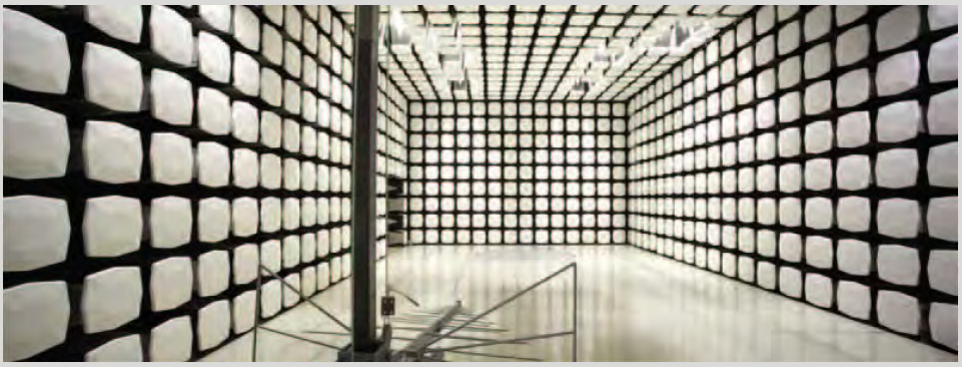
TE Connectivitiy / ADC Telecommunications

Prism HDM 1900 MHz / 2100 MHz SISO RF Module

FCC 27H:2014

Report #: TECO0017.1



Report Prepared By Northwest EMC Inc.

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

California – Minnesota – Oregon – New York – Washington

CERTIFICATE OF TEST

WTD 12.5.23

Last Date of Test: July 21, 2014
TE Connectivitiy / ADC Telecommunications
Model: Prism HDM 1900 MHz / 2100 MHz SISO RF Module

Emissions

Test Description	Specification	Test Method	Pass/Fail
Conducted Output Power	FCC 27:2014 FCC 2.1046	ANSI/TIA/EIA-603-C-2004	Pass
Occupied Bandwidth	FCC 27:2014, FCC 2.1049	ANSI/TIA/EIA-603-C-2004	Pass
Out of Band Emissions - Conducted	FCC 27:2014, FCC 2.1051	ANSI/TIA/EIA-603-C-2004	Pass
Band Edge	FCC 27:2014, FCC 2.1051	ANSI/TIA/EIA-603-C-2004	Pass
Intermodulation	FCC 27:2014, FCC 2.1051	ANSI/TIA/EIA-603-C-2004	Pass
Frequency Stability	FCC 27:2014, FCC 2.1055	ANSI/TIA/EIA-603-C-2004	Pass
Field Strength of Spurious Emissions	FCC 27:2014, FCC 2.1053	ANSI/TIA/EIA-603-C-2004	Pass
Spurious Radiated Emissions	FCC 27:2014, FCC 2.1053	ANSI/TIA/EIA-603-C-2004	Pass

Deviations From Test Standards

None

Approved By:

Tim O'Shea, Operations Manager

NVLAP Lab Code: 200881-0

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

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

REVISION HISTORY

REV 2012.08.02

Revision Number	Description	Date	Page Number
00	None		

Barometric Pressure

The recorded barometric pressure has been normalized to sea level.

NORTHWEST EMC

REV 2012.05.24

ACCREDITATIONS AND AUTHORIZATIONS

United States

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

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

NVLAP - Each laboratory is accredited by NVLAP to ISO 17025

Canada

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

European Union

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

Australia/New Zealand

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

Korea

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

Japan

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

Taiwan

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

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

Singapore

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

Hong Kong

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

Vietnam

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

Russia

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

SCOPE

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

MEASUREMENT UNCERTAINTY

Measurement Uncertainty

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

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

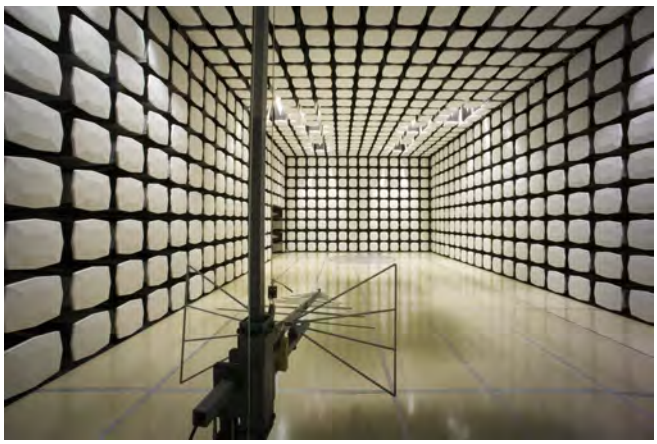
The following table represents the Measurement Uncertainty (MU) budgets for each of the tests that may be contained in this report.

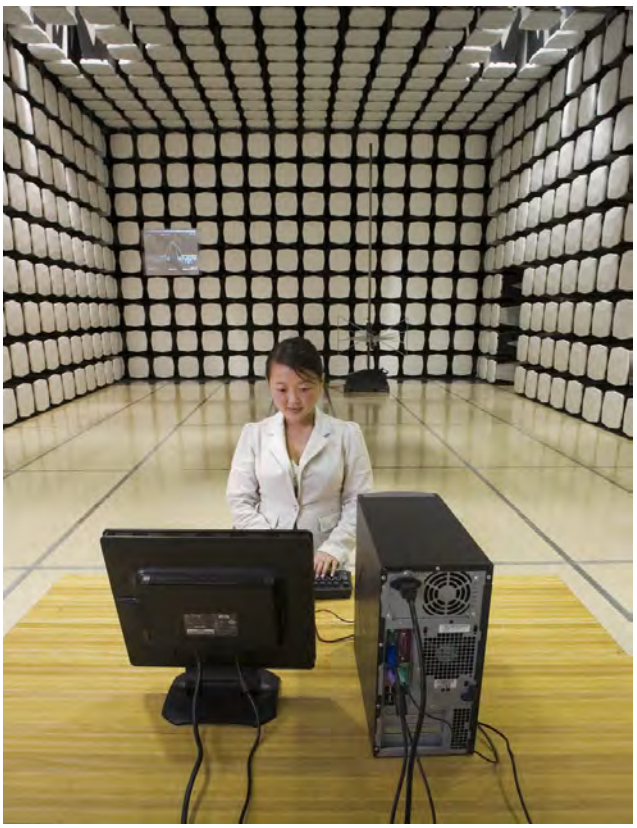
Test	+ MU	- MU
Frequency Accuracy (Hz)	0.12	-0.01
Amplitude Accuracy (dB)	0.49	-0.49
Conducted Power (dB)	0.41	-0.41
Radiated Power via Substitution (dB)	0.69	-0.68
Temperature (degrees C)	0.81	-0.81
Humidity (% RH)	2.89	-2.89
Field Strength (dB)	3.80	-3.80
AC Powerline Conducted Emissions (dB)	2.94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

FACILITIES

REV 2013.06.28

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





PRODUCT DESCRIPTION

Client and Equipment Under Test (EUT) Information

Company Name:	TE Connectivitiy / ADC Telecommunications
Address:	1187 Park Place
City, State, Zip:	Shakopee, MN 55379
Test Requested By:	Joshua Wittman
Model:	Prism HDM 1900 MHz / 2100 MHz SISO RF Module
First Date of Test:	July 22, 2013
Last Date of Test:	July 21, 2014
Receipt Date of Samples:	July 22, 2013
Equipment Design Stage:	Production
Equipment Condition:	No Damage

Information Provided by the Party Requesting the Test

Functional Description of the EUT (Equipment Under Test):

Prism HDM 1900 MHz / 2100 MHz SISO RF Module. The Prism HDM is an industrial signal booster which is used to enhance wireless networks in outdoor locations and large venues.

Testing Objective:

To demonstrate compliance to FCC Part 27. The radio/transmitter under test is the same radio as in Northwest EMC work order TECO0004. The only difference is the radio is repackaged into a with another radio so conducted measurements taken previously were used in this report.

CONFIGURATIONS

Configuration TECO0004- 1

Software/Firmware Running during test	
Description	**Version**
PRU	8.1.1.0dev9

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
RF Amplifier	TE Connectivity/ADC Telecommunications	FWP-84MTA4MMOD	None

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
RF Signal Generator	Aeroflex	IFR 3413	341006
Power Supply	Sorensen	DCS80-13E	None
IO Control Device	TE Connectivity/ADC Telecommunications	SVT-HOSTSUP-5	225607886
Laptop	Dell	Latitude D630	34562243089
Laptop Supply	Dell	LA90PS0-00	CN-0DF266-71615-68A-7166
30 dB attenuator	Aeroflex	86-30-12DC-22GHz	369
30 dB attenuator	Aeroflex	57-30-43	NL616

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
AC Power	No	> 3m	No	RF Amplifier	AC Mains
Fiber	No	> 3m	No	RF Amplifier	IO Control Device
RF x2	Yes	0.9m	No	RF Amplifier	30 dB attenuator
RF x2	Yes	0.7m	No	IO Control Device	RF Signal Generator
AC Power	No	1.8m	No	RF Signal Generator	AC Mains
AC Power	No	1.8m	No	Power Supply	AC Mains
DC Power	No	2.8m	Yes	IO Control Device	Power Supply
AC Power	No	1.8m	No	Laptop Supply	AC Mains
DC Power	No	1.8m	Yes	Laptop	Laptop Supply
Ethernet	No	1.5m	No	Laptop	IO Control Device
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

CONFIGURATIONS

Configuration TECO0004- 2

Software/Firmware Running during test	
Description	**Version**
PRU	8.1.1.0dev9

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
RF Amplifier	TE Connectivity/ADC Telecommunications	FWP-84MTA4MMOD	None

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
30 dB attenuator	Aeroflex	57-30-43	NL616
30 dB attenuator	Inmet Corp.	2N75W-30-296	None

Remote Equipment Outside of Test Setup Boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
RF Signal Generator	Aeroflex	IFR 3413	341006
Power Supply	Sorensen	DCS80-13E	None
IO Control Device	TE Connectivity/ADC Telecommunications	SVT-HOSTSUP-5	225607886
Laptop	Dell	Latitude D630	34562243089
Laptop Supply	Dell	LA90PS0-00	CN-0DF266-71615-68A-7166

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
AC Power	No	> 3m	No	RF Amplifier	AC Mains
Fiber	No	> 3m	No	RF Amplifier	IO Control Device
RF x2	Yes	0.9m	No	RF Amplifier	30 dB attenuator
RF x2	Yes	0.7m	No	IO Control Device	RF Signal Generator
AC Power	No	1.8m	No	RF Signal Generator	AC Mains
AC Power	No	1.8m	No	Power Supply	AC Mains
DC Power	No	2.8m	Yes	IO Control Device	Power Supply
AC Power	No	1.8m	No	Laptop Supply	AC Mains
DC Power	No	1.8m	Yes	Laptop	Laptop Supply
Ethernet	No	1.5m	No	Laptop	IO Control Device
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

CONFIGURATIONS

Configuration TECO0017- 2

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
RF Amplifier	TE Connectivitiy / ADC Telecommunications	FWP-84MTA4MMOD	None

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
30 dB Attenuator 1	Aeroflex / Weinschel	57-30-43	RA434
30 dB Attenuator 3	Aeroflex / Weinschel	57-30-43	NL616

Remote Equipment Outside of Test Setup Boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Signal Generator	Tektronix	Aeroflex IFR 3413	341006/252
Laptop	Dell	Latitude D630	34562243089
IO Control Device	TE Connectivitiy / ADC Telecommunications	SVT-GU-1011	MIN-1301041310-002
Laptop AC Adapter	Dell	PA-1900-02D	CN-09T215-55R-0526
DC Power Supply	Mean Well	SE-600-48	EB11101765

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
Fiber Optic Cable	No	>3m	No	IO Control Device	Prism
AC Power Cable (Laptop)	No	85cm	No	AC Mains	Laptop AC Adapter
DC Power Cable (Laptop)	No	1.8m	No	Laptop AC Adapter	Laptop
Ethernet Cable	No	160cm	No	Laptop	IO Control Device
AC Power Cable (DC Power Supply)	No	225cm	No	AC Mains	DC Power Supply
AC Power Cable (Signal Generator)	No	180cm	No	AC Mains	Signal Generator
DC Power Cable	No	290cm	No	DC Power Supply	IO Control Device
Coaxial Cable	Yes	150cm	No	Signal Generator	IO Control Device
AC Power Cable (Prism)	No	500cm	No	Prism	AC Mains
Coaxial Cable	Yes	0.8m	No	Prism	30 dB Attenuator 1
Coaxial Cable	Yes	0.9m	No	Prism	30 dB Attenuator 2
GND	No	0.4m	No	Prism	GND
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

MODIFICATIONS

WTD 12.5.23

Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	7/22/2013	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	7/23/2013	Occupied Bandwidth	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
3	7/23/2013	Band Edge Compliance	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
4	7/23/2013	Intermodulation	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
5	7/23/2013	Out of Band Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
6	7/24/2013	Frequency Stability	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing completed.
7	7/21/2014	Spurious Radiated Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing completed.

DUTY CYCLE

TEST DESCRIPTION

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

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

The EUT operates at 100% Duty Cycle.

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
Attenuator - 20db, 'SMA'	SM Electronics	SA26B-20	RFW	4/12/2013	12
40 GHz DC block	Fairview Microwave	SD3379	AMI	10/5/2012	12
Signal Generator MXG	Agilent	N5183A	TIK	6/7/2012	36
Spectrum Analyzer	Agilent	E4440A	AAX	5/15/2012	24

TEST DESCRIPTION

The Average (RMS) output power was measured with the EUT set to the parameters called out in the data sheets. 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, including cables and attenuators were calibrated and added into the reference level offset.

CONDUCTED OUTPUT POWER

EUT:	Prism HDM 1900 MHz / 2100 MHz SISO RF Module			**Work Order:**	TECO0004
Serial Number:	None			**Date:**	07/22/13
Customer:	TE Connectivity/ADC Telecommunications			**Temperature:**	26.2°C
Attendees:	None			**Humidity:**	51%
Project:	None			**Barometric Pres.:**	1004.8
Tested by:	Trevor Buls	**Power:**	110VAC/60Hz	**Job Site:**	MN08

TEST SPECIFICATIONS	Test Method
FCC 27:2014	ANSI/TIA/EIA-603-C-2004

COMMENTS

Customer provided a high wattage 30 dB attenuator. Port 2 was determined to have the highest output power. This port will be used for the remainder of the direct connect testing.

DEVIATIONS FROM TEST STANDARD

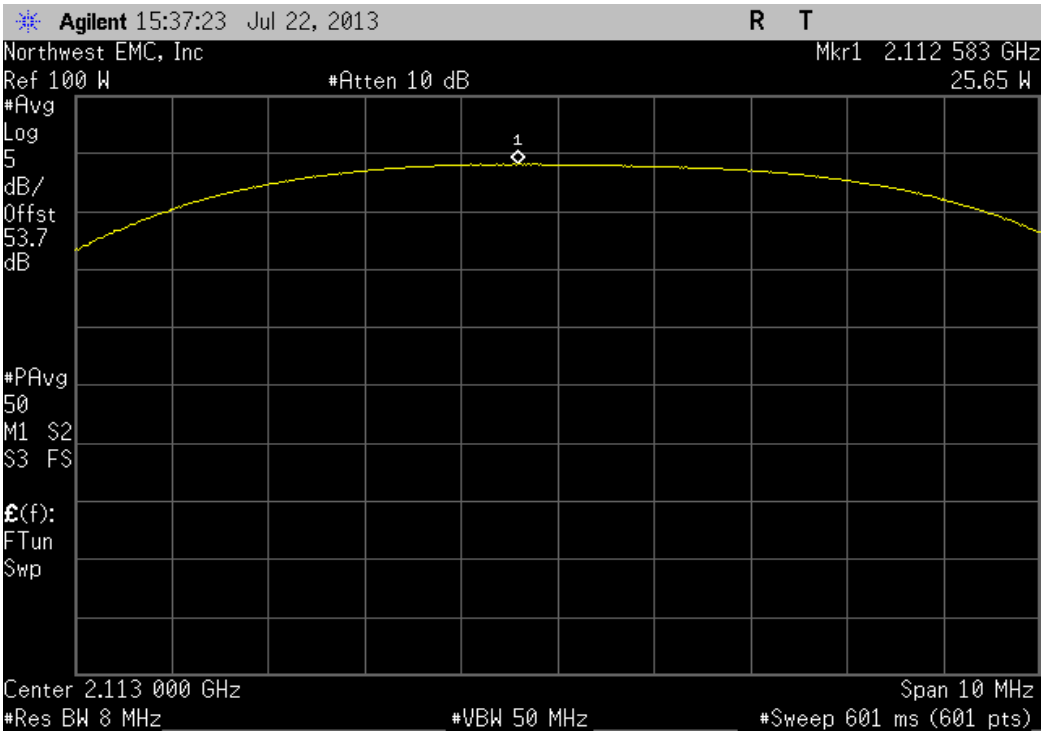
None

Configuration #	1	*Signature* Trevor Buls

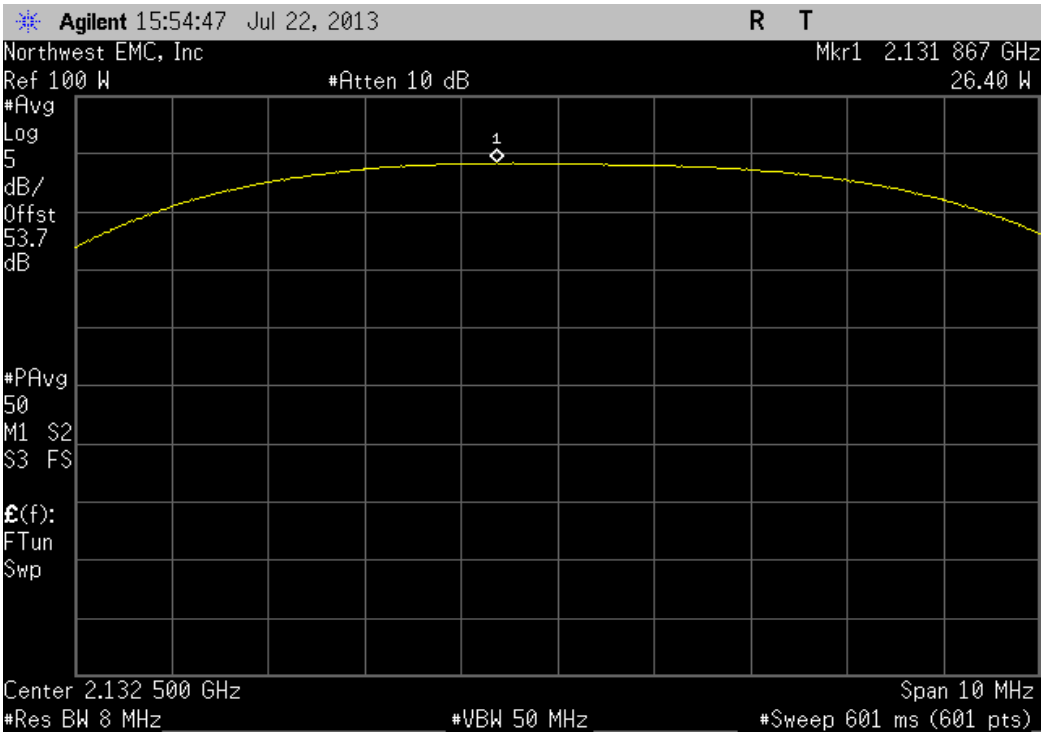
		Value (dBm)	Value (W)	Limit	Result
Path 1					
	WCDMA				
	Low Channel 2113 MHz	44.1	25.651 W	< 1640 W	Pass
	Mid Channel 2132.5 MHz	44.2	26.4 W	< 1640 W	Pass
	High Channel 2152 MHz	43.5	22.449 W	< 1640 W	Pass
	LTE 5 MHz				
	Low Channel 2113 MHz	44.1	25.728 W	< 1640 W	Pass
	Mid Channel 2132.5 MHz	44.3	26.748 W	< 1640 W	Pass
	High Channel 2152 MHz	43.4	21.792 W	< 1640 W	Pass
	LTE 10 MHz				
	Mid Channel 2132.5 MHz	43.2	21.117 W	< 1640 W	Pass
	Low Channel 2117 MHz	43.7	23.494 W	< 1640 W	Pass
	High Channel 2148 MHz	43.1	20.461 W	< 1640 W	Pass
Path 2					
	WCDMA				
	Low Channel 2113 MHz	44.2	26.002 W	< 1640 W	Pass
	Mid Channel 2132.5 MHz	44.5	28.028 W	< 1640 W	Pass
	High Channel 2152 MHz	43.8	23.752 W	< 1640 W	Pass
	LTE 5 MHz				
	Low Channel 2113 MHz	44.3	26.693 W	< 1640 W	Pass
	Mid Channel 2132.5 MHz	44.6	28.834 W	< 1640 W	Pass
	High Channel 2152 MHz	44.2	26.485 W	< 1640 W	Pass
	LTE 10 MHz				
	Mid Channel 2132.5 MHz	43.3	21.425 W	< 1640 W	Pass
	Low Channel 2117 MHz	43.6	22.806 W	< 1640 W	Pass
	High Channel 2148 MHz	43.7	23.221 W	< 1640 W	Pass

CONDUCTED OUTPUT POWER

Path 1, WCDMA, Low Channel 2113 MHz						
		Value (dBm)		Value (W)	Limit	Result
		44.1		25.651 W	< 1640 W	Pass

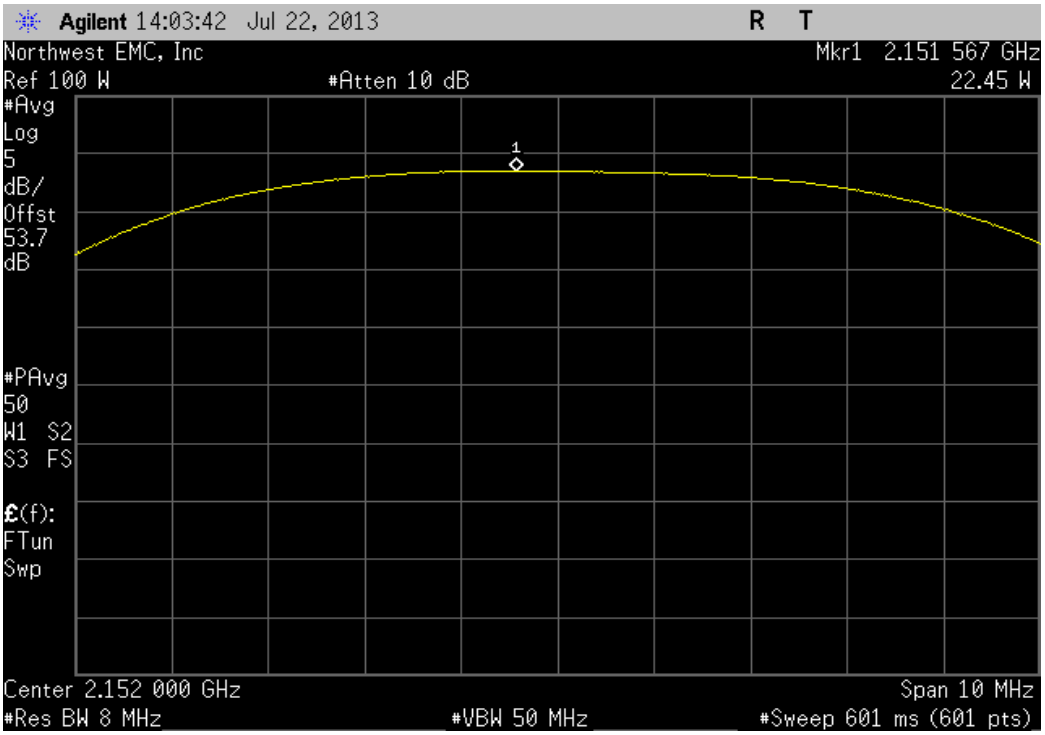


Path 1, WCDMA, Mid Channel 2132.5 MHz						
		Value (dBm)		Value (W)	Limit	Result
		44.2		26.4 W	< 1640 W	Pass

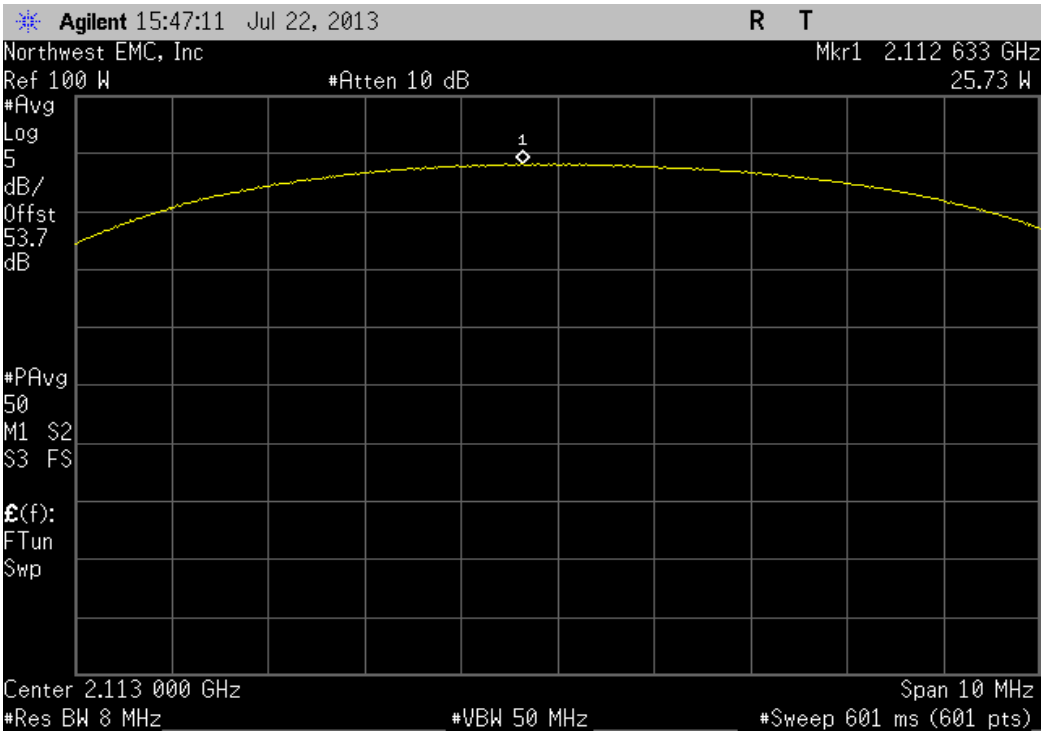


CONDUCTED OUTPUT POWER

Path 1, WCDMA, High Channel 2152 MHz						
		Value (dBm)		Value (W)	Limit	Result
		43.5		22.449 W	< 1640 W	Pass

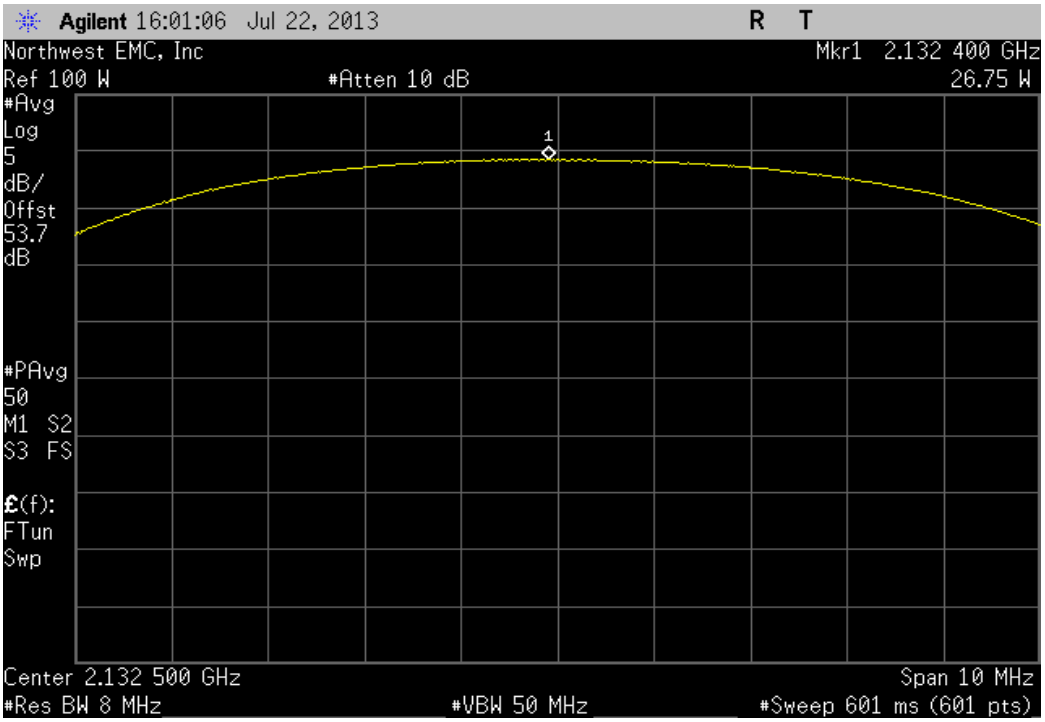


Path 1, LTE 5 MHz, Low Channel 2113 MHz						
		Value (dBm)		Value (W)	Limit	Result
		44.1		25.728 W	< 1640 W	Pass

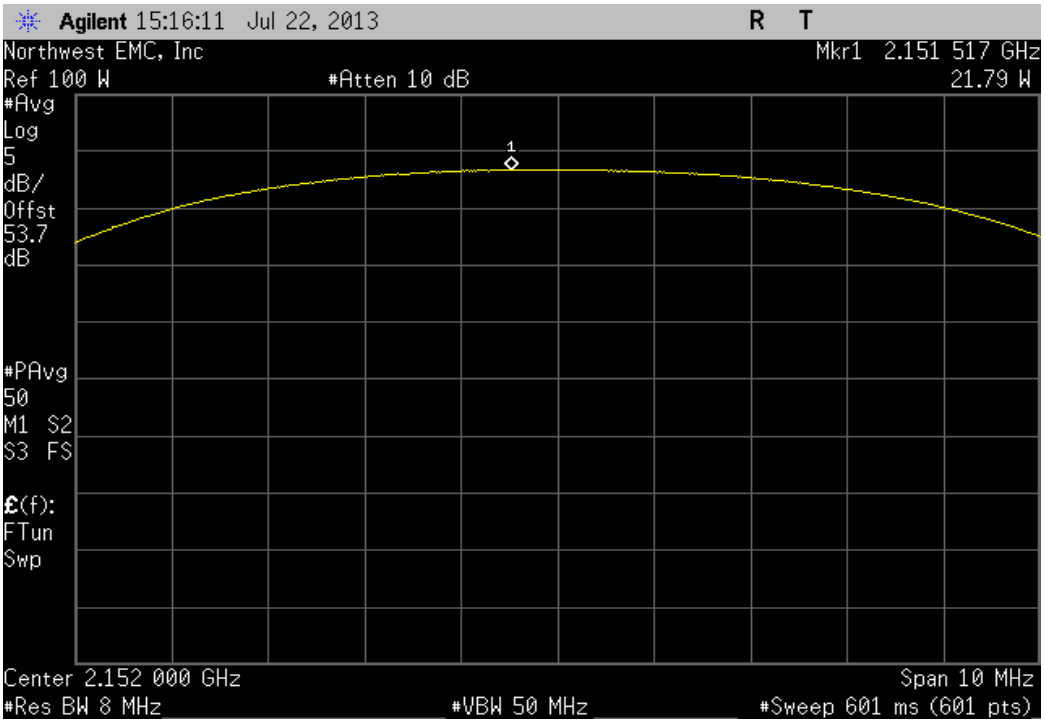


CONDUCTED OUTPUT POWER

Path 1, LTE 5 MHz, Mid Channel 2132.5 MHz						
		Value (dBm)		Value (W)	Limit	Result
		44.3		26.748 W	< 1640 W	Pass

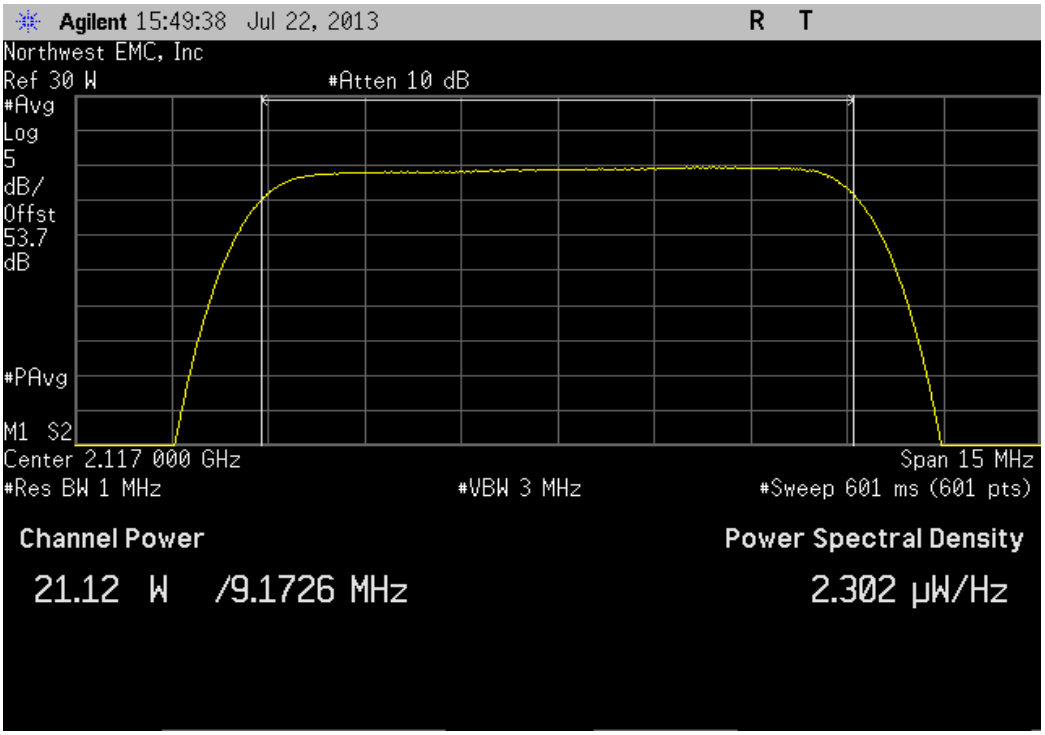


Path 1, LTE 5 MHz, High Channel 2152 MHz						
		Value (dBm)		Value (W)	Limit	Result
		43.4		21.792 W	< 1640 W	Pass

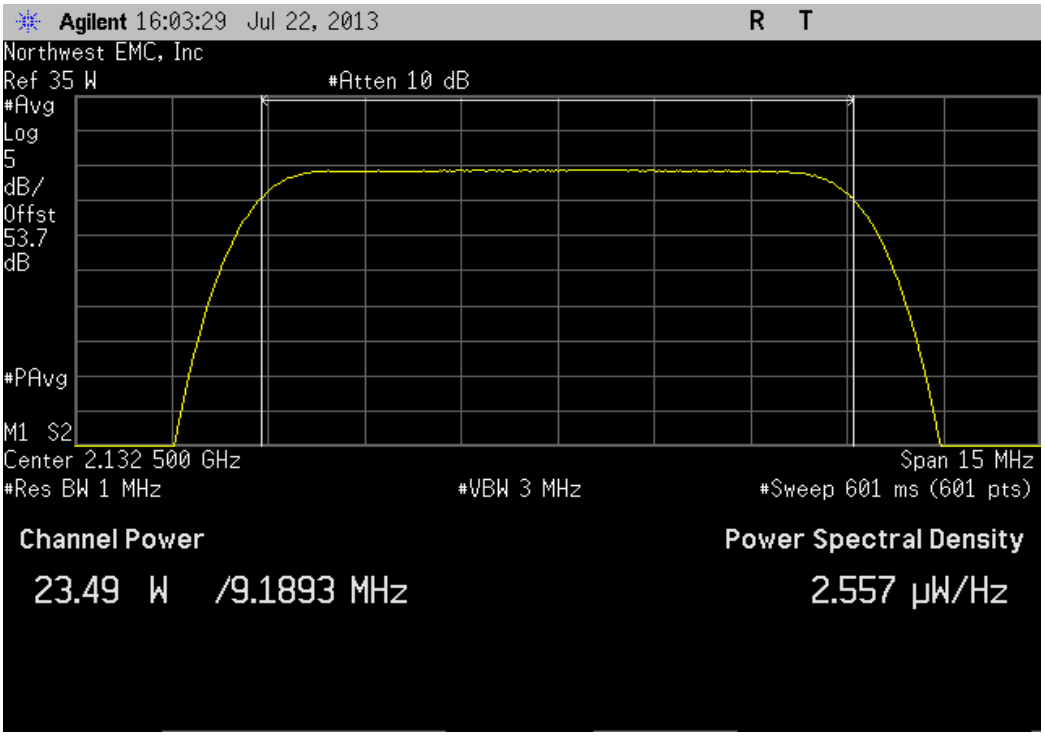


CONDUCTED OUTPUT POWER

Path 1, LTE 10 MHz, Mid Channel 2132.5 MHz						
		Value (dBm)		Value (W)	Limit	Result
		43.2		21.117 W	< 1640 W	Pass

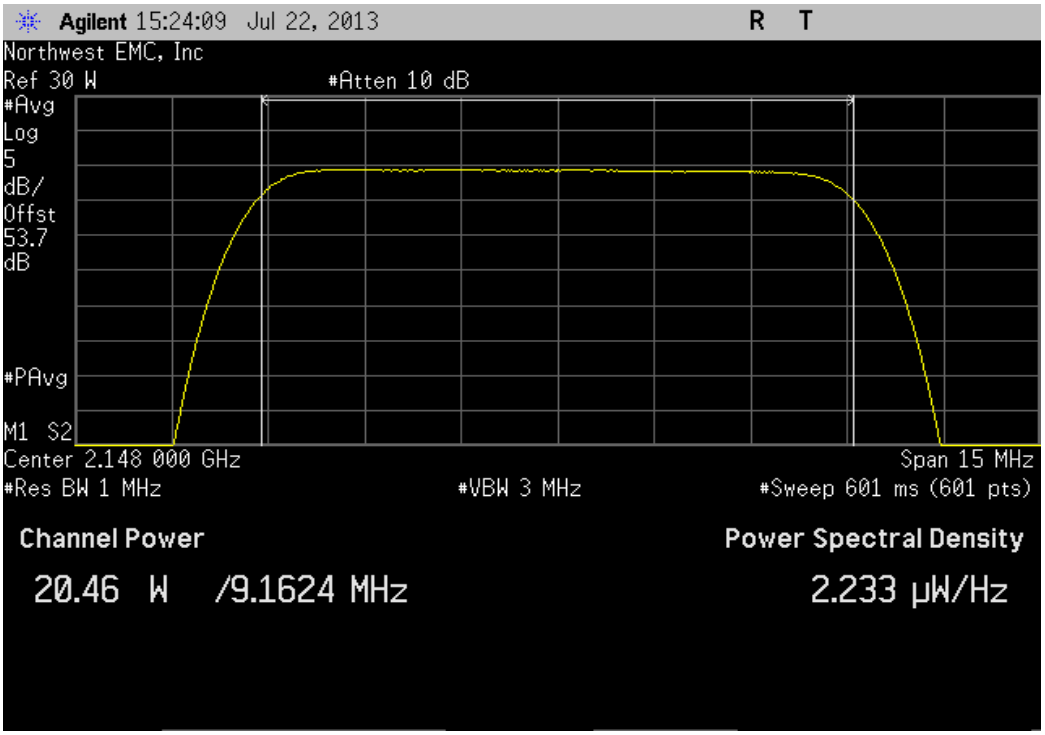


Path 1, LTE 10 MHz, Low Channel 2117 MHz						
		Value (dBm)		Value (W)	Limit	Result
		43.7		23.494 W	< 1640 W	Pass

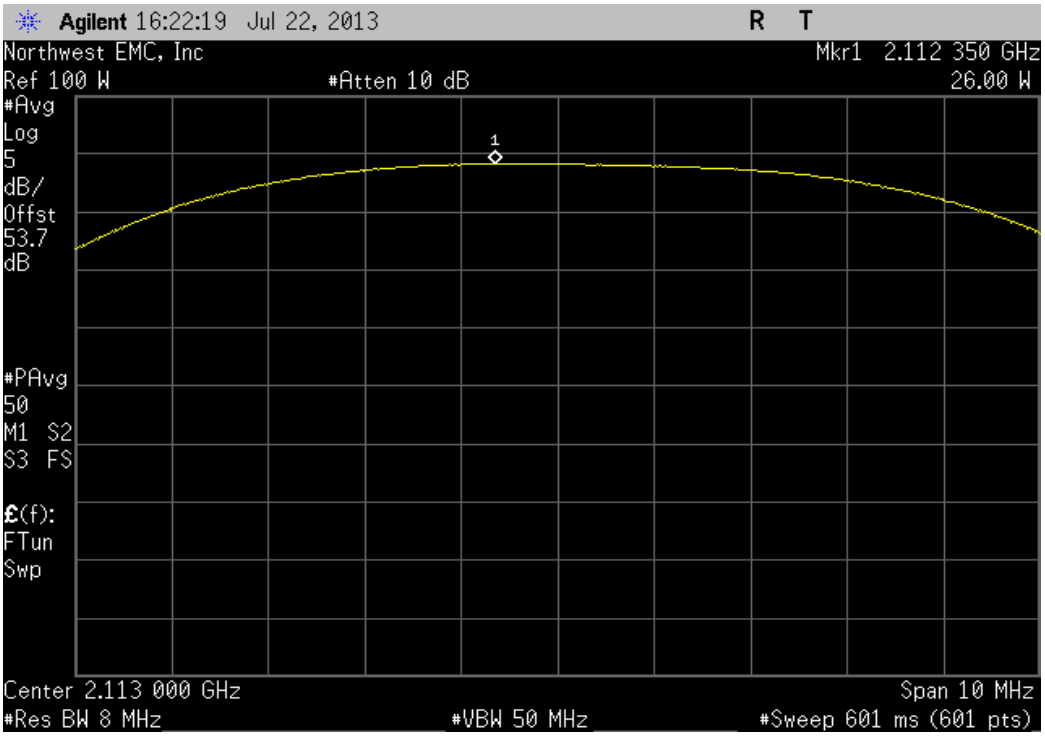


CONDUCTED OUTPUT POWER

Path 1, LTE 10 MHz, High Channel 2148 MHz						
		Value (dBm)		Value (W)	Limit	Result
		43.1		20.461 W	< 1640 W	Pass

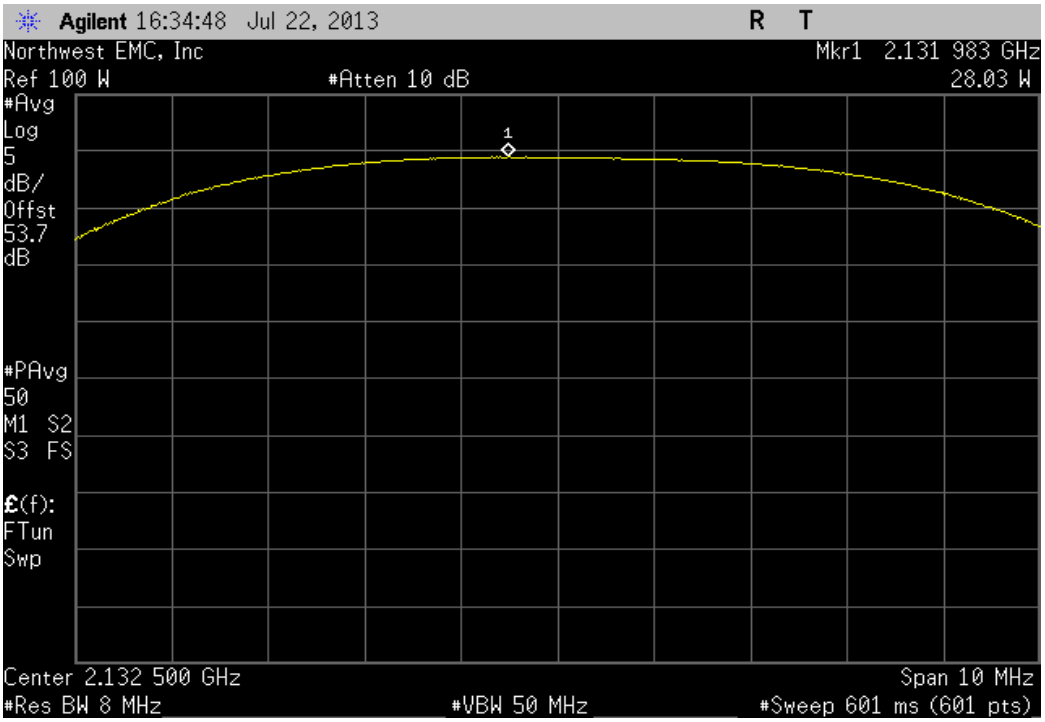


Path 2, WCDMA, Low Channel 2113 MHz						
		Value (dBm)		Value (W)	Limit	Result
		44.2		26.002 W	< 1640 W	Pass

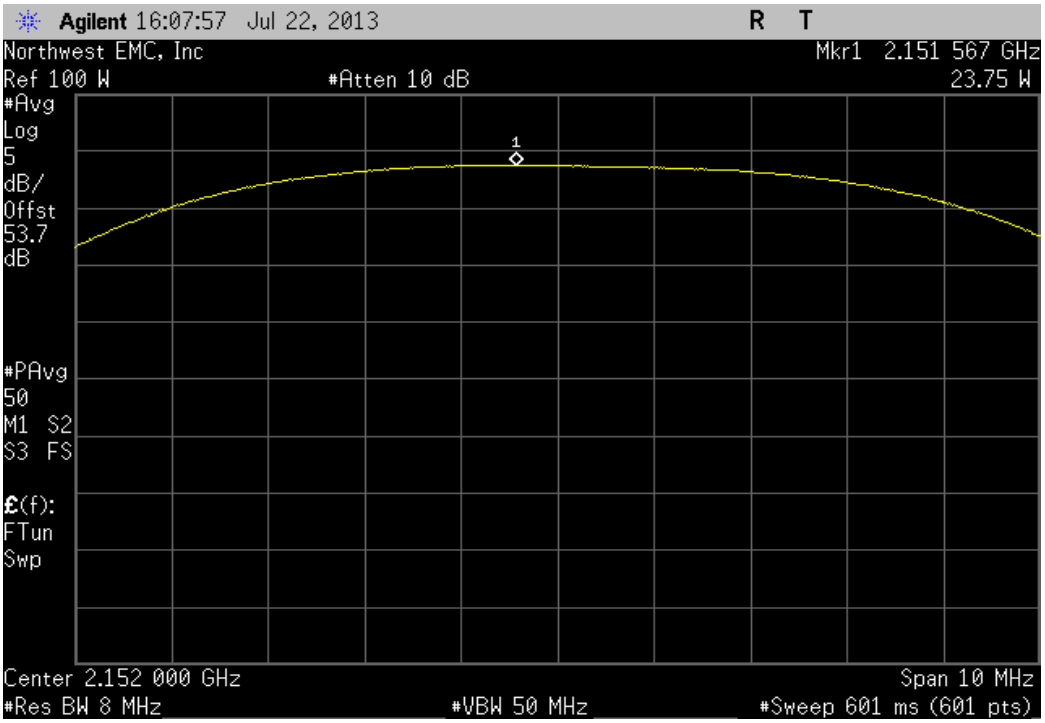


CONDUCTED OUTPUT POWER

Path 2, WCDMA, Mid Channel 2132.5 MHz						
		Value (dBm)		Value (W)	Limit	Result
		44.5		28.028 W	< 1640 W	Pass

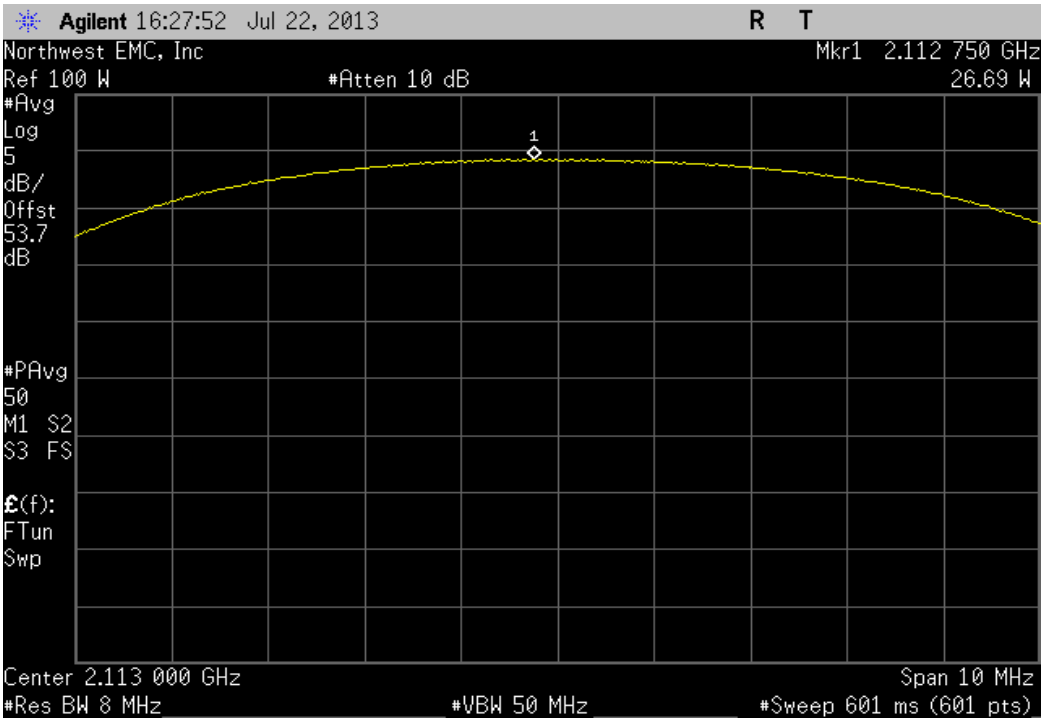


Path 2, WCDMA, High Channel 2152 MHz						
		Value (dBm)		Value (W)	Limit	Result
		43.8		23.752 W	< 1640 W	Pass

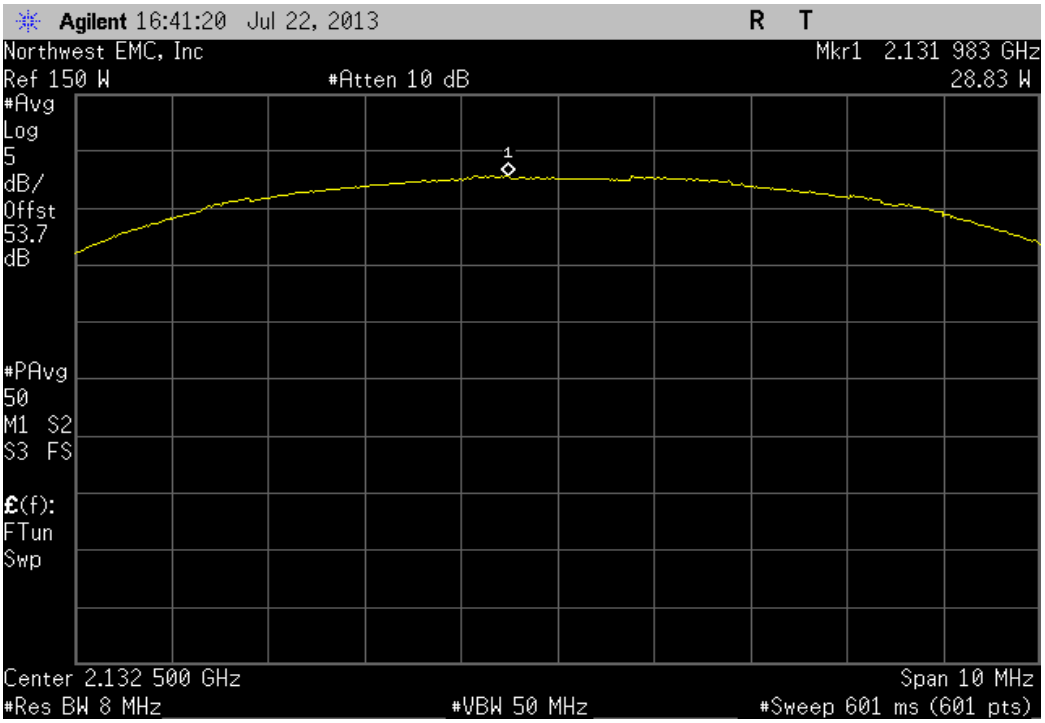


CONDUCTED OUTPUT POWER

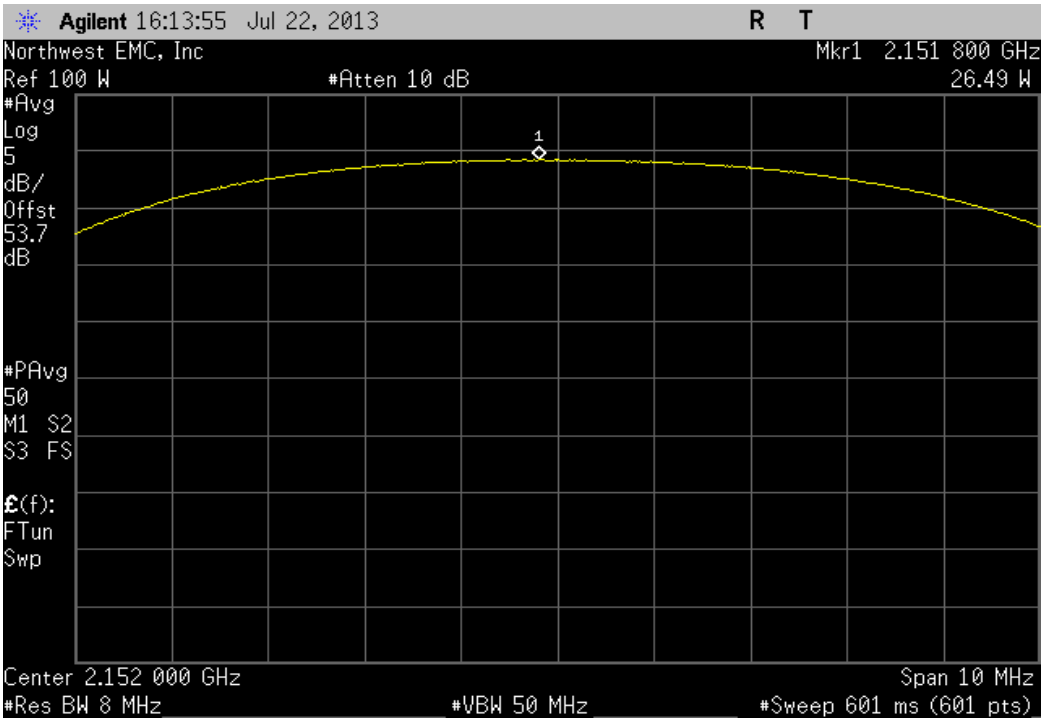
Path 2, LTE 5 MHz, Low Channel 2113 MHz						
		Value (dBm)		Value (W)	Limit	Result
		44.3		26.693 W	< 1640 W	Pass



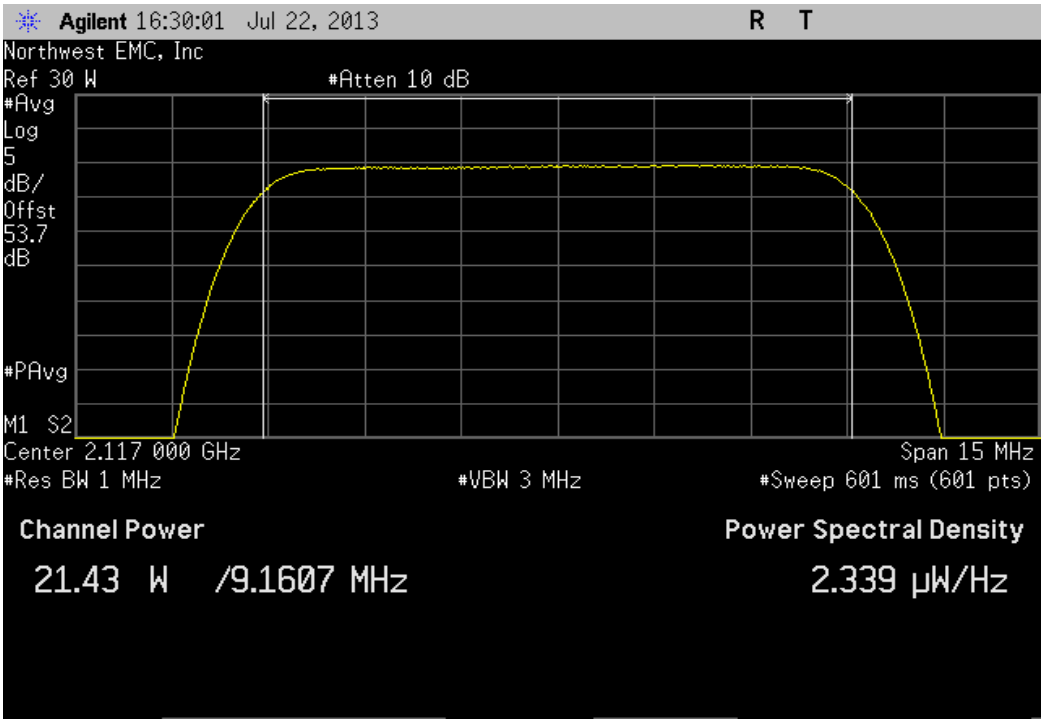
Path 2, LTE 5 MHz, Mid Channel 2132.5 MHz						
		Value (dBm)		Value (W)	Limit	Result
		44.6		28.834 W	< 1640 W	Pass



Path 2, LTE 5 MHz, High Channel 2152 MHz						
		Value (dBm)		Value (W)	Limit	Result
		44.2		26.485 W	< 1640 W	Pass

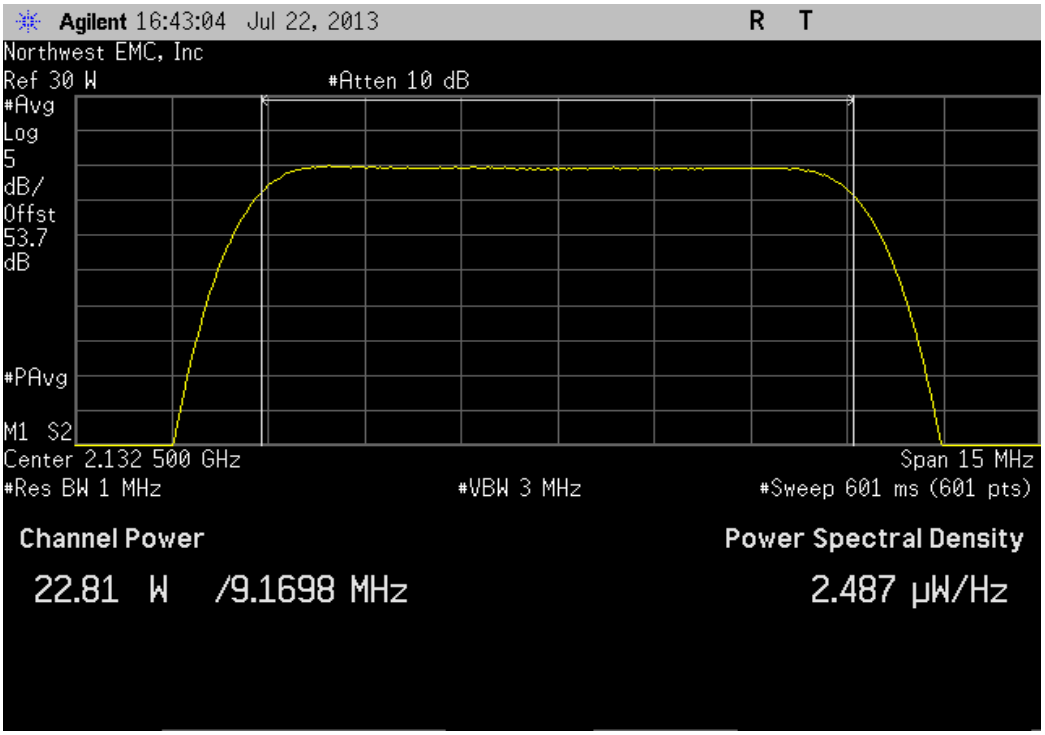


Path 2, LTE 10 MHz, Mid Channel 2132.5 MHz						
		Value (dBm)		Value (W)	Limit	Result
		43.3		21.425 W	< 1640 W	Pass

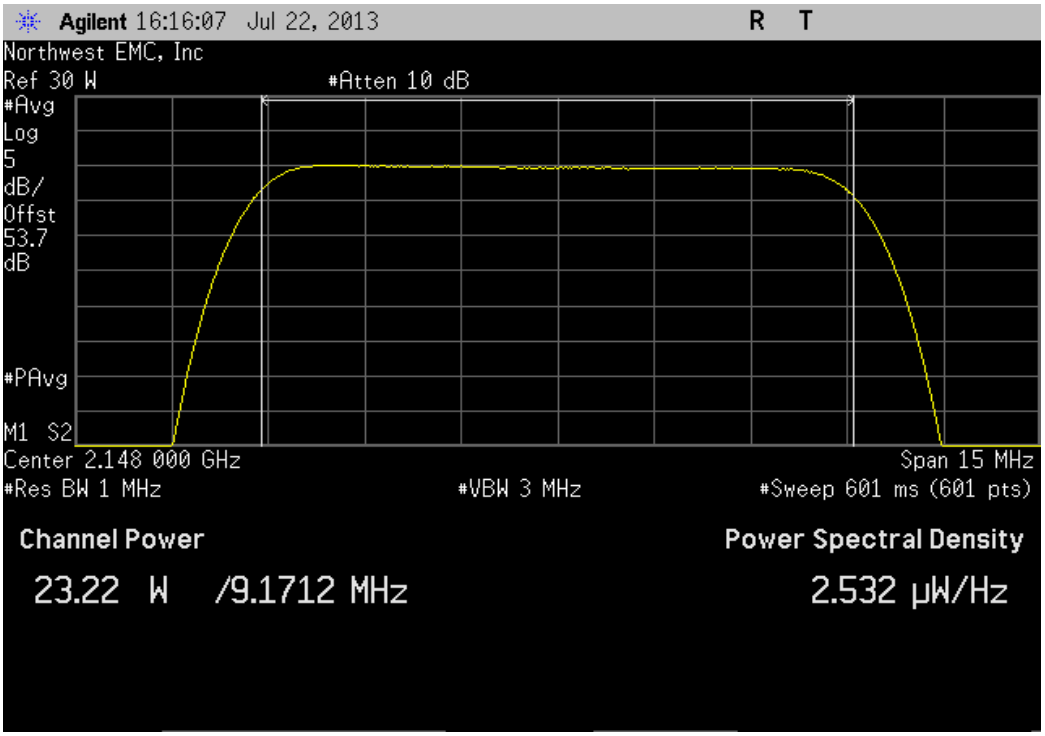


CONDUCTED OUTPUT POWER

Path 2, LTE 10 MHz, Low Channel 2117 MHz						
		Value (dBm)		Value (W)	Limit	Result
		43.6		22.806 W	< 1640 W	Pass



Path 2, LTE 10 MHz, High Channel 2148 MHz						
		Value (dBm)		Value (W)	Limit	Result
		43.7		23.221 W	< 1640 W	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
Attenuator - 20db, 'SMA'	SM Electronics	SA26B-20	RFW	4/12/2013	12
40 GHz DC block	Fairview Microwave	SD3379	AMI	10/5/2012	12
Signal Generator MXG	Agilent	N5183A	TIK	6/7/2012	36
Spectrum Analyzer	Agilent	E4440A	AAX	5/15/2012	24

TEST DESCRIPTION

The 99% bandwidth was measured utilizing the analyzer's peak detector and measuring the carrier's 26 dB occupied bandwidth based on the peak output power level measured. A 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 resolution bandwidth was approximately equal to 1% of the 26dB bandwidth and the video bandwidth was greater than or equal to the resolution bandwidth.

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

OCCUPIED BANDWIDTH

EUT:	Prism HDM 1900 MHz / 2100 MHz SISO RF Module			**Work Order:**	TECO0004
Serial Number:	None			**Date:**	07/23/13
Customer:	TE Connectivity/ADC Telecommunications			**Temperature:**	25.6°C
Attendees:	None			**Humidity:**	41%
Project:	None			**Barometric Pres.:**	1015.5
Tested by:	Trevor Buls	**Power:**	110VAC/60Hz	**Job Site:**	MN08

TEST SPECIFICATIONS	Test Method
FCC 27:2014	ANSI/TIA/EIA-603-C-2004

COMMENTS

Customer provided a high wattage 30 dB attenuator.

DEVIATIONS FROM TEST STANDARD

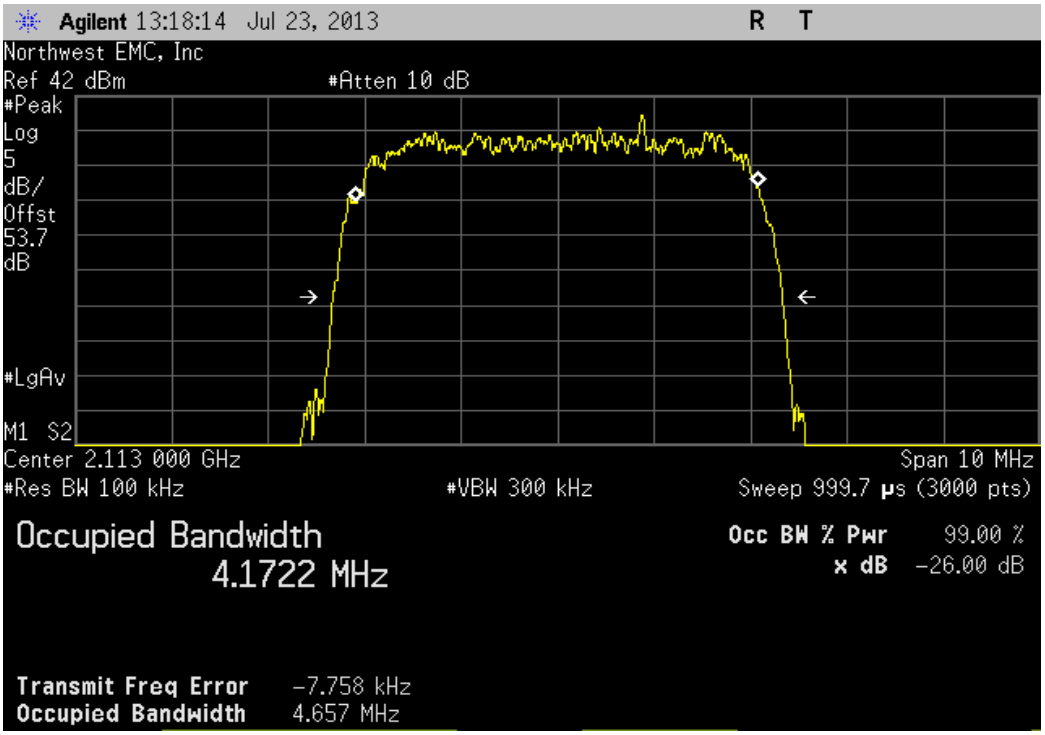
None

Configuration #	1	Signature	Trevor Buls

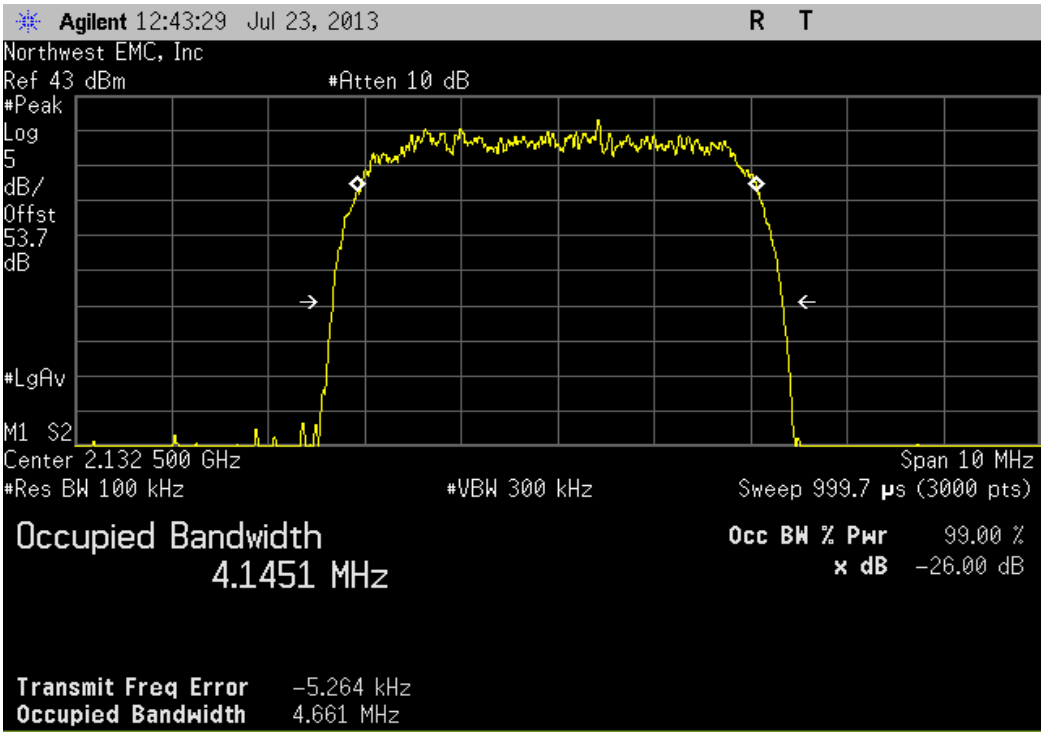
		Value (99%)	Value (26 dB)	Limit	Result
Path 2					
	WCDMA				
	Low Channel 2113 MHz	4.172 MHz	4.657 MHz	N/A	N/A
	Mid Channel 2132.5 MHz	4.145 MHz	4.661 MHz	N/A	N/A
	High Channel 2152 MHz	4.163 MHz	4.666 MHz	N/A	N/A
	LTE 5 MHz				
	Low Channel 2113 MHz	4.506 MHz	4.903 MHz	N/A	N/A
	Mid Channel 2132.5 MHz	4.506 MHz	4.862 MHz	N/A	N/A
	High Channel 2152 MHz	4.515 MHz	4.937 MHz	N/A	N/A
	LTE 10 MHz				
	Mid Channel 2132.5 MHz	8.966 MHz	9.465 MHz	N/A	N/A
	Low Channel 2117 MHz	9.000 MHz	9.464 MHz	N/A	N/A
	High Channel 2148 MHz	8.989 MHz	9.476 MHz	N/A	N/A

OCCUPIED BANDWIDTH

Path 2, WCDMA, Low Channel 2113 MHz						
			Value (99%)	Value (26 dB)	Limit	Result
			4.172 MHz	4.657 MHz	N/A	N/A

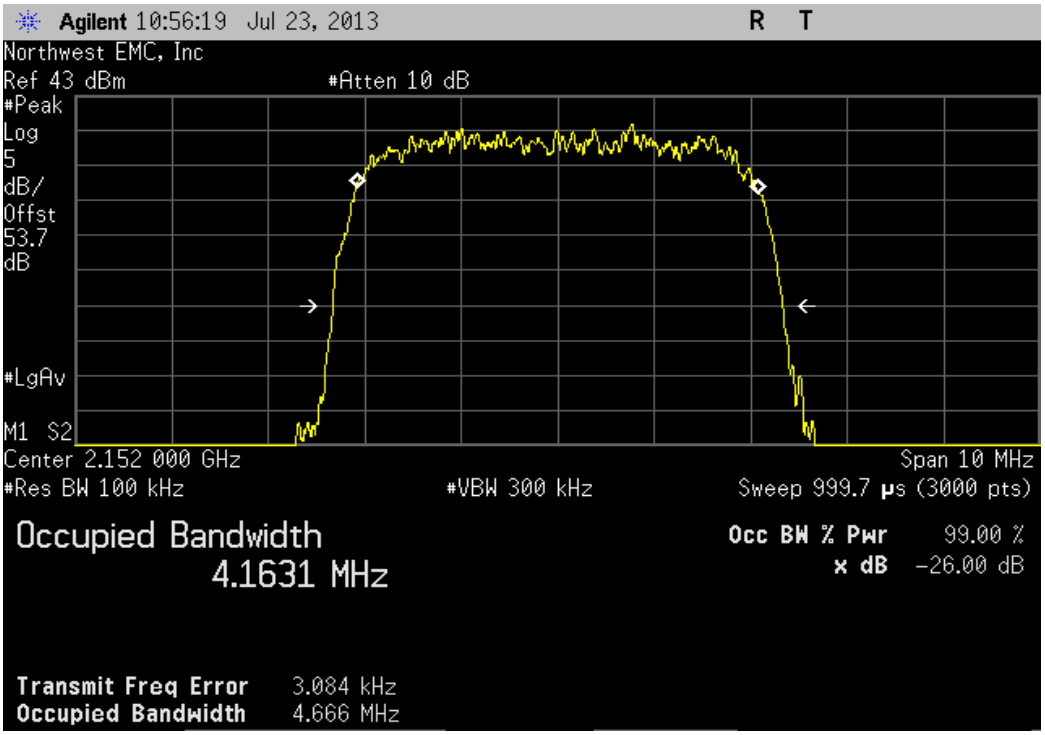


Path 2, WCDMA, Mid Channel 2132.5 MHz						
			Value (99%)	Value (26 dB)	Limit	Result
			4.145 MHz	4.661 MHz	N/A	N/A

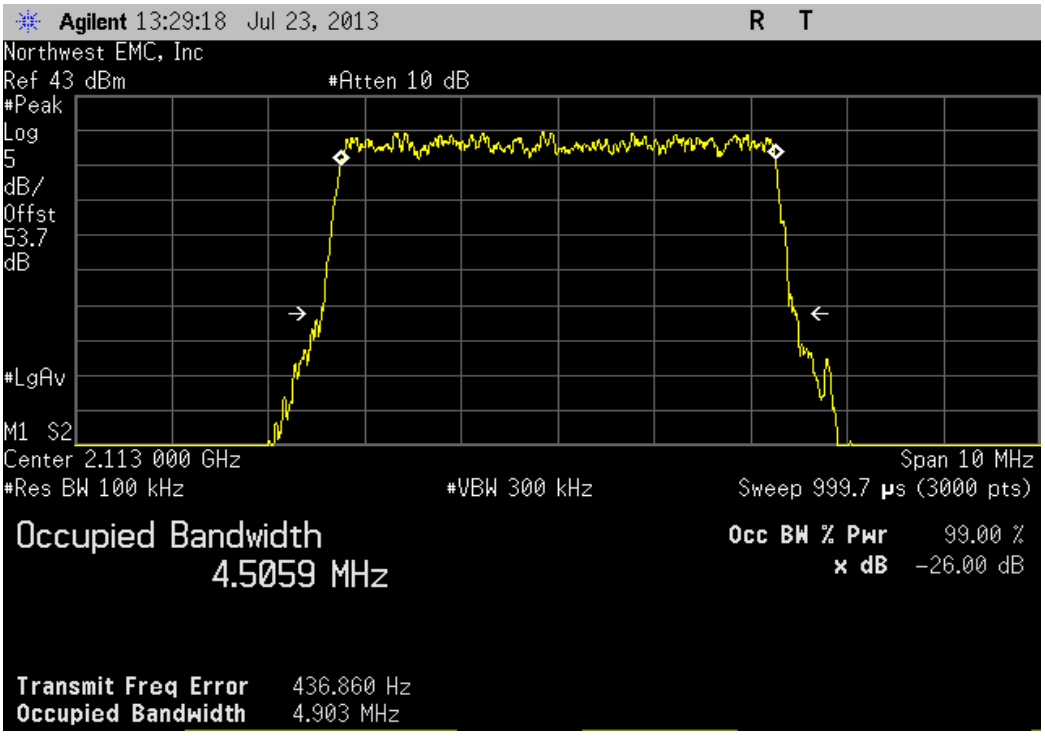


OCCUPIED BANDWIDTH

Path 2, WCDMA, High Channel 2152 MHz						
			Value (99%)	Value (26 dB)	Limit	Result
			4.163 MHz	4.666 MHz	N/A	N/A

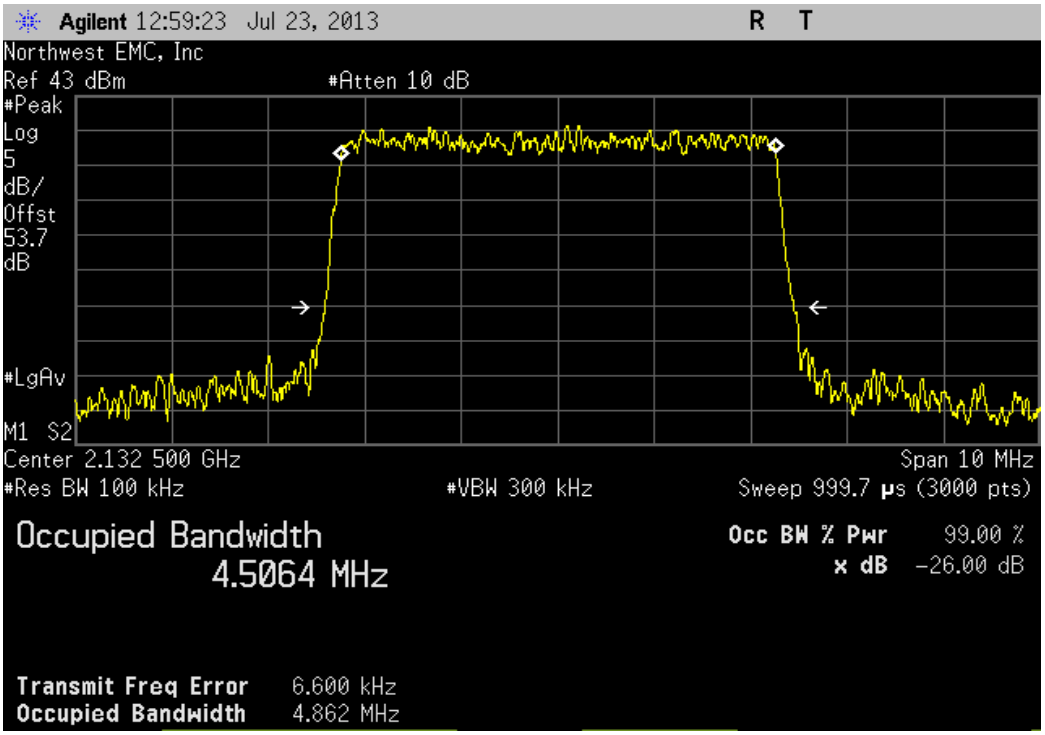


Path 2, LTE 5 MHz, Low Channel 2113 MHz						
			Value (99%)	Value (26 dB)	Limit	Result
			4.506 MHz	4.903 MHz	N/A	N/A

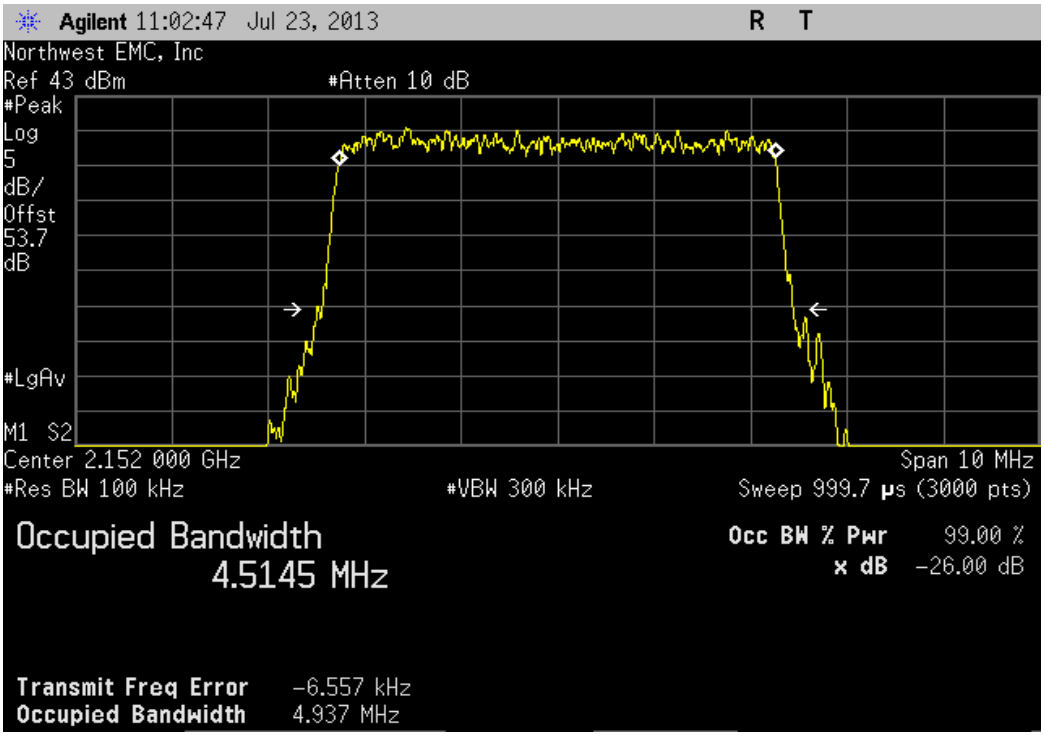


OCCUPIED BANDWIDTH

Path 2, LTE 5 MHz, Mid Channel 2132.5 MHz						
			Value (99%)	Value (26 dB)	Limit	Result
			4.506 MHz	4.862 MHz	N/A	N/A

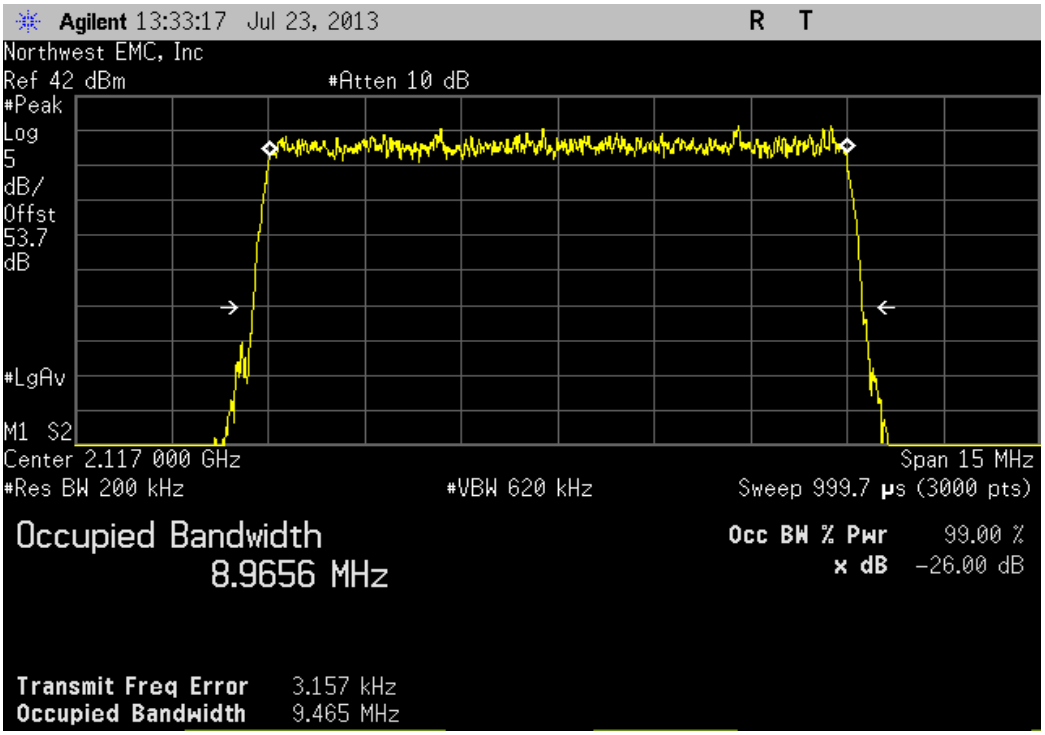


Path 2, LTE 5 MHz, High Channel 2152 MHz						
			Value (99%)	Value (26 dB)	Limit	Result
			4.515 MHz	4.937 MHz	N/A	N/A

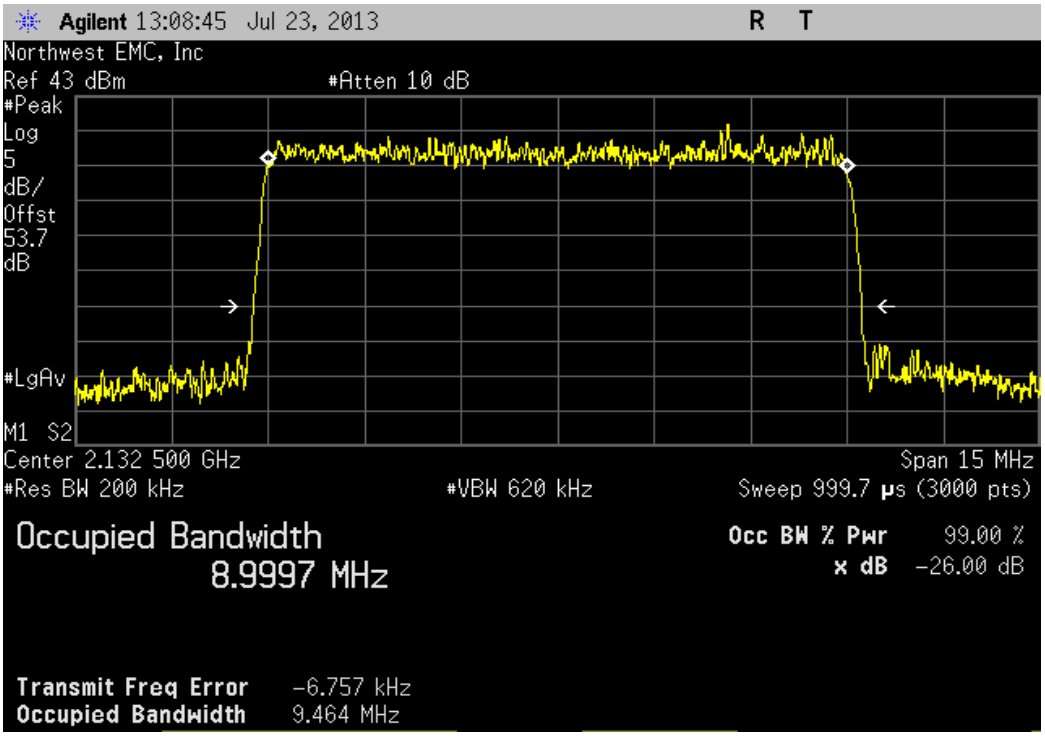


OCCUPIED BANDWIDTH

Path 2, LTE 10 MHz, Mid Channel 2132.5 MHz						
			Value (99%)	Value (26 dB)	Limit	Result
			8.966 MHz	9.465 MHz	N/A	N/A

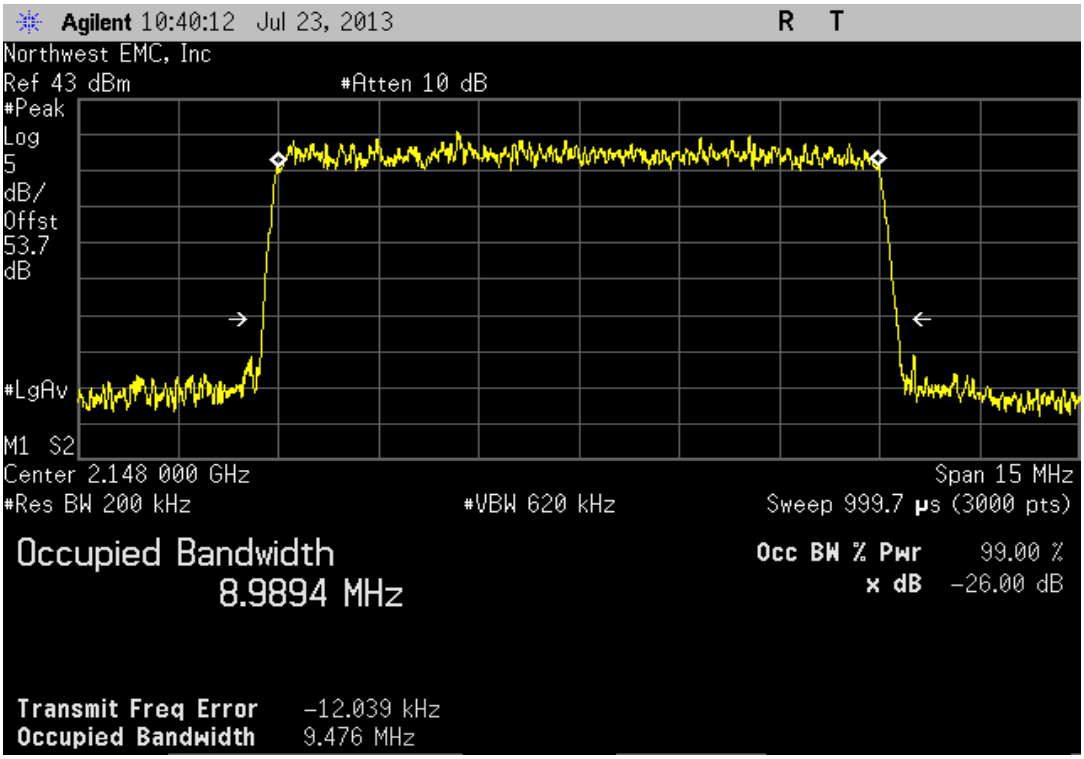


Path 2, LTE 10 MHz, Low Channel 2117 MHz						
			Value (99%)	Value (26 dB)	Limit	Result
			9.000 MHz	9.464 MHz	N/A	N/A



OCCUPIED BANDWIDTH

Path 2, LTE 10 MHz, High Channel 2148 MHz						
			Value (99%)	Value (26 dB)	Limit	Result
			8.989 MHz	9.476 MHz	N/A	N/A



OUT OF BAND EMISSIONS

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Low Pass Filter 0-1000 MHz	Micro-Tronics	LPM50004	HGV	10/5/2012	24
High Pass Filter 2.8 GHz	Micro-Tronics	HPM50111	HGY	10/5/2012	24
Attenuator - 20db, 'SMA'	SM Electronics	SA26B-20	RFW	4/12/2013	12
40 GHz DC block	Fairview Microwave	SD3379	AMI	10/5/2012	12
Signal Generator MXG	Agilent	N5183A	TIK	6/7/2012	36
Spectrum Analyzer	Agilent	E4440A	AAX	5/15/2012	24

TEST DESCRIPTION

The antenna port spurious emissions were measured at the RF output terminal of the EUT with external attenuation on the RF input of the spectrum analyzer. Analyzer plots utilizing a 1MHz resolution bandwidth and no video filtering were made for each modulation type from 30 MHz to 22 GHz. The peak conducted power of spurious emissions, up to the 10th harmonic of the transmit frequency, were investigated to ensure they were less than or equal to –13 dBm.

OUT OF BAND EMISSIONS

EUT:	Prism HDM 1900 MHz / 2100 MHz SISO RF Module			**Work Order:**	TECO0004
Serial Number:	None			**Date:**	07/23/13
Customer:	TE Connectivity/ADC Telecommunications			**Temperature:**	25.6°C
Attendees:	None			**Humidity:**	41%
Project:	None			**Barometric Pres.:**	1015.5
Tested by:	Trevor Buls	**Power:**	110VAC/60Hz	**Job Site:**	MN08

TEST SPECIFICATIONS	**Test Method**
FCC 27:2014	ANSI/TIA/EIA-603-C-2004

COMMENTS

Customer provided a high wattage 30 dB attenuator.

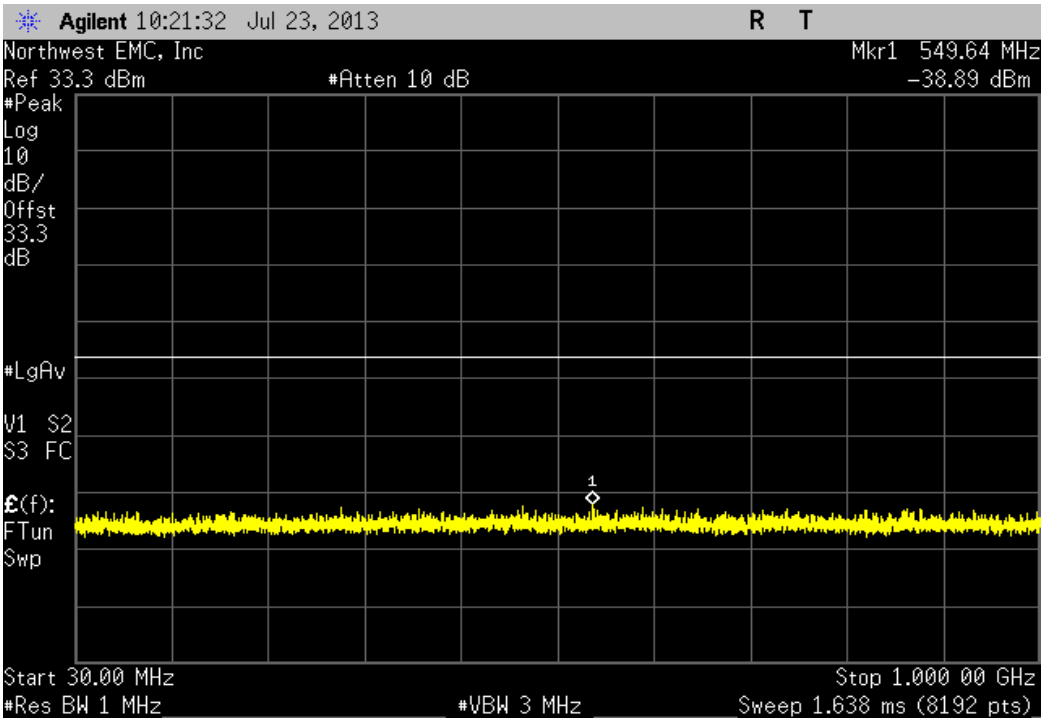
DEVIATIONS FROM TEST STANDARD

None

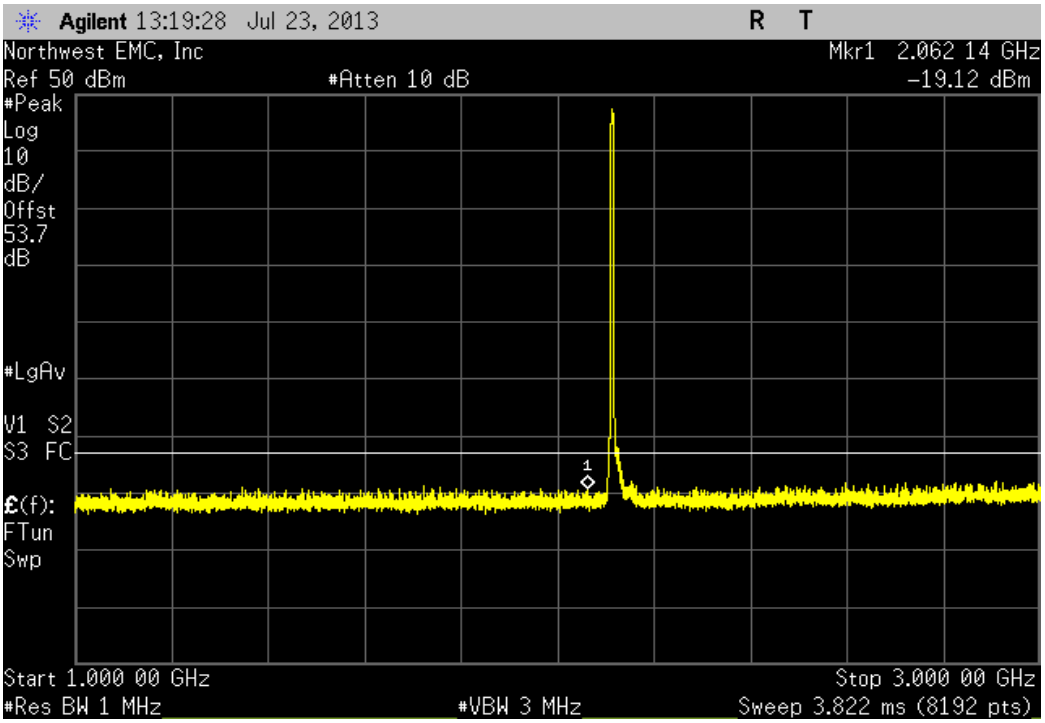
Configuration #	1	*Signature* Trevor Buls

		Frequency Range	Value	Limit	Result
Path 2					
	WCDMA				
	Low Channel 2113 MHz	30 MHz - 1 GHz	-38.89 dBm	≤ -13 dBm	Pass
	Low Channel 2113 MHz	1 GHz - 3 GHz	-19.12 dBm	≤ -13 dBm	Pass
	Low Channel 2113 MHz	3 GHz - 22 GHz	-28.14 dBm	≤ -13 dBm	Pass
	Mid Channel 2132.5 MHz	30 MHz - 1 GHz	-38.74 dBm	≤ -13 dBm	Pass
	Mid Channel 2132.5 MHz	1 GHz - 3 GHz	-18.08 dBm	≤ -13 dBm	Pass
	Mid Channel 2132.5 MHz	3 GHz - 22 GHz	-27.24 dBm	≤ -13 dBm	Pass
	High Channel 2152 MHz	30 MHz - 1 GHz	-38.88 dBm	≤ -13 dBm	Pass
	High Channel 2152 MHz	1 GHz - 3 GHz	-17.63 dBm	≤ -13 dBm	Pass
	High Channel 2152 MHz	3 GHz - 22 GHz	-28.04 dBm	≤ -13 dBm	Pass
	LTE 5 MHz				
	Low Channel 2113 MHz	30 MHz - 1 GHz	-38.74 dBm	≤ -13 dBm	Pass
	Low Channel 2113 MHz	1 GHz - 3 GHz	-16.44 dBm	≤ -13 dBm	Pass
	Low Channel 2113 MHz	3 GHz - 22 GHz	-28.18 dBm	≤ -13 dBm	Pass
	Mid Channel 2132.5 MHz	30 MHz - 1 GHz	-38.99 dBm	≤ -13 dBm	Pass
	Mid Channel 2132.5 MHz	1 GHz - 3 GHz	-17.65 dBm	≤ -13 dBm	Pass
	Mid Channel 2132.5 MHz	3 GHz - 22 GHz	-27.05 dBm	≤ -13 dBm	Pass
	High Channel 2152 MHz	30 MHz - 1 GHz	-39.5 dBm	≤ -13 dBm	Pass
	High Channel 2152 MHz	1 GHz - 3 GHz	-18.27 dBm	≤ -13 dBm	Pass
	High Channel 2152 MHz	3 GHz - 22 GHz	-27.77 dBm	≤ -13 dBm	Pass
	LTE 10 MHz				
	Mid Channel 2132.5 MHz	30 MHz - 1 GHz	-38.56 dBm	≤ -13 dBm	Pass
	Mid Channel 2132.5 MHz	1 GHz - 3 GHz	-17.17 dBm	≤ -13 dBm	Pass
	Mid Channel 2132.5 MHz	3 GHz - 22 GHz	-27.78 dBm	≤ -13 dBm	Pass
	Low Channel 2117 MHz	30 MHz - 1 GHz	-38.97 dBm	≤ -13 dBm	Pass
	Low Channel 2117 MHz	1 GHz - 3 GHz	-18.03 dBm	≤ -13 dBm	Pass
	Low Channel 2117 MHz	3 GHz - 22 GHz	-27.95 dBm	≤ -13 dBm	Pass
	High Channel 2148 MHz	30 MHz - 1 GHz	-38.77 dBm	≤ -13 dBm	Pass
	High Channel 2148 MHz	1 GHz - 3 GHz	-16.77 dBm	≤ -13 dBm	Pass
	High Channel 2148 MHz	3 GHz - 22 GHz	-27.39 dBm	≤ -13 dBm	Pass

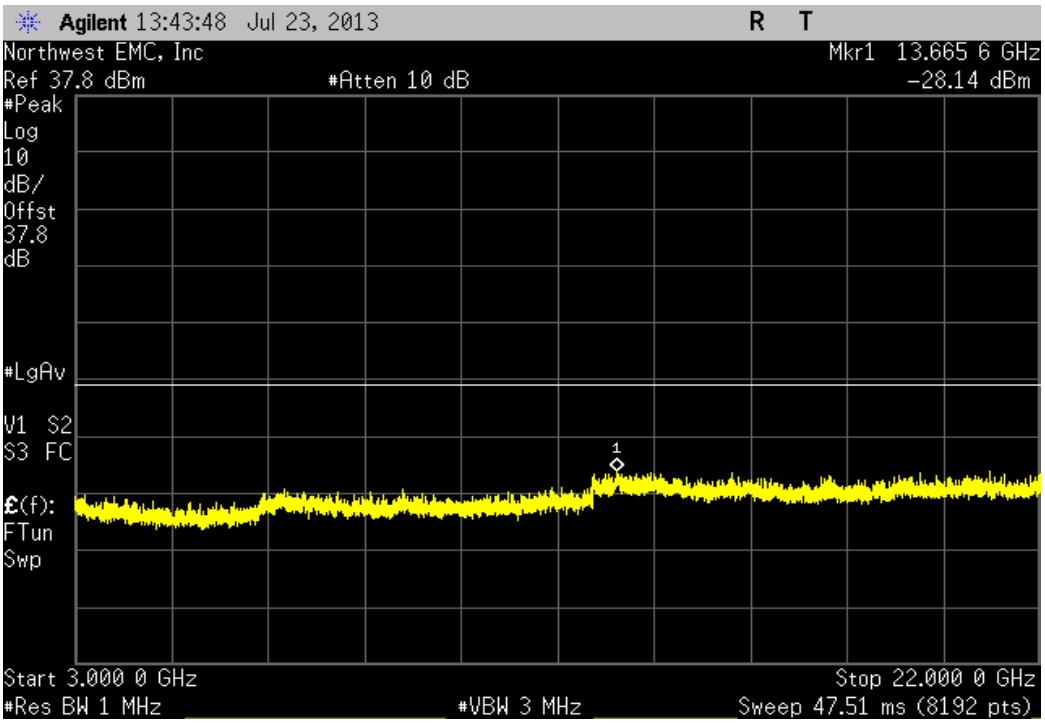
Path 2, WCDMA, Low Channel 2113 MHz						
	Frequency Range			Value	Limit	Result
	30 MHz - 1 GHz			-38.89 dBm	≤ -13 dBm	Pass



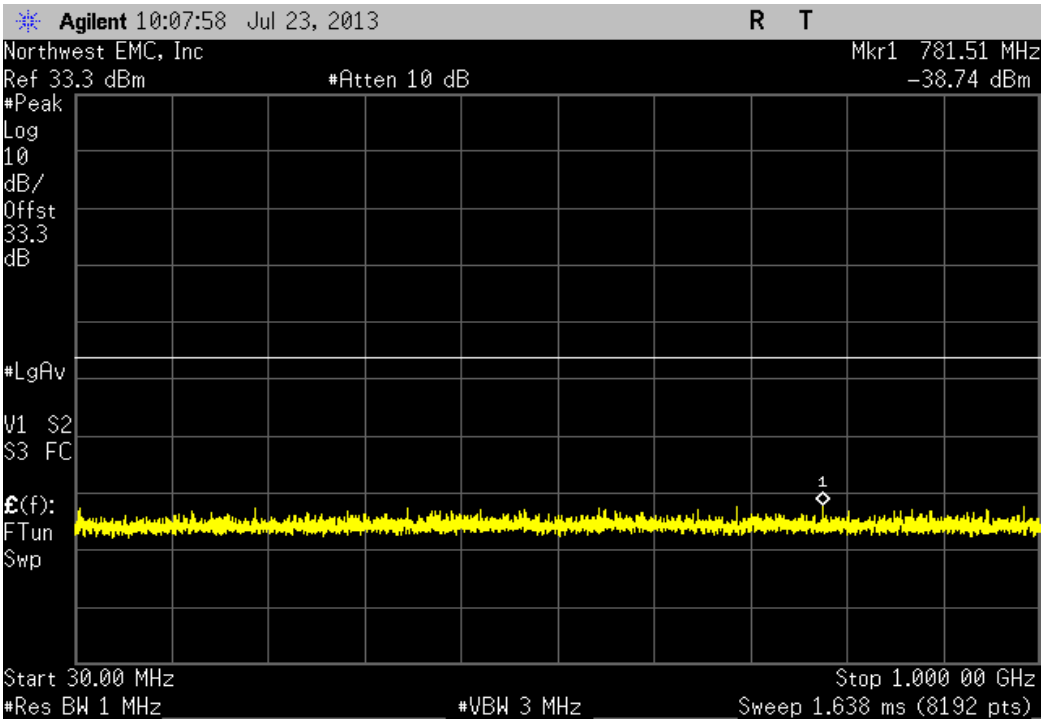
Path 2, WCDMA, Low Channel 2113 MHz						
	Frequency Range			Value	Limit	Result
	1 GHz - 3 GHz			-19.12 dBm	≤ -13 dBm	Pass



Path 2, WCDMA, Low Channel 2113 MHz						
	Frequency Range			Value	Limit	Result
	3 GHz - 22 GHz			-28.14 dBm	≤ -13 dBm	Pass

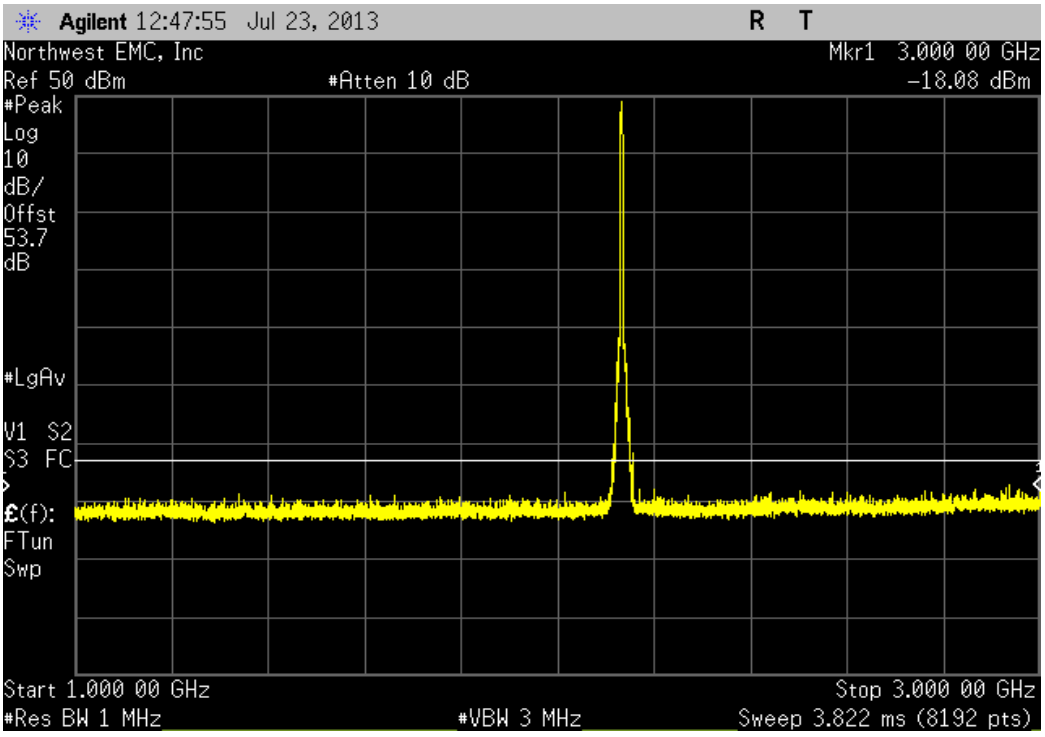


Path 2, WCDMA, Mid Channel 2132.5 MHz						
	Frequency Range			Value	Limit	Result
	30 MHz - 1 GHz			-38.74 dBm	≤ -13 dBm	Pass

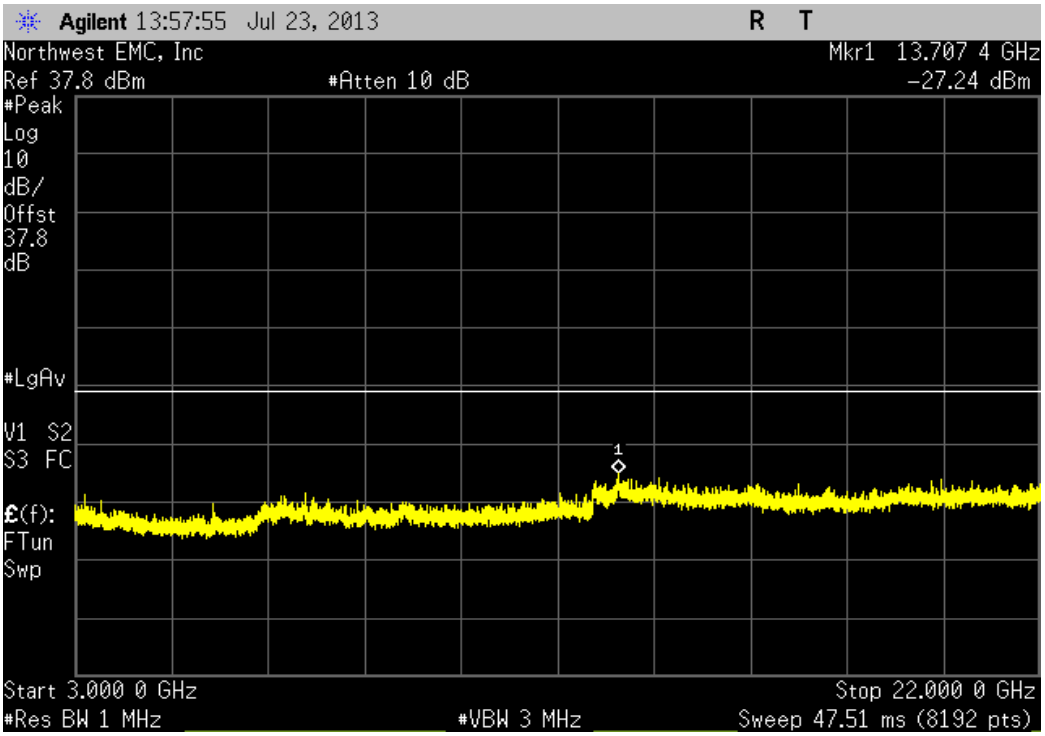


OUT OF BAND EMISSIONS

Path 2, WCDMA, Mid Channel 2132.5 MHz						
	Frequency Range			Value	Limit	Result
	1 GHz - 3 GHz			-18.08 dBm	≤ -13 dBm	Pass

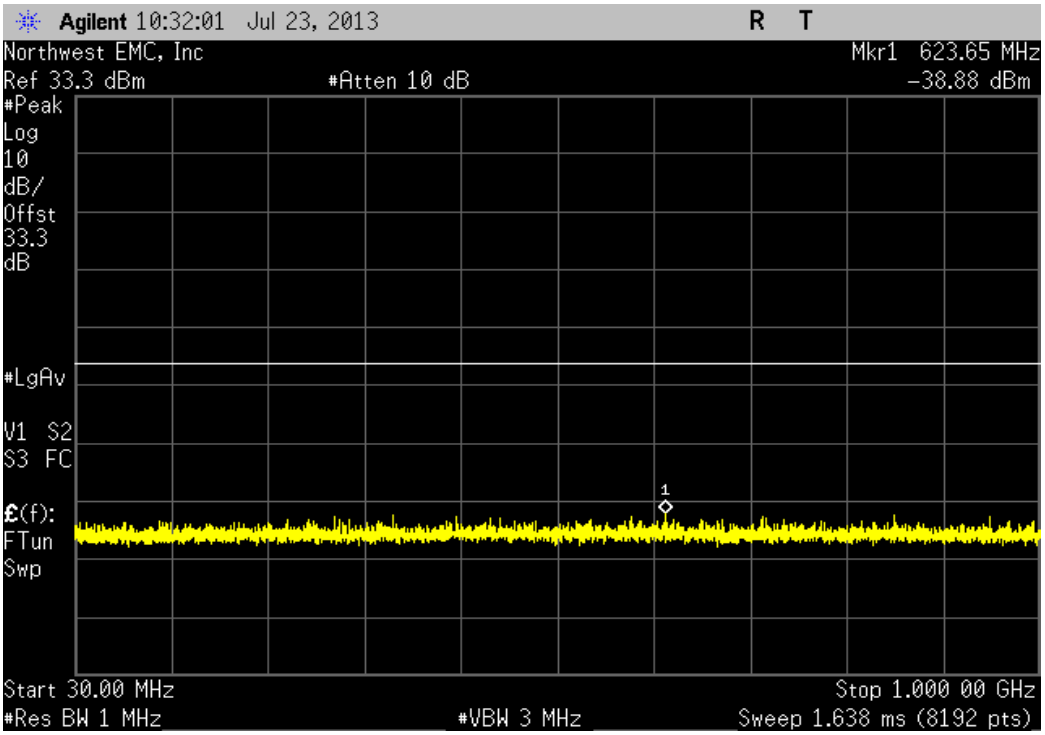


Path 2, WCDMA, Mid Channel 2132.5 MHz						
	Frequency Range			Value	Limit	Result
	3 GHz - 22 GHz			-27.24 dBm	≤ -13 dBm	Pass

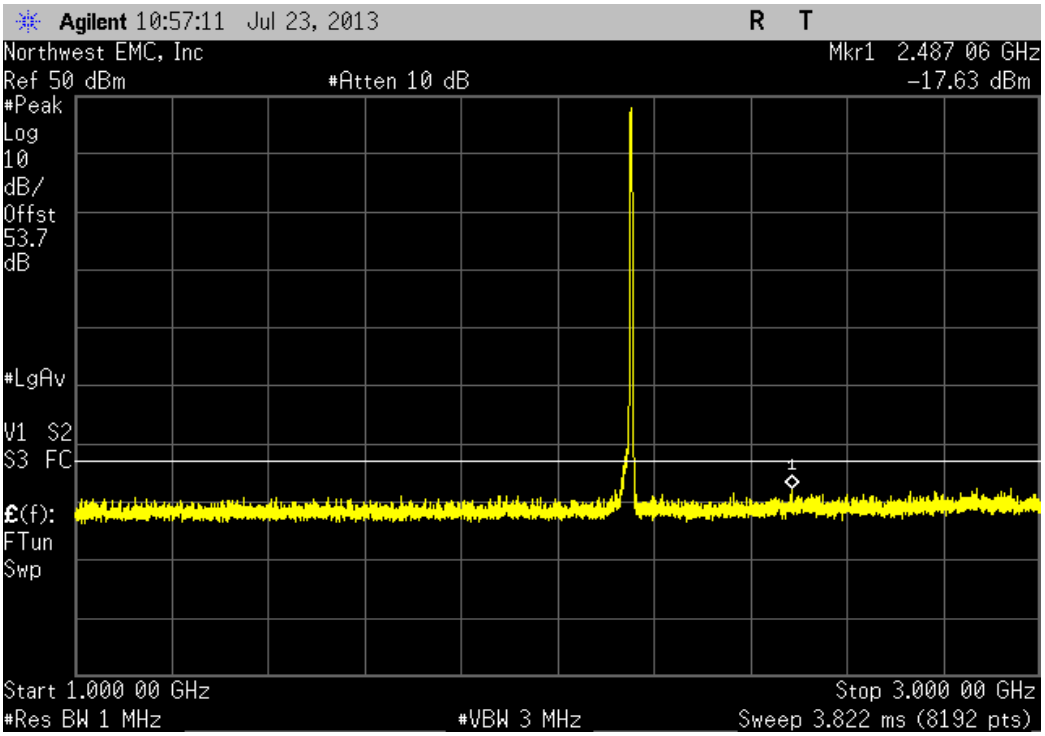


OUT OF BAND EMISSIONS

Path 2, WCDMA, High Channel 2152 MHz						
	Frequency Range			Value	Limit	Result
	30 MHz - 1 GHz			-38.88 dBm	≤ -13 dBm	Pass

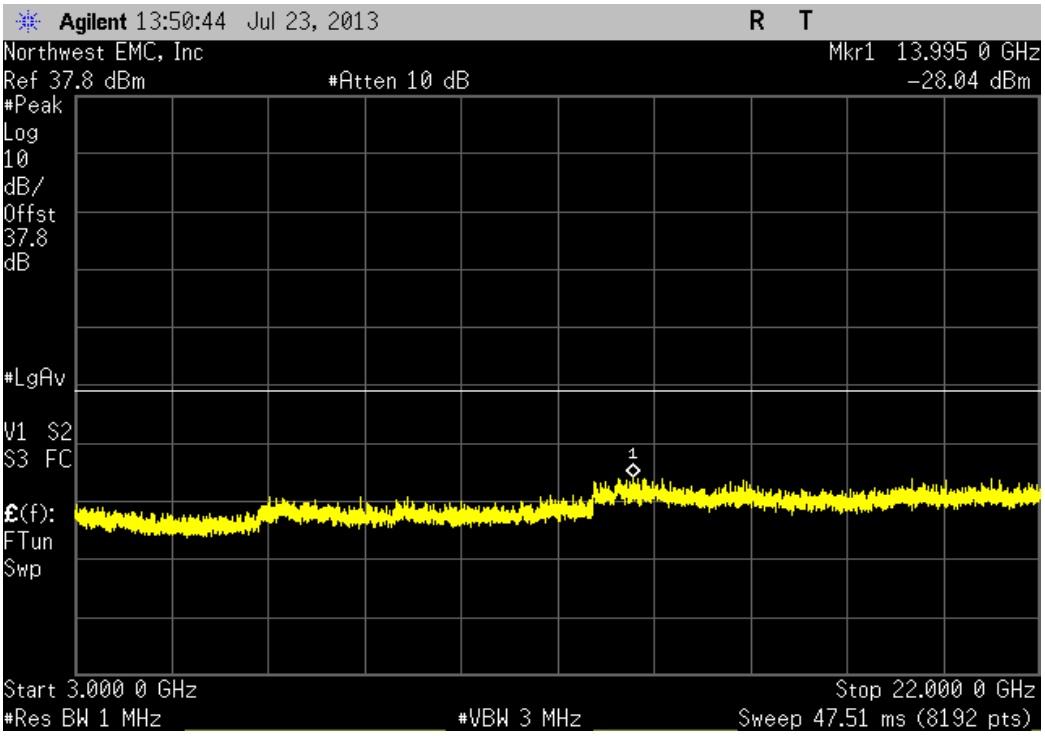


Path 2, WCDMA, High Channel 2152 MHz						
	Frequency Range			Value	Limit	Result
	1 GHz - 3 GHz			-17.63 dBm	≤ -13 dBm	Pass

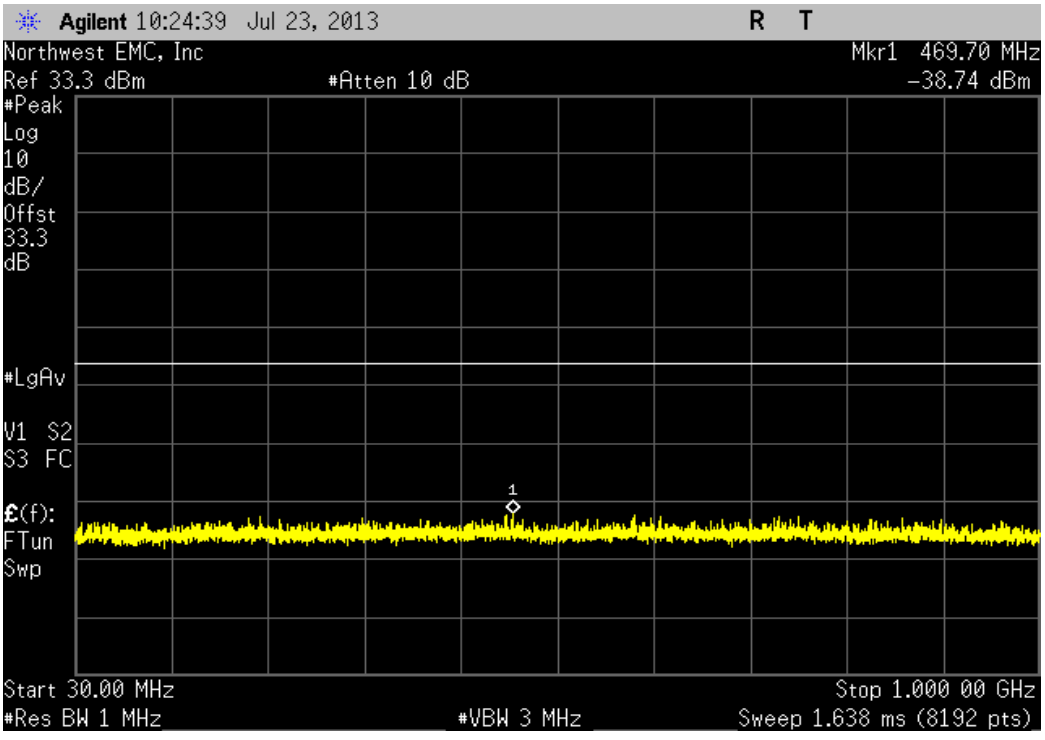


OUT OF BAND EMISSIONS

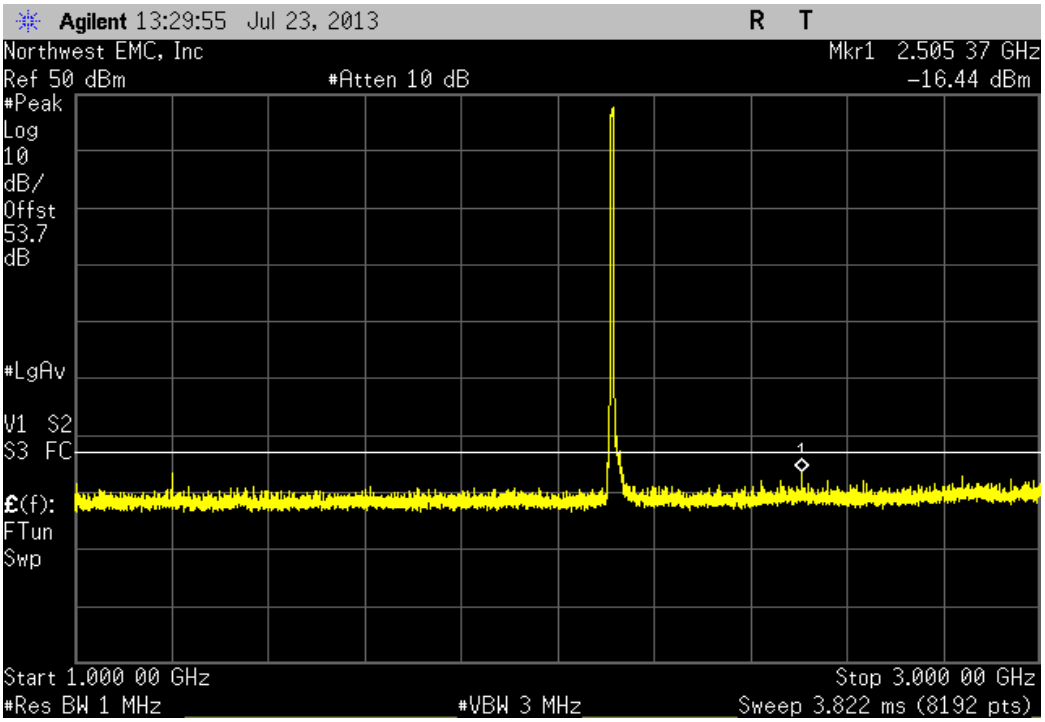
Path 2, WCDMA, High Channel 2152 MHz						
	Frequency Range			Value	Limit	Result
	3 GHz - 22 GHz			-28.04 dBm	≤ -13 dBm	Pass



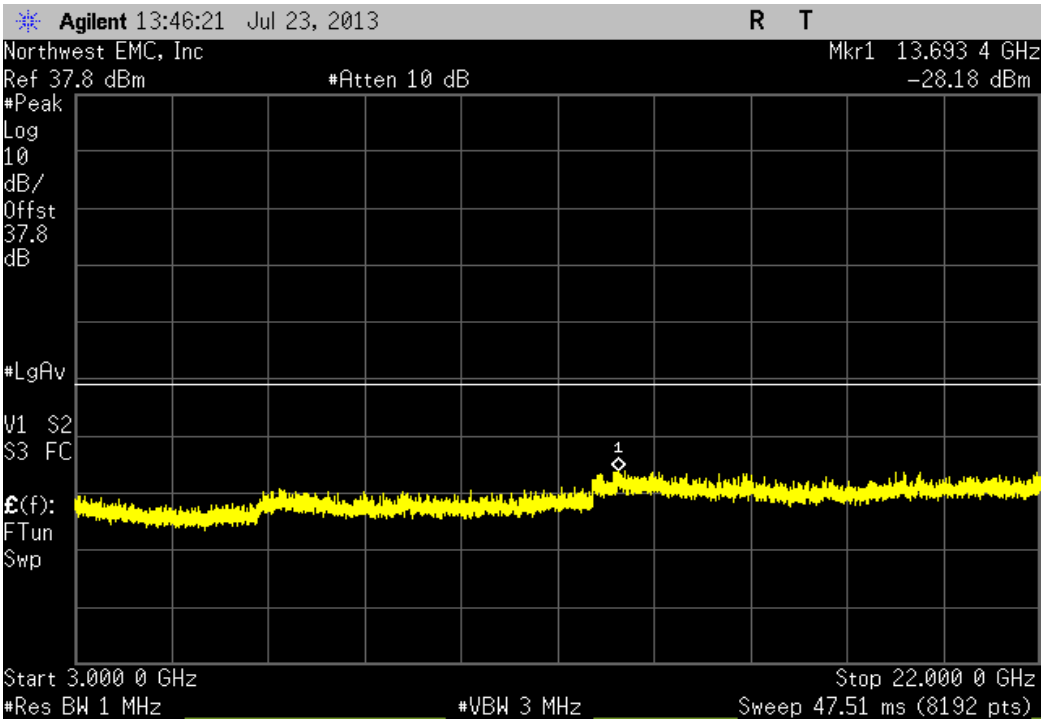
Path 2, LTE 5 MHz, Low Channel 2113 MHz						
	Frequency Range			Value	Limit	Result
	30 MHz - 1 GHz			-38.74 dBm	≤ -13 dBm	Pass



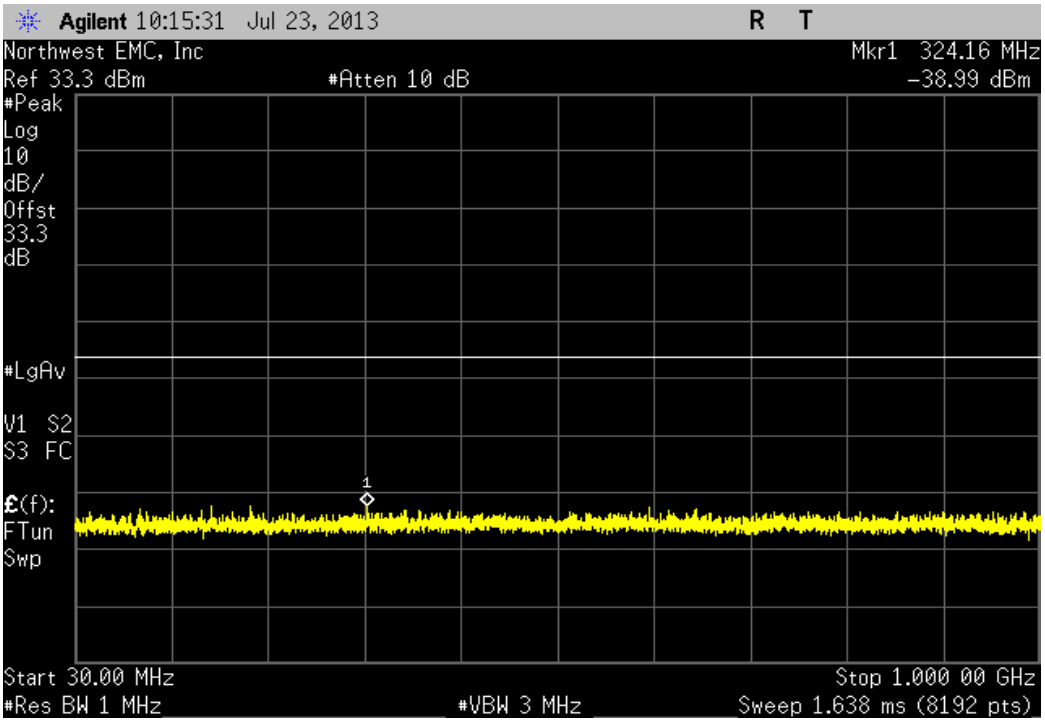
Path 2, LTE 5 MHz, Low Channel 2113 MHz						
	Frequency Range			Value	Limit	Result
	1 GHz - 3 GHz			-16.44 dBm	≤ -13 dBm	Pass



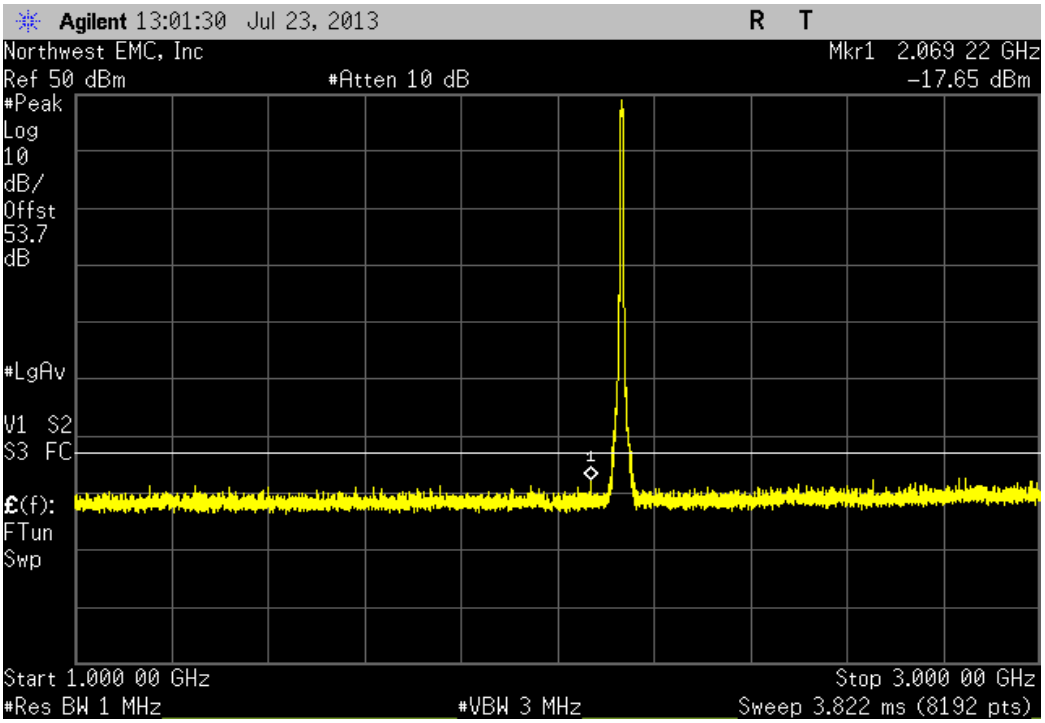
Path 2, LTE 5 MHz, Low Channel 2113 MHz						
	Frequency Range			Value	Limit	Result
	3 GHz - 22 GHz			-28.18 dBm	≤ -13 dBm	Pass



Path 2, LTE 5 MHz, Mid Channel 2132.5 MHz						
	Frequency Range			Value	Limit	Result
	30 MHz - 1 GHz			-38.99 dBm	≤ -13 dBm	Pass

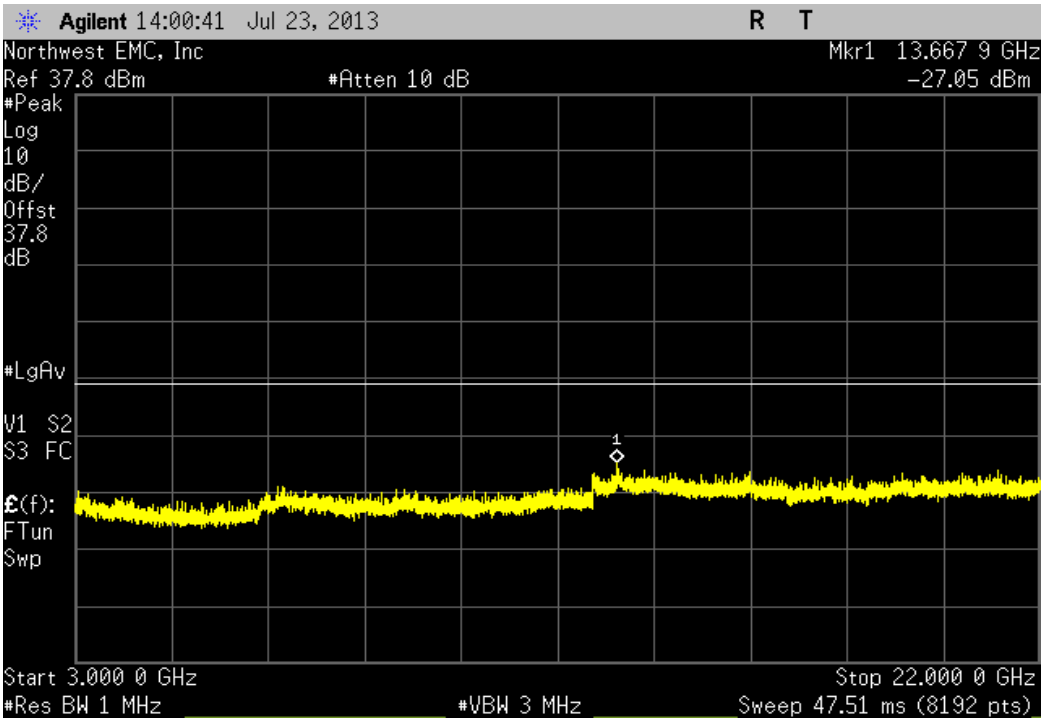


Path 2, LTE 5 MHz, Mid Channel 2132.5 MHz						
	Frequency Range			Value	Limit	Result
	1 GHz - 3 GHz			-17.65 dBm	≤ -13 dBm	Pass

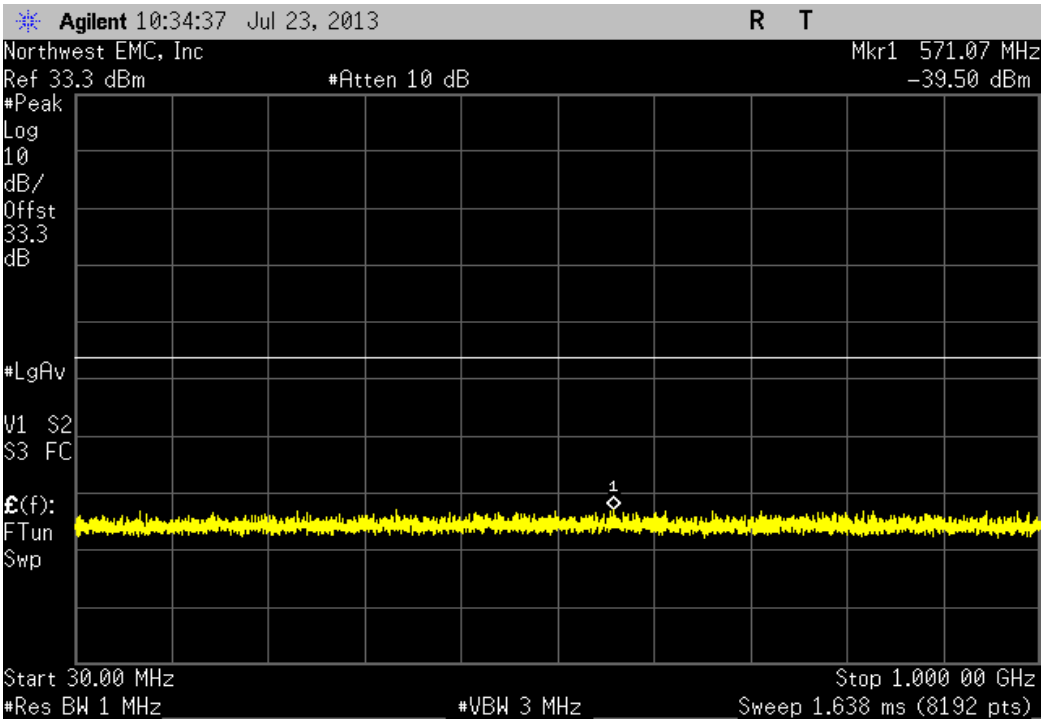


OUT OF BAND EMISSIONS

Path 2, LTE 5 MHz, Mid Channel 2132.5 MHz						
	Frequency Range			Value	Limit	Result
	3 GHz - 22 GHz			-27.05 dBm	≤ -13 dBm	Pass

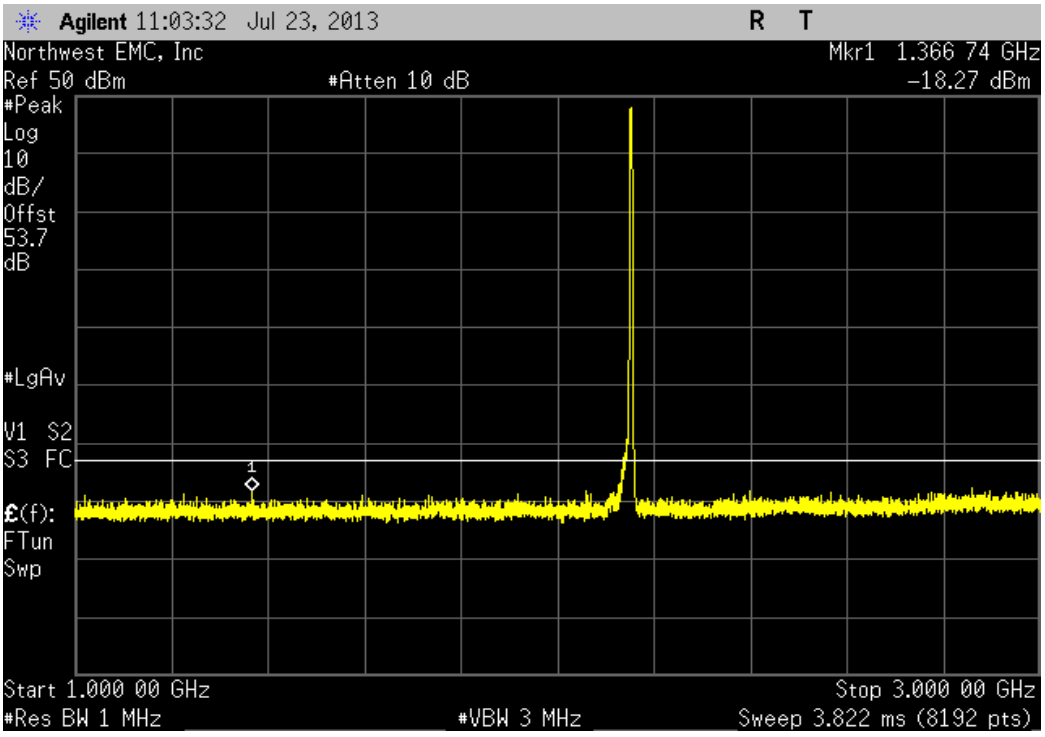


Path 2, LTE 5 MHz, High Channel 2152 MHz						
	Frequency Range			Value	Limit	Result
	30 MHz - 1 GHz			-39.5 dBm	≤ -13 dBm	Pass

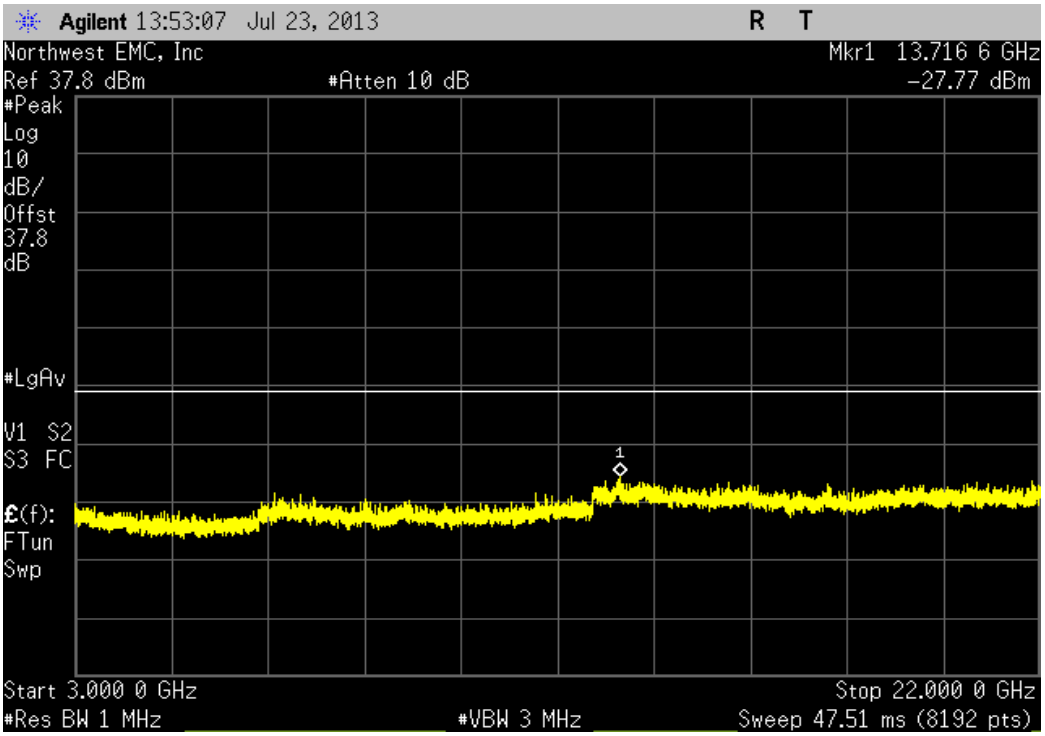


OUT OF BAND EMISSIONS

Path 2, LTE 5 MHz, High Channel 2152 MHz						
	Frequency Range			Value	Limit	Result
	1 GHz - 3 GHz			-18.27 dBm	≤ -13 dBm	Pass

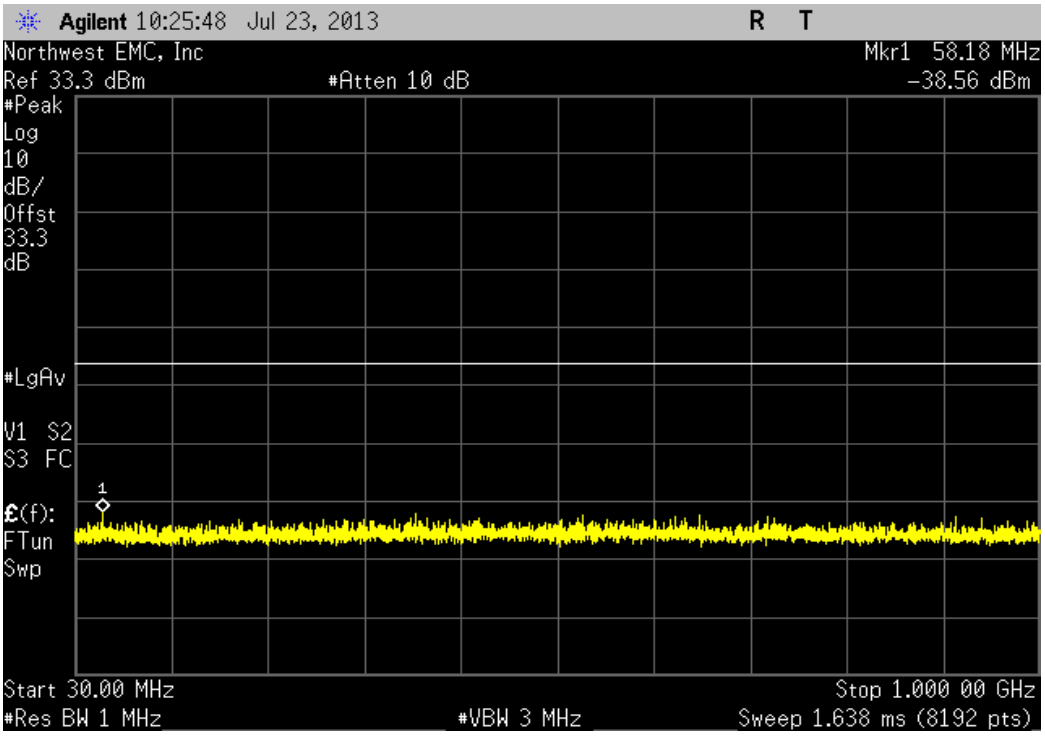


Path 2, LTE 5 MHz, High Channel 2152 MHz						
	Frequency Range			Value	Limit	Result
	3 GHz - 22 GHz			-27.77 dBm	≤ -13 dBm	Pass

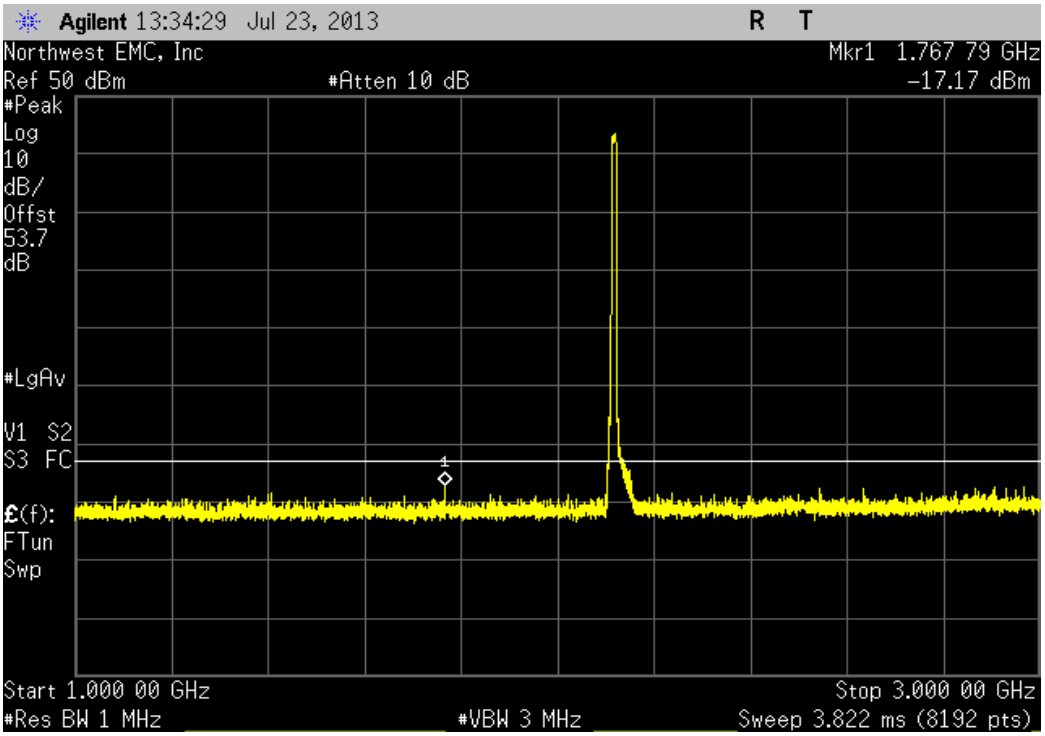


OUT OF BAND EMISSIONS

Path 2, LTE 10 MHz, Mid Channel 2132.5 MHz						
	Frequency Range			Value	Limit	Result
	30 MHz - 1 GHz			-38.56 dBm	≤ -13 dBm	Pass

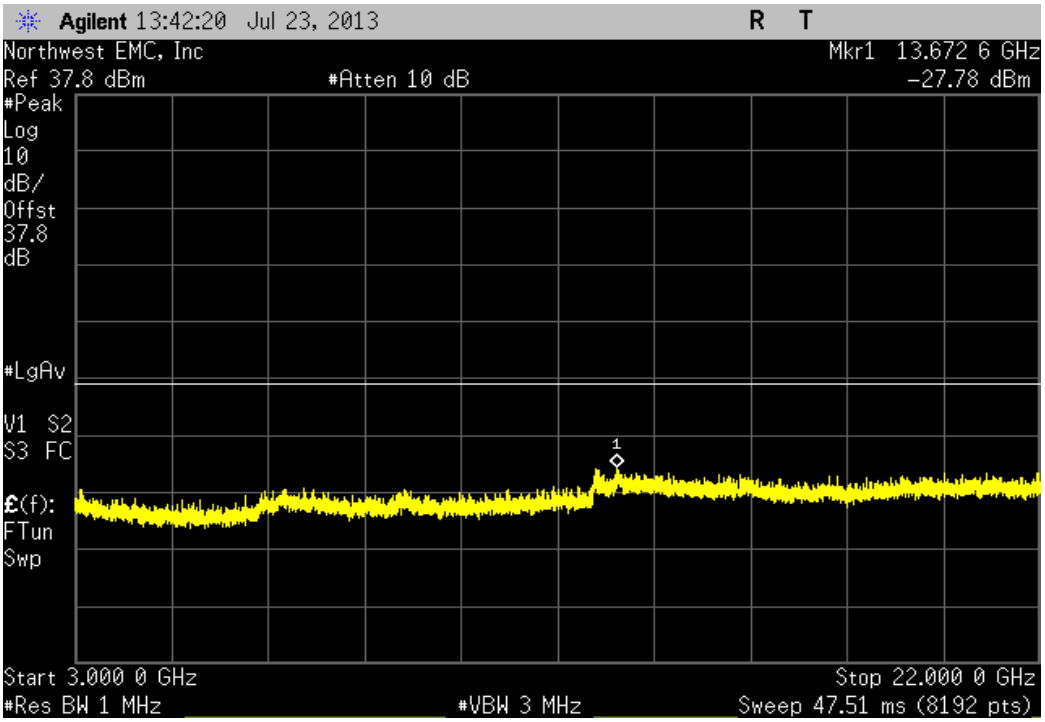


Path 2, LTE 10 MHz, Mid Channel 2132.5 MHz						
	Frequency Range			Value	Limit	Result
	1 GHz - 3 GHz			-17.17 dBm	≤ -13 dBm	Pass

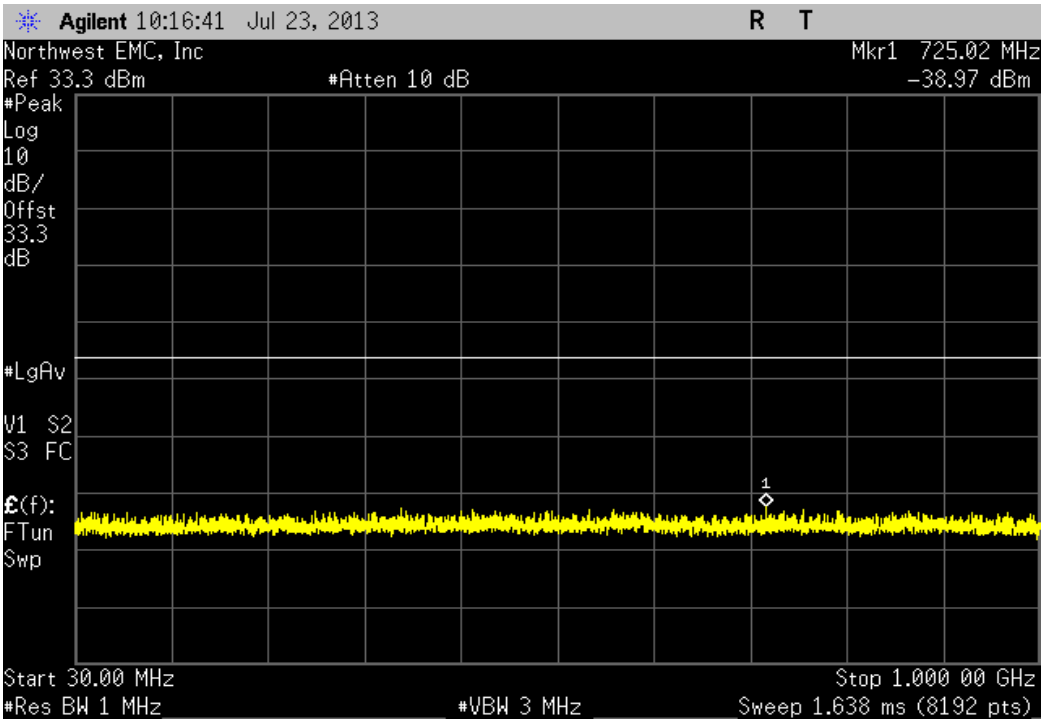


OUT OF BAND EMISSIONS

Path 2, LTE 10 MHz, Mid Channel 2132.5 MHz						
	Frequency Range			Value	Limit	Result
	3 GHz - 22 GHz			-27.78 dBm	≤ -13 dBm	Pass

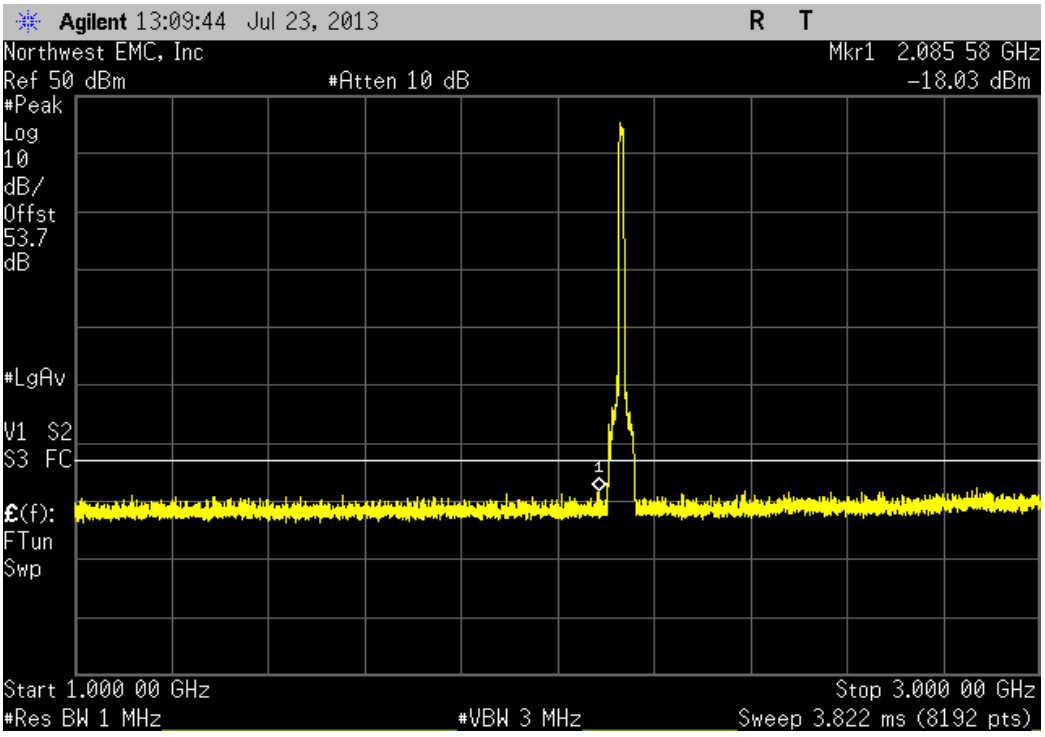


Path 2, LTE 10 MHz, Low Channel 2117 MHz						
	Frequency Range			Value	Limit	Result
	30 MHz - 1 GHz			-38.97 dBm	≤ -13 dBm	Pass

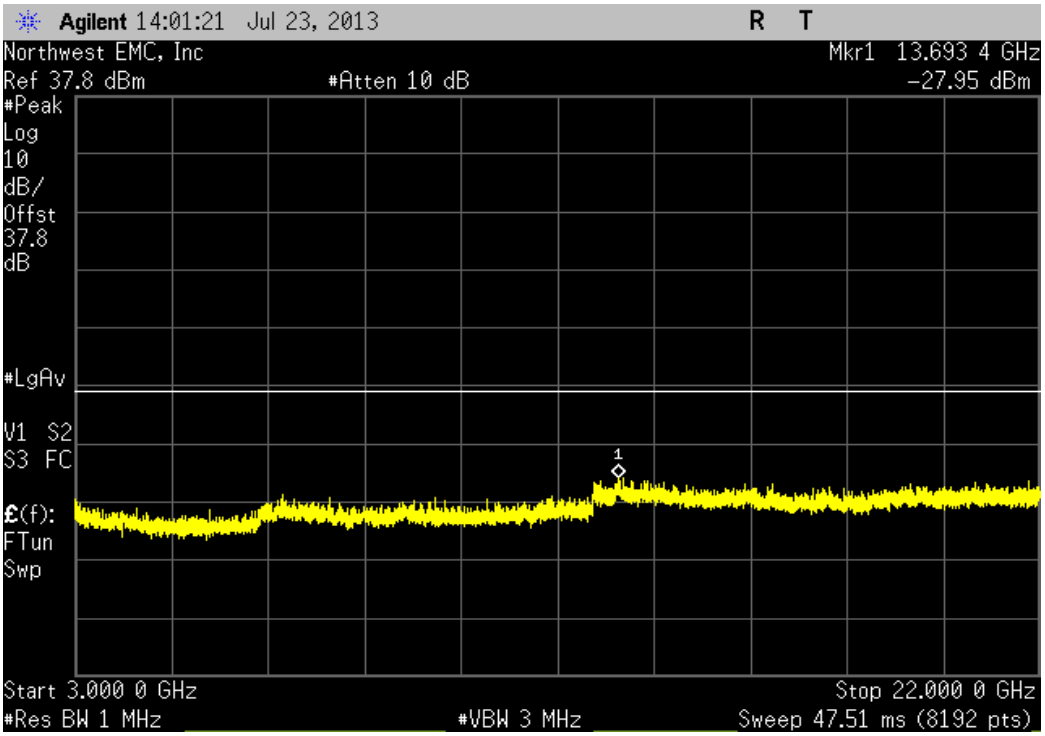


OUT OF BAND EMISSIONS

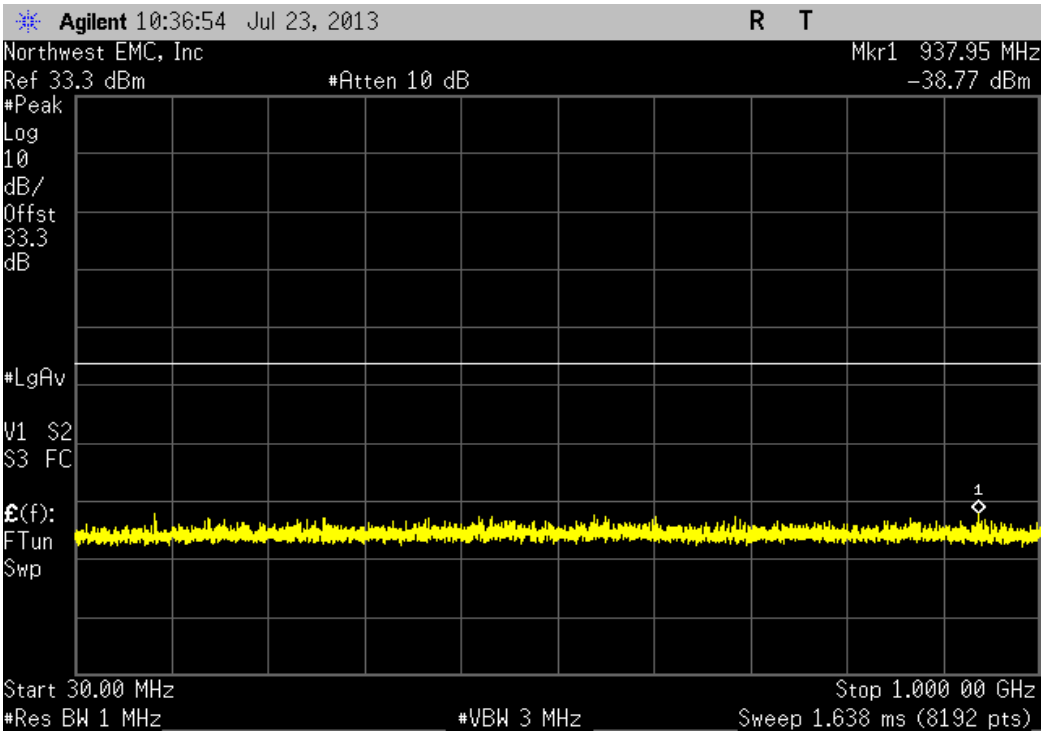
Path 2, LTE 10 MHz, Low Channel 2117 MHz						
	Frequency Range			Value	Limit	Result
	1 GHz - 3 GHz			-18.03 dBm	≤ -13 dBm	Pass



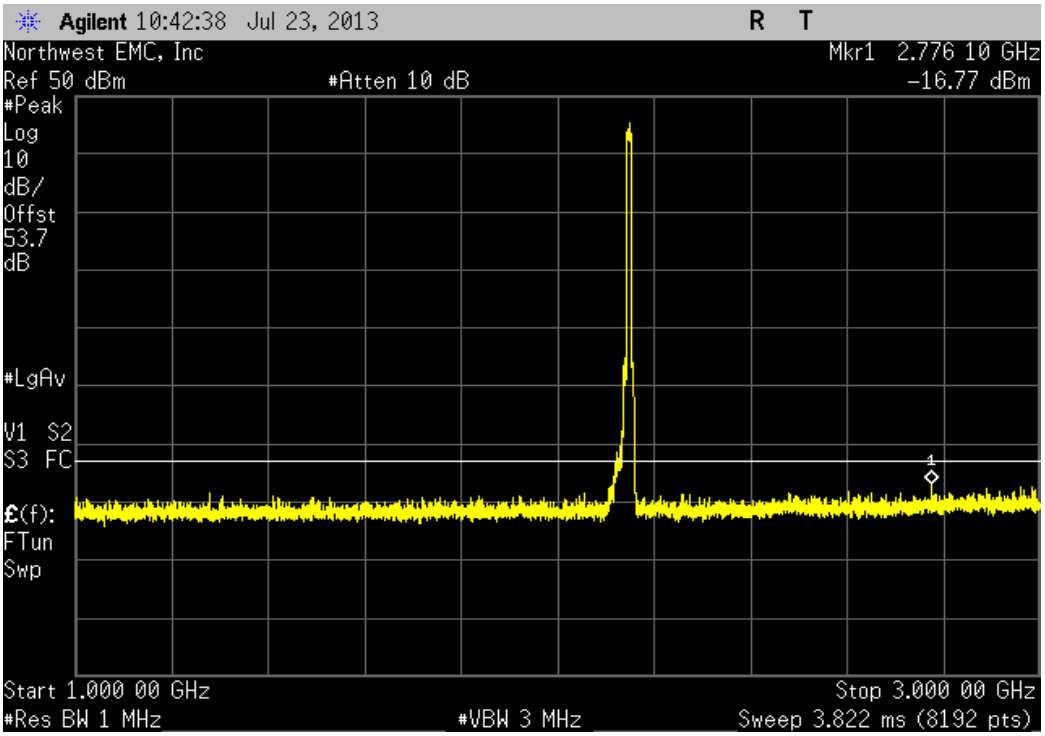
Path 2, LTE 10 MHz, Low Channel 2117 MHz						
	Frequency Range			Value	Limit	Result
	3 GHz - 22 GHz			-27.95 dBm	≤ -13 dBm	Pass



Path 2, LTE 10 MHz, High Channel 2148 MHz						
	Frequency Range			Value	Limit	Result
	30 MHz - 1 GHz			-38.77 dBm	≤ -13 dBm	Pass

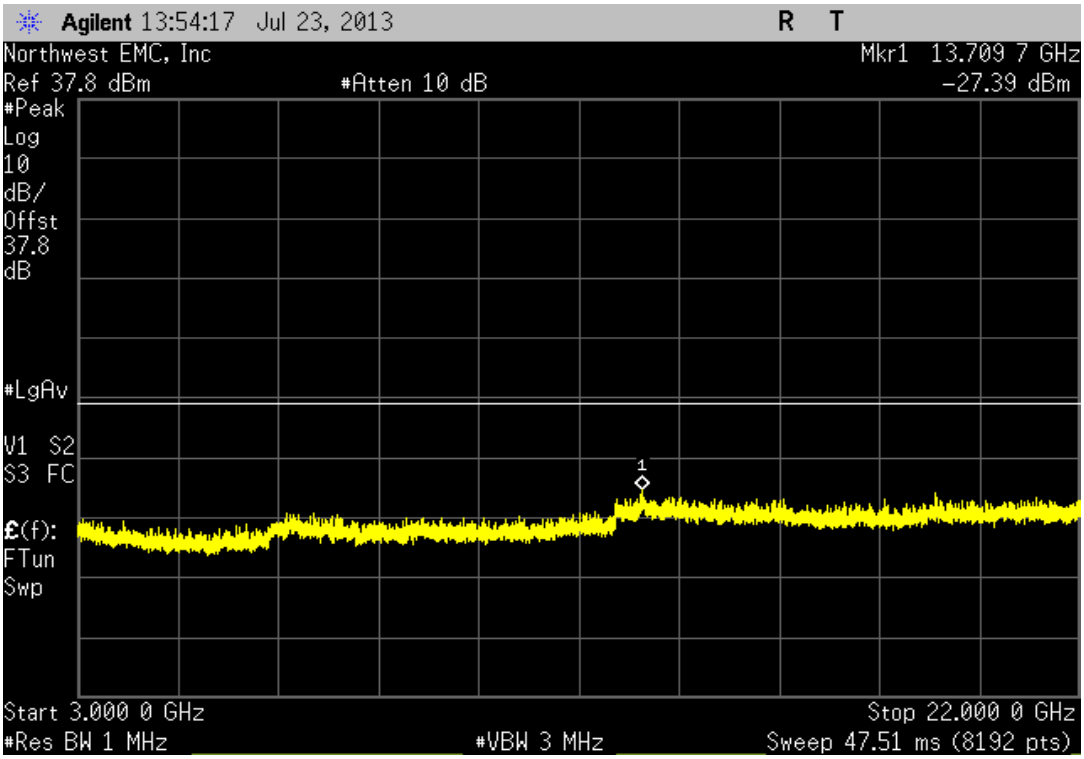


Path 2, LTE 10 MHz, High Channel 2148 MHz						
	Frequency Range			Value	Limit	Result
	1 GHz - 3 GHz			-16.77 dBm	≤ -13 dBm	Pass



OUT OF BAND EMISSIONS

Path 2, LTE 10 MHz, High Channel 2148 MHz						
	Frequency Range			Value	Limit	Result
	3 GHz - 22 GHz			-27.39 dBm	≤ -13 dBm	Pass



BAND EDGE COMPLIANCE

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Attenuator - 20db, 'SMA'	SM Electronics	SA26B-20	RFW	4/12/2013	12
40 GHz DC block	Fairview Microwave	SD3379	AMI	10/5/2012	12
Signal Generator MXG	Agilent	N5183A	TIK	6/7/2012	36
Spectrum Analyzer	Agilent	E4440A	AAX	5/15/2012	24

TEST DESCRIPTION

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

The spectrum was scanned below the lower band edge and above the higher band edge. The resolution bandwidth was set to approximately 1% of the measured emissions bandwidth. An average RMS detector was used to match the method used during Output Power. The screen capture shows the margin between the measured value and the -13 dBm limit at the band edge.

BAND EDGE COMPLIANCE

EUT:	Prism HDM 1900 MHz / 2100 MHz SISO RF Module			**Work Order:**	TECO0004
Serial Number:	None			**Date:**	07/23/13
Customer:	TE Connectivity /ADC Telecommunications			**Temperature:**	25.6°C
Attendees:	None			**Humidity:**	41%
Project:	None			**Barometric Pres.:**	1015.5
Tested by:	Trevor Buls	**Power:**	110VAC/60Hz	**Job Site:**	MN08

TEST SPECIFICATIONS	Test Method
FCC 27:2014	ANSI/TIA/EIA-603-C-2004

COMMENTS

Customer provided a high wattage 30 dB attenuator.

DEVIATIONS FROM TEST STANDARD

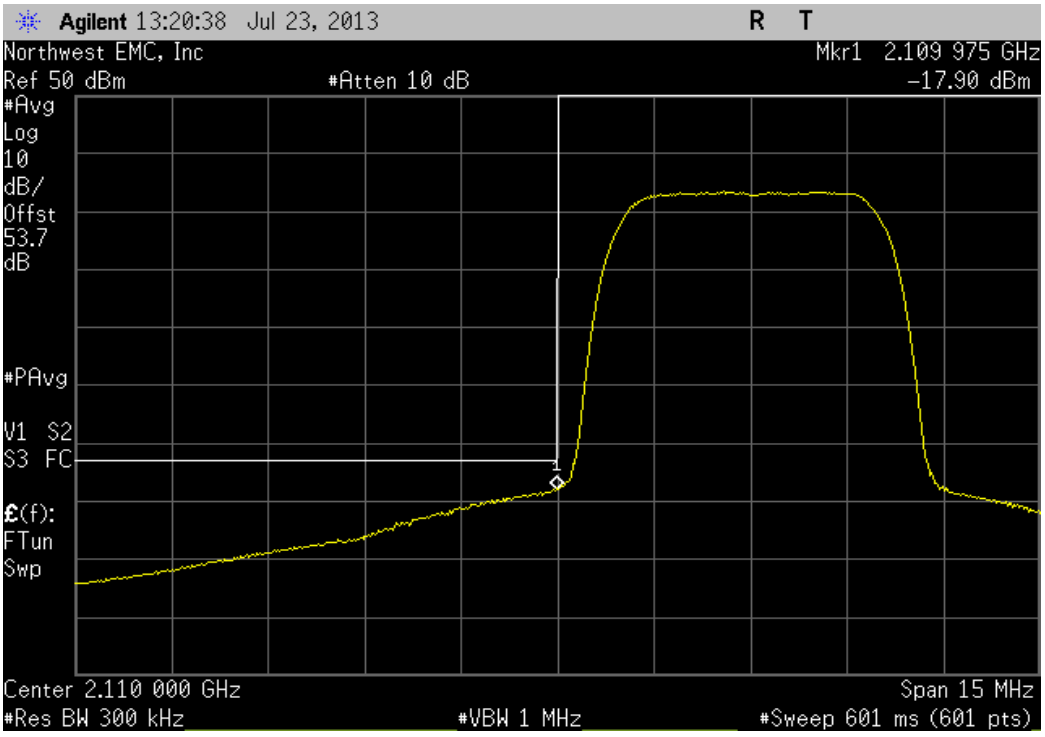
None

Configuration #	1	Signature	Trevor Buls

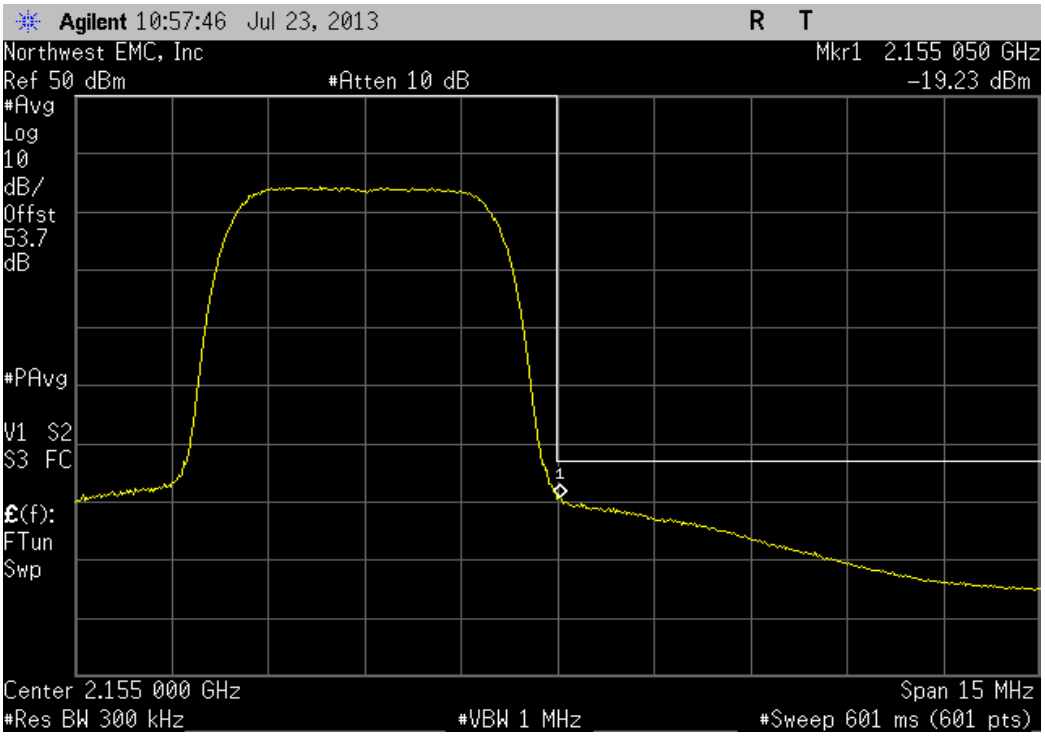
		Value (dBm)	Limit (dBm)	Result
Path 2				
	WCDMA			
	Low Channel 2113 MHz	-17.9	-13	Pass
	High Channel 2152 MHz	-19.23	-13	Pass
	LTE 5 MHz			
	Low Channel 2113 MHz	-20.79	-13	Pass
	High Channel 2152 MHz	-21.24	-13	Pass
	LTE 10 MHz			
	Low Channel 2117 MHz	-20.46	-13	Pass
	High Channel 2148 MHz	-21.29	-13	Pass

BAND EDGE COMPLIANCE

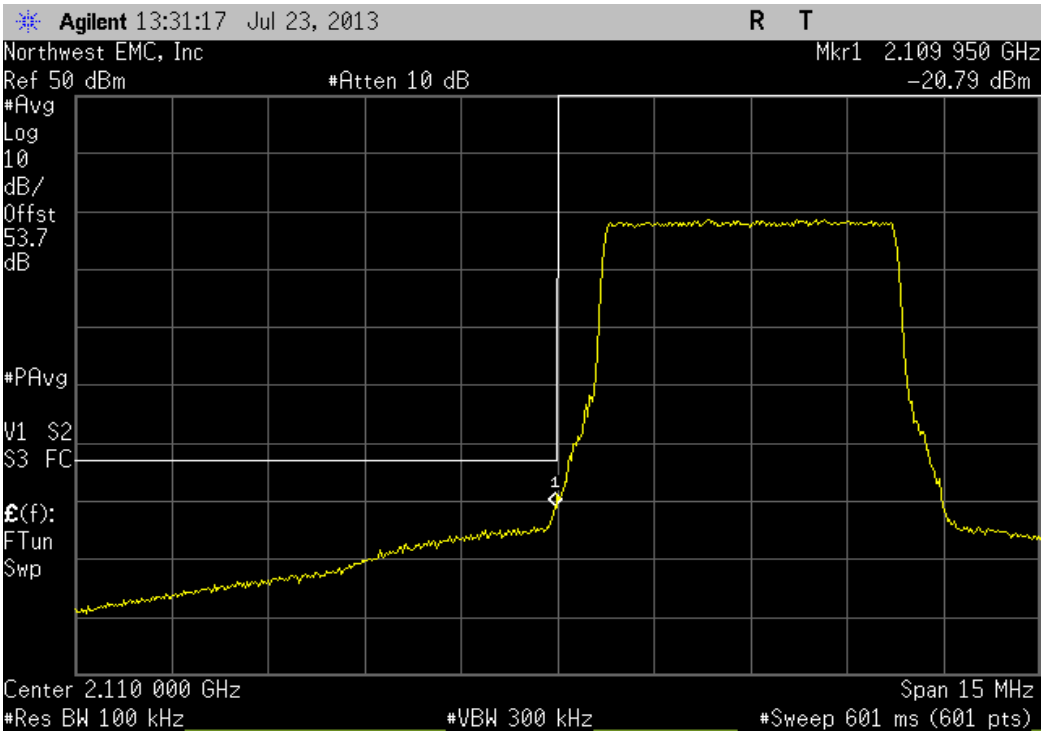
Path 2, WCDMA, Low Channel 2113 MHz							
					Value (dBm)	Limit (dBm)	Result
					-17.9	-13.0	Pass



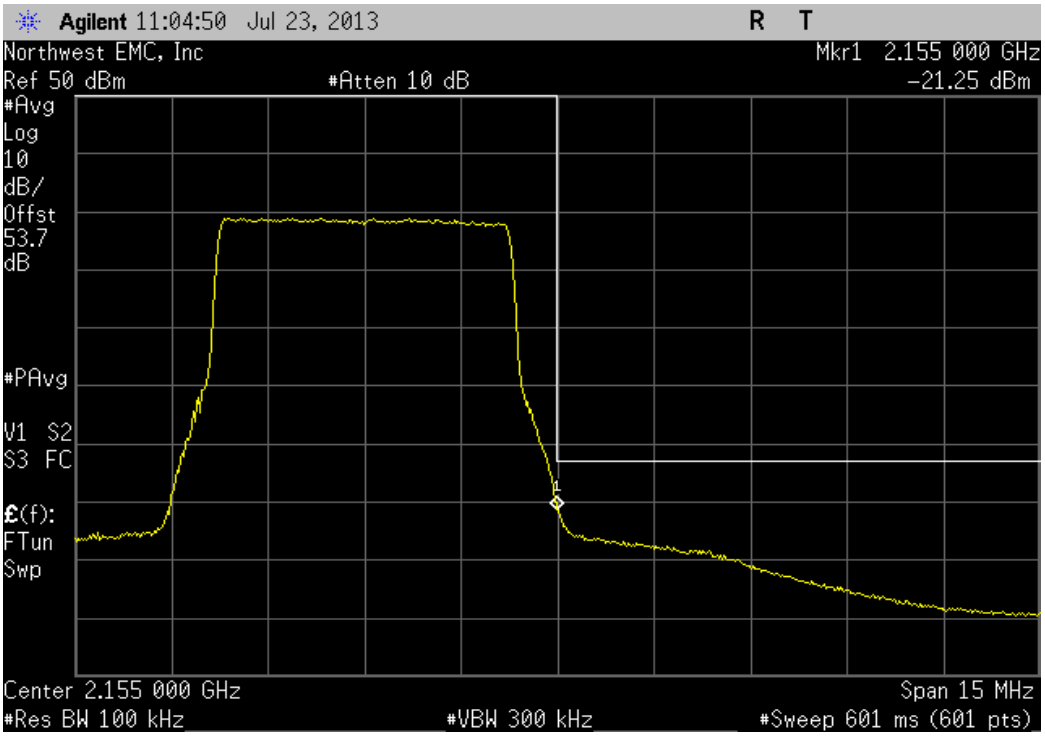
Path 2, WCDMA, High Channel 2152 MHz							
					Value (dBm)	Limit (dBm)	Result
					-19.23	-13.0	Pass



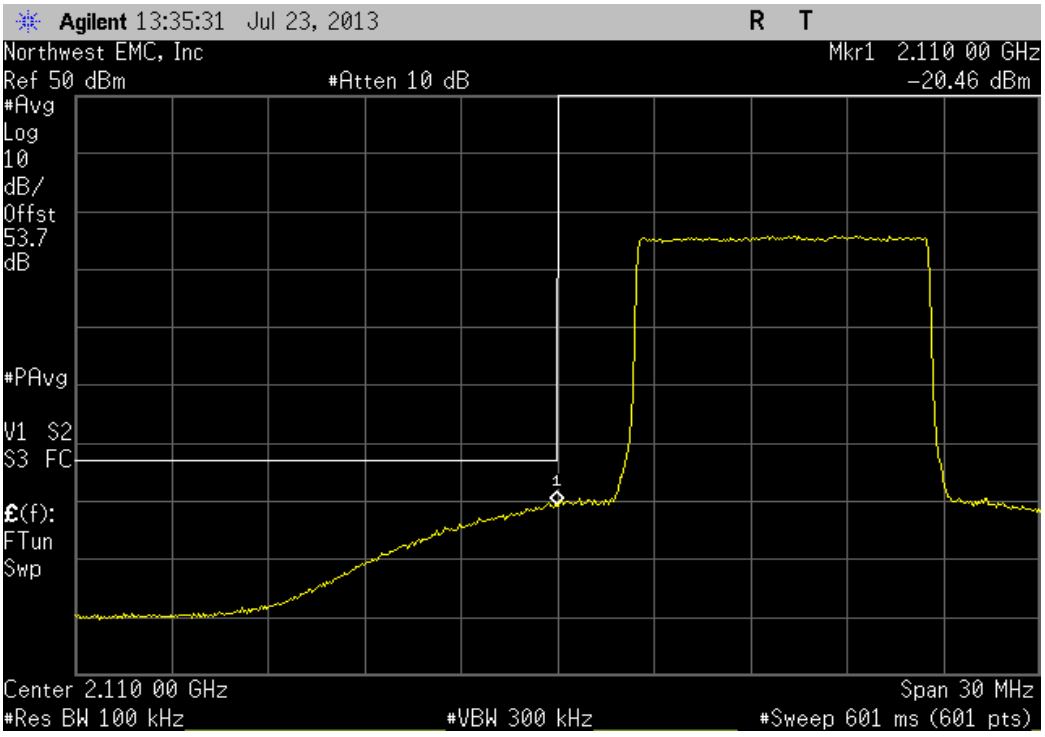
Path 2, LTE 5 MHz, Low Channel 2113 MHz							
					Value (dBm)	Limit (dBm)	Result
					-20.79	-13.0	Pass



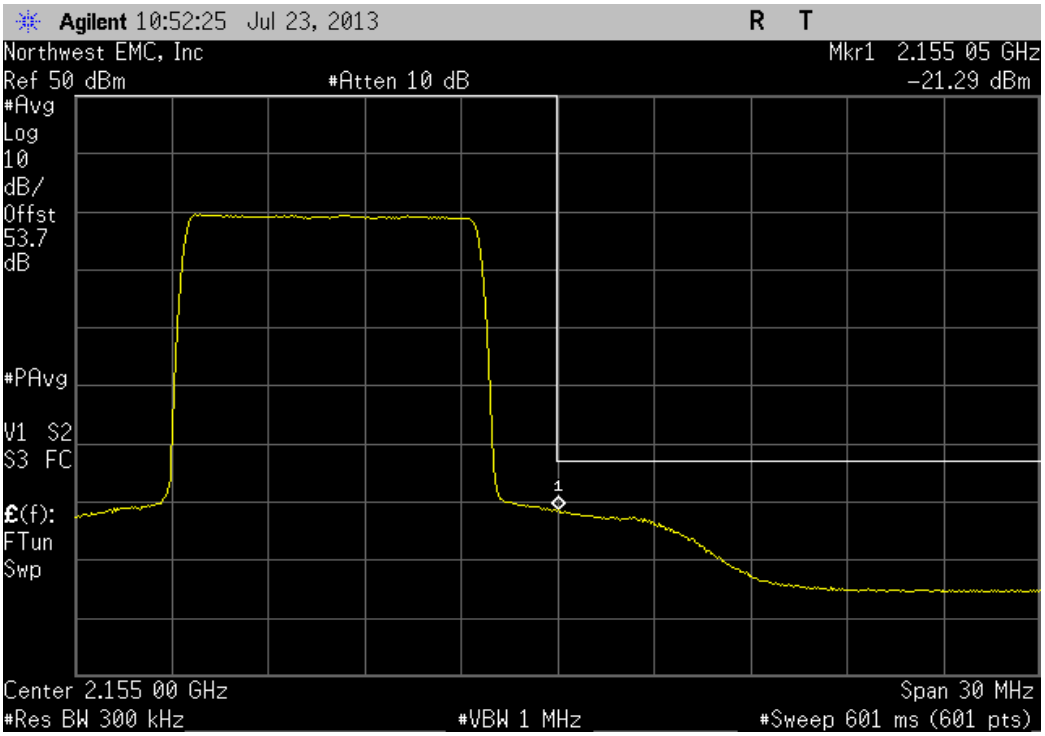
Path 2, LTE 5 MHz, High Channel 2152 MHz							
					Value (dBm)	Limit (dBm)	Result
					-21.24	-13.0	Pass



Path 2, LTE 10 MHz, Low Channel 2117 MHz							
					Value (dBm)	Limit (dBm)	Result
					-20.46	-13.0	Pass



Path 2, LTE 10 MHz, High Channel 2148 MHz							
					Value (dBm)	Limit (dBm)	Result
					-21.29	-13.0	Pass



INTERMODULATION

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 Divider/Combiner	Fairview Microwave	MP0208-2	IAF	NCR	0
Low Pass Filter 0-1000 MHz	Micro-Tronics	LPM50004	HGV	10/5/2012	24
High Pass Filter 2.8-18 GHz	Micro-Tronics	HPM50111	HGY	10/5/2012	24
40 GHz DC block	Fairview Microwave	SD3379	AMI	10/5/2012	12
Attenuator - 20db, 'SMA'	SM Electronics	SA26B-20	RFW	4/12/2013	12
Signal Generator	Agilent	E4422B	TGQ	3/5/2012	36
Signal Generator MXG	Agilent	N5183A	TIK	6/7/2012	36
Spectrum Analyzer	Agilent	E4440A	AAX	5/15/2012	24

TEST DESCRIPTION

The EUT was configured with an input of a CW pulse at the bottom of the band, a CW pulse at the top of the band,and a modulated pulse near the bottom of the band.

The antenna port spurious emissions were measured at the RF output terminal of the EUT with external attenuation on the RF input of the spectrum analyzer. Analyzer plots utilizing a 1MHz resolution bandwidth and no video filtering were made for each modulation type from 30 MHz to 22 GHz. The peak conducted power of spurious emissions, up to the 10th harmonic of the transmit frequency, were investigated to ensure they were less than or equal to –13 dBm.

The emissions at the band edges were measured with an average RMS detector to match the method used during Output Power.

INTERMODULATION

EUT:	Prism HDM 1900 MHz / 2100 MHz SISO RF Module			**Work Order:**	TECO0004
Serial Number:	None			**Date:**	07/23/13
Customer:	TE Connectivity/ADC Telecommunications			**Temperature:**	25.6°C
Attendees:	None			**Humidity:**	41%
Project:	None			**Barometric Pres.:**	1015.5
Tested by:	Trevor Buls	**Power:**	110VAC/60Hz	**Job Site:**	MN08

TEST SPECIFICATIONS	Test Method
FCC 27:2014	ANSI/TIA/EIA-603-C-2004

COMMENTS

Customer provided a high wattage 30 dB attenuator.

DEVIATIONS FROM TEST STANDARD

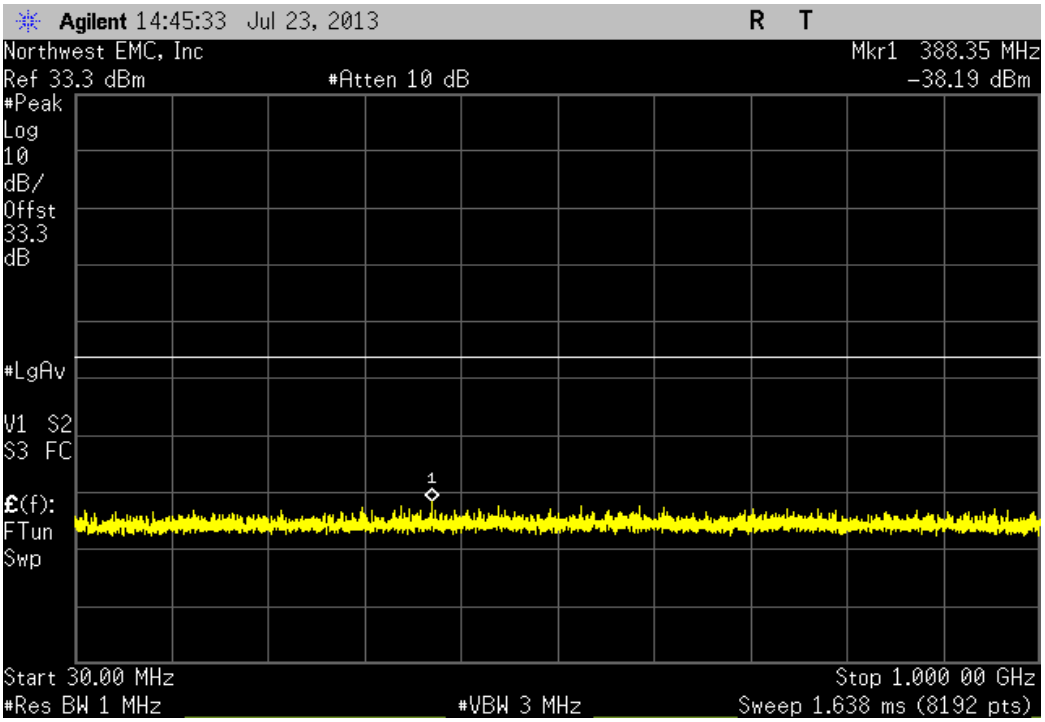
None

Configuration #	1	Signature	Trevor Buls

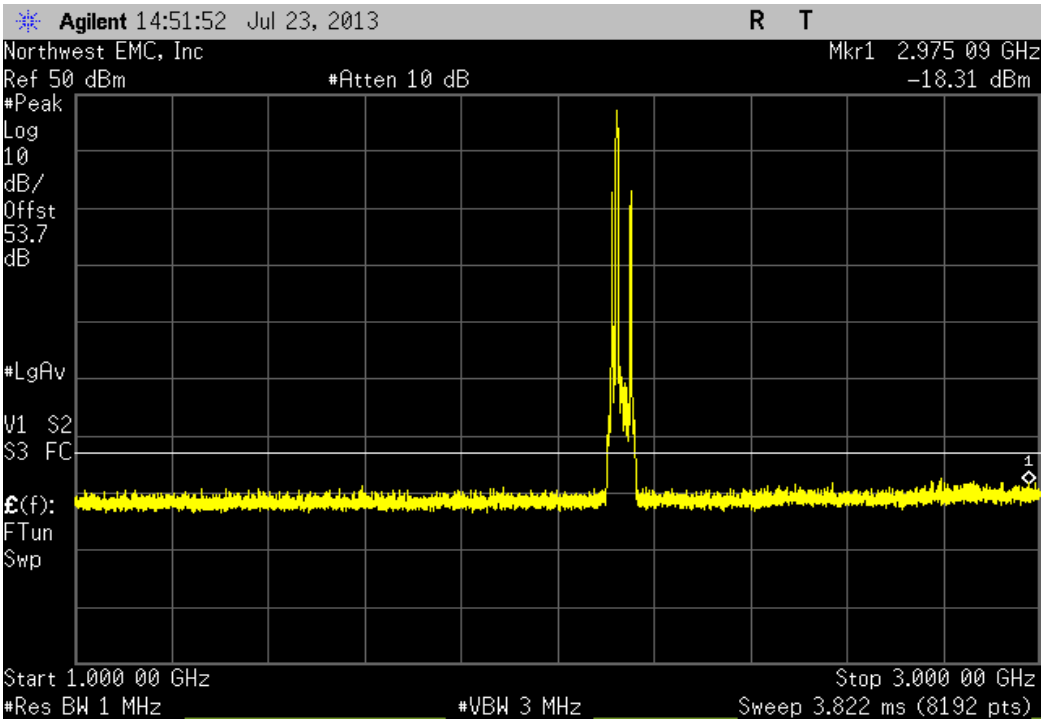
		Frequency Range	Value	Limit	Result
Path 2					
	WCDMA	30 MHz - 1 GHz	-38.2 dBm	≤ -13 dBm	Pass
	WCDMA	1 GHz - 3 GHz	-18.31 dBm	≤ -13 dBm	Pass
	WCDMA	3 GHz - 22 GHz	-27.74 dBm	≤ -13 dBm	Pass
	WCDMA	Band Edge (RMS)	See Graph	≤ -13 dBm	Pass
	LTE 5 MHz	30 MHz - 1 GHz	-38.41 dBm	≤ -13 dBm	Pass
	LTE 5 MHz	1 GHz - 3 GHz	-17.78 dBm	≤ -13 dBm	Pass
	LTE 5 MHz	3 GHz - 22 GHz	-27.7 dBm	≤ -13 dBm	Pass
	LTE 5 MHz	Band Edge (RMS)	See Graph	≤ -13 dBm	Pass
	LTE 10 MHz	30 MHz - 1 GHz	-38.83 dBm	≤ -13 dBm	Pass
	LTE 10 MHz	1 GHz - 3 GHz	-17.25 dBm	≤ -13 dBm	Pass
	LTE 10 MHz	3 GHz - 22 GHz	-27.72 dBm	≤ -13 dBm	Pass
	LTE 10 MHz	Band Edge (RMS)	See Graph	≤ -13 dBm	Pass

INTERMODULATION

Path 2, WCDMA						
	Frequency Range			Value	Limit	Result
	30 MHz - 1 GHz			-38.2 dBm	≤ -13 dBm	Pass

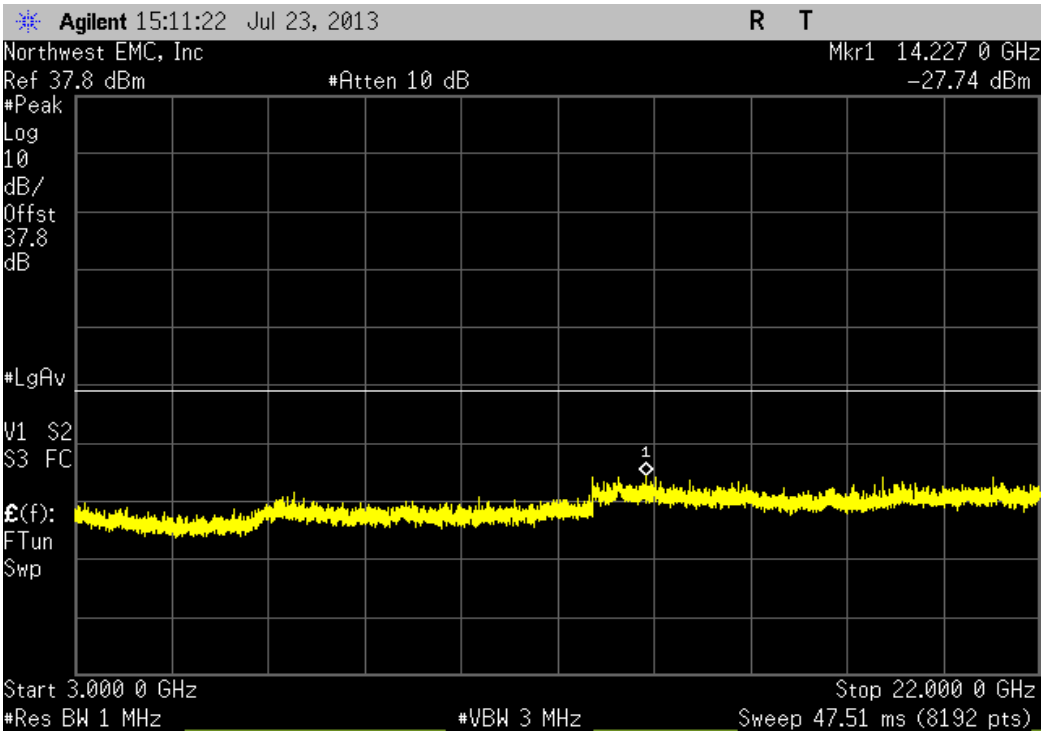


Path 2, WCDMA						
	Frequency Range			Value	Limit	Result
	1 GHz - 3 GHz			-18.31 dBm	≤ -13 dBm	Pass

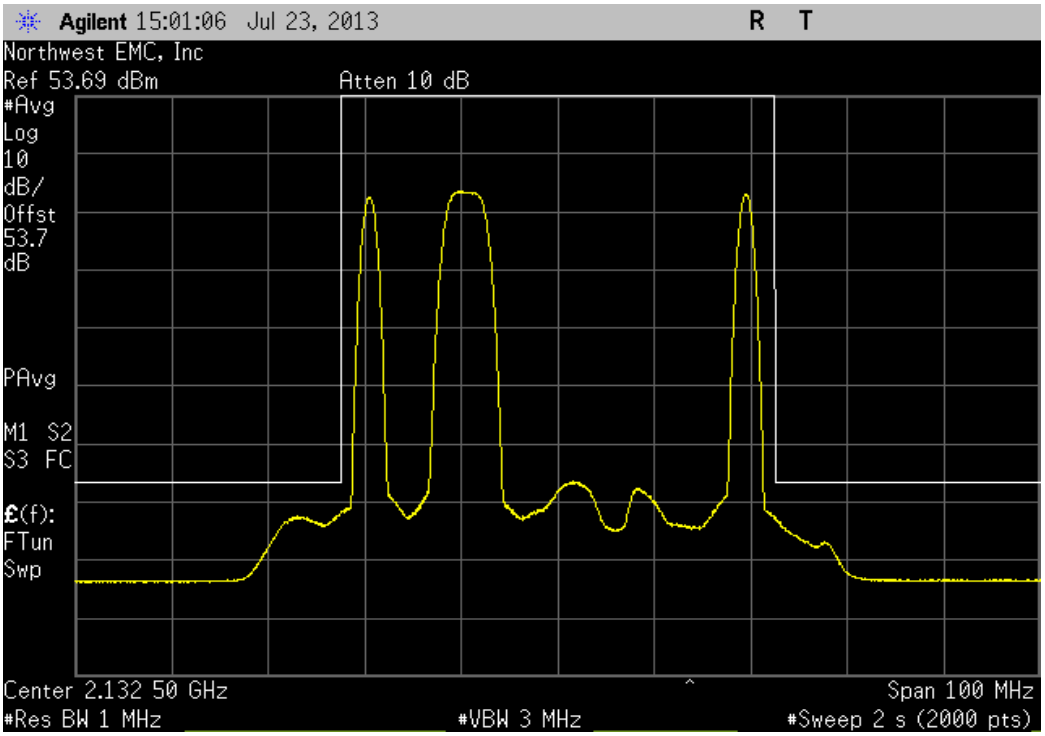


INTERMODULATION

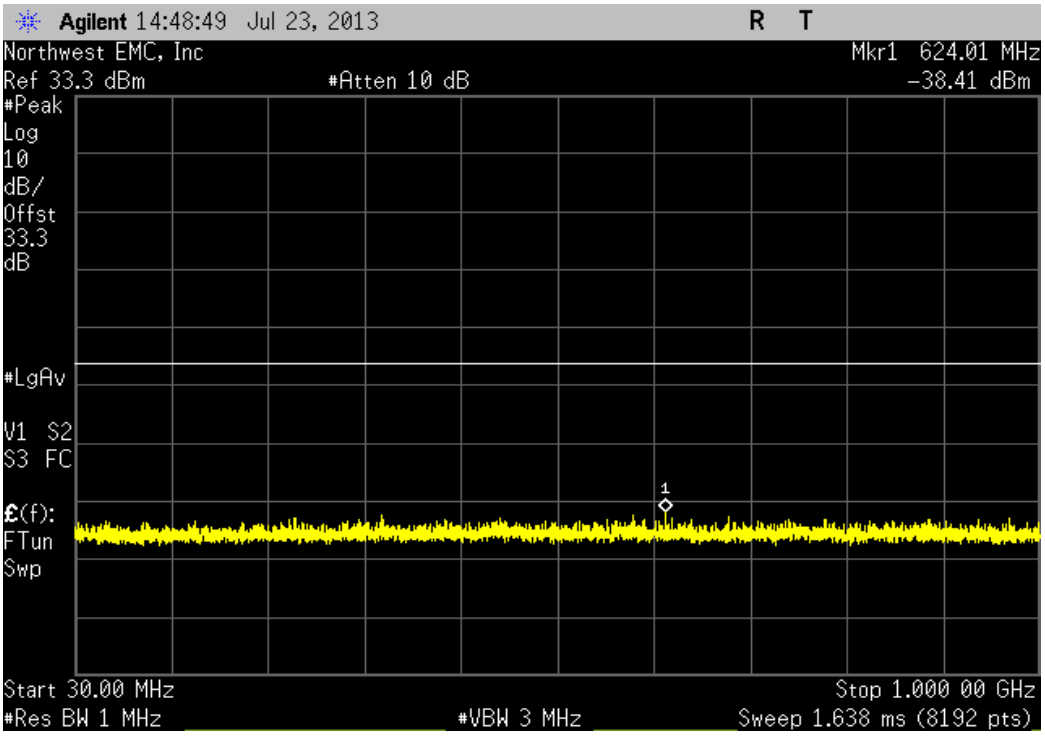
Path 2, WCDMA					
Frequency Range			Value	Limit	Result
3 GHz - 22 GHz			-27.74 dBm	≤ -13 dBm	Pass



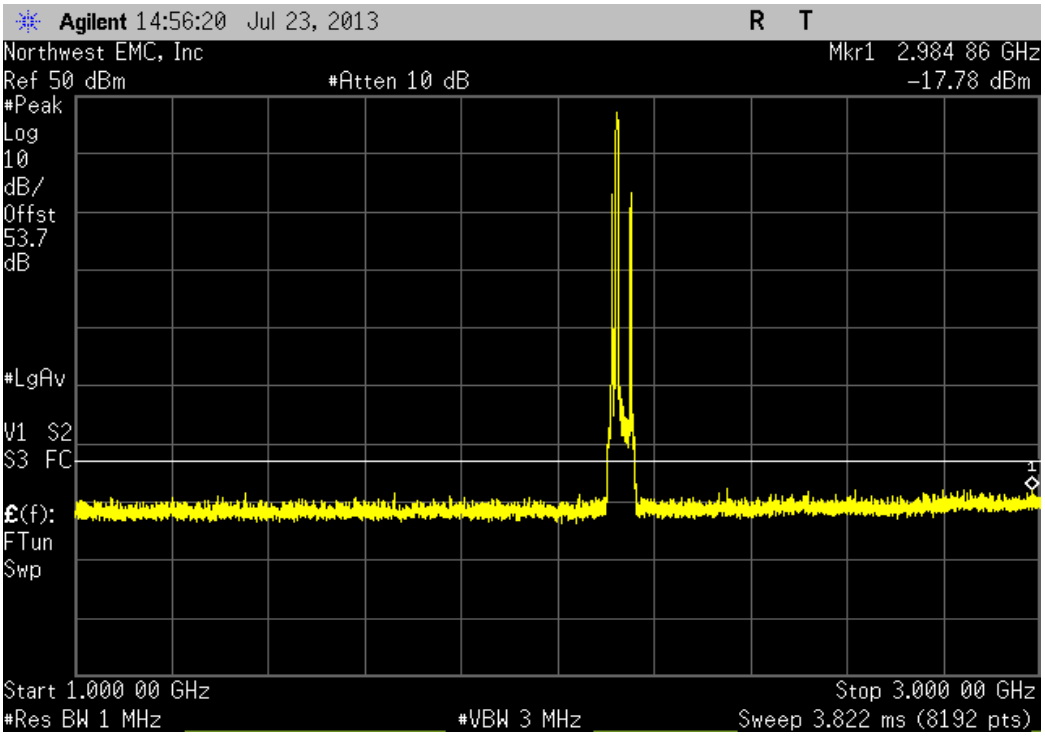
Path 2, WCDMA					
Frequency Range			Value	Limit	Result
Band Edge (RMS)			See Graph	≤ -13 dBm	Pass



Path 2, LTE 5 MHz						
	Frequency Range			Value	Limit	Result
	30 MHz - 1 GHz			-38.41 dBm	≤ -13 dBm	Pass

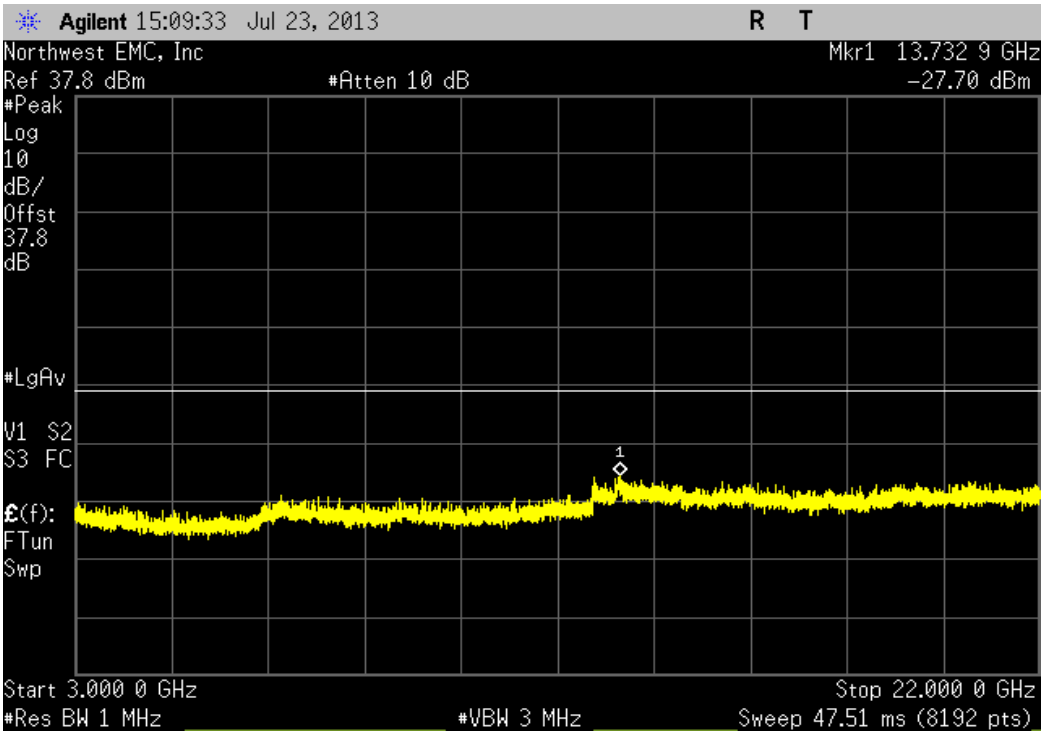


Path 2, LTE 5 MHz						
	Frequency Range			Value	Limit	Result
	1 GHz - 3 GHz			-17.78 dBm	≤ -13 dBm	Pass

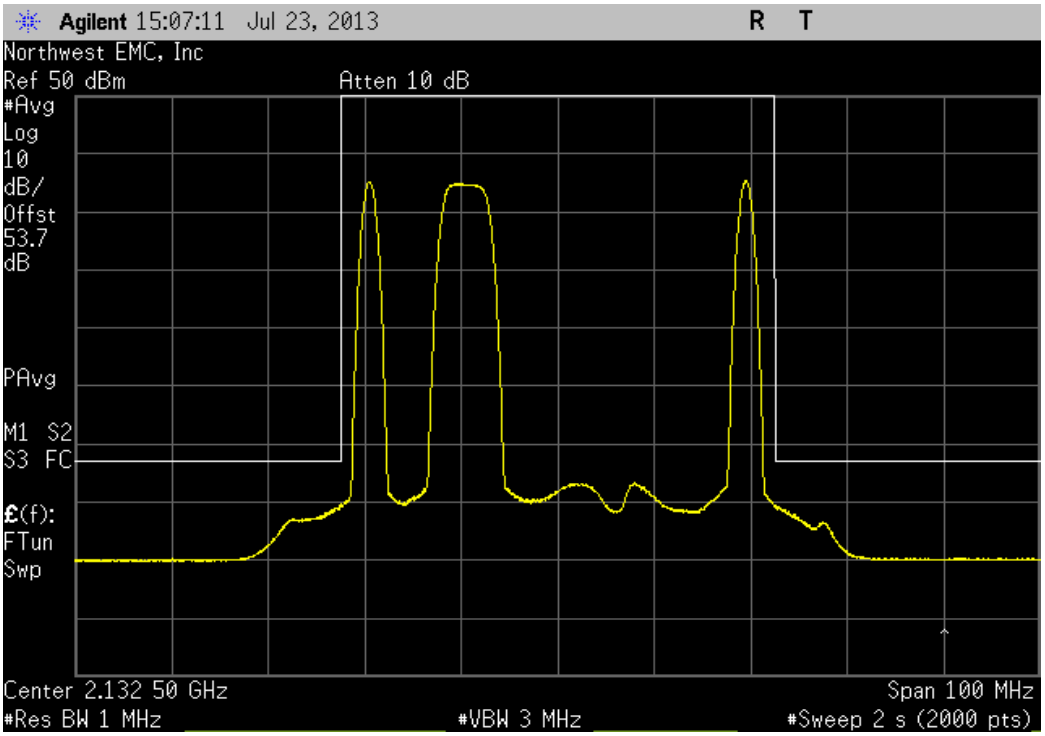


INTERMODULATION

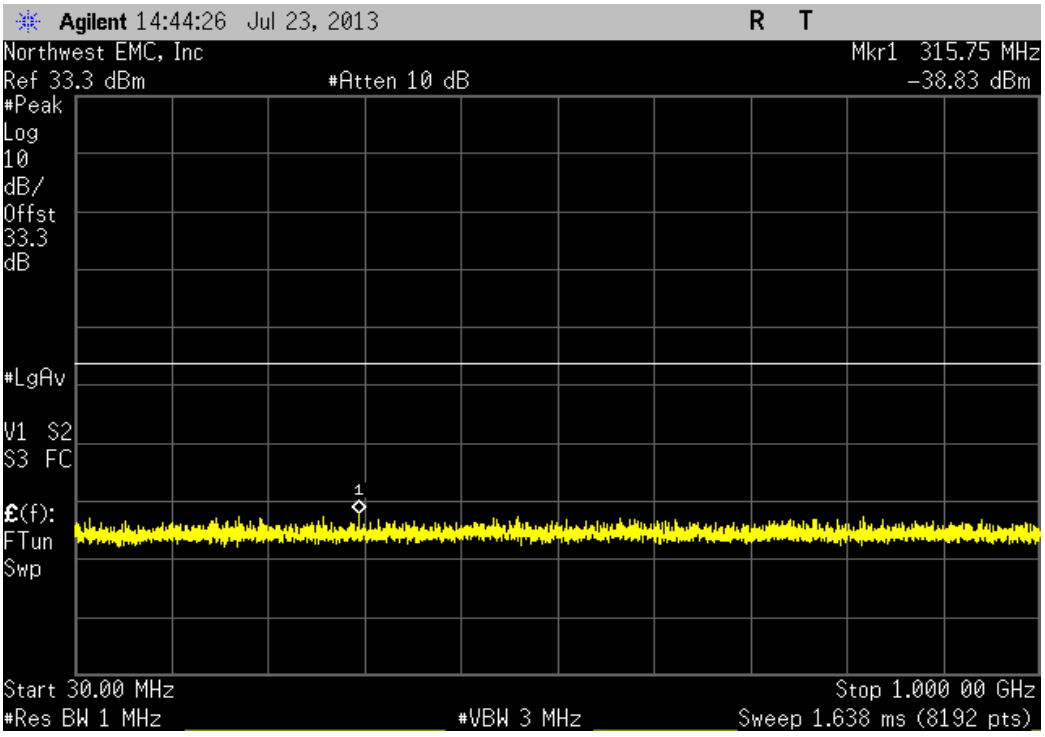
Path 2, LTE 5 MHz					
Frequency Range			Value	Limit	Result
3 GHz - 22 GHz			-27.7 dBm	≤ -13 dBm	Pass



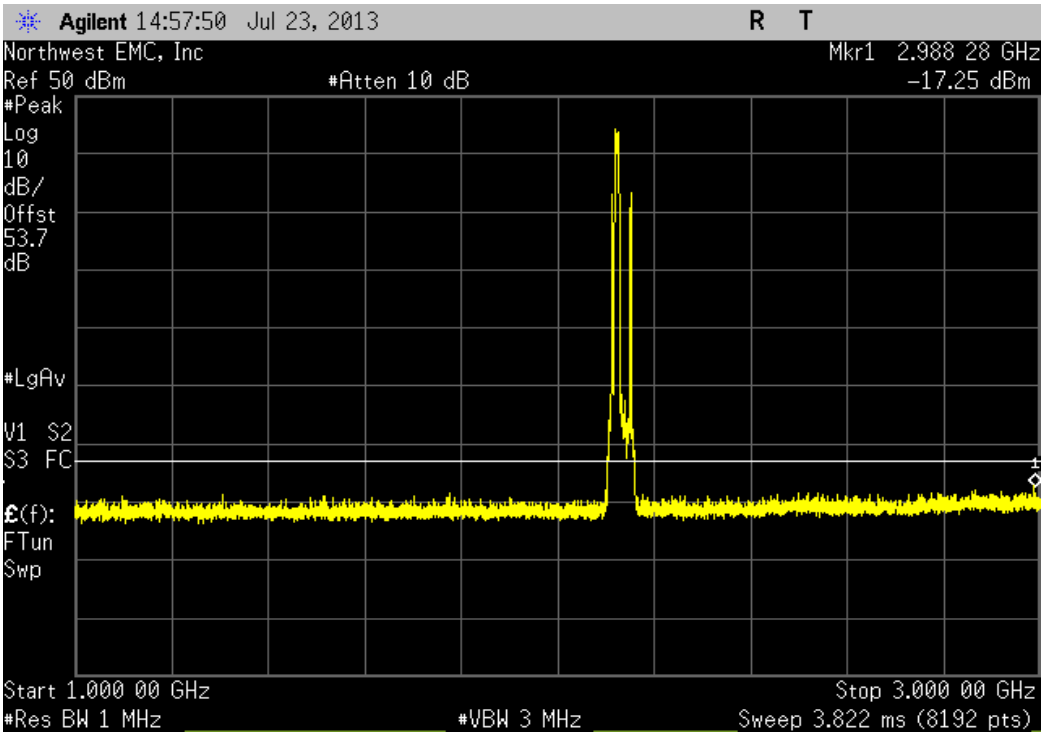
Path 2, LTE 5 MHz					
Frequency Range			Value	Limit	Result
Band Edge (RMS)			See Graph	≤ -13 dBm	Pass



Path 2, LTE 10 MHz						
	Frequency Range			Value	Limit	Result
	30 MHz - 1 GHz			-38.83 dBm	≤ -13 dBm	Pass

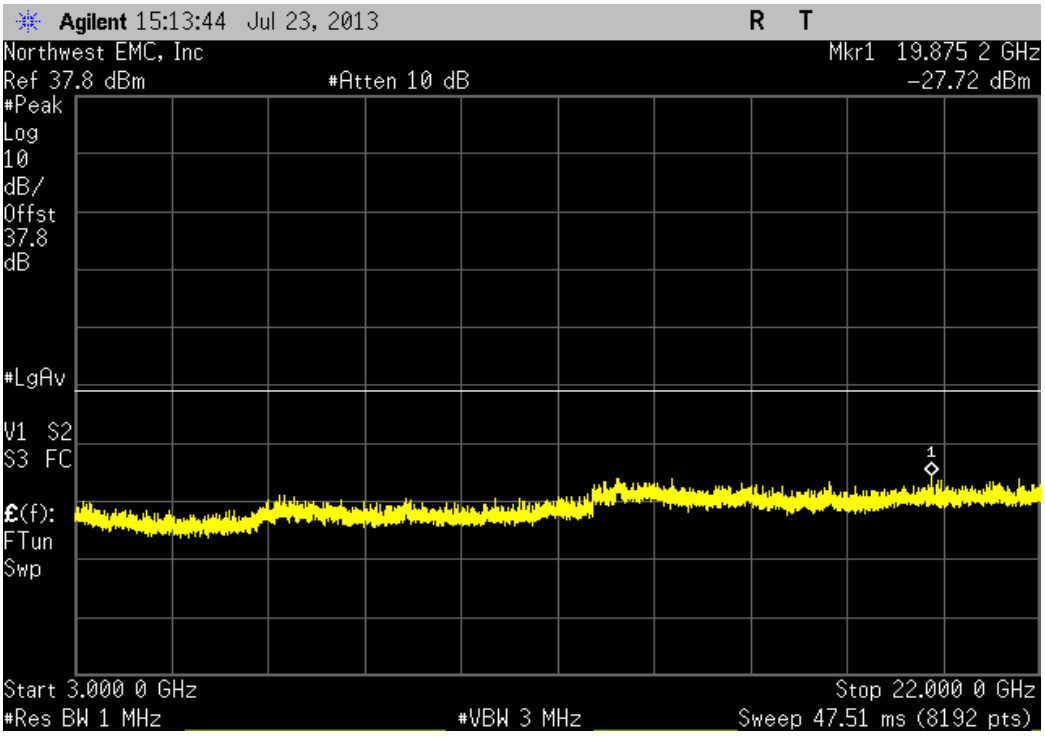


Path 2, LTE 10 MHz						
	Frequency Range			Value	Limit	Result
	1 GHz - 3 GHz			-17.25 dBm	≤ -13 dBm	Pass

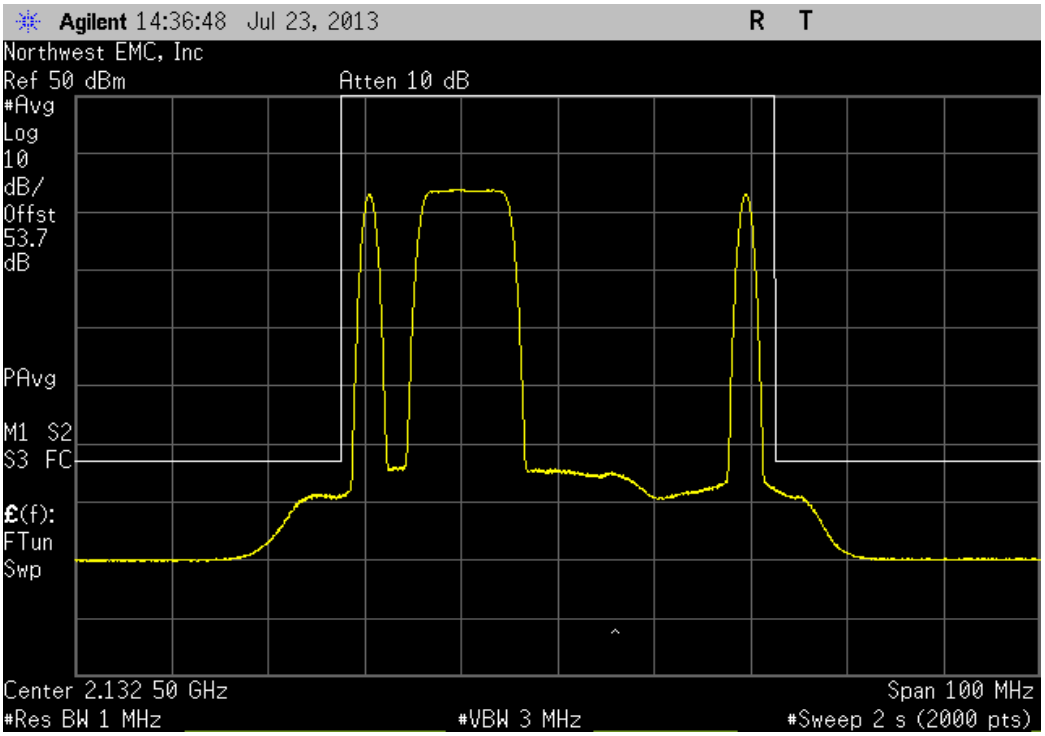


INTERMODULATION

Path 2, LTE 10 MHz					
Frequency Range			Value	Limit	Result
3 GHz - 22 GHz			-27.72 dBm	≤ -13 dBm	Pass



Path 2, LTE 10 MHz					
Frequency Range			Value	Limit	Result
Band Edge (RMS)			See Graph	≤ -13 dBm	Pass



FREQUENCY STABILITY

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Variable Transformer	Powerstat	246	XFR	NCR	0
Multimeter	Fluke	114	MMU	7/8/2011	36
Humidity Temperature Meter	Omega Engineering, Inc.	HH31	DUB	10/25/2011	36
Temp./Humidity Chamber	Cincinnati Sub Zero (CSZ)	ZPH-32-3.5-SCT/AC	TBF	NCR	0
Attenuator - 20db, 'SMA'	SM Electronics	SA26B-20	RFW	4/12/2013	12
40 GHz DC block	Fairview Microwave	SD3379	AMI	10/5/2012	12
Signal Generator MXG	Agilent	N5183A	TIK	6/7/2012	36
Spectrum Analyzer	Agilent	E4440A	AAX	5/15/2012	24

TEST DESCRIPTION

A direct connect measurement was made between the EUT's antenna cable and a spectrum analyzer. The spectrum analyzer is equipped with a precision frequency reference that exceeds the stability requirement of the EUT. Testing was done with an absence of modulation in a CW mode of operation.

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

Per the requirements of FCC 27.54:

"The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation."

No specific limits are provided in either FCC 27.54, the product specific rule part, or FCC 2.1055, the equipment authorization procedure for testing frequency stability. While there are no limits called out, any results less than 1.5ppm will still allow the radio to be operating within the band.

RSS-131:2003 requires the EUT to meet a frequency stability limit of 1.5 ppm.

FREQUENCY STABILITY

EUT:	Prism HDM 1900 MHz / 2100 MHz SISO RF Module			**Work Order:**	TECO0004
Serial Number:	None			**Date:**	07/24/13
Customer:	TE Connectivity/ADC Telecommunications			**Temperature:**	23.4°C
Attendees:	None			**Humidity:**	48%
Project:	None			**Barometric Pres.:**	1016.2
Tested by:	Trevor Buls	**Power:**	110VAC/60Hz	**Job Site:**	MN08

TEST SPECIFICATIONS	Test Method
FCC 27:2014	ANSI/TIA/EIA-603-C-2004

COMMENTS

Customer provided a high wattage 30 dB attenuator. Voltage range vaired from 93.5 to 126.5 VAC.

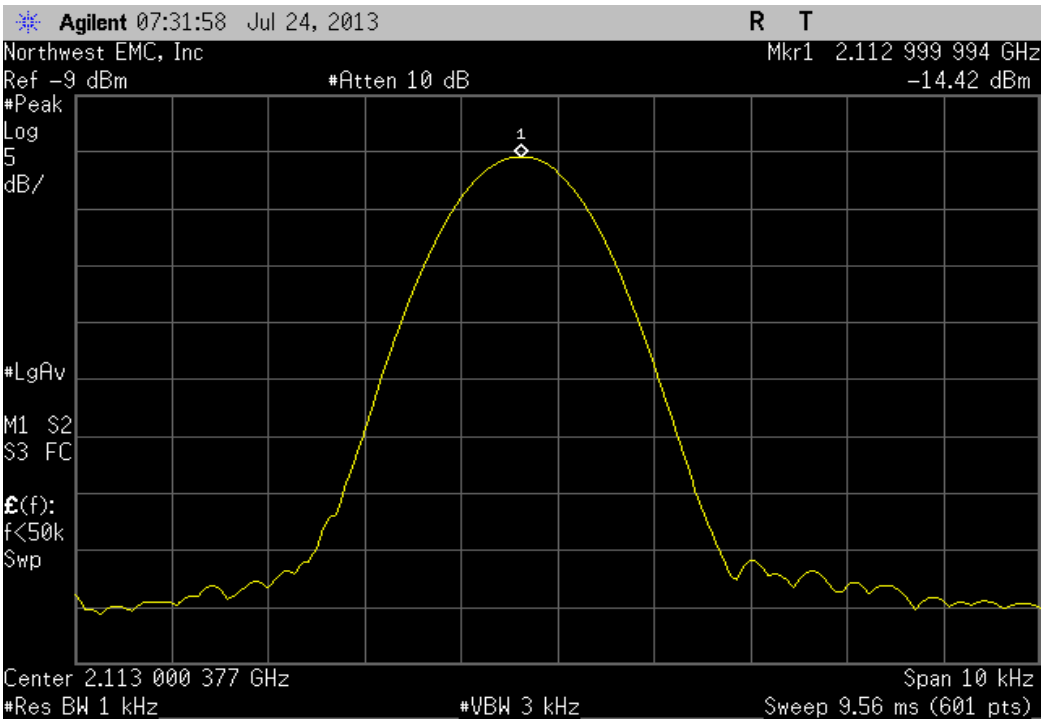
DEVIATIONS FROM TEST STANDARD

None

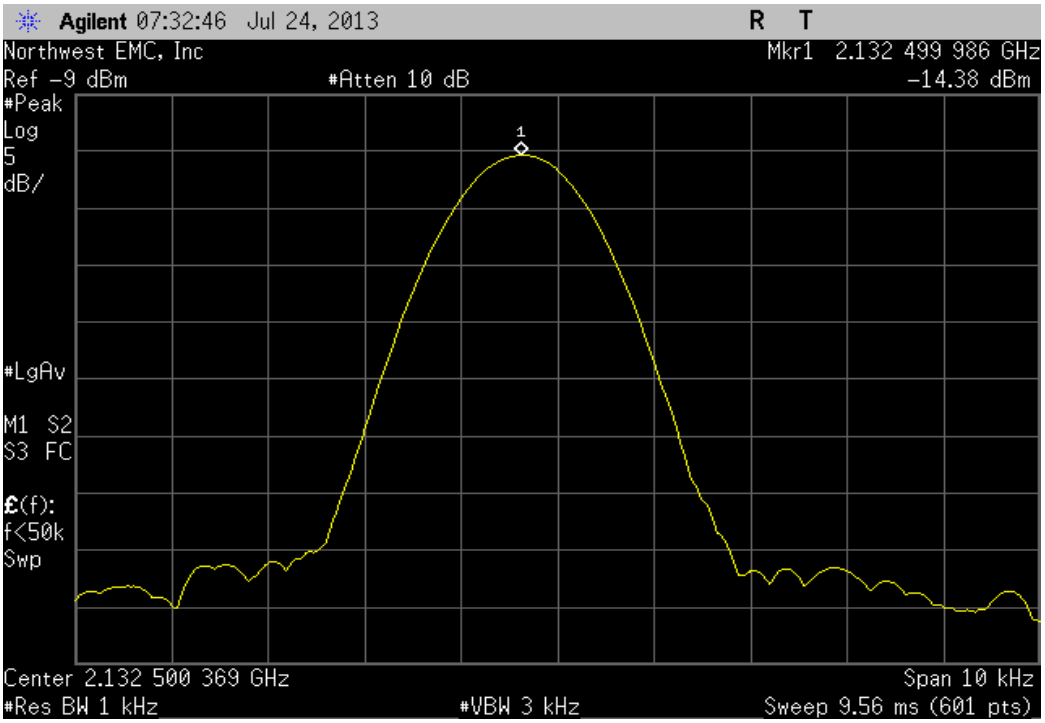
Configuration #	1	*Signature* Trevor Buls

		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
Voltage: 115%						
	Low Channel, 2113 MHz	2112.999994	2113	0.0028	1.5	Pass
	Mid Channel, 2132.5 MHz	2132.499986	2132.5	0.0066	1.5	Pass
	High Channel, 2152 MHz	2151.999984	2152	0.0074	1.5	Pass
Voltage: 100%						
	Low Channel, 2113 MHz	2112.999994	2113	0.0028	1.5	Pass
	Mid Channel, 2132.5 MHz	2132.499986	2132.5	0.0066	1.5	Pass
	High Channel, 2152 MHz	2152.000001	2152	0.0005	1.5	Pass
Voltage: 85%						
	Low Channel, 2113 MHz	2112.999994	2113	0.0028	1.5	Pass
	Mid Channel, 2132.5 MHz	2132.499986	2132.5	0.0066	1.5	Pass
	High Channel, 2152 MHz	2152.000001	2152	0.0005	1.5	Pass
Temperature: +50°						
	Low Channel, 2113 MHz	2112.999982	2113	0.0085	1.5	Pass
	Mid Channel, 2132.5 MHz	2132.499986	2132.5	0.0066	1.5	Pass
	High Channel, 2152 MHz	2151.999985	2152	0.0070	1.5	Pass
Temperature: +40°						
	Low Channel, 2113 MHz	2112.999994	2113	0.0028	1.5	Pass
	Mid Channel, 2132.5 MHz	2132.499986	2132.5	0.0066	1.5	Pass
	High Channel, 2152 MHz	2151.999985	2152	0.0070	1.5	Pass
Temperature: +30°						
	Low Channel, 2113 MHz	2112.999994	2113	0.0028	1.5	Pass
	Mid Channel, 2132.5 MHz	2132.499986	2132.5	0.0066	1.5	Pass
	High Channel, 2152 MHz	2151.999984	2152	0.0074	1.5	Pass
Temperature: +20°						
	Low Channel, 2113 MHz	2112.999994	2113	0.0028	1.5	Pass
	Mid Channel, 2132.5 MHz	2132.499986	2132.5	0.0066	1.5	Pass
	High Channel, 2152 MHz	2151.999984	2152	0.0074	1.5	Pass
Temperature: +10°						
	Low Channel, 2113 MHz	2112.999994	2113	0.0028	1.5	Pass
	Mid Channel, 2132.5 MHz	2132.500003	2132.5	0.0014	1.5	Pass
	High Channel, 2152 MHz	2151.999984	2152	0.0074	1.5	Pass
Temperature: 0°						
	Low Channel, 2113 MHz	2112.999994	2113	0.0028	1.5	Pass
	Mid Channel, 2132.5 MHz	2132.500002	2132.5	0.0009	1.5	Pass
	High Channel, 2152 MHz	2151.999984	2152	0.0074	1.5	Pass
Temperature: -10°						
	Low Channel, 2113 MHz	2112.999994	2113	0.0028	1.5	Pass
	Mid Channel, 2132.5 MHz	2132.499986	2132.5	0.0066	1.5	Pass
	High Channel, 2152 MHz	2151.999984	2152	0.0074	1.5	Pass
Temperature: -20°						
	Low Channel, 2113 MHz	2112.999994	2113	0.0028	1.5	Pass
	Mid Channel, 2132.5 MHz	2132.499986	2132.5	0.0066	1.5	Pass
	High Channel, 2152 MHz	2151.999984	2152	0.0074	1.5	Pass
Temperature: -30°						
	Low Channel, 2113 MHz	2112.999994	2113	0.0028	1.5	Pass
	Mid Channel, 2132.5 MHz	2132.499986	2132.5	0.0066	1.5	Pass
	High Channel, 2152 MHz	2151.999985	2152	0.0070	1.5	Pass

Voltage: 115%, Low Channel, 2113 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		2112.999994	2113	0.0028	1.5	Pass

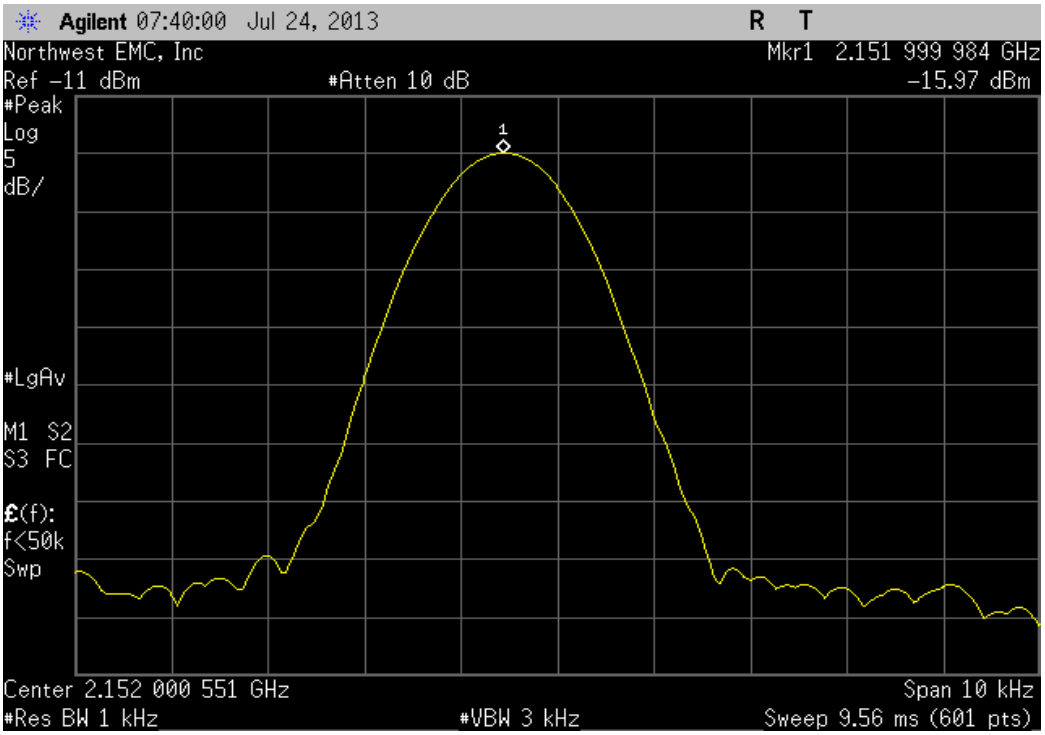


Voltage: 115%, Mid Channel, 2132.5 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		2132.499986	2132.5	0.0066	1.5	Pass

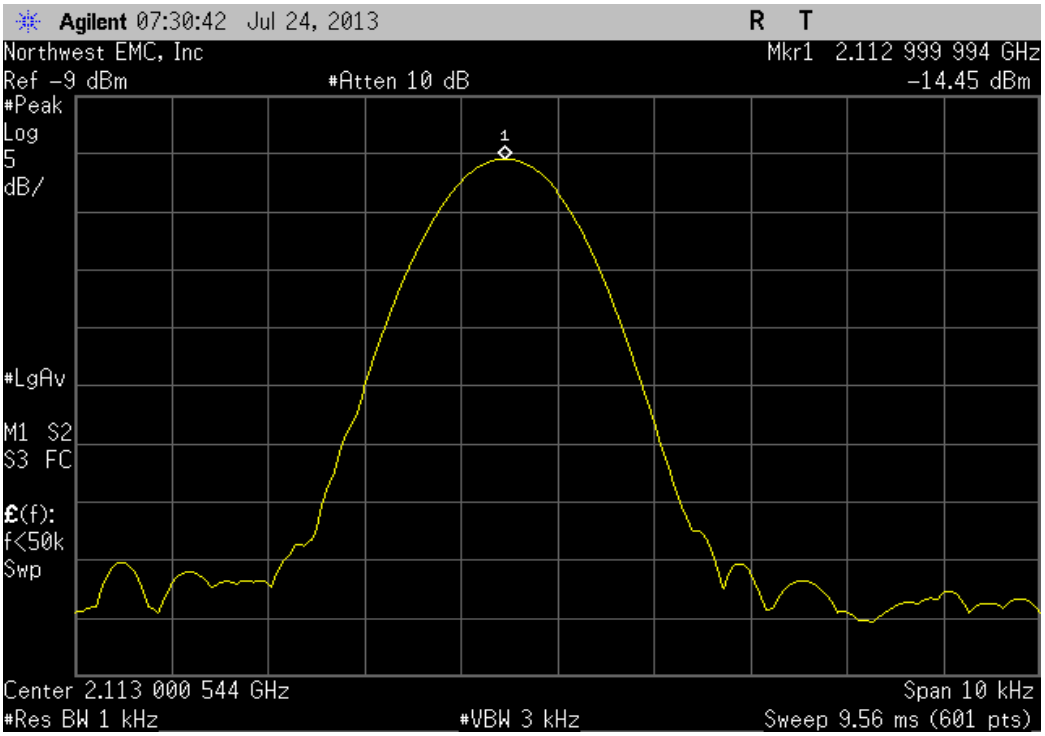


FREQUENCY STABILITY

Voltage: 115%, High Channel, 2152 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		2151.999984	2152	0.0074	1.5	Pass

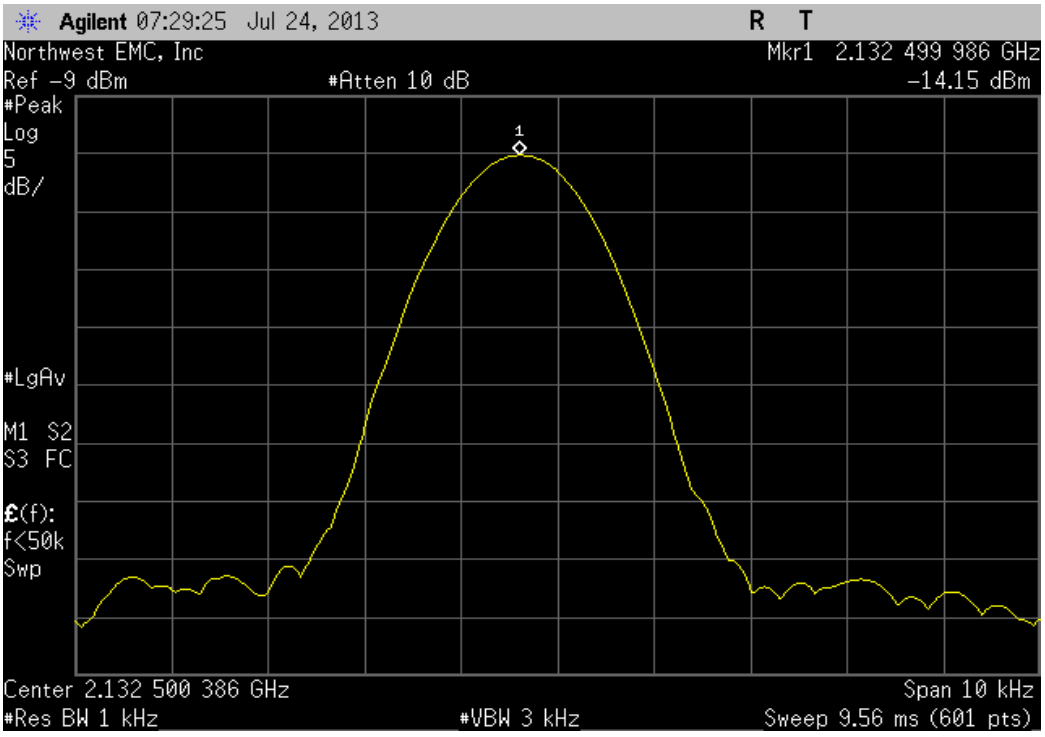


Voltage: 100%, Low Channel, 2113 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		2112.999994	2113	0.0028	1.5	Pass

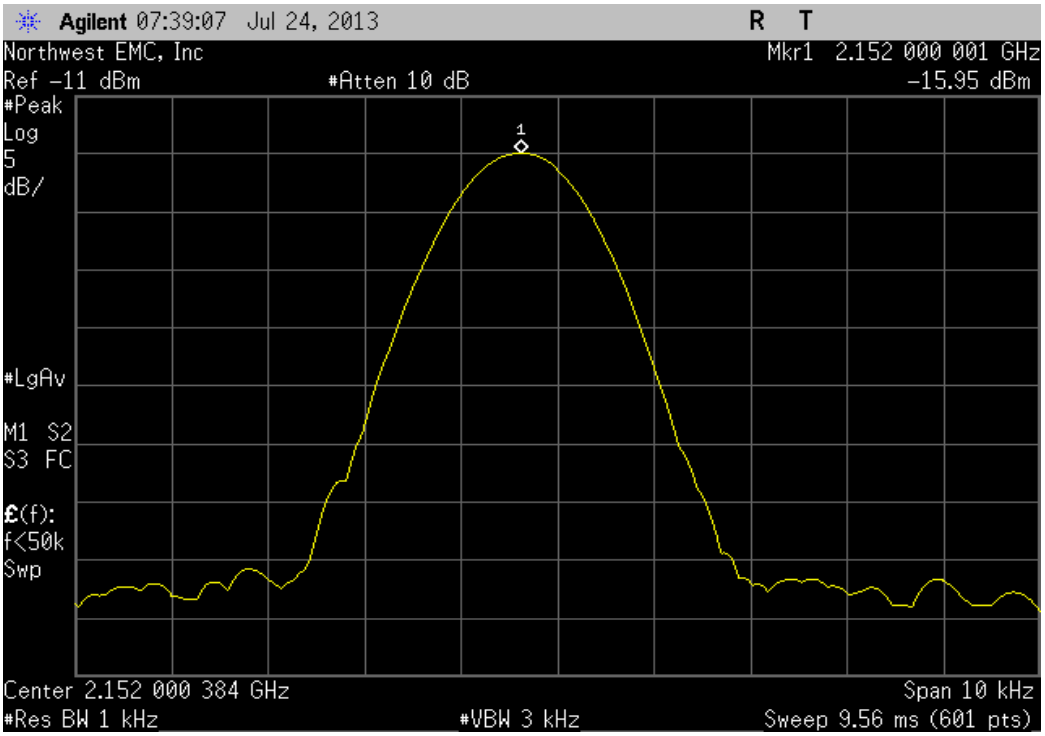


FREQUENCY STABILITY

Voltage: 100%, Mid Channel, 2132.5 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		2132.499986	2132.5	0.0066	1.5	Pass

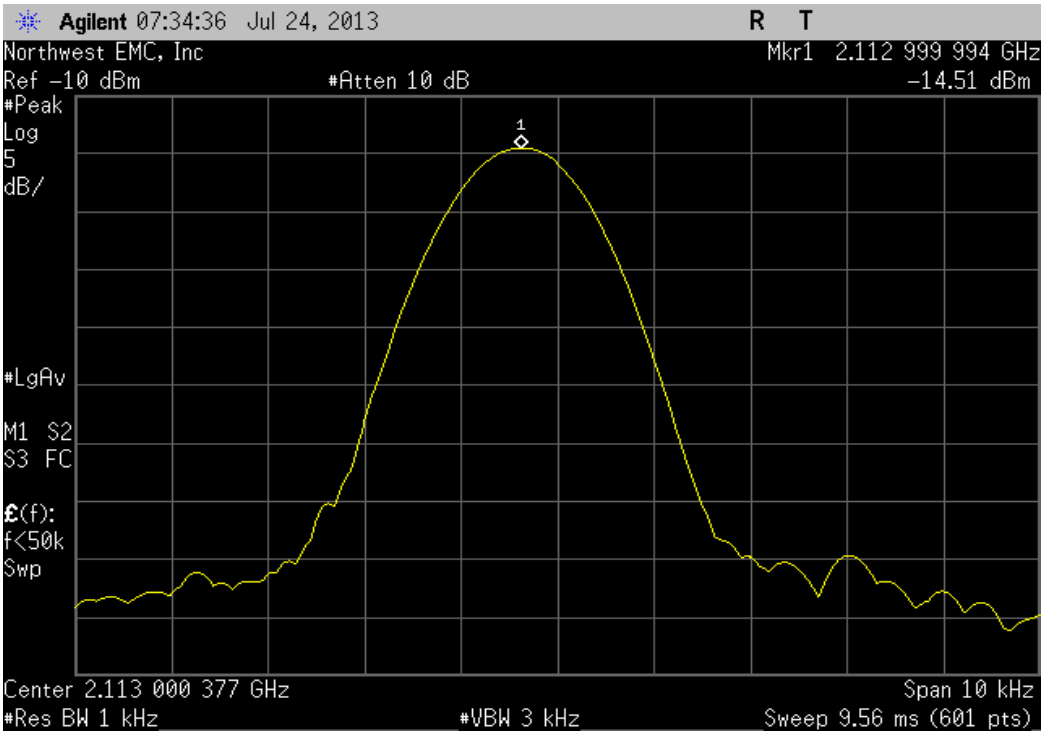


Voltage: 100%, High Channel, 2152 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		2152.000001	2152	0.0005	1.5	Pass

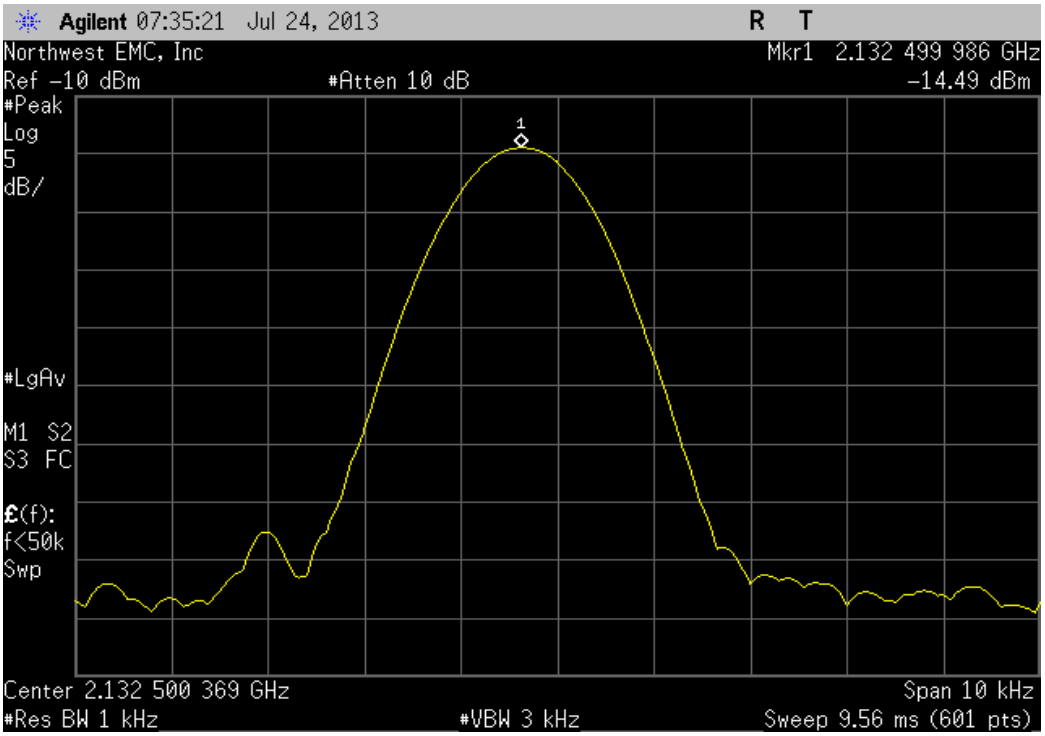


FREQUENCY STABILITY

Voltage: 85%, Low Channel, 2113 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		2112.999994	2113	0.0028	1.5	Pass

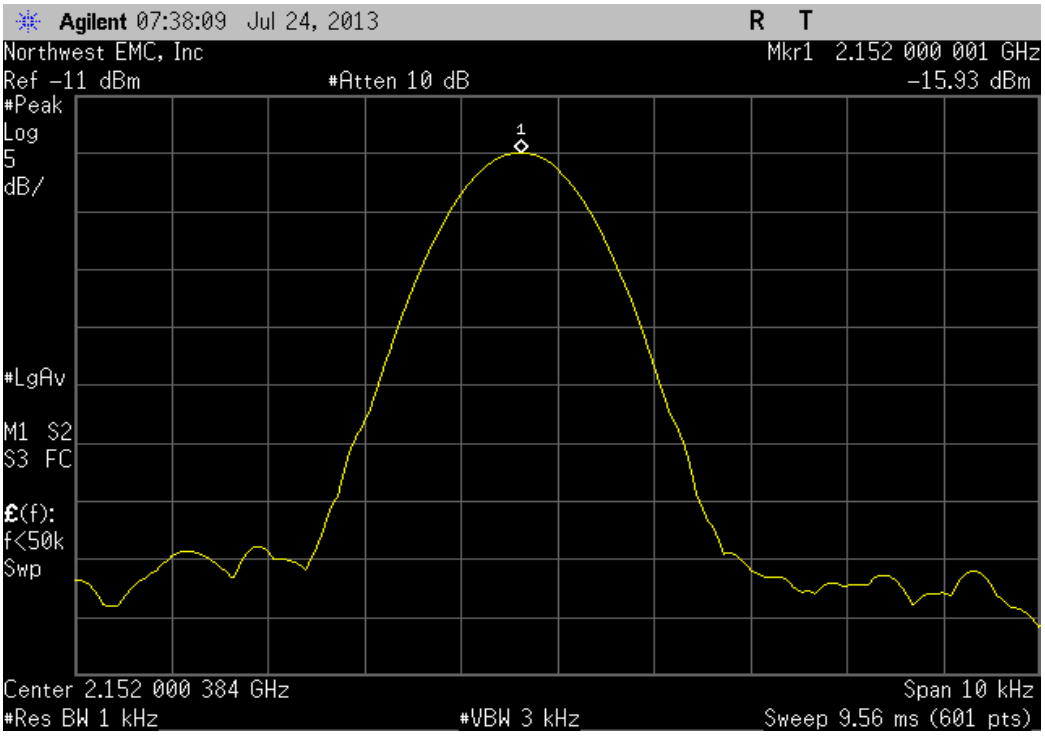


Voltage: 85%, Mid Channel, 2132.5 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		2132.499986	2132.5	0.0066	1.5	Pass

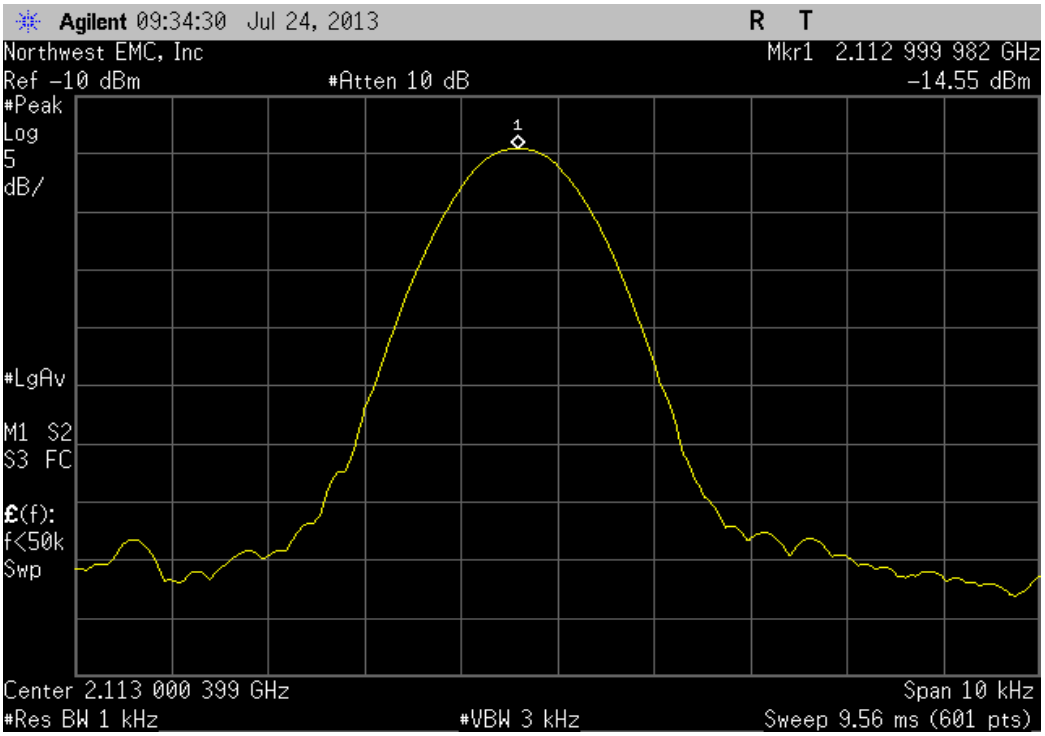


FREQUENCY STABILITY

Voltage: 85%, High Channel, 2152 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		2152.000001	2152	0.0005	1.5	Pass

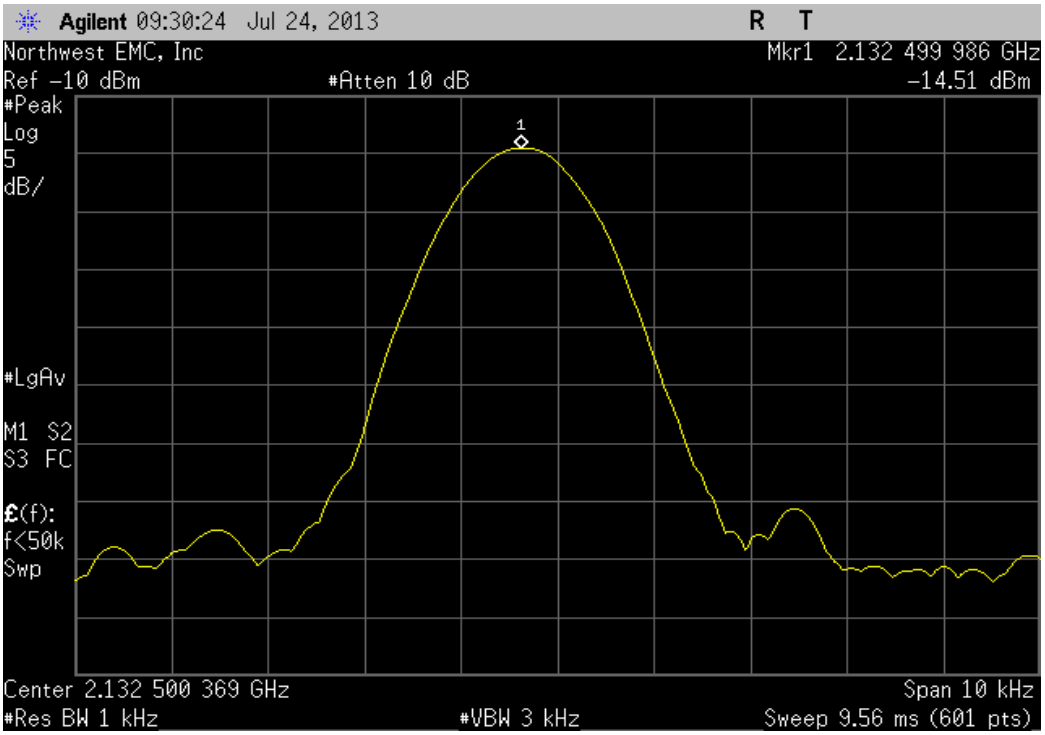


Temperature: +50°, Low Channel, 2113 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		2112.999982	2113	0.0085	1.5	Pass

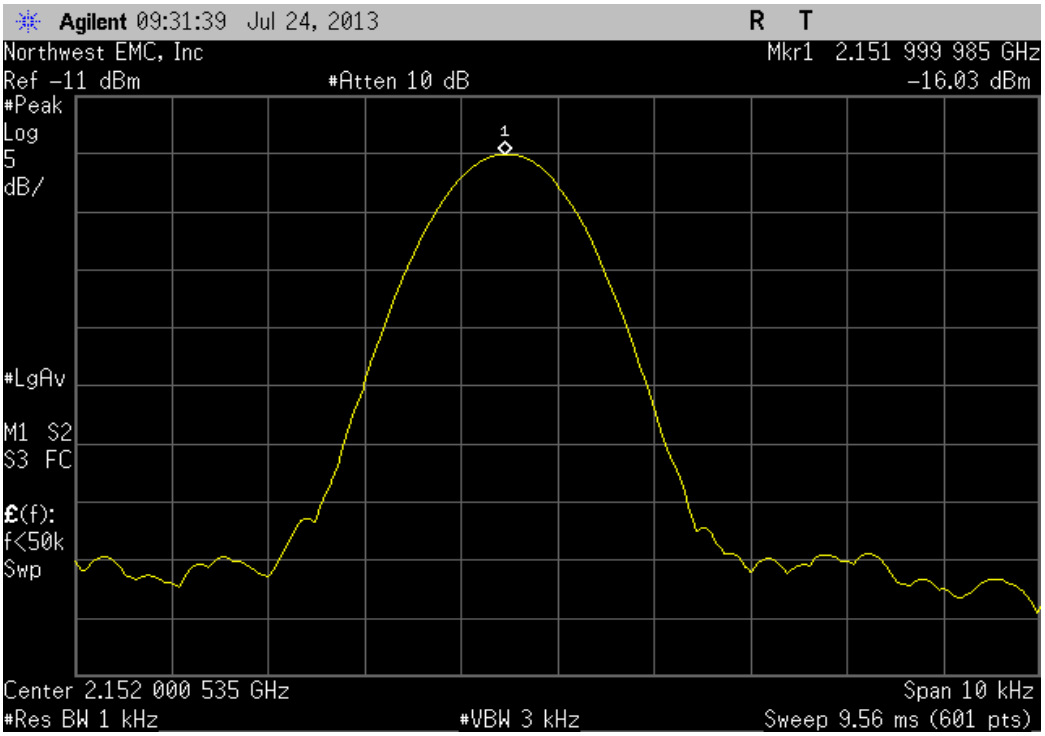


FREQUENCY STABILITY

Temperature: +50°, Mid Channel, 2132.5 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		2132.499986	2132.5	0.0066	1.5	Pass

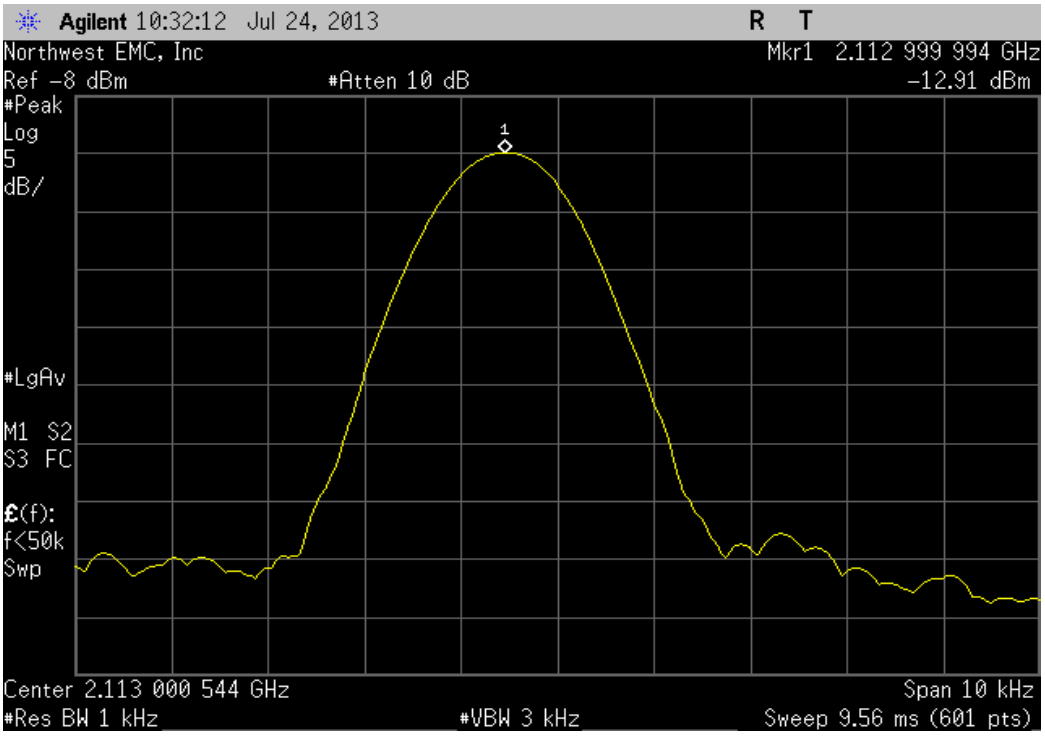


Temperature: +50°, High Channel, 2152 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		2151.999985	2152	0.0070	1.5	Pass

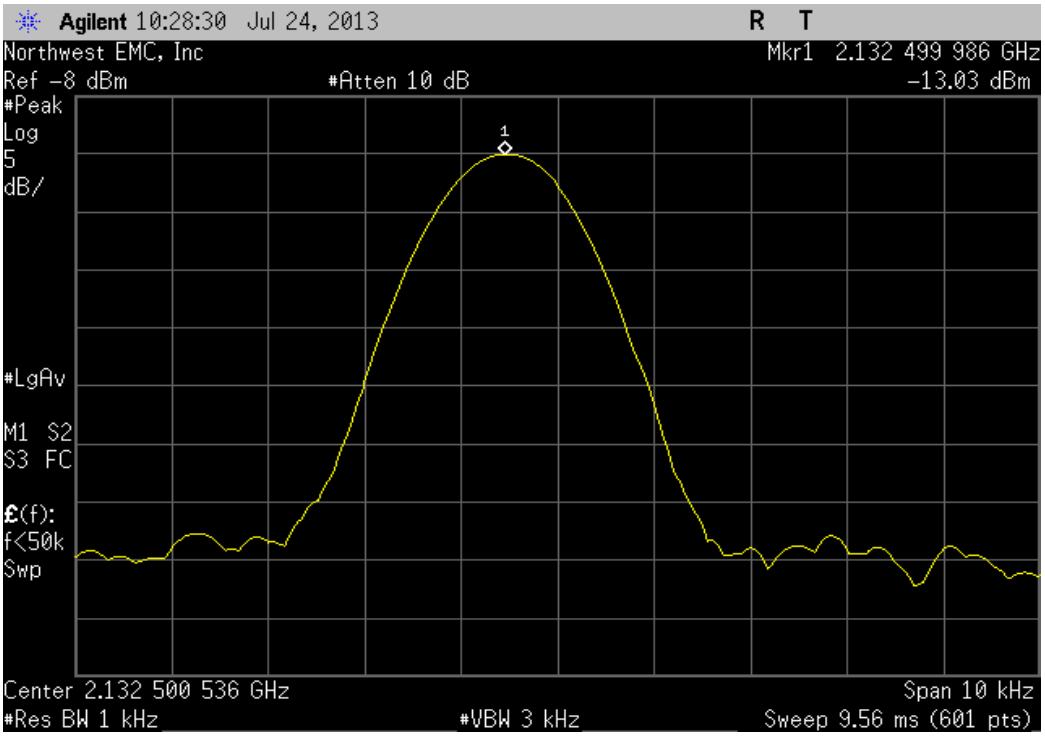


FREQUENCY STABILITY

Temperature: +40°, Low Channel, 2113 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		2112.999994	2113	0.0028	1.5	Pass

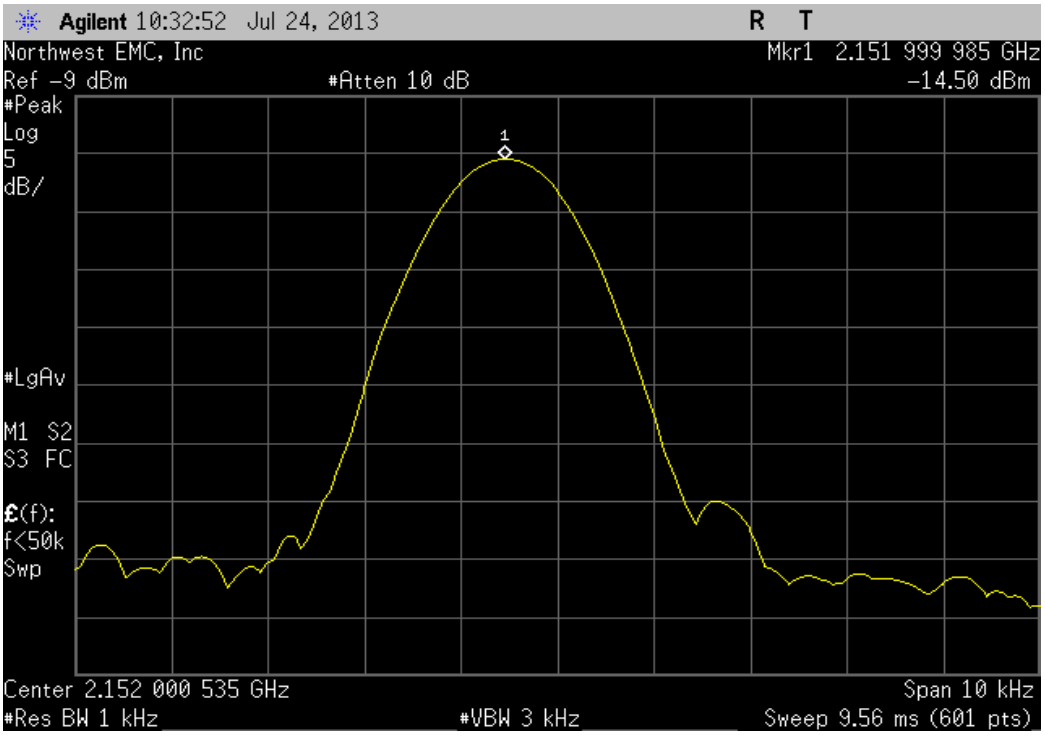


Temperature: +40°, Mid Channel, 2132.5 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		2132.499986	2132.5	0.0066	1.5	Pass

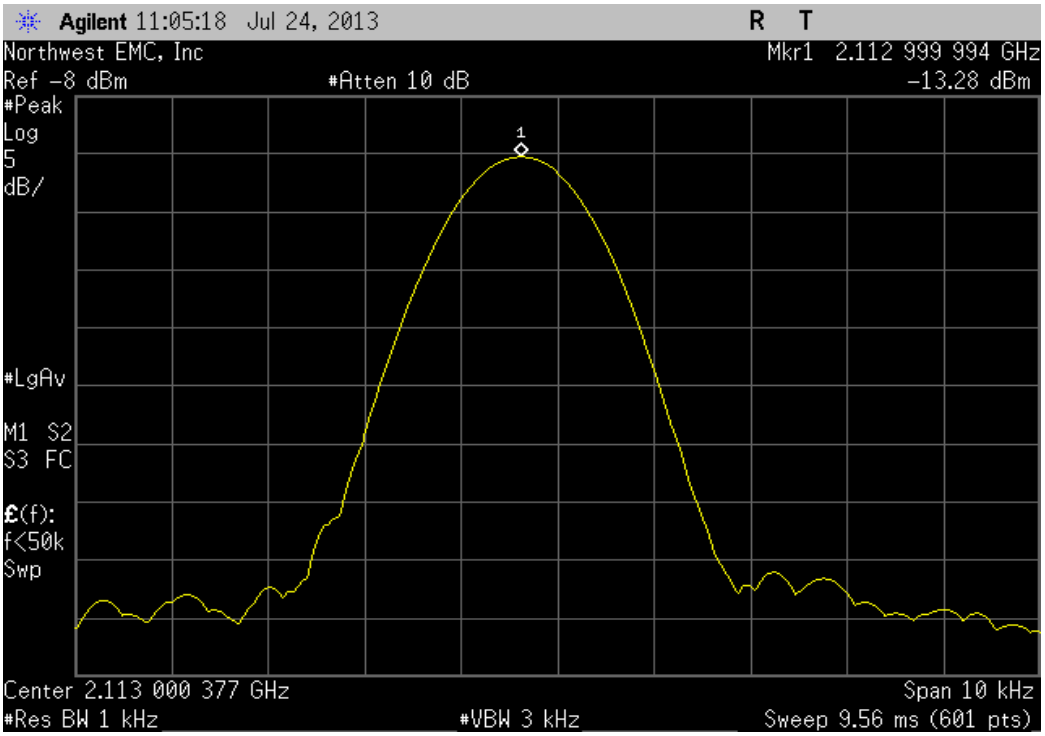


FREQUENCY STABILITY

Temperature: +40°, High Channel, 2152 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		2151.999985	2152	0.0070	1.5	Pass

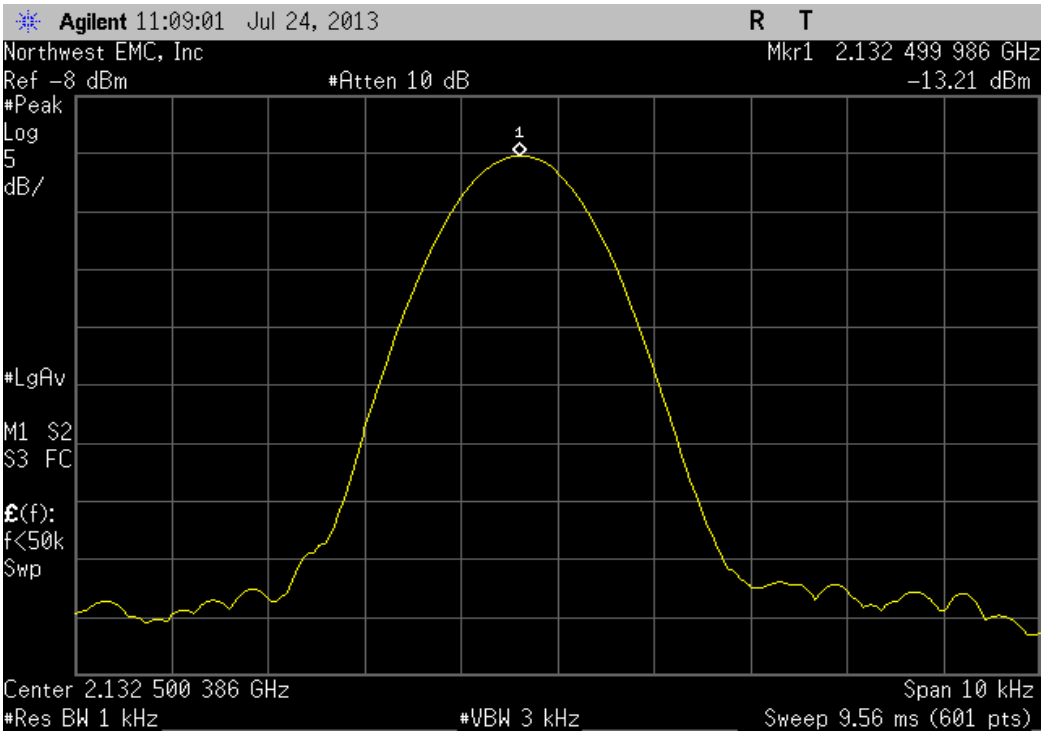


Temperature: +30°, Low Channel, 2113 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		2112.999994	2113	0.0028	1.5	Pass

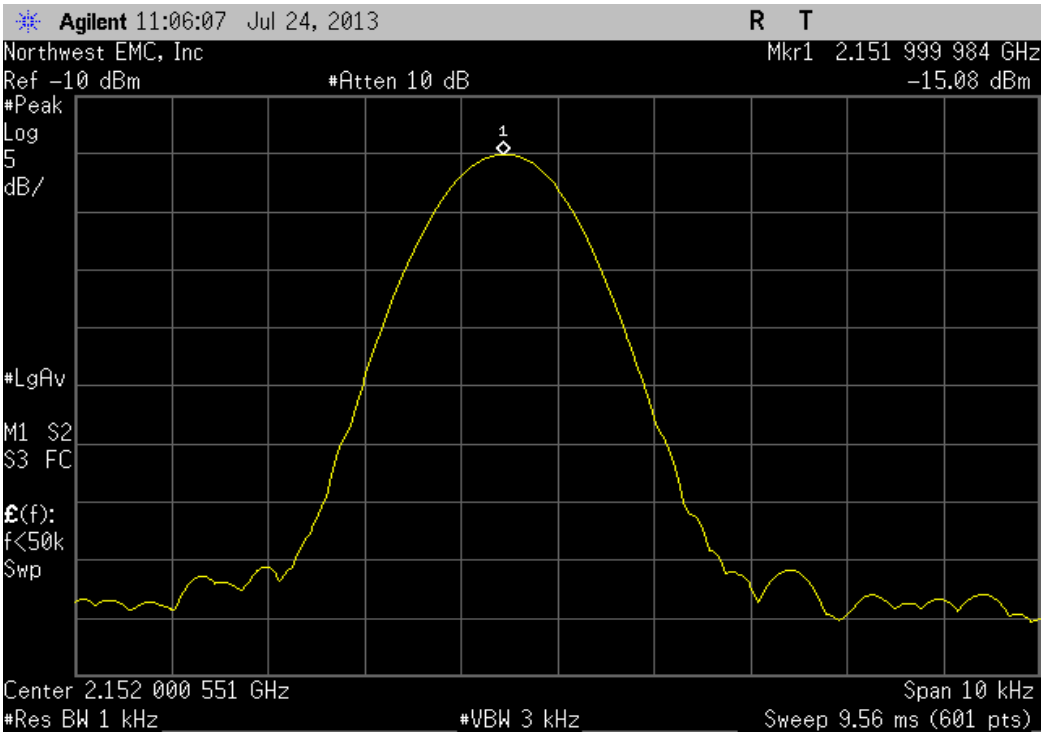


FREQUENCY STABILITY

Temperature: +30°, Mid Channel, 2132.5 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		2132.499986	2132.5	0.0066	1.5	Pass

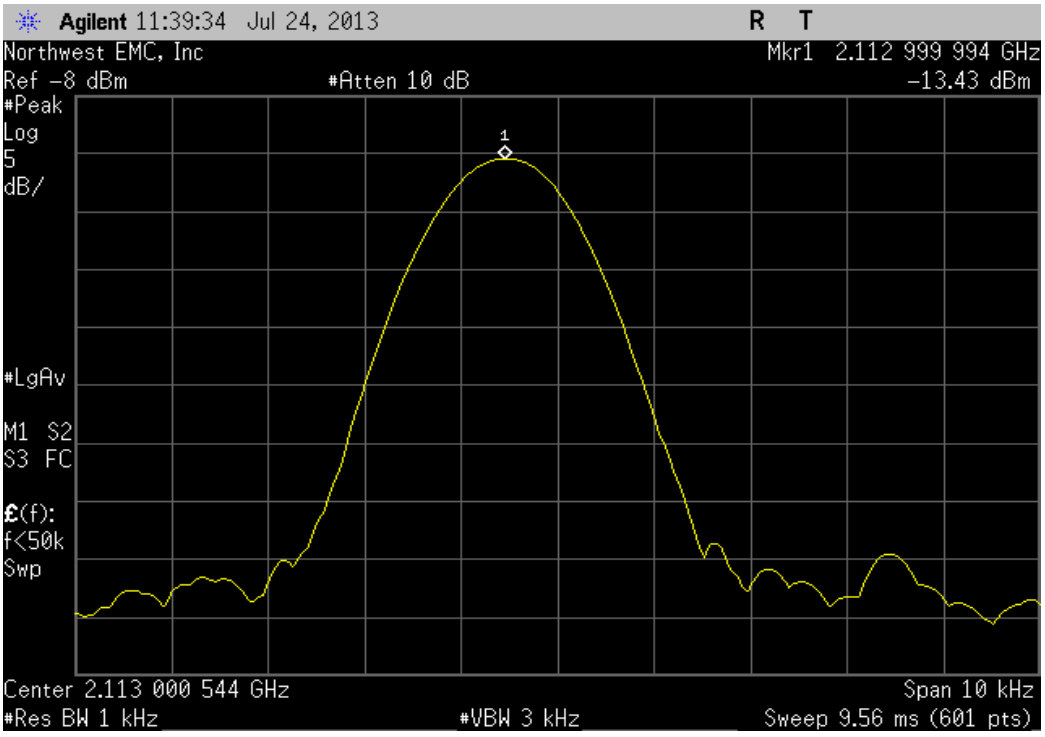


Temperature: +30°, High Channel, 2152 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		2151.999984	2152	0.0074	1.5	Pass

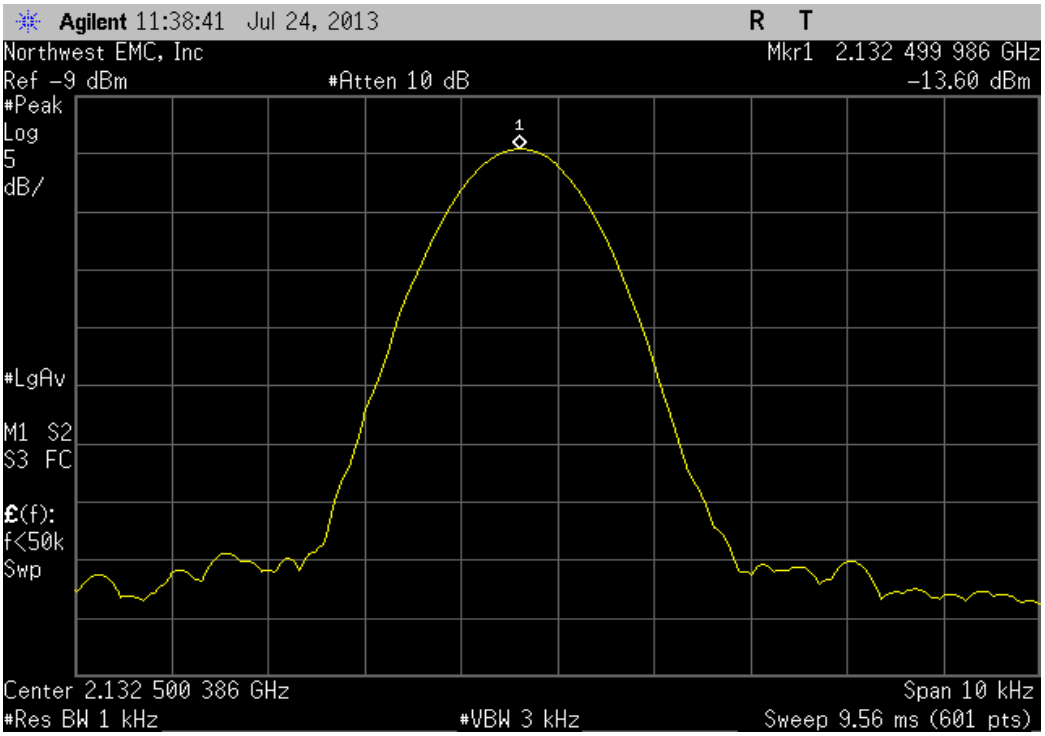


FREQUENCY STABILITY

Temperature: +20°, Low Channel, 2113 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		2112.999994	2113	0.0028	1.5	Pass

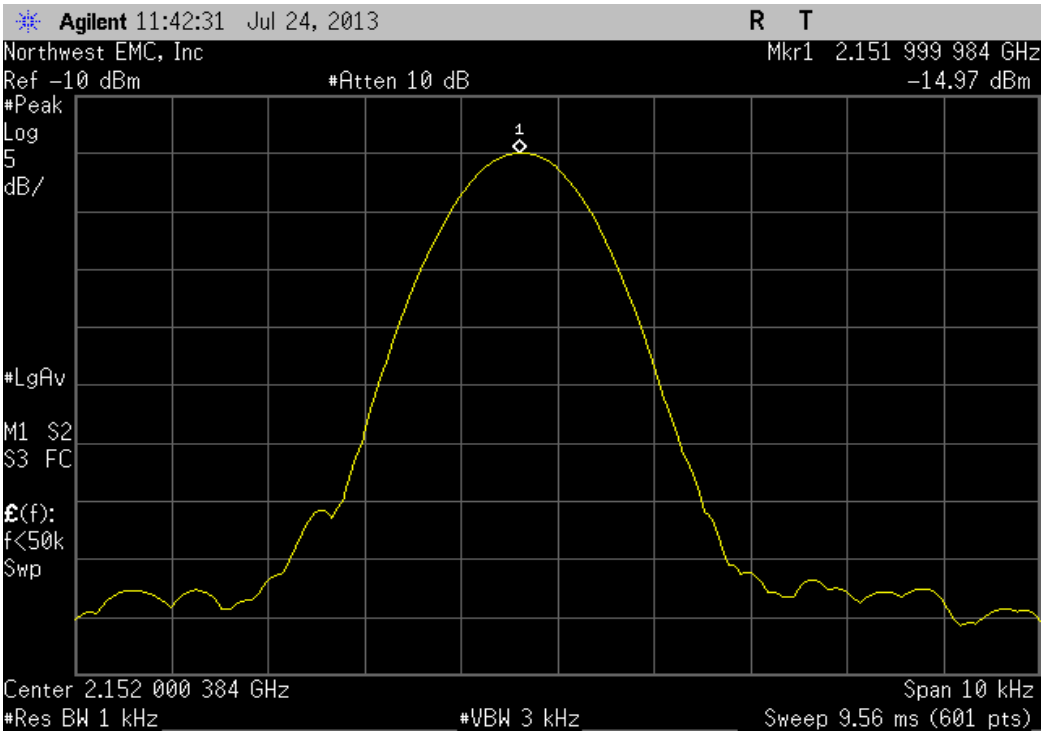


Temperature: +20°, Mid Channel, 2132.5 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		2132.499986	2132.5	0.0066	1.5	Pass

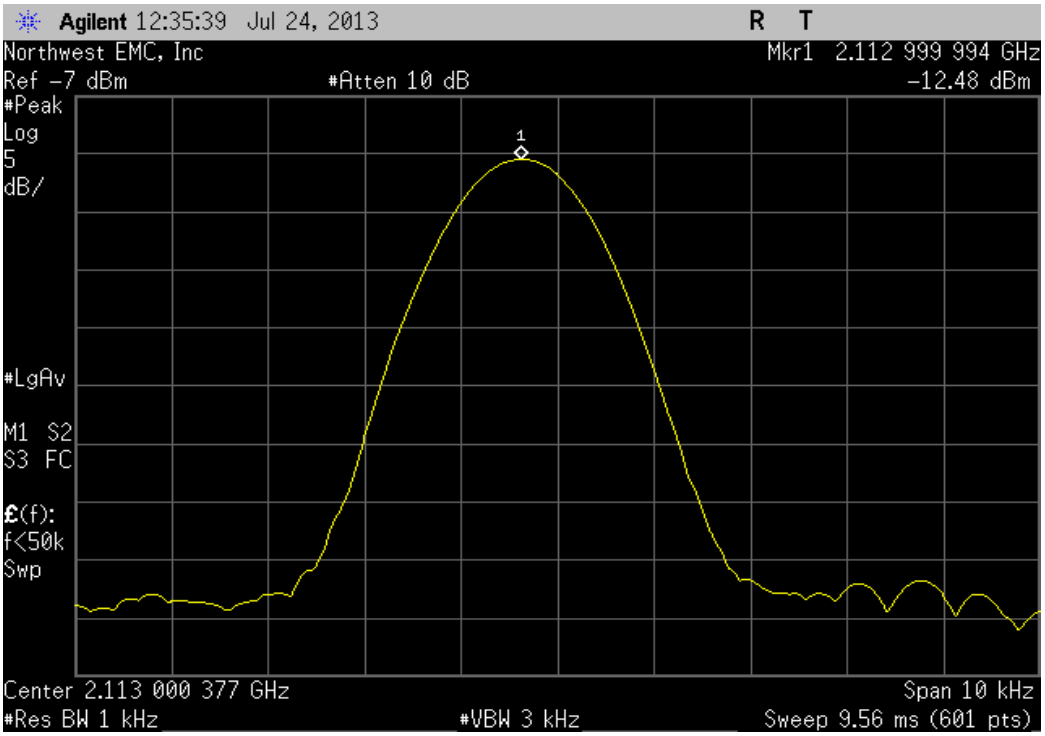


FREQUENCY STABILITY

Temperature: +20°, High Channel, 2152 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		2151.999984	2152	0.0074	1.5	Pass

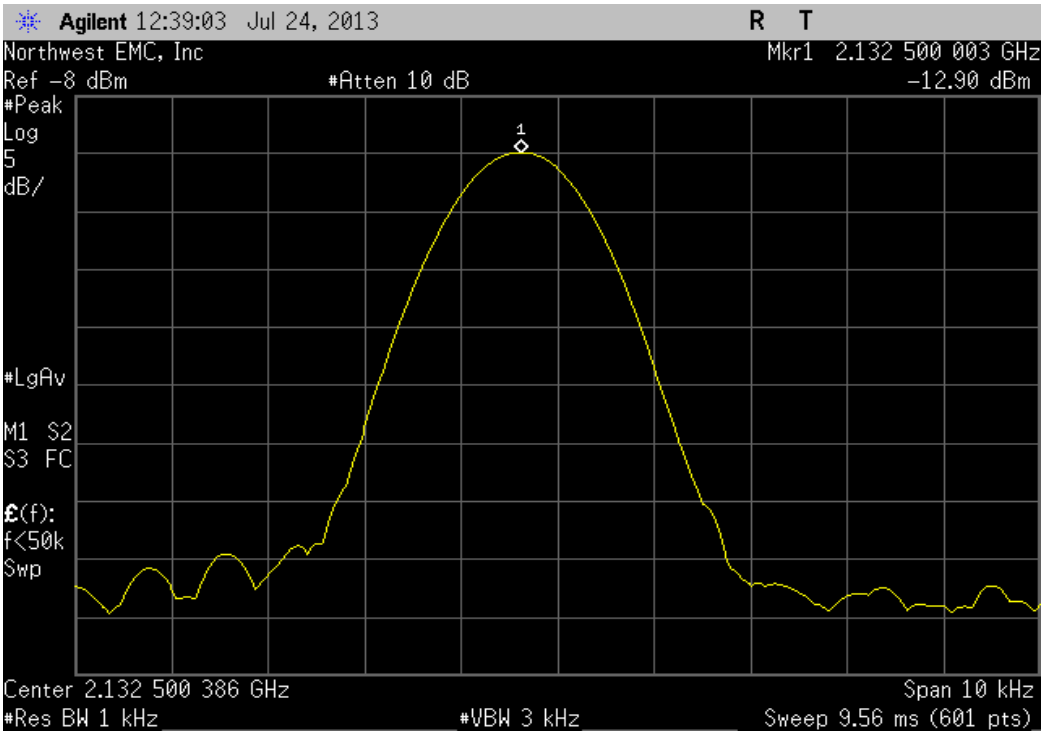


Temperature: +10°, Low Channel, 2113 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		2112.999994	2113	0.0028	1.5	Pass

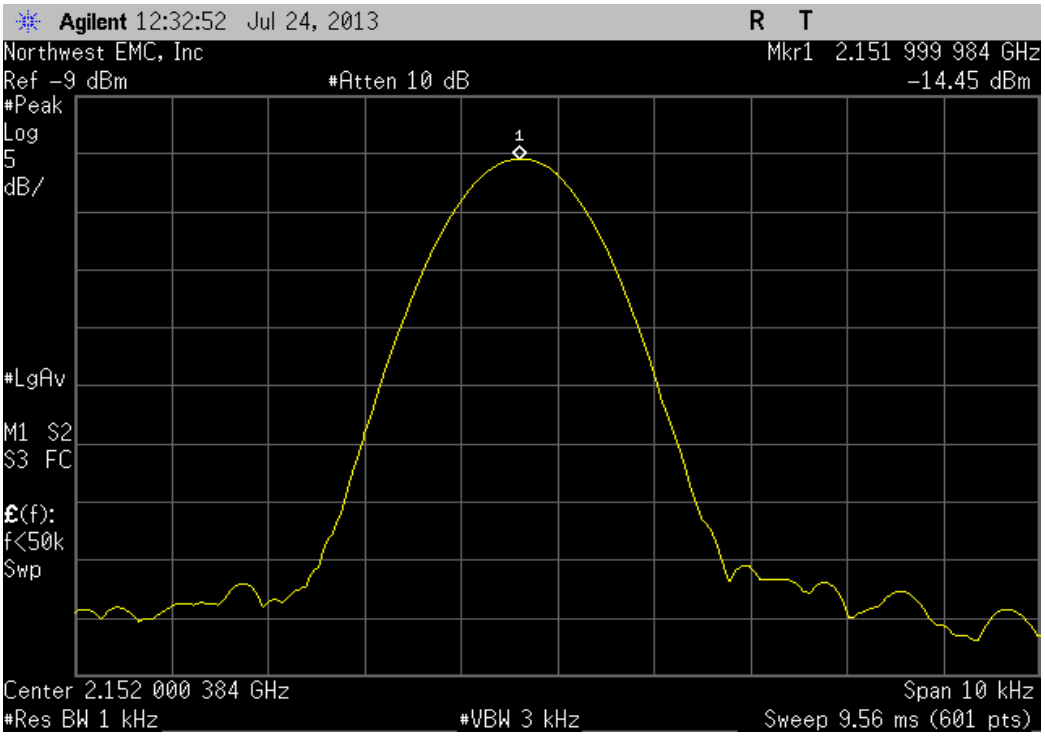


FREQUENCY STABILITY

Temperature: +10°, Mid Channel, 2132.5 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		2132.500003	2132.5	0.0014	1.5	Pass

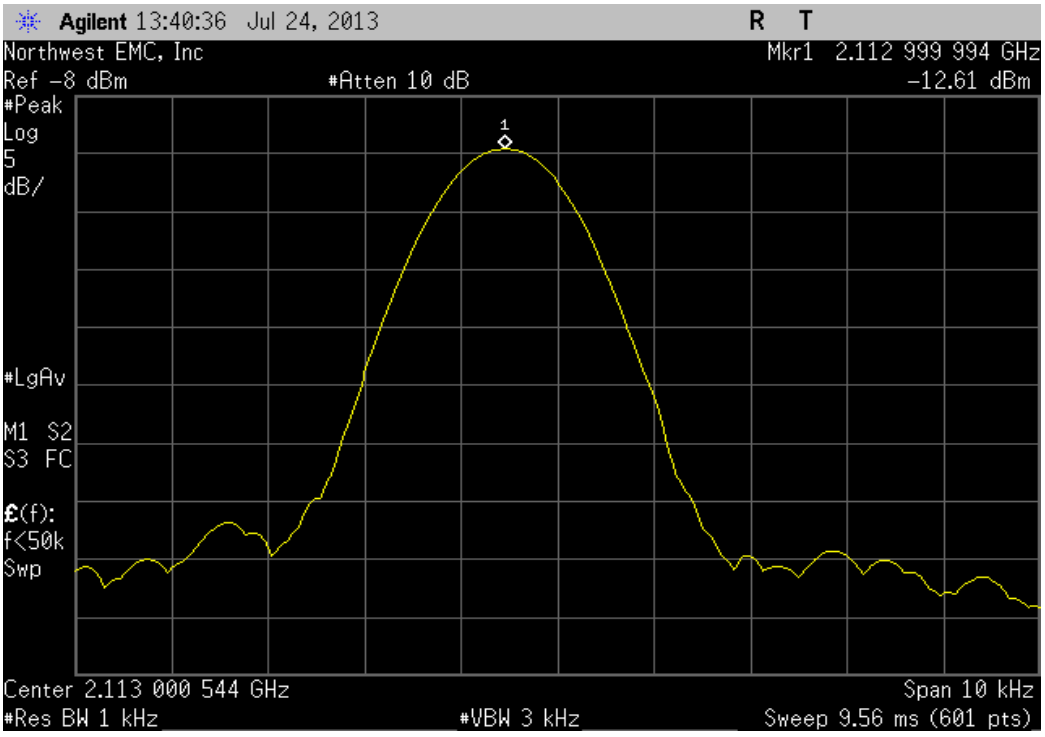


Temperature: +10°, High Channel, 2152 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		2151.999984	2152	0.0074	1.5	Pass

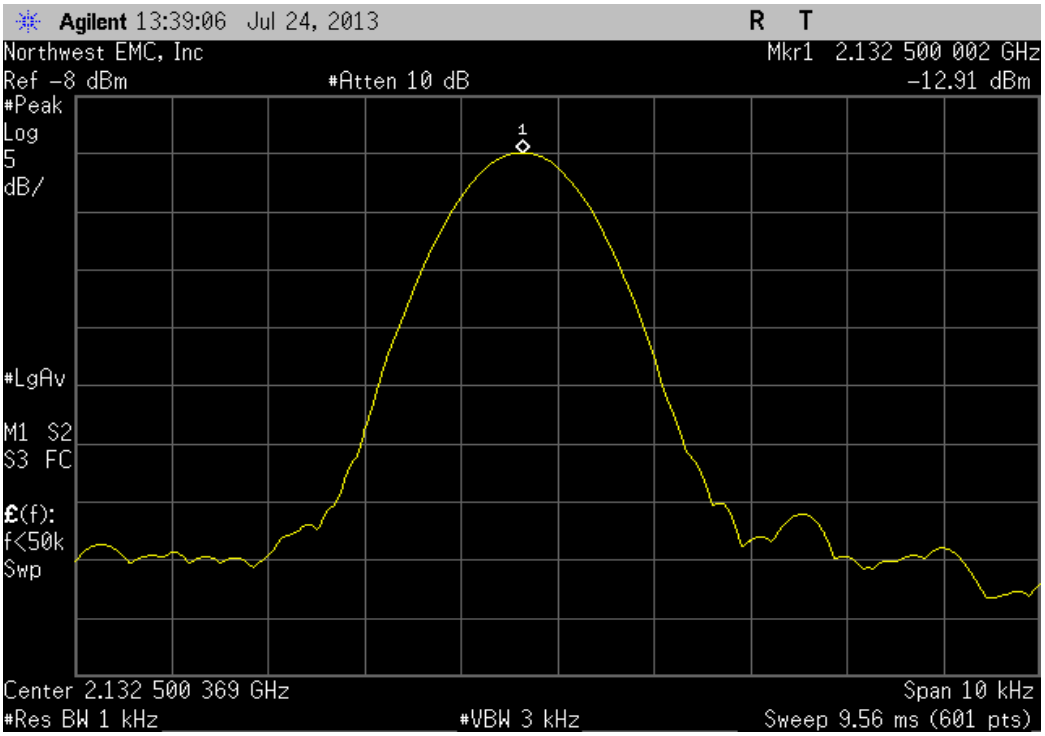


FREQUENCY STABILITY

Temperature: 0°, Low Channel, 2113 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		2112.999994	2113	0.0028	1.5	Pass

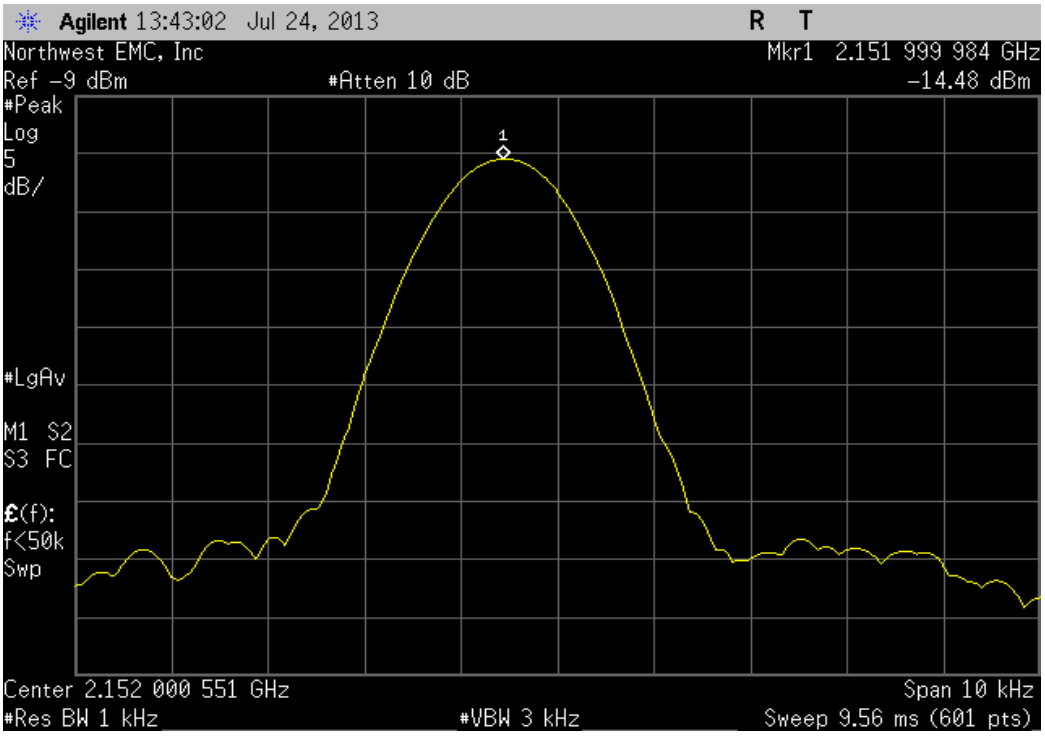


Temperature: 0°, Mid Channel, 2132.5 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		2132.500002	2132.5	0.0009	1.5	Pass

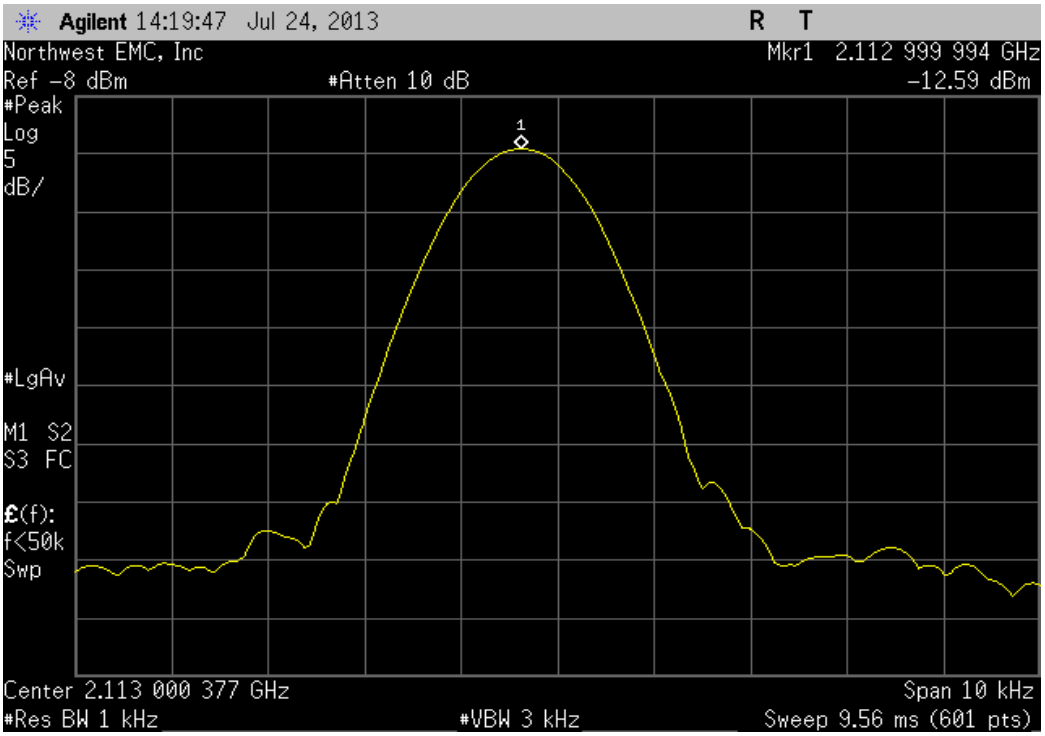


FREQUENCY STABILITY

Temperature: 0°, High Channel, 2152 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		2151.999984	2152	0.0074	1.5	Pass

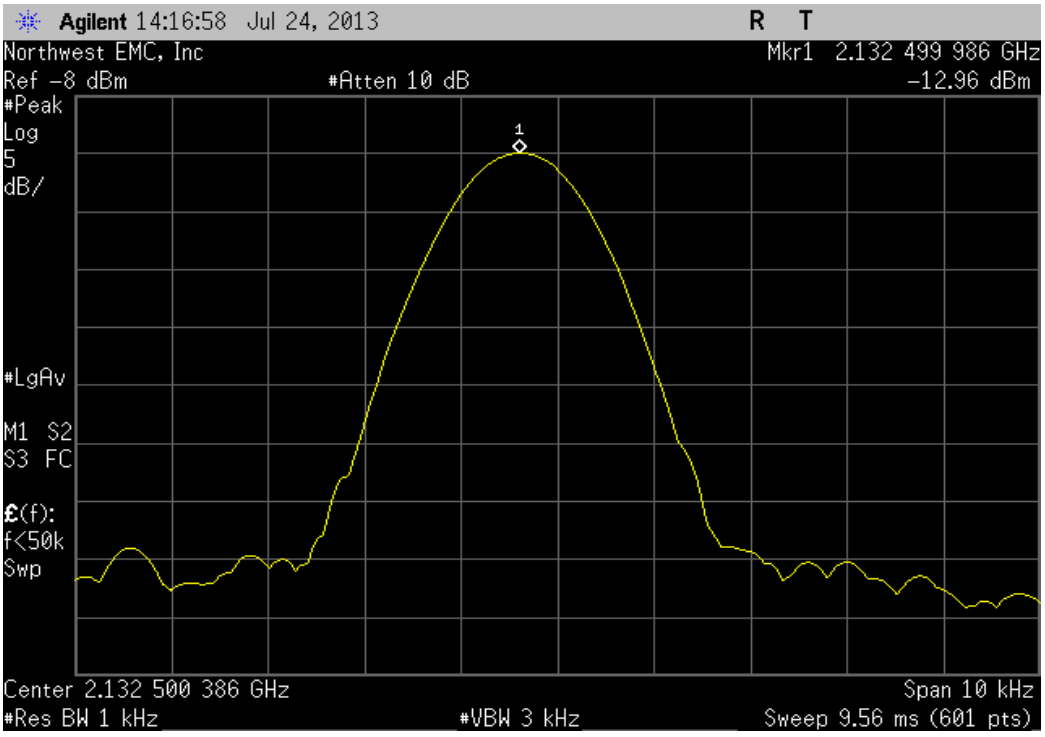


Temperature: -10°, Low Channel, 2113 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		2112.999994	2113	0.0028	1.5	Pass

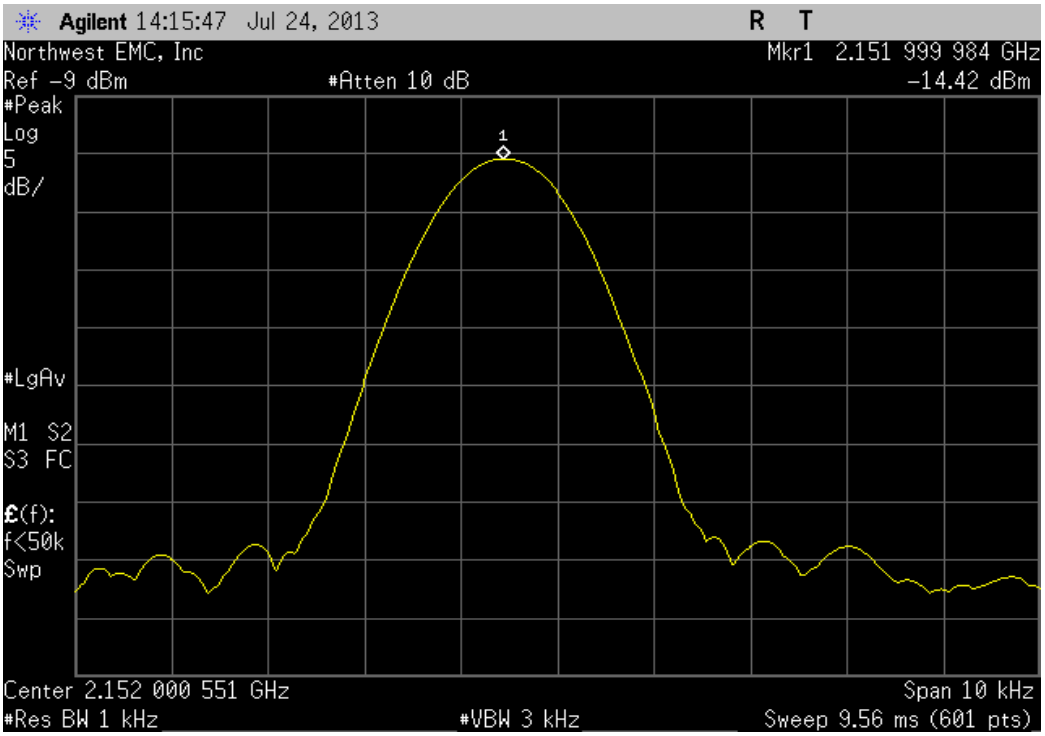


FREQUENCY STABILITY

Temperature: -10°, Mid Channel, 2132.5 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		2132.499986	2132.5	0.0066	1.5	Pass

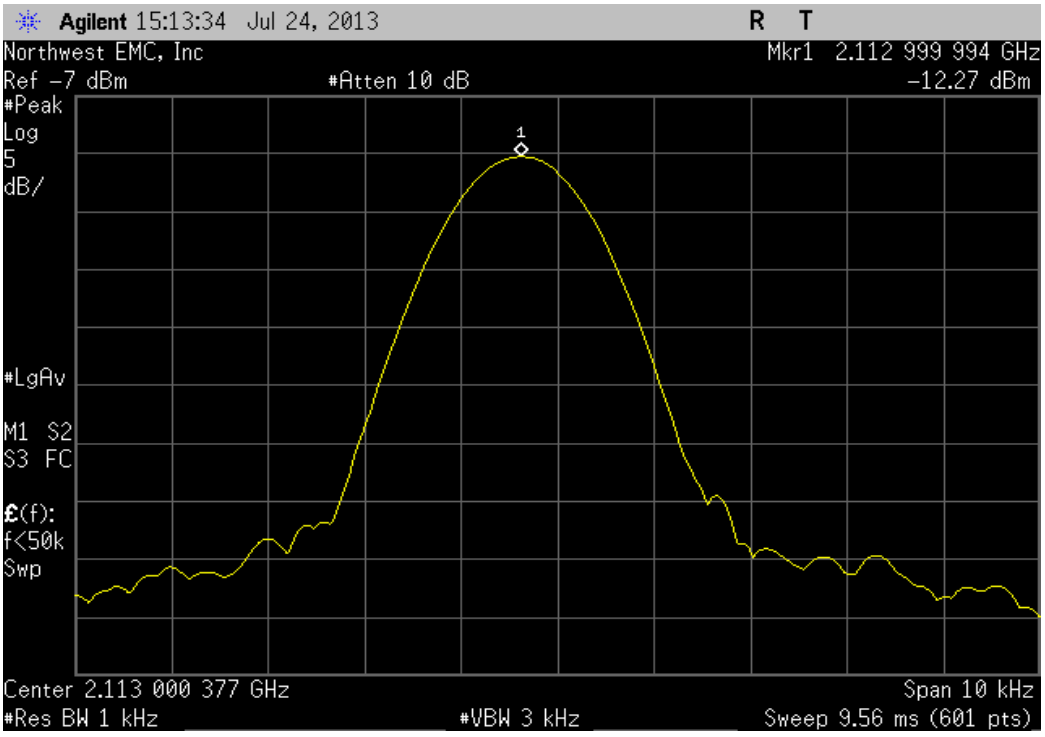


Temperature: -10°, High Channel, 2152 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		2151.999984	2152	0.0074	1.5	Pass

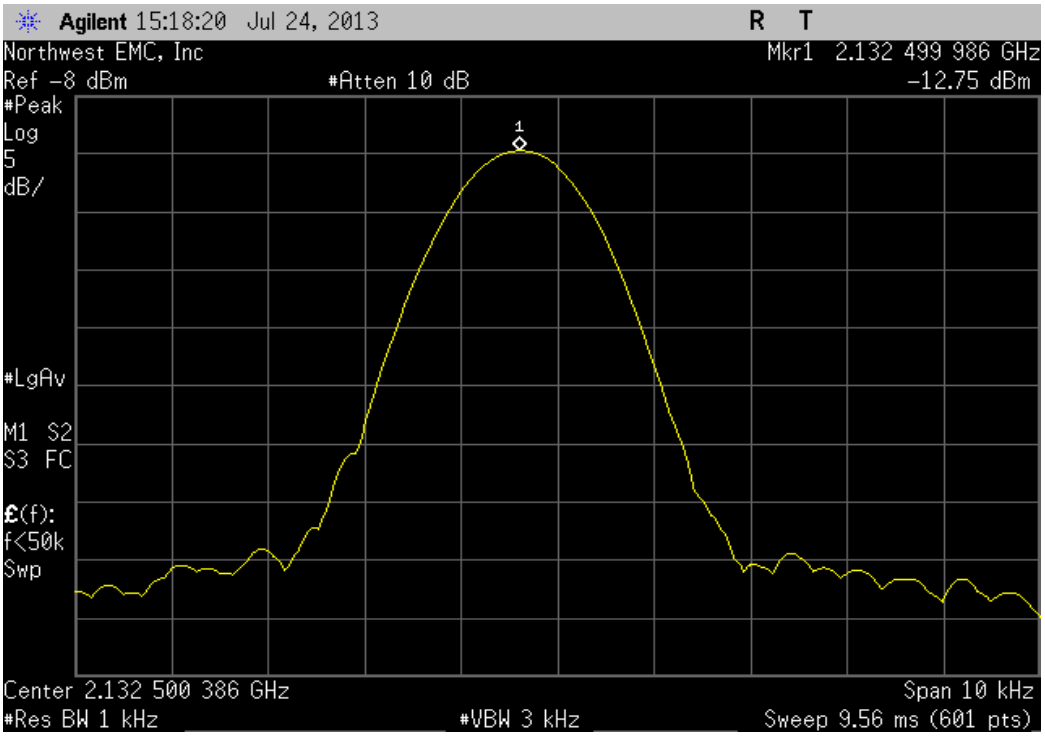


FREQUENCY STABILITY

Temperature: -20°, Low Channel, 2113 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		2112.999994	2113	0.0028	1.5	Pass

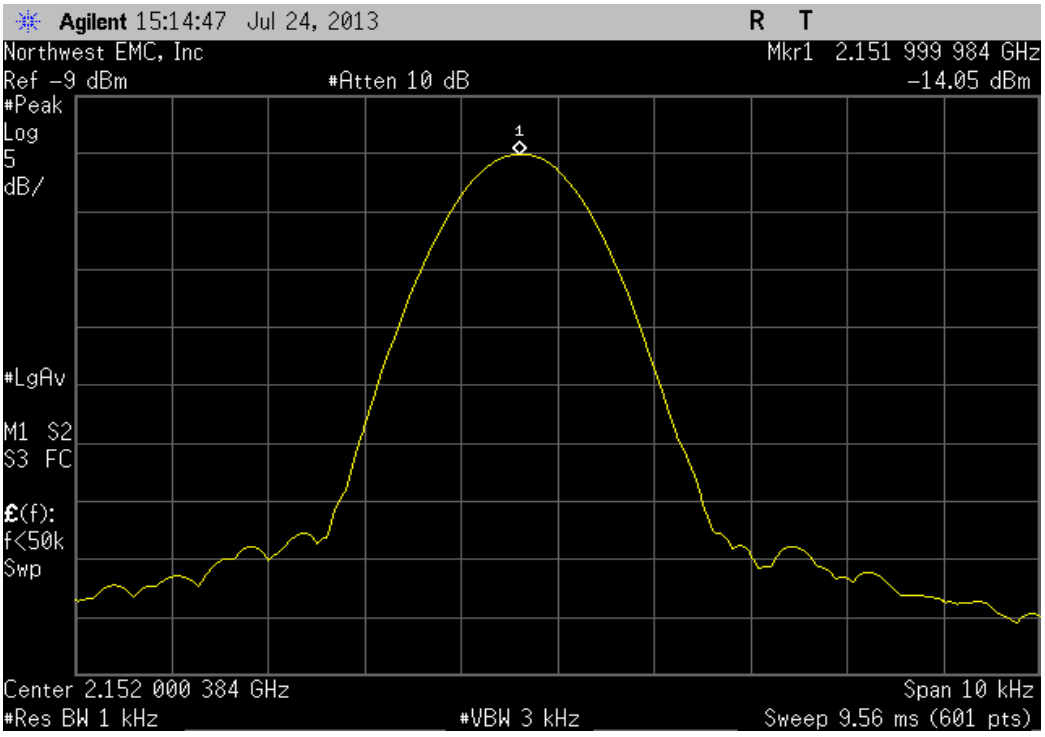


Temperature: -20°, Mid Channel, 2132.5 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		2132.499986	2132.5	0.0066	1.5	Pass

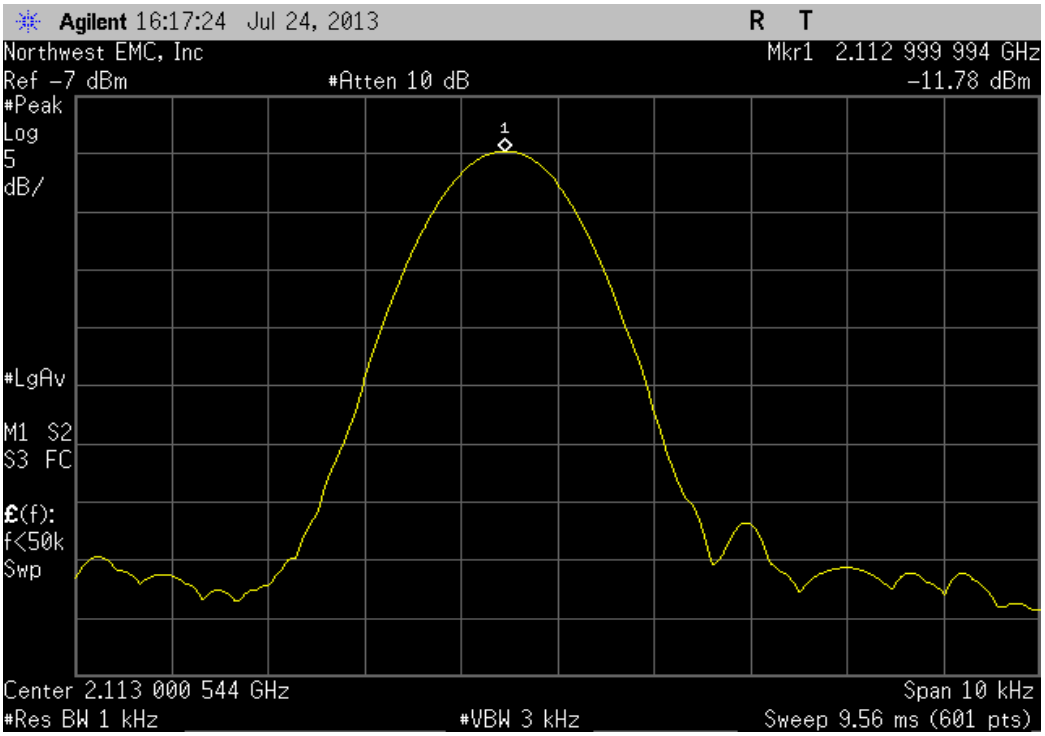


FREQUENCY STABILITY

Temperature: -20°, High Channel, 2152 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		2151.999984	2152	0.0074	1.5	Pass

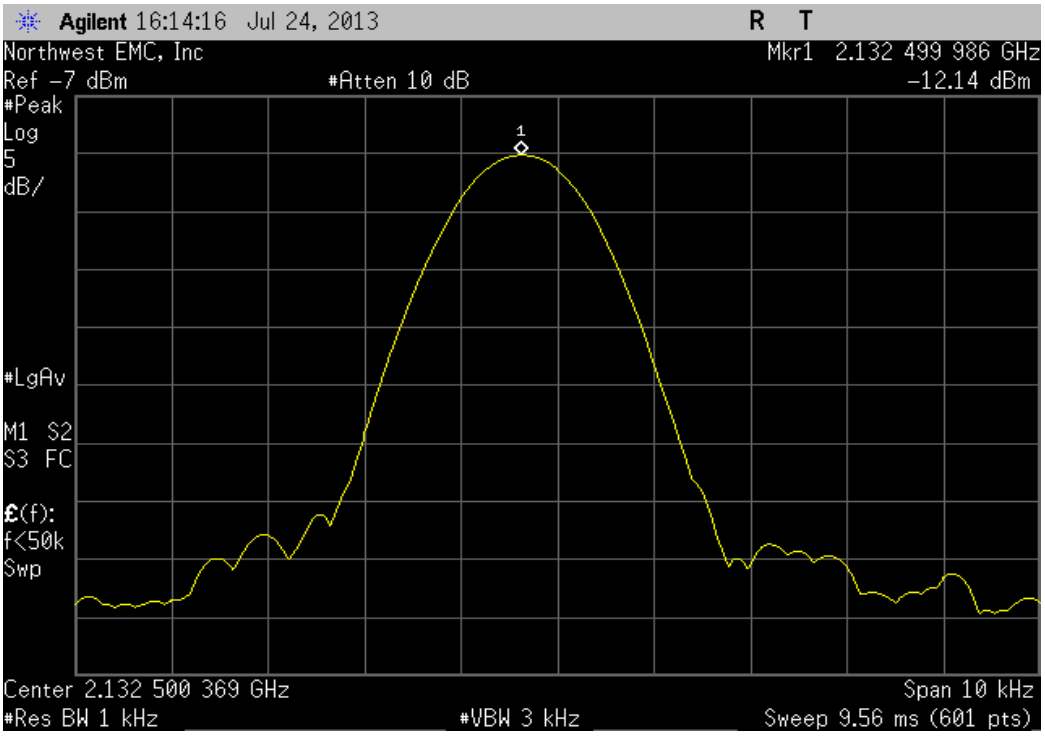


Temperature: -30°, Low Channel, 2113 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		2112.999994	2113	0.0028	1.5	Pass

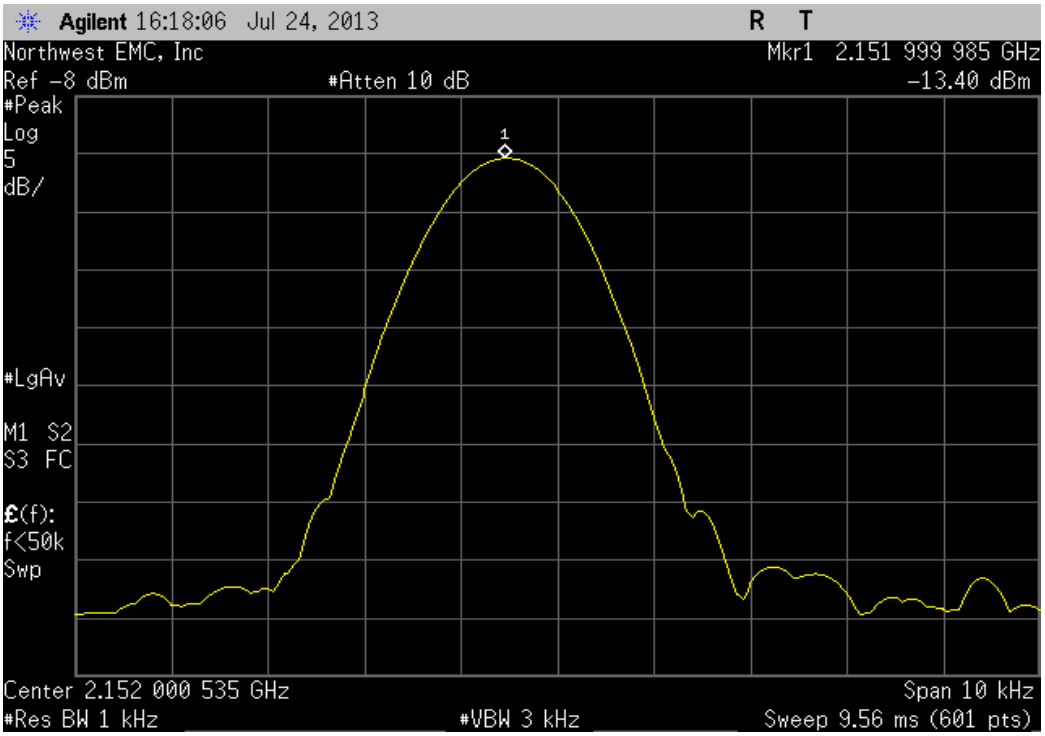


FREQUENCY STABILITY

Temperature: -30°, Mid Channel, 2132.5 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		2132.499986	2132.5	0.0066	1.5	Pass



Temperature: -30°, High Channel, 2152 MHz						
		Measured Value (MHz)	Assigned Value (MHz)	Error (ppm)	Limit (ppm)	Result
		2151.999985	2152	0.0070	1.5	Pass



SPURIOUS RADIATED EMISSIONS

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

MODES OF OPERATION

Transmitting Low Mid High WCDMA, LTE 5 MHz: 2113, 2132.5, 2152 MHz; LTE 10 MHz: 2117, 2132.5, 2148 MHz

POWER SETTINGS INVESTIGATED

110VAC/60Hz

CONFIGURATIONS INVESTIGATED

TECO0017 - 2

FREQUENCY RANGE INVESTIGATED

Start Frequency	30 MHz	Stop Frequency	22 GHz

SAMPLE CALCULATIONS

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Antenna, Horn (DRG)	ETS Lindgren	3115	AIP	6/26/2014	36 mo
Signal Generator MXG	Agilent	N5183A	TIK	6/7/2012	36 mo
Power Sensor	Agilent	N8481A	SQN	8/27/2012	24 mo
Power Meter	Agilent	N1913A	SQL	8/27/2012	24 mo
Low Pass Filter	Micro-Tronics	LPM50004	HGK	5/15/2014	24 mo
High Pass Filter	Micro-Tronics	HPM50111	HGQ	5/15/2014	24 mo
Attenuator, 20 dB, 'SMA'	SM Electronics	SA6-20	REO	5/15/2014	12 mo
Pre-Amplifier	Miteq	JSD4-18002600-26-8P	APU	9/26/2013	12 mo
MN05 Cables	N/A	18-26GHz Standard Gain Horn Cable	MNP	9/26/2013	12 mo
Antenna, Horn	ETS	3160-09	AHG	NCR	0 mo
Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	AVW	3/14/2014	12 mo
Antenna, Horn	ETS Lindgren	3160-08	AIQ	NCR	0 mo
MN05 Cables	ESM Cable Corp.	Standard Gain Horn Cables	MNJ	3/14/2014	12 mo
Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AVV	3/14/2014	12 mo
Antenna, Horn	ETS	3160-07	AXP	NCR	0 mo
Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	AVX	3/14/2014	12 mo
MN05 Cables	ESM Cable Corp.	Double Ridge Guide Horn Cables	MNI	3/14/2014	12 mo
Antenna, Horn	ETS	3115	AJA	6/3/2014	24 mo
Pre-Amplifier	Miteq	AM-1616-1000	PAD	3/14/2014	12 mo
MN05 Cables	ESM Cable Corp.	Bilog Cables	MNH	3/14/2014	12 mo
Antenna, Biconilog	Teseq	CBL 6141B	AYD	12/17/2013	24 mo
Spectrum Analyzer	Agilent	N9010A	AFI	1/27/2013	24 mo

MEASUREMENT BANDWIDTHS

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

TEST DESCRIPTION

The highest gain antenna 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 place 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 ½ 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 ½ wave dipole antenna is determined for each radiated spurious emission.

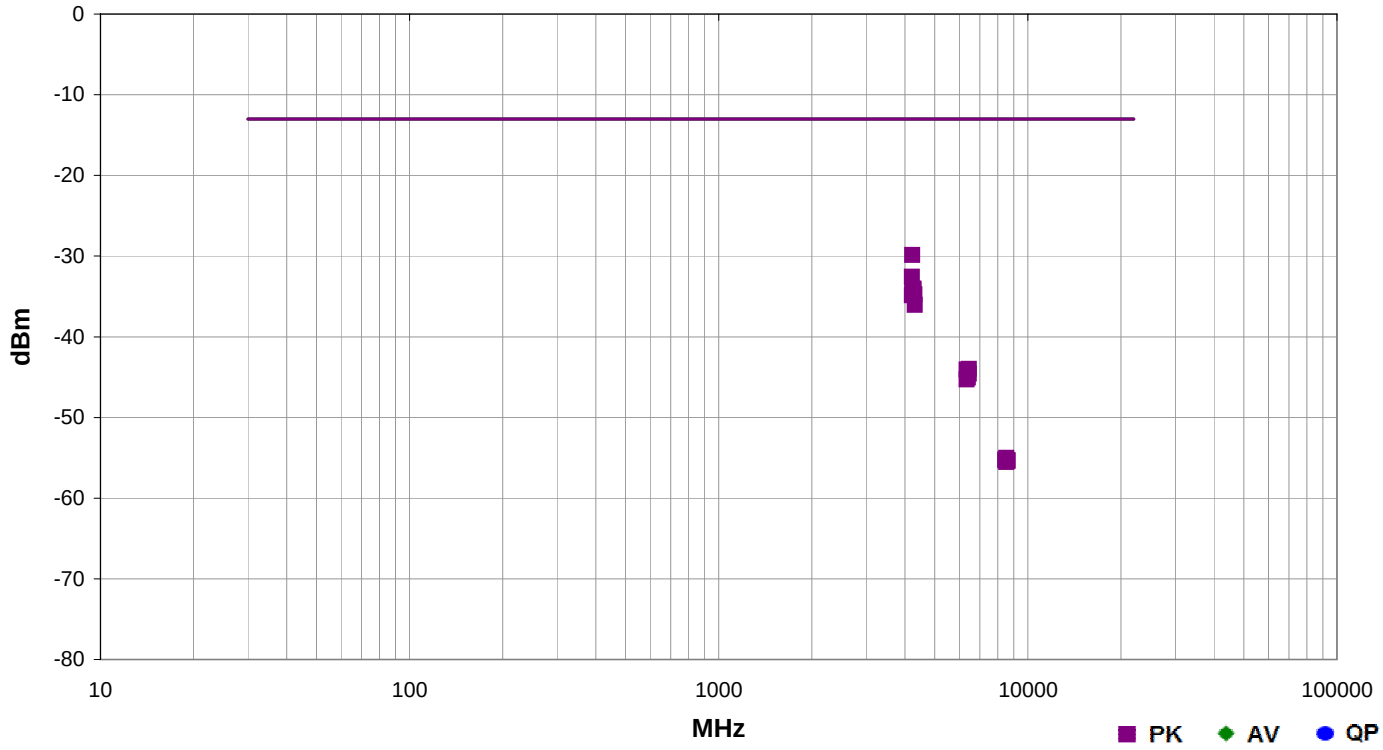
For the purposes of preliminary measurements, the field strength of the spurious emissions can be measured and compared with a 3 meter limit. The 3 meter limit was calculated to be 82.5 dBuV/m at 3 meters. The final measurements must be made utilizing the substitution method described above

SPURIOUS RADIATED EMISSIONS

Work Order:	TECO0017	**Date:**	07/21/14	Trevor Buls	
Project:	None	**Temperature:**	23.6 °C		
Job Site:	MN05	**Humidity:**	59.2% RH		
Serial Number:	None	**Barometric Pres.:**	1015.2 mbar	**Tested by:**	Trevor Buls, Dustin Sparks
EUT:	Prism HDM 1900 MHz / 2100 MHz SISO RF Module				
Configuration:	2				
Customer:	TE Connectivitiy / ADC Telecommunications				
Attendees:	None				
EUT Power:	110VAC/60Hz				
Operating Mode:	Transmitting Low Mid High WCDMA, LTE 5 MHz: 2113, 2132.5, 2152 MHz; LTE 10 MHz: 2117, 2132.5, 2148 MHz (see comments)				
Deviations:	None				
Comments:	A 30 dB high wattage attenuator was provided by the customer to terminate the antenna output. Tested in normal upright position as device is always a floorstanding system.				

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

Run #	22	**Test Distance (m)**	3	**Antenna Height(s)**	1 to 4(m)	**Results**	Pass



	Freq (MHz)	Antenna Height (meters)	Azimuth (degrees)	Polarity/ Transducer Type	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
	4228.267	1.2	257.0	Vert	PK	1.04E-06	-29.8	-13.0	-16.8	LTE 5 MHz, low channel
	4224.275	1.0	358.0	Vert	PK	5.56E-07	-32.5	-13.0	-19.5	WCDMA, low channel
	4266.850	1.0	21.0	Vert	PK	3.94E-07	-34.0	-13.0	-21.0	WCDMA, mid channel
	4266.983	1.5	65.0	Horz	PK	3.85E-07	-34.1	-13.0	-21.1	WCDMA, mid channel
	4233.433	1.0	254.0	Vert	PK	3.76E-07	-34.2	-13.0	-21.2	LTE 10 MHz, low channel
	4302.225	1.0	66.0	Horz	PK	3.35E-07	-34.7	-13.0	-21.7	WCDMA, high channel
	4223.883	1.0	350.0	Horz	PK	3.27E-07	-34.8	-13.0	-21.8	WCDMA, low channel

	Freq (MHz)	Antenna Height (meters)	Azimuth (degrees)	Polarity/ Transducer Type	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
	4305.892	1.0	46.0	Vert	PK	2.48E-07	-36.0	-13.0	-23.0	WCDMA, high channel
	6456.958	1.2	239.0	Horz	PK	4.00E-08	-44.0	-13.0	-31.0	WCDMA, high channel
	6339.950	1.0	228.0	Horz	PK	3.92E-08	-44.1	-13.0	-31.1	WCDMA, low channel
	6395.800	1.0	18.0	Horz	PK	3.66E-08	-44.4	-13.0	-31.4	WCDMA, mid channel
	6456.967	1.0	173.0	Vert	PK	3.49E-08	-44.6	-13.0	-31.6	WCDMA, high channel
	6396.075	1.0	0.0	Vert	PK	3.12E-08	-45.1	-13.0	-32.1	WCDMA, mid channel
	6336.808	1.0	169.0	Vert	PK	2.96E-08	-45.3	-13.0	-32.3	WCDMA, low channel
	8530.317	2.8	303.0	Vert	PK	3.14E-09	-55.0	-13.0	-42.0	WCDMA, mid channel
	8453.208	1.0	338.0	Vert	PK	3.01E-09	-55.2	-13.0	-42.2	WCDMA, low channel
	8605.825	1.0	274.0	Vert	PK	2.95E-09	-55.3	-13.0	-42.3	WCDMA, high channel
	8453.583	2.8	164.0	Horz	PK	2.94E-09	-55.3	-13.0	-42.3	WCDMA, low channel
	8606.217	1.0	181.0	Horz	PK	2.88E-09	-55.4	-13.0	-42.4	WCDMA, high channel
	8532.125	1.0	227.0	Horz	PK	2.80E-09	-55.5	-13.0	-42.5	WCDMA, mid channel