

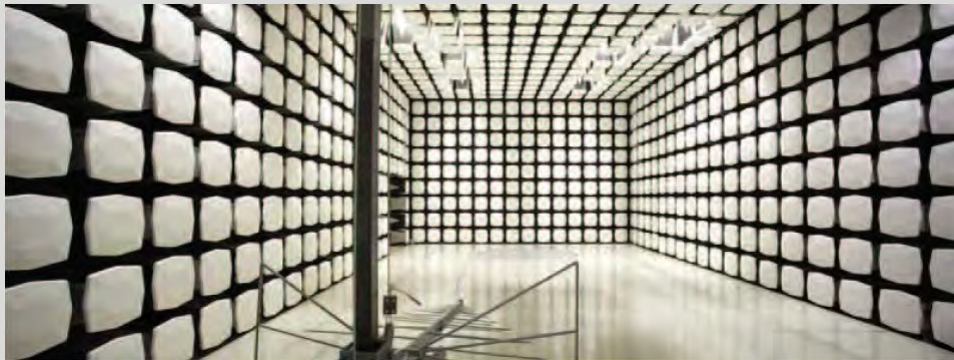


## **KMW Communications**

**AWS RRH**

**FCC 27L:2014**

**Report #: KMWC0048 Rev. 1**



Report Prepared By Northwest EMC Inc.

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

California – Minnesota – Oregon – New York – Washington

**Last Date of Test: January 14, 2014**  
**KMW Communications**  
**Model: AWS RRH**

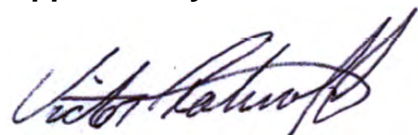
## Emissions

Test Description	Specification	Test Method	Pass/Fail
Conducted Output Power	FCC 27L:2014 (FCC 2.1046)	ANSI/TIA/EIA-603-C-2004	Pass
Occupied Bandwidth	FCC 27L:2014 (FCC 2.1049)	ANSI/TIA/EIA-603-C-2004	Pass
Emissions Mask	FCC 27L:2014 (FCC 2.1049)	ANSI/TIA/EIA-603-C-2004	Pass
Spurious Emissions at the Antenna Terminals	FCC 27L:2014 (FCC 2.1051)	ANSI/TIA/EIA-603-C-2004	Pass
Field Strength of Spurious Emissions	FCC 27L:2014 (FCC 2.1053)	ANSI/TIA/EIA-603-C-2004	Pass
Frequency Stability	FCC 27L:2014 (FCC 2.1055)	ANSI/TIA/EIA-603-C-2004	Pass

## Deviations From Test Standards

None

**Approved By:**



Victor Ratinoff, Operations Manager



NVLAP Lab Code: 200676-0

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

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

Revision Number	Description	Date	Page Number
01	Configuration updated to change DC power cable to unshielded	3-11-2014	8

## Barometric Pressure

The recorded barometric pressure has been normalized to sea level.

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## United States

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

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

**NVLAP** - Each laboratory is accredited by NVLAP to ISO 17025

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## Canada

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

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## European Union

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

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## Australia/New Zealand

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

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## Korea

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

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## Japan

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

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## Taiwan

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

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

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## Singapore

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

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## Hong Kong

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

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## Vietnam

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

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## Russia

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

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## SCOPE

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

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

## Measurement Uncertainty

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

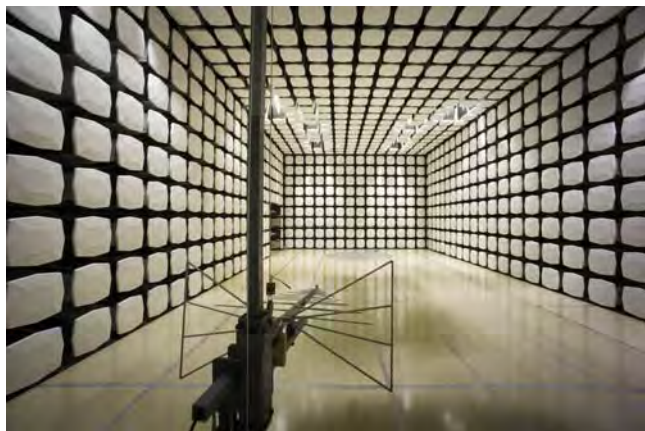
A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty (K=2) for each test is listed below. Our measurement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

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

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



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





## Client and Equipment Under Test (EUT) Information

<b>Company Name:</b>	KMW Communications
<b>Address:</b>	1818 E. Orangethorpe Ave
<b>City, State, Zip:</b>	Fullerton, CA 92831
<b>Test Requested By:</b>	Edward Lee
<b>Model:</b>	AWS RRH
<b>First Date of Test:</b>	January 13, 2014
<b>Last Date of Test:</b>	January 14, 2014
<b>Receipt Date of Samples:</b>	January 13, 2014
<b>Equipment Design Stage:</b>	Production
<b>Equipment Condition:</b>	No Damage

## Information Provided by the Party Requesting the Test

### Functional Description of the EUT (Equipment Under Test):

The KMW AWS RRH is a 60W LTE transceiver operating in the 2110 MHz - 2155 MHz AWS band and supporting 5 MHz, 10 MHz, 15 MHz, and 20 MHz channel bandwidths.

### Testing Objective:

To demonstrate compliance to FCC Part 27 requirements.

## Configuration KMWC0048- 1

Software/Firmware Running during test	
Description	Version
RRH 250 GUI	R21684M

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
AWS RRH	KMW Communications	AWS RRH	U365000113

Peripherals in test setup boundary			
Description	Manufacturer	Model/Part Number	Serial Number
Reliability Analyzer	KMW Communications	COBRA	NONE
Remote Laptop	Sony	SVS15113FXB	275546003000190
Power Sensor	Agilent	E9300A	MY41499318
Power Divider	None	None	None
Attenuator	Aeroflex	49-30-43	None
Attenuator	Fairview	SA3N5W-20	None
DC Power Supply	HP	6574A	US36340150

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
RF Cable1	Yes	3.0m	No	AWS RRH	Attenuator
RF Cable2	Yes	3.0m	No	AWS RRH	Attenuator
Lan Cable	No	1.8m	No	Reliability Analyzer	Remote Laptop
Optic Cable	No	5.0m	No	Cobra	AWS RRH
DC Power Cable	No	5.0m	No	AWS RRH	DC Power Supply
AC Cable	No	1.8m	No	Reliability Analyzer	AC Mains
AC Cable	No	1.8m	No	Power Meter	AC Mains
TX Monitor Cable (x2)	No	3.0m	No	TX Monitor Port	Unterminated
RX Monitor Cable (x4)	No	3.0m	No	RX Monitor Port	Unterminated
AISG Cable	No	10.0m	No	AISG Port	Unterminated
ALM Cable	No	10.0m	No	ALM Port	Unterminated
RX Cable (x2)	No	3.0m	No	RX Port	Unterminated

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



## Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	01/13/2014	Conducted Output Power	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
2	01/13/2014	Occupied Bandwidth	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
3	01/13/2014	Emissions Mask	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	01/13/2014	Spurious Emissions at the Antenna Terminals	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	01/13/2014	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.
6	01/14/2014	Field Strength of Spurious Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

## CONDUCTED OUTPUT POWER


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

### TEST EQUIPMENT

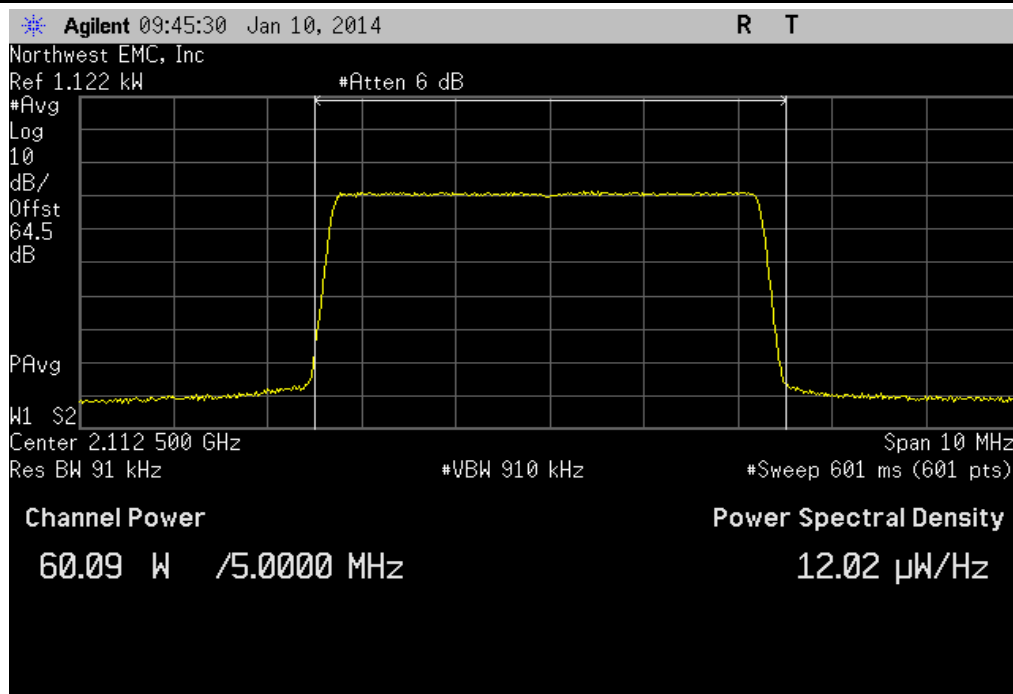
Description	Manufacturer	Model	ID	Last Cal.	Interval
Signal Generator	Agilent	E8257D	TGU	2/1/2012	36
Power Sensor	Agilent	E4412A	SQE	4/11/2012	24
Power Meter	Hewlett Packard	E4418A	SPA	4/11/2012	24
Spectrum Analyzer	Agilent	E4440A	AFA	6/15/2012	24

### TEST DESCRIPTION

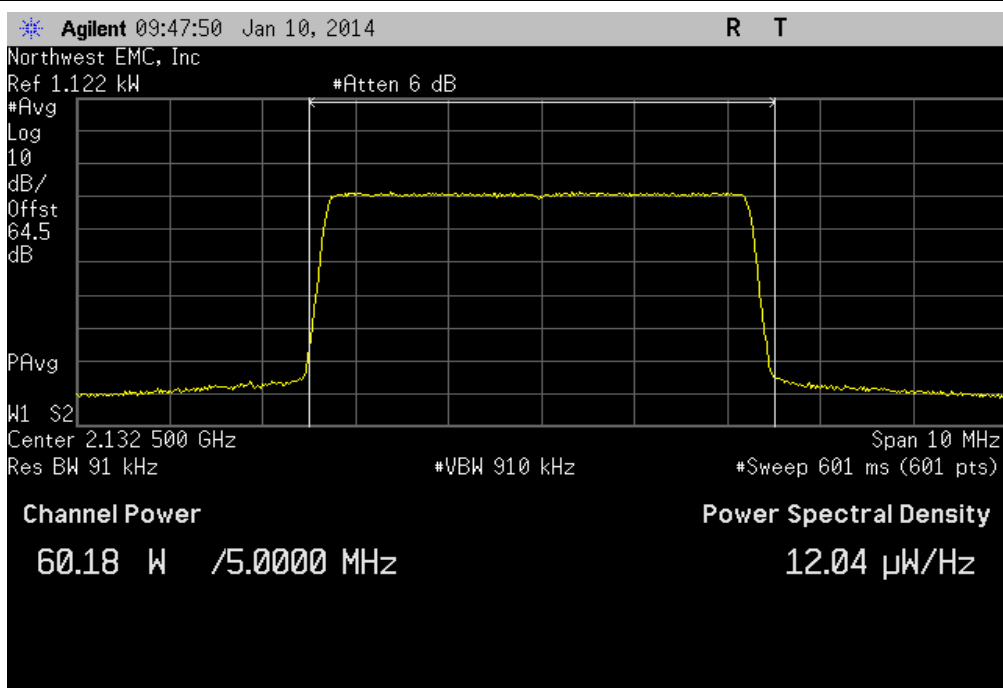
The peak output power was measured with the EUT set to low, medium and high transmit frequencies. The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. Prior to making the measurements, the setup and attenuator was calibrated using a signal generator and a power meter. Measurements were taken with RMS average detector and the Channel Power function on the analyzer.

EUT: AWS RRH		Work Order: KMWC0048	
Serial Number: U365000113		Date: 01/13/14	
Customer: KMW Communications		Temperature: 23.4°C	
Attendees: Edward Lee		Humidity: 42%	
Project: None		Barometric Pres.: 1012	
Tested by: Jaemi Suh		Job Site: OC10	
Power: 48VDC			
TEST SPECIFICATIONS		Test Method	
FCC 27L:2014		ANSI/TIA/EIA-603-C-2004	
COMMENTS			
Power Level Settings: 60W. Reference level offset: 30dB Attenuator + 20 dB Attenuator + 10dB Attenuator + Power Divider (3dB) + Cable Loss (1.5dB) = 64.5dB. Limit is determined at the time of licensing. Limit of 1640 W EIRP takes into account of the antenna structure at the time of installation.			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	1	Signature 	
		Measured Power (W)	Limit
Port A			Result
LTE 5M			
Low Channel, 2112.5 MHz	60.09	See Comments	Pass
Mid Channel, 2132.5 MHz	60.18	See Comments	Pass
High Channel, 2152.5 MHz	60.33	See Comments	Pass
Multi Channel, 4FA, 2112.5, 2122.5, 2132.5, 2152.5 MHz	60.41	See Comments	Pass
LTE 10M			
Low Channel, 2115 MHz	60.38	See Comments	Pass
Mid Channel, 2132.5 MHz	60.27	See Comments	Pass
High Channel, 2150 MHz	60.73	See Comments	Pass
Multi Channel, 4FA, 2115, 2125, 2135, 2150 MHz	60.98	See Comments	Pass
LTE 15M			
Low Channel, 2117.5 MHz	60.3	See Comments	Pass
Mid Channel, 2132.5 MHz	60.7	See Comments	Pass
High Channel, 2147.5 MHz	60.66	See Comments	Pass
Multi Channel, 2FA, 2117.5, 2147.5 MHz	60.8	See Comments	Pass
LTE 20M			
Low Channel, 2120 MHz	60.58	See Comments	Pass
Mid Channel, 2132.5 MHz	60.54	See Comments	Pass
High Channel, 2145 MHz	60.68	See Comments	Pass
Multi Channel, 2FA, 2120, 2145 MHz	60.41	See Comments	Pass
Port B			
LTE 5M			
Low Channel, 2112.5 MHz	60.69	See Comments	Pass
Mid Channel, 2132.5 MHz	60.21	See Comments	Pass
High Channel, 2152.5 MHz	61.8	See Comments	Pass
Multi Channel, 4FA, 2112.5, 2122.5, 2132.5, 2152.5 MHz	60.39	See Comments	Pass
LTE 10M			
Low Channel, 2115 MHz	60.34	See Comments	Pass
Mid Channel, 2132.5 MHz	61.17	See Comments	Pass
High Channel, 2150 MHz	60.95	See Comments	Pass
Multi Channel, 4FA, 2115, 2125, 2135, 2150 MHz	60.11	See Comments	Pass
LTE 15M			
Low Channel, 2117.5 MHz	60.43	See Comments	Pass
Mid Channel, 2132.5 MHz	60.4	See Comments	Pass
High Channel, 2147.5 MHz	60.6	See Comments	Pass
Multi Channel, 2FA, 2117.5, 2147.5 MHz	60.19	See Comments	Pass
LTE 20M			
Low Channel, 2120 MHz	60.51	See Comments	Pass
Mid Channel, 2132.5 MHz	60.75	See Comments	Pass
High Channel, 2145 MHz	60.34	See Comments	Pass
Multi Channel, 2FA, 2120, 2145 MHz	60	See Comments	Pass

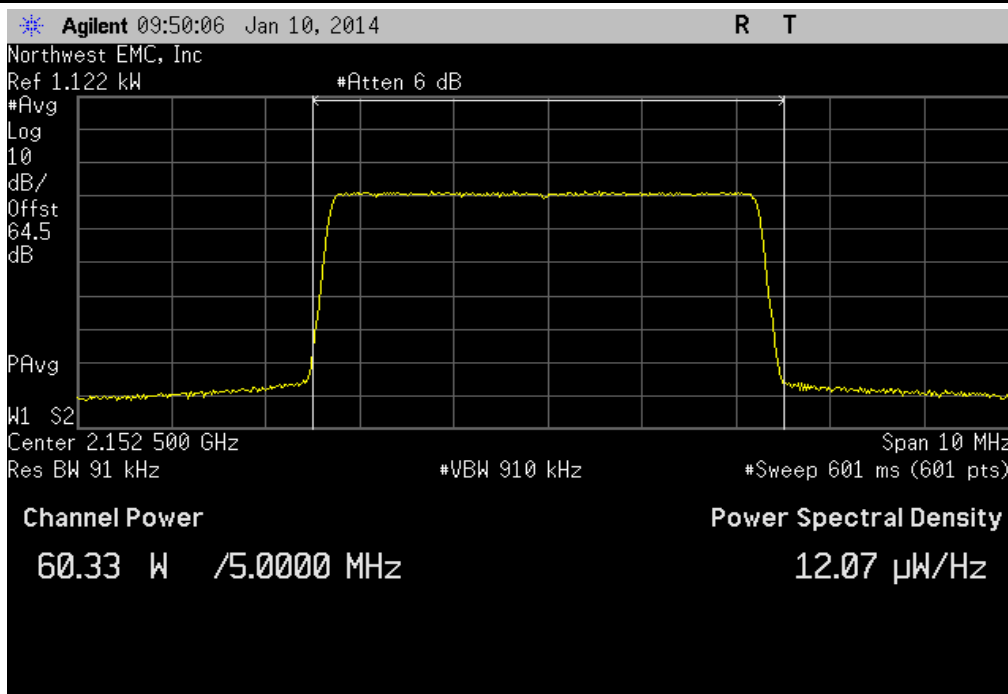
Port A, LTE 5M, Low Channel							
				Measured Power (WATTS)	Limit	Result	
				60.09	See Comments	Pass	



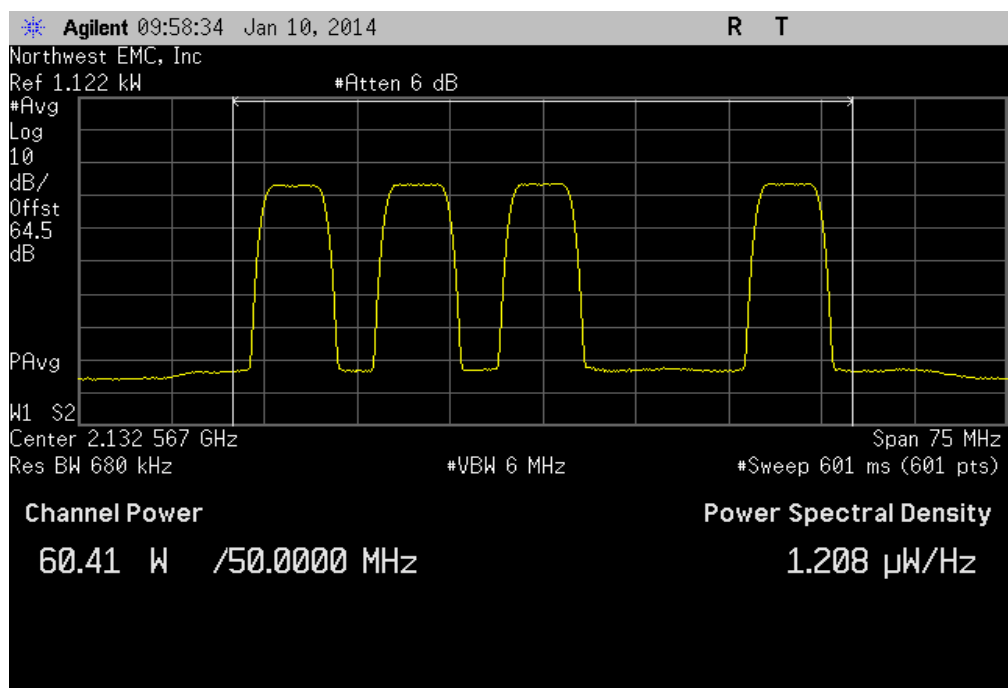
Port A, LTE 5M, Mid Channel							
				Measured Power (W)	Limit	Result	
				60.18	See Comments	Pass	



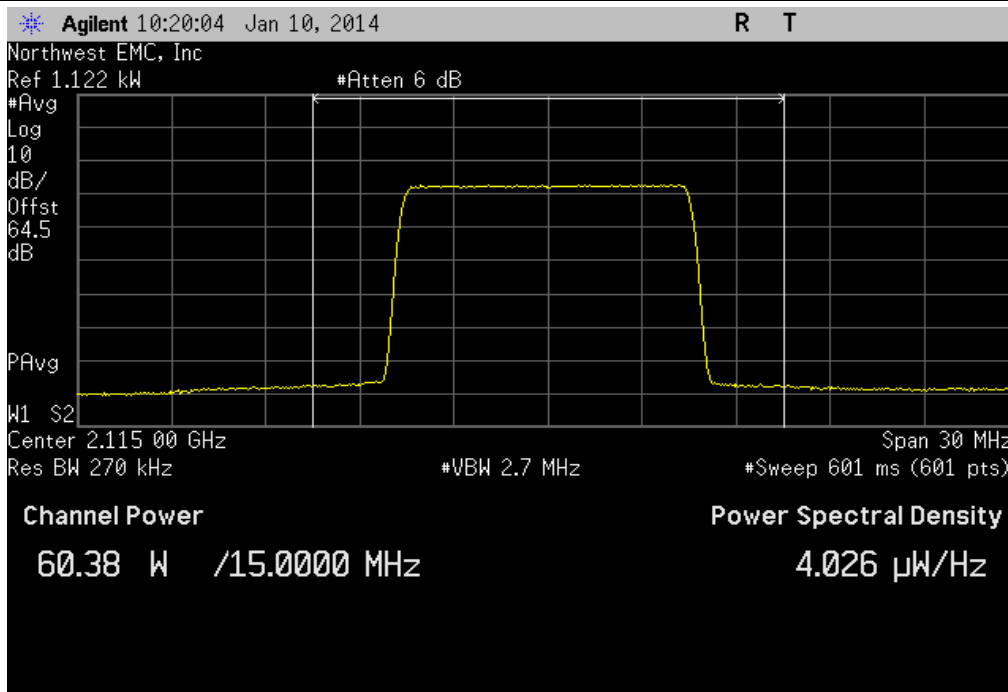
Port A, LTE 5M, High Channel							
Measured Power					Limit	Result	
(W)							
					60.33	See Comments	Pass



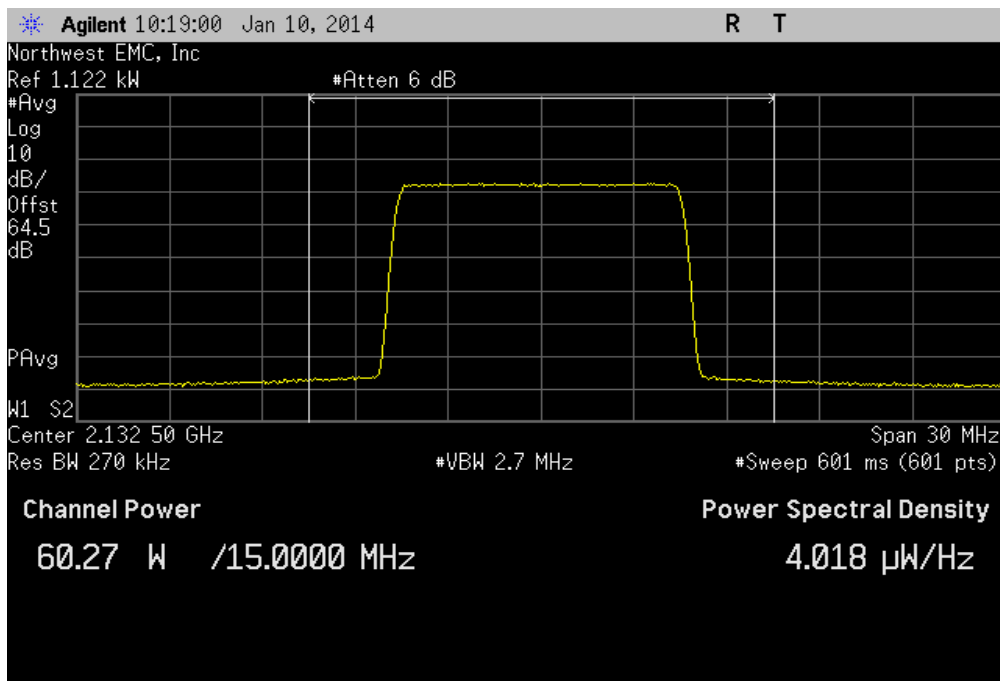
Port A, LTE 5M, Multi Channel							
Measured Power					Limit	Result	
(W)							
					60.41	See Comments	Pass



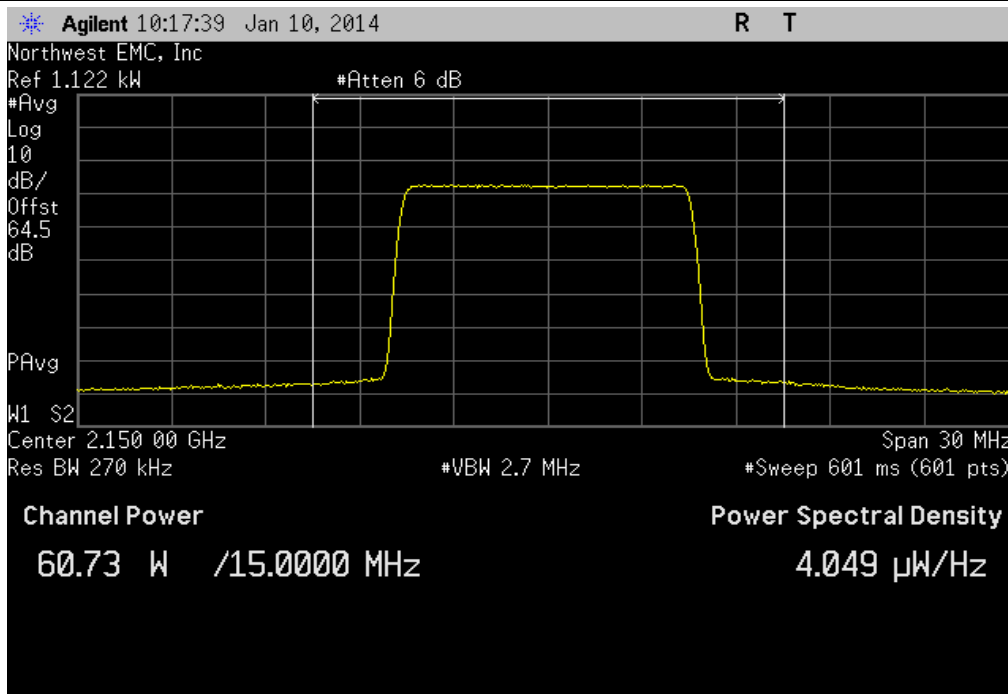
Port A, LTE 10M, Low Channel							
				Measured Power (W)	Limit	Result	
				60.38	See Comments	Pass	



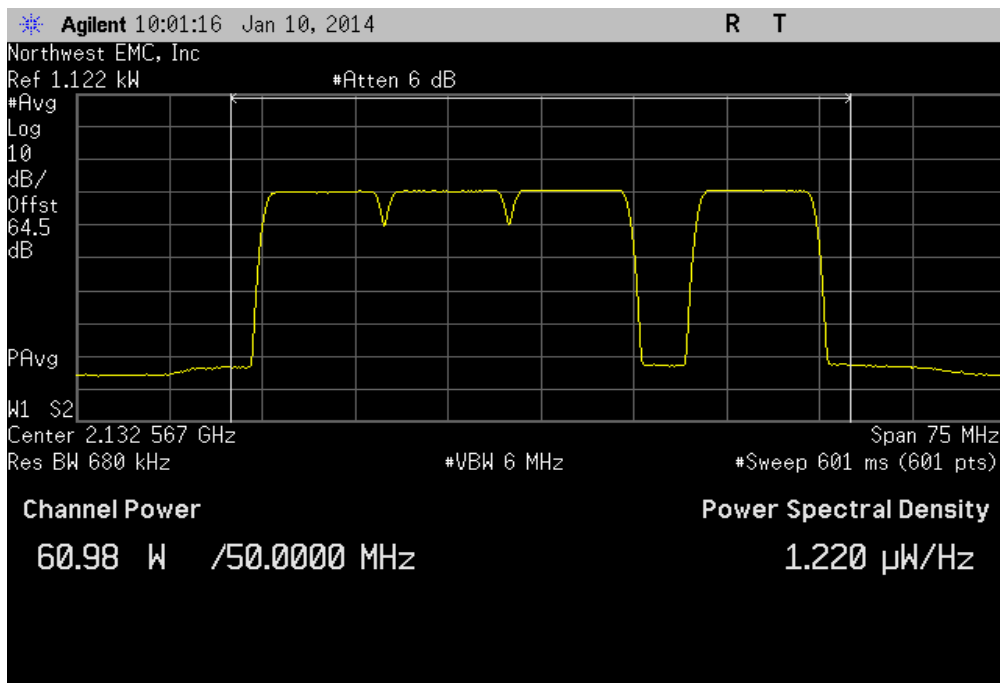
Port A, LTE 10M, Mid Channel							
				Measured Power (W)	Limit	Result	
				60.27	See Comments	Pass	



Port A, LTE 10M, High Channel							
				Measured Power (W)	Limit	Result	
				60.73	See Comments	Pass	

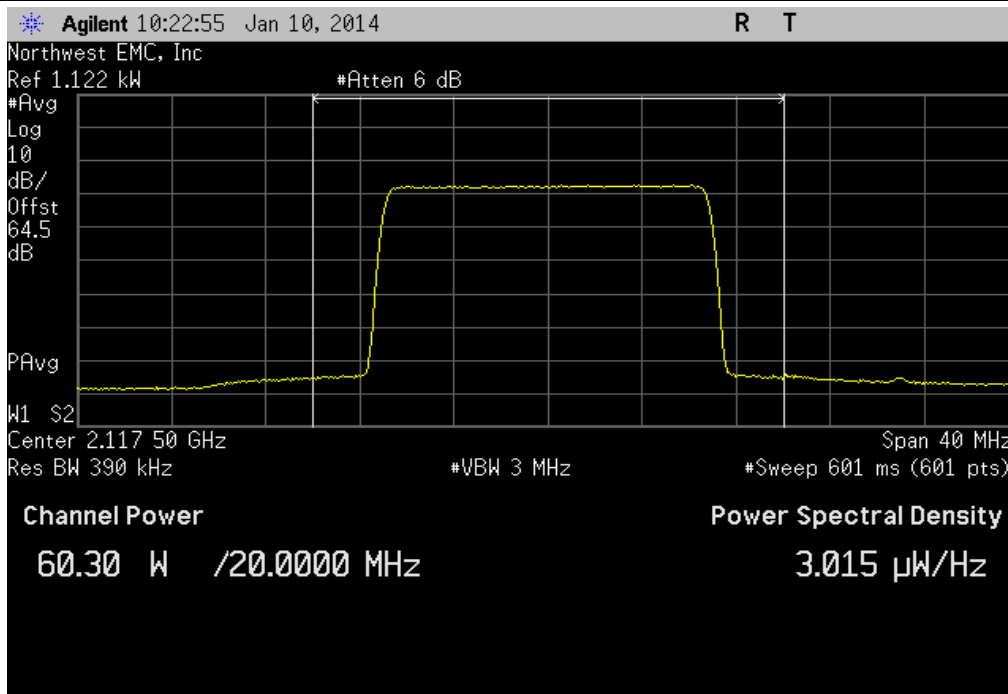


Port A, LTE 10M, Multi Channel							
				Measured Power (W)	Limit	Result	
				60.98	See Comments	Pass	

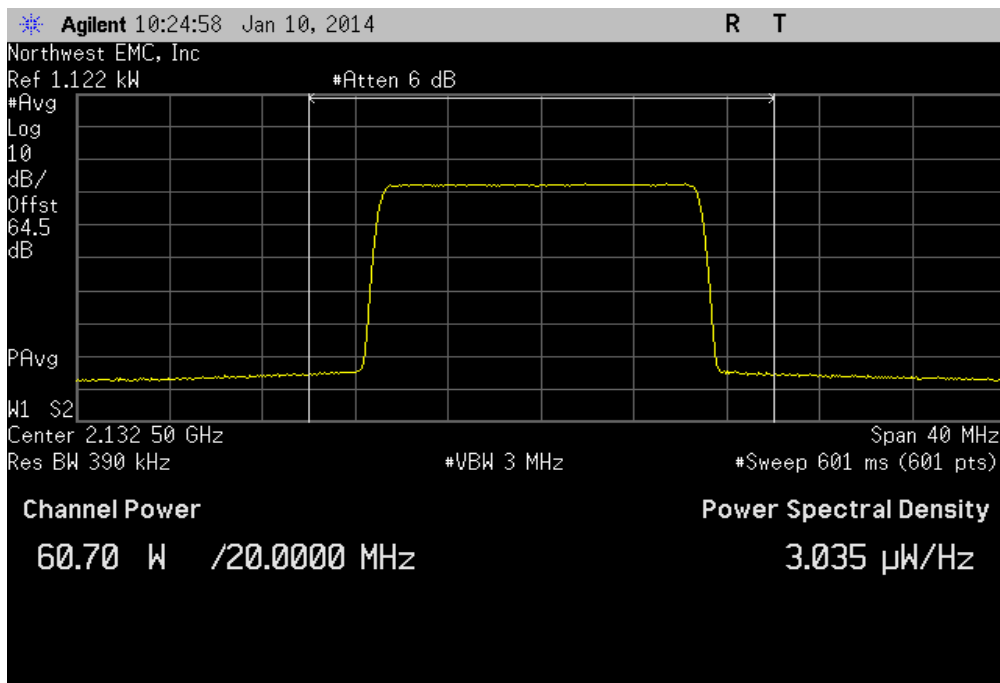




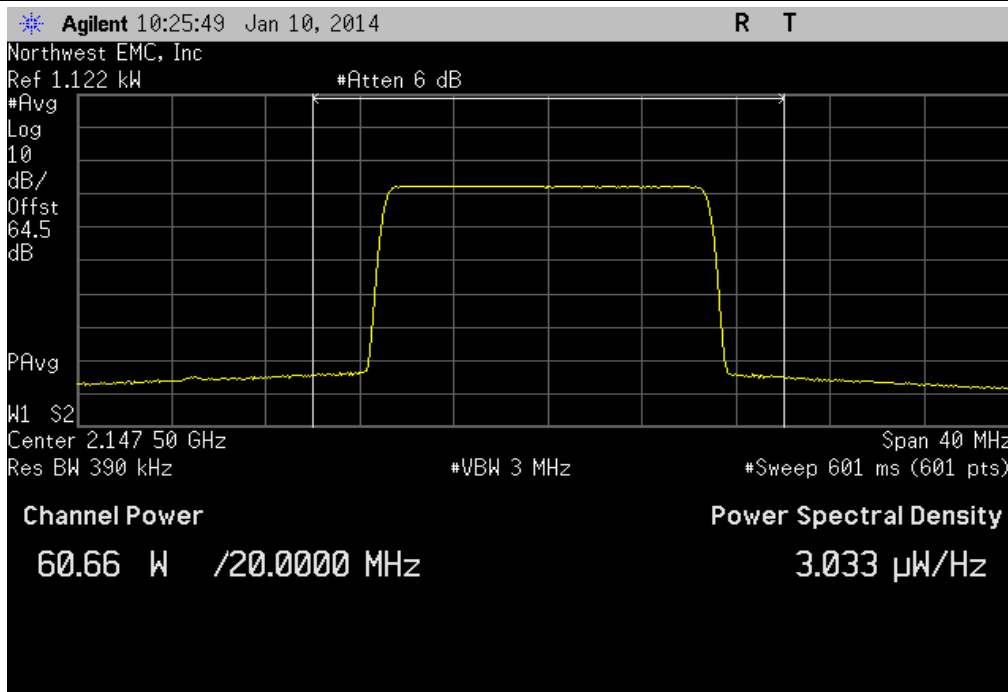
Port A, LTE 15M, Low Channel							
				Measured Power (W)	Limit	Result	
				60.3	See Comments	Pass	



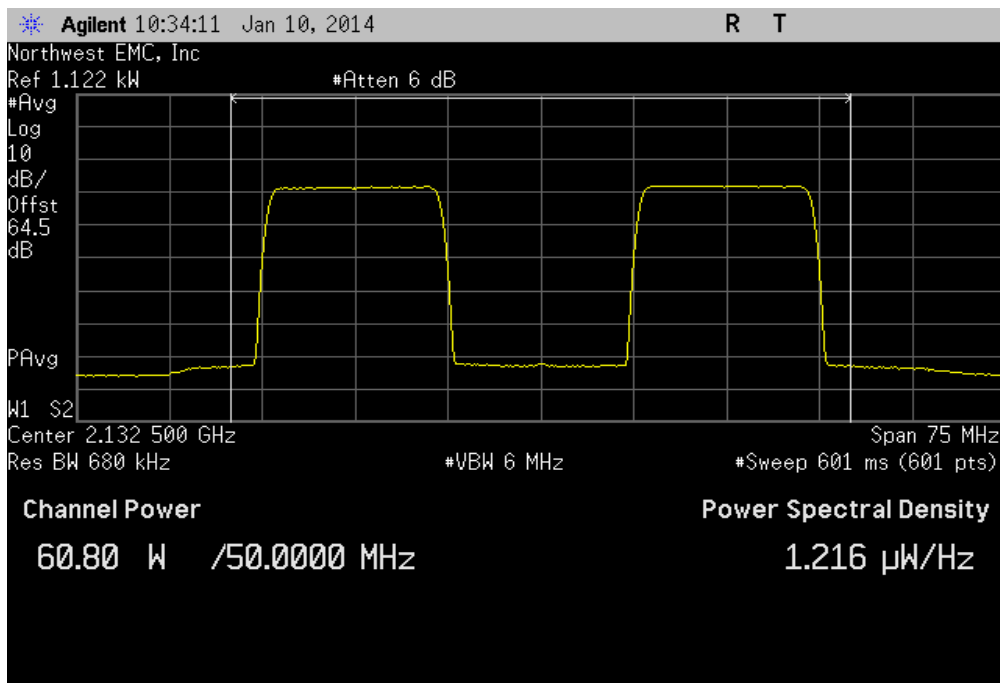
Port A, LTE 15M, Mid Channel							
				Measured Power (W)	Limit	Result	
				60.7	See Comments	Pass	



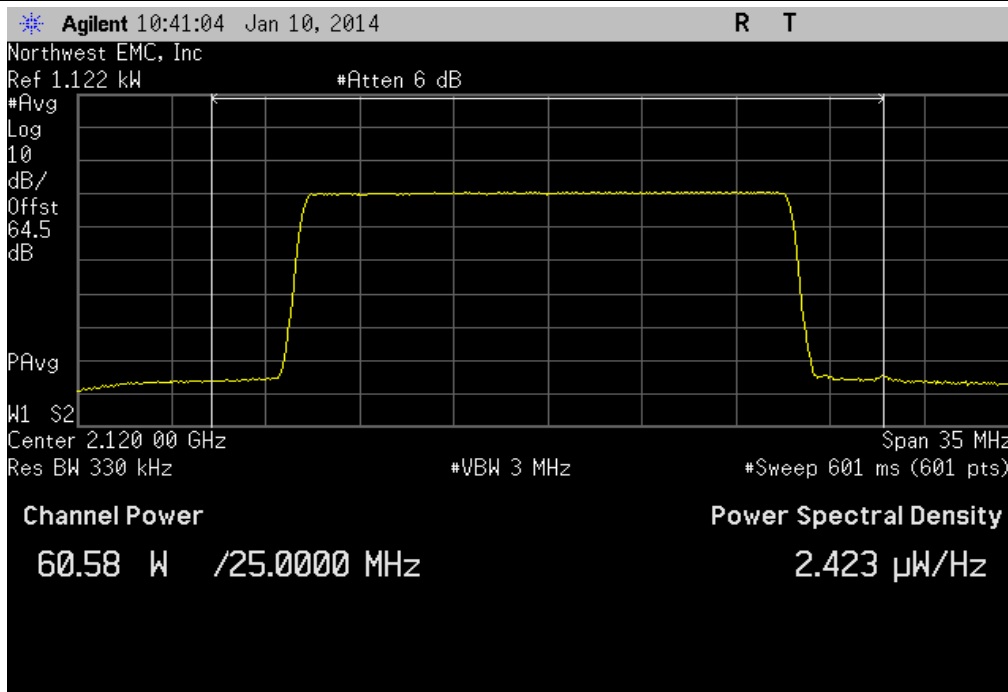
Port A, LTE 15M, High Channel							
				Measured Power (W)	Limit	Result	
				60.66	See Comments	Pass	



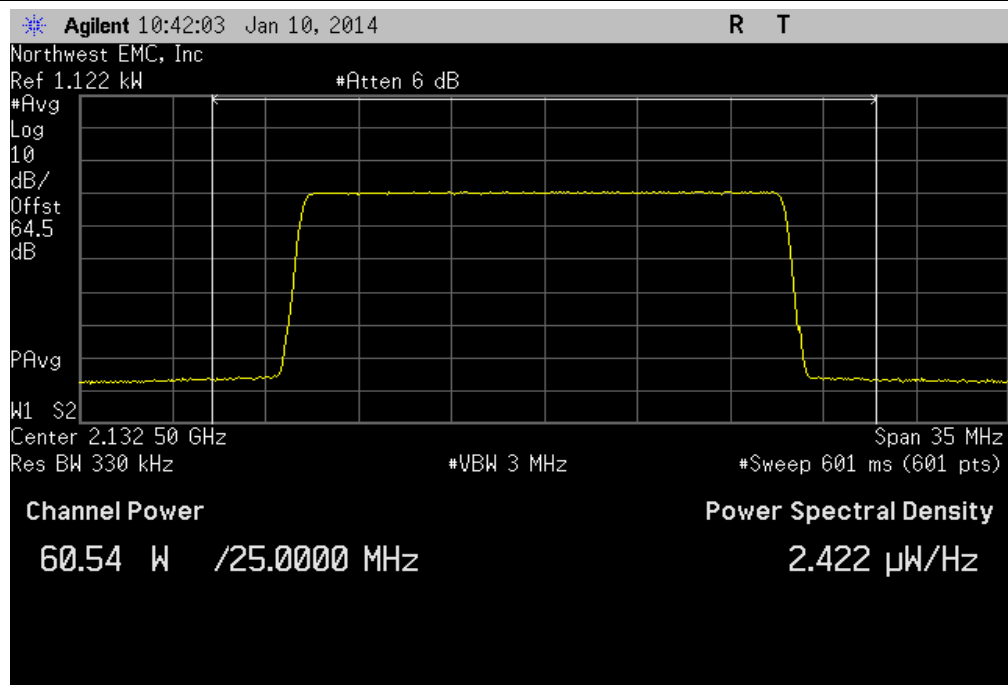
Port A, LTE 15M, Multi Channel							
				Measured Power (W)	Limit	Result	
				60.8	See Comments	Pass	



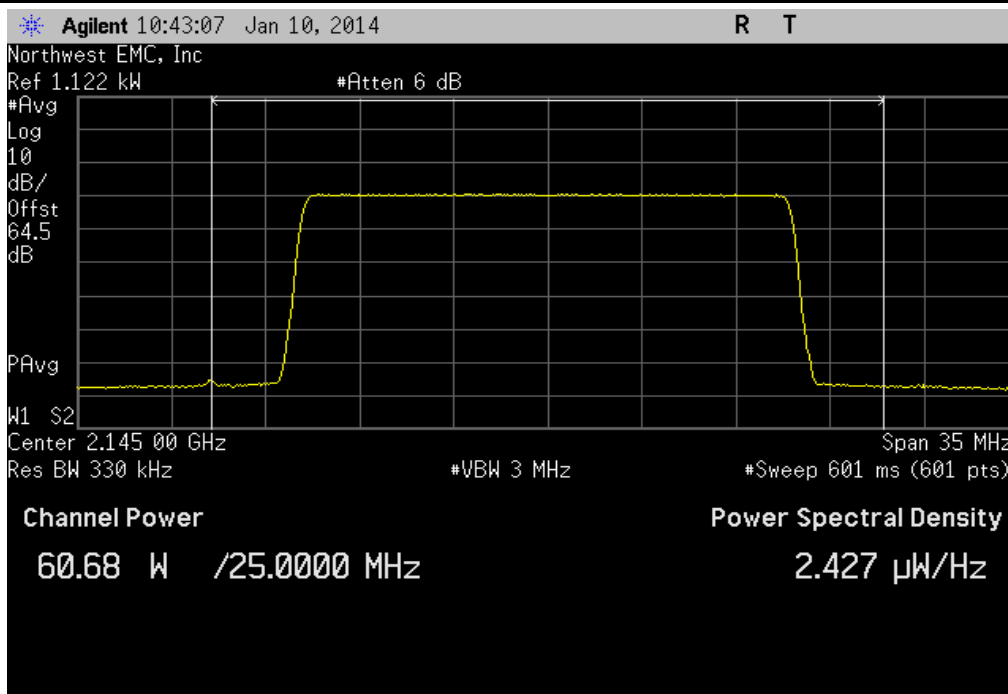
Port A, LTE 20M, Low Channel							
				Measured Power (W)	Limit	Result	
				60.58	See Comments	Pass	



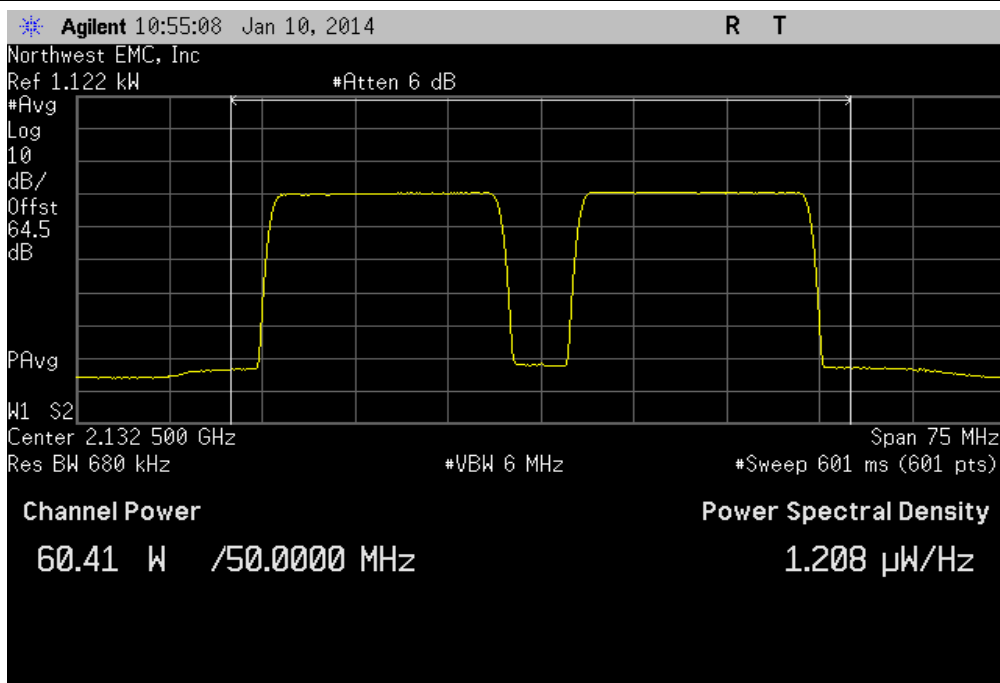
Port A, LTE 20M, Mid Channel							
				Measured Power (W)	Limit	Result	
				60.54	See Comments	Pass	



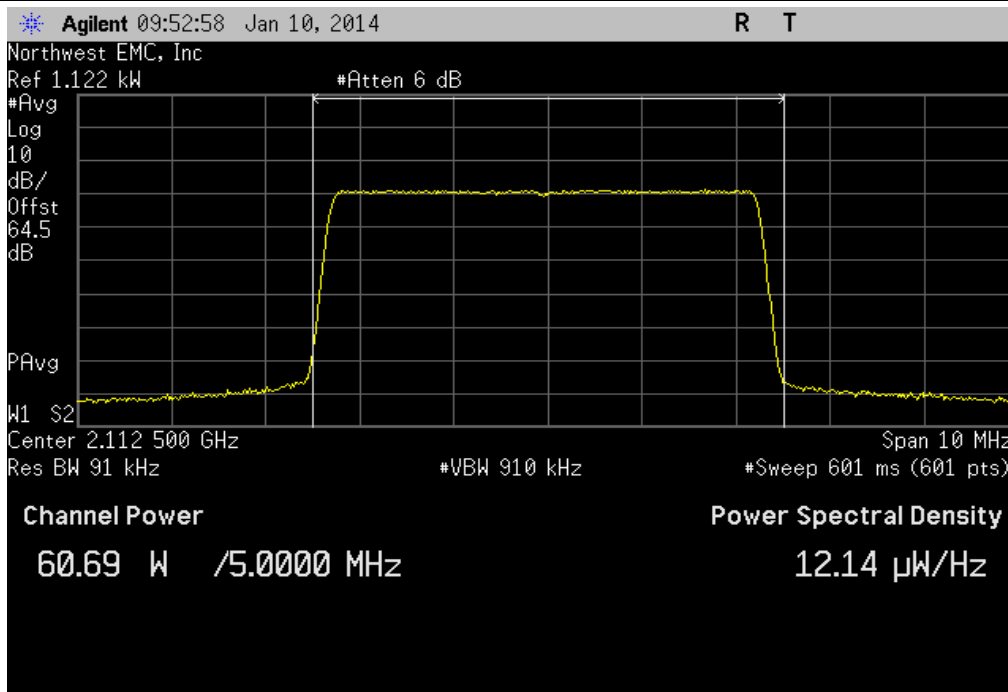
Port A, LTE 20M, High Channel							
Measured Power				Limit		Result	
(W)							
			60.68	See Comments		Pass	



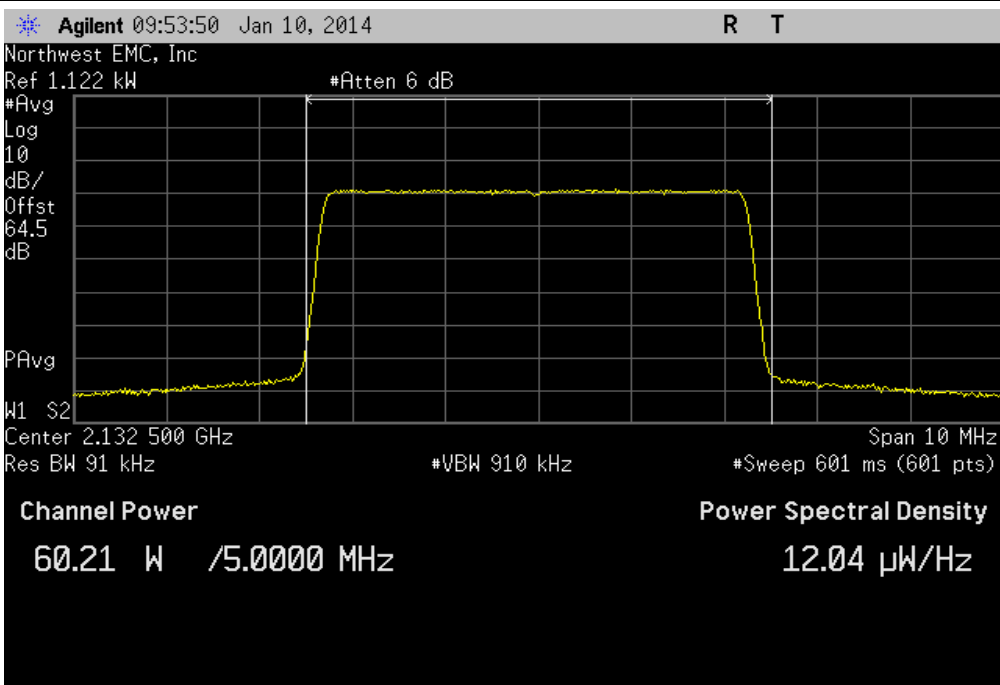
Port A, LTE 20M, Multi Channel							
Measured Power				Limit		Result	
(W)							
			60.41	See Comments		Pass	



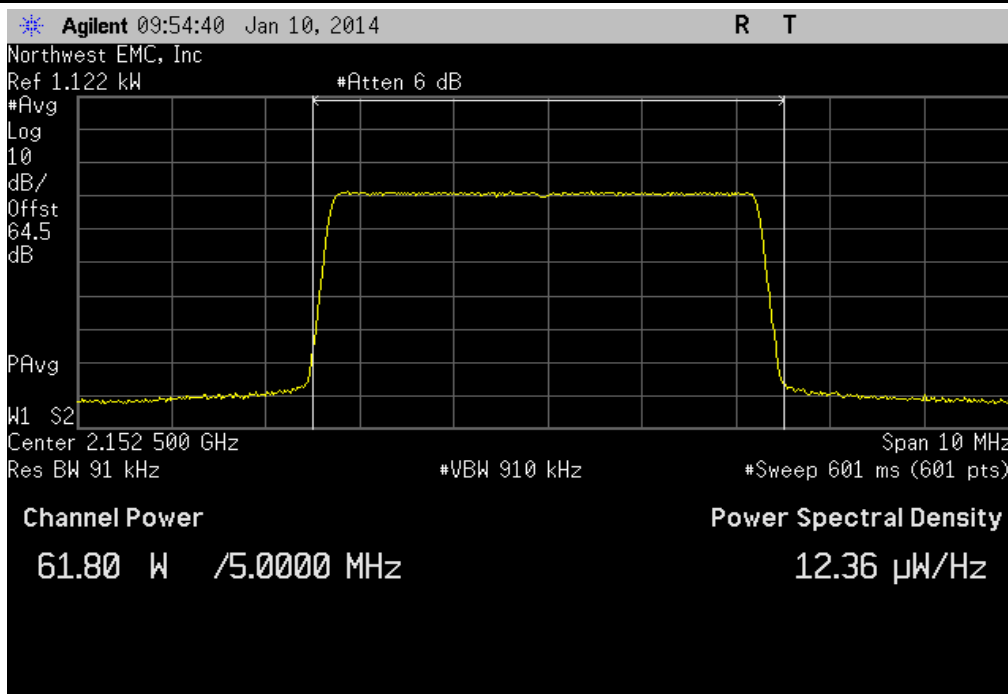
Port B, LTE 5M, Low Channel							
Measured Power					Limit	Result	
(W)							
					60.69	See Comments	Pass



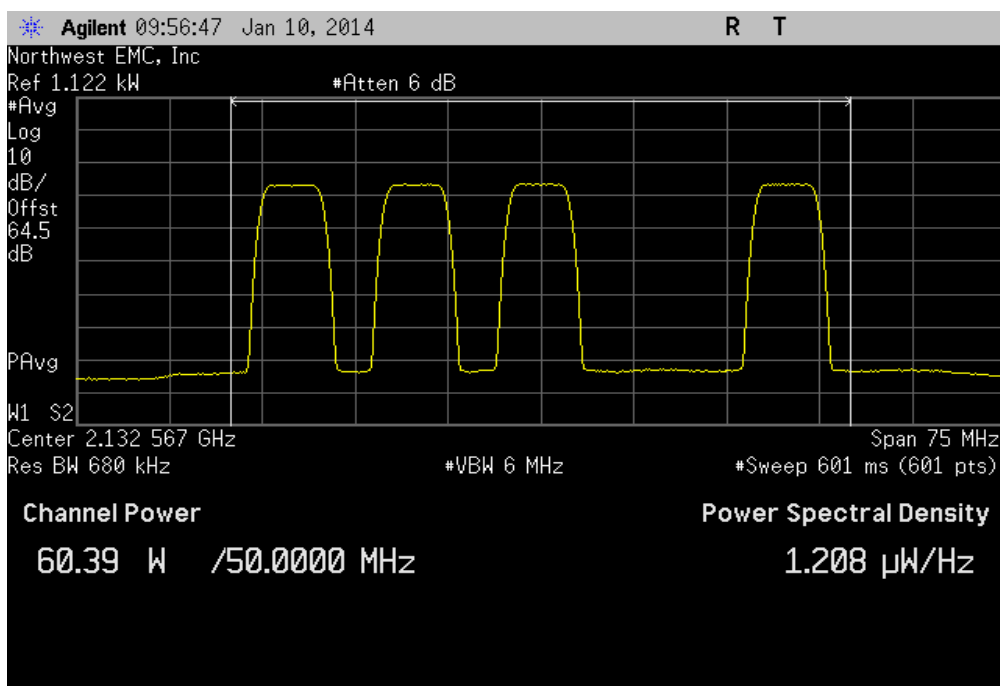
Port B, LTE 5M, Mid Channel							
Measured Power					Limit	Result	
(W)							
					60.21	See Comments	Pass



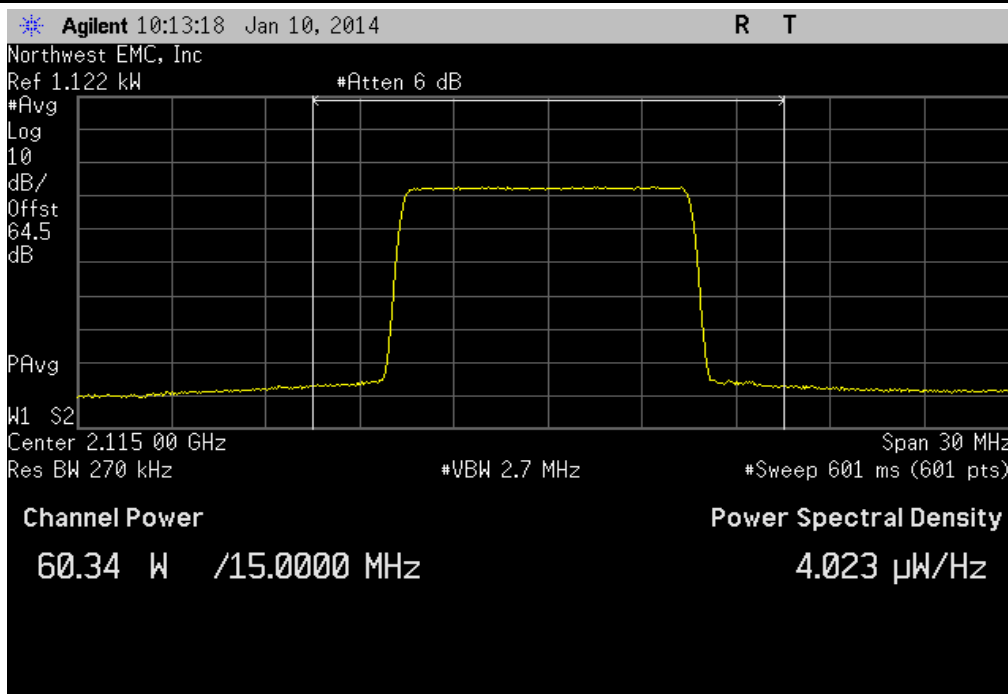
Port B, LTE 5M, High Channel							
				Measured Power (W)	Limit	Result	
				61.8	See Comments	Pass	



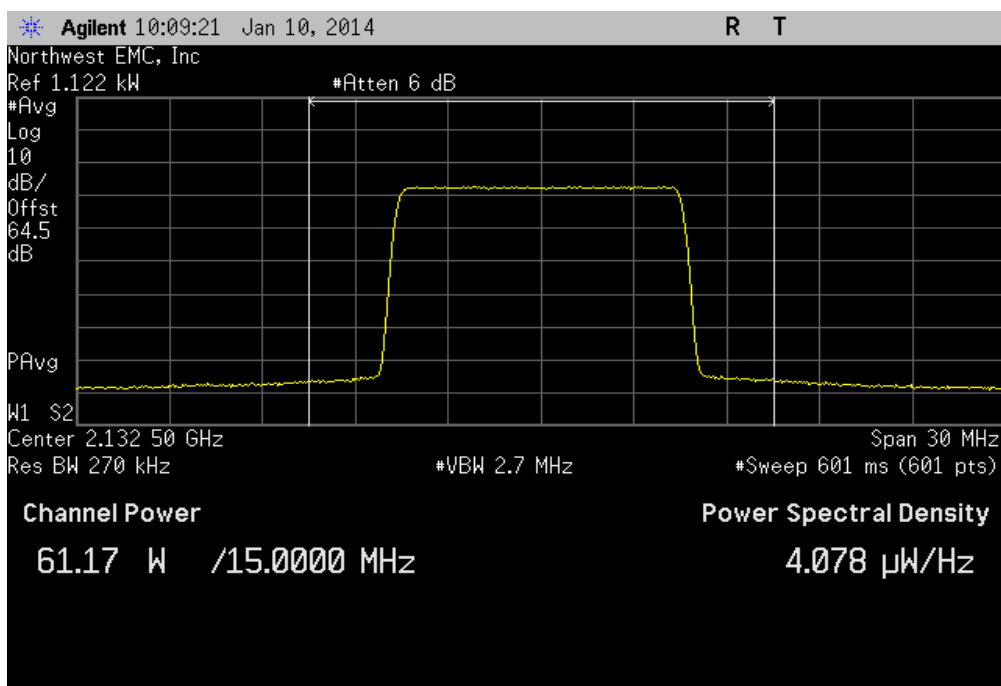
Port B, LTE 5M, Multi Channel							
				Measured Power (W)	Limit	Result	
				60.39	See Comments	Pass	



Port B, LTE 10M, Low Channel							
Measured Power					Limit	Result	
(W)							
					60.34	See Comments	Pass

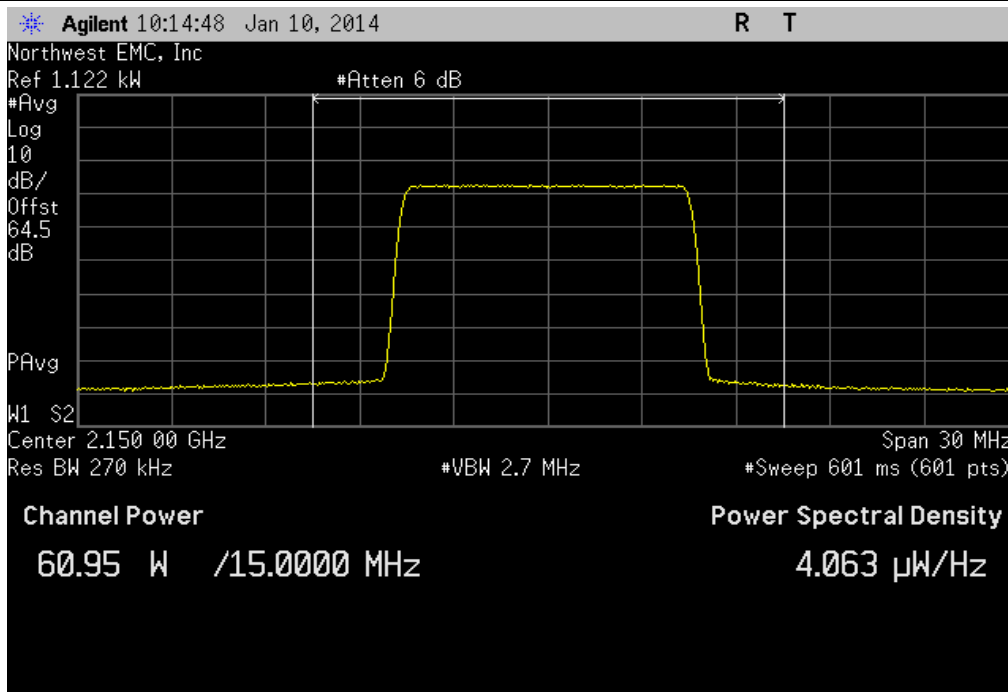


Port B, LTE 10M, Mid Channel							
Measured Power					Limit	Result	
(W)							
					61.17	See Comments	Pass

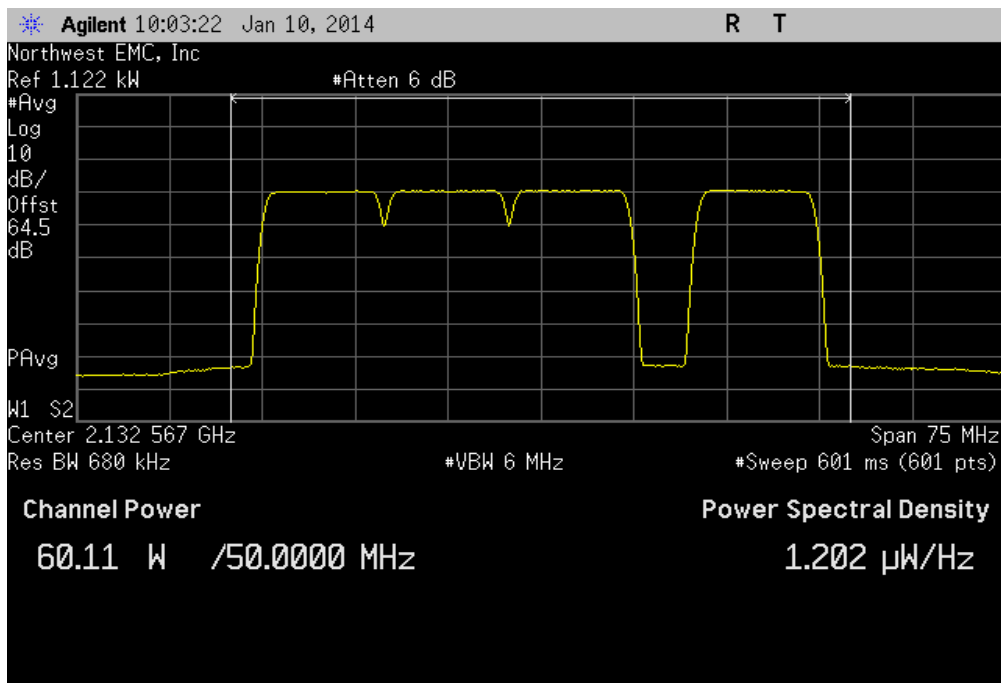




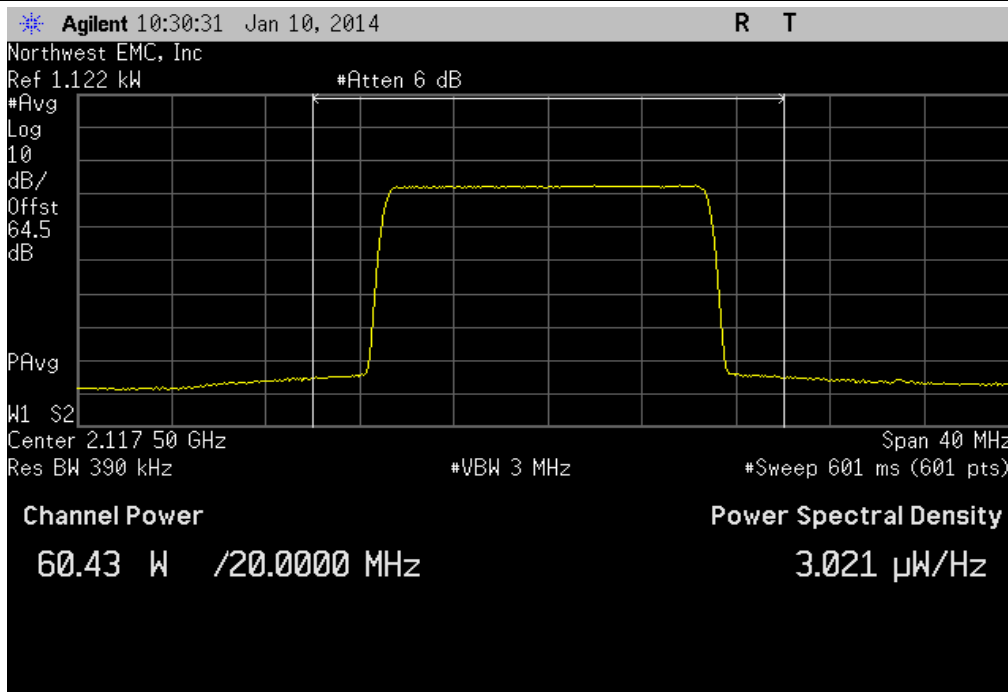
Port B, LTE 10M, High Channel							
Measured Power				Limit		Result	
(W)							
			60.95	See Comments		Pass	



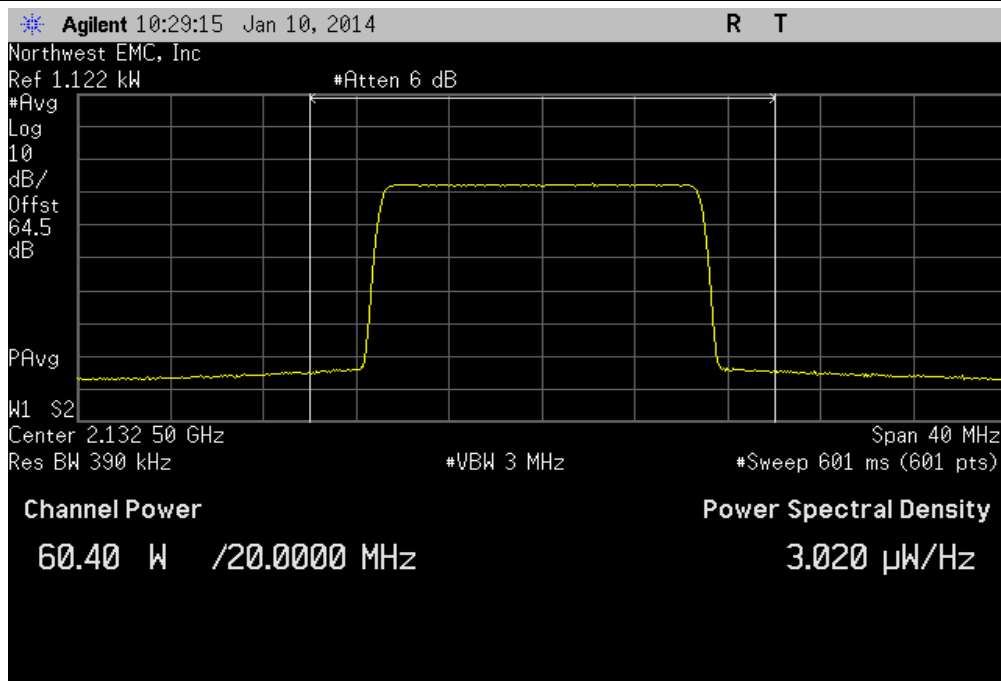
Port B, LTE 10M, Multi Channel							
Measured Power				Limit		Result	
(W)							
			60.11	See Comments		Pass	



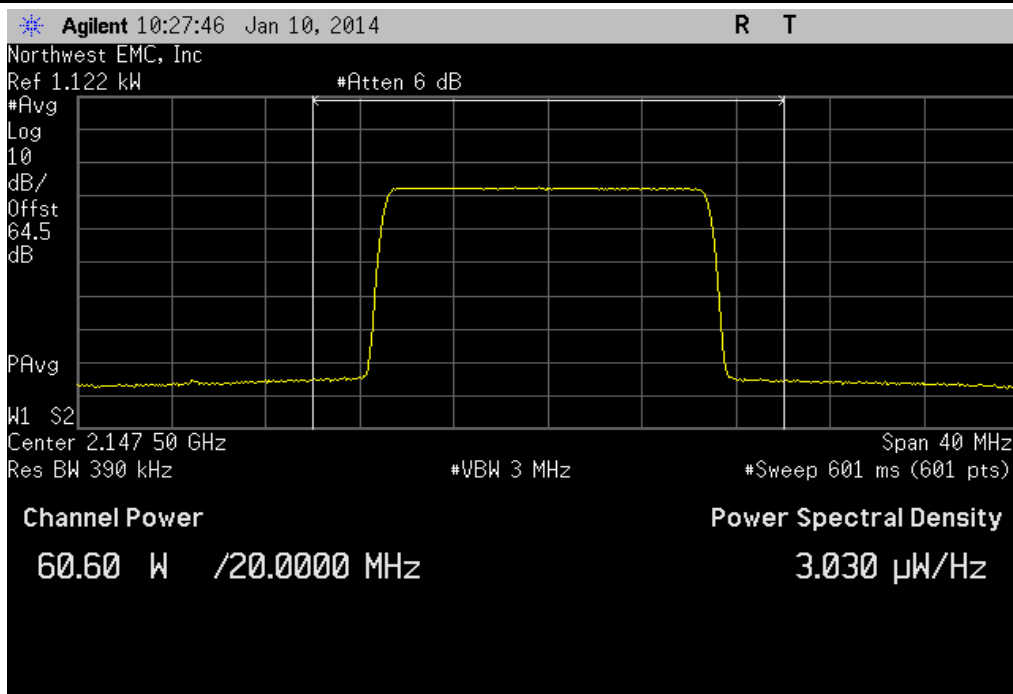
Port B, LTE 15M, Low Channel							
				Measured Power (W)	Limit	Result	
				60.43	See Comments	Pass	



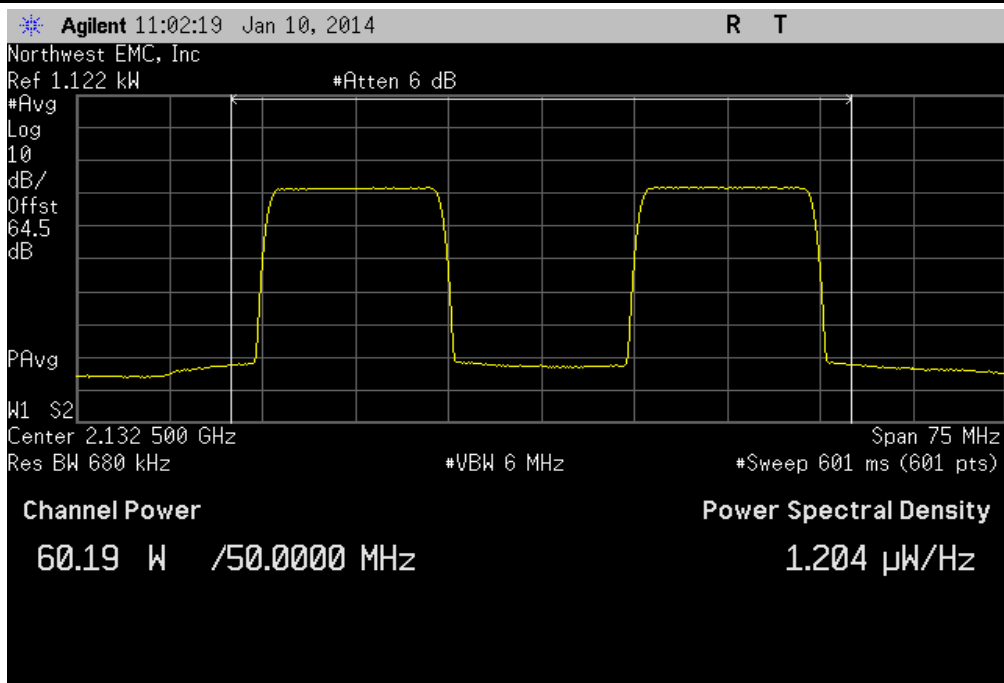
Port B, LTE 15M, Mid Channel							
				Measured Power (W)	Limit	Result	
				60.4	See Comments	Pass	



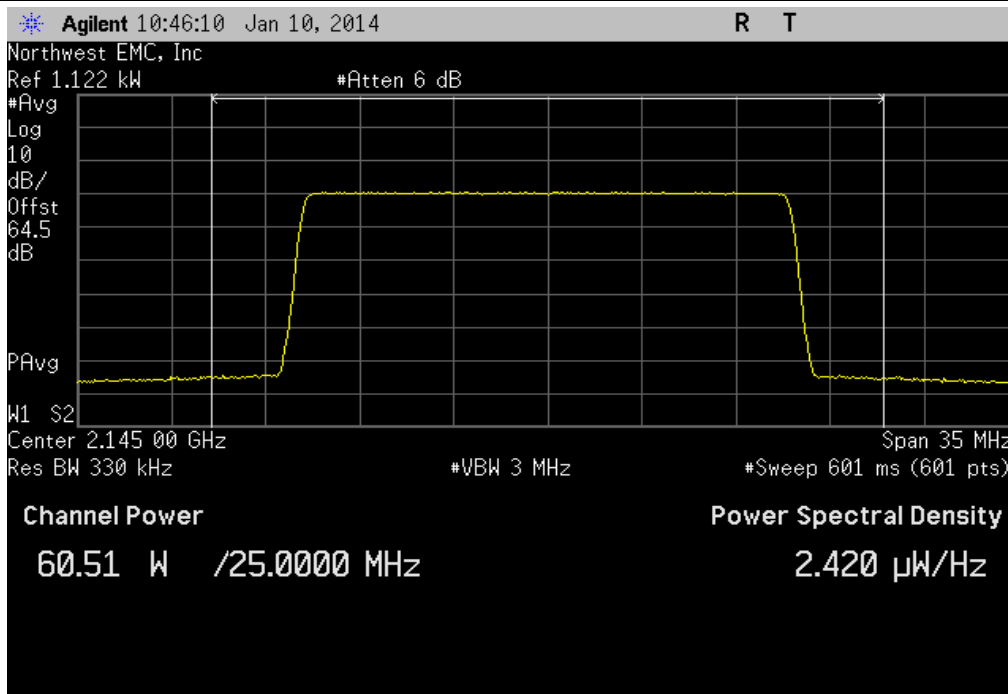
Port B, LTE 15M, High Channel							
				Measured Power (W)	Limit	Result	
				60.6	See Comments	Pass	



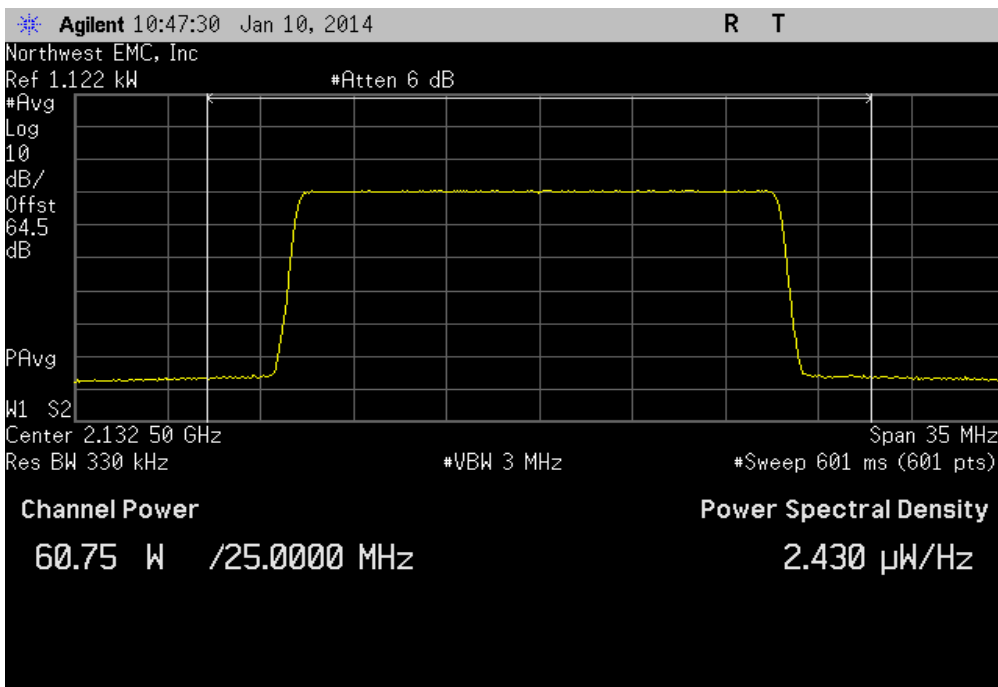
Port B, LTE 15M, Multi Channel							
				Measured Power (W)	Limit	Result	
				60.19	See Comments	Pass	



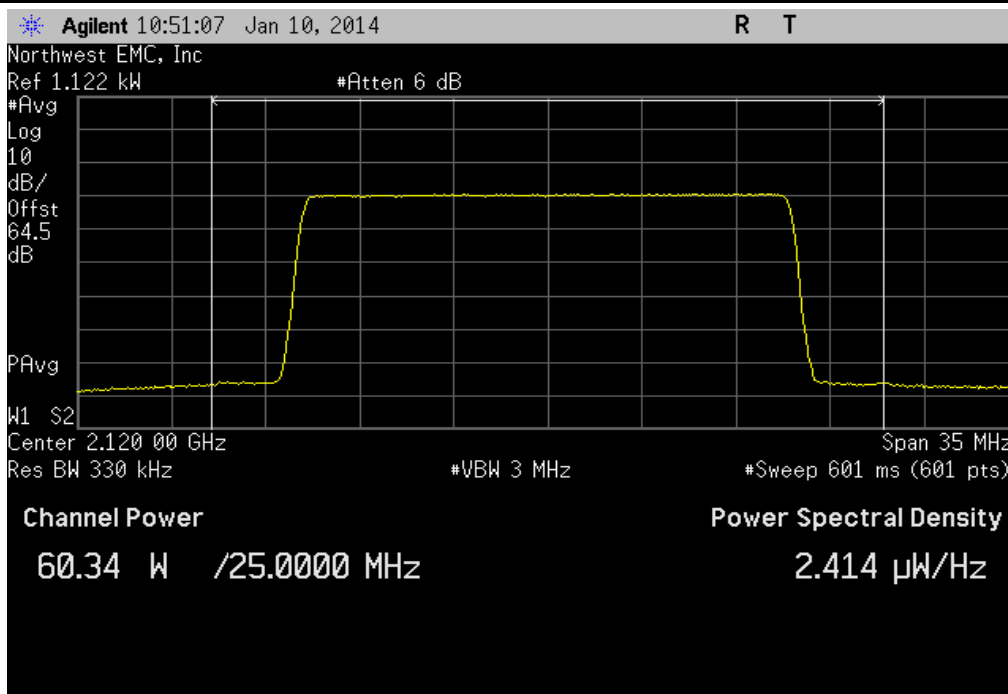
Port B, LTE 20M, Low Channel							
				Measured Power (W)	Limit	Result	
				60.51	See Comments	Pass	



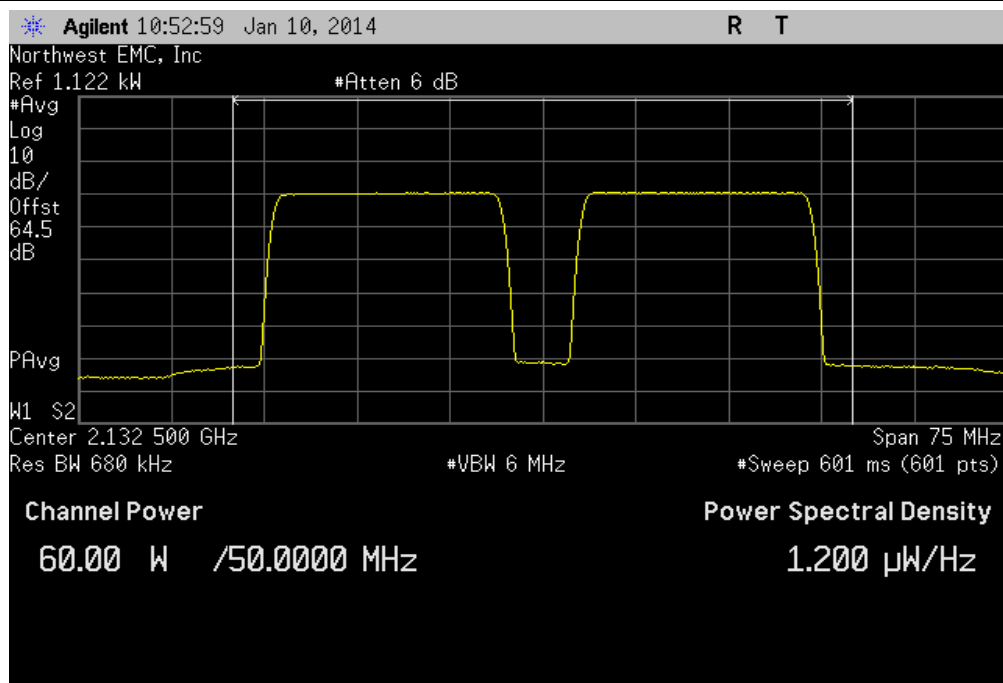
Port B, LTE 20M, Mid Channel							
				Measured Power (W)	Limit	Result	
				60.75	See Comments	Pass	



Port B, LTE 20M, High Channel							
Measured Power				Limit		Result	
(W)							
			60.34	See Comments		Pass	



Port B, LTE 20M, Multi Channel							
Measured Power				Limit		Result	
(W)							
			60	See Comments		Pass	



## OCCUPIED BANDWIDTH

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

### TEST EQUIPMENT


Description	Manufacturer	Model	ID	Last Cal.	Interval
Power Sensor	Agilent	E4412A	SQE	4/11/2012	24
Power Meter	Hewlett Packard	E4418A	SPA	4/11/2012	24
Signal Generator	Agilent	E8257D	TGU	2/1/2012	36
Spectrum Analyzer	Agilent	E4440A	AFA	6/15/2012	24

### TEST DESCRIPTION

The carrier's -26 dB occupied bandwidth was measured. The plot was taken to show the occupied bandwidth is contained within the allowable transmit band.

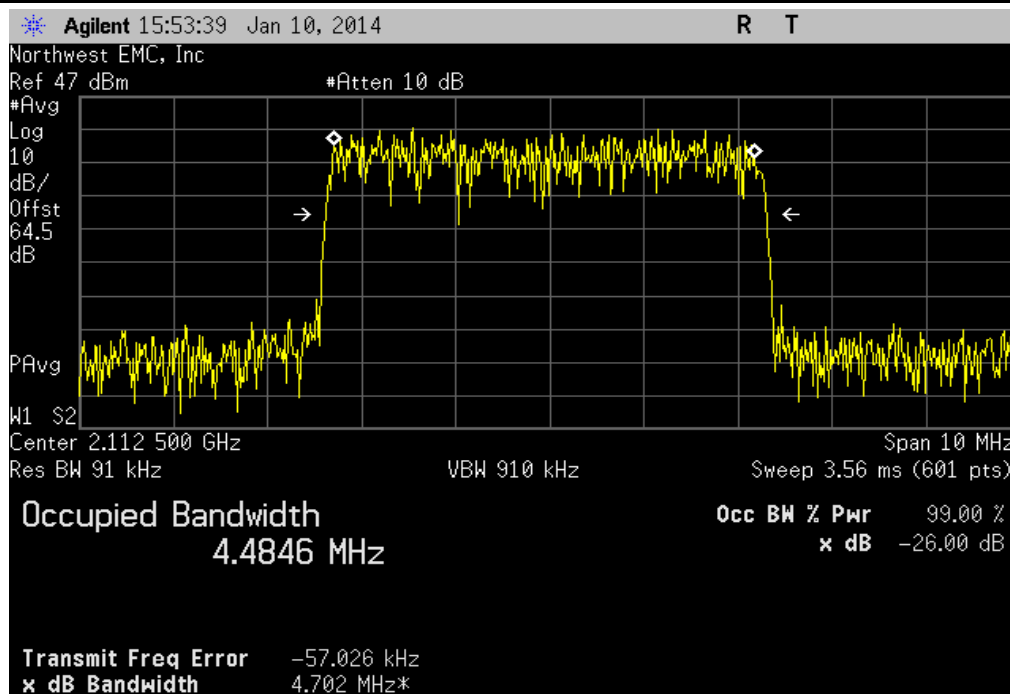
A direct connection was made between the EUT and a spectrum analyzer. The occupied bandwidth was measured using the Occupied Bandwidth function of the spectrum analyzer.

The occupied bandwidth was measured with the EUT configured in the modes called out in the data sheets.

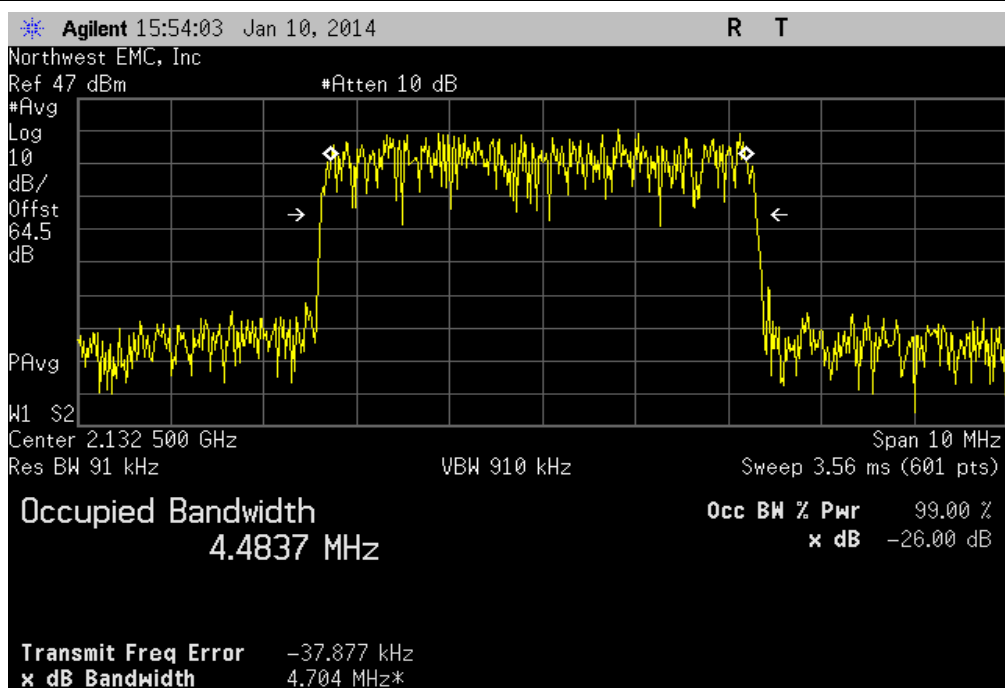
EUT: AWS RRH		Work Order: KMWC0048	
Serial Number: U365000113		Date: 01/13/14	
Customer: KMW Communications		Temperature: 24.23°C	
Attendees: Edward Lee		Humidity: 41%	
Project: None		Barometric Pres.: 1012	
Tested by: Jaemi Suh		Job Site: OC10	
Power: 48 VDC			
TEST SPECIFICATIONS		Test Method	
FCC 27L:2014		ANSI/TIA/EIA-603-C-2004	
COMMENTS			
Power Level Settings: 60W.			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	1	Signature 	
		Value	Limit
PORT A			Result
LTE 5M			
Low Channel		4.702 MHz	N/A
Mid Channel		4.704 MHz	N/A
High Channel		4.718 MHz	N/A
LTE 10M			
Low Channel		9.142 MHz	N/A
Mid Channel		9.226 MHz	N/A
High Channel		9.263 MHz	N/A
LTE 15M			
Low Channel		13.813 MHz	N/A
Mid Channel		13.850 MHz	N/A
High Channel		13.811 MHz	N/A
LTE 20M			
Low Channel		18.356 MHz	N/A
Mid Channel		18.453 MHz	N/A
High Channel		18.431 MHz	N/A
PORT B			
LTE 5M			
Low Channel		4.609 MHz	N/A
Mid Channel		4.644 MHz	N/A
High Channel		4.640 MHz	N/A
LTE 10M			
Low Channel		9.330 MHz	N/A
Mid Channel		9.221 MHz	N/A
High Channel		9.216 MHz	N/A
LTE 15M			
Low Channel		13.846 MHz	N/A
Mid Channel		13.805 MHz	N/A
High Channel		13.818 MHz	N/A
LTE 20M			
Low Channel		18.439 MHz	N/A
Mid Channel		18.291 MHz	N/A
High Channel		18.343 MHz	N/A



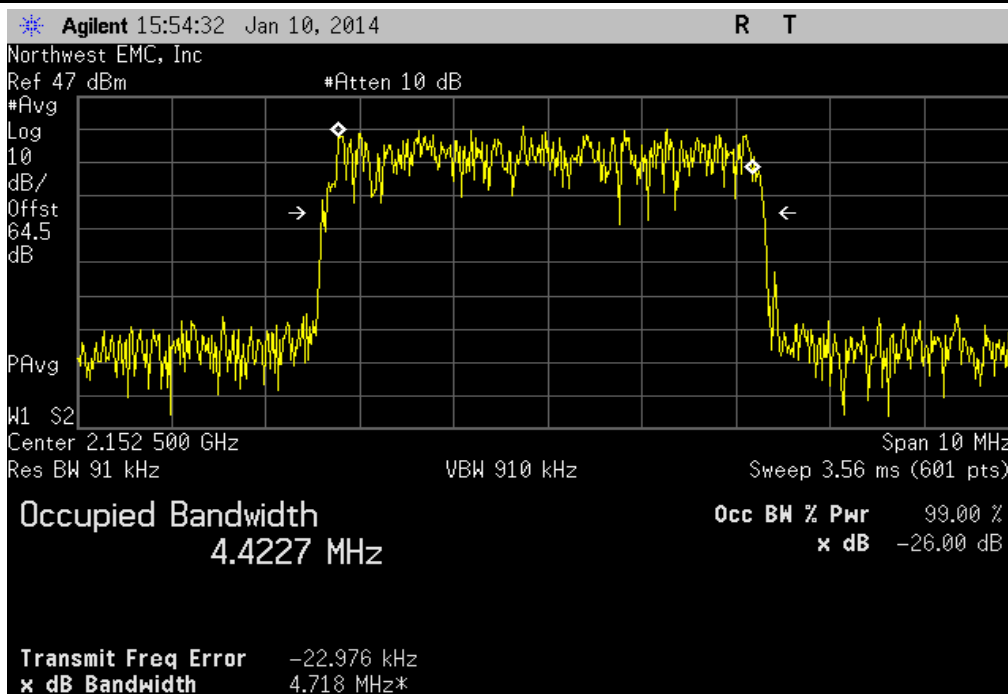
PORT A, LTE 5M, Low Channel							
				Value	Limit	Result	
				4.702 MHz	N/A	N/A	



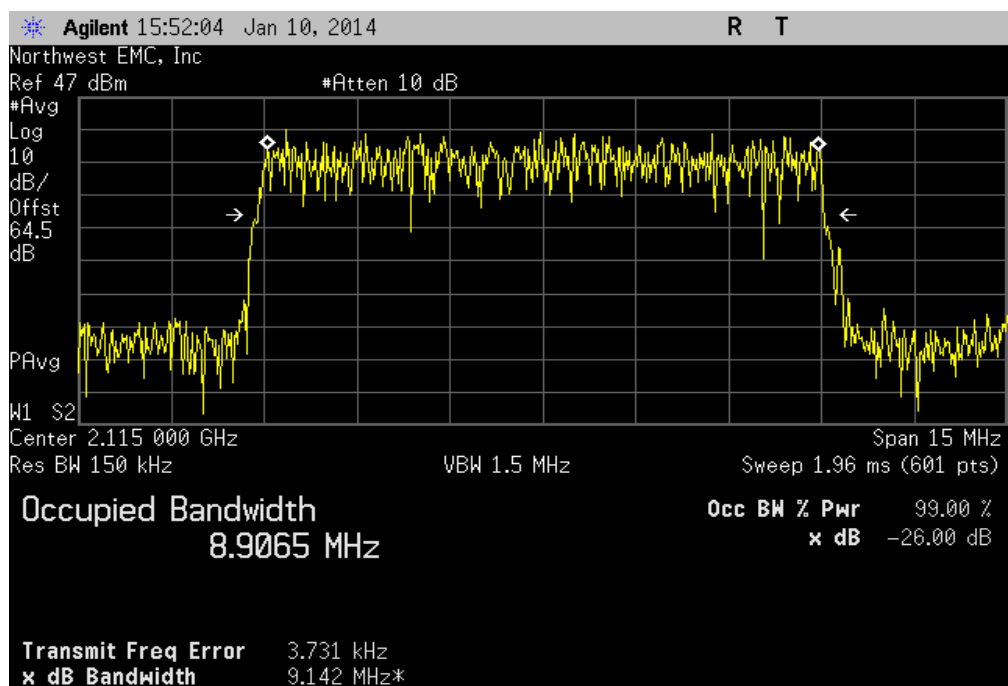
PORT A, LTE 5M, Mid Channel							
				Value	Limit	Result	
				4.704 MHz	N/A	N/A	



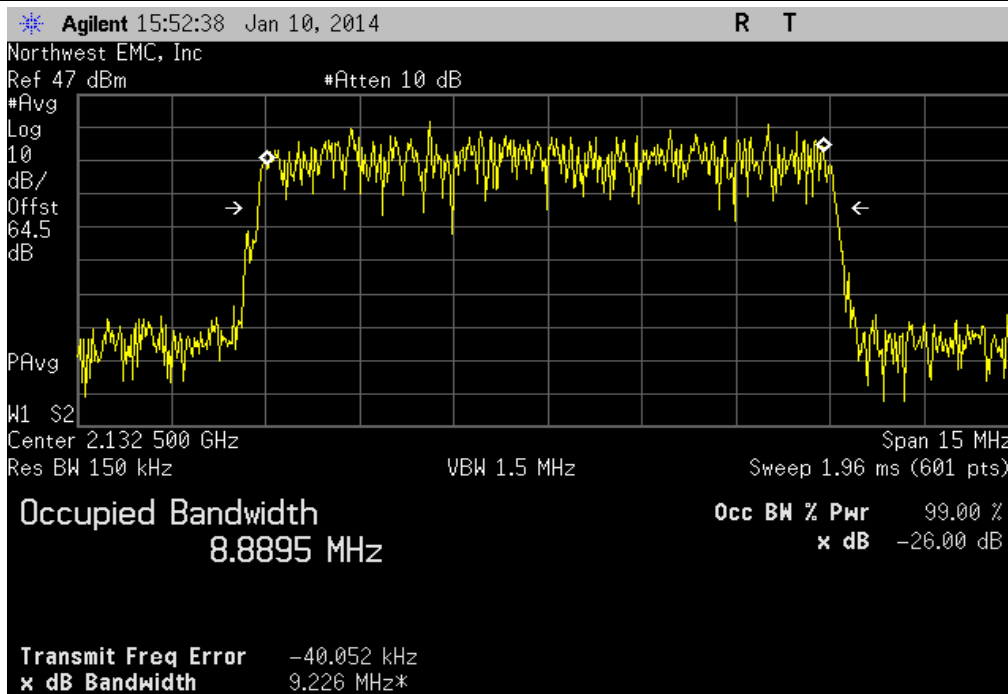
PORT A, LTE 5M, High Channel							
				Value	Limit	Result	
				4.718 MHz	N/A	N/A	



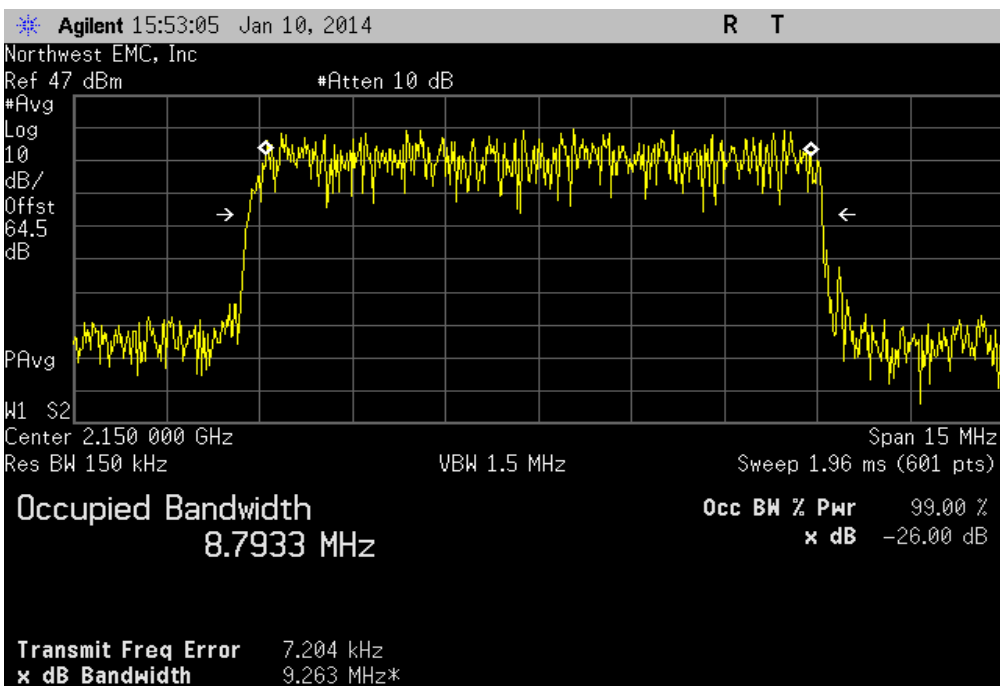
PORT A, LTE 10M, Low Channel							
				Value	Limit	Result	
				9.142 MHz	N/A	N/A	



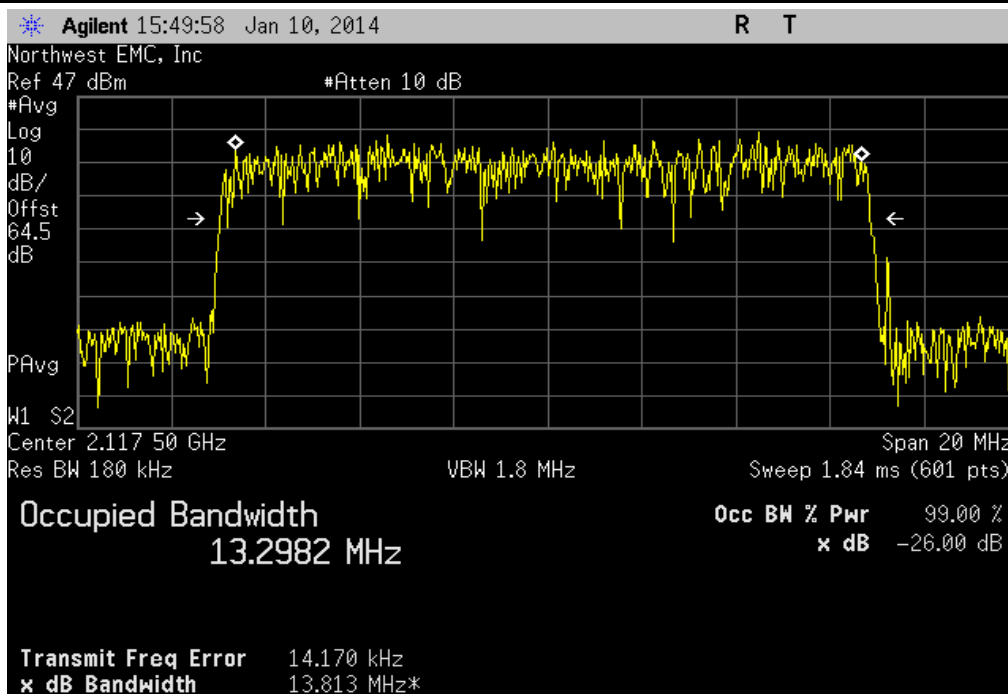
PORT A, LTE 10M, Mid Channel							
				Value	Limit	Result	
				9.226 MHz	N/A	N/A	



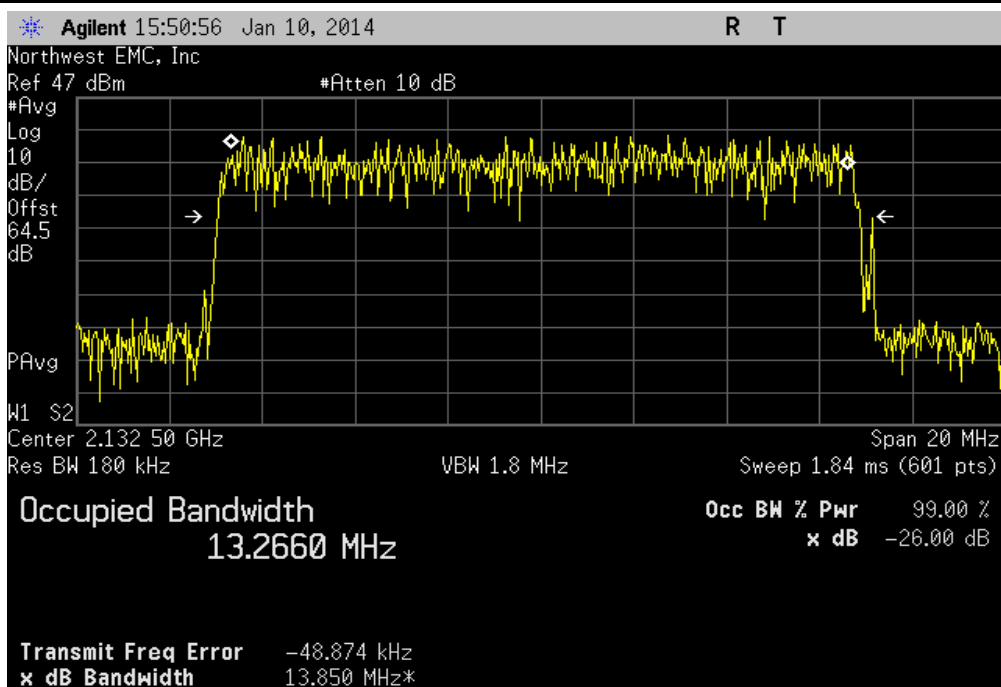
PORT A, LTE 10M, High Channel							
				Value	Limit	Result	
				9.263 MHz	N/A	N/A	



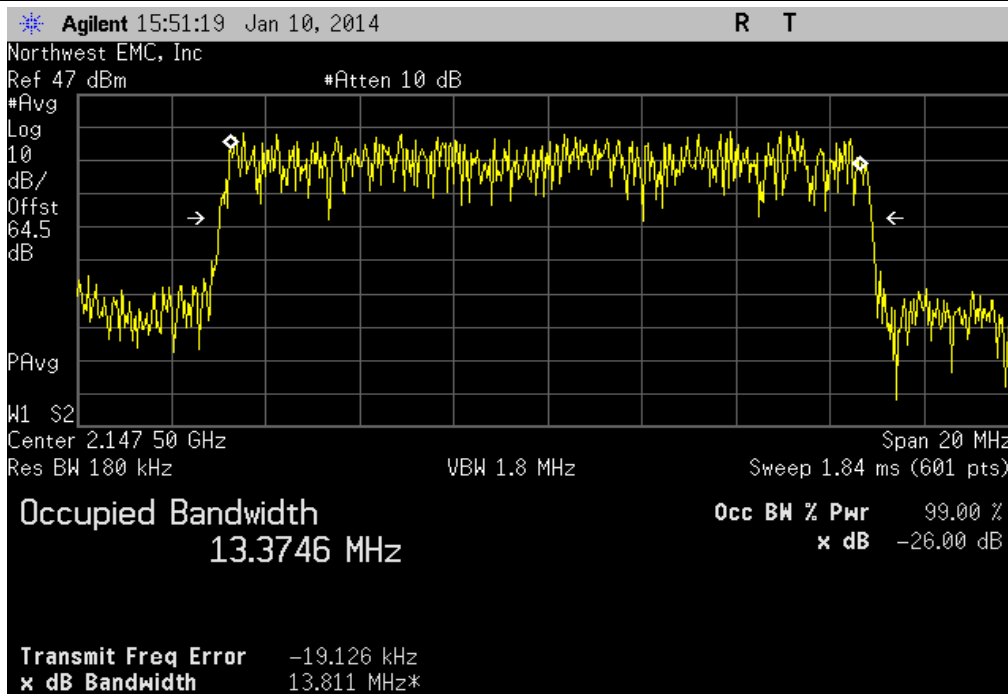
PORT A, LTE 15M, Low Channel							
				Value	Limit	Result	
				13.813 MHz	N/A	N/A	



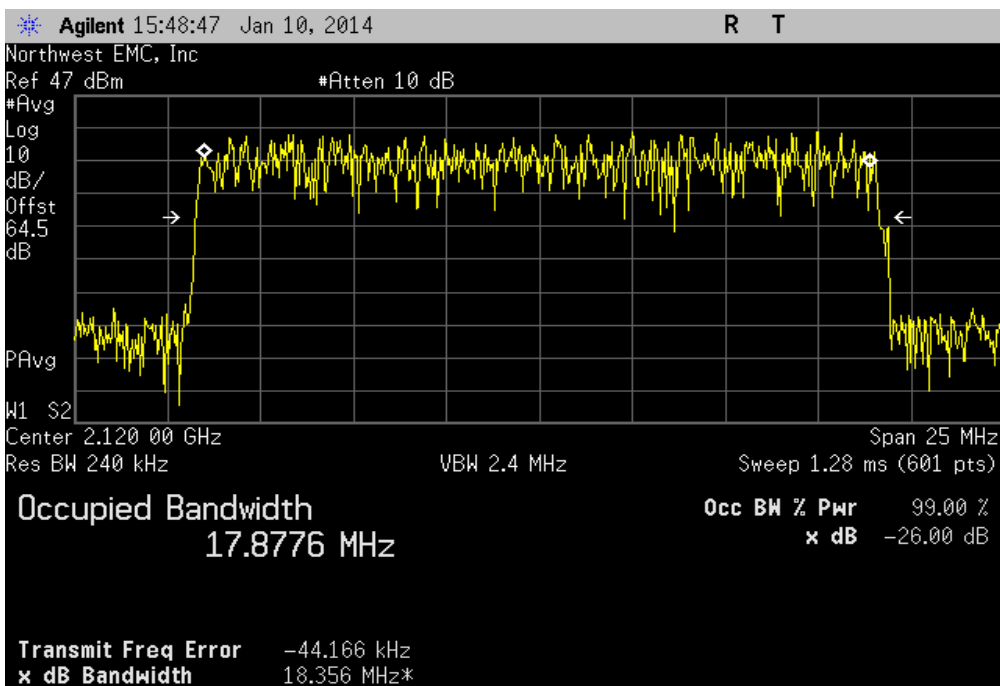
PORT A, LTE 15M, Mid Channel							
				Value	Limit	Result	
				13.850 MHz	N/A	N/A	



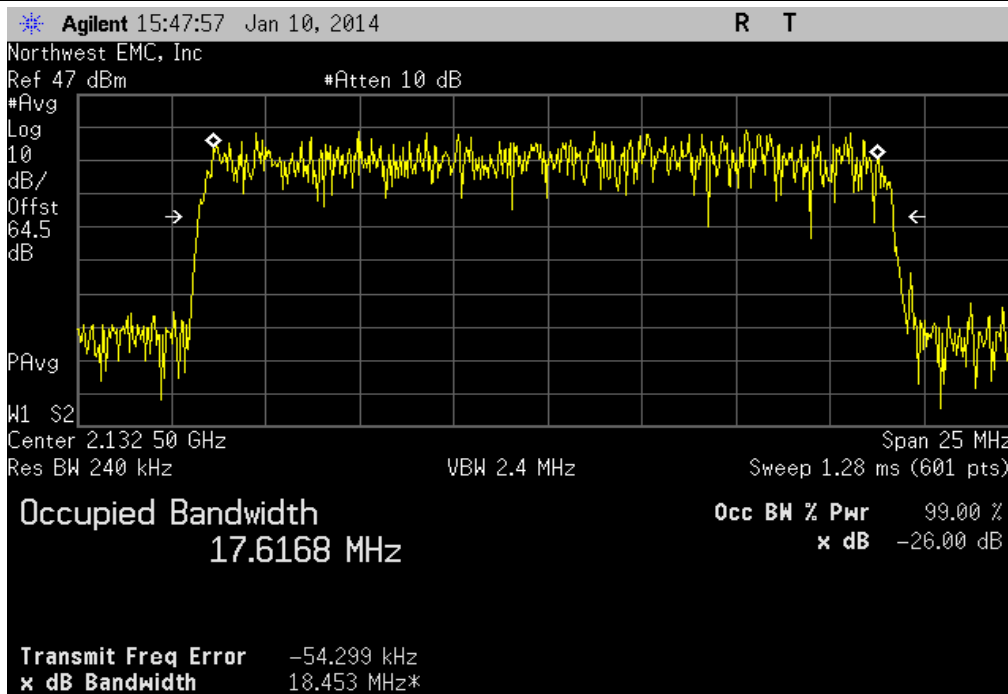
PORT A, LTE 15M, High Channel							
				Value	Limit	Result	
				13.811 MHz	N/A	N/A	



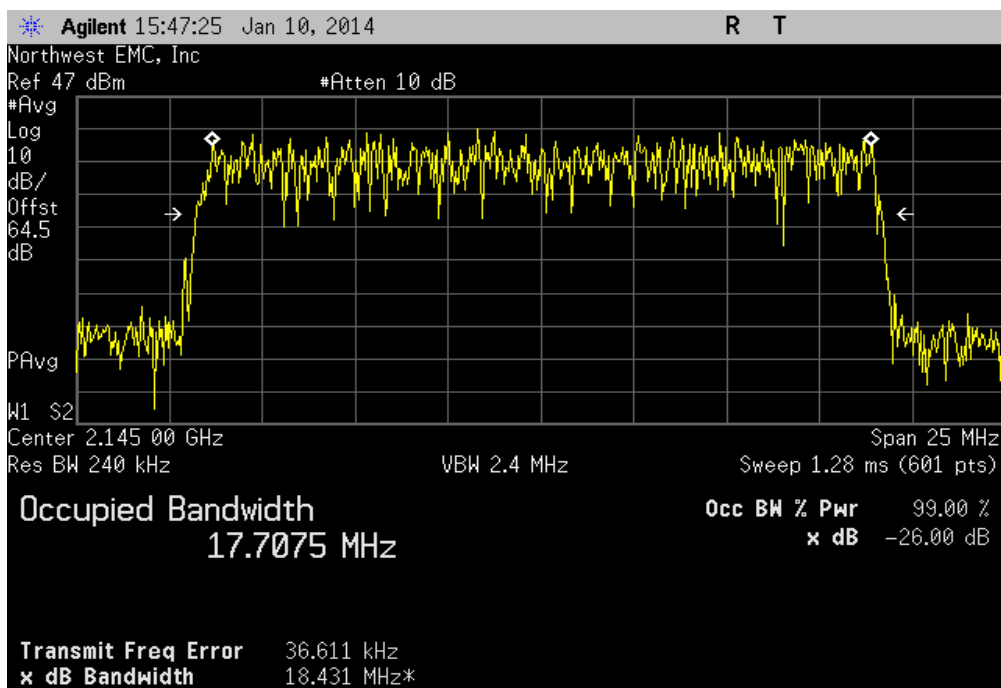
PORT A, LTE 20M, Low Channel							
				Value	Limit	Result	
				18.356 MHz	N/A	N/A	



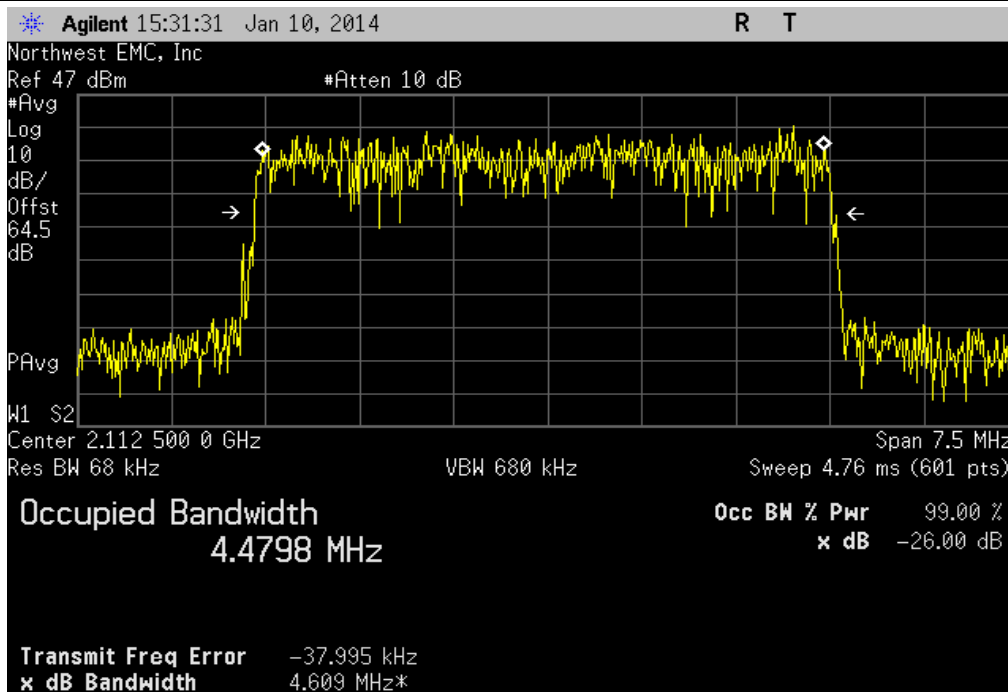
PORT A, LTE 20M, Mid Channel							
				Value	Limit	Result	
				18.453 MHz	N/A	N/A	



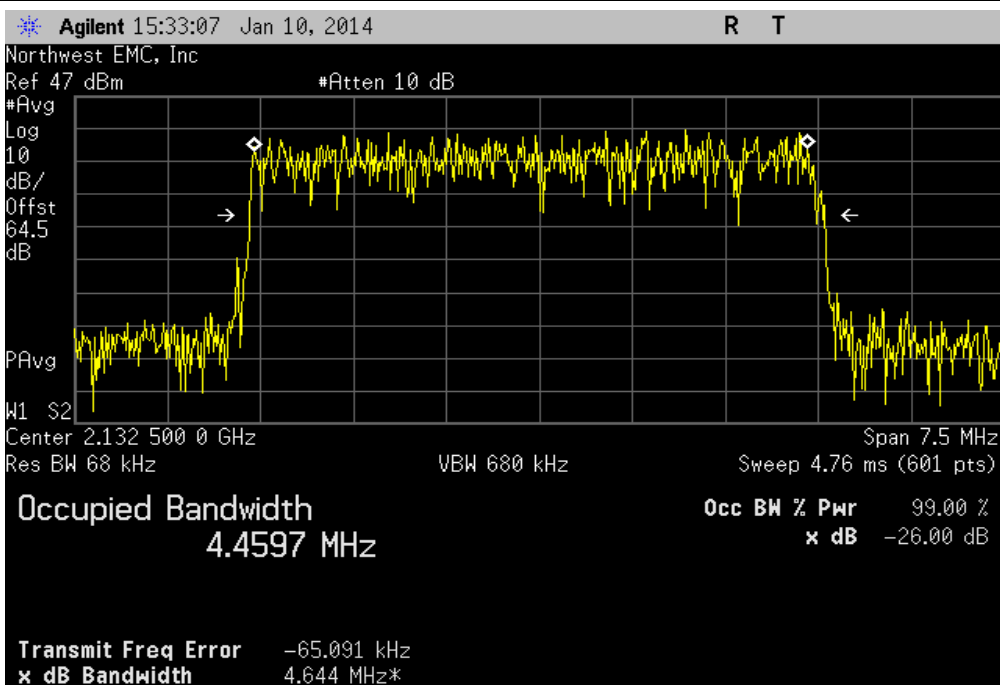
PORT A, LTE 20M, High Channel							
				Value	Limit	Result	
				18.431 MHz	N/A	N/A	



PORT B, LTE 5M, Low Channel							
				Value	Limit	Result	
				4.609 MHz	N/A	N/A	

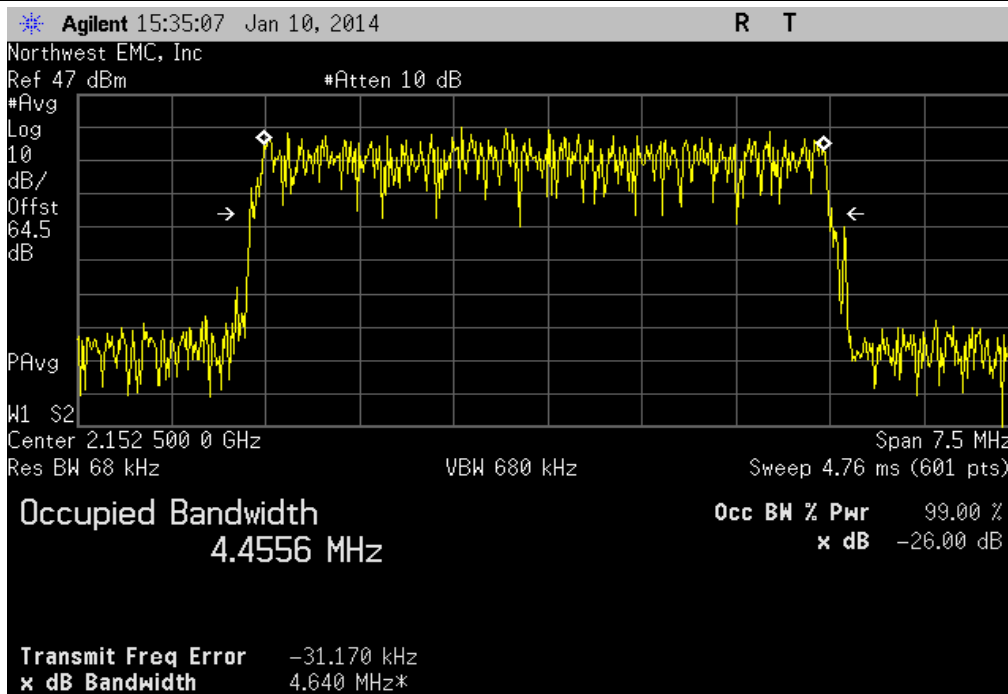


PORT B, LTE 5M, Mid Channel							
				Value	Limit	Result	
				4.644 MHz	N/A	N/A	

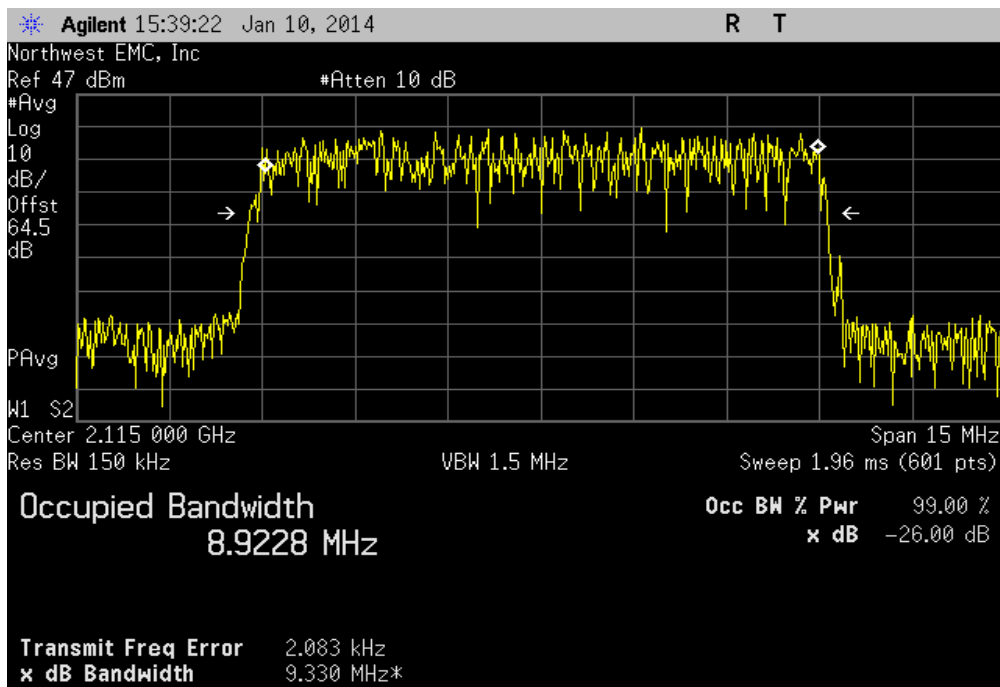




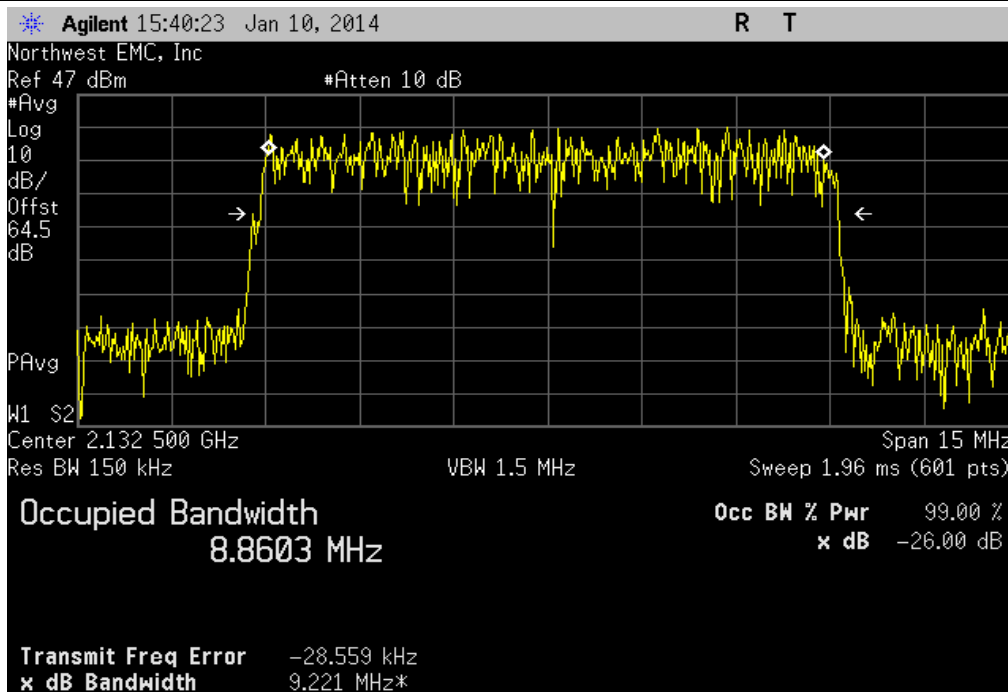
PORT B, LTE 5M, High Channel							
				Value	Limit	Result	
				4.640 MHz	N/A	N/A	



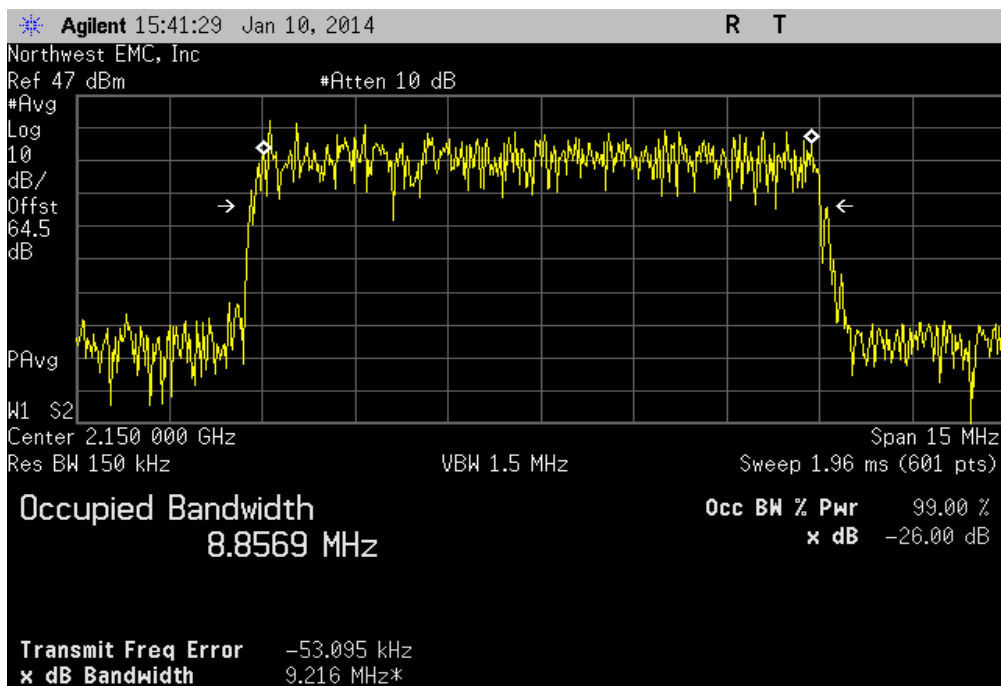
PORT B, LTE 10M, Low Channel							
				Value	Limit	Result	
				9.330 MHz	N/A	N/A	



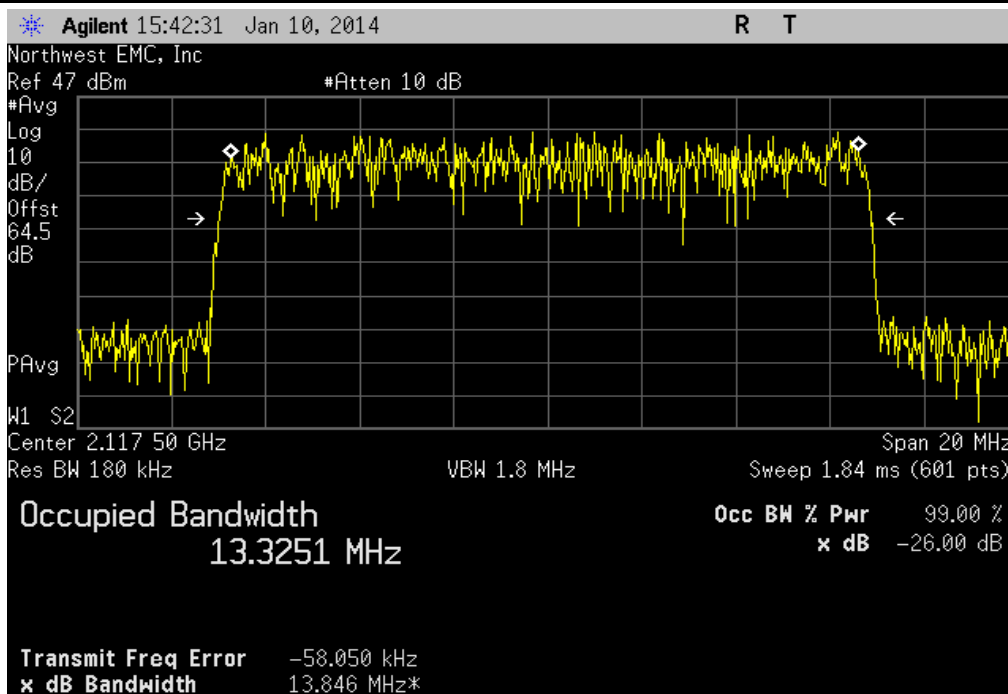
PORT B, LTE 10M, Mid Channel							
				Value	Limit	Result	
				9.221 MHz	N/A	N/A	



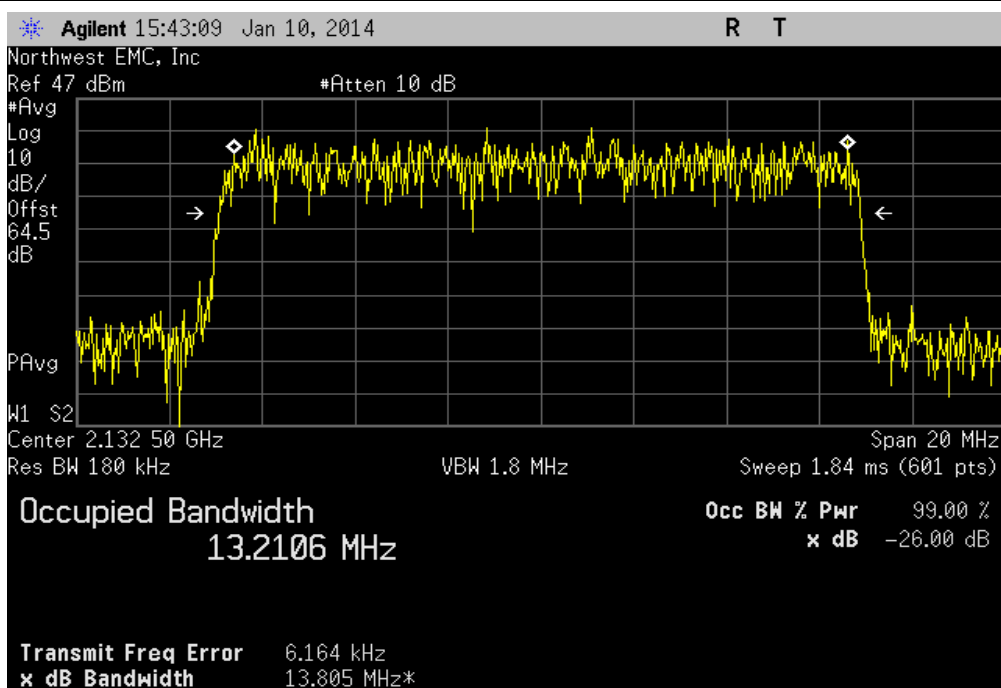
PORT B, LTE 10M, High Channel							
				Value	Limit	Result	
				9.216 MHz	N/A	N/A	



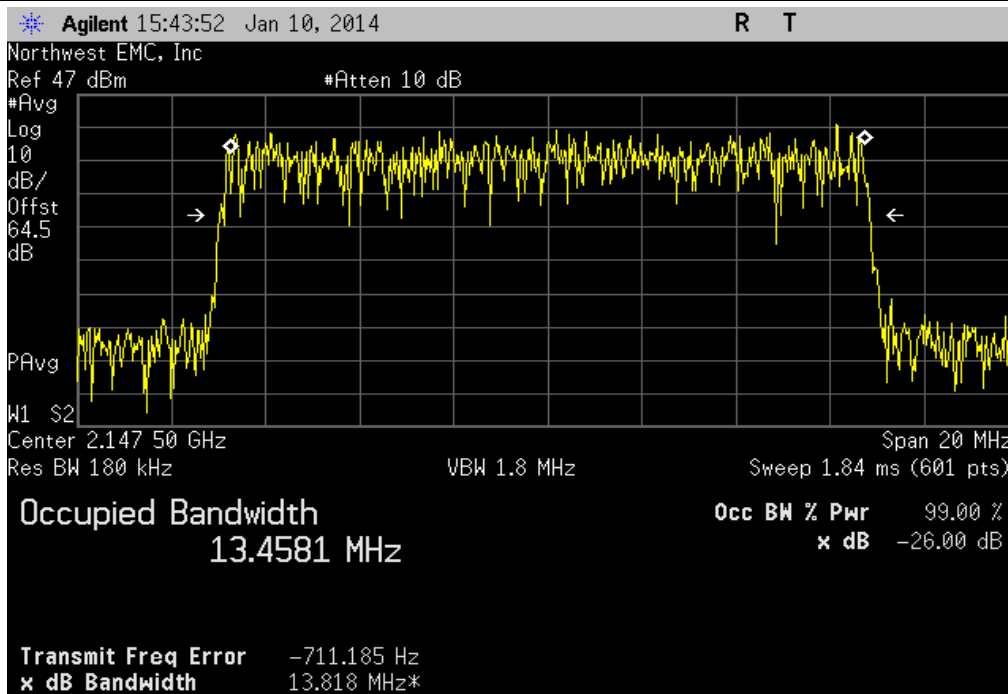
PORT B, LTE 15M, Low Channel							
				Value	Limit	Result	
				13.846 MHz	N/A	N/A	



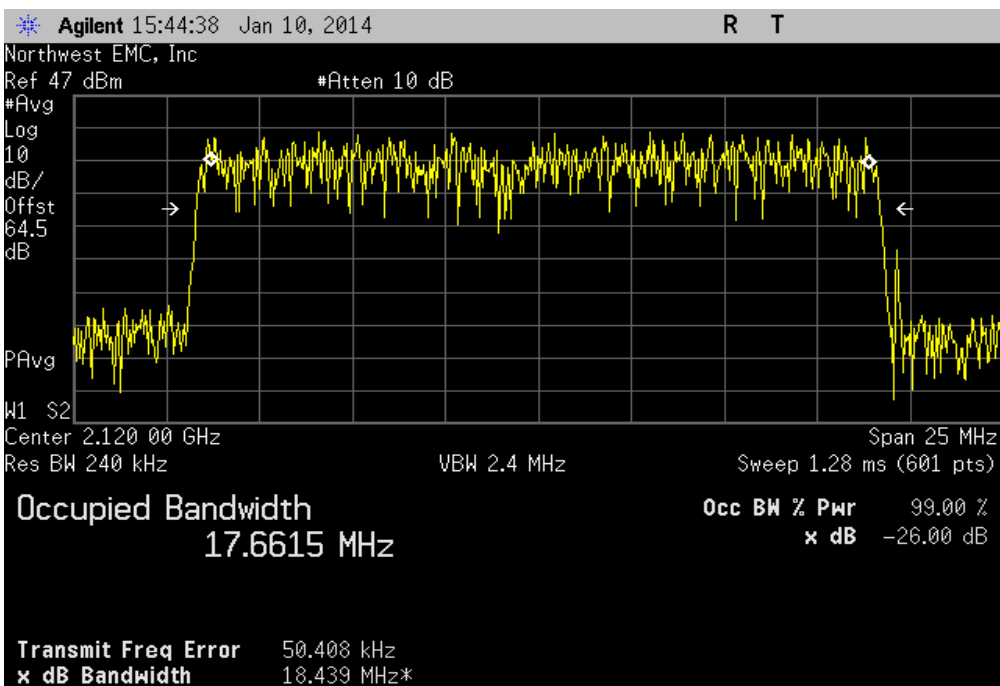
PORT B, LTE 15M, Mid Channel							
				Value	Limit	Result	
				13.805 MHz	N/A	N/A	



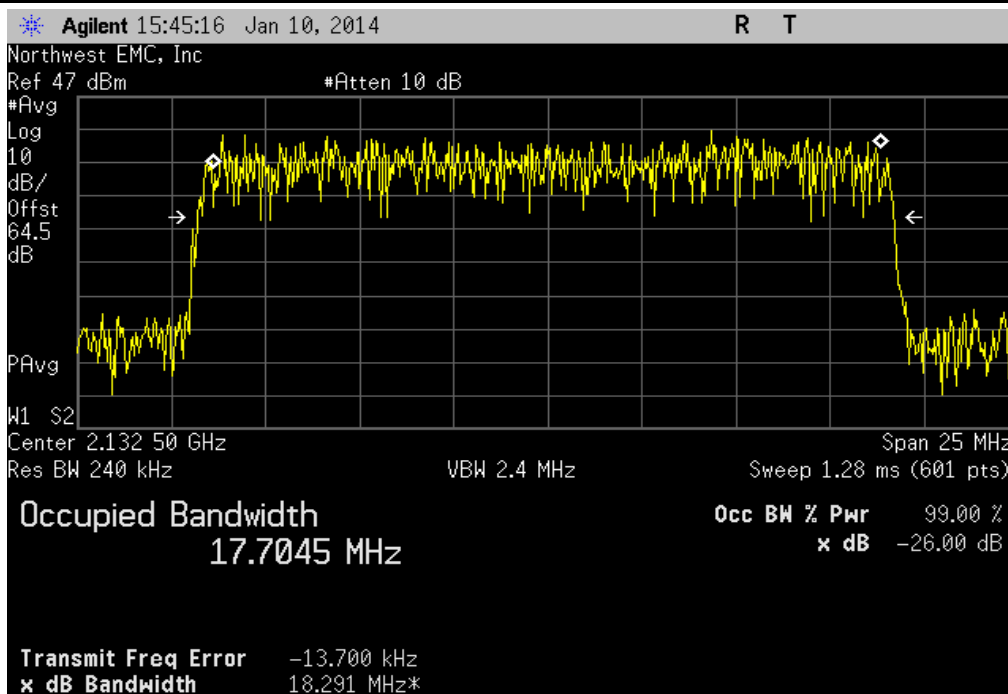
PORT B, LTE 15M, High Channel							
				Value	Limit	Result	
				13.818 MHz	N/A	N/A	



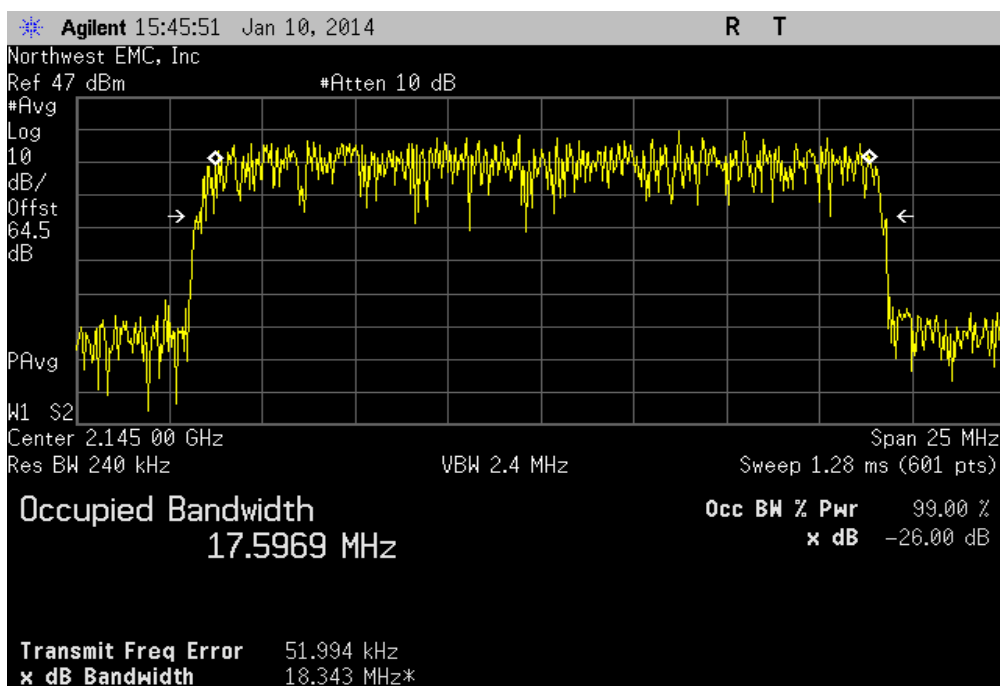
PORT B, LTE 20M, Low Channel							
				Value	Limit	Result	
				18.439 MHz	N/A	N/A	



PORT B, LTE 20M, Mid Channel							
				Value	Limit	Result	
				18.291 MHz	N/A	N/A	



PORT B, LTE 20M, High Channel							
				Value	Limit	Result	
				18.343 MHz	N/A	N/A	



## EMISSION MASK

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

### TEST EQUIPMENT


Description	Manufacturer	Model	ID	Last Cal.	Interval
Signal Generator	Agilent	E8257D	TGU	2/1/2012	36
Power Sensor	Hewlett Packard	8481	SQP	4/11/2012	24
Power Meter	Hewlett Packard	E4418A	SPA	4/11/2012	24
Chamber, Temperature/Humidity	Cincinnati Sub Zero (CSZ)	ZPHS-32-3.5-SCT/AC	TBE	NCR	0
Spectrum Analyzer	Agilent	E4446A	AAY	2/22/2013	24

### TEST DESCRIPTION

The Emissions Mask was measured following the guidance in 3GPP TS36.104 V12.2.0 Table 6.6.3.1-6. Testing was done to the lower and upper band edges according to the standard.

A spectrum analyzer was used to measure the emission mask. A spectrum analyzer channel power function using as RMS Average detector with no video filtering was used with an integration bandwidth equal to that called out in the table.

## EMISSION MASK

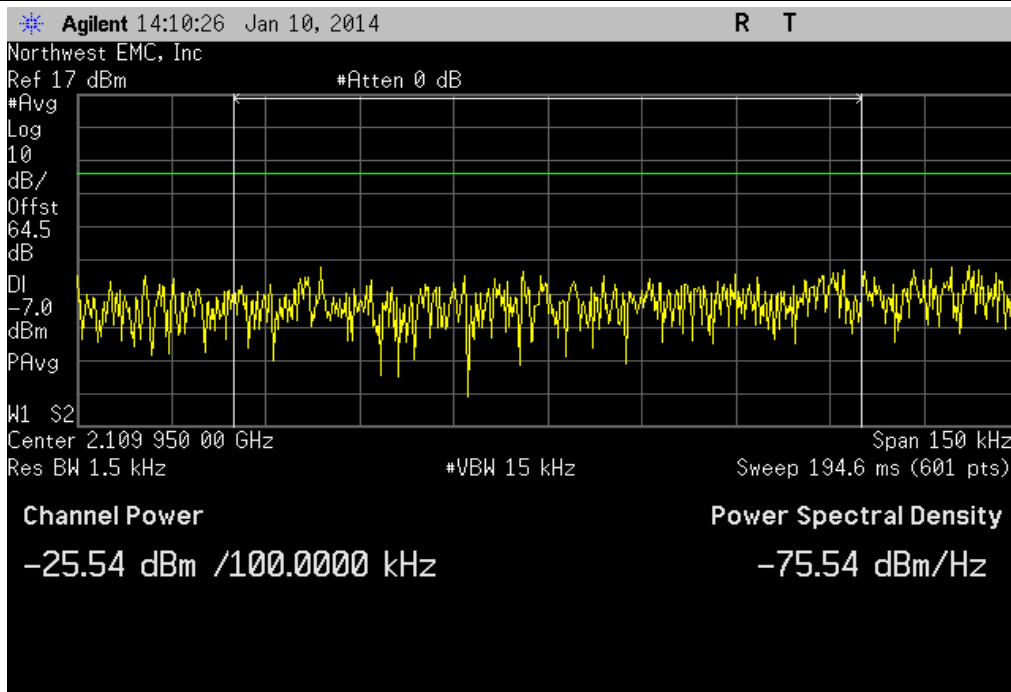
EUT: AWS RRH		Work Order: KMWC0048	
Serial Number: U365000113		Date: 01/13/14	
Customer: KMW Communications		Temperature: 23.4°C	
Attendees: Edward Lee		Humidity: 42%	
Project: None		Barometric Pres.: 1012	
Tested by: Jaemi Suh		Job Site: OC10	
Power: 48VDC			
TEST SPECIFICATIONS		Test Method	
FCC 27L:2014		ANSI/TIA/EIA-603-C-2004	
COMMENTS			
Power Level Settings: 60W			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	1	Signature 	
		Value	Limit Result
Port A			
LTE 5M			
Single Carrier			
Left Band Edge 2109.95 MHz		-25.54 dBm	-7 dBm Pass
Left Band Edge 2104.95 MHz		-37.06 dBm	-14 dBm Pass
Left Band Edge 2099.5 MHz		-30.24 dBm	-13 dBm Pass
Right Band Edge 2155.05 MHz		-27.34 dBm	-7 dBm Pass
Right Band Edge 2160.05 MHz		-35.93 dBm	-14 dBm Pass
Right Band Edge 2165.05 MHz		-28.43 dBm	-13 dBm Pass
Multi Carrier			
Left Band Edge 2109.95 MHz		-31.24 dBm	-7 dBm Pass
Left Band Edge 2104.95 MHz		-35.61 dBm	-14 dBm Pass
Left Band Edge 2099.5 MHz		-30.48 dBm	-13 dBm Pass
Right Band Edge 2155.05 MHz		-31.27 dBm	-7 dBm Pass
Right Band Edge 2160.05 MHz		-34.56 dBm	-14 dBm Pass
Right Band Edge 2165.05 MHz		-27.29 dBm	-13 dBm Pass
LTE 10M			
Single Carrier			
Left Band Edge 2109.95 MHz		-30.37 dBm	-7 dBm Pass
Left Band Edge 2104.95 MHz		-36.32 dBm	-14 dBm Pass
Left Band Edge 2099.5 MHz		-30.18 dBm	-13 dBm Pass
Right Band Edge 2155.05 MHz		-32.30 dBm	-7 dBm Pass
Right Band Edge 2160.05 MHz		-36.38 dBm	-14 dBm Pass
Right Band Edge 2165.05 MHz		-28.68 dBm	-13 dBm Pass
Multi Carrier			
Left Band Edge 2109.95 MHz		-33.40 dBm	-7 dBm Pass
Left Band Edge 2104.95 MHz		-35.30 dBm	-14 dBm Pass
Left Band Edge 2099.5 MHz		-30.09 dBm	-13 dBm Pass
Right Band Edge 2155.05 MHz		-32.07 dBm	-7 dBm Pass
Right Band Edge 2160.05 MHz		-33.87 dBm	-14 dBm Pass
Right Band Edge 2165.05 MHz		-26.19 dBm	-13 dBm Pass
LTE 15M			
Single Carrier			
Left Band Edge 2109.95 MHz		-34.11 dBm	-7 dBm Pass
Left Band Edge 2104.95 MHz		-35.91 dBm	-14 dBm Pass
Left Band Edge 2099.5 MHz		-30.31 dBm	-13 dBm Pass
Right Band Edge 2155.05 MHz		-32.39 dBm	-7 dBm Pass
Right Band Edge 2160.05 MHz		-35.18 dBm	-14 dBm Pass
Right Band Edge 2165.05 MHz		-28.25 dBm	-13 dBm Pass
Multi Carrier			
Left Band Edge 2109.95 MHz		-33.30 dBm	-7 dBm Pass
Left Band Edge 2104.95 MHz		-34.16 dBm	-14 dBm Pass
Left Band Edge 2099.5 MHz		-30.36 dBm	-13 dBm Pass
Right Band Edge 2155.05 MHz		-31.61 dBm	-7 dBm Pass
Right Band Edge 2160.05 MHz		-34.76 dBm	-14 dBm Pass
Right Band Edge 2165.05 MHz		-27.70 dBm	-13 dBm Pass
LTE 20M			
Single Carrier			
Left Band Edge 2109.95 MHz		-34.52 dBm	-7 dBm Pass
Left Band Edge 2104.95 MHz		-36.35 dBm	-14 dBm Pass
Left Band Edge 2099.5 MHz		-30.37 dBm	-13 dBm Pass
Right Band Edge 2155.05 MHz		-33.53 dBm	-7 dBm Pass
Right Band Edge 2160.05 MHz		-35.58 dBm	-14 dBm Pass
Right Band Edge 2165.05 MHz		-28.81 dBm	-13 dBm Pass
Multi Carrier			
Left Band Edge 2109.95 MHz		-34.02 dBm	-7 dBm Pass
Left Band Edge 2104.95 MHz		-35.85 dBm	-14 dBm Pass
Left Band Edge 2099.5 MHz		-30.40 dBm	-13 dBm Pass
Right Band Edge 2155.05 MHz		-33.22 dBm	-7 dBm Pass
Right Band Edge 2160.05 MHz		-35.86 dBm	-14 dBm Pass
Right Band Edge 2165.05 MHz		-27.06 dBm	-13 dBm Pass
Port B			
LTE 5M			
Single Carrier			
Left Band Edge 2109.95 MHz		-25.81 dBm	-7 dBm Pass
Left Band Edge 2104.95 MHz		-36.40 dBm	-14 dBm Pass
Left Band Edge 2099.5 MHz		-30.08 dBm	-13 dBm Pass
Right Band Edge 2155.05 MHz		-25.72 dBm	-7 dBm Pass
Right Band Edge 2160.05 MHz		-35.22 dBm	-14 dBm Pass
Right Band Edge 2165.05 MHz		-26.53 dBm	-13 dBm Pass
Multi Carrier			
Left Band Edge 2109.95 MHz		-31.31 dBm	-7 dBm Pass
Left Band Edge 2104.95 MHz		-35.51 dBm	-14 dBm Pass
Left Band Edge 2099.5 MHz		-30.31 dBm	-13 dBm Pass
Right Band Edge 2155.05 MHz		-31.48 dBm	-7 dBm Pass
Right Band Edge 2160.05 MHz		-34.04 dBm	-7 dBm Pass
Right Band Edge 2165.05 MHz		-25.14 dBm	-13 dBm Pass

LTE 10M				
	Single Carrier			
	Left Band Edge 2109.95 MHz	-28.20 dBm	-7 dBm	Pass
	Left Band Edge 2104.95 MHz	-35.44 dBm	-14 dBm	Pass
	Left Band Edge 2099.5 MHz	-30.14 dBm	-13 dBm	Pass
	Right Band Edge 2155.05 MHz	-32.07 dBm	-7 dBm	Pass
	Right Band Edge 2160.05 MHz	-35.42 dBm	-14 dBm	Pass
	Right Band Edge 2165.05 MHz	-26.81 dBm	-13 dBm	Pass
	Multi Carrier			
	Left Band Edge 2109.95 MHz	-33.11 dBm	-7 dBm	Pass
	Left Band Edge 2104.95 MHz	-36.27 dBm	-14 dBm	Pass
	Left Band Edge 2099.5 MHz	-30.33 dBm	-13 dBm	Pass
	Right Band Edge 2155.05 MHz	-33.31 dBm	-7 dBm	Pass
	Right Band Edge 2160.05 MHz	-34.71 dBm	-14 dBm	Pass
	Right Band Edge 2165.05 MHz	-25.18 dBm	-13 dBm	Pass
LTE 15M	Single Carrier			
	Left Band Edge 2109.95 MHz	-33.69 dBm	-7 dBm	Pass
	Left Band Edge 2104.95 MHz	-36.13 dBm	-14 dBm	Pass
	Left Band Edge 2099.5 MHz	-30.35 dBm	-13 dBm	Pass
	Right Band Edge 2155.05 MHz	-32.02 dBm	-7 dBm	Pass
	Right Band Edge 2160.05 MHz	-35.09 dBm	-14 dBm	Pass
	Right Band Edge 2165.05 MHz	-27.19 dBm	-13 dBm	Pass
	Multi Carrier			
	Left Band Edge 2109.95 MHz	-33.65 dBm	-7 dBm	Pass
	Left Band Edge 2104.95 MHz	-35.64 dBm	-14 dBm	Pass
	Left Band Edge 2099.5 MHz	-30.12 dBm	-13 dBm	Pass
	Right Band Edge 2155.05 MHz	-32.84 dBm	-7 dBm	Pass
	Right Band Edge 2160.05 MHz	-34.39 dBm	-14 dBm	Pass
	Right Band Edge 2165.05 MHz	-25.39 dBm	-13 dBm	Pass
LTE 20M	Single Carrier			
	Left Band Edge 2109.95 MHz	-33.07 dBm	-7 dBm	Pass
	Left Band Edge 2104.95 MHz	-36.81 dBm	-14 dBm	Pass
	Left Band Edge 2099.5 MHz	-30.26 dBm	-13 dBm	Pass
	Right Band Edge 2155.05 MHz	-33.90 dBm	-7 dBm	Pass
	Right Band Edge 2160.05 MHz	-36.00 dBm	-14 dBm	Pass
	Right Band Edge 2165.05 MHz	-25.98 dBm	-13 dBm	Pass
	Multi Carrier			
	Left Band Edge 2109.95 MHz	-34.33 dBm	-7 dBm	Pass
	Left Band Edge 2104.95 MHz	-35.69 dBm	-14 dBm	Pass
	Left Band Edge 2099.5 MHz	-30.28 dBm	-13 dBm	Pass
	Right Band Edge 2155.05 MHz	-33.51 dBm	-7 dBm	Pass
	Right Band Edge 2160.05 MHz	-33.72 dBm	-14 dBm	Pass
	Right Band Edge 2165.05 MHz	-25.23 dBm	-13 dBm	Pass



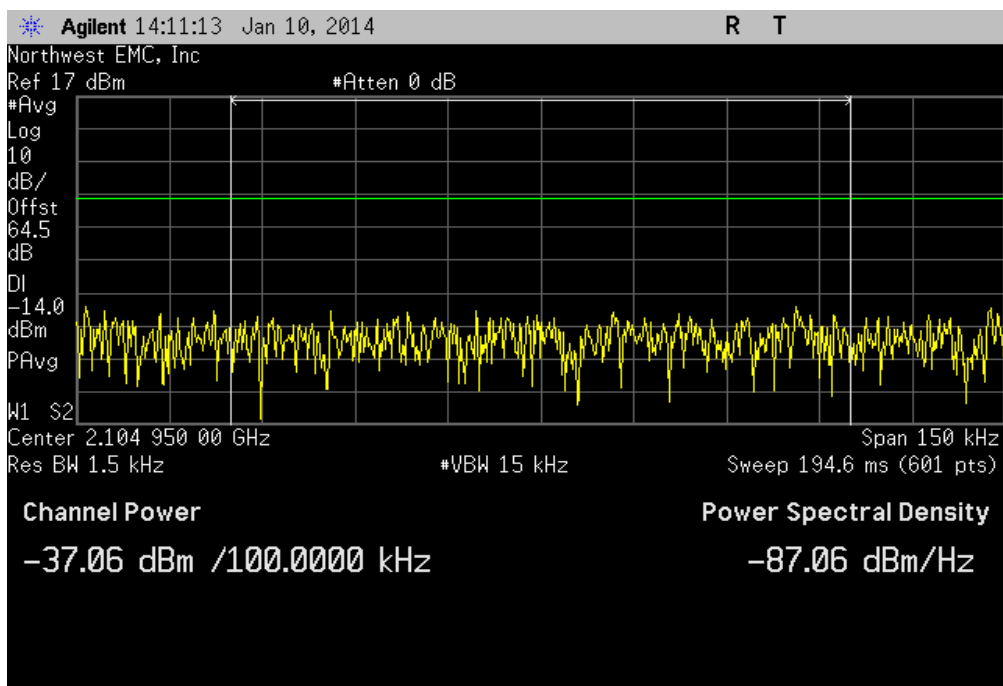
Port A, LTE 5M, Single Carrier, Left Band Edge 2109.95 MHz

					Value	Limit	Result
					-25.54 dBm	-7 dBm	Pass



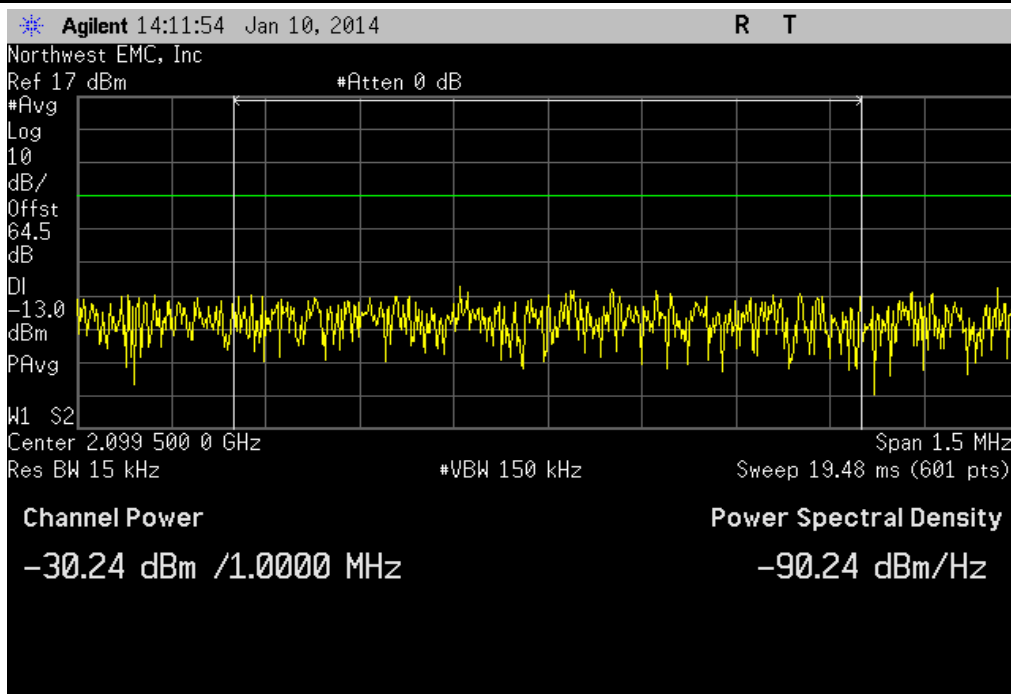
Port A, LTE 5M, Single Carrier, Left Band Edge 2104.95 MHz

					Value	Limit	Result
					-37.06 dBm	-14 dBm	Pass



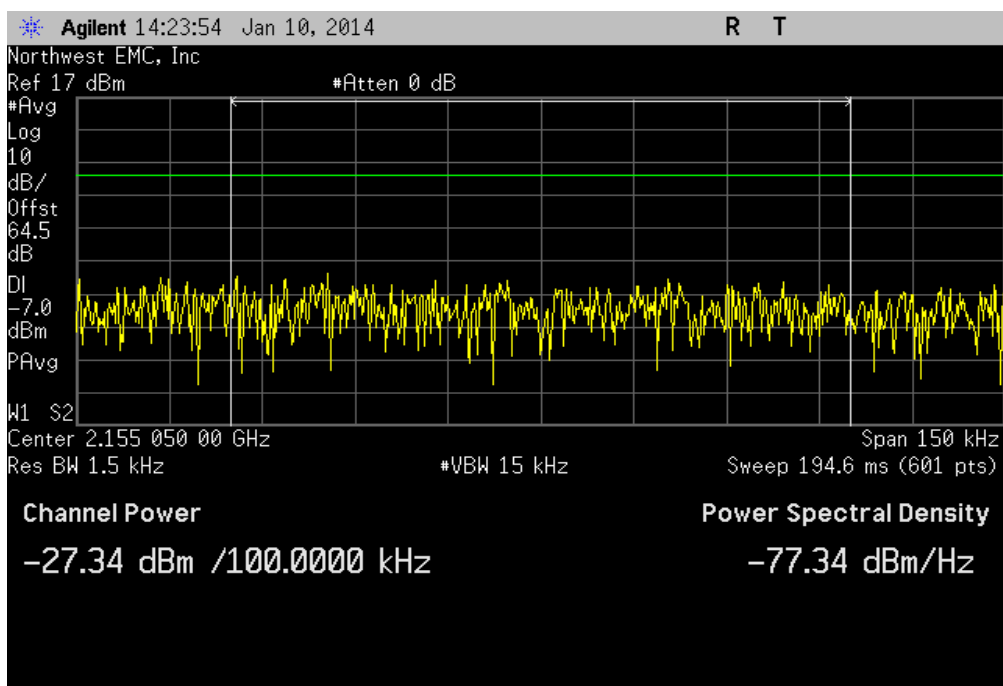
Port A, LTE 5M, Single Carrier, Left Band Edge 2099.5 MHz

					Value	Limit	Result
					-30.24 dBm	-13 dBm	Pass

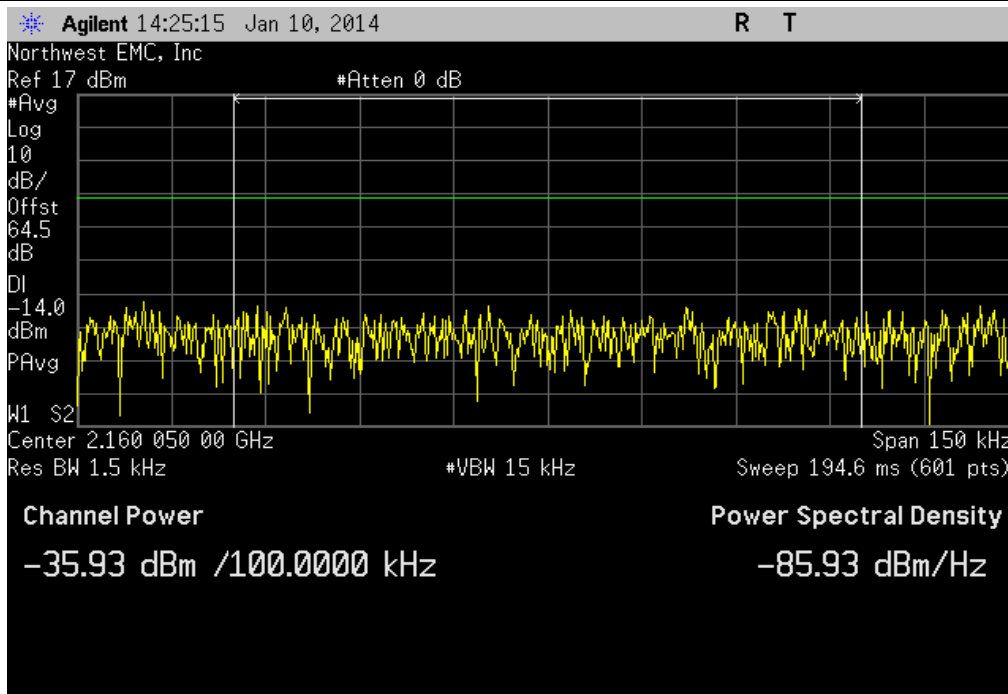


Port A, LTE 5M, Single Carrier, Right Band Edge 2155.05 MHz

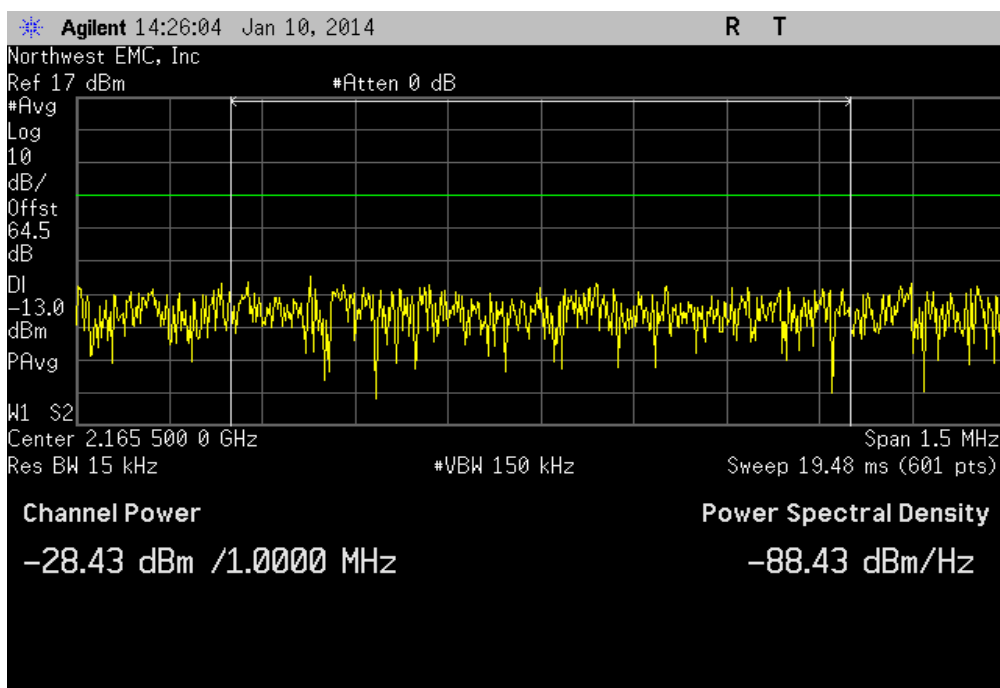
					Value	Limit	Result
					-27.34 dBm	-7 dBm	Pass



Port A, LTE 5M, Single Carrier, Right Band Edge 2160.05 MHz							
					Value	Limit	Result
					-35.93 dBm	-14 dBm	Pass

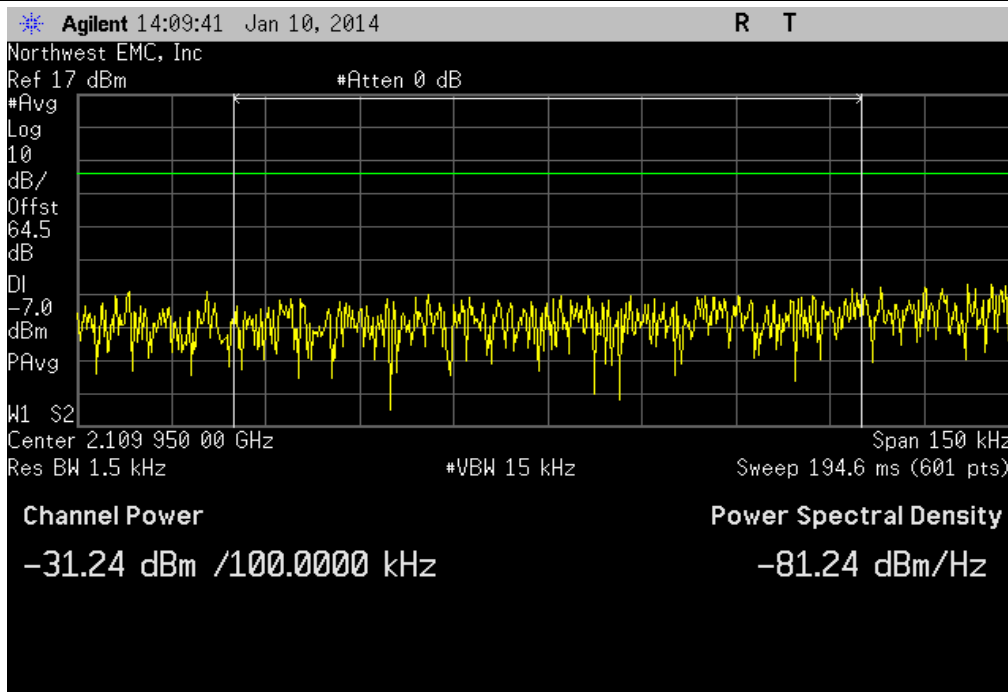


Port A, LTE 5M, Single Carrier, Right Band Edge 2165.05 MHz							
					Value	Limit	Result
					-28.43 dBm	-13 dBm	Pass



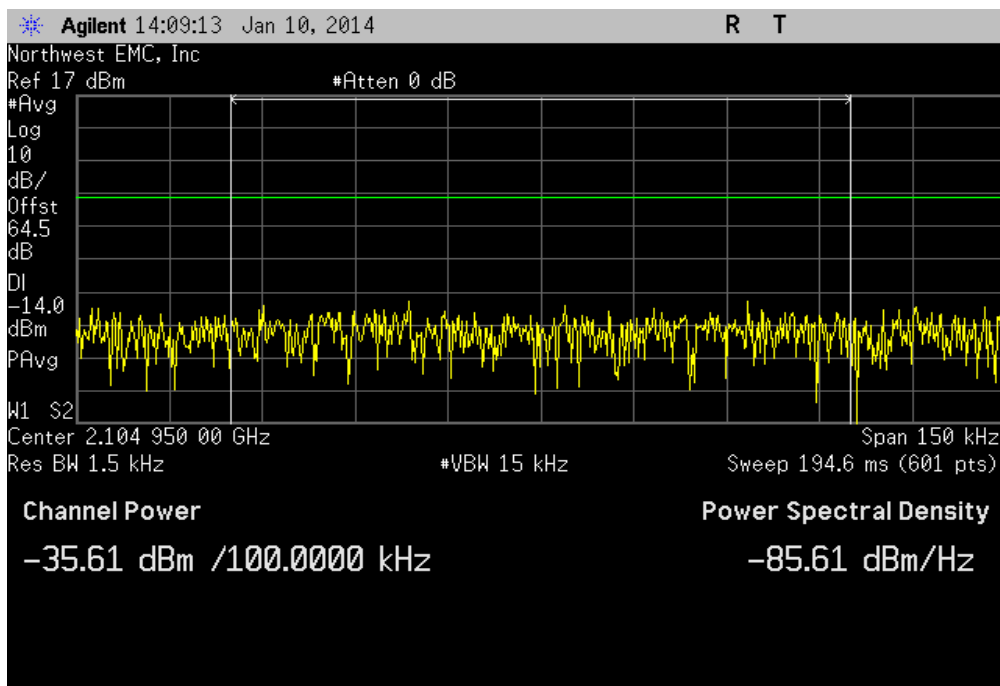
Port A, LTE 5M, Multi Carrier, Left Band Edge 2109.95 MHz

					Value	Limit	Result
					-31.24 dBm	-7 dBm	Pass



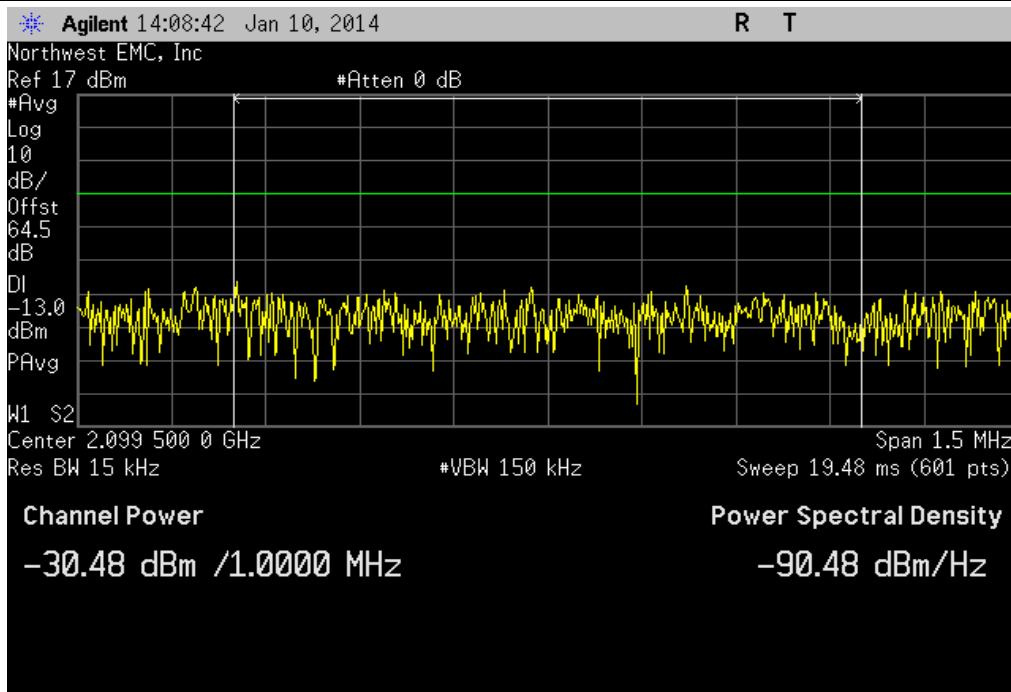
Port A, LTE 5M, Multi Carrier, Left Band Edge 2104.95 MHz

					Value	Limit	Result
					-35.61 dBm	-14 dBm	Pass



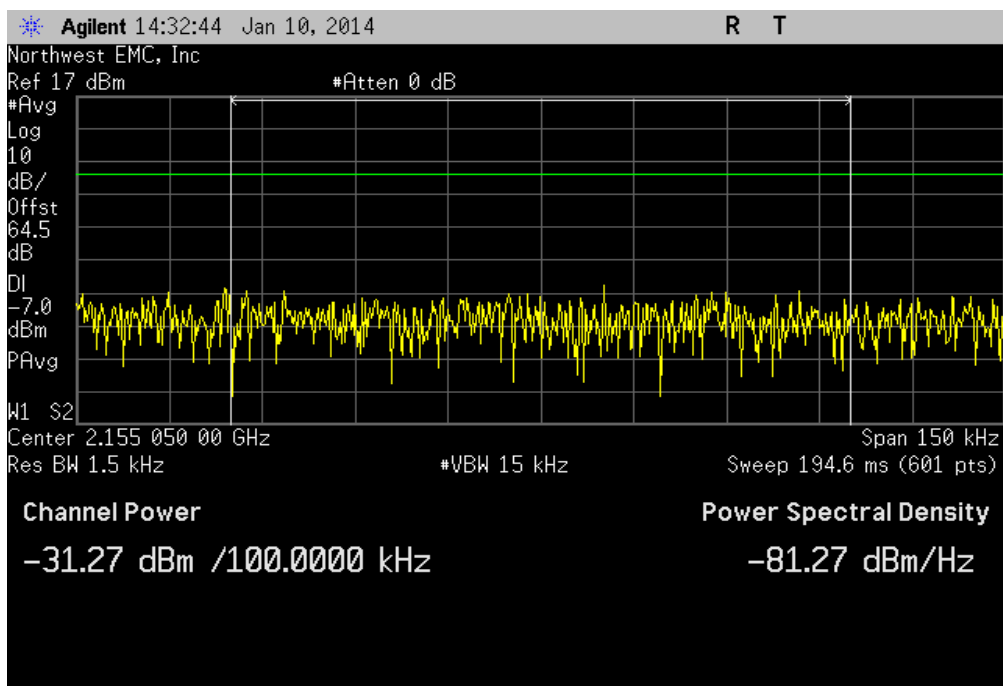
Port A, LTE 5M, Multi Carrier, Left Band Edge 2099.5 MHz

					Value	Limit	Result
					-30.48 dBm	-13 dBm	Pass



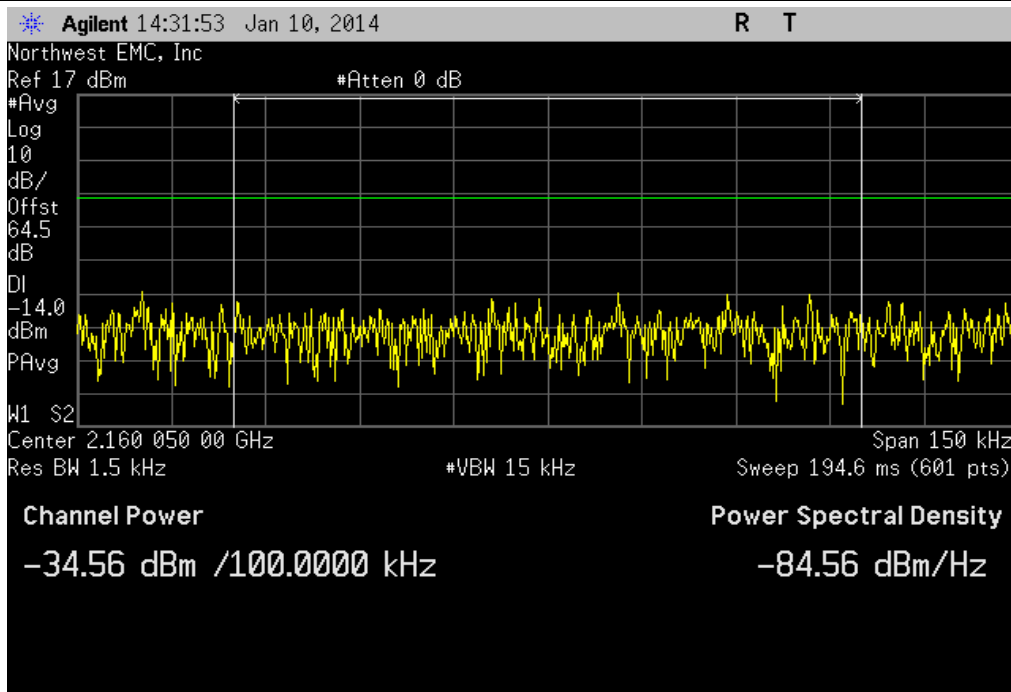
Port A, LTE 5M, Multi Carrier, Right Band Edge 2155.05 MHz

					Value	Limit	Result
					-31.27 dBm	-7 dBm	Pass



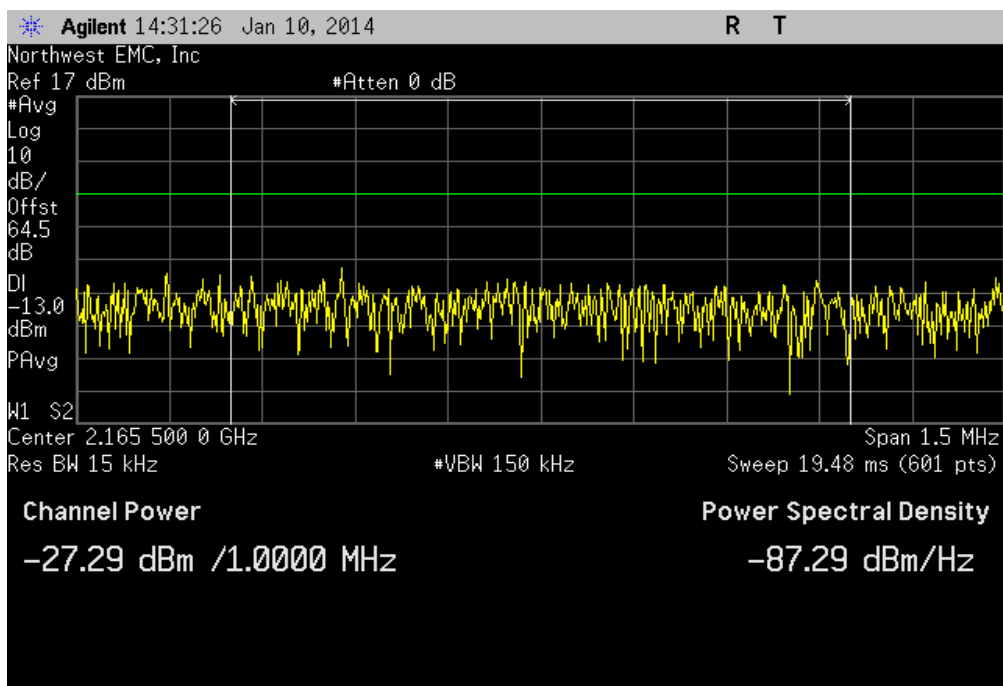
Port A, LTE 5M, Multi Carrier, Right Band Edge 2160.05 MHz

					Value	Limit	Result
					-34.56 dBm	-14 dBm	Pass



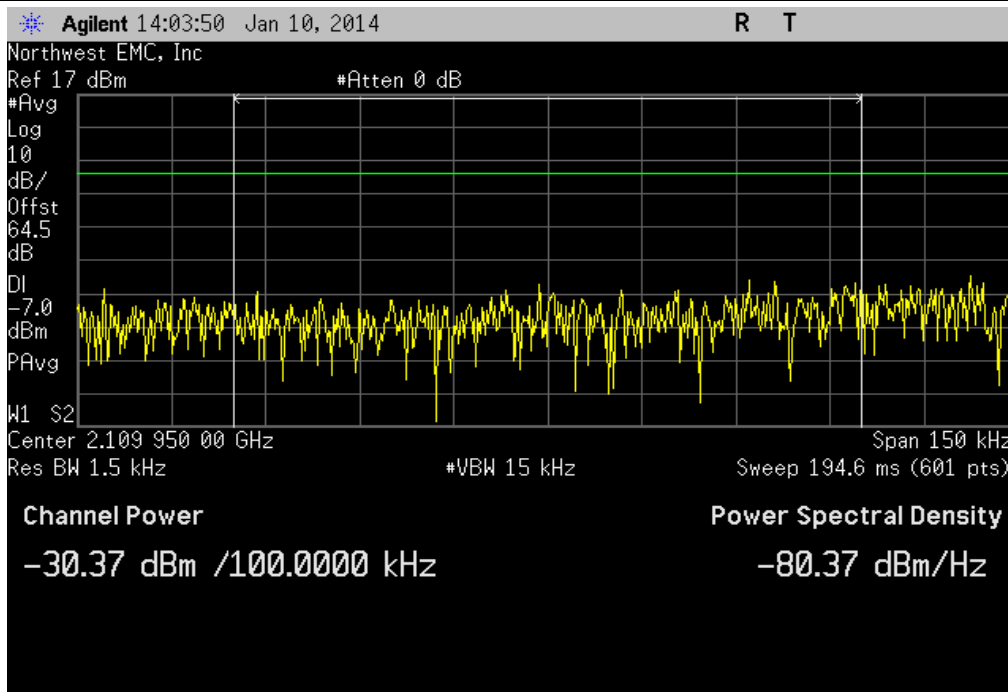
Port A, LTE 5M, Multi Carrier, Right Band Edge 2165.05 MHz

					Value	Limit	Result
					-27.29 dBm	-13 dBm	Pass



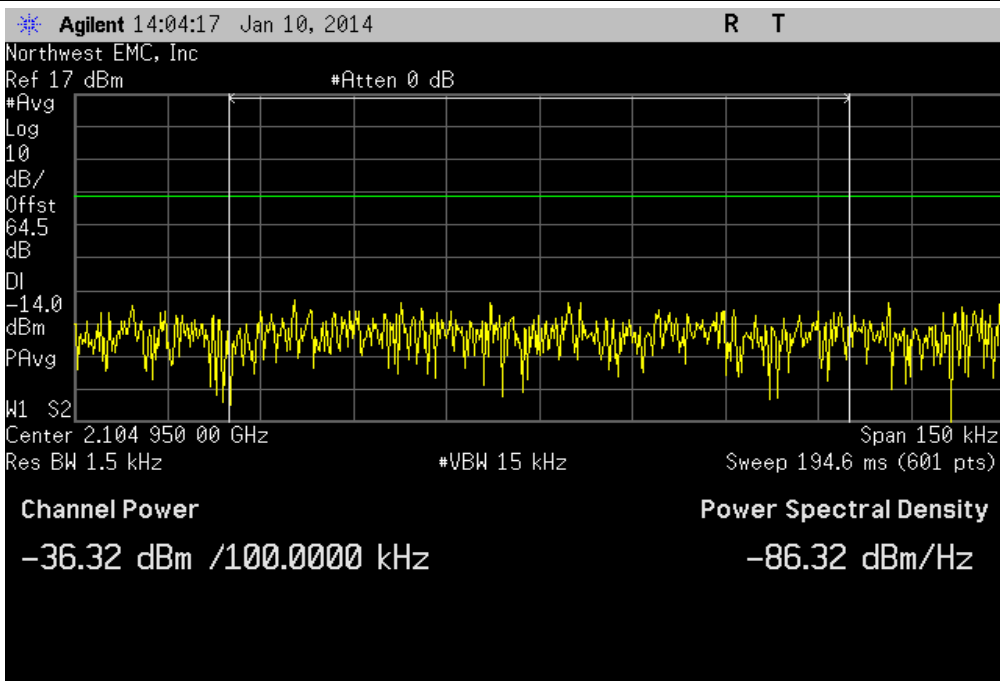
Port A, LTE 10M, Single Carrier, Left Band Edge 2109.95 MHz

Value	Limit	Result
-30.37 dBm	-7 dBm	Pass



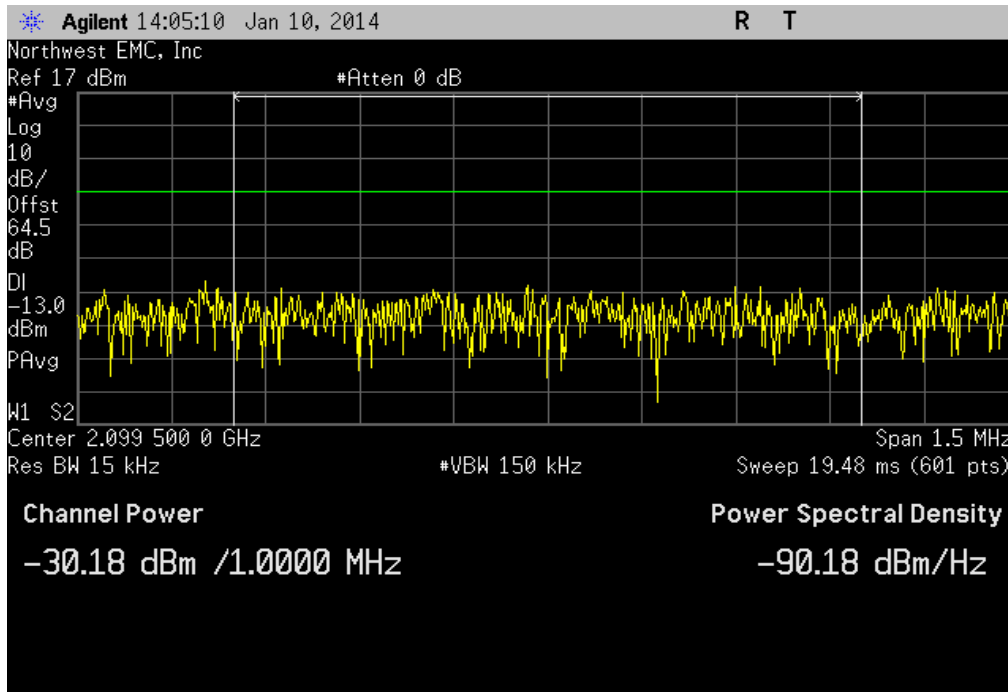
Port A, LTE 10M, Single Carrier, Left Band Edge 2104.95 MHz

Value	Limit	Result
-36.32 dBm	-14 dBm	Pass



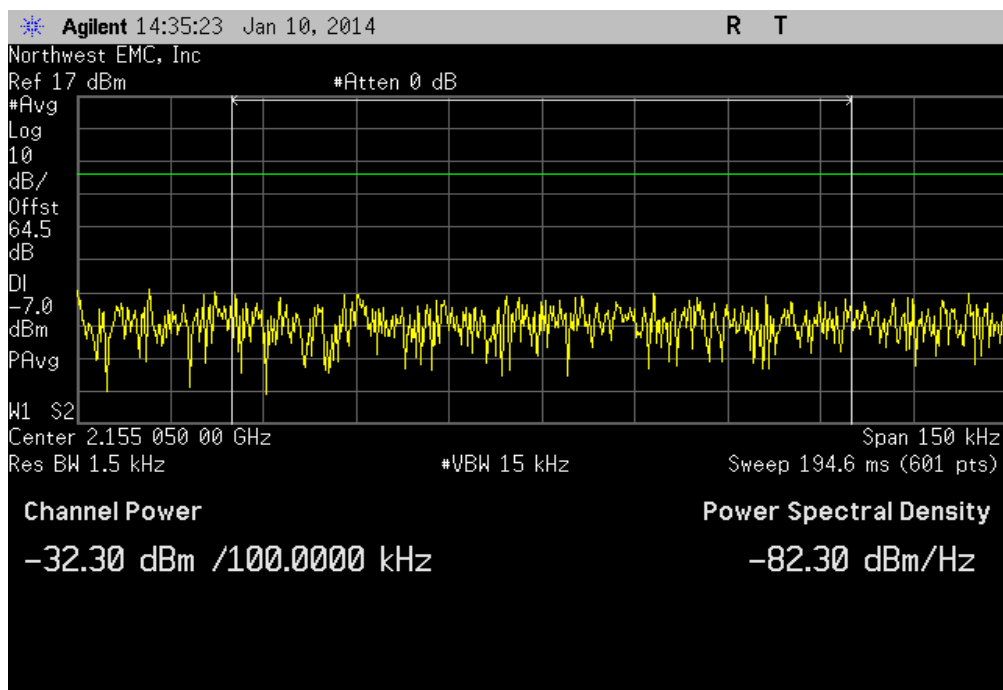
Port A, LTE 10M, Single Carrier, Left Band Edge 2099.5 MHz

					Value	Limit	Result
					-30.18 dBm	-13 dBm	Pass



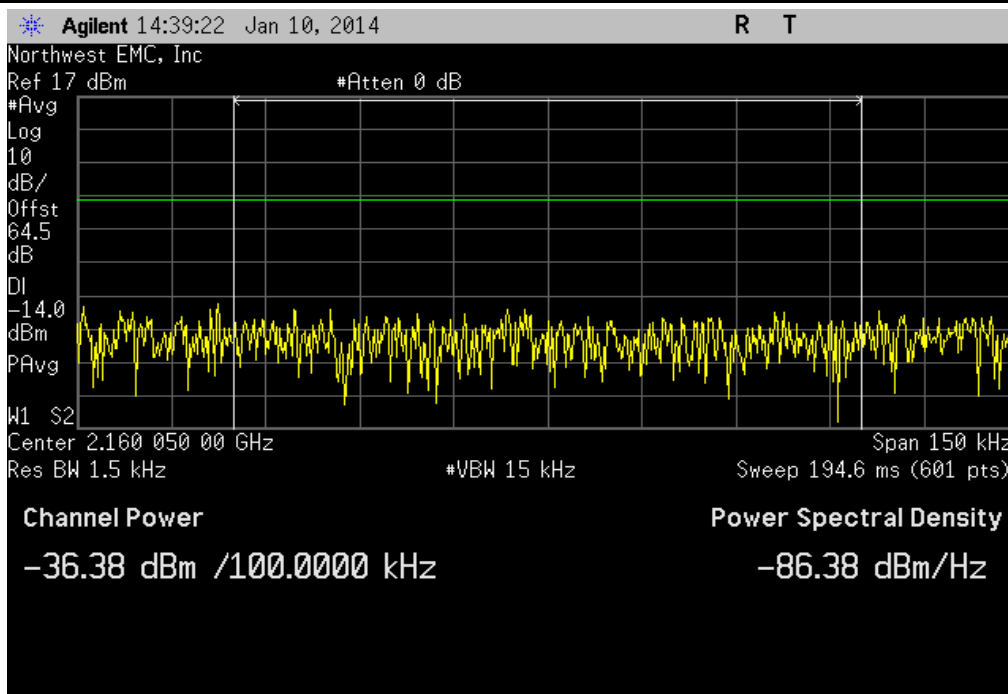
Port A, LTE 10M, Single Carrier, Right Band Edge 2155.05 MHz

					Value	Limit	Result
					-32.30 dBm	-7 dBm	Pass

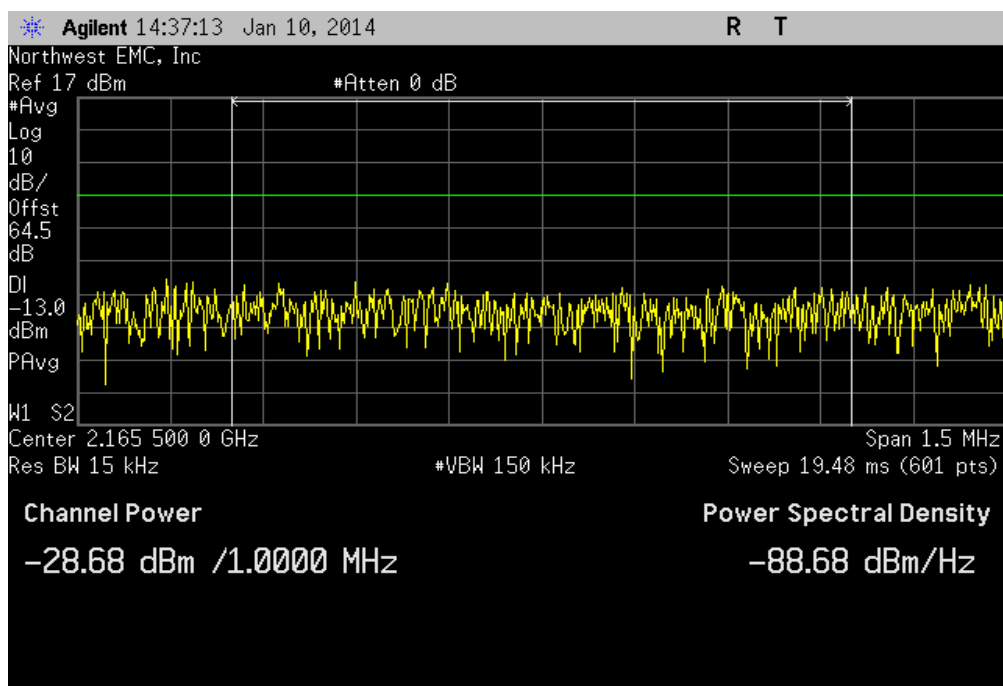




Port A, LTE 10M, Single Carrier, Right Band Edge 2160.05 MHz							
				Value	Limit	Result	
				-36.38 dBm	-14 dBm	Pass	

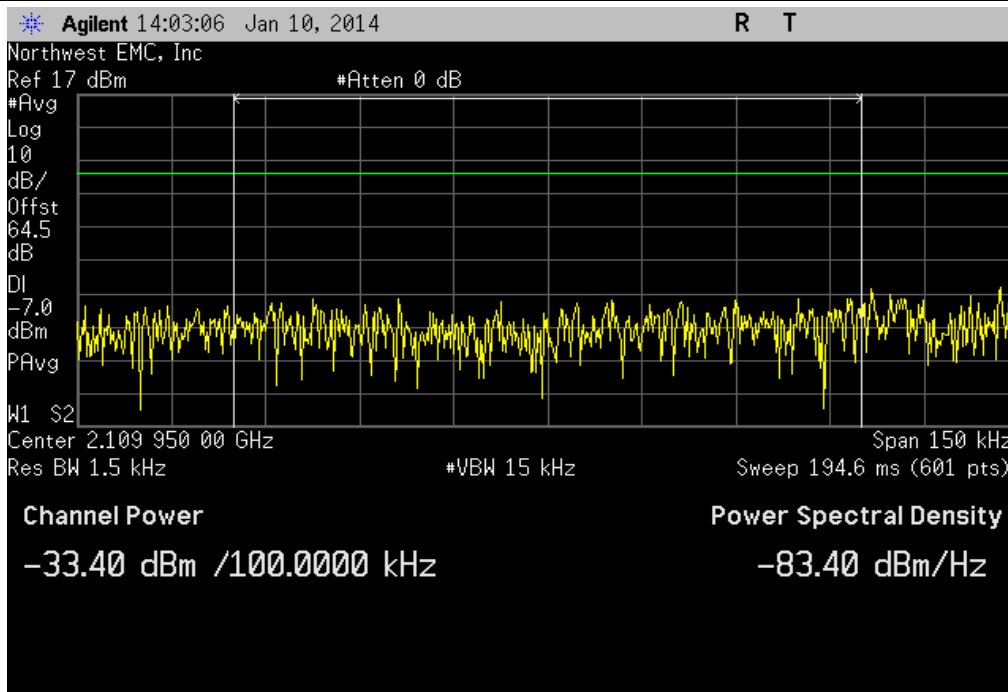


Port A, LTE 10M, Single Carrier, Right Band Edge 2165.05 MHz							
				Value	Limit	Result	
				-28.68 dBm	-13 dBm	Pass	



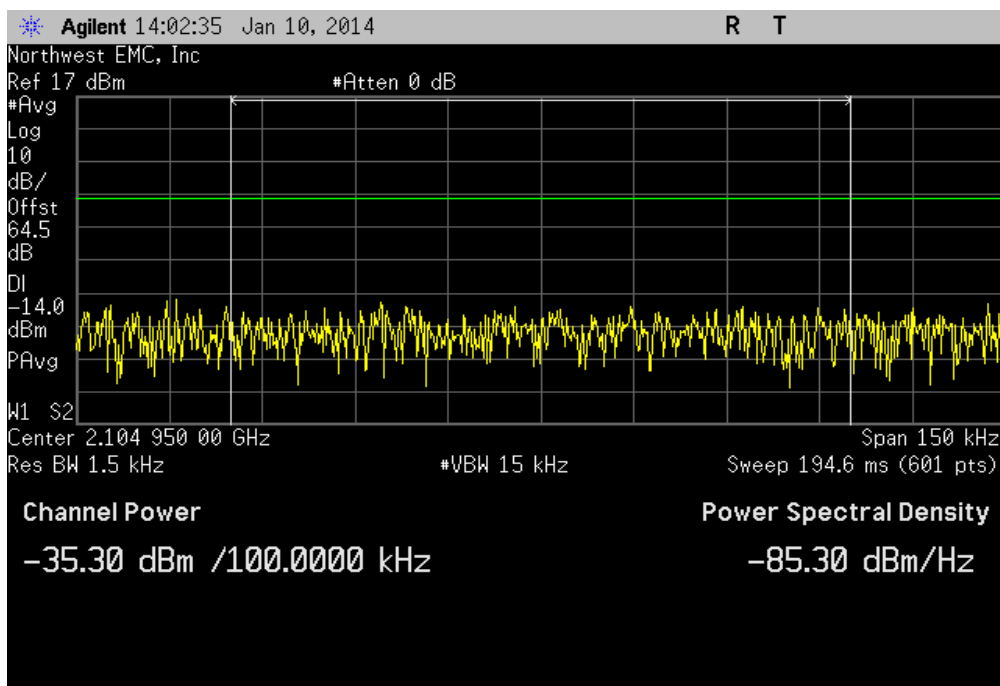
Port A, LTE 10M, Multi Carrier, Left Band Edge 2109.95 MHz

Value	Limit	Result
-33.40 dBm	-7 dBm	Pass



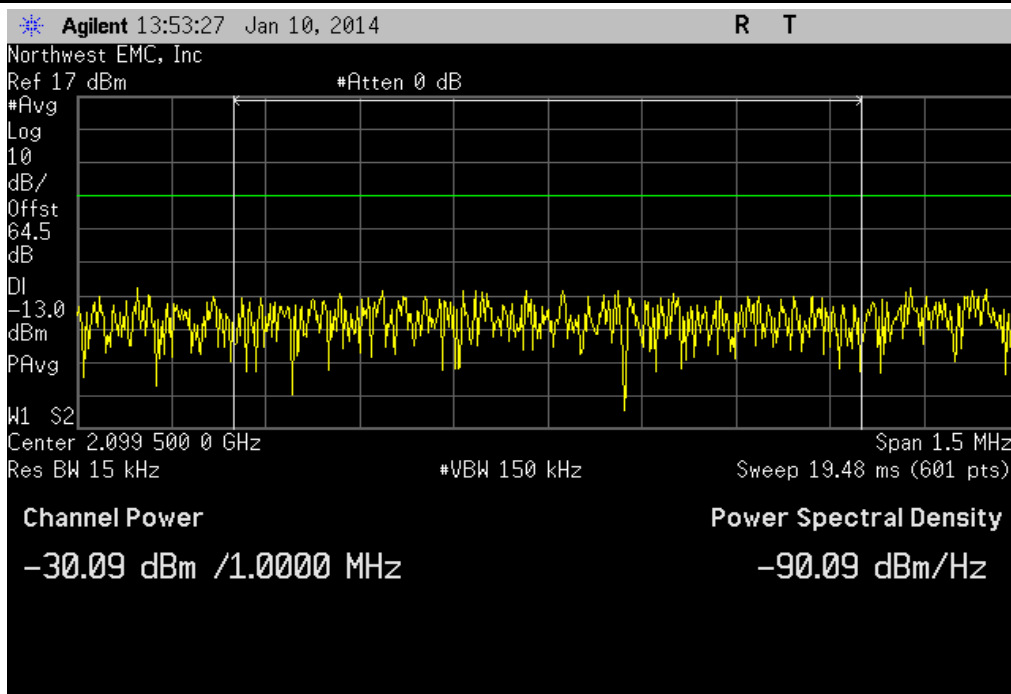
Port A, LTE 10M, Multi Carrier, Left Band Edge 2104.95 MHz

Value	Limit	Result
-35.30 dBm	-14 dBm	Pass



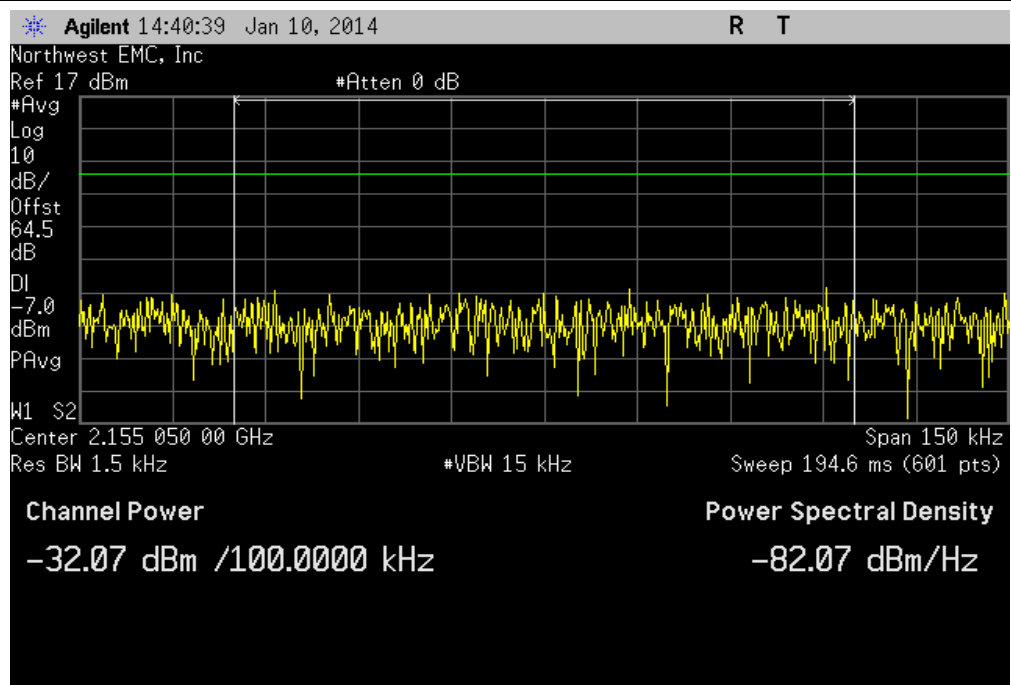
Port A, LTE 10M, Multi Carrier, Left Band Edge 2099.5 MHz

					Value	Limit	Result
					-30.09 dBm	-13 dBm	Pass



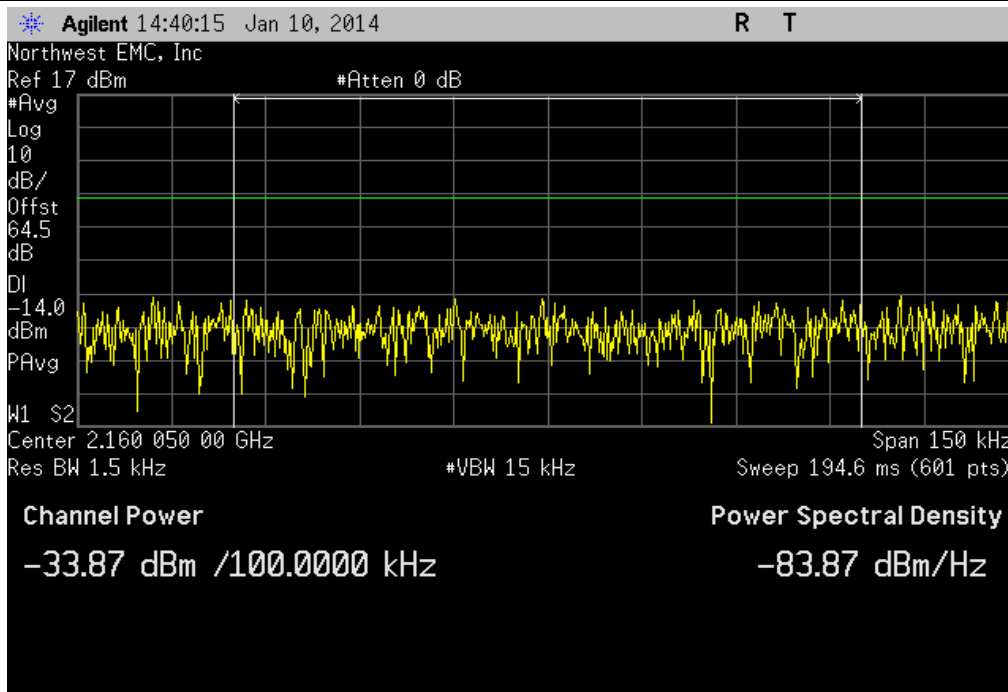
Port A, LTE 10M, Multi Carrier, Right Band Edge 2155.05 MHz

					Value	Limit	Result
					-32.07 dBm	-7 dBm	Pass



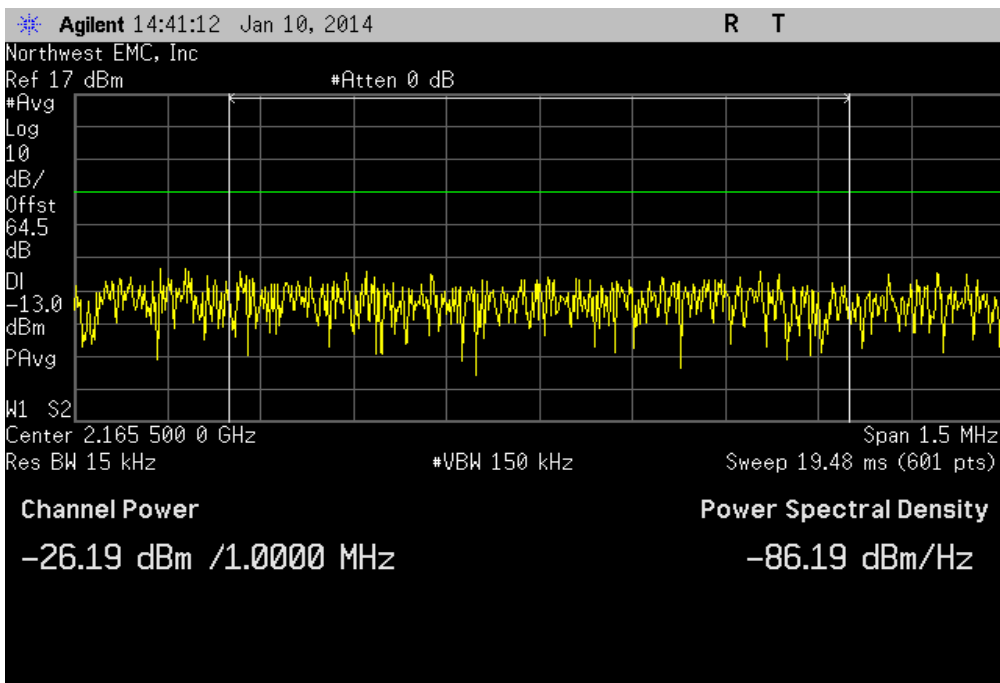
Port A, LTE 10M, Multi Carrier, Right Band Edge 2160.05 MHz

Value	Limit	Result
-33.87 dBm	-14 dBm	Pass



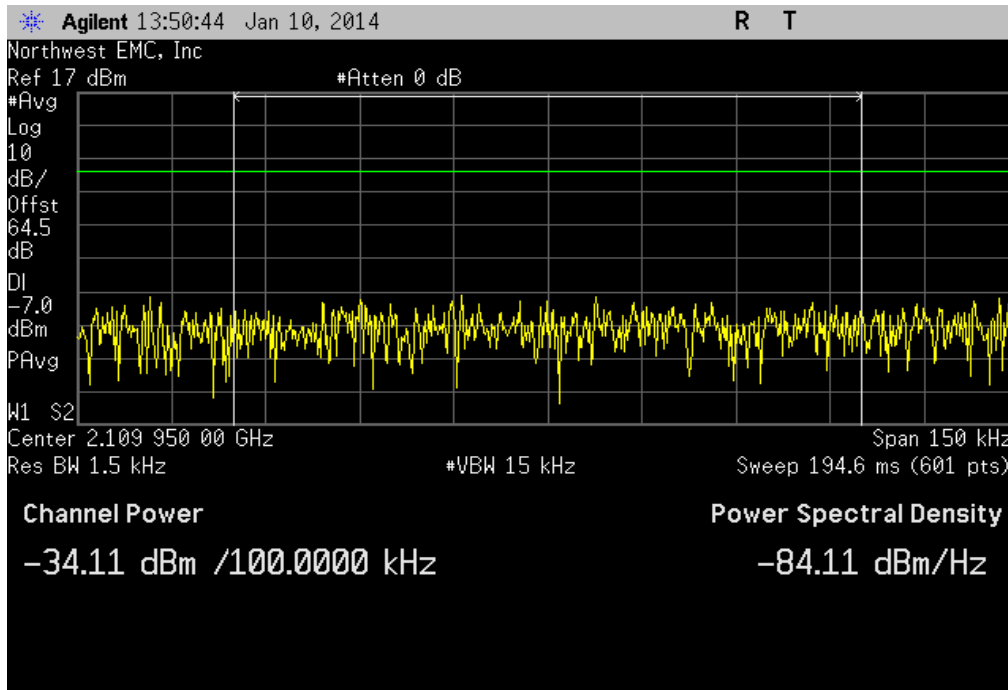
Port A, LTE 10M, Multi Carrier, Right Band Edge 2165.05 MHz

Value	Limit	Result
-26.19 dBm	-13 dBm	Pass



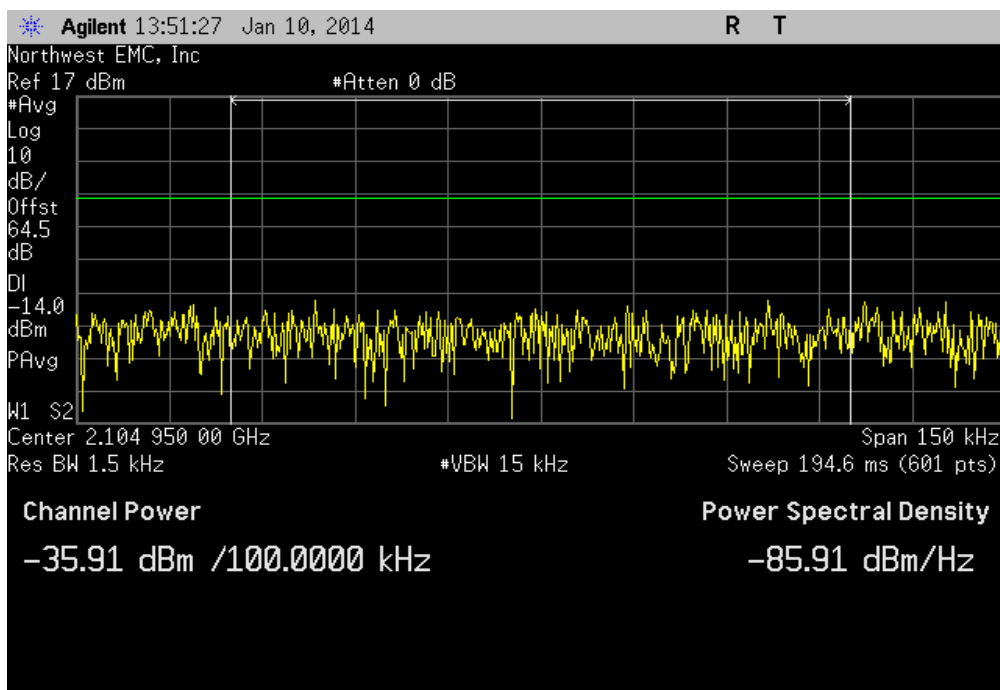
Port A, LTE 15M, Single Carrier, Left Band Edge 2109.95 MHz

Value	Limit	Result
-34.11 dBm	-7 dBm	Pass



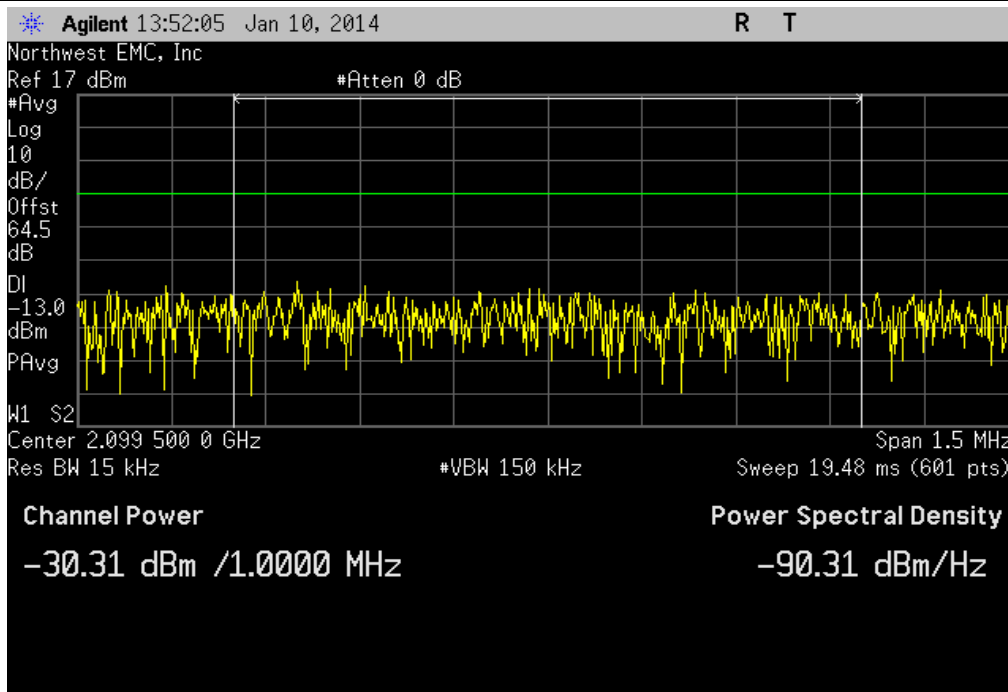
Port A, LTE 15M, Single Carrier, Left Band Edge 2104.95 MHz

Value	Limit	Result
-35.91 dBm	-14 dBm	Pass



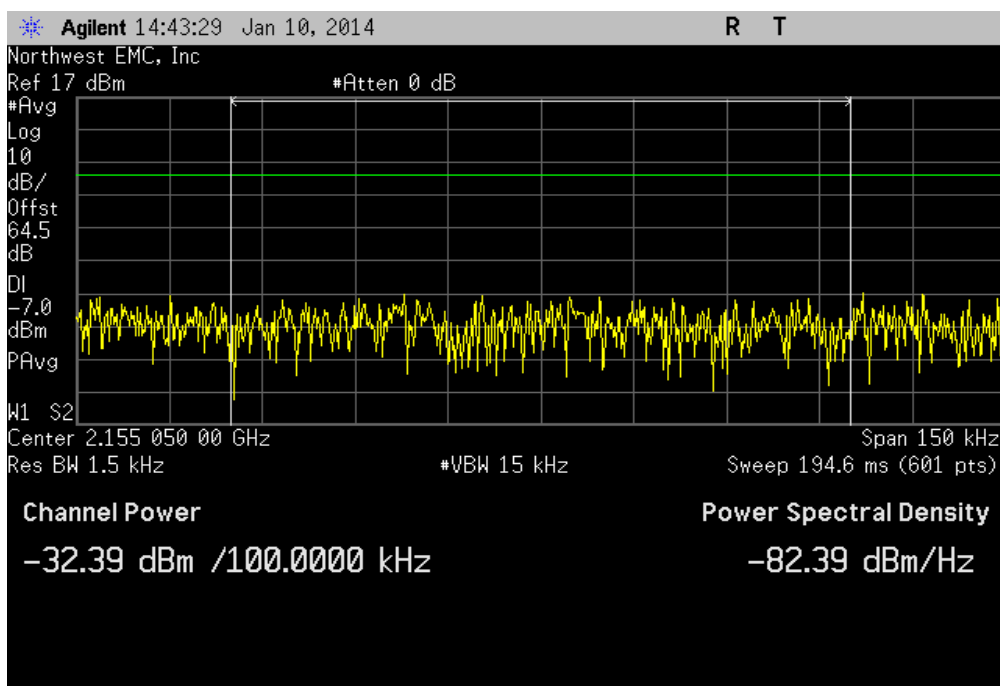
Port A, LTE 15M, Single Carrier, Left Band Edge 2099.5 MHz

					Value	Limit	Result
					-30.31 dBm	-13 dBm	Pass

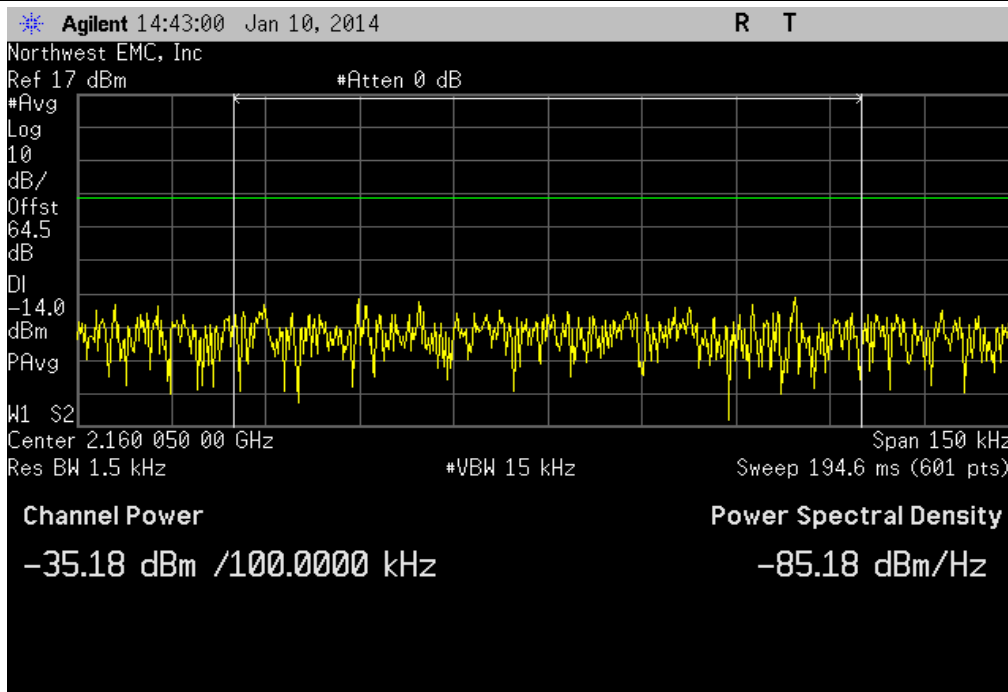


Port A, LTE 15M, Single Carrier, Right Band Edge 2155.05 MHz

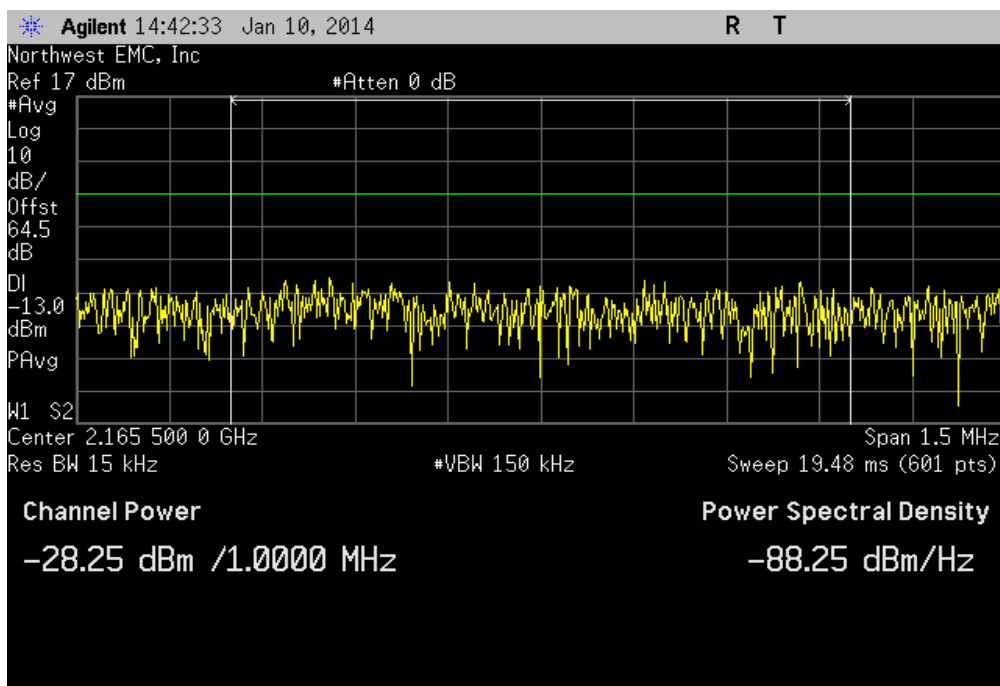
					Value	Limit	Result
					-32.39 dBm	-7 dBm	Pass



Port A, LTE 15M, Single Carrier, Right Band Edge 2160.05 MHz							
				Value	Limit	Result	
				-35.18 dBm	-14 dBm	Pass	

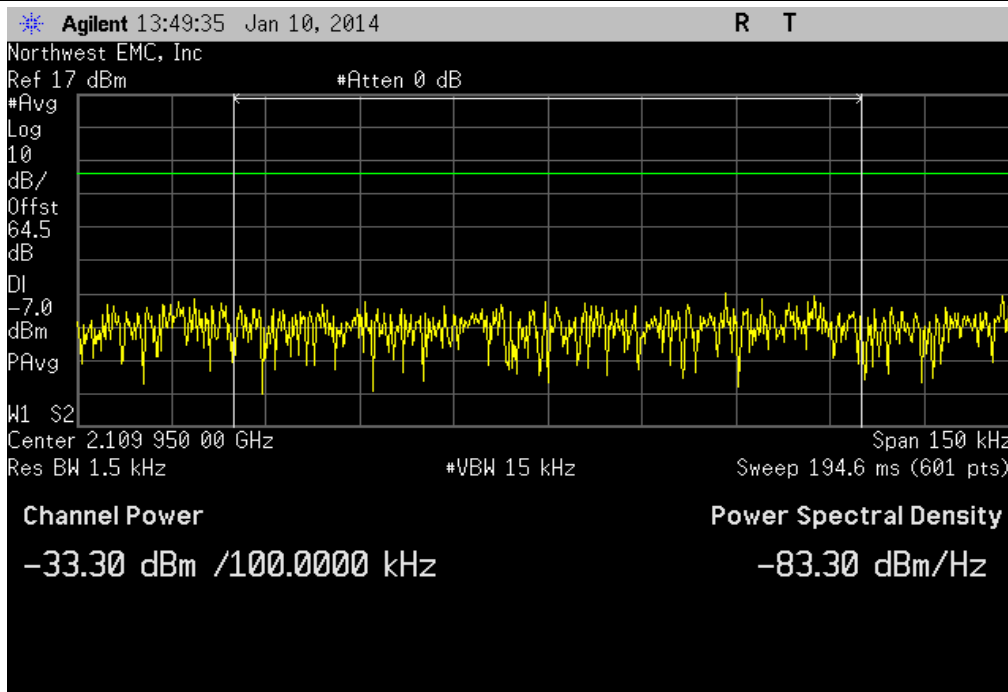


Port A, LTE 15M, Single Carrier, Right Band Edge 2165.05 MHz							
				Value	Limit	Result	
				-28.25 dBm	-13 dBm	Pass	



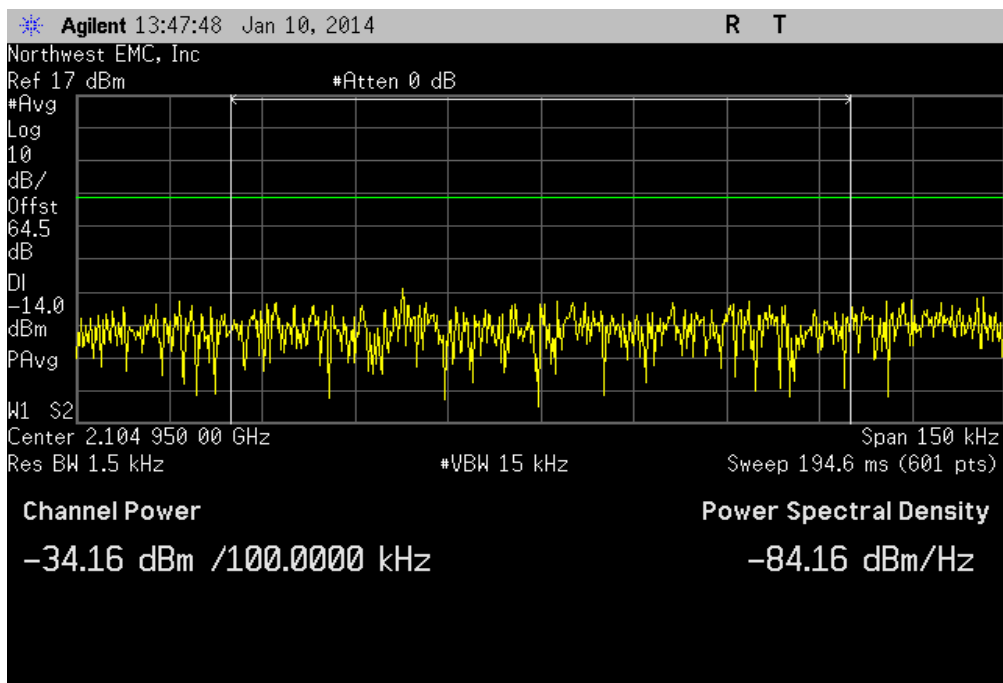
Port A, LTE 15M, Multi Carrier, Left Band Edge 2109.95 MHz

Value	Limit	Result
-33.30 dBm	-7 dBm	Pass



Port A, LTE 15M, Multi Carrier, Left Band Edge 2104.95 MHz

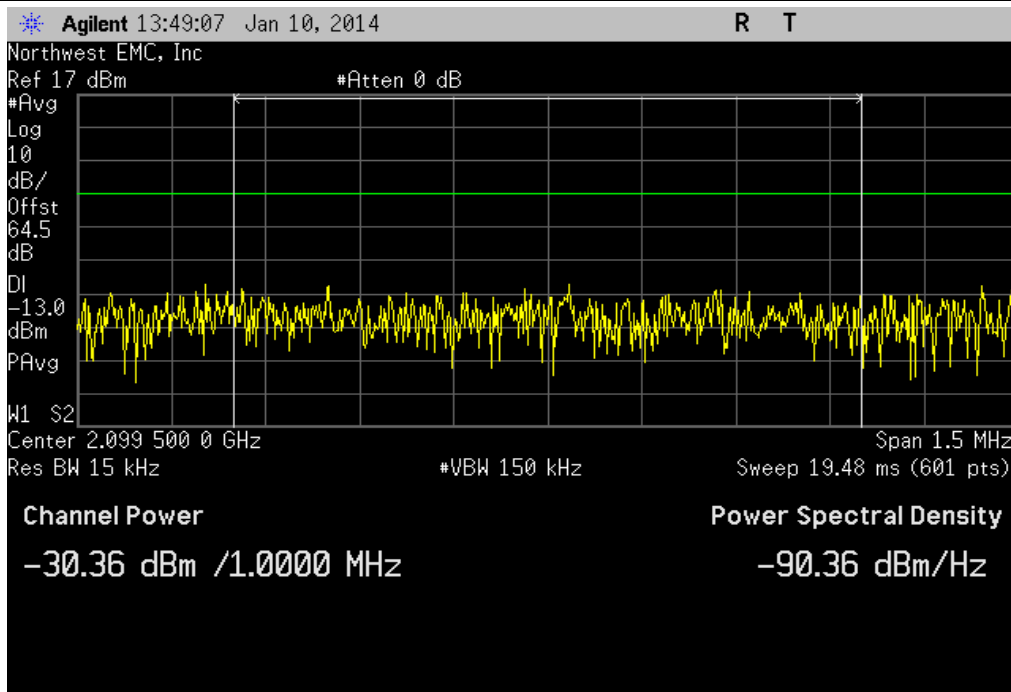
Value	Limit	Result
-34.16 dBm	-14 dBm	Pass





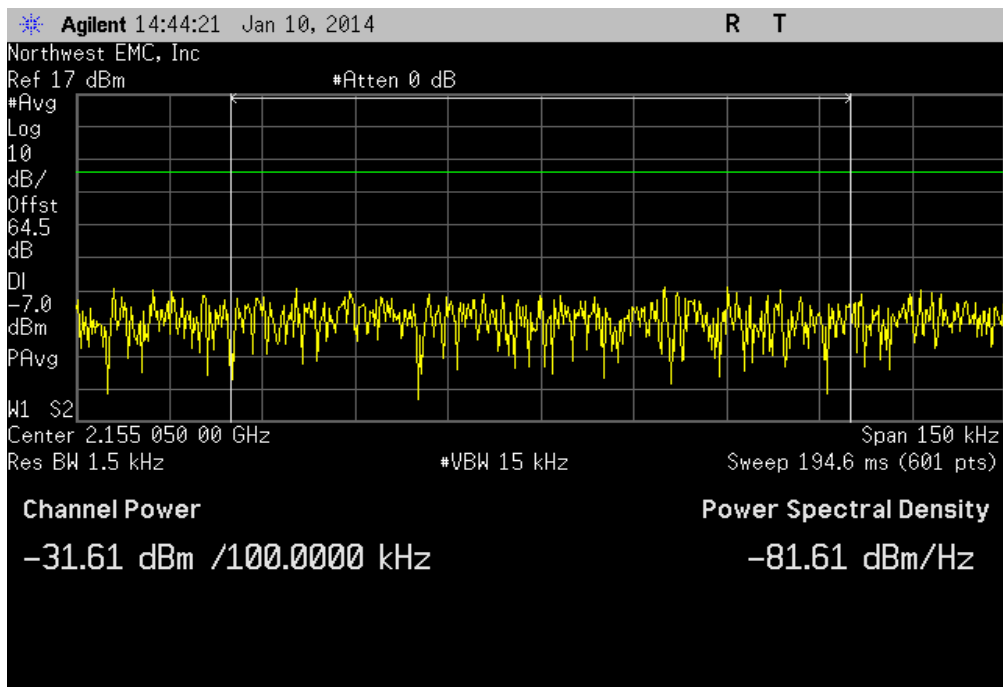
Port A, LTE 15M, Multi Carrier, Left Band Edge 2099.5 MHz

					Value	Limit	Result
					-30.36 dBm	-13 dBm	Pass



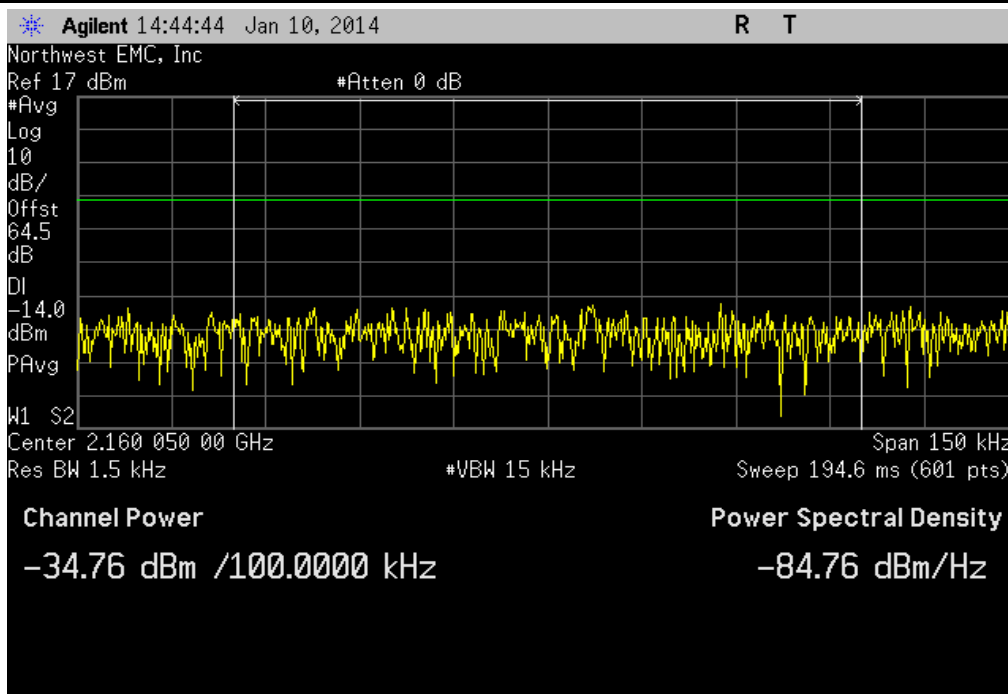
Port A, LTE 15M, Multi Carrier, Right Band Edge 2155.05 MHz

					Value	Limit	Result
					-31.61 dBm	-7 dBm	Pass



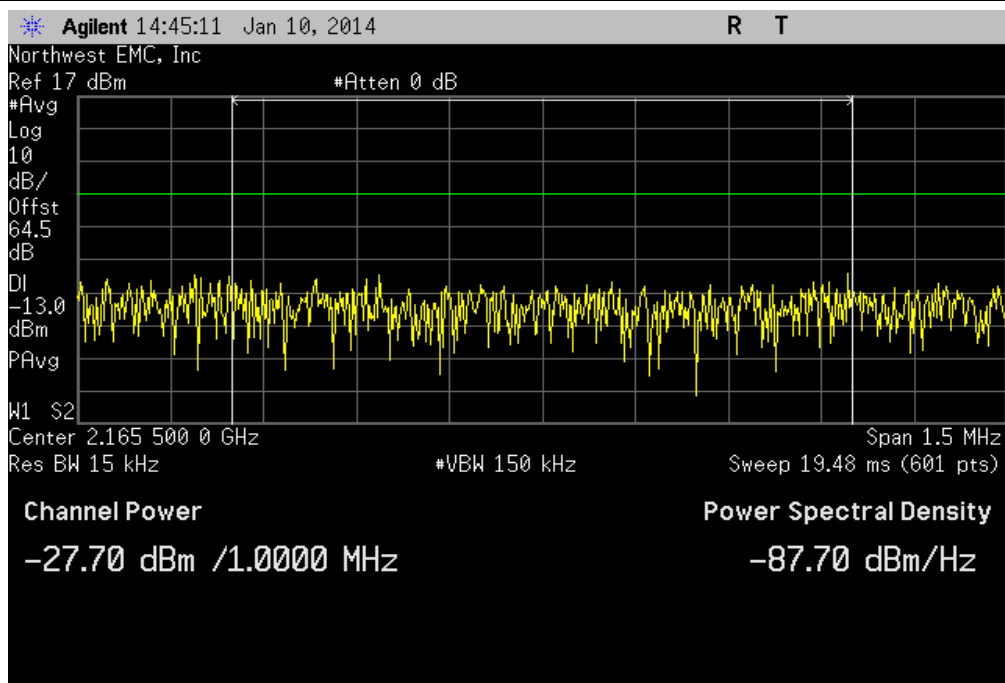
Port A, LTE 15M, Multi Carrier, Right Band Edge 2160.05 MHz

Value	Limit	Result
-34.76 dBm	-14 dBm	Pass



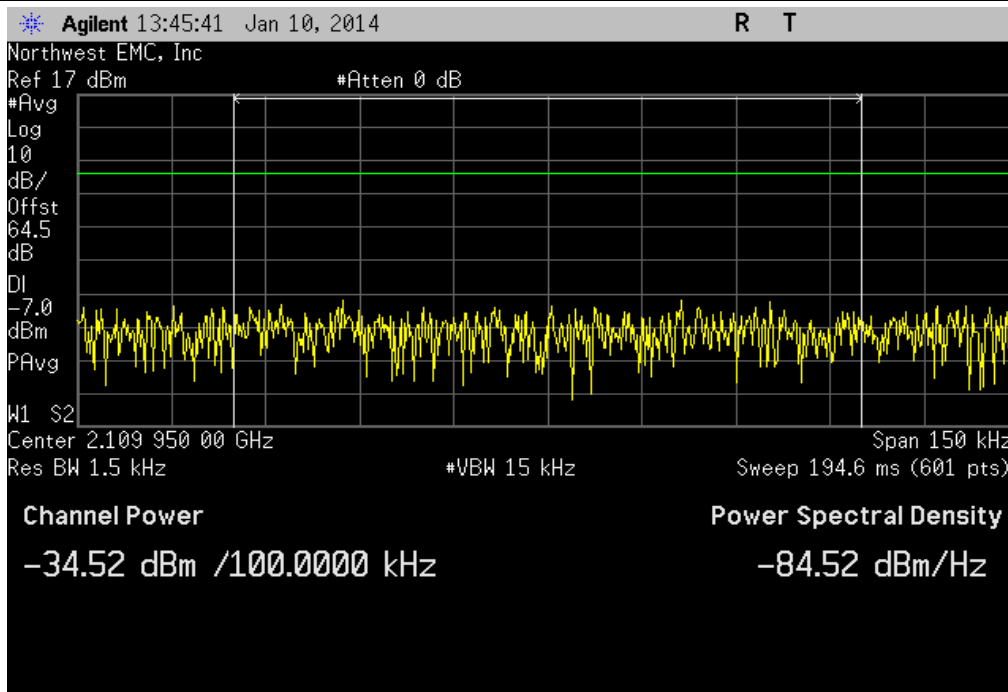
Port A, LTE 15M, Multi Carrier, Right Band Edge 2165.05 MHz

Value	Limit	Result
-27.70 dBm	-13 dBm	Pass



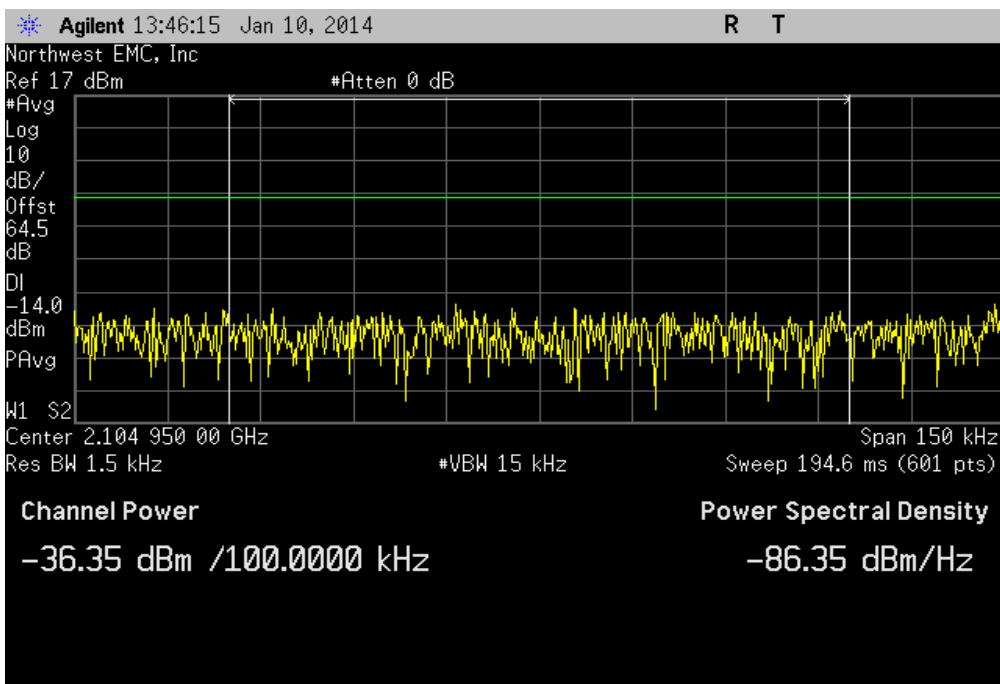
Port A, LTE 20M, Single Carrier, Left Band Edge 2109.95 MHz

Value	Limit	Result
-34.52 dBm	-7 dBm	Pass

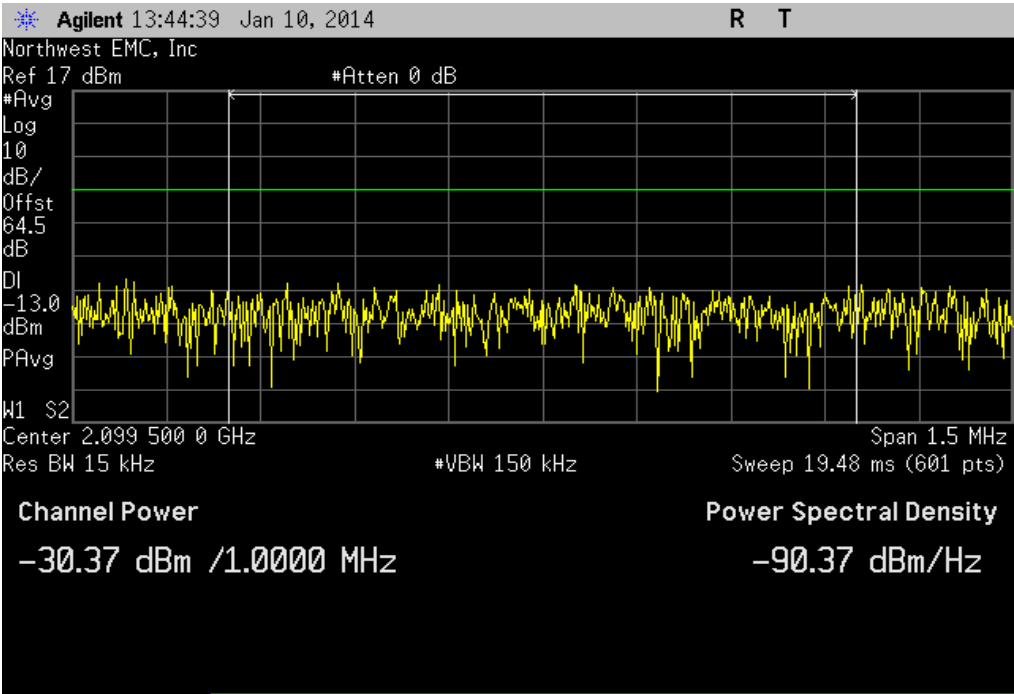


Port A, LTE 20M, Single Carrier, Left Band Edge 2104.95 MHz

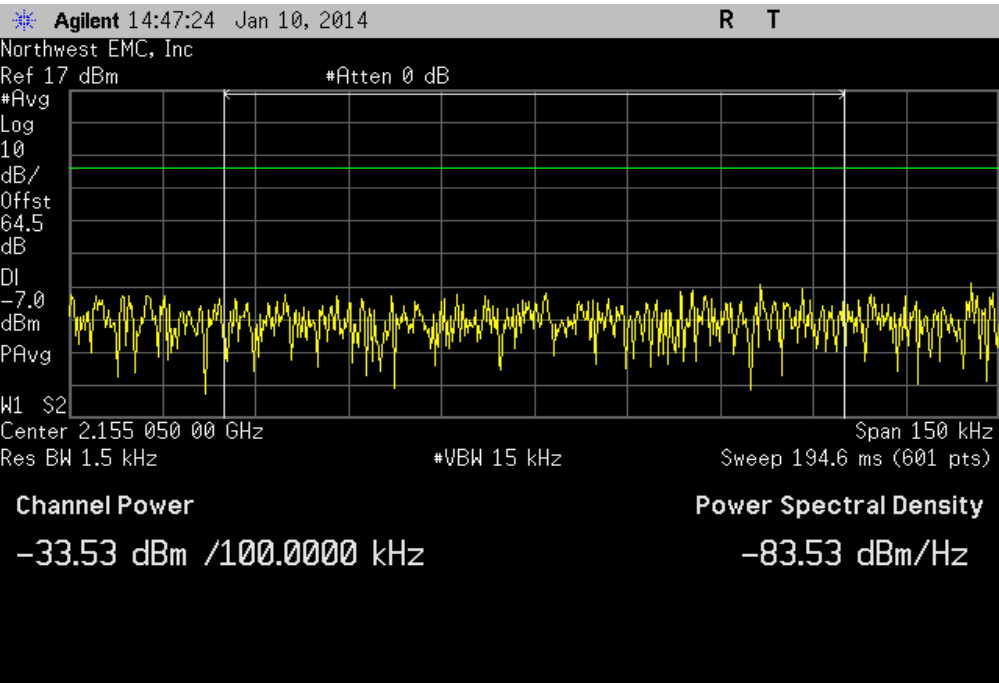
Value	Limit	Result
-36.35 dBm	-14 dBm	Pass



Port A, LTE 20M, Single Carrier, Left Band Edge 2099.5 MHz							
				Value	Limit	Result	
				-30.37 dBm	-13 dBm	Pass	

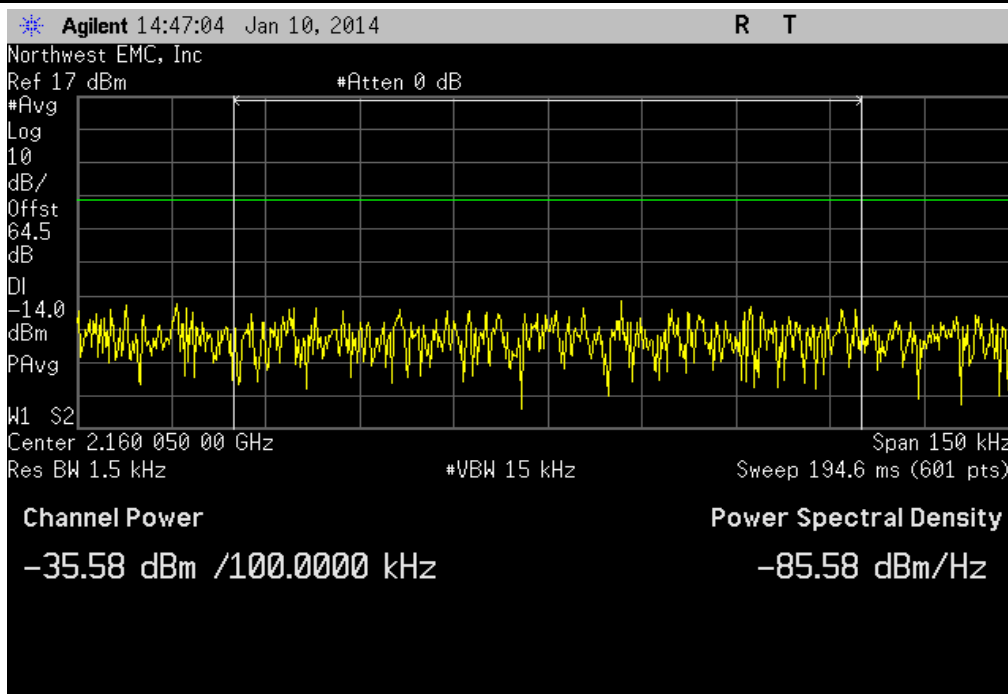


Port A, LTE 20M, Single Carrier, Right Band Edge 2155.05 MHz							
				Value	Limit	Result	
				-33.53 dBm	-7 dBm	Pass	



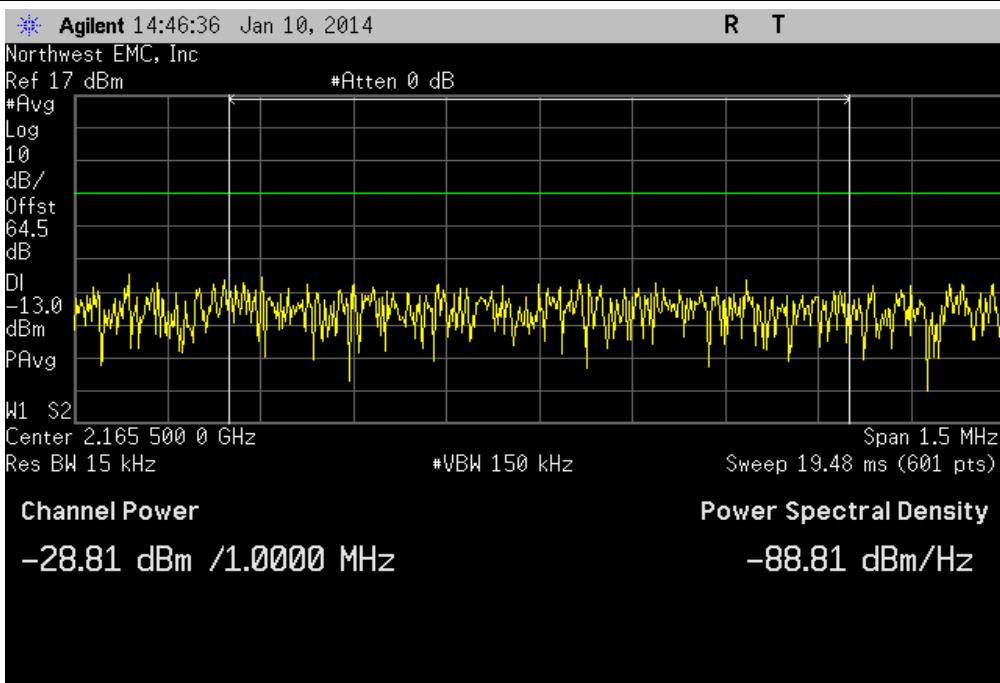
Port A, LTE 20M, Single Carrier, Right Band Edge 2160.05 MHz

Value	Limit	Result
-35.58 dBm	-14 dBm	Pass



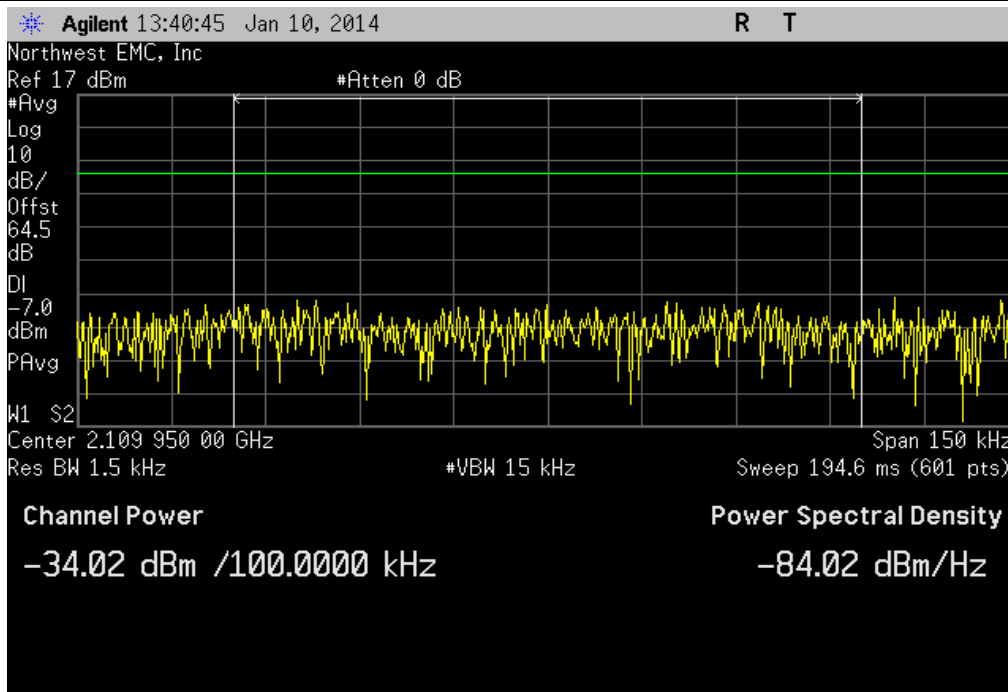
Port A, LTE 20M, Single Carrier, Right Band Edge 2165.05 MHz

Value	Limit	Result
-28.81 dBm	-13 dBm	Pass



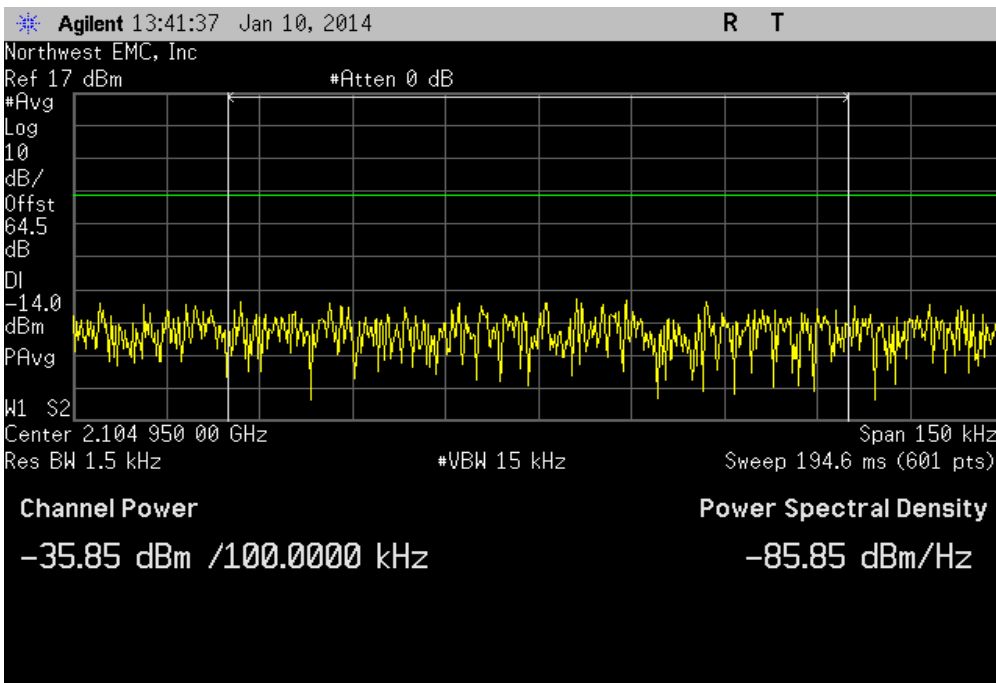
Port A, LTE 20M, Multi Carrier, Left Band Edge 2109.95 MHz

Value	Limit	Result
-34.02 dBm	-7 dBm	Pass



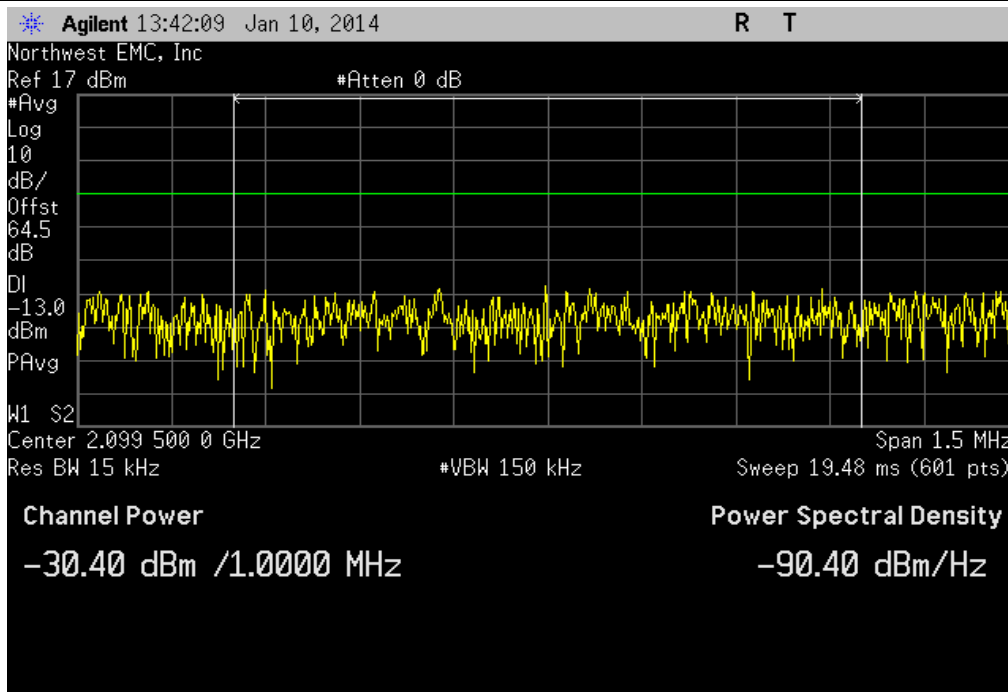
Port A, LTE 20M, Multi Carrier, Left Band Edge 2104.95 MHz

Value	Limit	Result
-35.85 dBm	-14 dBm	Pass



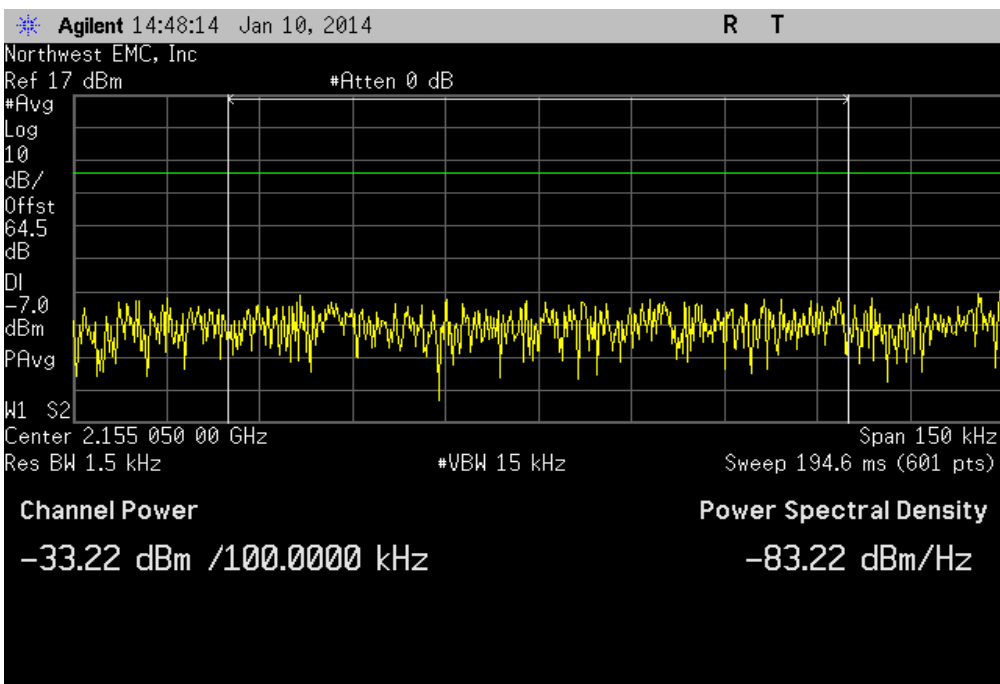
Port A, LTE 20M, Multi Carrier, Left Band Edge 2099.5 MHz

					Value	Limit	Result
					-30.40 dBm	-13 dBm	Pass

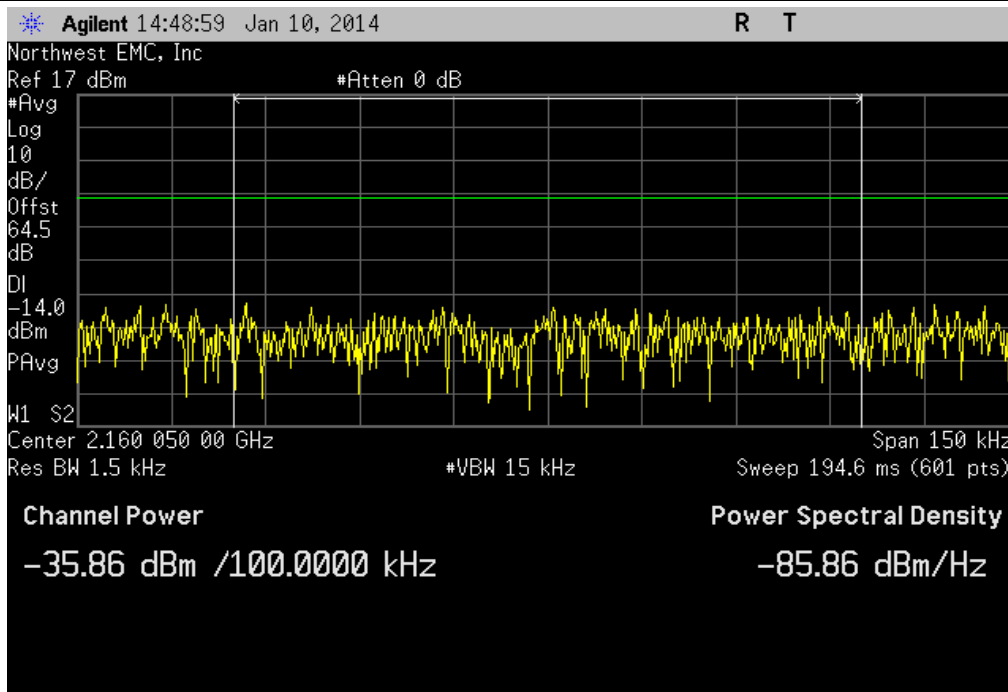


Port A, LTE 20M, Multi Carrier, Right Band Edge 2155.05 MHz

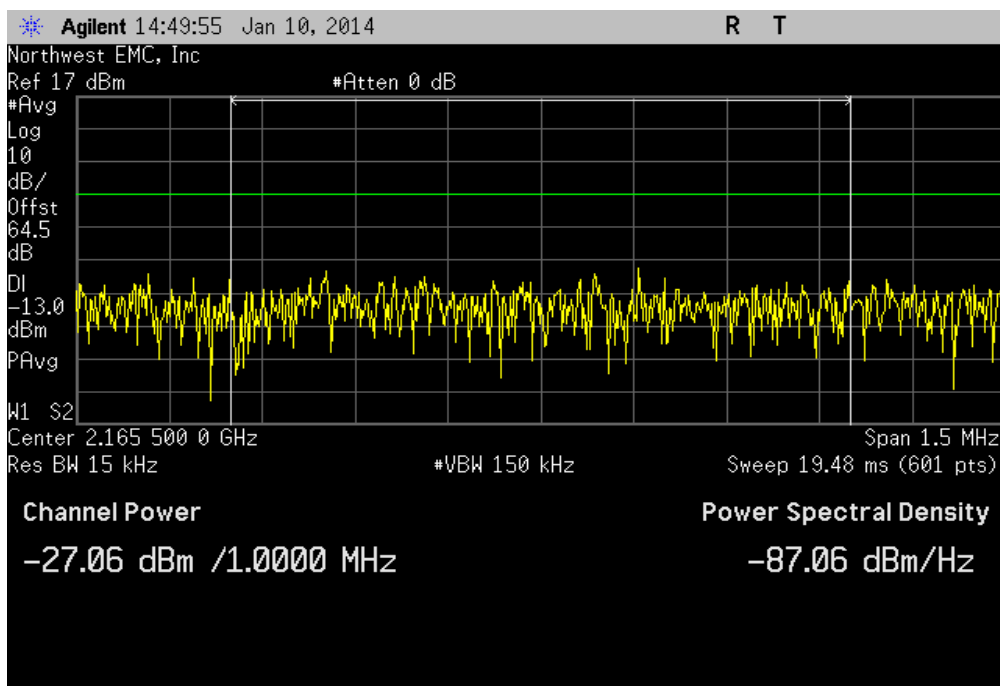
					Value	Limit	Result
					-33.22 dBm	-7 dBm	Pass



Port A, LTE 20M, Multi Carrier, Right Band Edge 2160.05 MHz							
					Value	Limit	Result
					-35.86 dBm	-14 dBm	Pass



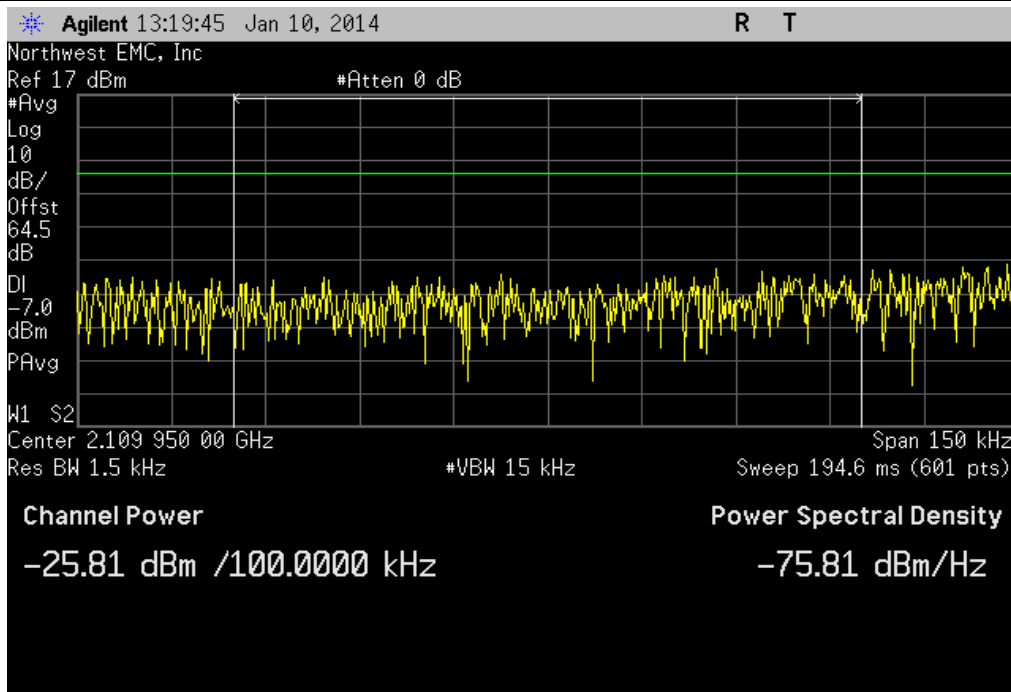
Port A, LTE 20M, Multi Carrier, Right Band Edge 2165.05 MHz							
					Value	Limit	Result
					-27.06 dBm	-13 dBm	Pass





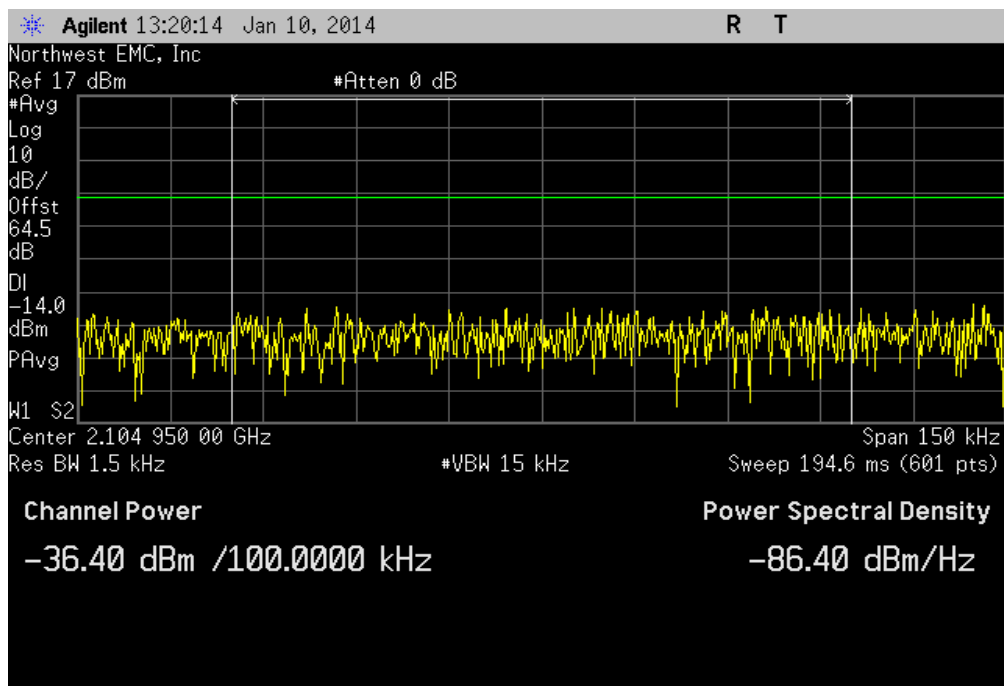
Port B, LTE 5M, Single Carrier, Left Band Edge 2109.95 MHz

					Value	Limit	Result
					-25.81 dBm	-7 dBm	Pass



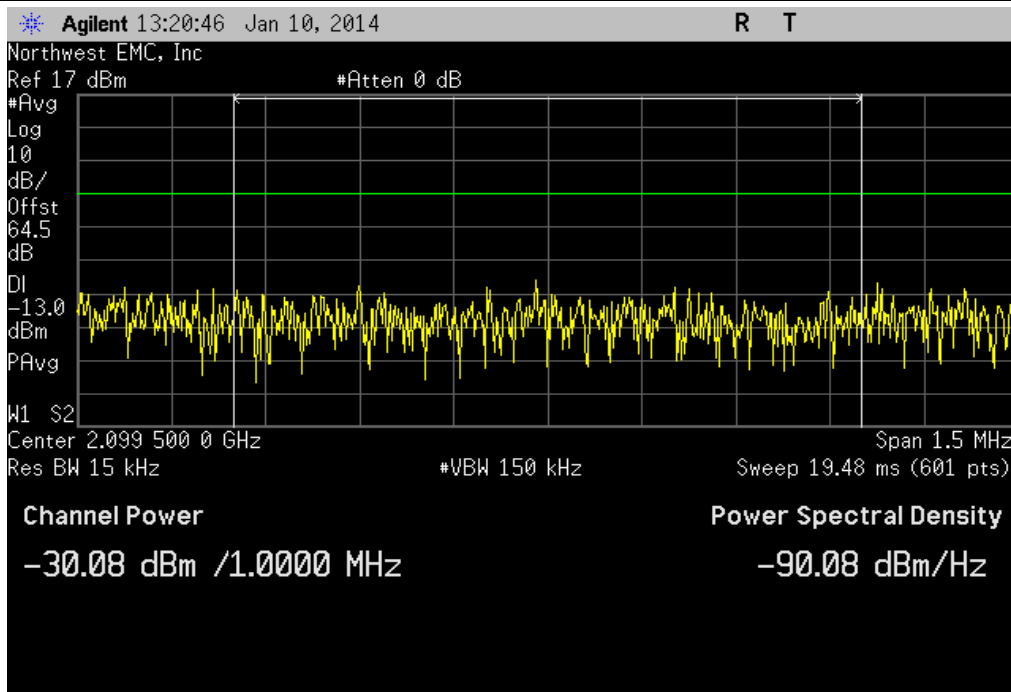
Port B, LTE 5M, Single Carrier, Left Band Edge 2104.95 MHz

					Value	Limit	Result
					-36.40 dBm	-14 dBm	Pass



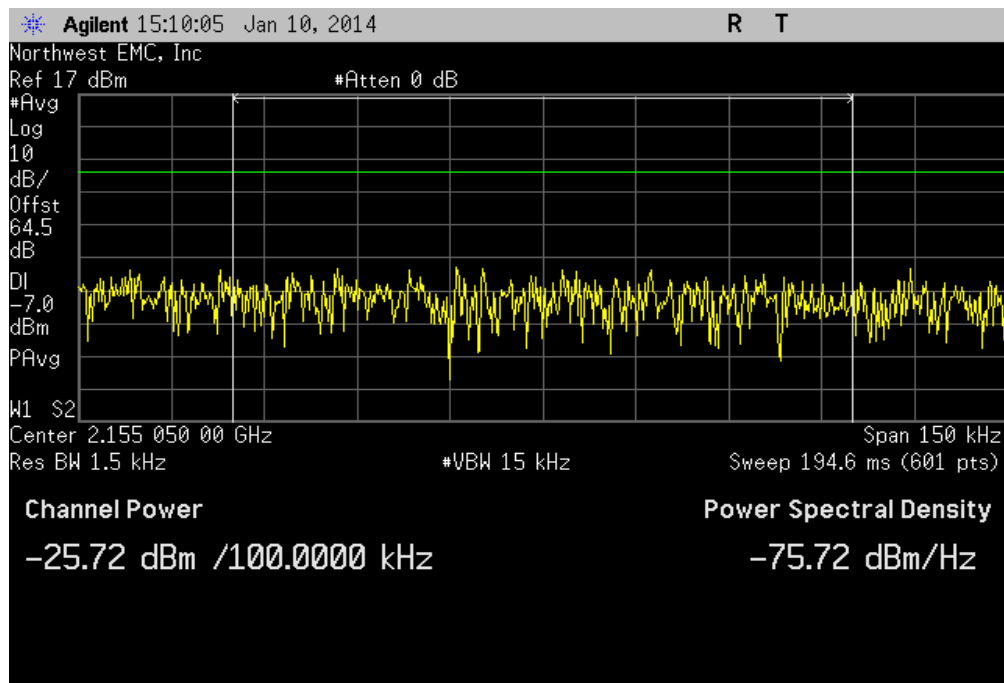
Port B, LTE 5M, Single Carrier, Left Band Edge 2099.5 MHz

					Value	Limit	Result
					-30.08 dBm	-13 dBm	Pass



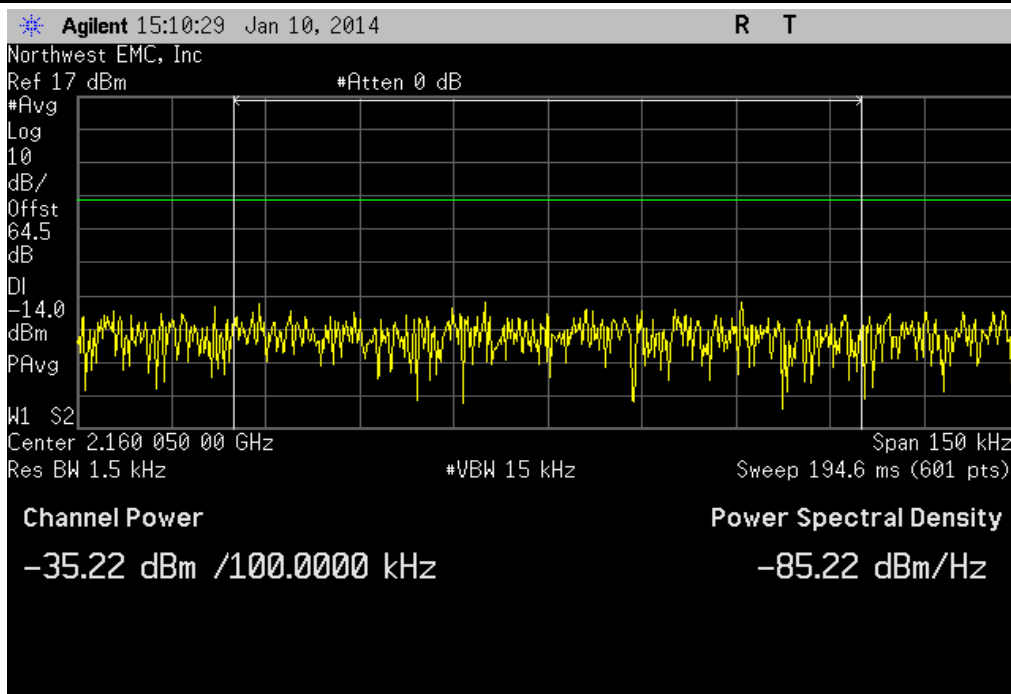
Port B, LTE 5M, Single Carrier, Right Band Edge 2155.05 MHz

					Value	Limit	Result
					-25.72 dBm	-7 dBm	Pass



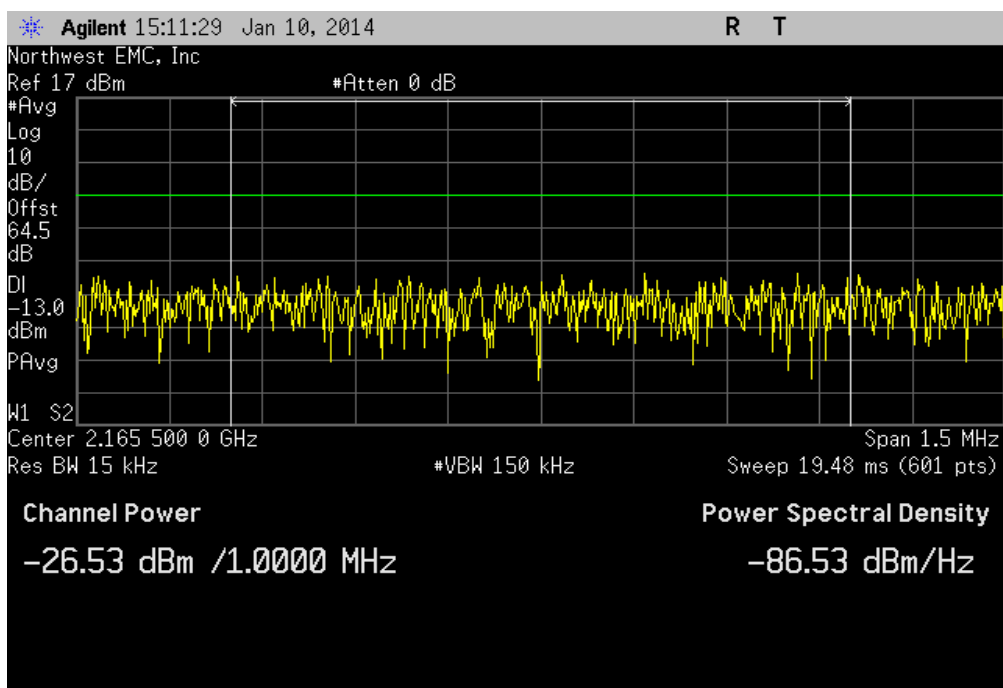
Port B, LTE 5M, Single Carrier, Right Band Edge 2160.05 MHz

Value	Limit	Result
-35.22 dBm	-14 dBm	Pass



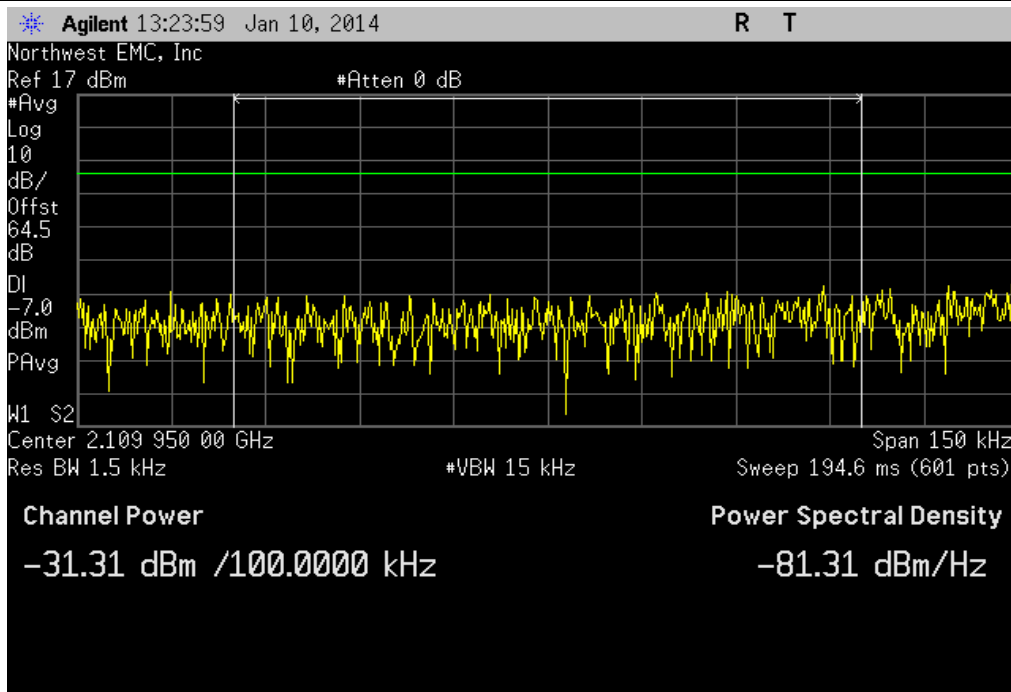
Port B, LTE 5M, Single Carrier, Right Band Edge 2165.05 MHz

Value	Limit	Result
-26.53 dBm	-13 dBm	Pass



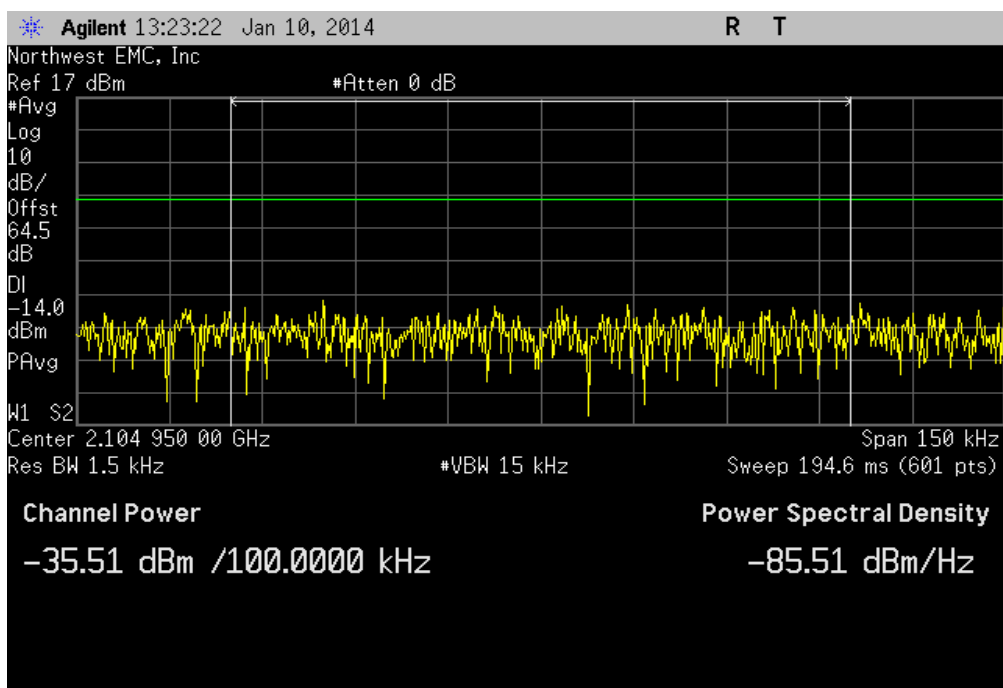
Port B, LTE 5M, Multi Carrier, Left Band Edge 2109.95 MHz

					Value	Limit	Result
					-31.31 dBm	-7 dBm	Pass



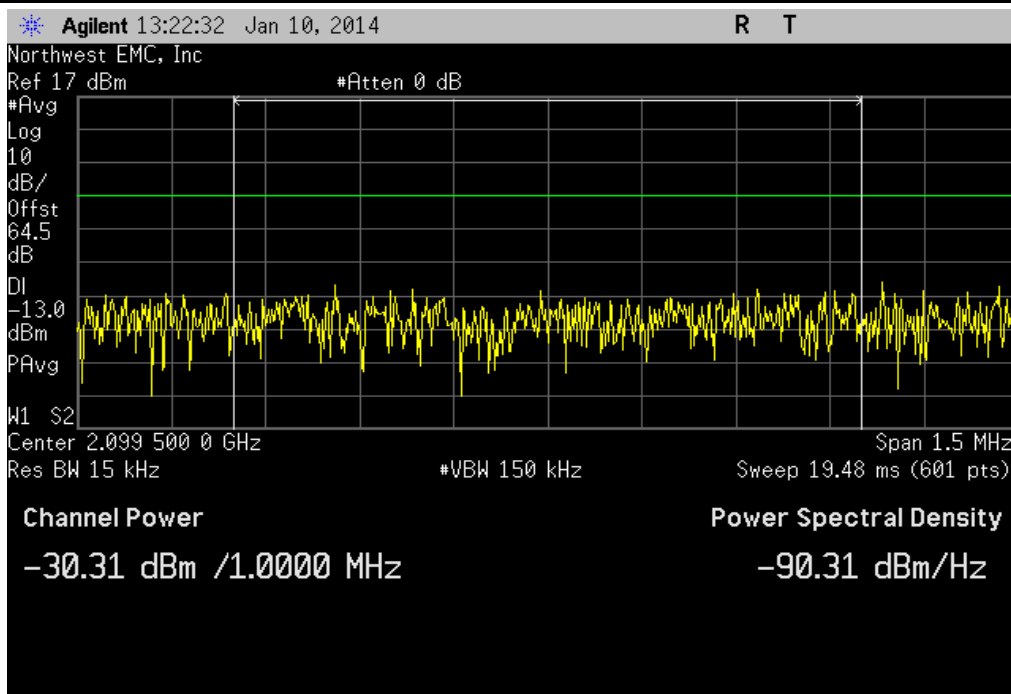
Port B, LTE 5M, Multi Carrier, Left Band Edge 2104.95 MHz

					Value	Limit	Result
					-35.51 dBm	14 dBm	Pass



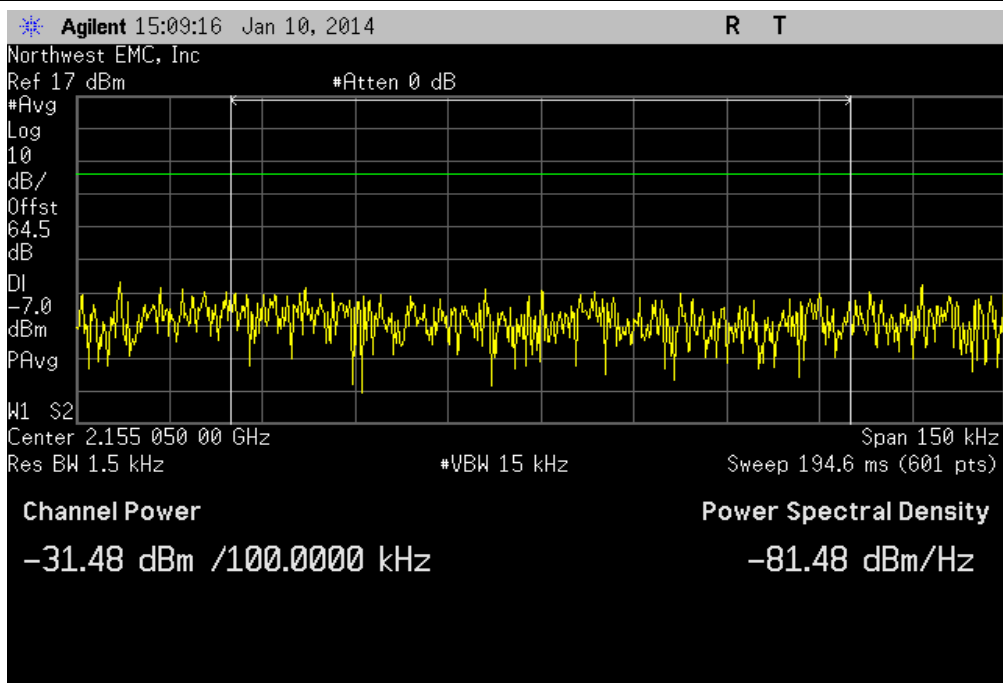
Port B, LTE 5M, Multi Carrier, Left Band Edge 2099.5 MHz

					Value	Limit	Result
					-30.31 dBm	-13 dBm	Pass



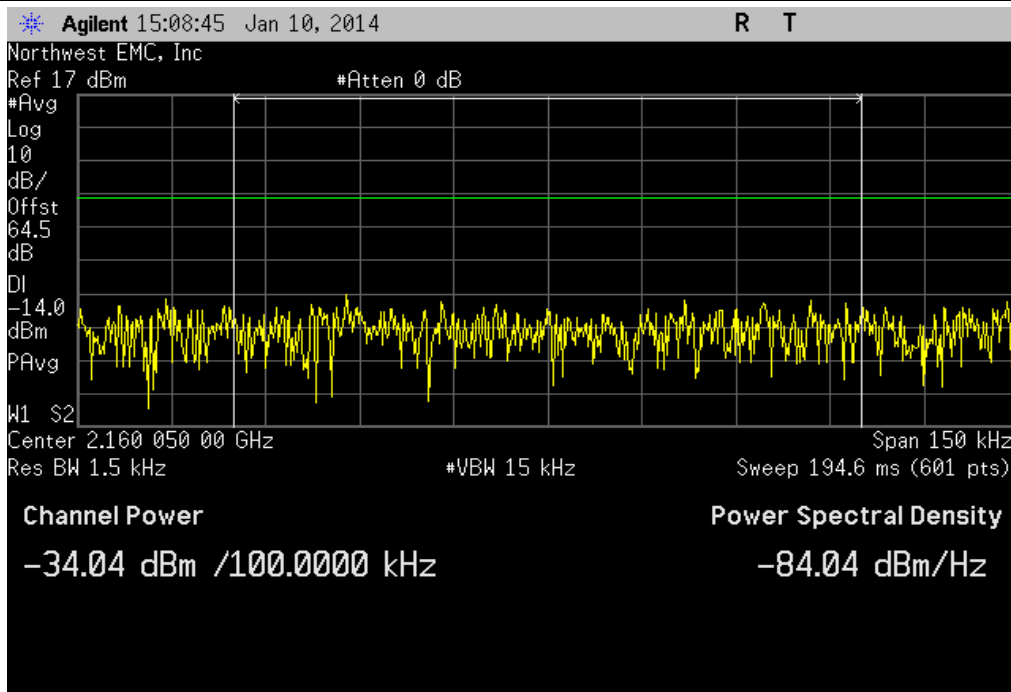
Port B, LTE 5M, Multi Carrier, Right Band Edge 2155.05 MHz

					Value	Limit	Result
					-31.48 dBm	-7 dBm	Pass



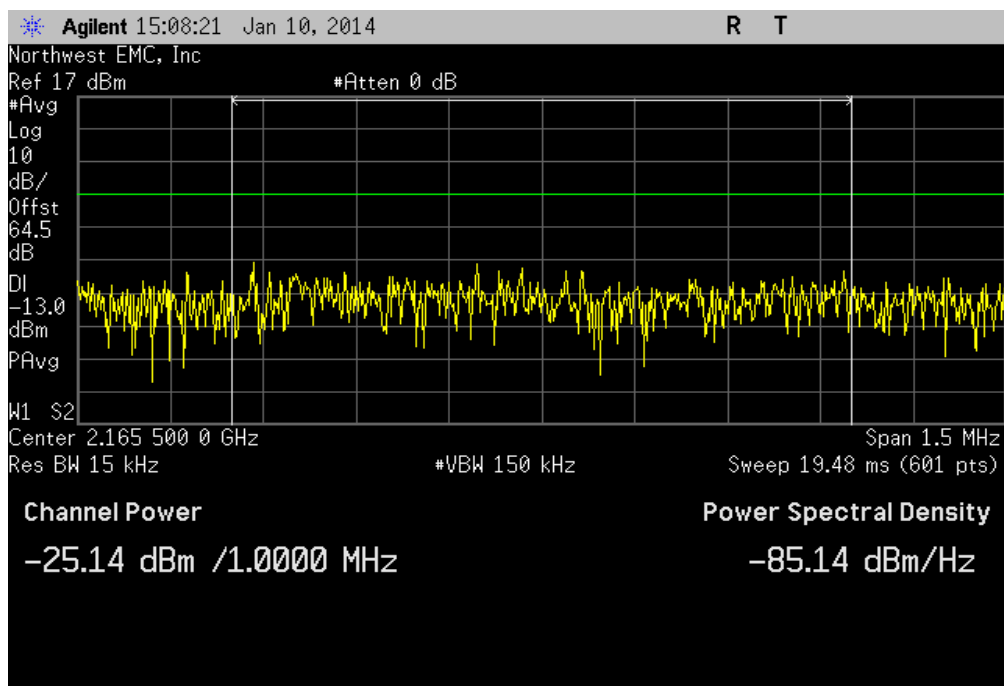
Port B, LTE 5M, Multi Carrier, Right Band Edge 2160.05 MHz

Value	Limit	Result
-34.04 dBm	-7 dBm	Pass



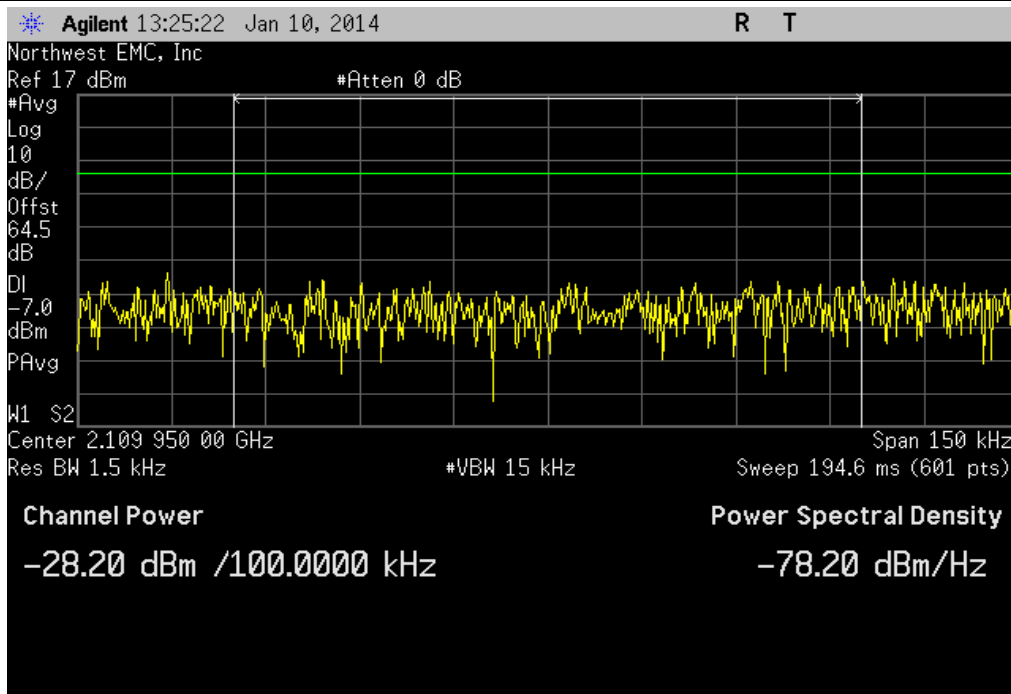
Port B, LTE 5M, Multi Carrier, Right Band Edge 2165.05 MHz

Value	Limit	Result
-25.14 dBm	-13 dBm	Pass



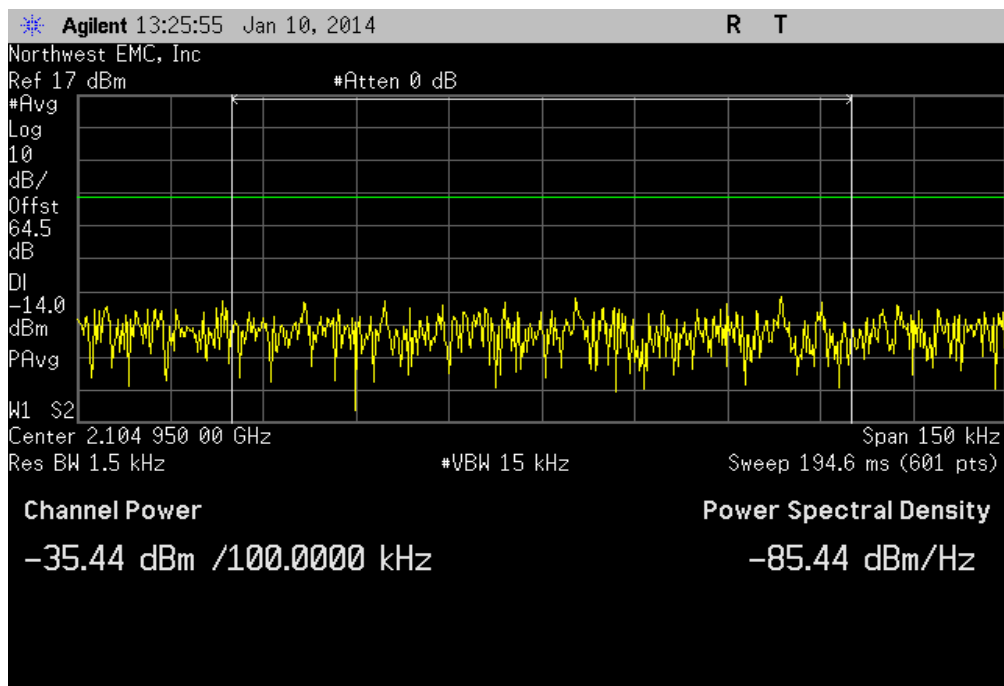
Port B, LTE 10M, Single Carrier, Left Band Edge 2109.95 MHz

Value	Limit	Result
-28.20 dBm	-7 dBm	Pass



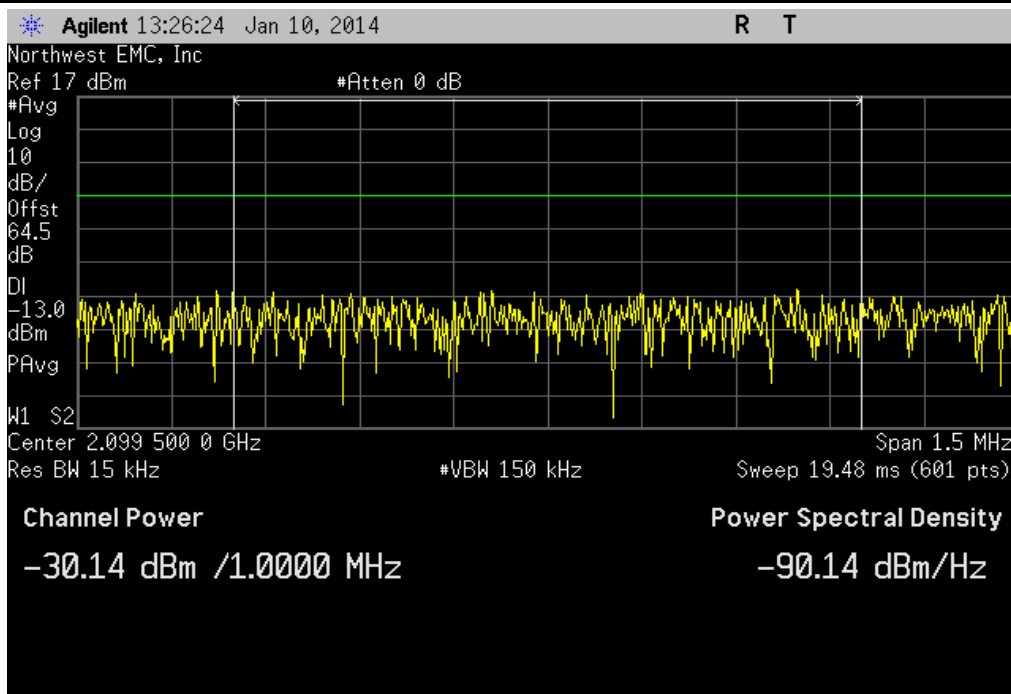
Port B, LTE 10M, Single Carrier, Left Band Edge 2104.95 MHz

Value	Limit	Result
-35.44 dBm	-14 dBm	Pass



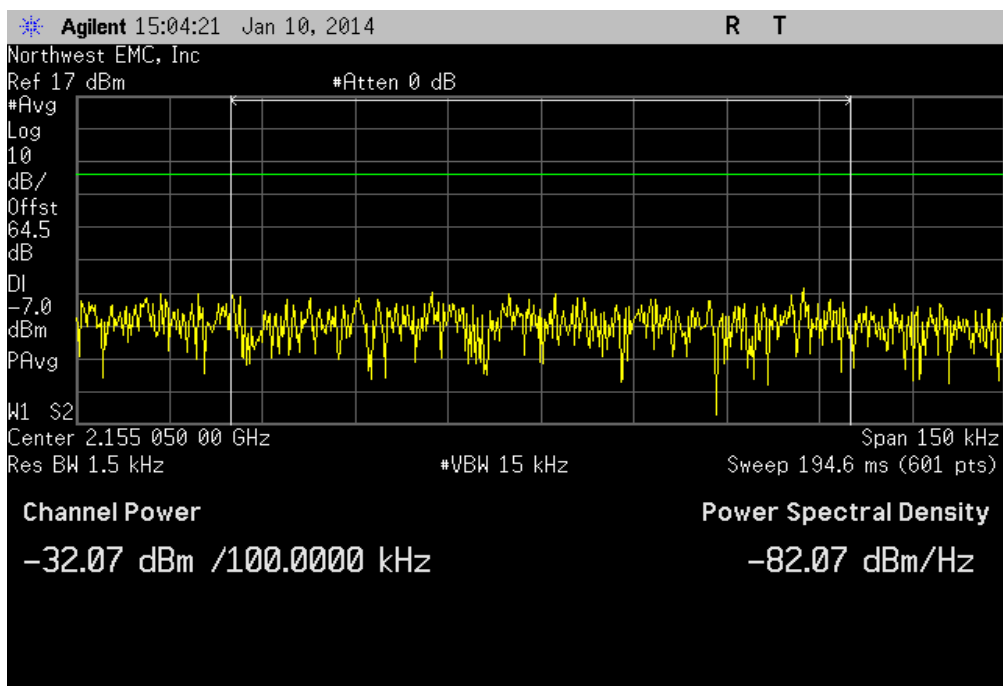
Port B, LTE 10M, Single Carrier, Left Band Edge 2099.5 MHz

					Value	Limit	Result
					-30.14 dBm	-13 dBm	Pass



Port B, LTE 10M, Single Carrier, Right Band Edge 2155.05 MHz

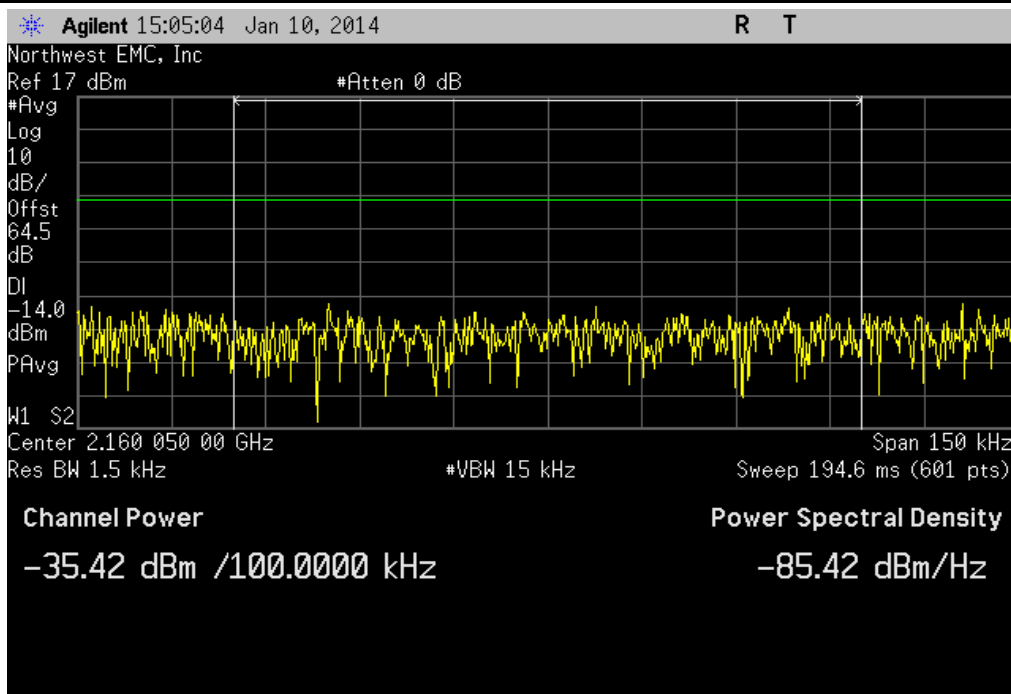
					Value	Limit	Result
					-32.07 dBm	-7 dBm	Pass





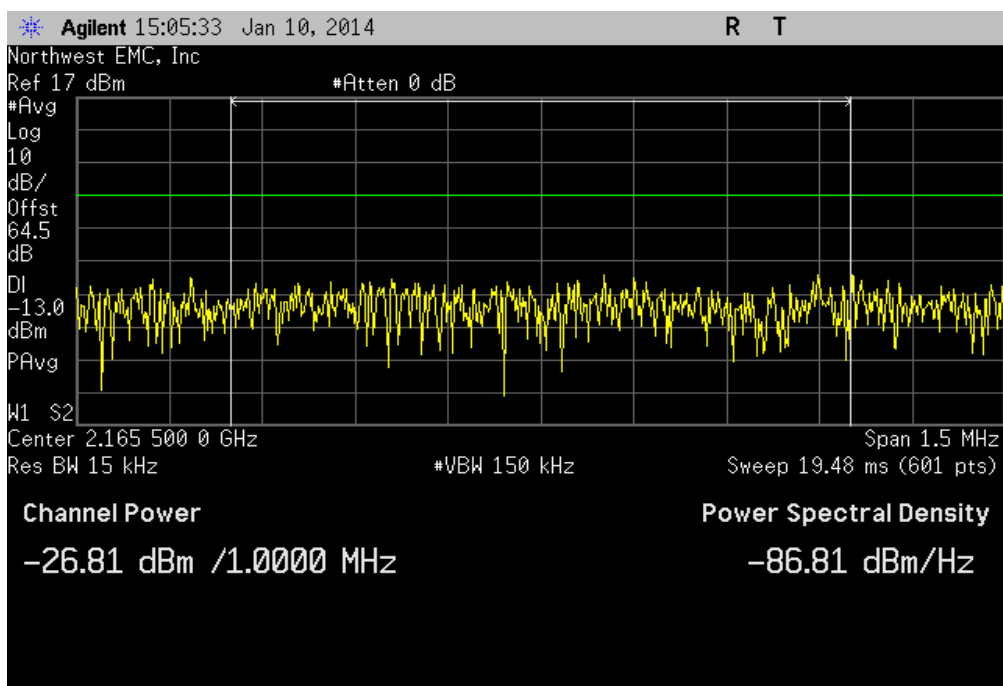
Port B, LTE 10M, Single Carrier, Right Band Edge 2160.05 MHz

Value	Limit	Result
-35.42 dBm	-14 dBm	Pass



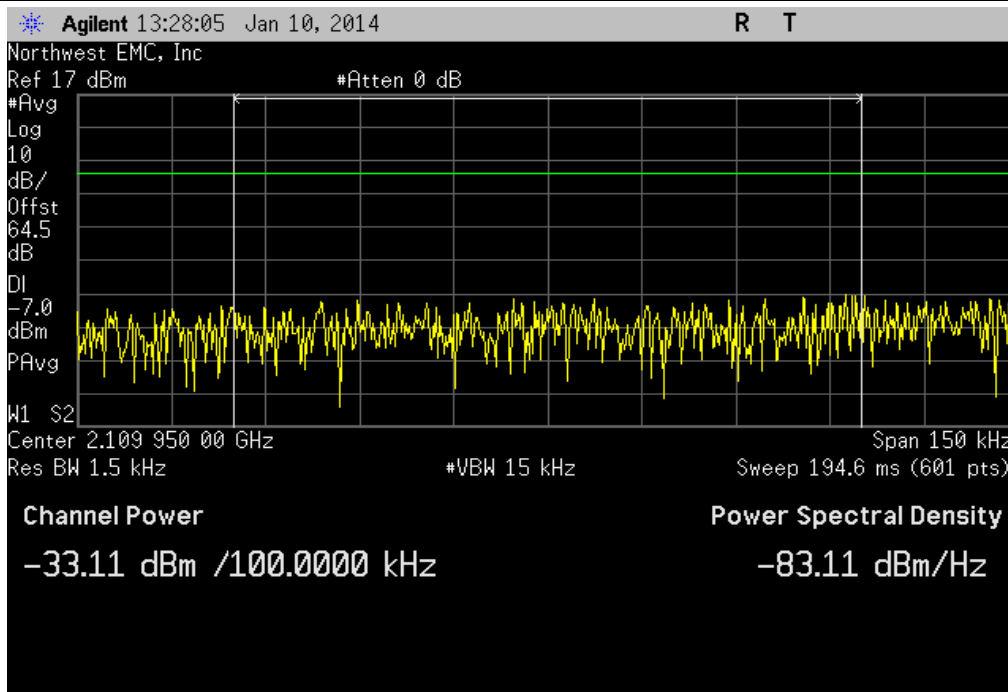
Port B, LTE 10M, Single Carrier, Right Band Edge 2165.05 MHz

Value	Limit	Result
-26.81 dBm	-13 dBm	Pass



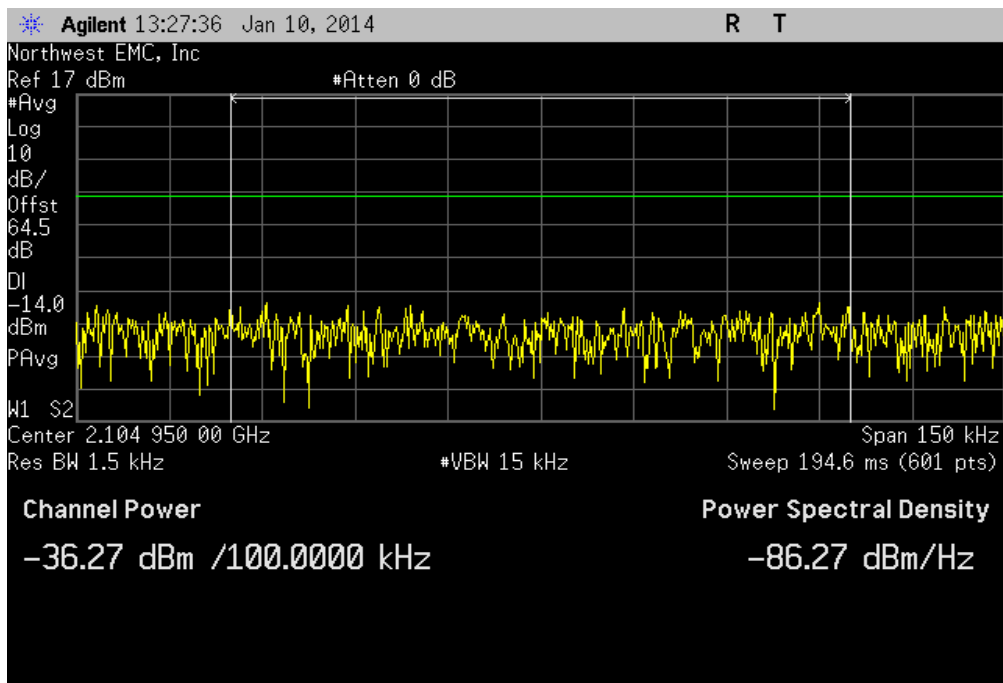
Port B, LTE 10M, Multi Carrier, Left Band Edge 2109.95 MHz

Value	Limit	Result
-33.11 dBm	-7 dBm	Pass



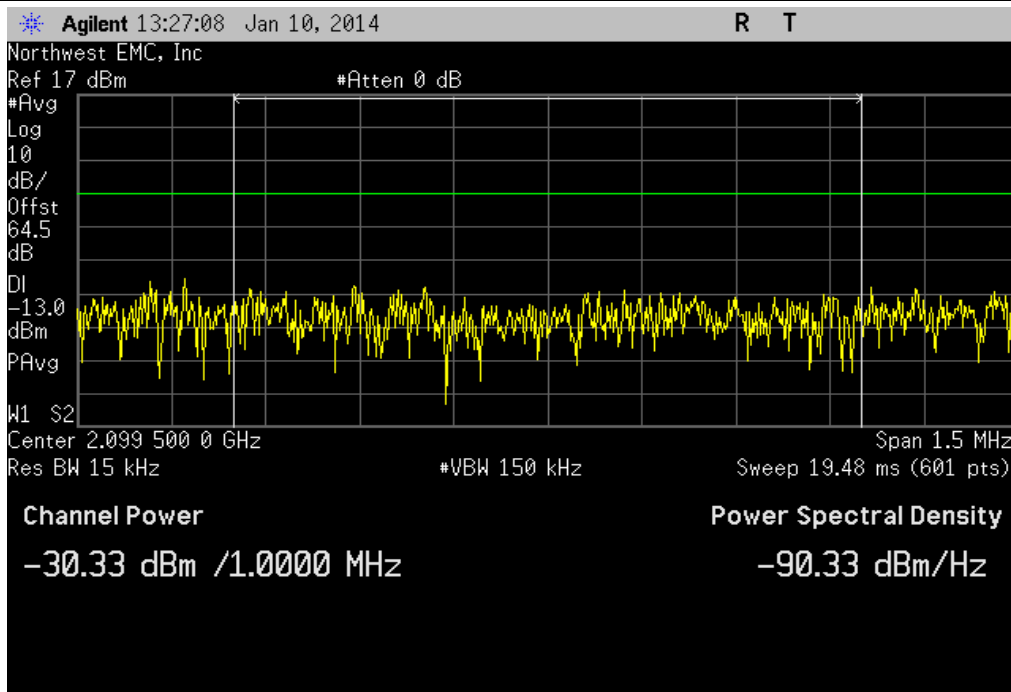
Port B, LTE 10M, Multi Carrier, Left Band Edge 2104.95 MHz

Value	Limit	Result
-36.27 dBm	-14 dBm	Pass



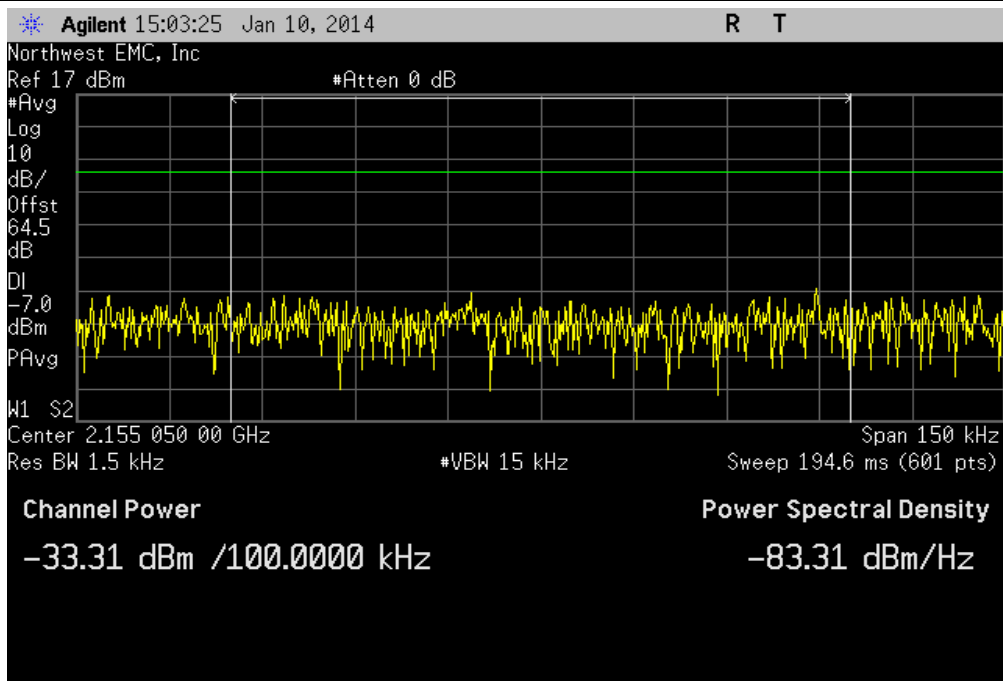
Port B, LTE 10M, Multi Carrier, Left Band Edge 2099.5 MHz

					Value	Limit	Result
					-30.33 dBm	-13 dBm	Pass



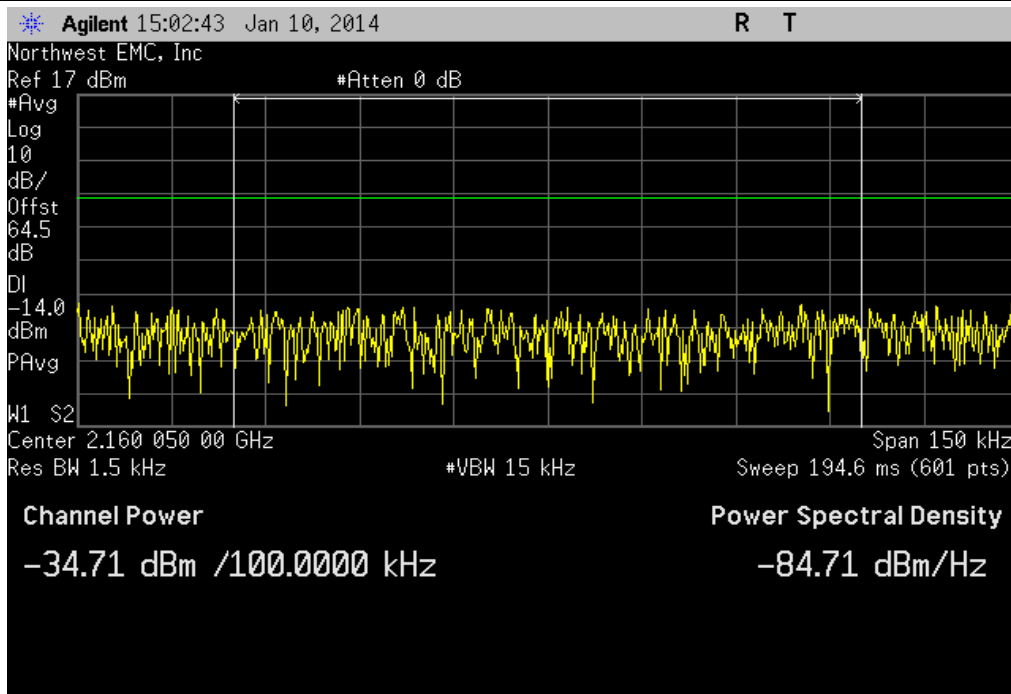
Port B, LTE 10M, Multi Carrier, Right Band Edge 2155.05 MHz

					Value	Limit	Result
					-33.31 dBm	-7 dBm	Pass



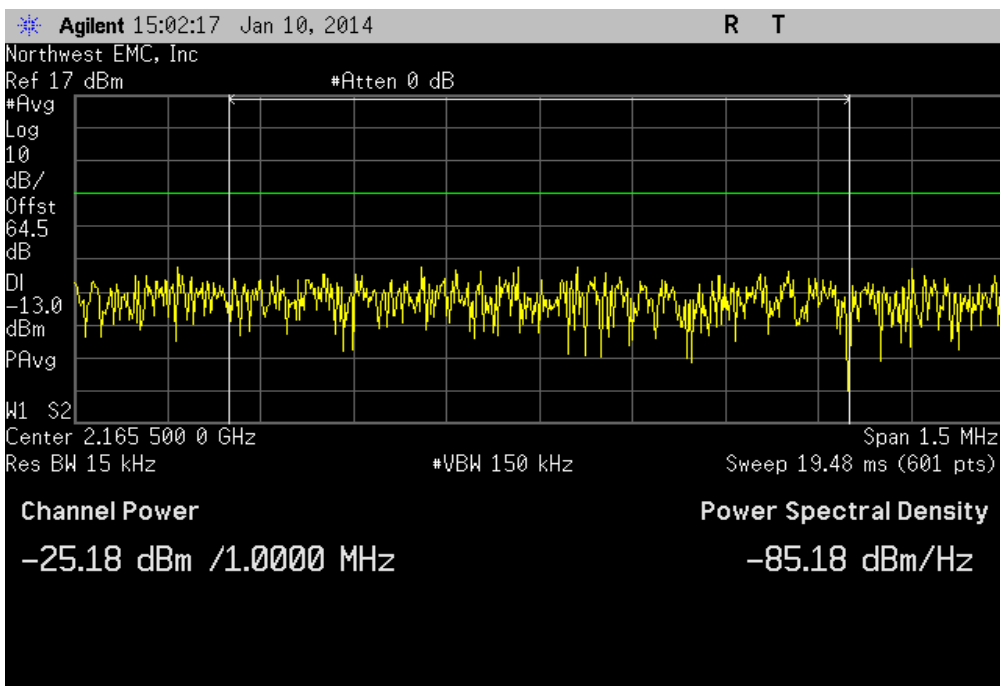
Port B, LTE 10M, Multi Carrier, Right Band Edge 2160.05 MHz

Value	Limit	Result
-34.71 dBm	-14 dBm	Pass



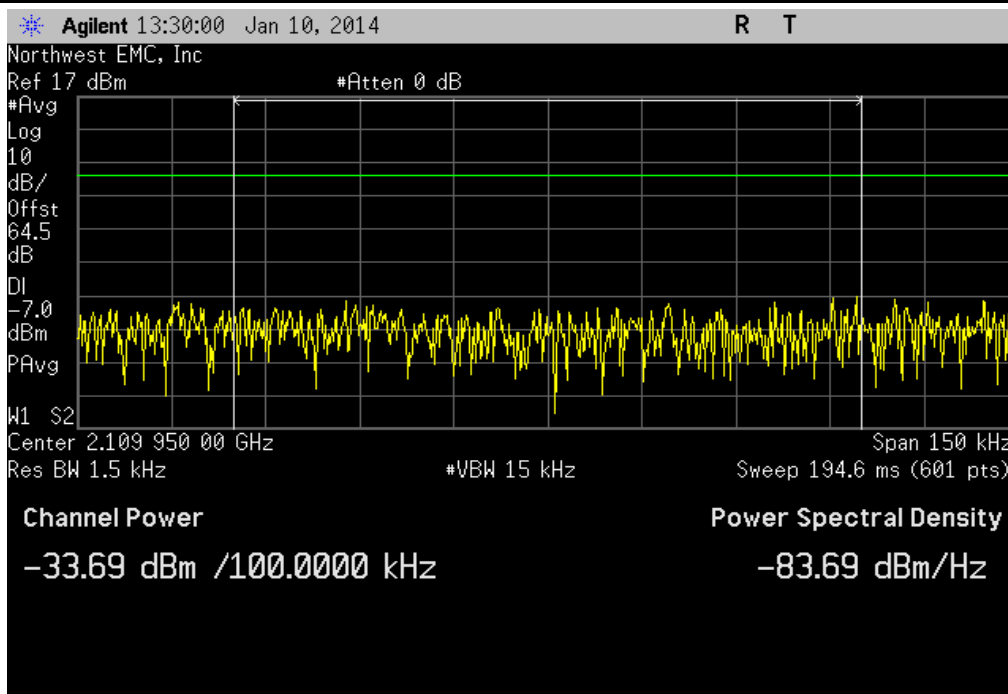
Port B, LTE 10M, Multi Carrier, Right Band Edge 2165.05 MHz

Value	Limit	Result
-25.18 dBm	-13 dBm	Pass



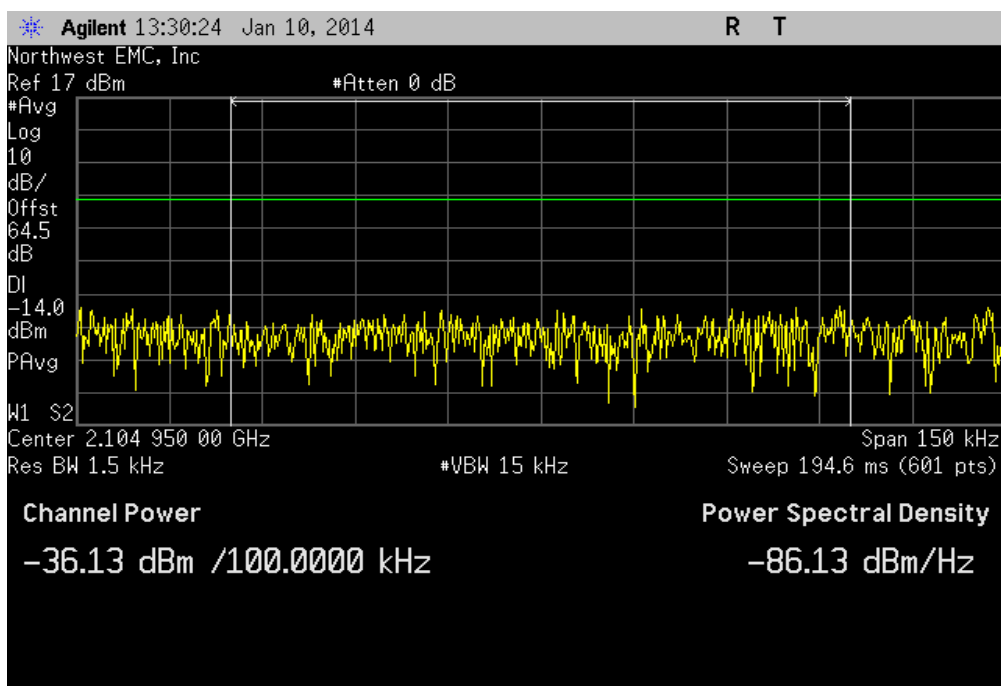
Port B, LTE 15M, Single Carrier, Left Band Edge 2109.95 MHz

Value	Limit	Result
-33.69 dBm	-7 dBm	Pass



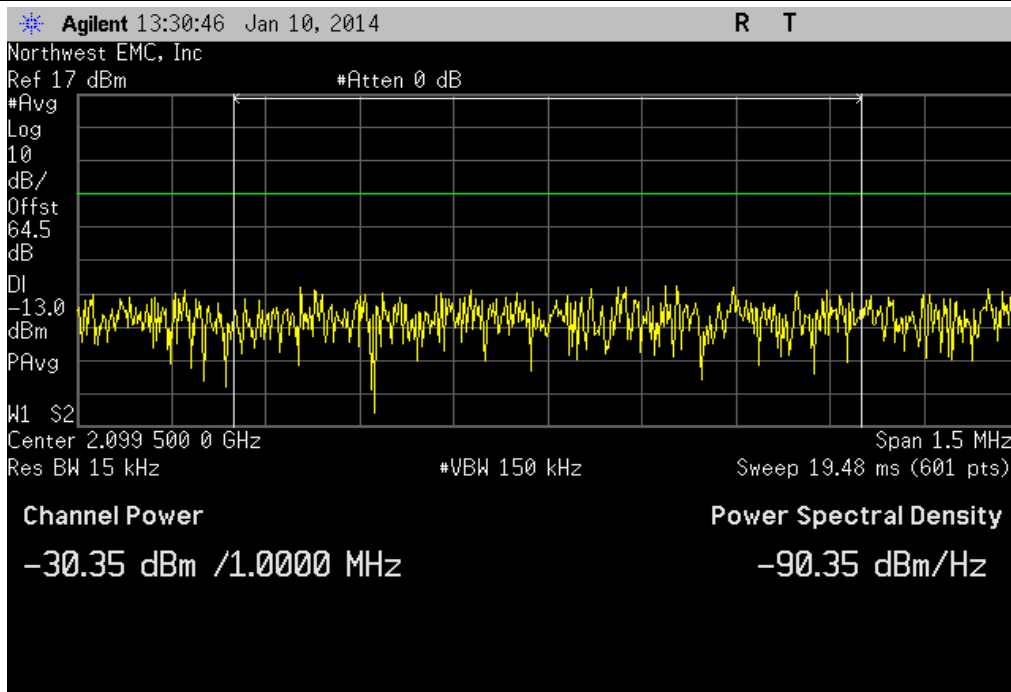
Port B, LTE 15M, Single Carrier, Left Band Edge 2104.95 MHz

Value	Limit	Result
-36.13 dBm	-14 dBm	Pass



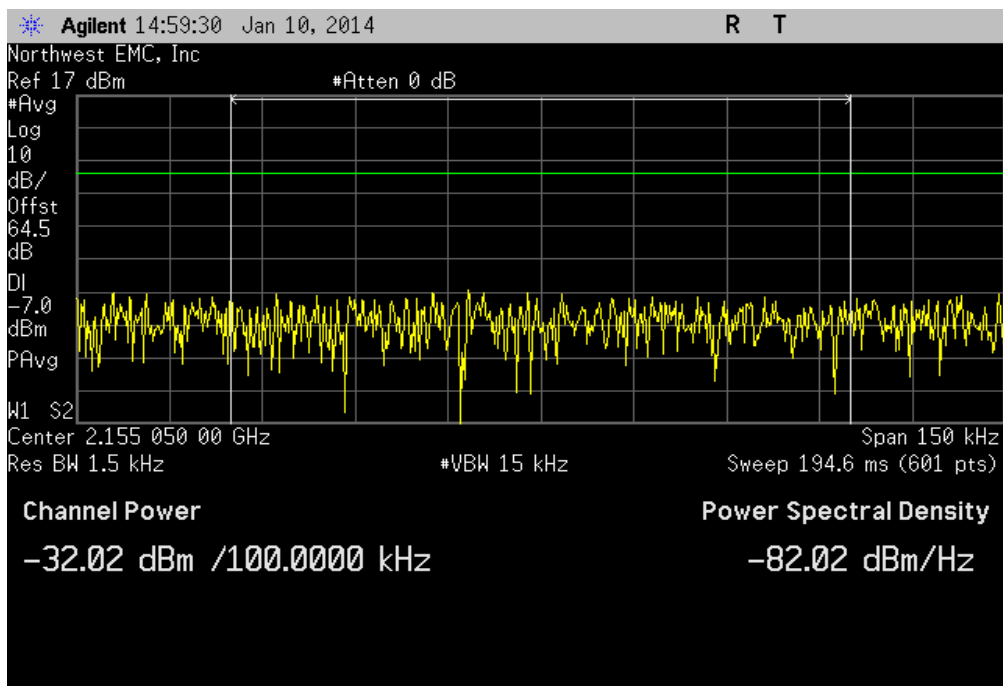
Port B, LTE 15M, Single Carrier, Left Band Edge 2099.5 MHz

					Value	Limit	Result
					-30.35 dBm	-13 dBm	Pass

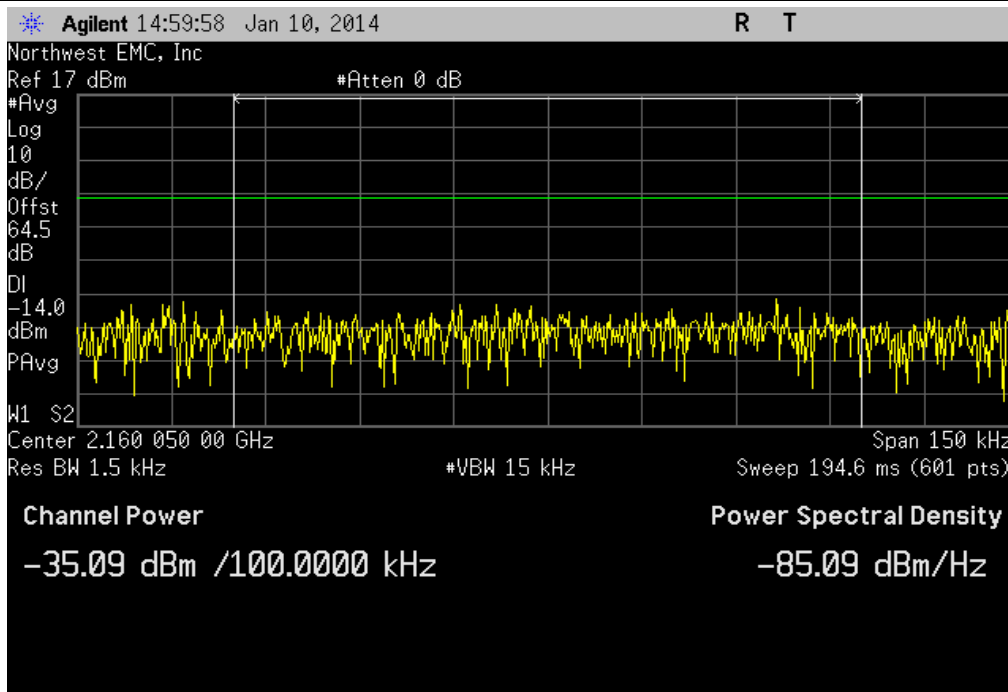


Port B, LTE 15M, Single Carrier, Right Band Edge 2155.05 MHz

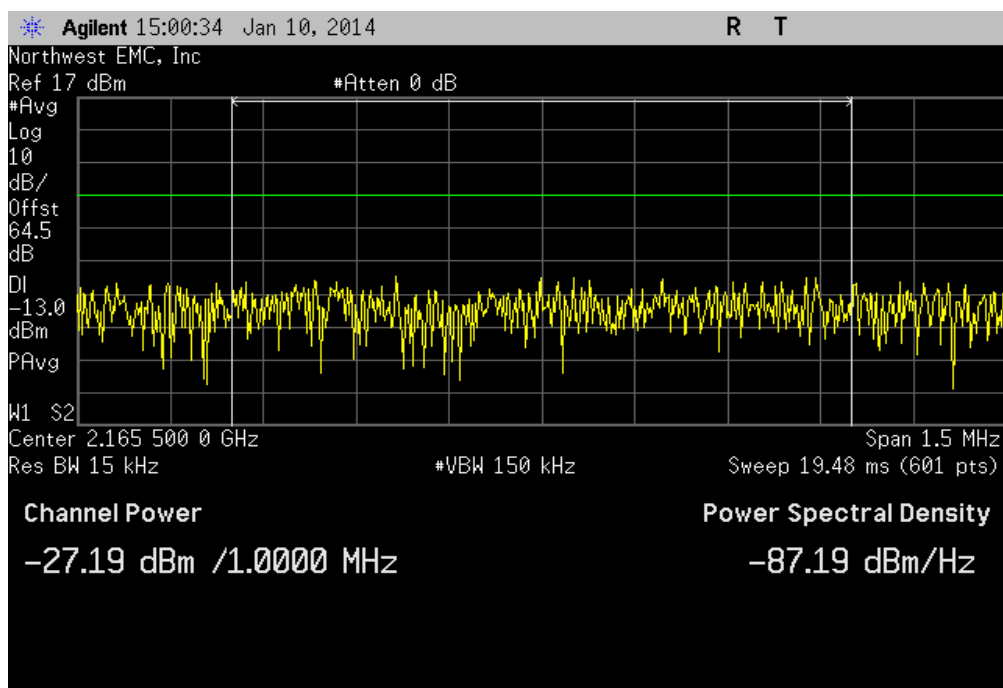
					Value	Limit	Result
					-32.02 dBm	-7 dBm	Pass



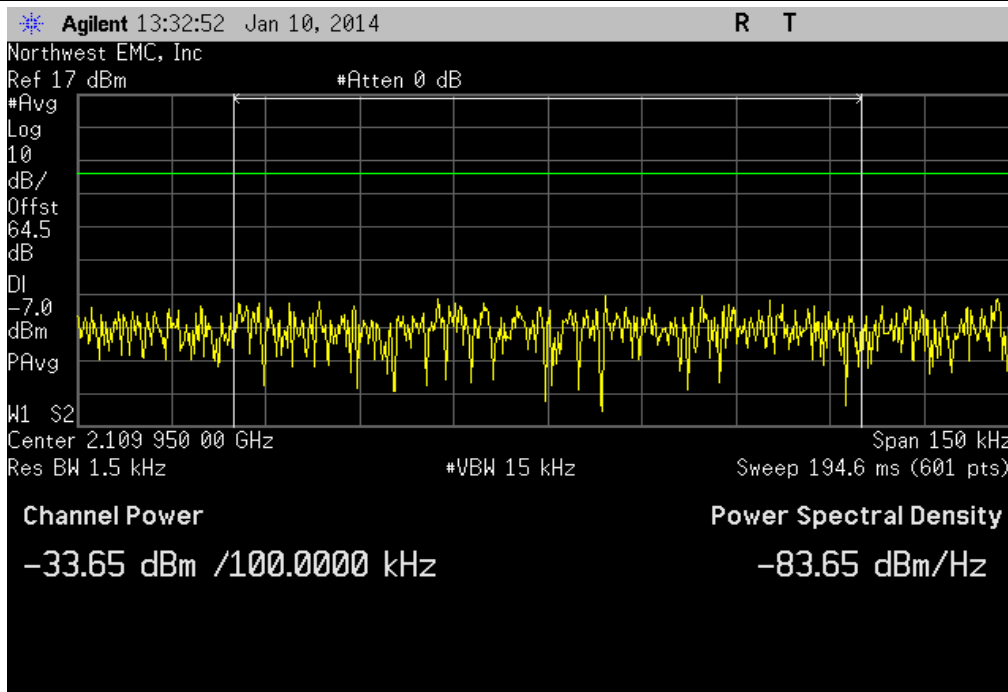
Port B, LTE 15M, Single Carrier, Right Band Edge 2160.05 MHz							
				Value	Limit	Result	
				-35.09 dBm	-14 dBm	Pass	



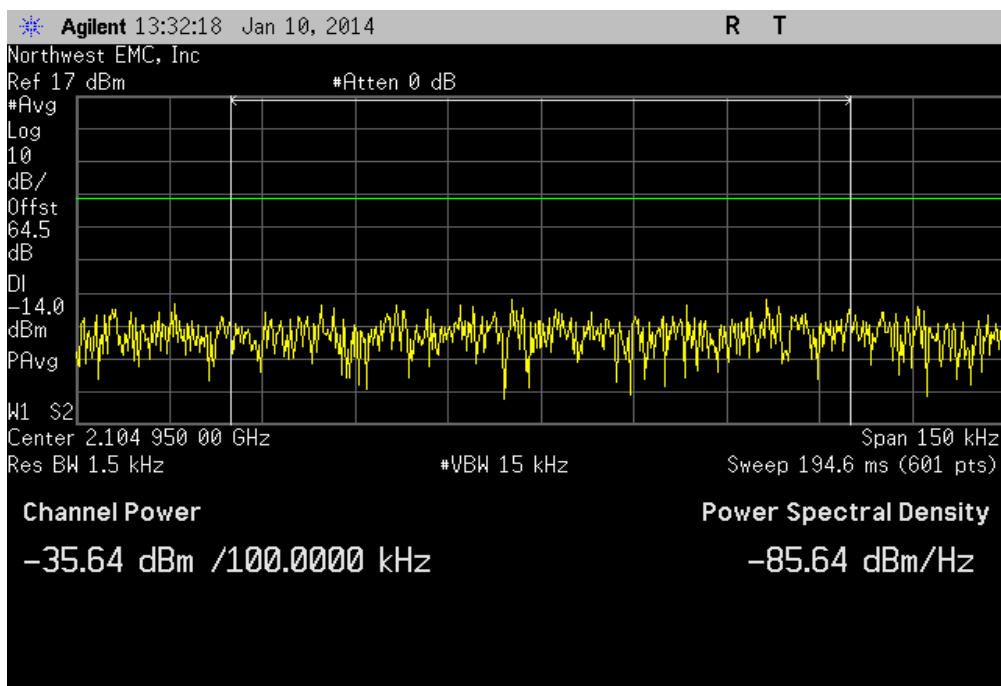
Port B, LTE 15M, Single Carrier, Right Band Edge 2165.05 MHz							
				Value	Limit	Result	
				-27.19 dBm	-13 dBm	Pass	



Port B, LTE 15M, Multi Carrier, Left Band Edge 2109.95 MHz							
				Value	Limit	Result	
				-33.65 dBm	-7 dBm	Pass	



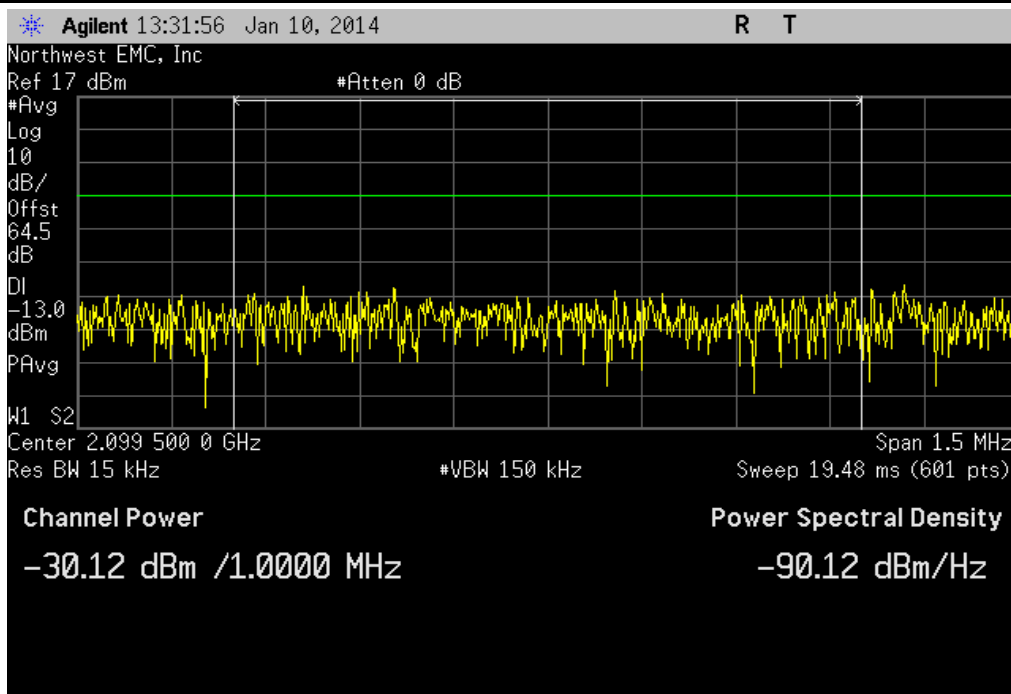
Port B, LTE 15M, Multi Carrier, Left Band Edge 2104.95 MHz							
				Value	Limit	Result	
				-35.64 dBm	-14 dBm	Pass	





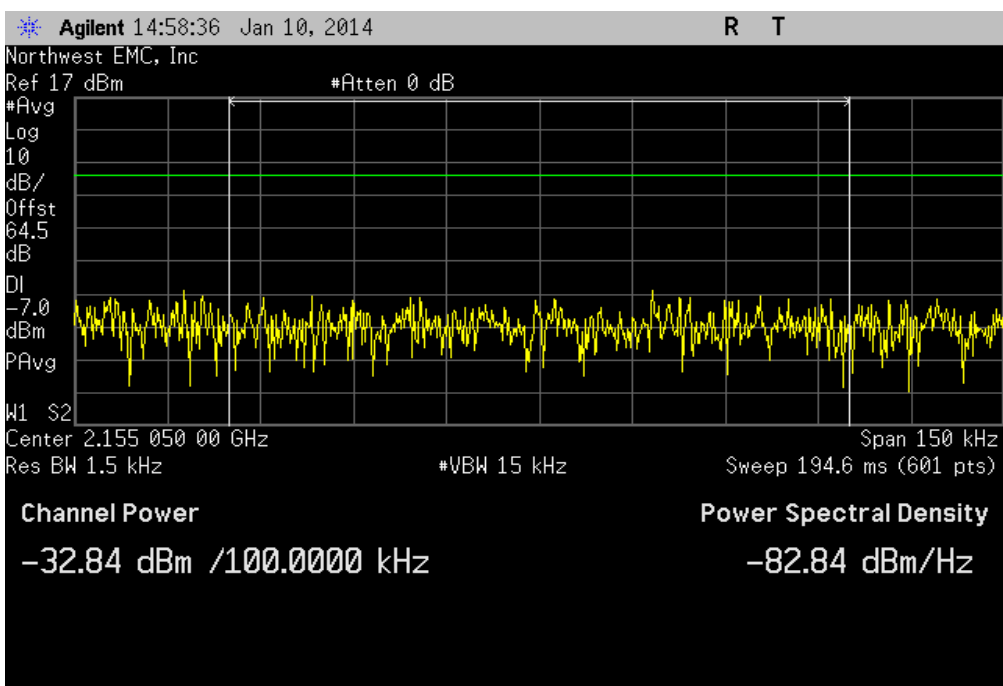
Port B, LTE 15M, Multi Carrier, Left Band Edge 2099.5 MHz

					Value	Limit	Result
					-30.12 dBm	-13 dBm	Pass



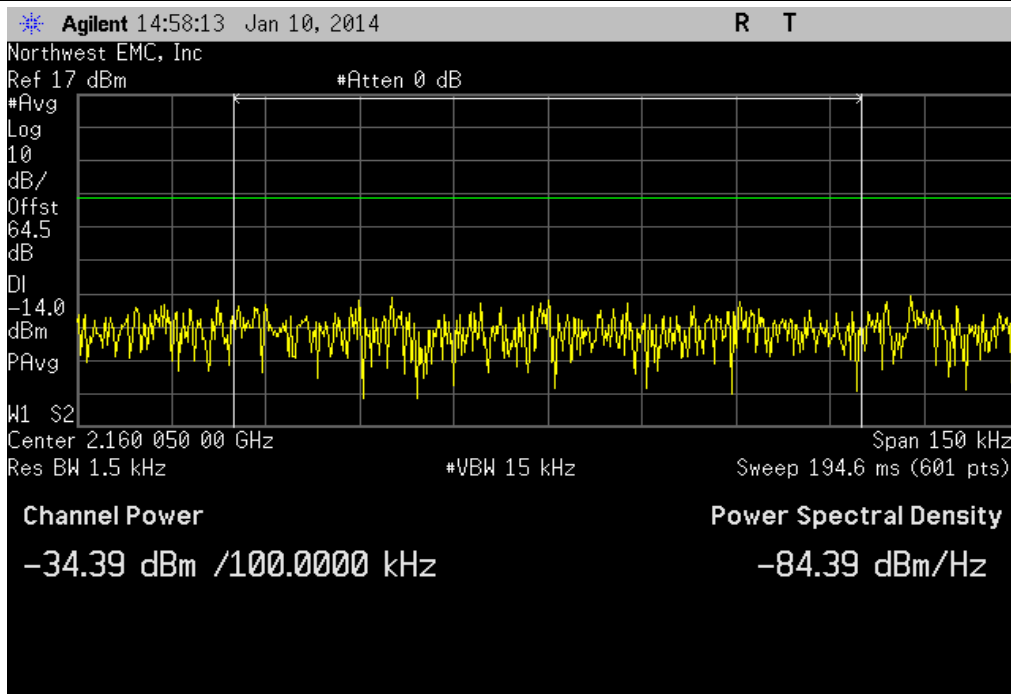
Port B, LTE 15M, Multi Carrier, Right Band Edge 2155.05 MHz

					Value	Limit	Result
					-32.84 dBm	-7 dBm	Pass



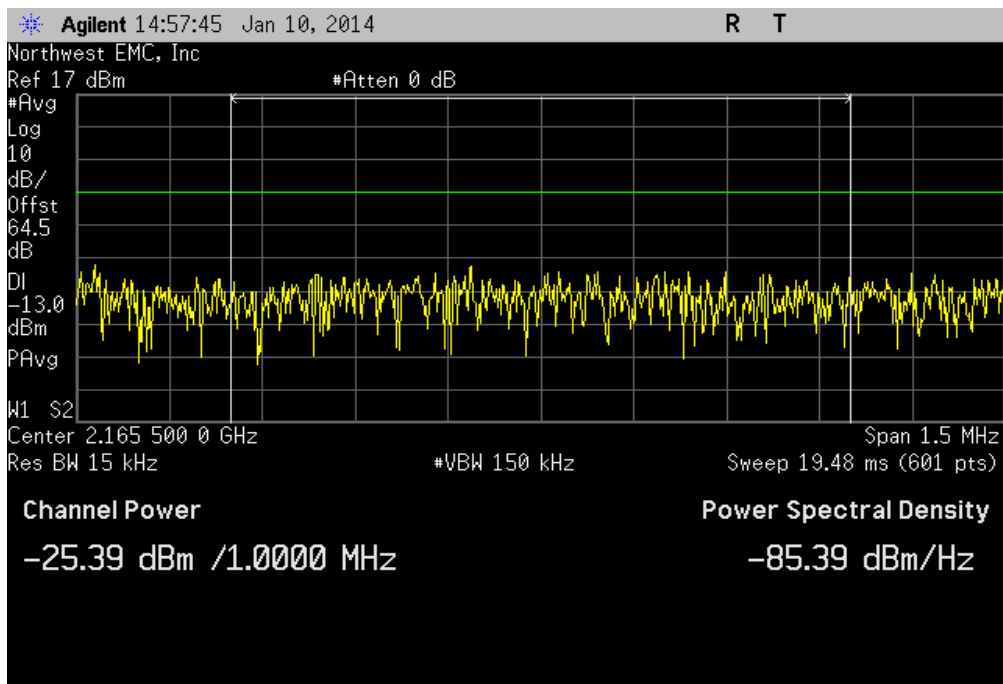
Port B, LTE 15M, Multi Carrier, Right Band Edge 2160.05 MHz

Value	Limit	Result
-34.39 dBm	-14 dBm	Pass

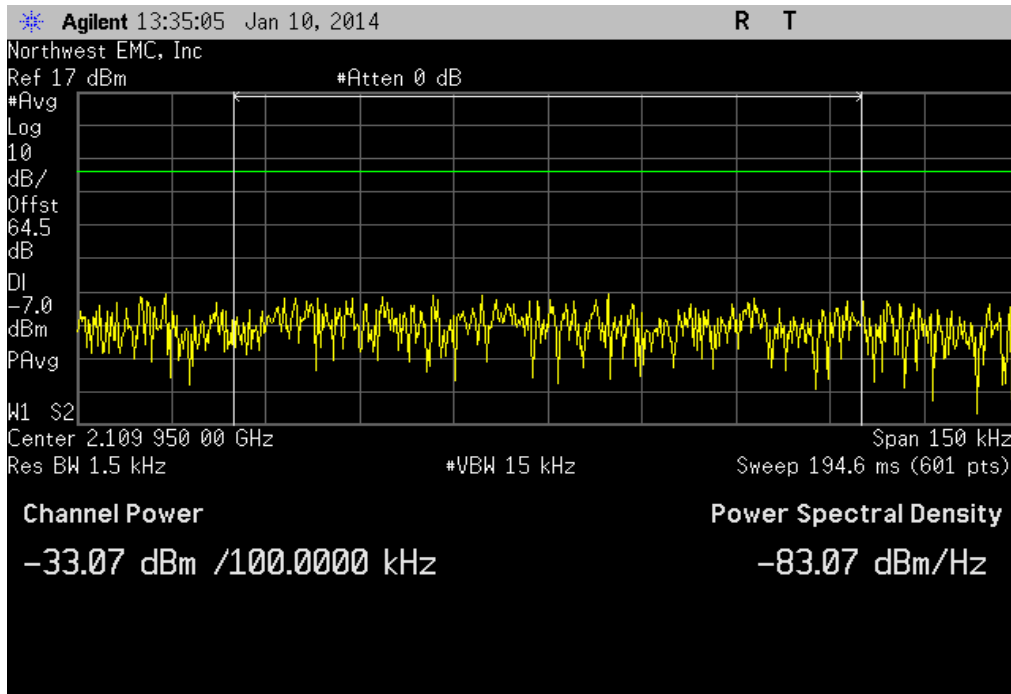


Port B, LTE 15M, Multi Carrier, Right Band Edge 2165.05 MHz

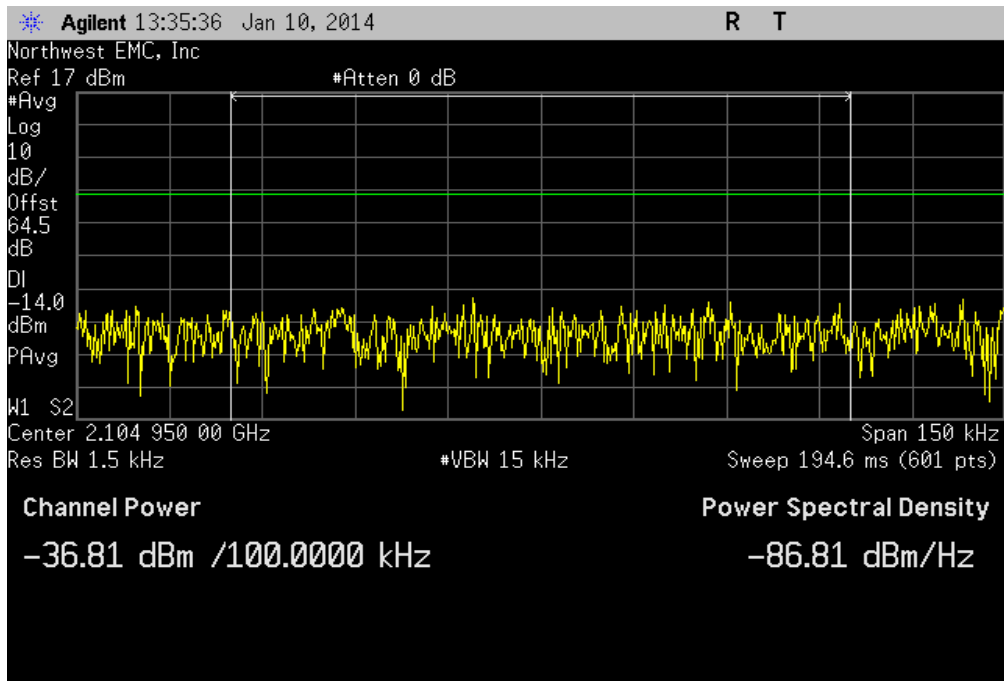
Value	Limit	Result
-25.39 dBm	-13 dBm	Pass



Port B, LTE 20M, Single Carrier, Left Band Edge 2109.95 MHz							
				Value	Limit	Result	
				-33.07 dBm	-7 dBm	Pass	

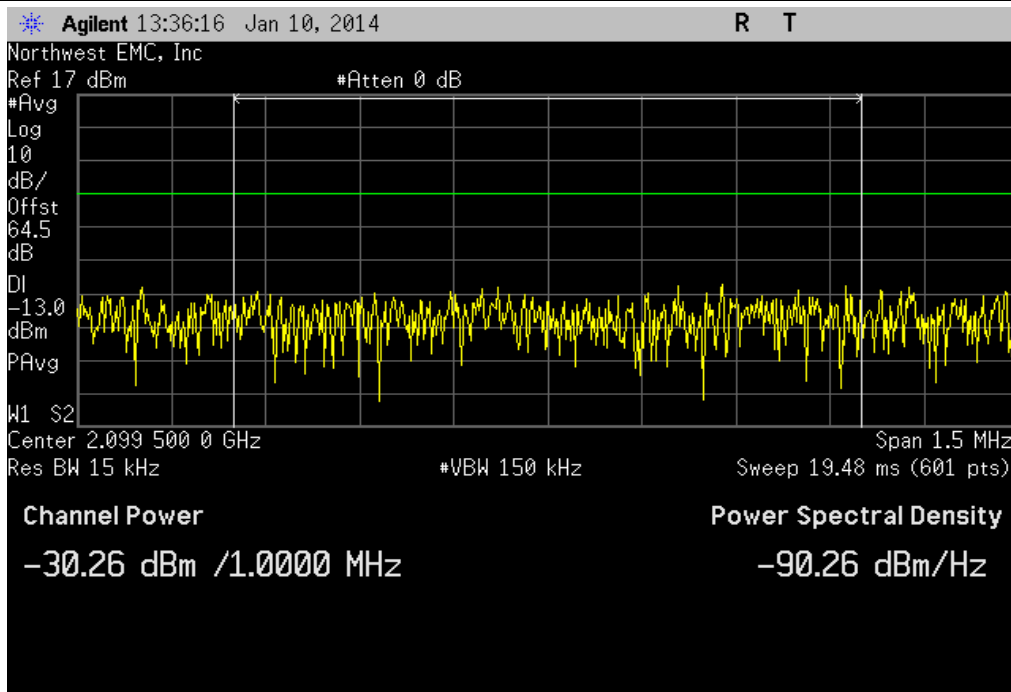


Port B, LTE 20M, Single Carrier, Left Band Edge 2104.95 MHz							
				Value	Limit	Result	
				-36.81 dBm	-14 dBm	Pass	



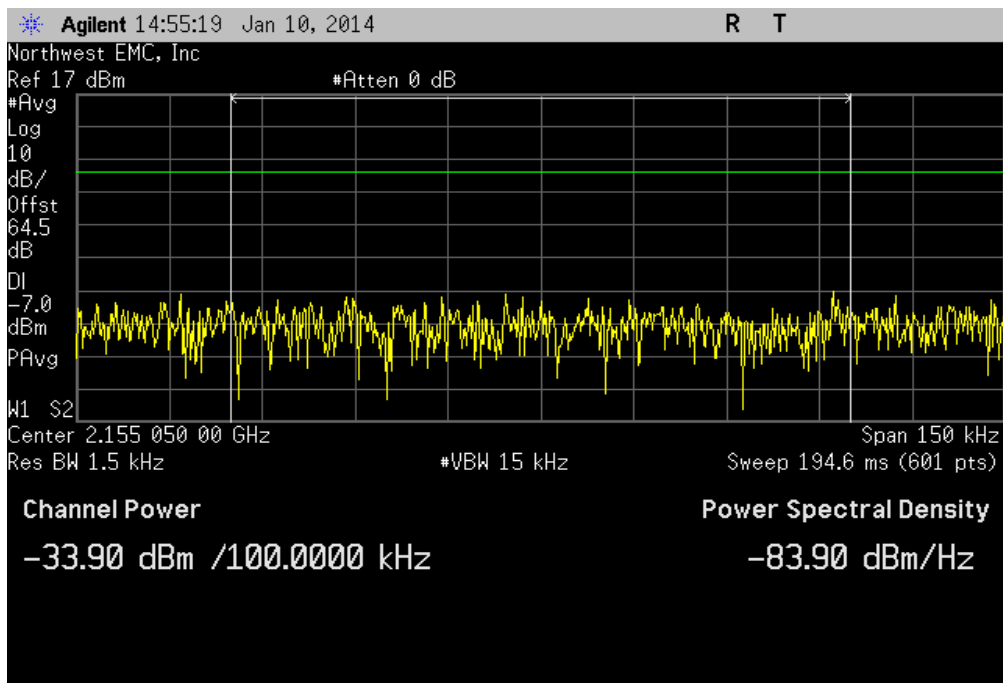
Port B, LTE 20M, Single Carrier, Left Band Edge 2099.5 MHz

					Value	Limit	Result
					-30.26 dBm	-13 dBm	Pass

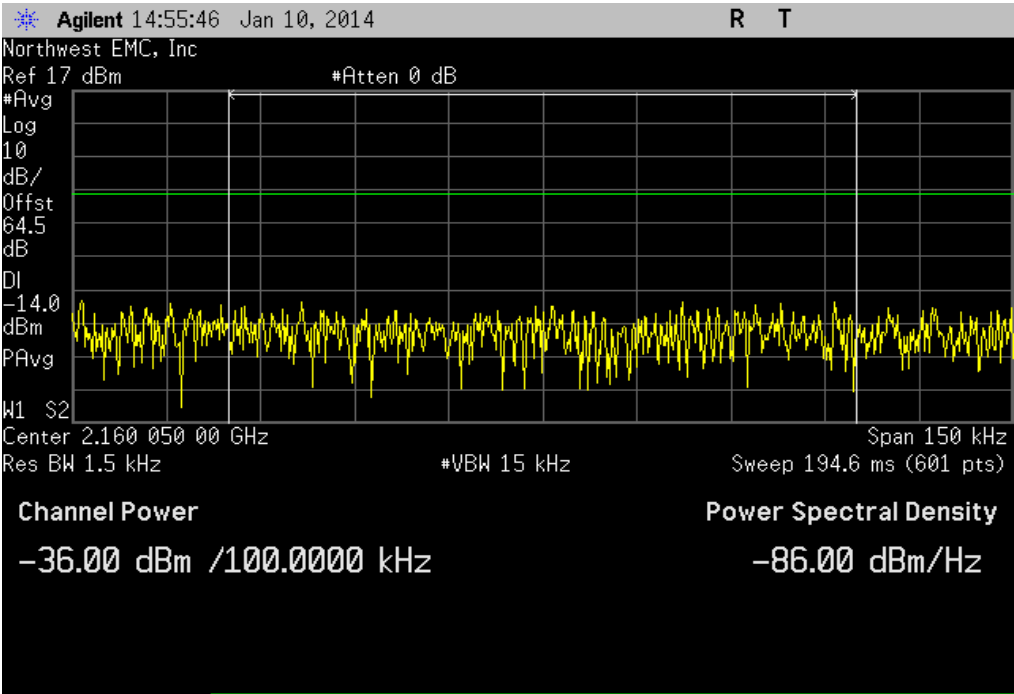


Port B, LTE 20M, Single Carrier, Right Band Edge 2155.05 MHz

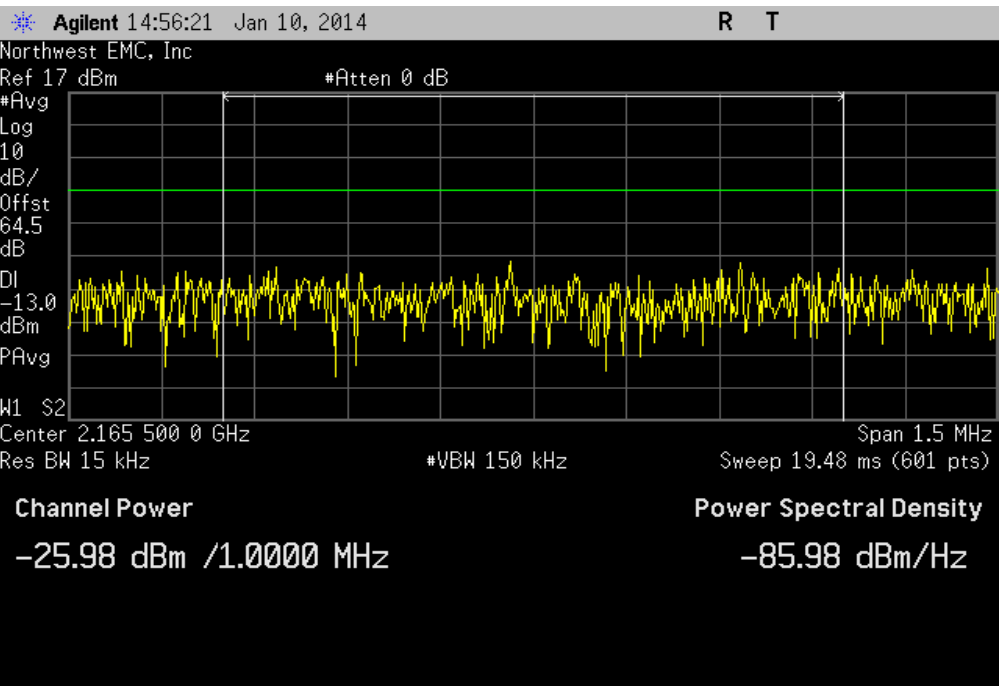
					Value	Limit	Result
					-33.90 dBm	-7 dBm	Pass



Port B, LTE 20M, Single Carrier, Right Band Edge 2160.05 MHz							
				Value	Limit	Result	
				-36.00 dBm	-14 dBm	Pass	

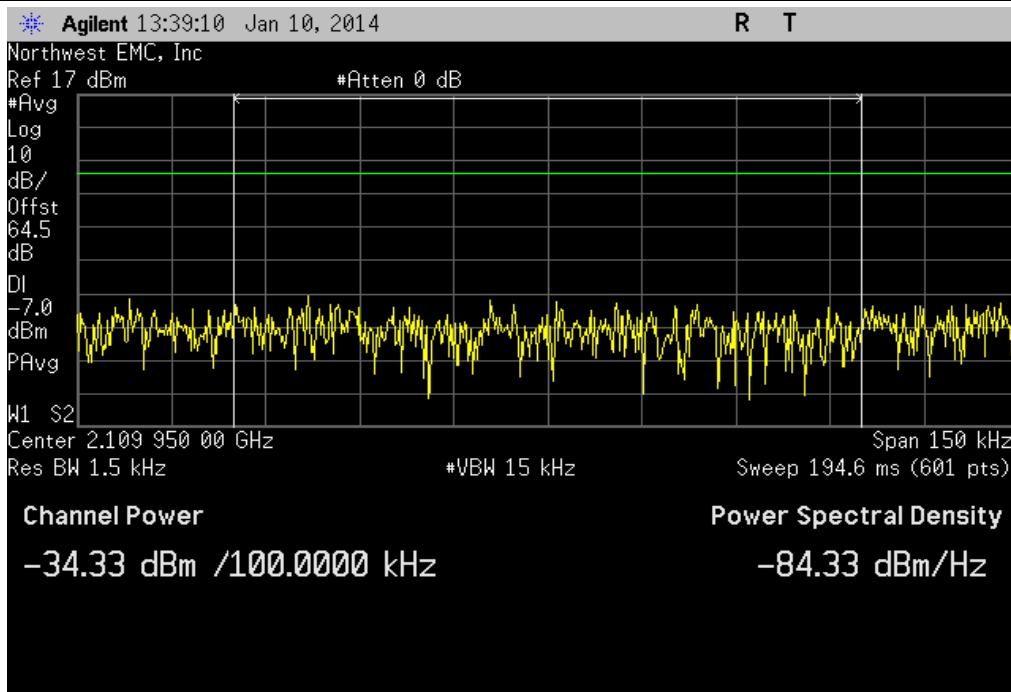


Port B, LTE 20M, Single Carrier, Right Band Edge 2165.05 MHz							
				Value	Limit	Result	
				-25.98 dBm	-13 dBm	Pass	



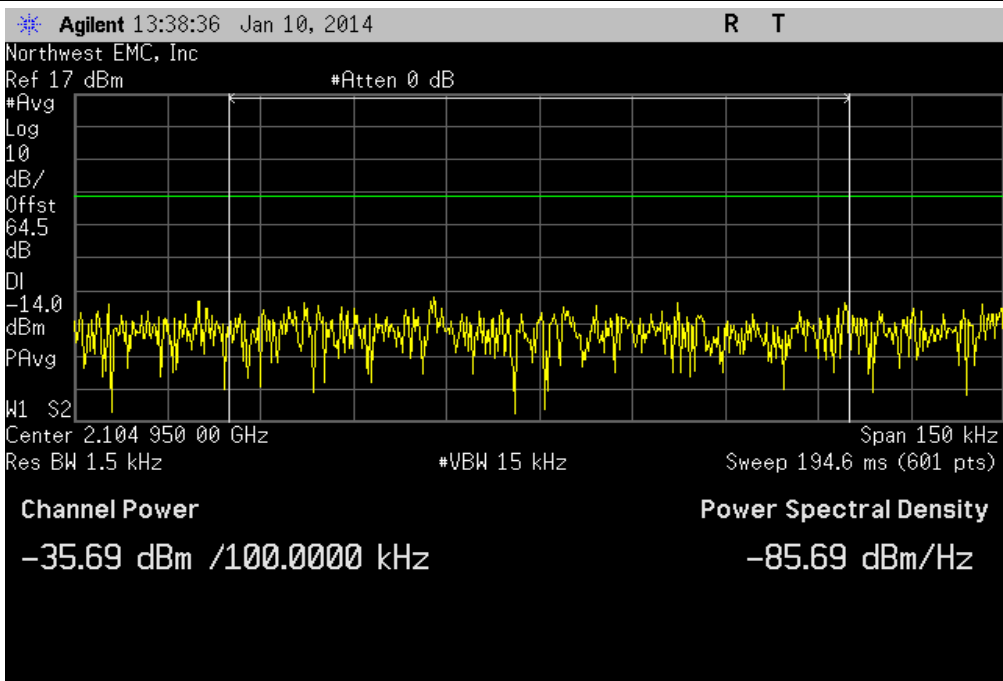
Port B, LTE 20M, Multi Carrier, Left Band Edge 2109.95 MHz

					Value	Limit	Result
					-34.33 dBm	-7 dBm	Pass



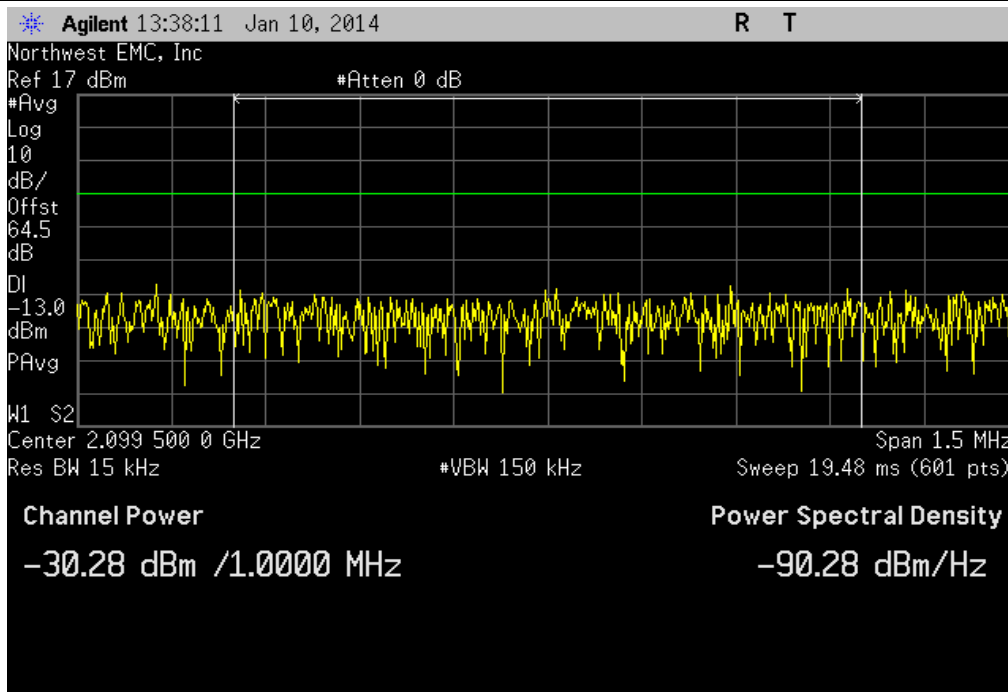
Port B, LTE 20M, Multi Carrier, Left Band Edge 2104.95 MHz

					Value	Limit	Result
					-35.69 dBm	-14 dBm	Pass



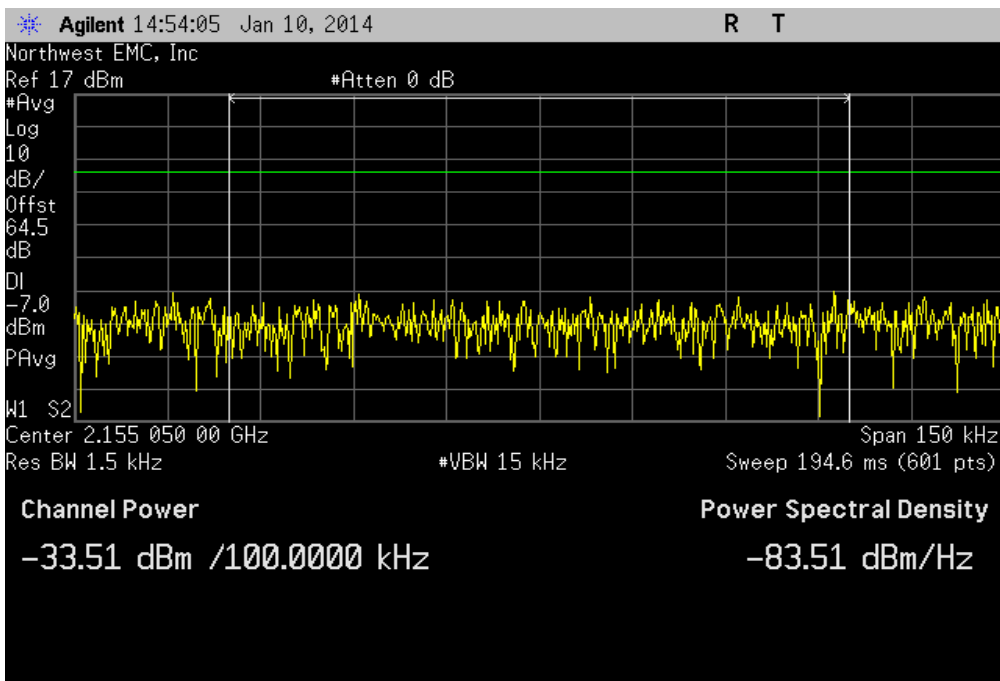
Port B, LTE 20M, Multi Carrier, Left Band Edge 2099.5 MHz

					Value	Limit	Result
					-30.28 dBm	-13 dBm	Pass



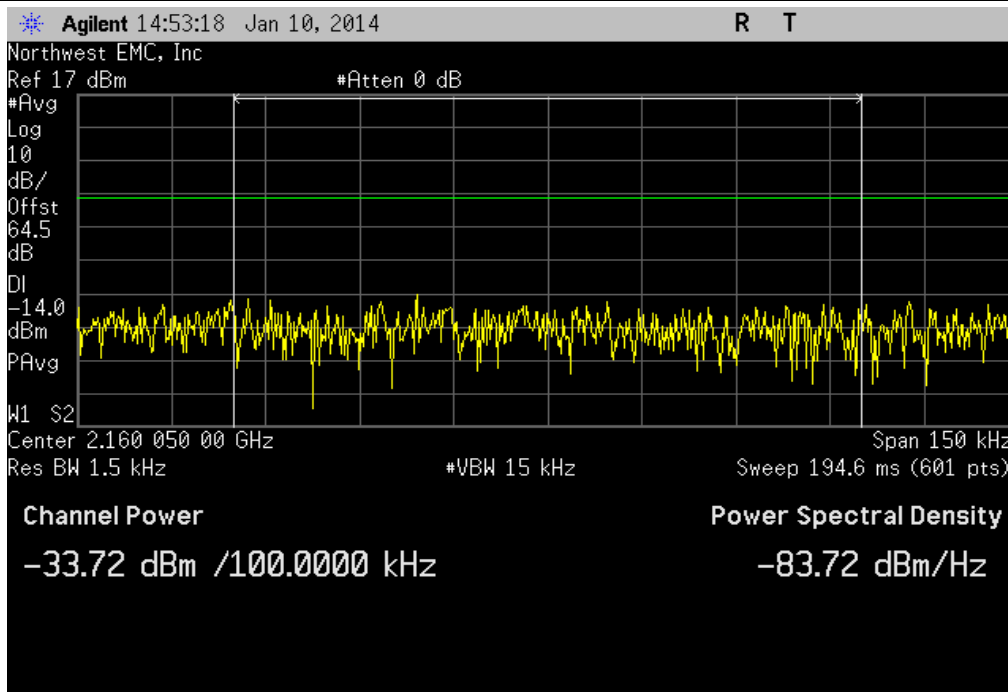
Port B, LTE 20M, Multi Carrier, Right Band Edge 2155.05 MHz

					Value	Limit	Result
					-33.51 dBm	-7 dBm	Pass



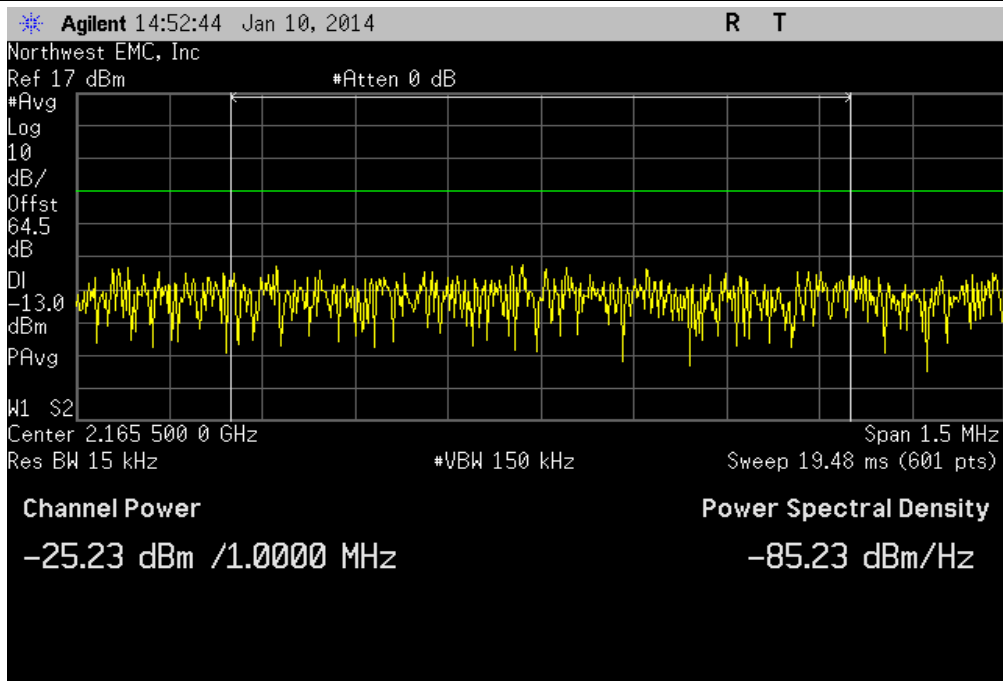
Port B, LTE 20M, Multi Carrier, Right Band Edge 2160.05 MHz

Value	Limit	Result
-33.72 dBm	-14 dBm	Pass



Port B, LTE 20M, Multi Carrier, Right Band Edge 2165.05 MHz

Value	Limit	Result
-25.23 dBm	-13 dBm	Pass





## SPURIOUS EMISSIONS AT THE ANTENNA TERMINALS

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
Spectrum Analyzer	Agilent	E4440A	AFA	6/15/2012	24
Power Meter	Hewlett Packard	E4418A	SPA	4/11/2012	24
Power Sensor	Agilent	E4412A	SQE	4/11/2012	24
Signal Generator	Agilent	E8257D	TGU	2/1/2012	36

### TEST DESCRIPTION

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



# SPURIOUS EMISSIONS AT THE ANTENNA TERMINALS

XMit 2013.08.15

EUT:	AWS RRH	Work Order:	KMWC0048
Serial Number:	U365000113	Date:	01/13/14
Customer:	KMW Communications	Temperature:	23.4°C
Attendees:	Edward Lee	Humidity:	42%
Project:	None	Barometric Pres.:	1012
Tested by:	Jaemi Suh	Power:	48VDC
TEST SPECIFICATIONS		Job Site:	
FCC 27L:2014		Test Method	
		ANSI/TIA/EIA-603-C-2004	

## COMMENTS

Power Level Settings: 60W.

## DEVIATIONS FROM TEST STANDARD

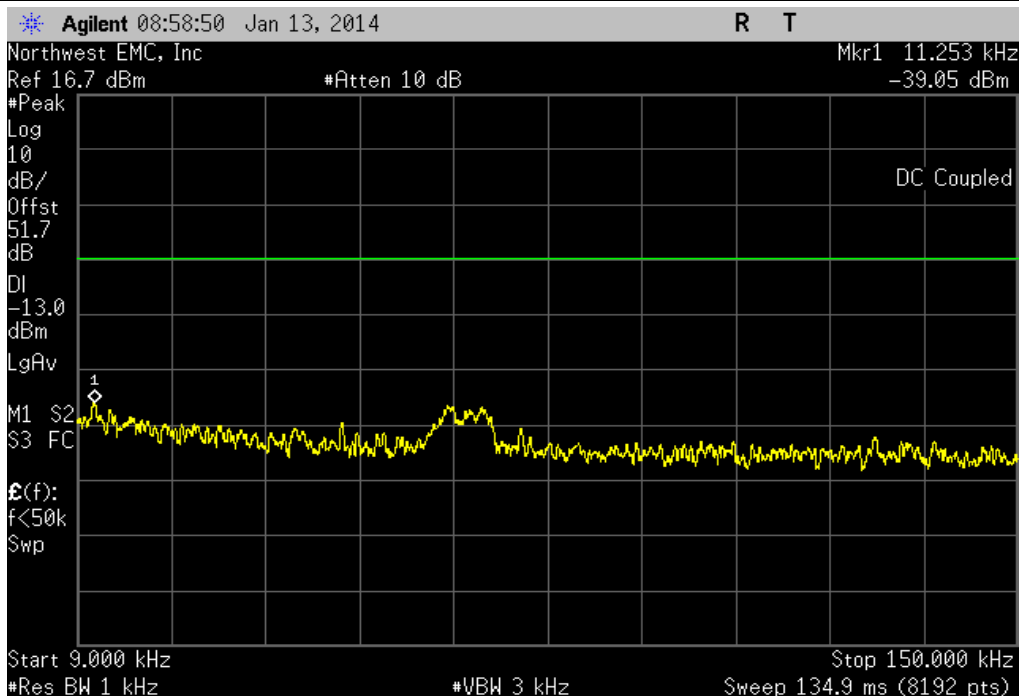
None

Configuration #	1	Signature
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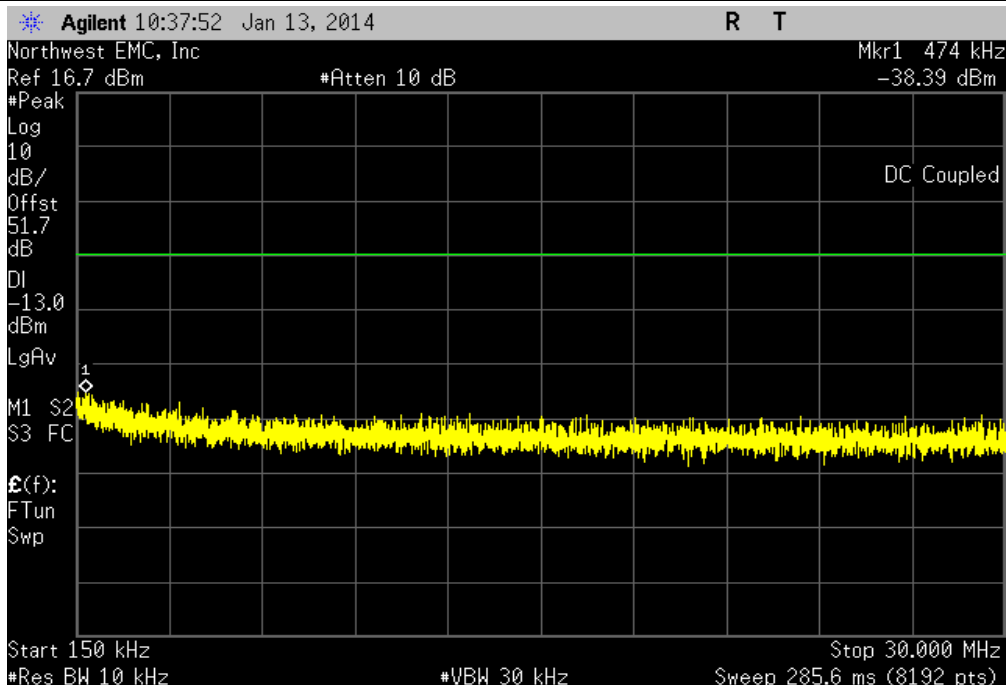
		Value	Limit	Result
Port A				
LTE 5M				
	Low Channel			
	9 kHz - 150 kHz	-39.05 dBm	-13 dBm	Pass
	150 kHz - 30 MHz	-38.39 dBm	-13 dBm	Pass
	30 MHz - 1 GHz	-31.93 dBm	-13 dBm	Pass
	1 GHz - 12.75 GHz	-17.70 dBm	-13 dBm	Pass
	Mid Channel			
	9 kHz - 150 kHz	-38.87 dBm	-13 dBm	Pass
	150 kHz - 30 MHz	-38.39 dBm	-13 dBm	Pass
	30 MHz - 1 GHz	-29.61 dBm	-13 dBm	Pass
	1 GHz - 12.75 GHz	-17.02 dBm	-13 dBm	Pass
	High Channel			
	9 kHz - 150 kHz	-38.92 dBm	-13 dBm	Pass
	150 kHz - 30 MHz	-37.89 dBm	-13 dBm	Pass
	30 MHz - 1 GHz	-27.68 dBm	-13 dBm	Pass
	1 GHz - 12.75 GHz	-17.40 dBm	-13 dBm	Pass
	Multi Channel			
	9 kHz - 150 kHz	-39.06 dBm	-13 dBm	Pass
	150 kHz - 30 MHz	-39.04 dBm	-13 dBm	Pass
	30 MHz - 1 GHz	-30.35 dBm	-13 dBm	Pass
	1 GHz - 12.75 GHz	-16.95 dBm	-13 dBm	Pass
LTE 10M				
	Low Channel			
	9 kHz - 150 kHz	-39.88 dBm	-13 dBm	Pass
	150 kHz - 30 MHz	-38.61 dBm	-13 dBm	Pass
	30 MHz - 1 GHz	-30.46 dBm	-13 dBm	Pass
	1 GHz - 12.75 GHz	-17.07 dBm	-13 dBm	Pass
	Mid Channel			
	9 kHz - 150 kHz	-39.52 dBm	-13 dBm	Pass
	150 kHz - 30 MHz	-37.68 dBm	-13 dBm	Pass
	30 MHz - 1 GHz	-30.87 dBm	-13 dBm	Pass
	1 GHz - 12.75 GHz	-17.40 dBm	-13 dBm	Pass
	High Channel			
	9 kHz - 150 kHz	-39.69 dBm	-13 dBm	Pass
	150 kHz - 30 MHz	-38.34 dBm	-13 dBm	Pass
	30 MHz - 1 GHz	-30.14 dBm	-13 dBm	Pass
	1 GHz - 12.75 GHz	-17.75 dBm	-13 dBm	Pass
	Multi Channel			
	9 kHz - 150 kHz	-39.37 dBm	-13 dBm	Pass
	150 kHz - 30 MHz	-38.24 dBm	-13 dBm	Pass
	30 MHz - 1 GHz	-31.29 dBm	-13 dBm	Pass
	1 GHz - 12.75 GHz	-18.28 dBm	-13 dBm	Pass
LTE 15M				
	Low Channel			
	9 kHz - 150 kHz	-39.38 dBm	-13 dBm	Pass
	150 kHz - 30 MHz	-39.08 dBm	-13 dBm	Pass
	30 MHz - 1 GHz	-31.01 dBm	-13 dBm	Pass
	1 GHz - 12.75 GHz	-16.62 dBm	-13 dBm	Pass
	Mid Channel			
	9 kHz - 150 kHz	-39.85 dBm	-13 dBm	Pass
	150 kHz - 30 MHz	-38.07 dBm	-13 dBm	Pass
	30 MHz - 1 GHz	-31.02 dBm	-13 dBm	Pass
	1 GHz - 12.75 GHz	-18.36 dBm	-13 dBm	Pass
	High Channel			
	9 kHz - 150 kHz	-39.01 dBm	-13 dBm	Pass
	150 kHz - 30 MHz	-38.97 dBm	-13 dBm	Pass
	30 MHz - 1 GHz	-31.04 dBm	-13 dBm	Pass
	1 GHz - 12.75 GHz	-16.58 dBm	-13 dBm	Pass
	Multi Channel			
	9 kHz - 150 kHz	-40.49 dBm	-13 dBm	Pass
	150 kHz - 30 MHz	-37.18 dBm	-13 dBm	Pass
	30 MHz - 1 GHz	-30.97 dBm	-13 dBm	Pass
	1 GHz - 12.75 GHz	-17.79 dBm	-13 dBm	Pass
LTE 20M				
	Low Channel			
	9 kHz - 150 kHz	-38.71 dBm	-13 dBm	Pass
	150 kHz - 30 MHz	-37.12 dBm	-13 dBm	Pass
	30 MHz - 1 GHz	-30.96 dBm	-13 dBm	Pass
	1 GHz - 12.75 GHz	-16.49 dBm	-13 dBm	Pass
	Mid Channel			
	9 kHz - 150 kHz	-39.32 dBm	-13 dBm	Pass
	150 kHz - 30 MHz	-38.09 dBm	-13 dBm	Pass
	30 MHz - 1 GHz	-31.17 dBm	-13 dBm	Pass
	1 GHz - 12.75 GHz	-17.22 dBm	-13 dBm	Pass

Port B					
LTE 5M					
High Channel					
9 kHz - 150 kHz		-39.52 dBm	-13 dBm	Pass	
150 kHz - 30 MHz		-38.24 dBm	-13 dBm	Pass	
30 MHz - 1 GHz		-31.13 dBm	-13 dBm	Pass	
1 GHz - 12.75 GHz		-17.52 dBm	-13 dBm	Pass	
Multi Channel					
9 kHz - 150 kHz		-38.47 dBm	-13 dBm	Pass	
150 kHz - 30 MHz		-35.67 dBm	-13 dBm	Pass	
30 MHz - 1 GHz		-30.85 dBm	-13 dBm	Pass	
1 GHz - 12.75 GHz		-17.71 dBm	-13 dBm	Pass	
Low Channel					
9 kHz - 150 kHz		-39.71 dBm	-13 dBm	Pass	
150 kHz - 30 MHz		-38.29 dBm	-13 dBm	Pass	
30 MHz - 1 GHz		-30.26 dBm	-13 dBm	Pass	
1 GHz - 12.75 GHz		-16.98 dBm	-13 dBm	Pass	
Mid Channel					
9 kHz - 150 kHz		-38.11 dBm	-13 dBm	Pass	
150 kHz - 30 MHz		-38.94 dBm	-13 dBm	Pass	
30 MHz - 1 GHz		-29.71 dBm	-13 dBm	Pass	
1 GHz - 12.75 GHz		-16.61 dBm	-13 dBm	Pass	
High Channel					
9 kHz - 150 kHz		-38.92 dBm	-13 dBm	Pass	
150 kHz - 30 MHz		-38.39 dBm	-13 dBm	Pass	
30 MHz - 1 GHz		-30.02 dBm	-13 dBm	Pass	
1 GHz - 12.75 GHz		-16.65 dBm	-13 dBm	Pass	
Multi Channel					
9 kHz - 150 kHz		-39.04 dBm	-13 dBm	Pass	
150 kHz - 30 MHz		-38.44 dBm	-13 dBm	Pass	
30 MHz - 1 GHz		-31.21 dBm	-13 dBm	Pass	
1 GHz - 12.75 GHz		-17.82 dBm	-13 dBm	Pass	
LTE 10M					
Low Channel					
9 kHz - 150 kHz		-39.39 dBm	-13 dBm	Pass	
150 kHz - 30 MHz		-38.40 dBm	-13 dBm	Pass	
30 MHz - 1 GHz		-30.92 dBm	-13 dBm	Pass	
1 GHz - 12.75 GHz		-16.85 dBm	-13 dBm	Pass	
Mid Channel					
9 kHz - 150 kHz		-39.35 dBm	-13 dBm	Pass	
150 kHz - 30 MHz		-37.05 dBm	-13 dBm	Pass	
30 MHz - 1 GHz		-30.33 dBm	-13 dBm	Pass	
1 GHz - 12.75 GHz		-17.07 dBm	-13 dBm	Pass	
High Channel					
9 kHz - 150 kHz		-37.97 dBm	-13 dBm	Pass	
150 kHz - 30 MHz		-38.15 dBm	-13 dBm	Pass	
30 MHz - 1 GHz		-30.56 dBm	-13 dBm	Pass	
1 GHz - 12.75 GHz		-17.99 dBm	-13 dBm	Pass	
Multi Channel					
9 kHz - 150 kHz		-39.23 dBm	-13 dBm	Pass	
150 kHz - 30 MHz		-38.69 dBm	-13 dBm	Pass	
30 MHz - 1 GHz		-30.56 dBm	-13 dBm	Pass	
1 GHz - 12.75 GHz		-16.84 dBm	-13 dBm	Pass	
LTE 15M					
Low Channel					
9 kHz - 150 kHz		-38.68 dBm	-13 dBm	Pass	
150 kHz - 30 MHz		-37.19 dBm	-13 dBm	Pass	
30 MHz - 1 GHz		-31.44 dBm	-13 dBm	Pass	
1 GHz - 12.75 GHz		-18.07 dBm	-13 dBm	Pass	
Mid Channel					
9 kHz - 150 kHz		-38.42 dBm	-13 dBm	Pass	
150 kHz - 30 MHz		-37.01 dBm	-13 dBm	Pass	
30 MHz - 1 GHz		-30.63 dBm	-13 dBm	Pass	
1 GHz - 12.75 GHz		-17.67 dBm	-13 dBm	Pass	
High Channel					
9 kHz - 150 kHz		-39.02 dBm	-13 dBm	Pass	
150 kHz - 30 MHz		-36.79 dBm	-13 dBm	Pass	
30 MHz - 1 GHz		-30.13 dBm	-13 dBm	Pass	
1 GHz - 12.75 GHz		-17.17 dBm	-13 dBm	Pass	
Multi Channel					
9 kHz - 150 kHz		-38.88 dBm	-13 dBm	Pass	
150 kHz - 30 MHz		-37.93 dBm	-13 dBm	Pass	
30 MHz - 1 GHz		-29.13 dBm	-13 dBm	Pass	
1 GHz - 12.75 GHz		-16.98 dBm	-13 dBm	Pass	
LTE 20M					
Low Channel					
9 kHz - 150 kHz		-38.42 dBm	-13 dBm	Pass	
150 kHz - 30 MHz		-37.40 dBm	-13 dBm	Pass	
30 MHz - 1 GHz		-30.40 dBm	-13 dBm	Pass	
1 GHz - 12.75 GHz		-18.16 dBm	-13 dBm	Pass	
Mid Channel					
9 kHz - 150 kHz		-39.80 dBm	-13 dBm	Pass	
150 kHz - 30 MHz		-38.10 dBm	-13 dBm	Pass	
30 MHz - 1 GHz		-31.13 dBm	-13 dBm	Pass	
1 GHz - 12.75 GHz		-16.52 dBm	-13 dBm	Pass	
High Channel					
9 kHz - 150 kHz		-38.28 dBm	-13 dBm	Pass	
150 kHz - 30 MHz		-37.70 dBm	-13 dBm	Pass	
30 MHz - 1 GHz		-31.00 dBm	-13 dBm	Pass	
1 GHz - 12.75 GHz		-17.70 dBm	-13 dBm	Pass	
Multi Channel					
9 kHz - 150 kHz		-38.14 dBm	-13 dBm	Pass	
150 kHz - 30 MHz		-38.57 dBm	-13 dBm	Pass	
30 MHz - 1 GHz		-30.94 dBm	-13 dBm	Pass	
1 GHz - 12.75 GHz		-17.17 dBm	-13 dBm	Pass	

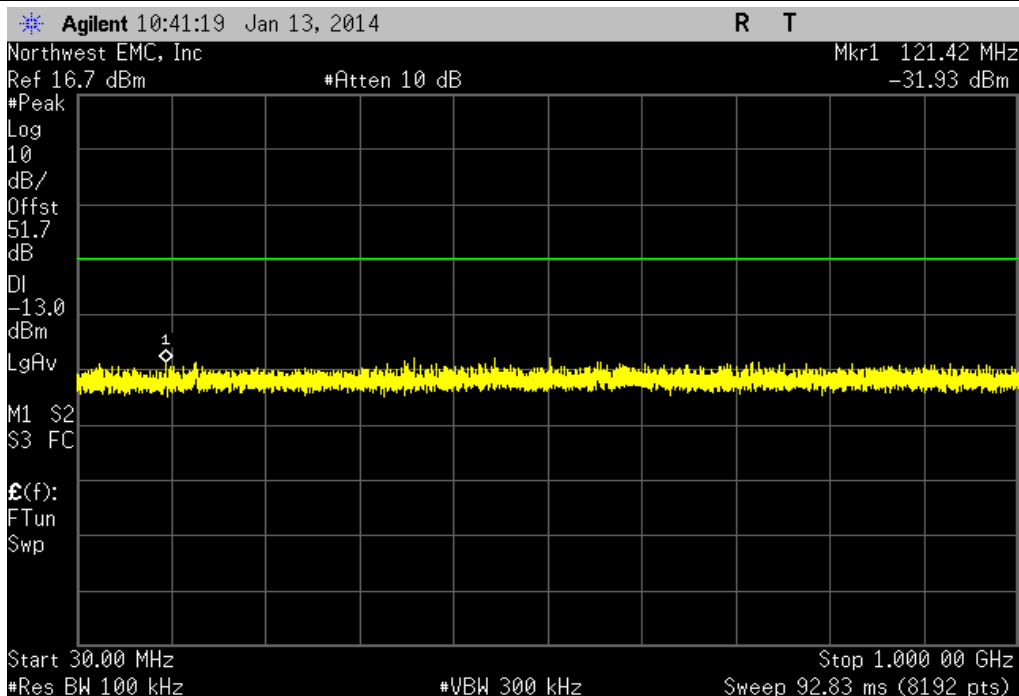
Port A, LTE 5M, Low Channel, 9 kHz - 150 kHz							
				Value	Limit	Result	
				-39.05 dBm	-13 dBm	Pass	



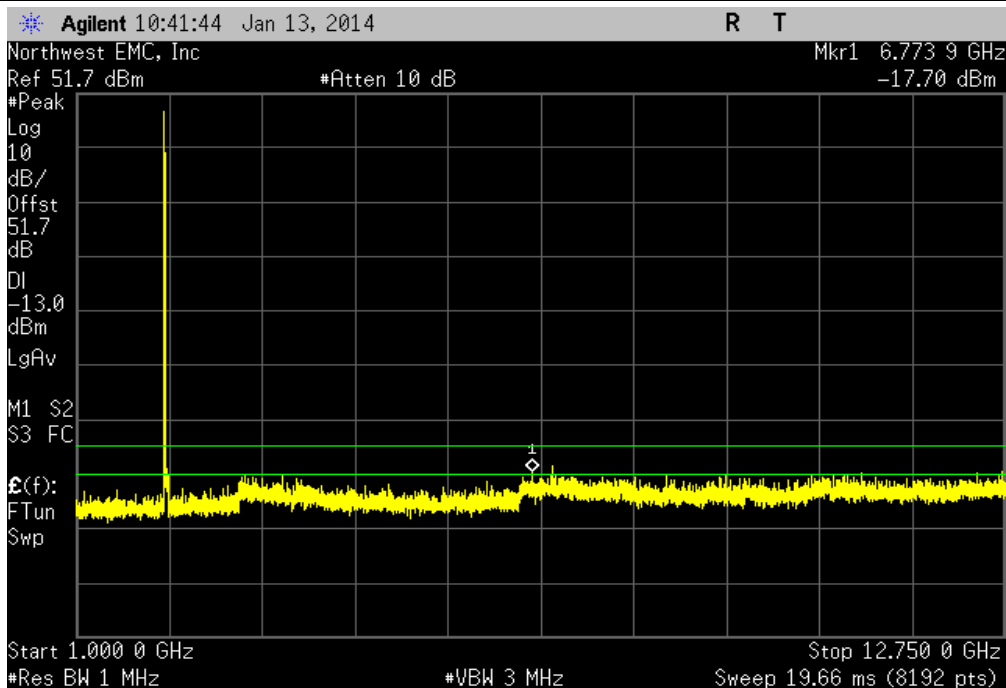
Port A, LTE 5M, Low Channel, 150 kHz - 30 MHz							
				Value	Limit	Result	
				-38.39 dBm	-13 dBm	Pass	



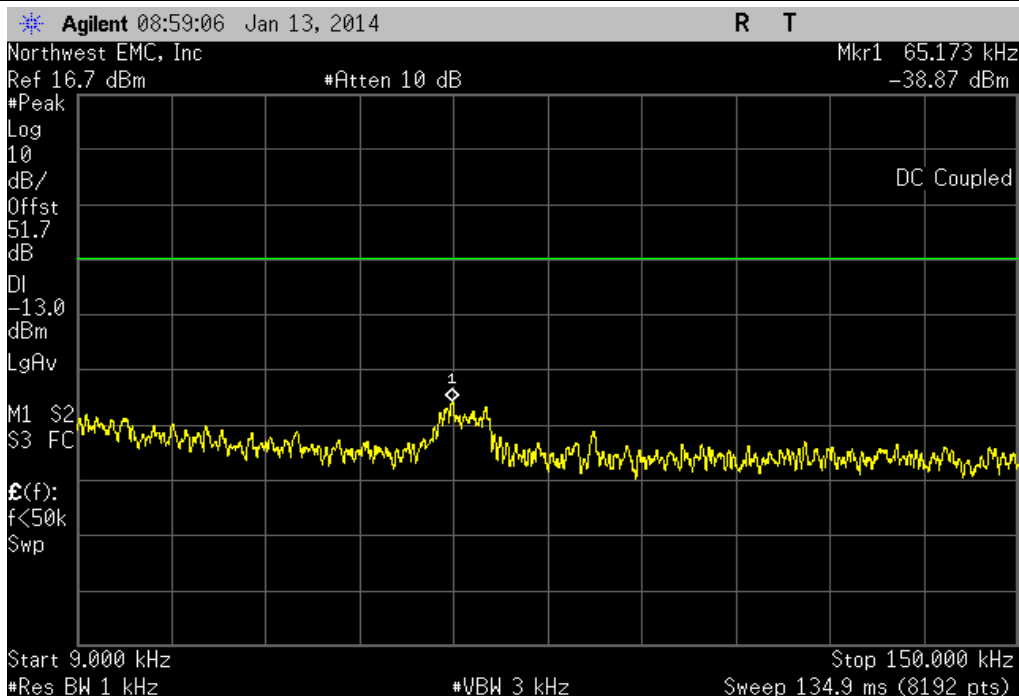
Port A, LTE 5M, Low Channel, 30 MHz - 1 GHz							
					Value	Limit	Result
					-31.93 dBm	-13 dBm	Pass



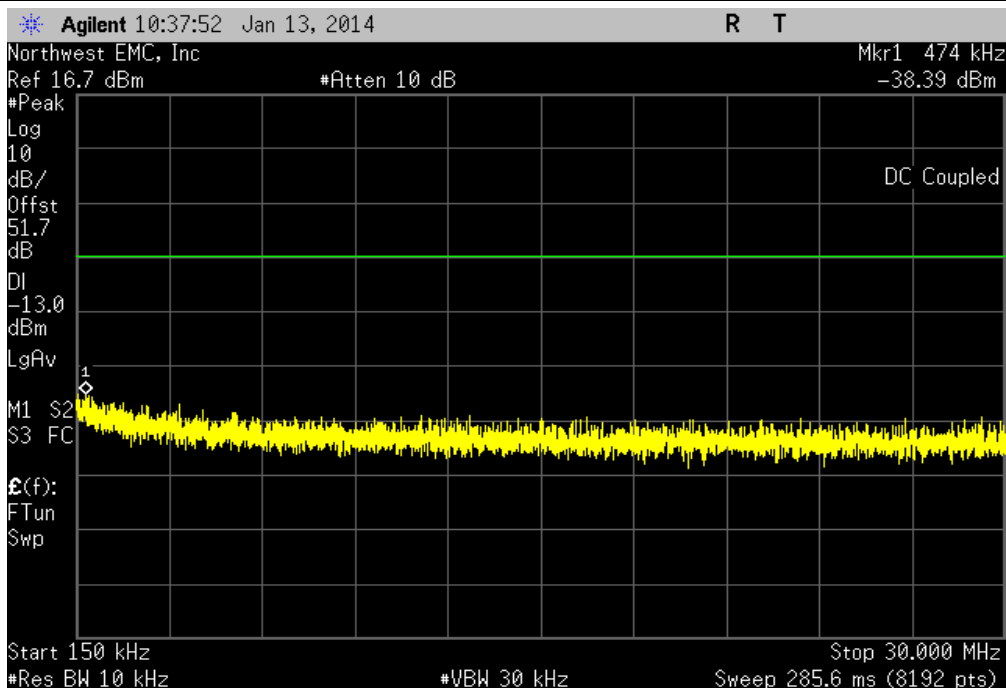
Port A, LTE 5M, Low Channel, 1 GHz - 12.75 GHz							
					Value	Limit	Result
					-17.70 dBm	-13 dBm	Pass



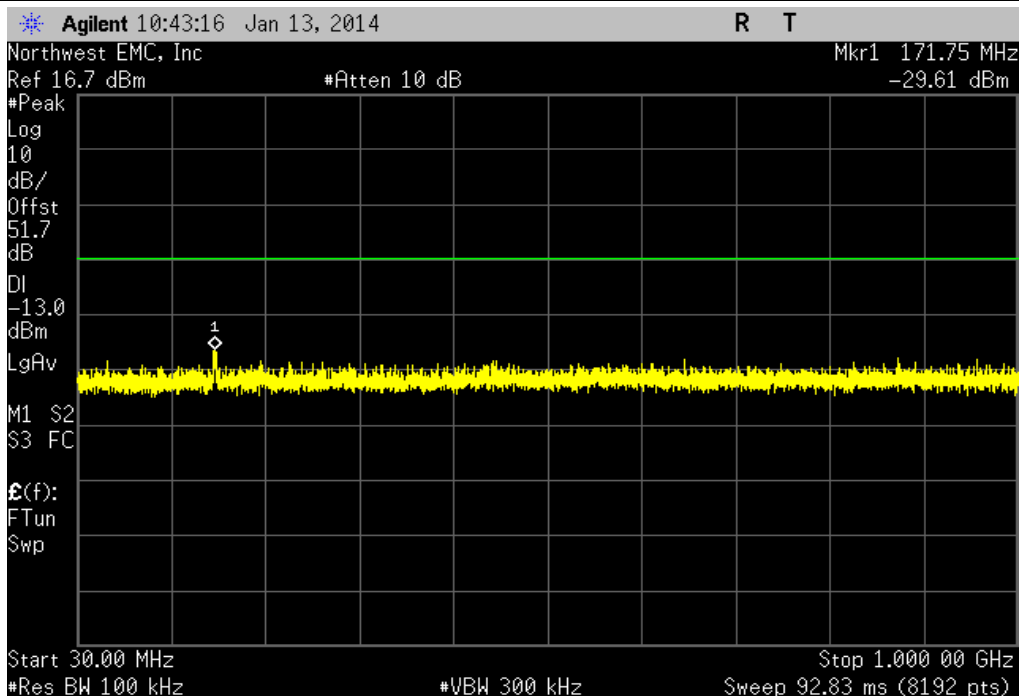
Port A, LTE 5M, Mid Channel, 9 kHz - 150 kHz							
					Value	Limit	Result
					-38.87 dBm	-13 dBm	Pass



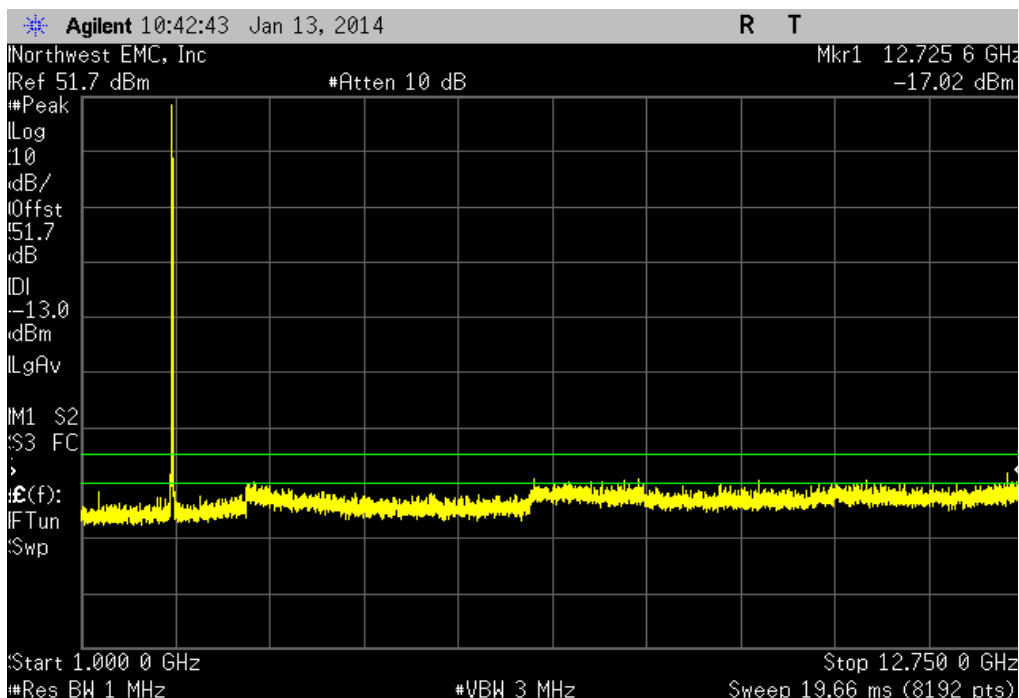
Port A, LTE 5M, Mid Channel, 150 kHz - 30 MHz							
					Value	Limit	Result
					-38.39 dBm	-13 dBm	Pass



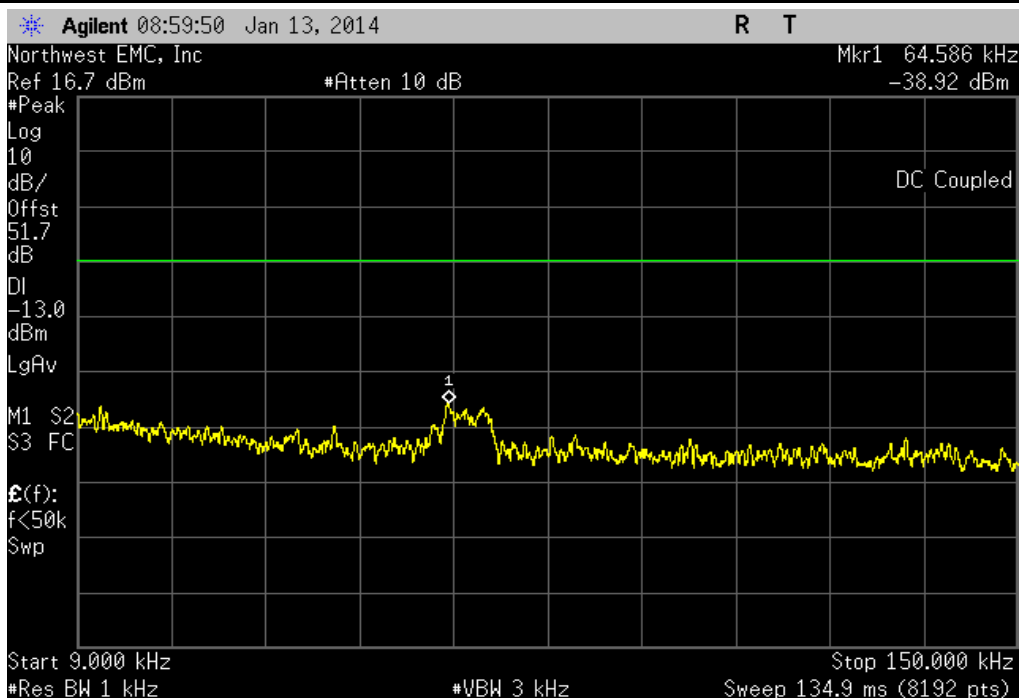
Port A, LTE 5M, Mid Channel, 30 MHz - 1 GHz							
				Value	Limit	Result	
				-29.61 dBm	-13 dBm	Pass	



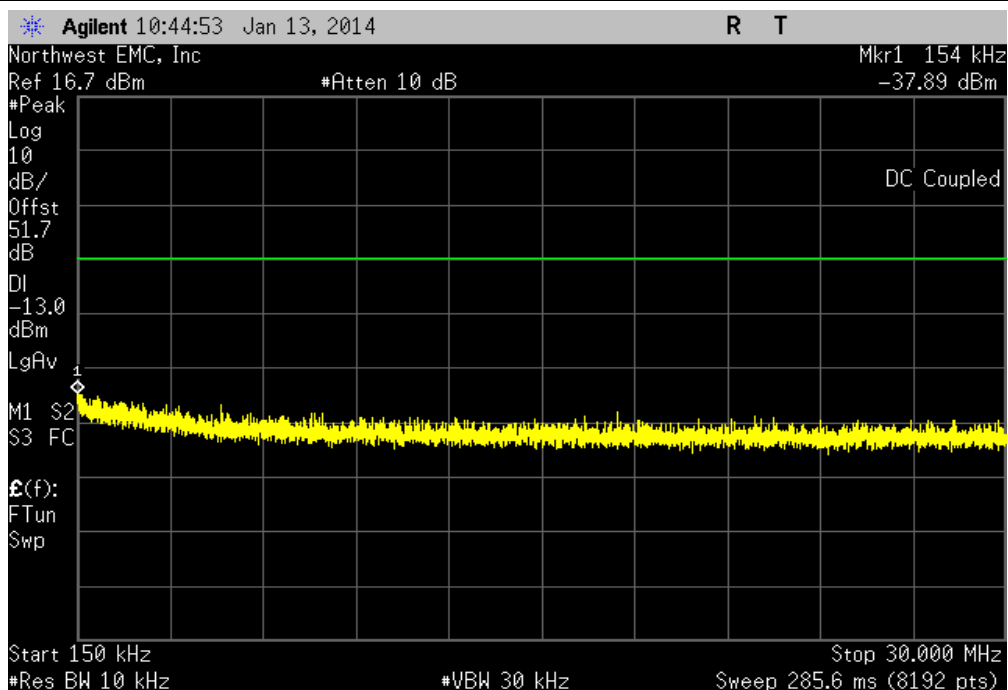
Port A, LTE 5M, Mid Channel, 1 GHz - 12.75 GHz							
				Value	Limit	Result	
				-17.02 dBm	-13 dBm	Pass	



Port A, LTE 5M, High Channel, 9 kHz - 150 kHz							
					Value	Limit	Result
					-38.92 dBm	-13 dBm	Pass

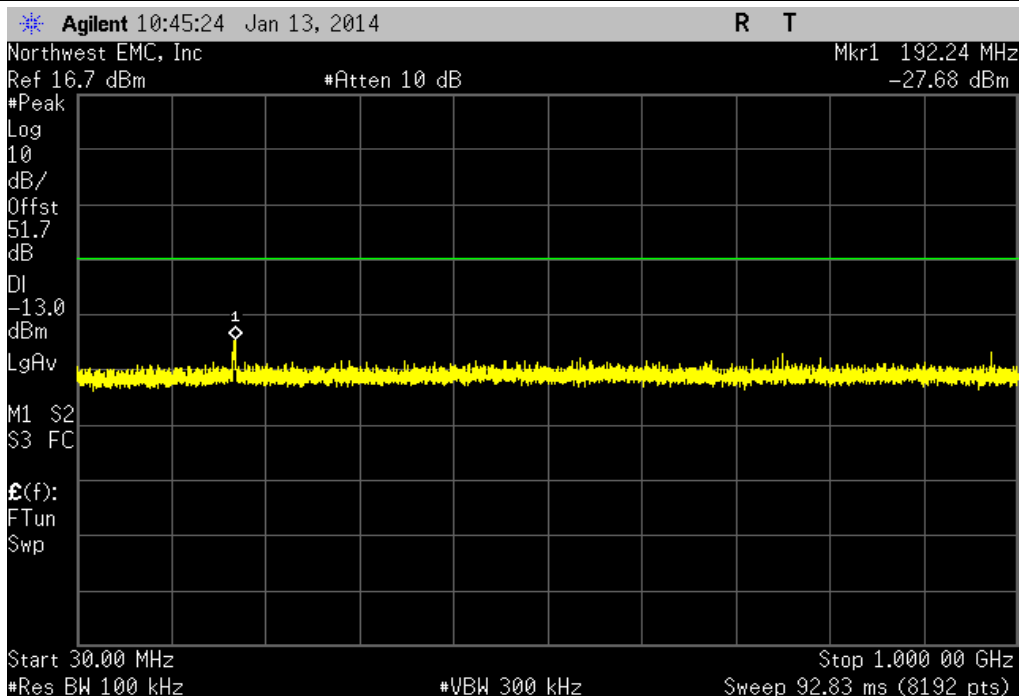


Port A, LTE 5M, High Channel, 150 kHz - 30 MHz							
					Value	Limit	Result
					-37.89 dBm	-13 dBm	Pass

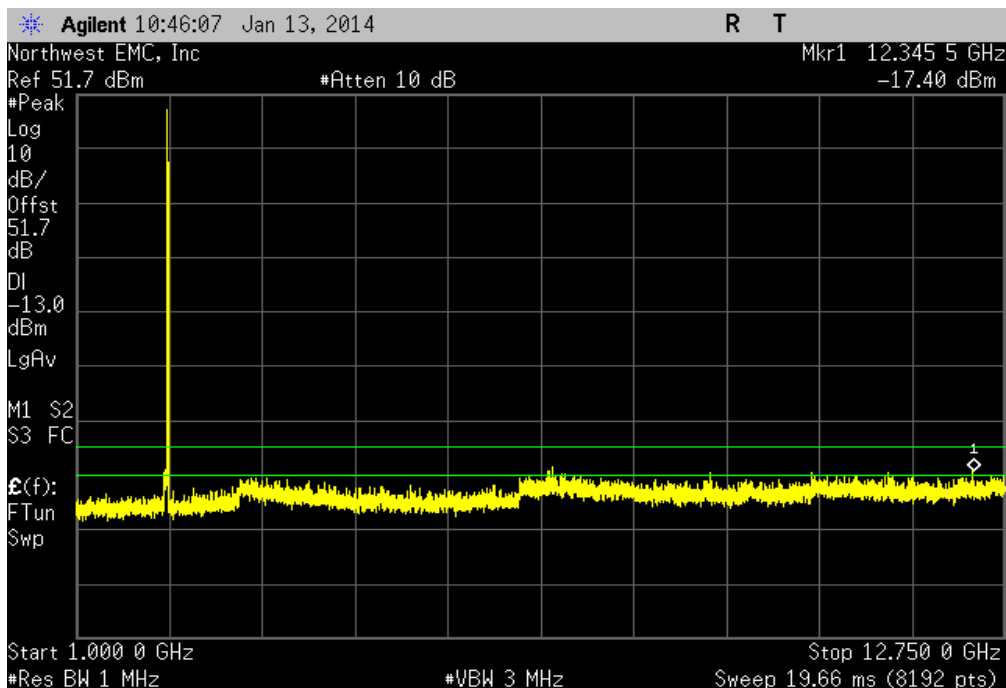




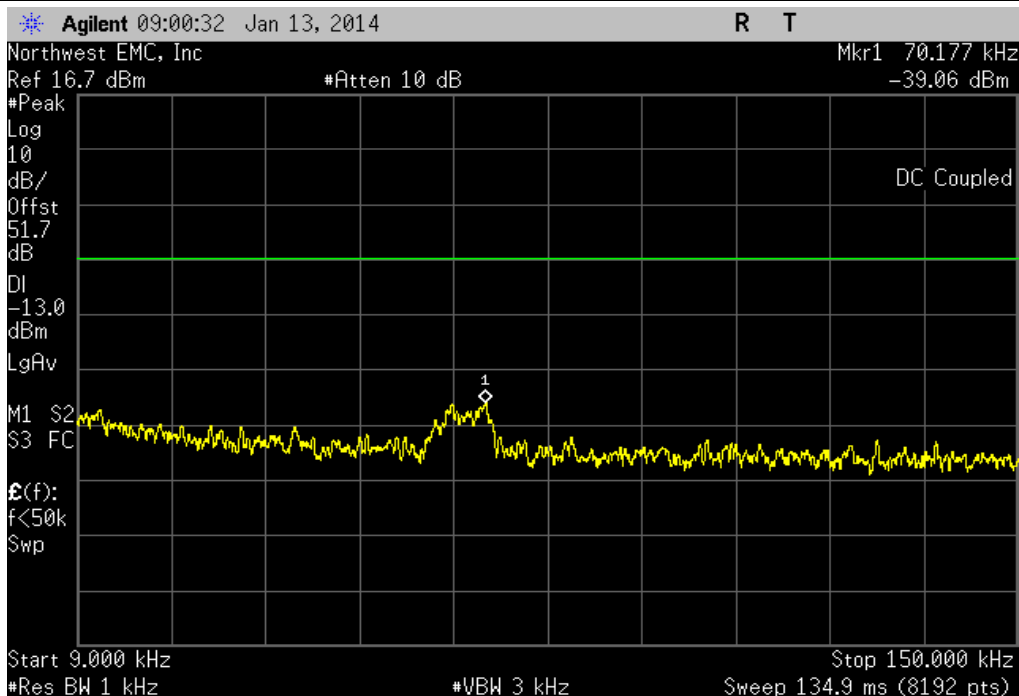
Port A, LTE 5M, High Channel, 30 MHz - 1 GHz							
				Value	Limit	Result	
				-27.68 dBm	-13 dBm	Pass	



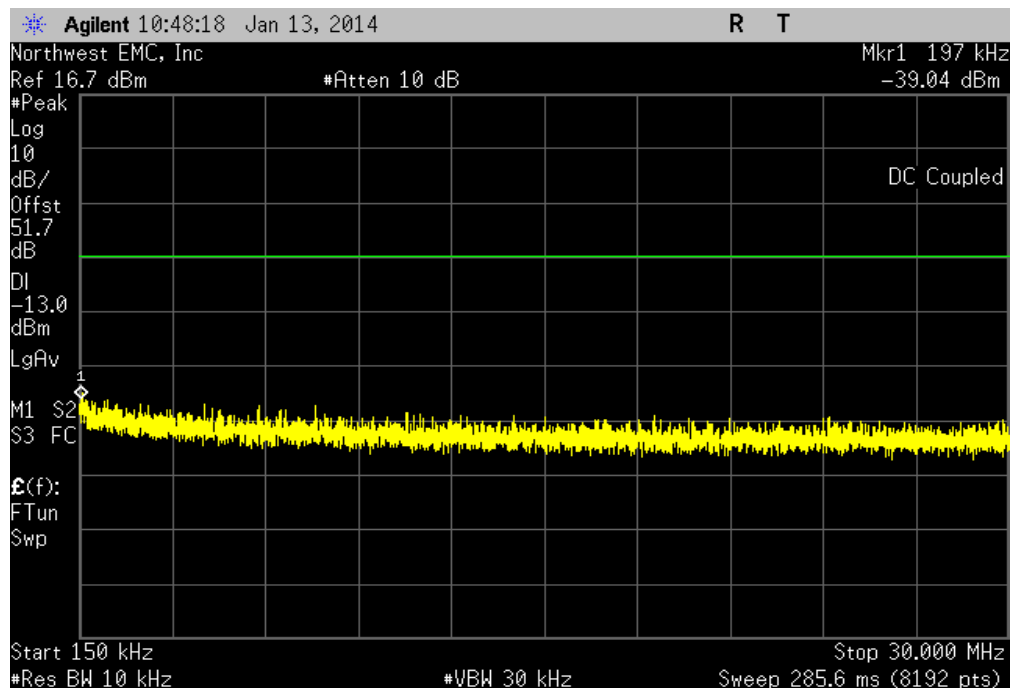
Port A, LTE 5M, High Channel, 1 GHz - 12.75 GHz							
				Value	Limit	Result	
				-17.40 dBm	-13 dBm	Pass	



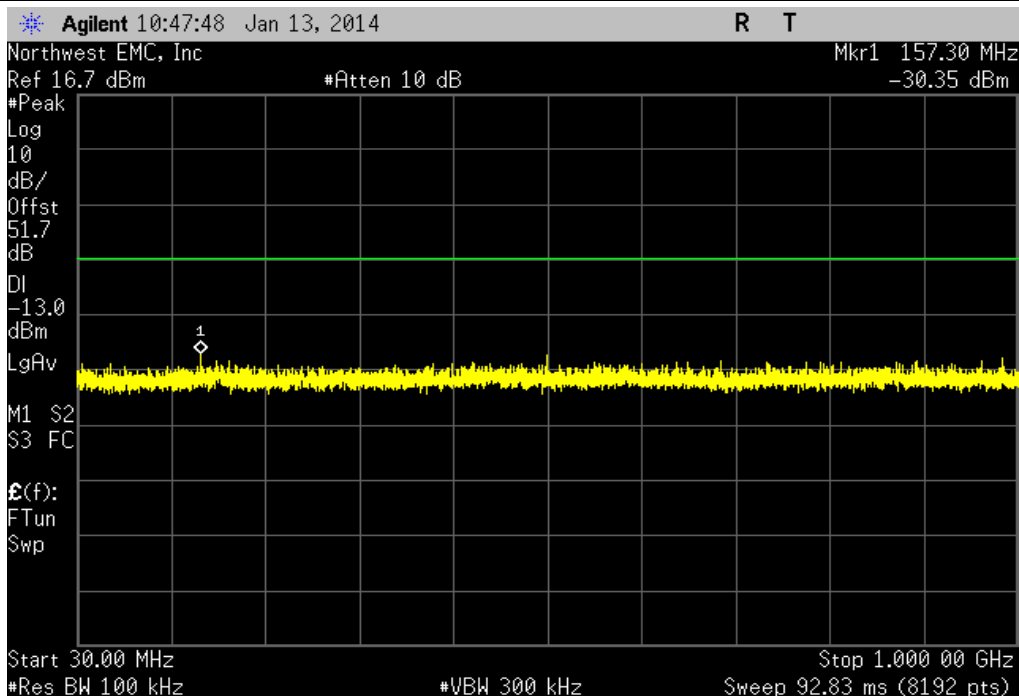
Port A, LTE 5M, Multi Channel, 9 kHz - 150 kHz							
					Value	Limit	Result
					-39.06 dBm	-13 dBm	Pass



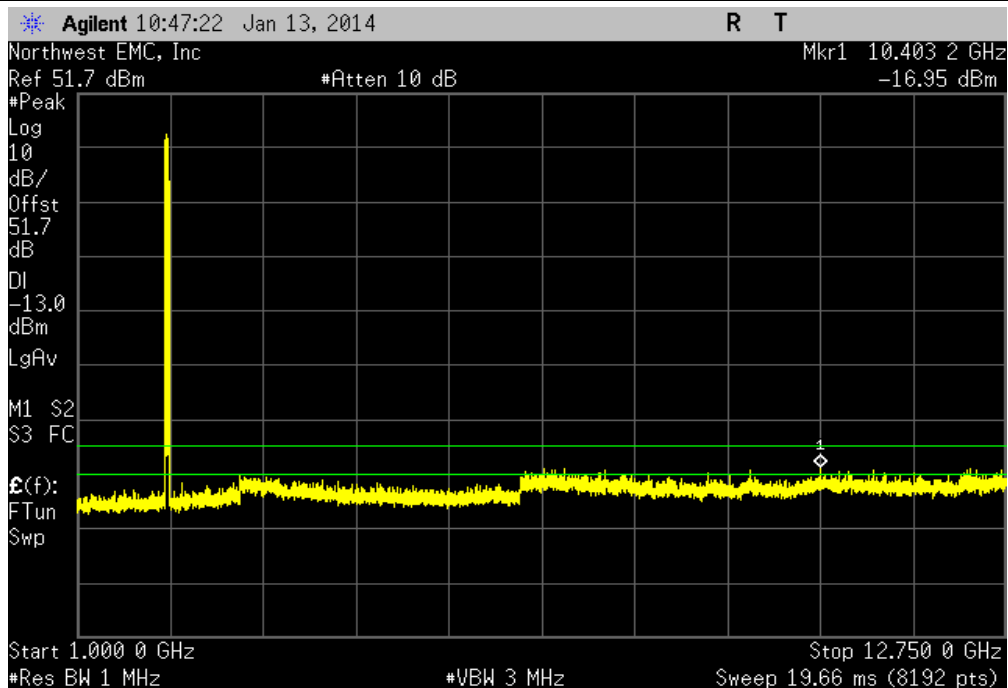
Port A, LTE 5M, Multi Channel, 150 kHz - 30 MHz							
					Value	Limit	Result
					-39.04 dBm	-13 dBm	Pass



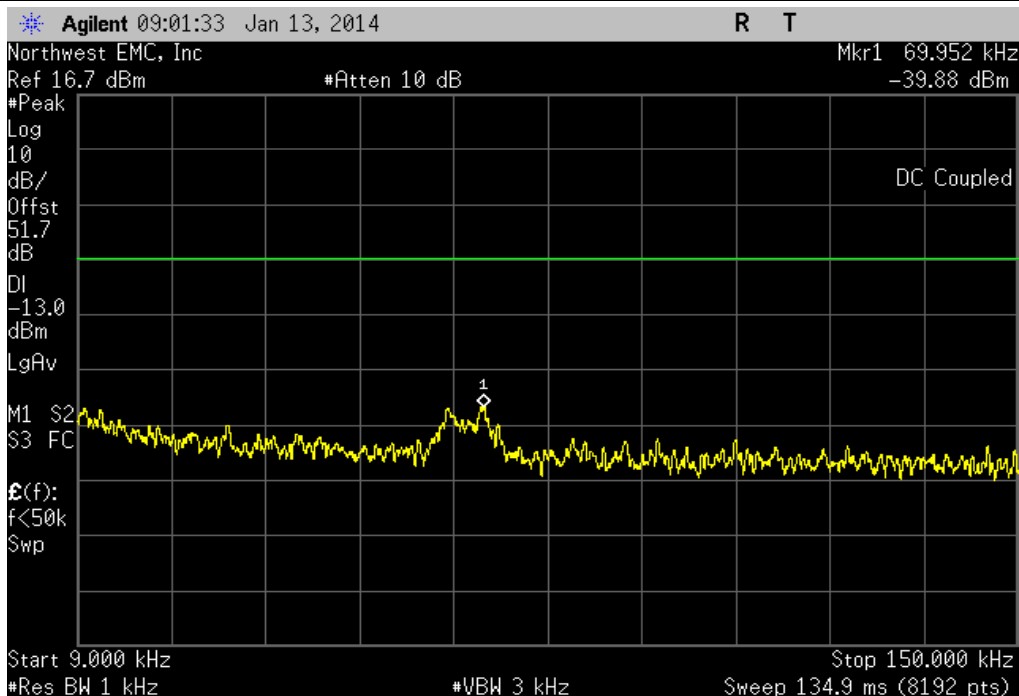
Port A, LTE 5M, Multi Channel, 30 MHz - 1 GHz							
				Value	Limit	Result	
				-30.35 dBm	-13 dBm	Pass	



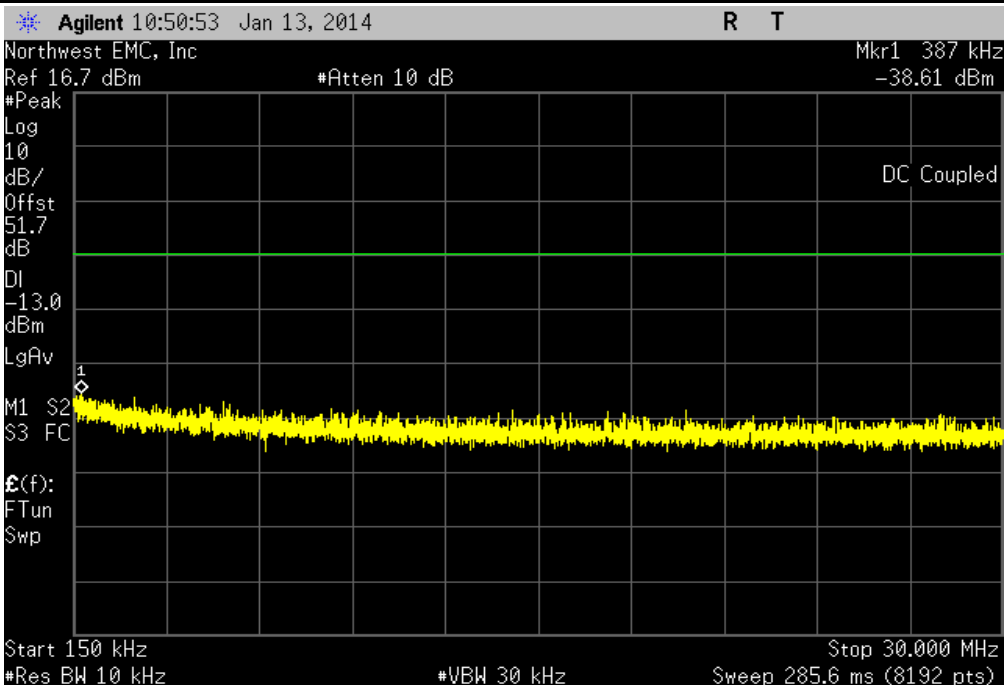
Port A, LTE 5M, Multi Channel, 1 GHz - 12.75 GHz							
				Value	Limit	Result	
				-16.95 dBm	-13 dBm	Pass	



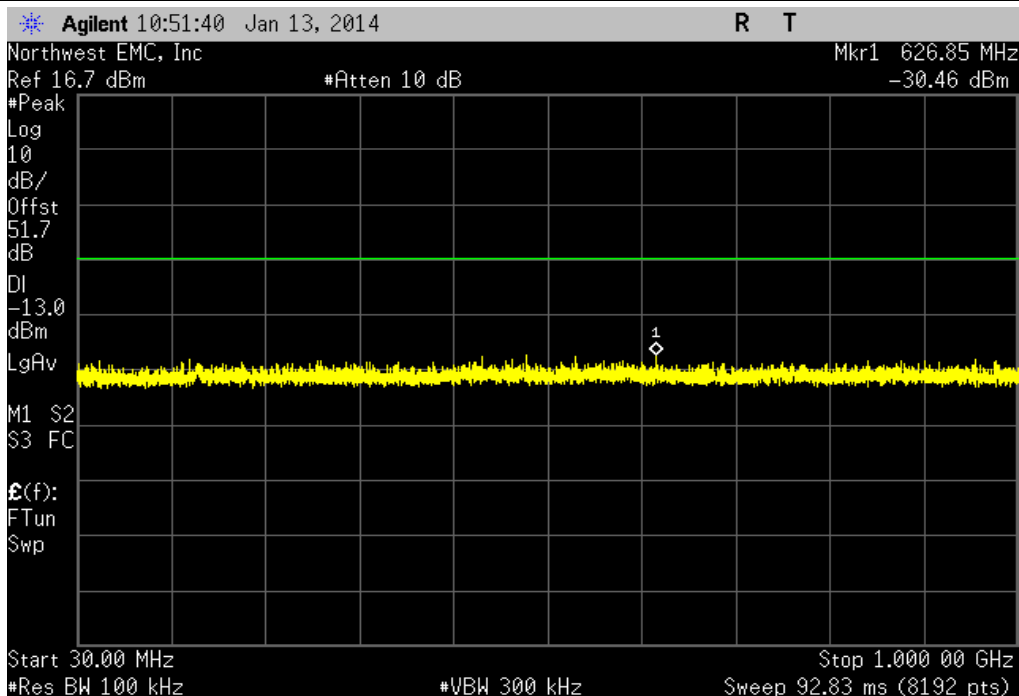
Port A, LTE 10M, Low Channel, 9 kHz - 150 kHz							
				Value	Limit	Result	
				-39.88 dBm	-13 dBm	Pass	



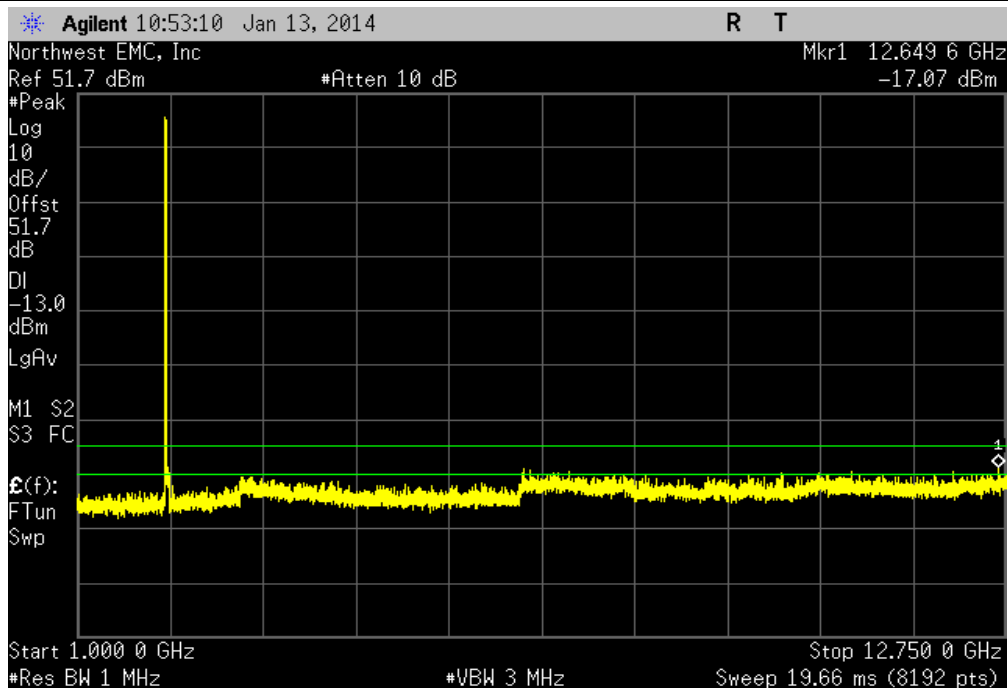
Port A, LTE 10M, Low Channel, 150 kHz - 30 MHz							
				Value	Limit	Result	
				-38.61 dBm	-13 dBm	Pass	



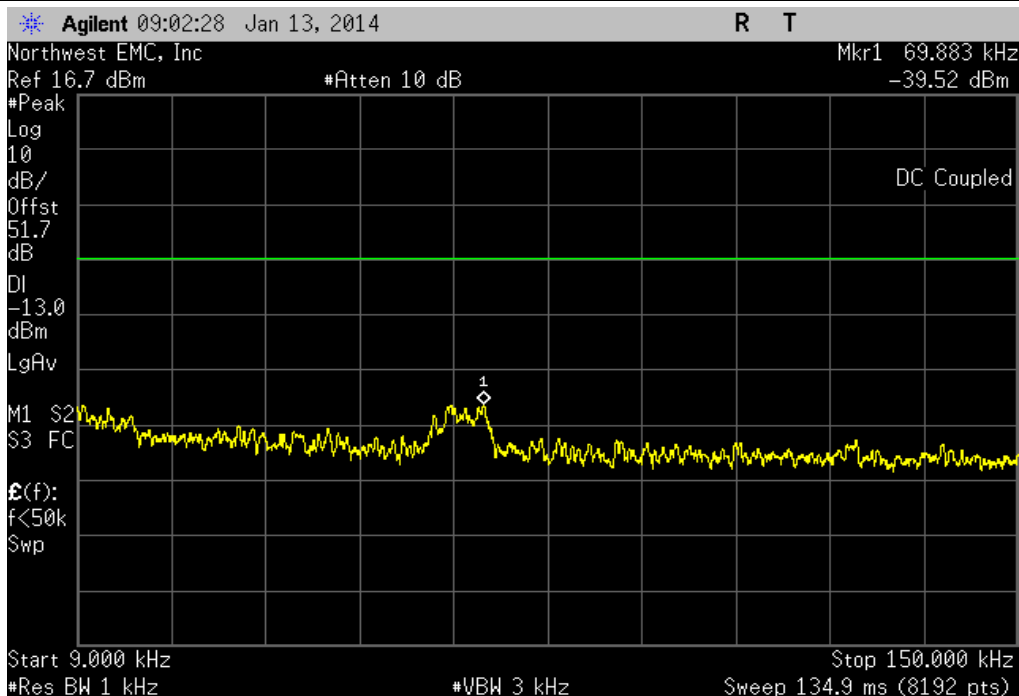
Port A, LTE 10M, Low Channel, 30 MHz - 1 GHz							
				Value	Limit	Result	
				-30.46 dBm	-13 dBm	Pass	



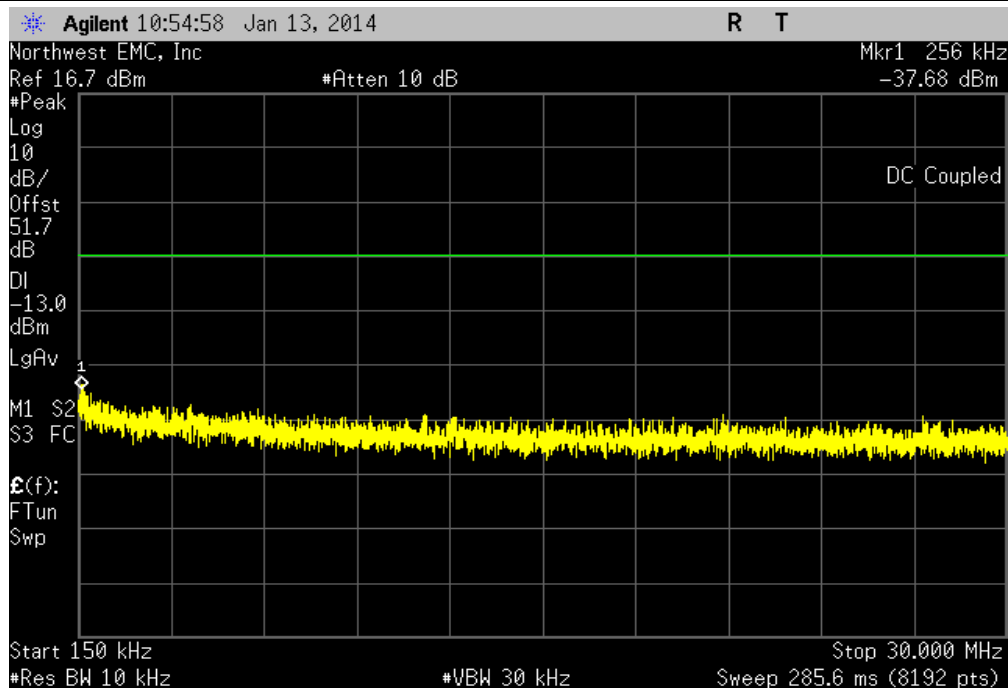
Port A, LTE 10M, Low Channel, 1 GHz - 12.75 GHz							
				Value	Limit	Result	
				-17.07 dBm	-13 dBm	Pass	



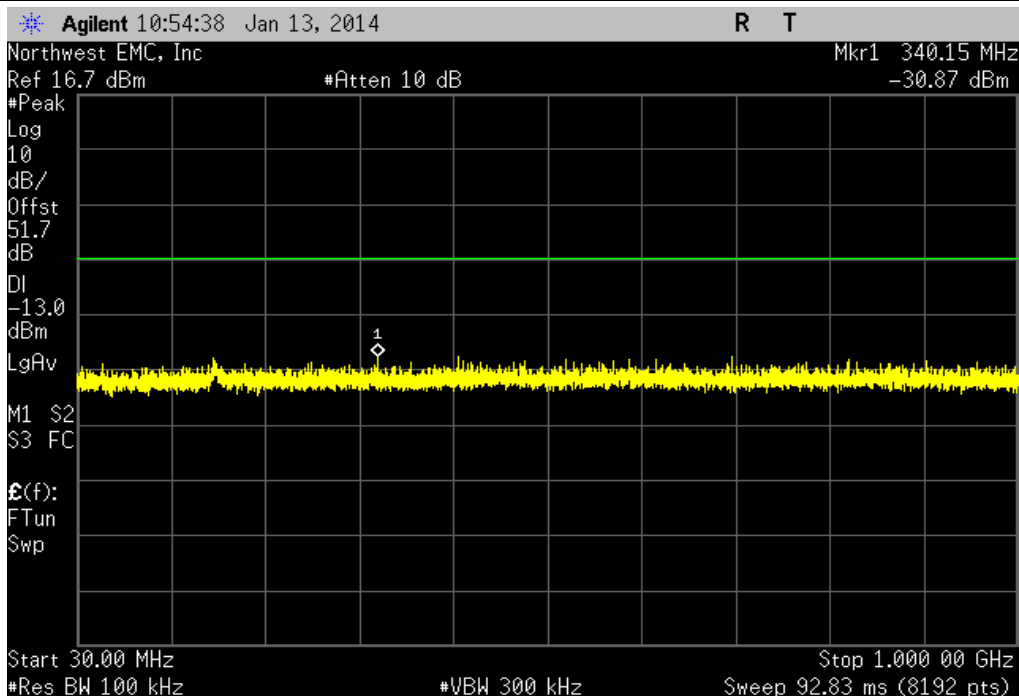
Port A, LTE 10M, Mid Channel, 9 kHz - 150 kHz							
				Value	Limit	Result	
				-39.52 dBm	-13 dBm	Pass	



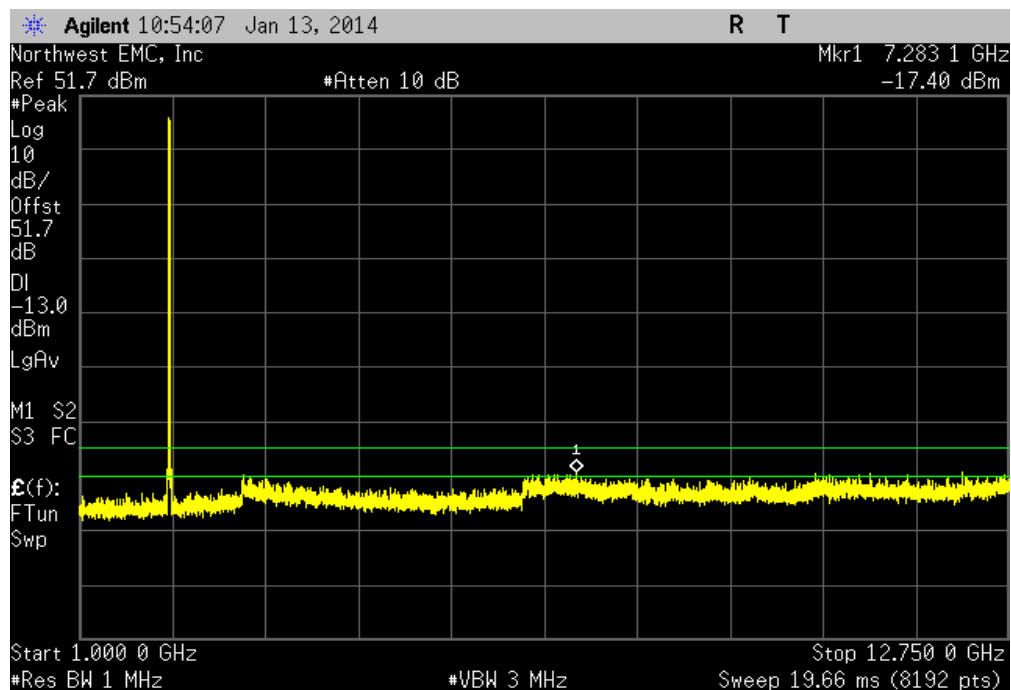
Port A, LTE 10M, Mid Channel, 150 kHz - 30 MHz							
				Value	Limit	Result	
				-37.68 dBm	-13 dBm	Pass	



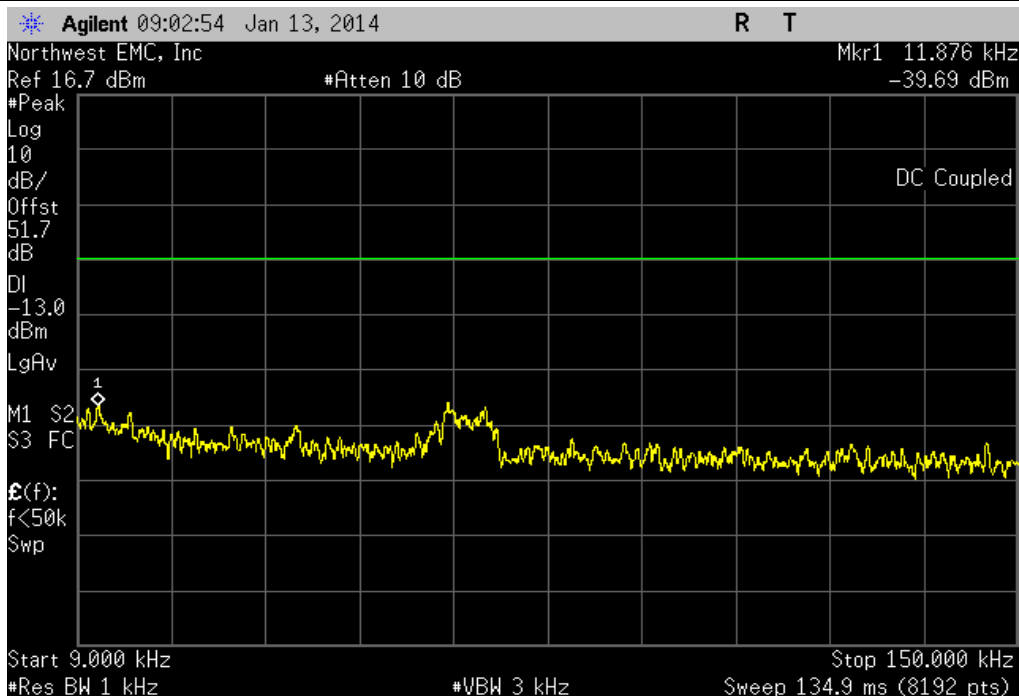
Port A, LTE 10M, Mid Channel, 30 MHz - 1 GHz							
				Value	Limit	Result	
				-30.87 dBm	-13 dBm	Pass	



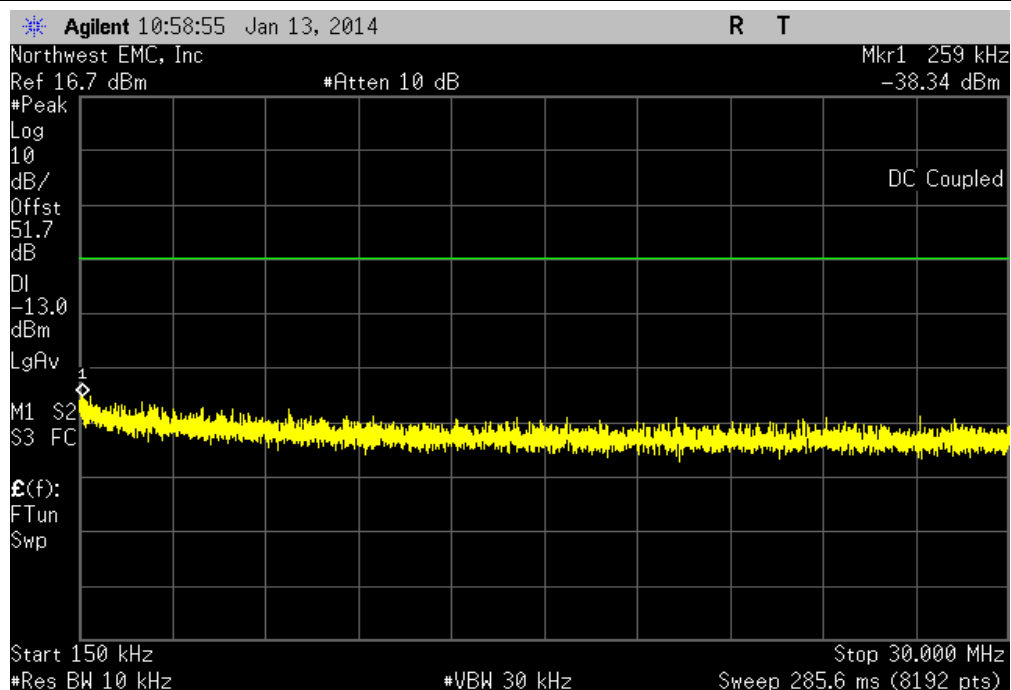
Port A, LTE 10M, Mid Channel, 1 GHz - 12.75 GHz							
				Value	Limit	Result	
				-17.40 dBm	-13 dBm	Pass	



Port A, LTE 10M, High Channel, 9 kHz - 150 kHz							
					Value	Limit	Result
					-39.69 dBm	-13 dBm	Pass

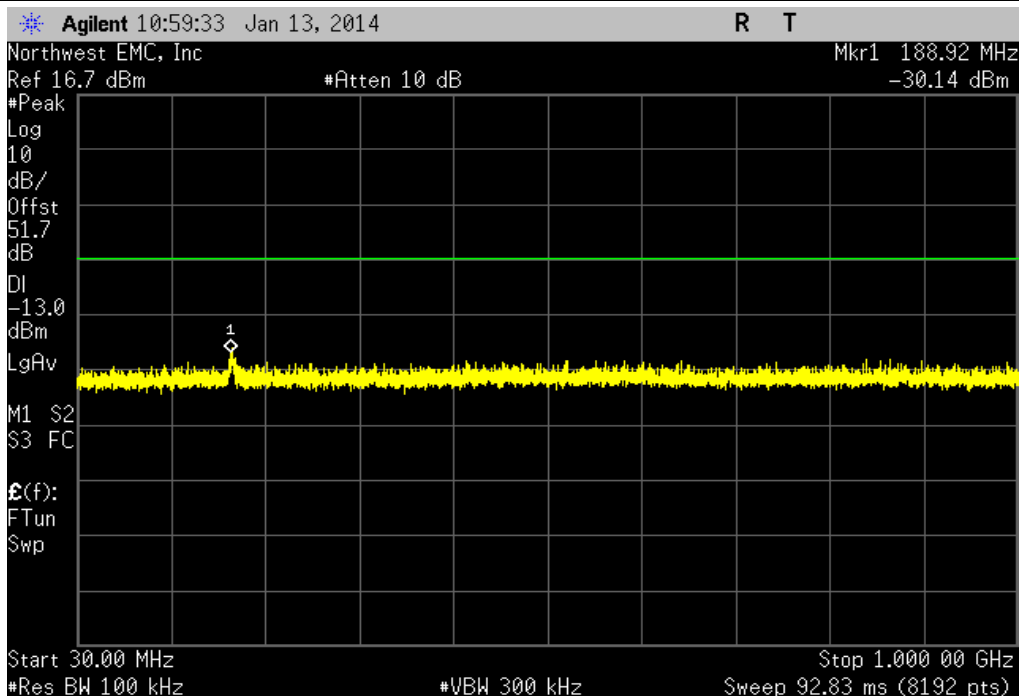


Port A, LTE 10M, High Channel, 150 kHz - 30 MHz							
					Value	Limit	Result
					-38.34 dBm	-13 dBm	Pass

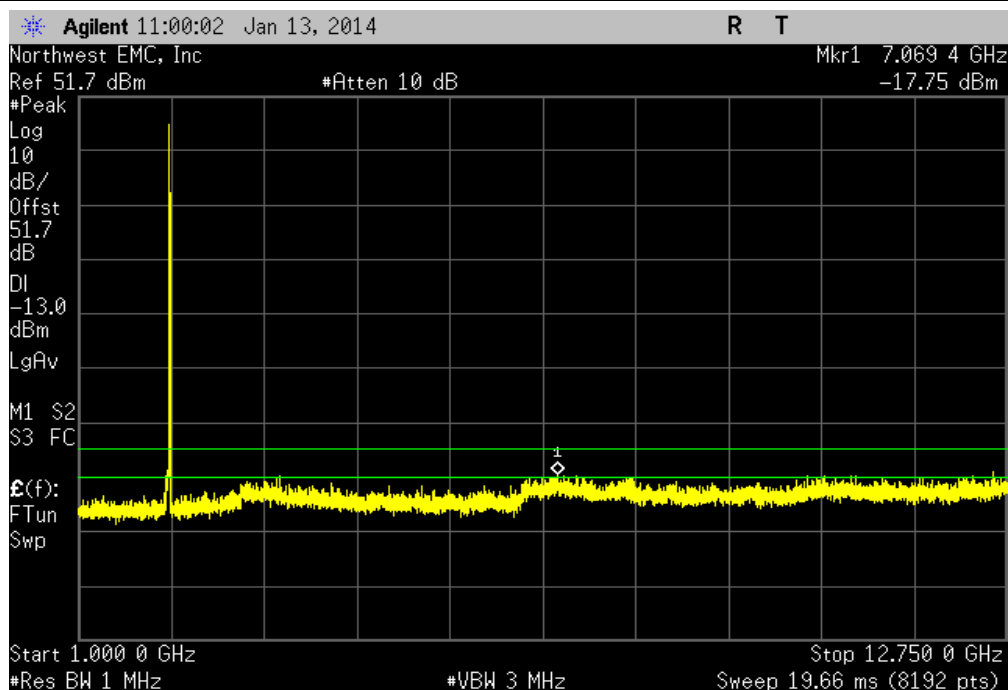




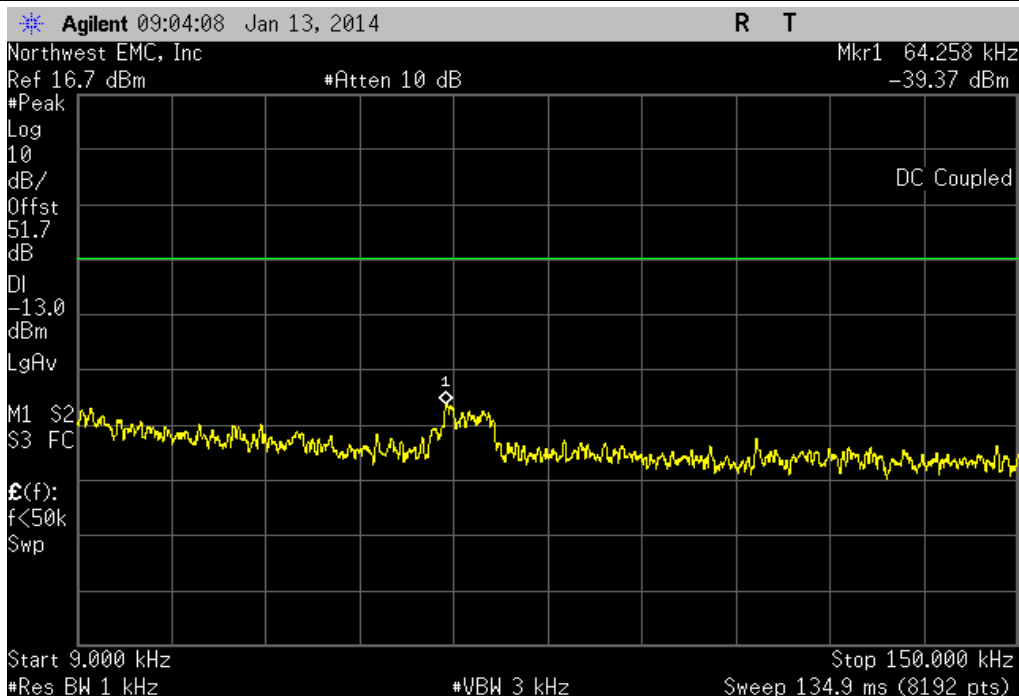
Port A, LTE 10M, High Channel, 30 MHz - 1 GHz							
					Value	Limit	Result
					-30.14 dBm	-13 dBm	Pass



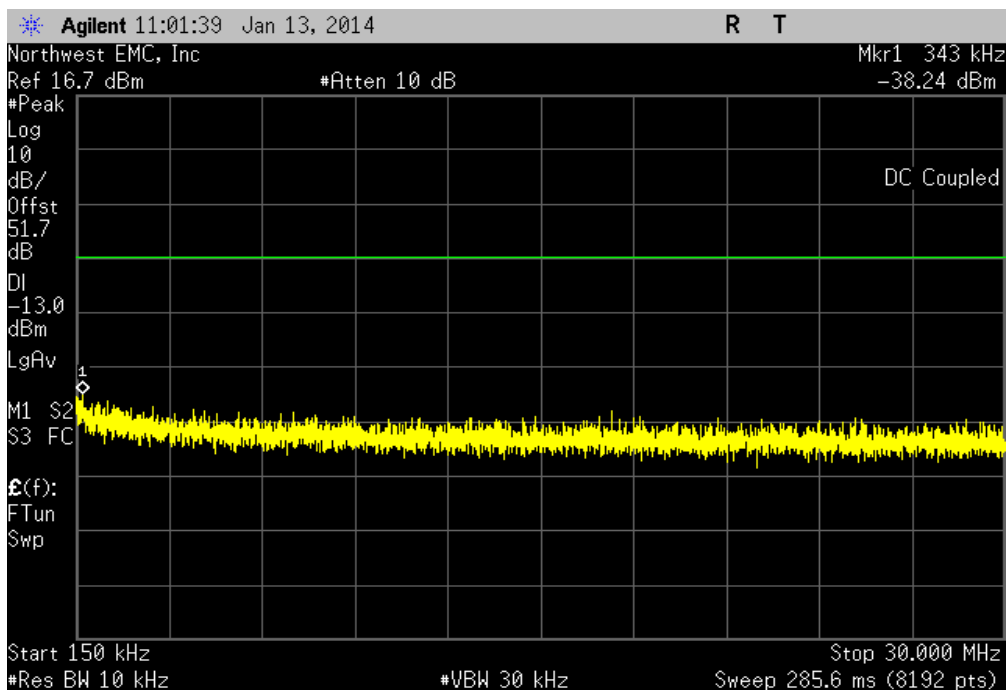
Port A, LTE 10M, High Channel, 1 GHz - 12.75 GHz							
					Value	Limit	Result
					-17.75 dBm	-13 dBm	Pass



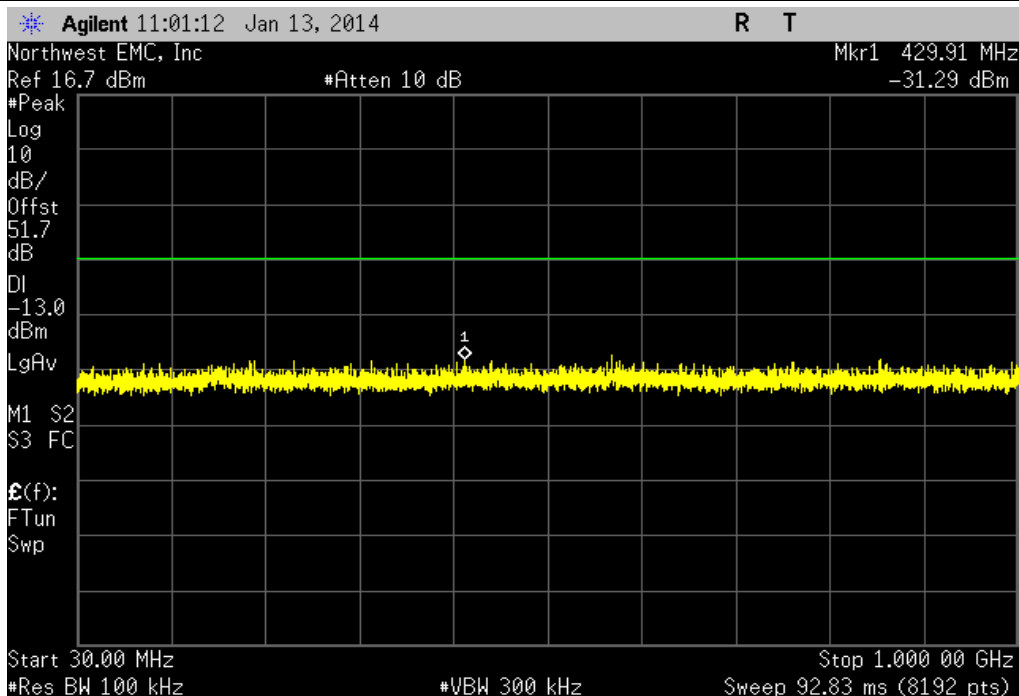
Port A, LTE 10M, Multi Channel, 9 kHz - 150 kHz							
					Value	Limit	Result
					-39.37 dBm	-13 dBm	Pass



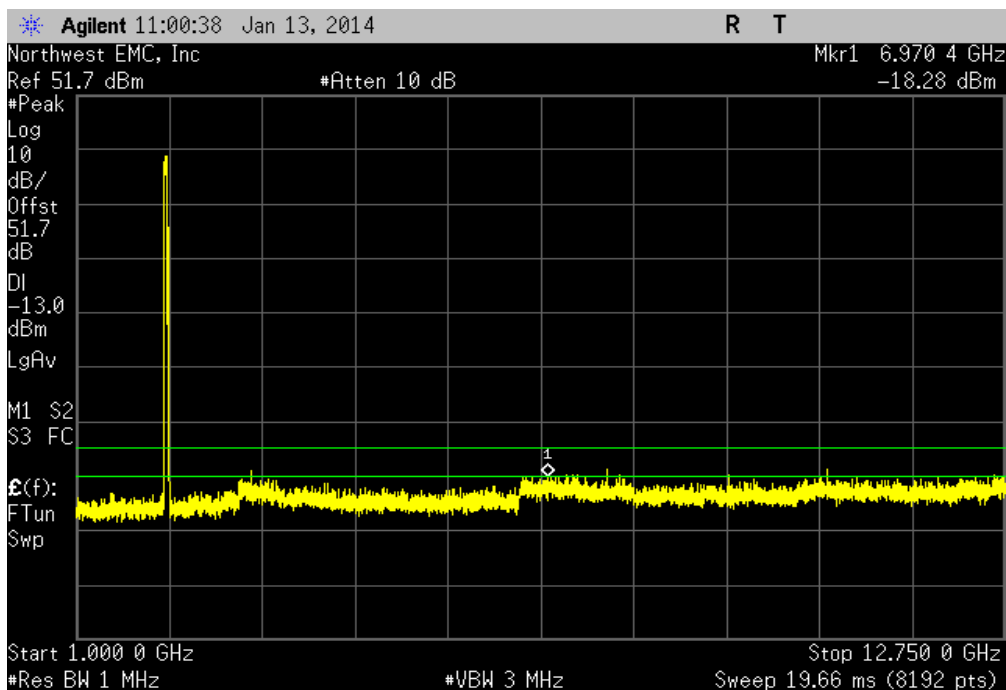
Port A, LTE 10M, Multi Channel, 150 kHz - 30 MHz							
					Value	Limit	Result
					-38.24 dBm	-13 dBm	Pass



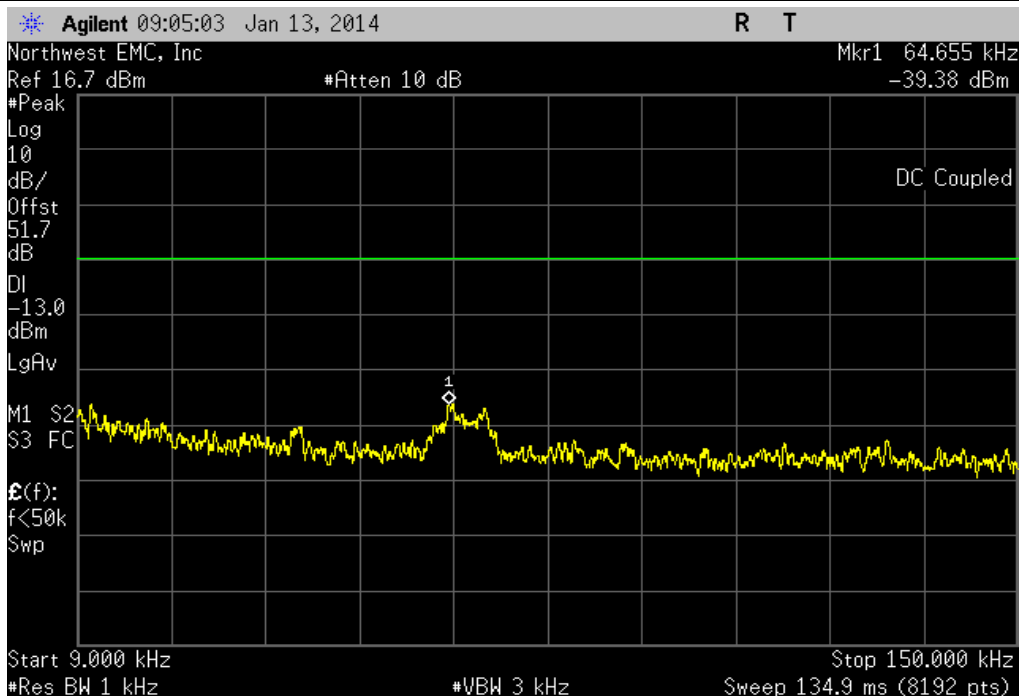
Port A, LTE 10M, Multi Channel, 30 MHz - 1 GHz							
					Value	Limit	Result
					-31.29 dBm	-13 dBm	Pass



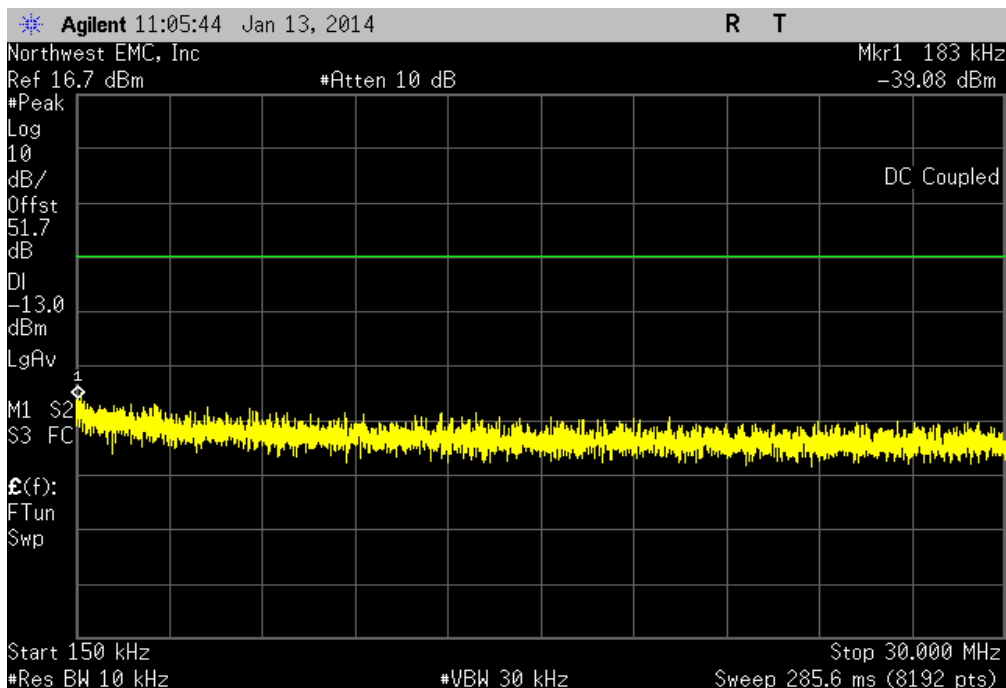
Port A, LTE 10M, Multi Channel, 1 GHz - 12.75 GHz							
					Value	Limit	Result
					-18.28 dBm	-13 dBm	Pass



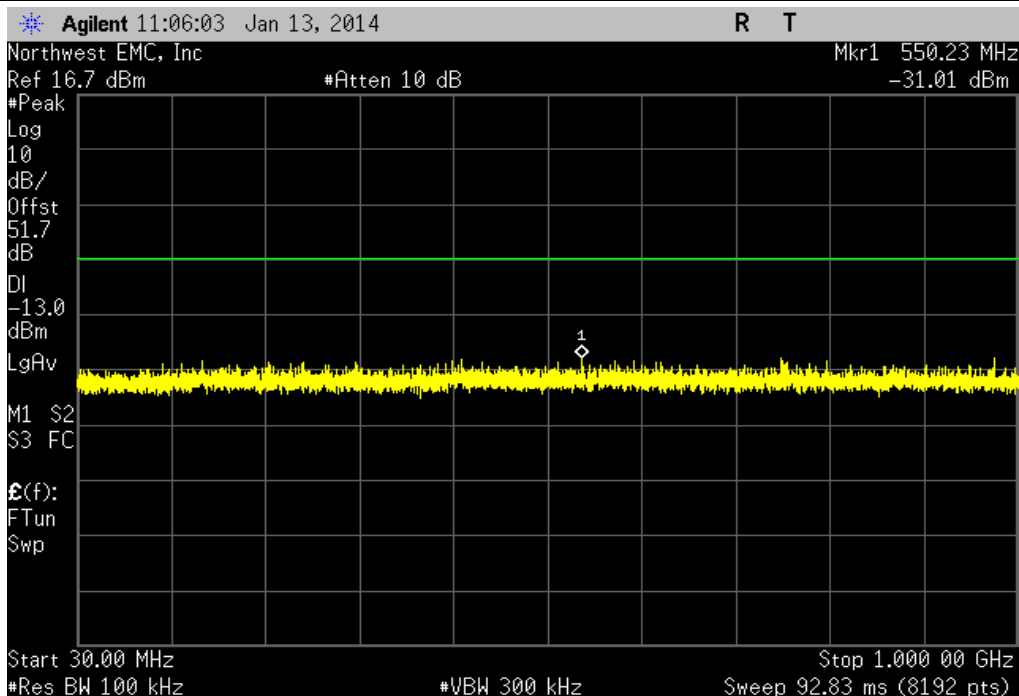
Port A, LTE 15M, Low Channel, 9 kHz - 150 kHz							
					Value	Limit	Result
					-39.38 dBm	-13 dBm	Pass



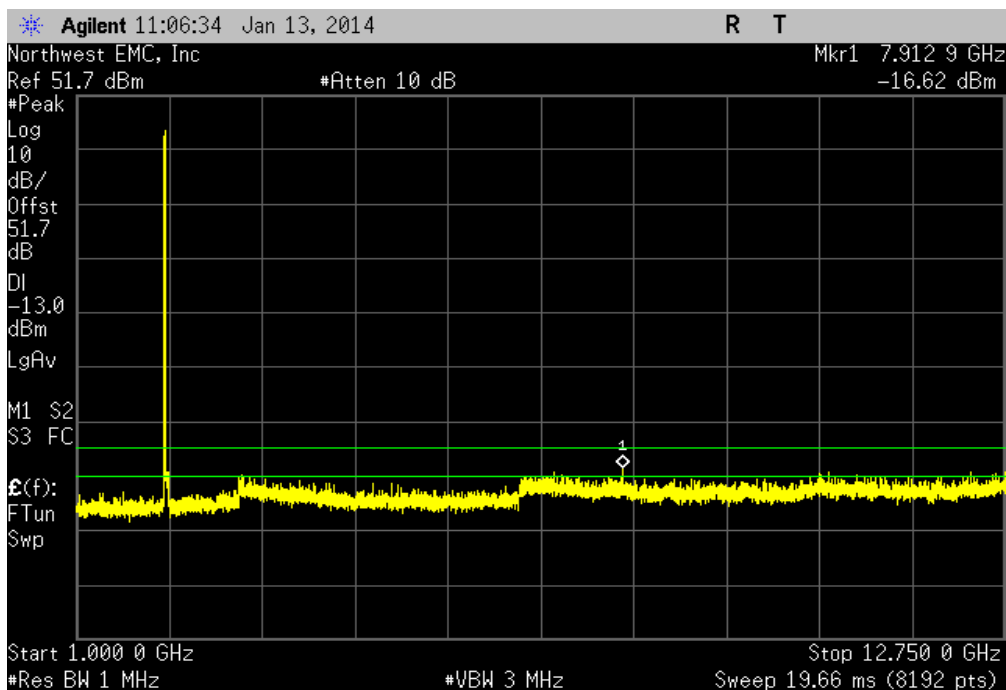
Port A, LTE 15M, Low Channel, 150 kHz - 30 MHz							
					Value	Limit	Result
					-39.08 dBm	-13 dBm	Pass



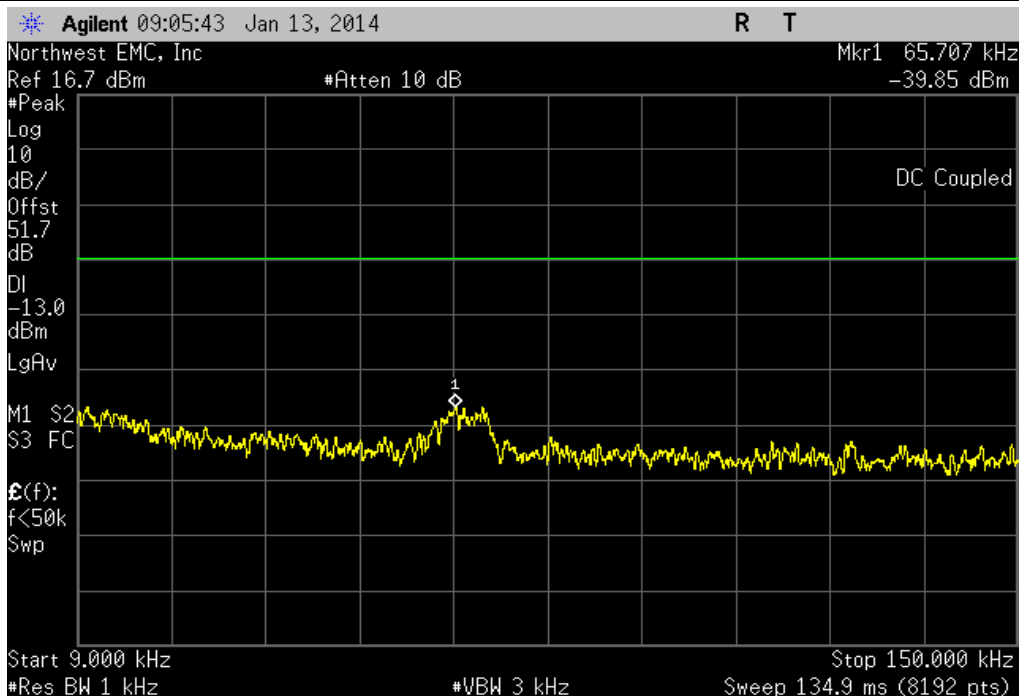
Port A, LTE 15M, Low Channel, 30 MHz - 1 GHz							
					Value	Limit	Result
					-31.01 dBm	-13 dBm	Pass



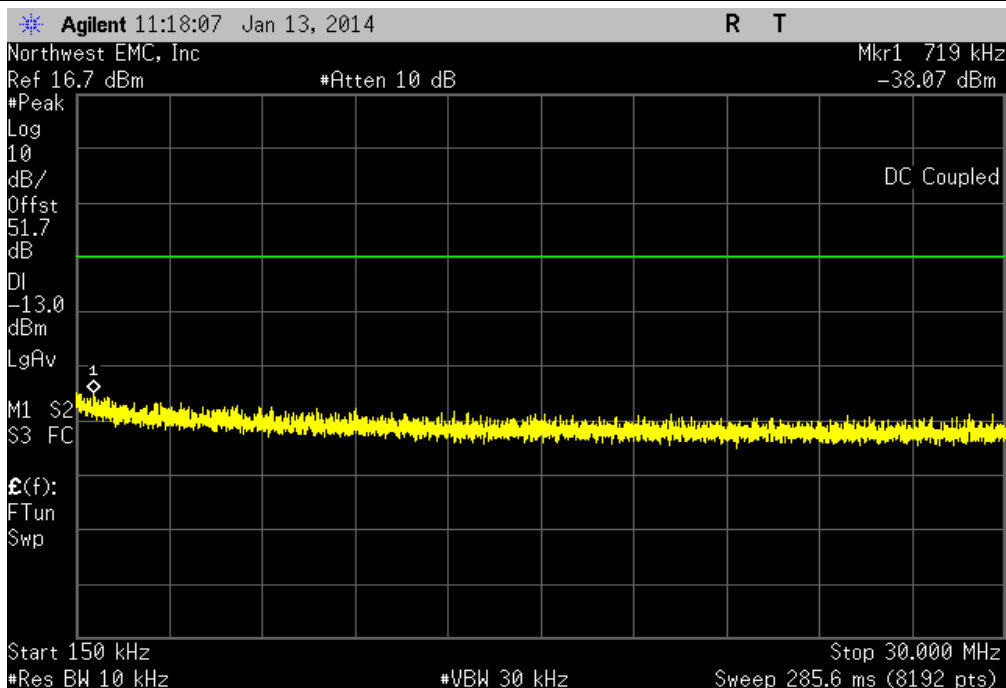
Port A, LTE 15M, Low Channel, 1 GHz - 12.75 GHz							
					Value	Limit	Result
					-16.62 dBm	-13 dBm	Pass



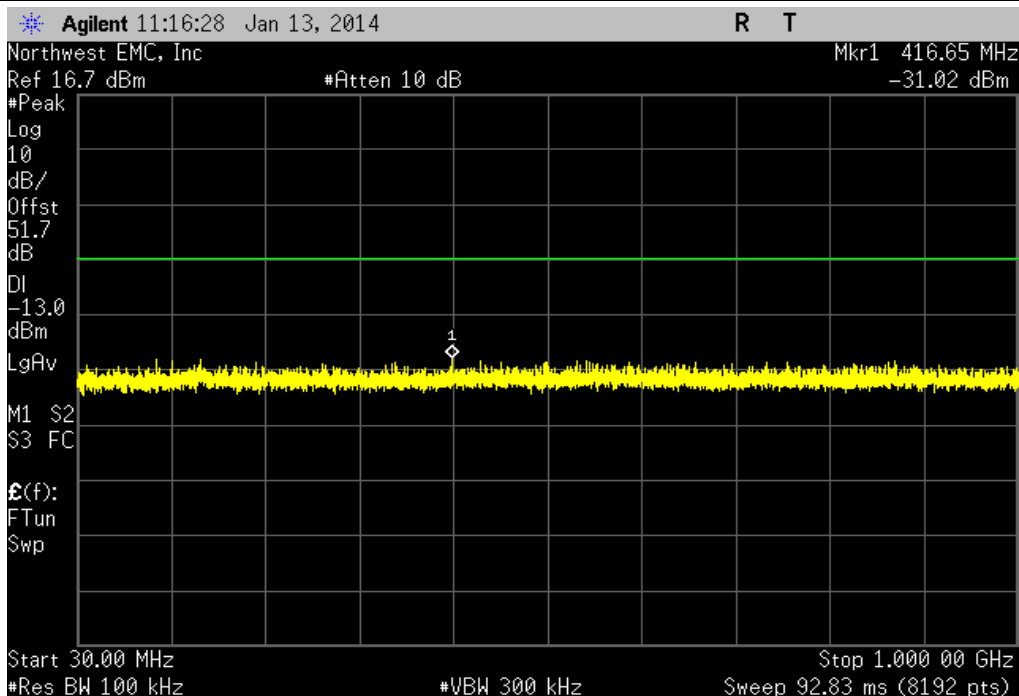
Port A, LTE 15M, Mid Channel, 9 kHz - 150 kHz							
				Value	Limit	Result	
				-39.85 dBm	-13 dBm	Pass	



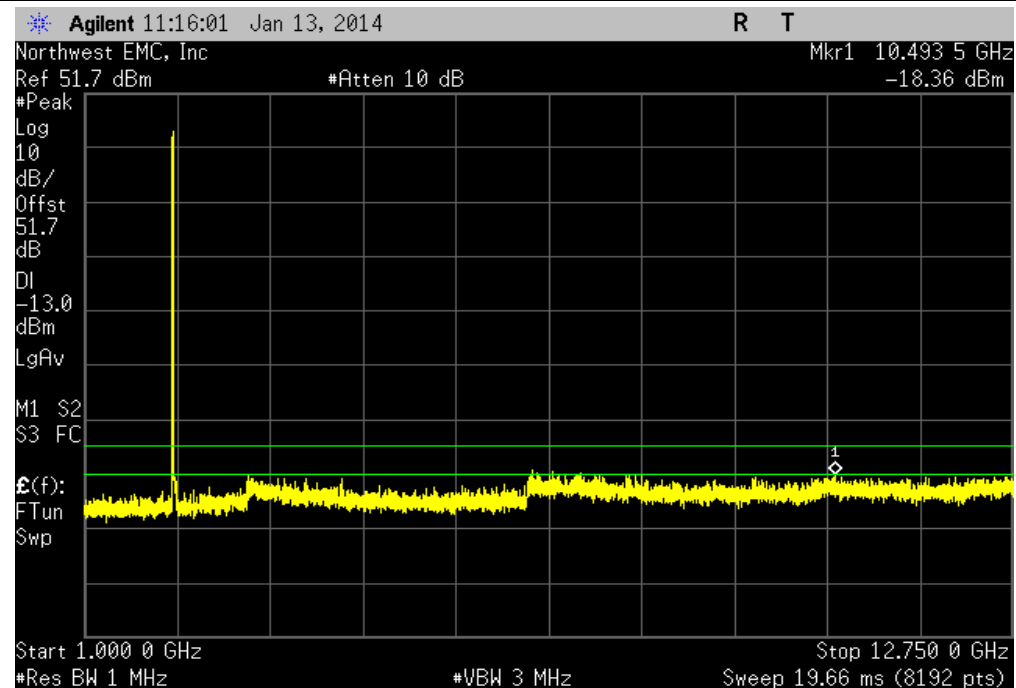
Port A, LTE 15M, Mid Channel, 150 kHz - 30 MHz							
				Value	Limit	Result	
				-38.07 dBm	-13 dBm	Pass	



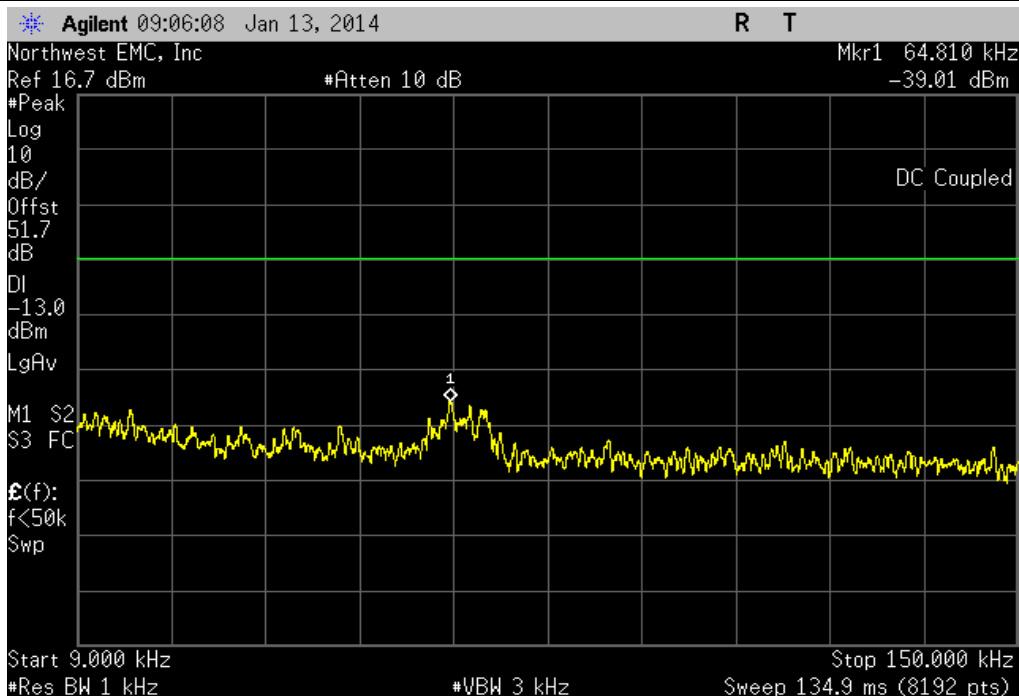
Port A, LTE 15M, Mid Channel, 30 MHz - 1 GHz							
				Value	Limit	Result	
				-31.02 dBm	-13 dBm	Pass	



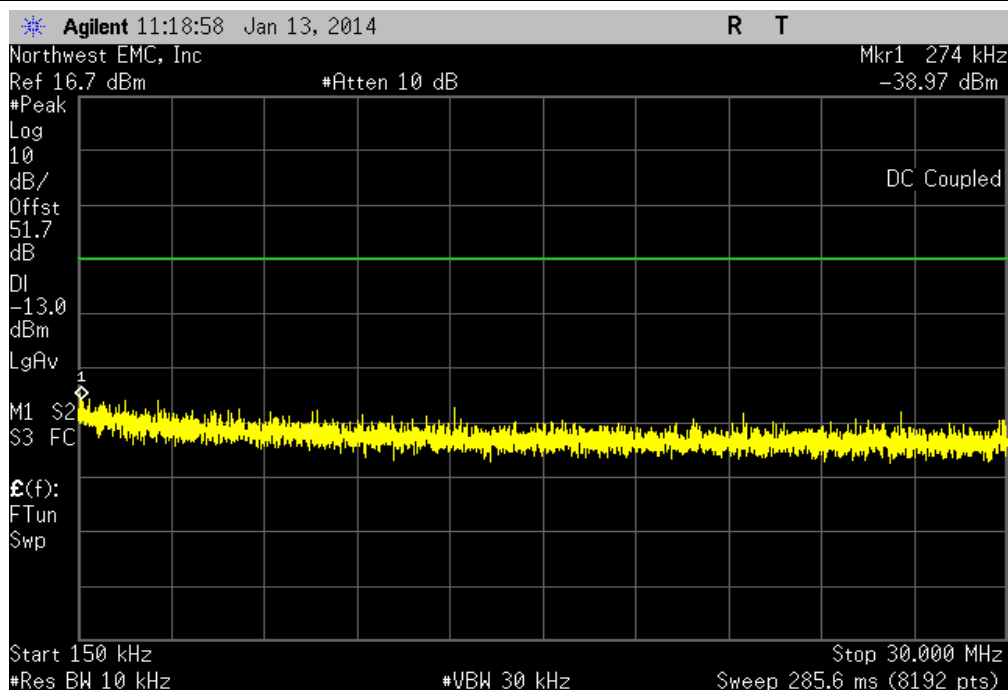
Port A, LTE 15M, Mid Channel, 1 GHz - 12.75 GHz							
				Value	Limit	Result	
				-18.36 dBm	-13 dBm	Pass	



Port A, LTE 15M, High Channel, 9 kHz - 150 kHz							
				Value	Limit	Result	
				-39.01 dBm	-13 dBm	Pass	

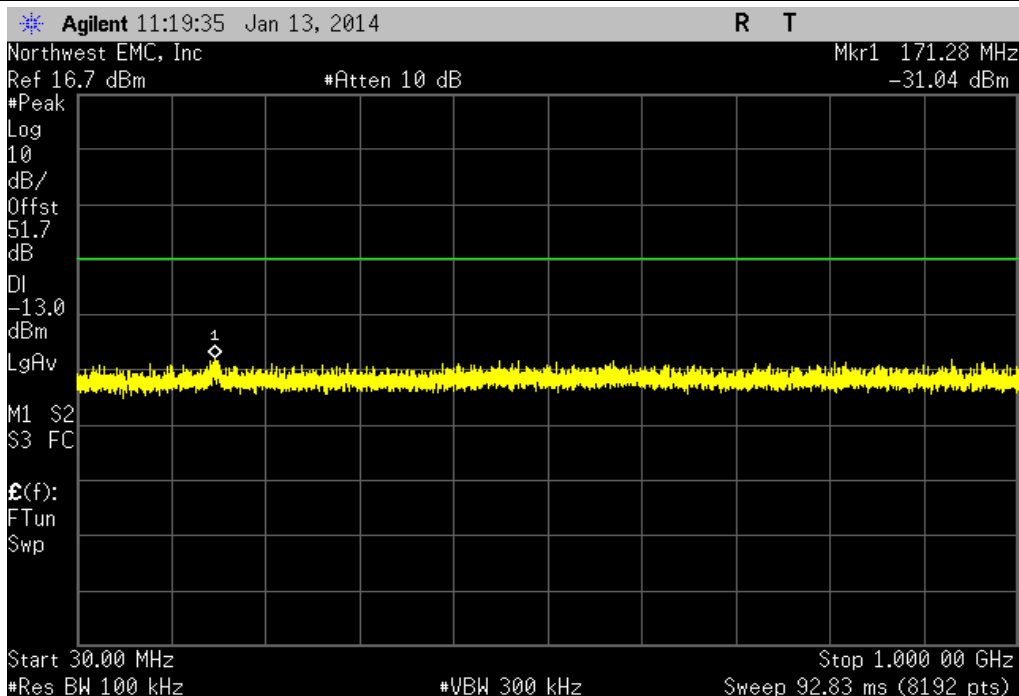


Port A, LTE 15M, High Channel, 150 kHz - 30 MHz							
				Value	Limit	Result	
				-38.97 dBm	-13 dBm	Pass	

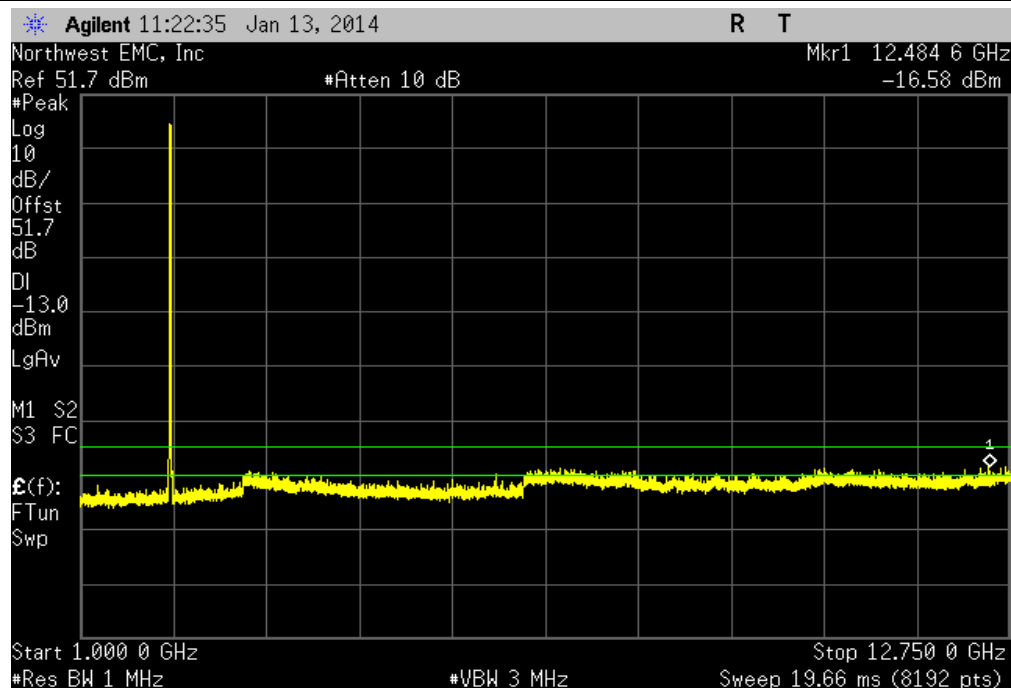




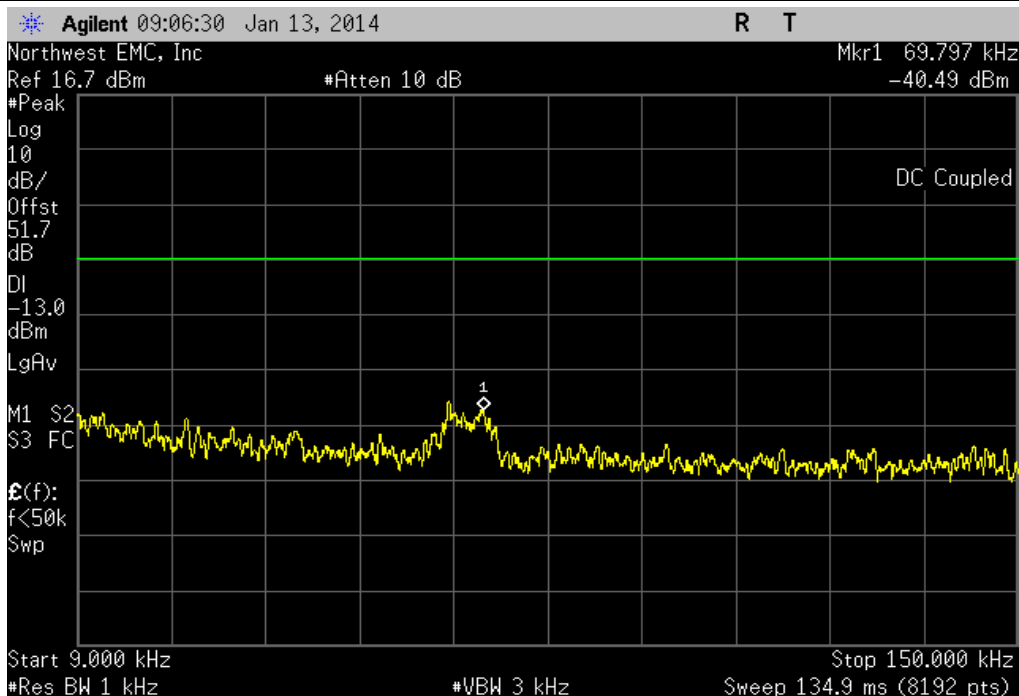
Port A, LTE 15M, High Channel, 30 MHz - 1 GHz							
				Value	Limit	Result	
				-31.04 dBm	-13 dBm	Pass	



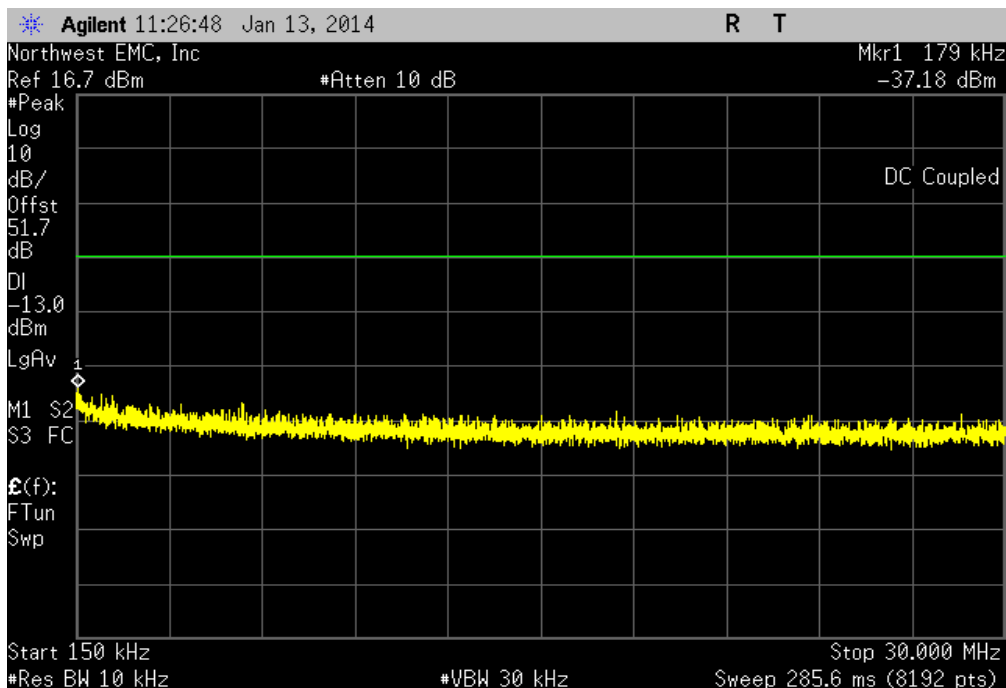
Port A, LTE 15M, High Channel, 1 GHz - 12.75 GHz							
				Value	Limit	Result	
				-16.58 dBm	-13 dBm	Pass	



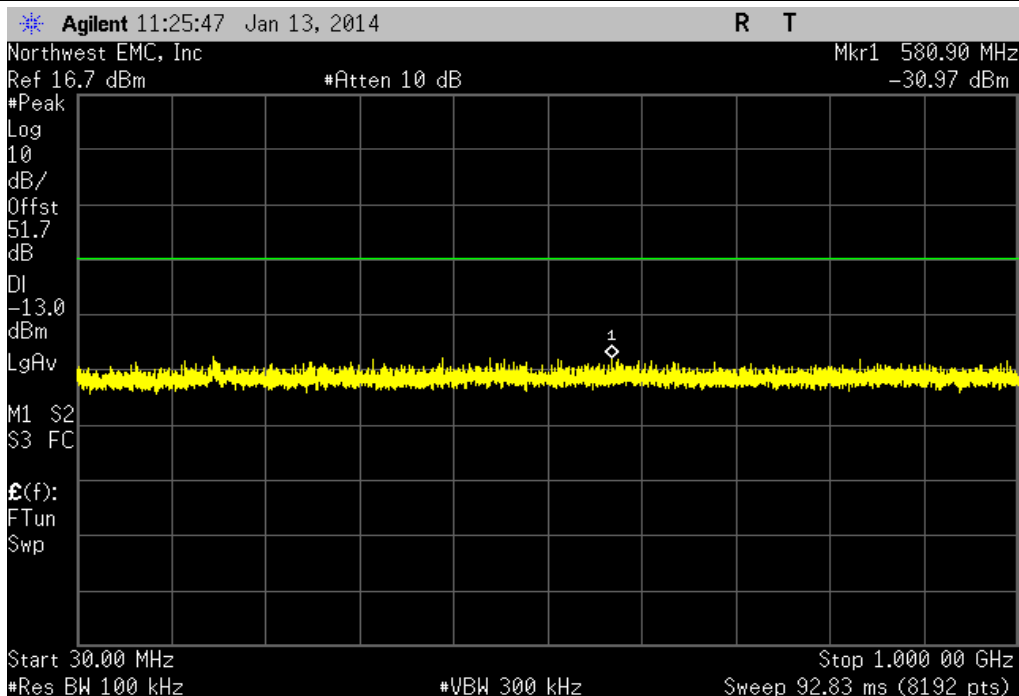
Port A, LTE 15M, Multi Channel, 9 kHz - 150 kHz							
					Value	Limit	Result
					-40.49 dBm	-13 dBm	Pass



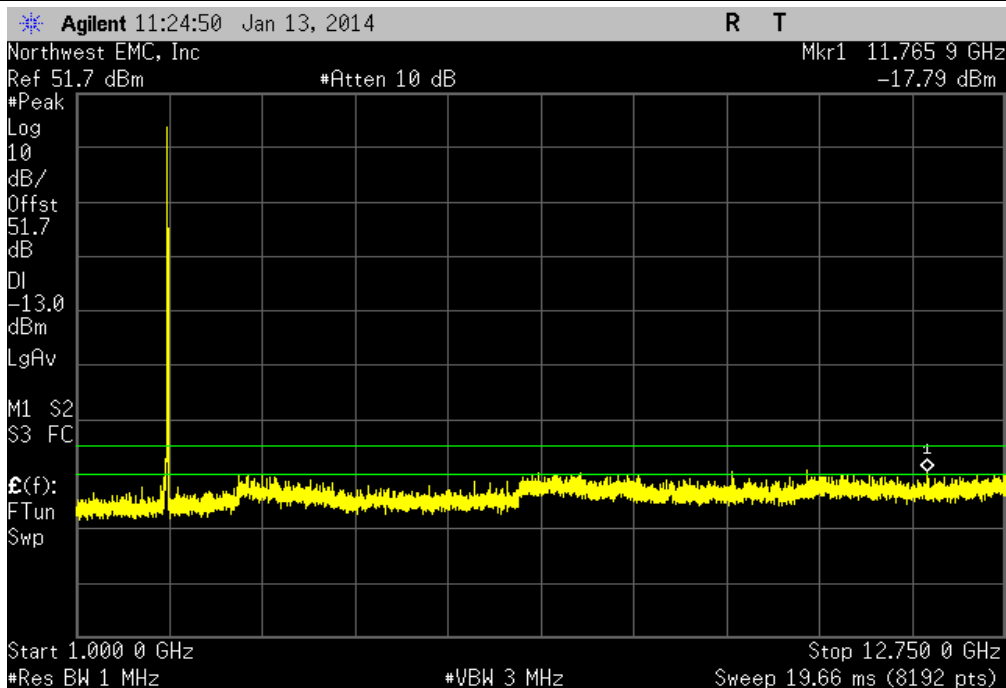
Port A, LTE 15M, Multi Channel, 150 kHz - 30 MHz							
					Value	Limit	Result
					-37.18 dBm	-13 dBm	Pass



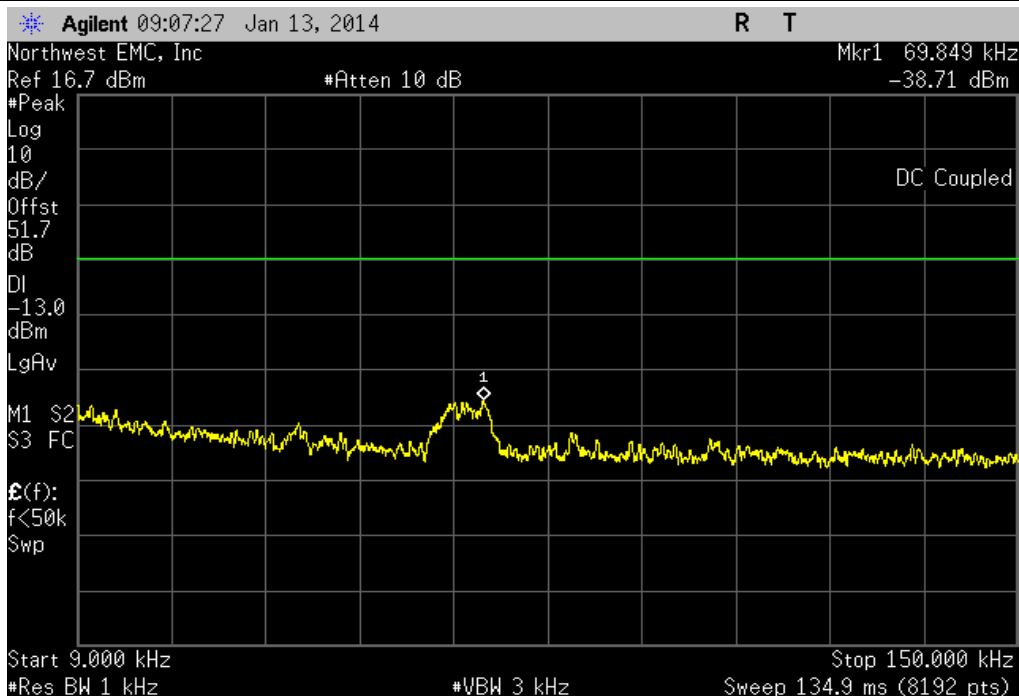
Port A, LTE 15M, Multi Channel, 30 MHz - 1 GHz							
					Value	Limit	Result
					-30.97 dBm	-13 dBm	Pass



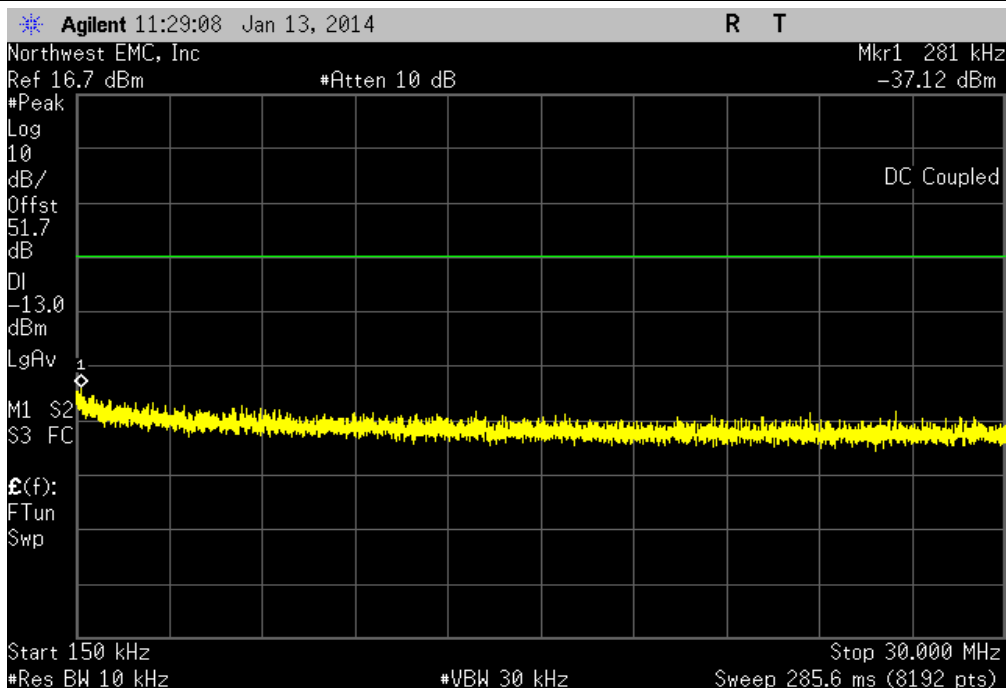
Port A, LTE 15M, Multi Channel, 1 GHz - 12.75 GHz							
					Value	Limit	Result
					-17.79 dBm	-13 dBm	Pass



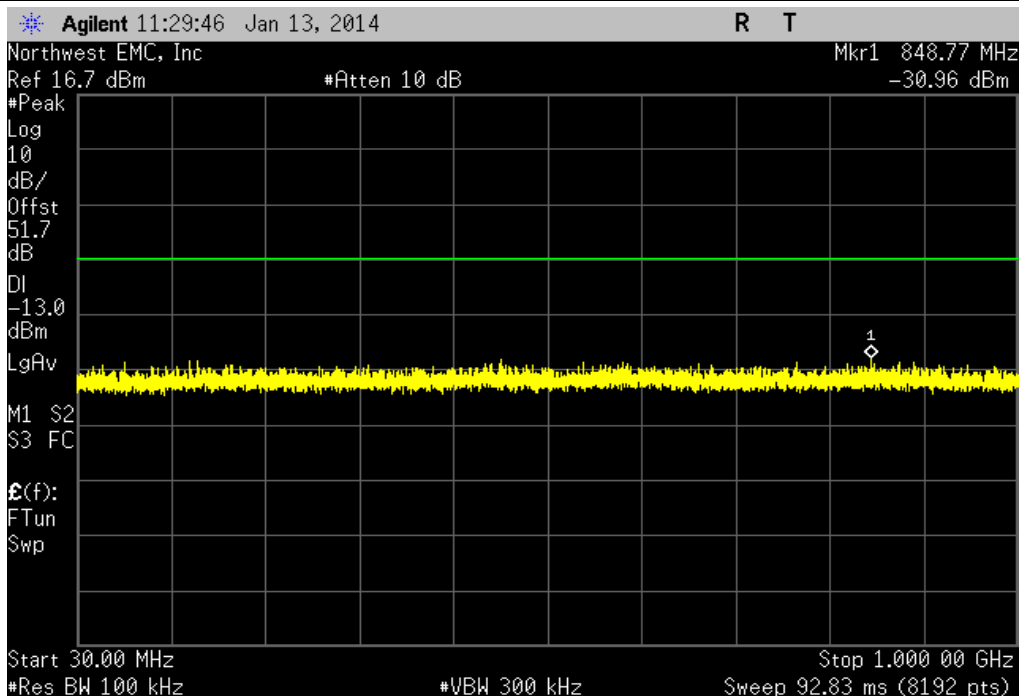
Port A, LTE 20M, Low Channel, 9 kHz - 150 kHz							
					Value	Limit	Result
					-38.71 dBm	-13 dBm	Pass



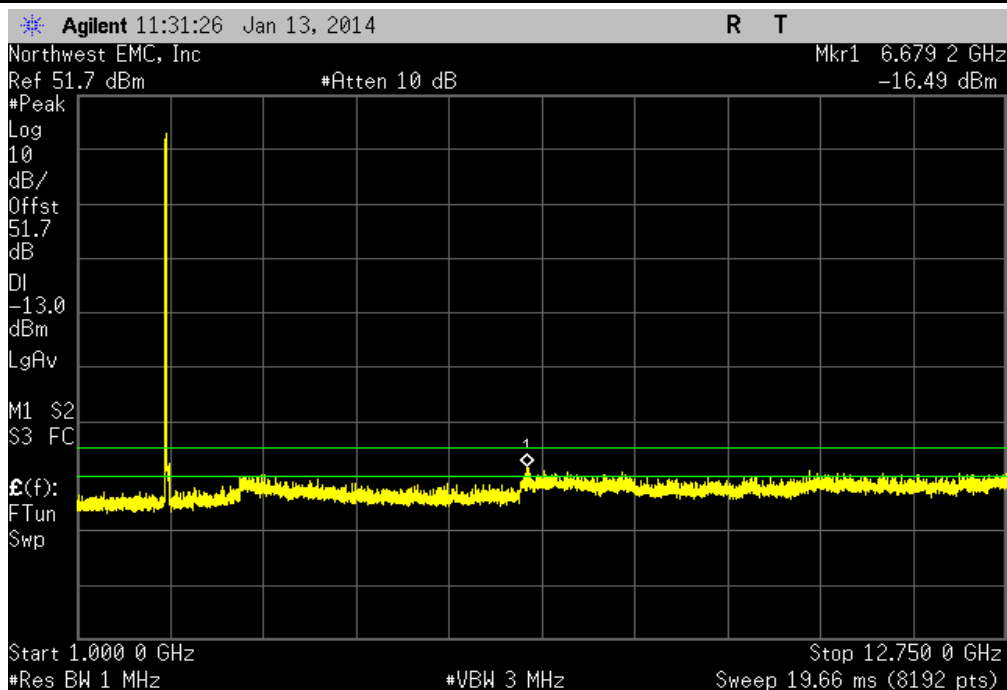
Port A, LTE 20M, Low Channel, 150 kHz - 30 MHz							
					Value	Limit	Result
					-37.12dBm	-13 dBm	Pass



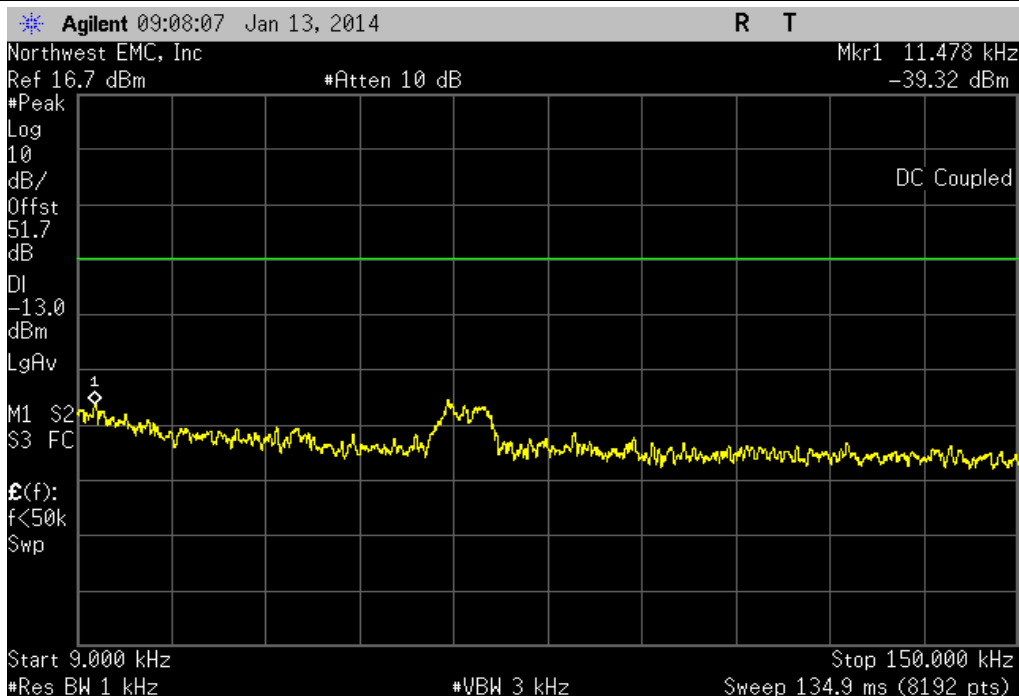
Port A, LTE 20M, Low Channel, 30 MHz - 1 GHz							
				Value	Limit	Result	
				-30.96 dBm	-13 dBm	Pass	



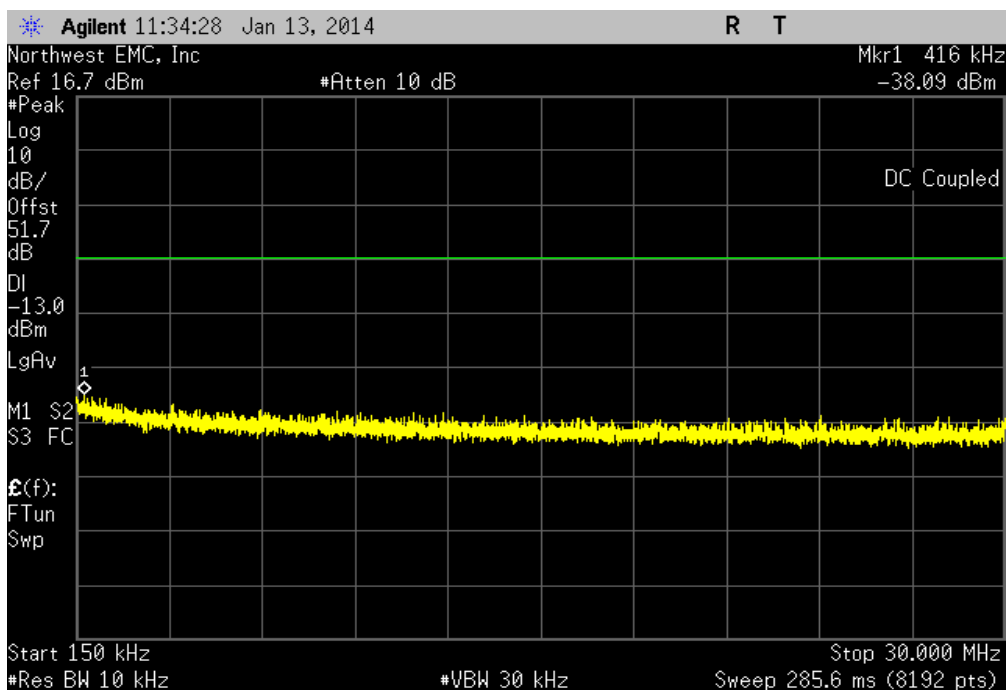
Port A, LTE 20M, Low Channel, 1 GHz - 12.75 GHz							
				Value	Limit	Result	
				-16.49 dBm	-13 dBm	Pass	



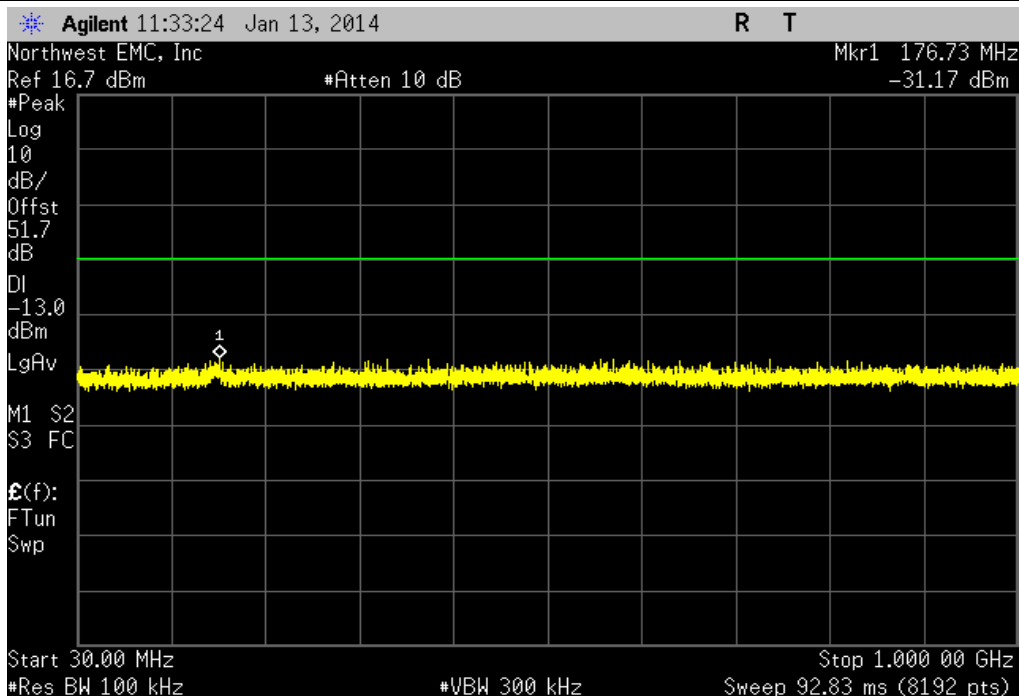
Port A, LTE 20M, Mid Channel, 9 kHz - 150 kHz							
					Value	Limit	Result
					-39.32 dBm	-13 dBm	Pass



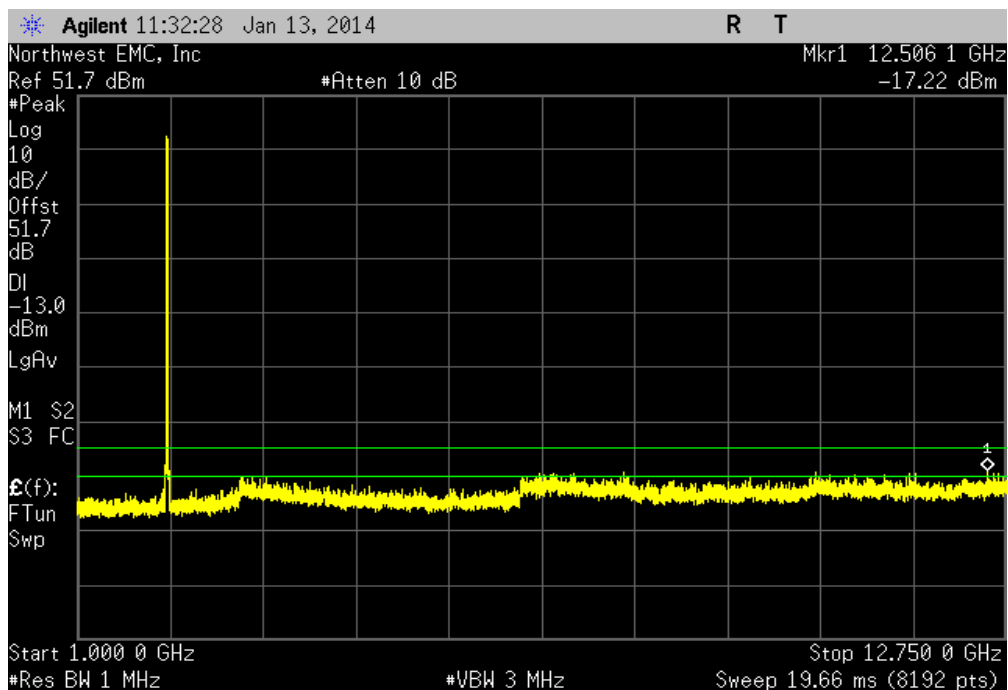
Port A, LTE 20M, Mid Channel, 150 kHz - 30 MHz							
					Value	Limit	Result
					-38.09 dBm	-13 dBm	Pass



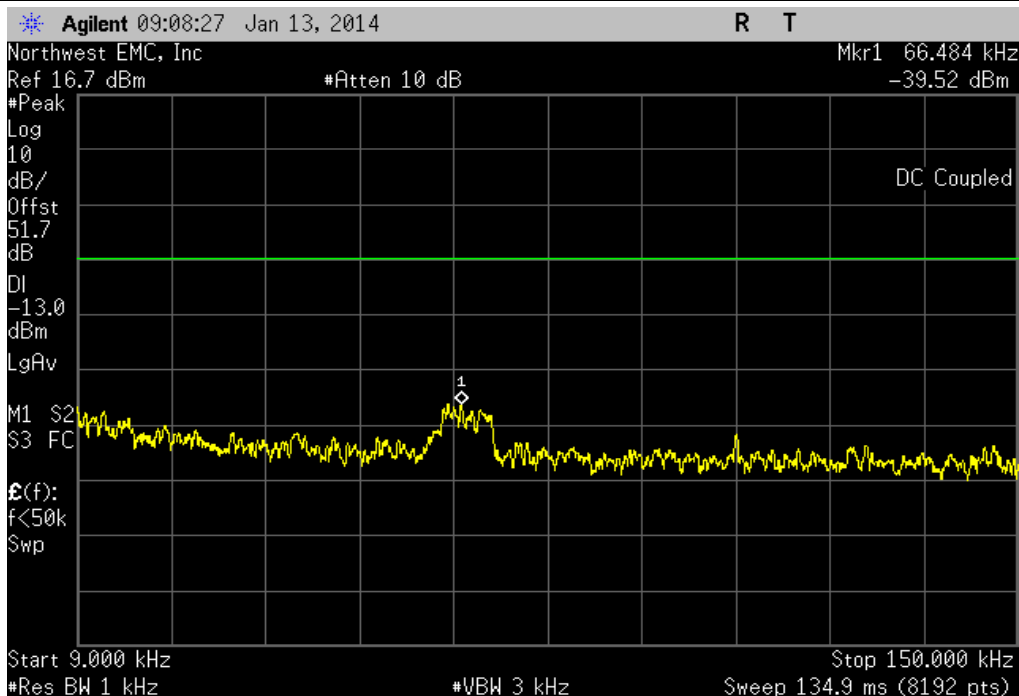
Port A, LTE 20M, Mid Channel, 30 MHz - 1 GHz							
				Value	Limit	Result	
				-31.17 dBm	-13 dBm	Pass	



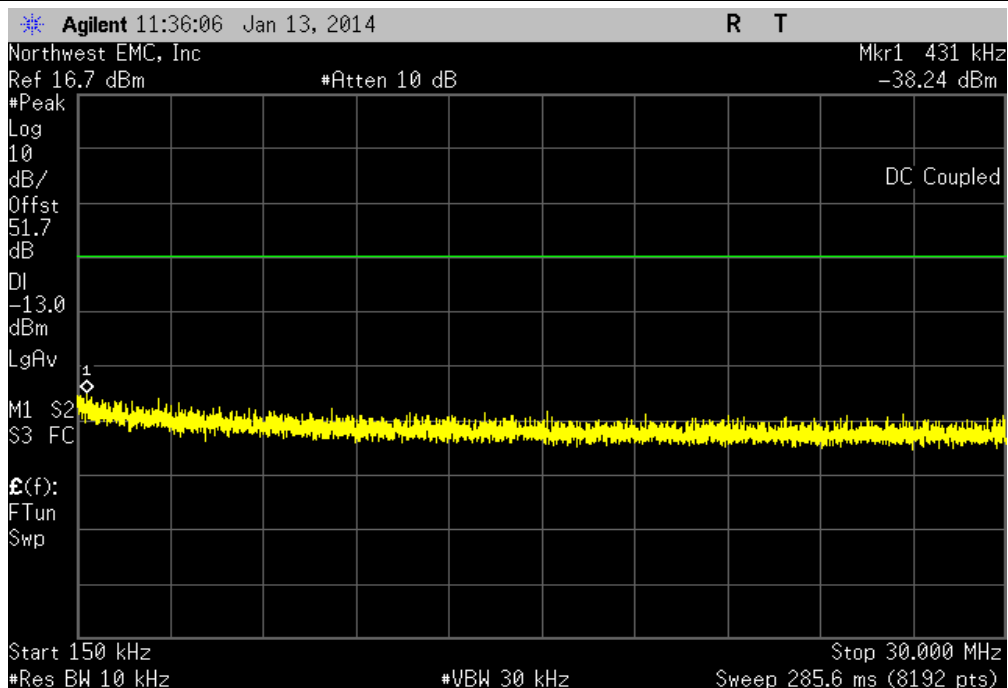
Port A, LTE 20M, Mid Channel, 1 GHz - 12.75 GHz							
				Value	Limit	Result	
				-17.22 dBm	-13 dBm	Pass	



Port A, LTE 20M, High Channel, 9 kHz - 150 kHz							
					Value	Limit	Result
					-39.52 dBm	-13 dBm	Pass

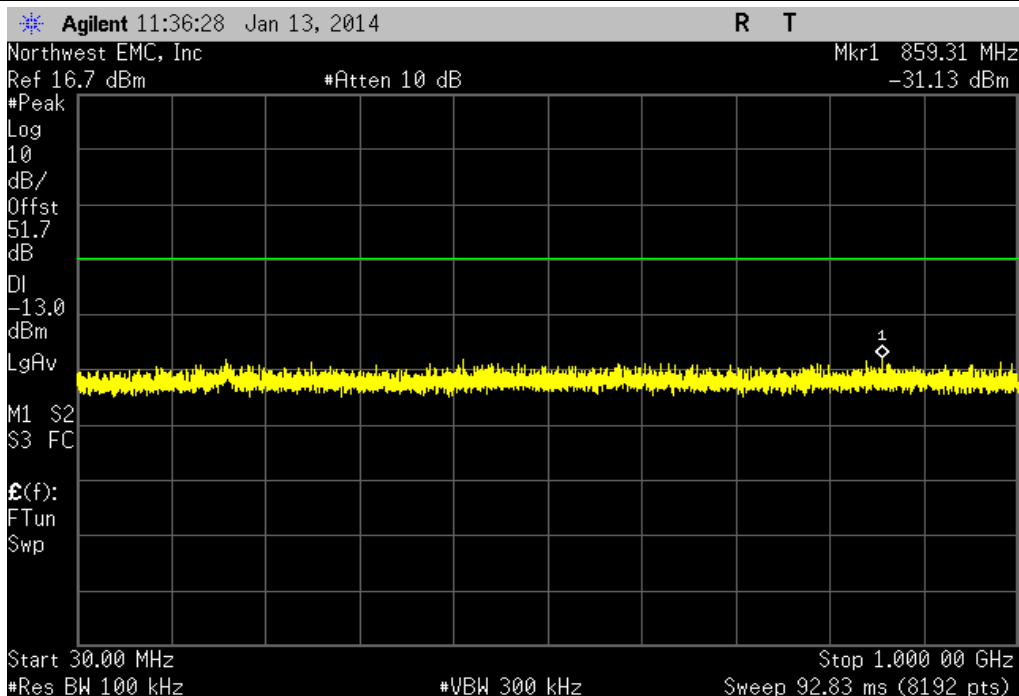


Port A, LTE 20M, High Channel, 150 kHz - 30 MHz							
					Value	Limit	Result
					-38.24 dBm	-13 dBm	Pass

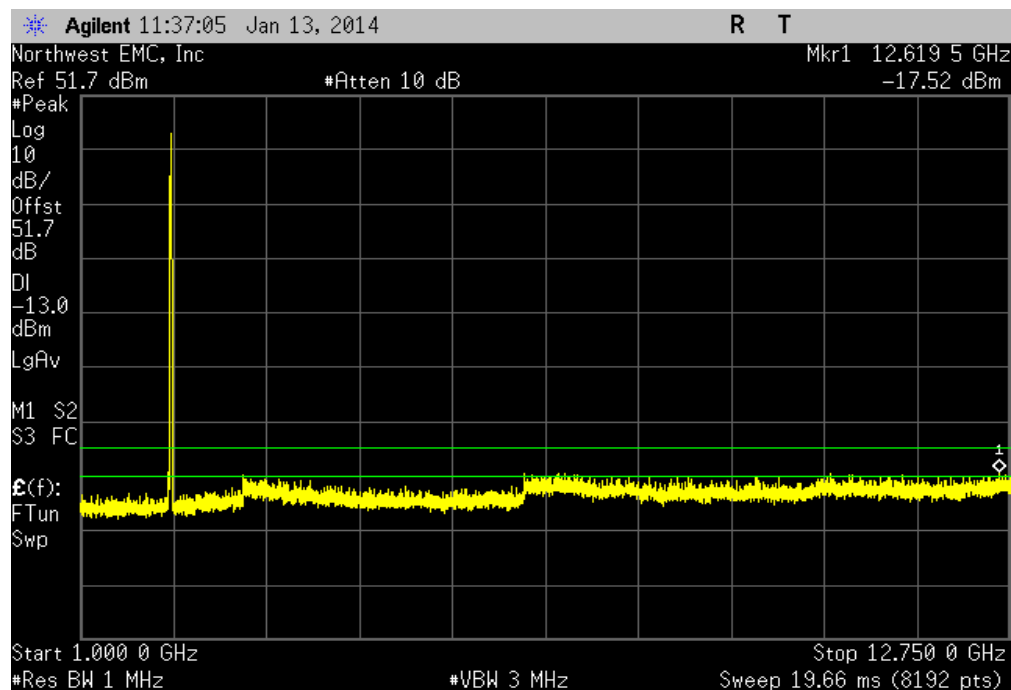




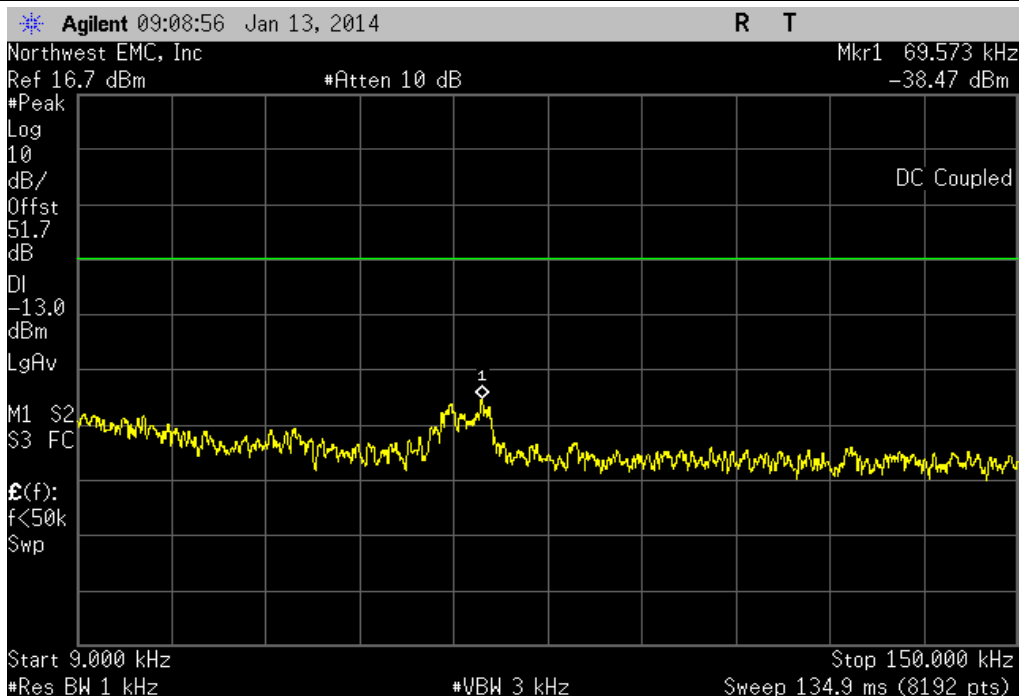
Port A, LTE 20M, High Channel, 30 MHz - 1 GHz							
				Value	Limit	Result	
				-31.13 dBm	-13 dBm	Pass	



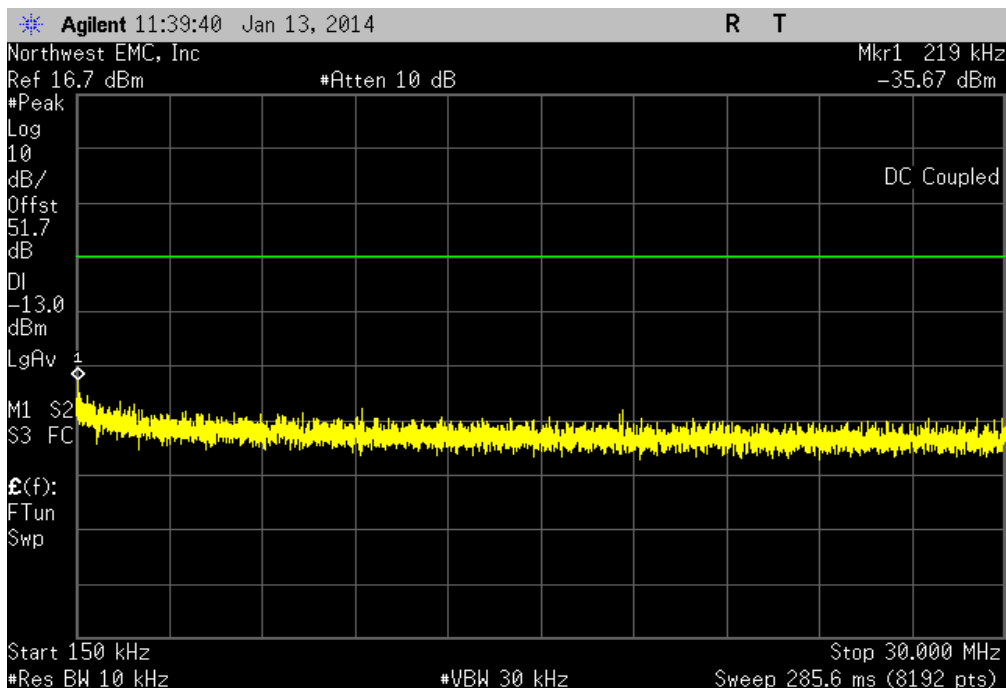
Port A, LTE 20M, High Channel, 1 GHz - 12.75 GHz							
				Value	Limit	Result	
				-17.52 dBm	-13 dBm	Pass	



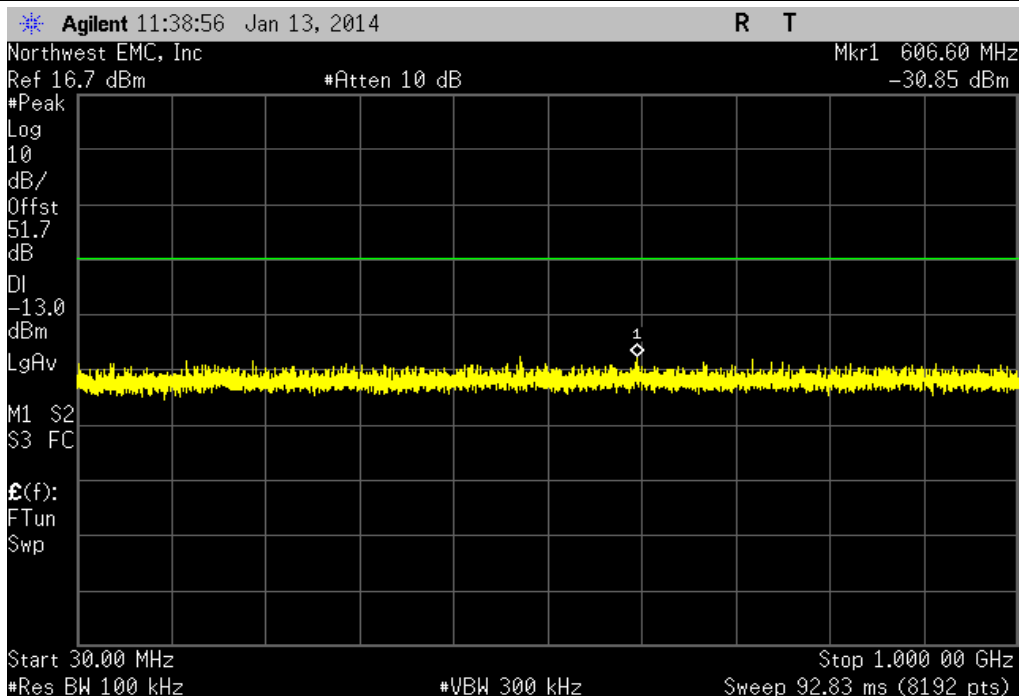
Port A, LTE 20M, Multi Channel, 9 kHz - 150 kHz							
					Value	Limit	Result
					-38.47 dBm	-13 dBm	Pass



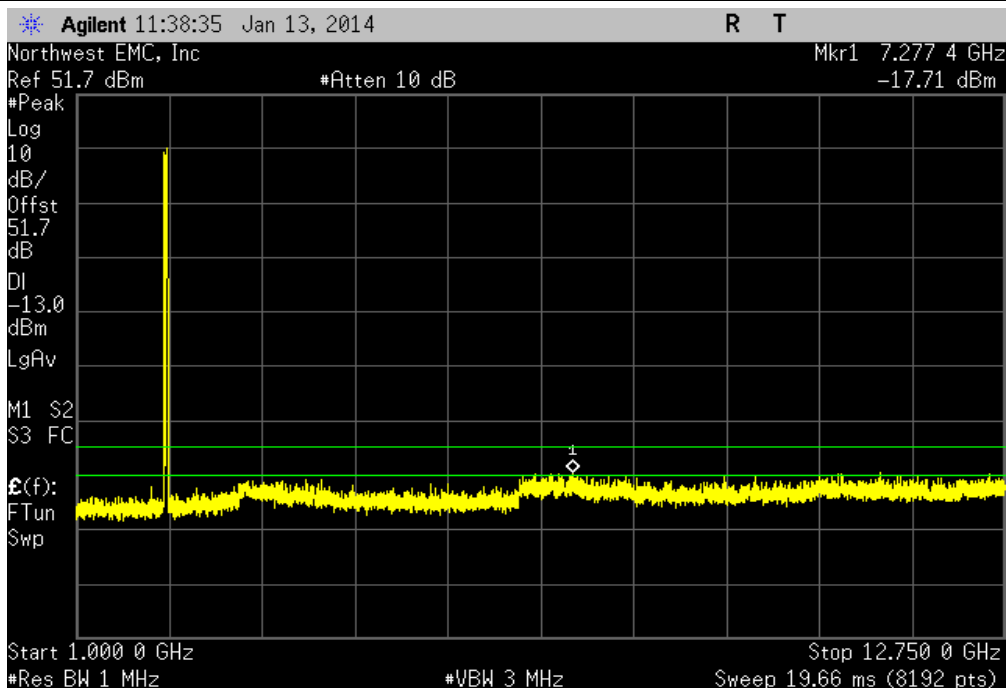
Port A, LTE 20M, Multi Channel, 150 kHz - 30 MHz							
					Value	Limit	Result
					-35.67 dBm	-13 dBm	Pass



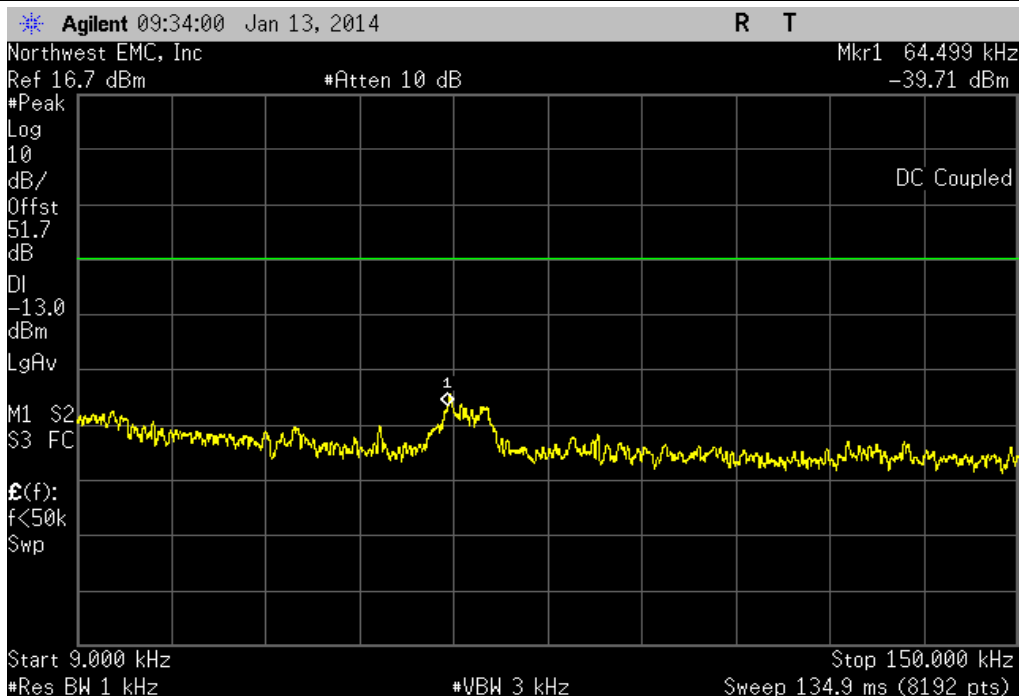
Port A, LTE 20M, Multi Channel, 30 MHz - 1 GHz							
					Value	Limit	Result
					-30.85 dBm	-13 dBm	Pass



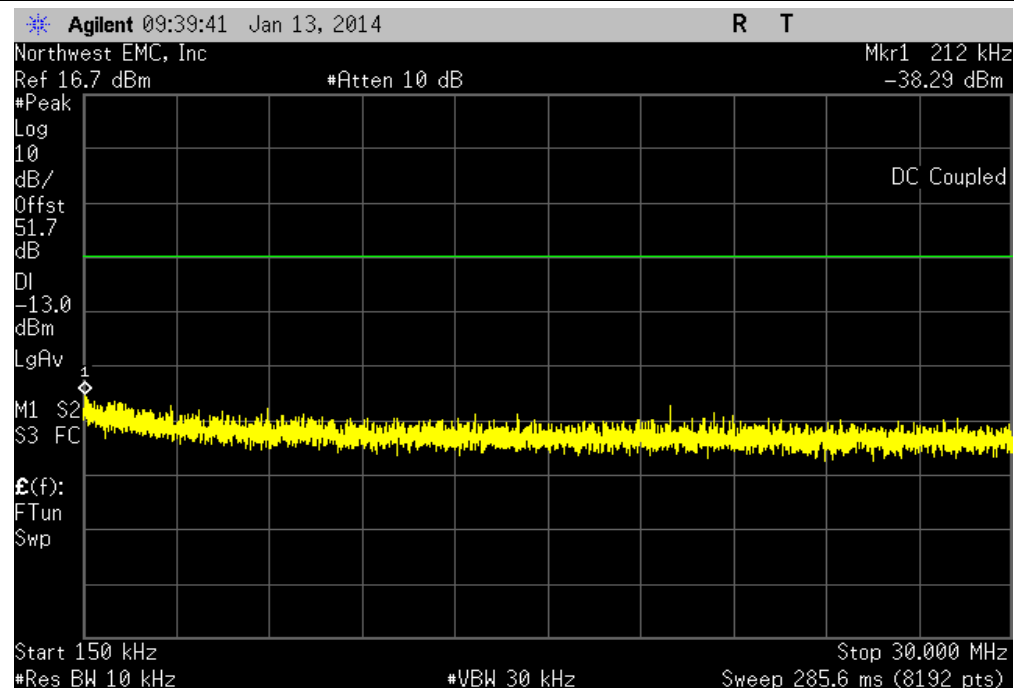
Port A, LTE 20M, Multi Channel, 1 GHz - 12.75 GHz							
					Value	Limit	Result
					-17.71 dBm	-13 dBm	Pass



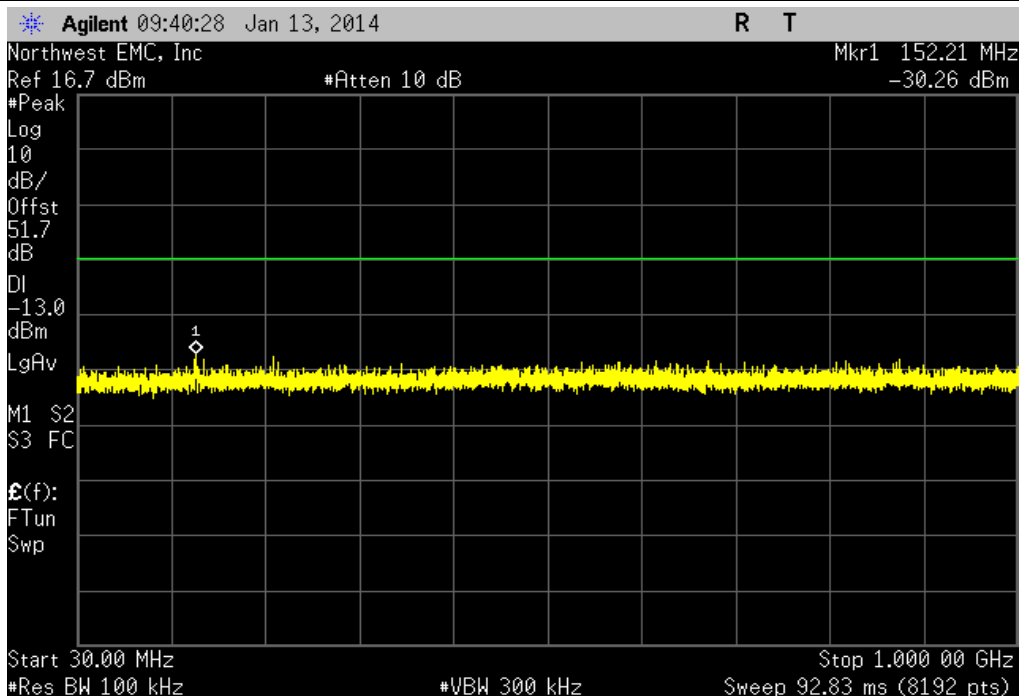
Port B, LTE 5M, Low Channel, 9 kHz - 150 kHz							
				Value	Limit	Result	
				-39.71 dBm	-13 dBm	Pass	



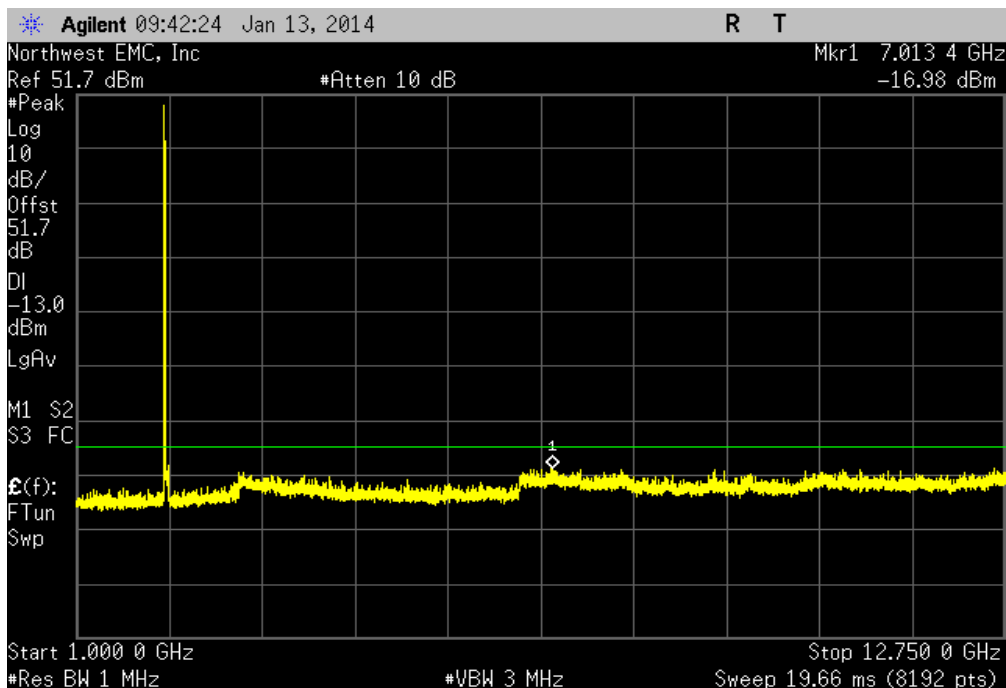
Port B, LTE 5M, Low Channel, 150 kHz - 30 MHz							
				Value	Limit	Result	
				-38.29 dBm	-13 dBm	Pass	



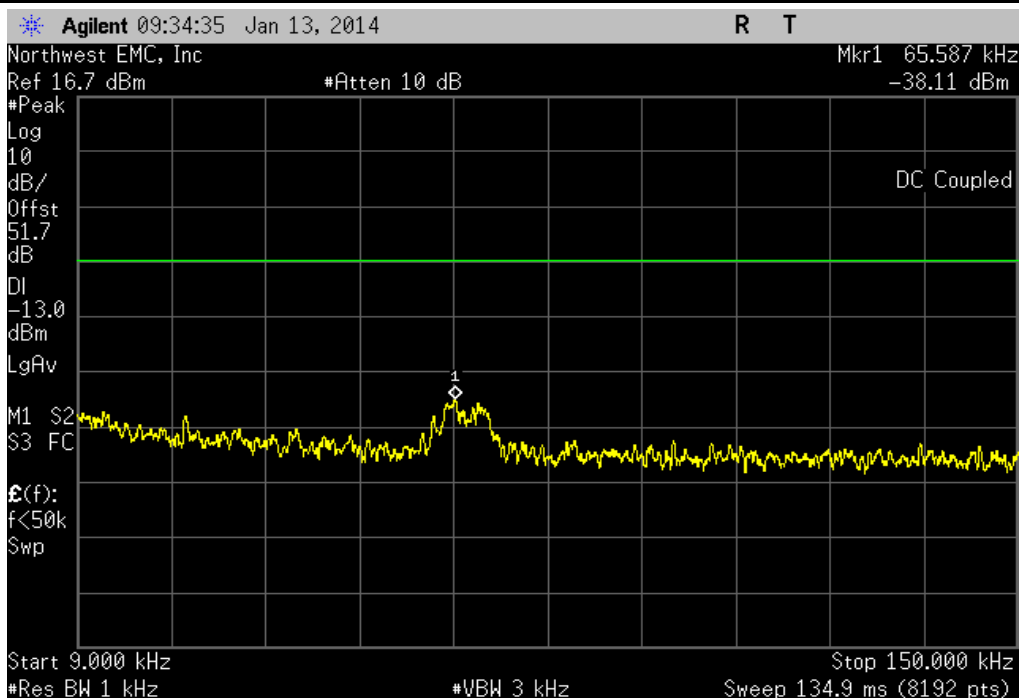
Port B, LTE 5M, Low Channel, 30 MHz - 1 GHz							
				Value	Limit	Result	
				-30.26 dBm	-13 dBm	Pass	



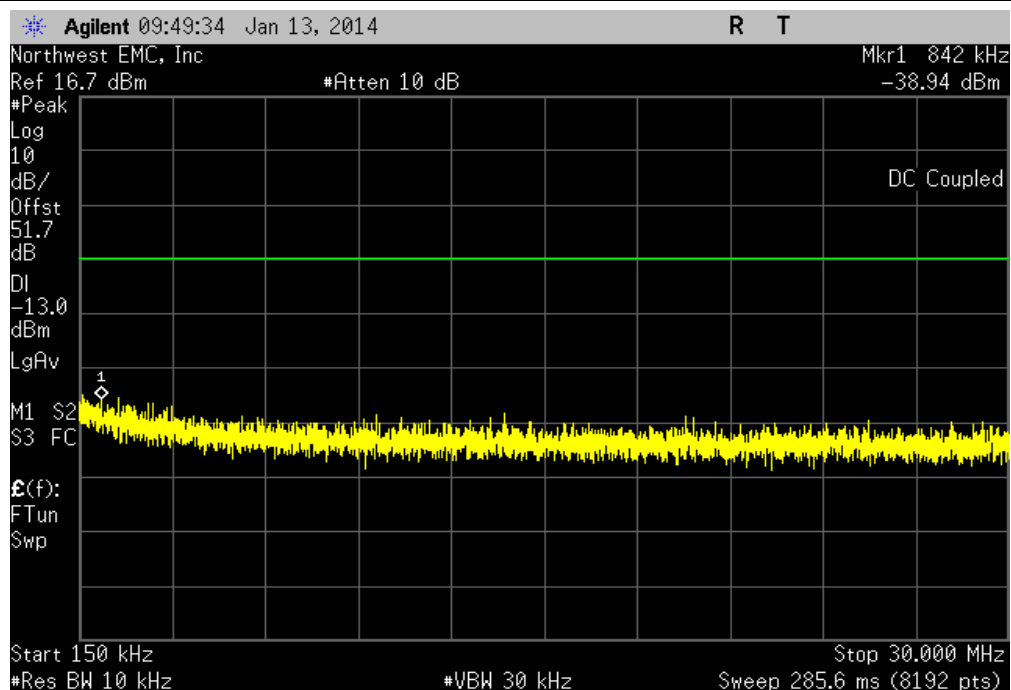
Port B, LTE 5M, Low Channel, 1 GHz - 12.75 GHz							
				Value	Limit	Result	
				-16.98 dBm	-13 dBm	Pass	



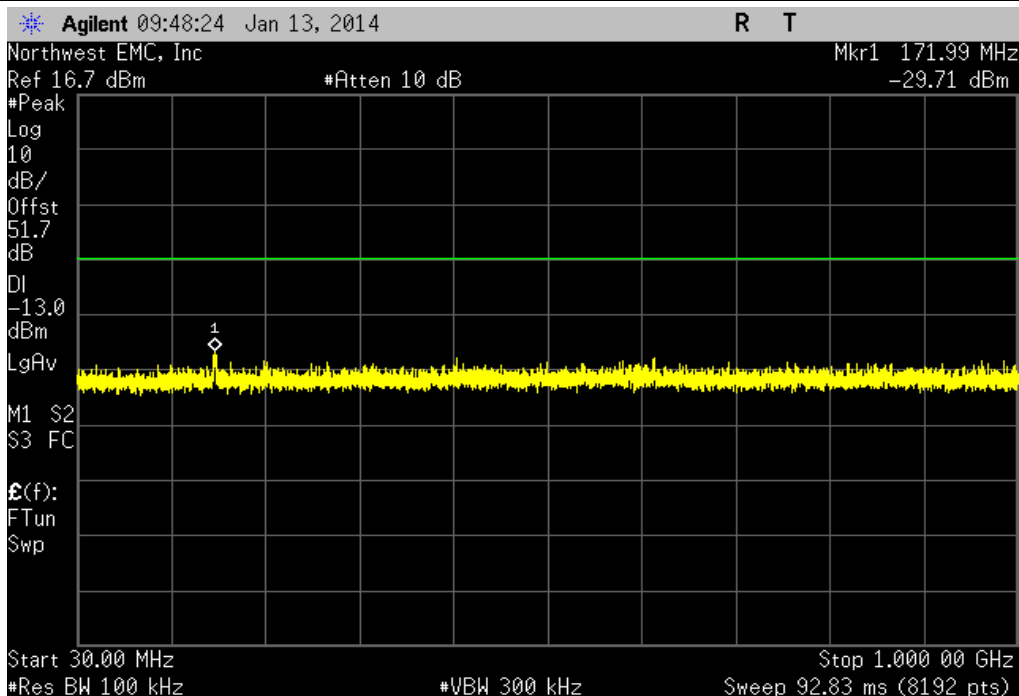
Port B, LTE 5M, Mid Channel, 9 kHz - 150 kHz							
				Value	Limit	Result	
				-38.11 dBm	-13 dBm	Pass	



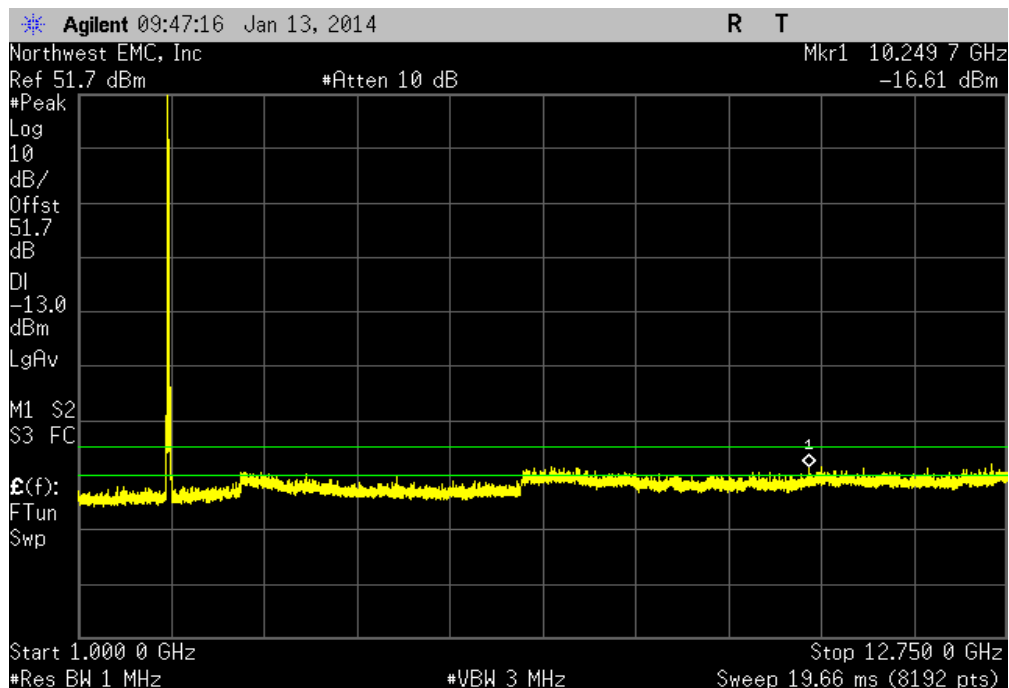
Port B, LTE 5M, Mid Channel, 150 kHz - 30 MHz							
				Value	Limit	Result	
				-38.94 dBm	-13 dBm	Pass	



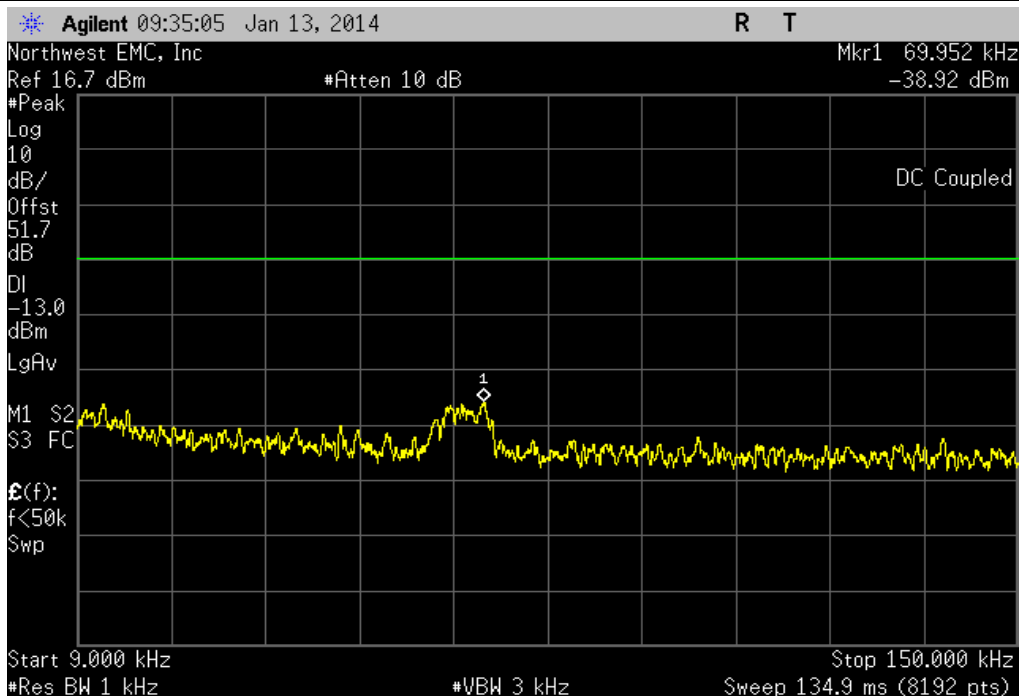
Port B, LTE 5M, Mid Channel, 30 MHz - 1 GHz							
				Value	Limit	Result	
				-29.71 dBm	-13 dBm	Pass	



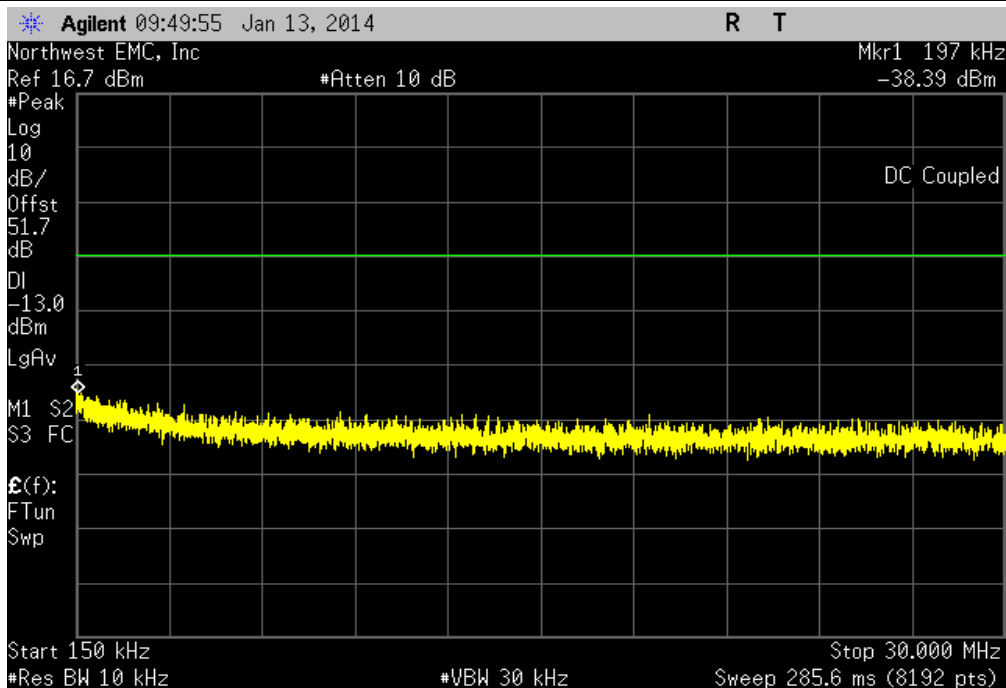
Port B, LTE 5M, Mid Channel, 1 GHz - 12.75 GHz							
				Value	Limit	Result	
				-16.61 dBm	-13 dBm	Pass	



Port B, LTE 5M, High Channel, 9 kHz - 150 kHz							
				Value	Limit	Result	
				-38.92 dBm	-13 dBm	Pass	

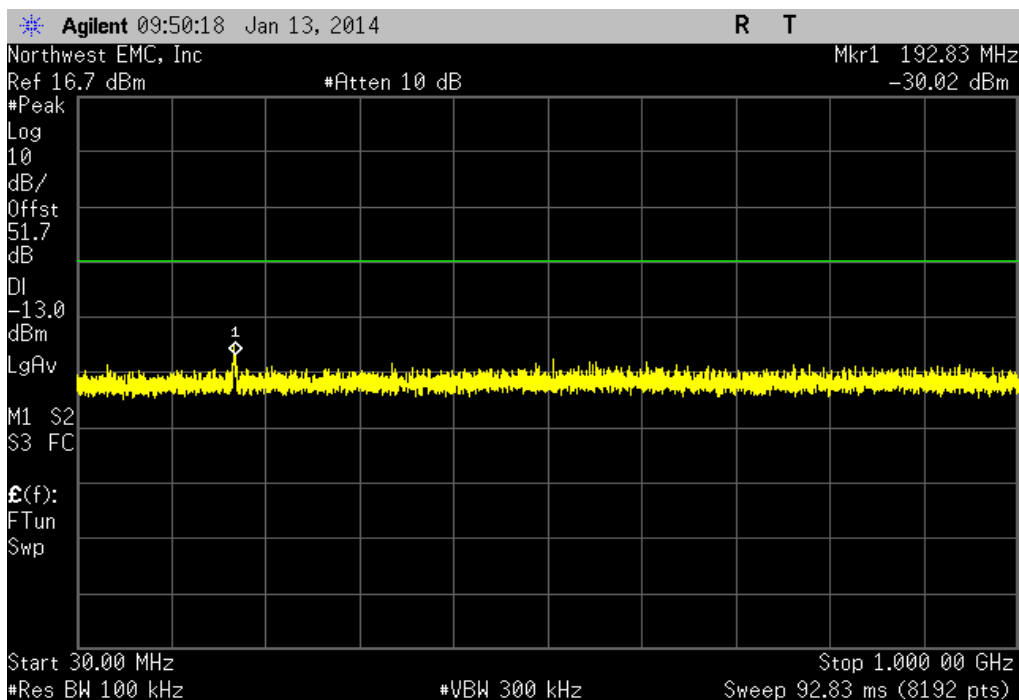


Port B, LTE 5M, High Channel, 150 kHz - 30 MHz							
				Value	Limit	Result	
				-38.39 dBm	-13 dBm	Pass	

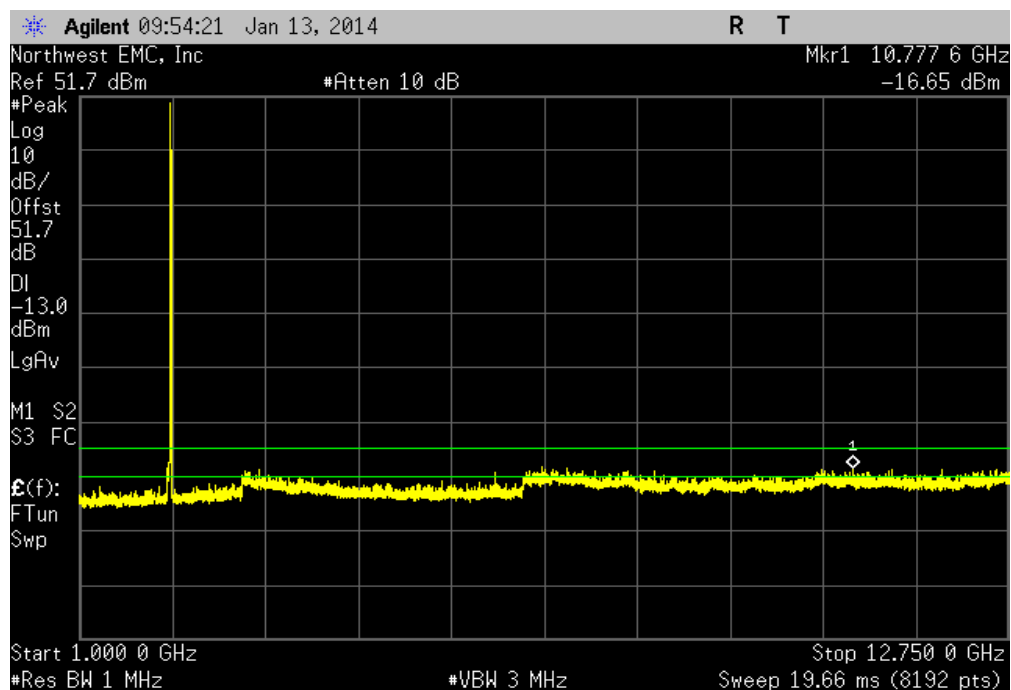




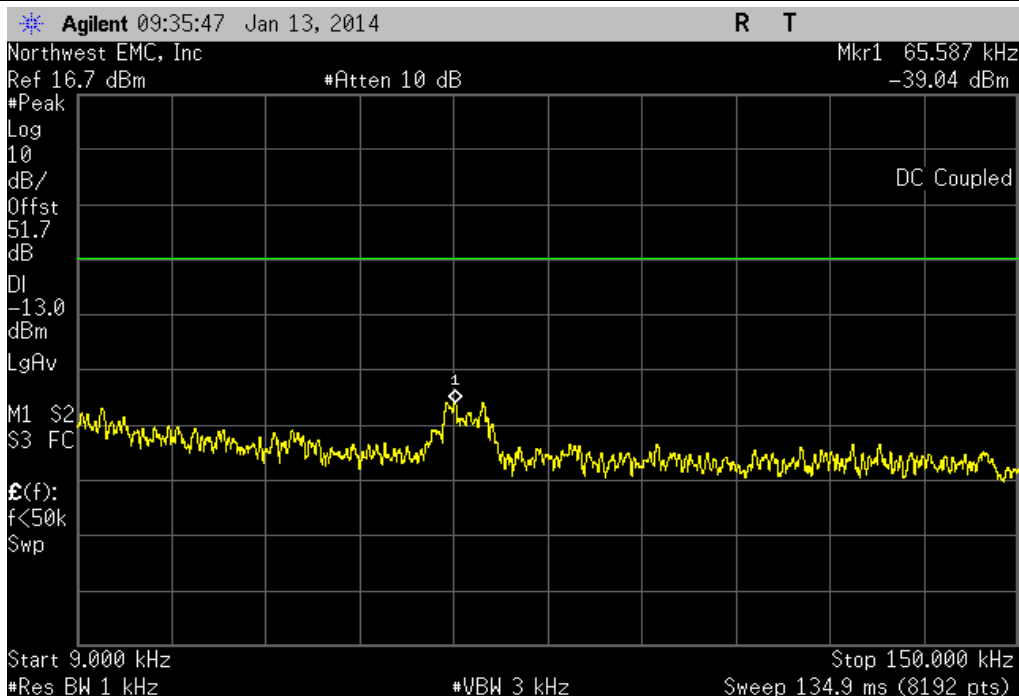
Port B, LTE 5M, High Channel, 30 MHz - 1 GHz							
				Value	Limit	Result	
				-30.02 dBm	-13 dBm	Pass	



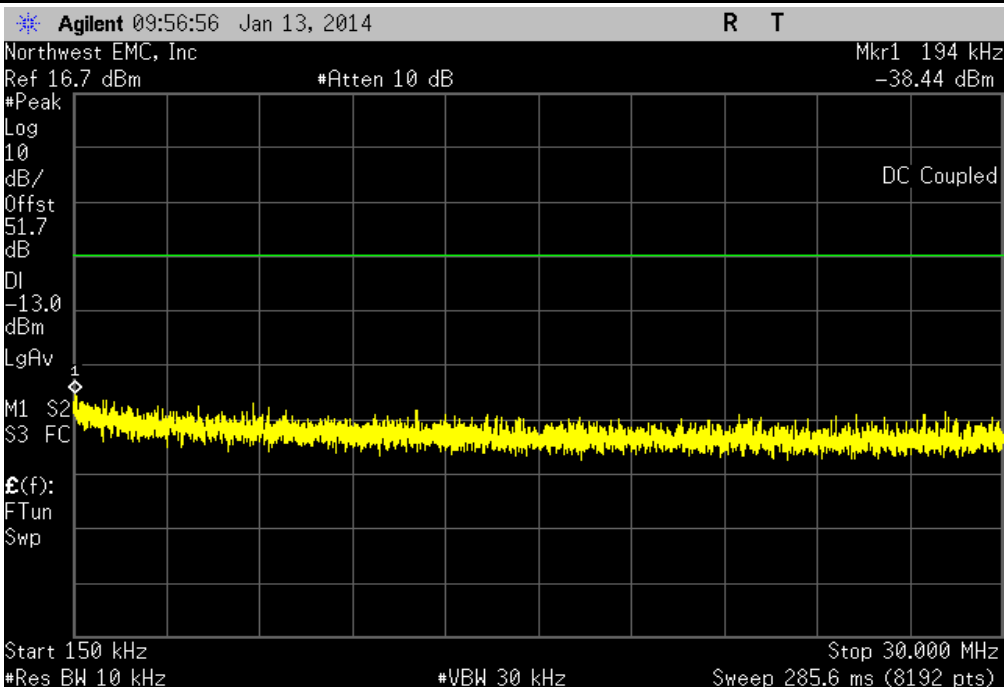
Port B, LTE 5M, High Channel, 1 GHz - 12.75 GHz							
				Value	Limit	Result	
				-16.65 dBm	-13 dBm	Pass	



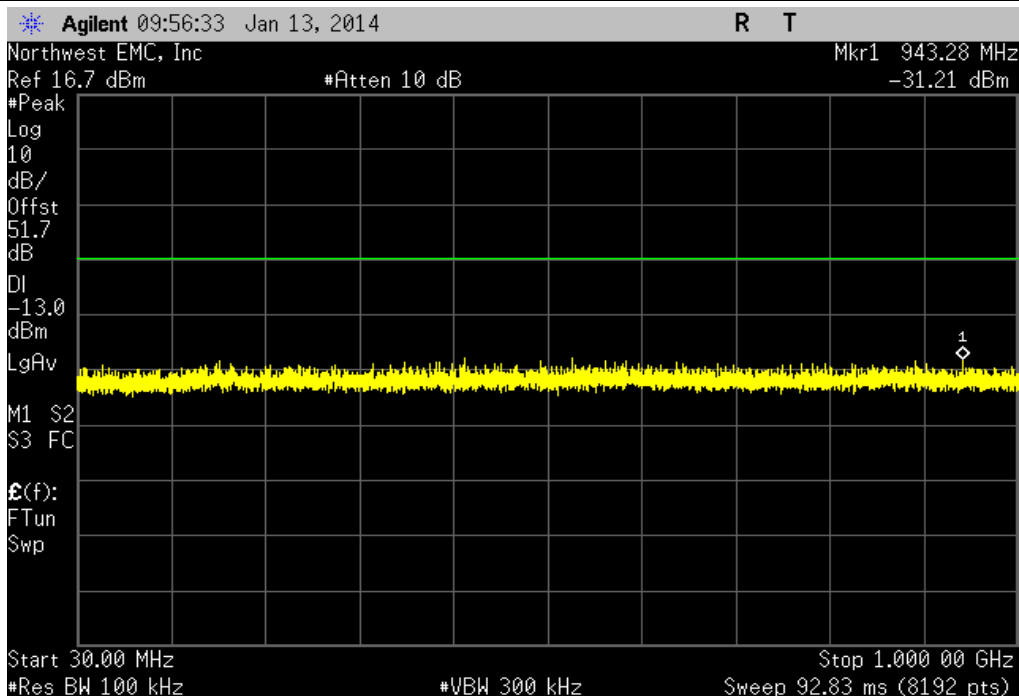
Port B, LTE 5M, Multi Channel, 9 kHz - 150 kHz							
					Value	Limit	Result
					-39.04 dBm	-13 dBm	Pass



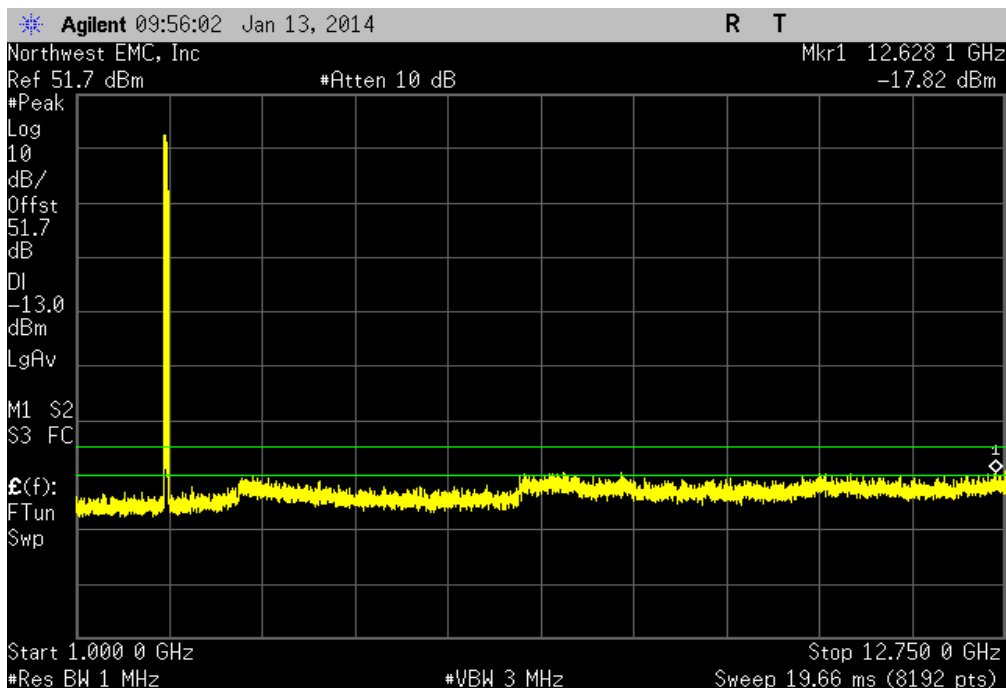
Port B, LTE 5M, Multi Channel, 150 kHz - 30 MHz							
					Value	Limit	Result
					-38.44 dBm	-13 dBm	Pass



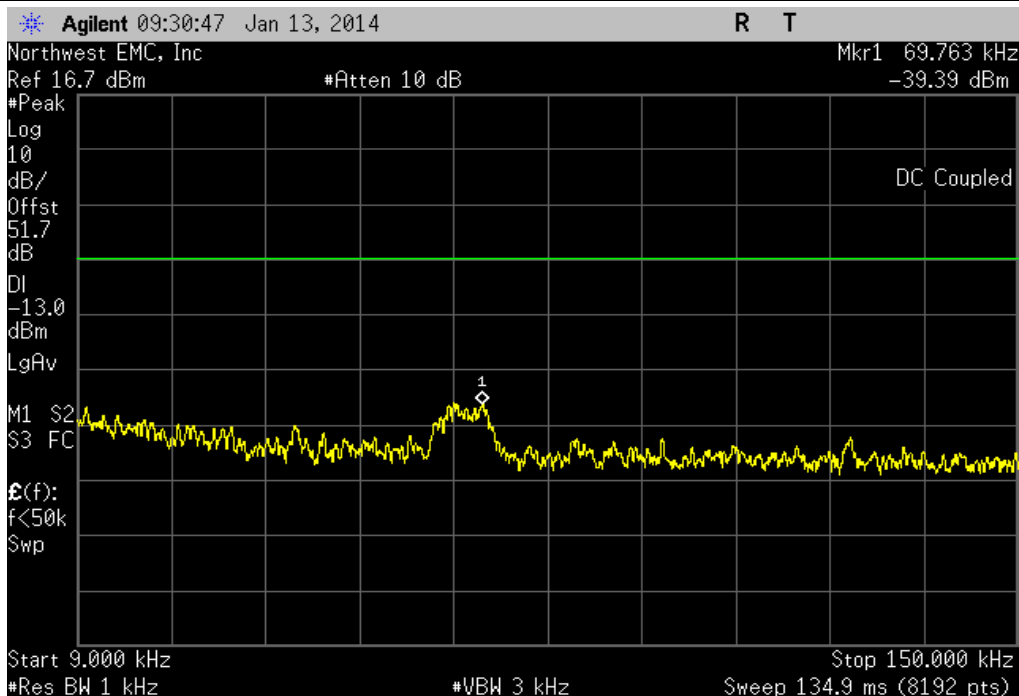
Port B, LTE 5M, Multi Channel, 30 MHz - 1 GHz							
				Value	Limit	Result	
				-31.21 dBm	-13 dBm	Pass	



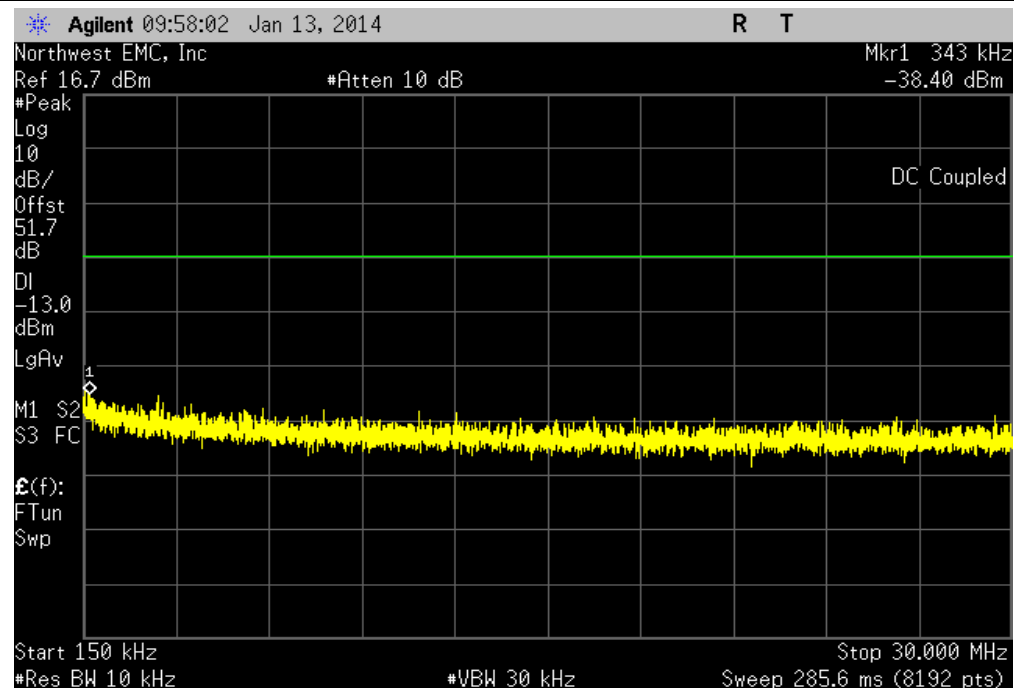
Port B, LTE 5M, Multi Channel, 1 GHz - 12.75 GHz							
				Value	Limit	Result	
				-17.82 dBm	-13 dBm	Pass	



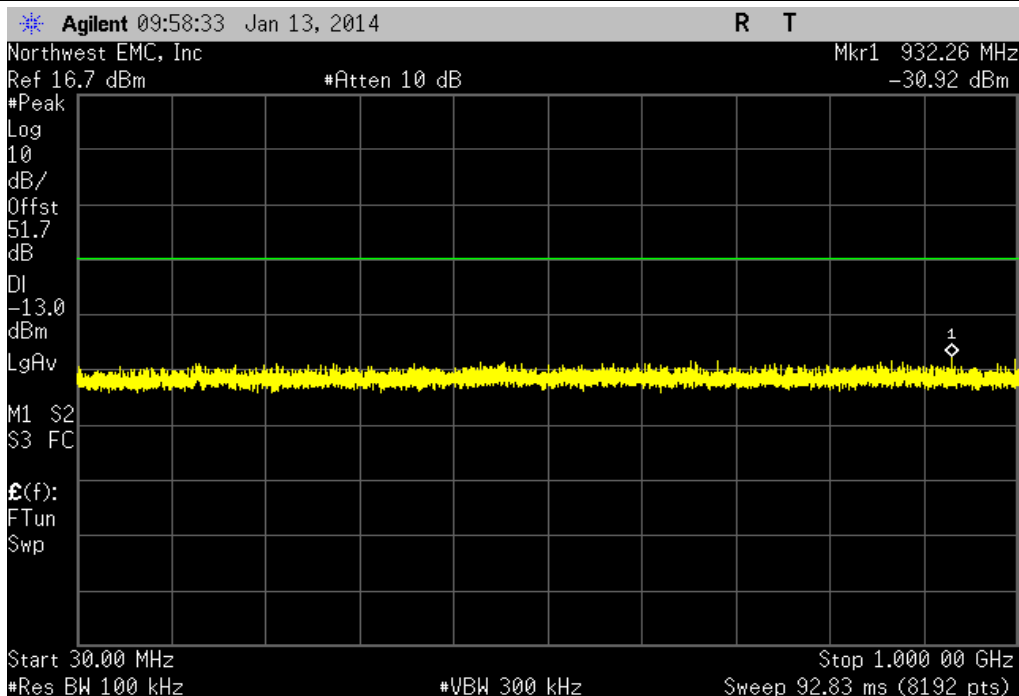
Port B, LTE 10M, Low Channel, 9 kHz - 150 kHz							
				Value	Limit	Result	
				-39.39 dBm	-13 dBm	Pass	



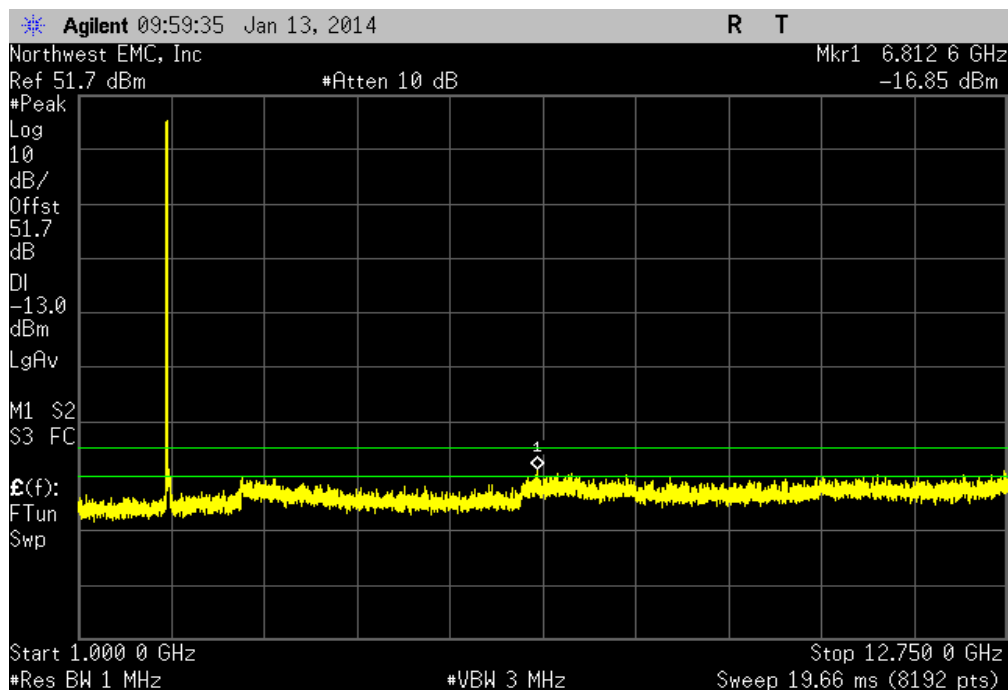
Port B, LTE 10M, Low Channel, 150 kHz - 30 MHz							
				Value	Limit	Result	
				-38.40 dBm	-13 dBm	Pass	



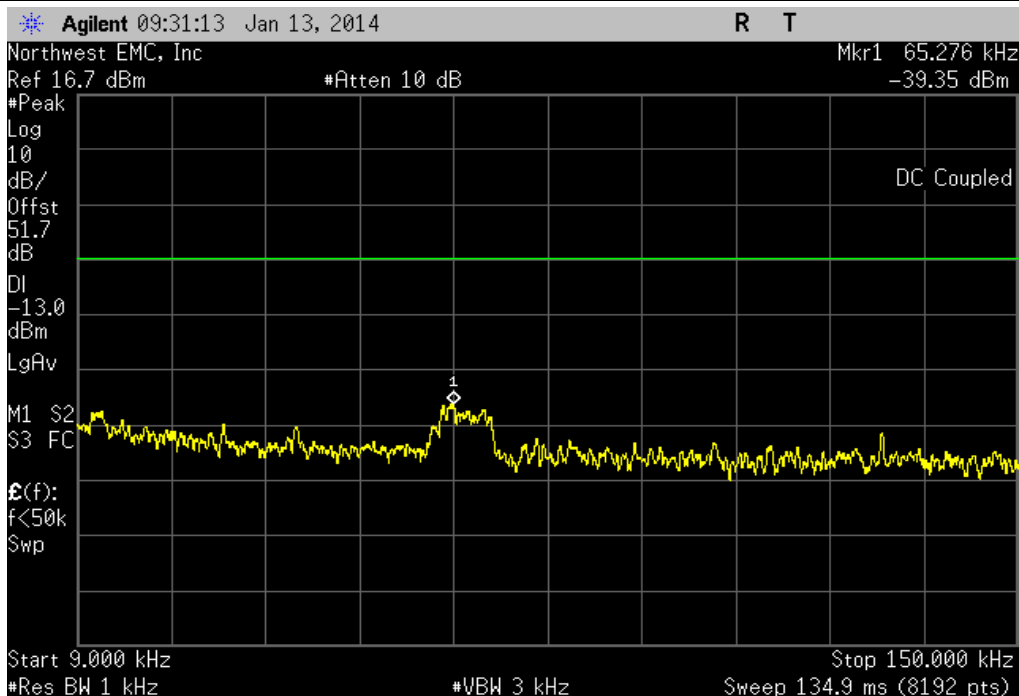
Port B, LTE 10M, Low Channel, 30 MHz - 1 GHz							
				Value	Limit	Result	
				-30.92 dBm	-13 dBm	Pass	



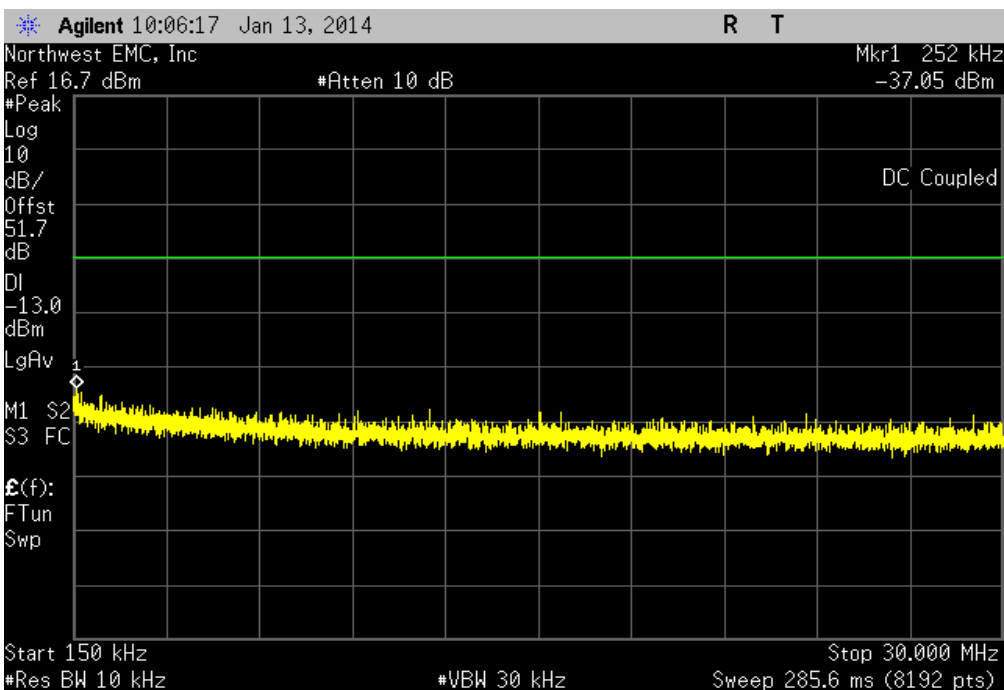
Port B, LTE 10M, Low Channel, 1 GHz - 12.75 GHz							
				Value	Limit	Result	
				-16.85 dBm	-13 dBm	Pass	



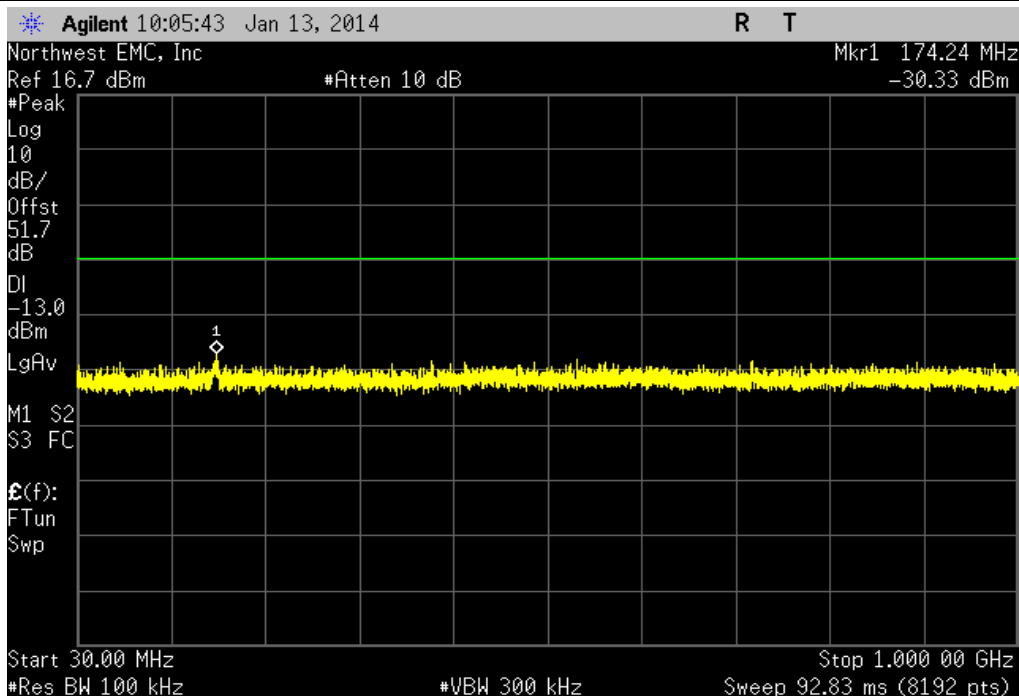
Port B, LTE 10M, Mid Channel, 9 kHz - 150 kHz							
					Value	Limit	Result
					-39.35 dBm	-13 dBm	Pass



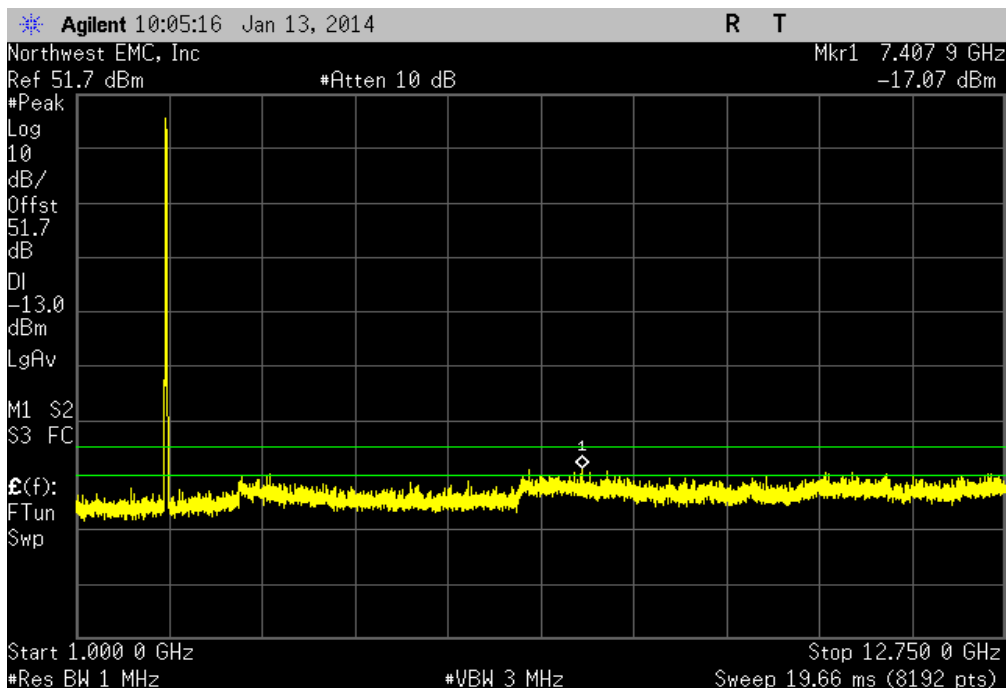
Port B, LTE 10M, Mid Channel, 150 kHz - 30 MHz							
					Value	Limit	Result
					-37.05 dBm	-13 dBm	Pass



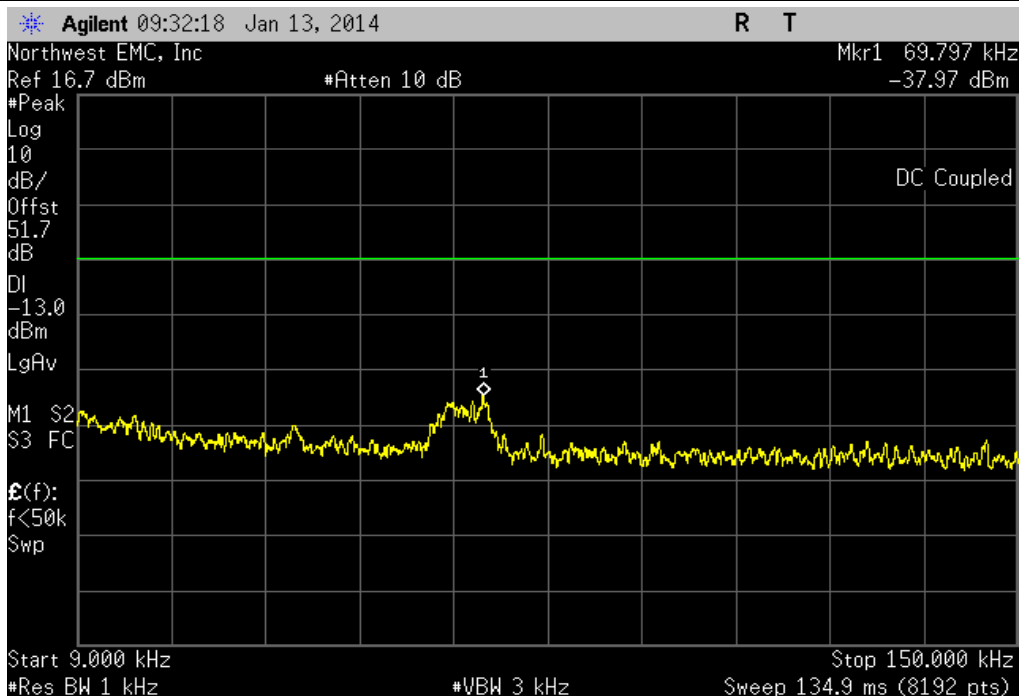
Port B, LTE 10M, Mid Channel, 30 MHz - 1 GHz							
				Value	Limit	Result	
				-30.33 dBm	-13 dBm	Pass	



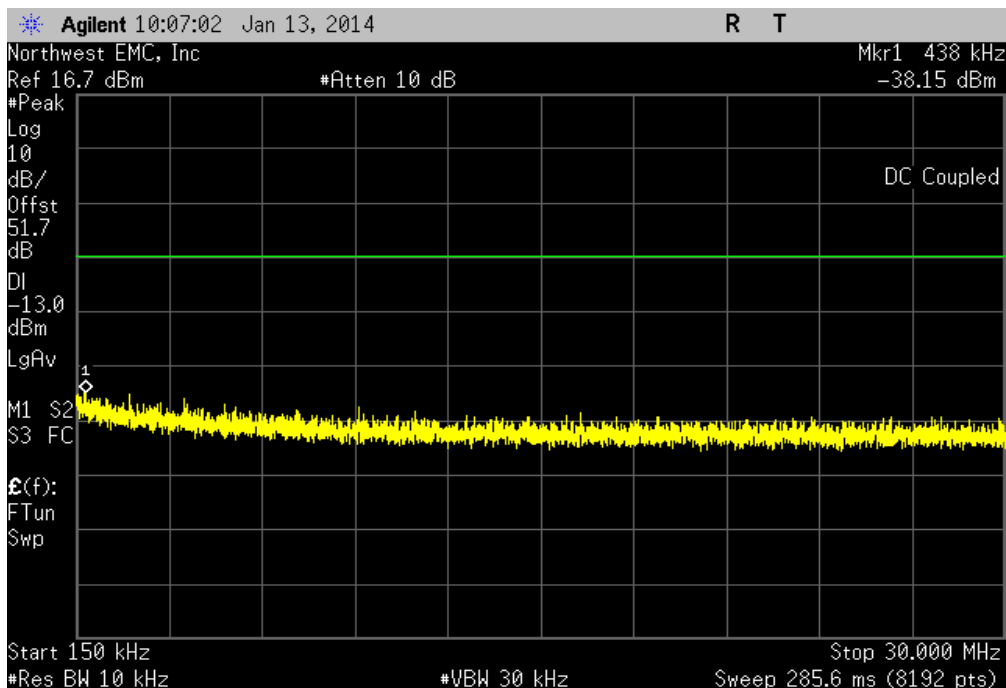
Port B, LTE 10M, Mid Channel, 1 GHz - 12.75 GHz							
				Value	Limit	Result	
				-17.07 dBm	-13 dBm	Pass	



Port B, LTE 10M, High Channel, 9 kHz - 150 kHz							
				Value	Limit	Result	
				-37.97 dBm	-13 dBm	Pass	

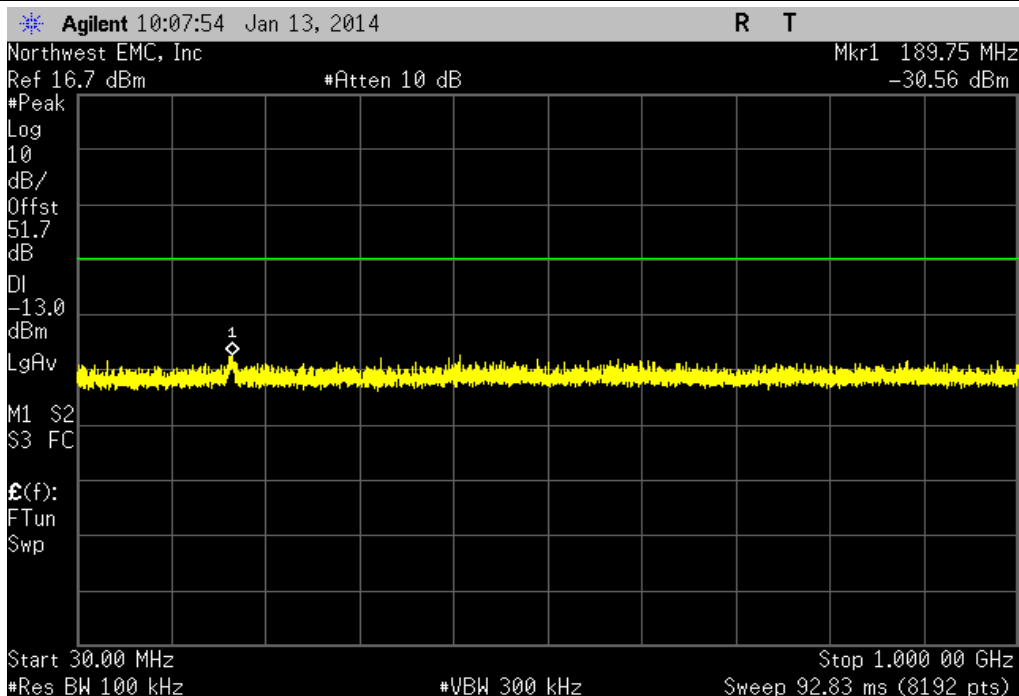


Port B, LTE 10M, High Channel, 150 kHz - 30 MHz							
				Value	Limit	Result	
				-38.15 dBm	-13 dBm	Pass	

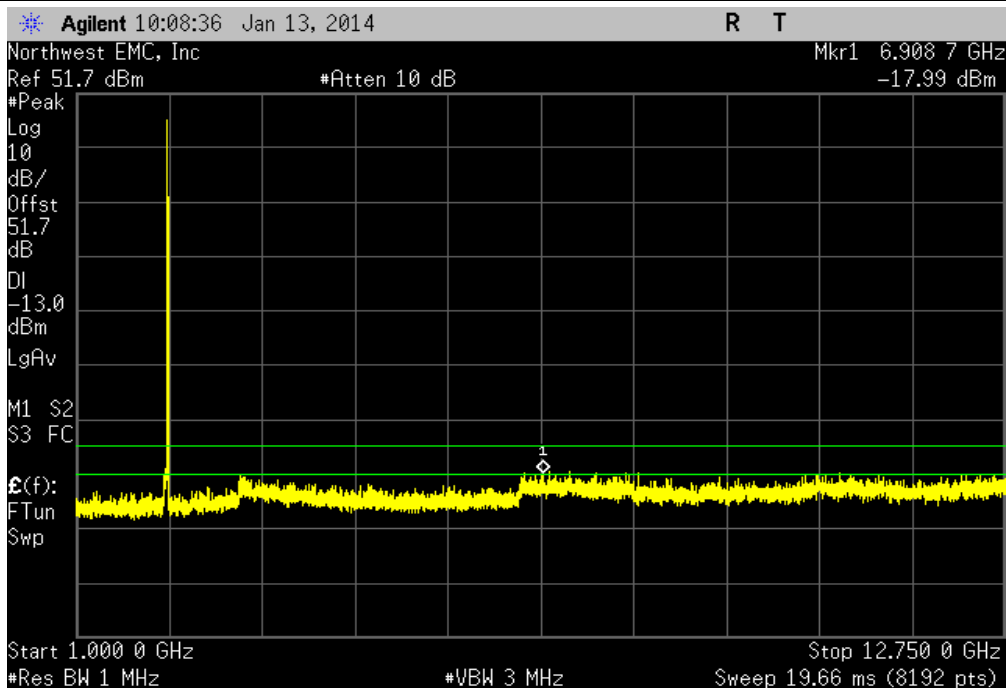




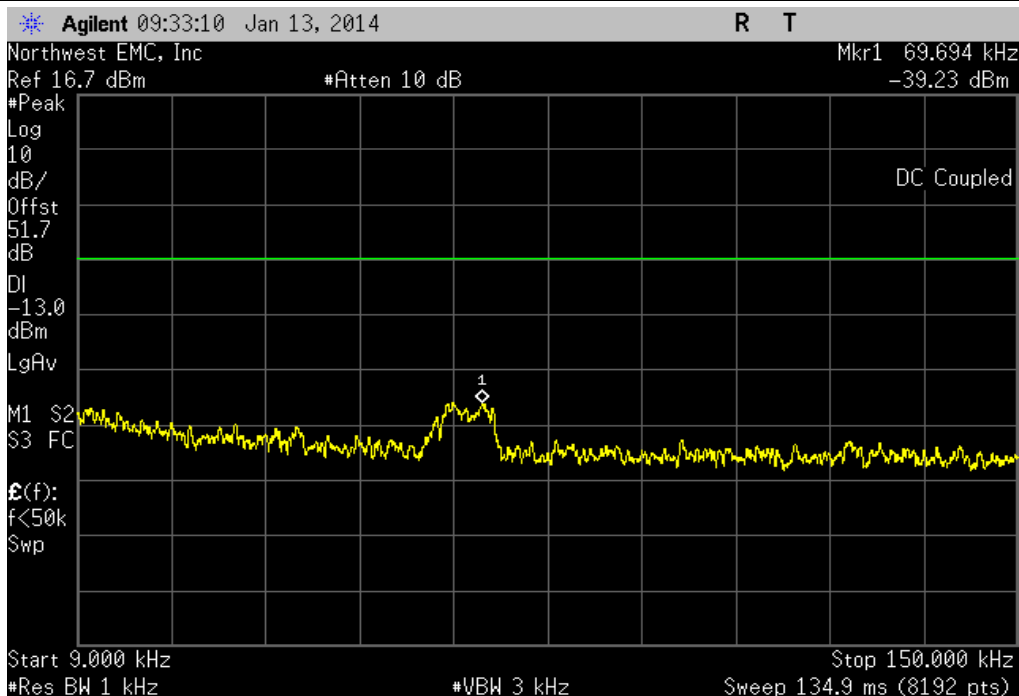
Port B, LTE 10M, High Channel, 30 MHz - 1 GHz							
				Value	Limit	Result	
				-30.56 dBm	-13 dBm	Pass	



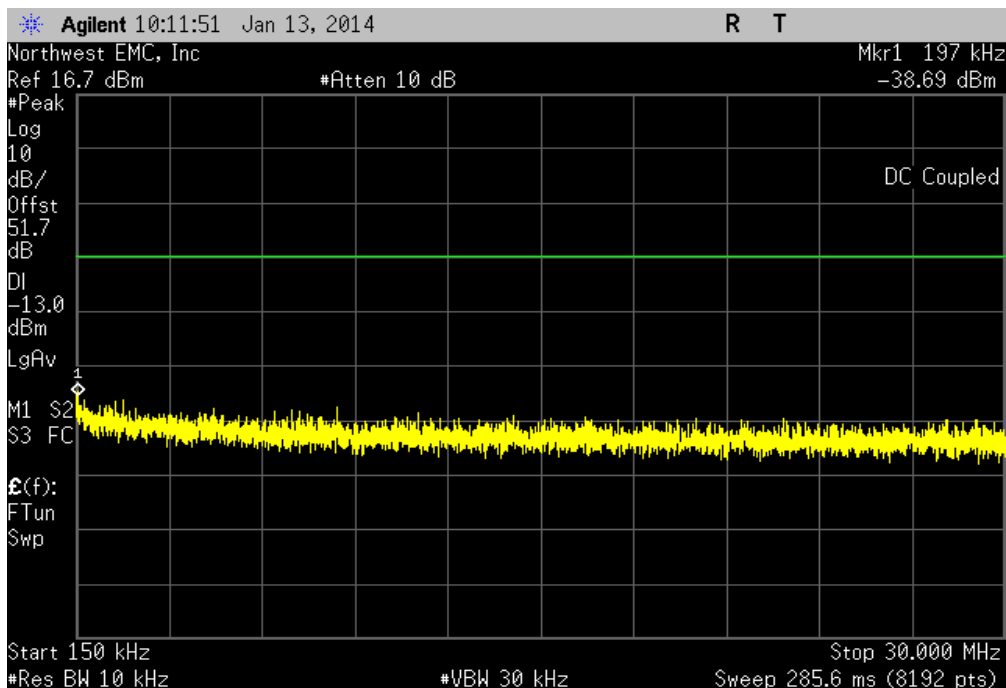
Port B, LTE 10M, High Channel, 1 GHz - 12.75 GHz							
				Value	Limit	Result	
				-17.99 dBm	-13 dBm	Pass	



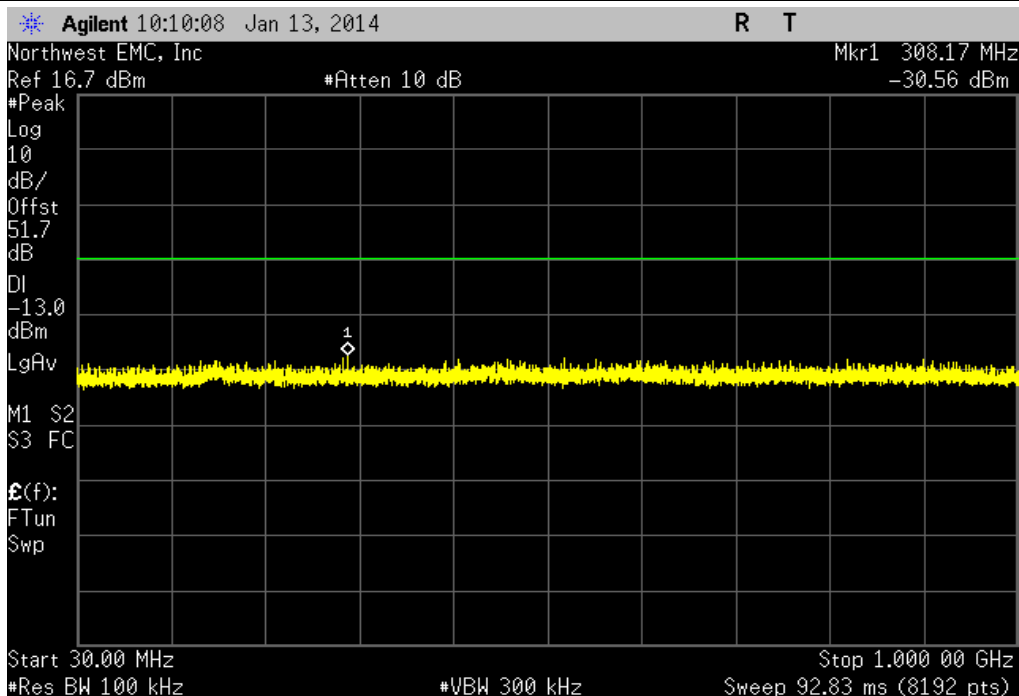
Port B, LTE 10M, Multi Channel, 9 kHz - 150 kHz							
				Value	Limit	Result	
				-39.23 dBm	-13 dBm	Pass	



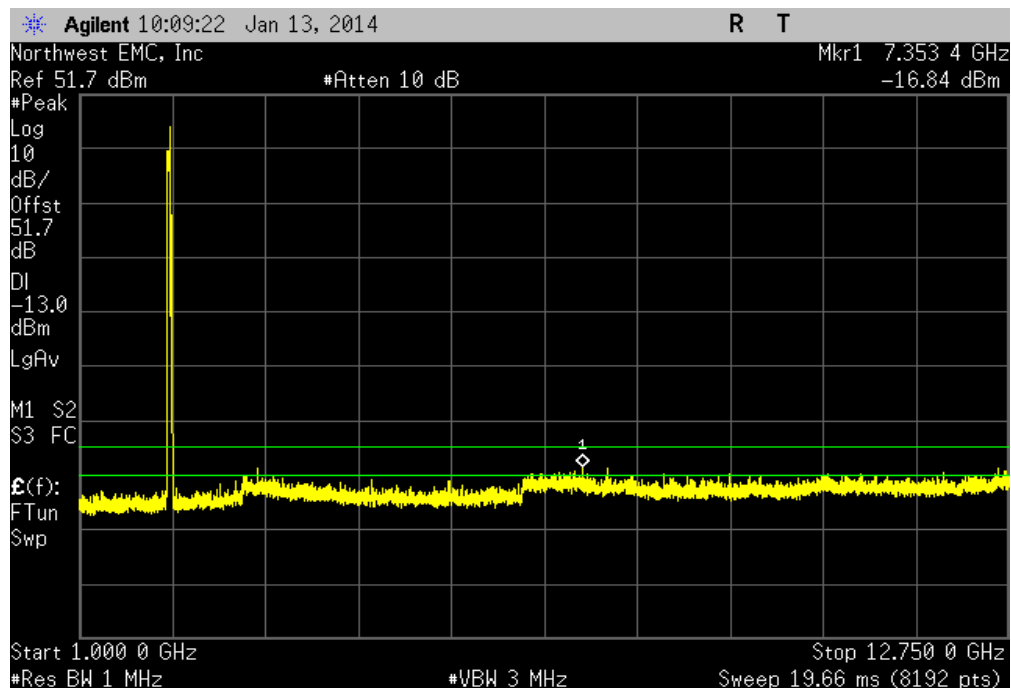
Port B, LTE 10M, Multi Channel, 150 kHz - 30 MHz							
				Value	Limit	Result	
				-38.69 dBm	-13 dBm	Pass	



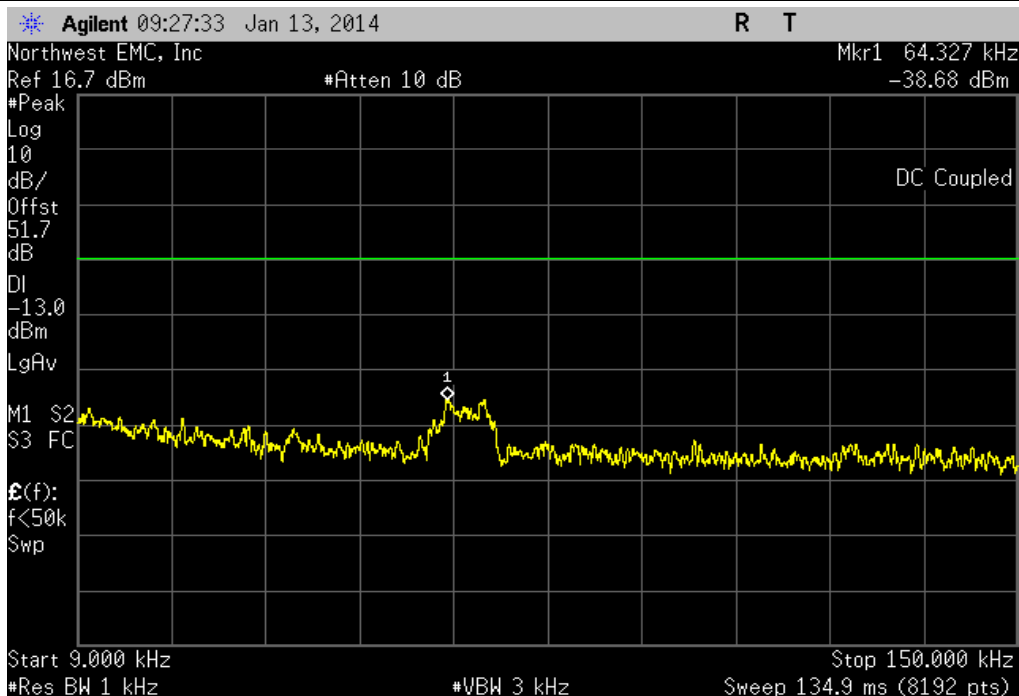
Port B, LTE 10M, Multi Channel, 30 MHz - 1 GHz							
				Value	Limit	Result	
				-30.56 dBm	-13 dBm	Pass	



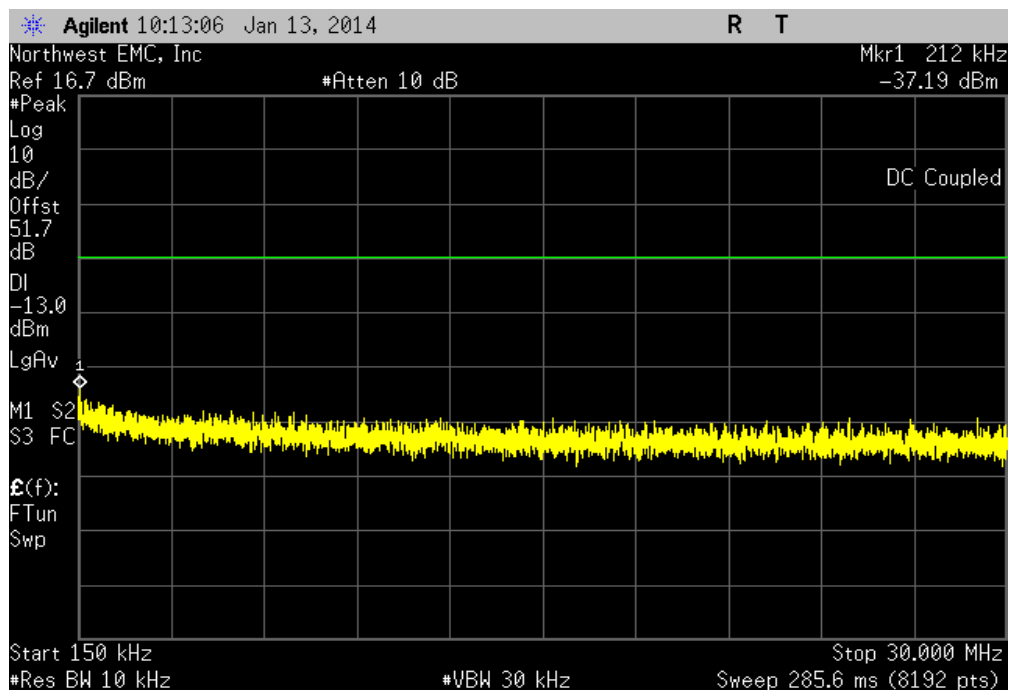
Port B, LTE 10M, Multi Channel, 1 GHz - 12.75 GHz							
				Value	Limit	Result	
				-16.84 dBm	-13 dBm	Pass	



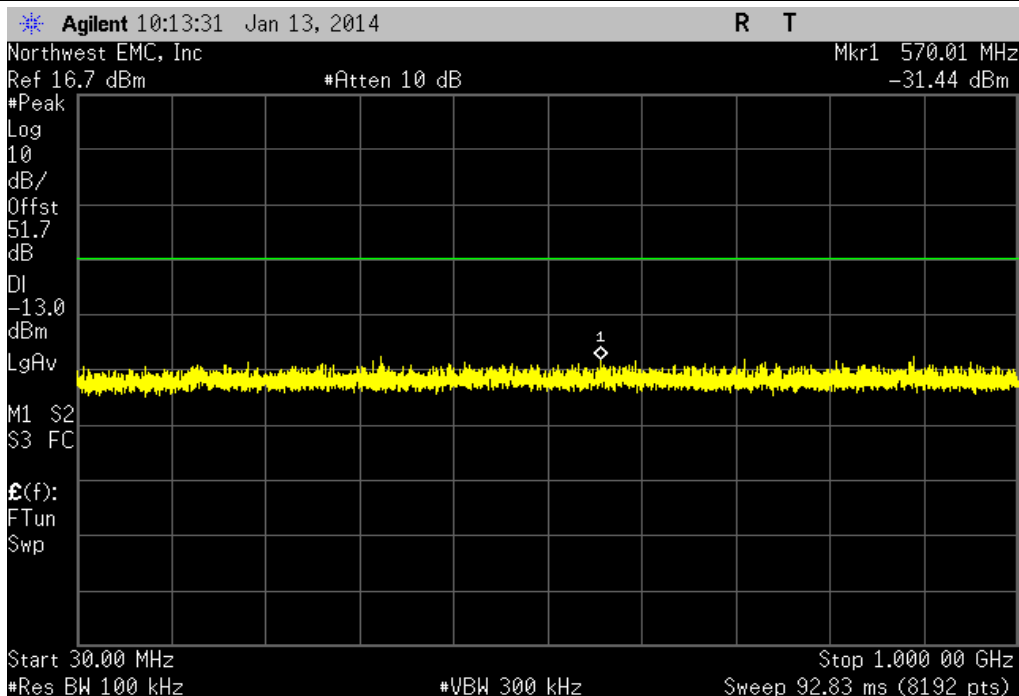
Port B, LTE 15M, Low Channel, 9 kHz - 150 kHz							
					Value	Limit	Result
					-38.68 dBm	-13 dBm	Pass



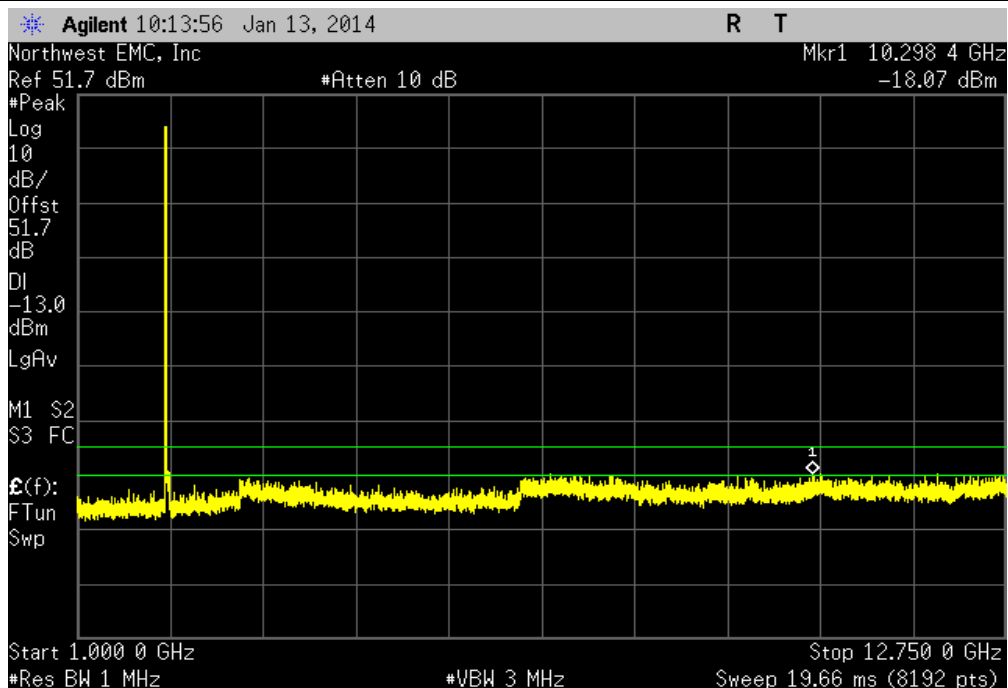
Port B, LTE 15M, Low Channel, 150 kHz - 30 MHz							
					Value	Limit	Result
					-37.19 dBm	-13 dBm	Pass



Port B, LTE 15M, Low Channel, 30 MHz - 1 GHz							
				Value	Limit	Result	
				-31.44 dBm	-13 dBm	Pass	

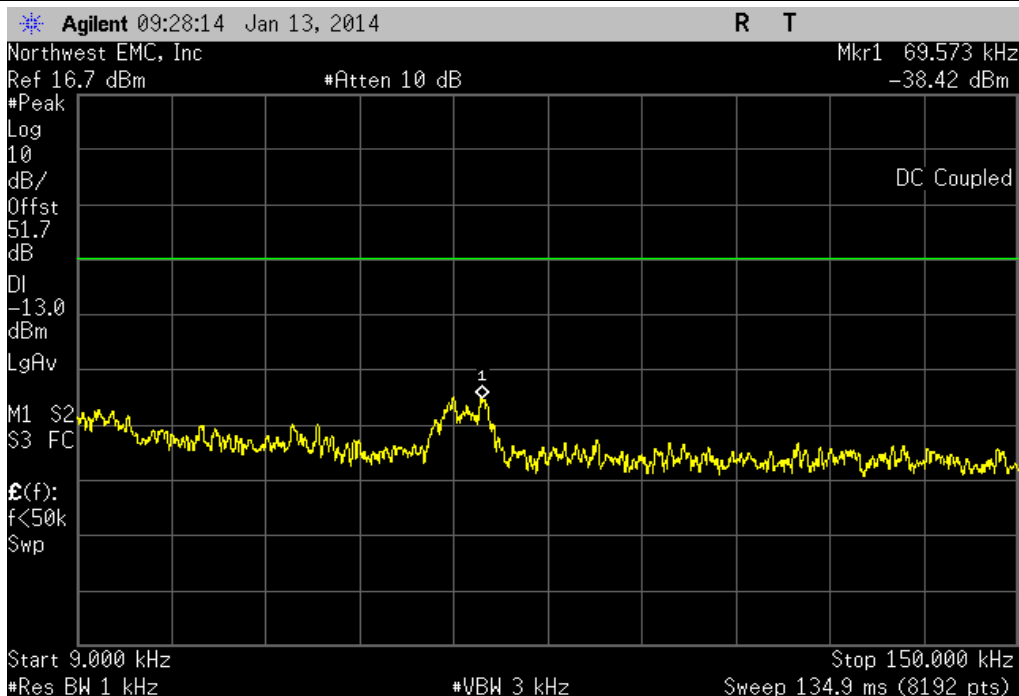


Port B, LTE 15M, Low Channel, 1 GHz - 12.75 GHz							
				Value	Limit	Result	
				-18.07 dBm	-13 dBm	Pass	



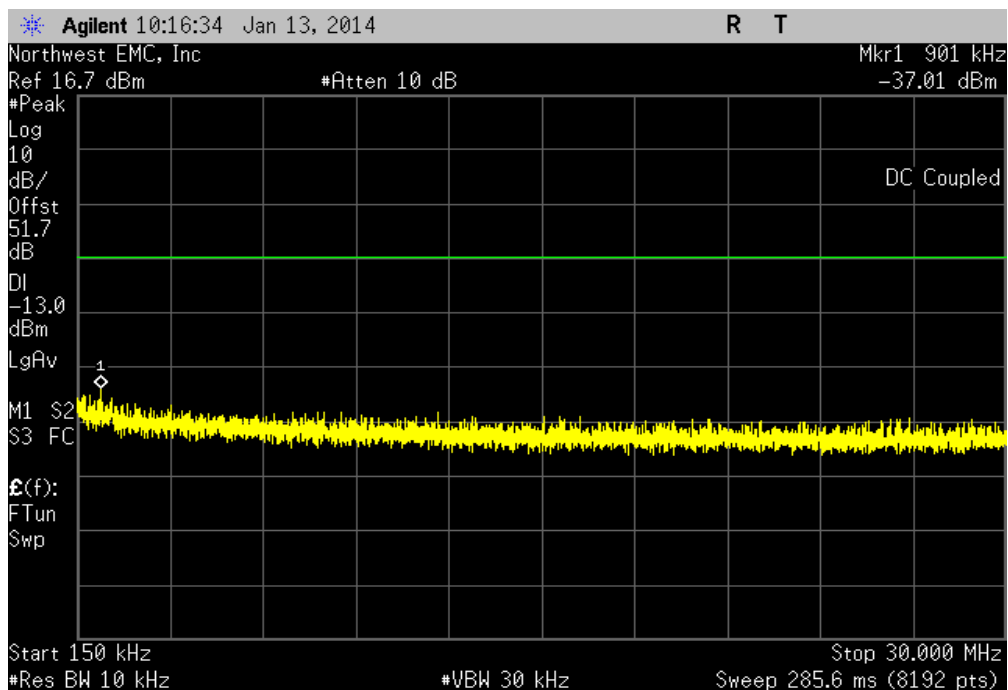
Port B, LTE 15M, Mid Channel, 9 kHz - 150 kHz

					Value	Limit	Result
					-38.42 dBm	-13 dBm	Pass

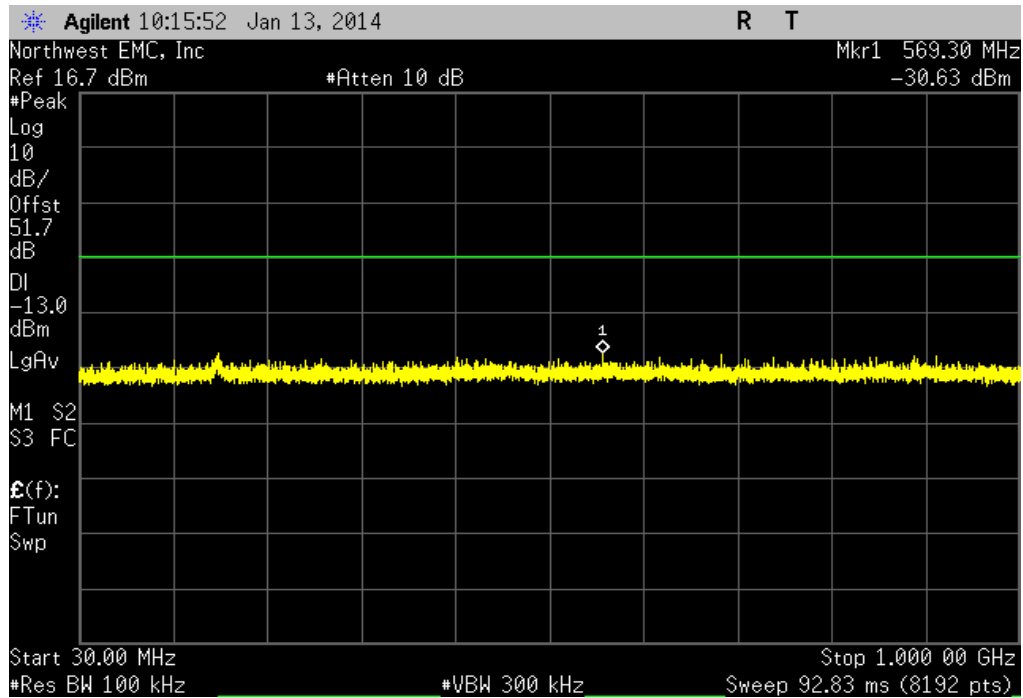


Port B, LTE 15M, Mid Channel, 150 kHz - 30 MHz

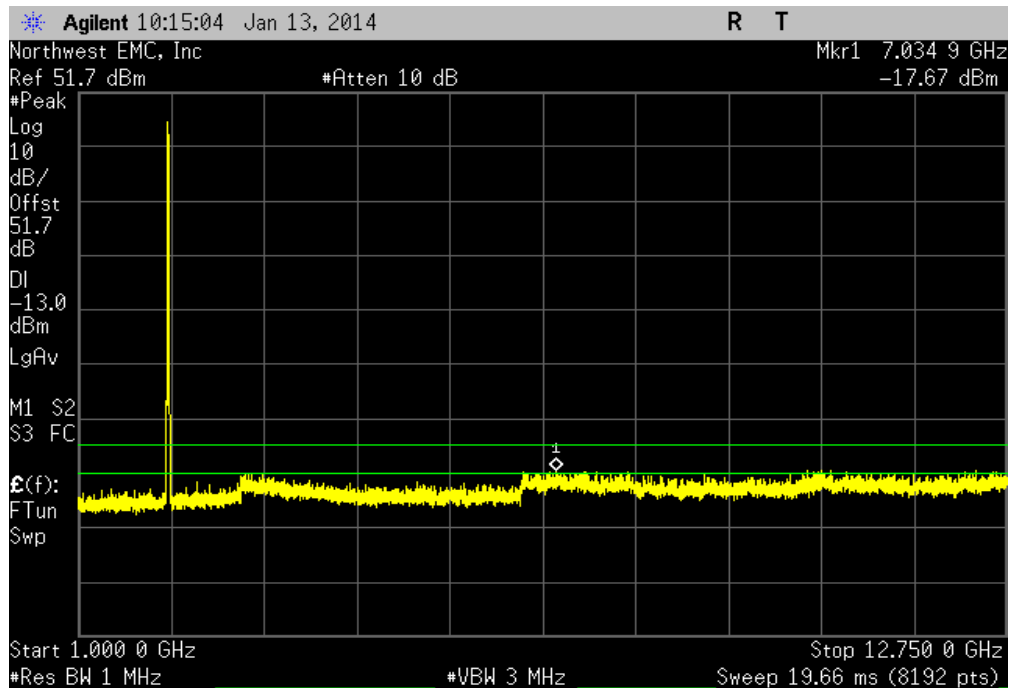
					Value	Limit	Result
					-37.01 dBm	-13 dBm	Pass



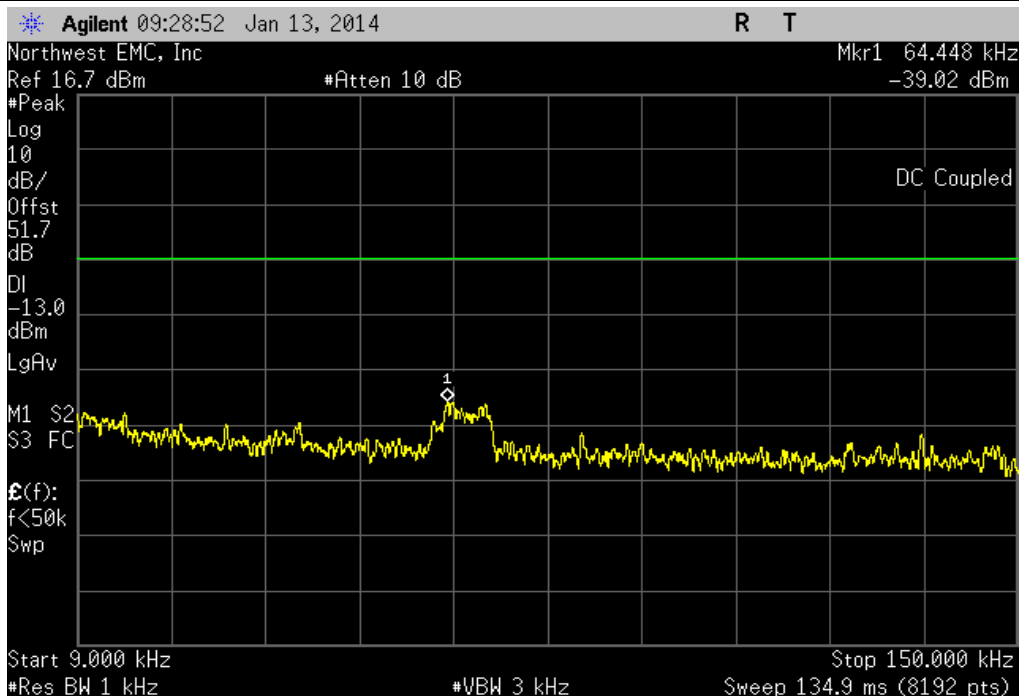
Port B, LTE 15M, Mid Channel, 30 MHz - 1 GHz							
				Value	Limit	Result	
				-30.63 dBm	-13 dBm	Pass	



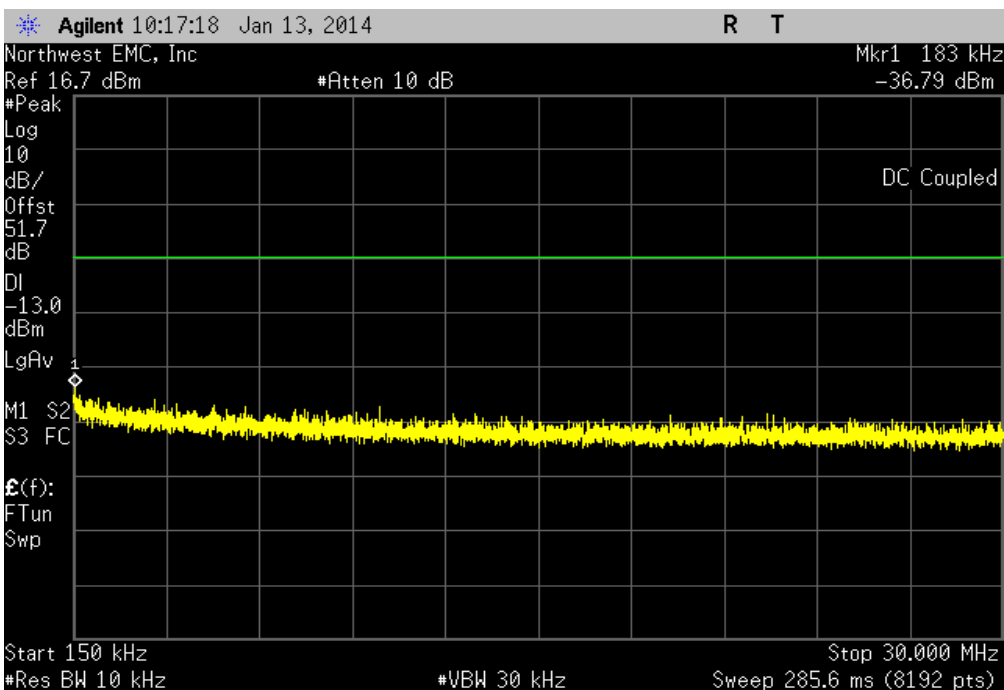
Port B, LTE 15M, Mid Channel, 1 GHz - 12.75 GHz							
				Value	Limit	Result	
				-17.67 dBm	-13 dBm	Pass	



Port B, LTE 15M, High Channel, 9 kHz - 150 kHz							
					Value	Limit	Result
					-39.02 dBm	-13 dBm	Pass

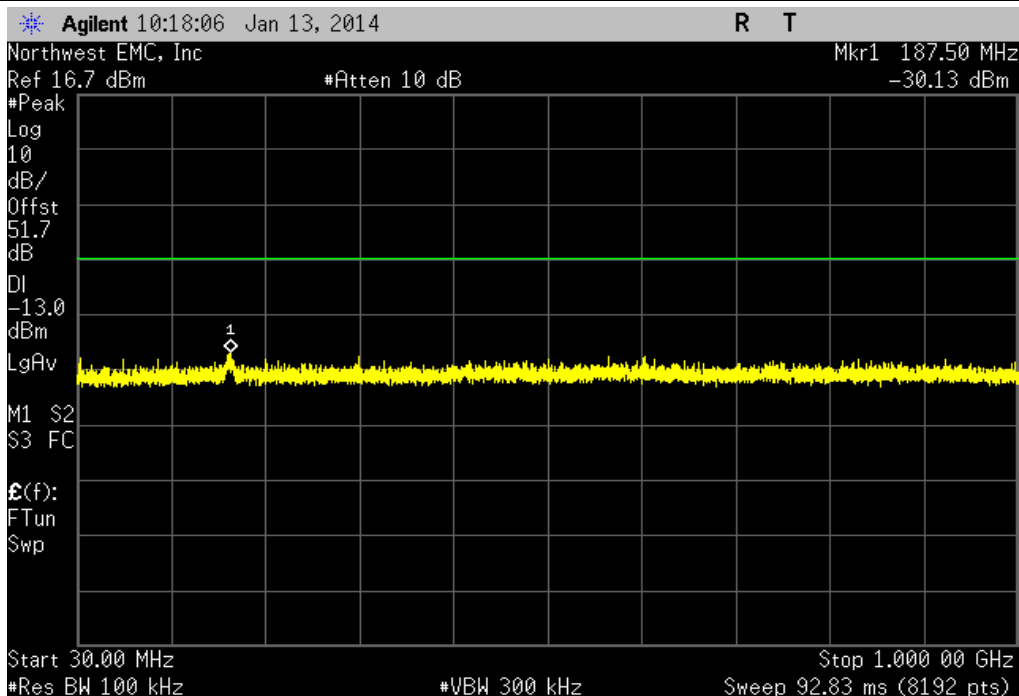


Port B, LTE 15M, High Channel, 150 kHz - 30 MHz							
					Value	Limit	Result
					-36.79 dBm	-13 dBm	Pass

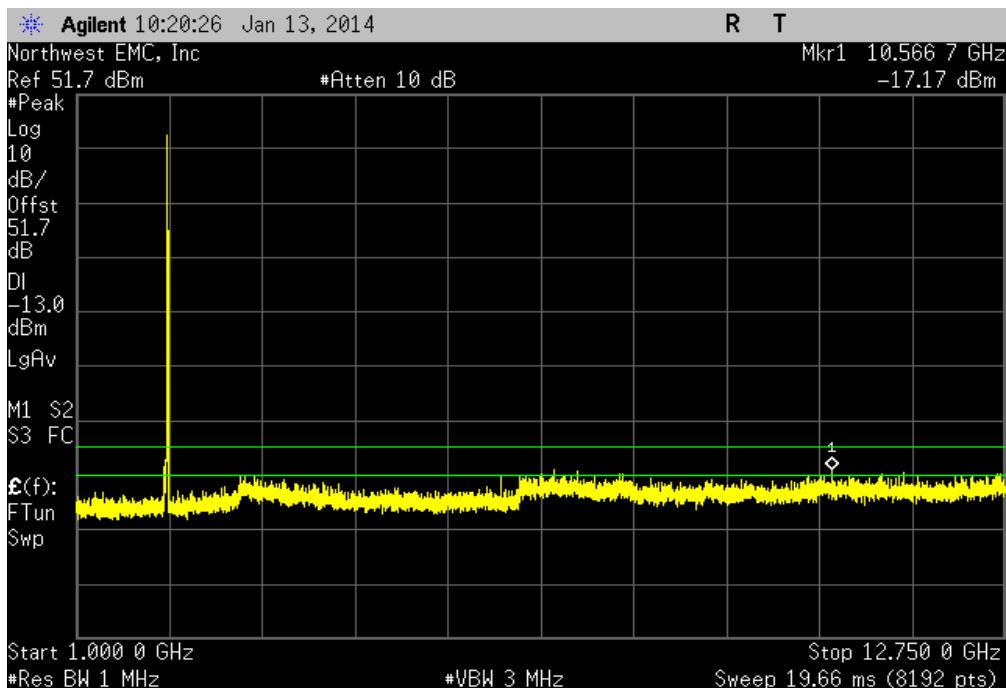




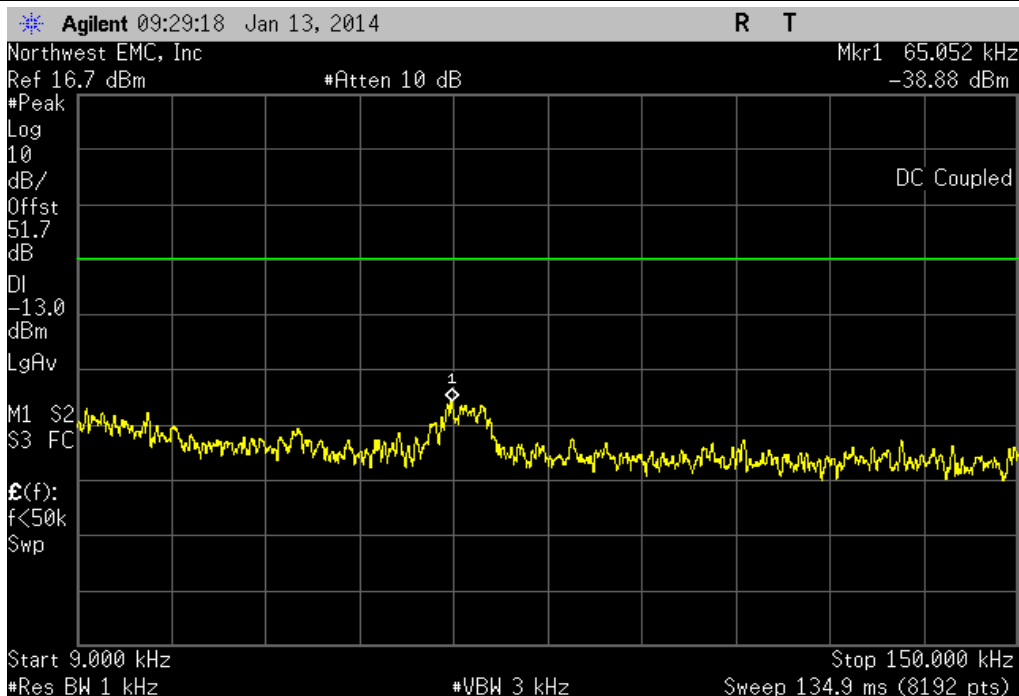
Port B, LTE 15M, High Channel, 30 MHz - 1 GHz							
				Value	Limit	Result	
				-30.13 dBm	-13 dBm	Pass	



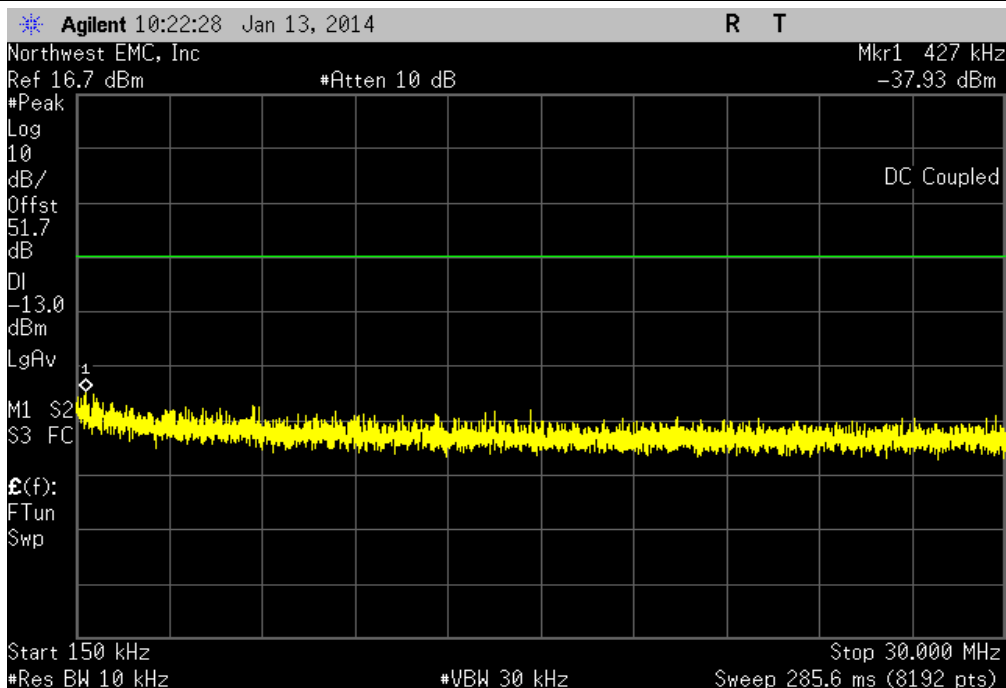
Port B, LTE 15M, High Channel, 1 GHz - 12.75 GHz							
				Value	Limit	Result	
				-17.17dBm	-13 dBm	Pass	



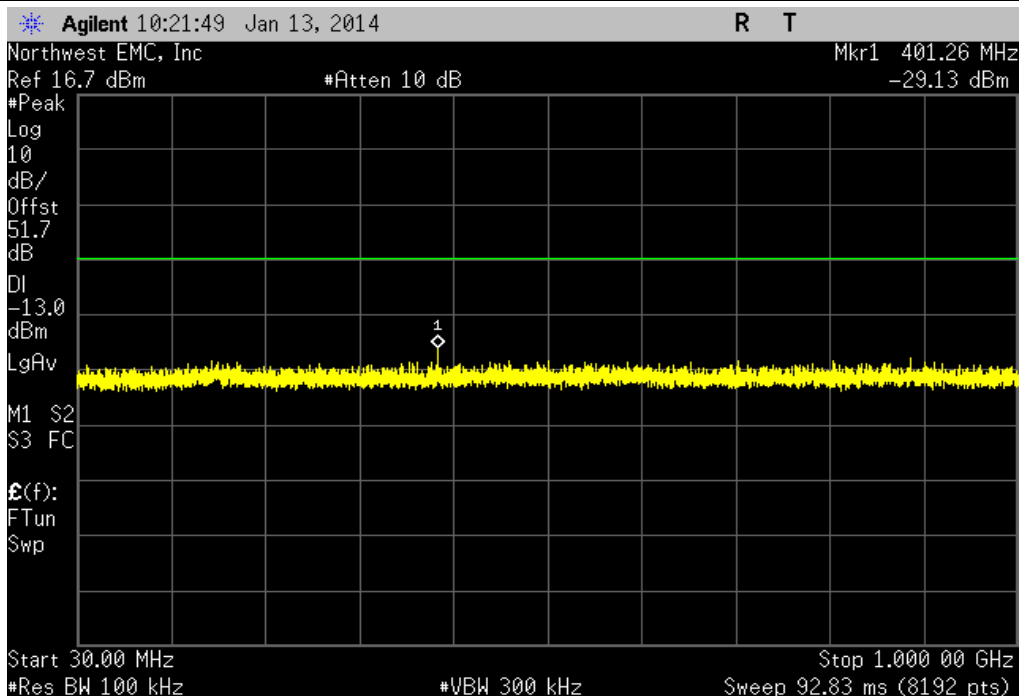
Port B, LTE 15M, Multi Channel, 9 kHz - 150 kHz							
				Value	Limit	Result	
				-38.88 dBm	-13 dBm	Pass	



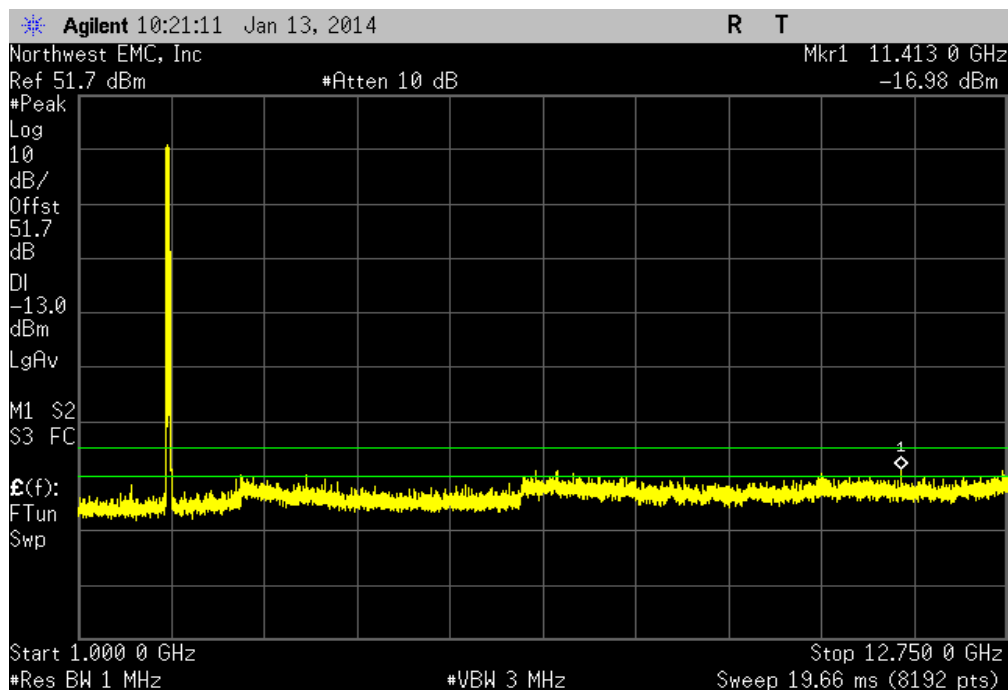
Port B, LTE 15M, Multi Channel, 150 kHz - 30 MHz							
				Value	Limit	Result	
				-37.93 dBm	-13 dBm	Pass	



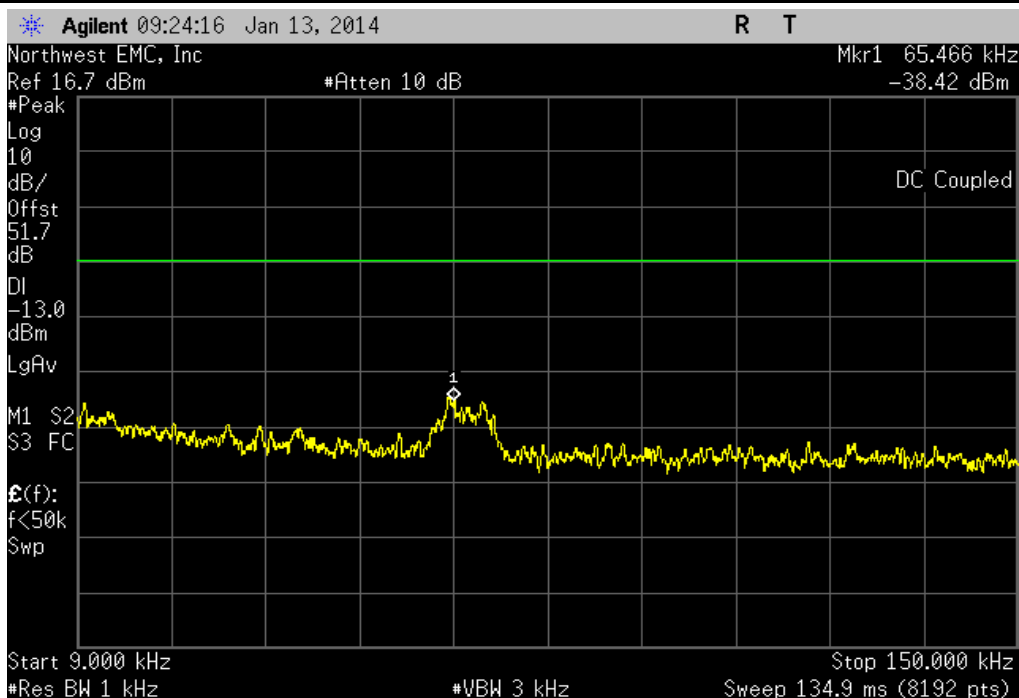
Port B, LTE 15M, Multi Channel, 30 MHz - 1 GHz							
				Value	Limit	Result	
				-29.13 dBm	-13 dBm	Pass	



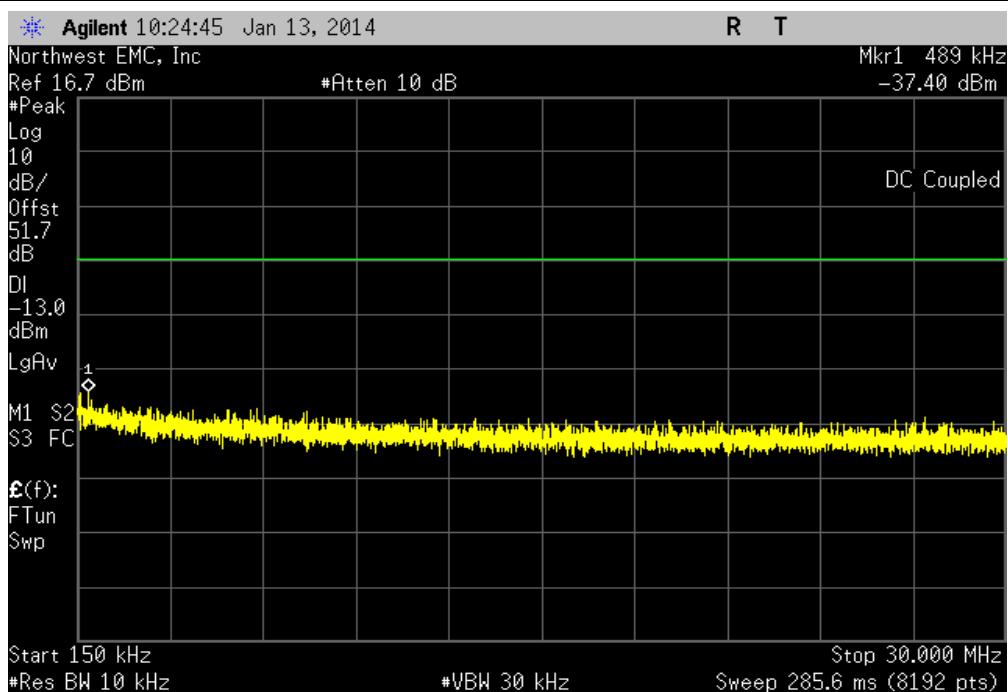
Port B, LTE 15M, Multi Channel, 1 GHz - 12.75 GHz							
				Value	Limit	Result	
				-16.98 dBm	-13 dBm	Pass	



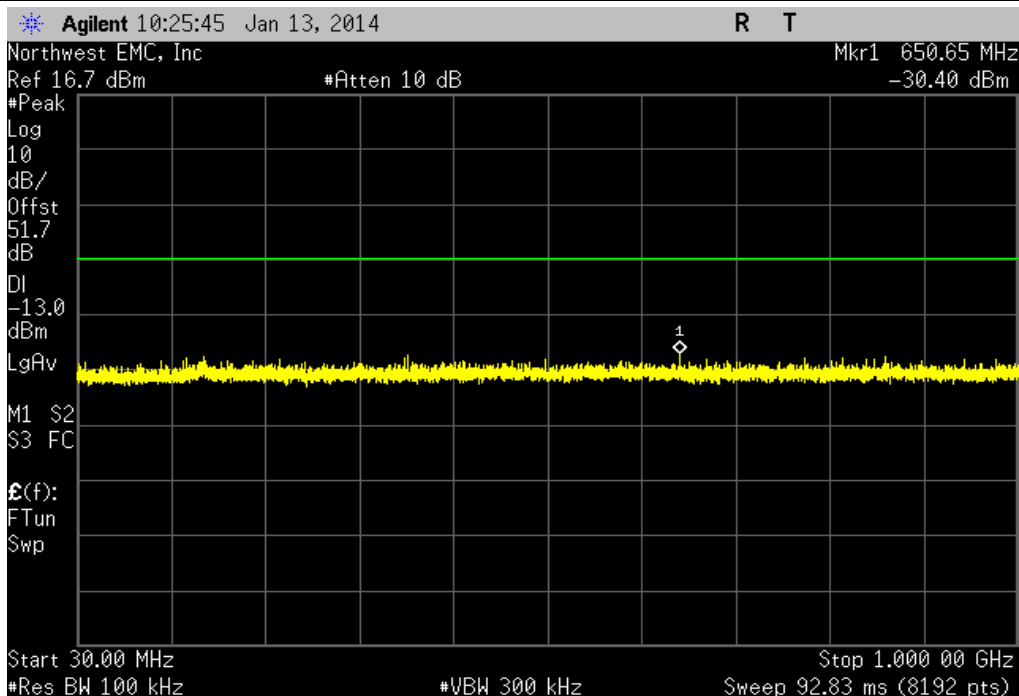
Port B, LTE 20M, Low Channel, 9 kHz - 150 kHz							
					Value	Limit	Result
					-38.42 dBm	-13 dBm	Pass



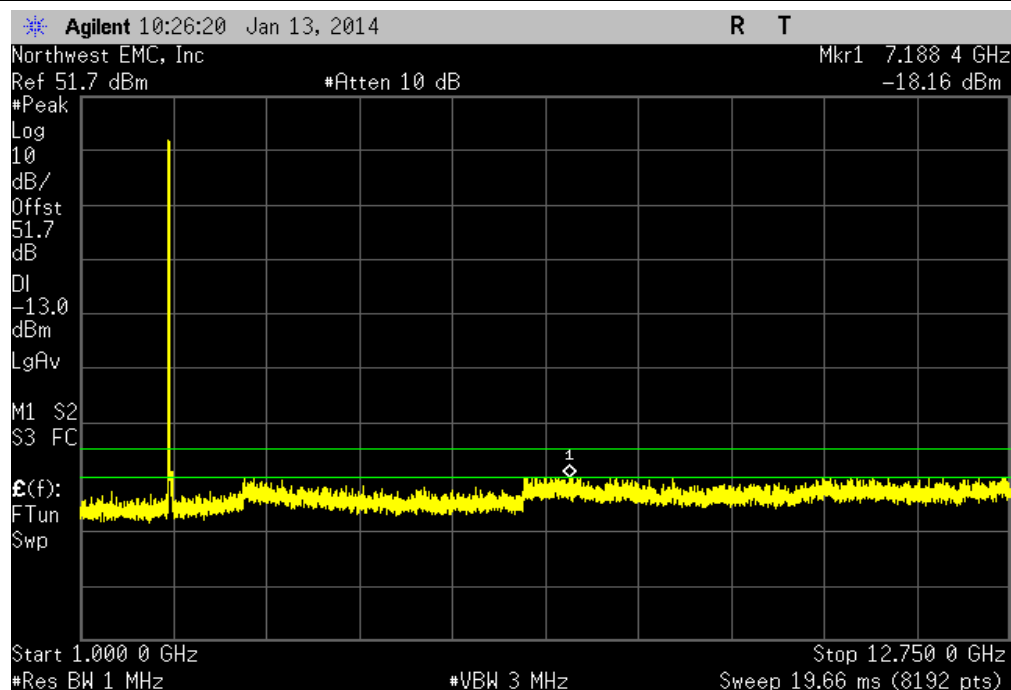
Port B, LTE 20M, Low Channel, 150 kHz - 30 MHz							
					Value	Limit	Result
					-37.40 dBm	-13 dBm	Pass



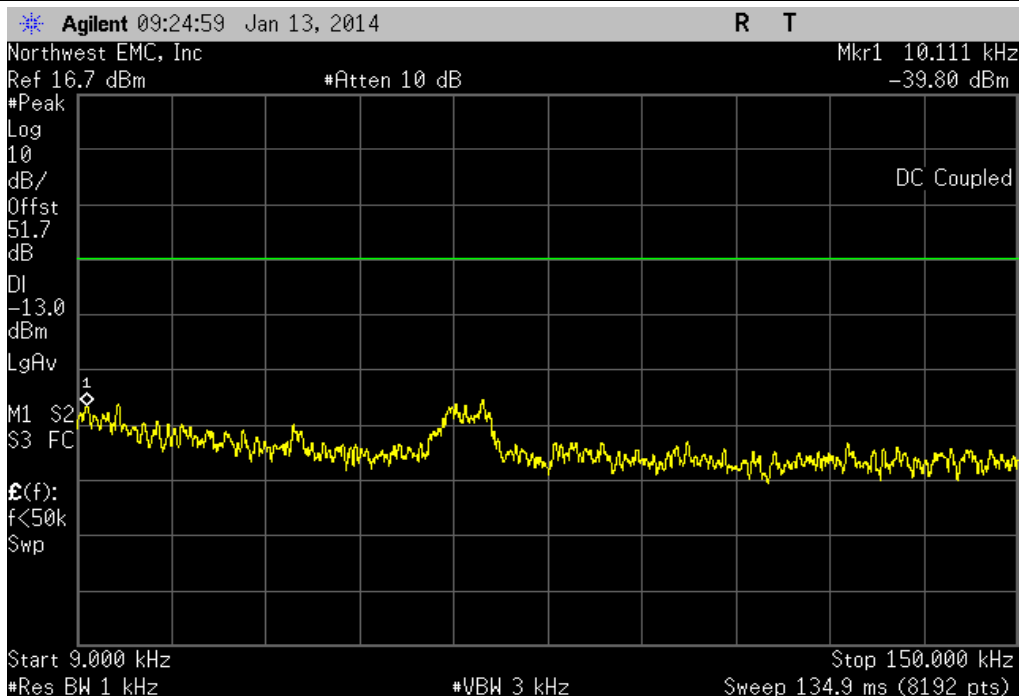
Port B, LTE 20M, Low Channel, 30 MHz - 1 GHz							
				Value	Limit	Result	
				-30.40 dBm	-13 dBm	Pass	



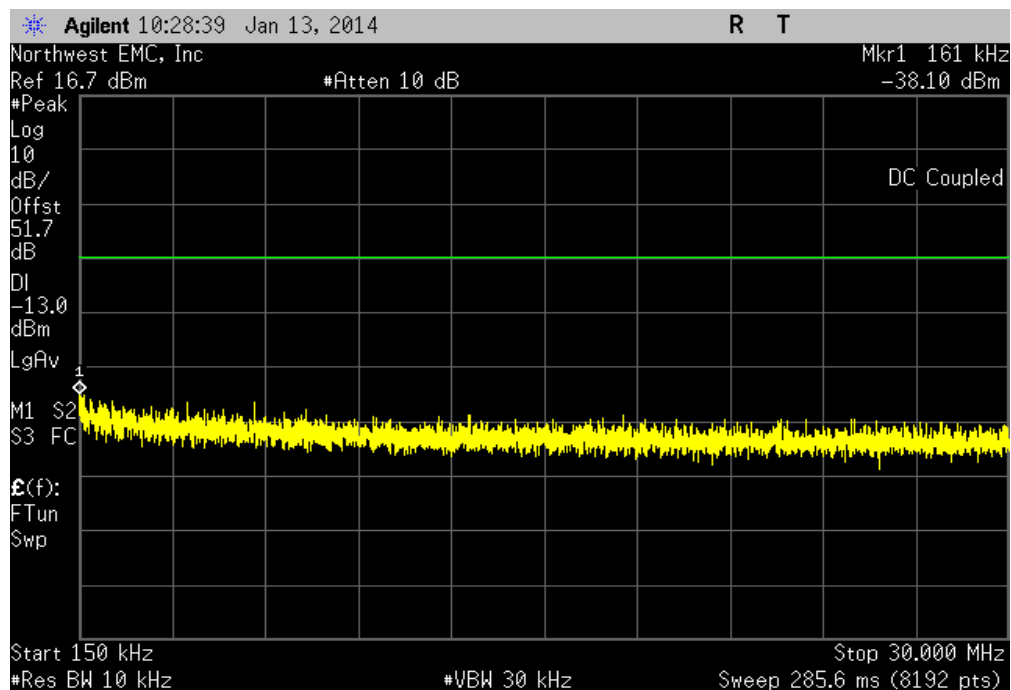
Port B, LTE 20M, Low Channel, 1 GHz - 12.75 GHz							
				Value	Limit	Result	
				-18.16 dBm	-13 dBm	Pass	



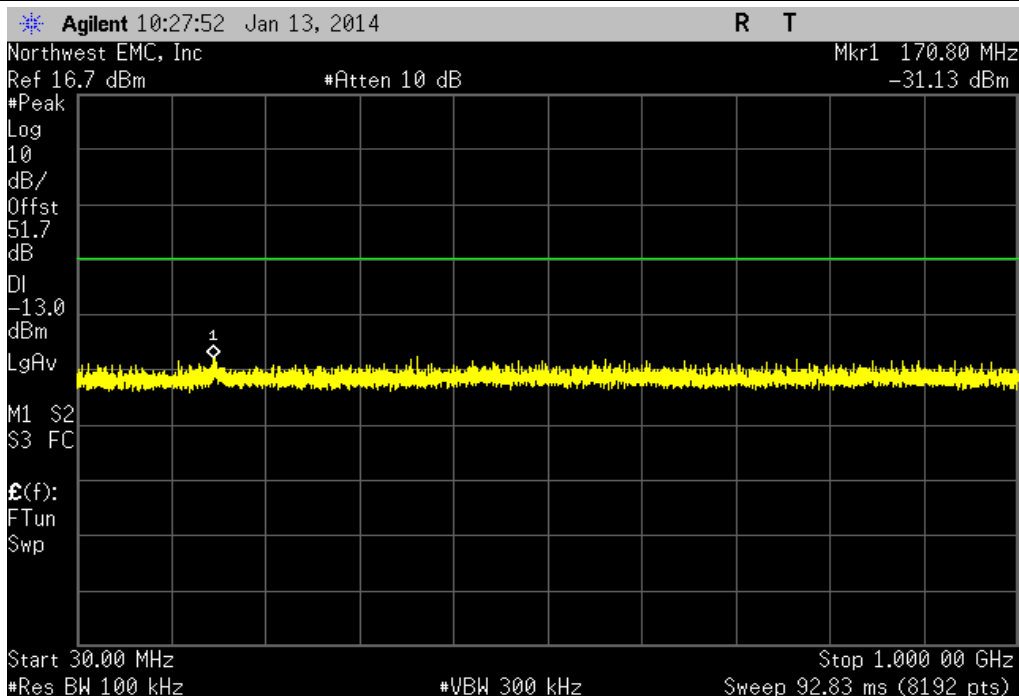
Port B, LTE 20M, Mid Channel, 9 kHz - 150 kHz							
				Value	Limit	Result	
				-39.80 dBm	-13 dBm	Pass	



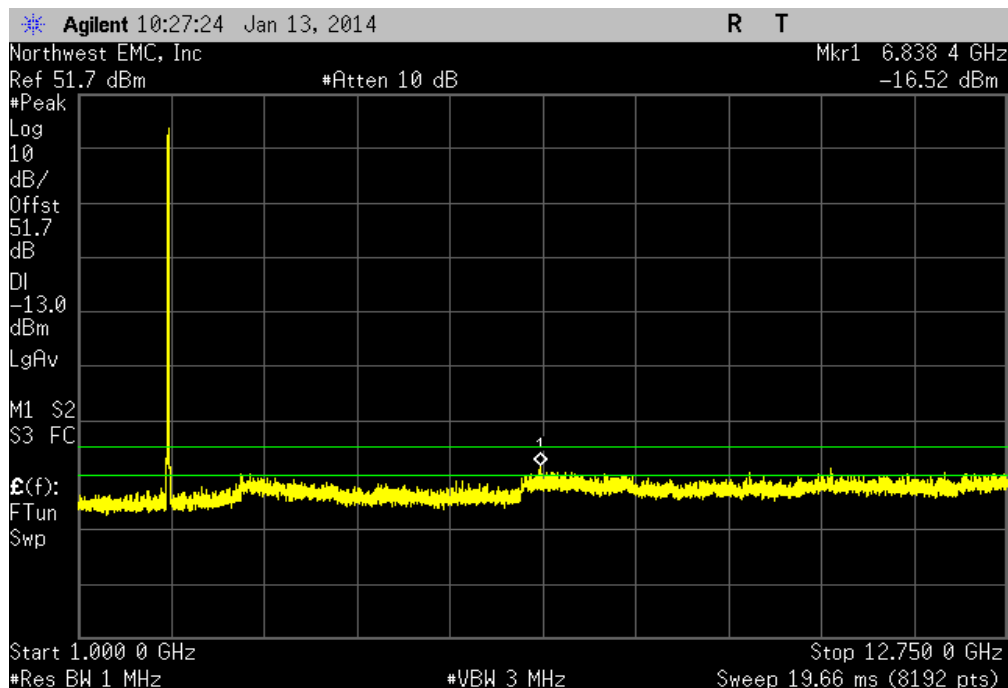
Port B, LTE 20M, Mid Channel, 150 kHz - 30 MHz							
				Value	Limit	Result	
				-38.10 dBm	-13 dBm	Pass	



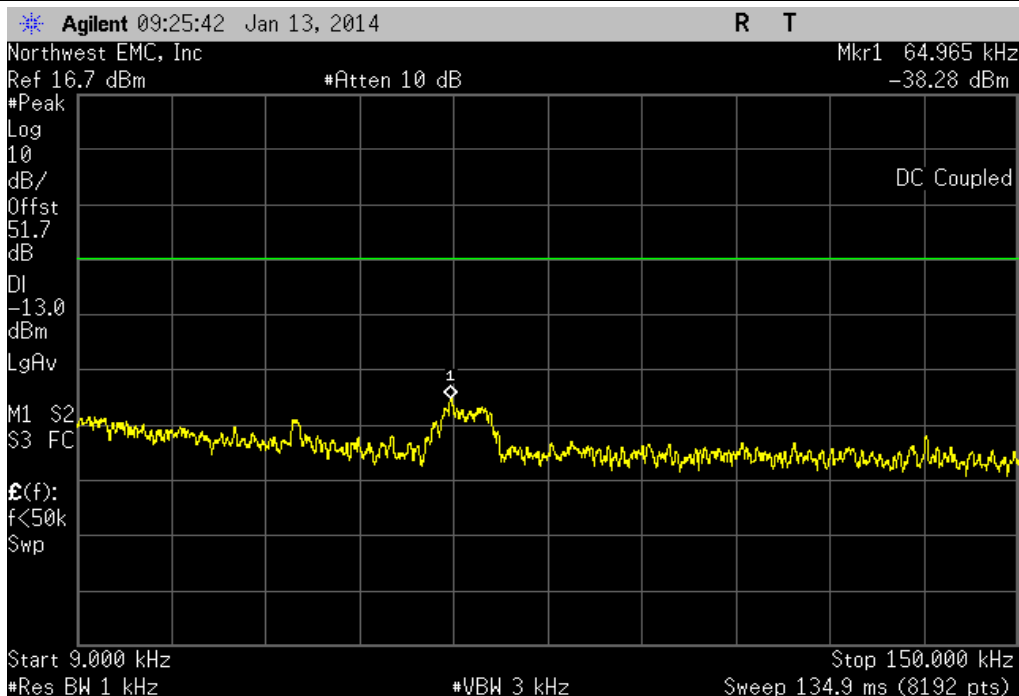
Port B, LTE 20M, Mid Channel, 30 MHz - 1 GHz							
				Value	Limit	Result	
				-31.13 dBm	-13 dBm	Pass	



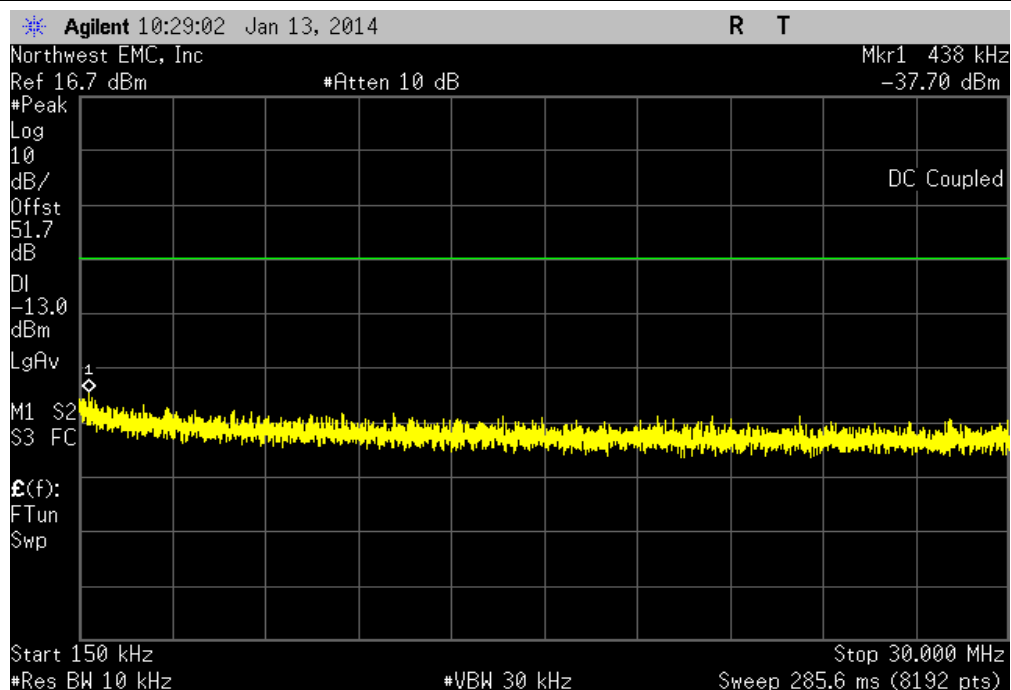
Port B, LTE 20M, Mid Channel, 1 GHz - 12.75 GHz							
				Value	Limit	Result	
				-16.52 dBm	-13 dBm	Pass	



Port B, LTE 20M, High Channel, 9 kHz - 150 kHz							
				Value	Limit	Result	
				-38.28 dBm	-13 dBm	Pass	

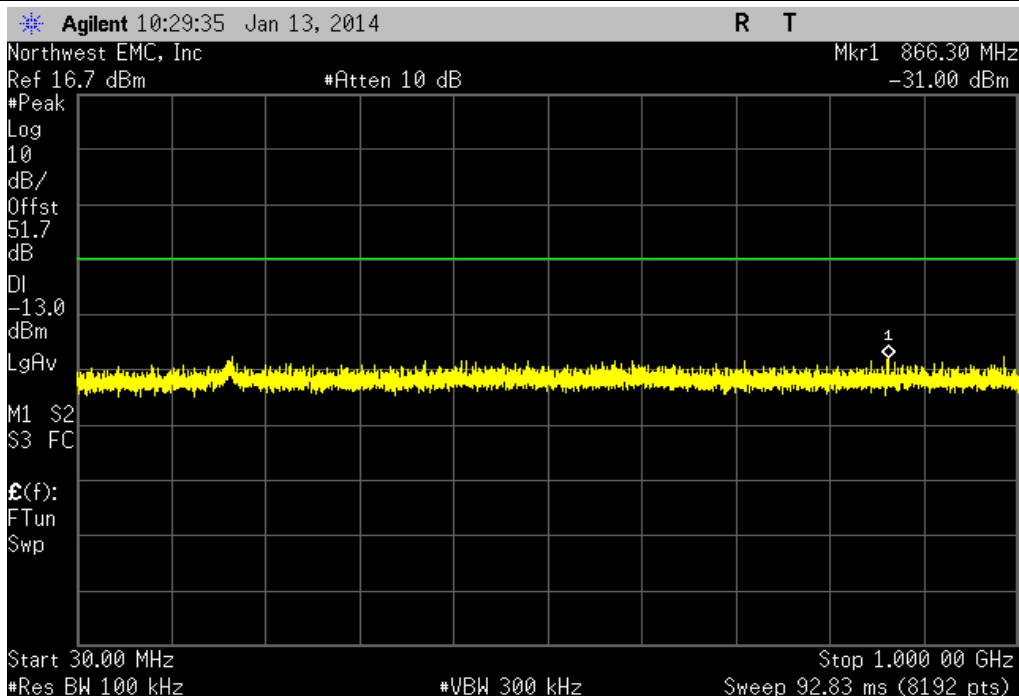


Port B, LTE 20M, High Channel, 150 kHz - 30 MHz							
				Value	Limit	Result	
				-37.70 dBm	-13 dBm	Pass	

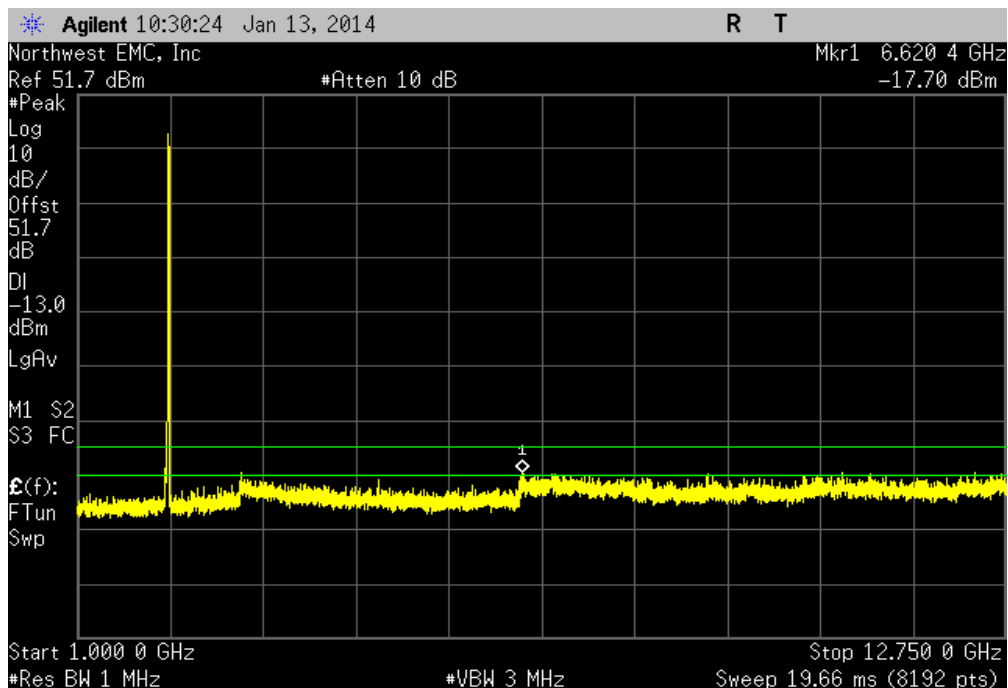




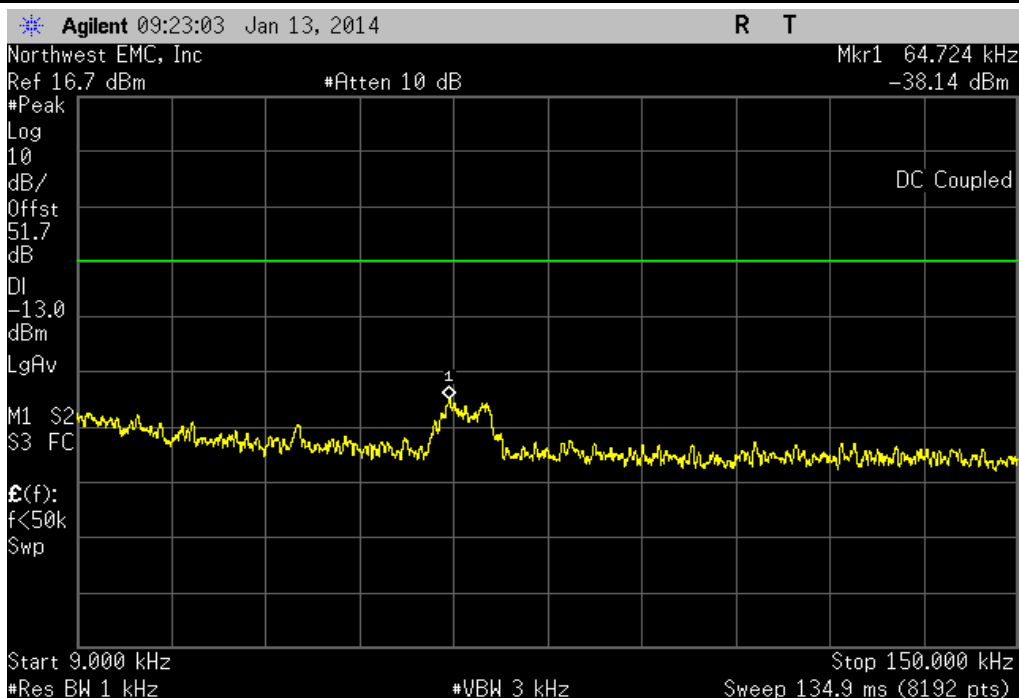
Port B, LTE 20M, High Channel, 30 MHz - 1 GHz							
				Value	Limit	Result	
				-31.00 dBm	-13 dBm	Pass	



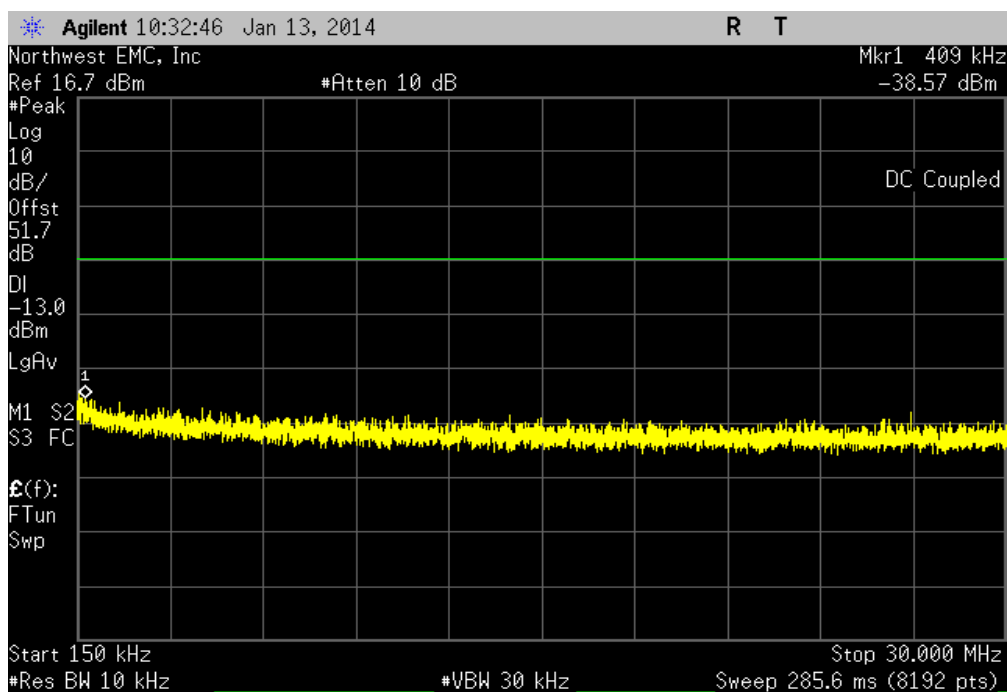
Port B, LTE 20M, High Channel, 1 GHz - 12.75 GHz							
				Value	Limit	Result	
				-17.70 dBm	-13 dBm	Pass	



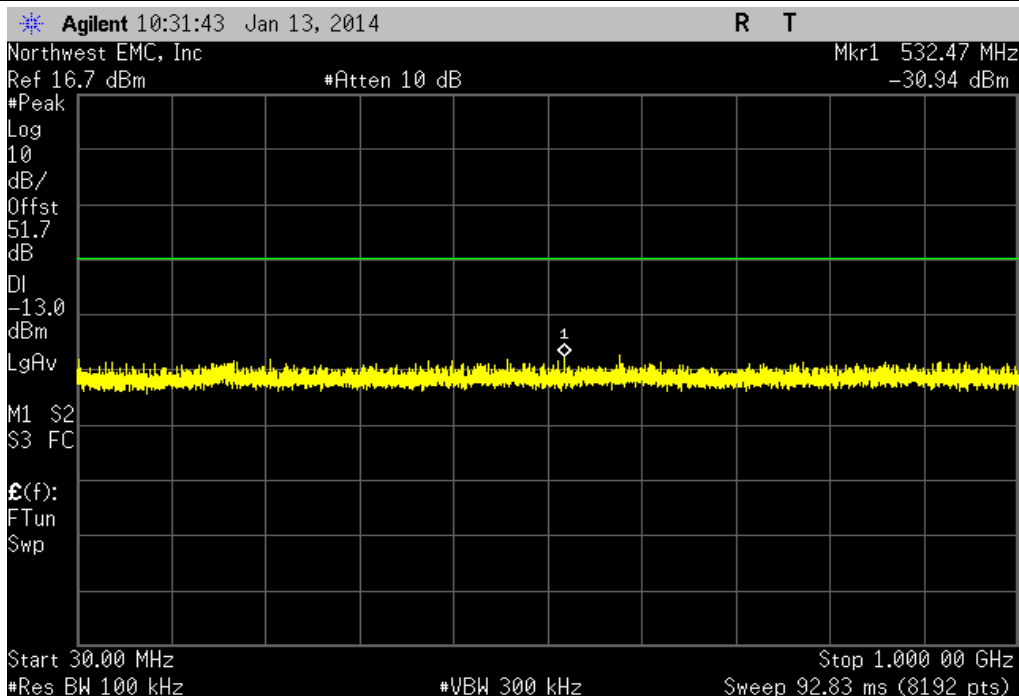
Port B, LTE 20M, Multi Channel, 9 kHz - 150 kHz							
					Value	Limit	Result
					-38.14 dBm	-13 dBm	Pass



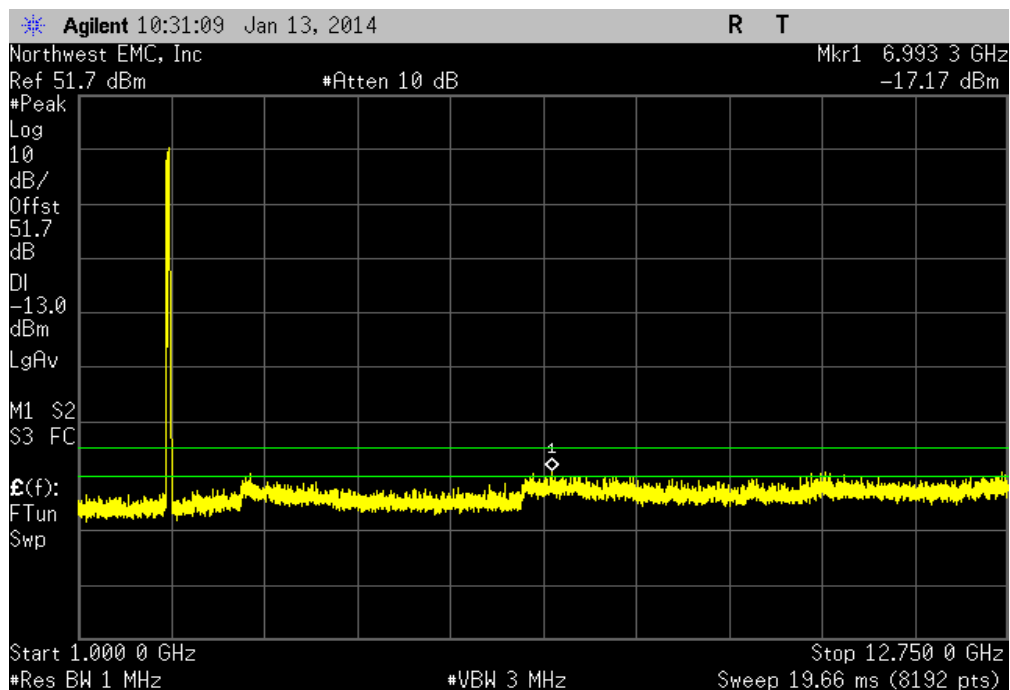
Port B, LTE 20M, Multi Channel, 150 kHz - 30 MHz							
					Value	Limit	Result
					-38.57 dBm	-13 dBm	Pass



Port B, LTE 20M, Multi Channel, 30 MHz - 1 GHz							
				Value	Limit	Result	
				-30.94 dBm	-13 dBm	Pass	



Port B, LTE 20M, Multi Channel, 1 GHz - 12.75 GHz							
				Value	Limit	Result	
				-17.17 dBm	-13 dBm	Pass	



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

## MODES OF OPERATION

Power: 60Wx2. See comments on data for channel and mode.

## POWER SETTINGS INVESTIGATED

48 VDC

## CONFIGURATIONS INVESTIGATED

KMWC0048 - 1

## FREQUENCY RANGE INVESTIGATED

Start Frequency	30 MHz	Stop Frequency	26 GHz
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## 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
Antenna, Horn	ETS	3117	AHQ	9/12/2012	36 mo
Antenna, Dipole	EMCO	3121C-DB1,DB2,DB3,DB4	ADC	5/17/2013	36 mo
Signal Generator	Agilent	E8257D	TGU	2/1/2012	36 mo
Attenuator	Coaxicom	66702 3910AF-20	TKH	6/6/2013	12 mo
HP Filter	Micro-Tronics	HPM50111	HFM	4/2/2012	36 mo
HP Filter	Micro-Tronics	HPM50108	HFW	4/2/2012	36 mo
Pre-Amplifier	Miteq	JSW45-26004000-40-5P	AVQ	1/10/2014	12 mo
Antenna, Horn	ETS	3160-10	AIX	NCR	0 mo
Cable	ESM Cable Corp.	KMKM-72	OC1	1/9/2014	12 mo
Pre-Amplifier	Miteq	AMF-6F-18002650-25-10P	AOI	1/10/2014	12 mo
Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	AOF	10/24/2013	12 mo
Antenna, Horn	ETS	3160-08	AHT	NCR	0 mo
Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AOE	10/24/2013	12 mo
Antenna, Horn	ETS	3160-07	AHR	NCR	0 mo
OC 10 Cables	N/A	8-18GHz RE Cables	OCO	10/24/2013	12 mo
Pre-Amplifier	Miteq	AMF-4D-010120-30-10P-1	AOP	6/6/2013	12 mo
Antenna, Horn	EMCO	3115	AHB	3/8/2011	36 mo
OC10 Cables	N/A	1-8GHz RE Cables	OCJ	10/24/2013	12 mo
Antenna, Biconilog	EMCO	3142	AXB	6/2/2013	36 mo
OC10 Cables	N/A	10kHz-1GHz RE Cables	OCH	6/6/2013	12 mo
Pre-Amplifier	Miteq	AM-1064-9079	AOO	6/6/2013	12 mo
Spectrum Analyzer	Agilent	E4440A	AFA	6/15/2012	24 mo

## MEASUREMENT BANDWIDTHS

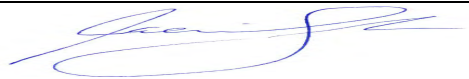
Frequency Range (MHz)	Peak Data (kHz)	Quasi-Peak Data (kHz)	Average Data (kHz)
0.01 - 0.15	1.0	0.2	0.2
0.15 - 30.0	10.0	9.0	9.0
30.0 - 1000	100.0	120.0	120.0
Above 1000	1000.0	N/A	1000.0

## TEST DESCRIPTION

The highest gain antenna to be used with the EUT was tested for final measurements. 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. 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.

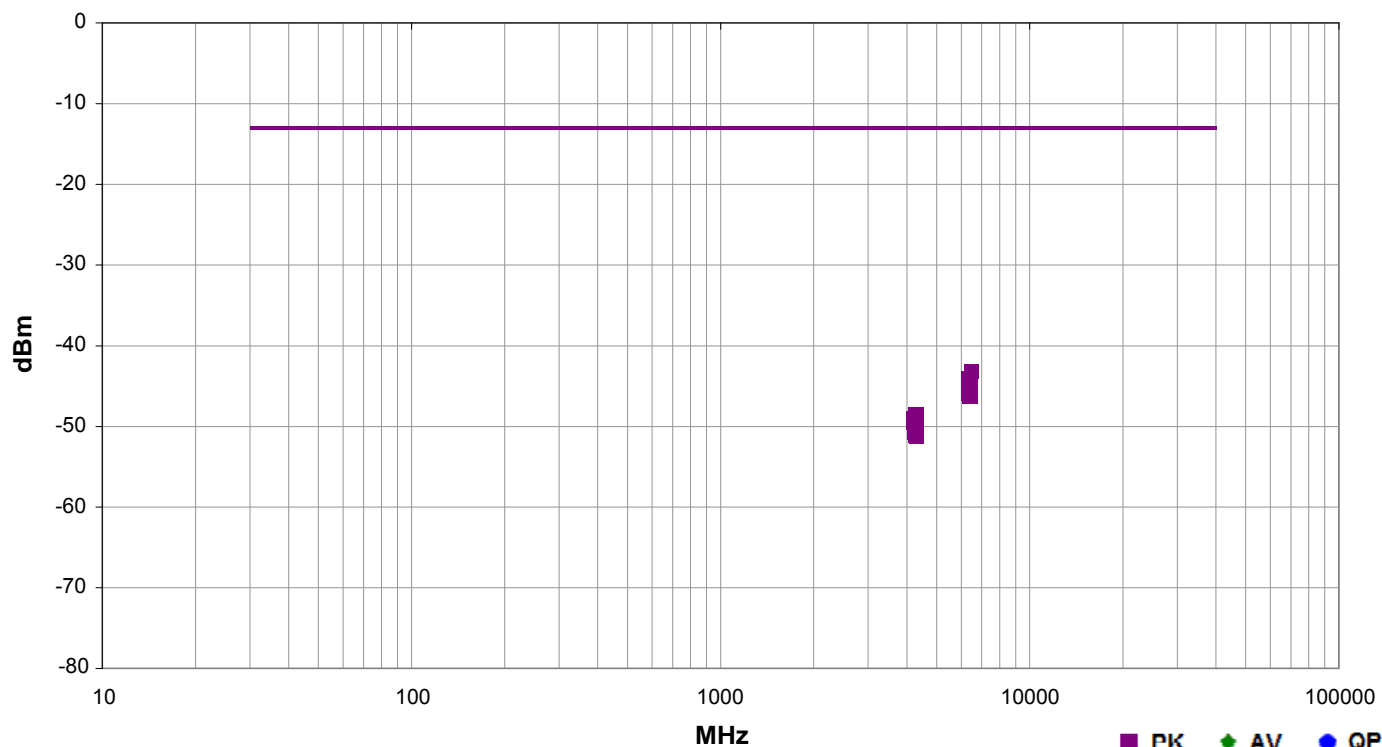
For licensed transmitters, the FCC references TIA/EIA-603 as the measurement procedure standard. TIA/EIA-603 Section 2.2.12 describes a method for measuring radiated spurious emissions that utilizes an antenna substitution method:

At an approved test site, the transmitter is placed on a remotely controlled turntable, and the measurement antenna is placed 3 meters from the transmitter. The turntable azimuth is varied to maximize the level of spurious emissions. The height of the measurement antenna is also varied from 1 to 4 meters. The amplitude and frequency of the highest emissions are noted. The transmitter is then replaced with a  $\frac{1}{2}$  wave dipole that is successively tuned to each of the highest spurious emissions for emissions below 1 GHz, and a horn antenna for emissions above 1 GHz. A signal generator is connected to the dipole (horn antenna for frequencies above 1 GHz), and its output is adjusted to match the level previously noted for each frequency. The output of the signal generator is recorded, and by factoring in the cable loss to the antenna and its gain; the power (dBm) into an ideal  $\frac{1}{2}$  wave dipole antenna is determined for each radiated spurious emission.

Work Order:	KMWC0048	Date:	01/14/14	
Project:	None	Temperature:	24.5 °C	
Job Site:	OC07	Humidity:	42.5% RH	
Serial Number:	U365000113	Barometric Pres.:	1012 mbar	
EUT:		AWS RRH		
Configuration:		1		
Customer:		KMW Communications		
Attendees:		Edward Lee		
EUT Power:		48 VDC		
Operating Mode:		Power: 60Wx2. See comments on data for channel and mode.		
Deviations:		None		
Comments:		None		

Test Specifications	Test Method
FCC 27L:2014	ANSI/TIA/EIA-603-C-2004

Run #	23	Test Distance (m)	3	Antenna Height(s)	1-4m	Results	Pass
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Freq (MHz)	Antenna Height (meters)	Azimuth (degrees)	Polarity/Transducer Type	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
6458.565	1.0	192.0	Horz	PK	4.81E-08	-43.2	-13.0	-30.2	LTE 5 MHz, High Channel
6344.145	1.0	353.0	Horz	PK	3.92E-08	-44.1	-13.0	-31.1	LTE 10 MHz, Low Channel
6451.395	3.7	252.0	Vert	PK	3.83E-08	-44.2	-13.0	-31.2	LTE 10 MHz, High Channel
6396.205	3.0	208.0	Vert	PK	3.77E-08	-44.2	-13.0	-31.2	LTE 5 MHz, Mid Channel
6336.525	1.0	46.0	Horz	PK	3.76E-08	-44.3	-13.0	-31.3	LTE 5 MHz, Low Channel
6345.530	2.3	182.0	Vert	PK	3.74E-08	-44.3	-13.0	-31.3	LTE 10 MHz, Low Channel
6398.195	1.0	131.0	Vert	PK	3.68E-08	-44.3	-13.0	-31.3	LTE 10 MHz, Mid Channel

Freq (MHz)	Antenna Height (meters)	Azimuth (degrees)	Polarity/ Transducer Type	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
6396.965	1.0	277.0	Horz	PK	3.51E-08	-44.5	-13.0	-31.5	LTE 5 MHz, Mid Channel
6456.815	3.2	255.0	Vert	PK	3.49E-08	-44.6	-13.0	-31.6	LTE 5 MHz, High Channel
6338.295	1.0	56.0	Vert	PK	3.42E-08	-44.7	-13.0	-31.7	LTE 5 MHz, Low Channel
6449.540	1.0	135.0	Horz	PK	3.41E-08	-44.7	-13.0	-31.7	LTE 10 MHz, High Channel
6396.170	1.0	338.0	Horz	PK	3.28E-08	-44.8	-13.0	-31.8	LTE 10 MHz, Mid Channel
6360.935	1.0	51.0	Horz	PK	2.89E-08	-45.4	-13.0	-32.4	LTE 20 MHz, Low Channel
6353.815	2.9	302.0	Vert	PK	2.83E-08	-45.5	-13.0	-32.5	LTE 15 MHz, Low Channel
6396.035	1.0	249.0	Horz	PK	2.73E-08	-45.6	-13.0	-32.6	LTE 20 MHz, Mid Channel
6434.095	1.0	310.0	Horz	PK	2.71E-08	-45.7	-13.0	-32.7	LTE 20 MHz, High Channel
6359.750	1.0	109.0	Vert	PK	2.58E-08	-45.9	-13.0	-32.9	LTE 20 MHz, Low Channel
6441.975	1.0	360.0	Horz	PK	2.53E-08	-46.0	-13.0	-33.0	LTE 15 MHz, High Channel
6353.470	1.0	23.0	Horz	PK	2.52E-08	-46.0	-13.0	-33.0	LTE 15 MHz, Low Channel
6396.760	2.2	107.0	Vert	PK	2.49E-08	-46.0	-13.0	-33.0	LTE 15 MHz, Mid Channel
6398.400	1.0	160.0	Horz	PK	2.37E-08	-46.2	-13.0	-33.2	LTE 15 MHz, Mid Channel
6398.650	3.7	174.0	Vert	PK	2.32E-08	-46.3	-13.0	-33.3	LTE 20 MHz, Mid Channel
6434.850	1.3	101.0	Vert	PK	2.31E-08	-46.4	-13.0	-33.4	LTE 20 MHz, High Channel
6443.025	4.0	100.0	Vert	PK	2.31E-08	-46.4	-13.0	-33.4	LTE 15 MHz, High Channel
4263.650	1.2	240.0	Vert	PK	1.41E-08	-48.5	-13.0	-35.5	LTE 10 MHz, Mid Channel
4298.660	1.0	13.0	Horz	PK	1.39E-08	-48.6	-13.0	-35.6	LTE 10 MHz, High Channel
4306.050	1.0	0.0	Horz	PK	1.26E-08	-49.0	-13.0	-36.0	LTE 5 MHz, High Channel
4224.130	1.0	99.0	Horz	PK	1.26E-08	-49.0	-13.0	-36.0	LTE 5 MHz, Low Channel
4263.915	1.0	208.0	Horz	PK	1.23E-08	-49.1	-13.0	-36.1	LTE 10 MHz, Mid Channel
4230.735	1.0	36.0	Horz	PK	1.22E-08	-49.1	-13.0	-36.1	LTE 10 MHz, Low Channel
4234.555	1.0	311.0	Horz	PK	1.19E-08	-49.2	-13.0	-36.2	LTE 15 MHz, Low Channel
4229.045	3.1	295.0	Vert	PK	1.17E-08	-49.3	-13.0	-36.3	LTE 10 MHz, Low Channel
4301.285	1.0	32.0	Vert	PK	1.13E-08	-49.5	-13.0	-36.5	LTE 10 MHz, High Channel
4263.540	1.0	0.0	Horz	PK	1.12E-08	-49.5	-13.0	-36.5	LTE 5 MHz, Mid Channel
4224.475	1.0	360.0	Vert	PK	1.12E-08	-49.5	-13.0	-36.5	LTE 5 MHz, Low Channel
4306.110	1.6	0.0	Vert	PK	1.07E-08	-49.7	-13.0	-36.7	LTE 5 MHz, High Channel
4264.120	1.1	245.0	Vert	PK	1.07E-08	-49.7	-13.0	-36.7	LTE 5 MHz, Mid Channel
4241.235	1.0	247.0	Vert	PK	9.89E-09	-50.0	-13.0	-37.0	LTE 20 MHz, Low Channel
4265.970	2.6	176.0	Vert	PK	9.55E-09	-50.2	-13.0	-37.2	LTE 20 MHz, Mid Channel
4291.170	1.0	88.0	Horz	PK	9.21E-09	-50.4	-13.0	-37.4	LTE 20 MHz, High Channel
4290.100	1.9	242.0	Vert	PK	8.80E-09	-50.6	-13.0	-37.6	LTE 20 MHz, High Channel
4235.305	1.0	6.0	Vert	PK	8.45E-09	-50.7	-13.0	-37.7	LTE 15 MHz, Low Channel
4264.575	1.0	335.0	Horz	PK	8.32E-09	-50.8	-13.0	-37.8	LTE 20 MHz, Mid Channel
4295.055	1.0	42.0	Horz	PK	8.19E-09	-50.9	-13.0	-37.9	LTE 15 MHz, High Channel
4265.945	1.0	103.0	Vert	PK	8.13E-09	-50.9	-13.0	-37.9	LTE 15 MHz, Mid Channel
4266.230	1.0	249.0	Horz	PK	7.58E-09	-51.2	-13.0	-38.2	LTE 15 MHz, Mid Channel
4296.330	1.0	318.0	Vert	PK	7.47E-09	-51.3	-13.0	-38.3	LTE 15 MHz, High Channel

## 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
Power Meter	Hewlett Packard	E4418A	SPA	4/11/2012	24
Power Sensor	Agilent	E4412A	SQE	4/11/2012	24
Signal Generator	Agilent	E8257D	TGU	2/1/2012	36
Chamber, Temperature/Humidity	Cincinnati Sub Zero (CSZ)	ZPHS-32-3.5-SCT/AC	TBE	NCR	0
Humidity Temperature Meter	Omega Engineering, Inc.	HH331	DUC	10/25/2011	36
Multimeter	Fluke	111	MMV	NCR	0
Spectrum Analyzer	Agilent	E4446A	AAY	2/22/2013	24

### TEST DESCRIPTION

#### Variation of Supply Voltage

The primary supply voltage was varied from 85% to 115% of the nominal voltage. A DC lab supply was used to vary the supply 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.


The measurement was made with a direct connection between the EUT antenna port and the test equipment. The spectrum analyzer is equipped with a precision frequency reference that exceeds the stability requirement of the EUT.





# FREQUENCY STABILITY

XMit 2013.08.15

EUT: AWS RRH		Work Order: KMWC0048	
Serial Number: U365000113		Date: 01/13/14	
Customer: KMW Communications		Temperature: 23.4°C	
Attendees: Edward Lee		Humidity: 42%	
Project: None		Barometric Pres.: 1012	
Tested by: Jaemi Suh		Power: 48VDC	
		Job Site: OC13	
TEST SPECIFICATIONS		Test Method	
FCC 27L:2014		ANSI/TIA/EIA-603-C-2004	
COMMENTS			
Power Level Settings: 60W. The spec is: Sufficient to ensure that the fundamental emissions stay within the authorized bands of operation"			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	1	Signature 	

## Frequency Stability with Variation of DC Voltage (Ambient Temperature = 20° C)

Voltage (VDC)	Assigned Frequency (MHz)	Measured Frequency (MHz)	Tolerance (ppm)	Specification (ppm)
55.2 (115%)	2132.500000	2132.500001	0.00	See Comments
52.8 (110%)	2132.500000	2132.500001	0.00	See Comments
50.4 (105%)	2132.500000	2132.500001	0.00	See Comments
48 (100%)	2132.500000	2132.500001	0.00	See Comments
45.6 (95%)	2132.500000	2132.500001	0.00	See Comments
43.2 (90%)	2132.500000	2132.500001	0.00	See Comments
40.8 (85%)	2132.500000	2132.500001	0.00	See Comments

## Frequency Stability with Variation of Ambient Temperature (Primary Supply = 48 VDC)

Temp (°C)	Assigned Frequency (MHz)	Measured Frequency (MHz)	Tolerance (ppm)	Specification (ppm)
50	2132.500000	2132.500001	0.00	See Comments
40	2132.500000	2132.500001	0.00	See Comments
30	2132.500000	2132.500001	0.00	See Comments
20	2132.500000	2132.500001	0.00	See Comments
10	2132.500000	2132.500001	0.00	See Comments
0	2132.500000	2132.500001	0.00	See Comments
-10	2132.500000	2132.500001	0.00	See Comments
-20	2132.500000	2132.500001	0.00	See Comments
-30	2132.500000	2132.500001	0.00	See Comments