

TE Connectivitiy / ADC Telecommunications Prism HDM 1900 MHz / 2100 MHz SISO RF Module FCC 24E:2014

Report #: TECO0017



Report Prepared By Northwest EMC Inc.

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

California – Minnesota – Oregon – New York – Washington



Last Date of Test: July 18, 2014 TE Connectivitiy / ADC Telecommunications Models: Prism HDM 1900 MHz / 2100 MHz SISO RF Module

Emissions			
Test Description	Specification	Test Method	Pass/Fail
Output Power	FCC 24E:2014, FCC 2.1046	ANSI/TIA/EIA-603-C-2004	Pass
Band Edge Compliance	FCC 24E:2014, FCC 2.1051	ANSI/TIA/EIA-603-C-2004	Pass
Out of Band Emissions - Conducted	FCC 24E:2014, FCC 2.1051	ANSI/TIA/EIA-603-C-2004	Pass
Intermodulation	FCC 24E:2014, FCC 2.1051	ANSI/TIA/EIA-603-C-2004	Pass
Frequency Stability	FCC 24E:2014, FCC 2.1055	ANSI/TIA/EIA-603-C-2004	Pass
Conducted Output Power	FCC 24E:2014, FCC 2.1046	ANSI/TIA/EIA-603-C-2004	Pass
Occupied Bandwidth	FCC 24E:2014, FCC 2.1049	ANSI/TIA/EIA-603-C-2004	Pass
Spurious Radiated Emissions	FCC 24E:2014, FCC 2.1053	ANSI/TIA/EIA-603-C-2004	Pass
Peak to Average Ratio	FCC 24E: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 Number	Description	Date	Page Number
00	None		
	·	-	·

Barometric Pressure

The recorded barometric pressure has been normalized to sea level.



United States

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

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

NVLAP - Each laboratory is accredited by NVLAP to ISO 17025

Canada

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

European Union

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

Australia/New Zealand

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

Korea

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



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









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 15, 2014
Last Date of Test:	July 18, 2014
Receipt Date of Samples:	April 09, 2014
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 24.



CONFIGURATIONS

Configuration TECO0013-1

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	341006/252			
Power Supply	Mean Well	SE-600-48	EB11101765			
IO Control Device	TE Connectivity / ADC Telecommunications	SVT-GU-1011	None			
30 dB attenuator	Aeroflex	57-30-43	RA434			
RF Signal Generator	Aeroflex	IFR 3413	341006/056			
30 dB attenuator	Aeroflex	86-30-12 DC -22 GHz	369			
Laptop	Lenovo	T500	L3-AFD7K 09/04			
Laptop Supply	Lenovo	42T4418	11S42T4418Z1ZGWG19659N			

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	Yes	0.8m	No	RF Amplifier	30 dB attenuator
RF	Yes	1.8m	No	IO Control Device	RF Signal Generator
AC Power x2	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
RF	Yes	0.8m	No	RF Amplifier	30 dB attenuator
RF	Yes	0.9m	No	IO Control Device	RF Signal Generator
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					



CONFIGURATIONS

Configuration TECO0013-2

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	Aeroflex	57-30-43	RA434			

Remote Equipment Outside of Test Setup Boundary						
Description	Manufacturer	Model/Part Number	Serial Number			
RF Signal Generator	Aeroflex	IFR 3413	341006/252			
Power Supply	Mean Well	SE-600-48	EB11101765			
IO Control Device	TE Connectivity / ADC Telecommunications	SVT-GU-1011	None			
RF Signal Generator	Aeroflex	IFR 3413	341006/056			
Laptop	Lenovo	T500	L3-AFD7K 09/04			
Laptop Supply	Lenovo	42T4418	11S42T4418Z1ZGWG19659N			

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	Yes	0.8m	No	RF Amplifier	30 dB attenuator	
RF	Yes	1.8m	No	IO Control Device	RF Signal Generator	
AC Power x2	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	
RF	Yes	0.8m	No	RF Amplifier	30 dB attenuator	
RF	Yes	0.9m	No	IO Control Device	RF Signal Generator	
Ground	No	1.3m	No	RF Amplifier	Ground	
PA =	PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					



Configuration TECO0017-1

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
RF Amplifier	TE Connectivity / ADC Telecommunications	FWP-441T841MOD	None

Peripherals in 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		
30 dB Attenuator 1	Aeroflex / Weinschel	57-30-43	RA434		
30 dB Attenuator 2	Aeroflex / Weinschel	40-0052	N/A		

Cables						
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2	
Fiber Optic Cable	No	>3m	No	IO Control Device	RF Amplifier	
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	RF Amplifier	AC Mains	
Coaxial Cable	Yes	0.8m	No	RF Amplifier	30 dB Attenuator 1	
Coaxial Cable	Yes	0.9m	No	RF Amplifier	30 dB Attenuator 2	
PA = Cable is perman	ently attache	d to the device. Sh	ielding and/o	r presence of ferrite may b	e unknown.	



Configuration TECO0017-2

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
RF Amplifier	TE Connectivity / ADC Telecommunications	FWP-441T841MOD	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	RF Amplifier		
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	No	225cm	No	AC Mains	DC Power Supply		
Supply)	INU	225011	INU	AC Mains	DC Power Supply		
AC Power Cable (Signal	No	180cm	No	AC Mains	Signal Generator		
Generator)	NO	roocm	NU		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	RF Amplifier	AC Mains		
Coaxial Cable	Yes	0.8m	No	RF Amplifier	30 dB Attenuator 1		
Coaxial Cable	Yes	0.9m	No	RF Amplifier	30 dB Attenuator 2		
GND	No	0.4m	No	RF Amplifier	GND		
PA = Cable is permaner	ntly attached	to the device. Shi	elding and/o	or presence of ferrite may l	be unknown.		



MODIFICATIONS

Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
		Occurried	Tested as	No EMI suppression	EUT remained at
1	4/9/2014	Occupied	delivered to	devices were added or	Northwest EMC
		Bandwidth	Test Station.	modified during this test.	following the test.
		Dealste	Tested as	No EMI suppression	EUT remained at
2	4/9/2014	Peak to	delivered to	devices were added or	Northwest EMC
		Average Ratio	Test Station.	modified during this test.	following the test.
			Tested as	No EMI suppression	EUT remained at
3	4/9/2014	Output Power	delivered to	devices were added or	Northwest EMC
			Test Station.	modified during this test.	following the test.
		David Edica	Tested as	No EMI suppression	EUT remained at
4	4/10/2014	Band Edge	delivered to	devices were added or	Northwest EMC
		Compliance	Test Station.	modified during this test.	following the test.
			Tested as	No EMI suppression	EUT remained at
5	4/11/2014	Intermodulation	delivered to	devices were added or	Northwest EMC
			Test Station.	modified during this test.	following the test.
		Out of Band	Tested as	No EMI suppression	EUT remained at
6	4/11/2014	Emissions-	delivered to	devices were added or	Northwest EMC
		Conducted	Test Station.	modified during this test.	following the test.
		Fraguanay	Tested as	No EMI suppression	
7	4/14/2014	Frequency	delivered to	devices were added or	Scheduled testing
		Stability	Test Station.	modified during this test.	was completed.
		Conducted	Tested as	No EMI suppression	EUT remained at
8	7/15/2014	Output Power	delivered to	devices were added or	Northwest EMC
		Output Fower	Test Station.	modified during this test.	following the test.
		Occupied	Tested as	No EMI suppression	EUT remained at
9	7/15/2014	Bandwidth (26	delivered to	devices were added or	Northwest EMC
		dB)	Test Station.	modified during this test.	following the test.
		Peak to	Tested as	No EMI suppression	EUT remained at
10	7/16/2014	Average Ratio	delivered to	devices were added or	Northwest EMC
		_	Test Station.	modified during this test.	following the test.
		Out of Band	Tested as	No EMI suppression	EUT remained at
11	7/16/2014	Emissions -	delivered to	devices were added or	Northwest EMC
		Conducted	Test Station.	modified during this test.	following the test.
			Tested as	No EMI suppression	EUT remained at
12	7/16/2014	Intermodulation	delivered to	devices were added or	Northwest EMC
			Test Station.	modified during this test.	following the test.
		Band Edge	Tested as	No EMI suppression	EUT remained at
13	7/16/2014	Compliance	delivered to	devices were added or	Northwest EMC
		•	Test Station.	modified during this test.	following the test.
		Spurious	Tested as	No EMI suppression	Scheduled testing
14	7/18/2014	Radiated	delivered to	devices were added or	was completed.
		Emissions	Test Station.	modified during this test.	



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.



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TEST DESCRIPTION

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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.



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	4/3/2014	12
40 GHz DC block	Fairview Microwave	SD3379	AMI	9/26/2013	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.



	rism HDM 1900 MHz / 210	00 MHz SISO RF Module			Work Order:		
Serial Number: N						04/09/14	
Customer: T	E Connectivity / ADC Tel	ecommunications			Temperature:	24.2°C	
Attendees: N	lone				Humidity:	21%	
Project: N	lone				Barometric Pres.:	1013.5	
Tested by: T	revor Buls		Power:	110VAC/60Hz	Job Site:	MN08	
TEST SPECIFICATION	NS			Test Method			
FCC 24E:2014				ANSI/TIA/EIA-603-C-2004			
COMMENTS							
Customer provided a	high wattage 30 dB atter	nuator that was added into the	he reference level offset				
ouoloinoi providou a	ingn nanago oo ab ano.						
DEVIATIONS FROM T	TEST STANDARD						
None							
			1	0			
Configuration #	1		Trevor	Bullo			
g	-	Signature	enerol	, v aug			
					Value	Limit	Result
LTE 5 MHz							
L	ow Channel 1932.7 MHz				42.820 dBm	< 1640 W	Pass
Μ	/lid Channel 1962.5 MHz				43.027 dBm	< 1640 W	Pass
	ligh Channel 1992.4 MHz				42,418 dBm	< 1640 W	Pass
LTE 10 MHz	5						
	ow Channel 1935 MHz				43.063 dBm	< 1640 W	Pass
	/id Channel 1962.5 MHz				42.809 dBm	< 1640 W	Pass
	ligh Channel 1990 MHz				41.772 dBm	< 1640 W	Pass

			Value 42.820 dBm	Limit < 1640 W	Result Pass
* Agilent 12:44:18	Apr 10, 2014			RT	
Northwest EMC, Inc					1.932 500 GHz
Ref 47 dBm	#Atten 1	0 dB			42.820 dBm
#Avg					
_og					
B/					
Offst					
Offst 51.8					
dB					
#PAvg					
100					
v1 S2					
S3 FS					
ɛ (f):					
Tun					
Swp					
Center 1.932 700 GHz	Z				Span 10 MHz
Res BW 8 MHz 🔜		#VBW 50 MH:	Z	_ #Sweep 60)1 ms (601 pts)_

LTE 5 MHz, Low Channel 1932.7 MHz



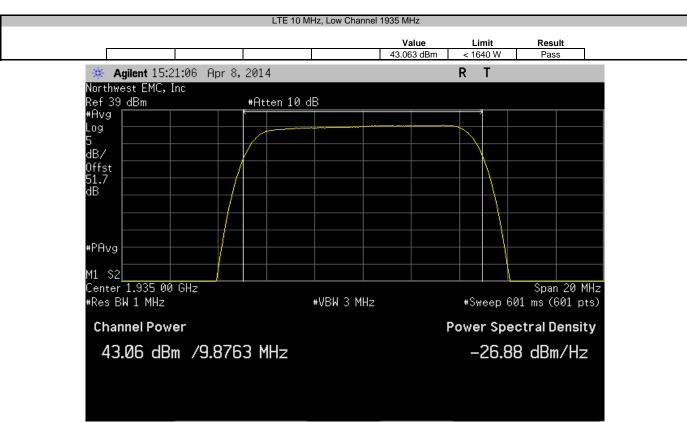


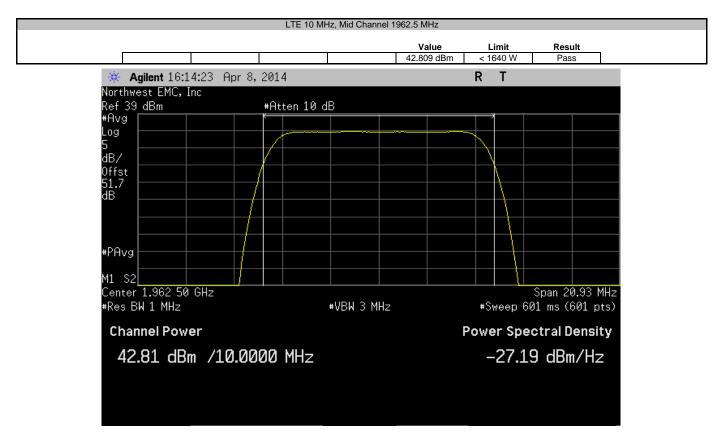
Value Limit Result 43.027 dBm < 1640 W Pass		LTE 5 MHz	z, Mid Channel 1962.5	MHz		
Agilent 16:08:30 Apr 8, 2014 R T Northwest EMC, Inc Mkr1 1.962 367 GHz Ref 47 dBm •Atten 10 dB *Agilent 16:08:30 •Atten 10 dB *Agilent 10:08:30 •Atten 10 dB *PAvg						
Northwest EMC, Inc Mkr1 1.962 367 GHz Ref 47 dBm #Atten 10 dB 43.027 dBm #Rug 1 1 Log 5 4 GB/ 0 1 Offst 5 J.J. 1 VIIII 1.962 367 GHz VIIIIII 43.027 dBm VIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII			43.	027 dBm < 1640 W	Pass	_
Ref 47 dBm +Atten 10 dB 43.027 dBm HAvg 1 1 Log 5 1 S dB 1 Offst 5 1 S1.7 dB 1 #PRvg 1 1 #PRvg 1 1 100 H1 \$2 1 \$3 FS 1 1 E(f): FTun 1 Swp 1 1 Genter 1.962 500 GHz \$pan 10 MHz		or 8,2014				
Hrvg 1 1 Log 1 1 GB/ GF 1 Offst 1 1 S1.7 1 1 GB 1 1 PAvg 1 1 Image: Center 1.962 500 GHz Span 10 MHz			_	Mkr		
Log GB/ Offst 51.7 GB PAvg PAvg 100 W1 S2 S3 FS £(f): FTun Swp Center 1.962 500 GHz Span 10 MHz	Ref 47 dBm	#Atten 10 db	3		43.027 dBm	
S B/ Diffst 0ffst 51.7 dB Image: Sign of the second s						
Offst 51.7 dB *PAvg 100 k1 S2 S3 FS £(f): FTun Swp Center 1.962 500 GHz Span 10 MHz	5					
dB Image: state of the s	dB/					
dB Image: state of the s	51.7					
100 W1 S2 S3 FS £(f): FTun Swp Center 1.962 500 GHz Span 10 MHz	dB					
100 W1 S2 S3 FS £(f): FTun Swp Center 1.962 500 GHz Span 10 MHz						
100 W1 S2 S3 FS £(f): FTun Swp Center 1.962 500 GHz Span 10 MHz						
100 W1 S2 S3 FS £(f): FTun Swp Center 1.962 500 GHz Span 10 MHz	#PAvg					
S3 FS £(f): FTun Swp Center 1.962 500 GHz Span 10 MHz	100					
£(f): FTun Swp Image: Swp Center 1.962 500 GHz	W1 S2					
FTun Swp Center 1.962 500 GHz Span 10 MHz						
Swp Center 1.962 500 GHz Span 10 MHz						
Center 1.962 500 GHz Span 10 MHz						
Center 1.962 500 GHz Span 10 MHz #Res BW 8 MHz #VBW 50 MHz #Sweep 601 ms (601 pts)	Swp					
Center 1.962 500 GHz Span 10 MHz #Res BW 8 MHz #VBW 50 MHz #Sweep 601 ms (601 pts)						
Center 1.962 500 GHz Span 10 MHz #Res BW 8 MHz #VBW 50 MHz #Sweep 601 ms (601 pts)						
#Res BW 8 MHz #VBW 50 MHz #Sweep 601 ms (601 pts)	Center 1.962 500 GHz				Span 10 MHz	
		#	VBW 50 MHz	#Sweep 6	601 ms (601 pts)	
LTE 5 MHz, High Channel 1992.4 MHz		LTE 5 MHz,	, High Channel 1992.4	MHz		
Value Limit Result 42.418 dBm < 1640 W						

	•	-		•	Value	Limit	Result
					42.418 dBm	< 1640 W	Pass
🔆 Agilent 12	:51:03 Apr	10,20	14			RT	
lorthwest EMC,	Inc					Mkr1	1.992 267 GHz
lef 47_dBm		#At	ten 10 d	B			42.418 dBm
Avg .og							
в/							
)ffst j1.8							
iB							
PAvg							
.00							
41 S2 53 FS							
2 (f):							
Tun							
qwi							
enter <mark>1.992 4</mark> Res BW 8 MHz				∗VBW 50 MHz			Span 10 MHz 1 ms (601 pts)



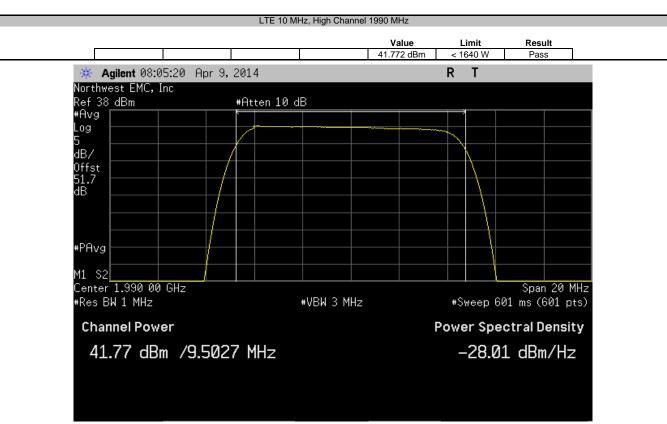
OUTPUT POWER







OUTPUT POWER



EMC

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	4/3/2014	12
40 GHz DC block	Fairview Microwave	SD3379	AMI	9/26/2013	12
Signal Generator MXG	Agilent	N5183A	TIK	6/7/2012	36
Spectrum Analyzer	Agilent	E4440A	AAX	4/28/2014	12

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.



	T: Prism HDM 1900 MHz / 2100 MHz SISO RF	Module			Work Order:				
Serial Numbe	r: None					07/15/14			
Custome	r: TE Connectivitiy / ADC Telecommunication	ons			Temperature: 23.1°C				
Attendee	s: Josh Wittman				Humidity:	45%			
Projec	t: None				Barometric Pres.: 1021.6				
Tested b	y: Trevor Buls		Power:	110VAC/60Hz	Job Site: MN08				
TEST SPECIFICA	TIONS			Test Method					
FCC 24E:2014			1	ANSI/TIA/EIA-603-C-2004					
COMMENTS									
DEVIATIONS FRO	tage attenuator was provided by the custom	cı.							
None									
Configuration #	1 Si	gnature J	revor	Buls					
					Value	Limit	Result		
WCDMA									
	Low Channel 1932.5 MHz				43.33 dBm	< 1640 W	Pass		
	Mid Channel 1962.5 MHz				43.291 dBm	< 1640 W	Pass		
	High Channel 1992.5 MHz				43.165 dBm	< 1640 W	Pass		



CONDUCTED OUTPUT POWER

WCDMA, Low Channel 1932.5 MHz									
			Value	Limit	Result				
			43.33 dBm	< 1640 W	Pass				
🔆 Agilent 09:24:	14 Jul 15, 201	.4		RT					
Northwest EMC, Inc	;			Mkr1	1.932 000 GHz				
Ref 48_dBm	#At	ten 10 dB			43.330 dBm				
#Avg		1							
Log 5									
dB/									
Offst									
Offst 51.9 dB									
aB									
#PAvg									
100									
W1 S2									
S3 FS									
£(f):									
FTun									
Swp									
Center 1.932 500	GHz				Span 10 MHz				
#Res BW 8 MHz		#VBW 50 N	1Hz	#Sweep 601	. ms (601 pts)_				

	WCDMA, Mid Channel	1962.5 MHz		
			mit Result	
		43.291 dBm < 16	40 W Pass	
🔆 Agilent 09:22:02 Jul 15, 2	2014	R	Т	
Northwest EMC, Inc			Mkr1 1.962 150 G	
Ref 48_dBm #	Atten 10 dB		43.291 dE	3m
#Avg Log				
5 dB/				
Offst 51.9 dB				
#PAvg				
100 W1 S2				
W1 S2 S3 FS				
€(f): FTun				
Swp				
Center 1.962 500 GHz			Span 10 M	Hz
#Res BW 8 MHz	#VBW 50 MI	Hz <u> </u> #Sv	/eep 601 ms (601 pt	s)_



CONDUCTED OUTPUT POWER

	WCDMA, High Channe	1992.5 MHz	
		Value Limit 43.165 dBm < 1640 W	Result Pass
🔆 Agilent 09:32:05 Jul 1	5,2014	RT	
Northwest EMC, Inc		Mkr1	1.991 967 GHz
Ref 48 dBm	#Atten 10 dB		43.165 dBm
#Avg Log			
5 dB/			
Offst 51.9 dB			
#PAvg			
100 W1 S2			
S3 FS			
£(f): FTun			
Swp			
Center 1.992 500 GHz			Span 10 MHz
#Res BW 8 MHz	#VBW 50 M	Hz <u></u> #Sweep 60	1 ms (601 pts)_

EMC

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	4/3/2014	12
40 GHz DC block	Fairview Microwave	SD3379	AMI	9/26/2013	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.



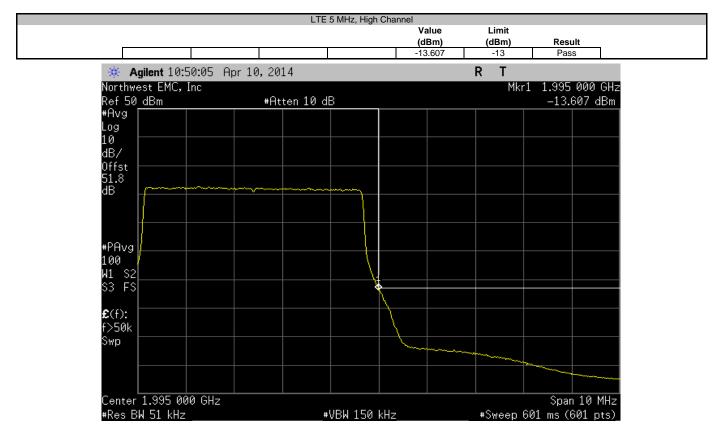


	: Prism HDM 1900 MHz / 21	100 MHz SISO RF Module				TECO0013	
Serial Number						04/10/14	
Customer	TE Connectivity / ADC Te	lecommunications			Temperature	26.5°C	
Attendees	None				Humidity	21%	
Project	: None				Barometric Pres.	1011.8	
	: Trevor Buls			110VAC/60Hz	Job Site	MN08	
TEST SPECIFICAT	IONS			Test Method			
FCC 24E:2014				ANSI/TIA/EIA-603-C-2004			
COMMENTS							
Customer provide	d a high wattage 30 dB atte	enuator that was added into the refere	nce level offset.				
	3						
DEVIATIONS FRO	M TEST STANDARD						
None							
Configuration #	1		T	or Buls			
configuration #	'	Signature	Inerr	or our			
					Value	Limit	
					(dBm)	(dBm)	Result
LTE 5 MHz							
	Low Channel				-13.416	-13	Pass
	High Channel				-13.607	-13	Pass
LTE 10 MHz							
	Low Channel				-16.785	-13	Pass
	High Channel				-18.474	-13	Pass
	-						



BAND EDGE COMPLIANCE

		LTE 5 MHz, Low (Channel				
				lue	Limit		
r				Bm)	(dBm)	Resu	
			-13	.416	-13	Pass	6
🔆 Agilent 11:16:1	3 Apr 10,201	4			RΤ		
Northwest EMC, Inc					Mkr	1 1.930	
Ref 50_dBm	#Att	en 10 dB				-13.4	16 dBm
#Avg							
Dffst 51.8 dB							
B						~~~~~	
ŧPAvg							
100							
v1 S2			<u> </u>				
\$3 FS			•				
x (0).		/					
£ (f): f>50k		{ _					
бжр		/					
- duc		monorman					
Contor 1 020 07E C							10 MU-
Center 1.929 975 G #Res BW 51 kHz	νĦΖ	#VBW 150 k	/∐⊐		#\$W000		10 MHz
Kes DW DI KHZ		#VDW 150 K			_ #Sweep 6	601 ms (6	wi pts/_





BAND EDGE COMPLIANCE

	LTE 10	0 MHz, Low (Channel				
				lue	Limit		
				3m)	(dBm)	Resu	
			-16	.785	-13	Pass	6
🔆 Agilent 08:23:31 Apr	10,2014				RT		
orthwest EMC, Inc					Mkr	1 1.930	
ef 50_dBm	#Atten 20 dB					-16.7	'85 dBm
Avg							
og							
0							
B/							
ffst 1.8							
B							
		l l					
PAvg							
00 0							
1 \$2							
3 FS							
		Ÿ					
:(f):		- /					
>50k							
wp wp							
enter 1.930 000 GHz							10 MHz
Res BW 100 kHz	#V	'BW 300 k	Hz		#Sweep 6	601 ms	01 pts)_

			LTE 10 MHz, Hig				
				Value	Limit	Desself	
				(dBm) -18.474	(dBm) -13	Result Pass	
		0 40 0011		1 10.171			
		9 Apr 10,2014			RT		
	vest EMC, Inc				Mkr1	. 1.995 000 GHz	
Ref 50	∮dBm	#Atte	n 20 dB			-18.474 dBm	
#Avg							
Log 10							
dB/							
0ffst							
Offst 51.8 dB							
dB		·	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~				
#PAvg							
100							
W1 S2 S3 F5							
00 F3				1			
£ (f):				X			
f>50k							
Swp							
Center	r 1.995 025 GH					Span 10 MHz	
	3W 100 kHz		#VBW 300	kHz	#Sween 6	01 ms (601 pts)_	
-1103						or wo (oor bro)_	

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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	4/3/2014	12
40 GHz DC block	Fairview Microwave	SD3379	AMI	9/26/2013	12
Signal Generator MXG	Agilent	N5183A	TIK	6/7/2012	36
Spectrum Analyzer	Agilent	E4440A	AAX	4/28/2014	12

TEST DESCRIPTION

The spurious RF conducted emissions at the edges of the authorized bands were measured with the EUT set to low and high transmit frequencies in 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.

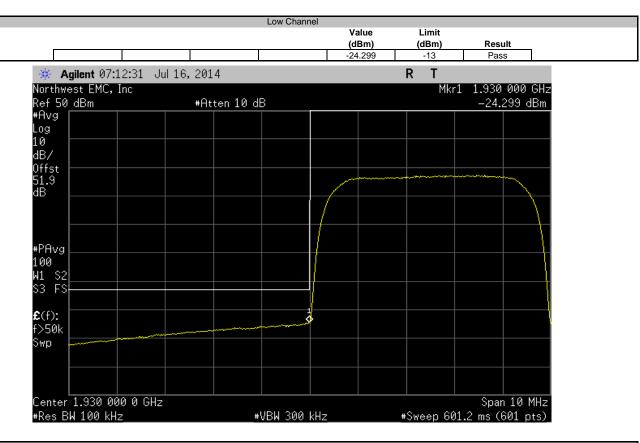


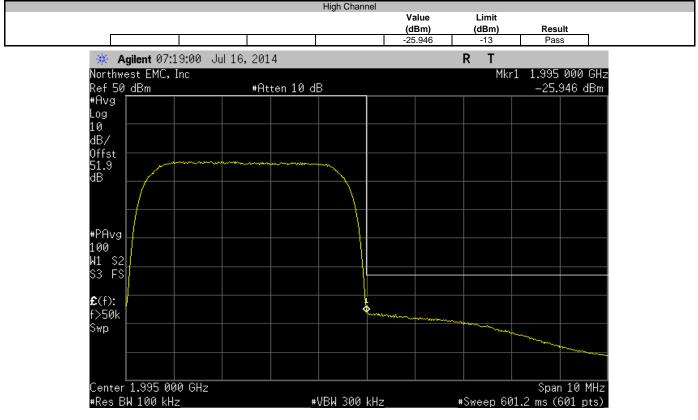


EUT: Prism HDM 1900 MHz / 2100 MHz SISO RF Module		Work Order:					
Serial Number: None	Date:	Date: 07/16/14					
Customer: TE Connectivitiy / ADC Telecommunications	Temperature	Temperature: 23.3°C					
Attendees: None		Humidity	43%				
Project: None	Barometric Pres.	Pres.: 1020.6					
Tested by: Trevor Buls	Job Site:	MN08					
TEST SPECIFICATIONS	Test Method						
FCC 24E:2014	ANSI/TIA/EIA-603-C-2004						
COMMENTS							
A 30 dB high wattage attenuator was provided by the customer. WCDMA.							
DEVIATIONS FROM TEST STANDARD							
None							
Configuration # 1 Signature	Trevor Buls						
		Value	Limit				
		(dBm)	(dBm)	Result			
Low Channel		-24.299	-13	Pass			
High Channel		-25.946	-13	Pass			



BAND EDGE COMPLIANCE





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OUT OF BAND EMISSIONS -CONDUCTED

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	4/3/2014	12
40 GHz DC block	Fairview Microwave	SD3379	AMI	9/26/2013	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 1 MHz resolution bandwidth and no video filtering were made for each modulation type from 30 MHz to 9 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 -CONDUCTED

EUT	F: Prism HDM 1900 MHz / 2100 MHz SISO	RF Module	Work Order:	TECO0013	
Serial Numbe	r: None			04/11/14	
Custome	r: TE Connectivity / ADC Telecommunica	tions	Temperature:		
Attendees	s: None		Humidity:		
Projec	t: None	Power: 110VAC/60Hz	Barometric Pres.:	1017.2	
	y: Trevor Buls	Job Site:	MN08		
EST SPECIFICA	TIONS	Test Method			
CC 24E:2014		ANSI/TIA/EIA-603-C-2004			
OMMENTS					
ustomer provide	ed a high wattage 30 dB attenuator that w	as added into the reference level offset.			
	OM TEST STANDARD				
one					
onfiguration #	1	Signature Trevor Buls			
		Frequency			
		Range	Value	Limit	Result
TE 5 MHz					
	Mid Channel 1962.5 MHz	30 MHz - 1 GHz	-40.39 dBm	≤ -13 dBm	Pass
	Mid Channel 1962.5 MHz	1 GHz - 3 GHz	-18.53 dBm	≤ -13 dBm	Pass
	Mid Channel 1962.5 MHz	3 GHz - 20 GHz	-28.83 dBm	≤ -13 dBm	Pass
	Low Channel 1932.7 MHz	30 MHz - 1 GHz	-40.14 dBm	≤ -13 dBm	Pass
	Low Channel 1932.7 MHz	1 GHz - 3 GHz	-18.76 dBm	≤ -13 dBm	Pass
				≤ -13 dBm	Pass
	Low Channel 1932.7 MHz	3 GHz - 20 GHz	-29.14 dBm		
	High Channel 1992.4 MHz	30 MHz - 1 GHz	-40.33 dBm	≤ -13 dBm	Pass
	High Channel 1992.4 MHz High Channel 1992.4 MHz	30 MHz - 1 GHz 1 GHz - 3 GHz	-40.33 dBm -20.35 dBm	≤ -13 dBm ≤ -13 dBm	Pass
	High Channel 1992.4 MHz	30 MHz - 1 GHz	-40.33 dBm	≤ -13 dBm	
TE 10 MHz	High Channel 1992.4 MHz High Channel 1992.4 MHz High Channel 1992.4 MHz	30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 20 GHz	-40.33 dBm -20.35 dBm -28.63 dBm	≤ -13 dBm ≤ -13 dBm ≤ -13 dBm	Pass Pass
TE 10 MHz	High Channel 1992.4 MHz High Channel 1992.4 MHz High Channel 1992.4 MHz Mid Channel 1962.5 MHz	30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 20 GHz 30 MHz - 1 GHz	-40.33 dBm -20.35 dBm -28.63 dBm -39.74 dBm	≤ -13 dBm ≤ -13 dBm ≤ -13 dBm ≤ -13 dBm	Pass Pass Pass
TE 10 MHz	High Channel 1992.4 MHz High Channel 1992.4 MHz High Channel 1992.4 MHz Mid Channel 1962.5 MHz Mid Channel 1962.5 MHz	30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 20 GHz 30 MHz - 1 GHz 1 GHz - 3 GHz	-40.33 dBm -20.35 dBm -28.63 dBm -39.74 dBm -19.76 dBm	≤ -13 dBm ≤ -13 dBm ≤ -13 dBm ≤ -13 dBm ≤ -13 dBm	Pass Pass Pass Pass
TE 10 MHz	High Channel 1992.4 MHz High Channel 1992.4 MHz High Channel 1992.4 MHz Mid Channel 1962.5 MHz Mid Channel 1962.5 MHz Mid Channel 1962.5 MHz	30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 20 GHz 30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 20 GHz	-40.33 dBm -20.35 dBm -28.63 dBm -39.74 dBm -19.76 dBm -29.45 dBm	≤ -13 dBm ≤ -13 dBm ≤ -13 dBm ≤ -13 dBm ≤ -13 dBm ≤ -13 dBm ≤ -13 dBm	Pass Pass Pass Pass Pass
TE 10 MHz	High Channel 1992.4 MHz High Channel 1992.4 MHz High Channel 1992.4 MHz Mid Channel 1962.5 MHz Mid Channel 1962.5 MHz Mid Channel 1962.5 MHz Low Channel 1962.5 MHz	30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 20 GHz 30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 20 GHz 30 MHz - 1 GHz	-40.33 dBm -20.35 dBm -28.63 dBm -39.74 dBm -19.76 dBm -29.45 dBm -39.88 dBm	≤ -13 dBm ≤ -13 dBm ≤ -13 dBm ≤ -13 dBm ≤ -13 dBm ≤ -13 dBm ≤ -13 dBm	Pass Pass Pass Pass Pass Pass Pass
TE 10 MHz	High Channel 1992.4 MHz High Channel 1992.4 MHz High Channel 1992.4 MHz Mid Channel 1962.5 MHz Mid Channel 1962.5 MHz Low Channel 1935 MHz Low Channel 1935 MHz	30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 20 GHz 30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 20 GHz 30 MHz - 1 GHz 1 GHz - 3 GHz	-40,33 dBm -20.35 dBm -28.63 dBm -39.74 dBm -19.76 dBm -29.45 dBm -39.88 dBm -19.51 dBm	≤ -13 dBm ≤ -13 dBm	Pass Pass Pass Pass Pass Pass Pass Pass
TE 10 MHz	High Channel 1992.4 MHz High Channel 1992.4 MHz High Channel 1992.4 MHz Mid Channel 1962.5 MHz Mid Channel 1962.5 MHz Mid Channel 1962.5 MHz Low Channel 1962.5 MHz	30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 20 GHz 30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 20 GHz 30 MHz - 1 GHz	-40.33 dBm -20.35 dBm -28.63 dBm -39.74 dBm -19.76 dBm -29.45 dBm -39.88 dBm	≤ -13 dBm ≤ -13 dBm ≤ -13 dBm ≤ -13 dBm ≤ -13 dBm ≤ -13 dBm ≤ -13 dBm	Pass Pass Pass Pass Pass Pass Pass
TE 10 MHz	High Channel 1992.4 MHz High Channel 1992.4 MHz High Channel 1992.4 MHz Mid Channel 1962.5 MHz Mid Channel 1962.5 MHz Low Channel 1935 MHz Low Channel 1935 MHz	30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 20 GHz 30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 20 GHz 30 MHz - 1 GHz 1 GHz - 3 GHz	-40,33 dBm -20.35 dBm -28.63 dBm -39.74 dBm -19.76 dBm -29.45 dBm -39.88 dBm -19.51 dBm	≤ -13 dBm ≤ -13 dBm	Pass Pass Pass Pass Pass Pass Pass Pass
TE 10 MHz	High Channel 1992.4 MHz High Channel 1992.4 MHz High Channel 1992.4 MHz Mid Channel 1962.5 MHz Mid Channel 1962.5 MHz Low Channel 1962.5 MHz Low Channel 1935 MHz Low Channel 1935 MHz Low Channel 1935 MHz	30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 20 GHz 30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 20 GHz 30 MHz - 1 GHz 3 GHz - 20 GHz 1 GHz - 3 GHz 3 GHz - 20 GHz	-40.33 dBm -20.35 dBm -28.63 dBm -19.76 dBm -29.45 dBm -39.88 dBm -19.51 dBm -29.2 dBm	≤ -13 dBm ≤ -13 dBm	Pass Pass Pass Pass Pass Pass Pass Pass

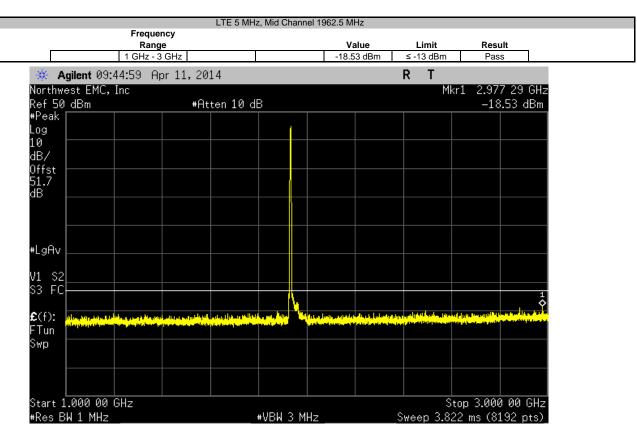


Freque						
Rang			Value	Limit	Result	
30 MHz - 1			-40.39 dBm	≤ -13 dBm	Pass	
🔆 🔆 Agilent 09:34:02 Ap	or 11, 2014			RT		
Northwest EMC, Inc				Μ	lkr1 600.68 M	
Ref 31.8 dBm	#Atten 10 d	В			-40.39 dE	ŝm
#Peak	I #Htten 10 dB -40.39 dBm					
10 dB/						
0ffst 31.8 dB						
dB						
#LgAv						
V1 S2 S3 FC						
£(f):						
	ality of the state	ويروا والمتلك والمتحد والمتعاد والمتعاد والمتعاد والمتعاد والمتعاد والمتعاد والمتعاد والمتعاد والمتع	a ta bhi dhe na ha a bha a bha a bh	واربع أأرا والتلجي الارجار	ta ha Basan Marina Angelan Ju	
Swp						
Start 30.00 MHz				Str	op 1.000 00 Gl	Hz
#Res BW 1 MHz		∗VBW 3 MHz			8 ms (8192 pt	

LTE 5 MHz, Mid Channel 1962.5 MHz



OUT OF BAND EMISSIONS -CONDUCTED



LTE 5 MHz, Mid Channel 1962.5 MHz													
		Frequer Rang 3 GHz - 20	e				alue 33 dBm	Limit ≤ -13 dBm	-	sult ass			
<u>来</u>	Agilent 09:			14		R T							
Northy Ref 30	Northwest EMC, Inc Ref 36.3 dBm #Atten 10 c					Mkr1 13.667 8 GHz							
#Peak Log													
10 dB∕ Offst													
Offst 36.3 dB													
#LgAv													
V1 S2 S3 F0	2						1 \$						
£(f): FTun	¹ Households and												
Swp													
C	3.000 0 G) 00 0 GHz			
	3.000 0 G BW 1 MHz	ΠZ			₩VBW 3 M	Hz	S			8192 pts)_			

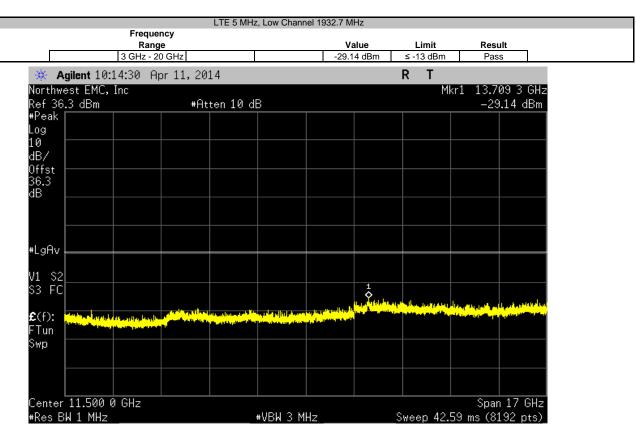


OUT OF BAND EMISSIONS -CONDUCTED

				LTE 5 MHz	, Low Chanr	nel 1932.7 M	Hz				
		Frequen									
г		Range					alue	Limit		sult	
		30 MHz - 1				-40.1	4 dBm	≤ -13 dBm	Pa	ass	
- 米	Agilent 09:5	9:43 Ap	r 11,200	14				RT			
	hwest EMC, I	nc								49.47 M	
	31.8 dBm		#At	ten 10 dl	В				-4	0.14 dB	m
#Pea	ik 📃 🗌										
Log											
10											
dB/											
31.8	t i										
Offs 31.8 dB											
#LgF	iv L										
V1	S2										
S3	FC										
							1				
£ (f)	a status presentation bit	name and a	and a state of the second	a the state of the second states of the second stat	A ROLL BULLE	and all all a liter	ALL		and and an	al and the second	
FTur) APERATION	and the second secon	and the state of the state of the	العقم أستسطيتها والم	A DATE OF A	an an an an an Anna an Anna Anna Anna A	and the second	and a state of the state of the	a de la desta d		<mark>اطنا</mark>
Swp											
	t 30.00 MHz								Stop 1.00		
#Req	8W 1 MH 2				#VR⊍ 3 M	H-7	(Sween 1 A	38 me ()	8192 nto	

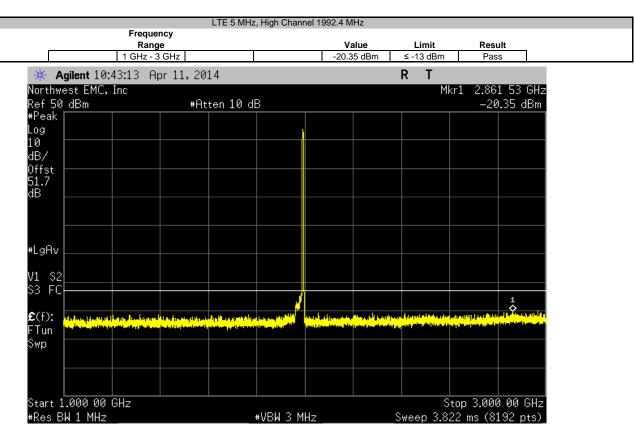
LTE 5 MHz, Low Channel 1932.7 MHz												
		Frequency Range				Va	alue	Limit	Re	sult		
		1 GHz - 3 GHz					6 dBm	≤ -13 dBm		ass		
-XK-	Agilent 10:	11:44 Apr 11, 20	014					RT				
	hwest EMC,							Mł	r1 2.7			
Ref #Pe:	50 dBm	#A	tten 10 d	B			1		1	.8.76 d	Bm	
Log	an											
10					+							
dB/												
Offs 51.7	it 7											
dB												
#Lgf	av											
V1	\$2											
\$3										1		
£ (f)): Managarahan	a and a state of the	M. Haterman and Al	a phase all					ad ut autit in			
FTu			i i i i i i i i i i i i i i i i i i i				Letter, and the second					
Swp												
Star	t 1.000 00	GHz						S	top 3.00	ao oo o	Hz	
	s BW 1 MHz			₩VBW 3	MHz	2		Sweep 3.82				





				LTE 5 MHz	, High Chanr	nel 1992.4 N	IHz				
		Frequer Range				V	alue	Limit		Result	
		30 MHz - 1					33 dBm	≤ -13 dBm		Pass	1
*	Agilent 10:	28:52 Ap	or 11, 201	14				RΤ			
	hwest EMC,	Inc								321.20	
Ref #Pea	31.8 dBm		#At	ten 10 d	3					-40.33 c	dBm
+rea Log	dK										
10											
dB/											
0ffs 31.8	it										
dB											
#Lgf	Av 📃 🚽										
V1 S3	\$2										
55			1								
£ (f)):	ويتعالمه والمراجع	ىرىمەر يەللەل بىرىمە	haladha hali anna	u all a dd a dd a a gu b	las bandas	. مام دا با مام خا	ant made with a	and the first sec	adaan ka dha sa w	ana lla
FTu	n <mark>hasterne in her</mark>	Langel disated by the	and the second states	a disa di sa di	literal description is a second	والمرجة والقديم أريسي	A STATE OF THE OWNER	Trade Induced a	a ili mild	addy the second	
Swp											
	t 30.00 MHz	2								.000 00	
#Res	s BW 1 MHz				#VBW 3 M	Hz		Sweep 1.6	38 ms	(8192 p	ots)_





		_		LTE 5 MHz	, High Chanr	nel 1992.4 M	1Hz				
		Frequer Range 3 GHz - 20	e				alue 63 dBm	Limit ≤ -13 dBm	Res		
*	Agilent 10:4			14		-20.0		R T	1 43	55	
	west EMC,		, 11,20	17					<r1 13.6<="" td=""><td>76 1 GHz</td><td></td></r1>	76 1 GHz	
Ref 3	36.3 dBm		#At	ten 10 d	B				-28	3.63 dBm	
#Peak Log											
10											
dB/ Offst											
Offst 36.3 dB											
dВ											
#LgAv											
V1 S S3 F	2										
53 F	4								kentendike (Ledaca	a all of the soul	
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FTun Swp											
Start	3.000 0 G	Hz						S	top 20_00	1 00 0 GHz	
	BW 1 MHz				₩VBW 3 M	Hz	S	weep 42.			



	LTE 10 MHz, Mi	d Channel 1962.5	5 MHz			
Frequency Range			Value	Limit	Result	
30 MHz - 1 GHz		-3	9.74 dBm	≤ -13 dBm	Pass	
🔆 Agilent 09:35:32 Apr 11, 2	2014			RT		
Northwest EMC, Inc					Mkr1 782.93 MHz	
Ref 31.8 dBm #f	Atten 10 dB				-39.74 dBm	
#Peak						
_og 10						
dB/						
Offst						
31.8 dB						
⊧LgAv						
J1 S2						
63 FC						
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Swp						
Start 30.00 MHz				 \$	top 1.000 00 GHz	
#Res BW 1 MHz	#VB	W 3 MHz			38 ms (8192 pts)	

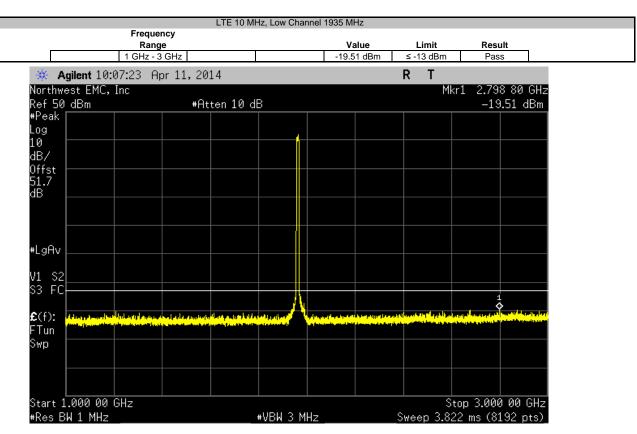
	_	LTE 10 MHz,	, Mid Chann	el 1962.5 MHz			
	Frequency Range			Value	e Limit	Result	
	1 GHz - 3 GHz			-19.76 d	lBm ≤ -13 dBm	n Pass	
🔆 🔆 Agilent	09:39:02 Apr 11, 20	14			RT		
Northwest E						Mkr1 2.988 (
Ref 50 dBm #Peak ∣	#A1	ten 10 dB				-19.7	6 dBm
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#Res BW 1 N	"IHZ	#\	VBW 3 MF	1Z	ъwеер 3.	822 ms (8192	z pts/_



LTE	10 MHz, Mid Channel 19	962.5 MHz		
Frequency				
Range		Value	Limit	Result
3 GHz - 20 GHz		-29.45 dBm	≤ -13 dBm	Pass
🔆 Agilent 09:52:20 Apr 11, 2014		1	RT	
Northwest EMC, Inc			Mkr1	13.709 3 GHz
Ref 36.3 dBm #Atten	10 dB			-29.45 dBm
#Peak				
Log				
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#LgAv				
*L9HV				
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Swp Swp				
Start 3.000 0 GHz			Stap 2	20.000 0 GHz
#Res BW 1 MHz	₩VBW 3 MHz	S	weep 42.59 m:	

		I TF	10 MHz, Low Cł	annel 1935 M	1Hz			
	Frequen Range 30 MHz - 1	су		V	/alue 88 dBm	Limit ≤ -13 dBm	Resu Pas	
🔆 Agilent	10:04:24 Apr	r 11,2014				RT		
Northwest E								4.20 MHz
Ref 31.8 dB	m	#Atten	10 dB				-39	.88 dBm
#Peak								
Log 10								
dB/								
Offst								
Offst 31.8 dB								
ар								
#LgAv								
V1 S2 S3 FC								
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Swp								
Start 30.00							ton 1 000) 00 GHz
#Res BW 1 M			#VBW 3	MHz	5	Sweep 1.63		





		F		LTE 10 MH	Hz, Low Char	nnel 1935 M	IHz				
		Frequen Range					alue	Limit		sult	
		3 GHz - 20	GHz			-29.	.2 dBm	≤ -13 dBm	Pa	ISS	
	Agilent 10:		r 11,201	14				RT			
Ref	thwest EMC, 36.3 dBm	Inc	#Ati	ten 10 di	В			M		723 8 GHz 9.20 dBm	
#Pe	ak 🛛										
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0ff 36. dB	5										
#Lg											
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0116	,										
	rt 3.000 0 G	Hz								000 0 GHz	
#Re	s BW 1 MHz				#VBW 3 M	HZ	5	weep 42.	59 ms (≀	3192 pts)_	



		LTE 10 MH	lz, High Chai	nnel 1990 M	Hz				
	Frequency				alue	Limit	Res		
	Range 30 MHz - 1 GHz				4 dBm	LIMIt ≤ -13 dBm	Pas		
No		A 4		10.2			1 40		
	:31:43 Apr 11, 20	014				RT			
Northwest EMC,			_					9.48 MHz	
Ref 31.8 dBm #Peak	#H	tten 10 dE	3		1		-41	0.24 dBm	
10									
dB/									
Offst 31.8 dB									
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#LgAv									
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Start 30.00 MH:								0 00 GHz	
#Res BW 1 MHz			₩VBW 3 MI	HZ	S	weep 1.6	38 ms (8	192 pts)	

		_	LTE 10 MI	Hz, High Cha	annel 1990 l	MHz				
		Frequency Range 1 GHz - 3 GHz		1		/alue .45 dBm	Limit ≤ -13 dBm	Result Pass	<u>. </u>	
					-20	.45 dBm		Pass		
*		37:46 Apr 11,2	014				RT	4 0 007	<u> </u>	
	thwest EMC, 50 dBm		itten 10 d	ID			Mk		30 GHz 45 dBm	
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dB7	/ 									
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Sta	rt 1.000 00	GHz						top 3.000		
	s BW 1 MHz			#VBW 3 №	1Hz		Sweep 3.82	22 ms (819	92 pts)_	



				LTE 10 MH	Iz, High Cha	nnel 1990 N	/Hz				
		Freque							_		
		8 GHz - 20					alue 52 dBm	Limit ≤ -13 dBm	Res Pa		
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	thwest EMC, 36.3 dBm	, INC	#O+	ten 10 di	D			[*]		172 1 G 9.51 dE	
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	t 3.000 0 I							S	top 20.0	00 0 G	Hz
	s BW 1 MHz				₩VBW 3 M	Hz		Sweep 42.	59 ms (8	192 pt	s)_

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OUT OF BAND EMISSIONS -CONDUCTED

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 2.8-18 GHz	Micro-Tronics	HPM50111	HGY	10/5/2012	24
Attenuator - 20db, 'SMA'	SM Electronics	SA26B-20	RFW	4/3/2014	12
40 GHz DC block	Fairview Microwave	SD3379	AMI	9/26/2013	12
Signal Generator MXG	Agilent	N5183A	TIK	6/7/2012	36
Spectrum Analyzer	Agilent	E4440A	AAX	4/28/2014	12

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 1 MHz resolution bandwidth and no video filtering were made for each modulation type from 30 MHz to 20 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.



EUT:	Prism HDM 1900 MHz / 2100 M	Hz SISO RF Module		Work Order:	TECO0017	
Serial Number:					07/16/14	
	TE Connectivitiy / ADC Teleco	mmunications		Temperature:		
Attendees				Humidity:		
Project:	None			Barometric Pres.:		
Tested by:	: Trevor Buls		Power: 110VAC/60Hz	Job Site:	MN08	
TEST SPECIFICAT			Test Method			
FCC 24E:2014			ANSI/TIA/EIA-603-C-2004			
COMMENTS			• •			
	M TEST STANDARD					
	M TEST STANDARD					
None	M TEST STANDARD	Sianature	Trevor Buls			
None		Signature	Trevor Buls Frequency			
DEVIATIONS FROM None Configuration #		Signature		Value	Limit	Result
None Configuration #		Signature	Frequency	Value	Limit	Result
None Configuration #		Signature	Frequency	Value -40.58 dBm	Limit ≤ -13 dBm	Result
None Configuration #	1 Low Channel 1932.5 MHz Low Channel 1932.5 MHz	Signature	Frequency Range 30 MHz - 1 GHz 1 GHz - 3 GHz	-40.58 dBm -19.2 dBm	≤ -13 dBm ≤ -13 dBm	
None Configuration #	1 Low Channel 1932.5 MHz	Signature	Frequency Range 30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 20 GHz	-40.58 dBm	≤ -13 dBm	Pass
None Configuration #	1 Low Channel 1932.5 MHz Low Channel 1932.5 MHz	Signature	Frequency Range 30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 20 GHz 30 MHz - 1 GHz	-40.58 dBm -19.2 dBm	≤ -13 dBm ≤ -13 dBm	Pass Pass
None Configuration #	1 Low Channel 1932.5 MHz Low Channel 1932.5 MHz Low Channel 1932.5 MHz Mid Channel 1962.5 MHz Mid Channel 1962.6 MHz	Signature	Frequency Range 30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 20 GHz 30 MHz - 1 GHz 1 GHz - 3 GHz	-40.58 dBm -19.2 dBm -32.81 dBm -40.4 dBm -19.12 dBm	≤ -13 dBm ≤ -13 dBm ≤ -13 dBm ≤ -13 dBm ≤ -13 dBm	Pass Pass Pass Pass Pass
None Configuration #	1 Low Channel 1932.5 MHz Low Channel 1932.5 MHz Low Channel 1932.5 MHz Mid Channel 1962.5 MHz Mid Channel 1962.5 MHz	Signature	Frequency Range 30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 20 GHz 30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 20 GHz	-40.58 dBm -19.2 dBm -32.81 dBm -40.4 dBm -19.12 dBm -32.46 dBm	≤ -13 dBm ≤ -13 dBm ≤ -13 dBm ≤ -13 dBm ≤ -13 dBm ≤ -13 dBm	Pass Pass Pass Pass Pass Pass Pass
None	1 Low Channel 1932.5 MHz Low Channel 1932.5 MHz Low Channel 1932.5 MHz Mid Channel 1962.5 MHz Mid Channel 1962.5 MHz Mid Channel 1962.5 MHz High Channel 1962.5 MHz	Signature	Frequency Range 30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 20 GHz 30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 20 GHz 3 0 MHz - 1 GHz 1 GHz - 20 GHz 3 0 MHz - 1 GHz 1 GHz - 20 GHz 3 0 MHz - 1 GHz 3 0 MHz - 1 GHz	-40.58 dBm -19.2 dBm -32.81 dBm -40.4 dBm -19.12 dBm -32.46 dBm -40.2 dBm	≤ -13 dBm ≤ -13 dBm ≤ -13 dBm ≤ -13 dBm ≤ -13 dBm ≤ -13 dBm ≤ -13 dBm	Pass Pass Pass Pass Pass Pass Pass Pass
None Configuration #	1 Low Channel 1932.5 MHz Low Channel 1932.5 MHz Low Channel 1932.5 MHz Mid Channel 1962.5 MHz Mid Channel 1962.5 MHz	Signature	Frequency Range 30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 20 GHz 30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 20 GHz	-40.58 dBm -19.2 dBm -32.81 dBm -40.4 dBm -19.12 dBm -32.46 dBm	≤ -13 dBm ≤ -13 dBm ≤ -13 dBm ≤ -13 dBm ≤ -13 dBm ≤ -13 dBm	Pass Pass Pass Pass Pass Pass Pass



WCDMA, Low Channel 1932.5 MHz									
Frequency Range			Value	Limit	Res	ult			
30 MHz - 1 GHz			-40.58 dBm	≤ -13 dBm	Pas	S			
🔆 Agilent 08:14:51 Jul 16,	2014			RT					
Northwest EMC, Inc						1.93 MHz			
Ref 31.7 dBm	#Atten 10 dB				-40).58 dBm			
#Peak Log									
10									
dB/									
Offst 31.7									
dB									
#LgAv									
-L9/10									
V1 S2 S3 FC									
S3 FC									
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Swp 🛛 👘									
Start 30.00 MHz					+op 1 00	000 GHz			
art 30.00 MH2 #Res BW 1 MHz		VBW 3 MHz		د Sweep 1.6_					

	WCDMA, Low Channel 1932.5 MHz											
		Freque										
		Rang						alue	Limit		Result	n
		1 GHz - 3	GHz				-19.	2 dBm	≤ -13 dBm		Pass	
	Agilent 08:		I 16, 201	.4					RT			
	vest EMC,	Inc							М		.994 63	
Ref 5	0 dBm		#At	ten 10 di	В						–19.20 d	Bm
#Peak												
Log												
10												
dB/												
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51.9												
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Swp												
	1.000 00	GHz									.000 000 (
#Res	BW 1 MHz				ŧVBW (3 M	Hz		Sweep 3.8	22 ms	(8192 p	ts)_



	WCDMA	, Low Channel 1	932.5 MHz	2			
	equency Range		Val		Limit	Res	.14
	z - 20 GHz		-32.81		≤ -13 dBm	Pas	
🔆 Agilent 08:22:50	Jul 16, 2014				RТ	•	
Northwest EMC, Inc						kr1 16.2	01 9 GHz
Ref 32.8 dBm	#Atten 10 🤇	дB					2.81 dBm
#Peak							
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32.8 dB							
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Swp							
Start 3.000 0 GHz							00 0 GHz
#Res BW 1 MHz		₩VBW 3 MHz	2	S	weep 42.	59 ms (8:	192 pts)_

	WCDI	MA, Mid Channel 1962.5	5 MHz		
	Frequency		Value Limit	Result	
	Range 30 MHz - 1 GHz		-40.4 dBm ≤ -13 dB		
🔆 Agilent 08:	15:33 Jul 16, 2014		RT		
Northwest EMC,	Inc			Mkr1 859.08 MH:	z
Ref 31.7 dBm	#Atten 10	dB		-40.40 dBm	
#Peak Log					
10					
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FTun Swp					
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Start 30.00 MHz #Res BW 1 MHz	Z	_ #VBW 3 MHz	Sulaan	Stop 1.000 00 GHz 1.638 ms (8192 pts)	
#Res DM I MHZ		WDW_3_PINZ	Sweep .	1.050 IIIS (0132 pts)	



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	WCDMA, Mid Channel 1962.5 MHz											
Г		Freque Rang 1 GHz - 3	e				Va	alue 2 dBm	Limit ≤ -13 dBm	Res		
* *	Agilent 08:	17:01 Ju	ıl 16, 201	4					RT			
	est EMC,								Mł	(r1 2.91	0 39 GHz	
Ref 50			#At	ten 10 di	3						0.12 dBm	
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ab/ Offst 51.9 dB												
dB												
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Swp												

Stop 3.000 00 GHz Sweep 3.822 ms (8192 pts) Start 1.000 00 GHz #Res BW 1 MHz ₩VBW 3 MHz

	WCDMA	A, Mid Channel 1962.5 MF	Ηz		
F	requency	,			
	Range		alue Limit	Result	
	Hz - 20 GHz	-32.4	46 dBm ≤ -13 dBm	Pass	
🔆 Agilent 08:23:2	2 Jul 16, 2014		RT		
Northwest EMC, Inc			Mk	r1 13.742 5 GHz	
Ref 32.8 dBm	#Atten 10 <	dB		-32.46 dBm	
#Peak					
Log 10					
dB/					
Offst					
0ffst 32.8 dB					
ab					
#LgAv					
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onp					
Start 3.000 0 GHz			St	op 20.000 0 GHz	
#Res BW 1 MHz		₩VBW 3 MHz		9 ms (8192 pts)_	



	WCDMA, High Channel 1992.5 MHz										
	Freque							_			
	80 Ran 30 MHz -					alue 2 dBm	Limit ≤ -13 dBm	Res Pa			
					-40.			Fa	55		
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Northwest									32 . 20 MH:		
Ref 31.7 d	dBm	#At	ten 10 d	В				-40	0.20 dBm		
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Start 30.0	10 MH-2						<	1 top 1 00	L 0 00 GHz		
				#VRW 3_M	Hz	<					
#Res BW 1				₩VBW 3 M	Hz		Sweep 1.6				

WCDMA, High Channel 1992.5 MHz												
	-		Freque Rang 1 GHz - 3	e			-2	Value 0.66 dBm	Limit ≤ -13 dBm		esult ass	
					4						455	
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		↓1 MHz				₩VBW 3 M	Hz		Sweep 3.82			



	WCDMA, High Channel 1992.5 MHz										
		Freque	•								
		Rang 3 GHz - 20	e				alue 3 dBm	Limit ≤ -13 dBm	Res		
						-32.8	3 dBm		Pas	s	_
*	Agilent 08:		ıl 16, 201	4				RT			
	hwest EMC,	Inc						Mk		25 4 GH	
Ref	32 . 8 dBm		#At	ten 10 d	В				-32	2 . 83 dBr	n
#Pea	ak										
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10 dB/											
ab/ Offs											
32.8											
32.8 dB											
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	t 3.000 0 G	HZ							top 20.00		
#Kes	s BW 1 MHz				₩VBW 3 M	HZ		Sweep 42.	59 ms (8:	192 pts)

EMC

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 Inc (SM electronics)	MP8451-2	IAD	NCR	0
Power Divider/Combiner	Fairview Microwave Inc (SM electronics)	MP8451-2	IAC	NCR	0
Attenuator - 20db, 'SMA'	SM Electronics	SA26B-20	RFW	4/3/2014	12
40 GHz DC block	Fairview Microwave	SD3379	AMI	9/26/2013	12
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 bottom of the band, and a modulated pulse near the edge 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 20 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.

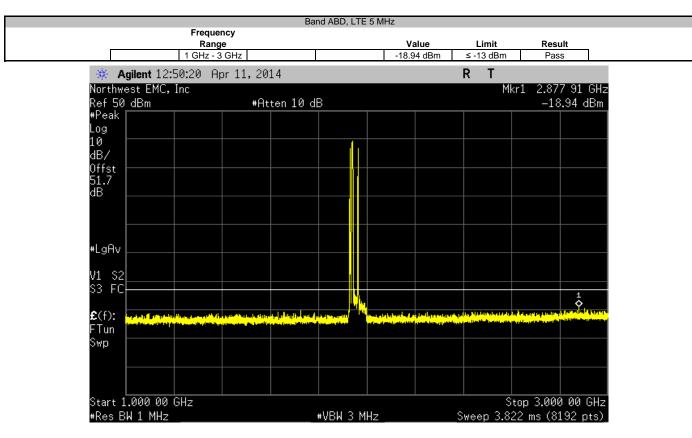


EL	UT: Prism HDM 1900 MHz / 2100 M	MHz SISO RF Module	Work Order:	TECO0013	
Serial Numb	per: None		Date:	04/11/14	
Custom	er: TE Connectivity / ADC Teleco	ommunications	Temperature:	25°C	
Attende	es: None		Humidity:	25%	
Proje	ect: None		Barometric Pres.:	1017.2	
	by: Trevor Buls	Power: 110VAC/60Hz	Job Site:	MN08	
EST SPECIFIC	ATIONS	Test Method			
CC 24E:2014		ANSI/TIA/EIA-603-C-2004			
OMMENTS					
stomer provid	ded a high wattage 30 dB attenua	tor that was added into the reference level offset.			
•	0 0				
EVIATIONS FR	ROM TEST STANDARD				
one					
onfiguration #	1	T Bulp			
onfiguration #	1	Signature Trevor Buls			
onfiguration #	1	Signature Trevor Buls Frequency			
onfiguration #	1		Value	Limit	Result
	1	Frequency	Value	Limit	Result
-	1 LTE 5 MHz	Frequency	Value -40.76 dBm	Limit ≤ -13 dBm	
		Frequency Range			
	LTE 5 MHz	Frequency Range 30 MHz - 1 GHz	-40.76 dBm	≤ -13 dBm	Pass
	LTE 5 MHz LTE 5 MHz	Frequency Range 30 MHz - 1 GHz 1 GHz - 3 GHz	-40.76 dBm -18.94 dBm	≤ -13 dBm ≤ -13 dBm	Pass Pass
	LTE 5 MHz LTE 5 MHz LTE 5 MHz LTE 5 MHz	Frequency Range 30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 20 GHz	-40.76 dBm -18.94 dBm -29.58 dBm	≤ -13 dBm ≤ -13 dBm ≤ -13 dBm	Pass Pass Pass
	LTE 5 MHz LTE 5 MHz LTE 5 MHz LTE 10 MHz	Frequency Range 30 MHz - 1 GHz 1 GHz 1 GHz - 3 GHz 3 GHz - 20 GHz 30 MHz - 1 GHz 3 GHz - 20 GHz	-40.76 dBm -18.94 dBm -29.58 dBm -40.54 dBm	≤ -13 dBm ≤ -13 dBm ≤ -13 dBm ≤ -13 dBm	Pass Pass Pass Pass
and ABD	LTE 5 MHz LTE 5 MHz LTE 5 MHz LTE 5 MHz LTE 10 MHz LTE 10 MHz	Frequency Range 30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 20 GHz 30 MHz - 1 GHz 1 GHz - 3 GHz 30 MHz - 1 GHz 1 GHz - 3 GHz	-40.76 dBm -18.94 dBm -29.58 dBm -40.54 dBm -19.82 dBm	≤ -13 dBm ≤ -13 dBm ≤ -13 dBm ≤ -13 dBm ≤ -13 dBm	Pass Pass Pass Pass Pass
and ABD	LTE 5 MHz LTE 5 MHz LTE 5 MHz LTE 5 MHz LTE 10 MHz LTE 10 MHz	Frequency Range 30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 20 GHz 30 MHz - 1 GHz 1 GHz - 3 GHz 30 MHz - 1 GHz 1 GHz - 3 GHz	-40.76 dBm -18.94 dBm -29.58 dBm -40.54 dBm -19.82 dBm	≤ -13 dBm ≤ -13 dBm ≤ -13 dBm ≤ -13 dBm ≤ -13 dBm	Pass Pass Pass Pass Pass Pass
and ABD	LTE 5 MHz LTE 5 MHz LTE 5 MHz LTE 5 MHz LTE 10 MHz LTE 10 MHz LTE 10 MHz	Frequency Range 30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 20 GHz 30 MHz - 1 GHz 1 GHz - 3 GHz 30 MHz - 1 GHz 3 GHz - 20 GHz	-40.76 dBm -18.94 dBm -29.58 dBm -40.54 dBm -19.82 dBm -29.52 dBm	≤ -13 dBm ≤ -13 dBm ≤ -13 dBm ≤ -13 dBm ≤ -13 dBm ≤ -13 dBm	Pass Pass Pass Pass Pass
and ABD	LTE 5 MHz LTE 5 MHz LTE 5 MHz LTE 5 MHz LTE 10 MHz LTE 10 MHz LTE 10 MHz LTE 5 MHz	Frequency Range 30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 20 GHz 30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 20 GHz 3 GHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 20 GHz 3 GHz - 1 GHz 3 GHz - 1 GHz 3 GHz - 1 GHz 30 MHz - 1 GHz	-40.76 dBm -18.94 dBm -29.58 dBm -40.54 dBm -19.82 dBm -29.52 dBm -40.48 dBm	≤ -13 dBm ≤ -13 dBm ≤ -13 dBm ≤ -13 dBm ≤ -13 dBm ≤ -13 dBm ≤ -13 dBm	Pass Pass Pass Pass Pass Pass Pass
and ABD	LTE 5 MHz LTE 5 MHz LTE 5 MHz LTE 10 MHz LTE 10 MHz LTE 10 MHz LTE 10 MHz LTE 5 MHz LTE 5 MHz	Frequency Range 30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 20 GHz 30 MHz - 1 GHz 1 GHz - 3 GHz 30 MHz - 1 GHz 3 GHz - 20 GHz 30 MHz - 1 GHz 3 GHz - 20 GHz 3 GHz - 20 GHz 3 GHz - 3 GHz 3 0 MHz - 1 GHz 1 GHz - 3 GHz 30 MHz - 1 GHz 1 GHz - 3 GHz	-40.76 dBm -18.94 dBm -29.58 dBm -40.54 dBm -19.82 dBm -29.52 dBm -40.48 dBm -19.51 dBm -29.18 dBm	≤ -13 dBm ≤ -13 dBm	Pass Pass Pass Pass Pass Pass Pass Pass
and ABD	LTE 5 MHz LTE 5 MHz LTE 5 MHz LTE 10 MHz LTE 10 MHz LTE 10 MHz LTE 5 MHz LTE 5 MHz LTE 5 MHz	Frequency Range 30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 20 GHz 30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 20 GHz 3 GHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 20 GHz 30 MHz - 1 GHz 3 GHz - 20 GHz	-40.76 dBm -18.94 dBm -29.58 dBm -40.54 dBm -19.82 dBm -29.52 dBm -40.48 dBm -19.51 dBm	≤ -13 dBm ≤ -13 dBm	Pass Pass Pass Pass Pass Pass Pass Pass



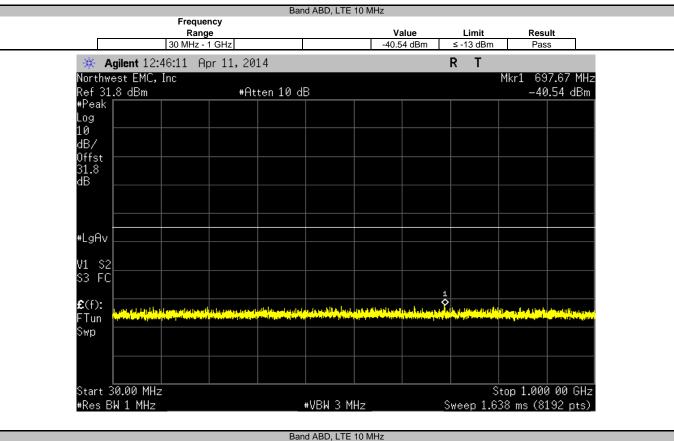
Band ABD, LTE 5 MHz											
Fre	equency		12								
	Range		Value	Limit	Result						
30 Mi	Hz - 1 GHz		-40.76 dBm	≤ -13 dBm	Pass						
🔆 🔆 Agilent 12:45:27	Apr 11, 2014			RT							
Northwest EMC, Inc				M	kr1 738.40						
Ref 31.8 dBm	#Atten 10 d	B			-40.76 d	Bm					
#Peak											
Log 10											
dB/											
Öffst											
31.8											
dB											
#LgAv											
#LgHV											
V1 S2											
\$3 FC											
				1							
£(f):	and placed and a product of the second standard standard standard standard standard standard standard standard	Constitution of a discussion	والمراجع المرادية أبار والمراجع والمراجع	and annual and	La state de la state de la state de						
Fiun statester at the second	the second s		and both sets along the set of the		destablished and the solid						
Swp											
					1 000 00 /						
Start 30.00 MHz					p 1.000 00 0						
#Res BW 1 MHz		₩VBW 3 MHz_		5weep 1.638	8 ms (8192 p	(5)					

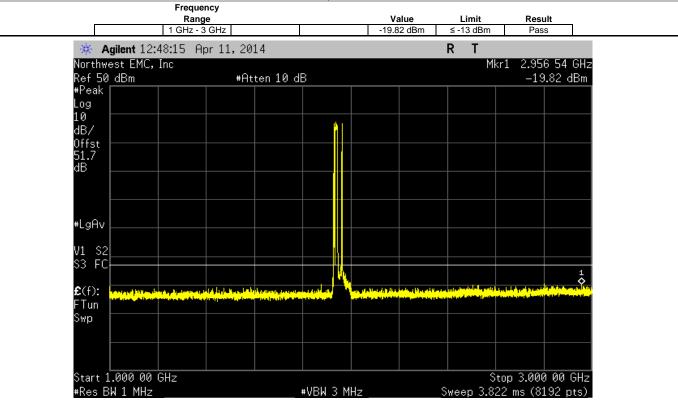




	Band ABD, LTE 5 MHz Frequency											
	Range	e			lue	Limit	Resu					
	3 GHz - 20			-29.58	8 dBm	≤ -13 dBm	Pass					
	lent 12:52:46 Ap	or 11, 2014				RT	1 12.71	2 5 61-				
Ref 36.3	t EMC, Inc ∣dBm	#Atten 10	dB			Mk	r1 13.71 -29.	58 dBm				
#Peak Log												
10												
dB/ Offst												
Offst 36.3 dB												
ad T												
+LgAv												
V1 S2 S3 FC					1							
	http://iteraal.	alaa dd Hillandoor II. aa b barra da	alsi ka mata na kika na	J. Low Hotel and State		dile de sete	ithe deal diskard)					
£(f): 🛄 FTun	internitienen in der der fest, kelled		the July in a stable of	and a second second								
Swp												
	000 0 GHz						top 20.00					
#Res BW	I MHZ		. #VBW 3 M	HZ	5	weep 42.	59 ms (81	92 pts)_				



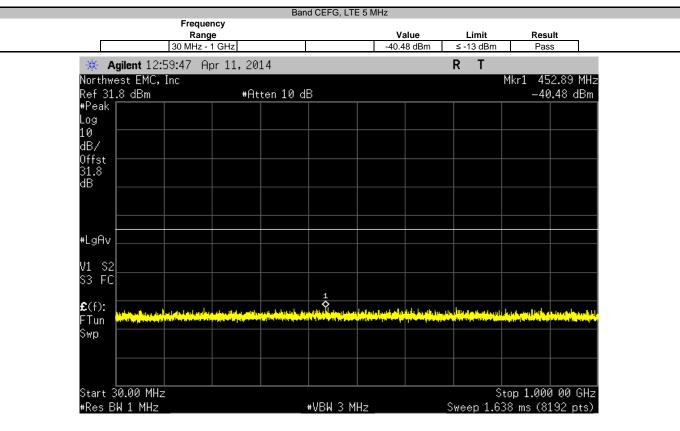


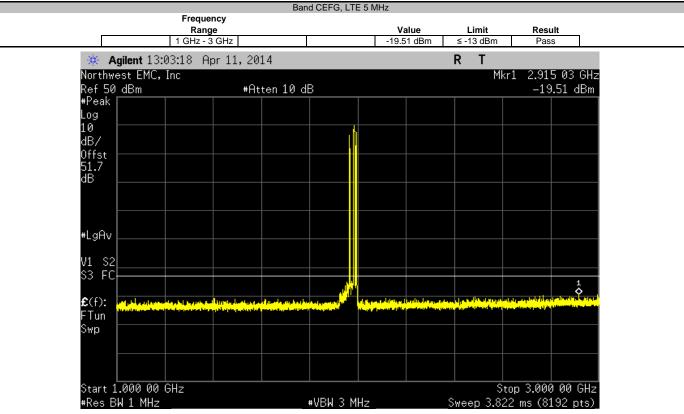




				Bai	nd ABD, LTE	10 MHz					
		Frequen							_		
		Range 3 GHz - 20					alue 52 dBm	Limit ≤ -13 dBm	Res Pas		
						-29.5			Pas	s	
*			⁻ 11, 20	14				RT			
	hwest EMC, I	nc						Mk		27 8 GHz	
Ref	36 <u>.3</u> dBm		#At	ten 10 d	IB				-29	9.51 dBm	
#Pe	ak										
Log 10											
dB/											
0D7 Aff⊲											
Offs 36.3 dB	3										
dB											
#LgI	1v										1
V1	<>										
\$3	FC						1				
~~~							W. Children	densi su statilati	المربيب والمراب	. الاعمادان	
<b>£</b> (f)	): <b>Ballabeteres</b> on	والمتحد ومحراه		a la la batili			il en la companya	ويطلقون والغروا والط		in the leaf had be	
FTu		Salutan Castill									
Swp											1
	t 3.000 0 GH	z								00 0 GHz	
#Re	s BW 1 MHz				#VBW 3 M	Hz		Sweep 42.5	59 ms (8:	192 pts)	

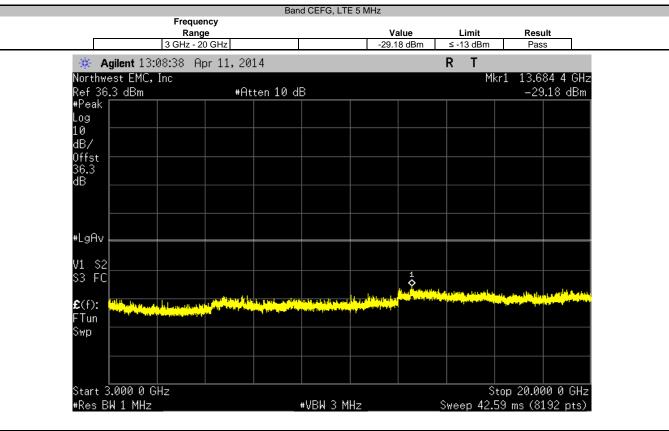






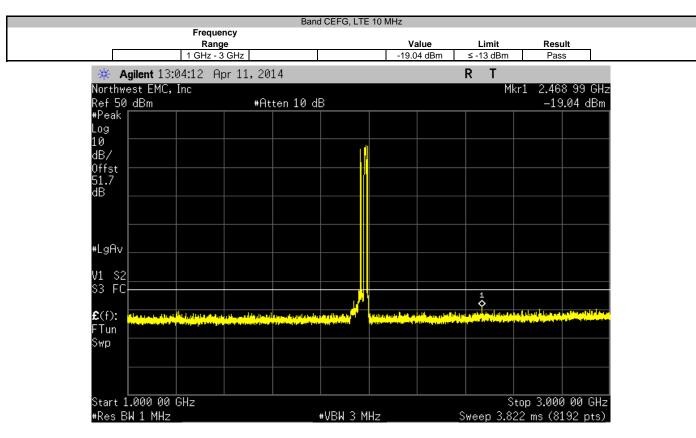


XMit 2013.08.15
PsaTx 2013.10.23



				Band	d CEFG, LTE	10 MHz					
		Freque									
Г		Rang 30 MHz -					/alue 53 dBm	Limit ≤ -13 dBr	n	Result Pass	
- C2							oo abiii			1 400	
莱	Agilent 13:		or II, 20	14				RT	<b>bal</b> 4	000.00 MU	
	west EMC,	Inc			_				Mkr1	902.06 MHz	
Ret . #Pea	31.8 dBm	1	#Ht	ten 10 d	Б Т		1			-40.53 dBm	
+rea Log	~										
10											
d₿/											
Offsi	. –								_		
Offs: 31.8											
dB											
#LgA	V								_		
111											
V1 3 S3 F									_		
<b>£</b> (f):	.									Ŷ	
FTun											
Swp											
Star	: 30.00 MH;	z							Stop 1	.000 00 GHz	
	BW 1 MHz				₩VBW 3 M	Hz		Sweep 1.		s (8192 pts)_	





	-	Band CEFG, LTE	10 MHz			
	Frequency Range		Value	Limit	Result	
	3 GHz - 20 GHz		-28.86 dBm	≤ -13 dBm	Pass	
	05:34 Apr 11, 201	4		RT		
Northwest EMC, Ref 36 <u>.3 dBm</u>		en 10 dB		Mkr1	13.692 7 GHz -28.86 dBm	
#Peak Log						
10						
dB/						
0ffst 36.3 dB						
dB						
#LgAv						
V1 S2						
S3 FC					arti a ta di la gala ang di ang ta di ki di ang ta	
C/D. Allertad	televised by the state of the s		and the second state of th	a dia mangkan si si di kana sa	والمخافظين أترجو التروالة ودال	
€(f): <mark>Heletana</mark> FTun		and the star with the particular star particular	and the second			
Swp						
Start 3.000 0 G	iHz			Stor	20.000 0 GHz	
#Res BW 1 MHz		#VBW 3 M	Hz		ms (8192 pts)_	

# EMC

## 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	Fairview Microwave MP0208-2		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
Attenuator - 20db, 'SMA'	SM Electronics	SA26B-20	RFW	4/3/2014	12
40 GHz DC block	Fairview Microwave	SD3379	AMI	9/26/2013	12
Signal Generator MXG	Agilent	N5183A	TIK	6/7/2012	36
Spectrum Analyzer	Agilent	E4440A	AAX	4/28/2014	12

#### **TEST DESCRIPTION**

The EUT was configured with an input of a CW pulse at the bottom of the band, a CW pulse at the bottom of the band, and a modulated pulse near the edge 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 20 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.

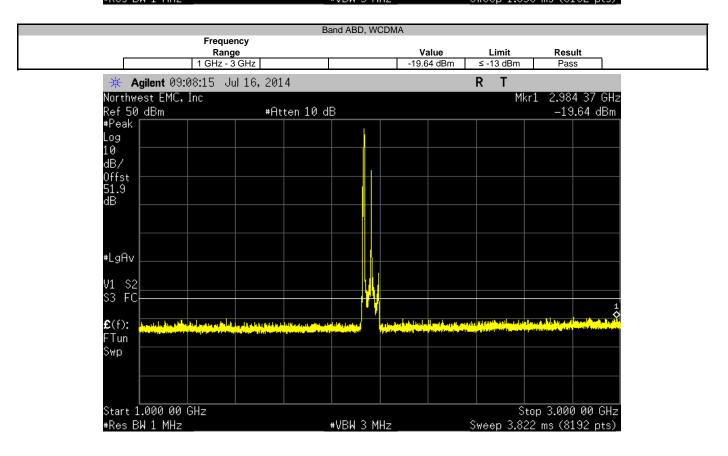


## INTERMODULATION

FUT	Prism HDM 1900 MHz / 210	00 MHz SISO RE Module			Work Order	TECO0017		
Serial Number:						07/16/14		
	TE Connectivitiy / ADC Te	lecommunications			Temperature:			
Attendees:		lecommunications			Humidity: 43%			
Project:					Barometric Pres.: 1020.6			
	Trevor Buls		Power	110VAC/60Hz	Job Site:			
EST SPECIFICATIO				Test Method				
CC 24E:2014				ANSI/TIA/EIA-603-C-2004				
COMMENTS				•				
30 dB high wattage	ge attenuator was provided	d by the customer.						
EVIATIONS FROM	I TEST STANDARD							
DEVIATIONS FROM	I TEST STANDARD							
	I TEST STANDARD	Circulus	Treason	Buls				
lone	1 TEST STANDARD	Signature	Trevor	Buls				
lone	1 TEST STANDARD	Signature	Trevor	Frequency	Value	Limit	Result	
None	1 TEST STANDARD	Signature	Trevor		 Value	Limit	Result	
None Configuration # Band ABD	1	Signature	Trevor	Frequency Range				
None Configuration # Band ABD	1 WCDMA	Signature	Trevor	Frequency Range 30 MHz - 1 GHz	-40.52 dBm	≤ -13 dBm	Pass	
Ione Configuration # Band ABD	1	Signature	Trevor	Frequency Range				
None Configuration # Band ABD	1 WCDMA WCDMA	Signature	Trevor	Frequency Range 30 MHz - 1 GHz 1 GHz - 3 GHz	-40.52 dBm -19.64 dBm	≤ -13 dBm ≤ -13 dBm	Pass Pass	
Ione Configuration # Nand ABD V V V Band CEFG	1 WCDMA WCDMA	Signature	Trevor	Frequency Range 30 MHz - 1 GHz 1 GHz - 3 GHz	-40.52 dBm -19.64 dBm	≤ -13 dBm ≤ -13 dBm	Pass Pass	
Ione Configuration # Iand ABD V V Iand CEFG	1 WCDMA WCDMA WCDMA	Signature	Trevor	Frequency Range 30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 20 GHz	-40.52 dBm -19.64 dBm -33.1 dBm	≤ -13 dBm ≤ -13 dBm ≤ -13 dBm	Pass Pass Pass	



		Band ABD, W	/CDMA		
	Frequency				
г	Range		Value	Limit	Result
	30 MHz - 1 GHz		-40.52 dBm	≤ -13 dBm	Pass
- 兼-	Agilent 09:07:10 Jul 16	,2014		RT	
Nort	hwest EMC, Inc			Mkr:	1 498.60 MHz
Ref	31.7 dBm	#Atten 10 dB			-40.52 dBm
#Pea	ak 🔤 🗌				
Log					
10					
dB/					
0ffS 31-7					
Offs 31.7 dB					
#Lgf	av				
V1	\$2				
S3	FC FC				
		1			
<b>£</b> (f)		والمتعادية والمتحاطية والمتحاد والمتحاد	Ang tao talah distanti di kana	المراجع والفاط والمتاريق والم	hadrone generation de street
FTu		and a state of a state	a state of the second se	an out the last to the last	الكفاد فتعطينا بالتقاطية
Swp					
	t 30.00 MHz				1.000 00 GHz
#Res	s RW 1 MH⁊	#URU 3 M	/Hz	Sween 1 638 m	ve (8192 nte)



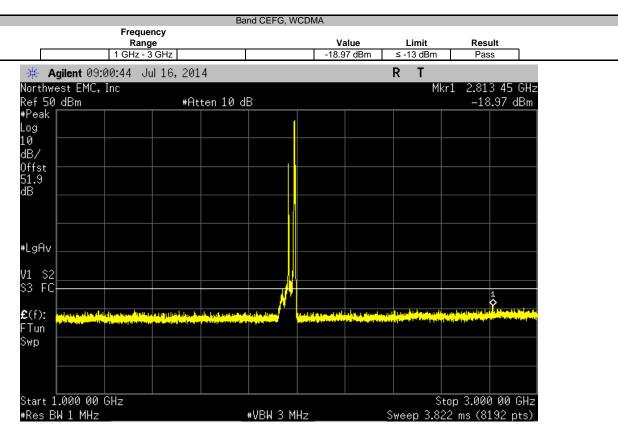


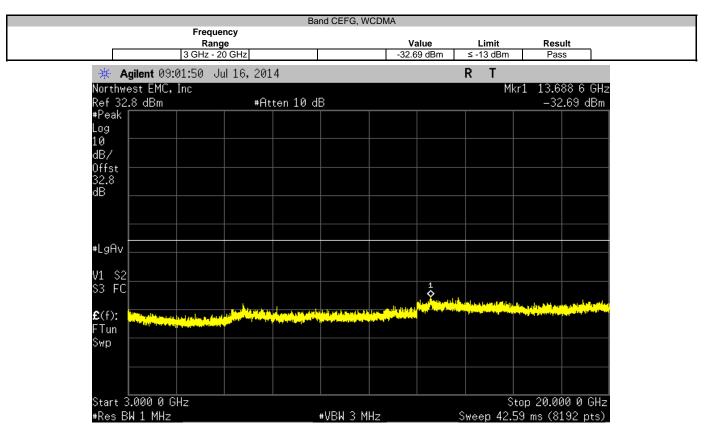
XMit 2014.02.07
PsaTx 14.04.29.1

		В	and ABD, WO	CDMA				
	Frequency Range			V	alue	Limit	Re	sult
3	GHz - 20 GHz				1 dBm	≤ -13 dBm		ISS
🔆 Agilent 09:09:	25 Jul 16, 201	.4				RT		
Northwest EMC, Inc							kr1 14.8	373 6 GHz
Ref 32.8 dBm		ten 10 d	В					3.10 dBm
#Peak Log								
10								
dB/								
Offst 32.8								
dB								
#LgAv								
V1 S2 S3 FC								
					dela de la			
£(f):	المراجعة والأطول منتظا وغير متلا	let to the stability		d a chinhi				
FTun FTun	and the state of the							
Swp								
Start 3.000 0 GHz								100 0 GHz
#Res BW 1 MHz 🔄			₩VBW 3 M	Hz	S	Sweep 42.	59 ms (8	3192 pts)_

		Band CEFG, W	Band CEFG, WCDMA										
	Frequency												
	Range 30 MHz - 1 GHz		Value -40.53 dBm	Limit ≤ -13 dBm	Result Pass								
			40.00 ubiii		1 435								
	8:59:21 Jul 16, 2014	1		RT									
Northwest EMC				Mkr:	1 589.90 MHz								
Ref 31.7 dBm	#Att	en 10 dB			-40.53 dBm								
#Peak													
10 dB/													
0ffst 31.7 dB													
dB													
#LgAv													
V1 S2 S3 FC													
\$3 FC													
			1										
£(f):	المحمد العربية أراف والمعالمين أحداث	and a second		والمرابع والمجار فأقرقن بالبود	an de la para de la classa polo anti-								
FTun Attended	and a philo in the link of a star a bird part of a	alisis na analisi na anal palainin ini atanan a		معتدة أطنعة أنطل لنقد ال	al de la compañía de								
Swp													
Start 30.00 M					1.000 00 GHz								
#Res BW 1 MH	Z	#VBW 3 M	Hz	Sweep 1.638 m	is (8192 pts)_								







# EMC

## 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	Description Manufacturer		ID	Last Cal.	Interval
Multimeter	Fluke	Fluke 117		1/20/2014	36
Variable Transformer	Powerstat	246	XFR	NCR	0
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	4/3/2014	12
40 GHz DC block	Fairview Microwave	SD3379	AMI	9/26/2013	12
Signal Generator MXG	Agilent	N5183A	TIK	6/7/2012	36
Spectrum Analyzer	Agilent	E4440A	AAX	5/15/2012	24

#### **TEST DESCRIPTION**

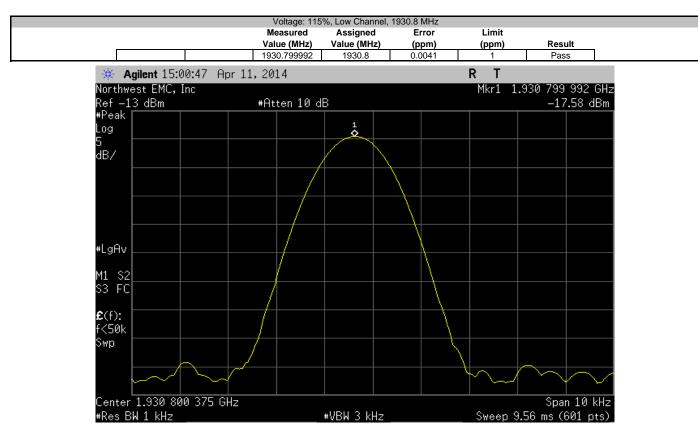
A direct connect measurement was made between the EUT's antenna cable and a spectrum analyzer. The spectrum analyzer is equipped with a precision frequency reference that exceeds the stability requirement of the EUT. Testing was done with an absence of modulation in a CW mode of operation.

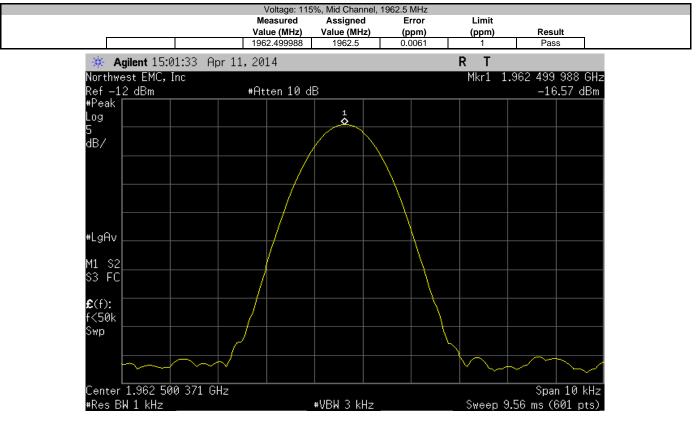
The primary supply voltage was varied from 85 % to 115% of the nominal voltage Using a temperature chamber, the transmit frequency was recorded at the extremes of the specified temperature range (-30  $^{\circ}$  to +50 $^{\circ}$  C) and at 10 $^{\circ}$ C intervals.



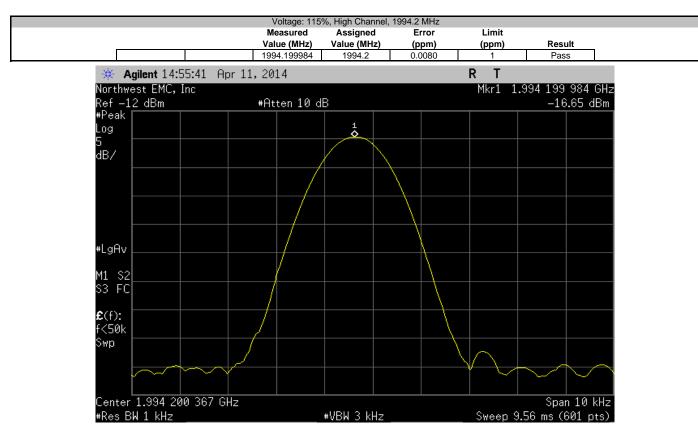
	Prism HDM 1900 MHz / 2100 MHz	oloo ki mouule				Work Order:		
Serial Number							04/14/14	
	: TE Connectivity / ADC Telecomn	unications				Temperature:		
Attendees						Humidity:		
	: None					Barometric Pres.:		
Tested by	: Trevor Buls		Power	110VAC/60Hz		Job Site:	MN08	
EST SPECIFICAT	TIONS			Test Method				
CC 24E:2014				ANSI/TIA/EIA-603-C-2004				
OMMENTS								
Sustomer provide	d a high wattage 30 dB attenuator.	Voltage range varied	from 126.5 to 93.5 VAC					
•	5 5							
EVIATIONS FRO	M TEST STANDARD							
lone								
Configuration #	1		Trevor	Buls				
		Signature	start	Measured	Assigned	Error	Limit	
				Value (MHz)	Value (MHz)	(ppm)	(ppm)	Result
/oltage: 115%								
	Low Channel, 1930.8 MHz			1930.799992	1930.8	0.0041	1	Pass
	Mid Channel, 1962.5 MHz			1962.499988	1962.5	0.0061	1	Pass
	High Channel, 1994.2 MHz			1994.199984	1994.2	0.0080	1	Pass
/oltage: 100%								
	Low Channel, 1930.8 MHz			1930.799992	1930.8	0.0041	1	Pass
	Mid Channel, 1962.5 MHz			1962.499988	1962.5	0.0061	1	Pass
	High Channel, 1994.2 MHz			1994.199984	1994.2	0.0080	1	Pass
/oltage: 85%								
	Low Channel, 1930.8 MHz			1930.799992	1930.8	0.0041	1	Pass
	Mid Channel, 1962.5 MHz			1962.499988	1962.5	0.0061	1	Pass
	High Channel, 1994.2 MHz			1994.2	1994.2	0.0000	1	Pass
emperature: +50°								
	Low Channel, 1930.8 MHz			1930.799992	1930.8	0.0041	1	Pass
	Mid Channel, 1962.5 MHz			1962.499988	1962.5	0.0061	1	Pass
	High Channel, 1994.2 MHz			1994.199984	1994.2	0.0080	1	Pass
Femperature: +40°	right endinion, ree hiz hintz			100 1100001	100 112	0.0000	•	1 400
	Low Channel, 1930.8 MHz			1930,799992	1930.8	0.0041	1	Pass
	Mid Channel, 1962.5 MHz			1962.499987	1962.5	0.0066	1	Pass
	High Channel, 1994.2 MHz			1994.199984	1994.2	0.0080	1	Pass
Femperature: +30°								
	Low Channel, 1930.8 MHz			1930.799988	1930.8	0.0062	1	Pass
	Mid Channel, 1962.5 MHz			1962.499988	1962.5	0.0061	1	Pass
	High Channel, 1994.2 MHz			1994.199984	1994.2	0.0080	1	Pass
Femperature: +20°								
	Low Channel, 1930.8 MHz			1930.799988	1930.8	0.0062	1	Pass
	Mid Channel, 1962.5 MHz			1962.500003	1962.5	0.0015	1	Pass
	High Channel, 1994.2 MHz			1994.199985	1994.2	0.0075	1	Pass
emperature: +10°				1004.100000	1007.2	0.0070		1 435
	Low Channel, 1930.8 MHz			1930.799989	1930.8	0.0057	1	Pass
	Mid Channel, 1962.5 MHz			1962.499988	1962.5	0.0061	1	Pass
	High Channel, 1994.2 MHz			1902.499988	1994.2	0.0080	1	Pass
emperature: 0°				1354.139904	1004.2	0.0000		1 435
emperature. U	Low Channel, 1930.8 MHz			1930.799992	1930.8	0.0041	1	Pass
	Mid Channel, 1962.5 MHz			1950.799992	1962.5	0.0041	1	Pass
							1	
emperature: -10°	High Channel, 1994.2 MHz			1994.2	1994.2	0.0000	1	Pass
emperature: - 10*	Low Channel, 1930.8 MHz			1930.799992	1930.8	0.0041	1	Pass
				1930.799992 1962.499986		0.0041 0.0071		
	Mid Channel, 1962.5 MHz				1962.5		1	Pass
	High Channel, 1994.2 MHz			1994.199984	1994.2	0.0080	1	Pass
emperature: -20°				1000 700000	4000.0	0.0044		D:
	Low Channel, 1930.8 MHz			1930.799992	1930.8	0.0041	1	Pass
	Mid Channel, 1962.5 MHz			1962.499988	1962.5	0.0061	1	Pass
	High Channel, 1994.2 MHz			1994.199984	1994.2	0.0080	1	Pass
emperature: -30°								-
emperature: -30°	Low Channel, 1930.8 MHz			1930.799992	1930.8	0.0041	1	Pass
emperature: -30°	Low Channel, 1930.8 MHz Mid Channel, 1962.5 MHz High Channel, 1994.2 MHz			1930.799992 1962.499988 1994.199984	1930.8 1962.5 1994.2	0.0041 0.0061 0.0080	1 1 1	Pass Pass Pass

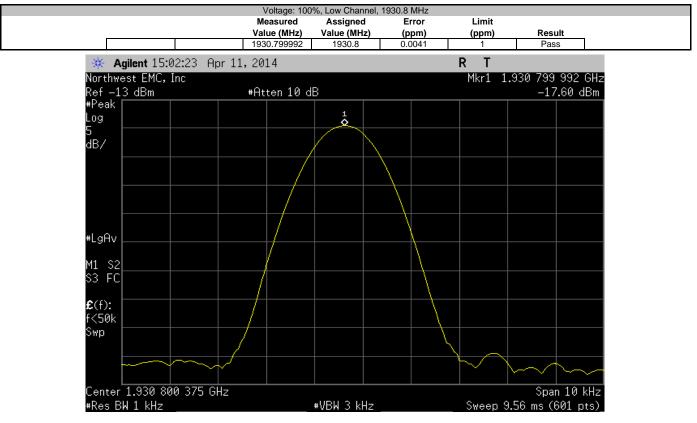




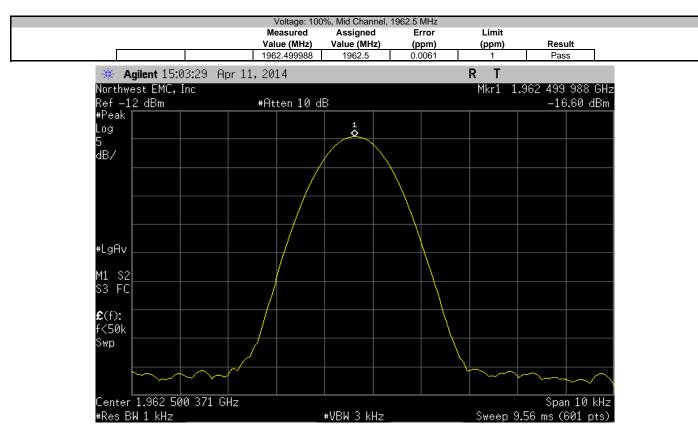


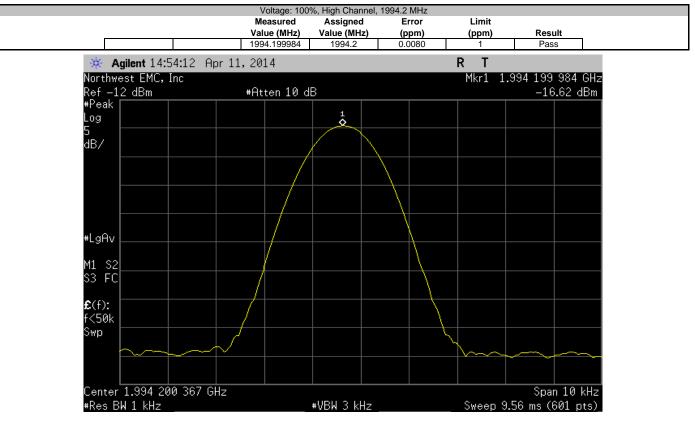




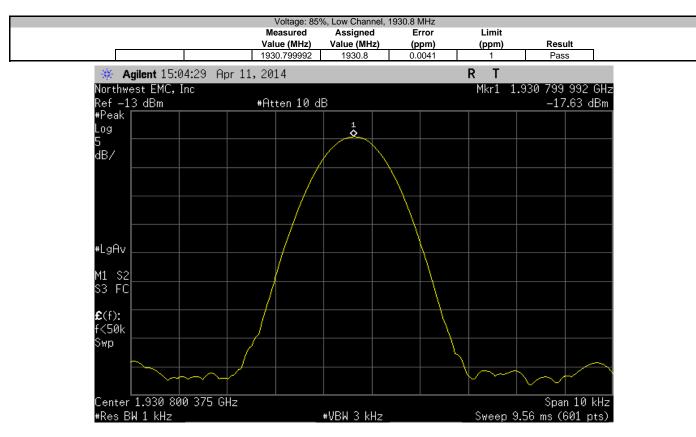


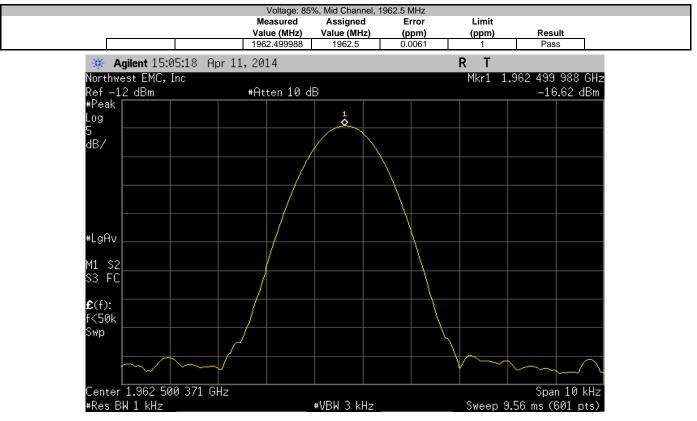




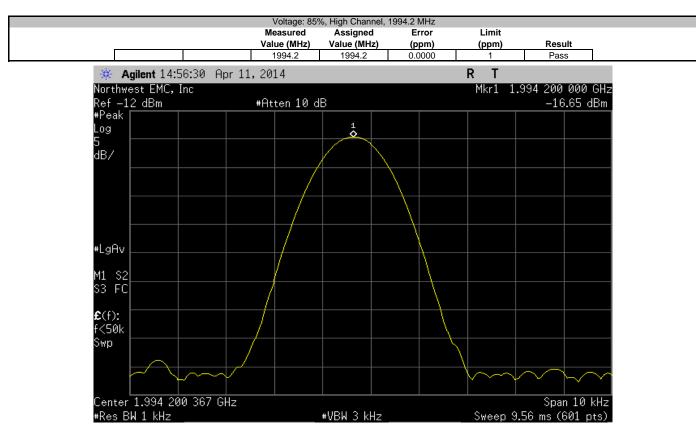


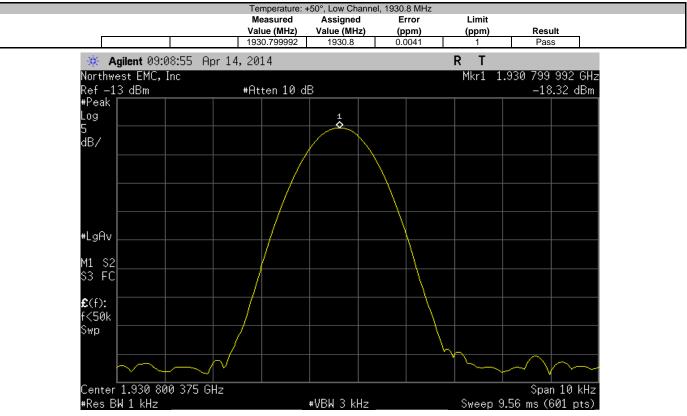




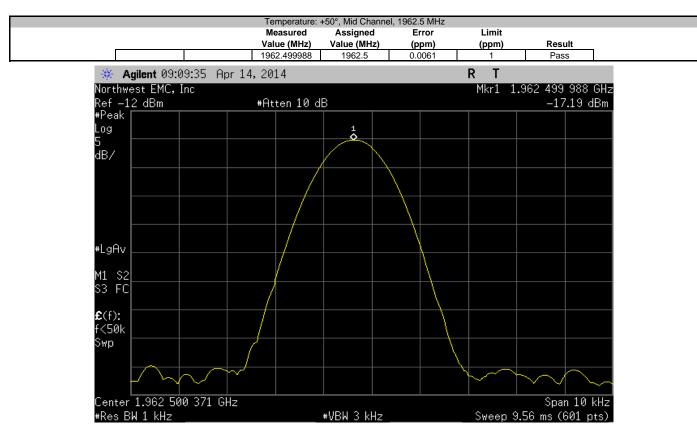


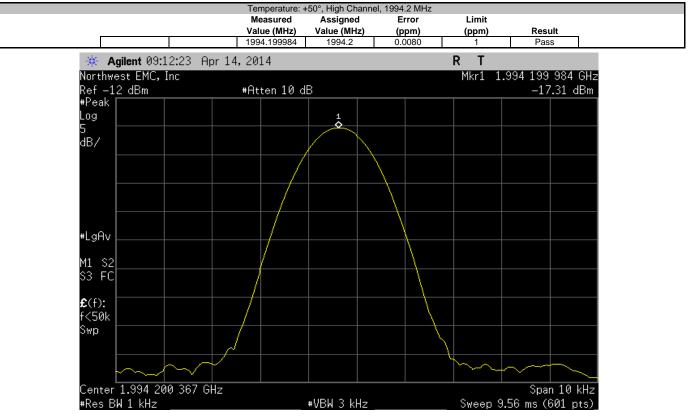




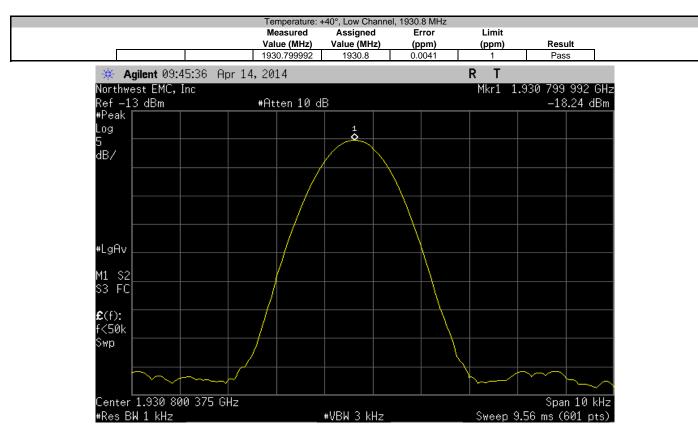


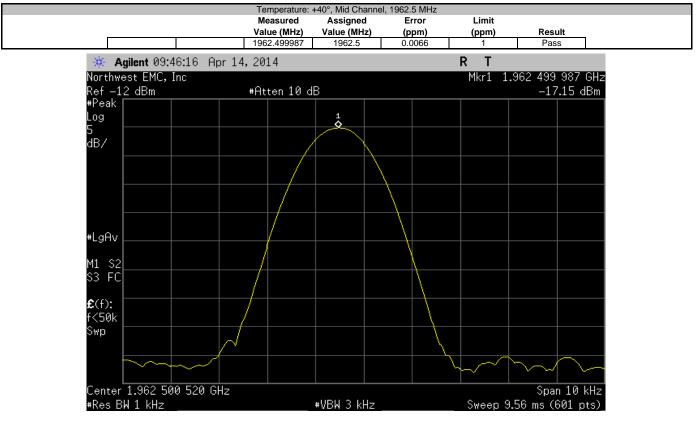




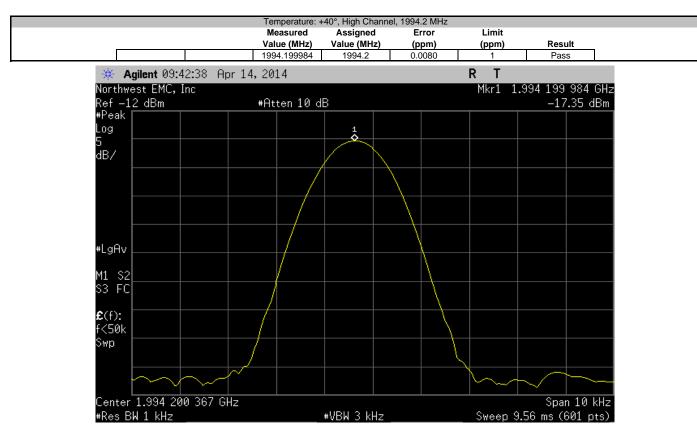


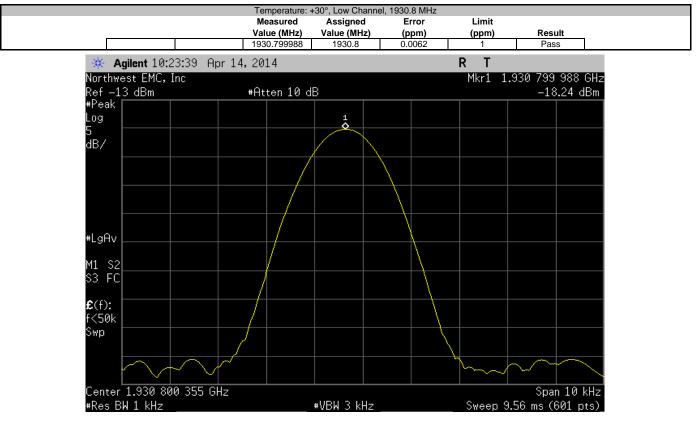




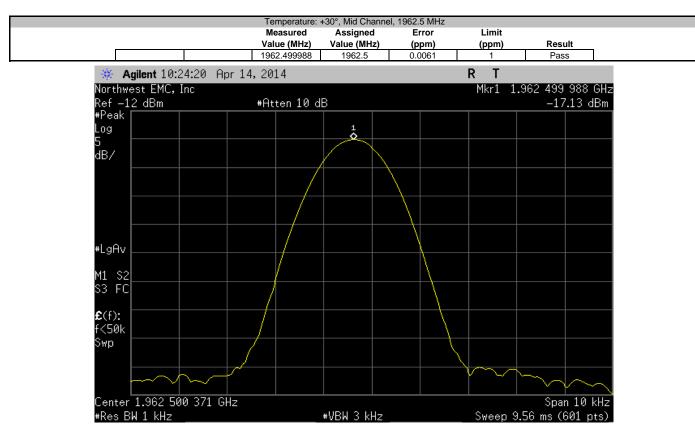


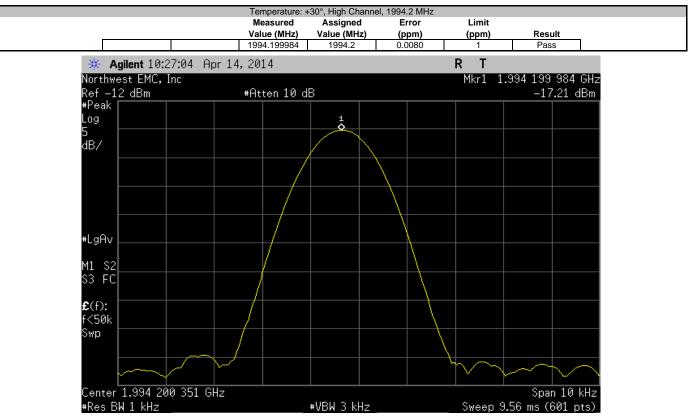




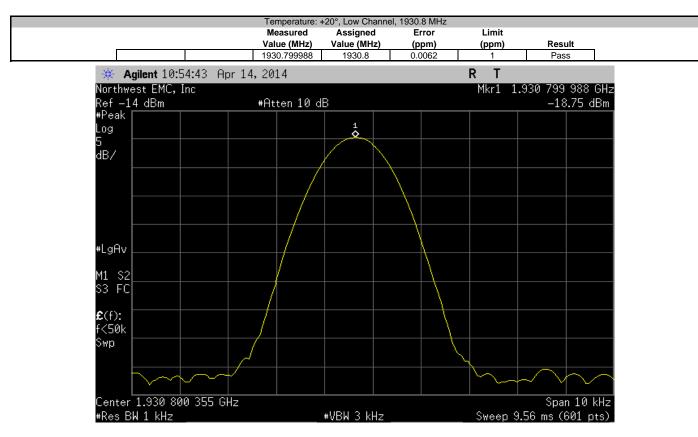


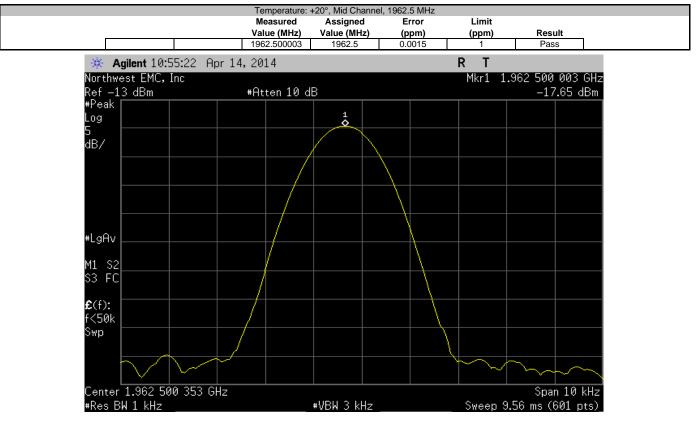




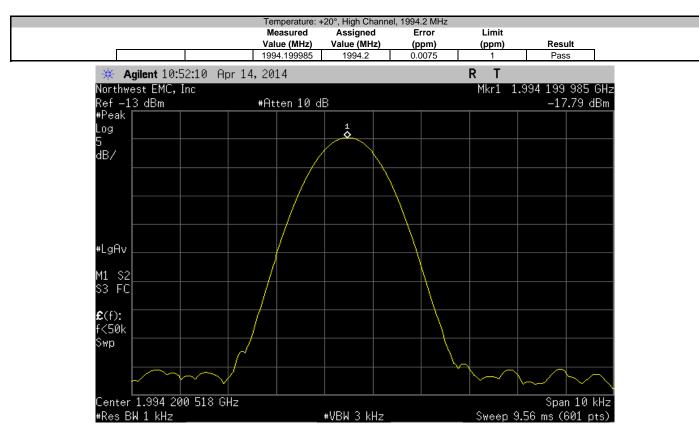


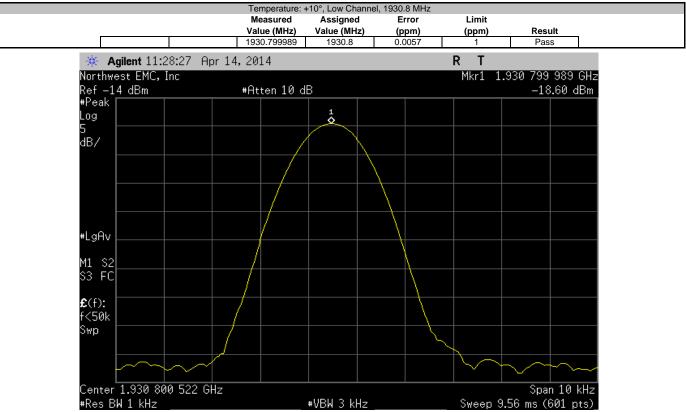




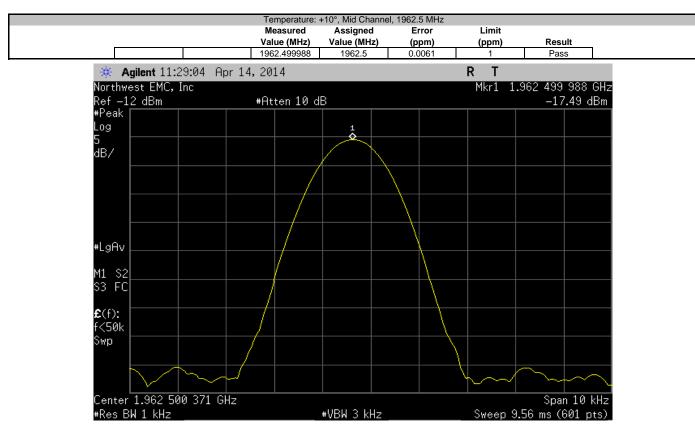


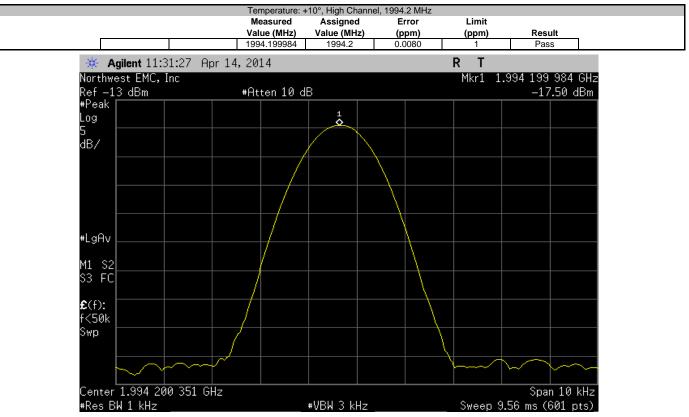




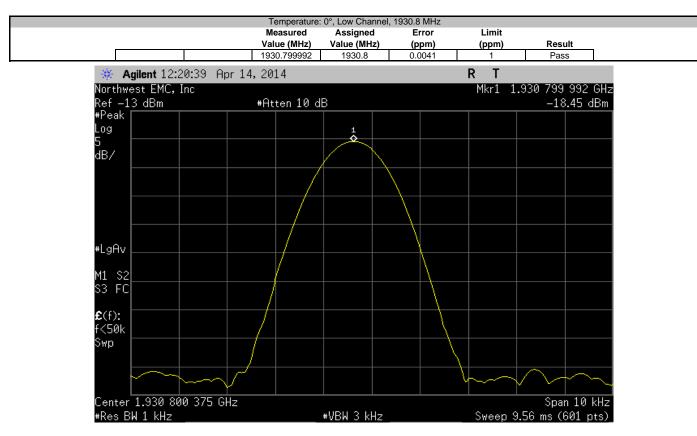


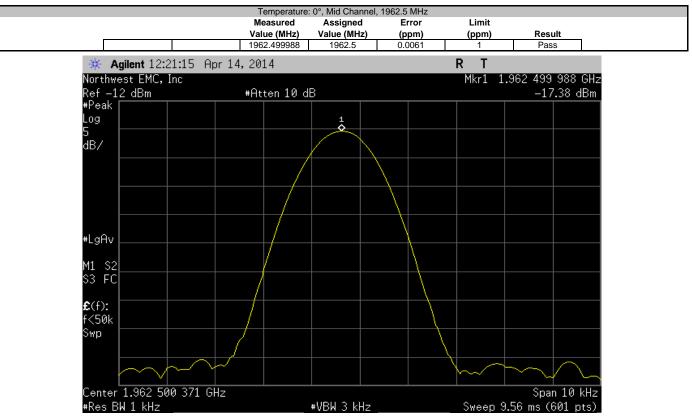




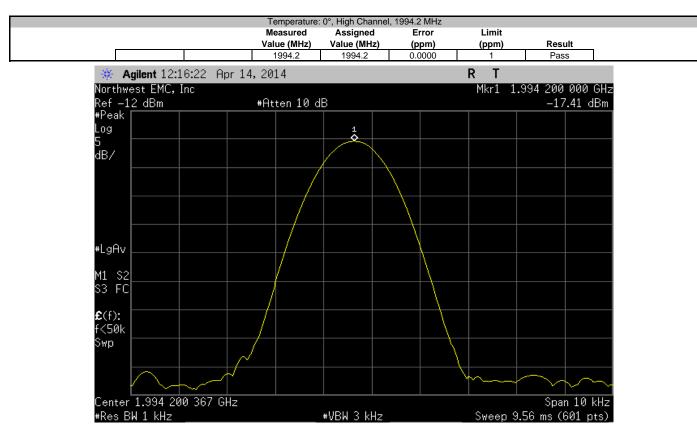


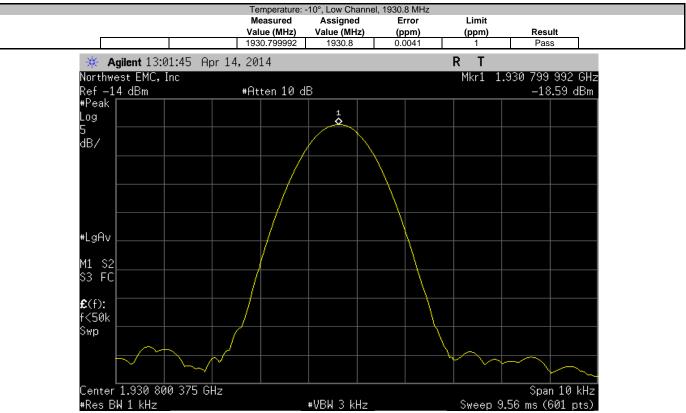




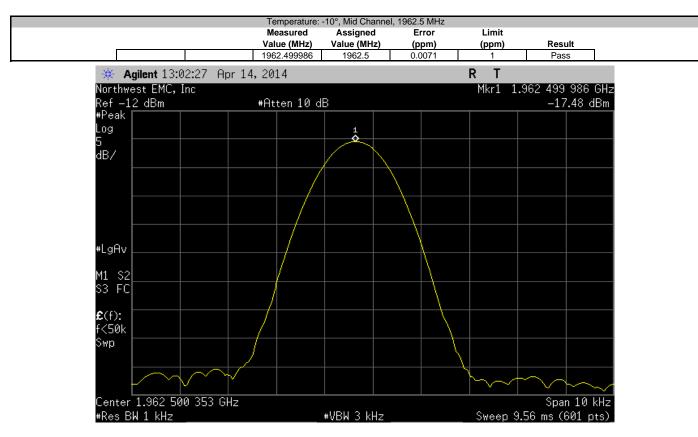


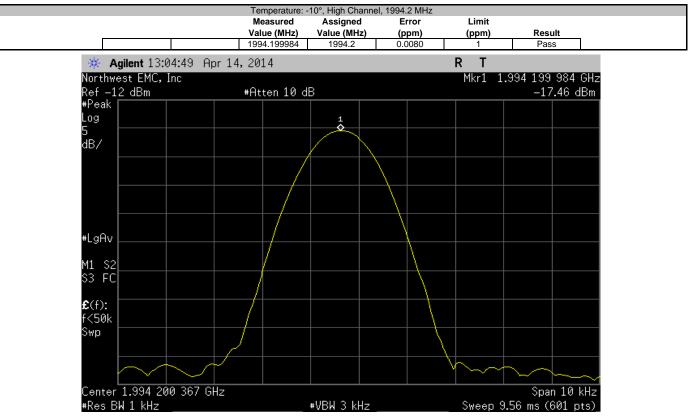




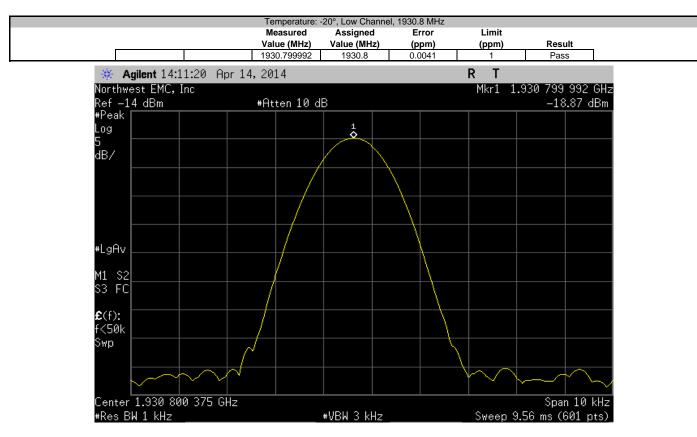


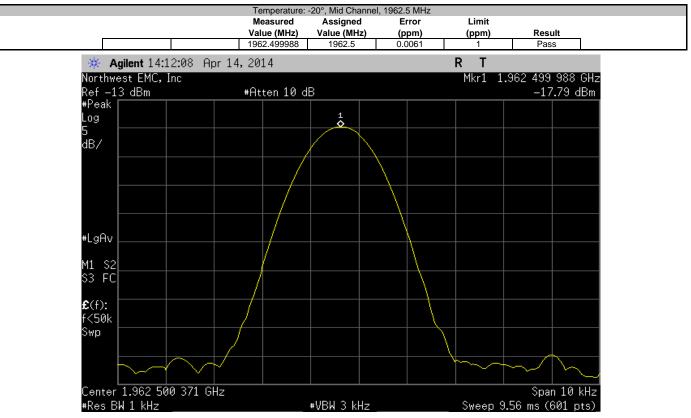




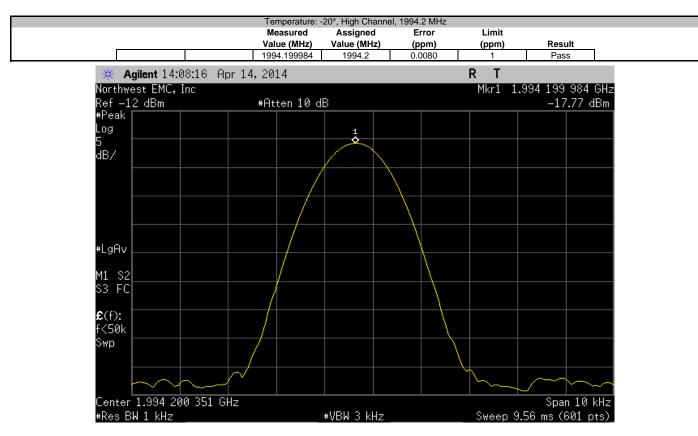


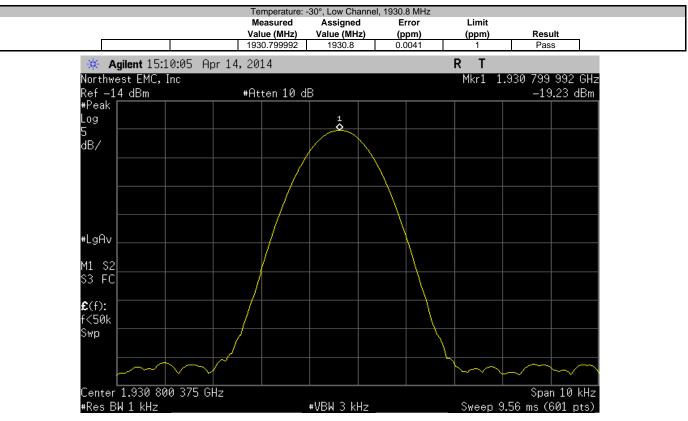




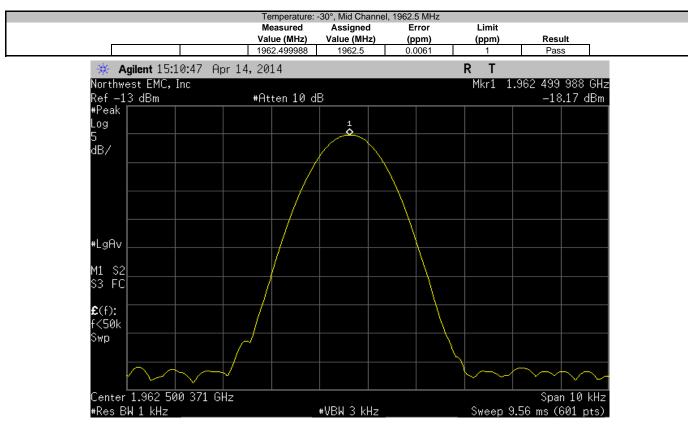


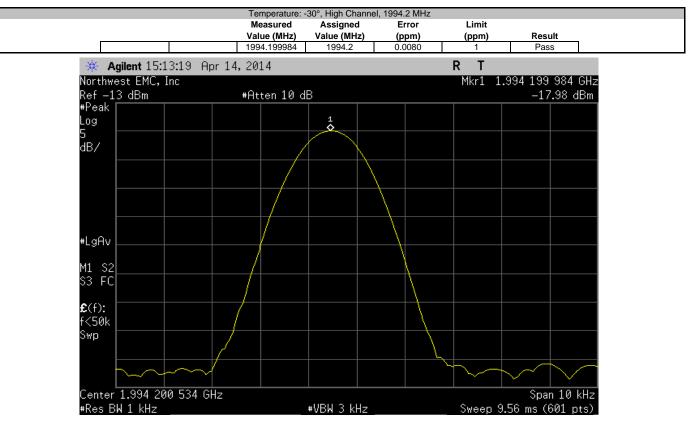












# EMC

# OCCUPIED BANDWIDTH (26 dB)

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	4/3/2014	12
40 GHz DC block	Fairview Microwave	SD3379	AMI	9/26/2013	12
Signal Generator MXG	Agilent	N5183A	TIK	6/7/2012	36
Spectrum Analyzer	Agilent	E4440A	AAX	5/15/2012	24

### **TEST DESCRIPTION**

The 26 dB occupied bandwidth was measured utilizing the analyzer's peak detector 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 26 dB bandwidth and the video bandwidth was greater than or equal to the resolution bandwidth.

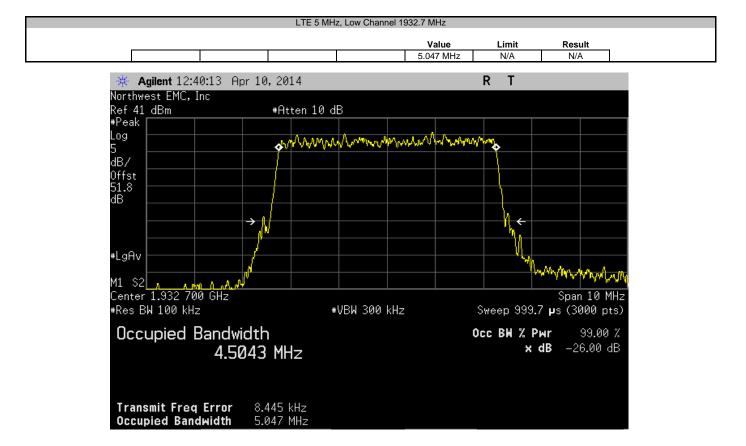
The occupied bandwidth was measured with the EUT configured in the modes called out in the data sheets.



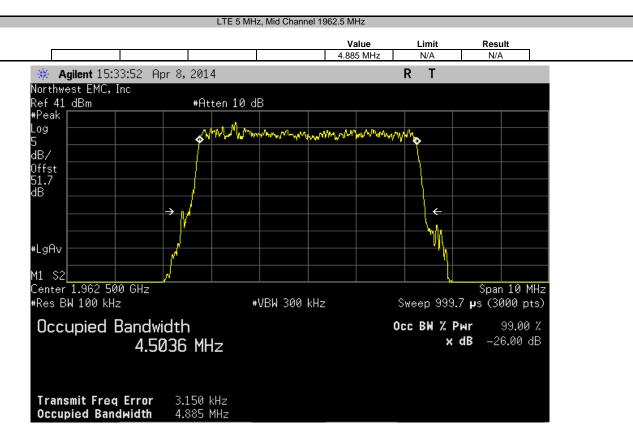
# CCUPIED BANDWIDTH (26 dB)

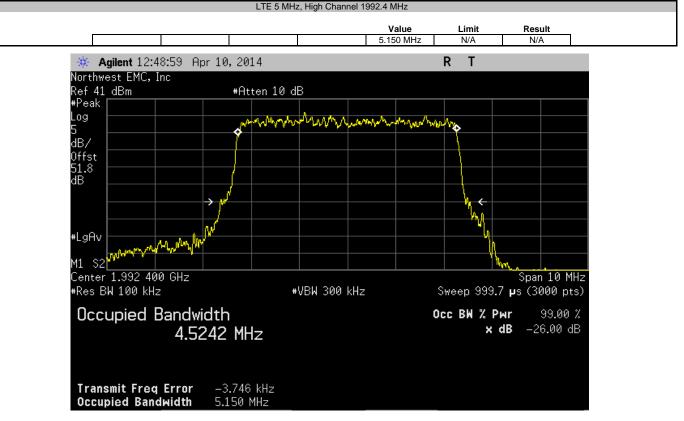
EU	T: Prism HDM 1900 MHz / 2100 MH	z SISO RF Module			Work Order:	ECO0013	
Serial Numbe						4/09/14	
Custome	er: TE Connectivity / ADC Telecom	munications			Temperature: 2		
Attendee					Humidity: 2	21%	
Projec	ct: None				Barometric Pres.: 1	013.5	
Tested b	y: Trevor Buls		Power:	10VAC/60Hz	Job Site:	/N08	
TEST SPECIFICA	ATIONS		1	Fest Method			
FCC 24E:2014			/	NSI/TIA/EIA-603-C-2004			
COMMENTS							
Customer provid	led a high wattage 30 dB attenuato	r that was added into the refer	ence level offset.				
	OM TEST STANDARD						
None							
Configuration #	1	Signature	Trevor	Buls			
					Value	Limit	Result
LTE 5 MHz							
	Low Channel 1932.7 MHz				5.047 MHz	N/A	N/A
	Mid Channel 1962.5 MHz				4.885 MHz	N/A	N/A
	High Channel 1992.4 MHz				5.150 MHz	N/A	N/A
LTE 10 MHz							
	Low Channel 1935 MHz				9.876 MHz	N/A	N/A
	Mid Channel 1962.5 MHz				9.557 MHz	N/A	N/A
	High Channel 1990 MHz				9.503 MHz	N/A	N/A
Input LTE 5 MHz							
	Mid Channel 1962.5 MHz				4.852 MHz	N/A	N/A
Input LTE 10 MHz							
	Mid Channel 1962.5 MHz				9.466 MHz	N/A	N/A



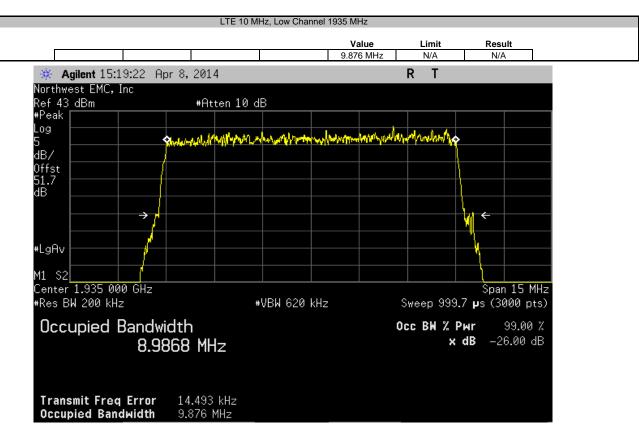


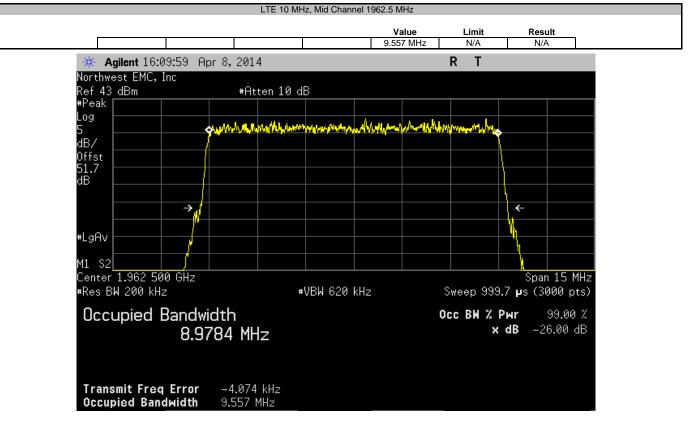










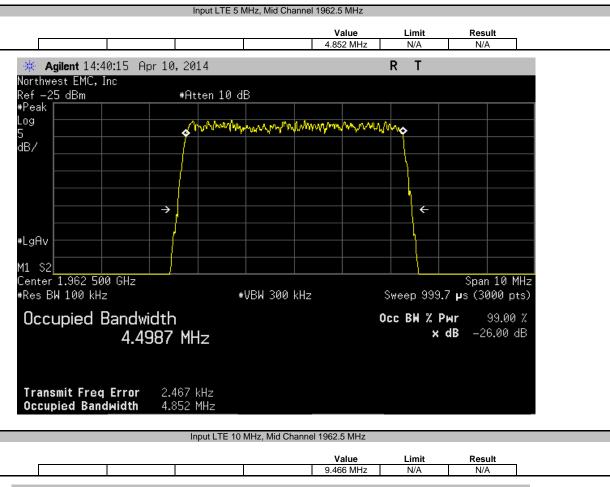


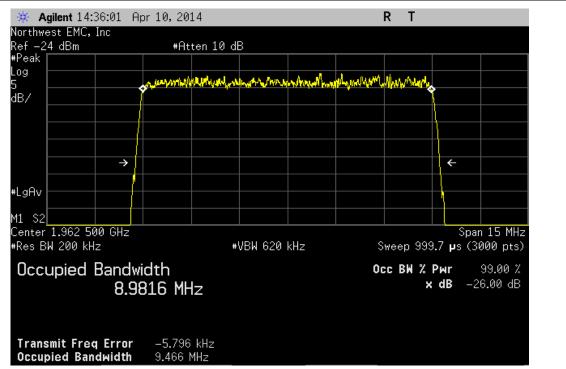
#### XMit 2013.08.15 PsaTx 2013.10.23



	LTE 10 Mł	Hz, High Channel	1990 MHz			
			Value	Limit	Result	
			9.503 MHz	N/A	N/A	
🔆 Agilent 08:03:41 🛛 A	Apr 9, 2014			RT		
Northwest EMC, Inc						
Ref 39 dBm #Peak	#Atten 10 d	B				
+reak Log						
5	Annon annon	here the state of the second	alamanda fax daman	the dath of the state		
dB/	/					
Offst 51.7	<u> </u>					
dB						
$\rightarrow$					<del>~</del>	
#LgAv						
M1 S2						
Center 1.990 000 GHz					Span 15 M	IHz
#Res BW 200 kHz	#	VBW 620 kHz		Sweep 999.7	<b>µ</b> s (3000 pt	s)
Occupied Bandw	vidth		(	Occ BW % Pr	<b>vr</b> 99.00	%
-	422 MHz			x c	<b>B</b> −26.00 c	IB
0.0						
Transmit Freq Error	–7.587 kHz					
Occupied Bandwidth	9.503 MHz					







# EMC

## OCCUPIED BANDWIDTH (26 dB)

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	4/3/2014	12
40 GHz DC block	Fairview Microwave	SD3379	AMI	9/26/2013	12
Signal Generator MXG	Agilent	N5183A	TIK	6/7/2012	36
Spectrum Analyzer	Agilent	E4440A	AAX	4/28/2014	12

### **TEST DESCRIPTION**

The occupied 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.



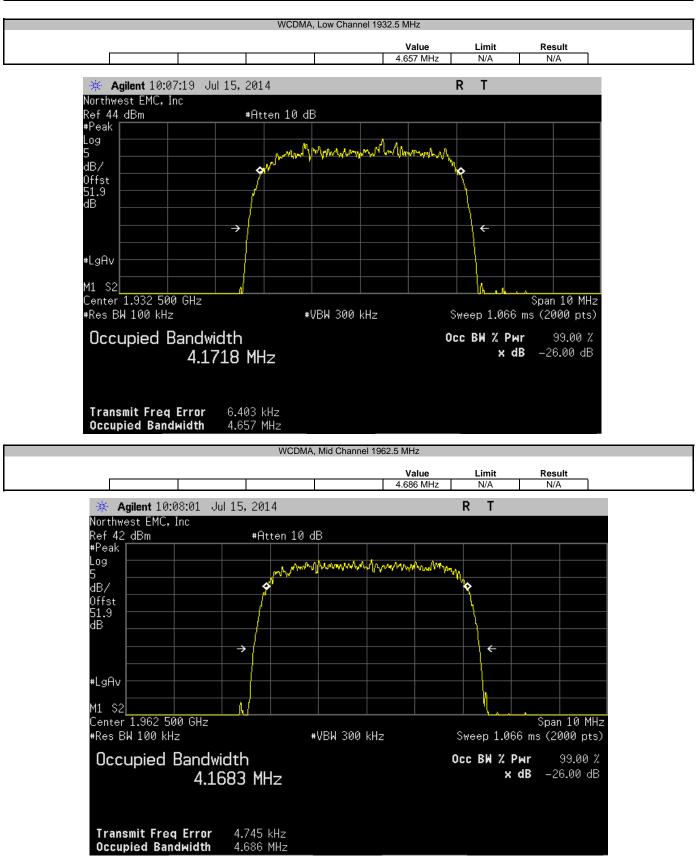
# CCUPIED BANDWIDTH (26 dB)

	: Prism HDM 1900 MHz / 2	100 MHZ SISO RF Module			Work Order:		
Serial Number						07/15/14	
	: TE Connectivitiy / ADC T	elecommunications			Temperature:		
	: Josh Wittman				Humidity:		
	t: None				Barometric Pres.:		
	r: Trevor Buls		Power:	110VAC/60Hz	Job Site:	MN08	
TEST SPECIFICAT	TIONS			Test Method			
FCC 24E:2014				ANSI/TIA/EIA-603-C-2004			
COMMENTS							
A 30 dB high watt	age attenuator was provide	ed by the customer.					
	-g	,					
DEVIATIONS FRO	M TEST STANDARD						
None							
			/	0 0			
Configuration #	1		~	BUND			
_		Signature 🥑	neroc	Buls			
					Value	Limit	Result
WCDMA							
	Low Channel 1932.5 MHz				4.657 MHz	N/A	N/A
	Mid Channel 1962.5 MHz				4.686 MHz	N/A	N/A
	High Channel 1992.5 MHz				4.66 MHz	N/A	N/A
WCDMA Input Sign							
	Mid Channel 1962.5 MHz				4.683 MHz	N/A	N/A

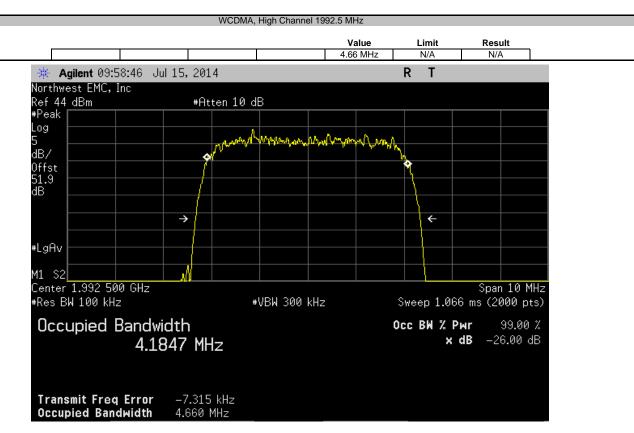


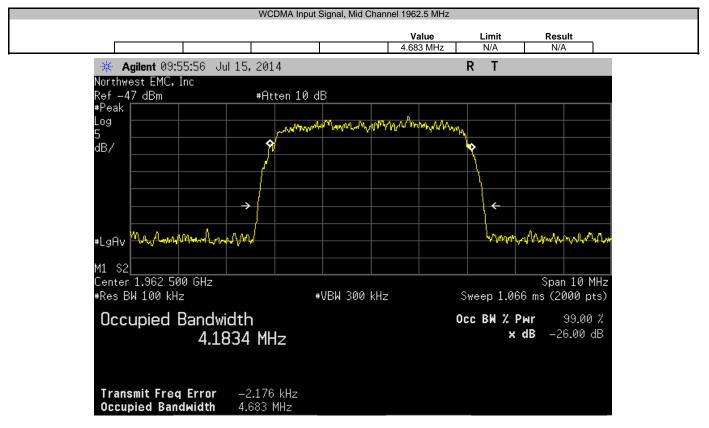
## **OCCUPIED BANDWIDTH (26 dB)**

XMit 2014.02.07 PsaTx 14.04.29.1









# ENC

# 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: 1932.5, 1962.5, 1992.5 MHz; LTE 5 MHz: 1932.7, 1962.5, 1992.4 MHz; LTE 10 MHz: 1935, 1962.5, 1990 MHz (see comments)

#### POWER SETTINGS INVESTIGATED

110VAC/60Hz

## **CONFIGURATIONS INVESTIGATED**

TECO0017 - 2

## FREQUENCY RANGE INVESTIGATED

Start Frequency 30 MHz

Stop Frequency 20 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
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
Antenna, Horn (DRG)	ETS Lindgren	3115	AIP	6/26/2014	36 mo
Attenuator, 20 dB, 'SMA'	SM Electronics	SA6-20	REO	5/15/2014	12 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
Pre-Amplifier	Miteq	JSD4-18002600-26-8P	APU	9/26/2013	12 mo
		18-26GHz Standard Gain Horn			
MN05 Cables	N/A	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
		Double Ridge Guide Horn			
MN05 Cables	ESM Cable Corp.	Cables	MNI	3/14/2014	12 mo
Antenna, Horn	ETS	3115	AJA	6/3/2014	24 mo
MN05 Cables	ESM Cable Corp.	Bilog Cables	MNH	3/14/2014	12 mo
Pre-Amplifier	Miteq	AM-1616-1000	PAD	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	Peak Data	Quasi-Peak Data	Average Data
(MHz)	(kHz)	(kHz)	(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

# EMC

# SPURIOUS RADIATED EMISSIONS

	Ma			20047		Deter	07/4	0/4.4					0
	VVO	ork Order: Project:		D0017	Ton	Date: nperature:	07/1 23.5				-	Bu	N.D.
		Job Site:		N05	Ten	Humidity:	48.1%		2)	nens	02.	Ju	us
		Number:		one	Barome	etric Pres.:	1019.9		<u> </u>	Tested by:	Trevor Buls,	Ductin 9	Snarks
	Serial				z / 2100 Mł			mbai		rested by.	Thevol Buis,	Dustin	оранко
	Confi	guration:			272100 101	12 0100 111	Modulo						
				ctivitiv / AD	C Telecom	munications							
		ttendees:			0 101000111	indificationic	,						
			110VAC/6	0Hz									
_			Tronomitti		High WCD	MA: 1932.5	. 1962.5. 1	992.5 MHz	LTE 5 MH	7: 1932.7.	1962.5, 1992	4 MHz:	I TF 10
0	perati	ng Mode:			990 MHz (s				,	,	,		
			None	,,			/						
	De	eviations:											
			A 30 dB hi	gh wattage	attenuator	was provide	ed by the c	ustomer to	terminate t	he antenna	a output. Teste	ed in no	rmal uprig
	Co	omments:	position as	device is a	always a flo	orstanding	system.						
			-		-		-						
est	Speci	fications						Test Meth	od				
	24E:20								EIA-603-C:	2004			
		•••											
_		4	Test Di		0	A			A += A(==)		Desults		
R	un #	4	lest Di	stance (m)	3	Antenna	Height(s)		1 to 4(m)		Results	F	Pass
	0 T												
	-10 +												
	-20 -												
	-30 -								-				
dBm	40												
<u>m</u>	-40 +												
0													
	50												
	-50 +												
	-60 -												
	-00 -												
	-70 +												
	10												
	-80 🗆												
	10	)		100	)		1000			10000			100000
		-											
							MHz				PK	AV	o QP
_					Polarity/								
					Transducer					Compared to			
		Freq	Antenna Height		Туре	Detector	EIRP (Wotte)	EIRP (dBm)	Spec. Limit	Spec.		Comments	S
		(MHz)	(meters)	(degrees)			(Watts)	(dBm)	(dBm)	(dB)			
					Vort	PK	1.95E-06	-27.1	-13.0	-14.1	High channel, \	VCDMA	
		3987.017	1.0	350.0	Vert	FN	1.356-00						
		3867.017	1.0 1.0	318.0	Vert	PK	1.60E-06	-28.0	-13.0	-15.0	Low channel, V		
		3867.017 3927.142	1.0 1.0	318.0 7.0	Vert Vert	PK PK	1.60E-06 1.53E-06	-28.0 -28.1	-13.0	-15.1	Mid channel, W	VCDMA VCDMA	
		3867.017 3927.142 3866.867	1.0 1.0 1.2	318.0 7.0 345.0	Vert Vert Horz	PK PK PK	1.60E-06 1.53E-06 1.27E-06	-28.0 -28.1 -29.0	-13.0 -13.0	-15.1 -16.0	Mid channel, W Low channel, V	VCDMA VCDMA VCDMA	
		3867.017 3927.142 3866.867 3984.558	1.0 1.0 1.2 1.0	318.0 7.0 345.0 26.0	Vert Vert Horz Vert	PK PK PK PK	1.60E-06 1.53E-06 1.27E-06 1.25E-06	-28.0 -28.1 -29.0 -29.0	-13.0 -13.0 -13.0	-15.1 -16.0 -16.0	Mid channel, W Low channel, V High channel, I	VCDMA VCDMA VCDMA .TE 5MHz	z
		3867.017 3927.142 3866.867	1.0 1.0 1.2	318.0 7.0 345.0	Vert Vert Horz	PK PK PK	1.60E-06 1.53E-06 1.27E-06	-28.0 -28.1 -29.0	-13.0 -13.0	-15.1 -16.0	Mid channel, W Low channel, V	VCDMA /CDMA VCDMA .TE 5MHz VCDMA	

Freq (MHz)	Antenna Height (meters)	Azimuth (degrees)	Polarity/ Transducer Type	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
3926.917	1.0	67.0	Horz	PK	9.23E-07	-30.3	-13.0	-17.3	Mid channel, WCDMA
7852.392	1.0	275.0	Horz	PK	7.70E-08	-41.1	-13.0	-28.1	Mid channel, WCDMA
7848.392	1.0	296.0	Vert	PK	7.50E-08	-41.2	-13.0	-28.2	Mid channel, WCDMA
7971.508	1.0	297.0	Horz	PK	6.82E-08	-41.7	-13.0	-28.7	High channel, WCDMA
7729.267	1.0	60.0	Vert	PK	6.25E-08	-42.0	-13.0	-29.0	Low channel, WCDMA
7970.875	2.0	282.0	Vert	PK	6.08E-08	-42.2	-13.0	-29.2	High channel, WCDMA
7731.008	1.0	119.0	Horz	PK	5.85E-08	-42.3	-13.0	-29.3	Low channel, WCDMA
5980.333	1.0	306.0	Horz	PK	2.61E-08	-45.8	-13.0	-32.8	High channel, WCDMA
5977.058	2.0	221.0	Vert	PK	2.60E-08	-45.9	-13.0	-32.9	High channel, WCDMA
5887.717	3.7	166.0	Vert	PK	2.33E-08	-46.3	-13.0	-33.3	Mid channel, WCDMA
5886.733	1.0	139.0	Horz	PK	2.23E-08	-46.5	-13.0	-33.5	Mid channel, WCDMA
5795.975	1.0	334.0	Vert	PK	2.06E-08	-46.9	-13.0	-33.9	Low channel, WCDMA
5796.425	2.8	17.0	Horz	PK	1.88E-08	-47.3	-13.0	-34.3	Low channel, WCDMA

# EMC

# PEAK TO AVERAGE RATIO

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### **TEST EQUIPMENT**

Description	Manufacturer	Model	ID	Last Cal.	Interval
Attenuator - 20db, 'SMA'	SM Electronics	SA26B-20	RFW	4/3/2014	12
40 GHz DC block	Fairview Microwave	SD3379	AMI	9/26/2013	12
Signal Generator MXG	Agilent	N5183A	TIK	6/7/2012	36
Spectrum Analyzer	Agilent	E4440A	AAX	5/15/2012	24

## **TEST DESCRIPTION**

Because the conducted Output Power was measured using a RMS Average detector, the Peak to Average Ratio was measured to show that the maximum peak-max-hold spectrum to the maximum of the average spectrum does not exceed 13 dBm.

A direct connection was made between the RF output of the EUT and a spectrum analyzer. Attenuation and a DC block were used. The reference level offset on the spectrum analyzer was adjusted to compensate for cable loss and the external attenuation used between the RF output and the spectrum analyzer input.

The spectrum analyzer settings were as follows:

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

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>1st Screen Capture: The same procedure and settings as was used for conducted Output Power.

>2nd Screen Capture: Same as Screen capture 1 except using a peak detector and trace max-hold.





EU.	T: Prism HDM 1900 MHz / 21	00 MHz SISO RF Module			Work Order:	TECO0013	
Serial Numbe	r: None				Date:	04/09/14	
Custome	r: TE Connectivity / ADC Te	lecommunications			Temperature:	24.2°C	
Attendee	s: None				Humidity:	21%	
Projec	t: None				Barometric Pres.:	1013.5	
Tested b	y: Trevor Buls		Power: 110VAC/60Hz		Job Site:	MN08	
TEST SPECIFICA	TIONS		Test Method				
FCC 24E:2014			ANSI/TIA/EIA-603-0	-2004			
COMMENTS							
		enuator that was added into the refe	erence level onset.				
	DM TEST STANDARD			2			
DEVIATIONS FRO			Average Value (dBm)	Peak Value (dBm)	Deita (dB)	Limit (dB)	Result
DEVIATIONS FRO			Terror Bull	Peak Value			Result
DEVIATIONS FRO None Configuration #			Terror Bull	Peak Value			Result N/A
DEVIATIONS FRO	DM TEST STANDARD		Tevor Bull Average Value (dBm)	Peak Value (dBm)	(dB)	(dB)	
DEVIATIONS FRO Ione	Average (RMS)		Average Value (dBm) 42.347	Peak Value (dBm) N/A	(dB) N/A	(dB) N/A	N/A



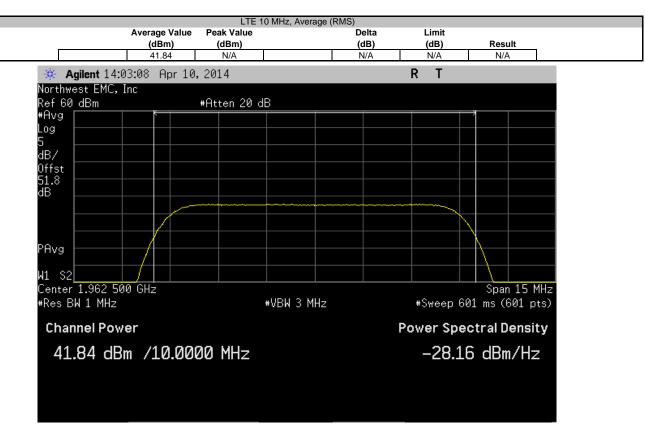
# PEAK TO AVERAGE RATIO

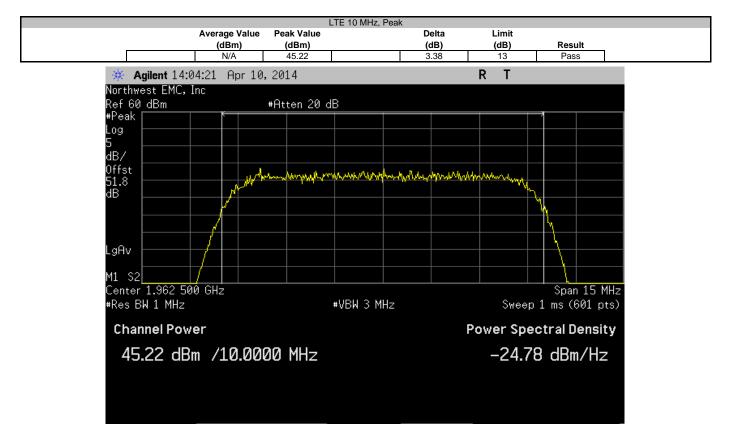
LTE 5 MHz, Average (RMS)         Average Value       Delta       Limit         (dBm)       (dB)       (dB)       Result         42:347       N/A       N/A       N/A         Agilent 13:52:01       Apr 10, 2014       R       T         Northwest EMC, Inc       Mkr1       1.962       300 GHz         #Aya       #Atten 10 dB       42:347 dBm         *forg       1       1       1         Log       5       4       1       1         % Agilent 13:52:01       Apr 10, 2014       R       T         Northwest EMC, Inc       Mkr1       1.962       300 GHz         *forg       4       42:347 dBm       42:347 dBm         *forg       1       1       1       1         log       1       1       1       1         %forg       1       1       1       1         %forg       1       1       1       1       1								
(dBm)       (dB)       (dB)       Result         42.347       N/A       N/A       N/A         Agilent 13:52:01       Apr 10, 2014       R       T         Northwest EMC, Inc       Mkr1       1.962       300 GHz         Ref 51.84 dBm       #Atten 10 dB       42.347 dBm         #Avg       Image: Constraint of the second sec		Average Value		o Ivinz, Average		Limit		
42:347     N/A     N/A     N/A     N/A       # Agilent 13:52:01     Apr 10, 2014     R     T       Northwest EMC, Inc     Mkr1     1.962     300 GHz       Ref 51:84 dBm     #Atten 10 dB     42:347 dBm       #Avg     Image: state							Result	
Agilent 13:52:01     Apr 10, 2014     R     T       Northwest EMC, Inc     Mkr1     1.962     300     GHz       Ref 51.84     dBm     #Atten 10     dB     42.347     dBm       #Avg								
Northwest EMC, Inc     Mkr1 1.962 300 GHz       Ref 51.84 dBm     #Atten 10 dB     42.347 dBm       #Avg     42.347 dBm     42.347 dBm       Log     1     1       5     4B/     1       0ffst     1     1       51.8     1     1       #PAvg     1     1       #PAvg     1     1       #PAvg     1     1       #PAvg     1     1	A.::						1 I	
Ref 51.84 dBm     #Atten 10 dB     42.347 dBm       #Avg Log     1     1       5     1     1       0ffst     1     1       51.8     4B     1       4B     4B     4B       4B     4B     4B </td <td></td> <td></td> <td>2014</td> <td></td> <td></td> <td></td> <td></td> <td></td>			2014					
*Avg Log 5 dB/ 0ffst 51.8 dB *PAvg 100 H1 \$2			~	_		Mkr1		
Log 5 dB/ 0ffst 51.8 dB #PAvg 100 H1 S2	51.84 dBm		#Atten 10 d	B			42.347 dE	3m
5 dB/ 0ffst 51.8 dB #PAvg 100 H1 S2								
dB/ 0ffst 51.8 dB #PAvg 100 ₩1 \$2								
0ffst 51.8 dB #PAvg 100 W1 \$2								
51.8 dB #PAvg 100 W1 S2								
#PAvg 100 W1 \$2	st 🚽							
#PAvg 100 W1 S2	8							
100								
100								
100						_		
100								
M1 \$2	Avg							
W1 S2	9							
S3 FS	S2							
	FS							
£(f):	): The second se							
FTun								
Swp								
	ř III.							
Center 1.962 500 GHz Span 10 MHz		00 GHz						
#Res BW 8 MHz	es BW 8 MHz			ŧVBW 50 <u>MH</u> :	z	_ #Sweep 6	01 ms (601 pt	s)_

			LTE 5 MHz, Pea	ak			
	Average Value	Peak Value		Delta	Limit	Result	
	(dBm) N/A	(dBm) 49.71		(dB) 7.363	(dB) 13	Pass	
🔆 Agilent 13:5	3:23 Apr 10,	2014			RT		
Northwest EMC, I		2011				1 1.961 050 GH	z
Ref 55 dBm		Atten 20 d	В			49.71 dBm	
#Peak Log		1					
5	with the second	1 ••••••••••••••••••••••••••••••••••••			- Anno		
	AND					Walt Hand a far	<b>1</b>
0ffst							
dB							
#LgAv							
M1 S2							
M1 S2 S3 FC							
£(f):							
FTun							
Swp							
Center 1.962 500	0 GHz					Span 10 MHz	
#Res BW 8 MHz			⊭VBW 50 MH:	Z	Swee	p 1 ms (601 pts)	



## PEAK TO AVERAGE RATIO





# EMC

# PEAK TO AVERAGE RATIO

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### **TEST EQUIPMENT**

Description	Manufacturer	Model	ID	Last Cal.	Interval
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40 GHz DC block	Fairview Microwave	SD3379	AMI	9/26/2013	12
Signal Generator MXG	Agilent	N5183A	TIK	6/7/2012	36
Spectrum Analyzer	Agilent	E4440A	AAX	4/28/2014	12

### **TEST DESCRIPTION**

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EUT: Pris	sm HDM 1900 MHz / 2100	MHz SISO RF Module		Work Order:	TECO0017				
Serial Number: Nor	ne				07/16/14				
Customer: TE	Connectivitiy / ADC Telec	communications		Temperature:	23.3°C				
Attendees: Nor	ne		Humidity:	43%					
Project: Nor				Barometric Pres.:					
Tested by: Tre				10VAC/60Hz		Job Site:	e: MN08		
EST SPECIFICATIONS	5		Т	est Method					
C 24E:2014			A	NSI/TIA/EIA-603-C-	2004				
OMMENTS 30 dB high wattage a	ttenuator was provided b	by the customer.							
		by the customer.							
30 dB high wattage a			Trevor	Buls					
30 dB high wattage a		by the customer. Signature	Trevor		Peak Value	Delta	Limit		
30 dB high wattage a			Trevor	Buls Average Value (dBm)	Peak Value (dBm)	Deita (dB)	Limit (dB)	Result	
80 dB high wattage a VIATIONS FROM TE ne nfiguration #			Trevor	Average	Peak Value			Result	
30 dB high wattage a EVIATIONS FROM TE Inne Infiguration # CDMA			Trevor	Average	Peak Value			Result N/A	



# PEAK TO AVERAGE RATIO

		MC	DMA, Average (				
	Average	Peak Value	DiviA, Average (	Delta	Limit		
	Value (dBm)	(dBm)		(dB)	(dB)	Result	
	43.177	N/A		N/A	N/A	N/A	
				N/A			_
🔆 🔆 🙀 🔆 🔆 🔆	37:33 Jul 16,	, 2014			RT		
Northwest EMC,	Inc				Mkr1	. 1.962 033 GH	z
Ref 61.9 dBm		#Atten 20 d	B			43.177 dBm	
#Avg							
Log							
10			_				
dB/			1				
Offst							
51.9 dB							
ap							
PAvg							
100							
<u>1</u> \$2							
W1 S2 S3 FS							
00 10							
<b>e</b> (0).							
<b>£</b> (f):							
FTun							
Swp							
Center 1.962 50	OU GHZ				<u> </u>	Span 10 MHz	
#Res BW 8 MHz			∗VBW 50 MH:	2	#Sweep 6	01 ms (601 pts)	

			WCDMA, Peak				
	Average	Peak Value		Delta	Limit		
	Value (dBm)	(dBm)		(dB)	(dB)	Result	
	N/A	52.81		9.6	13	Pass	
🔆 🔆 Agilent 07:3		2014			RΤ		
Northwest EMC, I					Mkr	1 1.961 033	
Ref 61.9 dBm		#Atten 20 d	B			52.81 d	Bm
#Peak Log							
10	Harry and Hardon and Martin and Ma			<u> </u>		www.www.www.www.www.www.	
							W-W-
Offst							
51.9 dB							
LgAv							
M1 S2							
S3 FC							
<b>£</b> (f):							
FTun							
Swp							
Center 1.962 50	0 GHz					Span 10 M	1Hz
#Res BW 8 MHz			ŧVBW 50 MHz		Swee	p 1 ms (601 p	