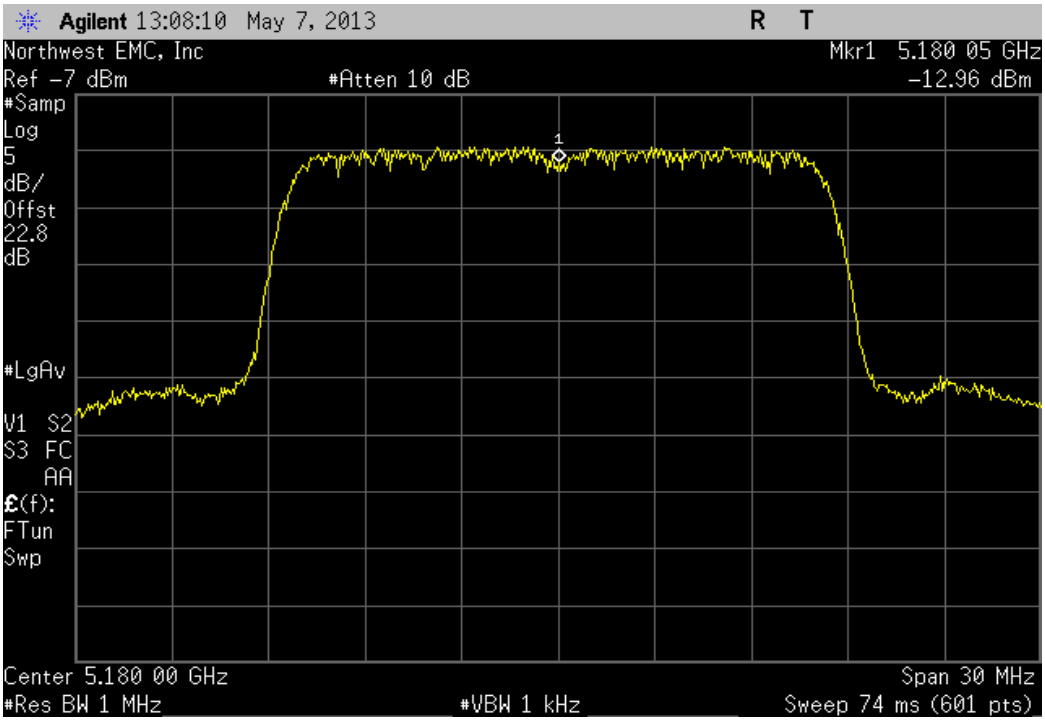


6 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: -10°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5180.05	5180	9.6	100	Pass

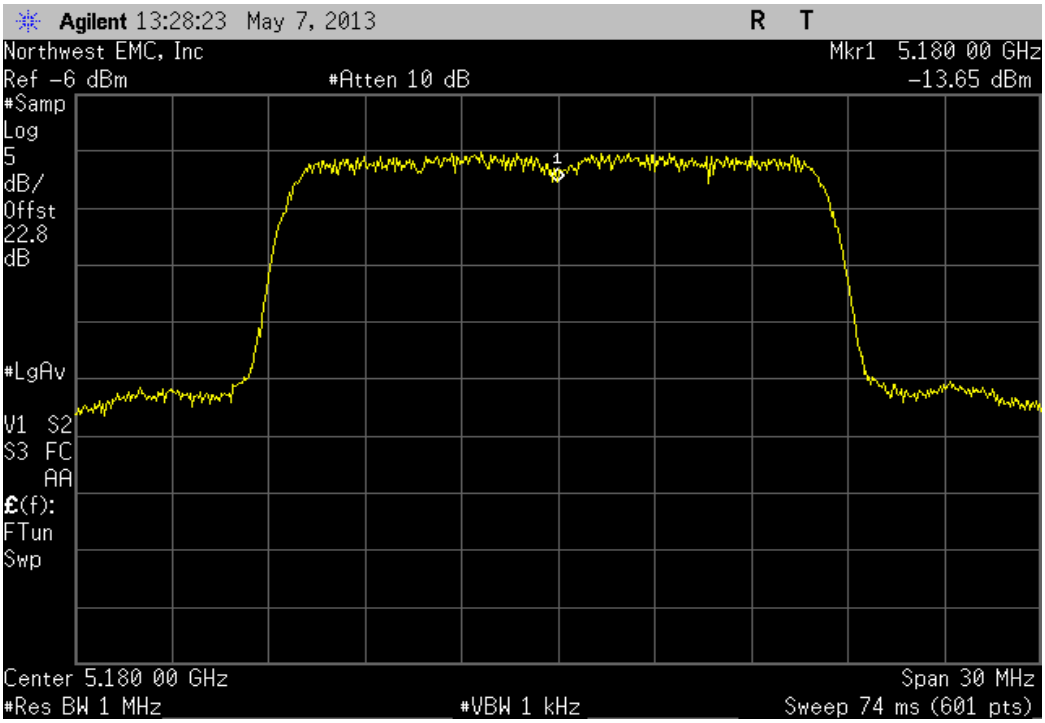


Frequency Stability

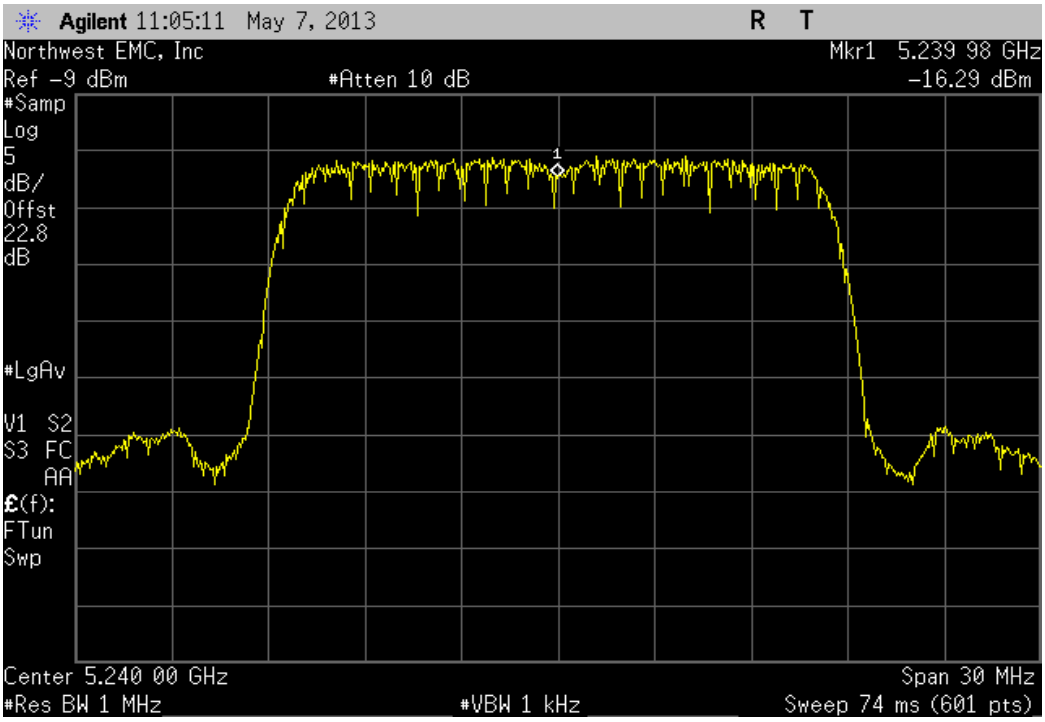
6 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: -20°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5180.05	5180	9.6	100	Pass



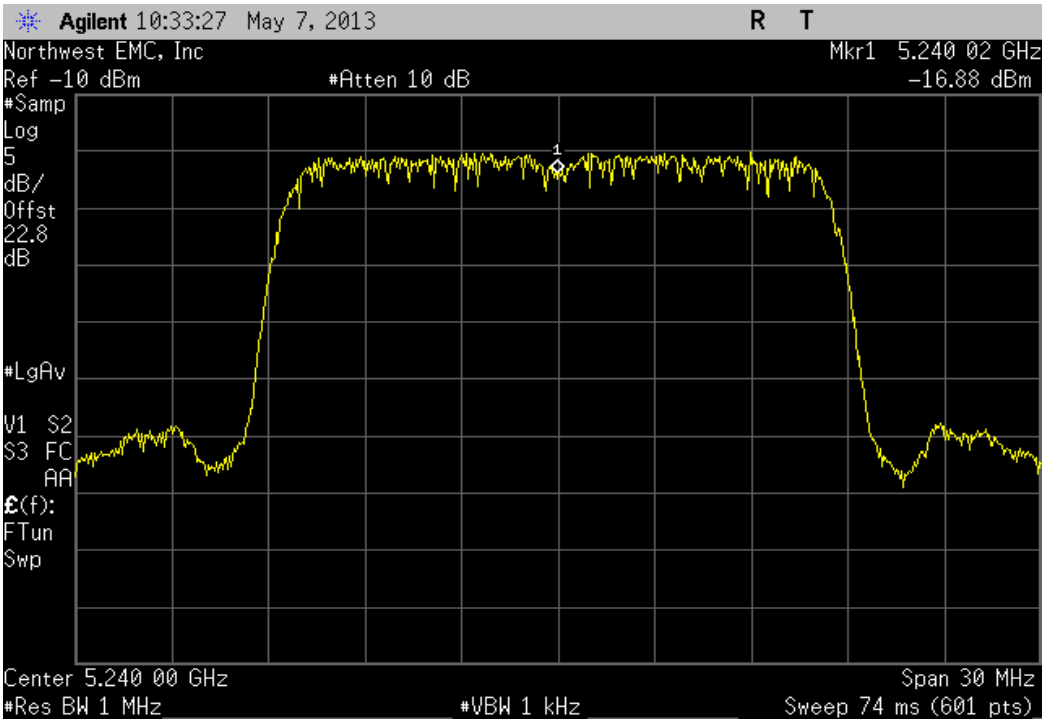
6 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: -30°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5180	5180	0	100	Pass



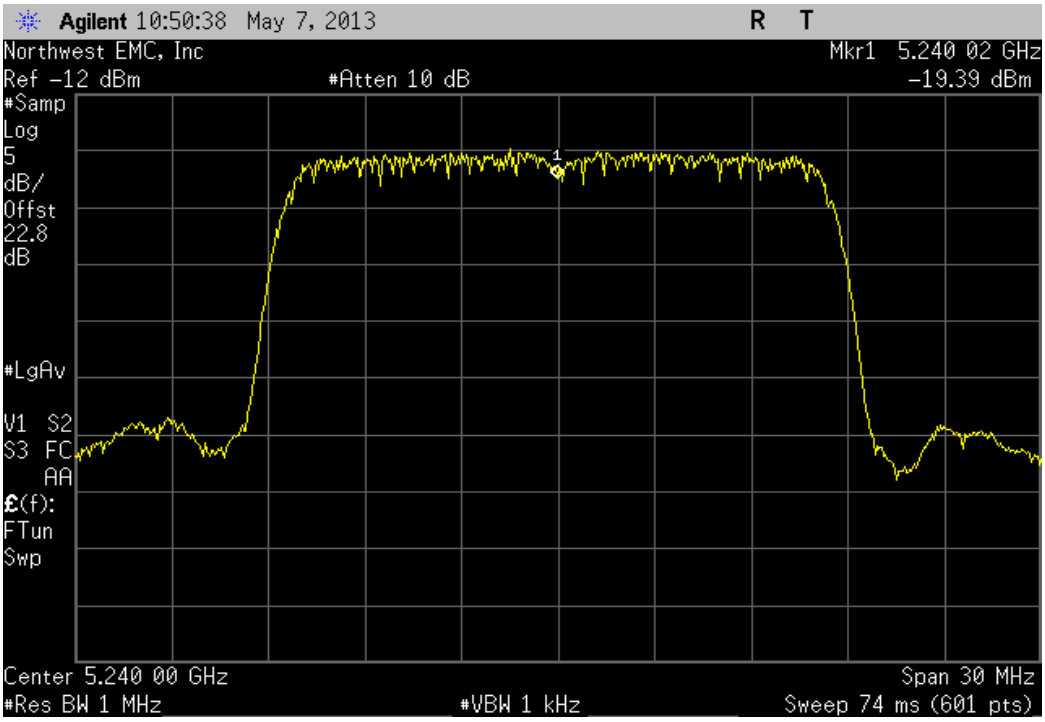
6 Mbps, 5150 MHz - 5250 MHz - High Channel, 5240 MHz, Voltage: 115%						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5239.98	5240	3.8	100	Pass



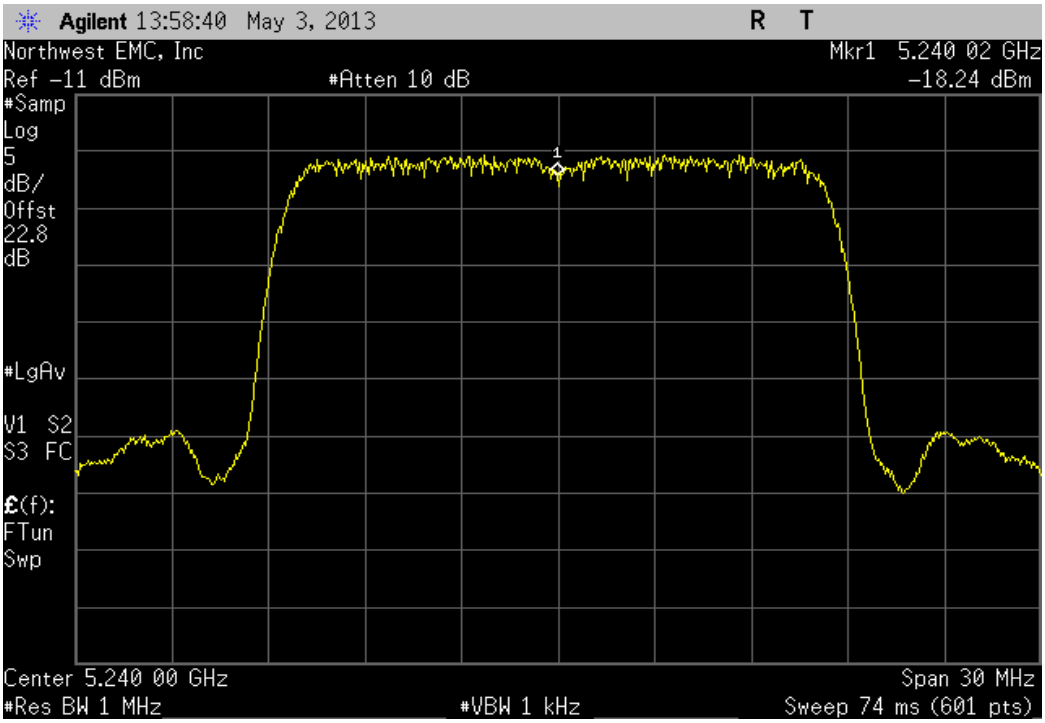
6 Mbps, 5150 MHz - 5250 MHz - High Channel, 5240 MHz, Voltage: 100%						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5240.02	5240	3.8	100	Pass



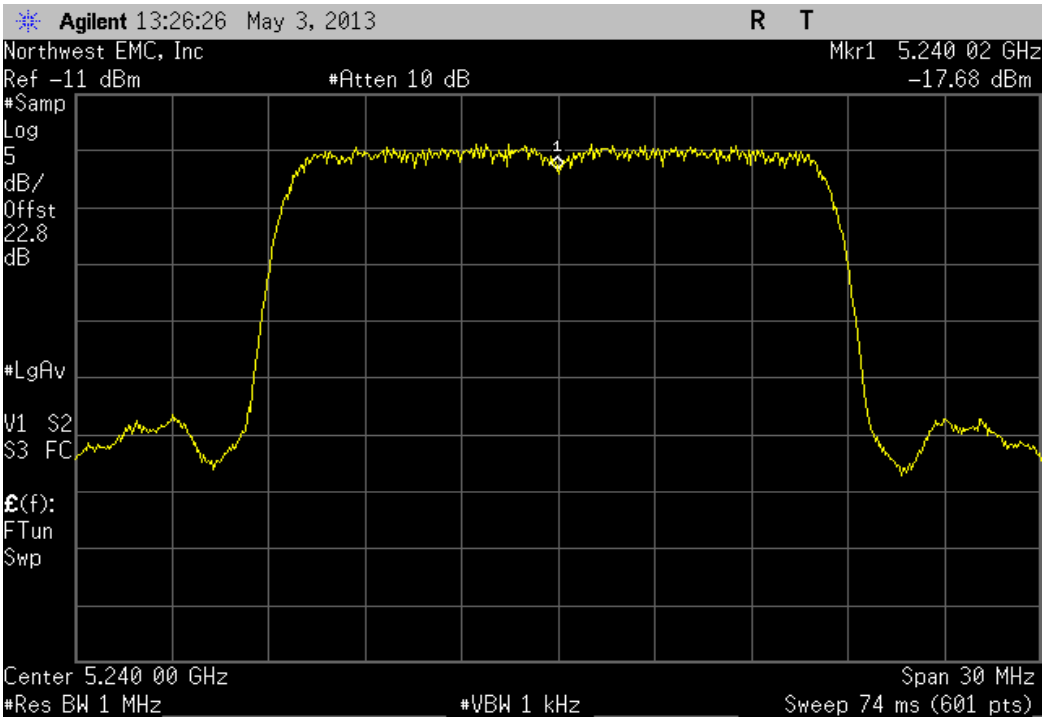
6 Mbps, 5150 MHz - 5250 MHz - High Channel, 5240 MHz, Voltage: 85%						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5240.02	5240	3.8	100	Pass



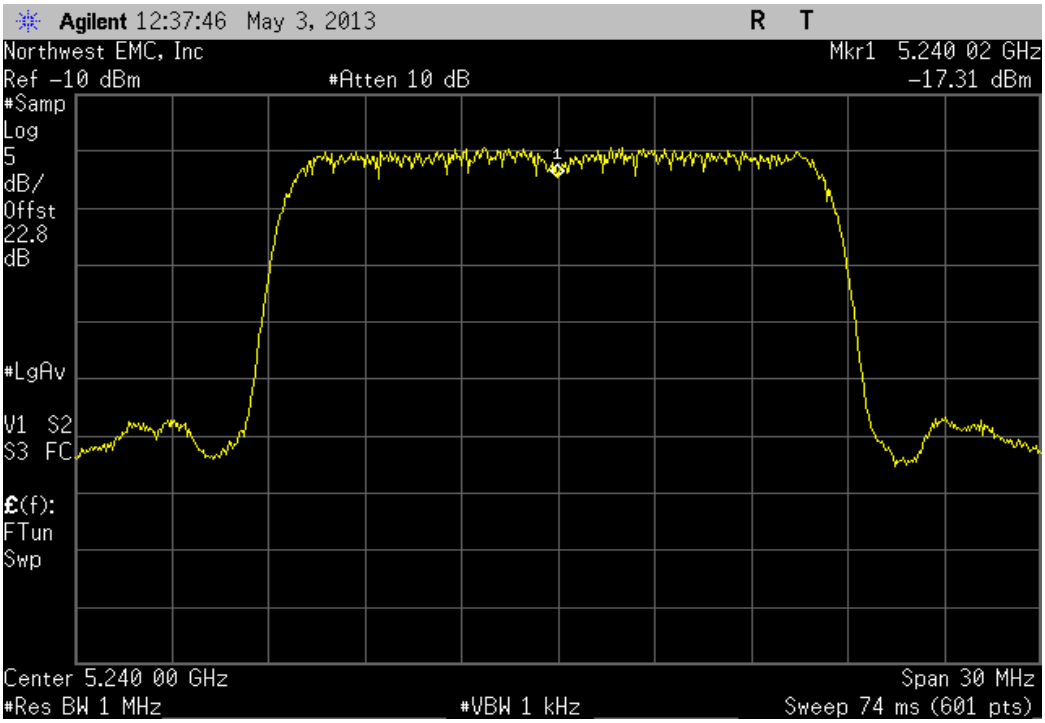
6 Mbps, 5150 MHz - 5250 MHz - High Channel, 5240 MHz, Temperature: +50°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5240.02	5240	3.8	100	Pass



6 Mbps, 5150 MHz - 5250 MHz - High Channel, 5240 MHz, Temperature: +40°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5240.02	5240	3.8	100	Pass

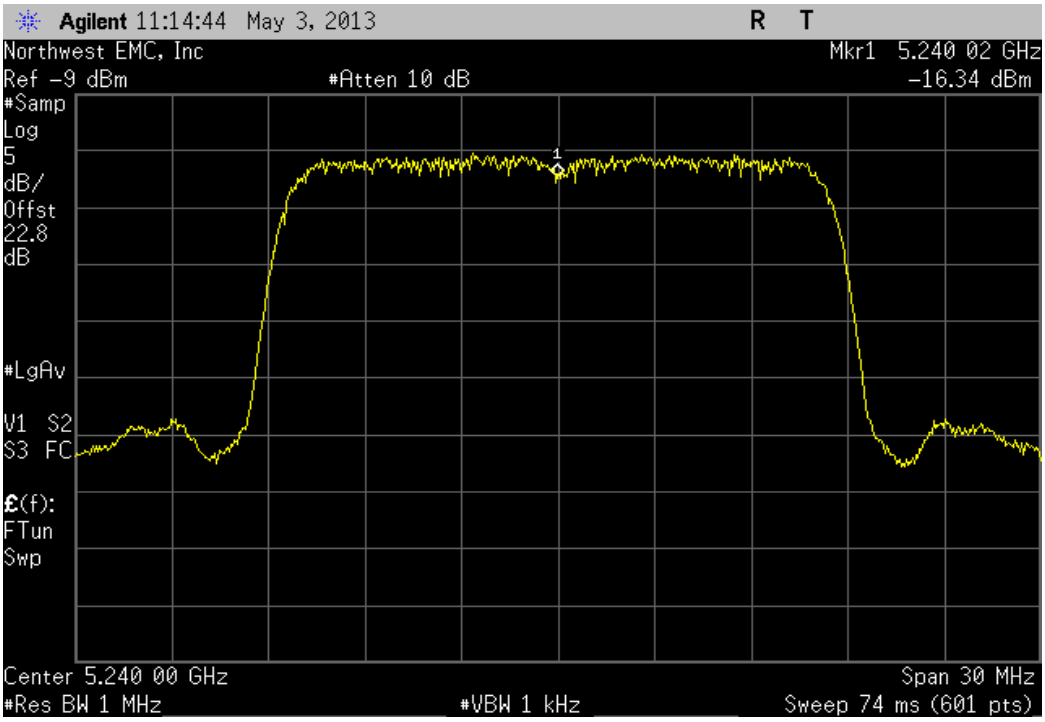


6 Mbps, 5150 MHz - 5250 MHz - High Channel, 5240 MHz, Temperature: +30°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5240.02	5240	3.8	100	Pass

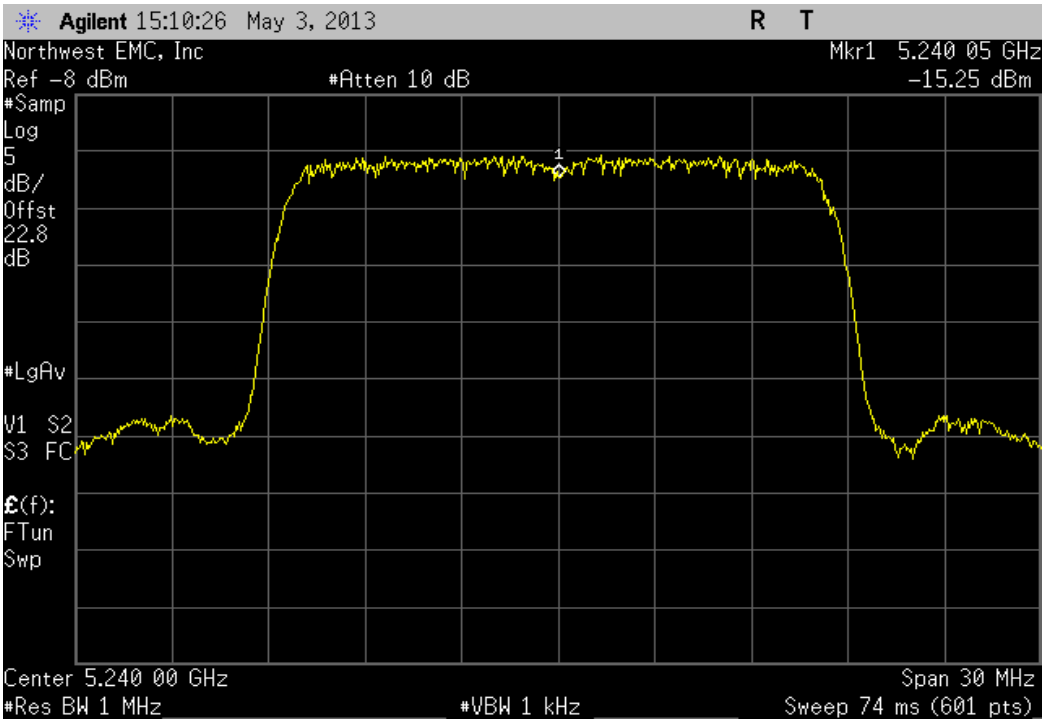


Frequency Stability

6 Mbps, 5150 MHz - 5250 MHz - High Channel, 5240 MHz, Temperature: +20°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5240.02	5240	3.8	100	Pass

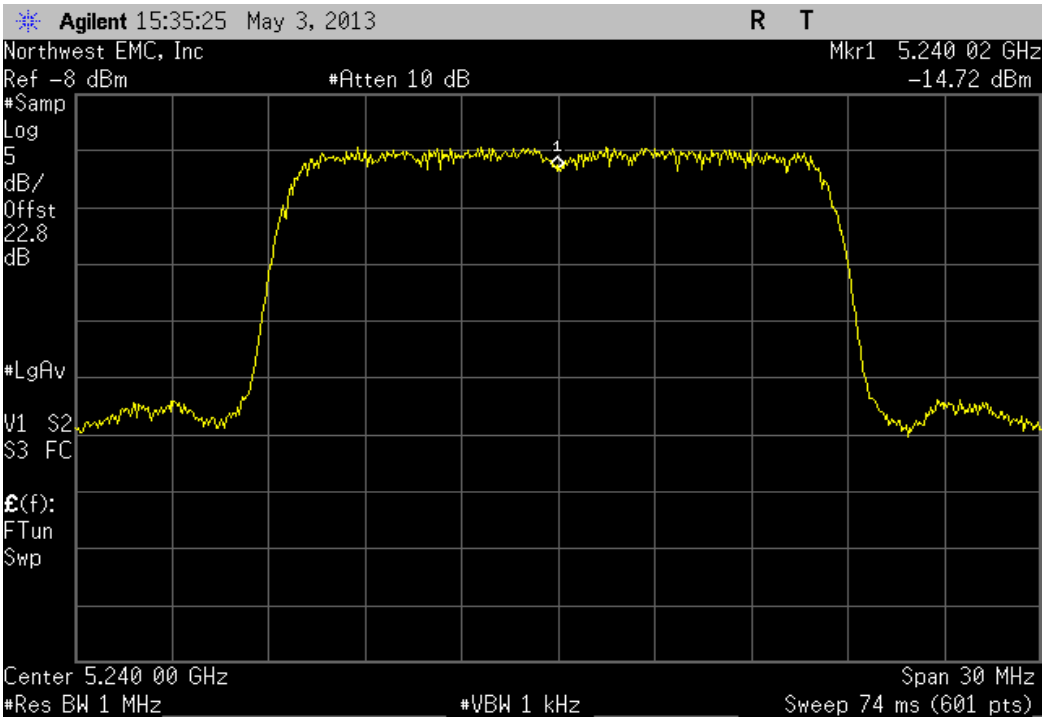


6 Mbps, 5150 MHz - 5250 MHz - High Channel, 5240 MHz, Temperature: +10°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5240.05	5240	9.5	100	Pass

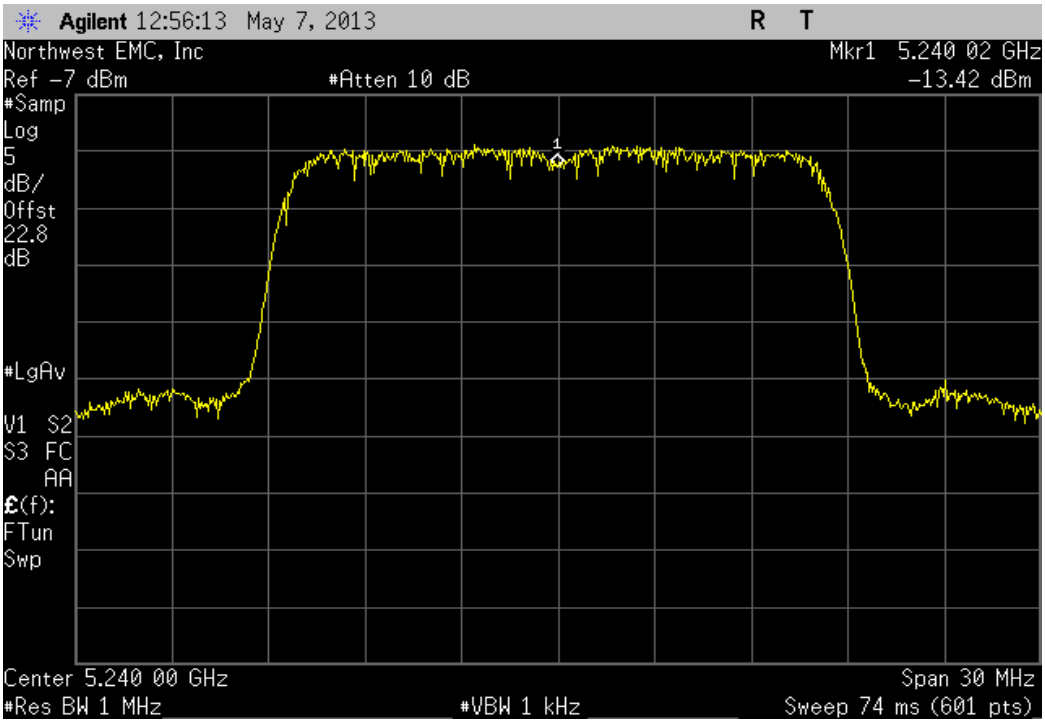


Frequency Stability

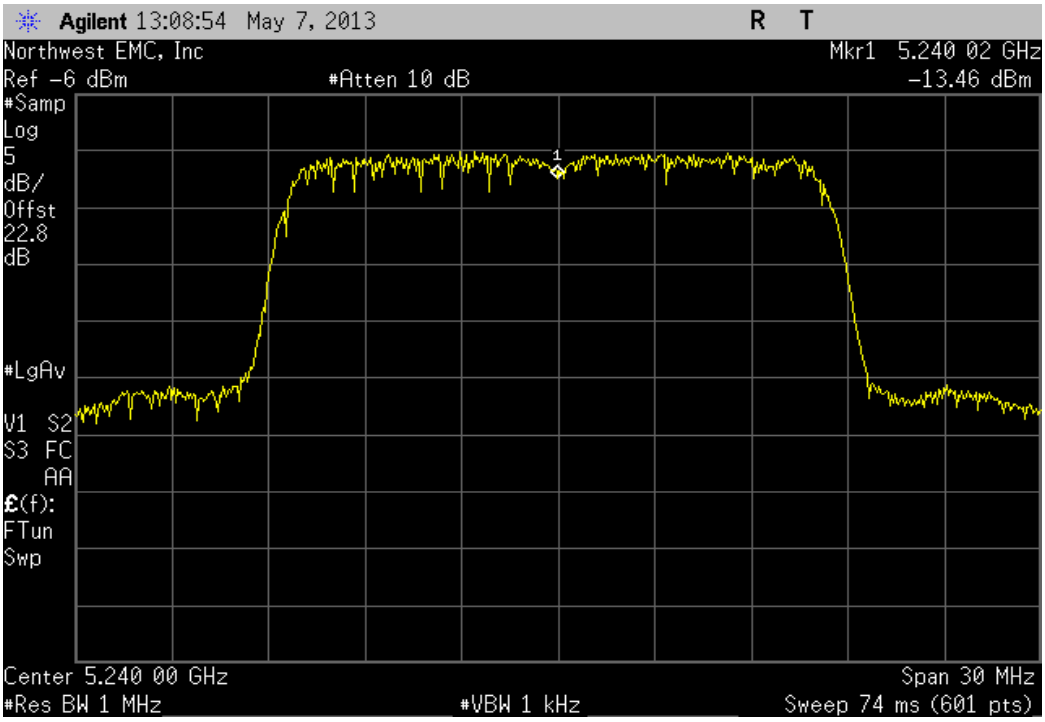
6 Mbps, 5150 MHz - 5250 MHz - High Channel, 5240 MHz, Temperature: 0°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5240.02	5240	3.8	100	Pass



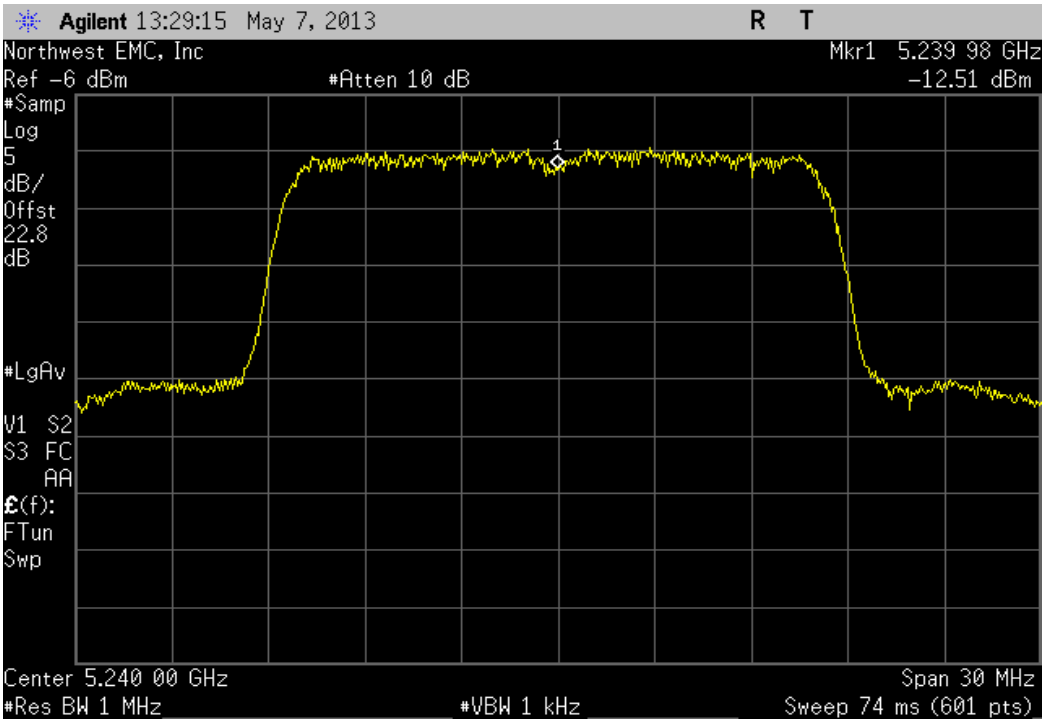
6 Mbps, 5150 MHz - 5250 MHz - High Channel, 5240 MHz, Temperature: -10°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5240.02	5240	3.8	100	Pass



6 Mbps, 5150 MHz - 5250 MHz - High Channel, 5240 MHz, Temperature: -20°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5240.02	5240	3.8	100	Pass

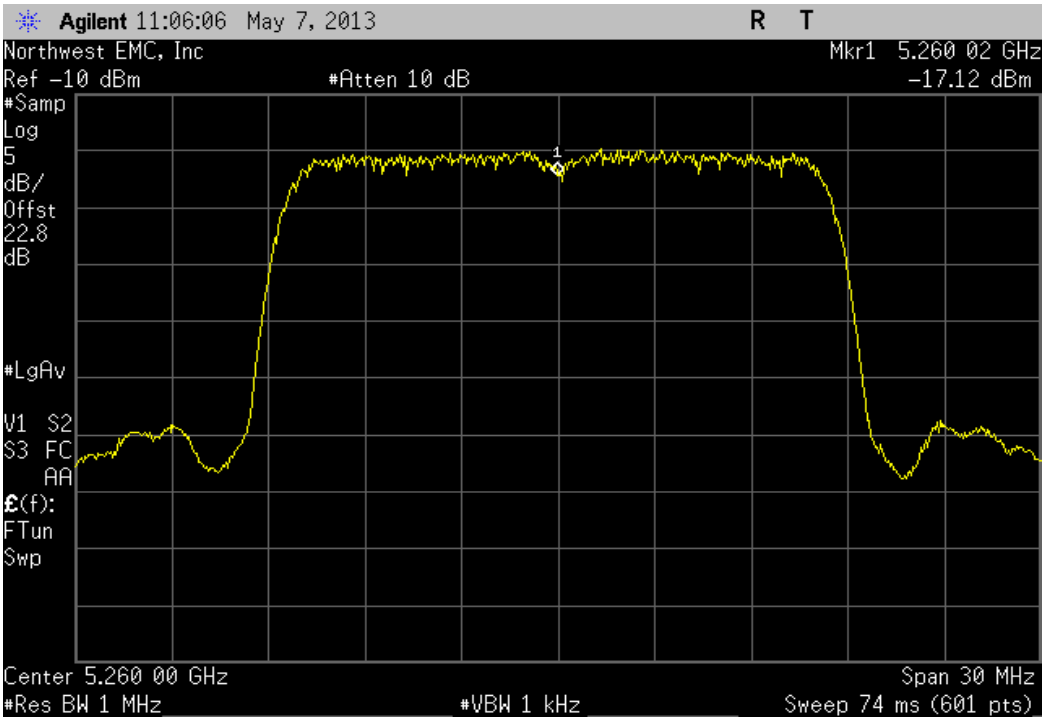


6 Mbps, 5150 MHz - 5250 MHz - High Channel, 5240 MHz, Temperature: -30°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5239.98	5240	3.8	100	Pass

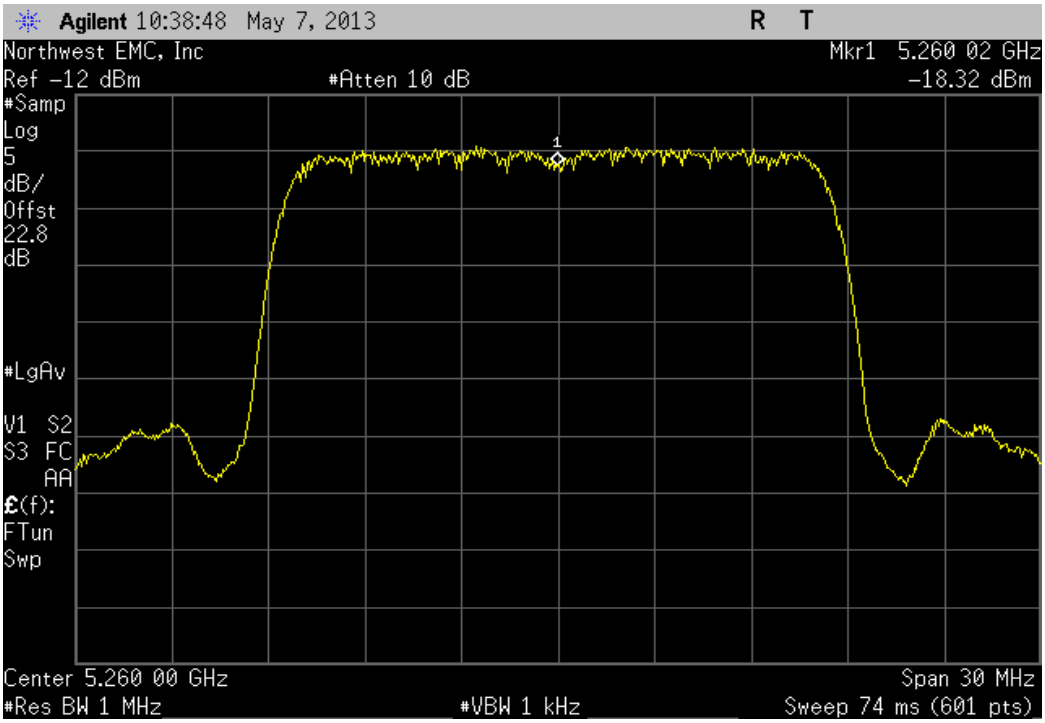


Frequency Stability

6 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5260 MHz, Voltage: 115%						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5260.02	5260	3.8	100	Pass

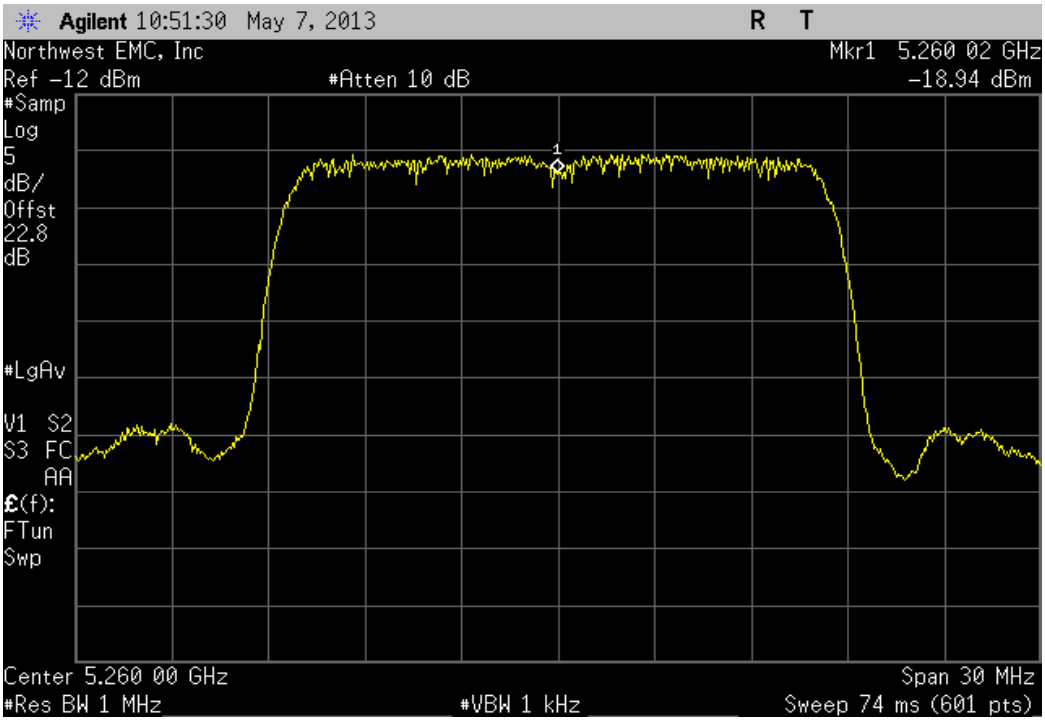


6 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5260 MHz, Voltage: 100%						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5260.02	5260	3.8	100	Pass

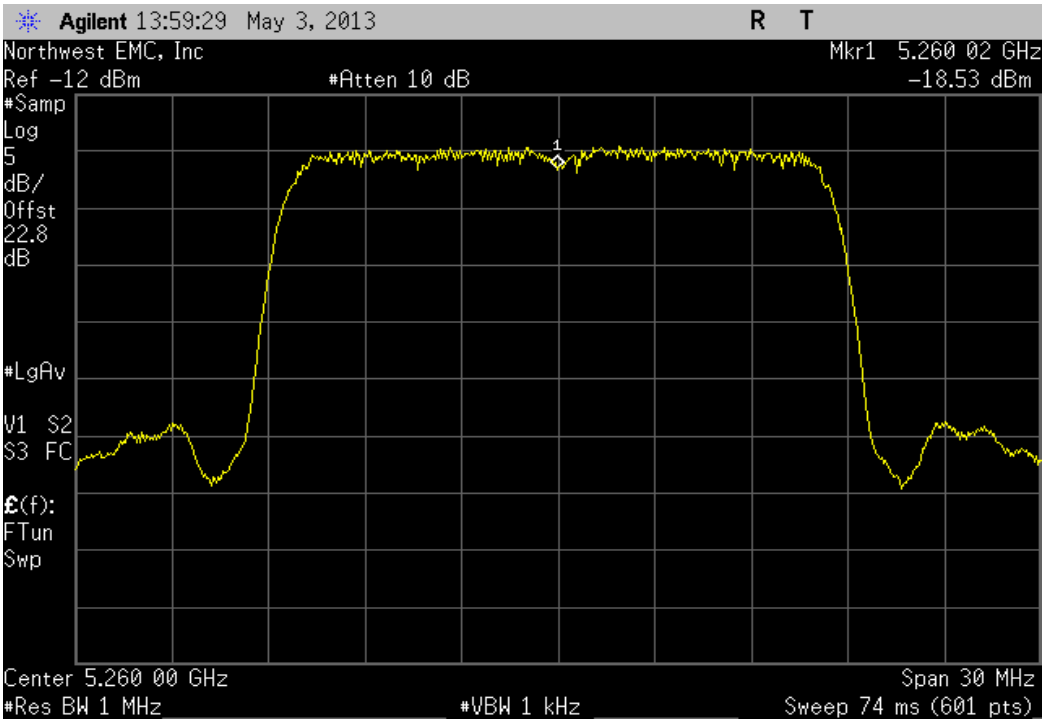


Frequency Stability

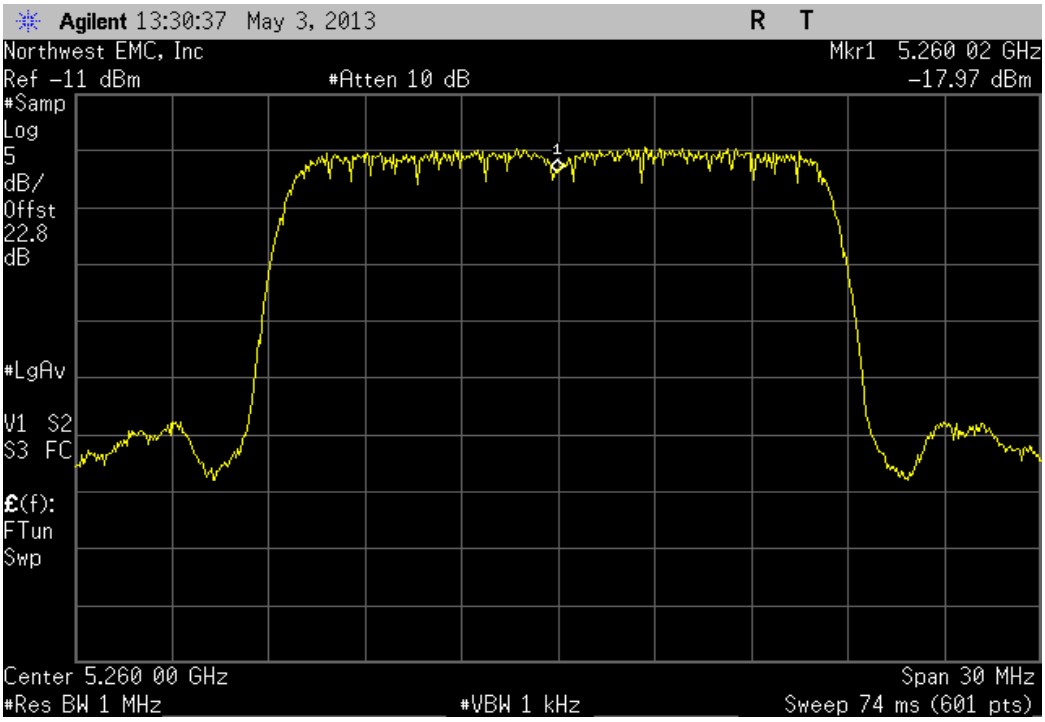
6 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5260 MHz, Voltage: 85%						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5260.02	5260	3.8	100	Pass



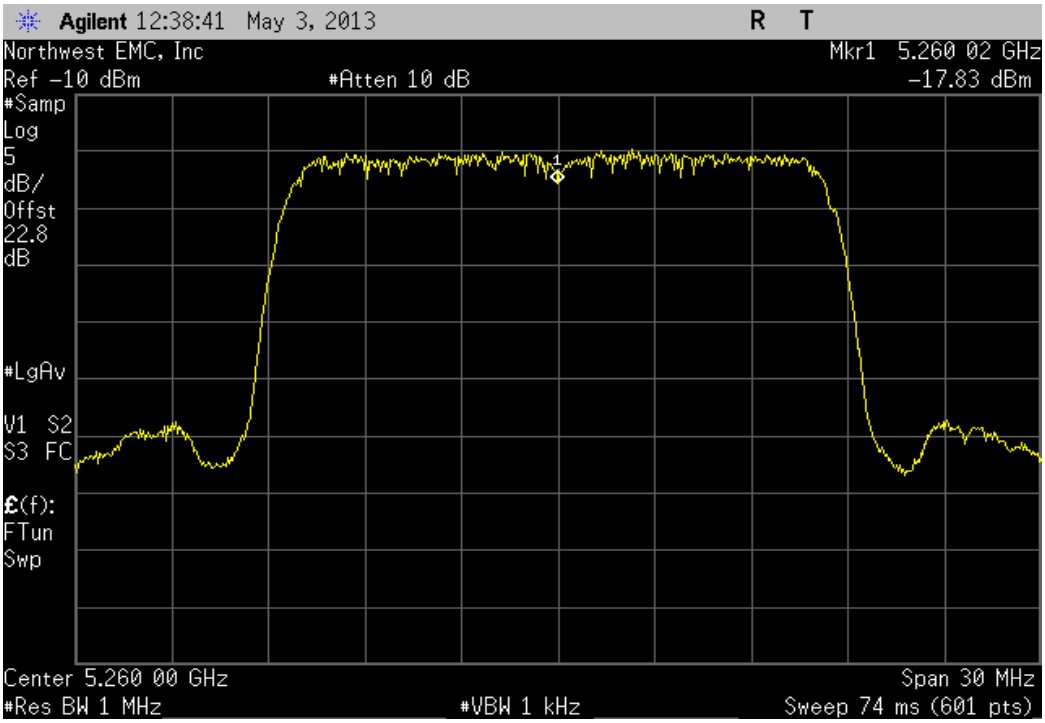
6 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5260 MHz, Temperature: +50°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5260.02	5260	3.8	100	Pass



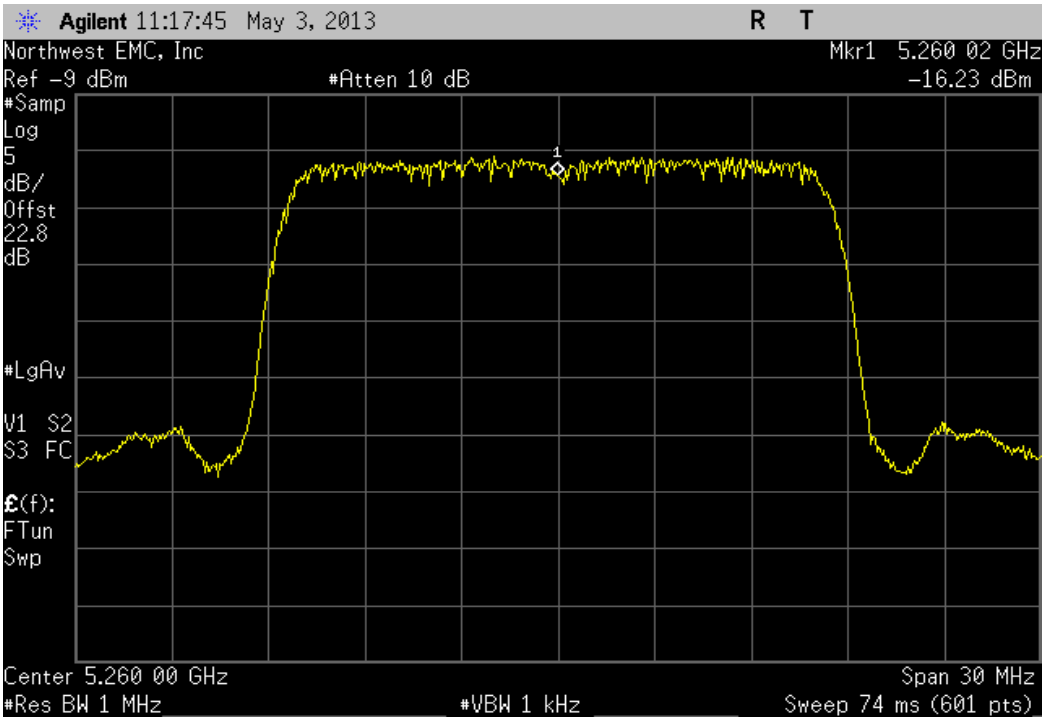
6 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5260 MHz, Temperature: +40°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5260.02	5260	3.8	100	Pass



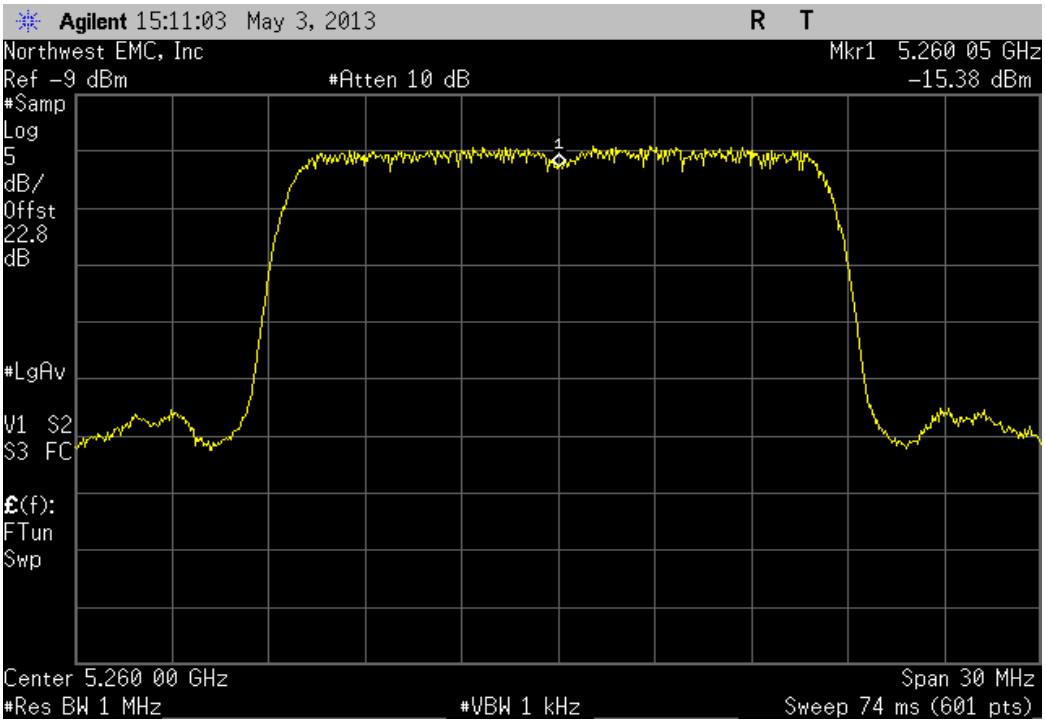
6 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5260 MHz, Temperature: +30°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5260.02	5260	3.8	100	Pass



6 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5260 MHz, Temperature: +20°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5260.02	5260	3.8	100	Pass

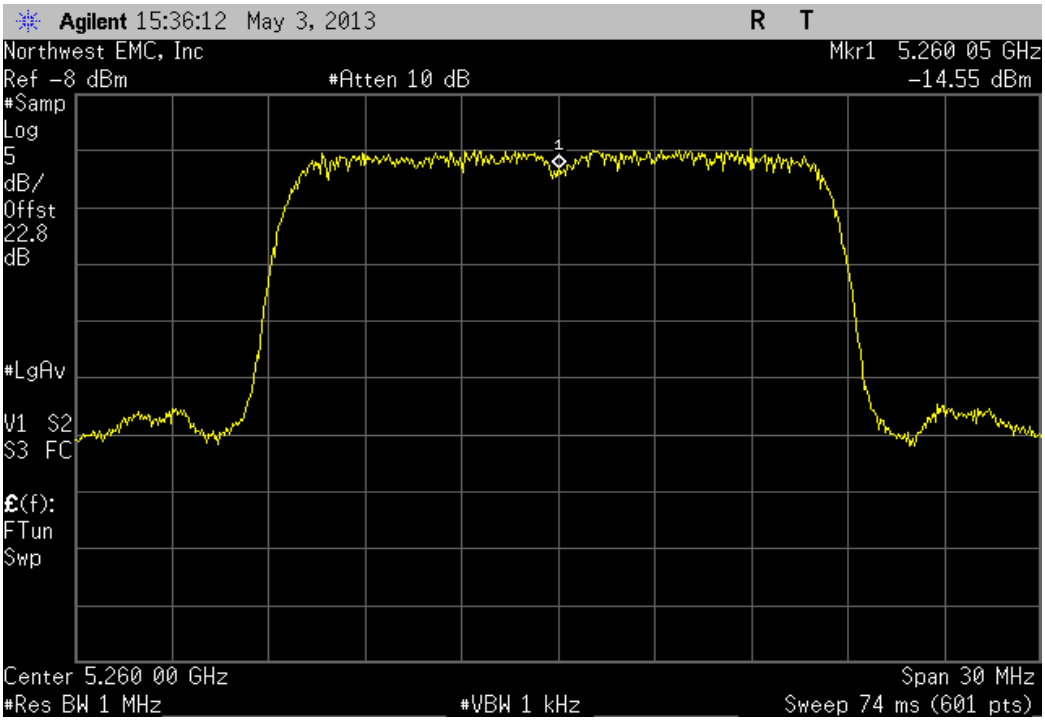


6 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5260 MHz, Temperature: +10°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5260.05	5260	9.5	100	Pass

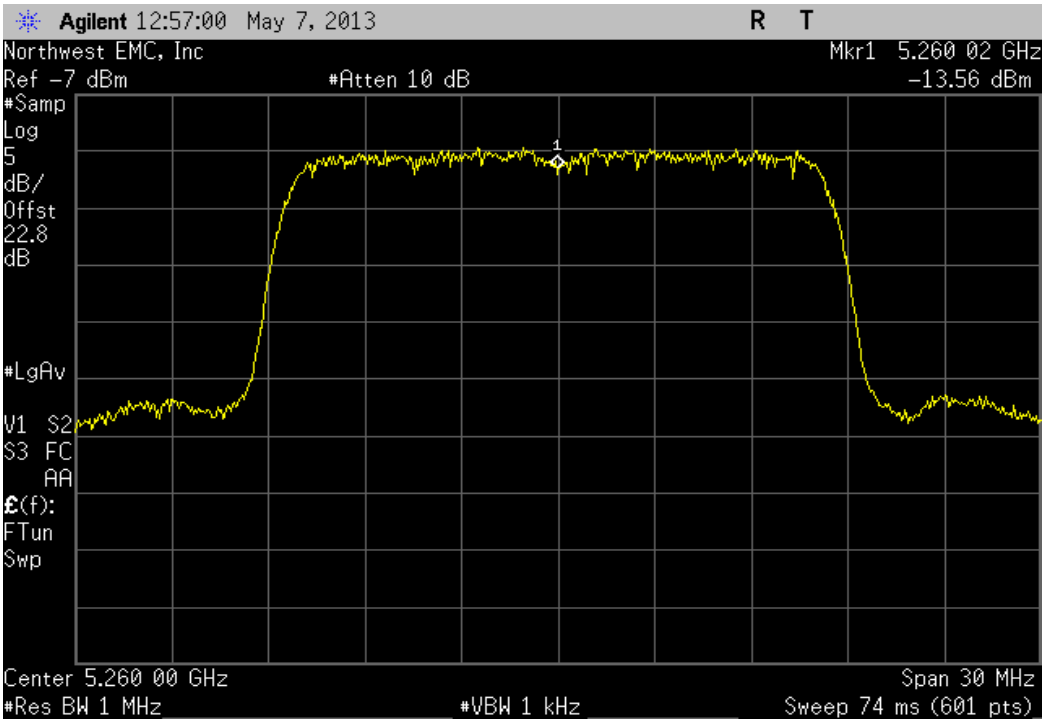


Frequency Stability

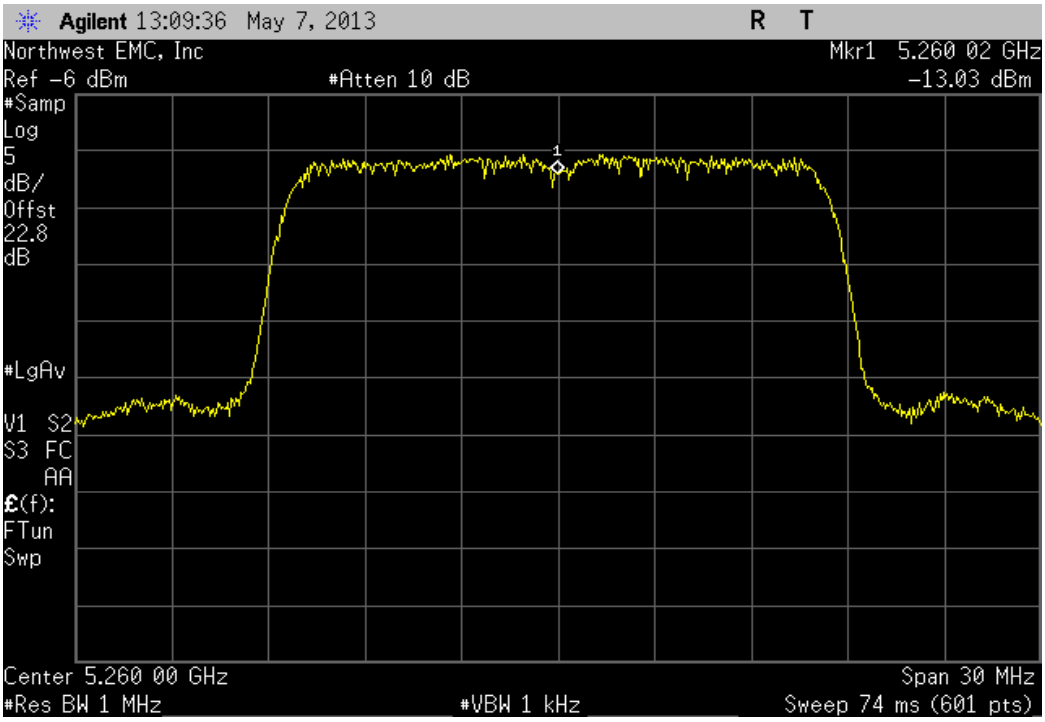
6 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5260 MHz, Temperature: 0°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5260.05	5260	9.5	100	Pass



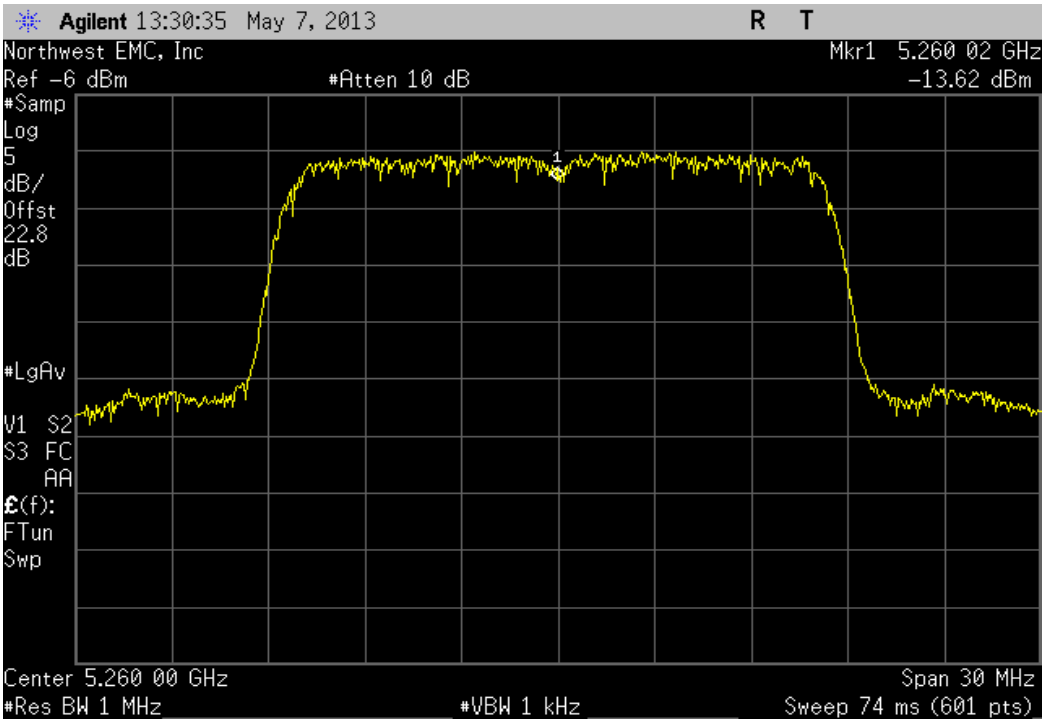
6 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5260 MHz, Temperature: -10°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5260.02	5260	3.8	100	Pass



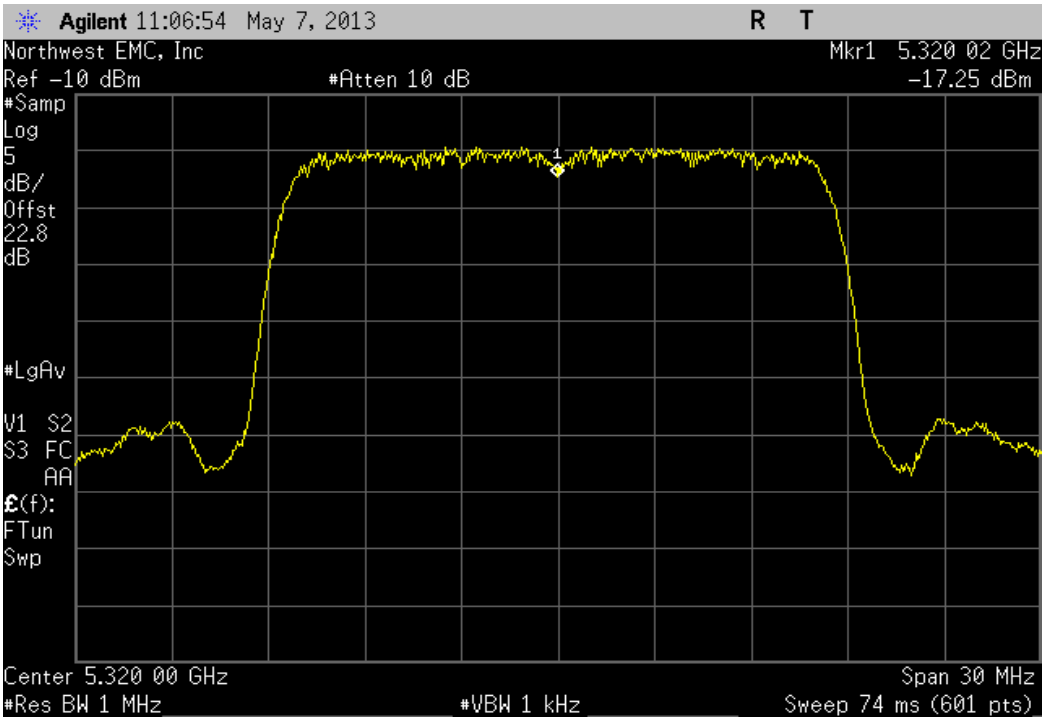
6 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5260 MHz, Temperature: -20°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5260.02	5260	3.8	100	Pass



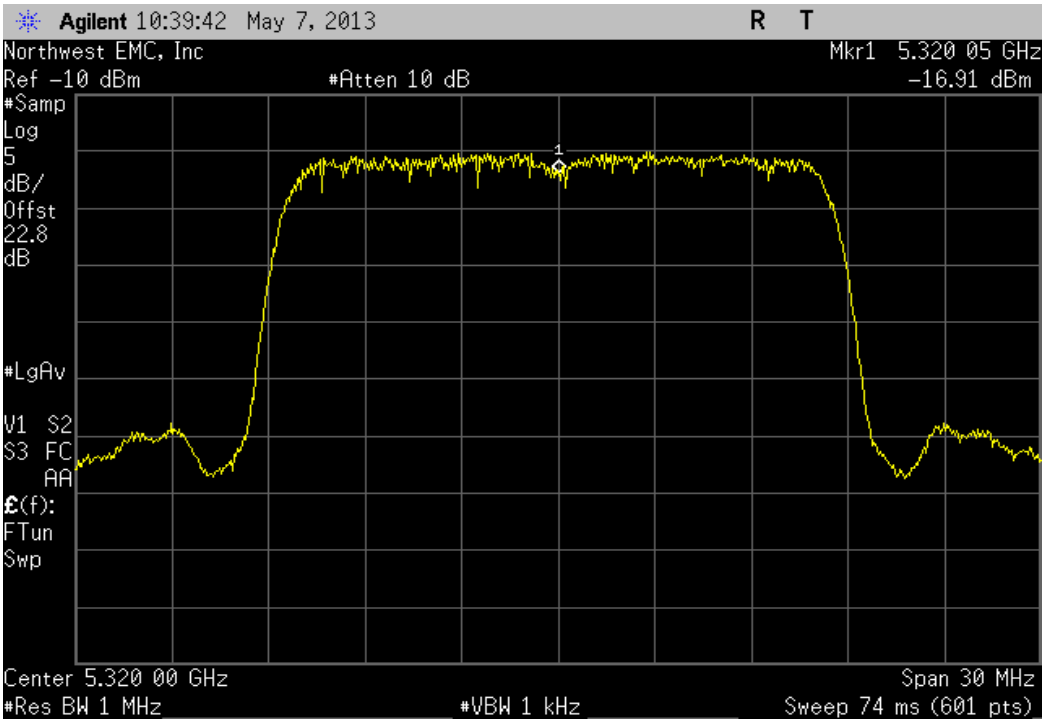
6 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5260 MHz, Temperature: -30°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5260.02	5260	3.8	100	Pass



6 Mbps, 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Voltage: 115%						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5320.02	5320	3.8	100	Pass

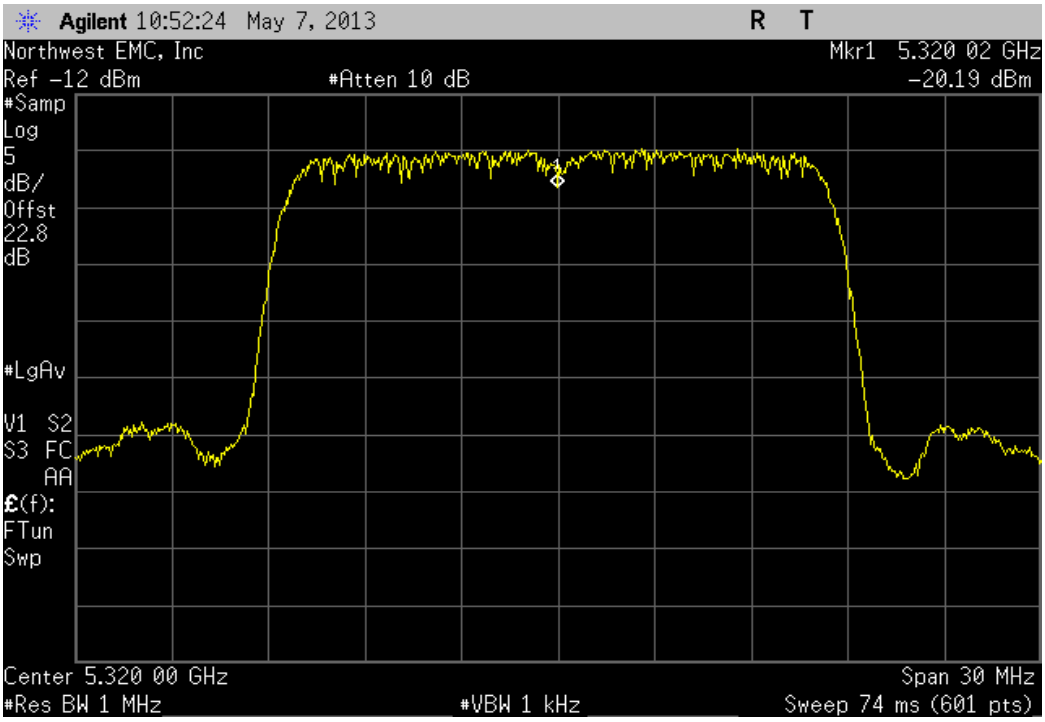


6 Mbps, 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Voltage: 100%						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5320.05	5320	9.4	100	Pass

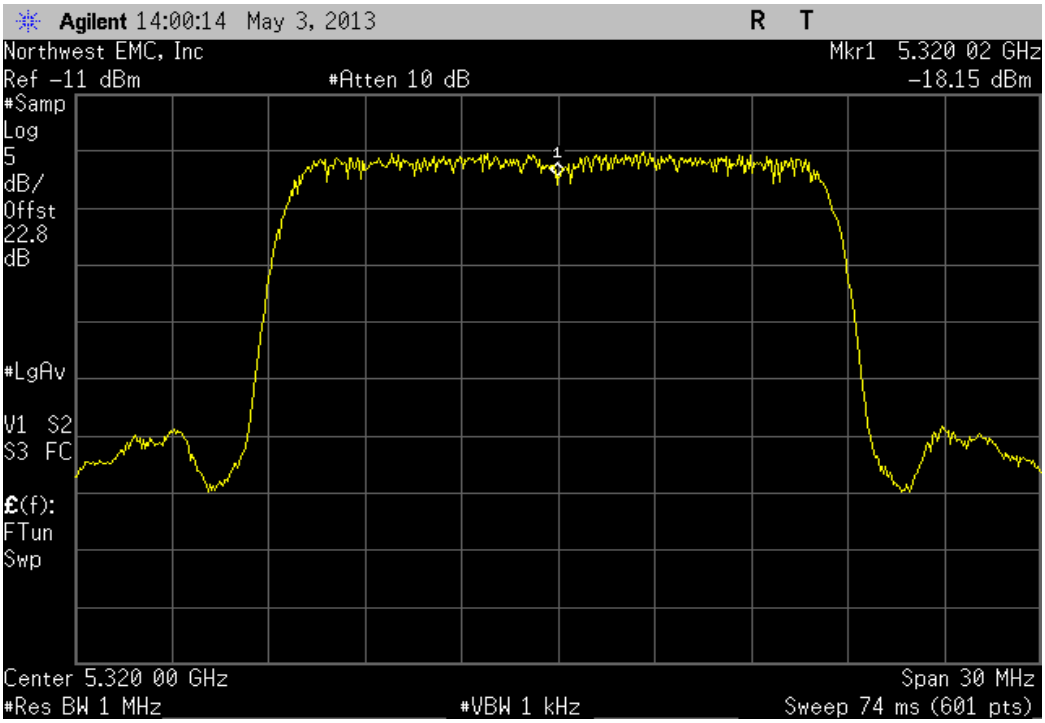


Frequency Stability

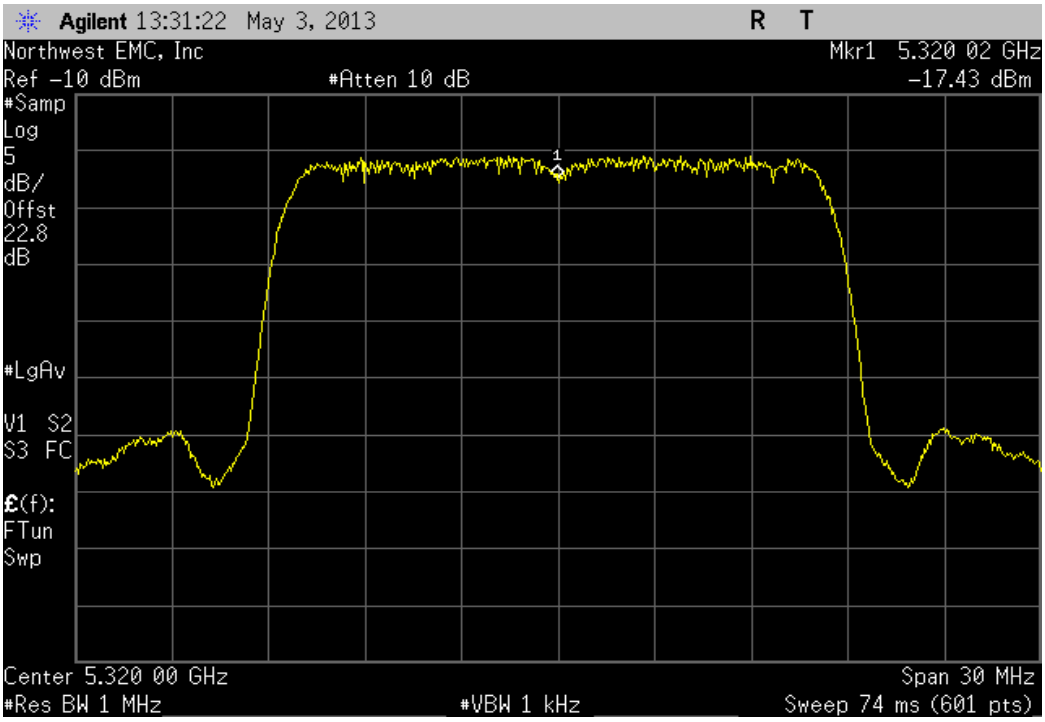
6 Mbps, 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Voltage: 85%						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5320.02	5320	3.8	100	Pass



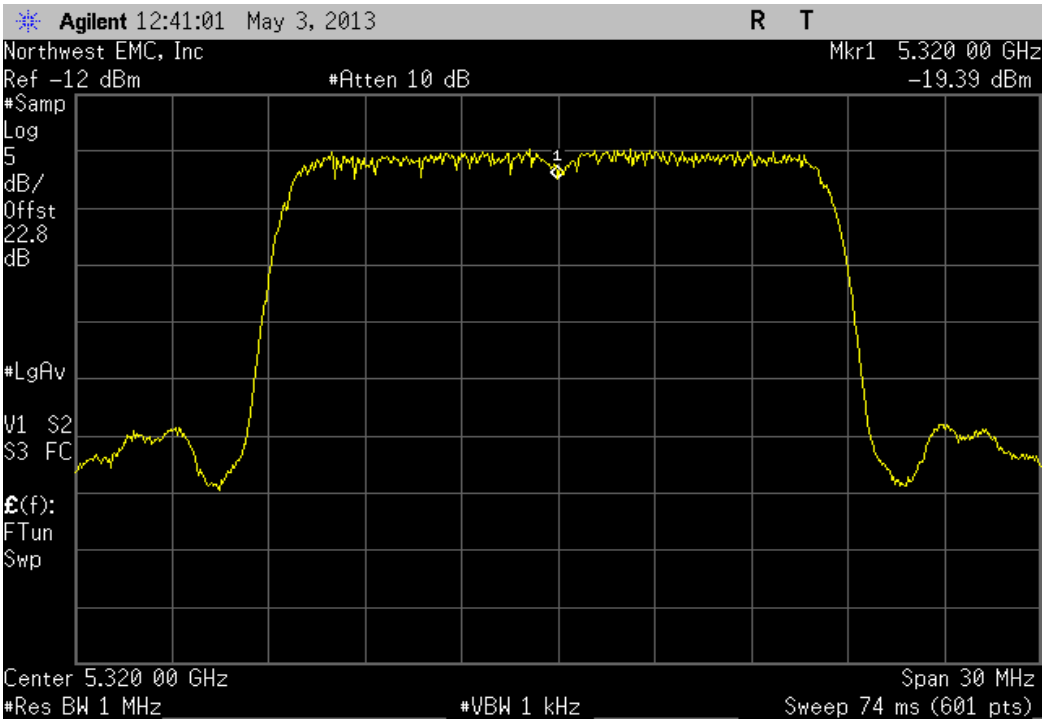
6 Mbps, 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: +50°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5320.02	5320	3.8	100	Pass



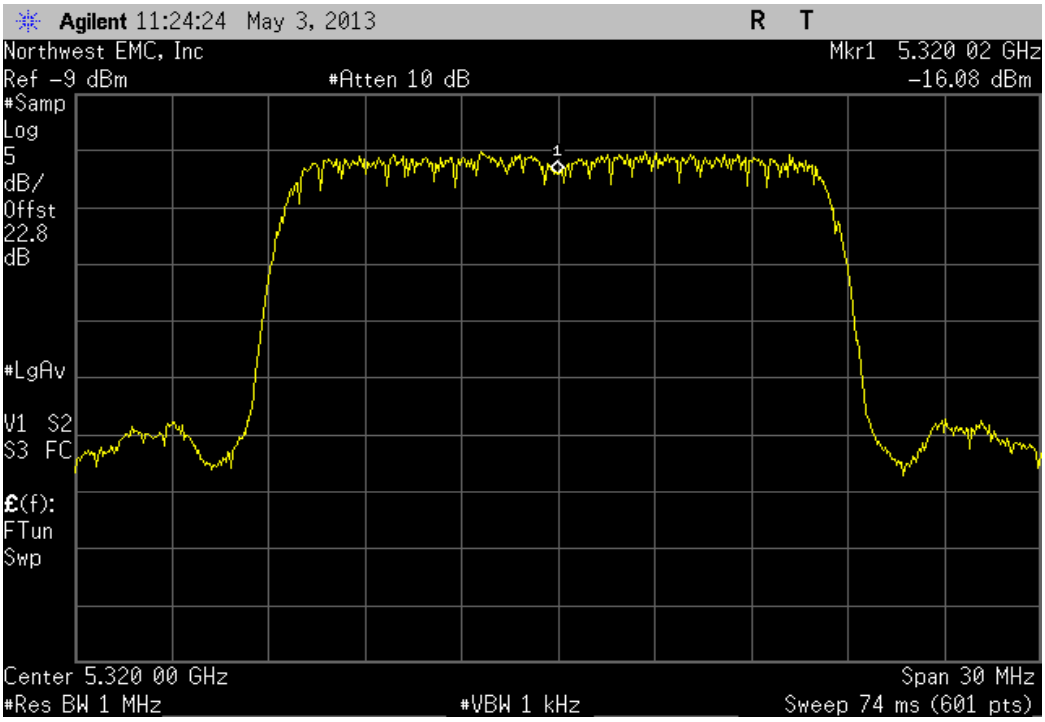
6 Mbps, 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: +40°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5320.02	5320	3.8	100	Pass



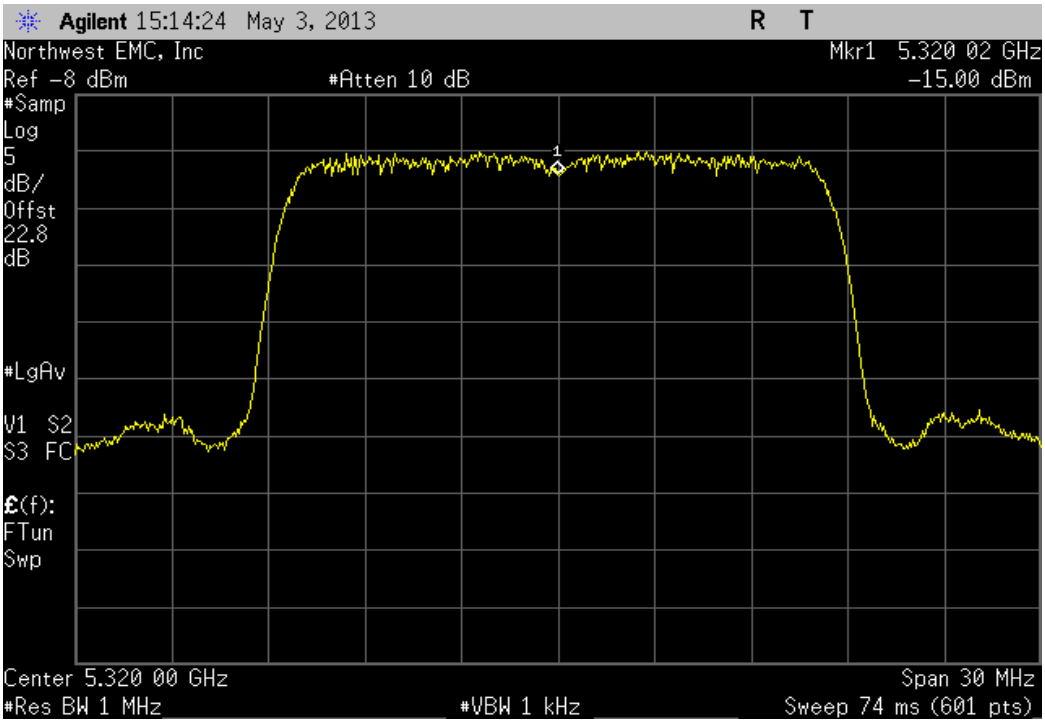
6 Mbps, 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: +30°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5320	5320	0	100	Pass



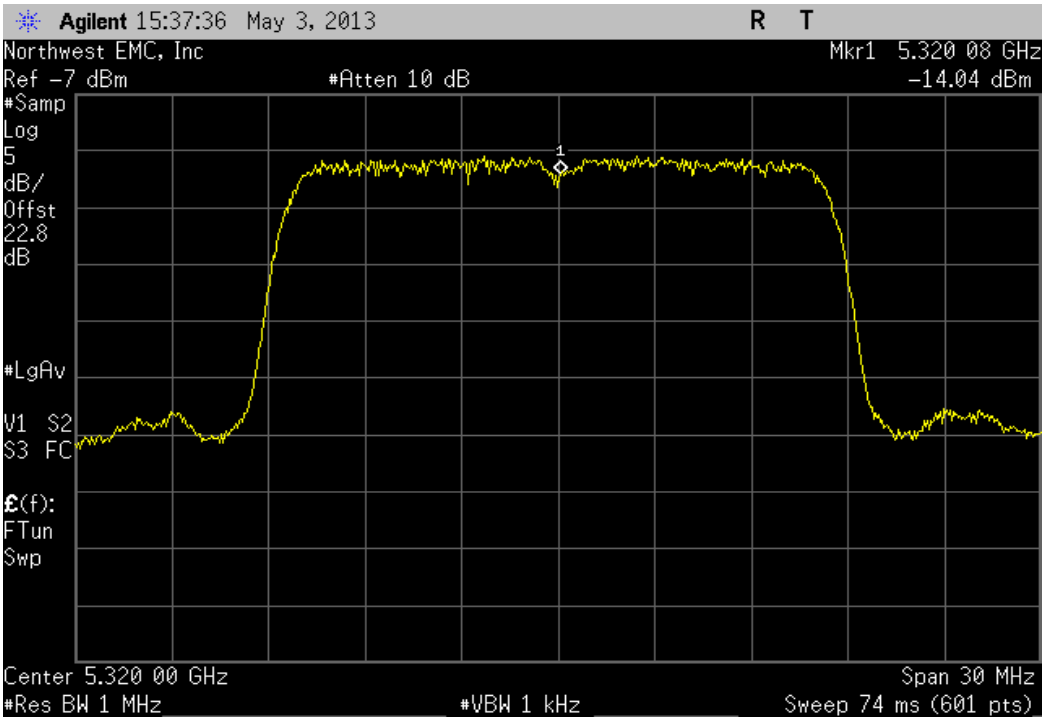
6 Mbps, 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: +20°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5320.02	5320	3.8	100	Pass



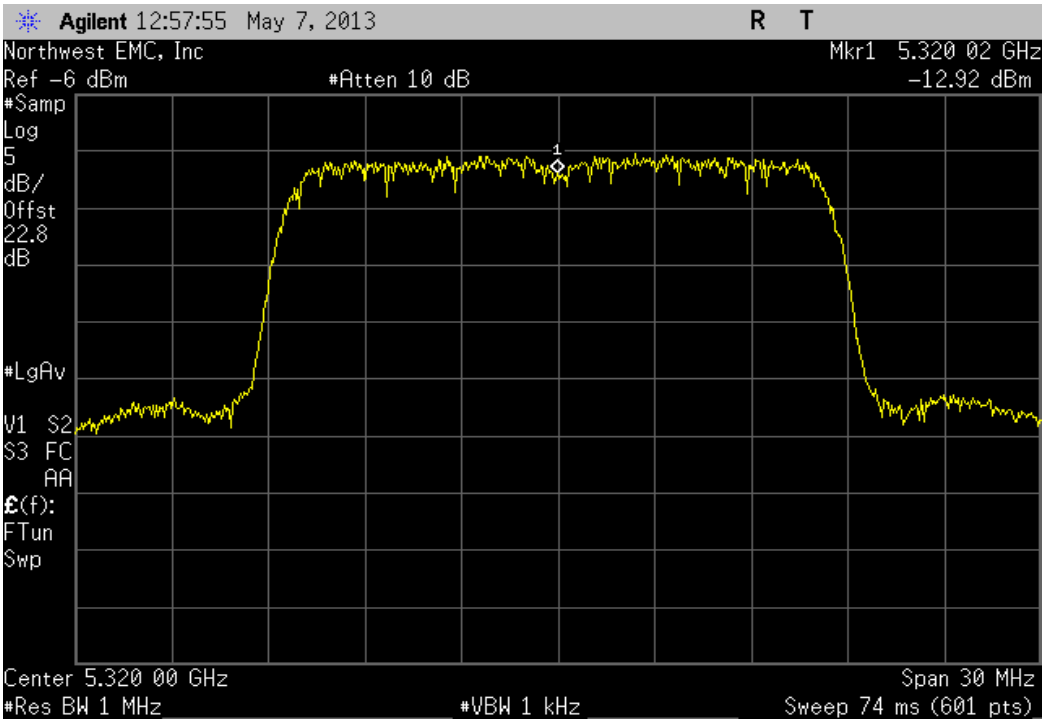
6 Mbps, 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: +10°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5320.02	5320	3.8	100	Pass



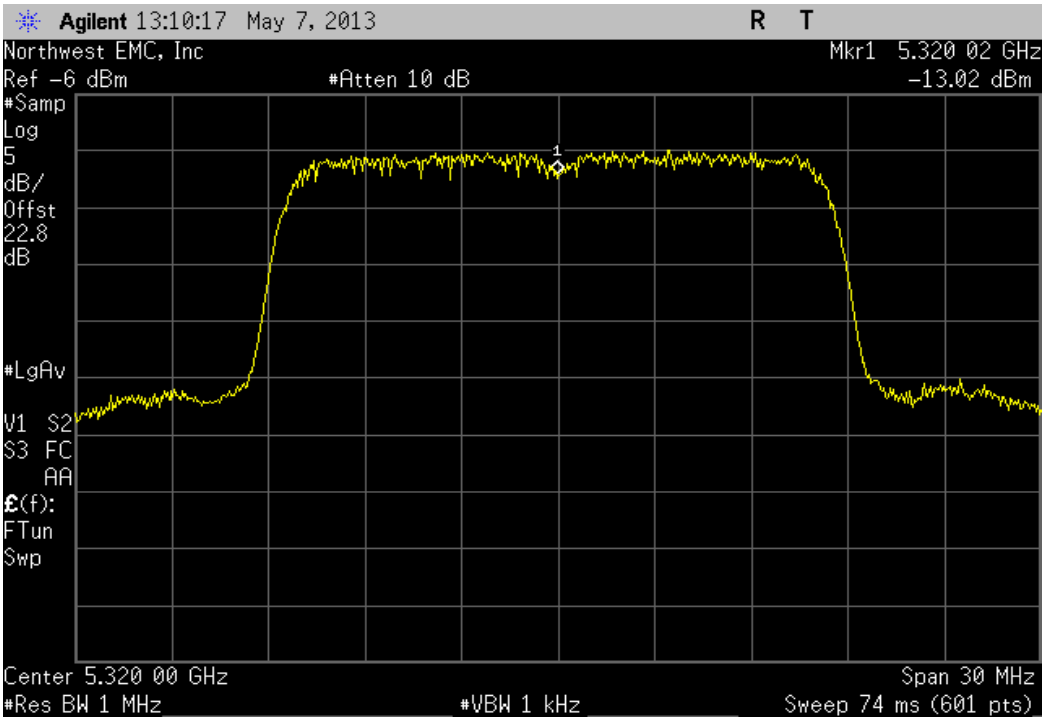
6 Mbps, 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: 0°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5320.08	5320	15	100	Pass



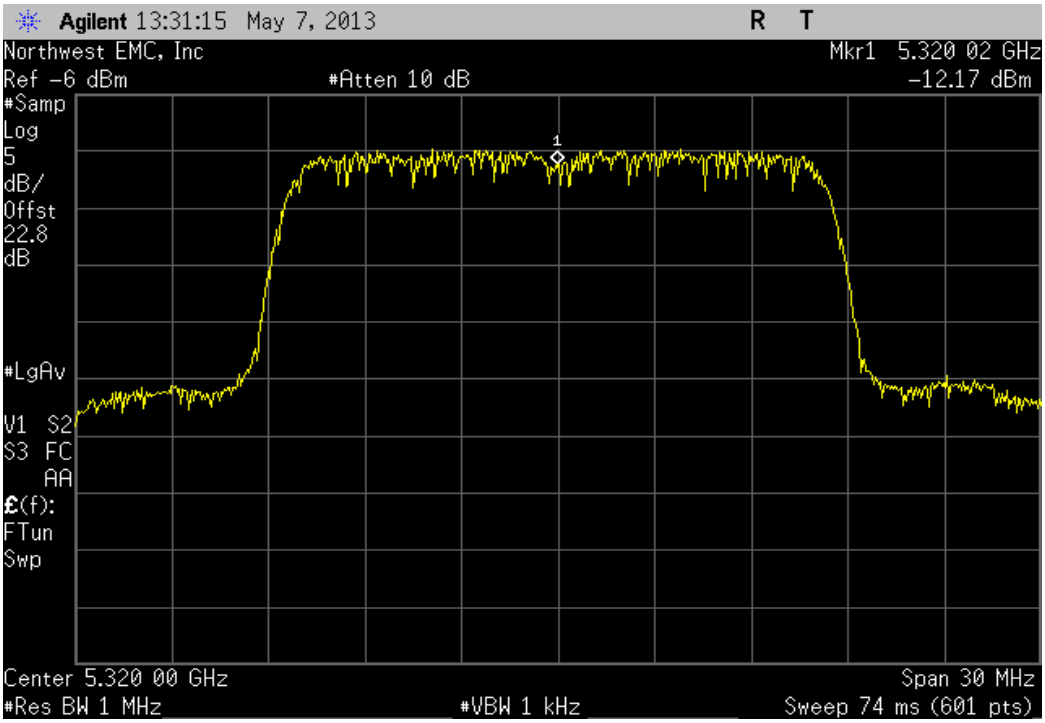
6 Mbps, 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: -10°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5320.02	5320	3.8	100	Pass



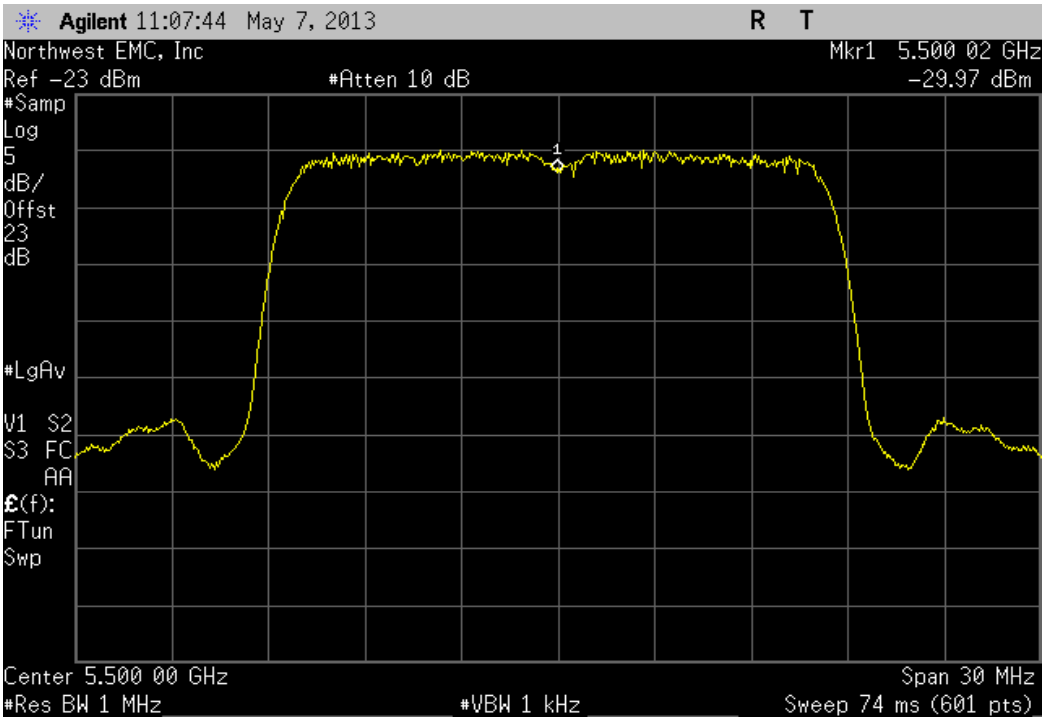
6 Mbps, 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: -20°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5320.02	5320	3.8	100	Pass



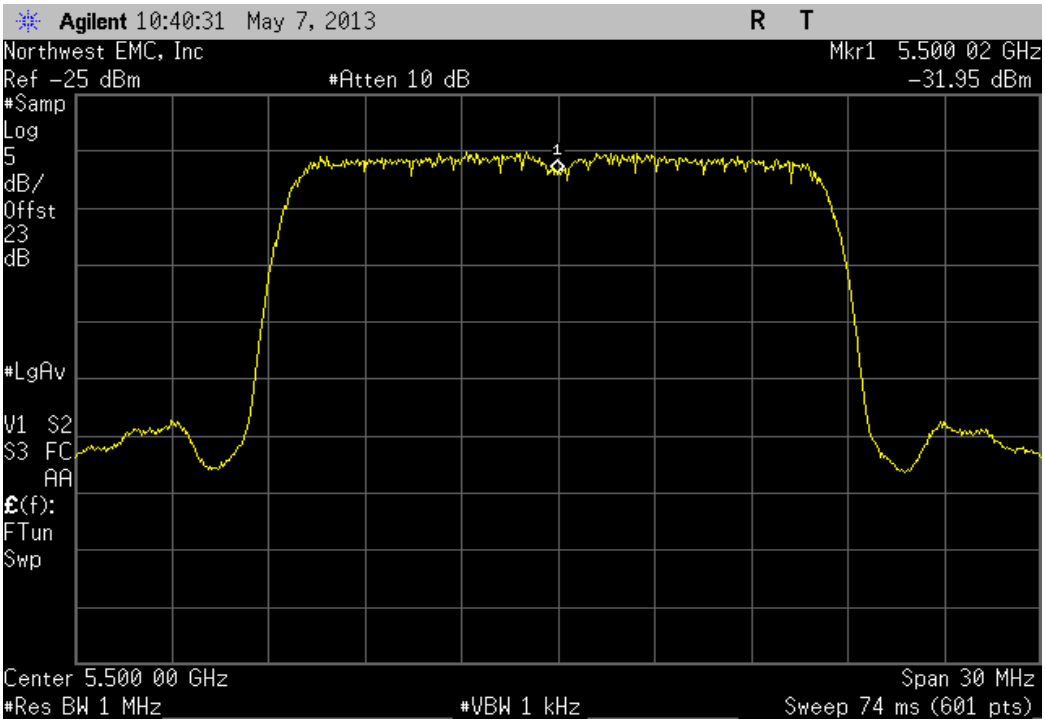
6 Mbps, 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: -30°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5320.02	5320	3.8	100	Pass



6 Mbps, 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Voltage: 115%						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5500.02	5500	3.6	100	Pass

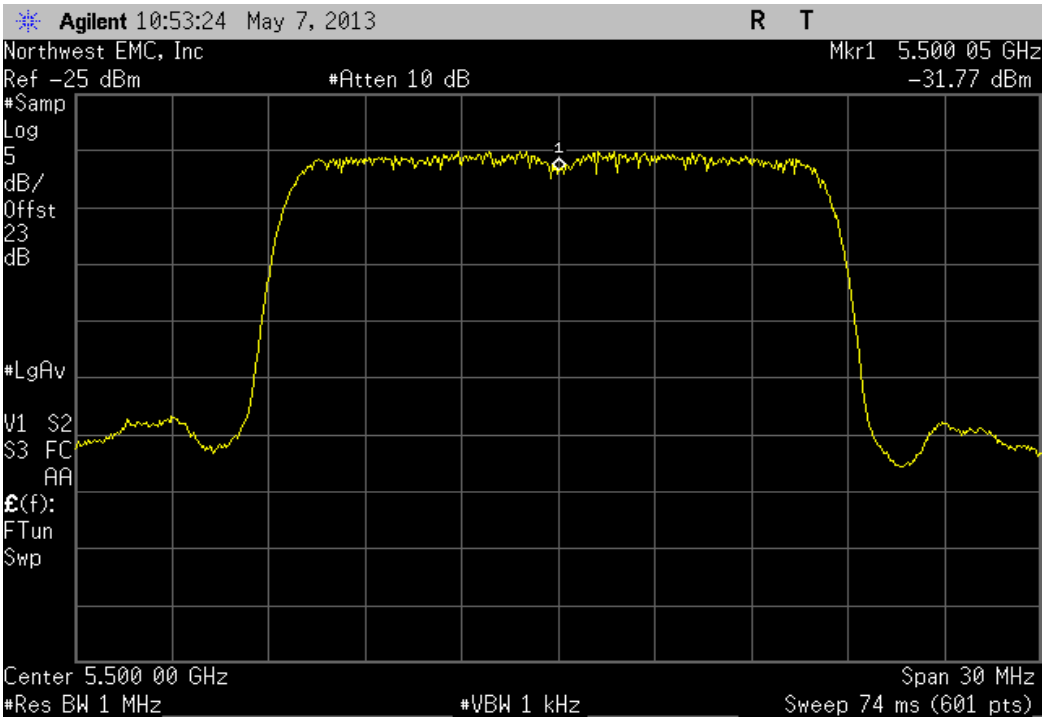


6 Mbps, 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Voltage: 100%						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5500.02	5500	3.6	100	Pass

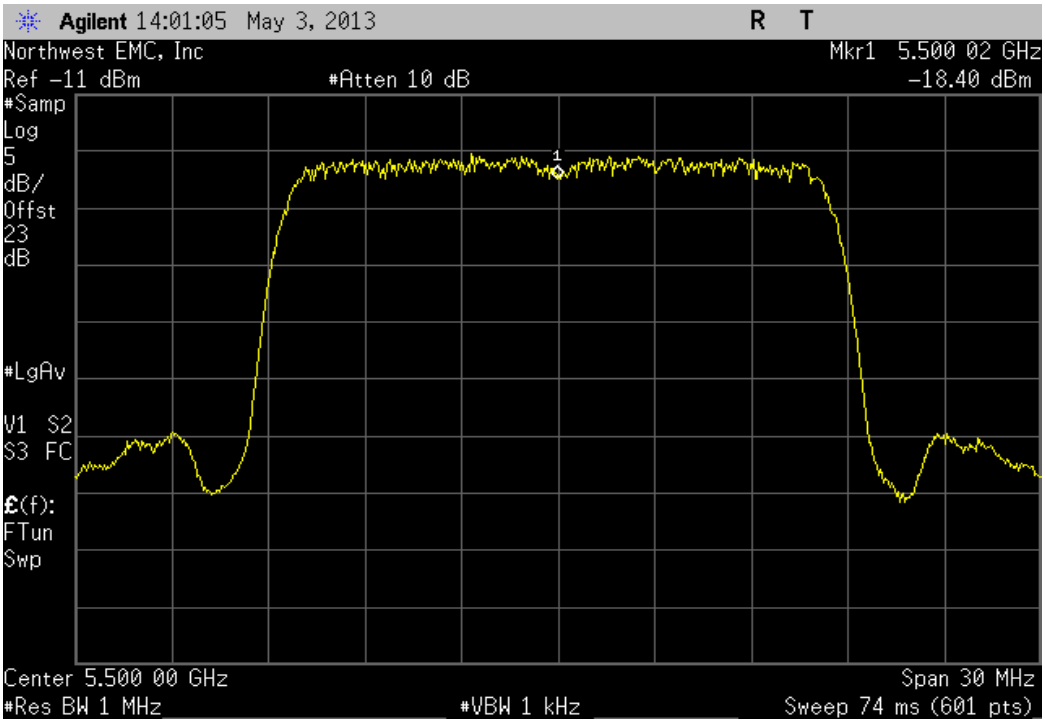


Frequency Stability

6 Mbps, 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Voltage: 85%						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5500.05	5500	9.1	100	Pass

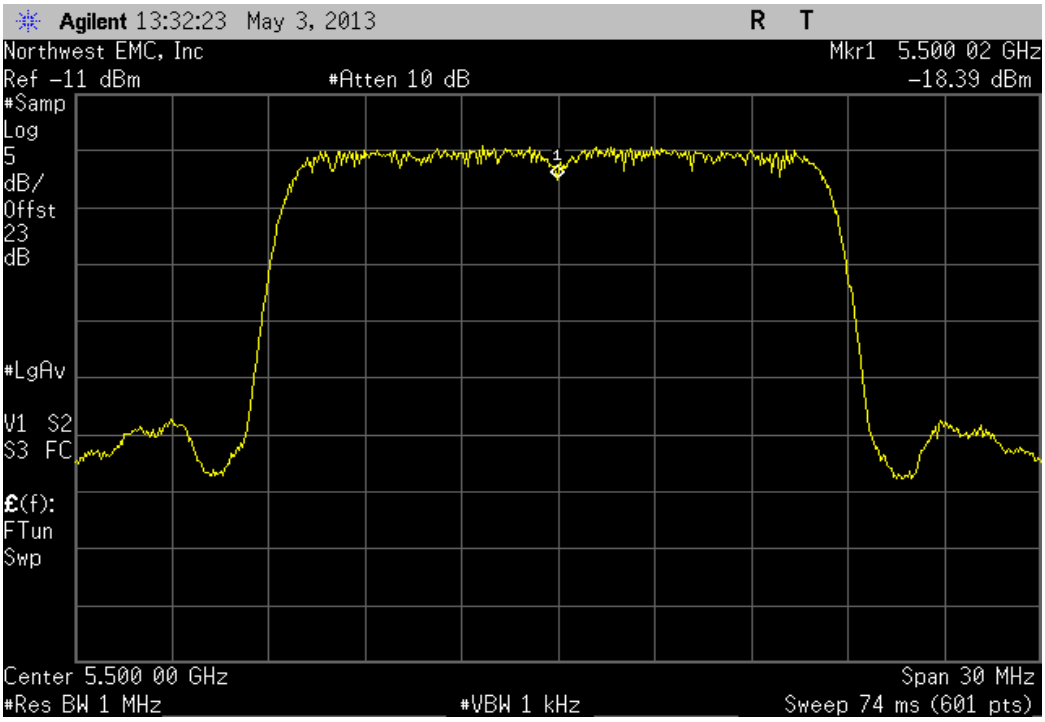


6 Mbps, 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: +50°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5500.02	5500	3.6	100	Pass

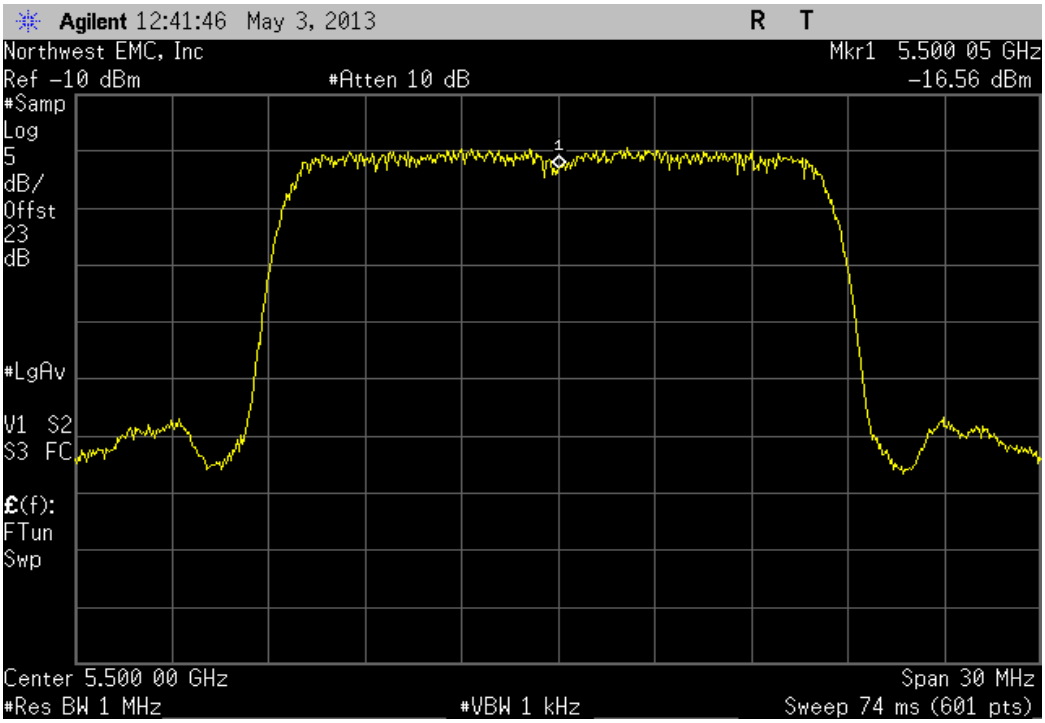


Frequency Stability

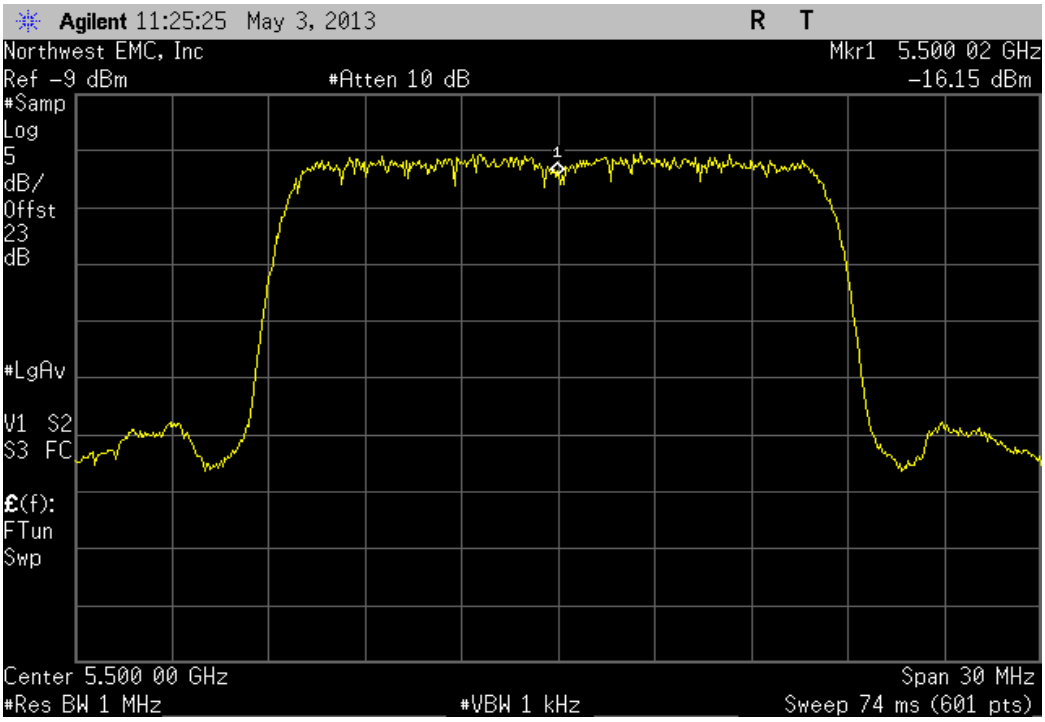
6 Mbps, 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: +40°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5500.02	5500	3.6	100	Pass



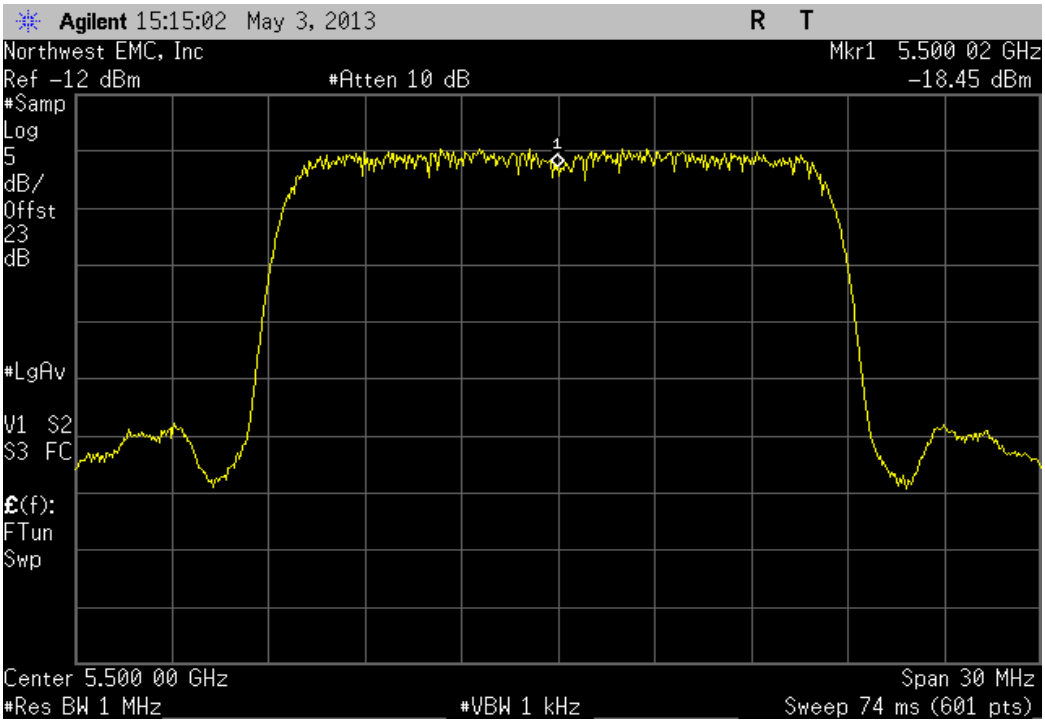
6 Mbps, 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: +30°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5500.05	5500	9.1	100	Pass



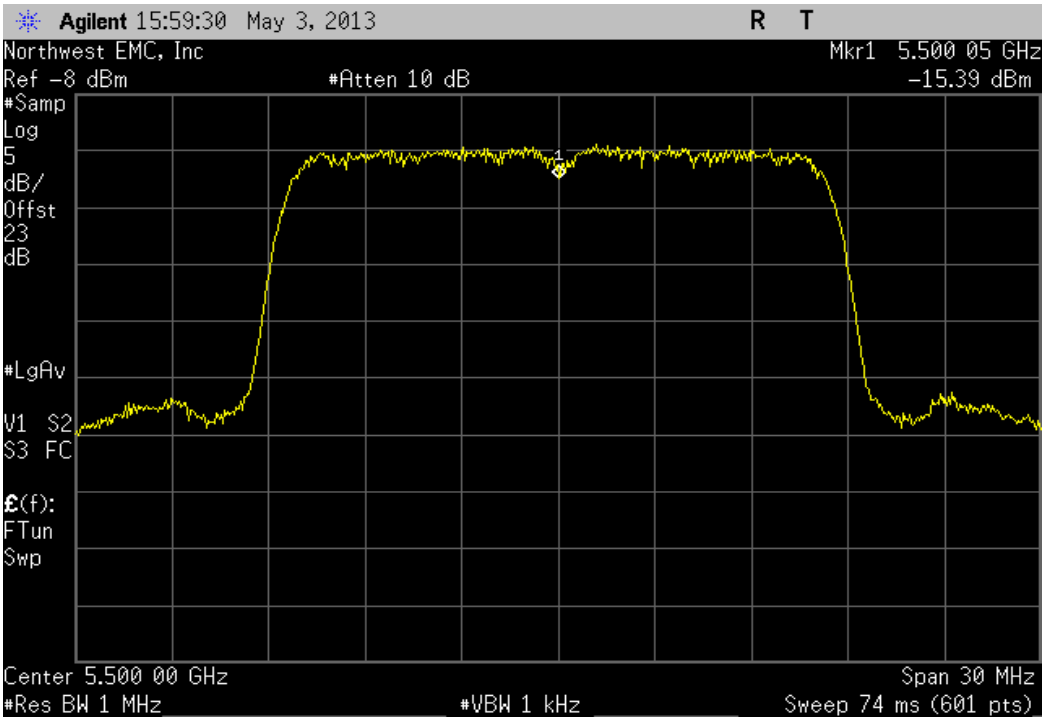
6 Mbps, 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: +20°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5500.02	5500	3.6	100	Pass



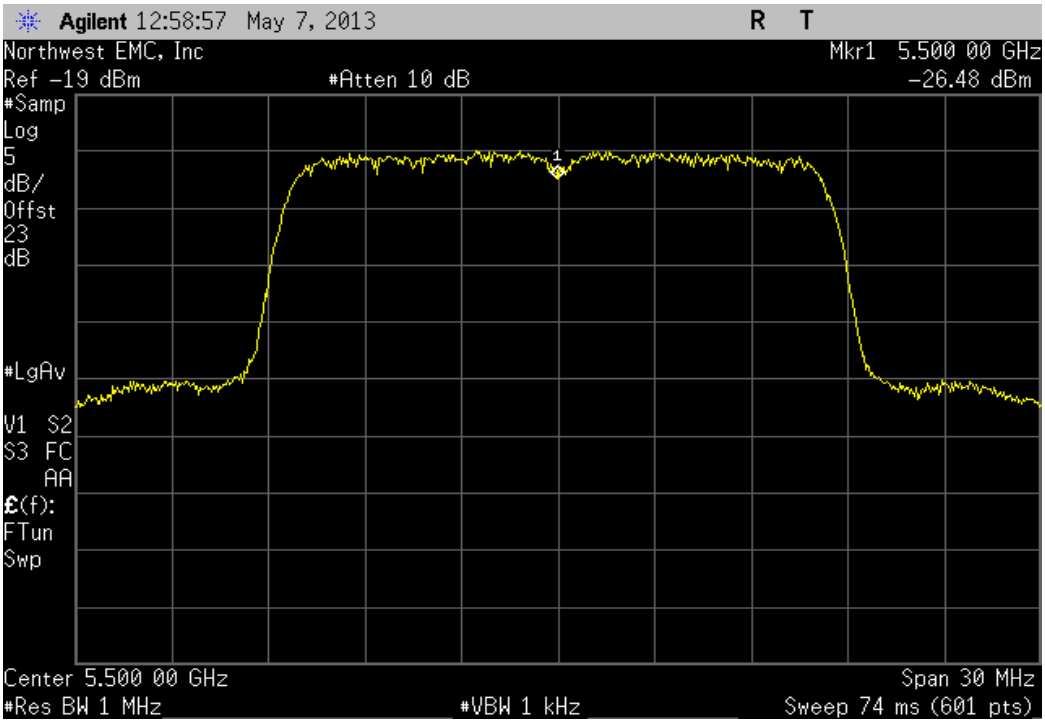
6 Mbps, 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: +10°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5500.02	5500	3.6	100	Pass



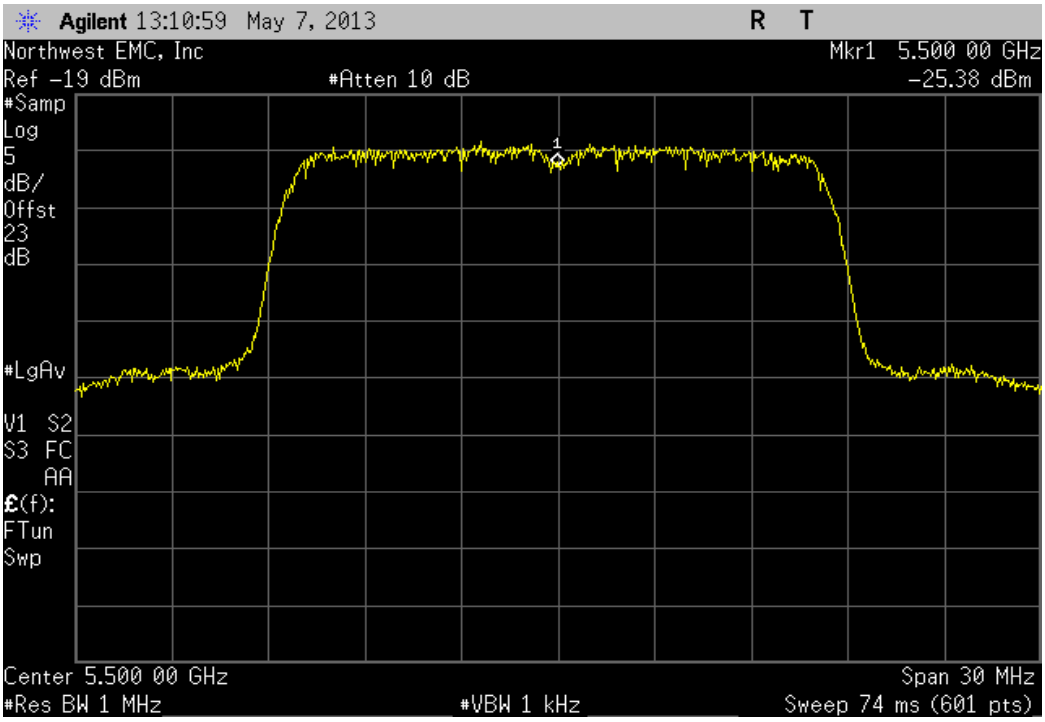
6 Mbps, 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: 0°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5500.05	5500	9.1	100	Pass



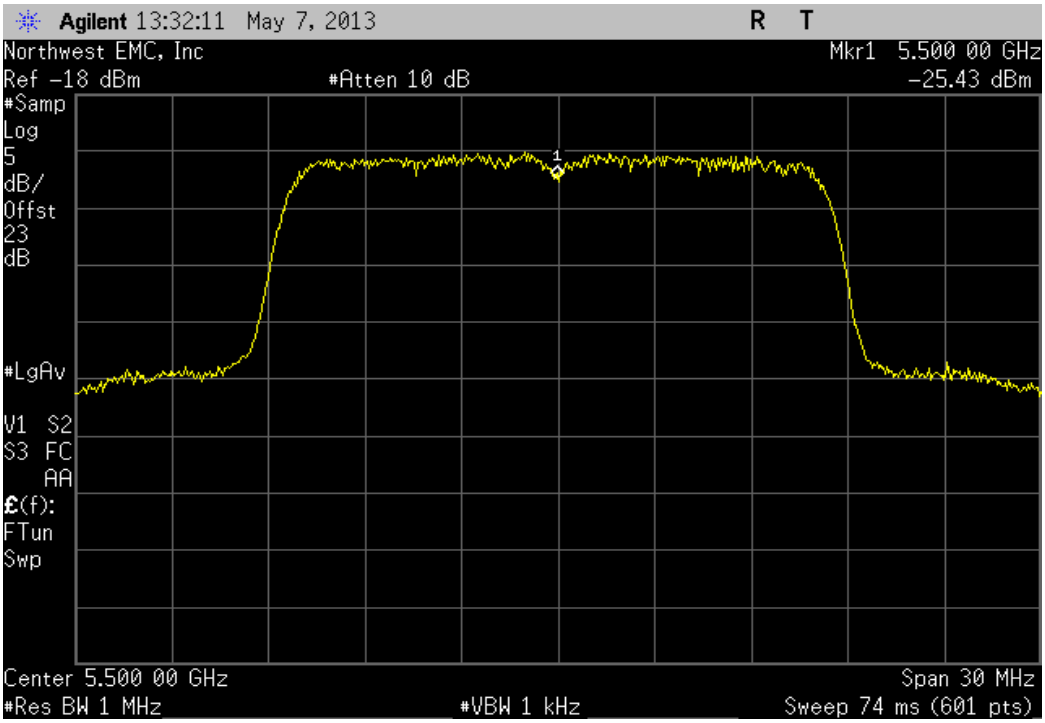
6 Mbps, 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: -10°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5500	5500	0	100	Pass



6 Mbps, 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: -20°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5500	5500	0	100	Pass

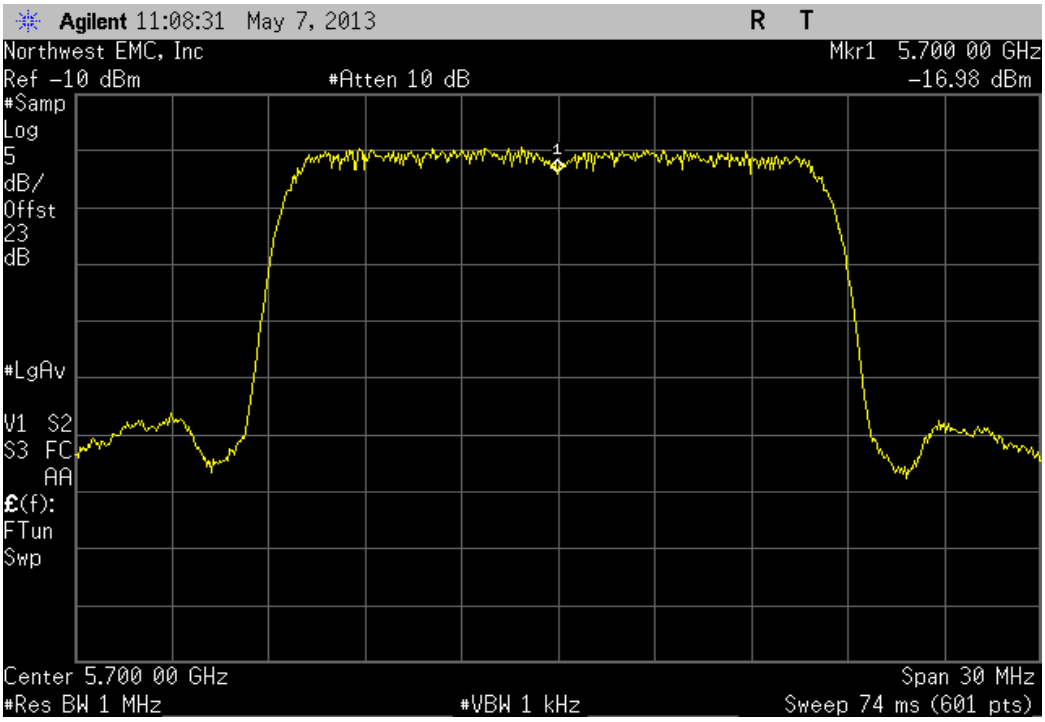


6 Mbps, 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: -30°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5500	5500	0	100	Pass

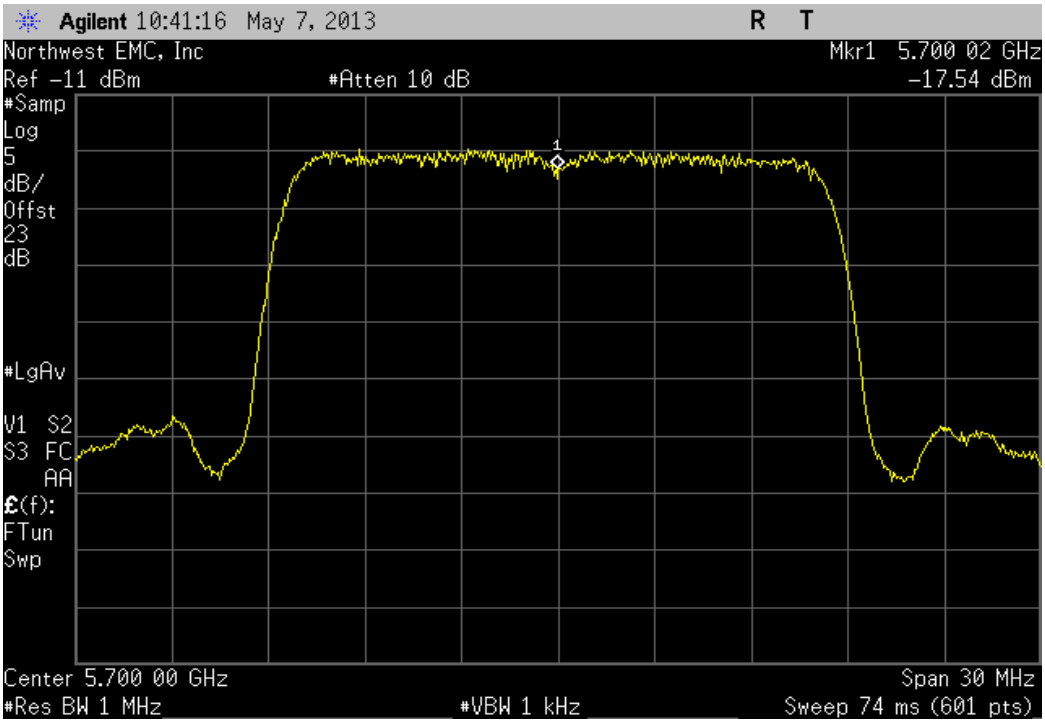


Frequency Stability

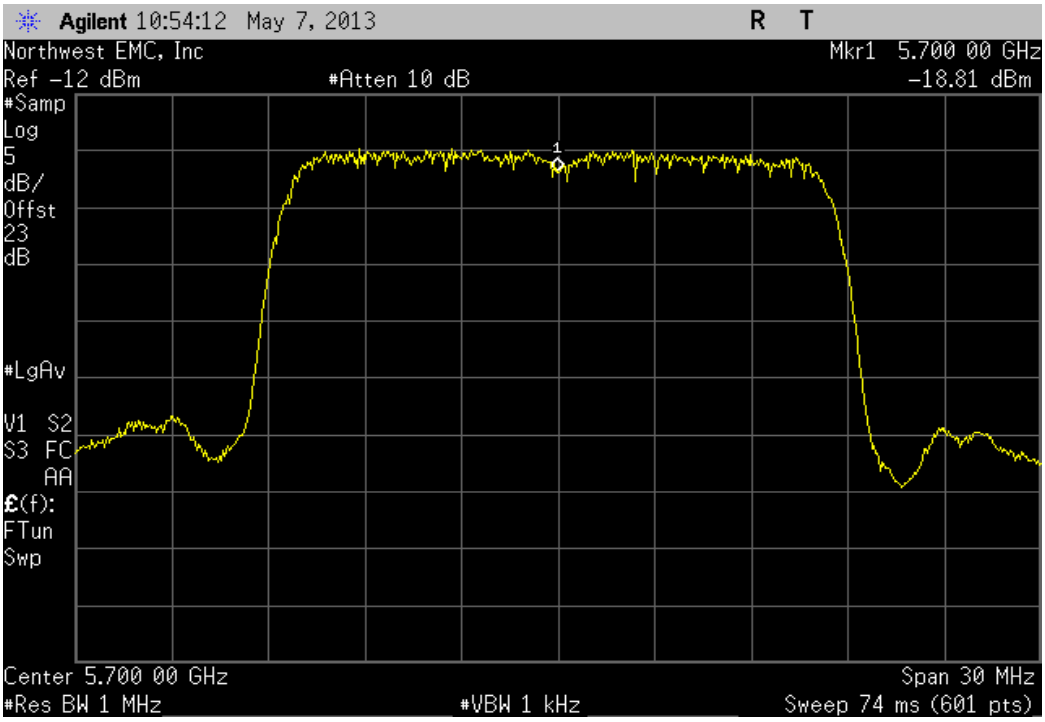
6 Mbps, 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Voltage: 115%						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5700	5700	0	100	Pass



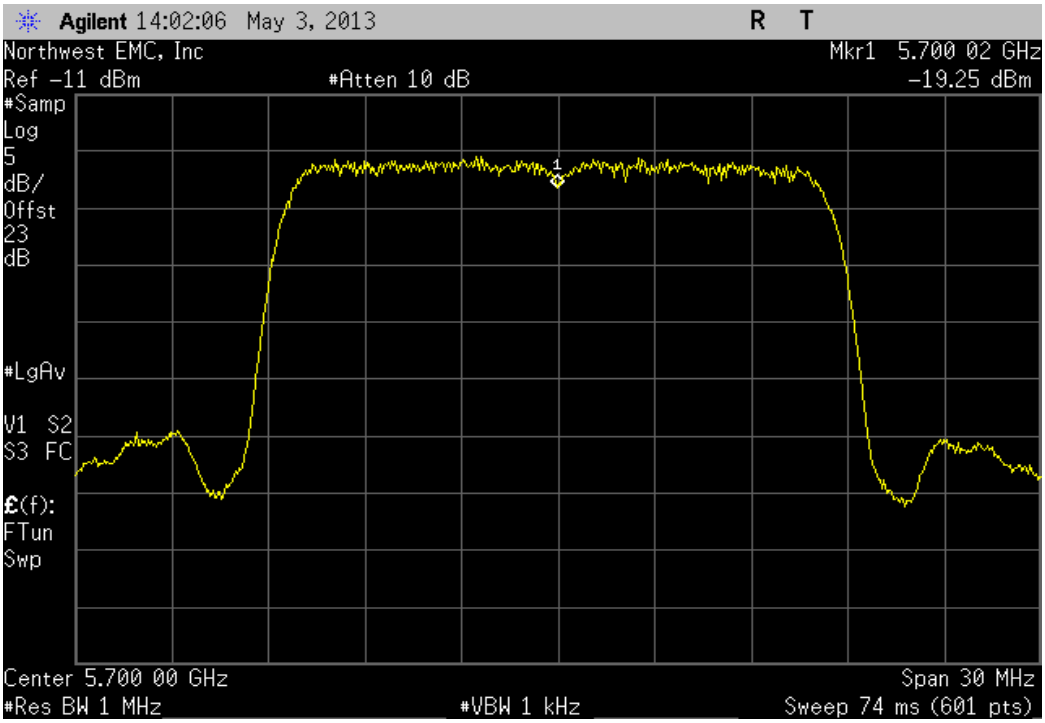
6 Mbps, 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Voltage: 100%						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5700.02	5700	3.5	100	Pass



6 Mbps, 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Voltage: 85%						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5700	5700	0	100	Pass

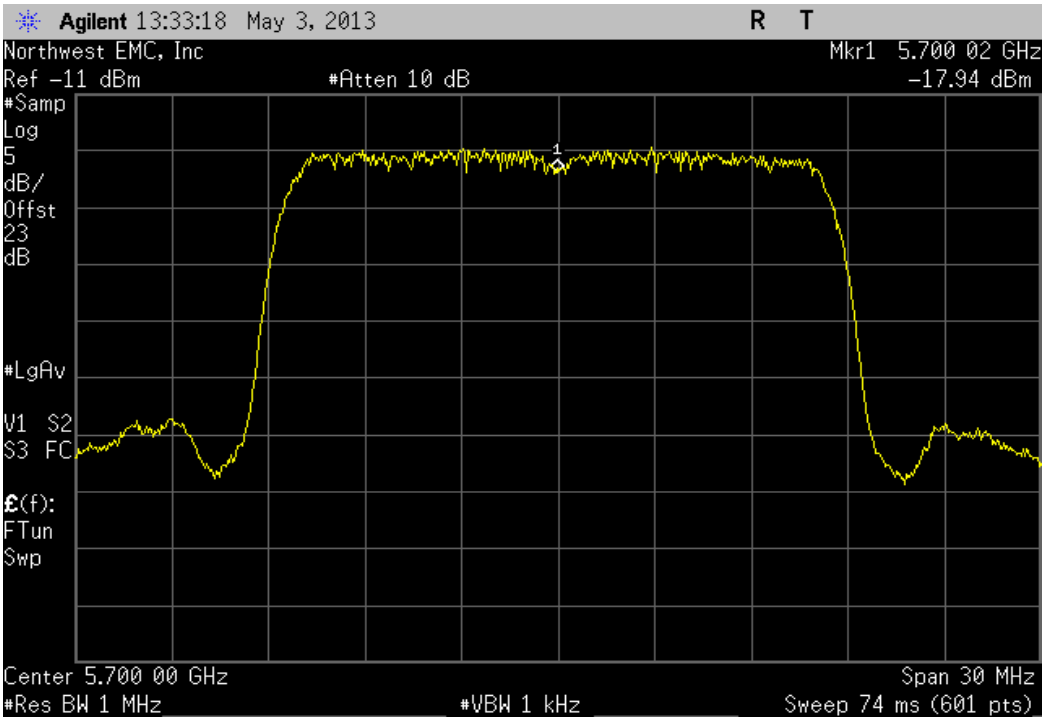


6 Mbps, 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: +50°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5700.02	5700	3.5	100	Pass

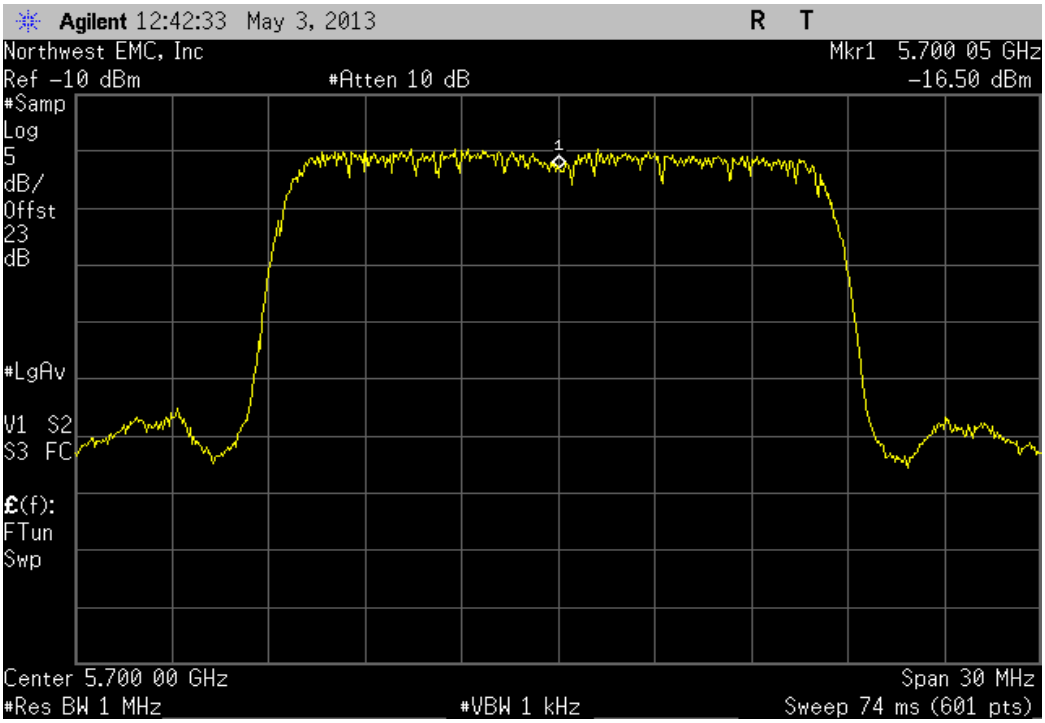


Frequency Stability

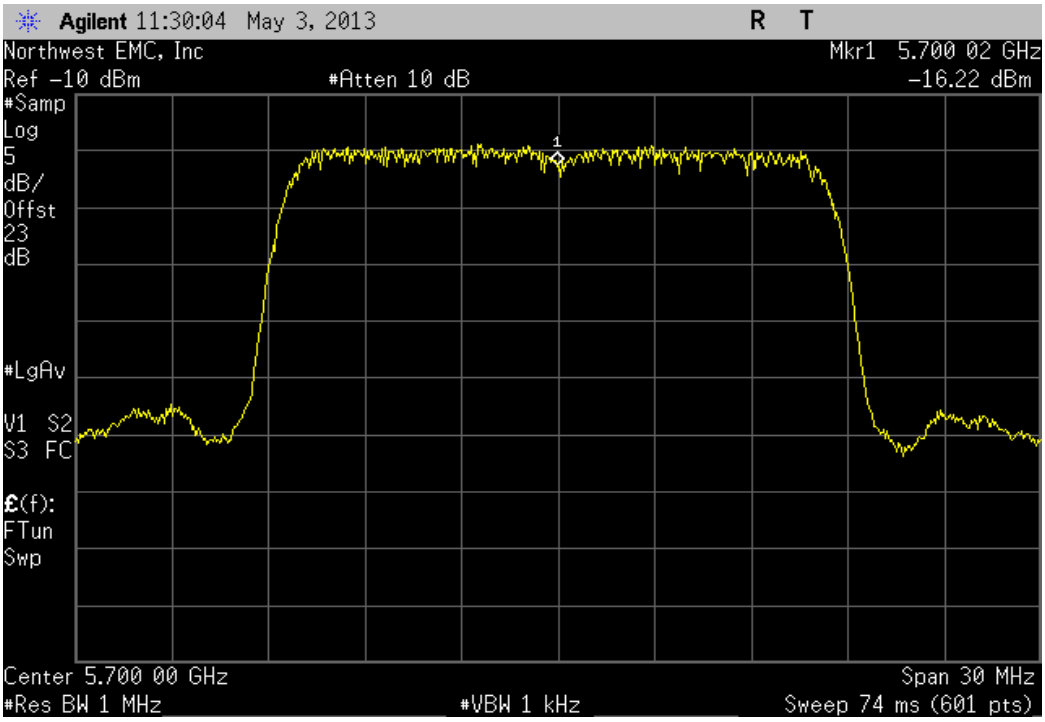
6 Mbps, 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: +40°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5700.02	5700	3.5	100	Pass



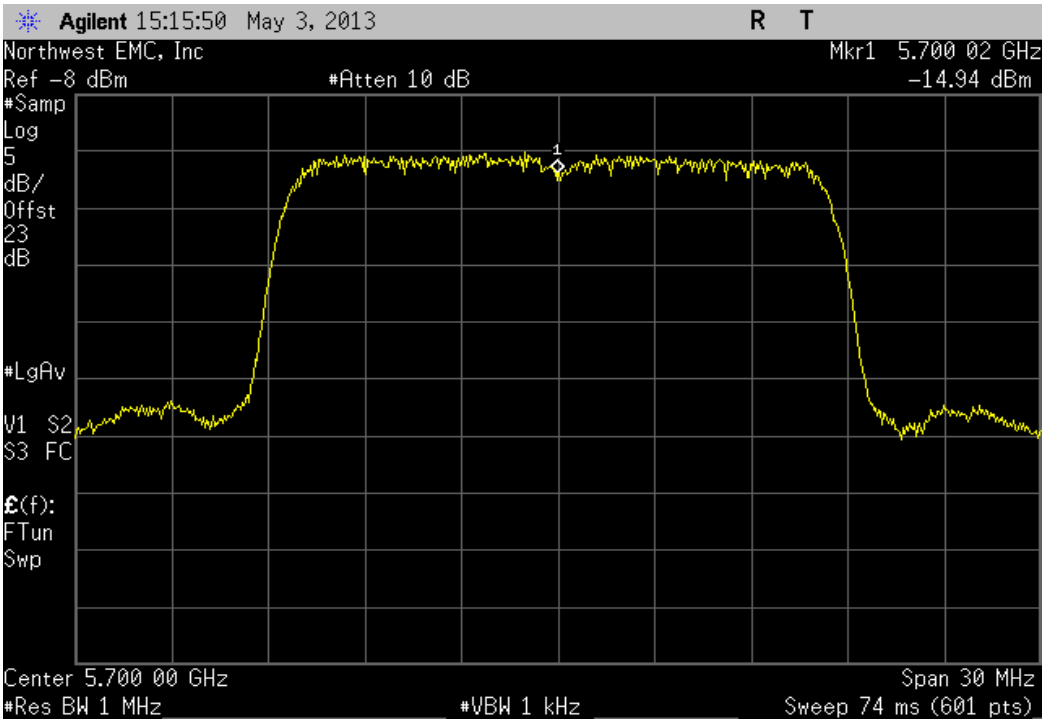
6 Mbps, 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: +30°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5700.05	5700	8.8	100	Pass



6 Mbps, 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: +20°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5700.02	5700	3.5	100	Pass

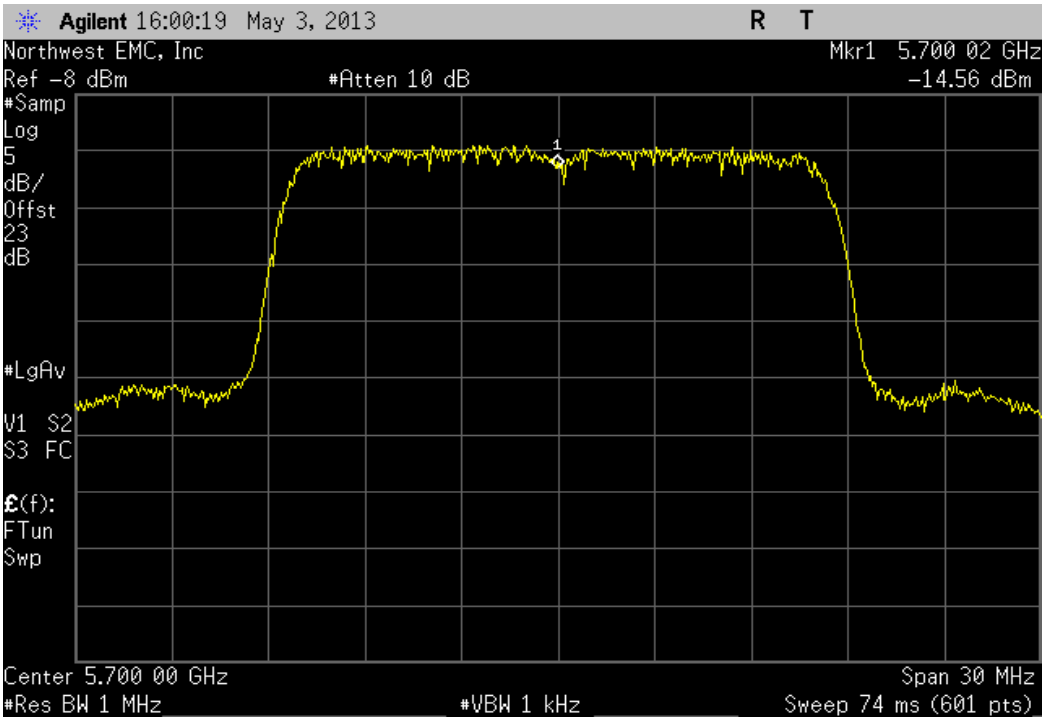


6 Mbps, 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: +10°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5700.02	5700	3.5	100	Pass

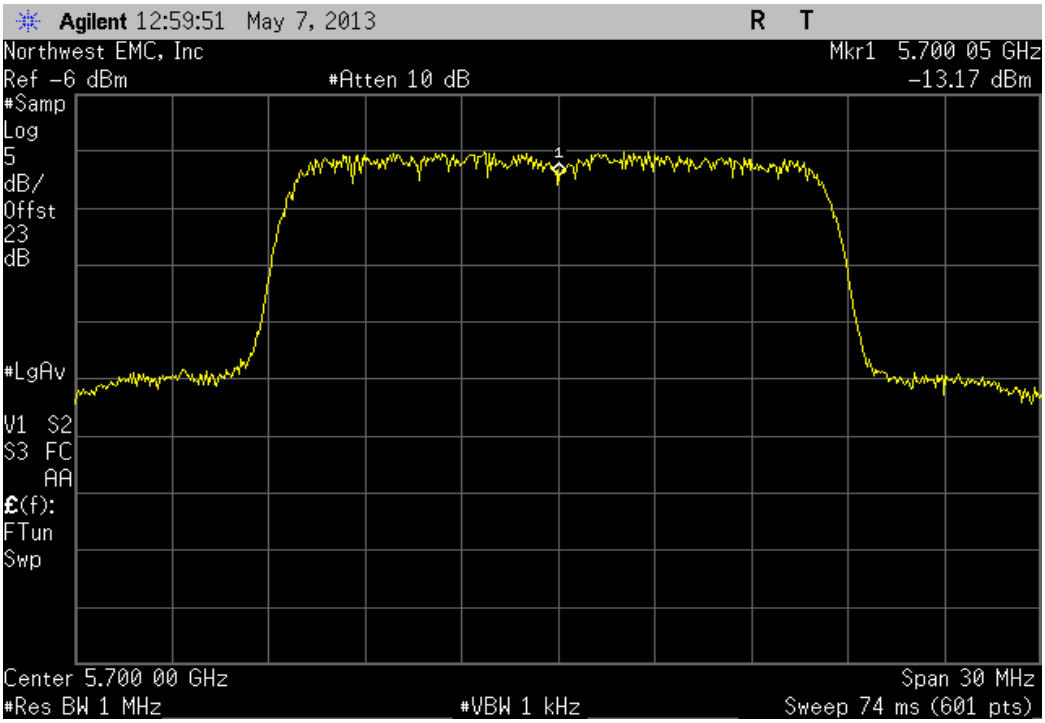


Frequency Stability

6 Mbps, 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: 0°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5700.02	5700	3.5	100	Pass

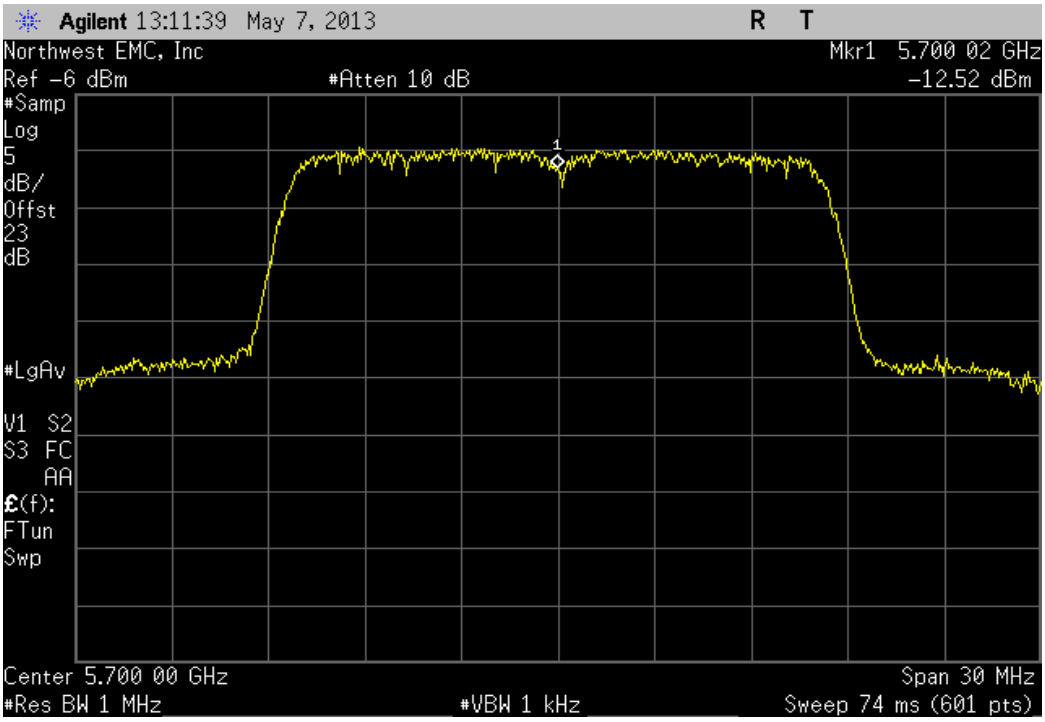


6 Mbps, 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: -10°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5700.05	5700	8.8	100	Pass

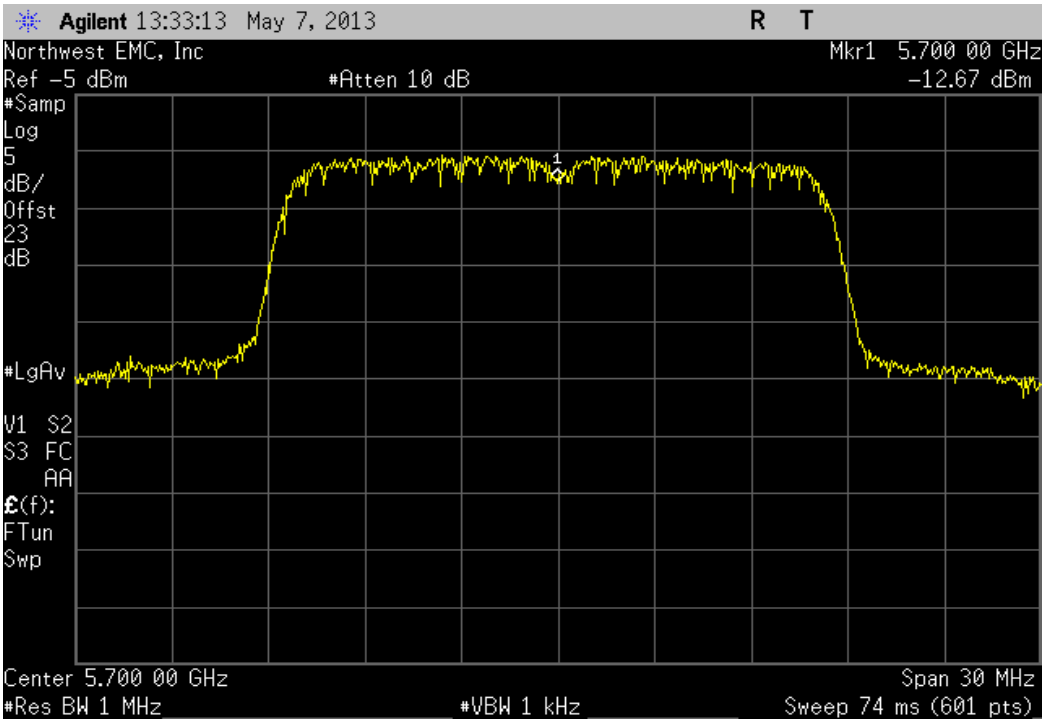


Frequency Stability

6 Mbps, 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: -20°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5700.02	5700	3.5	100	Pass

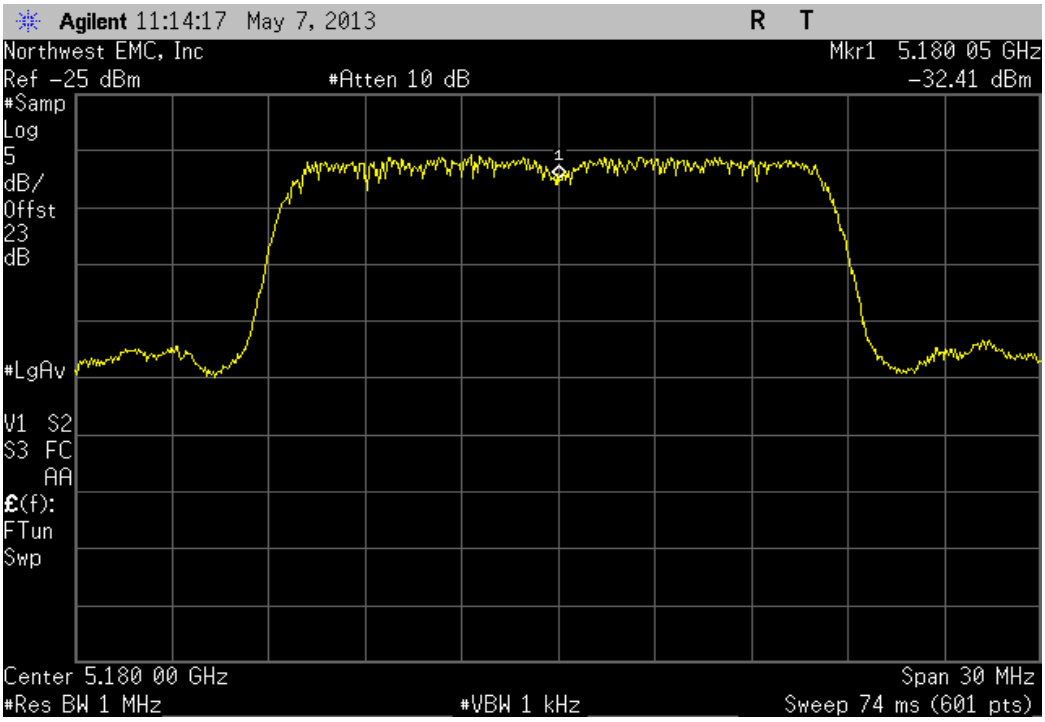


6 Mbps, 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: -30°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5700	5700	0	100	Pass

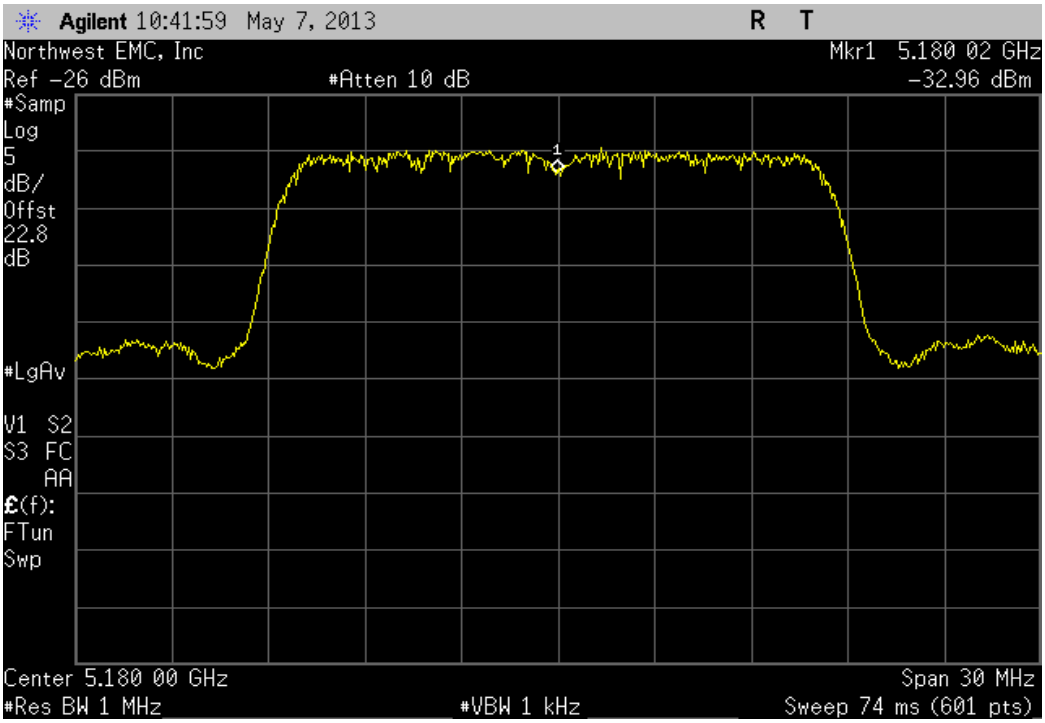


Frequency Stability

18 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Voltage: 115%						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5180.05	5180	9.6	100	Pass

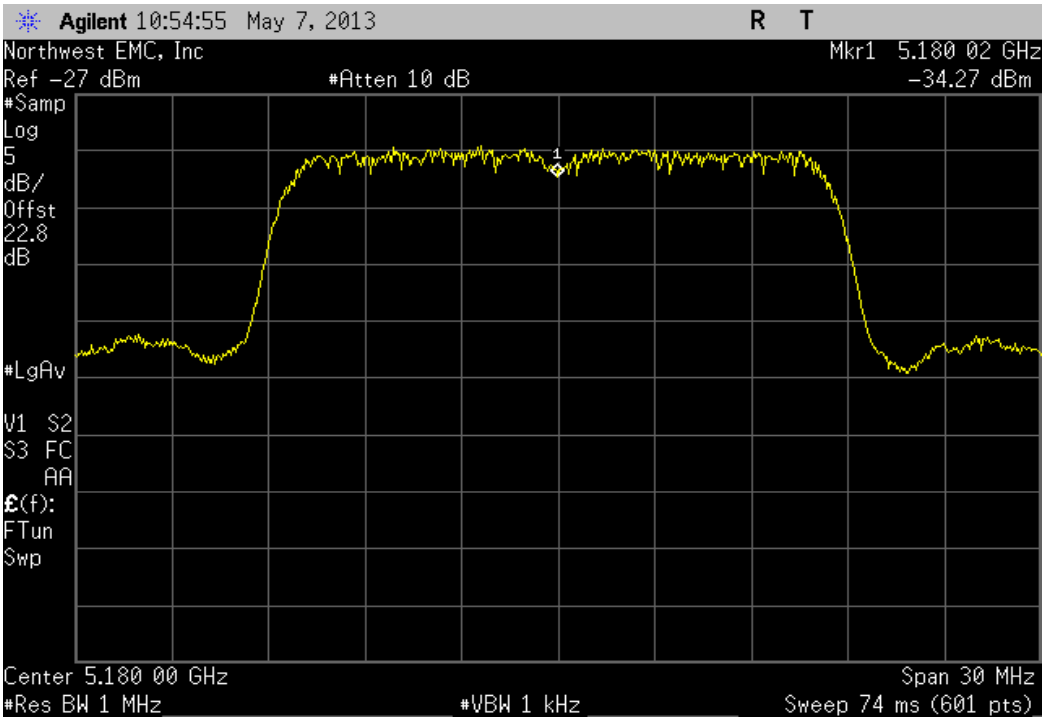


18 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Voltage: 100%						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5180.02	5180	3.9	100	Pass

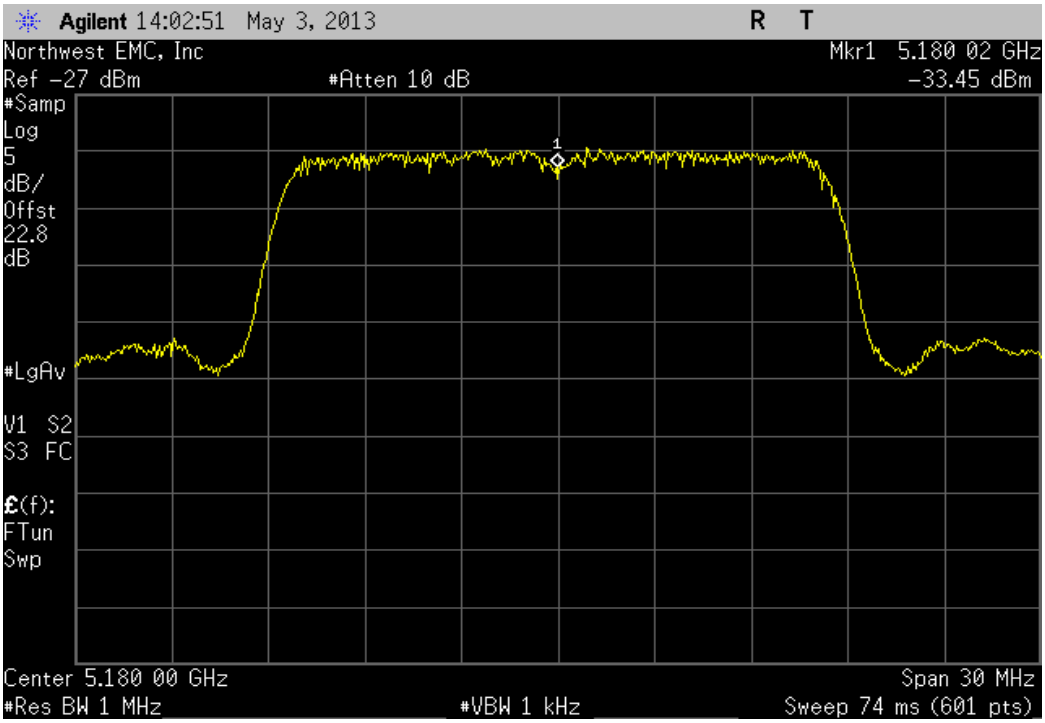


Frequency Stability

18 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Voltage: 85%						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5180.02	5180	3.9	100	Pass

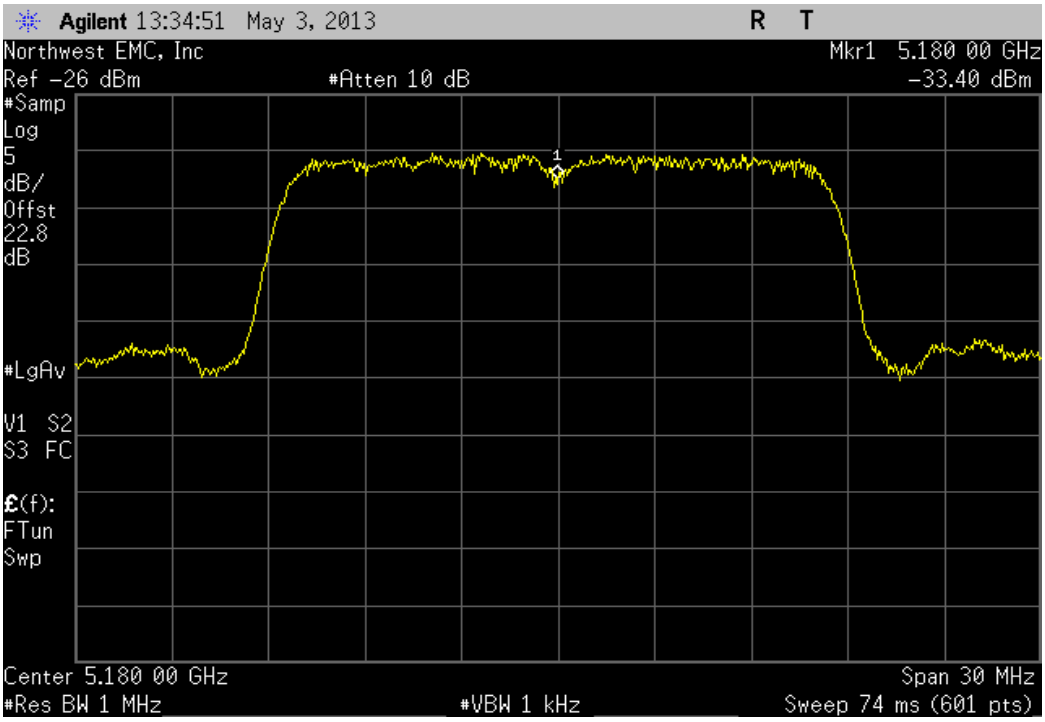


18 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: +50°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5180.02	5180	3.9	100	Pass

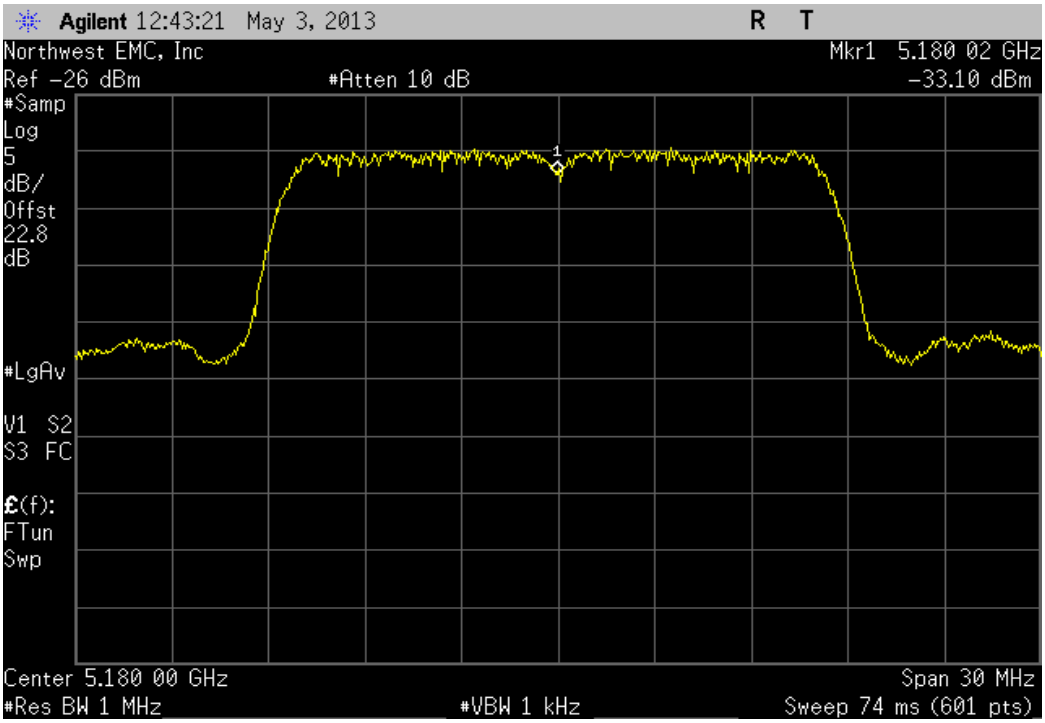


Frequency Stability

18 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: +40°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5180	5180	0	100	Pass

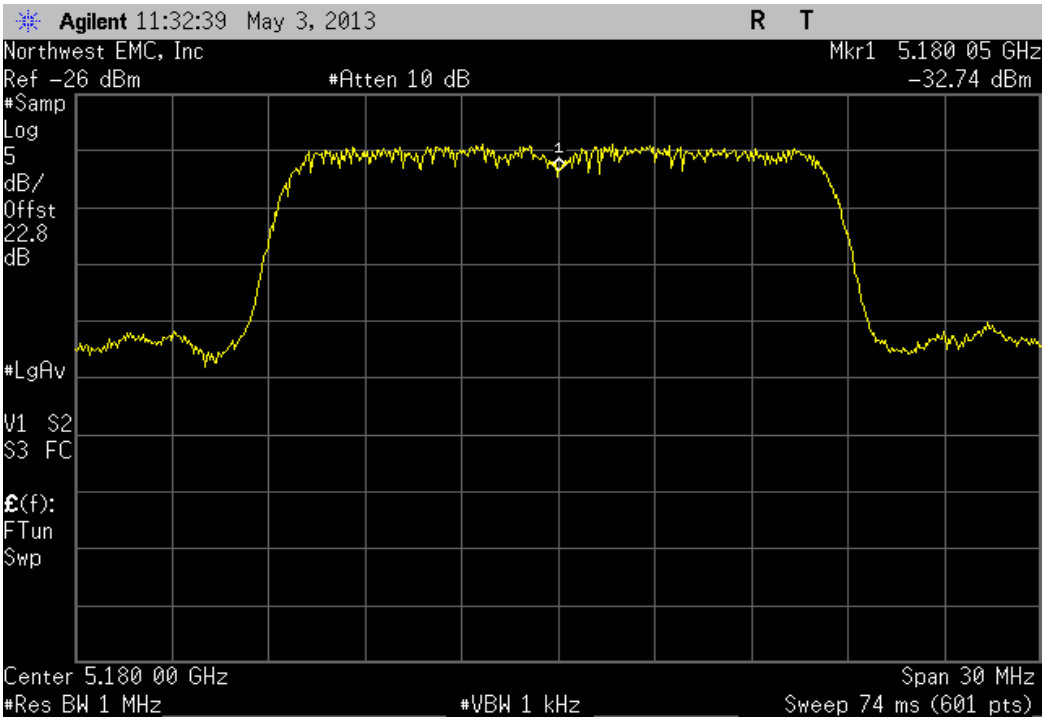


18 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: +30°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5180.02	5180	3.9	100	Pass

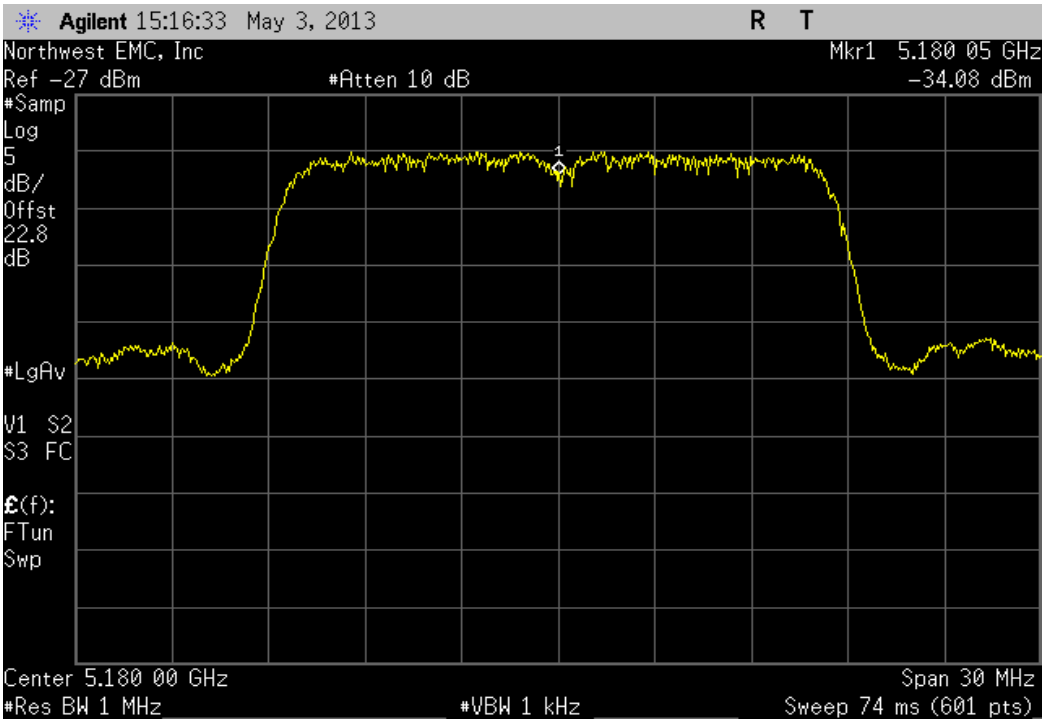


Frequency Stability

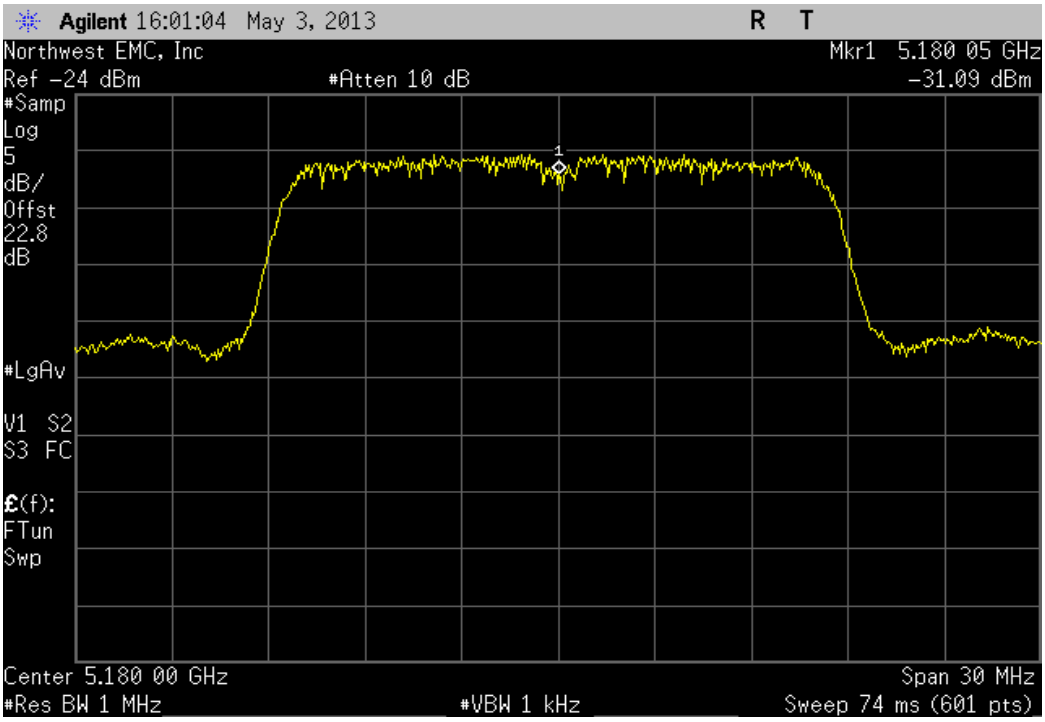
18 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: +20°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5180.05	5180	9.6	100	Pass



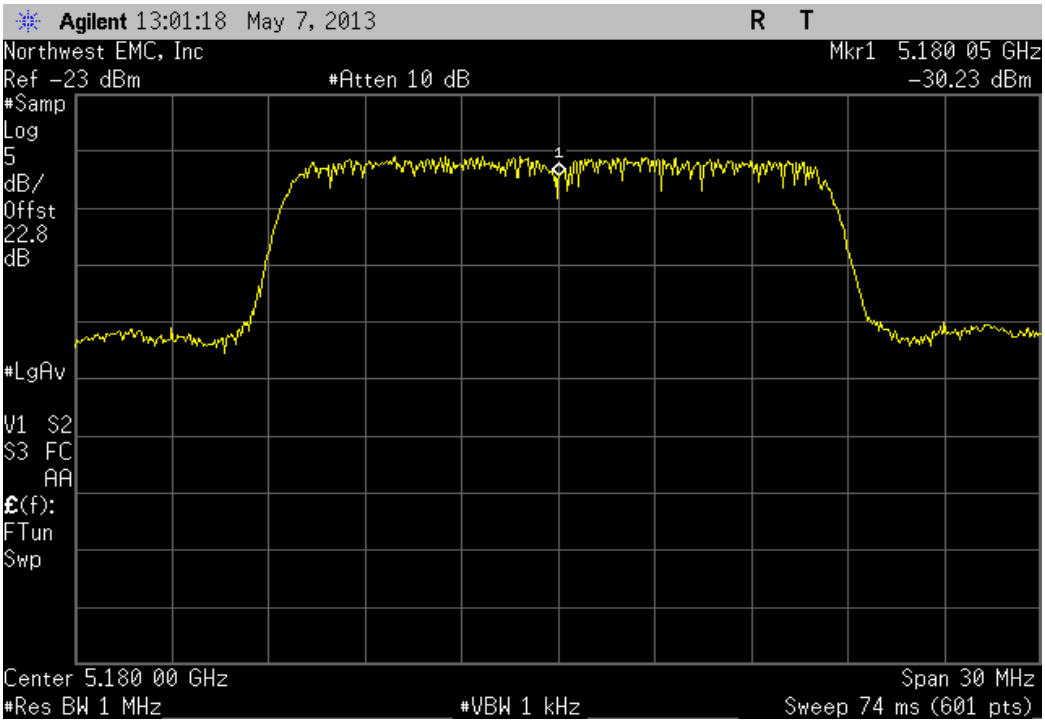
18 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: +10°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5180.05	5180	9.6	100	Pass



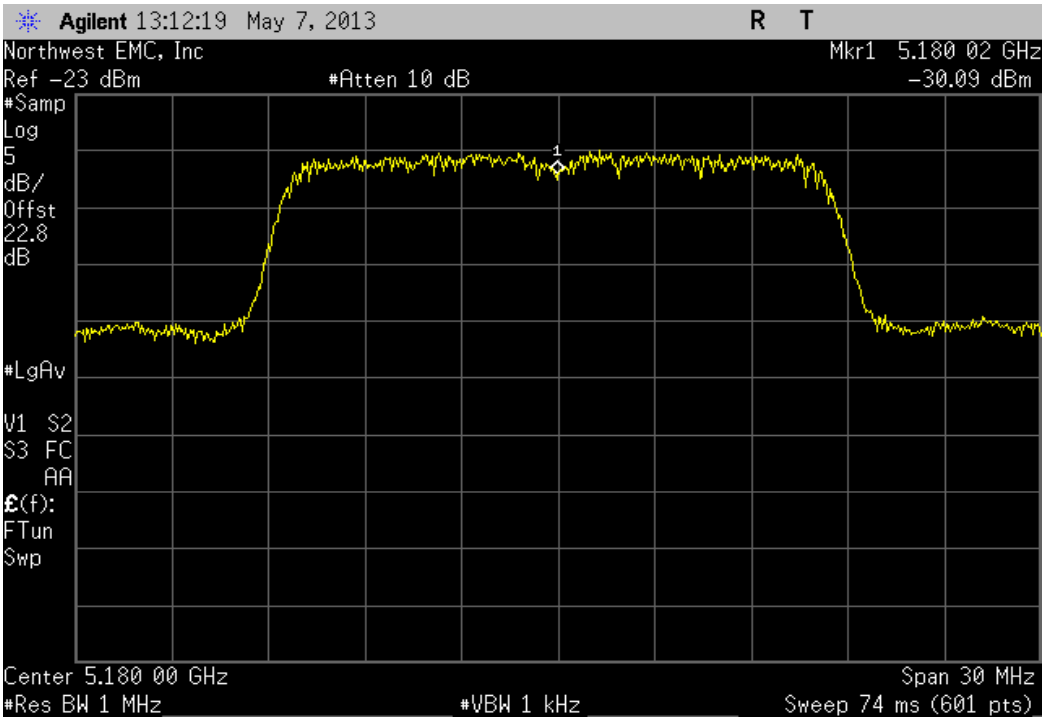
18 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: 0°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5180.05	5180	9.6	100	Pass



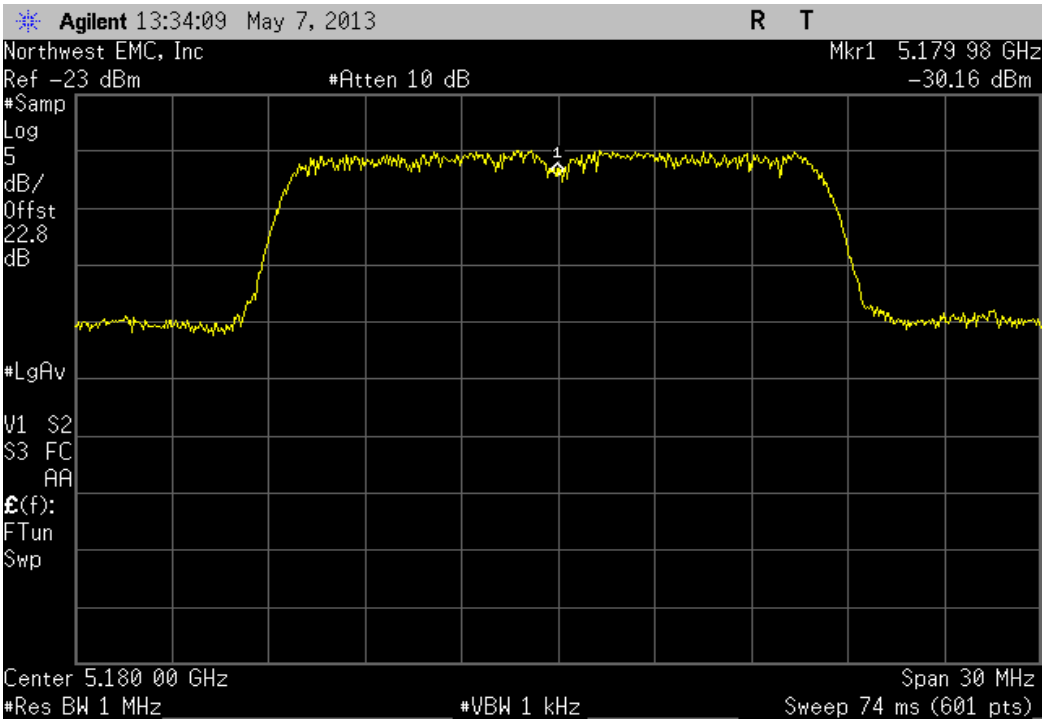
18 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: -10°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5180.05	5180	9.6	100	Pass



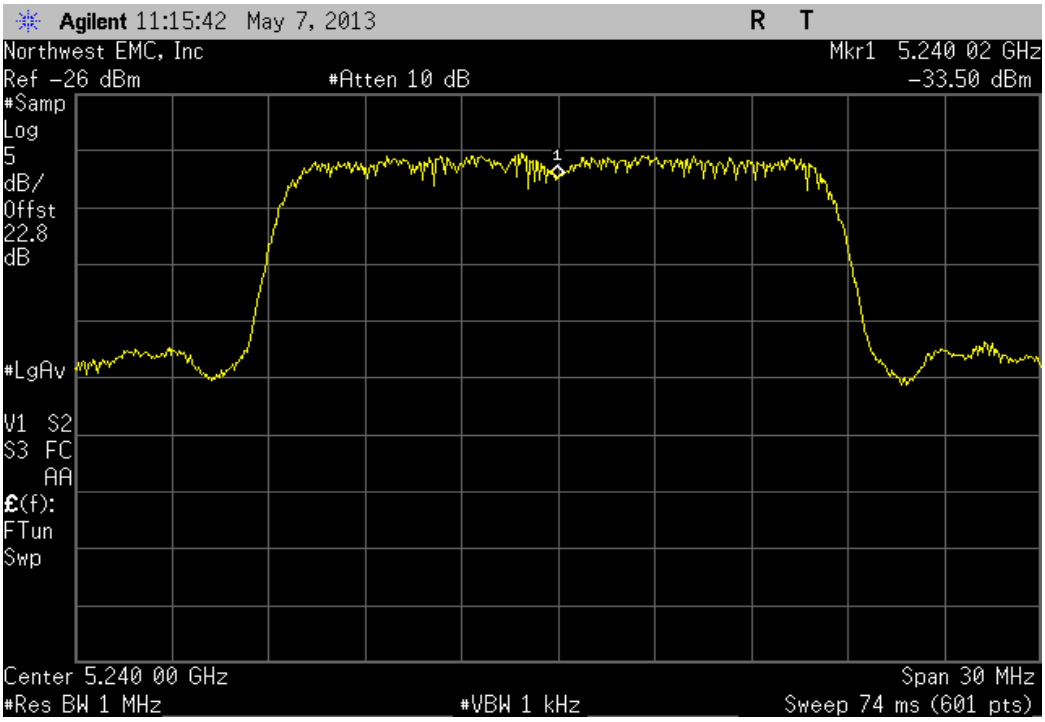
18 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: -20°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5180.02	5180	3.9	100	Pass



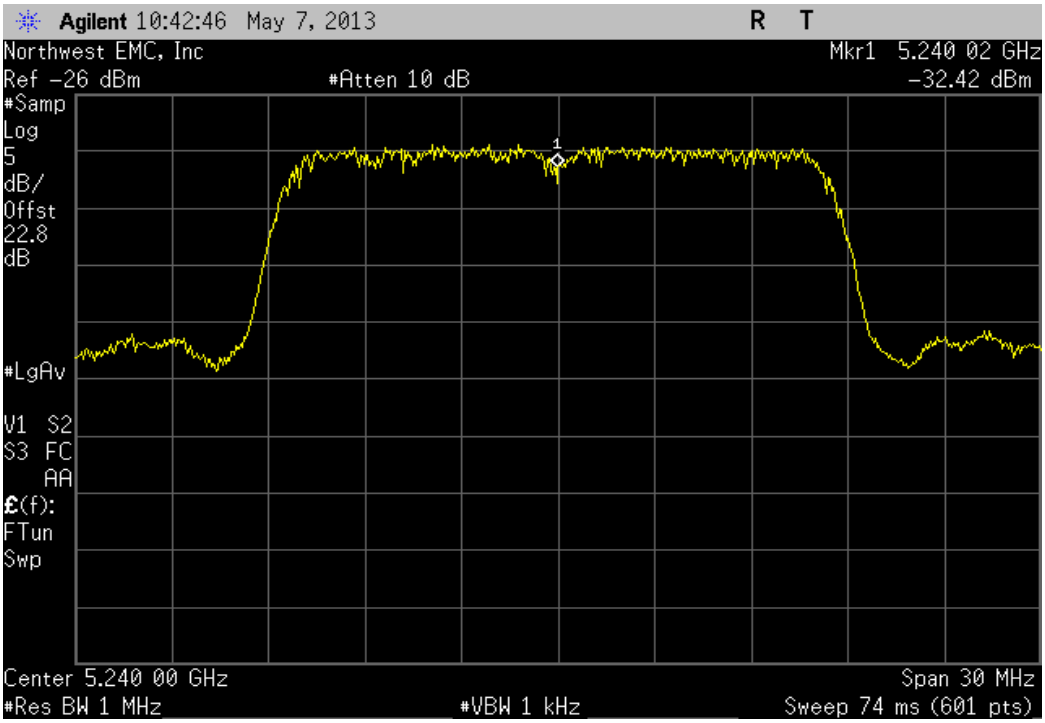
18 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5180 MHz, Temperature: -30°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5179.98	5180	3.9	100	Pass



18 Mbps, 5150 MHz - 5250 MHz - High Channel, 5240 MHz, Voltage: 115%						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5240.02	5240	3.8	100	Pass

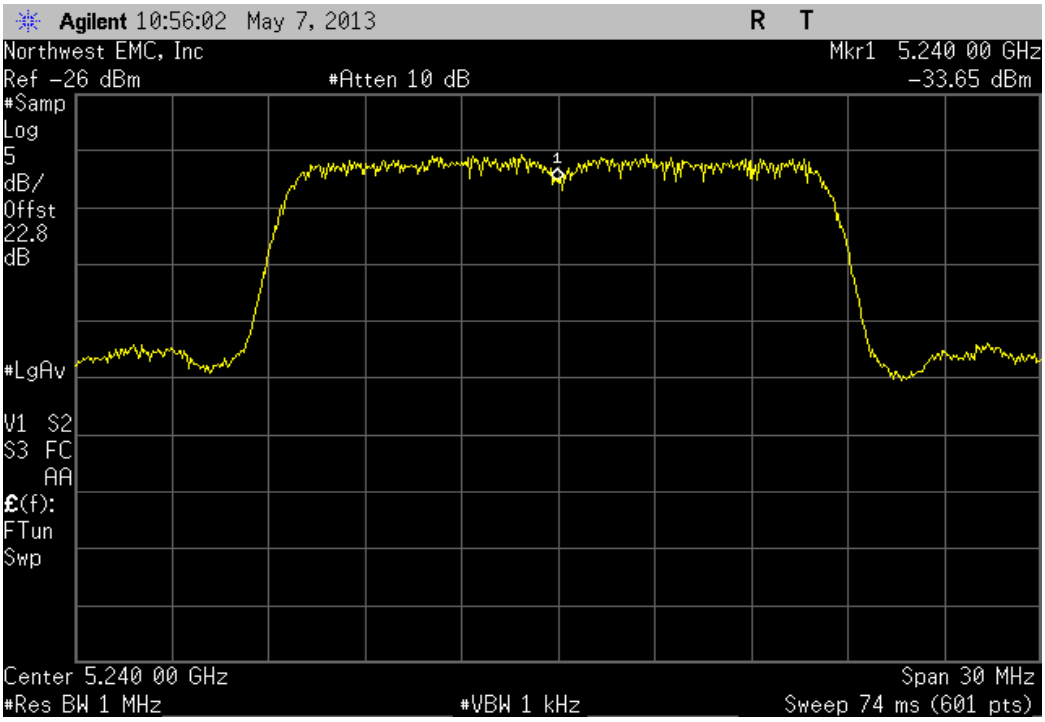


18 Mbps, 5150 MHz - 5250 MHz - High Channel, 5240 MHz, Voltage: 100%						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5240.02	5240	3.8	100	Pass

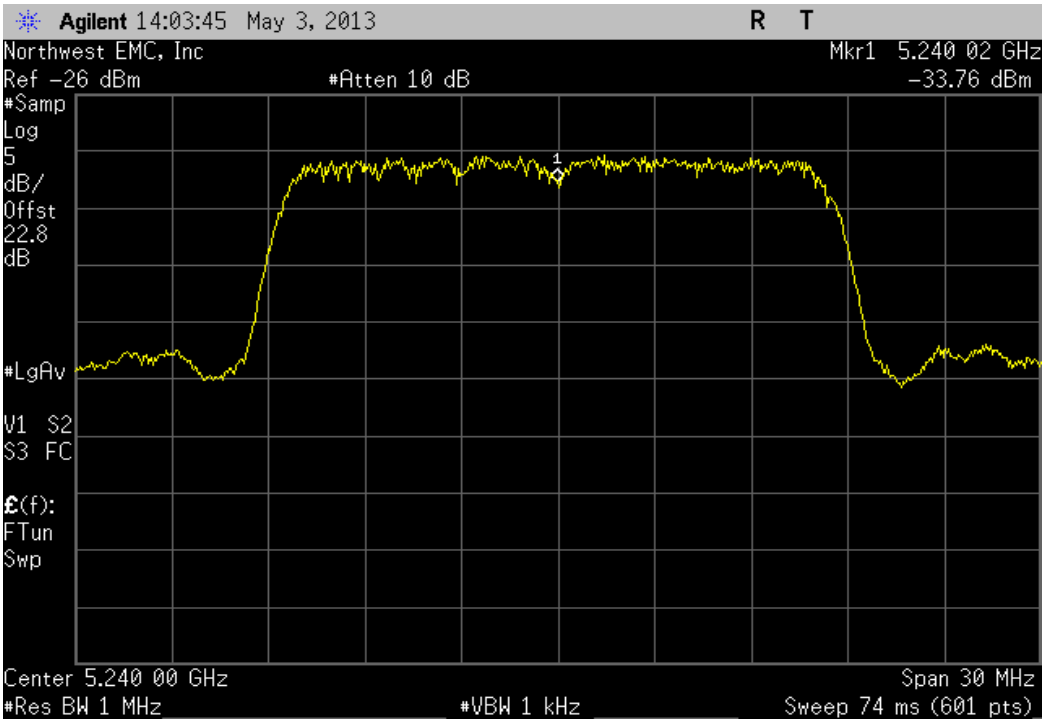


Frequency Stability

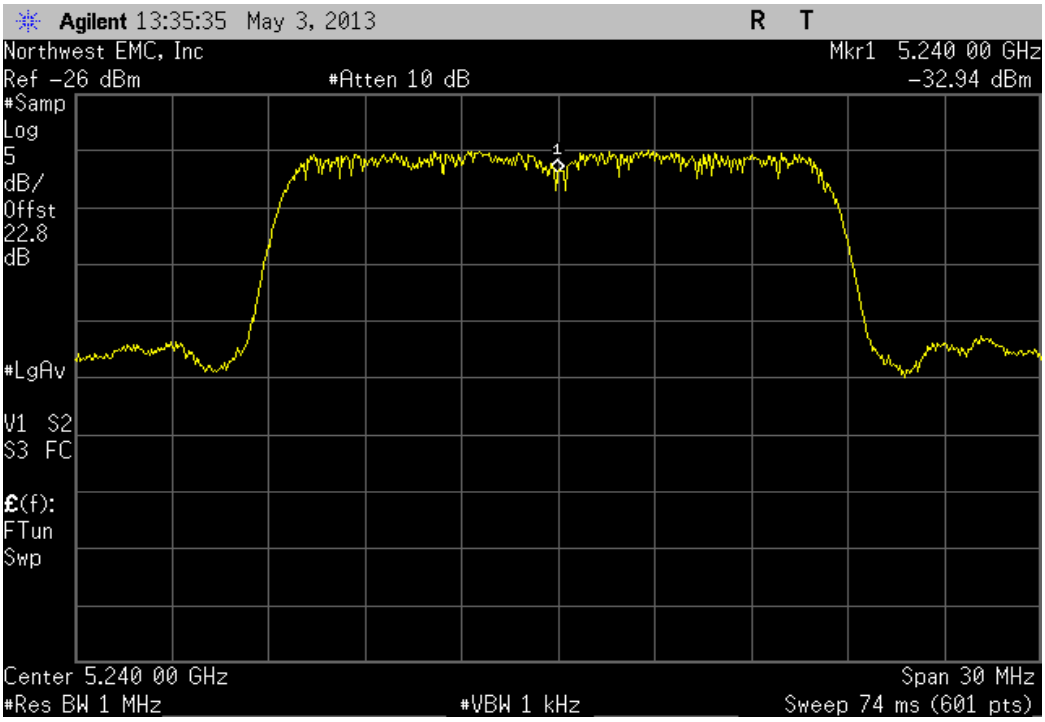
18 Mbps, 5150 MHz - 5250 MHz - High Channel, 5240 MHz, Voltage: 85%						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5240	5240	0	100	Pass



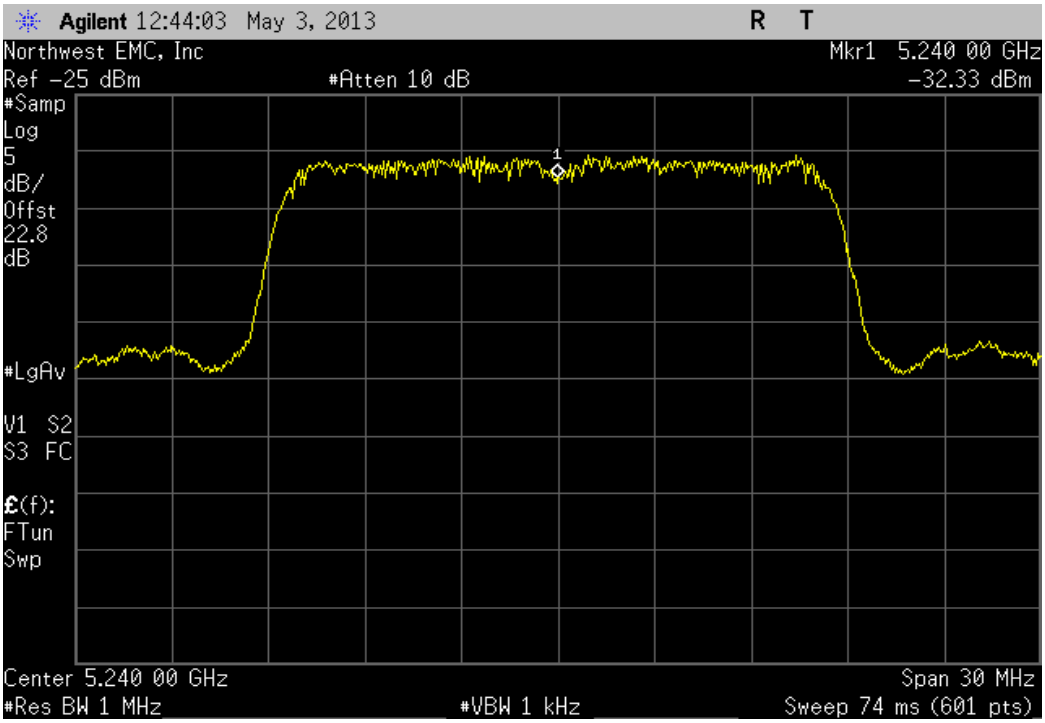
18 Mbps, 5150 MHz - 5250 MHz - High Channel, 5240 MHz, Temperature: +50°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5240.02	5240	3.8	100	Pass



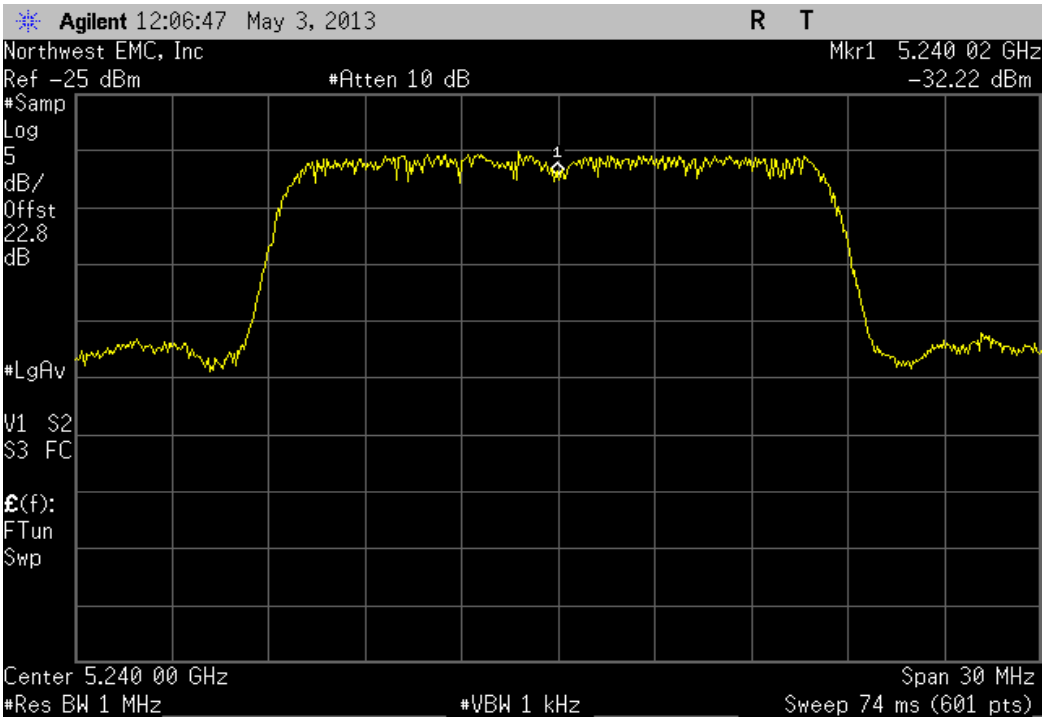
18 Mbps, 5150 MHz - 5250 MHz - High Channel, 5240 MHz, Temperature: +40°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5240	5240	0	100	Pass



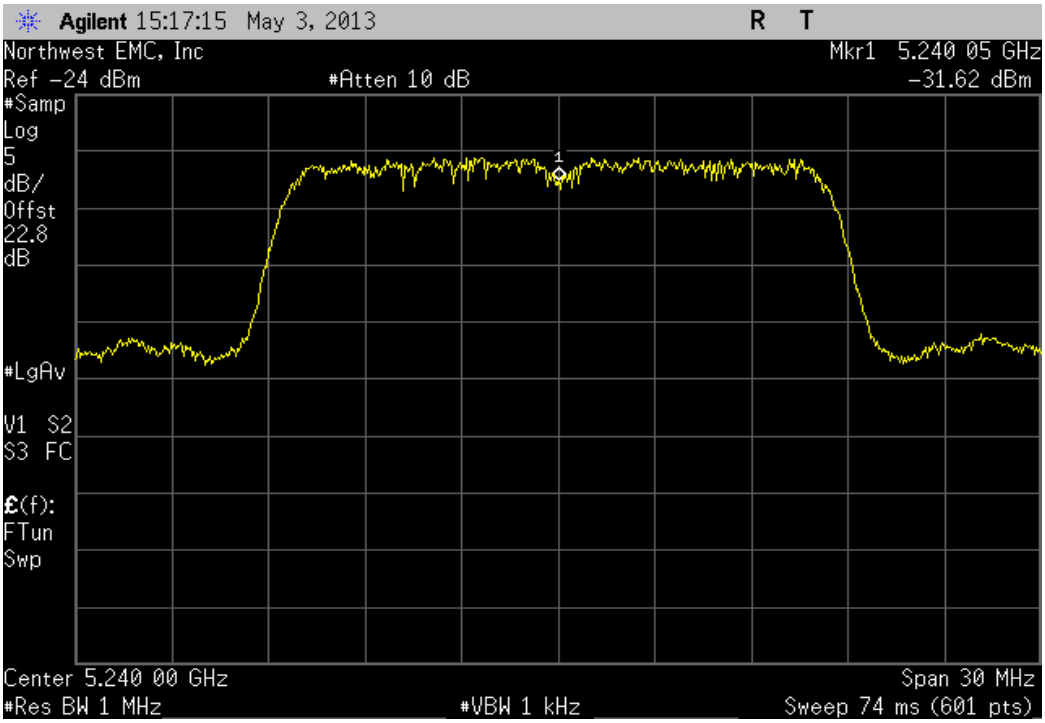
18 Mbps, 5150 MHz - 5250 MHz - High Channel, 5240 MHz, Temperature: +30°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5240	5240	0	100	Pass



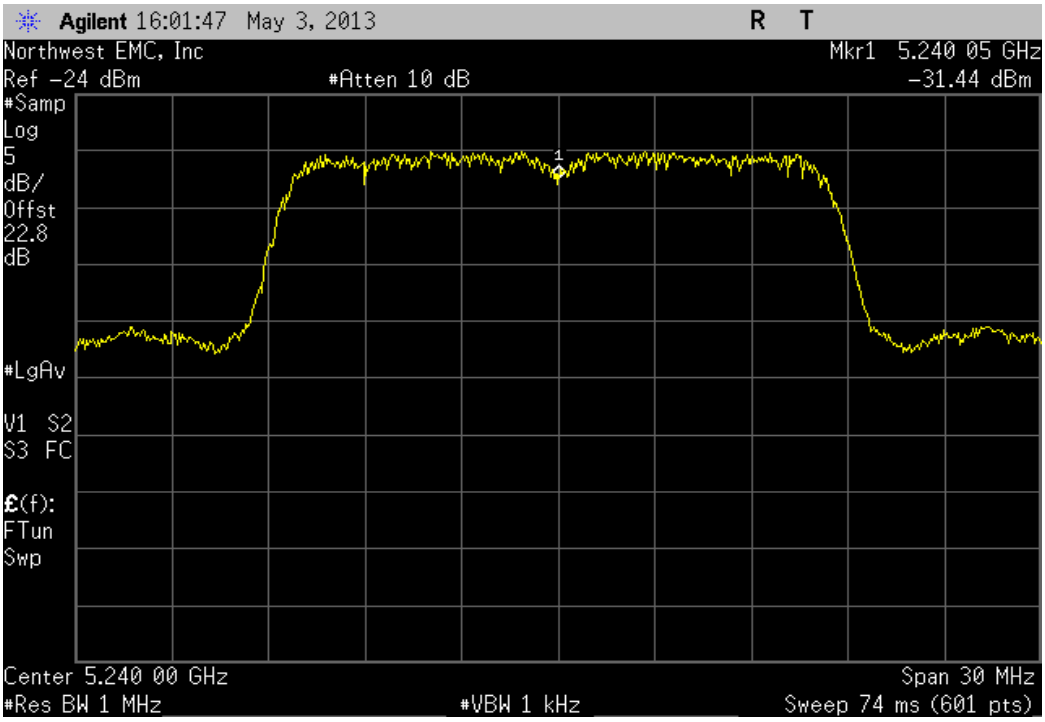
18 Mbps, 5150 MHz - 5250 MHz - High Channel, 5240 MHz, Temperature: +20°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5240.02	5240	3.8	100	Pass



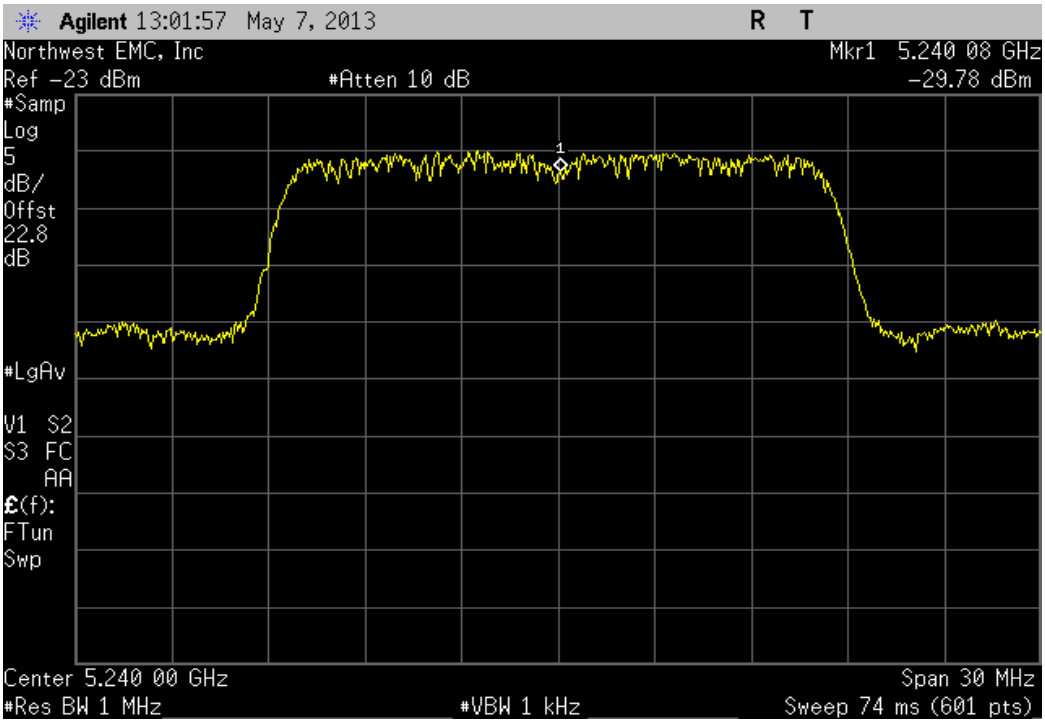
18 Mbps, 5150 MHz - 5250 MHz - High Channel, 5240 MHz, Temperature: +10°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5240.05	5240	9.5	100	Pass



18 Mbps, 5150 MHz - 5250 MHz - High Channel, 5240 MHz, Temperature: 0°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5240.05	5240	9.5	100	Pass

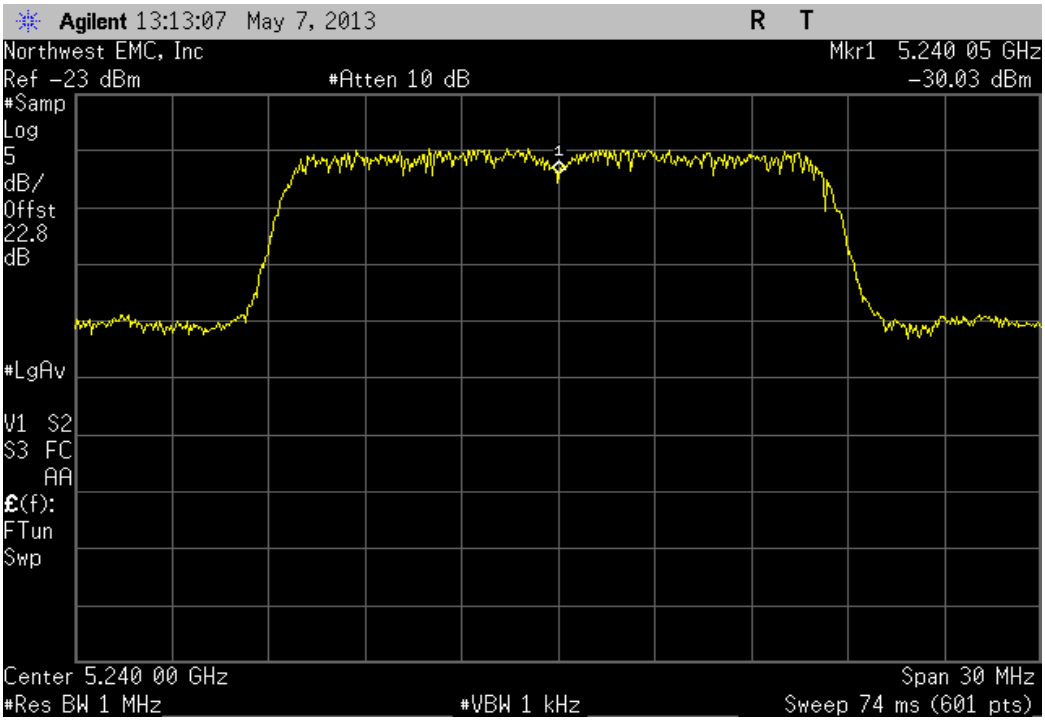


18 Mbps, 5150 MHz - 5250 MHz - High Channel, 5240 MHz, Temperature: -10°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5240.08	5240	15.3	100	Pass

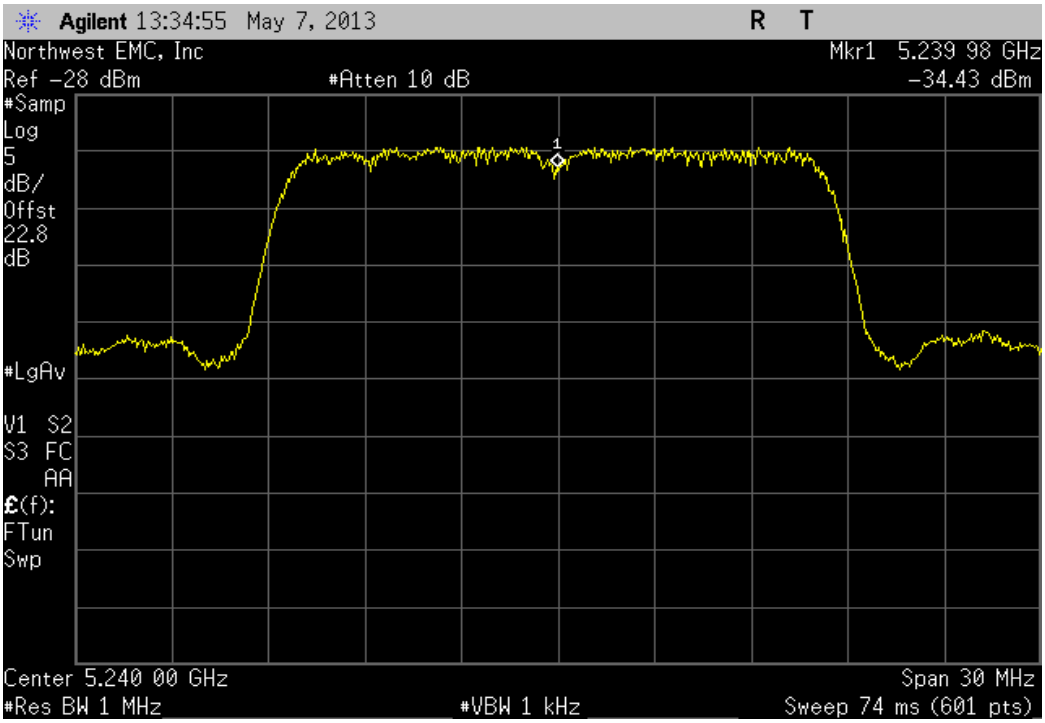


Frequency Stability

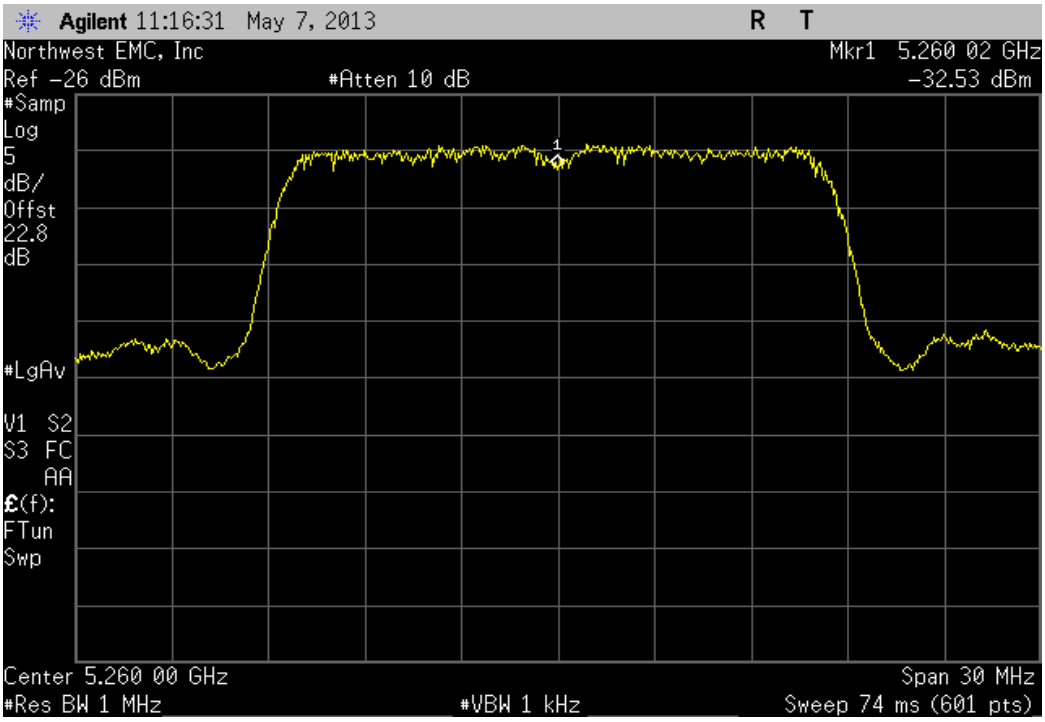
18 Mbps, 5150 MHz - 5250 MHz - High Channel, 5240 MHz, Temperature: -20°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5240.05	5240	9.5	100	Pass



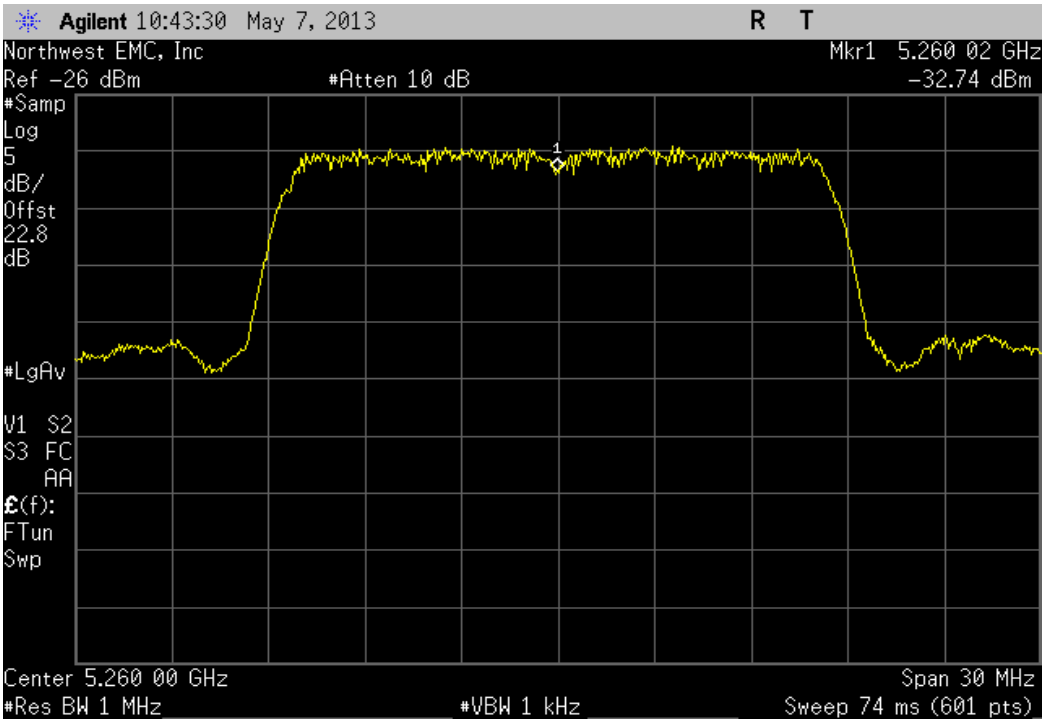
18 Mbps, 5150 MHz - 5250 MHz - High Channel, 5240 MHz, Temperature: -30°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5239.98	5240	3.8	100	Pass



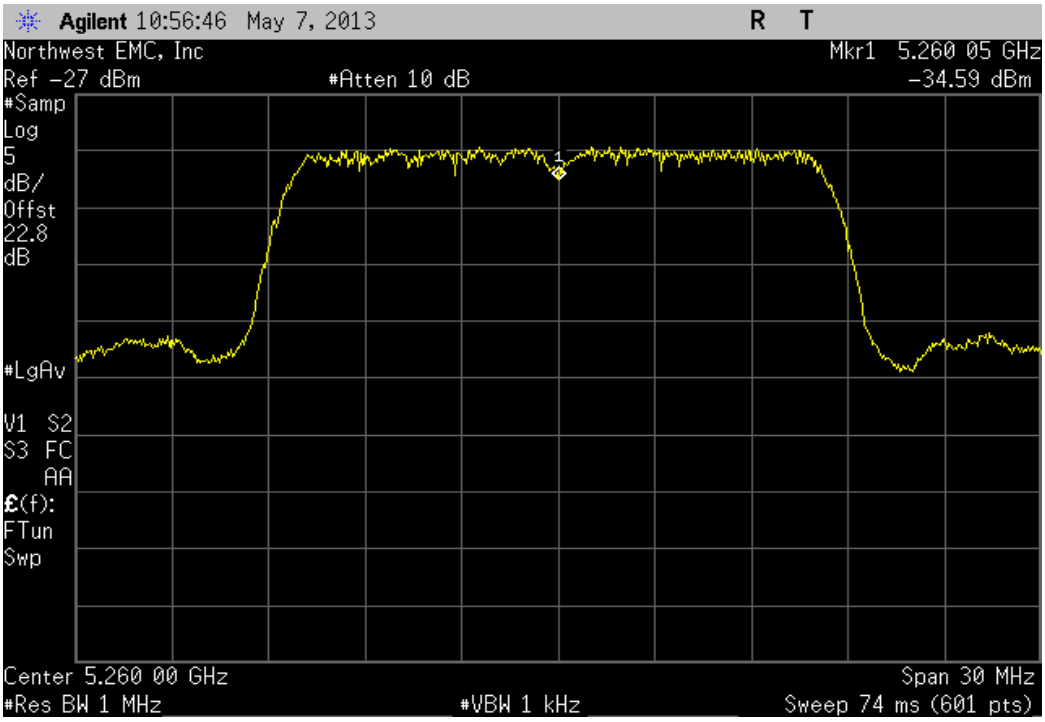
18 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5260 MHz, Voltage: 115%						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5260.02	5260	3.8	100	Pass



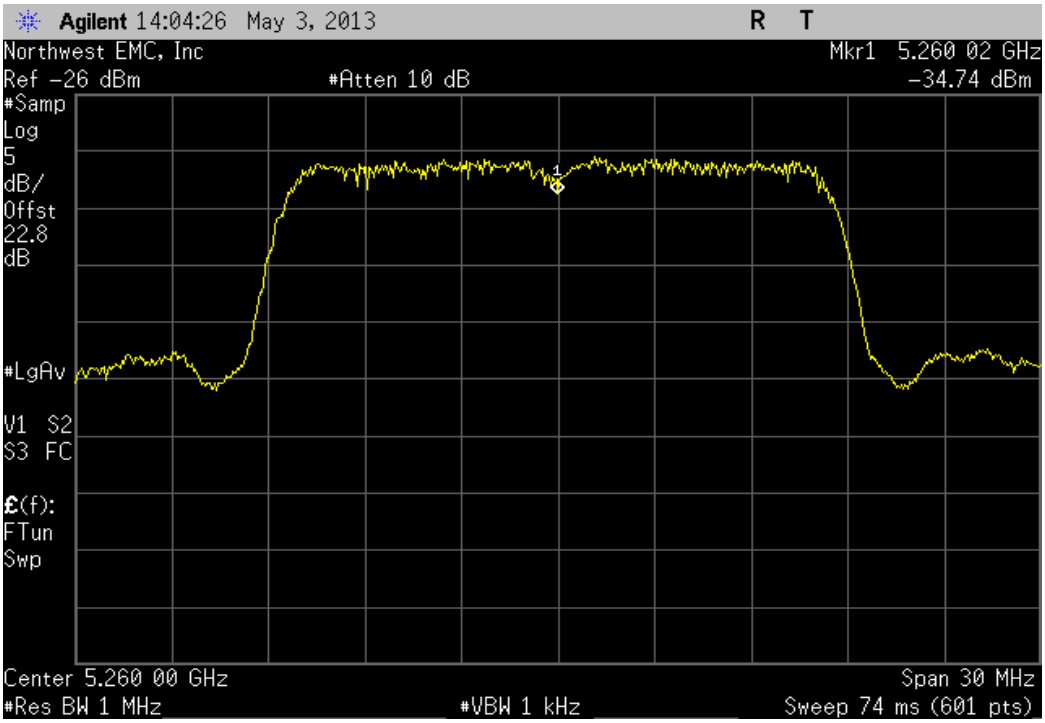
18 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5260 MHz, Voltage: 100%						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5260.02	5260	3.8	100	Pass



18 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5260 MHz, Voltage: 85%						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5260.05	5260	9.5	100	Pass

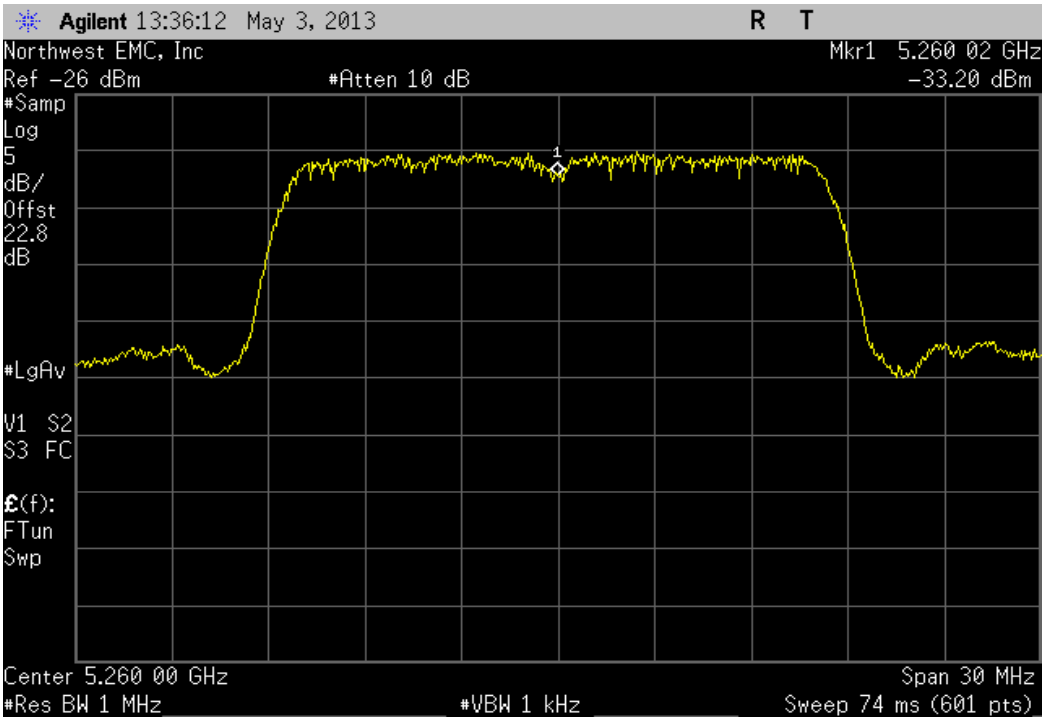


18 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5260 MHz, Temperature: +50°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5260.02	5260	3.8	100	Pass

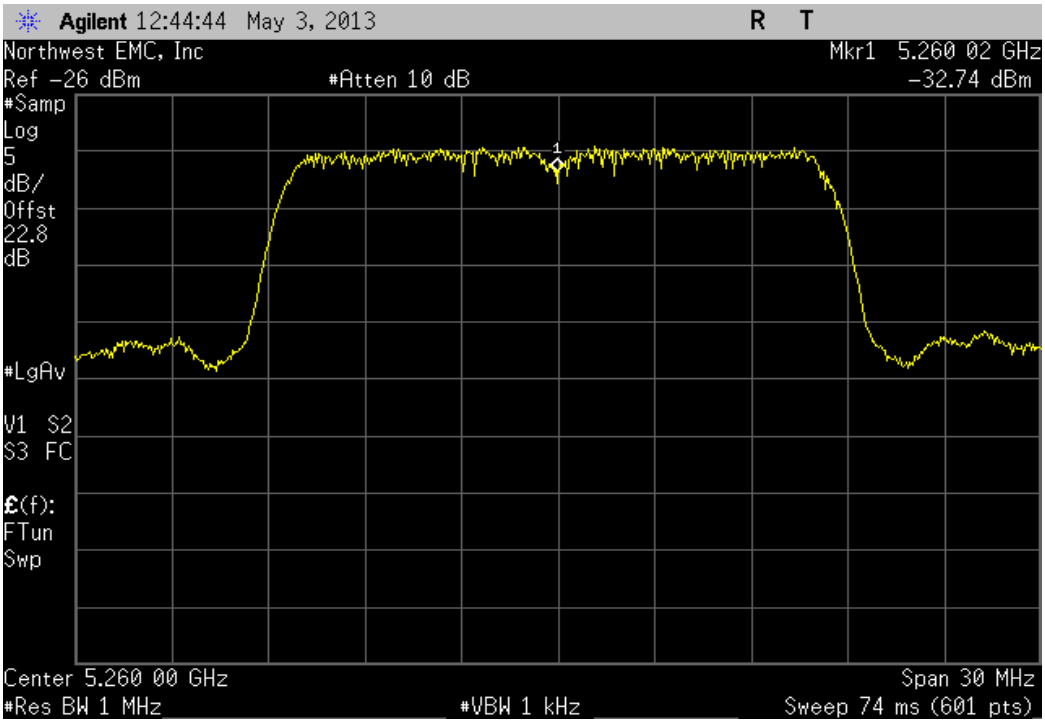


Frequency Stability

18 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5260 MHz, Temperature: +40°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5260.02	5260	3.8	100	Pass

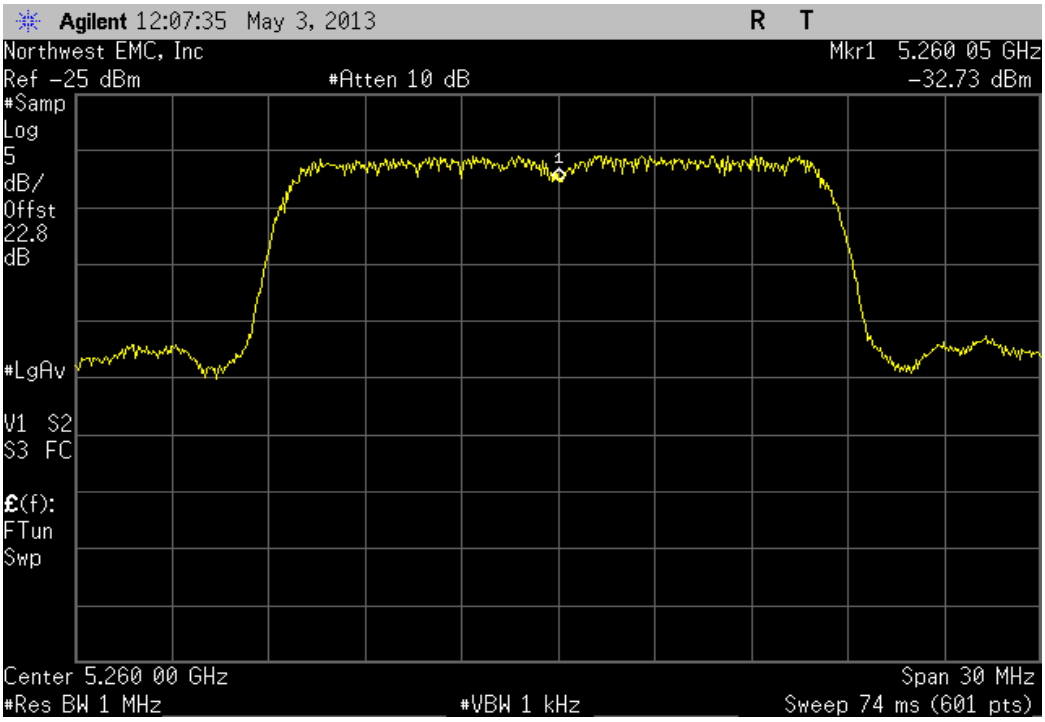


18 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5260 MHz, Temperature: +30°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5260.02	5260	3.8	100	Pass

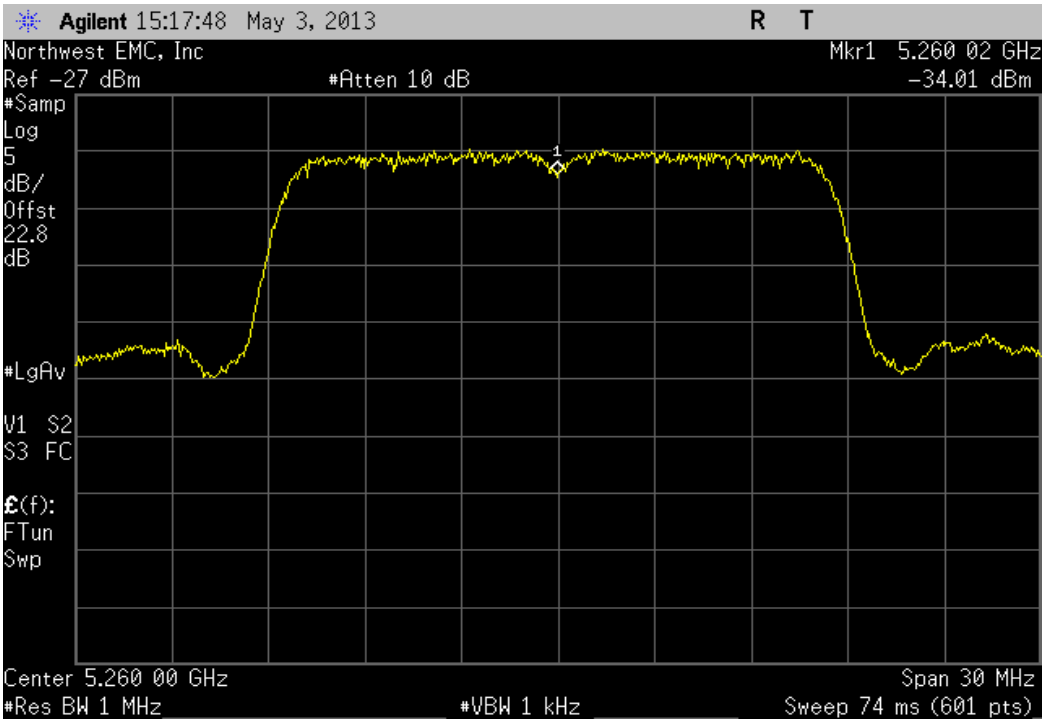


Frequency Stability

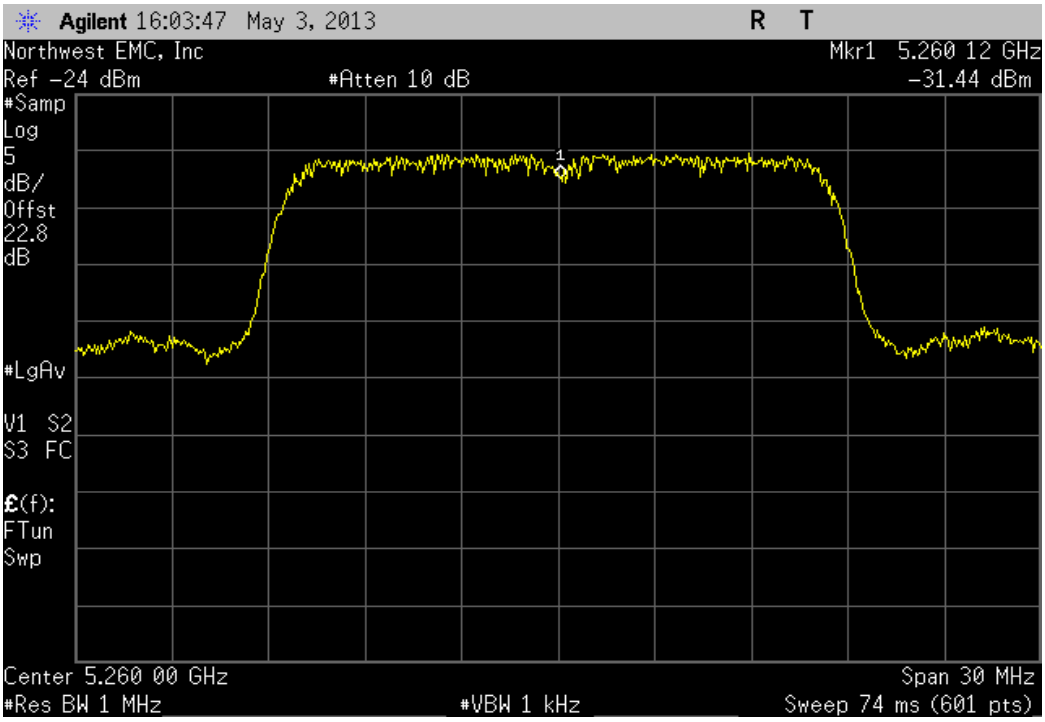
18 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5260 MHz, Temperature: +20°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5260.05	5260	9.5	100	Pass



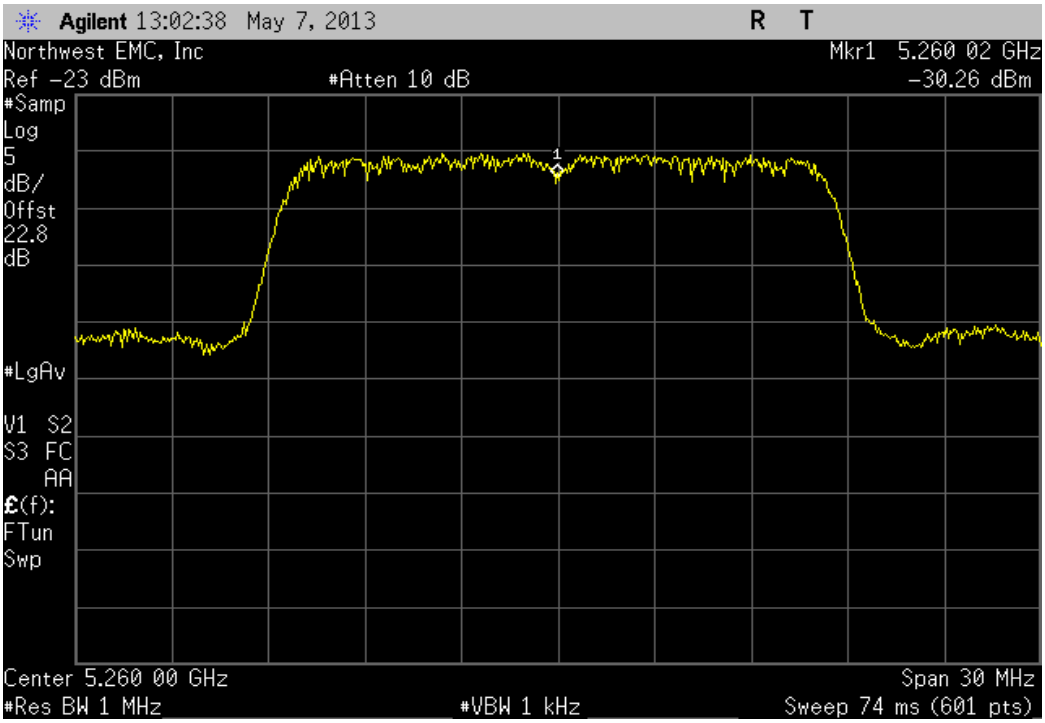
18 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5260 MHz, Temperature: +10°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5260.02	5260	3.8	100	Pass



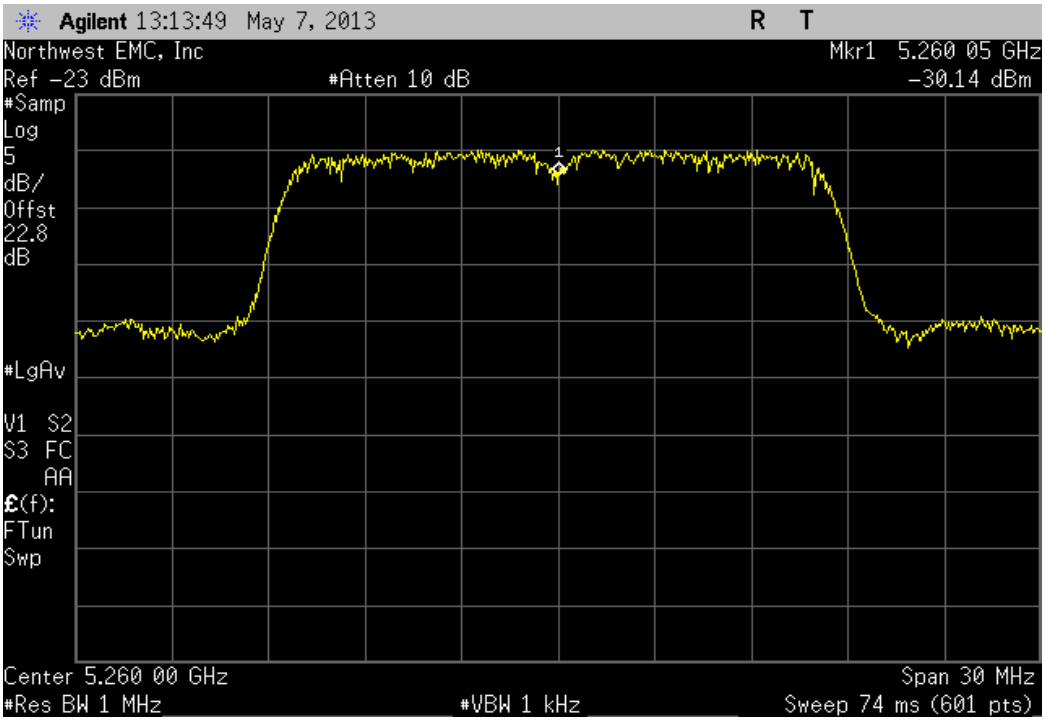
18 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5260 MHz, Temperature: 0°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5260.12	5260	22.8	100	Pass



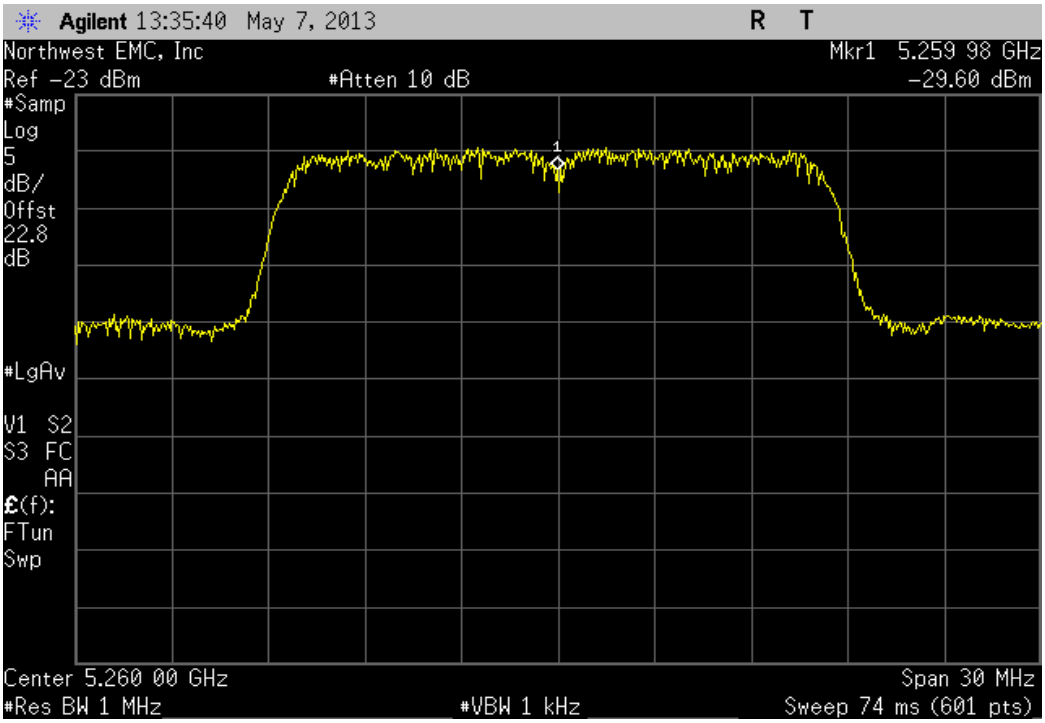
18 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5260 MHz, Temperature: -10°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5260.02	5260	3.8	100	Pass



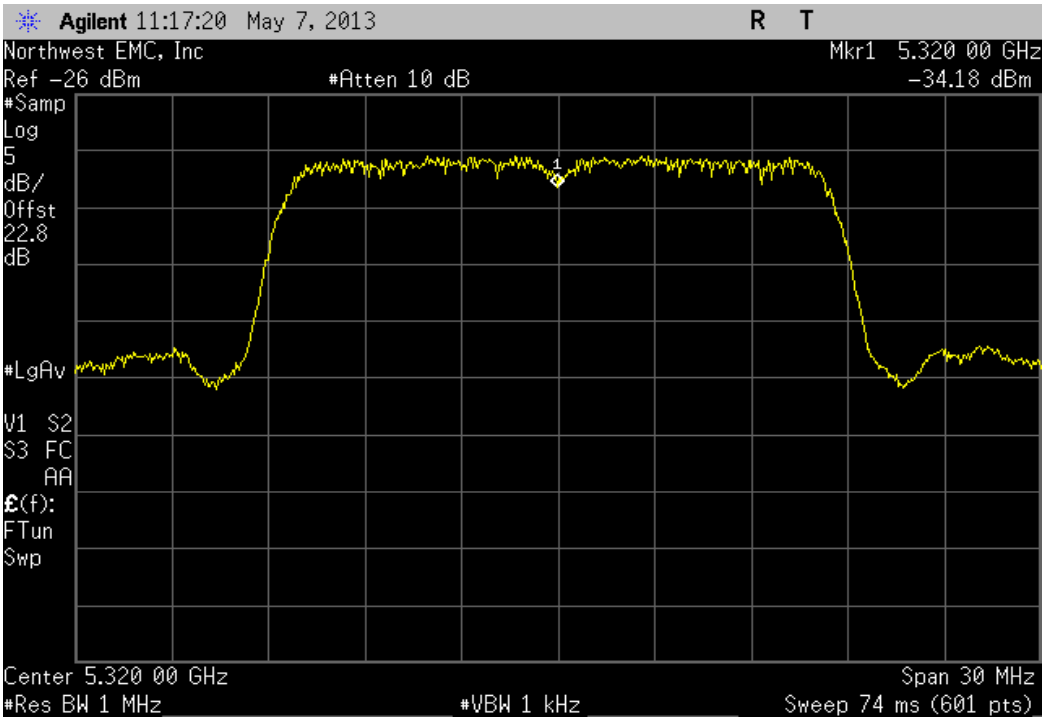
18 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5260 MHz, Temperature: -20°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5260.05	5260	9.5	100	Pass



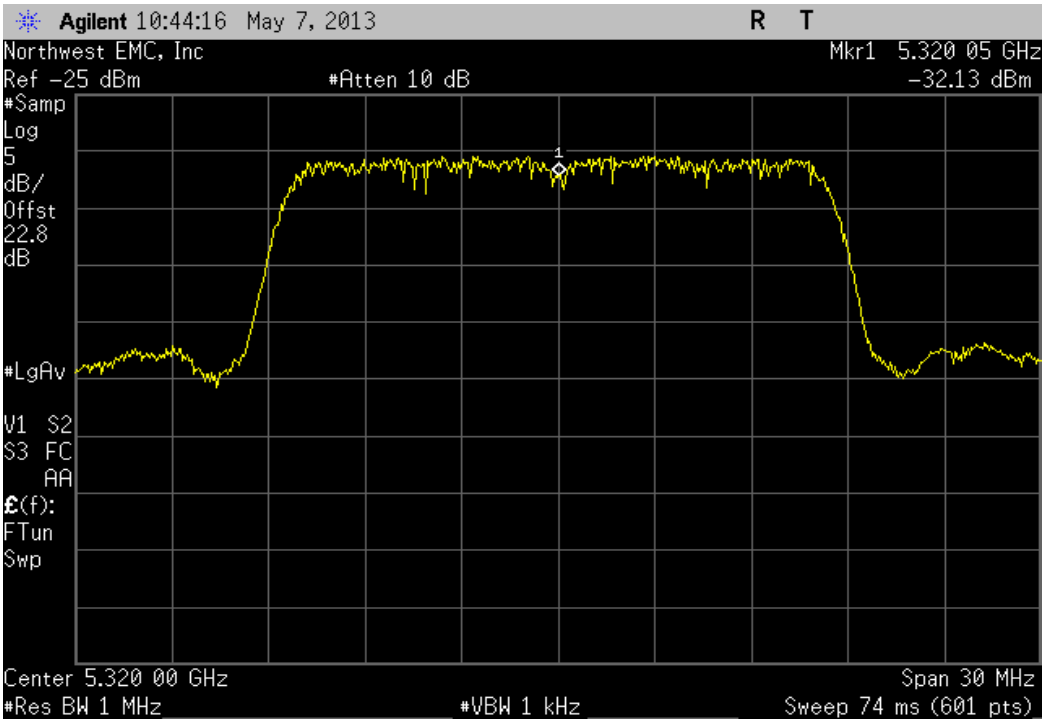
18 Mbps, 5150 MHz - 5250 MHz - Low Channel, 5260 MHz, Temperature: -30°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5259.98	5260	3.8	100	Pass



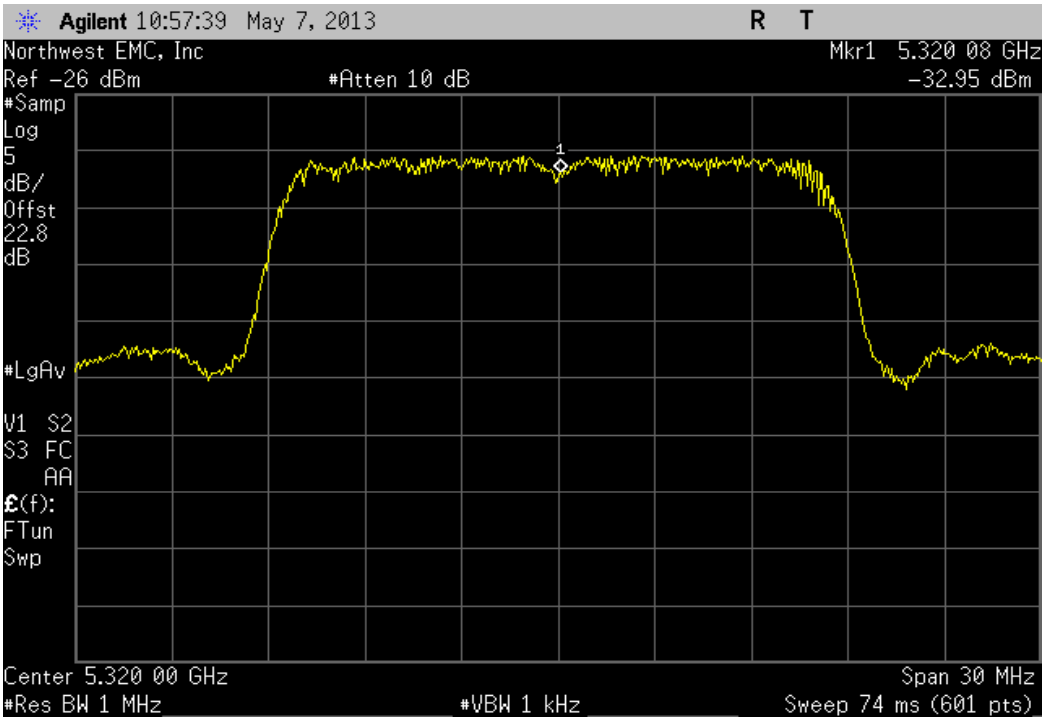
18 Mbps, 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Voltage: 115%						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5320	5320	0	100	Pass



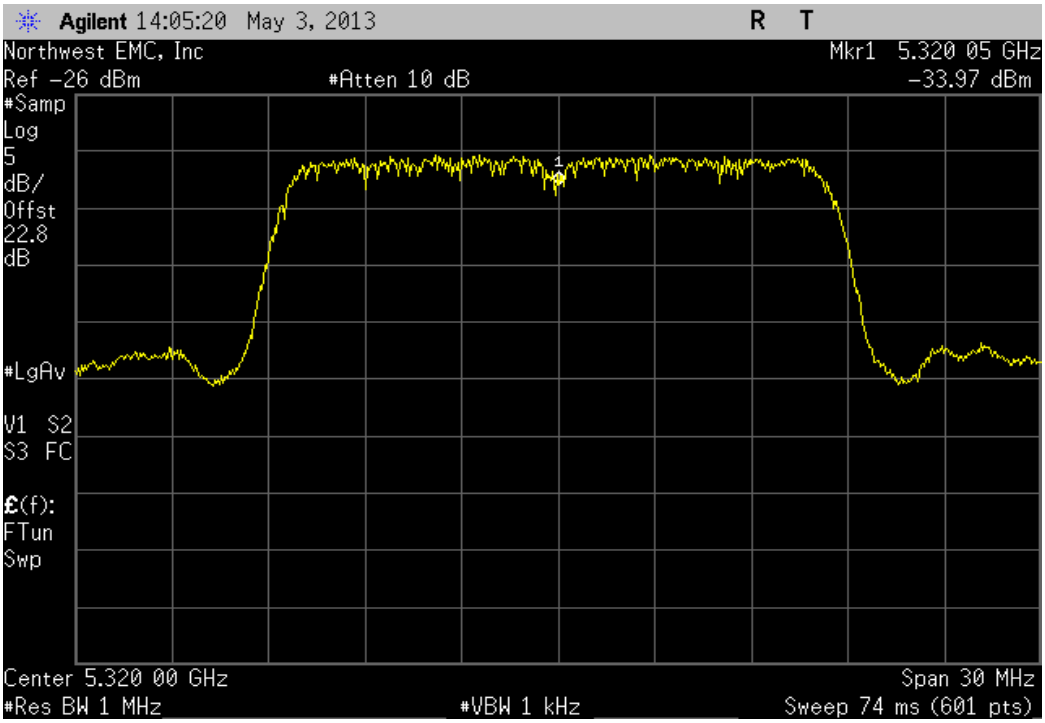
18 Mbps, 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Voltage: 100%						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5320.05	5320	9.4	100	Pass



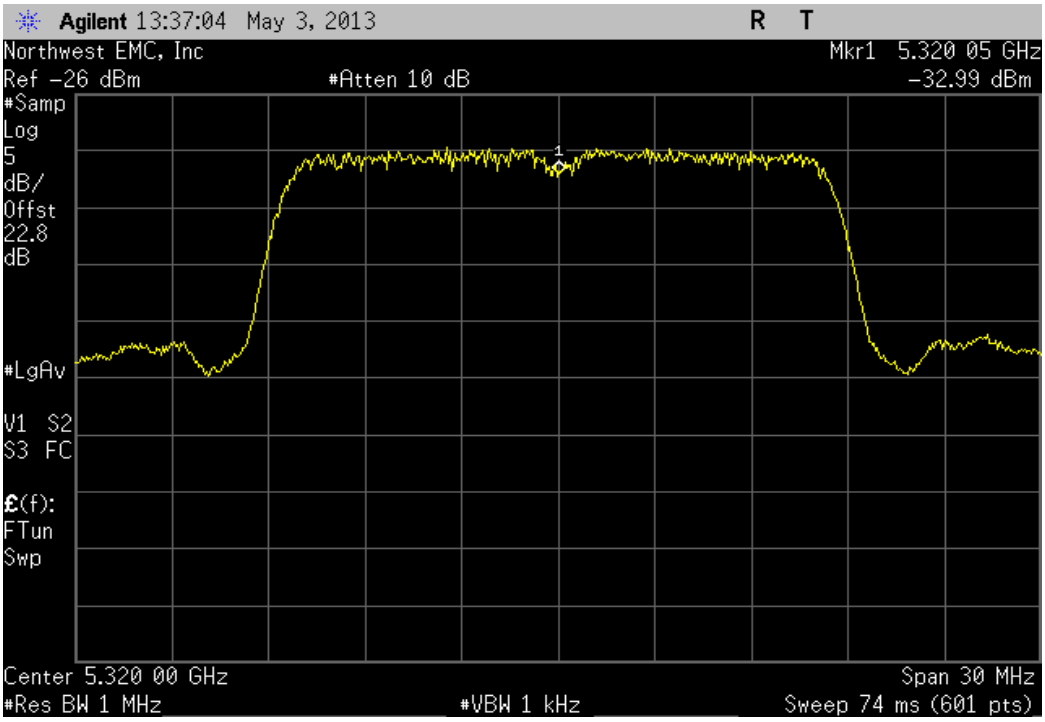
18 Mbps, 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Voltage: 85%						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5320.08	5320	15	100	Pass



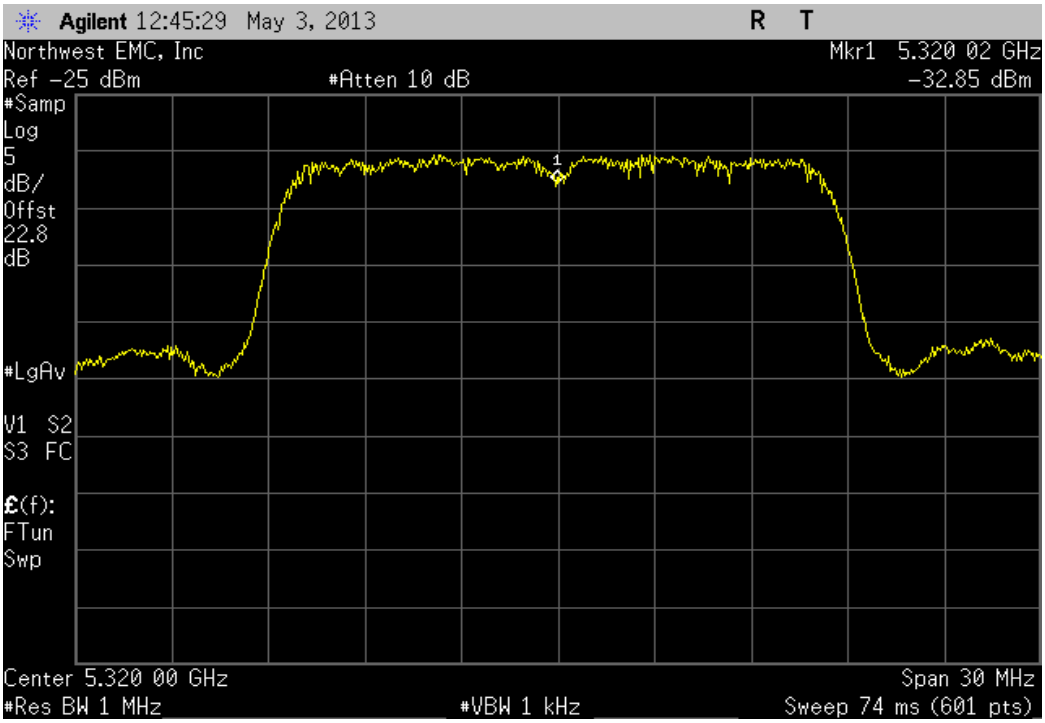
18 Mbps, 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: +50°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5320.05	5320	9.4	100	Pass



18 Mbps, 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: +40°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5320.05	5320	9.4	100	Pass

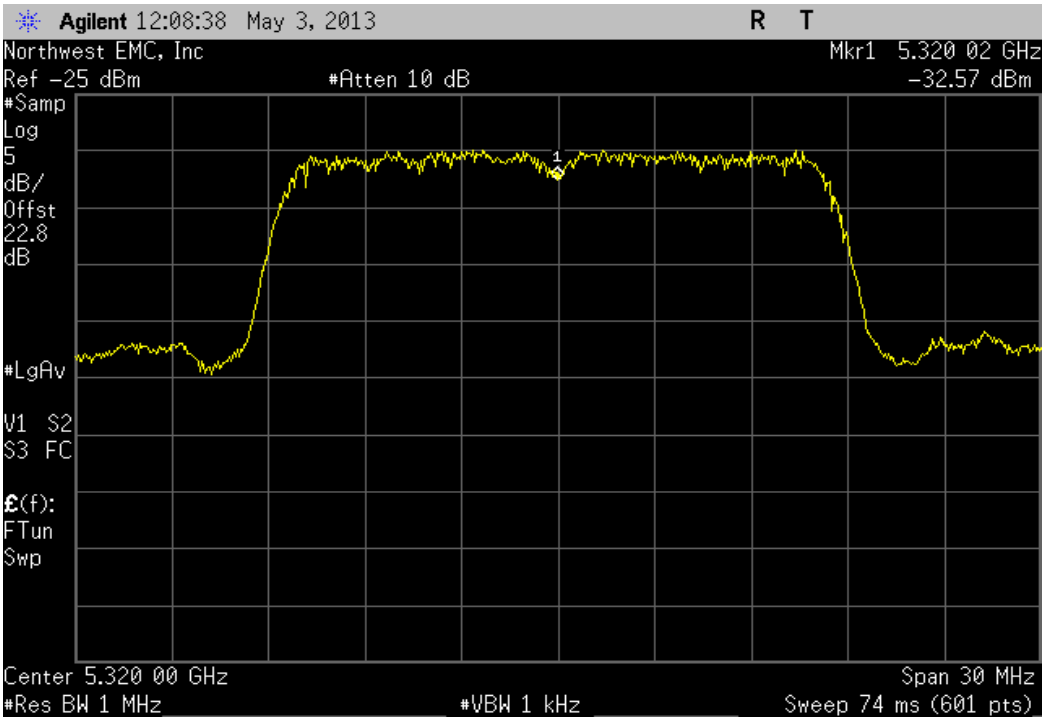


18 Mbps, 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: +30°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5320.02	5320	3.8	100	Pass

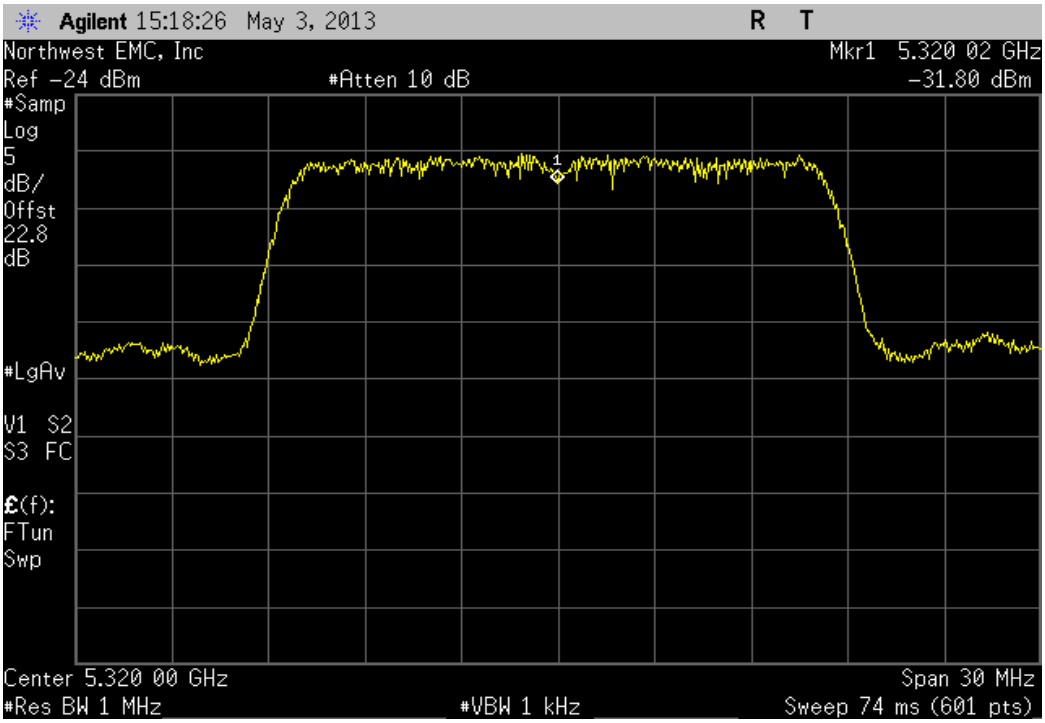


Frequency Stability

18 Mbps, 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: +20°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5320.02	5320	3.8	100	Pass

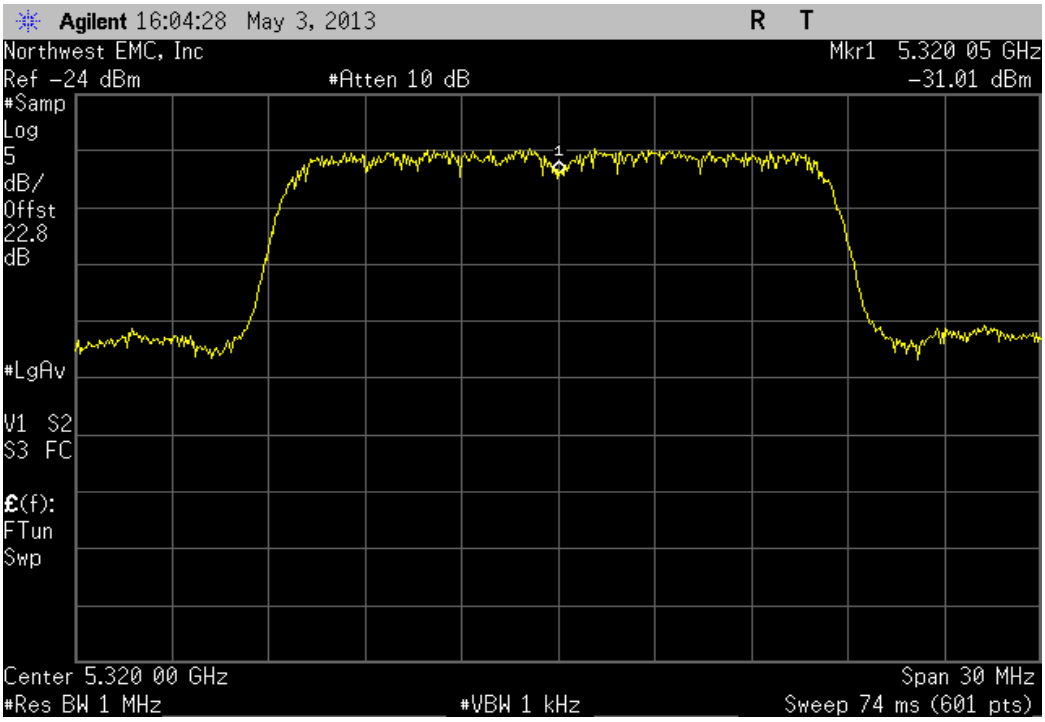


18 Mbps, 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: +10°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5320.02	5320	3.8	100	Pass

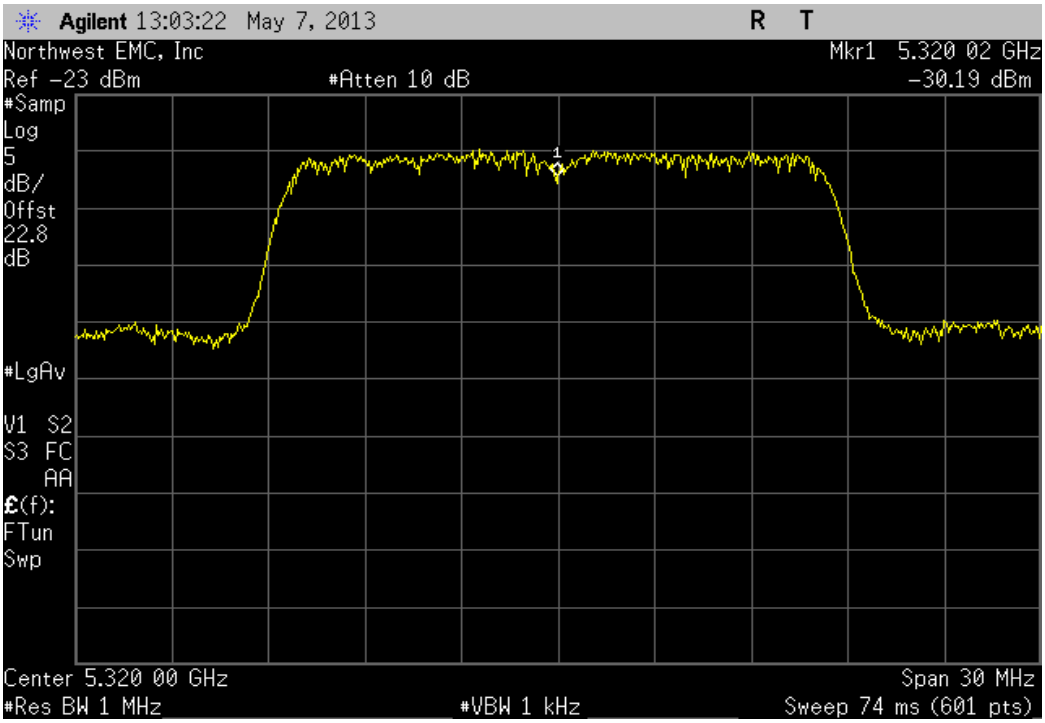


Frequency Stability

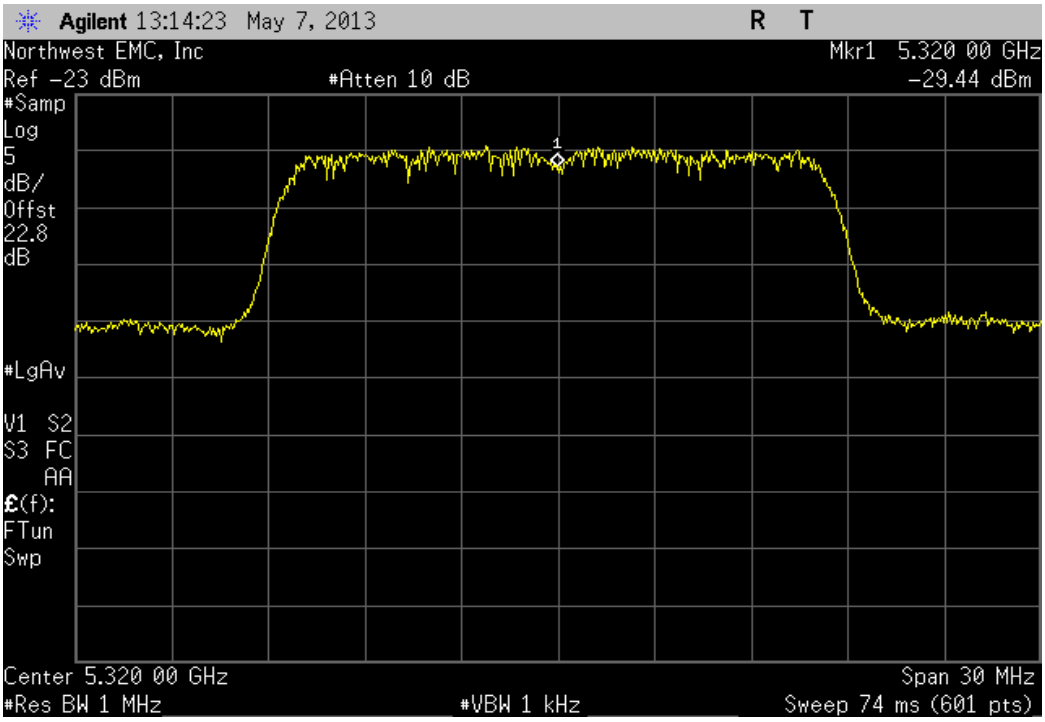
18 Mbps, 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: 0°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5320.05	5320	9.4	100	Pass



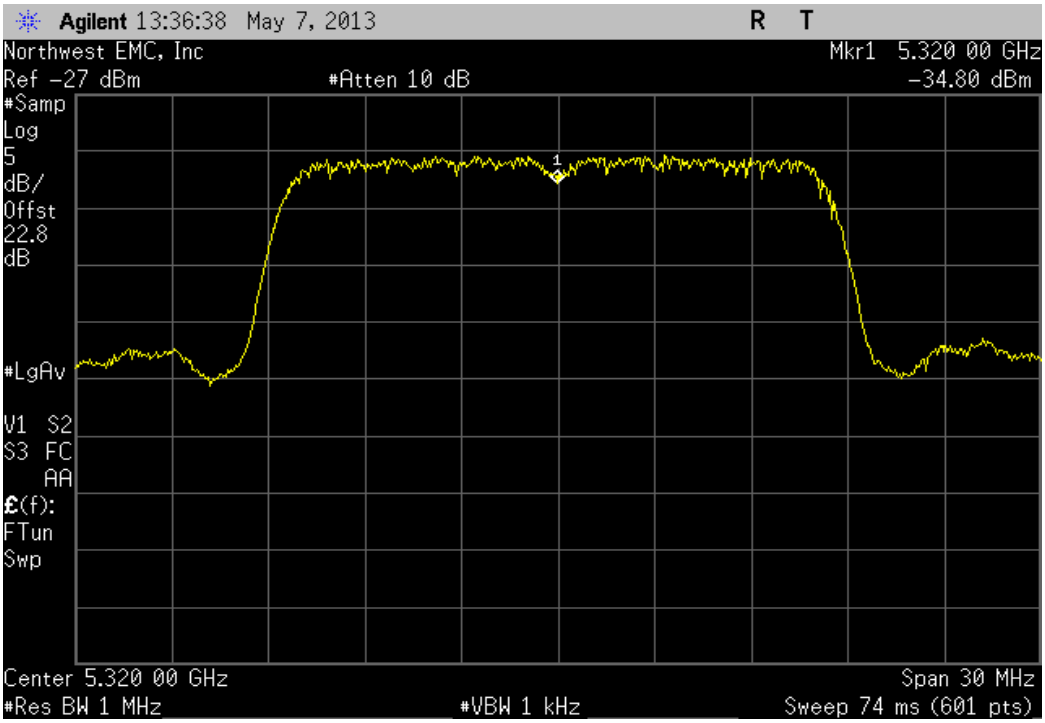
18 Mbps, 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: -10°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5320.02	5320	3.8	100	Pass



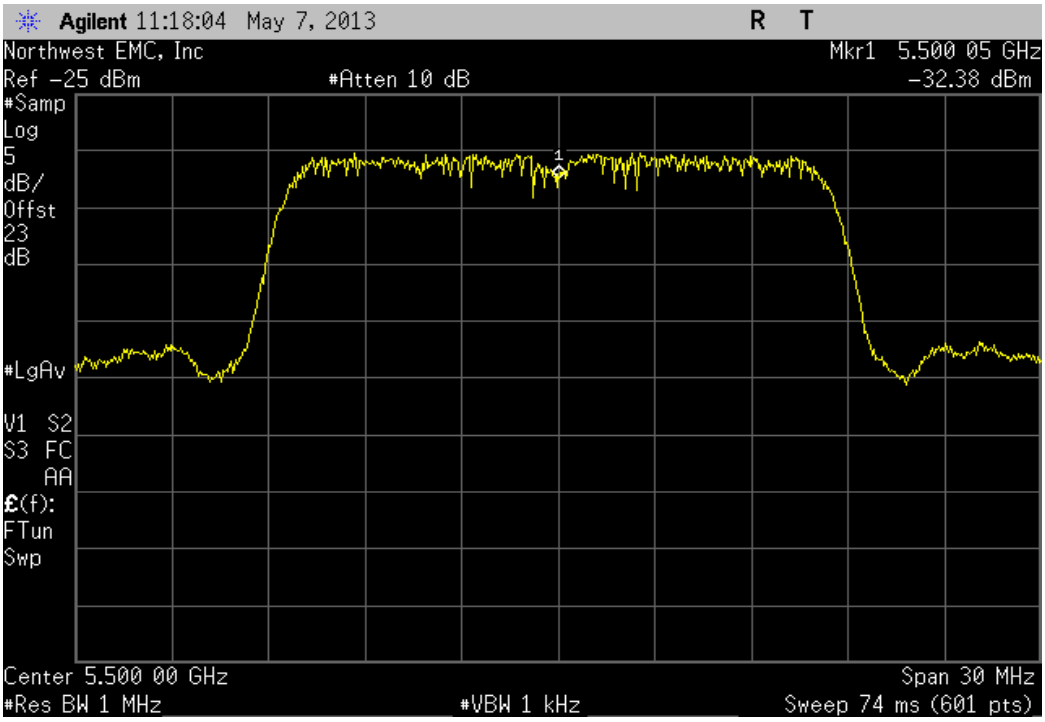
18 Mbps, 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: -20°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5320	5320	0	100	Pass



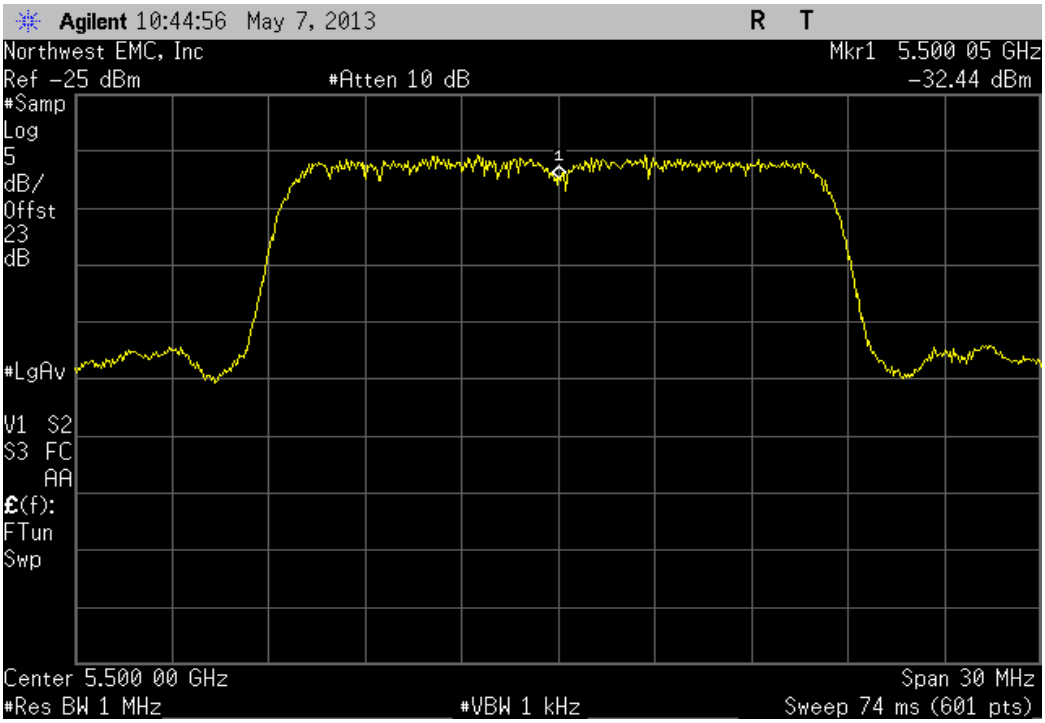
18 Mbps, 5250 MHz - 5350 MHz - High Channel, 5320 MHz, Temperature: -30°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5320	5320	0	100	Pass



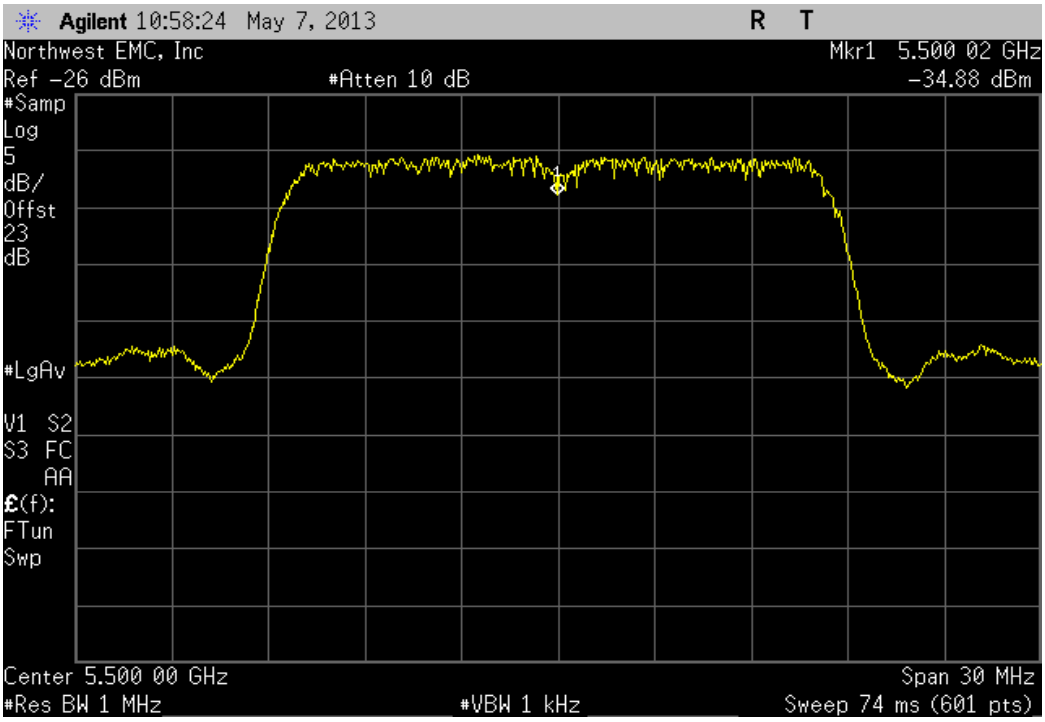
18 Mbps, 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Voltage: 115%						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5500.05	5500	9.1	100	Pass



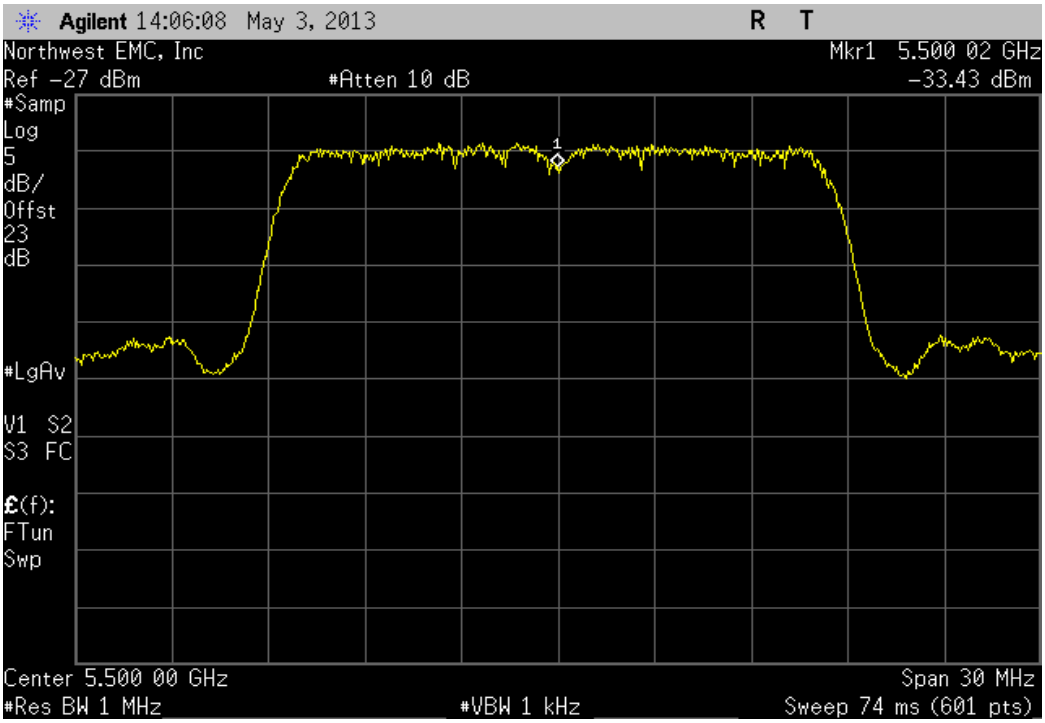
18 Mbps, 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Voltage: 100%						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5500.05	5500	9.1	100	Pass



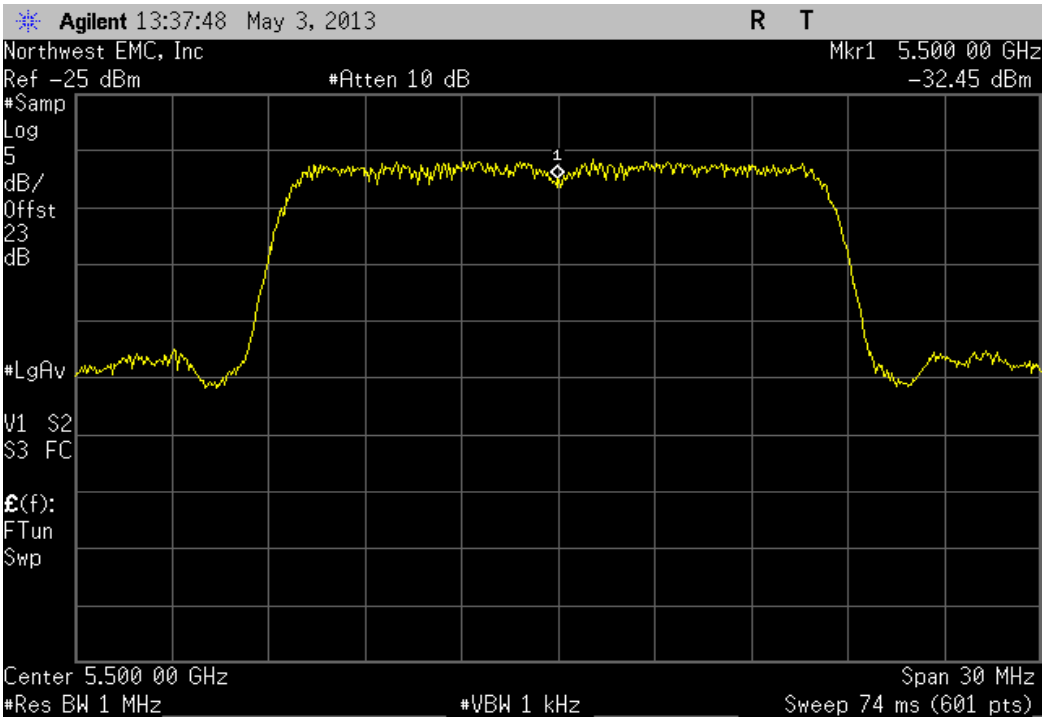
18 Mbps, 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Voltage: 85%						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5500.02	5500	3.6	100	Pass



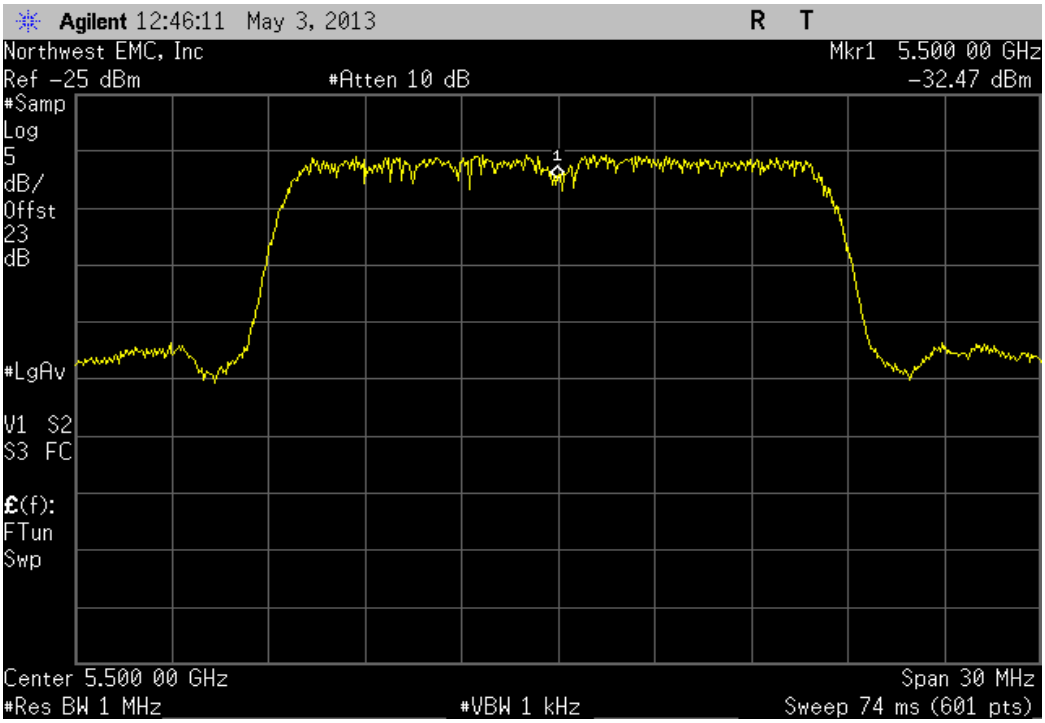
18 Mbps, 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: +50°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5500.02	5500	3.6	100	Pass



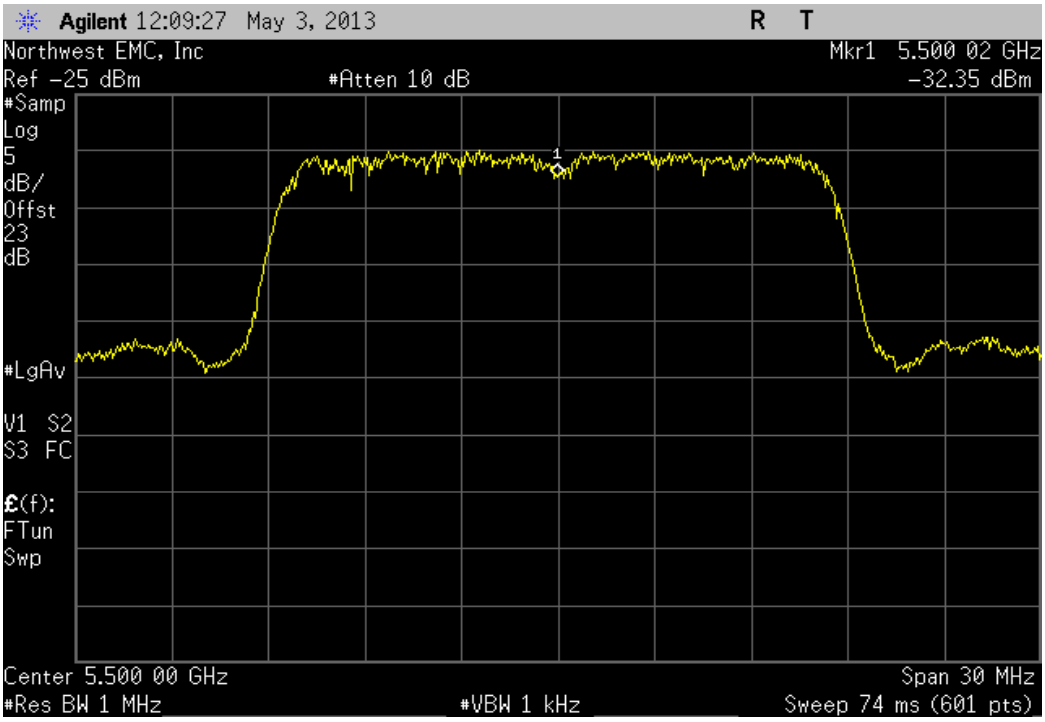
18 Mbps, 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: +40°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5500	5500	0	100	Pass



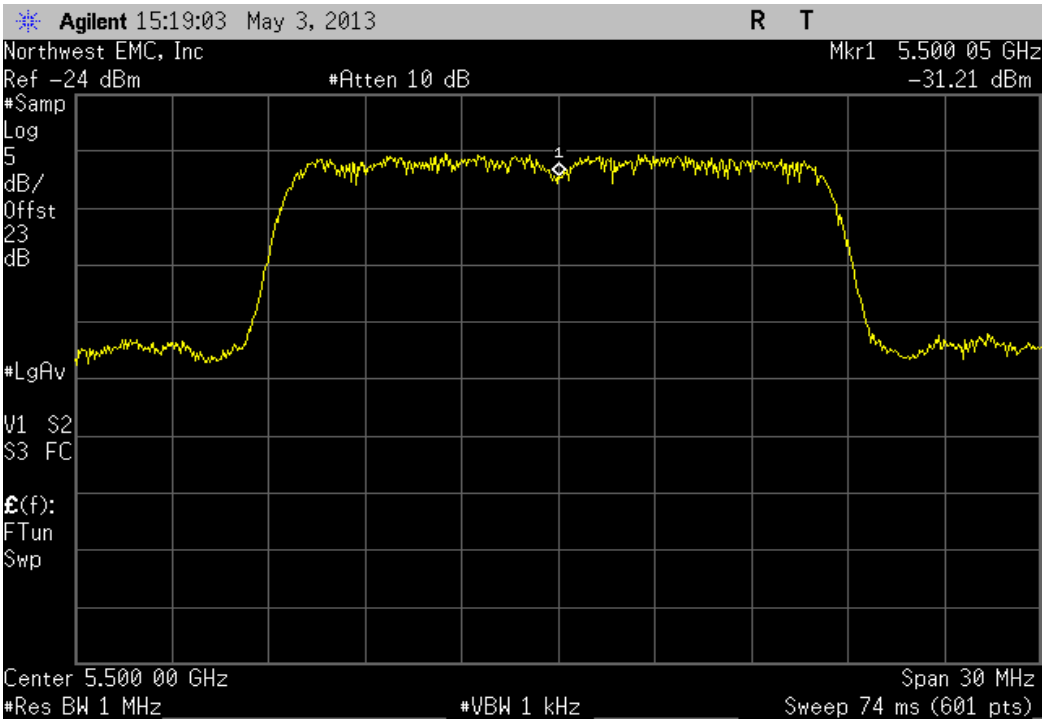
18 Mbps, 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: +30°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5500	5500	0	100	Pass



18 Mbps, 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: +20°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5500.02	5500	3.6	100	Pass

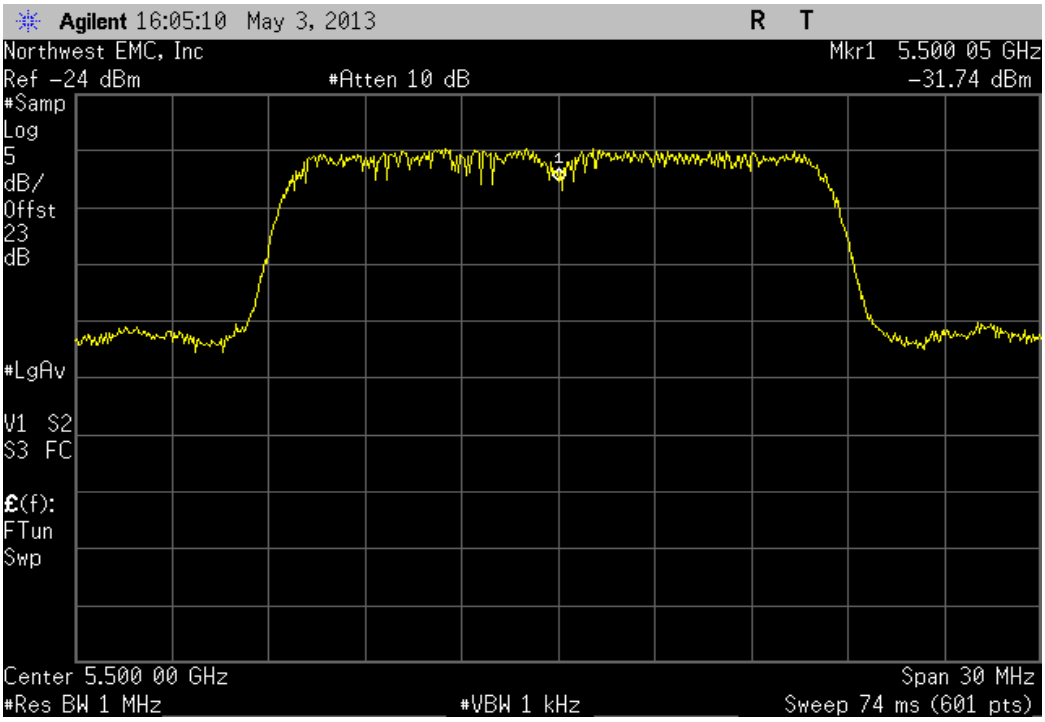


18 Mbps, 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: +10°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5500.05	5500	9.1	100	Pass

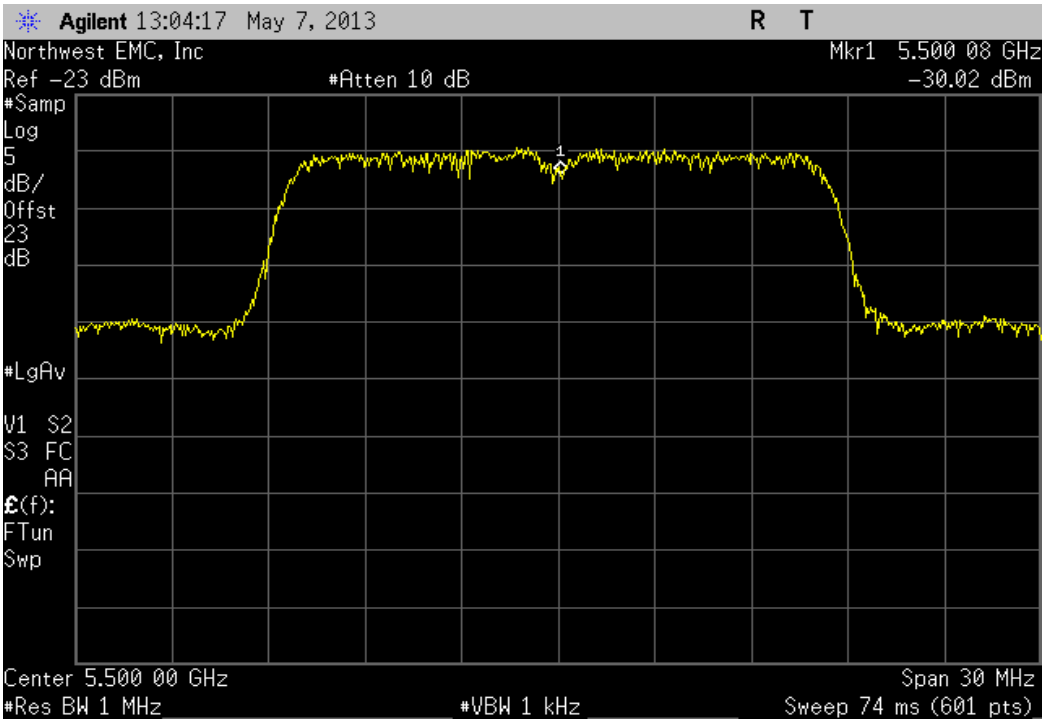


Frequency Stability

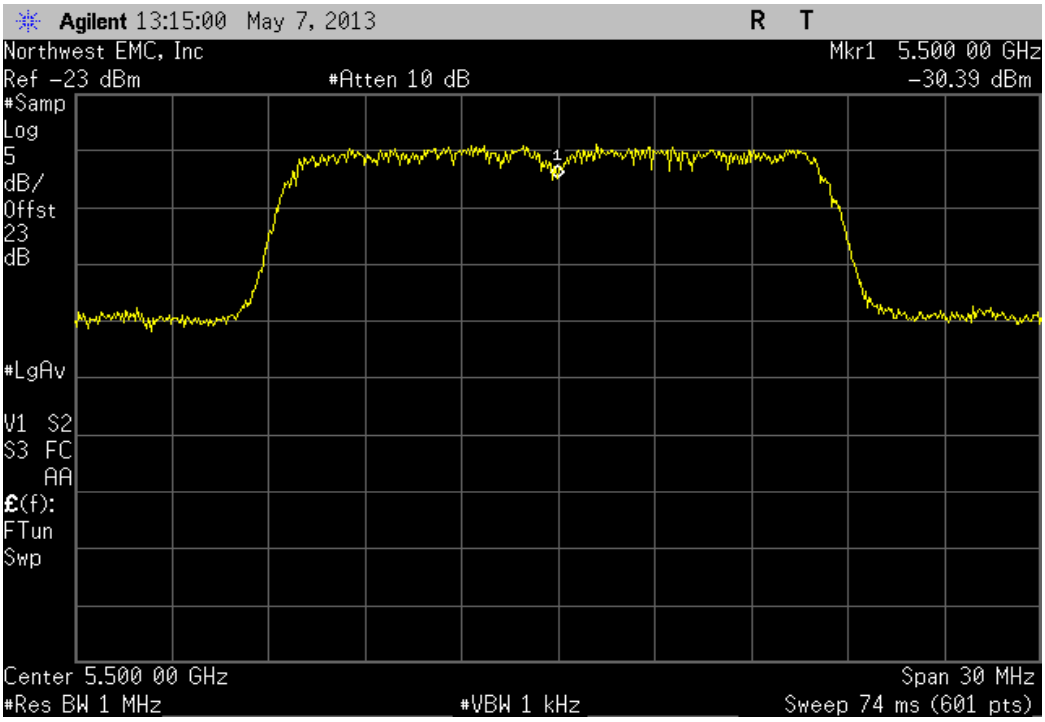
18 Mbps, 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: 0°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5500.05	5500	9.1	100	Pass



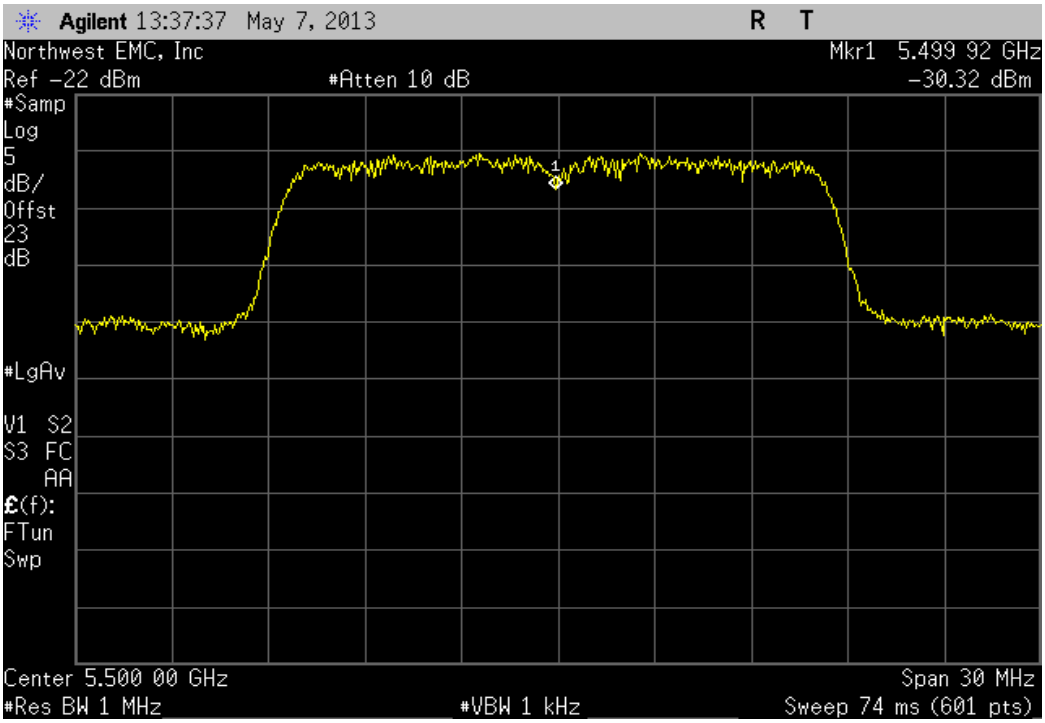
18 Mbps, 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: -10°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5500.08	5500	14.6	100	Pass



18 Mbps, 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: -20°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5500	5500	0	100	Pass

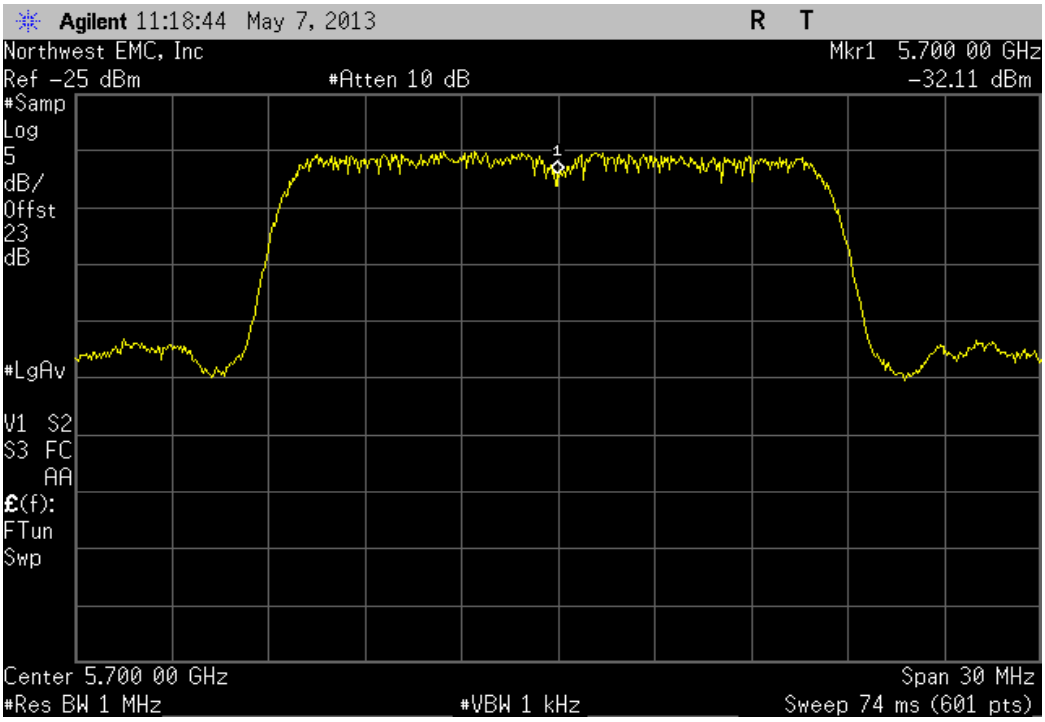


18 Mbps, 5470 MHz - 5725 MHz - Low Channel, 5500 MHz, Temperature: -30°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5499.92	5500	14.6	100	Pass

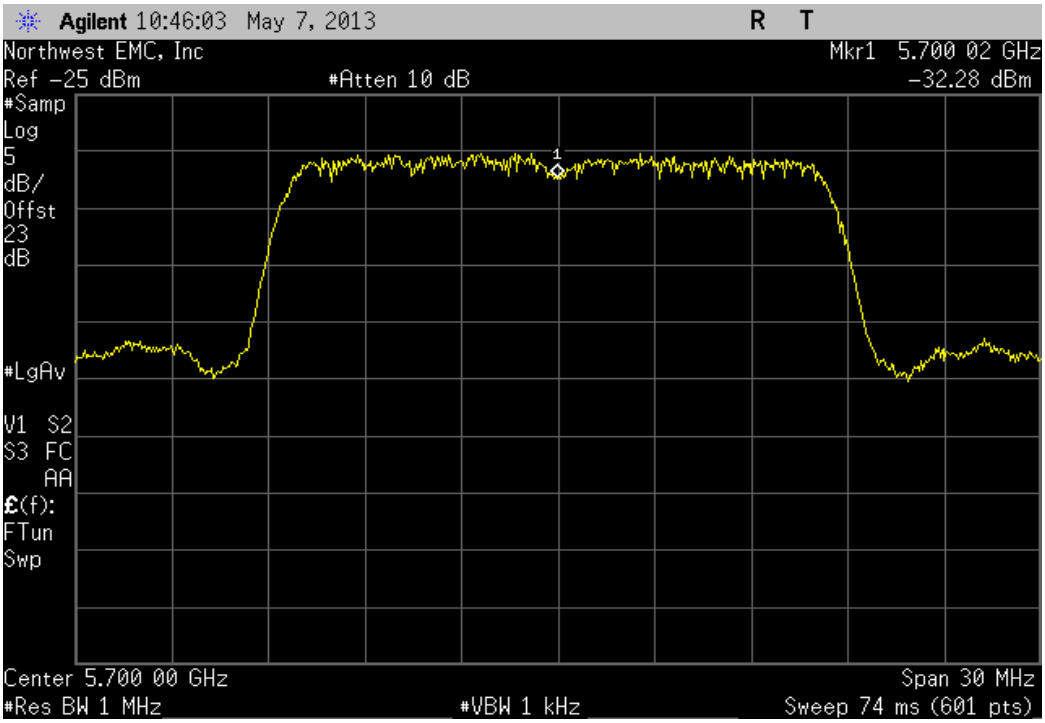


Frequency Stability

18 Mbps, 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Voltage: 115%						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5700	5700	0	100	Pass

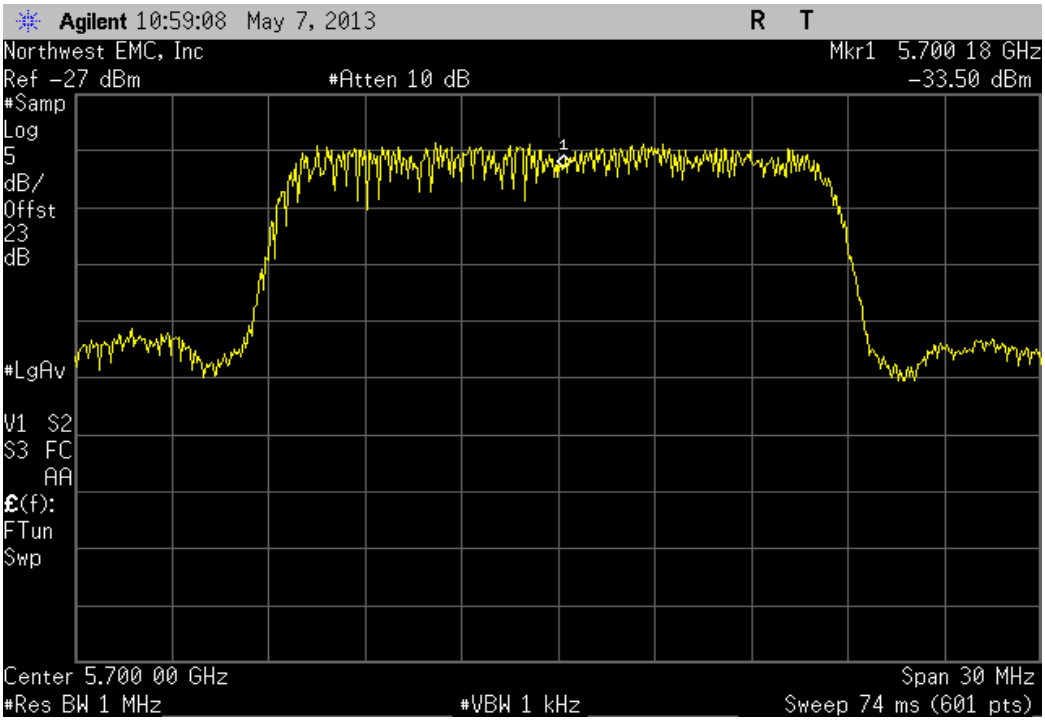


18 Mbps, 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Voltage: 100%						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5700.02	5700	3.5	100	Pass

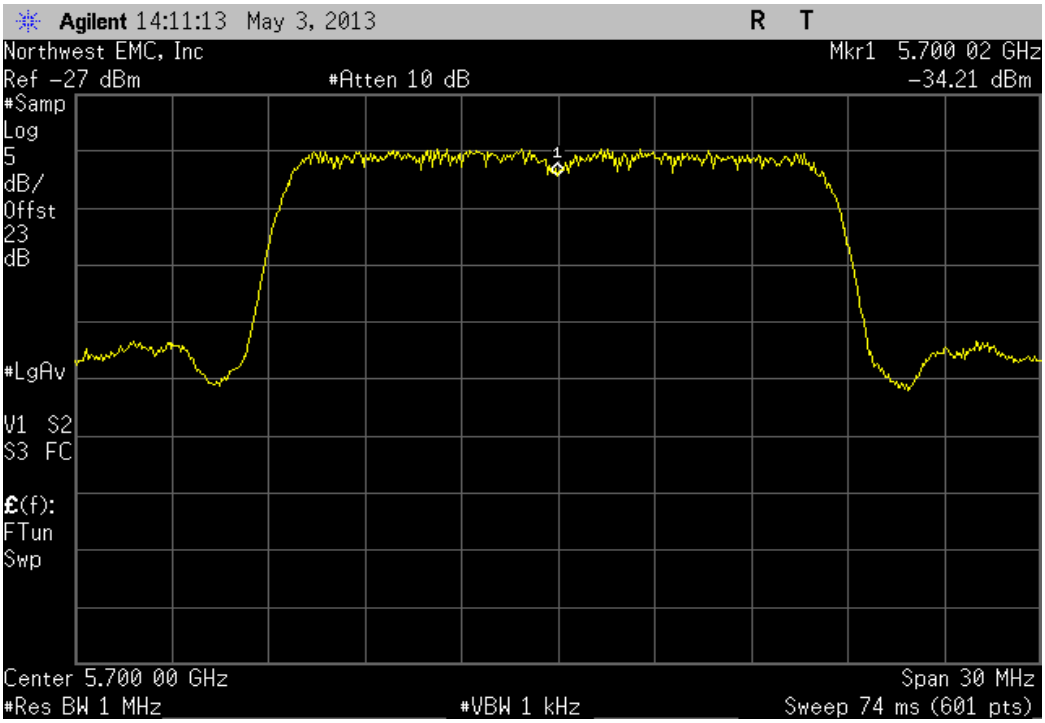


Frequency Stability

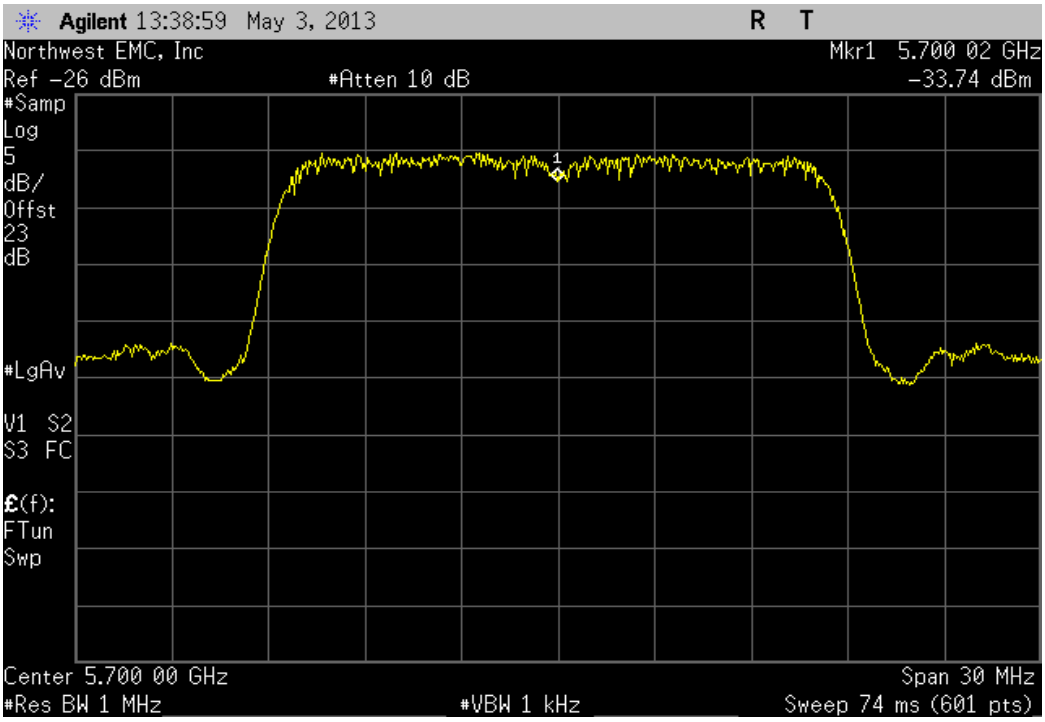
18 Mbps, 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Voltage: 85%						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5700.18	5700	31.6	100	Pass



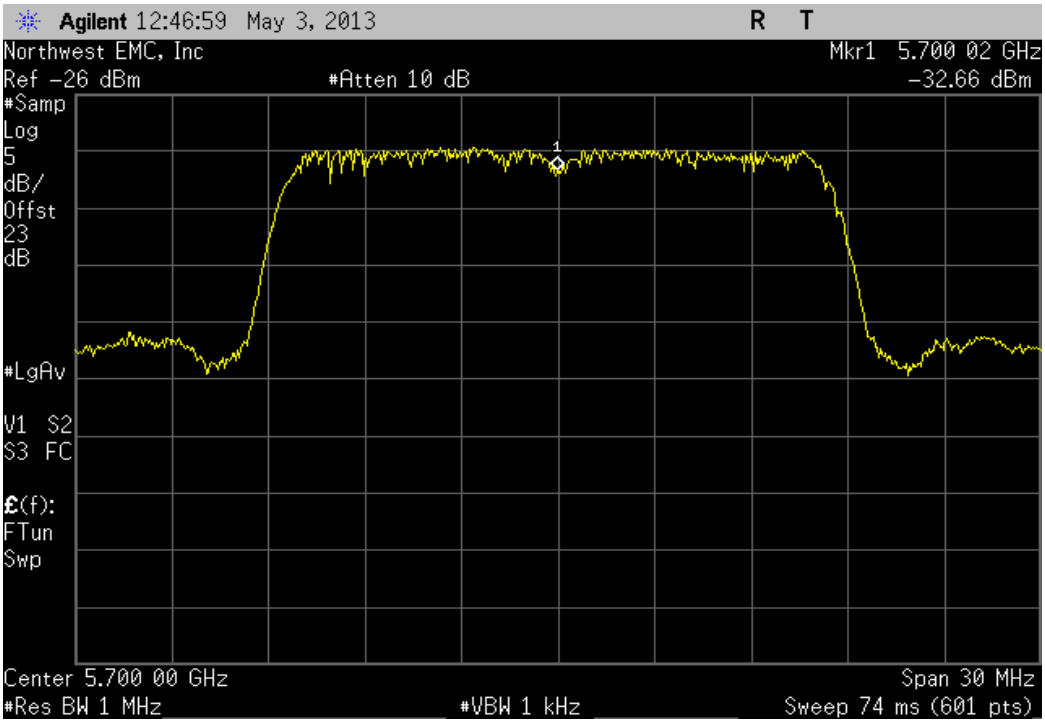
18 Mbps, 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: +50°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5700.02	5700	3.5	100	Pass



18 Mbps, 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: +40°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5700.02	5700	3.5	100	Pass

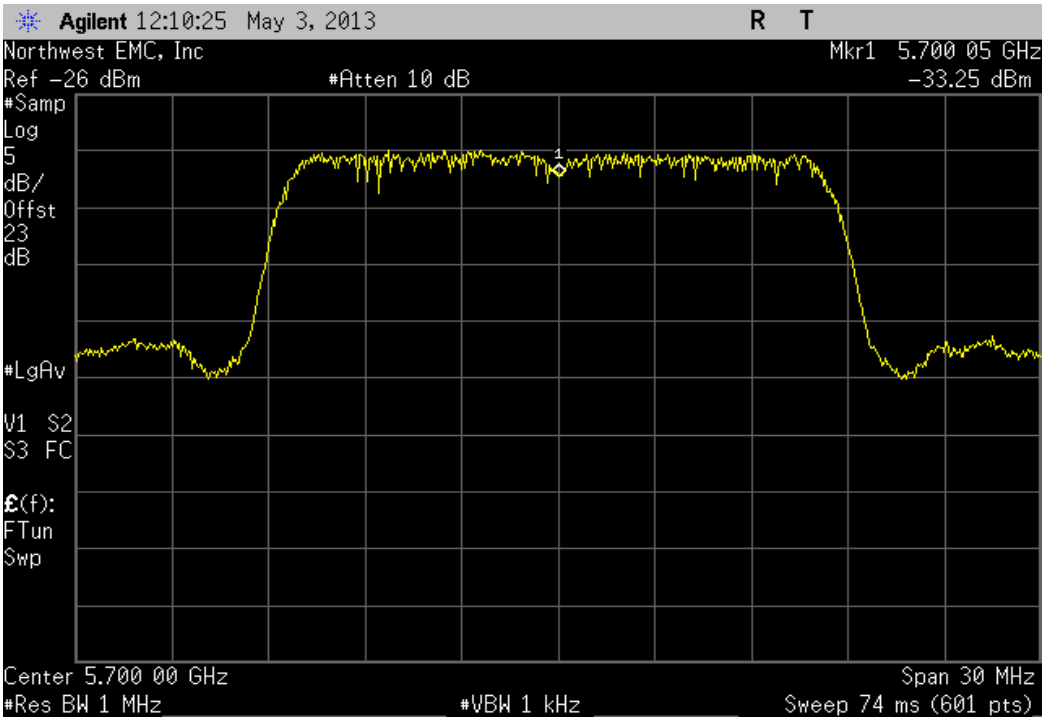


18 Mbps, 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: +30°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5700.02	5700	3.5	100	Pass

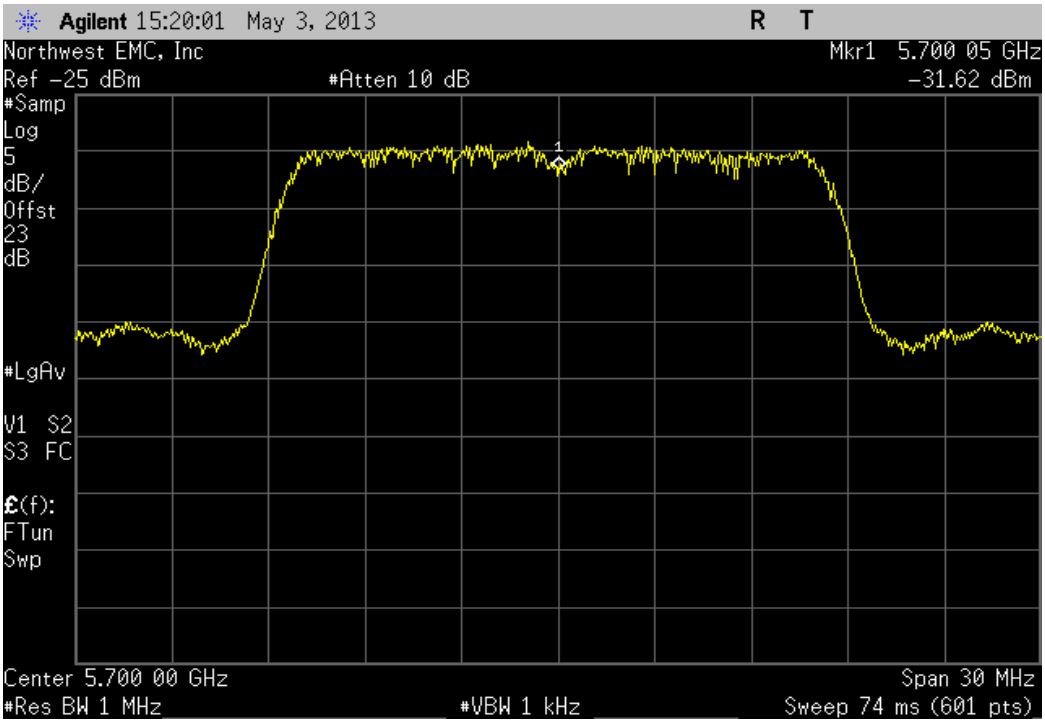


Frequency Stability

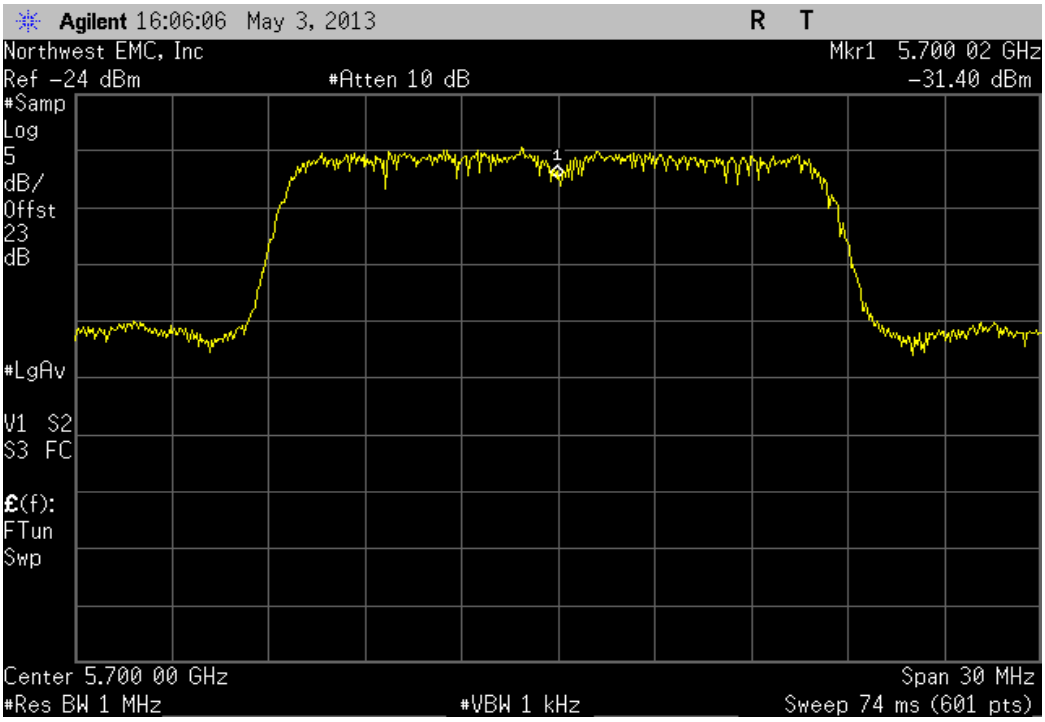
18 Mbps, 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: +20°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5700.05	5700	8.8	100	Pass



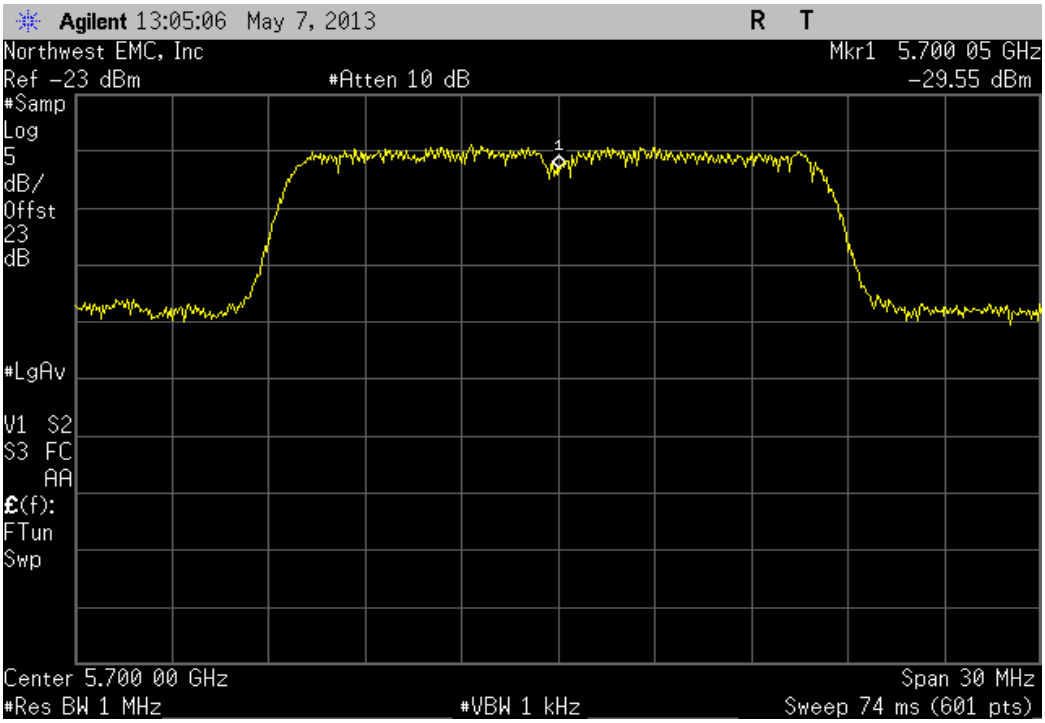
18 Mbps, 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: +10°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5700.05	5700	8.8	100	Pass



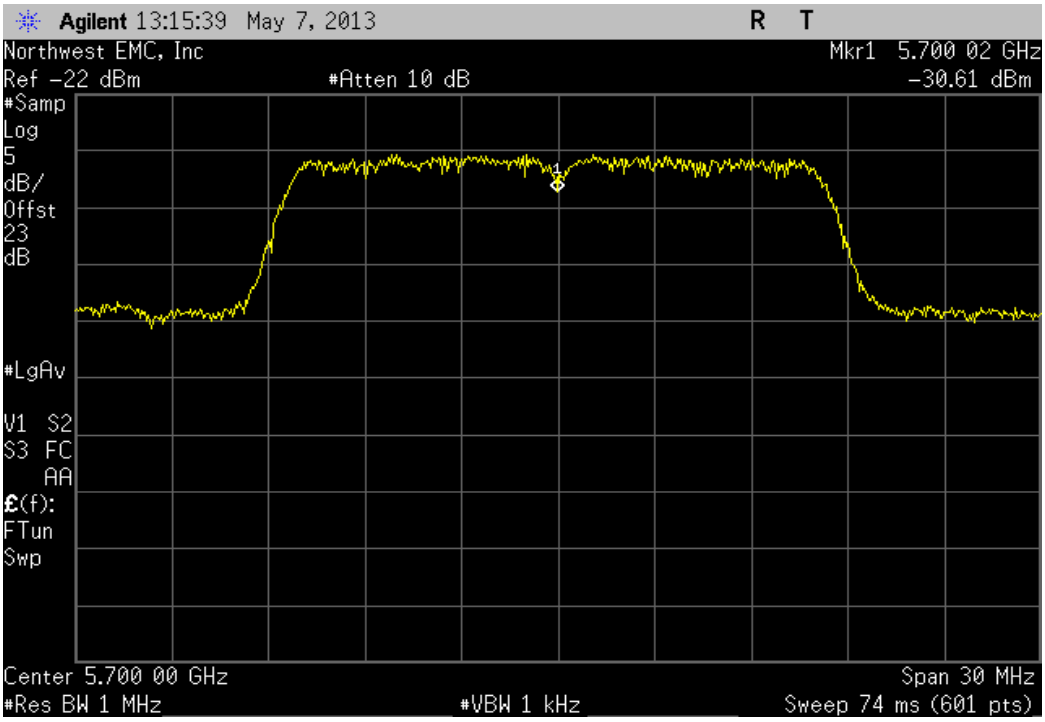
18 Mbps, 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: 0°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5700.02	5700	3.5	100	Pass



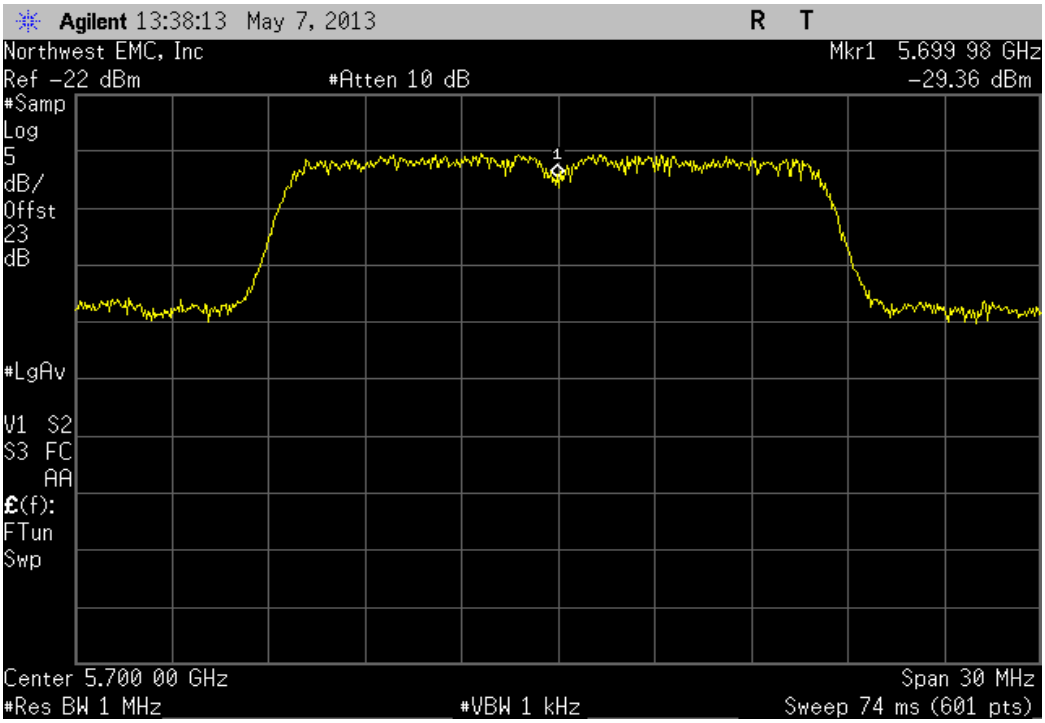
18 Mbps, 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: -10°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5700.05	5700	8.8	100	Pass



18 Mbps, 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: -20°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5700.02	5700	3.5	100	Pass



18 Mbps, 5470 MHz - 5725 MHz - High Channel, 5700 MHz, Temperature: -30°						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		5699.98	5700	3.5	100	Pass



Spurious Radiated Emissions

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

MODES OF OPERATION

Transmitting 802.11a, 50% Duty Cycle

POWER SETTINGS INVESTIGATED

3.3V DC

CONFIGURATIONS INVESTIGATED

FOCU0141 - 1

FREQUENCY RANGE INVESTIGATED

Start Frequency	30 MHz	Stop Frequency	40000 MHz

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
High Pass Filter	Micro-Tronics	HPM50112	HGA	10/4/2012	24 mo
5.725-5.875 Notch Filter	Micro-Tronics	BRC50705	HGJ	3/21/2012	24 mo
5.47-5.725 Notch Filter	Micro-Tronics	BRC50704	HGI	10/4/2012	24 mo
5.25 GHz Notch Filter	K&L Microwave	8N50-5250/X200-0/0	HFK	3/21/2012	24 mo
EV01 Cable	ESM Cable Corp.	TTBJ-141 KMKM-72	ECC	8/27/2012	12 mo
Antenna, Horn	EMCO	3115	AHC	6/20/2012	24 mo
Spectrum Analyzer	Agilent	E4440A	AFD	7/5/2012	24 mo
OC Cable	ESM Cable Corp.	KMKM-72	OCV	6/28/2012	12 mo
Pre-Amplifier	Miteq	JSW45-26004000-40-5P	AVR	6/28/2012	12 mo
Antenna, Horn	ETS Lindgren	3160-10	AIW	NCR	0 mo
Cable	ESM Cable Corp.	KMKM-72	EVY	9/11/2012	12 mo
Pre-Amplifier	Miteq	AMF-6F-18002650-25-10P	AVU	9/11/2012	12 mo
Antenna, Horn	ETS Lindgren	3160-09	AIV	NCR	0 mo
Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	AVD	2/27/2013	12 mo
Antenna, Horn	ETS	3160-08	AHV	NCR	0 mo
EV01 Cables	N/A	Standard Gain Horns Cables	EVF	2/27/2013	12 mo
Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AVC	2/27/2013	12 mo
Antenna, Horn	ETS	3160-07	AHU	NCR	0 mo
EV01 Cables	N/A	Double Ridge Horn Cables	EVB	6/27/2012	12 mo
Pre-Amplifier	Miteq	AMF-4D-010100-24-10P	APW	6/27/2012	12 mo
Antenna, Horn	ETS	3115	AIZ	1/24/2011	36 mo
EV01 Cables	N/A	Bilog Cables	EVA	6/26/2012	12 mo
Pre-Amplifier	Miteq	AM-1616-1000	AOL	6/26/2012	12 mo
Antenna, Biconilog	EMCO	3141	AXG	4/10/2012	36 mo
MXG Vector Signal Generator	Agilent	N5182A	TIF	NCR	0 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.

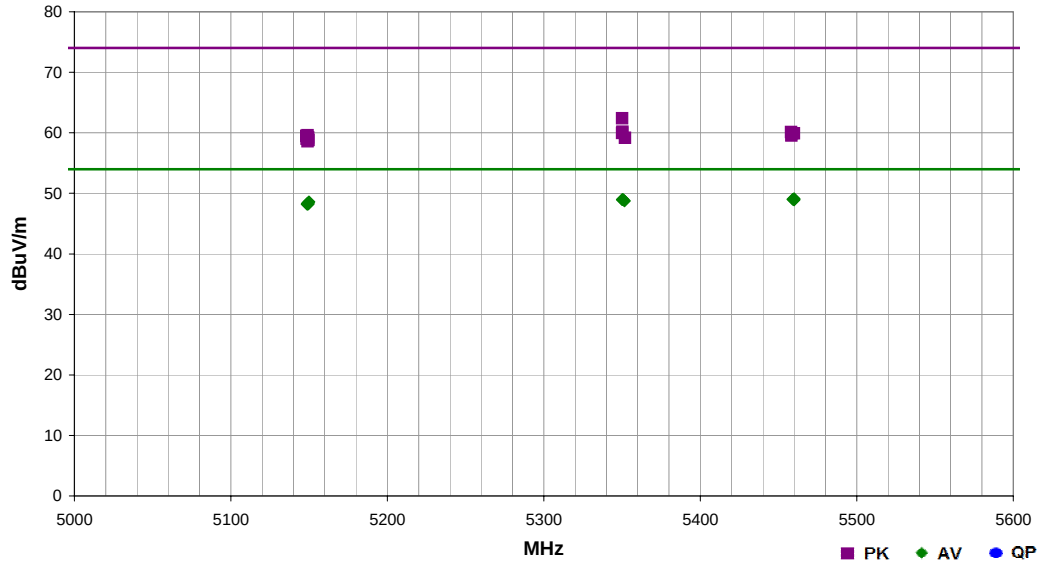
While scanning, emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and EUT antenna in three orthogonal axis, and adjusting the measurement antenna height and polarization (per ANSI C63.10:2009). A preamp and high pass filter (and notch filter)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

Spurious Radiated Emissions

Work Order:	FOCU0141	**Date:**	05/02/13		
Project:	None	**Temperature:**	22.1 °C		
Job Site:	EV01	**Humidity:**	29% RH		
Serial Number:	202EA4C0001C4	**Barometric Pres.:**	1030 mbar	**Tested by:**	Carl Engholm, Rod Peloquin
EUT:	Model 444-2224 (Athena 4X)				
Configuration:	1				
Customer:	Summit Semiconductor				
Attendees:	None				
EUT Power:	3.3V DC				
Operating Mode:	Transmitting 802.11a, 50% Duty Cycle				
Deviations:	None				
Comments:	See comment below for frequency, data rate, and EUT orientation.				

Test Specifications	**Test Method**
FCC 15.407:2013	ANSI C63.10:2009

Run #	76	**Test Distance (m)**	1	**Antenna Height(s)**	1-4m	**Results**	Pass



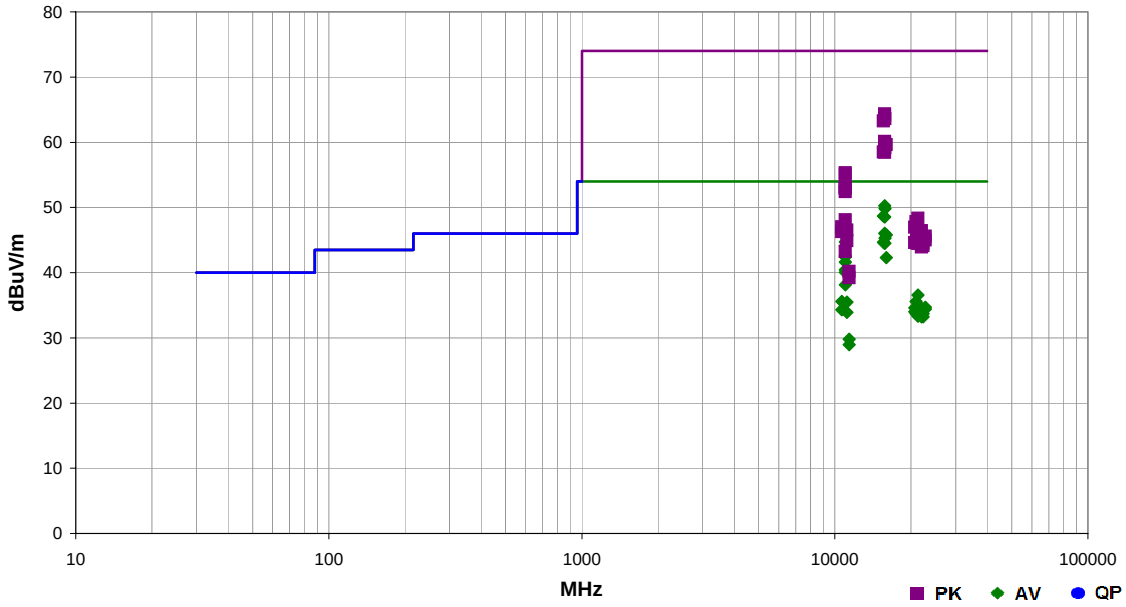
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
5459.853	21.1	37.6	1.0	110.0	1.0	0.0	Vert	AV	-9.5	49.1	54.0	-4.9	5500 MHz, 6 Mbps, EUT on Side
5459.860	21.0	37.6	1.0	188.0	1.0	0.0	Vert	AV	-9.5	49.0	54.0	-5.0	5500 MHz, 18 Mbps, EUT on Side
5459.137	21.0	37.6	1.0	290.0	1.0	0.0	Horz	AV	-9.5	49.0	54.0	-5.0	5500 MHz, 6 Mbps, EUT on Side
5350.070	21.1	37.4	1.0	258.0	1.0	0.0	Horz	AV	-9.5	49.0	54.0	-5.0	5320 MHz, 18 Mbps, EUT on Side
5350.273	21.1	37.4	1.0	76.0	1.0	0.0	Vert	AV	-9.5	49.0	54.0	-5.0	5320 MHz, 6 Mbps, EUT on Side
5350.640	21.1	37.4	1.0	278.0	1.0	0.0	Vert	AV	-9.5	49.0	54.0	-5.0	5320 MHz, 18 Mbps, EUT on Side
5459.833	20.9	37.6	1.0	291.0	1.0	0.0	Horz	AV	-9.5	48.9	54.0	-5.1	5500 MHz, 18 Mbps, EUT on Side
5351.627	20.9	37.4	1.0	24.0	1.0	0.0	Horz	AV	-9.5	48.8	54.0	-5.2	5320 MHz, 6 Mbps, EUT on Side
5149.963	21.3	36.8	1.0	194.0	1.0	0.0	Vert	AV	-9.5	48.6	54.0	-5.4	5180 MHz, 6 Mbps, EUT on Side
5149.110	21.1	36.8	1.0	356.0	1.0	0.0	Vert	AV	-9.5	48.4	54.0	-5.6	5180 MHz, 18 Mbps, EUT on Side
5149.480	21.0	36.8	1.0	263.0	1.0	0.0	Horz	AV	-9.5	48.3	54.0	-5.7	5180 MHz, 6 Mbps, EUT Horizontal
5148.607	20.9	36.8	1.0	146.0	1.0	0.0	Horz	AV	-9.5	48.2	54.0	-5.8	5180 MHz, 18 Mbps, EUT on Side
5148.870	20.9	36.8	1.0	35.0	1.0	0.0	Vert	AV	-9.5	48.2	54.0	-5.8	5180 MHz, 6 Mbps, EUT Horizontal
5149.233	20.9	36.8	1.0	305.0	1.0	0.0	Horz	AV	-9.5	48.2	54.0	-5.8	5180 MHz, 6 Mbps, EUT on Side
5350.170	34.5	37.4	1.0	24.0	1.0	0.0	Horz	PK	-9.5	62.4	74.0	-11.6	5320 MHz, 6 Mbps, EUT on Side
5350.287	32.3	37.4	1.0	278.0	1.0	0.0	Vert	PK	-9.5	60.2	74.0	-13.8	5320 MHz, 18 Mbps, EUT on Side
5458.060	32.1	37.6	1.0	110.0	1.0	0.0	Vert	PK	-9.5	60.1	74.0	-13.9	5500 MHz, 6 Mbps, EUT on Side
5350.043	32.1	37.4	1.0	258.0	1.0	0.0	Horz	PK	-9.5	60.0	74.0	-14.0	5320 MHz, 18 Mbps, EUT on Side
5459.860	31.9	37.6	1.0	188.0	1.0	0.0	Vert	PK	-9.5	59.9	74.0	-14.1	5500 MHz, 18 Mbps, EUT on Side
5458.597	31.9	37.6	1.0	290.0	1.0	0.0	Horz	PK	-9.5	59.9	74.0	-14.1	5500 MHz, 6 Mbps, EUT on Side
5149.097	32.3	36.8	1.0	194.0	1.0	0.0	Vert	PK	-9.5	59.6	74.0	-14.4	5180 MHz, 6 Mbps, EUT on Side
5458.223	31.5	37.6	1.0	291.0	1.0	0.0	Horz	PK	-9.5	59.5	74.0	-14.5	5500 MHz, 18 Mbps, EUT on Side
5148.337	32.2	36.8	1.0	146.0	1.0	0.0	Horz	PK	-9.5	59.5	74.0	-14.5	5180 MHz, 18 Mbps, EUT on Side
5149.543	31.9	36.8	1.0	356.0	1.0	0.0	Vert	PK	-9.5	59.2	74.0	-14.8	5180 MHz, 18 Mbps, EUT on Side
5351.905	31.3	37.4	1.0	76.0	1.0	0.0	Vert	PK	-9.5	59.2	74.0	-14.8	5320 MHz, 6 Mbps, EUT on Side
5148.540	31.7	36.8	1.0	35.0	1.0	0.0	Vert	PK	-9.5	59.0	74.0	-15.0	5180 MHz, 6 Mbps, EUT Horizontal
5149.743	31.5	36.8	1.0	263.0	1.0	0.0	Horz	PK	-9.5	58.8	74.0	-15.2	5180 MHz, 6 Mbps, EUT Horizontal
5149.033	31.3	36.8	1.0	305.0	1.0	0.0	Horz	PK	-9.5	58.6	74.0	-15.4	5180 MHz, 6 Mbps, EUT on Side

Spurious Radiated Emissions

Work Order:	FOCU0141	**Date:**	05/06/13		
Project:	None	**Temperature:**	24 °C		
Job Site:	EV01	**Humidity:**	32.3% RH		
Serial Number:	202EA4C0001C4	**Barometric Pres.:**	1011.2 mbar	**Tested by:**	C Ghizzone, D Hass, B Hobbs
EUT:	Model 444-2224 (Athena 4X)				
Configuration:	1				
Customer:	Summit Semiconductor				
Attendees:	None				
EUT Power:	3.3V DC				
Operating Mode:	Transmitting 802.11a, 50% Duty Cycle				
Deviations:	None				
Comments:	See comment below for frequency, data rate, and EUT orientation.				

Test Specifications	**Test Method**
FCC 15.407:2013	ANSI C63.10:2009

Run #	82	**Test Distance (m)**	3	**Antenna Height(s)**	1-4m	**Results**	Pass



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
15720.960	40.0	10.2	1.1	246.0	3.0	0.0	Horz	AV	0.0	50.2	54.0	-3.8	5240MHz, 6 Mbps, EUT on Side
15780.250	39.5	10.3	1.1	245.0	3.0	0.0	Horz	AV	0.0	49.8	54.0	-4.2	5260MHz, 6 Mbps, EUT on Side
15540.080	38.6	10.1	1.1	246.0	3.0	0.0	Horz	AV	0.0	48.7	54.0	-5.3	5180MHz, 6 Mbps, EUT on Side
15721.150	38.3	10.2	1.1	246.0	3.0	0.0	Horz	AV	0.0	48.5	54.0	-5.5	5240MHz, 18 Mbps, EUT on Side
15720.320	35.8	10.2	1.1	281.0	3.0	0.0	Vert	AV	0.0	46.0	54.0	-8.0	5240MHz, 6 Mbps, EUT Horizontal
15960.000	35.2	10.6	1.0	344.0	3.0	0.0	Horz	AV	0.0	45.8	54.0	-8.2	5320MHz, 6 Mbps, EUT on Side
15779.970	35.0	10.3	1.0	109.0	3.0	0.0	Vert	AV	0.0	45.3	54.0	-8.7	5260MHz, 6 Mbps, EUT Horizontal
10999.290	54.1	-9.4	1.2	115.0	3.0	0.0	Horz	AV	0.0	44.7	54.0	-9.3	5500 MHz, 6 Mbps, EUT on side
15540.030	34.6	10.1	1.1	279.0	3.0	0.0	Vert	AV	0.0	44.7	54.0	-9.3	5180MHz, 6 Mbps, EUT Horizontal
15720.570	34.3	10.2	1.1	281.0	3.0	0.0	Vert	AV	0.0	44.5	54.0	-9.5	5240MHz, 18 Mbps, EUT Horizontal
15720.330	34.3	10.2	1.0	2.0	3.0	0.0	Vert	AV	0.0	44.5	54.0	-9.5	5240MHz, 6 Mbps, EUT on Side
15724.120	54.1	10.2	1.1	246.0	3.0	0.0	Horz	PK	0.0	64.3	74.0	-9.7	5240MHz, 18 Mbps, EUT on Side
15721.960	53.9	10.2	1.1	246.0	3.0	0.0	Horz	PK	0.0	64.1	74.0	-9.9	5240MHz, 6 Mbps, EUT on Side
11001.070	53.5	-9.4	1.3	226.0	3.0	0.0	Horz	AV	0.0	44.1	54.0	-9.9	5500 MHz, 6 Mbps, EUT Vertical
15782.250	53.3	10.3	1.1	245.0	3.0	0.0	Horz	PK	0.0	63.6	74.0	-10.4	5260MHz, 6 Mbps, EUT on Side
15542.330	53.2	10.1	1.1	246.0	3.0	0.0	Horz	PK	0.0	63.3	74.0	-10.7	5180MHz, 6 Mbps, EUT on Side
10998.730	52.0	-9.4	1.3	8.0	3.0	0.0	Vert	AV	0.0	42.6	54.0	-11.4	5500 MHz, 6 Mbps, EUT Vertical
11001.200	51.8	-9.4	1.4	222.0	3.0	0.0	Vert	AV	0.0	42.4	54.0	-11.6	5500 MHz, 6 Mbps, EUT Horizontal
15960.030	31.7	10.6	1.0	109.0	3.0	0.0	Vert	AV	0.0	42.3	54.0	-11.7	5320MHz, 6 Mbps, EUT Horizontal
11001.190	51.0	-9.4	1.0	353.0	3.0	0.0	Horz	AV	0.0	41.6	54.0	-12.4	5500 MHz, 18 Mbps, EUT on side
11001.190	49.8	-9.4	1.3	316.0	3.0	0.0	Vert	AV	0.0	40.4	54.0	-13.6	5500 MHz, 18 Mbps, EUT Horizontal
15724.360	49.9	10.2	1.1	281.0	3.0	0.0	Vert	PK	0.0	60.1	74.0	-13.9	5240MHz, 18 Mbps, EUT Horizontal
11001.270	49.4	-9.4	1.1	213.0	3.0	0.0	Vert	AV	0.0	40.0	54.0	-14.0	5500 MHz, 6 Mbps, EUT on side
15722.410	49.7	10.2	1.1	281.0	3.0	0.0	Vert	PK	0.0	59.9	74.0	-14.1	5240MHz, 6 Mbps, EUT Horizontal
15962.250	49.0	10.6	1.0	344.0	3.0	0.0	Horz	PK	0.0	59.6	74.0	-14.4	5320MHz, 6 Mbps, EUT on Side
15782.300	48.8	10.3	1.0	109.0	3.0	0.0	Vert	PK	0.0	59.1	74.0	-14.9	5260MHz, 6 Mbps, EUT Horizontal
15542.250	48.4	10.1	1.1	279.0	3.0	0.0	Vert	PK	0.0	58.5	74.0	-15.5	5180MHz, 6 Mbps, EUT Horizontal

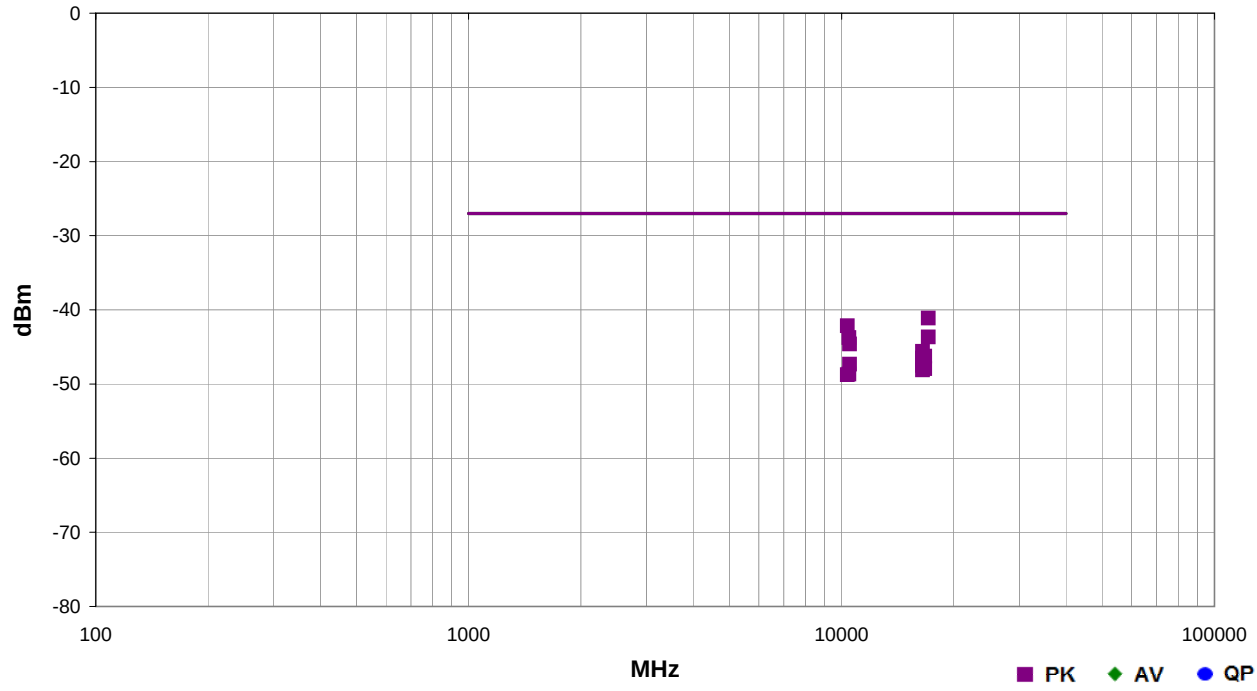
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
15722.530	48.2	10.2	1.0	2.0	3.0	0.0	Vert	PK	0.0	58.4	74.0	-15.6	5240MHz, 6 Mbps, EUT on Side
11001.130	47.5	-9.4	1.0	355.0	3.0	0.0	Horz	AV	0.0	38.1	54.0	-15.9	5500 MHz, 6 Mbps, EUT Horizontal
21278.170	40.7	-4.2	1.0	227.0	3.0	0.0	Horz	AV	0.0	36.5	54.0	-17.5	EUT On Side, 6 Mbps, 5320 MHz
20958.010	39.6	-4.0	1.0	3.0	3.0	0.0	Horz	AV	0.0	35.6	54.0	-18.4	EUT On Side, 6 Mbps, 5240 MHz
10639.000	46.8	-11.2	1.0	358.0	3.0	0.0	Horz	AV	0.0	35.6	54.0	-18.4	5320 MHz, 6 Mbps, EUT On Side
11158.800	44.3	-8.8	1.0	157.0	3.0	0.0	Horz	AV	0.0	35.5	54.0	-18.5	5580 MHz, 6 Mbps, EUT On Side
10996.370	64.7	-9.4	1.2	115.0	3.0	0.0	Horz	PK	0.0	55.3	74.0	-18.7	5500 MHz, 6 Mbps, EUT On Side
10999.200	64.5	-9.4	1.3	226.0	3.0	0.0	Horz	PK	0.0	55.1	74.0	-18.9	5500 MHz, 6 Mbps, EUT Vertical
22798.660	37.7	-3.0	1.0	308.0	3.0	0.0	Horz	AV	0.0	34.7	54.0	-19.3	EUT On Side, 6 Mbps, 5700 MHz
20720.130	38.6	-4.0	1.0	0.0	3.0	0.0	Vert	AV	0.0	34.6	54.0	-19.4	EUT Horizontal, 6 Mbps, 5180 MHz
21998.070	38.2	-3.7	1.0	104.0	3.0	0.0	Horz	AV	0.0	34.5	54.0	-19.5	EUT On Side, 6 Mbps, 5500 MHz
21038.030	38.5	-4.0	1.0	270.0	3.0	0.0	Horz	AV	0.0	34.5	54.0	-19.5	EUT On Side, 6 Mbps, 5260 MHz
22799.900	37.4	-3.0	1.0	86.0	3.0	0.0	Vert	AV	0.0	34.4	54.0	-19.6	EUT Horizontal, 6 Mbps, 5700 MHz
10638.600	45.5	-11.2	1.2	274.0	3.0	0.0	Vert	AV	0.0	34.3	54.0	-19.7	5320 MHz, 6 Mbps, EUT Horizontal
20718.460	38.0	-4.0	1.0	0.0	3.0	0.0	Horz	AV	0.0	34.0	54.0	-20.0	EUT On Side, 6 Mbps, 5180 MHz
11158.930	42.7	-8.8	1.4	259.0	3.0	0.0	Vert	AV	0.0	33.9	54.0	-20.1	5580 MHz, 6 Mbps, EUT Horizontal
21038.150	37.9	-4.0	1.0	97.0	3.0	0.0	Vert	AV	0.0	33.9	54.0	-20.1	EUT Horizontal, 6 Mbps, 5260 MHz
22318.490	37.3	-3.6	1.0	226.0	3.0	0.0	Horz	AV	0.0	33.7	54.0	-20.3	EUT On Side, 6 Mbps, 5580 MHz
20958.290	37.7	-4.0	1.0	316.0	3.0	0.0	Vert	AV	0.0	33.7	54.0	-20.3	EUT Horizontal, 6 Mbps, 5240 MHz
21278.080	37.5	-4.2	1.0	40.0	3.0	0.0	Vert	AV	0.0	33.3	54.0	-20.7	EUT Horizontal, 6 Mbps, 5320 MHz
21998.410	36.9	-3.7	1.0	236.0	3.0	0.0	Vert	AV	0.0	33.2	54.0	-20.8	EUT Horizontal, 6 Mbps, 5500 MHz
11000.380	62.6	-9.4	1.0	353.0	3.0	0.0	Horz	PK	0.0	53.2	74.0	-20.8	5500 MHz, 18 Mbps, EUT On Side
22318.530	36.8	-3.6	1.0	163.0	3.0	0.0	Vert	AV	0.0	33.2	54.0	-20.8	EUT Horizontal, 6 Mbps, 5580 MHz
10996.730	62.4	-9.4	1.4	222.0	3.0	0.0	Vert	PK	0.0	53.0	74.0	-21.0	5500 MHz, 6 Mbps, EUT Horizontal
11000.670	62.3	-9.4	1.3	8.0	3.0	0.0	Vert	PK	0.0	52.9	74.0	-21.1	5500 MHz, 6 Mbps, EUT Vertical
11000.280	61.8	-9.4	1.3	316.0	3.0	0.0	Vert	PK	0.0	52.4	74.0	-21.6	5500 MHz, 18 Mbps, EUT Horizontal
11399.130	37.7	-7.9	1.0	155.0	3.0	0.0	Horz	AV	0.0	29.8	54.0	-24.2	5700 MHz, 6 Mbps, EUT On Side
11399.870	36.9	-7.9	1.3	124.0	3.0	0.0	Vert	AV	0.0	29.0	54.0	-25.0	5700 MHz, 6 Mbps, EUT Horizontal
21278.680	52.5	-4.2	1.0	227.0	3.0	0.0	Horz	PK	0.0	48.3	74.0	-25.7	EUT On Side, 6 Mbps, 5320 MHz
10991.930	57.5	-9.4	1.0	355.0	3.0	0.0	Horz	PK	0.0	48.1	74.0	-25.9	5500 MHz, 6 Mbps, EUT Horizontal
20959.080	51.8	-4.0	1.0	3.0	3.0	0.0	Horz	PK	0.0	47.8	74.0	-26.2	EUT On Side, 6 Mbps, 5240 MHz
10641.070	58.2	-11.2	1.0	358.0	3.0	0.0	Horz	PK	0.0	47.0	74.0	-27.0	5320 MHz, 6 Mbps, EUT On Side
20720.460	51.0	-4.0	1.0	0.0	3.0	0.0	Vert	PK	0.0	47.0	74.0	-27.0	EUT Horizontal, 6 Mbps, 5180 MHz
11162.310	55.3	-8.8	1.0	157.0	3.0	0.0	Horz	PK	0.0	46.5	74.0	-27.5	5580 MHz, 6 Mbps, EUT On Side
21999.530	50.1	-3.7	1.0	104.0	3.0	0.0	Horz	PK	0.0	46.4	74.0	-27.6	EUT On Side, 6 Mbps, 5500 MHz
10639.400	57.5	-11.2	1.2	274.0	3.0	0.0	Vert	PK	0.0	46.3	74.0	-27.7	5320 MHz, 6 Mbps, EUT Horizontal
21039.880	49.7	-4.0	1.0	270.0	3.0	0.0	Horz	PK	0.0	45.7	74.0	-28.3	EUT On Side, 6 Mbps, 5260 MHz
22800.070	48.6	-3.0	1.0	86.0	3.0	0.0	Vert	PK	0.0	45.6	74.0	-28.4	EUT Horizontal, 6 Mbps, 5700 MHz
22799.100	48.0	-3.0	1.0	308.0	3.0	0.0	Horz	PK	0.0	45.0	74.0	-29.0	EUT On Side, 6 Mbps, 5700 MHz
11165.070	53.7	-8.8	1.4	259.0	3.0	0.0	Vert	PK	0.0	44.9	74.0	-29.1	5580 MHz, 6 Mbps, EUT Horizontal
20959.160	48.6	-4.0	1.0	316.0	3.0	0.0	Vert	PK	0.0	44.6	74.0	-29.4	EUT Horizontal, 6 Mbps, 5240 MHz
20719.380	48.6	-4.0	1.0	0.0	3.0	0.0	Horz	PK	0.0	44.6	74.0	-29.4	EUT On Side, 6 Mbps, 5180 MHz
21041.970	48.6	-4.0	1.0	97.0	3.0	0.0	Vert	PK	0.0	44.6	74.0	-29.4	EUT Horizontal, 6 Mbps, 5260 MHz
22319.000	48.1	-3.6	1.0	226.0	3.0	0.0	Horz	PK	0.0	44.5	74.0	-29.5	EUT On Side, 6 Mbps, 5580 MHz
21279.050	48.6	-4.2	1.0	40.0	3.0	0.0	Vert	PK	0.0	44.4	74.0	-29.6	EUT Horizontal, 6 Mbps, 5320 MHz
22319.870	47.7	-3.6	1.0	163.0	3.0	0.0	Vert	PK	0.0	44.1	74.0	-29.9	EUT Horizontal, 6 Mbps, 5580 MHz
21999.510	47.6	-3.7	1.0	236.0	3.0	0.0	Vert	PK	0.0	43.9	74.0	-30.1	EUT Horizontal, 6 Mbps, 5500 MHz
10999.130	52.6	-9.4	1.1	213.0	3.0	0.0	Vert	PK	0.0	43.2	74.0	-30.8	5500 MHz, 6 Mbps, EUT on side
11400.530	48.1	-7.9	1.0	155.0	3.0	0.0	Horz	PK	0.0	40.2	74.0	-33.8	5700 MHz, 6 Mbps, EUT On Side
11404.400	47.1	-7.9	1.3	124.0	3.0	0.0	Vert	PK	0.0	39.2	74.0	-34.8	5700 MHz, 6 Mbps, EUT Horizontal

Spurious Radiated Emissions

Work Order:	FOCU0141	**Date:**	05/03/13		
Project:	None	**Temperature:**	22.2 °C		
Job Site:	EV01	**Humidity:**	30.9% RH		
Serial Number:	202EA4C0001C4	**Barometric Pres.:**	1025.9 mbar	**Tested by:**	C Ghizzone, D Haas, B Hobbs
EUT:	Model 444-2224 (Athena 4X)				
Configuration:	1				
Customer:	Summit Semiconductor				
Attendees:	None				
EUT Power:	3.3V DC				
Operating Mode:	Transmitting 802.11a, 50% Duty Cycle				
Deviations:	None				
Comments:	See comment below for frequency, data rate, and EUT orientation.				

Test Specifications	**Test Method**
FCC 15.407:2013	ANSI C63.10:2009

Run #	80	**Test Distance (m)**	3	**Antenna Height(s)**	1-4m	**Results**	Pass



	Freq (MHz)	Antenna Height (meters)	Azimuth (degrees)	Polarity/ Transducer Type	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
	17090.330	1.1	228.0	Horz	PK	7.72E-08	-41.1	-27.0	-14.1	5700MHz, 6 Mbps, EUT on Side
	10361.070	1.2	152.0	Horz	PK	6.10E-08	-42.2	-27.0	-15.2	5180 MHz, 6 Mbps, EUT On Side
	17101.920	1.4	18.0	Vert	PK	4.30E-08	-43.7	-27.0	-16.7	5700MHz, 6 Mbps, EUT Horizontal
	10480.600	1.0	226.0	Horz	PK	4.21E-08	-43.8	-27.0	-16.8	5240 MHz, 6 Mbps, EUT On Side
	10520.730	1.4	136.0	Vert	PK	3.44E-08	-44.6	-27.0	-17.6	5260 MHz, 6 Mbps, EUT Horizontal
	16500.460	1.2	265.0	Horz	PK	2.74E-08	-45.6	-27.0	-18.6	5500MHz, 6 Mbps, EUT on Side
	16740.310	1.4	234.0	Horz	PK	2.37E-08	-46.3	-27.0	-19.3	5580MHz, 6 Mbps, EUT on Side
	16496.200	1.0	10.0	Vert	PK	2.22E-08	-46.5	-27.0	-19.5	5500MHz, 18 Mbps, EUT Horizontal
	10520.270	1.0	347.0	Horz	PK	1.85E-08	-47.3	-27.0	-20.3	5260 MHz, 6 Mbps, EUT On Side
	16504.950	1.2	265.0	Horz	PK	1.77E-08	-47.5	-27.0	-20.5	5500MHz, 18 Mbps, EUT on Side
	16739.040	1.2	237.0	Vert	PK	1.60E-08	-48.0	-27.0	-21.0	5580MHz, 6 Mbps, EUT Horizontal
	16490.450	1.0	10.0	Vert	PK	1.54E-08	-48.1	-27.0	-21.1	5500MHz, 6 Mbps, EUT Horizontal
	10480.530	1.6	22.0	Vert	PK	1.36E-08	-48.7	-27.0	-21.7	5240 MHz, 6 Mbps, EUT Horizontal
	10365.330	1.0	23.0	Vert	PK	1.33E-08	-48.7	-27.0	-21.7	5180 MHz, 6 Mbps, EUT Horizontal

AC POWERLINE 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.

MODES OF OPERATION

Transmitting 802.11a, 50% Duty Cycle, Ch. 29, 5700 MHz
Transmitting 802.11a, 50% Duty Cycle, Ch. 23, 5580 MHz
Transmitting 802.11a, 50% Duty Cycle, Ch. 19, 5500 MHz
Transmitting 802.11a, 50% Duty Cycle, Ch. 18, 5320 MHz
Transmitting 802.11a, 50% Duty Cycle, Ch. 15, 5260 MHz
Transmitting 802.11a, 50% Duty Cycle, Ch. 14, 5240 MHz
Transmitting 802.11a, 50% Duty Cycle, Ch. 8, 5180 MHz

POWER SETTINGS INVESTIGATED

3.3 VDC Nominal

CONFIGURATIONS INVESTIGATED

FOCU0140 - 7

SAMPLE CALCULATIONS

Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
DC Power Supply	Topward	TPS-2000	TPD	NCR	0 mo
LISN	Solar	9252-50-R-24-BNC	LIN	3/11/2013	12 mo
Receiver	Rohde & Schwarz	ESCI	ARH	1/24/2013	12 mo
High Pass Filter	TTE	H97-100K-50-720B	HHD	2/1/2012	24 mo
Attenuator	Coaxicom	66702 2910-20	RBR	4/25/2013	12 mo
EV07 Cables	N/A	Conducted Cables	EVG	4/25/2013	12 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

Measurements were made using the bandwidths and detectors specified. No video filter was used.

TEST DESCRIPTION

The EUT will be powered either directly or indirectly from the AC power line. Therefore, conducted emissions measurements were made on the AC input of the EUT, or on the AC input of the device used to power the EUT. The AC power line conducted emissions were measured with the EUT operating at the lowest, the highest, and a middle channel in the operational band. The EUT was transmitting at its maximum data rate. For each mode, the spectrum was scanned from 150 kHz to 30 MHz. The test setup and procedures were in accordance with ANSI C63.10-2009.

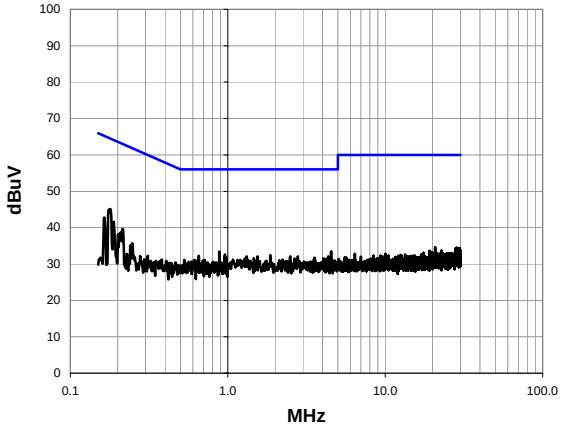
AC POWERLINE CONDUCTED EMISSIONS

Work Order:	FOCU0140	**Date:**	05/16/13		
Project:	None	**Temperature:**	23.7 °C		
Job Site:	EV07	**Humidity:**	40.3% RH		
Serial Number:	02EA4D000003	**Barometric Pres.:**	1014 mbar	**Tested by:**	Brandon Hobbs
EUT:	Model 444-2225 (Athena UFL)				
Configuration:	7				
Customer:	Summit Semiconductor				
Attendees:	None				
EUT Power:	3.3 VDC Nominal				
Operating Mode:	Transmitting 802.11a, 50% Duty Cycle, Ch. 8, 5180 MHz				
Deviations:	None				
Comments:	Power Supply plugged into 110VAC/60Hz				

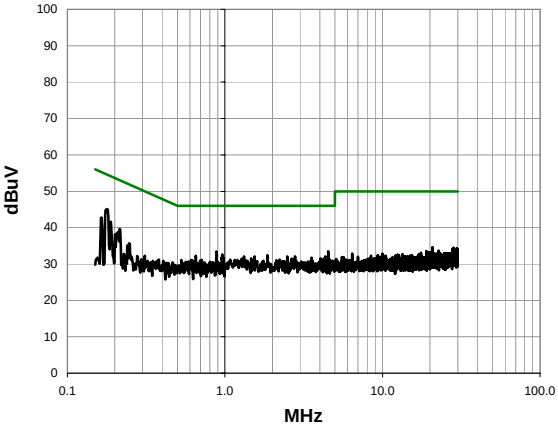
Test Specifications	**Test Method**
FCC 15.407:2013	ANSI C63.10:2009

Run #	3	**Line:**	Neutral	**Ext. Attenuation:**	20	**Results**	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.179	24.8	20.3	45.1	64.5	-19.4
0.189	21.3	20.3	41.6	64.1	-22.5
4.528	12.8	20.7	33.5	56.0	-22.5
0.164	22.4	20.3	42.7	65.3	-22.5
0.883	13.1	20.3	33.4	56.0	-22.6
0.961	12.3	20.3	32.6	56.0	-23.4
0.215	19.3	20.3	39.6	63.0	-23.4
1.864	12.0	20.4	32.4	56.0	-23.6
0.653	12.0	20.3	32.3	56.0	-23.7
1.544	11.7	20.4	32.1	56.0	-23.9
2.784	11.6	20.5	32.1	56.0	-23.9
1.320	11.7	20.4	32.1	56.0	-23.9
2.488	11.6	20.5	32.1	56.0	-23.9
4.344	11.4	20.7	32.1	56.0	-23.9
0.981	11.4	20.3	31.7	56.0	-24.3
3.552	11.1	20.6	31.7	56.0	-24.3
1.464	11.2	20.4	31.6	56.0	-24.4
4.048	10.9	20.6	31.5	56.0	-24.5
4.232	10.8	20.7	31.5	56.0	-24.5
3.528	10.7	20.6	31.3	56.0	-24.7

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.179	24.8	20.3	45.1	54.5	-9.4
0.189	21.3	20.3	41.6	54.1	-12.5
4.528	12.8	20.7	33.5	46.0	-12.5
0.164	22.4	20.3	42.7	55.3	-12.5
0.883	13.1	20.3	33.4	46.0	-12.6
0.961	12.3	20.3	32.6	46.0	-13.4
0.215	19.3	20.3	39.6	53.0	-13.4
1.864	12.0	20.4	32.4	46.0	-13.6
0.653	12.0	20.3	32.3	46.0	-13.7
1.544	11.7	20.4	32.1	46.0	-13.9
2.784	11.6	20.5	32.1	46.0	-13.9
1.320	11.7	20.4	32.1	46.0	-13.9
2.488	11.6	20.5	32.1	46.0	-13.9
4.344	11.4	20.7	32.1	46.0	-13.9
0.981	11.4	20.3	31.7	46.0	-14.3
3.552	11.1	20.6	31.7	46.0	-14.3
1.464	11.2	20.4	31.6	46.0	-14.4
4.048	10.9	20.6	31.5	46.0	-14.5
4.232	10.8	20.7	31.5	46.0	-14.5
3.528	10.7	20.6	31.3	46.0	-14.7

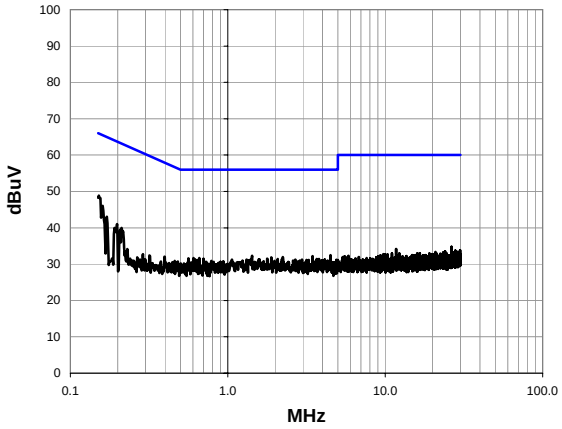
AC POWERLINE CONDUCTED EMISSIONS

Work Order:	FOCU0140	**Date:**	05/16/13		
Project:	None	**Temperature:**	23.7 °C		
Job Site:	EV07	**Humidity:**	40.3% RH		
Serial Number:	02EA4D000003	**Barometric Pres.:**	1014 mbar	**Tested by:**	Brandon Hobbs
EUT:	Model 444-2225 (Athena UFL)				
Configuration:	7				
Customer:	Summit Semiconductor				
Attendees:	None				
EUT Power:	3.3 VDC Nominal				
Operating Mode:	Transmitting 802.11a, 50% Duty Cycle, Ch. 8, 5180 MHz				
Deviations:	None				
Comments:	Power Supply plugged into 110VAC/60Hz				

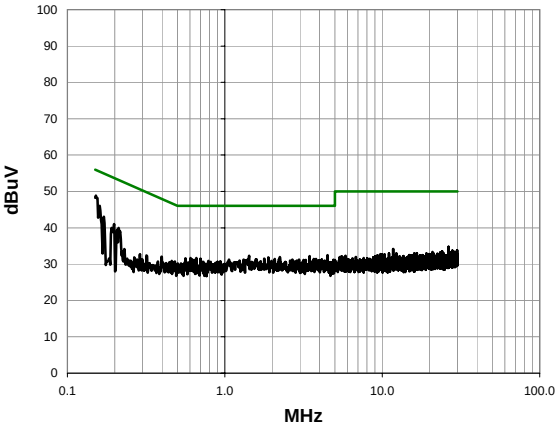
Test Specifications	**Test Method**
FCC 15.407:2013	ANSI C63.10:2009

Run #	4	**Line:**	High Line	**Ext. Attenuation:**	20	**Results**	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.152	28.4	20.4	48.8	65.9	-17.1
0.160	25.7	20.3	46.0	65.5	-19.4
0.170	22.7	20.3	43.0	64.9	-21.9
0.198	20.7	20.3	41.0	63.7	-22.7
0.211	19.6	20.3	39.9	63.2	-23.2
4.488	11.8	20.7	32.5	56.0	-23.5
1.424	11.9	20.4	32.3	56.0	-23.7
0.208	19.2	20.3	39.5	63.3	-23.8
3.456	11.6	20.6	32.2	56.0	-23.8
2.240	11.5	20.5	32.0	56.0	-24.0
1.888	11.4	20.4	31.8	56.0	-24.2
0.660	11.4	20.3	31.7	56.0	-24.3
0.606	11.4	20.3	31.7	56.0	-24.3
0.563	11.3	20.3	31.6	56.0	-24.4
0.701	11.2	20.3	31.5	56.0	-24.5
2.080	11.0	20.4	31.4	56.0	-24.6
3.800	10.8	20.6	31.4	56.0	-24.6
3.680	10.8	20.6	31.4	56.0	-24.6
0.621	11.1	20.3	31.4	56.0	-24.6
2.960	10.8	20.5	31.3	56.0	-24.7

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.152	28.4	20.4	48.8	55.9	-7.1
0.160	25.7	20.3	46.0	55.5	-9.4
0.170	22.7	20.3	43.0	54.9	-11.9
0.198	20.7	20.3	41.0	53.7	-12.7
0.211	19.6	20.3	39.9	53.2	-13.2
4.488	11.8	20.7	32.5	46.0	-13.5
1.424	11.9	20.4	32.3	46.0	-13.7
0.208	19.2	20.3	39.5	53.3	-13.8
3.456	11.6	20.6	32.2	46.0	-13.8
2.240	11.5	20.5	32.0	46.0	-14.0
1.888	11.4	20.4	31.8	46.0	-14.2
0.660	11.4	20.3	31.7	46.0	-14.3
0.606	11.4	20.3	31.7	46.0	-14.3
0.563	11.3	20.3	31.6	46.0	-14.4
0.701	11.2	20.3	31.5	46.0	-14.5
2.080	11.0	20.4	31.4	46.0	-14.6
3.800	10.8	20.6	31.4	46.0	-14.6
3.680	10.8	20.6	31.4	46.0	-14.6
0.621	11.1	20.3	31.4	46.0	-14.6
2.960	10.8	20.5	31.3	46.0	-14.7

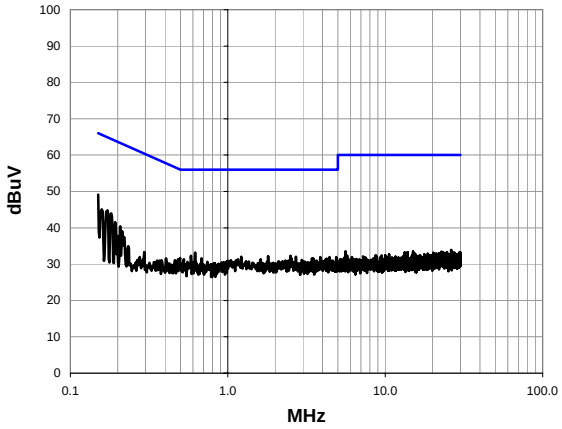
AC POWERLINE CONDUCTED EMISSIONS

Work Order:	FOCU0140	**Date:**	05/16/13		
Project:	None	**Temperature:**	23.7 °C		
Job Site:	EV07	**Humidity:**	40.3% RH		
Serial Number:	02EA4D000003	**Barometric Pres.:**	1014 mbar	**Tested by:**	Brandon Hobbs
EUT:	Model 444-2225 (Athena UFL)				
Configuration:	7				
Customer:	Summit Semiconductor				
Attendees:	None				
EUT Power:	3.3 VDC Nominal				
Operating Mode:	Transmitting 802.11a, 50% Duty Cycle, Ch. 14, 5240 MHz				
Deviations:	None				
Comments:	Power Supply plugged into 110VAC/60Hz				

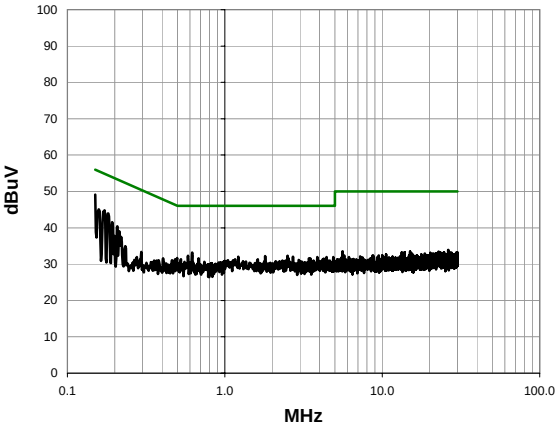
Test Specifications	**Test Method**
FCC 15.407:2013	ANSI C63.10:2009

Run #	5	**Line:**	High Line	**Ext. Attenuation:**	20	**Results**	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.150	28.7	20.4	49.1	66.0	-16.9
0.172	24.5	20.3	44.8	64.9	-20.0
0.182	23.6	20.3	43.9	64.4	-20.5
0.159	24.7	20.4	45.1	65.5	-20.5
0.193	21.2	20.3	41.5	63.9	-22.4
0.619	12.9	20.3	33.2	56.0	-22.8
0.208	20.1	20.3	40.4	63.3	-22.9
0.584	12.0	20.3	32.3	56.0	-23.7
2.504	11.8	20.5	32.3	56.0	-23.7
1.800	11.8	20.4	32.2	56.0	-23.8
2.704	11.6	20.5	32.1	56.0	-23.9
1.216	11.7	20.4	32.1	56.0	-23.9
0.213	18.8	20.3	39.1	63.1	-24.0
4.880	11.3	20.7	32.0	56.0	-24.0
4.424	11.3	20.7	32.0	56.0	-24.0
3.864	11.3	20.6	31.9	56.0	-24.1
0.497	11.4	20.3	31.7	56.1	-24.4
3.496	11.0	20.6	31.6	56.0	-24.4
0.682	11.3	20.3	31.6	56.0	-24.4
3.432	11.0	20.6	31.6	56.0	-24.4

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.150	28.7	20.4	49.1	56.0	-6.9
0.172	24.5	20.3	44.8	54.9	-10.0
0.182	23.6	20.3	43.9	54.4	-10.5
0.159	24.7	20.4	45.1	55.5	-10.5
0.193	21.2	20.3	41.5	53.9	-12.4
0.619	12.9	20.3	33.2	46.0	-12.8
0.208	20.1	20.3	40.4	53.3	-12.9
0.584	12.0	20.3	32.3	46.0	-13.7
2.504	11.8	20.5	32.3	46.0	-13.7
1.800	11.8	20.4	32.2	46.0	-13.8
2.704	11.6	20.5	32.1	46.0	-13.9
1.216	11.7	20.4	32.1	46.0	-13.9
0.213	18.8	20.3	39.1	53.1	-14.0
4.880	11.3	20.7	32.0	46.0	-14.0
4.424	11.3	20.7	32.0	46.0	-14.0
3.864	11.3	20.6	31.9	46.0	-14.1
0.497	11.4	20.3	31.7	46.1	-14.4
3.496	11.0	20.6	31.6	46.0	-14.4
0.682	11.3	20.3	31.6	46.0	-14.4
3.432	11.0	20.6	31.6	46.0	-14.4

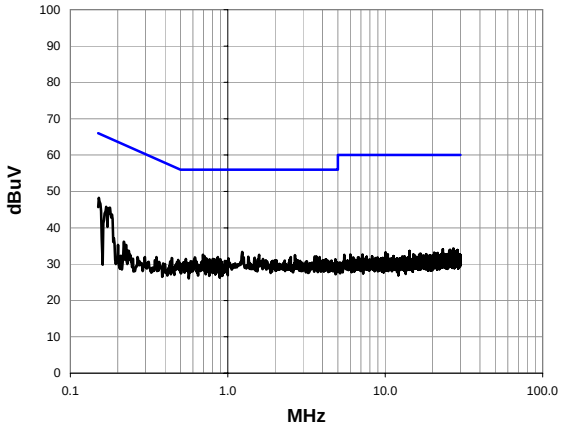
AC POWERLINE CONDUCTED EMISSIONS

Work Order:	FOCU0140	**Date:**	05/16/13		
Project:	None	**Temperature:**	23.7 °C		
Job Site:	EV07	**Humidity:**	40.3% RH		
Serial Number:	02EA4D000003	**Barometric Pres.:**	1014 mbar	**Tested by:**	Brandon Hobbs
EUT:	Model 444-2225 (Athena UFL)				
Configuration:	7				
Customer:	Summit Semiconductor				
Attendees:	None				
EUT Power:	3.3 VDC Nominal				
Operating Mode:	Transmitting 802.11a, 50% Duty Cycle, Ch. 14, 5240 MHz				
Deviations:	None				
Comments:	Power Supply plugged into 110VAC/60Hz				

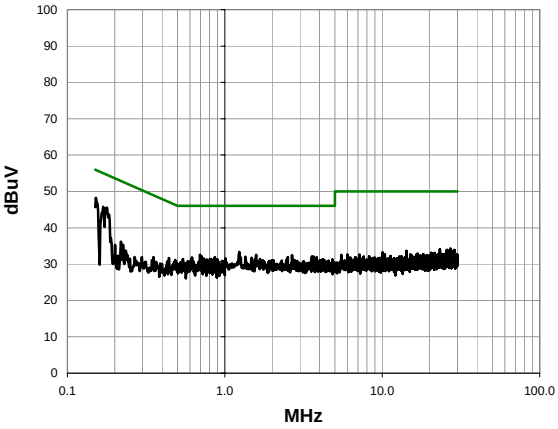
Test Specifications	**Test Method**
FCC 15.407:2013	ANSI C63.10:2009

Run #	6	**Line:**	Neutral	**Ext. Attenuation:**	20	**Results**	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.152	27.8	20.4	48.2	65.9	-17.7
0.177	25.2	20.3	45.5	64.6	-19.1
0.169	25.4	20.3	45.7	65.0	-19.3
1.232	13.0	20.4	33.4	56.0	-22.6
1.584	12.2	20.4	32.6	56.0	-23.4
0.697	12.3	20.3	32.6	56.0	-23.4
2.672	12.0	20.5	32.5	56.0	-23.5
3.568	11.5	20.6	32.1	56.0	-23.9
0.713	11.8	20.3	32.1	56.0	-23.9
1.352	11.7	20.4	32.1	56.0	-23.9
2.512	11.5	20.5	32.0	56.0	-24.0
3.840	11.3	20.6	31.9	56.0	-24.1
0.864	11.6	20.3	31.9	56.0	-24.1
0.618	11.6	20.3	31.9	56.0	-24.1
1.480	11.4	20.4	31.8	56.0	-24.2
1.008	11.3	20.3	31.6	56.0	-24.4
0.730	11.3	20.3	31.6	56.0	-24.4
0.543	11.2	20.3	31.5	56.0	-24.5
0.804	11.1	20.3	31.4	56.0	-24.6
4.208	10.7	20.7	31.4	56.0	-24.6

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.152	27.8	20.4	48.2	55.9	-7.7
0.177	25.2	20.3	45.5	54.6	-9.1
0.169	25.4	20.3	45.7	55.0	-9.3
1.232	13.0	20.4	33.4	46.0	-12.6
1.584	12.2	20.4	32.6	46.0	-13.4
0.697	12.3	20.3	32.6	46.0	-13.4
2.672	12.0	20.5	32.5	46.0	-13.5
3.568	11.5	20.6	32.1	46.0	-13.9
0.713	11.8	20.3	32.1	46.0	-13.9
1.352	11.7	20.4	32.1	46.0	-13.9
2.512	11.5	20.5	32.0	46.0	-14.0
3.840	11.3	20.6	31.9	46.0	-14.1
0.864	11.6	20.3	31.9	46.0	-14.1
0.618	11.6	20.3	31.9	46.0	-14.1
1.480	11.4	20.4	31.8	46.0	-14.2
1.008	11.3	20.3	31.6	46.0	-14.4
0.730	11.3	20.3	31.6	46.0	-14.4
0.543	11.2	20.3	31.5	46.0	-14.5
0.804	11.1	20.3	31.4	46.0	-14.6
4.208	10.7	20.7	31.4	46.0	-14.6

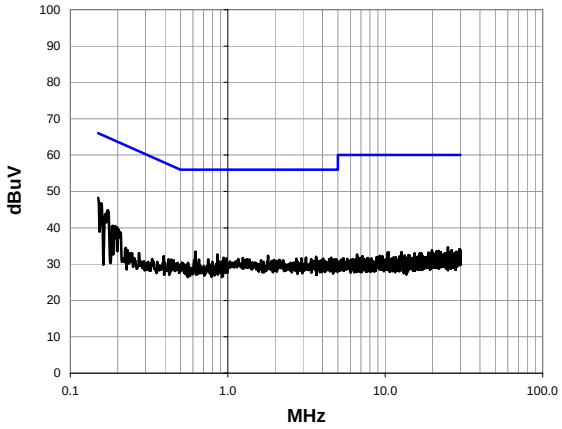
AC POWERLINE CONDUCTED EMISSIONS

Work Order:	FOCU0140	**Date:**	05/16/13		
Project:	None	**Temperature:**	23.7 °C		
Job Site:	EV07	**Humidity:**	40.3% RH		
Serial Number:	02EA4D000003	**Barometric Pres.:**	1014 mbar	**Tested by:**	Brandon Hobbs
EUT:	Model 444-2225 (Athena UFL)				
Configuration:	7				
Customer:	Summit Semiconductor				
Attendees:	None				
EUT Power:	3.3 VDC Nominal				
Operating Mode:	Transmitting 802.11a, 50% Duty Cycle, Ch. 15, 5260 MHz				
Deviations:	None				
Comments:	Power Supply plugged into 110VAC/60Hz				

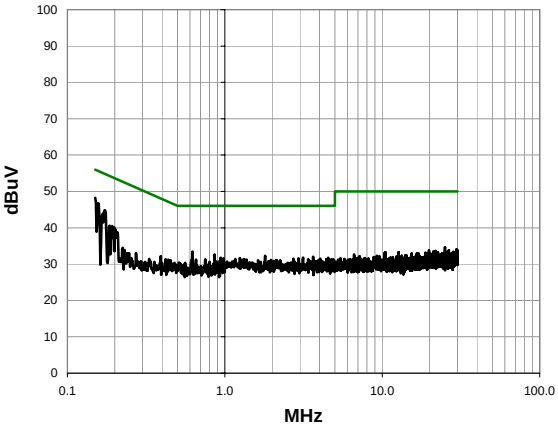
Test Specifications	**Test Method**
FCC 15.407:2013	ANSI C63.10:2009

Run #	7	**Line:**	Neutral	**Ext. Attenuation:**	20	**Results**	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.150	27.8	20.4	48.2	66.0	-17.8
0.157	26.4	20.4	46.8	65.6	-18.9
0.172	24.5	20.3	44.8	64.9	-20.0
0.624	13.2	20.3	33.5	56.0	-22.5
0.862	12.3	20.3	32.6	56.0	-23.4
0.193	20.2	20.3	40.5	63.9	-23.4
0.198	19.8	20.3	40.1	63.7	-23.6
0.186	20.3	20.3	40.6	64.2	-23.6
1.800	11.9	20.4	32.3	56.0	-23.7
0.201	19.4	20.3	39.7	63.6	-23.8
3.632	11.4	20.6	32.0	56.0	-24.0
3.144	11.3	20.5	31.8	56.0	-24.2
4.544	11.1	20.7	31.8	56.0	-24.2
0.942	11.4	20.3	31.7	56.0	-24.3
1.248	11.3	20.4	31.7	56.0	-24.3
0.980	11.3	20.3	31.6	56.0	-24.4
2.928	11.1	20.5	31.6	56.0	-24.4
4.040	10.9	20.6	31.5	56.0	-24.5
2.720	11.0	20.5	31.5	56.0	-24.5
4.744	10.7	20.7	31.4	56.0	-24.6

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.150	27.8	20.4	48.2	56.0	-7.8
0.157	26.4	20.4	46.8	55.6	-8.9
0.172	24.5	20.3	44.8	54.9	-10.0
0.624	13.2	20.3	33.5	46.0	-12.5
0.862	12.3	20.3	32.6	46.0	-13.4
0.193	20.2	20.3	40.5	53.9	-13.4
0.198	19.8	20.3	40.1	53.7	-13.6
0.186	20.3	20.3	40.6	54.2	-13.6
1.800	11.9	20.4	32.3	46.0	-13.7
0.201	19.4	20.3	39.7	53.6	-13.8
3.632	11.4	20.6	32.0	46.0	-14.0
3.144	11.3	20.5	31.8	46.0	-14.2
4.544	11.1	20.7	31.8	46.0	-14.2
0.942	11.4	20.3	31.7	46.0	-14.3
1.248	11.3	20.4	31.7	46.0	-14.3
0.980	11.3	20.3	31.6	46.0	-14.4
2.928	11.1	20.5	31.6	46.0	-14.4
4.040	10.9	20.6	31.5	46.0	-14.5
2.720	11.0	20.5	31.5	46.0	-14.5
4.744	10.7	20.7	31.4	46.0	-14.6

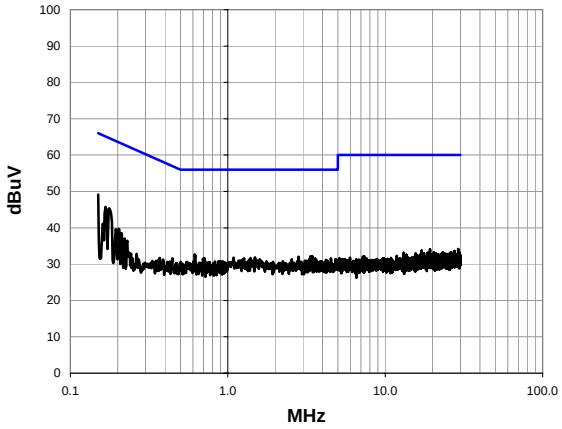
AC POWERLINE CONDUCTED EMISSIONS

Work Order:	FOCU0140	**Date:**	05/16/13		
Project:	None	**Temperature:**	23.7 °C		
Job Site:	EV07	**Humidity:**	40.3% RH		
Serial Number:	02EA4D000003	**Barometric Pres.:**	1014 mbar	**Tested by:**	Brandon Hobbs
EUT:	Model 444-2225 (Athena UFL)				
Configuration:	7				
Customer:	Summit Semiconductor				
Attendees:	None				
EUT Power:	3.3 VDC Nominal				
Operating Mode:	Transmitting 802.11a, 50% Duty Cycle, Ch. 15, 5260 MHz				
Deviations:	None				
Comments:	Power Supply plugged into 110VAC/60Hz				

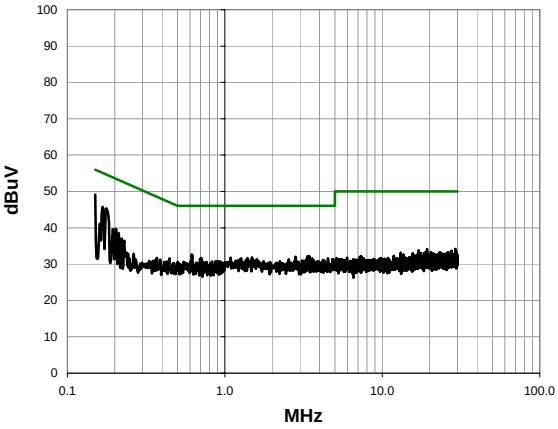
Test Specifications	**Test Method**
FCC 15.407:2013	ANSI C63.10:2009

Run #	8	**Line:**	High Line	**Ext. Attenuation:**	20	**Results**	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.150	28.7	20.4	49.1	66.0	-16.9
0.177	25.0	20.3	45.3	64.6	-19.3
0.167	25.4	20.3	45.7	65.1	-19.4
0.618	12.4	20.3	32.7	56.0	-23.3
3.368	11.7	20.6	32.3	56.0	-23.7
0.203	19.4	20.3	39.7	63.5	-23.8
3.448	11.6	20.6	32.2	56.0	-23.8
2.808	11.6	20.5	32.1	56.0	-23.9
1.488	11.5	20.4	31.9	56.0	-24.1
0.194	19.3	20.3	39.6	63.9	-24.2
1.088	11.4	20.3	31.7	56.0	-24.3
0.708	11.4	20.3	31.7	56.0	-24.3
0.160	20.8	20.3	41.1	65.5	-24.3
1.392	11.3	20.4	31.7	56.0	-24.3
3.592	11.0	20.6	31.6	56.0	-24.4
1.272	11.2	20.4	31.6	56.0	-24.4
4.520	10.9	20.7	31.6	56.0	-24.4
0.697	11.2	20.3	31.5	56.0	-24.5
2.544	10.9	20.5	31.4	56.0	-24.6
0.211	18.2	20.3	38.5	63.2	-24.6

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.150	28.7	20.4	49.1	56.0	-6.9
0.177	25.0	20.3	45.3	54.6	-9.3
0.167	25.4	20.3	45.7	55.1	-9.4
0.618	12.4	20.3	32.7	46.0	-13.3
3.368	11.7	20.6	32.3	46.0	-13.7
0.203	19.4	20.3	39.7	53.5	-13.8
3.448	11.6	20.6	32.2	46.0	-13.8
2.808	11.6	20.5	32.1	46.0	-13.9
1.488	11.5	20.4	31.9	46.0	-14.1
0.194	19.3	20.3	39.6	53.9	-14.2
1.088	11.4	20.3	31.7	46.0	-14.3
0.708	11.4	20.3	31.7	46.0	-14.3
0.160	20.8	20.3	41.1	55.5	-14.3
1.392	11.3	20.4	31.7	46.0	-14.3
3.592	11.0	20.6	31.6	46.0	-14.4
1.272	11.2	20.4	31.6	46.0	-14.4
4.520	10.9	20.7	31.6	46.0	-14.4
0.697	11.2	20.3	31.5	46.0	-14.5
2.544	10.9	20.5	31.4	46.0	-14.6
0.211	18.2	20.3	38.5	53.2	-14.6

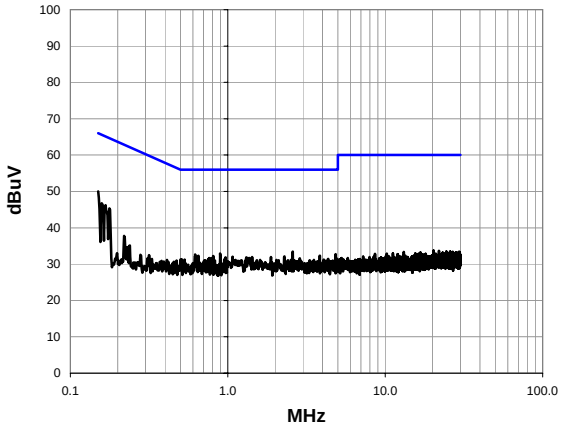
AC POWERLINE CONDUCTED EMISSIONS

Work Order:	FOCU0140	**Date:**	05/16/13		
Project:	None	**Temperature:**	23.7 °C		
Job Site:	EV07	**Humidity:**	40.3% RH		
Serial Number:	02EA4D000003	**Barometric Pres.:**	1014 mbar	**Tested by:**	Brandon Hobbs
EUT:	Model 444-2225 (Athena UFL)				
Configuration:	7				
Customer:	Summit Semiconductor				
Attendees:	None				
EUT Power:	3.3 VDC Nominal				
Operating Mode:	Transmitting 802.11a, 50% Duty Cycle, Ch. 18, 5320 MHz				
Deviations:	None				
Comments:	Power Supply plugged into 110VAC/60Hz				

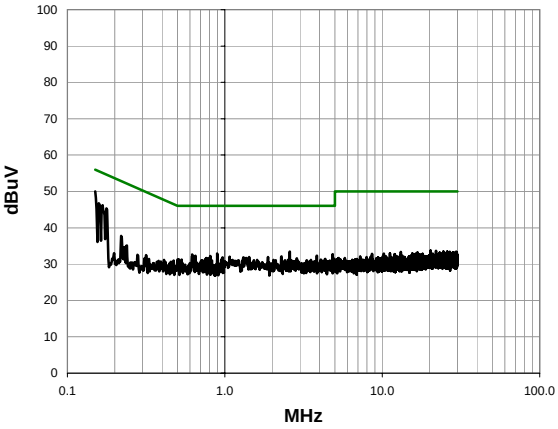
Test Specifications	**Test Method**
FCC 15.407:2013	ANSI C63.10:2009

Run #	9	**Line:**	High Line	**Ext. Attenuation:**	20	**Results**	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.150	29.6	20.4	50.0	66.0	-16.0
0.159	26.4	20.4	46.8	65.5	-18.8
0.167	25.9	20.3	46.2	65.1	-18.9
0.177	25.0	20.3	45.3	64.6	-19.3
2.584	13.0	20.5	33.5	56.0	-22.5
0.895	12.6	20.3	32.9	56.0	-23.1
4.848	12.1	20.7	32.8	56.0	-23.2
0.621	12.4	20.3	32.7	56.0	-23.3
3.848	11.7	20.6	32.3	56.0	-23.7
0.652	12.0	20.3	32.3	56.0	-23.7
0.810	11.9	20.3	32.2	56.0	-23.8
2.288	11.7	20.5	32.2	56.0	-23.8
1.072	11.7	20.3	32.0	56.0	-24.0
1.424	11.6	20.4	32.0	56.0	-24.0
1.880	11.5	20.4	31.9	56.0	-24.1
1.312	11.5	20.4	31.9	56.0	-24.1
0.966	11.5	20.3	31.8	56.0	-24.2
0.762	11.4	20.3	31.7	56.0	-24.3
0.782	11.3	20.3	31.6	56.0	-24.4
2.864	11.1	20.5	31.6	56.0	-24.4

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.150	29.6	20.4	50.0	56.0	-6.0
0.159	26.4	20.4	46.8	55.5	-8.8
0.167	25.9	20.3	46.2	55.1	-8.9
0.177	25.0	20.3	45.3	54.6	-9.3
2.584	13.0	20.5	33.5	46.0	-12.5
0.895	12.6	20.3	32.9	46.0	-13.1
4.848	12.1	20.7	32.8	46.0	-13.2
0.621	12.4	20.3	32.7	46.0	-13.3
3.848	11.7	20.6	32.3	46.0	-13.7
0.652	12.0	20.3	32.3	46.0	-13.7
0.810	11.9	20.3	32.2	46.0	-13.8
2.288	11.7	20.5	32.2	46.0	-13.8
1.072	11.7	20.3	32.0	46.0	-14.0
1.424	11.6	20.4	32.0	46.0	-14.0
1.880	11.5	20.4	31.9	46.0	-14.1
1.312	11.5	20.4	31.9	46.0	-14.1
0.966	11.5	20.3	31.8	46.0	-14.2
0.762	11.4	20.3	31.7	46.0	-14.3
0.782	11.3	20.3	31.6	46.0	-14.4
2.864	11.1	20.5	31.6	46.0	-14.4

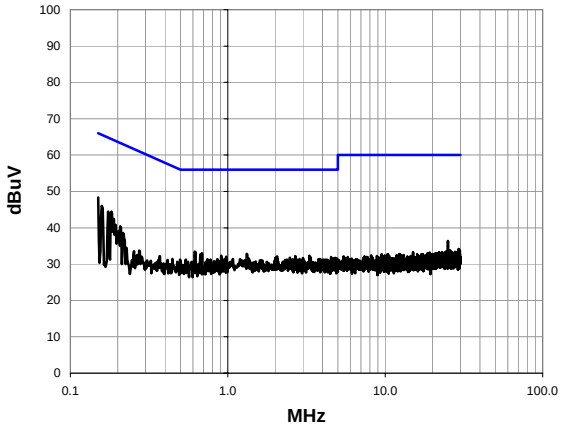
AC POWERLINE CONDUCTED EMISSIONS

Work Order:	FOCU0140	**Date:**	05/16/13		
Project:	None	**Temperature:**	23.7 °C		
Job Site:	EV07	**Humidity:**	40.3% RH		
Serial Number:	02EA4D000003	**Barometric Pres.:**	1014 mbar	**Tested by:**	Brandon Hobbs
EUT:	Model 444-2225 (Athena UFL)				
Configuration:	7				
Customer:	Summit Semiconductor				
Attendees:	None				
EUT Power:	3.3 VDC Nominal				
Operating Mode:	Transmitting 802.11a, 50% Duty Cycle, Ch. 18, 5320 MHz				
Deviations:	None				
Comments:	Power Supply plugged into 110VAC/60Hz				

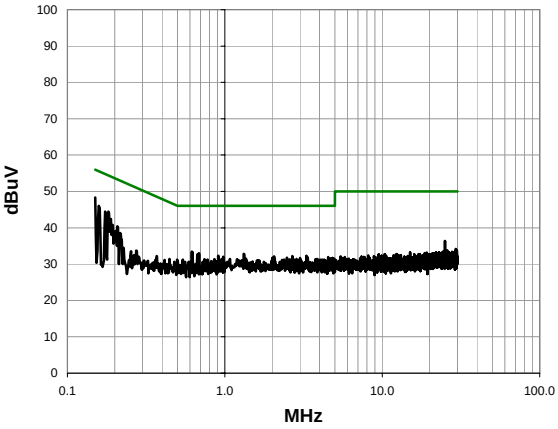
Test Specifications	**Test Method**
FCC 15.407:2013	ANSI C63.10:2009

Run #	10	**Line:**	Neutral	**Ext. Attenuation:**	20	**Results**	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.150	27.9	20.4	48.3	66.0	-17.7
0.159	25.7	20.4	46.1	65.5	-19.5
0.182	24.1	20.3	44.4	64.4	-20.0
0.174	24.1	20.3	44.4	64.8	-20.4
0.189	22.1	20.3	42.4	64.1	-21.7
0.618	13.2	20.3	33.5	56.0	-22.5
0.208	20.1	20.3	40.4	63.3	-22.9
0.686	12.7	20.3	33.0	56.0	-23.0
1.320	12.5	20.4	32.9	56.0	-23.1
0.669	12.4	20.3	32.7	56.0	-23.3
25.020	14.7	21.7	36.4	60.0	-23.6
3.296	11.8	20.5	32.3	56.0	-23.7
0.910	12.0	20.3	32.3	56.0	-23.7
2.680	11.7	20.5	32.2	56.0	-23.8
2.056	11.7	20.4	32.1	56.0	-23.9
0.978	11.7	20.3	32.0	56.0	-24.0
4.528	11.3	20.7	32.0	56.0	-24.0
2.480	11.3	20.5	31.8	56.0	-24.2
2.008	11.3	20.4	31.7	56.0	-24.3
3.008	11.2	20.5	31.7	56.0	-24.3

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.150	27.9	20.4	48.3	56.0	-7.7
0.159	25.7	20.4	46.1	55.5	-9.5
0.182	24.1	20.3	44.4	54.4	-10.0
0.174	24.1	20.3	44.4	54.8	-10.4
0.189	22.1	20.3	42.4	54.1	-11.7
0.618	13.2	20.3	33.5	46.0	-12.5
0.208	20.1	20.3	40.4	53.3	-12.9
0.686	12.7	20.3	33.0	46.0	-13.0
1.320	12.5	20.4	32.9	46.0	-13.1
0.669	12.4	20.3	32.7	46.0	-13.3
25.020	14.7	21.7	36.4	50.0	-13.6
3.296	11.8	20.5	32.3	46.0	-13.7
0.910	12.0	20.3	32.3	46.0	-13.7
2.680	11.7	20.5	32.2	46.0	-13.8
2.056	11.7	20.4	32.1	46.0	-13.9
0.978	11.7	20.3	32.0	46.0	-14.0
4.528	11.3	20.7	32.0	46.0	-14.0
2.480	11.3	20.5	31.8	46.0	-14.2
2.008	11.3	20.4	31.7	46.0	-14.3
3.008	11.2	20.5	31.7	46.0	-14.3

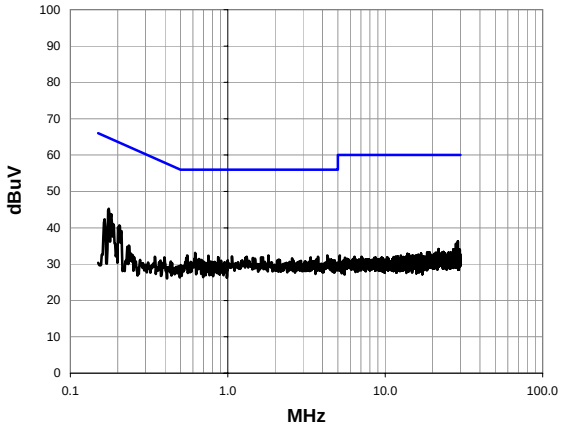
AC POWERLINE CONDUCTED EMISSIONS

Work Order:	FOCU0140	**Date:**	05/16/13		
Project:	None	**Temperature:**	23.7 °C		
Job Site:	EV07	**Humidity:**	40.3% RH		
Serial Number:	02EA4D000003	**Barometric Pres.:**	1014 mbar	**Tested by:**	Brandon Hobbs
EUT:	Model 444-2225 (Athena UFL)				
Configuration:	7				
Customer:	Summit Semiconductor				
Attendees:	None				
EUT Power:	3.3 VDC Nominal				
Operating Mode:	Transmitting 802.11a, 50% Duty Cycle, Ch. 19, 5500 MHz				
Deviations:	None				
Comments:	Power Supply plugged into 110VAC/60Hz				

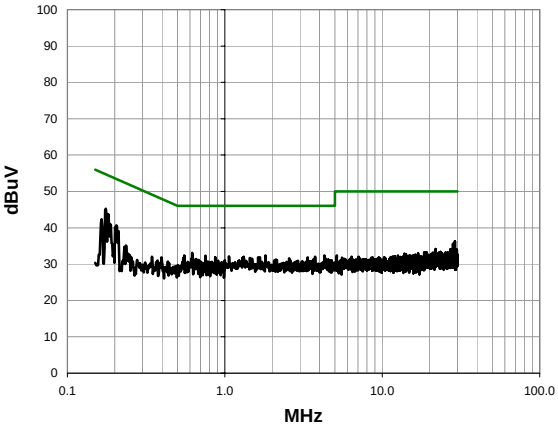
Test Specifications	**Test Method**
FCC 15.407:2013	ANSI C63.10:2009

Run #	11	**Line:**	Neutral	**Ext. Attenuation:**	20	**Results**	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.176	24.9	20.3	45.2	64.7	-19.5
0.182	23.4	20.3	43.7	64.4	-20.7
0.204	20.3	20.3	40.6	63.4	-22.8
0.165	22.0	20.3	42.3	65.2	-22.9
0.621	12.8	20.3	33.1	56.0	-22.9
0.187	20.7	20.3	41.0	64.2	-23.1
1.816	12.0	20.4	32.4	56.0	-23.6
0.553	12.1	20.3	32.4	56.0	-23.6
4.296	11.7	20.7	32.4	56.0	-23.6
28.920	14.3	22.0	36.3	60.0	-23.7
0.753	12.0	20.3	32.3	56.0	-23.7
1.064	11.8	20.3	32.1	56.0	-23.9
1.320	11.7	20.4	32.1	56.0	-23.9
3.744	11.4	20.6	32.0	56.0	-24.0
0.211	18.8	20.3	39.1	63.2	-24.0
1.672	11.5	20.4	31.9	56.0	-24.1
3.368	11.3	20.6	31.9	56.0	-24.1
0.869	11.5	20.3	31.8	56.0	-24.2
1.448	11.3	20.4	31.7	56.0	-24.3
2.560	11.1	20.5	31.6	56.0	-24.4

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.176	24.9	20.3	45.2	54.7	-9.5
0.182	23.4	20.3	43.7	54.4	-10.7
0.204	20.3	20.3	40.6	53.4	-12.8
0.165	22.0	20.3	42.3	55.2	-12.9
0.621	12.8	20.3	33.1	46.0	-12.9
0.187	20.7	20.3	41.0	54.2	-13.1
1.816	12.0	20.4	32.4	46.0	-13.6
0.553	12.1	20.3	32.4	46.0	-13.6
4.296	11.7	20.7	32.4	46.0	-13.6
28.920	14.3	22.0	36.3	50.0	-13.7
0.753	12.0	20.3	32.3	46.0	-13.7
1.064	11.8	20.3	32.1	46.0	-13.9
1.320	11.7	20.4	32.1	46.0	-13.9
3.744	11.4	20.6	32.0	46.0	-14.0
0.211	18.8	20.3	39.1	53.2	-14.0
1.672	11.5	20.4	31.9	46.0	-14.1
3.368	11.3	20.6	31.9	46.0	-14.1
0.869	11.5	20.3	31.8	46.0	-14.2
1.448	11.3	20.4	31.7	46.0	-14.3
2.560	11.1	20.5	31.6	46.0	-14.4

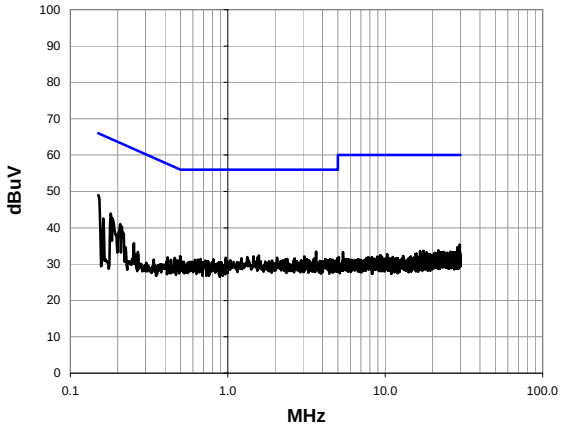
AC POWERLINE CONDUCTED EMISSIONS

Work Order:	FOCU0140	**Date:**	05/16/13		
Project:	None	**Temperature:**	23.7 °C		
Job Site:	EV07	**Humidity:**	40.3% RH		
Serial Number:	02EA4D000003	**Barometric Pres.:**	1014 mbar	**Tested by:**	Brandon Hobbs
EUT:	Model 444-2225 (Athena UFL)				
Configuration:	7				
Customer:	Summit Semiconductor				
Attendees:	None				
EUT Power:	3.3 VDC Nominal				
Operating Mode:	Transmitting 802.11a, 50% Duty Cycle, Ch. 19, 5500 MHz				
Deviations:	None				
Comments:	Power Supply plugged into 110VAC/60Hz				

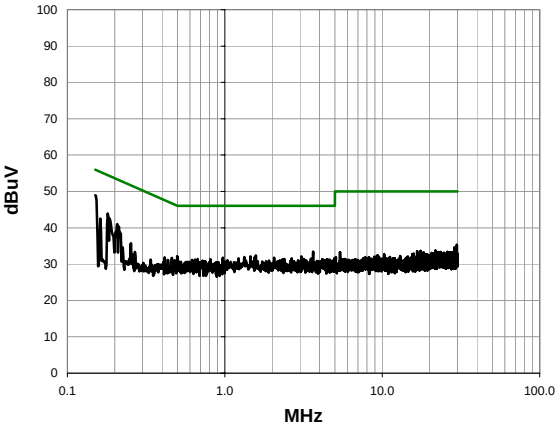
Test Specifications	**Test Method**
FCC 15.407:2013	ANSI C63.10:2009

Run #	12	**Line:**	High Line	**Ext. Attenuation:**	20	**Results**	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.150	28.5	20.4	48.9	66.0	-17.1
0.181	23.6	20.3	43.9	64.5	-20.5
0.186	22.2	20.3	42.5	64.2	-21.7
0.208	20.7	20.3	41.0	63.3	-22.3
3.632	12.8	20.6	33.4	56.0	-22.6
0.213	20.0	20.3	40.3	63.1	-22.8
0.162	22.2	20.3	42.5	65.4	-22.8
1.576	12.0	20.4	32.4	56.0	-23.6
0.499	12.0	20.3	32.3	56.0	-23.8
3.056	11.6	20.5	32.1	56.0	-23.9
1.456	11.7	20.4	32.1	56.0	-23.9
1.328	11.6	20.4	32.0	56.0	-24.0
1.544	11.5	20.4	31.9	56.0	-24.1
0.971	11.4	20.3	31.7	56.0	-24.3
2.056	11.3	20.4	31.7	56.0	-24.3
2.664	11.1	20.5	31.6	56.0	-24.4
3.528	10.9	20.6	31.5	56.0	-24.5
2.384	11.0	20.5	31.5	56.0	-24.5
3.184	10.9	20.5	31.4	56.0	-24.6
0.672	11.1	20.3	31.4	56.0	-24.6

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.150	28.5	20.4	48.9	56.0	-7.1
0.181	23.6	20.3	43.9	54.5	-10.5
0.186	22.2	20.3	42.5	54.2	-11.7
0.208	20.7	20.3	41.0	53.3	-12.3
3.632	12.8	20.6	33.4	46.0	-12.6
0.213	20.0	20.3	40.3	53.1	-12.8
0.162	22.2	20.3	42.5	55.4	-12.8
1.576	12.0	20.4	32.4	46.0	-13.6
0.499	12.0	20.3	32.3	46.0	-13.8
3.056	11.6	20.5	32.1	46.0	-13.9
1.456	11.7	20.4	32.1	46.0	-13.9
1.328	11.6	20.4	32.0	46.0	-14.0
1.544	11.5	20.4	31.9	46.0	-14.1
0.971	11.4	20.3	31.7	46.0	-14.3
2.056	11.3	20.4	31.7	46.0	-14.3
2.664	11.1	20.5	31.6	46.0	-14.4
3.528	10.9	20.6	31.5	46.0	-14.5
2.384	11.0	20.5	31.5	46.0	-14.5
3.184	10.9	20.5	31.4	46.0	-14.6
0.672	11.1	20.3	31.4	46.0	-14.6

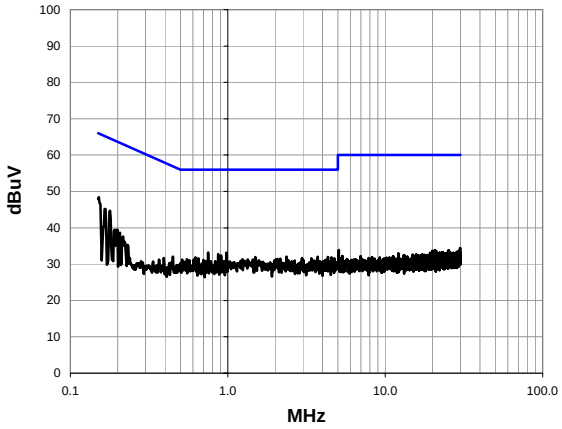
AC POWERLINE CONDUCTED EMISSIONS

Work Order:	FOCU0140	**Date:**	05/16/13		
Project:	None	**Temperature:**	23.7 °C		
Job Site:	EV07	**Humidity:**	40.3% RH		
Serial Number:	02EA4D000003	**Barometric Pres.:**	1014 mbar	**Tested by:**	Brandon Hobbs
EUT:	Model 444-2225 (Athena UFL)				
Configuration:	7				
Customer:	Summit Semiconductor				
Attendees:	None				
EUT Power:	3.3 VDC Nominal				
Operating Mode:	Transmitting 802.11a, 50% Duty Cycle, Ch. 23, 5580 MHz				
Deviations:	None				
Comments:	Power Supply plugged into 110VAC/60Hz				

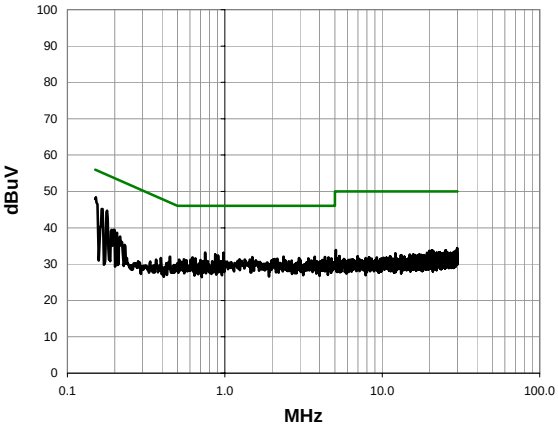
Test Specifications	**Test Method**
FCC 15.407:2013	ANSI C63.10:2009

Run #	13	**Line:**	High Line	**Ext. Attenuation:**	20	**Results**	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.152	28.0	20.4	48.4	65.9	-17.5
0.179	24.4	20.3	44.7	64.5	-19.8
0.165	24.8	20.3	45.1	65.2	-20.1
0.750	12.9	20.3	33.2	56.0	-22.8
0.981	12.8	20.3	33.1	56.0	-22.9
0.869	12.3	20.3	32.6	56.0	-23.4
0.906	12.0	20.3	32.3	56.0	-23.7
2.368	11.6	20.5	32.1	56.0	-23.9
3.728	11.4	20.6	32.0	56.0	-24.0
1.496	11.6	20.4	32.0	56.0	-24.0
4.328	11.3	20.7	32.0	56.0	-24.0
0.624	11.6	20.3	31.9	56.0	-24.1
4.552	11.2	20.7	31.9	56.0	-24.1
0.199	19.1	20.3	39.4	63.6	-24.2
2.960	11.2	20.5	31.7	56.0	-24.3
0.652	11.3	20.3	31.6	56.0	-24.4
4.744	10.9	20.7	31.6	56.0	-24.4
3.400	11.0	20.6	31.6	56.0	-24.4
2.152	11.1	20.4	31.5	56.0	-24.5
2.072	11.0	20.4	31.4	56.0	-24.6

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.152	28.0	20.4	48.4	55.9	-7.5
0.179	24.4	20.3	44.7	54.5	-9.8
0.165	24.8	20.3	45.1	55.2	-10.1
0.750	12.9	20.3	33.2	46.0	-12.8
0.981	12.8	20.3	33.1	46.0	-12.9
0.869	12.3	20.3	32.6	46.0	-13.4
0.906	12.0	20.3	32.3	46.0	-13.7
2.368	11.6	20.5	32.1	46.0	-13.9
3.728	11.4	20.6	32.0	46.0	-14.0
1.496	11.6	20.4	32.0	46.0	-14.0
4.328	11.3	20.7	32.0	46.0	-14.0
0.624	11.6	20.3	31.9	46.0	-14.1
4.552	11.2	20.7	31.9	46.0	-14.1
0.199	19.1	20.3	39.4	53.6	-14.2
2.960	11.2	20.5	31.7	46.0	-14.3
0.652	11.3	20.3	31.6	46.0	-14.4
4.744	10.9	20.7	31.6	46.0	-14.4
3.400	11.0	20.6	31.6	46.0	-14.4
2.152	11.1	20.4	31.5	46.0	-14.5
2.072	11.0	20.4	31.4	46.0	-14.6

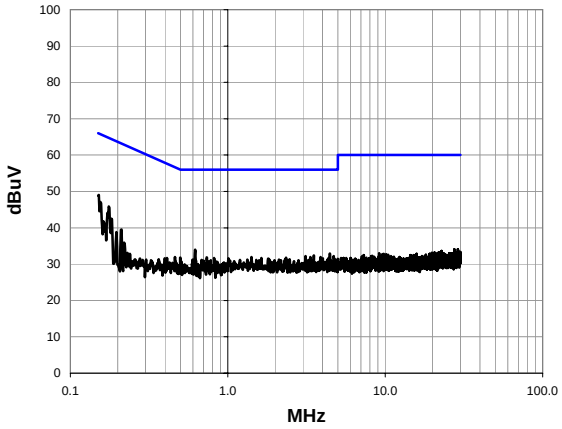
AC POWERLINE CONDUCTED EMISSIONS

Work Order:	FOCU0140	**Date:**	05/16/13		
Project:	None	**Temperature:**	23.7 °C		
Job Site:	EV07	**Humidity:**	40.3% RH		
Serial Number:	02EA4D000003	**Barometric Pres.:**	1014 mbar	**Tested by:**	Brandon Hobbs
EUT:	Model 444-2225 (Athena UFL)				
Configuration:	7				
Customer:	Summit Semiconductor				
Attendees:	None				
EUT Power:	3.3 VDC Nominal				
Operating Mode:	Transmitting 802.11a, 50% Duty Cycle, Ch. 23, 5580 MHz				
Deviations:	None				
Comments:	Power Supply plugged into 110VAC/60Hz				

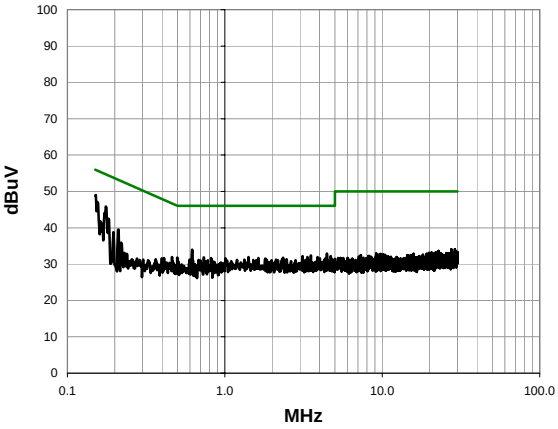
Test Specifications	**Test Method**
FCC 15.407:2013	ANSI C63.10:2009

Run #	14	**Line:**	Neutral	**Ext. Attenuation:**	20	**Results**	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.152	28.6	20.4	49.0	65.9	-16.9
0.176	25.5	20.3	45.8	64.7	-18.9
0.182	22.2	20.3	42.5	64.4	-21.9
0.619	13.7	20.3	34.0	56.0	-22.0
4.456	12.3	20.7	33.0	56.0	-23.0
0.162	21.5	20.3	41.8	65.4	-23.5
3.520	11.8	20.6	32.4	56.0	-23.6
0.211	19.2	20.3	39.5	63.2	-23.6
3.112	11.7	20.5	32.2	56.0	-23.8
4.712	11.5	20.7	32.2	56.0	-23.8
1.416	11.6	20.4	32.0	56.0	-24.0
3.352	11.4	20.6	32.0	56.0	-24.0
3.880	11.3	20.6	31.9	56.0	-24.1
0.735	11.6	20.3	31.9	56.0	-24.1
0.500	11.5	20.3	31.8	56.0	-24.2
2.344	11.3	20.5	31.8	56.0	-24.2
0.818	11.4	20.3	31.7	56.0	-24.3
1.632	11.3	20.4	31.7	56.0	-24.3
4.360	11.0	20.7	31.7	56.0	-24.3
4.008	11.0	20.6	31.6	56.0	-24.4

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.152	28.6	20.4	49.0	55.9	-6.9
0.176	25.5	20.3	45.8	54.7	-8.9
0.182	22.2	20.3	42.5	54.4	-11.9
0.619	13.7	20.3	34.0	46.0	-12.0
4.456	12.3	20.7	33.0	46.0	-13.0
0.162	21.5	20.3	41.8	55.4	-13.5
3.520	11.8	20.6	32.4	46.0	-13.6
0.211	19.2	20.3	39.5	53.2	-13.6
3.112	11.7	20.5	32.2	46.0	-13.8
4.712	11.5	20.7	32.2	46.0	-13.8
1.416	11.6	20.4	32.0	46.0	-14.0
3.352	11.4	20.6	32.0	46.0	-14.0
3.880	11.3	20.6	31.9	46.0	-14.1
0.735	11.6	20.3	31.9	46.0	-14.1
0.500	11.5	20.3	31.8	46.0	-14.2
2.344	11.3	20.5	31.8	46.0	-14.2
0.818	11.4	20.3	31.7	46.0	-14.3
1.632	11.3	20.4	31.7	46.0	-14.3
4.360	11.0	20.7	31.7	46.0	-14.3
4.008	11.0	20.6	31.6	46.0	-14.4

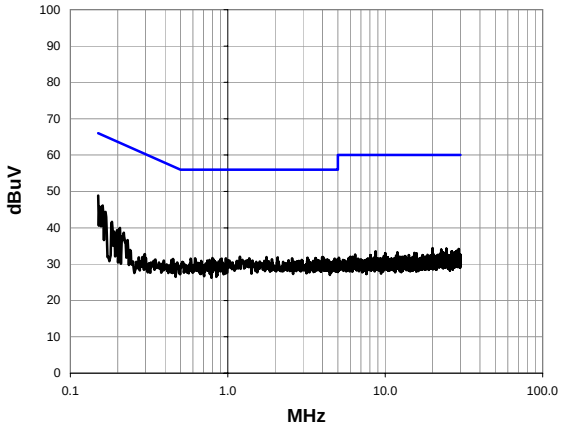
AC POWERLINE CONDUCTED EMISSIONS

Work Order:	FOCU0140	**Date:**	05/16/13		
Project:	None	**Temperature:**	23.7 °C		
Job Site:	EV07	**Humidity:**	40.3% RH		
Serial Number:	02EA4D000003	**Barometric Pres.:**	1014 mbar	**Tested by:**	Brandon Hobbs
EUT:	Model 444-2225 (Athena UFL)				
Configuration:	7				
Customer:	Summit Semiconductor				
Attendees:	None				
EUT Power:	3.3 VDC Nominal				
Operating Mode:	Transmitting 802.11a, 50% Duty Cycle, Ch. 29, 5700 MHz				
Deviations:	None				
Comments:	Power Supply plugged into 110VAC/60Hz				

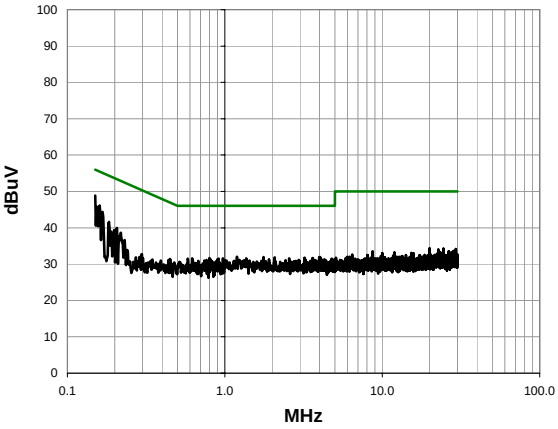
Test Specifications	**Test Method**
FCC 15.407:2013	ANSI C63.10:2009

Run #	15	**Line:**	Neutral	**Ext. Attenuation:**	20	**Results**	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.150	28.4	20.4	48.8	66.0	-17.2
0.160	25.8	20.3	46.1	65.5	-19.3
0.153	25.4	20.4	45.8	65.8	-20.0
0.167	24.0	20.3	44.3	65.1	-20.8
0.184	21.3	20.3	41.6	64.3	-22.7
0.206	19.6	20.3	39.9	63.4	-23.4
1.192	11.7	20.4	32.1	56.0	-23.9
4.040	11.3	20.6	31.9	56.0	-24.1
3.976	11.3	20.6	31.9	56.0	-24.1
1.760	11.5	20.4	31.9	56.0	-24.1
2.072	11.4	20.4	31.8	56.0	-24.2
3.208	11.3	20.5	31.8	56.0	-24.2
0.218	18.3	20.3	38.6	62.9	-24.3
3.600	11.1	20.6	31.7	56.0	-24.3
0.799	11.4	20.3	31.7	56.0	-24.3
0.974	11.3	20.3	31.6	56.0	-24.4
0.198	19.0	20.3	39.3	63.7	-24.4
0.621	11.3	20.3	31.6	56.0	-24.4
2.560	11.1	20.5	31.6	56.0	-24.4
0.913	11.2	20.3	31.5	56.0	-24.5

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.150	28.4	20.4	48.8	56.0	-7.2
0.160	25.8	20.3	46.1	55.5	-9.3
0.153	25.4	20.4	45.8	55.8	-10.0
0.167	24.0	20.3	44.3	55.1	-10.8
0.184	21.3	20.3	41.6	54.3	-12.7
0.206	19.6	20.3	39.9	53.4	-13.4
1.192	11.7	20.4	32.1	46.0	-13.9
4.040	11.3	20.6	31.9	46.0	-14.1
3.976	11.3	20.6	31.9	46.0	-14.1
1.760	11.5	20.4	31.9	46.0	-14.1
2.072	11.4	20.4	31.8	46.0	-14.2
3.208	11.3	20.5	31.8	46.0	-14.2
0.218	18.3	20.3	38.6	52.9	-14.3
3.600	11.1	20.6	31.7	46.0	-14.3
0.799	11.4	20.3	31.7	46.0	-14.3
0.974	11.3	20.3	31.6	46.0	-14.4
0.198	19.0	20.3	39.3	53.7	-14.4
0.621	11.3	20.3	31.6	46.0	-14.4
2.560	11.1	20.5	31.6	46.0	-14.4
0.913	11.2	20.3	31.5	46.0	-14.5

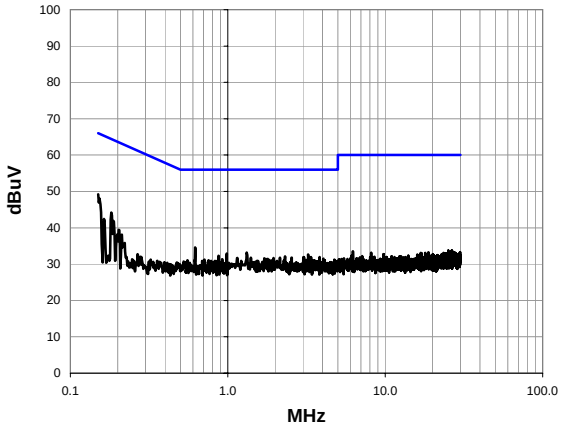
AC POWERLINE CONDUCTED EMISSIONS

Work Order:	FOCU0140	**Date:**	05/16/13		
Project:	None	**Temperature:**	23.7 °C		
Job Site:	EV07	**Humidity:**	40.3% RH		
Serial Number:	02EA4D000003	**Barometric Pres.:**	1014 mbar	**Tested by:**	Brandon Hobbs
EUT:	Model 444-2225 (Athena UFL)				
Configuration:	7				
Customer:	Summit Semiconductor				
Attendees:	None				
EUT Power:	3.3 VDC Nominal				
Operating Mode:	Transmitting 802.11a, 50% Duty Cycle, Ch. 29, 5700 MHz				
Deviations:	None				
Comments:	Power Supply plugged into 110VAC/60Hz				

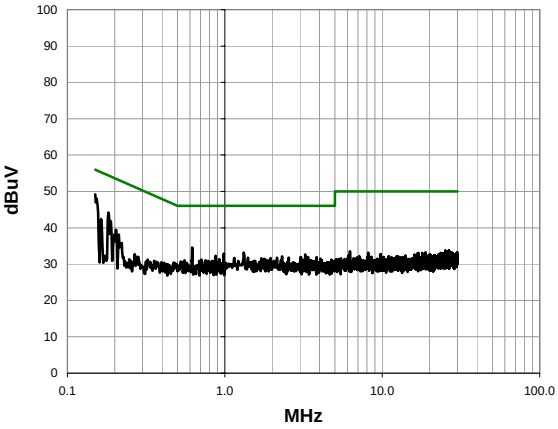
Test Specifications	**Test Method**
FCC 15.407:2013	ANSI C63.10:2009

Run #	16	**Line:**	High Line	**Ext. Attenuation:**	20	**Results**	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.150	28.8	20.4	49.2	66.0	-16.8
0.182	23.9	20.3	44.2	64.4	-20.2
0.621	14.3	20.3	34.6	56.0	-21.4
0.187	21.6	20.3	41.9	64.2	-22.2
1.320	12.8	20.4	33.2	56.0	-22.8
0.164	22.1	20.3	42.4	65.3	-22.8
0.985	12.6	20.3	32.9	56.0	-23.1
3.240	12.1	20.5	32.6	56.0	-23.4
0.874	12.0	20.3	32.3	56.0	-23.7
2.312	11.7	20.5	32.2	56.0	-23.8
3.040	11.5	20.5	32.0	56.0	-24.0
3.384	11.4	20.6	32.0	56.0	-24.0
3.824	11.3	20.6	31.9	56.0	-24.1
0.203	19.1	20.3	39.4	63.5	-24.1
1.400	11.4	20.4	31.8	56.0	-24.2
2.544	11.3	20.5	31.8	56.0	-24.2
2.144	11.3	20.4	31.7	56.0	-24.3
1.952	11.3	20.4	31.7	56.0	-24.3
1.152	11.3	20.4	31.7	56.0	-24.3
1.704	11.2	20.4	31.6	56.0	-24.4

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.150	28.8	20.4	49.2	56.0	-6.8
0.182	23.9	20.3	44.2	54.4	-10.2
0.621	14.3	20.3	34.6	46.0	-11.4
0.187	21.6	20.3	41.9	54.2	-12.2
1.320	12.8	20.4	33.2	46.0	-12.8
0.164	22.1	20.3	42.4	55.3	-12.8
0.985	12.6	20.3	32.9	46.0	-13.1
3.240	12.1	20.5	32.6	46.0	-13.4
0.874	12.0	20.3	32.3	46.0	-13.7
2.312	11.7	20.5	32.2	46.0	-13.8
3.040	11.5	20.5	32.0	46.0	-14.0
3.384	11.4	20.6	32.0	46.0	-14.0
3.824	11.3	20.6	31.9	46.0	-14.1
0.203	19.1	20.3	39.4	53.5	-14.1
1.400	11.4	20.4	31.8	46.0	-14.2
2.544	11.3	20.5	31.8	46.0	-14.2
2.144	11.3	20.4	31.7	46.0	-14.3
1.952	11.3	20.4	31.7	46.0	-14.3
1.152	11.3	20.4	31.7	46.0	-14.3
1.704	11.2	20.4	31.6	46.0	-14.4