

TE Connectivity / ADC Telecommunications Prism HDM 40W PCS SISO RF Module Model: FWP-881T000MOD

FCC 24E: 2013

Report #: TECO0005



Report Prepared By Northwest EMC Inc.

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

California – Minnesota – Oregon – New York – Washington



CERTIFICATE OF TEST

Last Date of Test: September 23, 2013 TE Connectivity / ADC Telecommunications Prism HDM 40W PCS SISO RF Module Model: FWP-881T000MOD

Emissions			
Test Description	Specification	Test Method	Pass/Fail
Conducted Output Power	FCC 24E:2013, FCC 2.1046:2013	ANSI/TIA/EIA-603-C-2004	Pass
Out of Band Emissions - Conducted	FCC 24E:2013, FCC 2.1051:2013	ANSI/TIA/EIA-603-C-2004	Pass
Intermodulation	FCC 24E:2013, FCC 2.1051:2013	ANSI/TIA/EIA-603-C-2004	Pass
Frequency Stability	FCC 24E:2013, FCC 2.1055:2013	ANSI/TIA/EIA-603-C-2004	Pass
Occupied Bandwidth	FCC 24E:2013, FCC 2.1049:2013	ANSI/TIA/EIA-603-C-2004	Pass
Field Strength of Spurious Emissions	FCC 24E:2013, FCC 2.1053:2013	ANSI/TIA/EIA-603-C-2004	Pass
Band Edge Compliance	FCC 24E:2013, FCC 2.1051:2013	ANSI/TIA/EIA-603-C-2004	Pass
Peak to Average Ratio	FCC 24E:2013, FCC 2.1046:2013	ANSI/TIA/EIA-603-C-2004	Pass

Deviations From Test Standards

None

Approved By:

Tim O'Shea, Operations Manager



NVLAP Lab Code: 200881-0

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

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



REVISION HISTORY

Revision Number	Description	Date	Page Number
00	None		
00			

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 on each data sheet. 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)	4.00	-4.00
AC Powerline Conducted Emissions (dB)	2.70	-2.70



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	2834C-1	
NVLAP					
NVLAP Lab Code: 200630-0	NVLAP Lab Code: 200676-0	NVLAP Lab Code: 200761-0	NVLAP Lab Code: 200881-0	NVLAP Lab Code: 200629-0	









PRODUCT DESCRIPTION

Client and Equipment Under Test (EUT) Information

Company Name:	TE Connectivity / ADC Telecommunications
Address:	1187 Park Place
City, State, Zip:	Shakopee, MN 55379
Test Requested By:	Joshua Wittman
Model:	Prism HDM 40W PCS SISO RF Module Model: FWP-881T000MOD
First Date of Test:	August 06, 2013
Last Date of Test:	September 23, 2013
Receipt Date of Samples:	August 05, 2013
Equipment Design Stage:	Production
Equipment Condition:	No Damage

Information Provided by the Party Requesting the Test

Functional Description of the EUT (Equipment Under Test):

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 24E.



CONFIGURATIONS

Configuration TECO0005-1

Software/Firmware Running during test		
Description	Version	
PRU	8.1.1.1	

EUT				
Description	Manufacturer	Model/Part Number	Serial Number	
Prism HDM 40W PCS SISO RF Module	TE Connectivity / ADC Telecommunications	FWP-881T000MOD	None	

Peripherals in test setup boundary					
Description	Manufacturer	Model/Part Number	Serial Number		
RF Signal Generator	Aeroflex	IFR 3413	341006		
Power Supply	Sorensen	DCS80-13E	None		
IO Control Device	TE Connectivity / ADC Telecommunications	SVT-GU-1011	7109A001D		
Laptop	Dell	Latitude D630	34562243089		
Laptop Supply	Dell	LA90PS0-00	CN-0DF266-71615-68A-7166		
30 dB attenuator	Aeroflex	86-30-12DC-22GHz	369		

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
AC Power	No	> 3m	No	Prism HDM 40W PCS SISO RF Module	AC Mains
Fiber	No	> 3m	No	Prism HDM 40W PCS SISO RF Module	IO Control Device
RF	Yes	0.9m	No	Prism HDM 40W PCS SISO RF Module	30 dB attenuator
RF	Yes	0.7m	No	IO Control Device	RF Signal Generator
AC Power	No	1.8m	No	RF Signal Generator	AC Mains
AC Power	No	1.8m	No	Power Supply	AC Mains
DC Power	No	2.8m	Yes	IO Control Device	Power Supply
AC Power	No	1.8m	No	Laptop Supply	AC Mains
DC Power	No	1.8m	Yes	Laptop	Laptop Supply
Ethernet	No	1.5m	No	Laptop	IO Control Device
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					



CONFIGURATIONS

Configuration TECO0005-2

Software/Firmware Running during test			
Description	Version		
PRU	8.1.1.1		

EUT				
Description	Manufacturer	Model/Part Number	Serial Number	
Prism HDM 40W PCS SISO RF Module	TE Connectivity / ADC Telecommunications	FWP-881T000MOD	None	

Peripherals in test setup boundary				
Description	Manufacturer	Model/Part Number	Serial Number	
30 dB attenuator	Aeroflex	57-30-43	NL616	

Remote Equipment Ou	Remote Equipment Outside of Test Setup Boundary										
Description	Manufacturer	Model/Part Number	Serial Number								
RF Signal Generator	Aeroflex	IFR 3413	341006								
Power Supply	Sorensen	DCS80-13E	None								
IO Control Device	TE Connectivity / ADC Telecommunications	SVT-GU-1011	7109A001D								
Laptop	Dell	Latitude D630	34562243089								
Laptop Supply	Dell	LA90PS0-00	CN-0DF266-71615-68A-7166								

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
AC Power	No	> 3m	No	Prism HDM 40W PCS SISO RF Module	AC Mains
Fiber	No	> 3m	No	Prism HDM 40W PCS SISO RF Module	IO Control Device
RF	Yes	0.9m	No	Prism HDM 40W PCS SISO RF Module	30 dB attenuator
RF	Yes	0.7m	No	IO Control Device	RF Signal Generator
AC Power	No	1.8m	No	RF Signal Generator	AC Mains
AC Power	No	1.8m	No	Power Supply	AC Mains
DC Power	No	2.8m	Yes	IO Control Device	Power Supply
AC Power	No	1.8m	No	Laptop Supply	AC Mains
DC Power	No	1.8m	Yes	Laptop	Laptop Supply
Ethernet	No	1.5m	No	Laptop	IO Control Device
PA	= Cable is per	manently attache	d to the devic	e. Shielding and/or presence of ferrite may	be unknown.



MODIFICATIONS

Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	8/6/2013	Band Edge Compliance	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
2	8/6/2013	Out of Band Emissions - Conducted	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
3	8/6/2013	Conducted Output Power	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
4	8/6/2013	Occupied Bandwidth	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
5	8/6/2013	Peak Average Ratio	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
6	8/7/2013	Frequency Stability	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
7	8/8/2013	Field Strength of Spurious Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
8	9/23/2013	Intermodulation	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.



DUTY CYCLE

TEST DESCRIPTION

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

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

The EUT operates at 100% Duty Cycle.

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	4/12/2013	12
40 GHz DC block	Fairview Microwave	SD3379	AMI	10/5/2012	12
Signal Generator MXG	Agilent	N5183A	TIK	6/7/2012	36
Spectrum Analyzer	Agilent	E4440A	AAX	5/15/2012	24

TEST DESCRIPTION

The Average (RMS) output power was measured with the EUT set to the parameters called out in the data sheets. The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. Prior to making the measurements the setup, including cables and attenuators were calibrated and added into the reference level offset.



Conducted Output Power

EUT	T: Prism HDM 40W PCS SISO RF M		Work Order:					
Serial Number	r: None				Date:	08/06/13		
Custome	r: TE Connectivity / ADC Telecom	munications			Temperature:	25.3°C		
Attendees	s: None				Humidity:			
Project	t: None				Barometric Pres.:	1010		
	y: Trevor Buls		Power:	110VAC/60Hz	Job Site:	MN08		
TEST SPECIFICA	TIONS			Test Method				
CC 24E:2013				ANSI/TIA/EIA-603-C-2004				
COMMENTS								
Customer provide	ed a high wattage 30 dB attenuator	r.						
-								
DEVIATIONS FRO	DM TEST STANDARD							
None								
			0	0				
Configuration #	1	Signature Tree	1-07 13	up				
		Signature	UUC -					
				Value	Value			
				(dBm)	(W)	Limit	Result	
CDMA							_	
	Low Channel			46.248	42.2	< 1640 W	Pass	
	Mid Channel			46.61	45.8	< 1640 W	Pass	
	High Channel			46.162	41.3	< 1640 W	Pass	
WCDMA	Low Channel			10.010	10.0	4040 \\	Deer	
	Mid Channel			46.649	46.2	< 1640 W	Pass Pass	
							Pass	
				47.077	51.0	< 1640 W	D	
	High Channel			46.259	51.0 42.3	< 1640 W < 1640 W	Pass	
LTE 10 MHz	High Channel			46.259	42.3	< 1640 W		
LTE 10 MHz	High Channel Low Channel			46.259 46.235	42.3 42.0	< 1640 W	Pass	
LTE 10 MHz	High Channel Low Channel Mid Channel			46.259 46.235 46.132	42.3 42.0 41.0	< 1640 W < 1640 W < 1640 W	Pass Pass	
	High Channel Low Channel			46.259 46.235	42.3 42.0	< 1640 W	Pass	
	High Channel Low Channel Mid Channel High Channel			46.259 46.235 46.132 46.076	42.3 42.0 41.0 40.5	< 1640 W < 1640 W < 1640 W < 1640 W	Pass Pass Pass	
	High Channel Low Channel Mid Channel High Channel Low Channel			46.259 46.235 46.132 46.076 46.255	42.3 42.0 41.0 40.5 42.2	< 1640 W < 1640 W < 1640 W < 1640 W < 1640 W	Pass Pass Pass Pass	
	High Channel Low Channel Mid Channel High Channel Low Channel Mid Channel			46.259 46.235 46.132 46.076 46.255 46.338	42.3 42.0 41.0 40.5 42.2 43.0	< 1640 W < 1640 W < 1640 W < 1640 W < 1640 W < 1640 W	Pass Pass Pass Pass Pass Pass	
LTE 15 MHz	High Channel Low Channel Mid Channel High Channel Low Channel			46.259 46.235 46.132 46.076 46.255	42.3 42.0 41.0 40.5 42.2	< 1640 W < 1640 W < 1640 W < 1640 W < 1640 W	Pass Pass Pass Pass	
LTE 15 MHz	High Channel Mid Channel High Channel Low Channel Mid Channel High Channel			46.259 46.235 46.132 46.076 46.255 46.338 46.052	42.3 42.0 41.0 40.5 42.2 43.0 40.3	< 1640 W < 1640 W < 1640 W < 1640 W < 1640 W < 1640 W < 1640 W	Pass Pass Pass Pass Pass Pass	
LTE 15 MHz	High Channel Low Channel High Channel Low Channel Mid Channel High Channel Low Channel			46.259 46.235 46.132 46.076 46.255 46.338 46.052 46.102	42.3 42.0 41.0 40.5 42.2 43.0 40.3 40.8	< 1640 W < 1640 W	Pass Pass Pass Pass Pass Pass Pass	
LTE 10 MHz LTE 15 MHz LTE 20 MHz	High Channel Mid Channel High Channel Low Channel Mid Channel High Channel			46.259 46.235 46.132 46.076 46.255 46.338 46.052	42.3 42.0 41.0 40.5 42.2 43.0 40.3	< 1640 W < 1640 W < 1640 W < 1640 W < 1640 W < 1640 W < 1640 W	Pass Pass Pass Pass Pass Pass	



		С	DMA, Low Ch	annel			
		Value	,	Value			
		(dBm)		(W)	Limit	Result	
		46.248		42.2	< 1640 W	Pass	
🔆 Agilent 07:	10:03 Aug 6,	2013			RT		
Northwest EMC,	Inc				Mkı	r1 1.931 179	9 GHz
Ref 49 dBm		#Atten 20 d	В			46.248	
#Avg							
Log							
5							
dB/							
Offst 51.8							
dB							
#PAvg							
50							
M1 S2							
50 M1 S2 S3 FS							
£ (f):							
FTun							
Swp							
Center 1.931 25						Span 2.5	MHz
#Res BW 2.4 MH:	Z		#VBW 8 MH	lz	#Sweep	601 ms (601	pts)_

CDMA, Mid Channel Value Valu (dBm) (W

	value	value		
	(dBm)	(W)	Limit	Result
	46.61	45.8	< 1640 W	Pass
.:59:48 Aug 6,	2013		RT	

🔆 Agilent 11:59:48	Qua 6 2013		RT	
Northwest EMC, Inc	Hug 0, 2015		Mkr	1 1.962 583 GHz
Ref 52 dBm	#Atten 20 d	D	LUKI	46.610 dBm
#Avg	+niteli ze u			40.010 UDIII
Log		1		
5		\$	··	
dB/				
Offst				
51.8 dB				
ар				
#PAvg				
50				
M1 S2				
S3 FS				
£ (f):				
FTun				
Swp				
Center 1.962 500 GH				Span 2.5 MHz
#Res BW 2.4 MHz		#VBW 8 MHz	#Sweep	601 ms (601 pts)_



				DMA, High C	hannel				
			Value (dBm)			lue N)	Limit	Resu	.14
			46.162			1.3	< 1640 W	Pas	
* *	Agilent 11:3	7:10 Aug 6	•				RT		
	est EMC, I						Mkr	1 1.993	617 GHz
Ref 51			#Atten 20 d	ΙB					162 dBm
#Avg									
Log									
5 dB/									
ab/ Offst									
51.8									
dB									
50									
#PAvg ⊑ø									
50 M1 S2	,								
S3 FS									
£ (f):									
FTun									
Swp									
C	1 002 75							<u></u>	
	1.993 75			#VBW 8 M	U-3		#Sweep 6	ວpan ເທາ ຫວຼຸ/(2.5 MHz
₩Kes E	3W 2.4 MHz			#VDW O M	ΠΖ		#Sweep 6	bel ms (e	oor pts)

		Value	WCDMA, Low C	hannel Val	ue			
		(dBm)		(V	V)	Limit	Result	t
		46.649		46	.2	< 1640 W	Pass	
🔆 🔆 Agila	ent 11:46:32	Aug 6, 2013			F			
Northwest	t EMC, Inc					Mkr1	. 1.932 0	083 GHz
Ref 52 df	Bm	#Atten 20	dB				46.64	49 dBm
#Avg ┌─								
Log								
5			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~					
dB/								
Offst 51.8 dB								
dB								
#PAvg								
100								
¥1 S2								
S3 FS								
£ (f):								
FTun								
Swp								
Contor 1	932 500 647						Span	10 MH-2

Center 1.932 500 GHz Span 10 MHz #Res BW 8 MHz ________#VBW 50 MHz ______#Sweep 601 ms (601 pts)

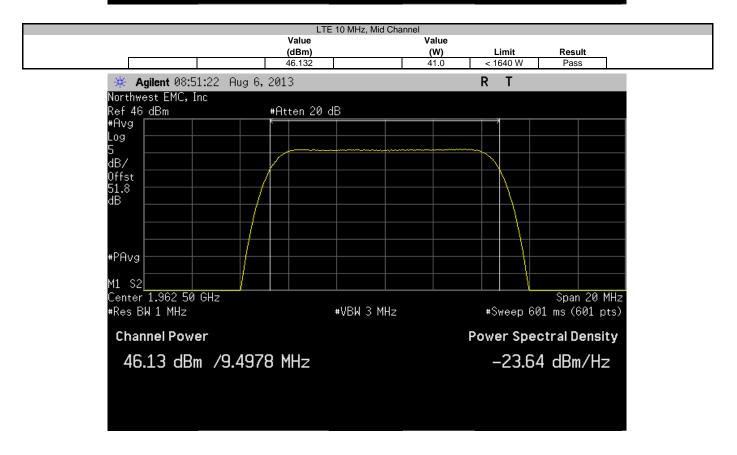


			W	CDMA, Mid Ch	annel			
			Value	02111, 1, 1110, 011	Value			
			(dBm)		(W)	Limit	Result	
			47.077		51.0	< 1640 W	Pass	
*	Agilent 11:5	i6:40 Aug 6,	2013			RT		
Nor	thwest EMC, I	Inc				Mkr1	1.962 000	GHz
	52 dBm		#Atten 20 d	IB			47.077 d	
#Av	'g							
Log								
5				+				
dB≠	/ _							
0ff: 51.3	st							
51.	8							
dB				+				
				<u> </u>				
#PA	lvg			ļ				
50								
50 M1 S3	S2							
\$3	FS							
£ (f):							
FTu								
Swp								
Cen	iter 1.962 50	0 GHz					 Span 10 №	IHz
	s BW 8 MHz	0-0112		∗VBW 50 MI	Hz	#Sweep 60	01 ms (601 p	
*NO				- VON JO M		0#eeb 00	ο <u>ι πο (σο</u> ι μ	.37_

	WCDMA, Hig	n Channel		
	Value	Value		
· · · · · · · · · · · · · · · · · · ·	(dBm) 46.259	(W) 42.3	Limit Result < 1640 W	
		42.5		_
* Agilent 11:50:01	Hug 6, 2013		RT	
Northwest EMC, Inc			Mkr1 1.992 200 0	
Ref 51 dBm #Avg	#Atten 20 dB		46.259 dE	3m
Log				
5	- <u>-</u> ◆			
dB/				
Offst 51.8 dB				~
51.8 -				
dD				
#PAvg				
100				
W1 \$2				
S3 FS				
£ (f):				
FTun				
Swp				
Center 1.992 500 GHz	· · · · · · · · · · · · · · · · · · ·		Span 10 M	Hz
#Res BW 8 MHz	#VBW 50	MHz	#Sweep 601 ms (601 pt	s)_

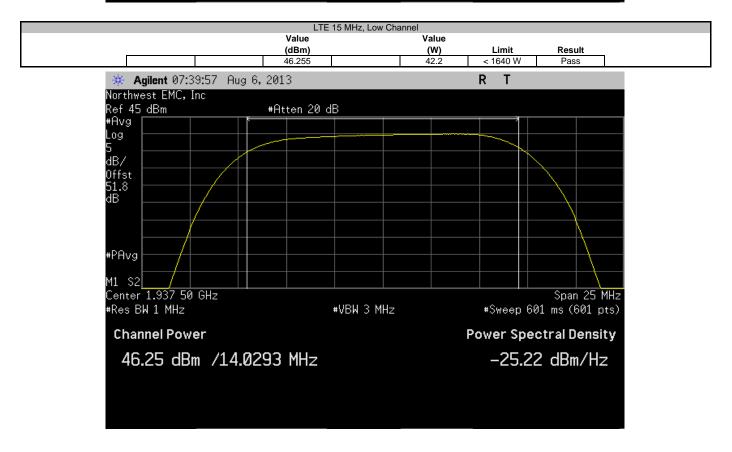






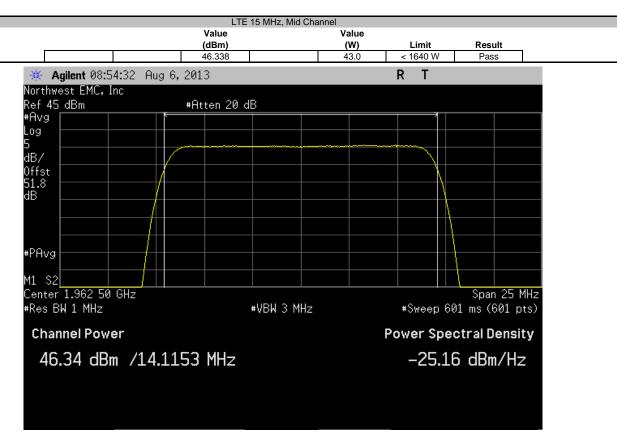






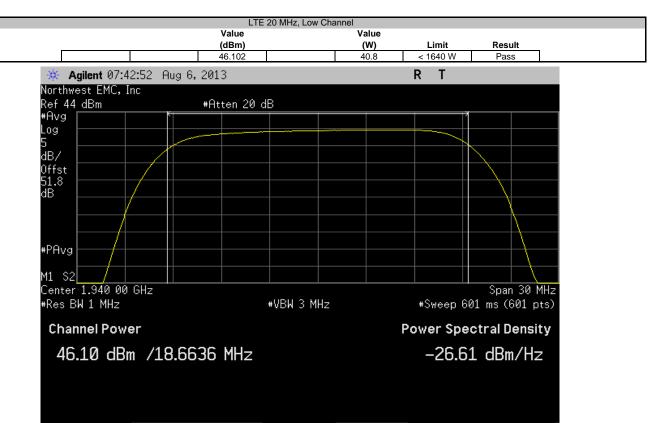


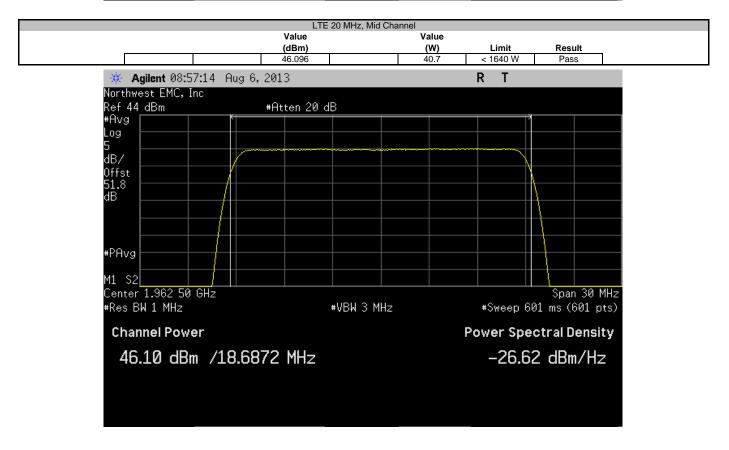
Conducted Output Power



LTE 15 MHz, High Channel Value Value (dBm) (W) Limit Result 46.052 40.3 < 1640 W Pass Agilent 08:09:41 Aug 6, 2013 R Т ** Northwest EMC, Inc Ref 45 dBm #Avg #Atten 20 dB Log 5 dB/ Offst 51.8 dB #PAvg M1 S2 Center 1.987 50 GHz Span 25 MHz #Res BW 1 MHz #VBW 3 MHz #Sweep 601 ms (601 pts) **Channel Power Power Spectral Density** -25.43 dBm/Hz 46.05 dBm /14.0600 MHz

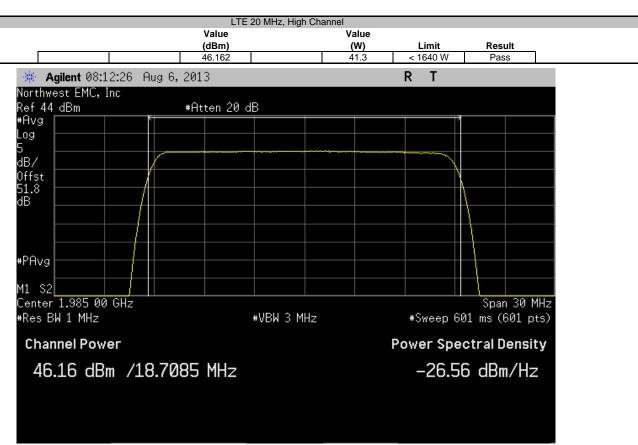






XMit 2013.02.28 PsaTx 2013.07.11







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	FQU	IIPM	FNT
	LQU		

Manufacturer	Model	ID	Last Cal.	Interval
Micro-Tronics	HPM50111	HGY	10/5/2012	24
Micro-Tronics	LPM50004	HGV	10/5/2012	24
SM Electronics	SA26B-20	RFW	4/12/2013	12
Agilent	N5183A	TIK	6/7/2012	36
Fairview Microwave	SD3379	AMI	10/5/2012	12
Agilent	E4440A	AAX	5/15/2012	24
	Micro-Tronics Micro-Tronics SM Electronics Agilent Fairview Microwave	Micro-TronicsHPM50111Micro-TronicsLPM50004SM ElectronicsSA26B-20AgilentN5183AFairview MicrowaveSD3379	Micro-TronicsHPM50111HGYMicro-TronicsLPM50004HGVSM ElectronicsSA26B-20RFWAgilentN5183ATIKFairview MicrowaveSD3379AMI	Micro-Tronics HPM50111 HGY 10/5/2012 Micro-Tronics LPM50004 HGV 10/5/2012 SM Electronics SA26B-20 RFW 4/12/2013 Agilent N5183A TIK 6/7/2012 Fairview Microwave SD3379 AMI 10/5/2012

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.

Out of Band Emissions - Conducted

		Module Model: FWP-881T000MOD	Work Order:		
Serial Numbe				08/06/13	
Custome	er: TE Connectivity / ADC Telecor	mmunications	Temperature:	25.3°C	
Attendee	s: None		Humidity:	44%	
Projec	ct: None		Barometric Pres.:	1010	
Tested b	y: Trevor Buls	Power: 110VAC/60Hz	Job Site:	MN08	
ST SPECIFICA		Test Method			
C 24E:2013		ANSI/TIA/EIA-603-C-2004			
0 242.2010					
MMENTS					
	ed a high wattage 30 dB attenuat	or			
stomer provid	ieu a nigri wattage 50 ub attenuat	01.			
VIATIONS FRO	OM TEST STANDARD				
ne					
nfiguration #	1	TBUD			
		Signature Trevor Buls			
		Frequency			
		Range	Value	Limit	Resul
MA		hunge	Vuide	Linik	Resul
1003	Low Channel	30 MHz - 1 GHz	-30.08 dBm	≤ -13 dBm	Pass
	Low Channel	1 GHz - 3 GHz	-18.34 dBm	≤ -13 dBm	Pass
	Low Channel	3 GHz - 20 GHz	-18.34 dBm -22.91 dBm	≤ -13 dBm	Pass
	Mid Channel	3 GHZ - 20 GHZ 30 MHz - 1 GHz	-22.91 dBm	≤ -13 dBm	Pass
	Mid Channel	1 GHz - 3 GHz	-17.47 dBm	≤ -13 dBm	Pass
	Mid Channel	3 GHz - 20 GHz	-23.43 dBm	≤ -13 dBm	Pass
	High Channel	30 MHz - 1 GHz	-30.41 dBm	≤ -13 dBm	Pass
	High Channel	1 GHz - 3 GHz	-17.83 dBm	≤ -13 dBm	Pass
	High Channel	3 GHz - 20 GHz	-22.73 dBm	≤ -13 dBm	Pass
CDMA					
	Low Channel	30 MHz - 1 GHz	-30.25 dBm	≤ -13 dBm	Pass
	Low Channel	1 GHz - 3 GHz	-17.78 dBm	≤ -13 dBm	Pass
	Low Channel	3 GHz - 20 GHz	-23.24 dBm	≤ -13 dBm	Pass
	Mid Channel	30 MHz - 1 GHz	-30.62 dBm	≤ -13 dBm	Pass
	Mid Channel	1 GHz - 3 GHz	-17.66 dBm	≤ -13 dBm	Pass
	Mid Channel	3 GHz - 20 GHz	-23.45 dBm	≤ -13 dBm	Pass
	High Channel	30 MHz - 1 GHz	-30.36 dBm	≤ -13 dBm	Pass
	High Channel	1 GHz - 3 GHz	-18.05 dBm	≤ -13 dBm	Pass
	High Channel	3 GHz - 20 GHz	-23.63 dBm	≤ -13 dBm	Pass
E 10 MHz	5				
	Low Channel	30 MHz - 1 GHz	-30.48 dBm	≤ -13 dBm	Pass
	Low Channel	1 GHz - 3 GHz	-17.45 dBm	≤ -13 dBm	Pass
	Low Channel	3 GHz - 20 GHz	-23.6 dBm	≤ -13 dBm	Pass
	Mid Channel	30 MHz - 1 GHz	-30.4 dBm	≤ -13 dBm	Pass
	Mid Channel	1 GHz - 3 GHz	-17.32 dBm	≤ -13 dBm	Pass
	Mid Channel	3 GHz - 20 GHz	-17.32 dBm	≤ -13 dBm	Pass
	High Channel	3 GHZ - 20 GHZ 30 MHz - 1 GHz	-22.72 dBm	≤ -13 dBm	Pass
	High Channel	30 MHZ - 1 GHZ 1 GHz - 3 GHz	-30.14 dBm -17.09 dBm	≤ -13 dBm ≤ -13 dBm	Pass
		3 GHz - 3 GHz 3 GHz - 20 GHz	-17.09 dBm -23.32 dBm	≤ -13 dBm ≤ -13 dBm	Pass
E 15 MHz	High Channel	3 GHZ - 20 GHZ	-23.32 dBm	≥ - 13 UDIII	Pass
	Low Channel	30 MHz - 1 GHz	-29.3 dBm	≤ -13 dBm	Pass
	Low Channel				
	Low Channel	1 GHz - 3 GHz	-17.55 dBm	≤ -13 dBm	Pass
	Low Channel	3 GHz - 20 GHz	-23.14 dBm	≤ -13 dBm	Pass
	Mid Channel	30 MHz - 1 GHz	-29.72 dBm	≤ -13 dBm	Pass
	Mid Channel	1 GHz - 3 GHz	-17.73 dBm	≤ -13 dBm	Pass
	Mid Channel	3 GHz - 20 GHz	-23.06 dBm	≤ -13 dBm	Pass
	High Channel	30 MHz - 1 GHz	-30.59 dBm	≤ -13 dBm	Pass
	High Channel	1 GHz - 3 GHz	-17.85 dBm	≤ -13 dBm	Pass
	High Channel	3 GHz - 20 GHz	-23.2 dBm	≤ -13 dBm	Pass
E 20 MHz					
	Low Channel	30 MHz - 1 GHz	-29.78 dBm	≤ -13 dBm	Pass
	Low Channel	1 GHz - 3 GHz	-17.46 dBm	≤ -13 dBm	Pass
	Low Channel	3 GHz - 20 GHz	-23.74 dBm	≤ -13 dBm	Pass
	Mid Channel	30 MHz - 1 GHz	-30.38 dBm	≤ -13 dBm	Pass
	Mid Channel	1 GHz - 3 GHz	-17.45 dBm	≤ -13 dBm	Pass
	Mid Channel	3 GHz - 20 GHz	-23.82 dBm	≤ -13 dBm	Pass
			-30.26 dBm	≤ -13 dBm	
	High Channel	30 MHz - 1 GHz			Pass
	High Channel High Channel	30 MHz - 1 GHz 1 GHz - 3 GHz	-30.26 dBm	≤ -13 dBm	Pass Pass



_		CDMA, Low Ch	annel			
	Frequency					
	Range 30 MHz - 1 GHz		Value -30.08 dBm	Limit	Result	
_			-30.08 dBm	≤ -13 dBm	Pass	
- * *	Agilent 13:29:34 Aug 6, 2	013		RT		
Nort	thwest EMC, Inc			1	Mkr1 213.20	MHz
	41.8 dBm #	Atten 20 dB			-30.08 d	Bm
#Pe						
Log						
10						
dB/						
Utts	st					
0ffs 31.8 dB	°					
aD						
#Lgi						
"L9						
V1	\$2					
\$3	FC					
£ (f)		ومروعة ألفالهم ومرجا والمروا ومرجع ومرجع				
FTu	In the second provide the second second					
Swp						
Star	rt 30.00 MHz			St	op 1.000 00 (GHz
	s BW 1 MHz	₩VBW 3 MH	lz		8 ms (8192 p	

CDMA, Low Channel Frequency Range 1 GHz - 3 GHz Value Limit Result -18.34 dBm ≤ -13 dBm Pass 🔆 Agilent 13:54:55 Aug 6, 2013 R T Northwest EMC, Inc 2.998 05 GHz Mkr1 Northwest EMC Ref 53.8 dBm #Peak Log 10 dB/ dB/ 0ffst 51.8 dB -18.34 dBm #Atten 12 dB #LgAv V1 S2 S3 FC ίų. **£**(f): and the state of t والمعدين dia a s ما مراد و للطبوط أسأعت والمعاديين وسألتن o. E. cont FTun يەر <u>الىرى ال</u> Swp Start 1.000 00 GHz Stop 3.000 00 GHz #Res BW 1 MHz ₩VBW 3 MHz Sweep 3.822 ms (8192 pts)



				C	DMA, Low Channel						
		Freque Rang				,	/alue	Limit	Ba	esult	
		3 GHz - 20	GHz				.91 dBm	≤ -13 dBm		ass	
	Agilent 14:	26:30 Au	a 6. 201	3				RΤ			
	thwest EMC,		.9 0, 201						kr1 13.	.678 2 G	Hz
Ref	41.8 dBm		#At	ten 20 d:	В					22.91 dB	
#Pe	ak 📃 👘										
Log											
10 dB/											
0ffs	st										
0ffs 31.8 dB	3										
dB											
#LgI	a										
*L9I											
V1	\$2										
V1 S3	FC										
				anter a the last		بالأرباط			let della de	المعادمين وبال	
£(f)): Malanda (
FTu Swp	n										
durc											
Star	t 3.000 0 G	iHz						S	ton 20.	000 0 GI	
	s BW 1 MHz				₩VBW 3 M	Hz		Sweep 42.			

CDMA, Mid Channel

		Freque Rang				Ve	alue	Limit	Res	ult
Γ		30 MHz -					7 dBm	≤ -13 dBm	Pas	
*	Agilent 13:0	30:13 Au	ug 6, 201	3				RТ		
	west EMC,	Inc								26.27 MHz
Ref 4	41.8 dBm		#At	ten 20 di	B				-30	0.37 dBm
#Peal Log	ĸ									
-09 10										
l₿∕										
Offst										
31.8 dB										
∎LgA	v									
/1 3	52									
\$3 F	Ĉ.									
									1	
£ (f):			الوقالين والبروالي	u dest des statue		Hard and strength	ويتبط والمقدول	alan addae add		
F⊤un Swp	a stille i fall sin i fall	and the sheet of the state of	a hi mili i ga da di la di						in the later of th	
aub										
	30.00 MHz									0 00 GHz
ŧRes	BW 1 MHz				#VBW 3 M	Hz	S	weep 1.6	38 ms (8	192 pts)_



		С	DMA, Mid Ch	nannel					
	Frequency								
	Range 1 GHz - 3 GHz				alue 47 dBm	Limit ≤ -13 dBm	Resu Pass		
				-17.4	47 aBm		Pass	6	
	:57:22 Aug 6,2	013				RT			
Northwest EMC,						Mk	r1 2.496		
Ref 50 dBm	#	Atten 12 d	В				-17	.47 dBm	
#Peak									
dB/ Offst									
51.8									
51.8 dB									
#LgAv									
V1 S2									
\$3 FC									
	a de la de la constante partir de la constante	e a dhuin duch i adaadd	and and the Market	and the set in some	ولحظه معربينها و		alaa ay ah daha	alumut porcali	
 (1) proposition 	a second s	and a last de juste a standard	a potenti di di da	and the standard state	and the second second	A DESCRIPTION OF A DESC	an a	and had per an an ab	
FTun									
Swp									
Start 1.000 00							top 3.000		
#Res BW 1 MHz			#VBW 3 M	Hz		Sweep 3.82	2 ms (81	.92 pts)	

CDMA, Mid Channel Frequency Range Value Limit Result 3 GHz - 20 GHz -23.43 dBm ≤ -13 dBm Pass ** Agilent 14:27:05 Aug 6, 2013 R T Northwest EMC, Inc 14.199 1 GHz Mkr1 Northwest EMC Ref 41.8 dBm +Peak Log dB/ dB/ Offst 31.8 dB -23.43 dBm #Atten 20 dB #LgAv V1 S2 S3 FC **£**(f): dar. dk FTun Swp Start 3.000 0 GHz Stop 20.000 0 GHz #Res BW 1 MHz ₩VBW 3 MHz Sweep 42.59 ms (8192 pts)

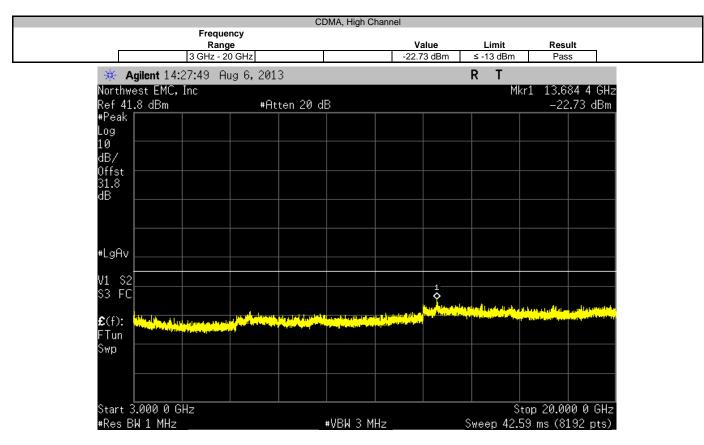


	C	DMA, High Chanr	nel			
Freque						
Ran			Value	Limit	Result	
30 MHz -	· 1 GHz		-30.41 dBm	≤ -13 dBm	Pass	_
🔆 Agilent 13:31:03 🛛 A	lug 6, 2013			RT		
Northwest EMC, Inc				Ν	4kr1 839.42 MH	
Ref 41.8 dBm	#Atten 20 d	В			-30.41 dBm	
#Peak						
Log						
10						
dB/						
0ffst 31.8 dB						
#LgAv						
~E911V						
V1 S2						
\$3 FC						
					1	
£(f):	فارجع فقروب فيلدوا الملط أورواط يد	براي وارتقا المتعاطي		A . 1	A ALANNA ALANA	
FTun Property Providence						<mark>.</mark>
Swp						
Start 30.00 MHz				St	op 1.000 00 GH:	2
#Res BW 1 MHz		#VBW 3 MHz			8 ms (8192 pts)	

		CDMA, H	gh Channel		
	Frequency Range		Value	Limit Res	
	1 GHz - 3 GHz		-17.83 dBm	≤ -13 dBm Pas	
🔆 Agil	lent 14:00:56 Aug 6	, 2013		RT	
	st EMC, Inc	a (a 15		Mkr1 2.96	
Ref 50 d #Peak ┌	1Bm	#Atten 12 dB			7.83 dBm
Log					
10					
Offst 🗕					
51.8 dB					
ap —					
#LgAv					
V1 S2					
S3 FC					
£(f): 🙁				ومعددا والتوريط ويوار ومطاولين ويرجع	
FTun					
Swp					
Start 1.0	000 00 GHz		o. 1.11	Stop 3.00	
#Res BW	1 MHz	#VBW	3 MHz	Sweep 3.822 ms (8	192 pts)_





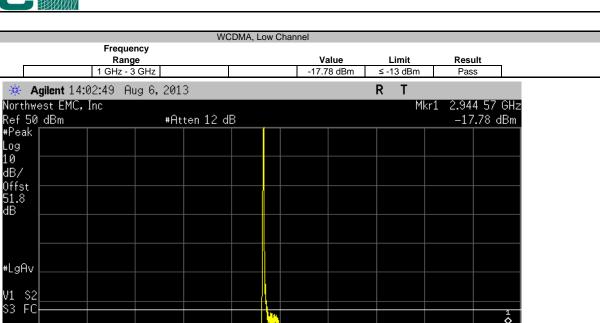


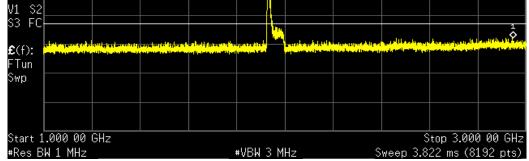
	Ercen		WC	DMA, Low C	Channel					
	Freque Ran				v	alue	Limit	Res	ult	
	30 MHz -				-30.2	25 dBm	≤ -13 dBm	Pas	SS	
🔆 Agilent	13:32:04 A	lug 6, 2013	3				RT			
lorthwest EM ≷ef 41.8 dBr			en 20 di	>					87.98 MHz 0.25 dBm	
Peak		#H((en ze u	<u> </u>				-30	J.ZJ UDIII	
.og										
.0										
₩B/										
)ffst 31.8										
яв										
LgAv		+								
л s2										
3 FC										
						1				
(f):	والأبسر والقاطية والمروان	والمالية بالإيران	a filling a faile	na table and	ومقراد فارق واللا	the delinger	ուսերերծեղելու	egh aby to trab	والدار والمرودين والعر	
Tun Canal an	And a state of the	والترج بالتجرية والمتحدية	وراقاطين ويتباغ	and a big of basis of	te bi ma data da di di di	I month privite a los	a la parte de la classifia de la com	in a la distriction dat	and the set of some	
бжр										
∫tart 30.00								ton 1 00	000 GHz	
Res BW 1 M				₩VBW 3 M	Hz		Sweep 1.6			

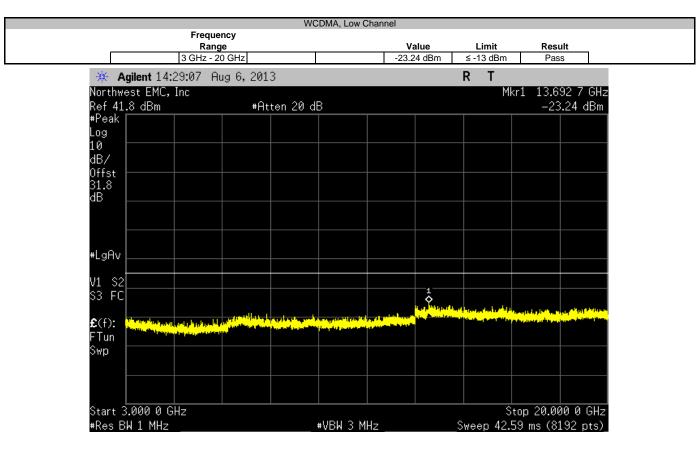


Log 10 dB/ Offst 51.8 dB

#LgAv





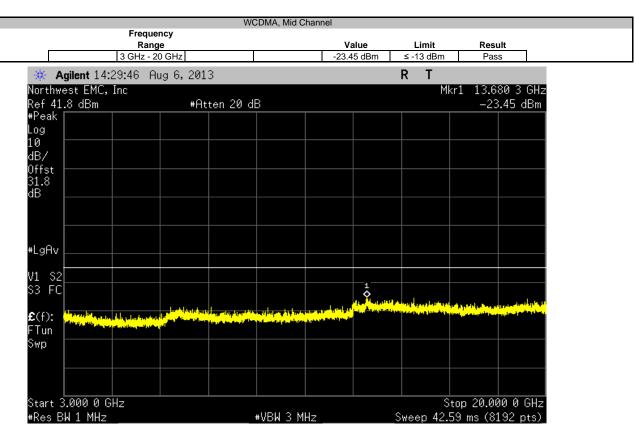




		WC	CDMA, Mid Ch	nannel					
	Frequency								
Г	Range 30 MHz - 1 GHz				a lue 2 dBm	Limit ≤ -13 dBm	Res Pas		
				-30.6	Z GBIN		Pa	55	
*	J	013				RΤ			
	hwest EMC, Inc						Mkr1 83		
Ref	41.8 dBm #	Atten 20 dl	B				-30	0.62 dBn	1
#Pea	ак								
Log 10									
dB/									
aby Offsi	+								
Offs 31.8 dB									
dB									
#LgA	→								
	^^ 								
V1 : S3 F	\$2 FC								
33 I									
£ (f)							1		
FTun	ويتقافص الأصباط والتقابية ألاحتهم والطوري والبوارة								el.
Swp									
o np									
Stor	t 30.00 MHz						Stop 1.00	 0 00 CU	7
	s BW 1 MHz		₩VBW 3 MH	7		Sweep 1.6			

WCDMA, Mid Channel Frequency Range 1 GHz - 3 GHz Value Limit Result -17.66 dBm ≤ -13 dBm Pass ** Agilent 14:04:57 Aug 6, 2013 R T Northwest EMC, Inc 2.496 83 GHz Mkr1 Northwest LN Ref 50 dBm #Peak Log 10 dB/ 0ffst 51.8 dB -17.66 dBm #Atten 12 dB #LgAv V1 S2 S3 FC \$ £(f): FTun Swp Start 1.000 00 GHz Stop 3.000 00 GHz #Res BW 1 MHz ₩VBW 3 MHz Sweep 3.822 ms (8192 pts)





	WC	nnel				
Freque Rang	e		Value	Limit	Result	
30 MHz -	1 GHz		-30.36 dBm	≤ -13 dBm	Pass	
	ug 6,2013			RT		
Northwest EMC, Inc Ref 41.8 dBm	#Atten 20 dl	В		Mi	r1 170.69 MHz -30.36 dBm	
#Peak Log						
10						
dB/						
Offst 31.8						
dB						
#LgAv						
V1 S2						
\$3 FC						
€(f): FTun	en de die besterne de die de die gewen eine		an little and the level of the		an de la lles de la de la compa	
Swp						
Start 30.00 MHz #Res BW 1 MHz		#VBW 3 MHz			p 1.000 00 GHz ms (8192 pts)_	



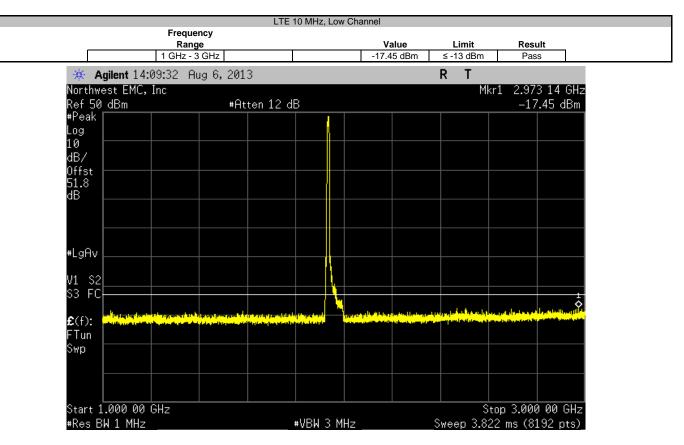
		WC	DMA, High	Channel					
	Frequency						_		
	Range 1 GHz - 3 GHz				alue 05 dBm	Limit ≤ -13 dBm	Res Pas		
		10		10.0			10.	55	
	4:07:28 Aug 6, 20	13				RT			
Northwest EMC			_			М		15 86 GHz	
Ref 50 dBm	#A	tten 12 d	В				-18	8.05 dBm	
#Peak									
Log 10									
dB/									
Öffst									
0ffst 51.8 dB									
dB									
#LgAv									
V1 S2									
\$3 FC									
							فليصار وبالول وأوابه		
£ (f):									
FTun									
Swp									
Start 1.000 00						S	top 3.00	0 00 GHz	
#Res BW 1 MHz	2		₩VBW 3 M	Hz		Sweep 3.8	22 ms (8	192 pts)_	

WCDMA, High Channel										
Frequer Range			Valu	le	Resu	lt				
3 GHz - 20			-23.63	dBm	≤ -13 dBm	Pass	3			
🗰 Agilent 14:30:23 Au	ig 6, 2013			I	RT					
Northwest EMC, Inc		D			Mk	r1 13.70				
Ref 41.8 dBm #Peak	#Atten 20 d					-23	.63 dBm			
Log										
10 dB/										
Offst										
31.8 dB										
#LgAv										
V1 S2										
\$3 FC				\$	la latin kanta talari ya					
£(f): Why individual to the control of the	dial design of the part of the second	Anter statistica de la construir								
FTun	A STREET, STRE	and the second state in the								
Swp										
Start 3.000 0 GHz					S	top 20.00	0 0 GHz			
#Res BW 1 MHz		#VBW 3 MH;	Z	S	weep 42.5					



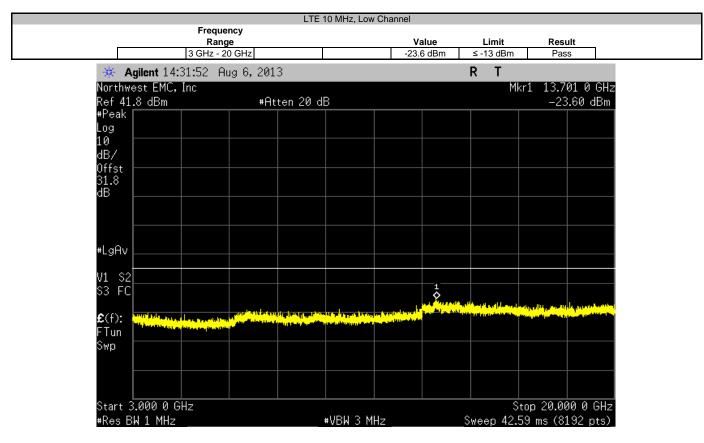
XMit 2013.02.28
PsaTx 2013.07.1

LTE 10 MHz, Low Channel										
	Frequency			(-)	1 June 14	Desult				
	Range 30 MHz - 1 GHz			/alue .48 dBm	Limit ≤ -13 dBm	Result Pass				
🔆 Agilent	13:34:32 Aug 6, 201	2			RT					
		.9				6-1 741 OF				
Northwest EN Ref 41.8 dBi		ten 20 dB:			P	lkr1 741.25 –30.48 d				
#Peak						-30.40 u				
Log										
10										
dB/										
Offst 31.8										
31.8 dB										
#LgAv										
V1 S2 S3 FC										
£(f):	والمتأوفين المرجنة والترجي أوار والمتحادية المتحدين والرابعي	<u> </u>								
FTun Photo	الماديني والدخرة المقتو الأحاد الألامي المهر	all the part of the second second	ilei shekara babaha				e e la			
Swp										
Start 30.00	MHz				St	op 1.000 00 (GHz			
#Res BW 1 M		#VBI	W 3 MHz			8 ms (8192 p				





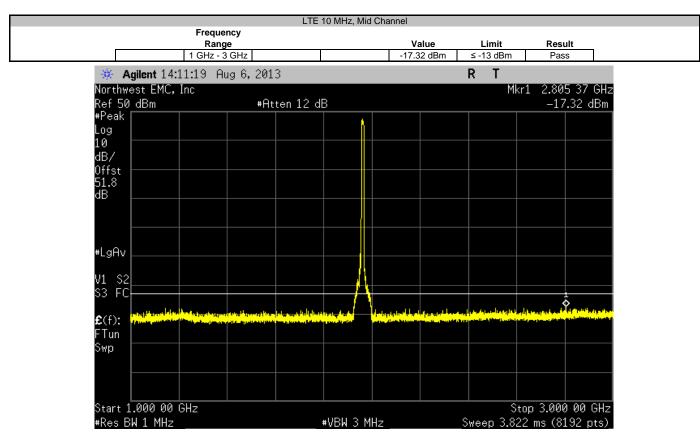




LTE 10 MHz, Mid Channel										
	Frequency Range 30 MHz - 1 GHz				alue 4 dBm	Limit ≤ -13 dBm	Res Pas			
🔆 Agilent 13:3	35:18 Aug 6, 201	.3				RT				
Northwest EMC, Ref 41.8 dBm	Inc	ten 20 d:	В					78.33 MHz 0.40 dBm		
#Peak Log 10										
dB/ Offst										
31.8 dB										
#LgAv										
V1 S2										
S3 FC										
£(f): FTun <mark>Piterdurite</mark>						unit) et landa	أحاد وماريه المخالف	الاروب بعدائم		
Swp										
Start 3 <mark>0.00 MH</mark> z #Res BW 1 MHz			#VBW 3 M	Hz	s			0 00 GHz 192 pts)_		







LTE 10 MHz, Mid Channel										
Frequ Rar			Value Li	mit Res	ult					
3 GHz -		-2		3 dBm Pas						
🔆 Agilent 14:32:58	Aug 6, 2013		R	Т						
Northwest EMC, Inc				Mkr1 13.6						
Ref 41.8 dBm #Peak	#Atten 20 dl	B		-22	2.72 dBm					
Log										
10										
dB/										
Offst 31.8										
dB										
#LgAv										
V1 S2 S3 FC										
			ala Artempto autore	a Malaka manang Maladar	المرابع المراجع					
£(f):				and the first state of the second	and a second second second second					
Fiun										
Swp										
Start 3.000 0 GHz				Stop 20.00						
#Res BW 1 MHz		₩VBW 3 MHz	Swee	p 42 . 59 ms (8:	192 pts)_					



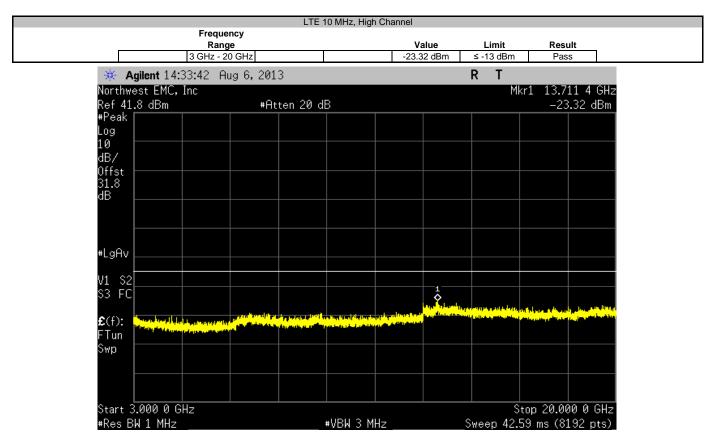
XMit 2013.02.28
PsaTx 2013.07.11

Frequency Range Value Limit Result 30 MHz - 1 GHZ -30.14 dBm ≤.13 dBm Pasis Agilent 13:36:02 Aug 6, 2013 R T Northwest EMC, Inc Mkr1 550.94 MHz Ref 41.8 dBm +Atten 20 dB -30.14 dBm +Peak -30.14 dBm -30.14 dBm Log -30.14 dBm -30.14 dBm 10 -30.14 dBm -30.14 dBm dB/ -30.14 dBm -30.14 dBm #LegRv -30.14 dBm -30.14 dBm #LgRv -30.90 MHz -30.90 MHz Swp -30.90 MHz -30.90 MHz -30.90 MHz Stop 1.000 00 GHz -30.00 MHz -30.00 MHz -30.00 MHz *Res BW 1 MHz -30.00 MHz -30.00 MHz -30.00 MHz	LTE 10 MHz, High Channel										
30 MHz - 1 GHz -30.14 dBm ≤ -13 dBm Pass Agilent 13:36:02 Aug 6, 2013 R T Northwest EMC, Inc Mkr1 550.94 MHz Ref 41.8 dBm *Atten 20 dB -30.14 dBm *Peak -30.14 dBm -30.14 dBm log -30.14 dBm -30.14 dBm *Peak -30.14 dBm -30.14 dBm 10 -30.14 dBm -30.14 dBm dB/ -30.14 dBm -30.14 dBm 10 -30.14 dBm -30.14 dBm dB/ -30.14 dBm -30.14 dBm 10 -30.14 dBm -30.14 dBm dB/ -30.14 dBm -30.14 dBm 10 -30.14 dBm -30.14 dBm dB/ -30.14 dBm -30.14 dBm VI Stop -30.14 dBm *LgAv -30.14 dBm -30.14 dBm v1 S2 -30.14 dBm -30.14 dBm Stop -30.14 dBm -30.14 dBm Stop -30.14 dBm -30.14 dBm start 30.00 MHz -30.00 00 GHz -30.00 00 GHz				Va	Re	Result					
Northwest EMC, Inc Mkr1 550.94 MHz Ref 41.8 dBm *Atten 20 dB -30.14 dBm *Peak											
Ref 41.8 dBm *Atten 20 dB -30.14 dBm *Peak	*	Agilent 13:	36 : 02 Au	ıg 6, 201	3				RT		
*Peak Log 10 dB/ Offst 31.8 dB			Inc								
Log 10 dB/ 0ffst 31.8 dB +LgAv V1 S2 S3 FC E(f): FTun Swp Start 30.00 MHz Stop 1.000 00 GHz	Ref	41.8 dBm		#Ĥt	ten 20 di	3				-3	0.14 dBr
10 dB/ offst 31.8 dB dB #LgAv dB dB #LgAv dB dB #LgAv dB dB \$\$ C(f): dB dB \$\$ Stop 1.000 00 GHz Stop 1.000 00 GHz		к									
dB/ Offst 31.8 dB dB dB #LgAv dB with gave dB with gave dB	10										_
31.8 #LgAv #LgAv	dB/										
dB #LgAv #LgAv	Offst	:									
#LgAv	dB										
V1 S2 1 1 £(f): 1 1 FTun 1 1 Swp 1 1 Start 30.00 MHz Stop 1.000 00 GHz											
V1 S2 1 1 £(f): 1 1 FTun 1 1 Swp 1 1 Start 30.00 MHz Stop 1.000 00 GHz											
V1 S2 1 1 £(f): 1 1 FTun 1 1 Swp 1 1 Start 30.00 MHz Stop 1.000 00 GHz											
€(f): FTun Swp Start 30.00 MHz Stop Major 100 00 GHz	#LgH	v									
€(f): FTun Swp Start 30.00 MHz Stop Major 100 00 GHz	V1 3	S2									
E(f): In the product of the billing	S3 F	÷C									
Start 30.00 MHz Stop 1.000 00 GHz	e /())	.									
Swp Start 30.00 MHz Stop 1.000 00 GHz			and data to the second	, in the second				den la haba		بالمالية والمراجع	
Start 30.00 MHz Stop 1.000 00 GHz											
$\#U_{AA} = HU_{A} = $: 30.00 MHz BW 1 MHz				#VBW 3 M	∐⇒				

LTE 10 MHz, High Channel											
		Freque					-1	1	_		
		Rang 1 GHz - 3					alue)9 dBm	Limit ≤ -13 dBm	Res Pas		
	Agilent 14:			3				RT			
	west EMC,		19 0, 201	5					kr1 - 2-94	4 33 GHz	
Ref 5	50 dBm	1110	#At	ten 12 di	В					.09 dBm	
#Peak	<										
Log											
10 dB/											
Offst											
51.8 dB											
dB											
#LgAv	v										
					i i						
V1 S	52				 	<u> </u>					
S3 F											
£(f):				ha hutil d	the star	in the three	dette plandate				
FTun											
Swp											
	1.000 00 I	GHz								0 00 GHz	
#Res	BW 1 MHz				₩VBW 3 M	IHZ	2	weep 3.8	ZZ MS (8.	192 pts)_	

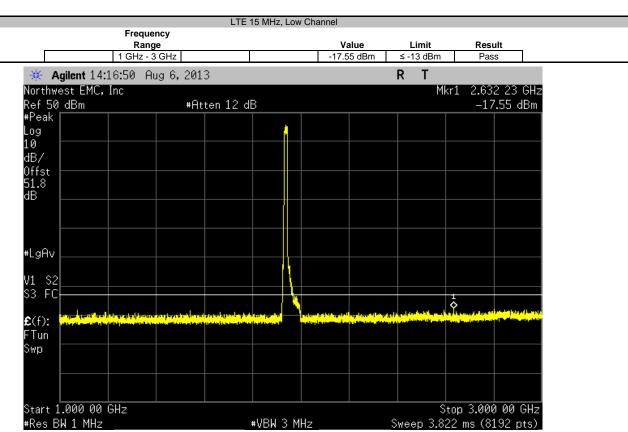






			LTE 1	15 MHz, Low	Channel				
	Frequ Ran 30 MHz	ige				alue 3 dBm	Limit ≤ -13 dBm	Res	
🔆 Agilen	nt 13:37:02 F		3		1		RT	1	
Northwest		149 0, E01.	<i>.</i>					Mkr1 76	61.73 MHz
Ref 41.8 d		#At	ten 20 di	3					0.30 dBm
#Peak									
Log 10									
dB/									
0ffst									
dB									
#LgAv									
V1 S2 S3 FC									
							1		
£(f):	an an an data an	وأسالها إحمدالوهو	and the late of the state of	Nativi stano i k	وبالصديب والم			والإرباء وبريع اخل	An an trade to be a second
FTun Swp		ادر به اط ^ر ا بشرار به مر	تمحيطها فحا يلاطنهمان			Secold at the second	a bile a bibliot suger	اين بنزم ويو _{ر م} يندا ا	i den for en de hije biet.
Juh									
Start 30.00									0 00 GHz
#Res BW 1	MHZ			∎VBW 3 M	HZ	S	weep 1.6	38 ms (8	192 pts)_

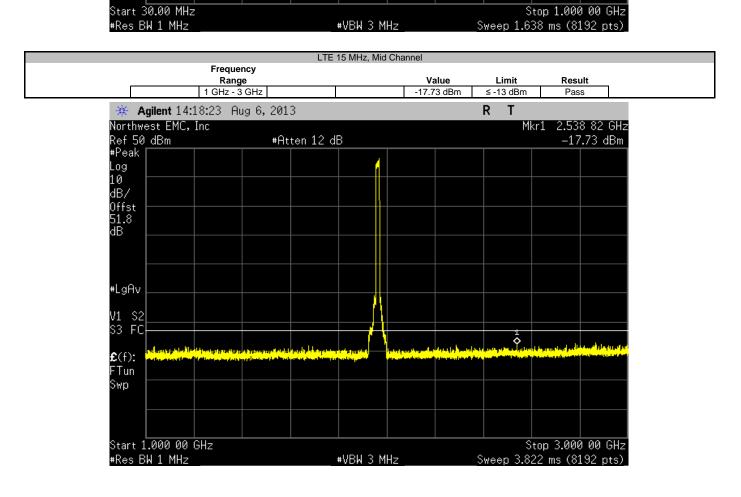




		LTE 15 MHz, L	ow Channel			
	Frequency	,,,,,,,, _				
	Range		Value	Limit	Result	
	3 GHz - 20 GHz		-23.14 dBm	≤ -13 dBm	Pass	
	:22:42 Aug 6, 201	3		RT		
Northwest EMC				Mkr1	1 14.568 6 GHz	
Ref 41.8 dBm	#At	ten 20 dB			-23.14 dBm	
#Peak						
Log 10						
dB/						
Offst						
31.8 dB						
dB						
#LgAv						
*L9110						
V1 S2						
V1 S2 S3 FC						
			a de la constantina d	Contraction in the part of	a de la constituía de la constituía de la	
£(f):					and the second secon	
Flun						
Swp						
Start 3.000 0			MU-		p 20.000 0 GHz	
#Res BW 1 MHz		#VBW 3	MHZ	_3weep 42.59	∣ms (8192 pts)_	



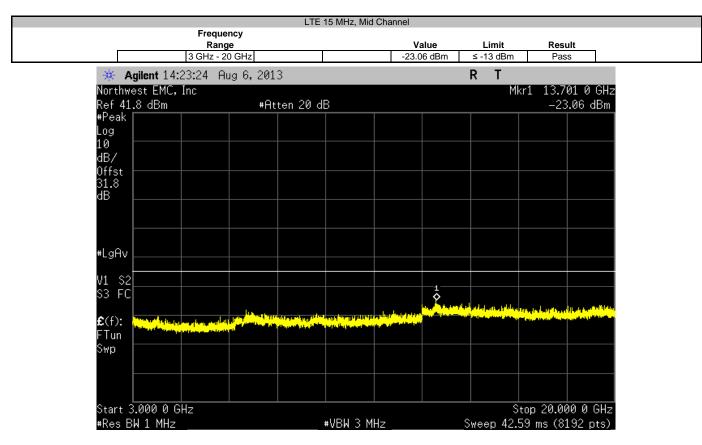
Fr	equency	5 MHz, Mid Channel				
	Range	v	alue	Limit	Resu	lt
	Hz - 1 GHz	-29.7	72 dBm	≤ -13 dBm	Pass	6
🔆 Agilent 13:37:49	Aug 6, 2013			RT		
lorthwest EMC, Inc					Mkr1 310	6.70 MHz
Ref 41.8 dBm	#Atten 20 dE	3			-29	.72 dBm
Peak						
.og						
.0 IB/						
)ffst						
81.8 IB						
IB						
LO						
LgAv						
/1 \$2						
S3 FC						
	1					
(f): (f):		والمحافير الأندون وراجع والالتقادي		All the shear of the	والمتعادية والمتعاد	والمعاملين
lun <mark>data sa ka ka</mark> pilana n	and the second	a line of the line is a second strategy of the second	distance in the	and the second	All a second state	tala, Materia disper
gwp						



Stop 1.000 00 GHz

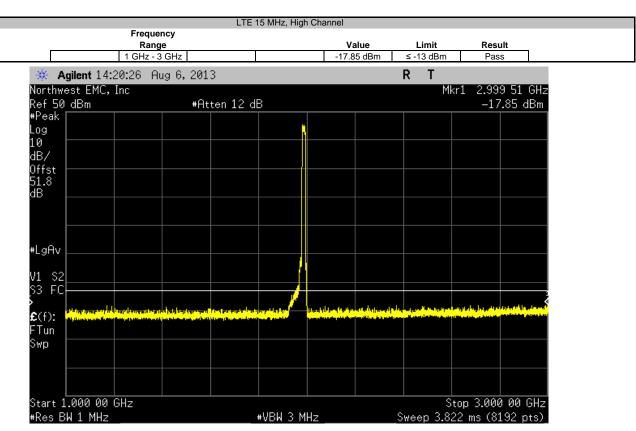


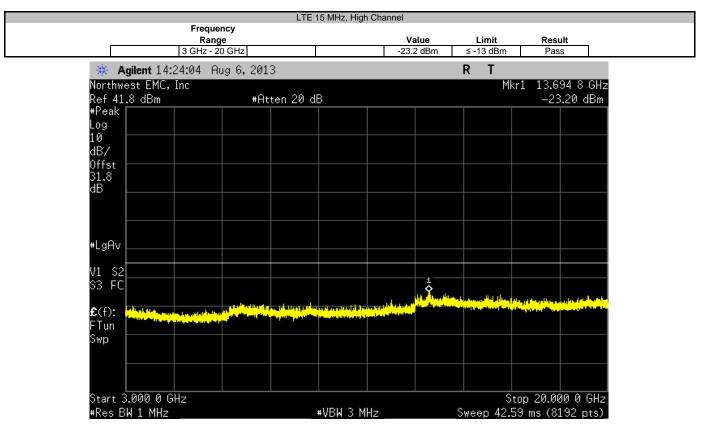




		E 15 MHz, Hig	15 MHz, High Channel						
	Frequency Range	-1		alue	Limit	Res			
	MHz - 1 GHz		-30.5	i9 dBm	≤ -13 dBm	Pas	SS		
	33 Aug 6,2013				RT	MI 4 00	0 4 0 MIL		
Northwest EMC, Inc Ref 41.8 dBm	#Atten 20	dB					50.10 MHz 0.59 dBm		
#Peak									
Log									
10 dB/									
Offst									
31.8 dB									
#LgAv									
V1 S2									
\$3 FC									
£ (f):									
FTun date the state of the state						a di setali de	a a data salar		
Swp									
Start 30.00 MHz						+op 1 00	0 00 GHz		
#Res BW 1 MHz		₩VBW 3 M	Hz	S			0 00 GH2 192 pts)_		









			_TE 20 MHz, Lo	w Channel				
	Freque Rang			v	alue	Limit	Resu	.14
	30 MHz -				78 dBm	≤ -13 dBm	Pass	
- 44	Agilent 13:40:40 A	lua 6. 2013				RT		
	hwest EMC, Inc	ay o, 2010					Mkr1 5	7.71 MHz
Ref	41.8 dBm	#Atten 24	0 dB					.78 dBm
#Pe								
Log 10								
dB/								
Offs	st							
31.8 dB	3							
uВ								
#Lgi	Av							
V1	\$2							
\$3	FC							
£ (f) ⊏⊤		a state in the state of the state	a la la la la sur de				a na ta da	
FTu Swp								
0 II 0								
	t 30.00 MHz						op 1.000	
(A	s RW 1 MH⁊		#URU 3 N	1H-2		Sween 1.63	X me (81	MZ ntel

LTE 20 MHz, Low Channel Frequency Range 1 GHz - 3 GHz Value Limit Result -17.46 dBm ≤ -13 dBm Pass 🔆 Agilent 13:50:28 Aug 6, 2013 R T Northwest EMC, Inc Ref 50 dBm #Peak Log 10 dB/ Mkr1 2.932 85 GHz –17.46 dBm #Atten 12 dB dB7 Offst 51.8 dB #LgAv V1 S2 S3 FC ومأسط المالك ومسترجل أستعر واللاج والترابيات المدارية **£**(f): FTun Swp Start 1.000 00 GHz #Res BW 1 MHz Stop 3.000 00 GHz ₩VBW 3 MHz Sweep 3.822 ms (8192 pts)

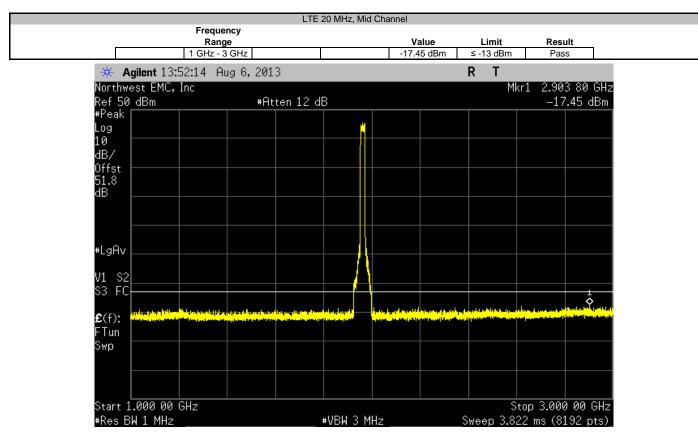


				LTE	20 MHz, Low	/ Channel					
		Freque				.,	alue	Limit	D -	It	
		8 Ran 3 GHz - 2	ge 20 GHz				alue 74 dBm	LIMIt ≤ -13 dBm		sult ass	
N	Agilent 1	14:35:37 A		2				RT			
			lug 6, 201	.)					La1 12	232 0 GHz	
	rthwest EM f 41.8 dBm		*0*	ten 20 d	D			[*]		232 0 GHZ 23.74 dBm	
#P	eak		#ni	iten ze u T					-2	.5.74 UDIII	
Los											
10											
dB											
Off	fst 🚽										
31 dB	.×										
uD											
#[gAv										
-											
V1	\$2 FC										
\$3	FC										
			La stress Million at	the second second		وروا والمحاط الماري			late to a state	d a sheeddar	
	f): Marile					and the state of the state			and a superior		
	un										
Sw											
S.L.	art 3.000 0									000 0 GHz	
	art 3.000 0 es BW 1 MH				₩VBW 3 M	Ц-7	\$			000 0 GHZ 8192 pts)_	
#IN	CO DM I PI	14				112		теер 42.	20 III2 (0	0102 pts/_	

	_	LTE 20 N	1Hz, Mid Cha	annel				
	Frequency Range 30 MHz - 1 GHz			Va -30.38		Limit ≤ -13 dBm	Res	
Agilent 13:41		>		-30.30		R T	183	
Northwest EMC, In)					Mkr1 59	57.34 MHz
Ref 41.8 dBm		en 20 dB:						0.38 dBm
#Peak								
Log								
10 dB/								
Offst								
0ffst 31.8								
dB								
#LgAv								
V1 S2 S3 FC								
				1				
£(f):	tana ta ta ila kata kapata ta ta ta ta	d. İsabili Balarısı Milanı ta	المربوب والأسط		و بالارد بالا	a selecter of backs	olisite distants a sec	Lader Ladrad
Filun productional company	ing table day. Los may prove produce and built	A A REAL PROPERTY AND A RE		and a second second	in the other of the test, of		i a line i debra a linear a	
Swp								
Start 30.00 MHz						S	top 1.000	1 0 00 GHz
#Res BW 1 MHz		#VB	SW 3 MHz		S	weep 1.6		



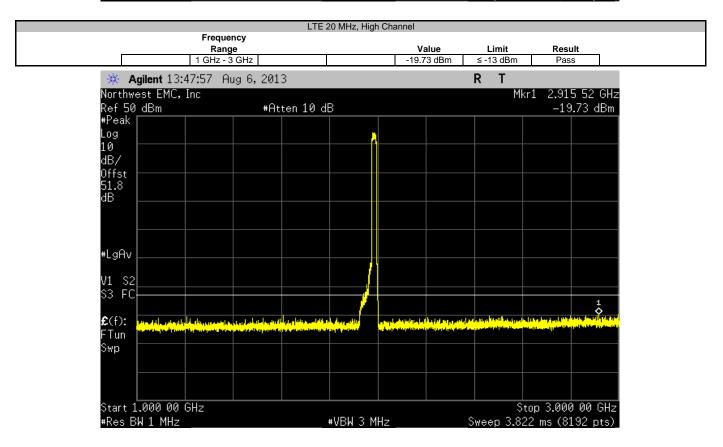




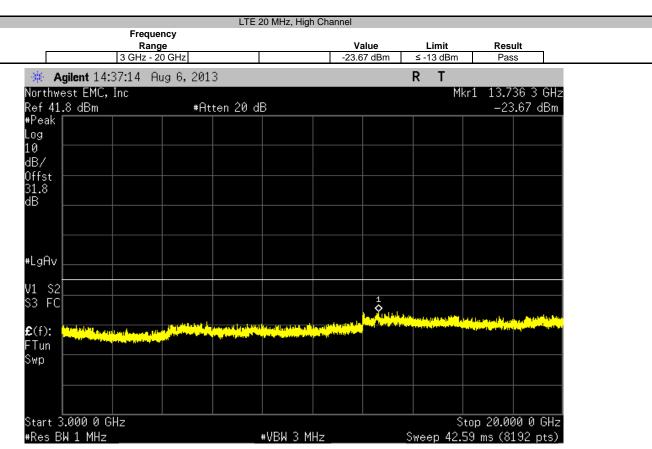
		20 MHz, Mid Cha	nnel		
	uency nge		Value	Limit	Result
	20 GHz		-23.82 dBm	≤ -13 dBm	Pass
🔆 Agilent 14:36:31	Aug 6, 2013			RT	
Northwest EMC, Inc	-			Mkr:	1 14.678 5 GHz
Ref 41.8 dBm	#Atten 20 d	В			-23.82 dBm
#Peak					
Log 10					
dB/					
Offst					
31.8 dB					
ulO					
#LgAv					
V1 S2					
S3 FC					
£(f):	and the state of the state of the	ور بر المراجع	alahan da karangan da karan		
FTun		and a second			
Swp					
Start 3.000 0 GHz				Sto	p 20.000 0 GHz
#Res BW 1 MHz		₩VBW 3 MHz			µ 20.000 0 0H2 ∣ms (8192 pts)_



		TE 20 MHz, High	Channel			
F	equency Range		Value	Limit	Result	
	Hz - 1 GHz		-30.26 dBm	≤ -13 dBm	Pass	_
🔆 Agilent 13:42:04	Aug 6, 2013			RT		
Northwest EMC, Inc Ref 41.8 dBm	#Atten 2	0 dB			Mkr1 66.59 –30.26 d	
#Peak Log						
LØ						
0ffst 31.8 dB						
dB						
#LgAv						
V1 S2 S3 FC						
FTun Handler	lis faters at the strength of the left					
Swp						
Start 30.00 MHz				St	op 1.000 00 (Hz
#Res BW 1 MHz		#VBW 3 M⊦	lz		8 ms (8192 p	







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	Manufacturer	Model	ID	Last Cal.	Interval
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
Multimeter	Fluke	114	MMU	7/8/2011	36
Variable Transformer	Powerstat	246	XFR	NCR	0
Spectrum Analyzer	Agilent	E4440A	AAX	5/15/2012	24

TEST DESCRIPTION

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

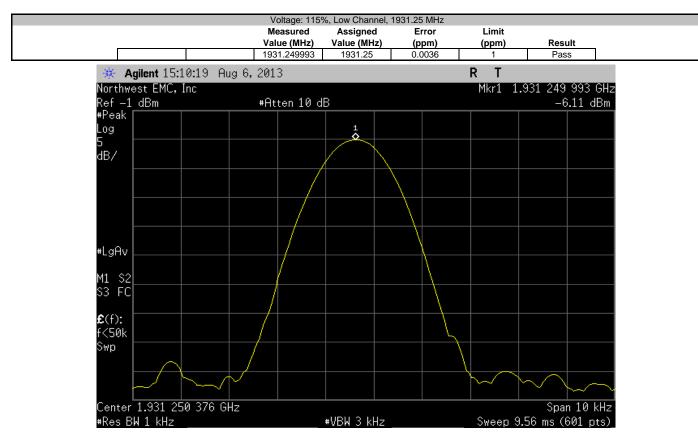
The primary supply voltage was varied from 85 % to 115% of the nominal voltage Using a temperature chamber, the transmit frequency was recorded at the extremes of the specified temperature range (-30 ° to +50° C) and at 10°C intervals.



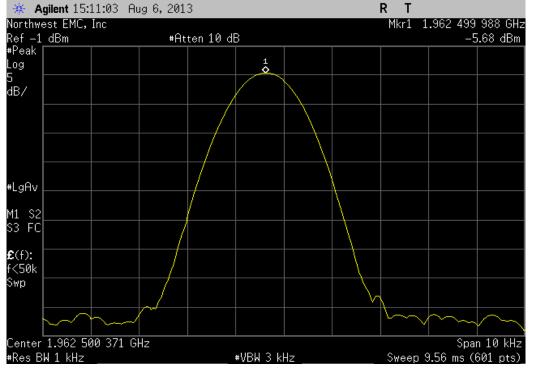
EMC

Serial Number:	Prism HDM 40W PCS SISO RF Mo					Work Order:	08/07/13	
	TE Connectivity / ADC Telecomm	unications				Temperature:		
Attendees:		unications				Humidity:		
Project:	Trevor Buls		Perman	110VAC/60Hz		Barometric Pres.: Job Site:		
EST SPECIFICATI				Test Method		Job Site:	MINU8	
	UN3							
CC 24E:2013				ANSI/TIA/EIA-603-C-2004				
OMMENTS	· · · · · · · · · · · · · · · · · · ·	-						
ustomer provided	I a high wattage 30 dB attenuator.	The voltage range w	/as varied from 93.5 - 126.5 V	AC.				
	I TEST STANDARD							
lone	I IEST STANDARD							
lone	I I I I I I I I I I I I I I I I I I I		1	2				
onfiguration #	1		Trevor	Bullo				
enngurunen "		Signature	eneror	and				
	II	orginataro		Measured	Assigned	Error	Limit	
				Value (MHz)	Value (MHz)	(ppm)	(ppm)	Result
oltage: 115%					· ·····•,	\FP''''/	w.r	
	Low Channel, 1931.25 MHz			1931.249993	1931.25	0.0036	1	Pass
	Mid Channel, 1962.5 MHz			1962.499988	1962.5	0.0061	1	Pass
	High Channel, 1993.75 MHz			1993.749984	1993.75	0.0080	1	Pass
oltage: 100%	<u> </u>							
	Low Channel, 1931.25 MHz			1931.249993	1931.25	0.0036	1	Pass
	Mid Channel, 1962.5 MHz			1962.499988	1962.5	0.0061	1	Pass
	High Channel, 1993.75 MHz			1993.749984	1993.75	0.0080	1	Pass
oltage: 85%				1000.140004		0.0000		1 433
	Low Channel, 1931.25 MHz			1931.249993	1931.25	0.0036	1	Pass
	Mid Channel, 1962.5 MHz			1962.499988	1962.5	0.0061	1	Pass
	High Channel, 1993.75 MHz			1993.749984	1993.75	0.0080	1	Pass
emperature: +50°				1555.745504	1000.10	0.0000		1 833
	Low Channel, 1931.25 MHz			1931.249993	1931.25	0.0036	1	Pass
	Mid Channel, 1962.5 MHz			1951.249995	1962.5	0.0061	1	Pass
	High Channel, 1993.75 MHz			1993.75	1902.5	0.0000	1	Pass
emperature: +40°	righ channel, 1995.75 Milz			1990.75	1333.73	0.0000	1	1 433
	Low Channel, 1931.25 MHz			1931.249993	1931.25	0.0036	1	Pass
	Mid Channel, 1962.5 MHz			1962.499988	1962.5	0.0061	1	Pass
	High Channel, 1993.75 MHz			1993.75	1993.75	0.0000	1	Pass
emperature: +30°	right endianel, recent e finiz			1000110	1000110	0.0000		1 400
	Low Channel, 1931.25 MHz			1931.249993	1931.25	0.0036	1	Pass
	Mid Channel, 1962.5 MHz			1962.499988	1962.5	0.0061	1	Pass
	High Channel, 1993.75 MHz			1993.75	1993.75	0.0000	1	Pass
emperature: +20°	right endianel, recent e finiz			1000110	1000110	0.0000		1 400
	Low Channel, 1931.25 MHz			1931.249993	1931.25	0.0036	1	Pass
	Mid Channel, 1962.5 MHz			1962.499988	1962.5	0.0061	1	Pass
	High Channel, 1993.75 MHz			1993.75	1993.75	0.0000	1	Pass
emperature: +10°	riigh chainlei, 1995.75 Wil12			1333.75	1333.13	0.0000	1	1 455
	Low Channel, 1931.25 MHz			1931.249993	1931.25	0.0036	1	Pass
	Mid Channel, 1962.5 MHz			1951.249995	1962.5	0.0020	1	Pass
	High Channel, 1993.75 MHz			1982.500004 1993.749984	1962.5	0.0020	1	Pass
emperature: 0°	riigh chainlei, 1995.75 Wil12			1333.749904	1333.13	0.0000	1	1 455
	Low Channel, 1931.25 MHz			1931.249993	1931.25	0.0036	1	Pass
	Mid Channel, 1962.5 MHz			1951.249995	1962.5	0.0061	1	Pass
	High Channel, 1993.75 MHz			1962.499966 1993.749984	1962.5	0.0081	1	Pass
emperature: -10°				1993./49984	1993.70	0.0000	1	Pass
	Low Channel, 1931.25 MHz			1931.249993	1931.25	0.0036	1	Pass
	Mid Channel, 1931.25 MHz			1931.249993 1962.499988	1931.25	0.0036	1	Pass
				1962.499988 1993.75	1962.5	0.0001	1	Pass
	High Channel, 1993.75 MHz			1993.75	1993.75	0.0000	1	Pass
emperature: -20°	Low Channel 1021 25 MH-			1021 240002	1021.25	0.0026	1	Deee
	Low Channel, 1931.25 MHz			1931.249993	1931.25	0.0036	1	Pass
	Mid Channel, 1962.5 MHz			1962.499988	1962.5	0.0061	1	Pass
	High Channel, 1993.75 MHz			1993.75	1993.75	0.0000	1	Pass
emperature: -30°				1001	1001.05			_
	Low Channel, 1931.25 MHz			1931.249993	1931.25	0.0036	1	Pass
	Mid Channel, 1962.5 MHz			1962.499988	1962.5	0.0061	1	Pass
	High Channel, 1993.75 MHz			1993.749984	1993.75	0.0080	1	Pass

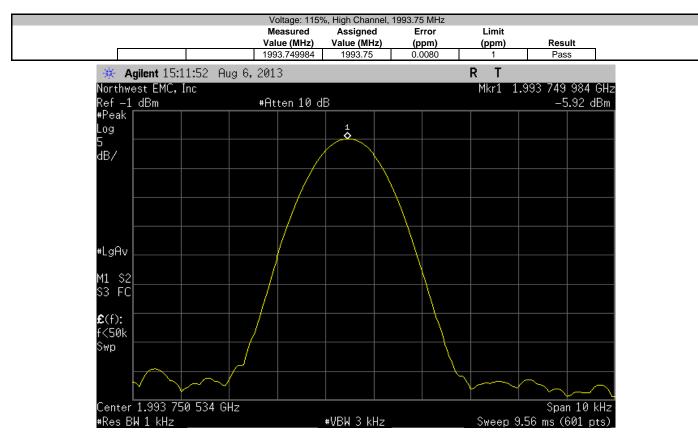


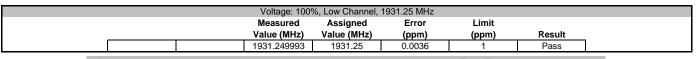


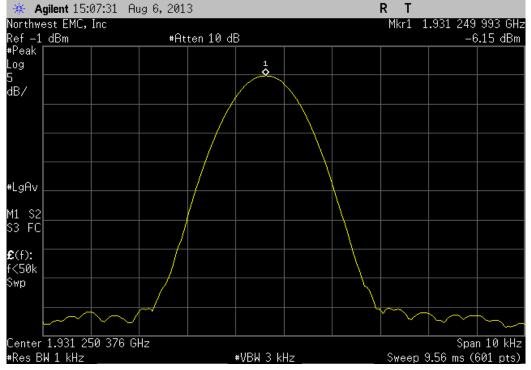
Voltage: 115	%, Mid Channel,	1962.5 MHz			
Measured	Assigned	Error	Limit		
 Value (MHz)	Value (MHz)	(ppm)	(ppm)	Result	
1962.499988	1962.5	0.0061	1	Pass	



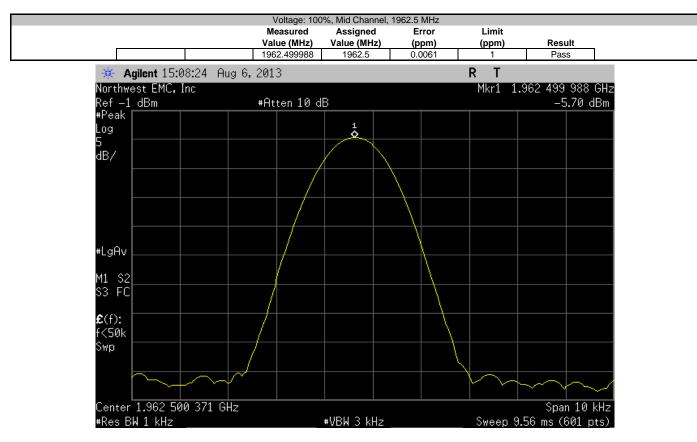


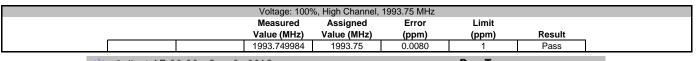


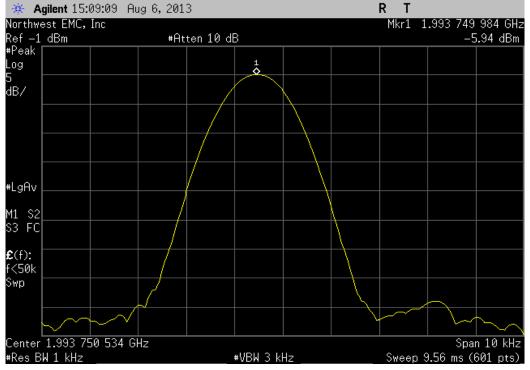




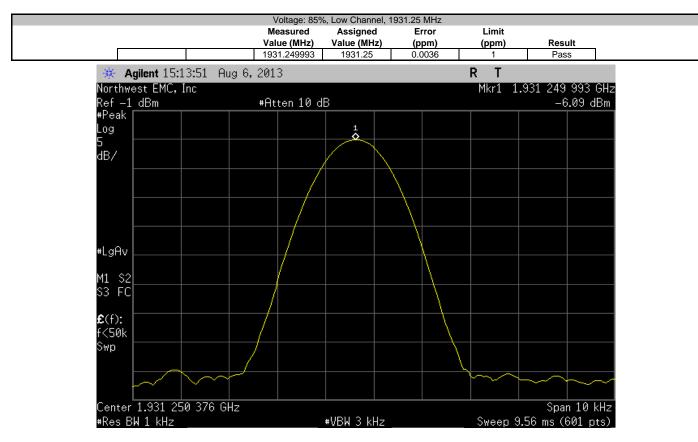


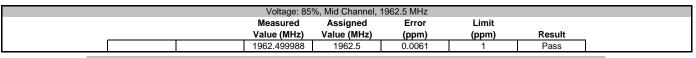


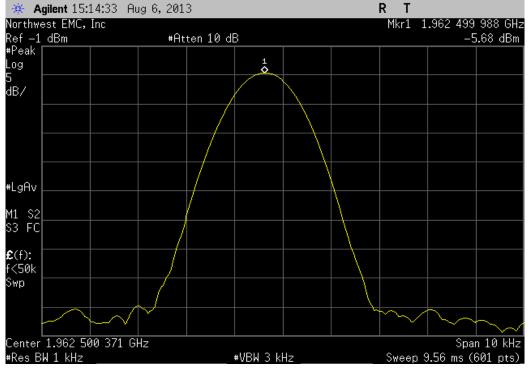




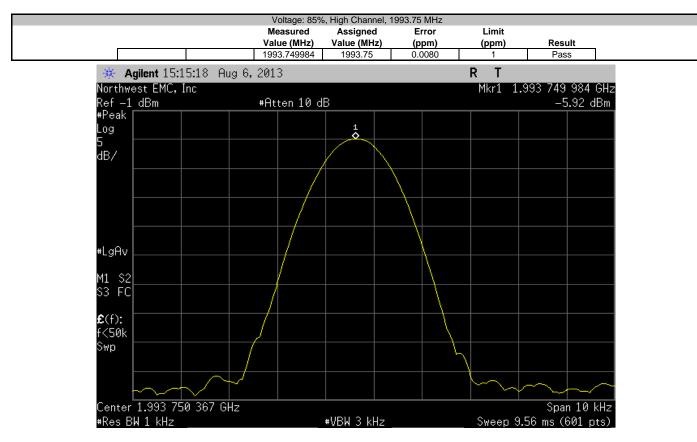




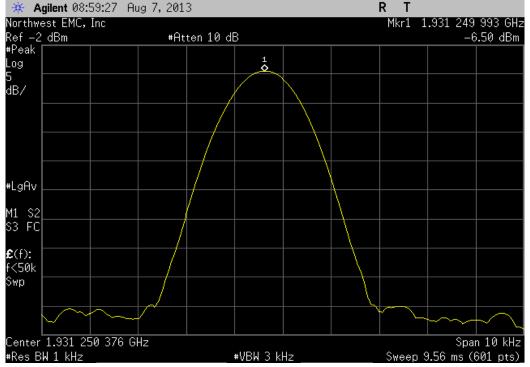




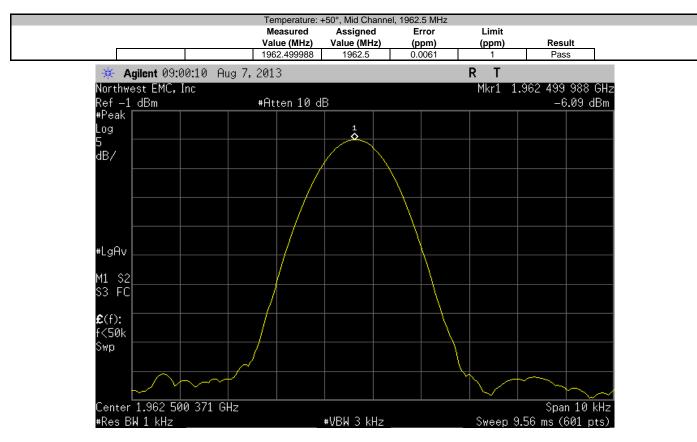


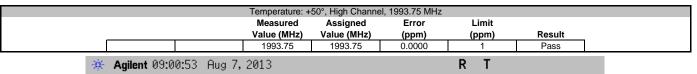


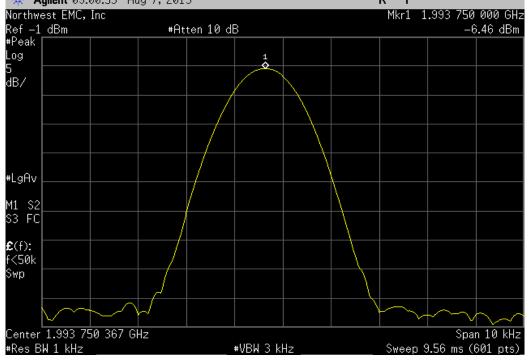
Temperature: +50°, Low Channel, 1931.25 MHz						
		Measured	Assigned	Error	Limit	
		Value (MHz)	Value (MHz)	(ppm)	(ppm)	Result
		1931.249993	1931.25	0.0036	1	Pass



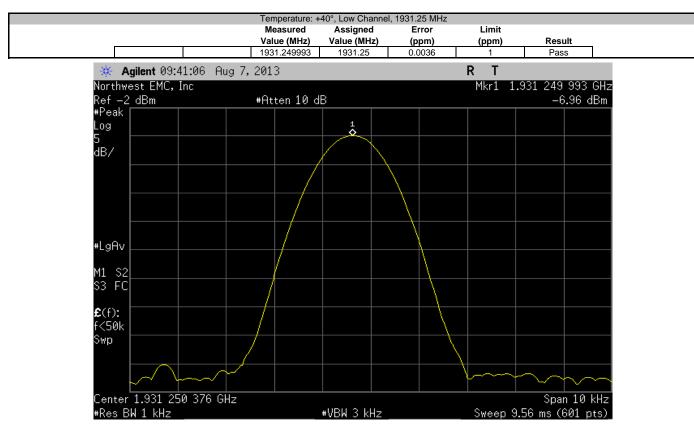


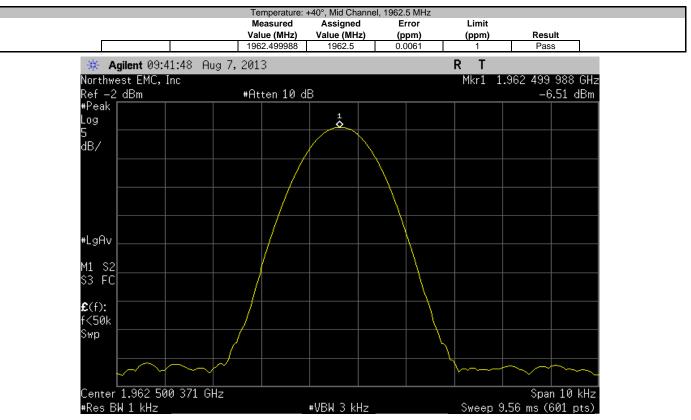




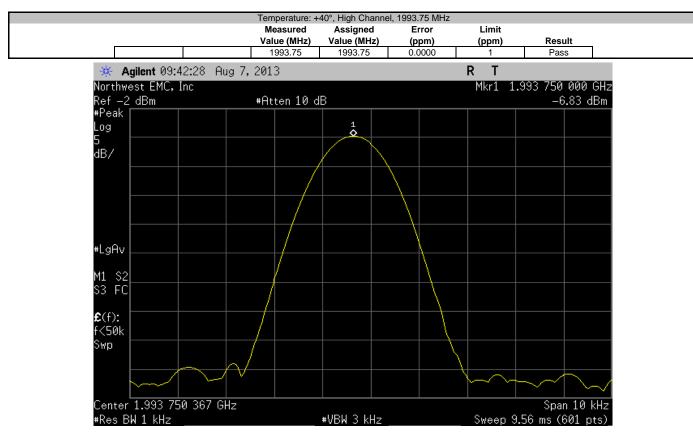


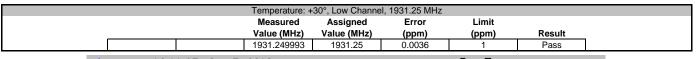


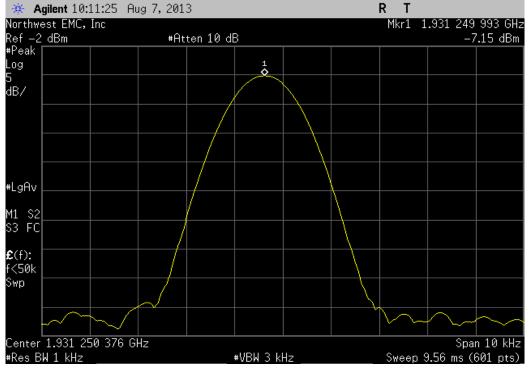




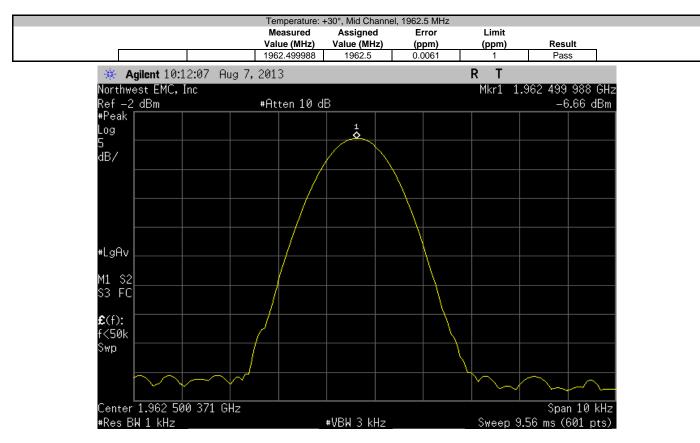


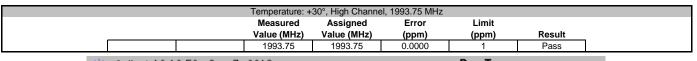


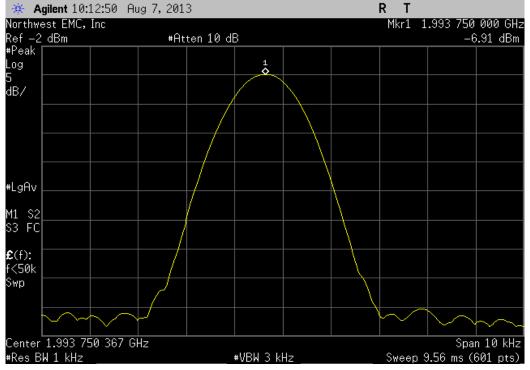




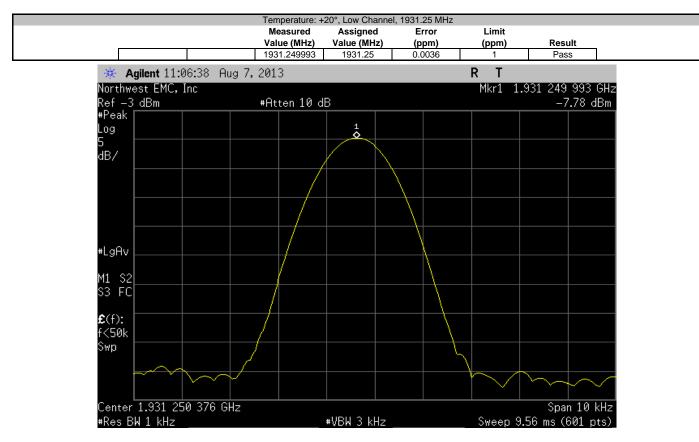


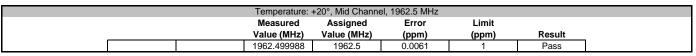


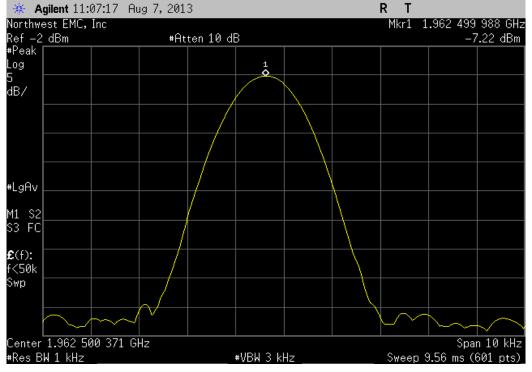




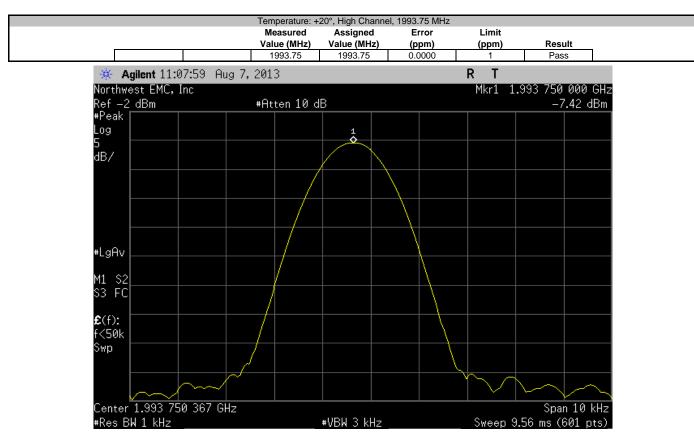


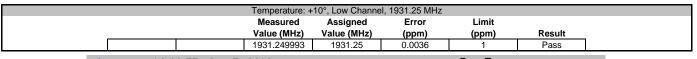


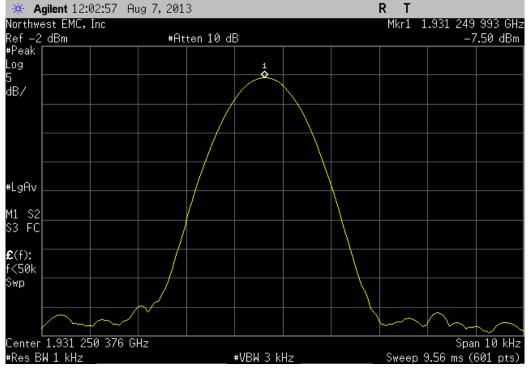




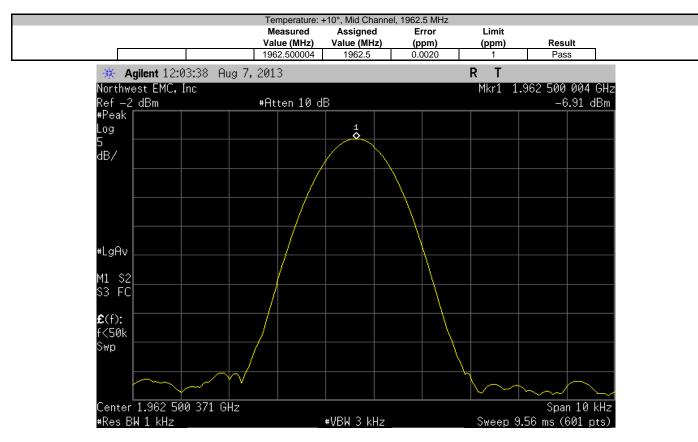


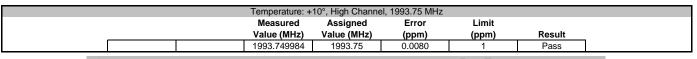


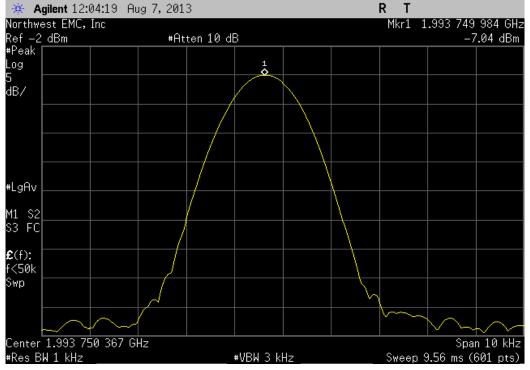




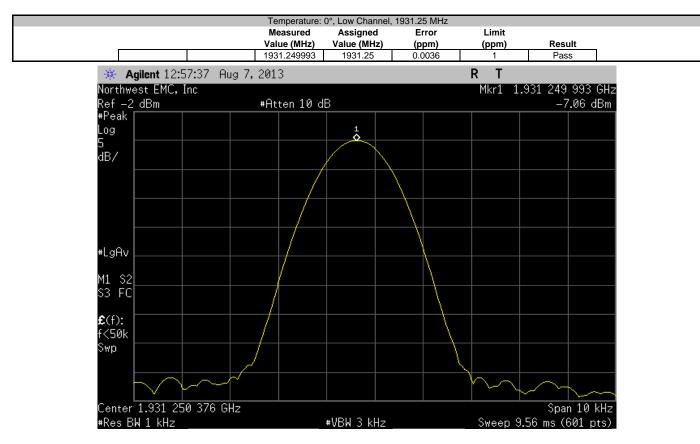


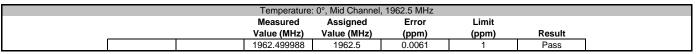


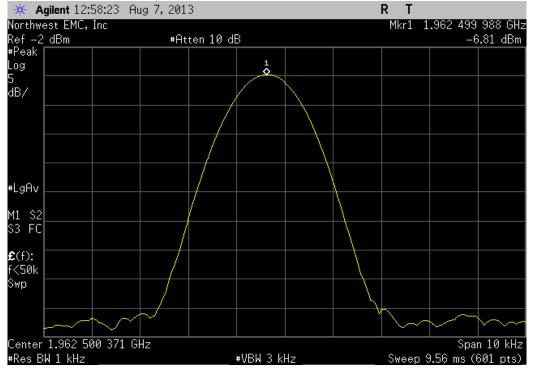




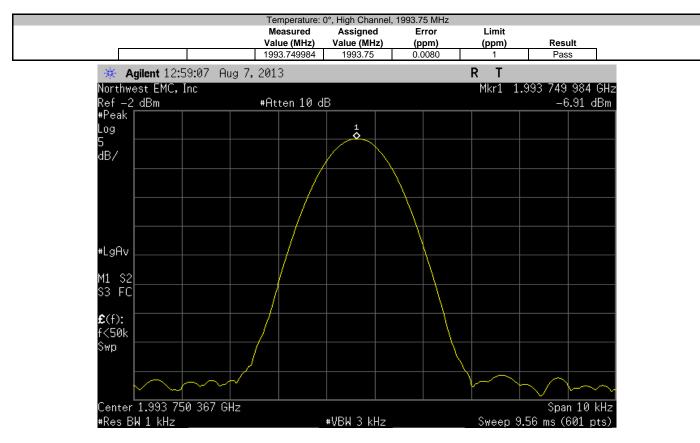


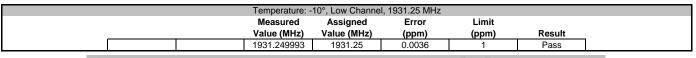


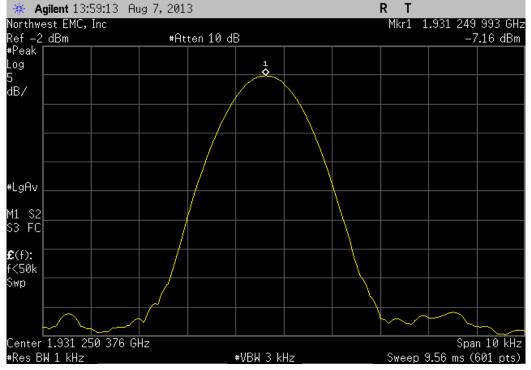




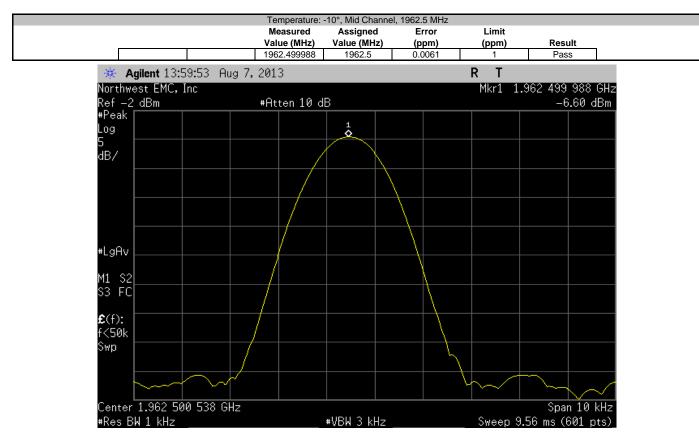


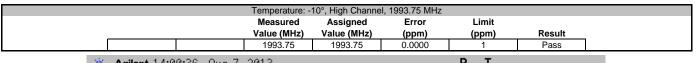


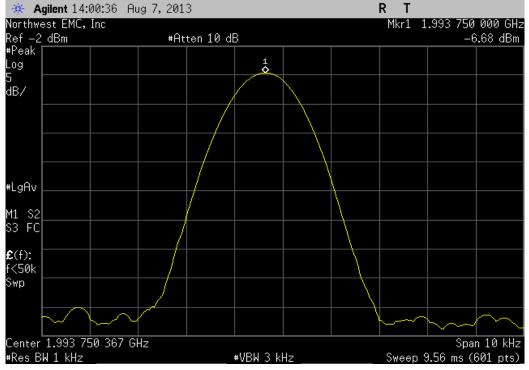




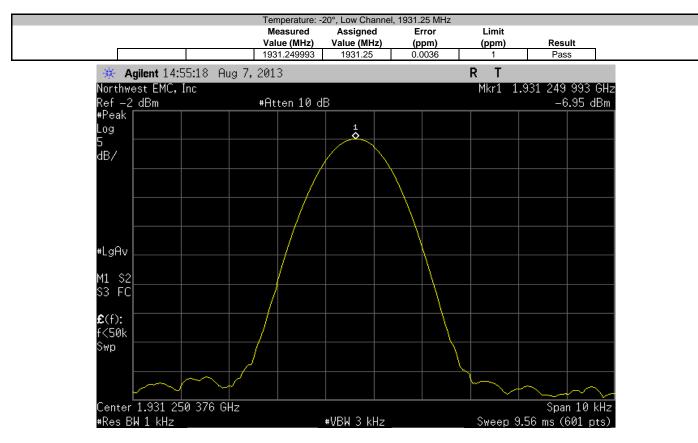


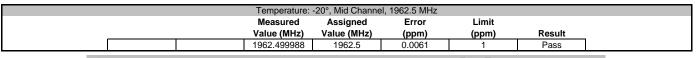


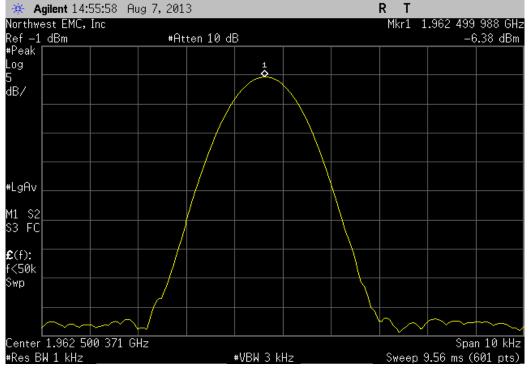




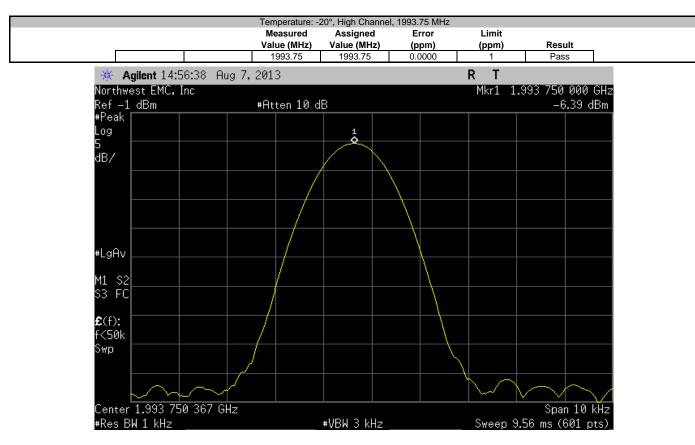


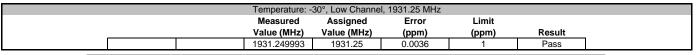


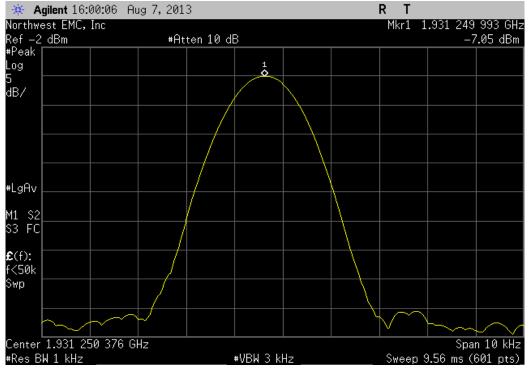




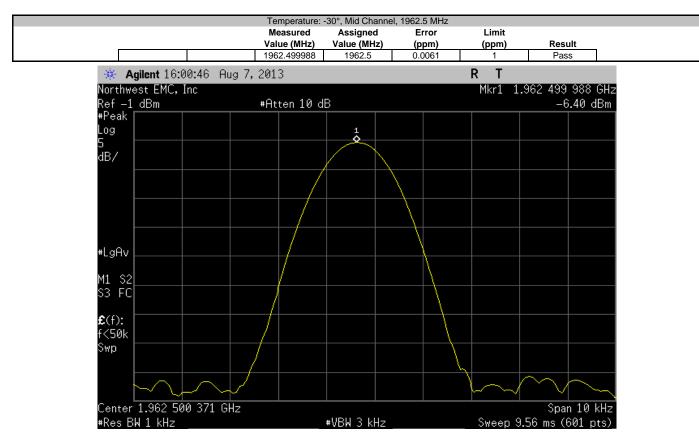




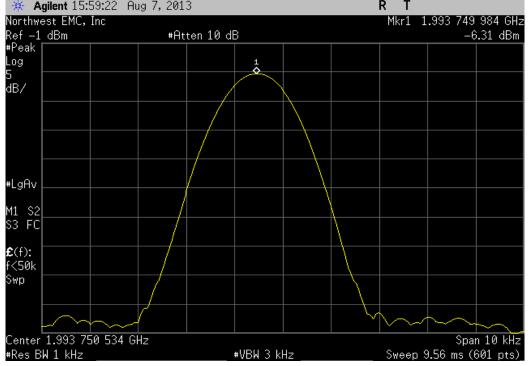








Temperature: -30°, High Channel, 1993.75 MHz								
			Measured	Assigned	Error	Limit		
_			Value (MHz)	Value (MHz)	(ppm)	(ppm)	Result	
			1993.749984	1993.75	0.0080	1	Pass	
Sic	Anilant 1E-E	0.22 0.44 7	2012			р т		



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	4/12/2013	12
40 GHz DC block	Fairview Microwave	SD3379	AMI	10/5/2012	12
Signal Generator MXG	Agilent	N5183A	TIK	6/7/2012	36
Spectrum Analyzer	Agilent	E4440A	AAX	5/15/2012	24

TEST DESCRIPTION

The 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.

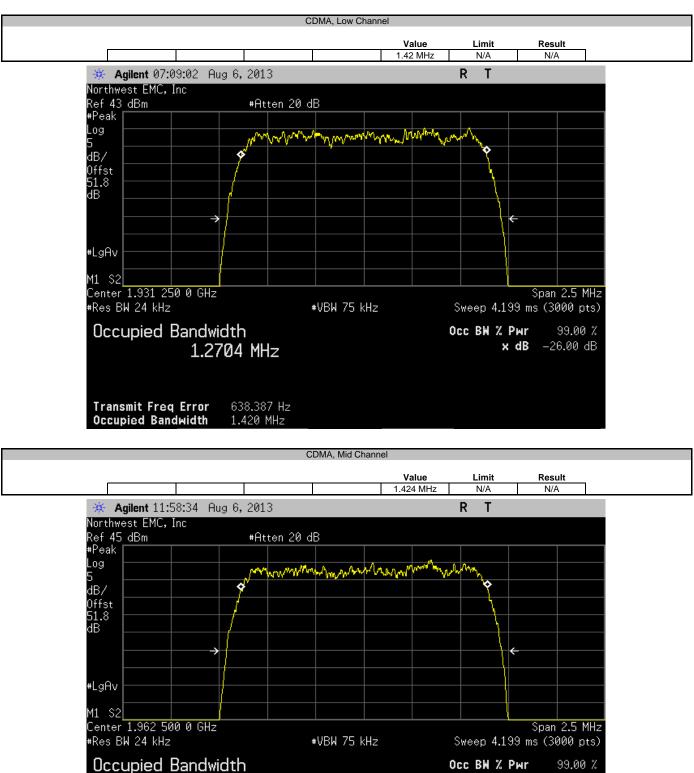


Ccupied Bandwidth (26 dB)

FUT	Prism HDM 40W PCS SIS	SO RF Module Model: FWP-881T000MOD	Work Order: T	C00005			
Serial Number:			Temperature: 25.3 °C Humidity: 44% Barometric Pres.: 1010				
	TE Connectivity / ADC Te	elecommunications					
Attendees		elecommunications					
Project:							
	Trevor Buls	Power: 110VAC/60Hz	Job Site: M				
TEST SPECIFICAT		Test Method	000 0110.11	100			
FCC 24E:2013		ANSI/TIA/EIA-603-C-2004					
100242.2010		7.1108 / 11/2 E/ 000 0 200 /					
COMMENTS							
Customer provided	d a high wattage 30 dB att	enuator.					
	M TEST STANDARD						
None							
Configuration #	1	Signature Torevor Buls					
			Value	Limit	Result		
CDMA							
	Low Channel		1.42 MHz	N/A	N/A		
	Mid Channel		1.424 MHz	N/A	N/A		
	High Channel		1.418 MHz	N/A	N/A		
WCDMA							
	Low Channel		4.682 MHz	N/A	N/A		
	Mid Channel		4.67 MHz	N/A	N/A		
	High Channel		4.688 MHz	N/A	N/A		
LTE 10 MHz			0.405.1411				
	Low Channel		9.465 MHz	N/A	N/A		
	Mid Channel		9.498 MHz	N/A	N/A		
	High Channel		9.44 MHz	N/A	N/A		
LTE 15 MHz	Less Obernel		4.4.000 MUL	N1/A	N1/A		
	Low Channel		14.029 MHz	N/A	N/A		
	Mid Channel		14.115 MHz	N/A	N/A		
1 TE 00 MIL	High Channel		14.06 MHz	N/A	N/A		
LTE 20 MHz	Leve Observed		40.004	N1/A	N1/A		
	Low Channel		18.664 MHz	N/A	N/A		
	Mid Channel		18.687 MHz	N/A	N/A		
	High Channel		18.709 MHz	N/A	N/A		



Occupied Bandwidth (26 dB)



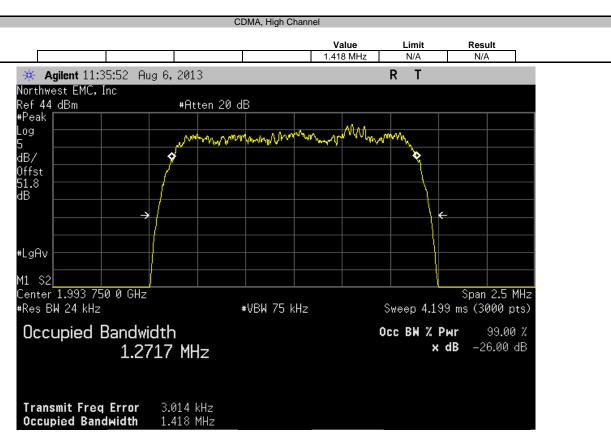
Occ BW % Pwr 99.00 % -26.00 dB x dB

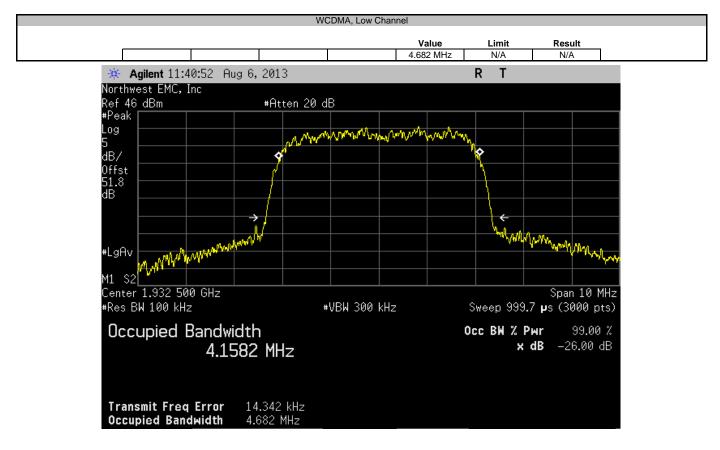
Transmit Freq Error 2.668 kHz 1.424 MHz **Occupied Bandwidth**

1.2761 MHz



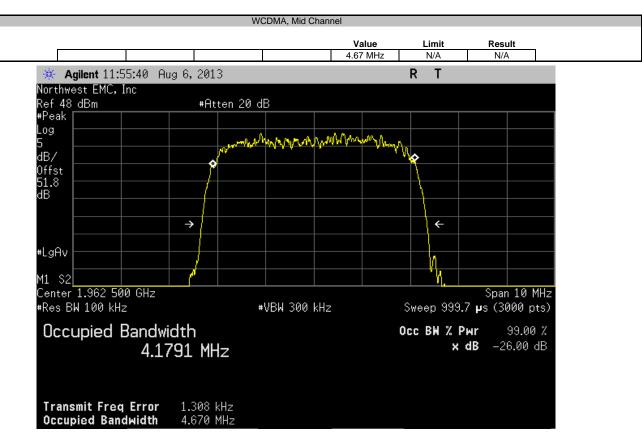
Occupied Bandwidth (26 dB)

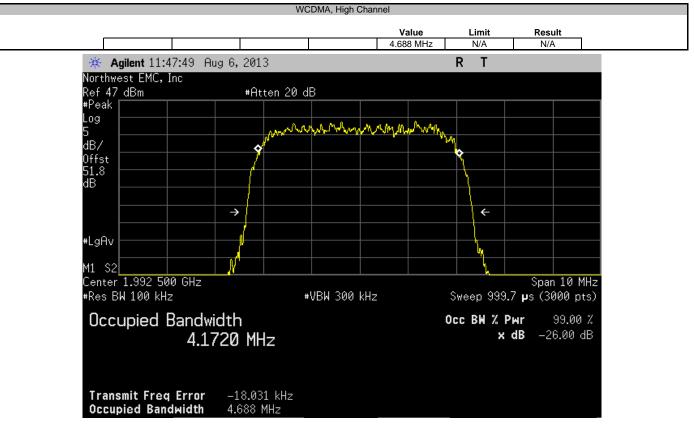




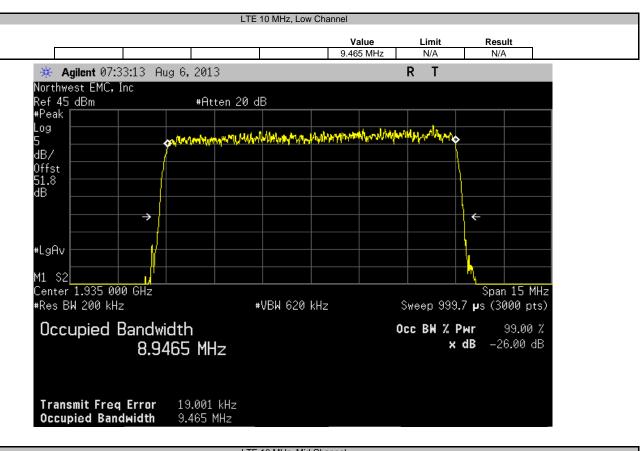


Occupied Bandwidth (26 dB)





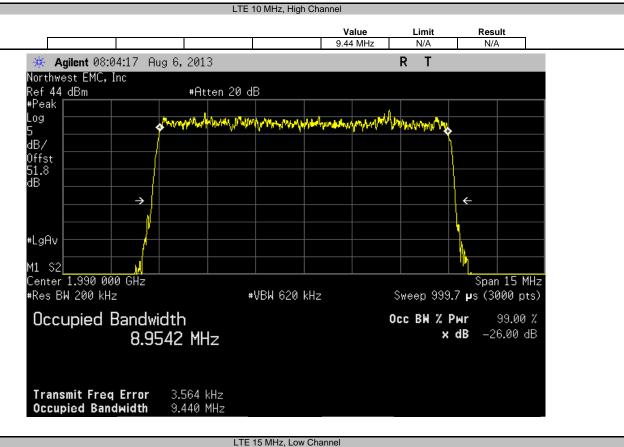


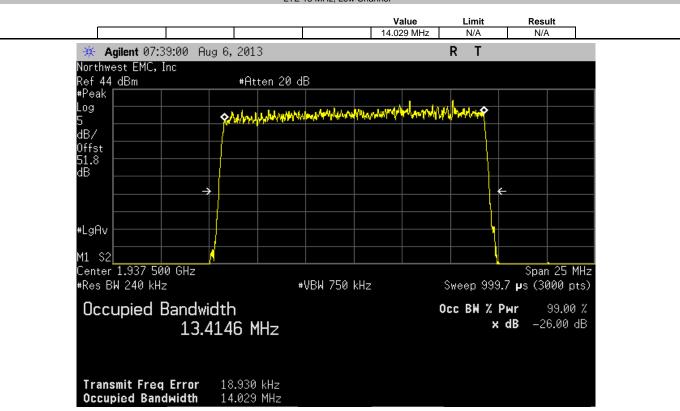


LTE 10 MHz, Mid Channel Value Limit Result 9.498 MHz N/A N/A Agilent 08:50:26 Aug 6, 2013 R Т ** Northwest EMC, Inc Ref 45 dBm #Atten 20 dB #Peak Log manshall francis man and a second and the former of the second the 5 dB/ Offst 51.8 dB ÷ ÷ #LgAv M1 S2 Center 1.962 500 GHz Span 15 MHz #Res BW 200 kHz Sweep 999.7 µs (3000 pts) #VBW 620 kHz Occupied Bandwidth Occ BW % Pwr 99.00 % -26.00 dB 8.9654 MHz x dB **Transmit Freq Error** 8.903 kHz **Occupied Bandwidth** 9.498 MHz

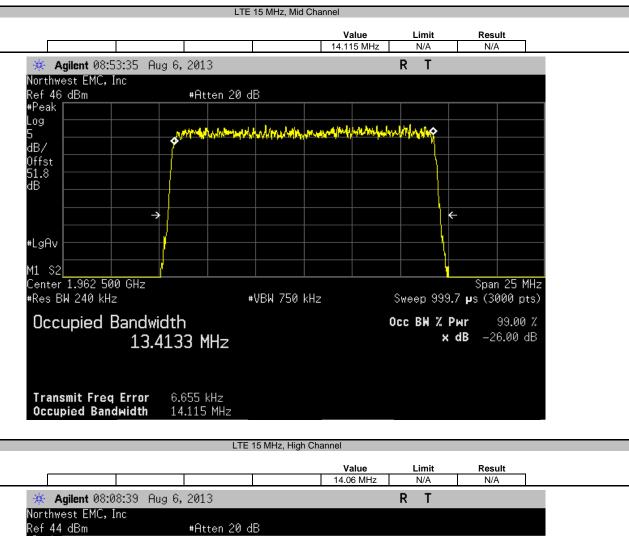


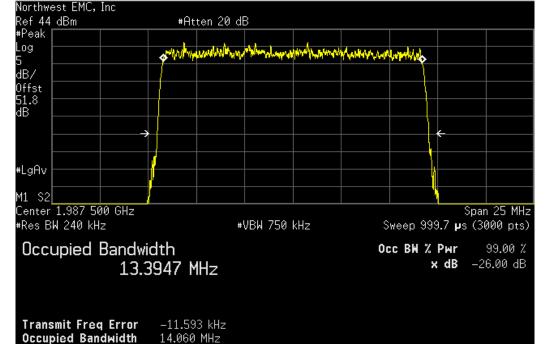
Occupied Bandwidth (26 dB)





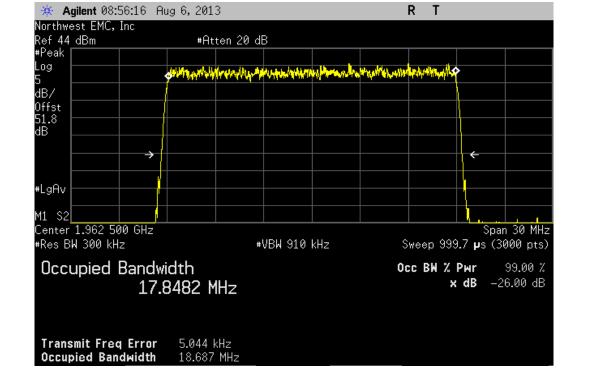




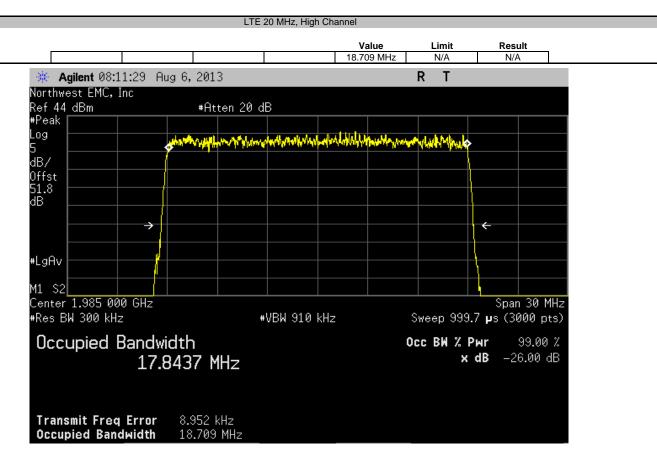




	LTE 20 MHz	z, Low Channel		
		Value	Limit	Result
		18.664 MHz	N/A	N/A
🔆 Agilent 07:41:53 A	ug 6, 2013		RT	
orthwest EMC, Inc				
Ref 44 dBm #Peak	#Atten 20 dB			
.og		t mark at the basels day		
	soluton introduction and water and and	Water Water - Manual And Advanta	an the new second	
lB/				
1.8				
IB				
\rightarrow				<
· · · · · · · · · · · · · · · · · · ·				
LgAv				
41 S2 <mark>/</mark> Center 1.940 000 GHz				Span 30 MHz
Res BW 300 kHz	, #VBW S	910 kHz	Sween 999.	7 µs (3000 pts)
Occupied Bandw			Occ BW % P	wr 99.00 % dB −26.00 dB
17.	8470 MHz		×	ub -20.00 dD
Transmit Freq Error	28.016 kHz			
Occupied Bandwidth	18.664 MHz			
	LIE 20 MHz	z, Mid Channel		
		Value	Limit	Result
		Value 18.687 MHz	N/A	Result N/A
	ug 6,2013			
orthwest EMC, Inc	-		N/A	
★ Agilent 08:56:16 A lorthwest EMC, Inc Ref 44 dBm	lug 6, 2013 #Atten 20 dB		N/A	









Field Strength of Spurious Emissions

Stop Frequency 20 GHz

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 WCDMA, Low, Mid, High Channel: 1932.5, 1962.5, 1992.5 MHz and CDMA, LTE 10 MHz, LTE 15 MHz, LTE 20 MHz (see comments for center frequency)

POWER SETTINGS INVESTIGATED

110VAC/60Hz

CONFIGURATIONS INVESTIGATED

TECO0005 - 2

FREQUENCY RANGE INVESTIGATED

Start Frequency 30 MHz

SAMPLE CALCULATIONS

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interva
Signal Generator MXG	Agilent	N5183A	TIK	6/7/2012	36 mc
Power Sensor	Agilent	N8481A	SQN	8/27/2012	24 mc
Power Meter	Agilent	N1913A	SQL	8/27/2012	24 mo
Antenna, Horn	ETS	3115	AJA	5/13/2011	36 ma
Pre-Amplifier	Miteq	JSD4-18002600-26-8P	APU	10/5/2012	12 m
		18-26GHz Standard Gain Horn			
MN05 Cables	N/A	Cable	MNP	10/5/2012	12 m
Antenna, Horn	ETS	3160-09	AHG	NCR	0 mo
Attenuator, 20 dB, 'SMA'	SM Electronics	SA6-20	REO	5/20/2013	12 m
Low Pass Filter	Micro-Tronics	LPM50004	HGK	5/31/2012	24 m
High Pass Filter	Micro-Tronics	HPM50111	HGQ	6/1/2012	24 m
Antenna, Horn	ETS Lindgren	3160-08	AIQ	NCR	0 mc
Antenna, Horn	ETS	3160-07	AXP	NCR	0 mc
MN05 Cables	ESM Cable Corp.	Standard Gain Horn Cables	MNJ	5/20/2013	12 m
Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	AVW	7/25/2013	12 m
Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AVV	5/20/2013	12 m
Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	AVX	5/20/2013	12 m
MN05 Cables	ESM Cable Corp.	Double Ridge Guide Horn Cables	MNI	5/20/2013	12 m
Antenna, Horn (DRG)	ETS Lindgren	3115	AIP	6/29/2011	36 m
Pre-Amplifier	Miteq	AM-1616-1000	PAD	5/20/2013	12 m
MN05 Cables	ESM Cable Corp.	Bilog Cables	MNH	5/20/2013	12 m
Antenna, Bilog	Teseq	CBL 6141B	AYD	12/17/2012	12 m
Spectrum Analyzer	Agilent	N9010A	AFI	1/27/2013	24 m

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

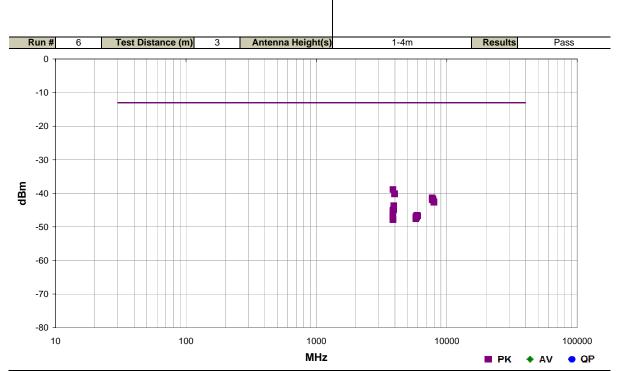


Field Strength of Spurious Emissions

	HTHINK				
Work Order:	TECO0005	Date:	08/08/13	-	
Project:	None	Temperature:	23.2 °C	-1	revor Buls
Job Site:	MN05	Humidity:	52.4% RH	2)	avo come
Serial Number:	None	Barometric Pres.:	1016 mbar		Tested by: Trevor Buls
EUT:	Prism HDM 40W PCS	SISO RF Module Mod	el: FWP-881T000MO	D	
Configuration:	2				
Customer:	TE Connectivity / ADC	Telecommunications			
Attendees:	None				
EUT Power:	110VAC/60Hz				
Operating Mode:		, Low, Mid, High Chann ts for center frequency)		992.5 MHz a	and CDMA, LTE 10 MHz, LTE 15 MHz, LTE
Deviations:	None				
Comments:	Antenna port terminate	ed. Tested in one positi	on only because EU1	is fixed floo	r standing equipment.
Test Specifications			Test Meth	nod	

FCC 24E:2013

ANSI/TIA/EIA-603-C:2004



Freq (MHz)	Antenna Height (meters)	Azimuth (degrees)	Polarity/ Transducer Type	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
3866.800	1.2	338.0	Horz	PK	1.29E-07	-38.9	-13.0	-25.9	WCDMA, Low Ch: 1932.5 MHz
3982.992	1.0	3.0	Horz	PK	9.75E-08	-40.1	-13.0	-27.1	WCDMA, High Ch: 1992.5 MHz
3982.975	1.3	295.0	Vert	PK	9.52E-08	-40.2	-13.0	-27.2	WCDMA, High Ch: 1992.5 MHz
7729.375	1.0	145.0	Vert	PK	7.29E-08	-41.4	-13.0	-28.4	WCDMA, Low Ch: 1932.5 MHz
7851.267	1.0	33.0	Vert	PK	6.67E-08	-41.8	-13.0	-28.8	WCDMA, Mid Ch: 1962.5 MHz
7728.592	1.5	289.0	Horz	PK	6.50E-08	-41.9	-13.0	-28.9	WCDMA, Low Ch: 1932.5 MHz
7852.017	1.0	295.0	Horz	PK	6.36E-08	-42.0	-13.0	-29.0	WCDMA, Mid Ch: 1962.5 MHz
7972.250	1.0	174.0	Horz	PK	5.65E-08	-42.5	-13.0	-29.5	WCDMA, High Ch: 1992.5 MHz
7968.858	1.0	45.0	Vert	PK	5.40E-08	-42.7	-13.0	-29.7	WCDMA, High Ch: 1992.5 MHz
3926.800	1.0	261.0	Vert	PK	4.28E-08	-43.7	-13.0	-30.7	WCDMA, Mid Ch: 1962.5 MHz
3924.625	1.0	81.0	Horz	PK	3.24E-08	-44.9	-13.0	-31.9	WCDMA, Mid Ch: 1962.5 MHz
3867.392	1.2	39.0	Vert	PK	3.18E-08	-45.0	-13.0	-32.0	WCDMA, Low Ch: 1932.5 MHz
3869.450	1.2	328.0	Horz	PK	2.71E-08	-45.7	-13.0	-32.7	LTE 10 MHz, Low Ch: 1935 MHz
5889.708	1.0	126.0	Horz	PK	2.21E-08	-46.5	-13.0	-33.5	WCDMA, Mid Ch: 1962.5 MHz
3862.892	1.0	311.0	Horz	PK	2.14E-08	-46.7	-13.0	-33.7	CDMA, Low Ch: 1931.25 MHz
5979.642	1.0	82.0	Vert	PK	2.13E-08	-46.7	-13.0	-33.7	WCDMA, High Ch: 1992.5 MHz
5977.617	2.4	251.0	Horz	PK	2.13E-08	-46.7	-13.0	-33.7	WCDMA, High Ch: 1992.5 MHz
5797.742	1.0	55.0	Vert	PK	2.00E-08	-47.0	-13.0	-34.0	WCDMA, Low Ch: 1932.5 MHz
5890.425	1.4	344.0	Vert	PK	1.93E-08	-47.1	-13.0	-34.1	WCDMA, Mid Ch: 1962.5 MHz
5798.942	1.0	175.0	Horz	PK	1.74E-08	-47.6	-13.0	-34.6	WCDMA, Low Ch: 1932.5 MHz
3875.050	1.3	70.0	Horz	PK	1.64E-08	-47.8	-13.0	-34.8	LTE 20 MHz, Low Ch: 1940 MHz
3872.000	1.3	330.0	Horz	PK	1.64E-08	-47.9	-13.0	-34.9	LTE 15 MHz, Low Ch: 1937.5 MHz

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	4/12/2013	12
40 GHz DC block	Fairview Microwave	SD3379	AMI	10/5/2012	12
Signal Generator MXG	Agilent	N5183A	TIK	6/7/2012	36
Spectrum Analyzer	Agilent	E4440A	AAX	5/15/2012	24

TEST DESCRIPTION

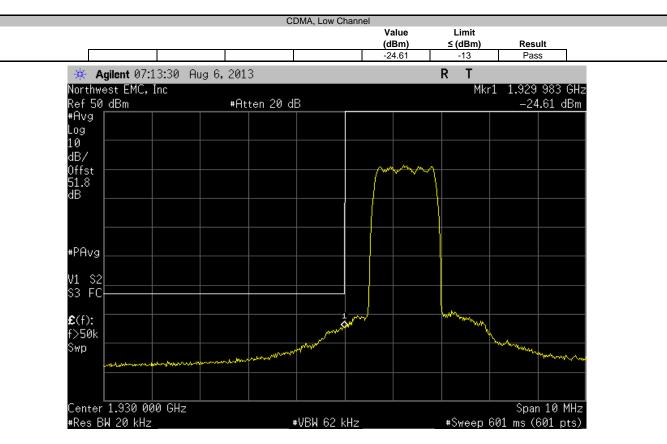
The spurious RF conducted emissions at the edges of the authorized bands were measured with the EUT set to low and high transmit frequencies in the available band. The channels closest to the band edges were selected. The measurement was made using a direct connection between the RF output of the EUT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

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



EU	T- Driver HDM 40W DCC CI	SO RF Module Model: FWP-881T000MC	D		West Order	: TECO0005	
Serial Numbe		SO RF Module Model. FWF-8811000MC	D			: 08/06/13	
	er: TE Connectivity / ADC T	Closermunications			Temperature		
Attendee		elecommunications			Humidity		
	ct: None				Barometric Pres.		
	v: Trevor Buls		Power: 110VAC/	04-	Job Site		
TEST SPECIFICA			Test Met		30D 3110		
FCC 24E:2013				EIA-603-C-2004			
FGC 24E:2013			ANSI/ HA	EIA-003-0-2004			
COMMENTS							
	ad a high wattage 20 dB at	4					
Customer provid	led a high wattage 30 dB at	tenuator.					
DEVIATIONS ED	OM TEST STANDARD						
None	OW TEST STANDARD						
None							
Configuration #	1		evor Bul	D			
configuration #		Signature	evor via	de la			
		Gighadare			Value	Limit	
					(dBm)	≤ (dBm)	Result
CDMA					(42)	= (42)	nooun
001111	Low Channel				-24.61	-13	Pass
	High Channel				-18.05	-13	Pass
WCDMA	right effaither				10.00	10	1 400
	Low Channel				-13.35	-13	Pass
	High Channel				-16.44	-13	Pass
LTE 10 MHz							
	Low Channel				-15.61	-13	Pass
	High Channel				-14.85	-13	Pass
LTE 15 MHz	-						
	Low Channel				-16.54	-13	Pass
	High Channel				-19.68	-13	Pass
LTE 20 MHz							
	Low Channel				-16.98	-13	Pass
	High Channel				-16.68	-13	Pass



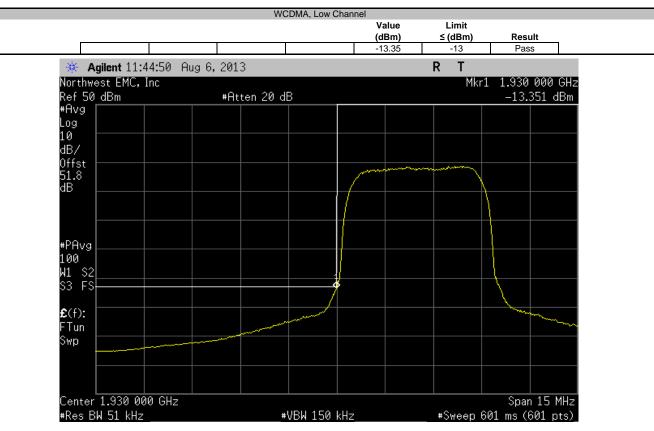


_			C	DMA, High		Value (dBm)	Limit ≤ (dBm)	Res	sult
						-18.05	-13	Pa	ISS
		9:03 Aug 6,	2013				RT		
	west EMC,I 0 dBm	Inc	#Atten 20 c	ID			М	kr1 1.99	5 000 GH: 8.05 dBm
#Avg			#Hiten 20 C					-1	o.es ubiii
Log 10 dB/				~					
ab/ Offst				\downarrow					
Offst 51.8 dB									
dB				+					
#PAvş	,			+					
M1 S	2								

M1 S2											
S3 FC			l l								
			لسرا			1	w.				
£ (f):			and the second sec				Mr.				
f>50k								~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			
Swp											
Center	1.995 00	00 GHz								Spar	10 MHz
#Res B	W 150 kH	z		#	VBW 430	Øk	:Hz		#Sweep	601 ms (6	601 pts)



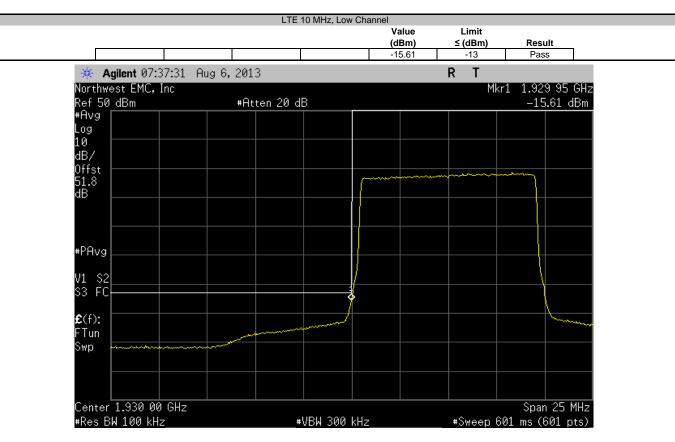
Band Edge Compliance



				WCDMA, Higl	n Channel			
					Value (dBm)	Limit ≤ (dBm)	Result	
					-16.44	-13	Pass	
*	Agilent 11:5	3:12 Aug 6,	, 2013			RT		
Nort	hwest EMC. I	nc				Mkr1	1 995 025	GHZ

Agrient 11:55:12 Hi	ug 6, 201	2				K I		
Northwest EMC, Inc						Mkı	1 1.995	025 GHz
Ref 50 dBm	#At	ten 20 di	3				-16.4	440 dBm
#Avg								
Log								
10								
dB/								
Offst		anna an						
51.8 dB/								
-00								
#PAvg								
100 W1 S2								
W1 S2								
			4	R				
£(f): FTun				the second				
Swp					- Annone			
						· · · · · · · · · · · · · · · · · · ·		
Center 1.995 000 GHz							Spar	15 MHz
#Res BW 51 kHz		#	VBW 150	kHz		#Sweep	601 ms (0	

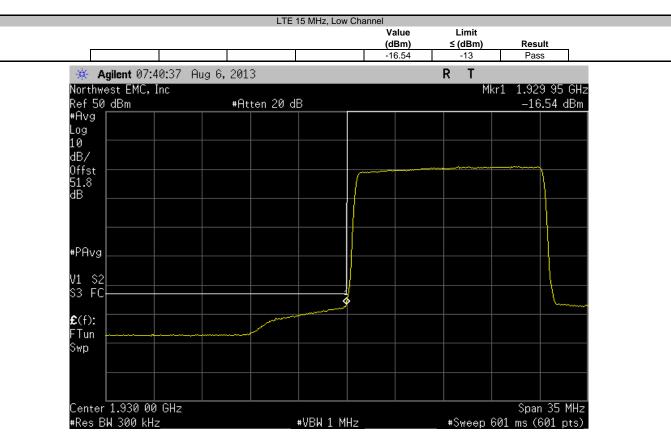




		LTE 10 MHz, High	n Channel			
			Value	Limit		
	T		(dBm)	≤ (dBm)	Result	
			-14.85	-13	Pass	
🔆 Agilent 08:	07:18 Aug 6, 2013	3		RT		
Northwest EMC,	Inc			Mkr	1 1.995 04 G	iHz
Ref 50 dBm	#Att	en 20 dB			-14.85 dB	ßm
#Avg						
Log						
Log 10						
dB/						
Offst						
51.8		human				
0ffst 51.8 dB						

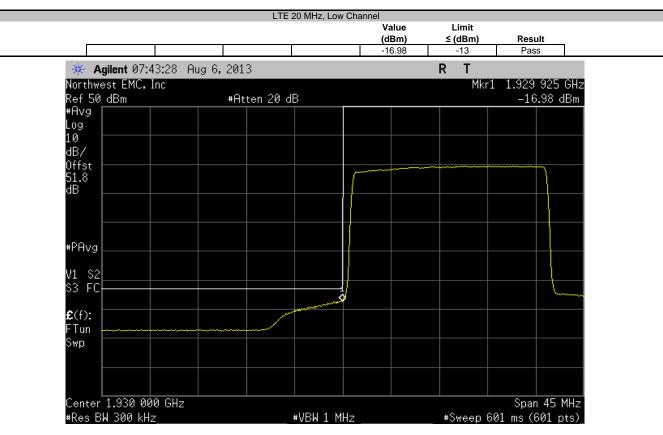
#PAvg			
M1 S2			
S3 FC		\$	
£(f):			
FTun FTun		harrow and the second	
Swp 📃 👘			••••••••••••••••••••••••••••••••••••••
			Serve 25 Mile
Center 1.995 00 GHz			Span 25 MHz
#Res BW 100 kHz	#VBW 300	kHz	#Sweep 601 ms (601 pts)_





	LTE 1	5 MHz, High C						
				lue	Limit		Desult	
				3m) 9.68	<u>≤ (dBm)</u> -13		Result Pass	
NK	0010		1 10				1 400	
Agilent 08:10:30 Aug 6,	2013					11	1 005 /	94. OU-
orthwest EMC, Inc ef 50 dBm	#Atten 20 dE	3			P	IKLT	1.995 (-19.6	
Avg		·						
og 📔 🚽								
0						+		
B/								
ffst 1.8 B								
B								
						<u> </u>		
PAvg								
1 S2 3 FC		\ _						
:(f):		<u> </u>	~~~					
Tun			and the second	-				
wp				and the second second	·····			
enter 1.995 00 GHz							Span 3	
Res BW 150 kHz	#\	/BW 430 k⊦	lz		_ #Sweep	601	ms (60	l pts)_





		1	Value (dBm) -16.68	Limit ≤ (dBm) -13	Result Pass	
			-10.08		Pass	_
🔆 Agilent 08:13:01	Aug 6, 2013			RT		
Northwest EMC, Inc				Mkr	1 1.995 09 GHz	
Ref 50 <u>dBm</u>	#Atten 20 d	dB			-16.68 dBm	
ŧAvg						
.og LØ						
18/						
)ffst						
Offst						
я́В		┼─── ┤┤──				
		<mark>-</mark>				
PAvg		<u> </u>				
и со 🗍						
/1 S2 S3 FC						
		A				
E(f):						
Tun						
бжр 👘 👘						
Center 1.995 00 GHz					Span 50 MHz	

EMC

Peak to Average Ratio

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

TEST EQUIPMENT

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

TEST DESCRIPTION

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.

The largest difference between the following two screen captures was calculated:

>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.



EMC Peak to Average Ratio

		SO RF Module Model: FWP-881T000M		Work Order:	TECO0005		
Serial Number	None				Date:	08/06/13	
Customer	TE Connectivity / ADC T	elecommunications		Temperature:			
Attendees				Humidity:			
Project				Barometric Pres.:			
	: Trevor Buls		Power: 110VAC/60Hz		Job Site:	MN08	
EST SPECIFICAT	IONS		Test Method				
CC 24E:2013			C-2004				
OMMENTS							
stomer provide	d a high wattage 30 dB att	enuator.					
EVIATIONS FRO	M TEST STANDARD						
one							
			00				
onfiguration #	1	T	and Buls				
onfiguration #	1	Signature True	wor Buls				
onfiguration #	1	Signature True	Average Value	Peak Value	Delta		
	1	Signature Jrue		Peak Value (dBm)	Deita (dB)	Limit	Result
onfiguration # DMA		Signature Jrue	Average Value (dBm)	(dBm)	(dB)		
	Average (RMS)	Signature Jree	Average Value (dBm) 46.61	(dBm) N/A	(dB) N/A	N/A	N/A
DMA		Signature True	Average Value (dBm)	(dBm)	(dB)		
DMA	Average (RMS) Peak	Signature Jrue	Average Value (dBm) 46.61 N/A	(dBm) N/A 52.54	(dB) N/A 5.9	N/A 13	N/A Pass
DMA	Average (RMS) Peak Average (RMS)	Signature Tree	Average Value (dBm) 46.61 N/A 47.077	(dBm) N/A 52.54 N/A	(dB) N/A 5.9 N/A	N/A 13 N/A	N/A Pass N/A
DMA CDMA	Average (RMS) Peak	Signature Tree	Average Value (dBm) 46.61 N/A	(dBm) N/A 52.54	(dB) N/A 5.9	N/A 13	N/A Pass
	Average (RMS) Peak Average (RMS) Peak	Signature True	Average Value (dBm) 46.61 N/A 47.077 N/A	(dBm) N/A 52.54 N/A 55.06	(dB) N/A 5.9 N/A 8.0	N/A 13 N/A 13	N/A Pass N/A Pass
DMA CDMA	Average (RMS) Peak Average (RMS) Peak Average (RMS)	Signature Tree	Average Value (dBm) 46.61 N/A 47.077 N/A 46.132	(dBm) N/A 52.54 N/A 55.06 N/A	(dB) N/A 5.9 N/A 8.0 N/A	N/A 13 N/A 13 N/A	N/A Pass N/A Pass N/A
DMA CDMA TE 10 MHz	Average (RMS) Peak Average (RMS) Peak	Signature Jree	Average Value (dBm) 46.61 N/A 47.077 N/A	(dBm) N/A 52.54 N/A 55.06	(dB) N/A 5.9 N/A 8.0	N/A 13 N/A 13	N/A Pass N/A Pass
DMA CDMA TE 10 MHz	Average (RMS) Peak Average (RMS) Peak Average (RMS) Peak	Signature Tree	Average Value (dBm) 46.61 N/A 47.077 N/A 46.132 N/A	(dBm) N/A 52.54 N/A 55.06 N/A 50.13	(dB) N/A 5.9 N/A 8.0 N/A 4.0	N/A 13 N/A 13 N/A 13	N/A Pass N/A Pass N/A Pass
DMA CDMA TE 10 MHz	Average (RMS) Peak Average (RMS) Peak Average (RMS) Peak Average (RMS)	Signature Tree	Average Value (dBm) 46.61 N/A 47.077 N/A 46.132 N/A 46.338	(dBm) N/A 52.54 N/A 55.06 N/A 50.13 N/A	(dB) N/A 5.9 N/A 8.0 N/A 4.0 N/A	N/A 13 N/A 13 N/A 13 N/A	N/A Pass N/A Pass N/A N/A
DMA CDMA TE 10 MHz TE 15 MHz	Average (RMS) Peak Average (RMS) Peak Average (RMS) Peak	Signature Jree	Average Value (dBm) 46.61 N/A 47.077 N/A 46.132 N/A	(dBm) N/A 52.54 N/A 55.06 N/A 50.13	(dB) N/A 5.9 N/A 8.0 N/A 4.0	N/A 13 N/A 13 N/A 13	N/A Pass N/A Pass N/A Pass
DMA CDMA TE 10 MHz	Average (RMS) Peak Average (RMS) Peak Average (RMS) Peak Average (RMS)	Signature Tree	Average Value (dBm) 46.61 N/A 47.077 N/A 46.132 N/A 46.338	(dBm) N/A 52.54 N/A 55.06 N/A 50.13 N/A	(dB) N/A 5.9 N/A 8.0 N/A 4.0 N/A	N/A 13 N/A 13 N/A 13 N/A	N/A Pass N/A Pass N/A N/A



				MA, Average					
			Peak Value			Delta			
		(dBm)	(dBm)		(dB)	Limit	Result	
		46.61	N/A			N/A	N/A	N/A	7
*	oniinut 11.⊑	i9:48 Aug 6, 20	31.2				RТ		
			915					1 1 000 500	eu
	hwest EMC, I			_			Mkr		
Ket #Out	52 dBm	#	Atten 20 d	В				46.610	dBm
#Av									
Log 5					1				
dB/									
044-									
51.9									
0ffs 51.8 dB	´ _								
#PA									
	°9								
50 M1 S3	(2)								
63	F C								
00	' ¥ _								
£ (f)).								
FTu	n l								
Swp									
0110									
_									
	ter 1.962 50							Span 2.5	
#Re:	s BW 2.4 MHz			#VBW 8 MH	z		#Sweep 6	601 ms (601 j	ots)_

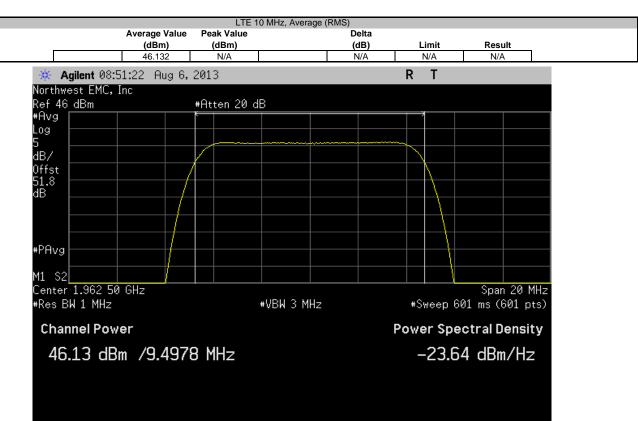
	Average Value Pea	CDMA, P	eak Delta		
	(dBm) (dBm) 52.54	(dB) 5.9	Limit 13	Result Pass
🔆 Agilent 13:1	15:17 Aug 6, 2013	3		RT	
Northwest EMC, Ref 60 dBm #Peak		en 20 dB		Mkr1	1.962 567 GHz 52.54 dBm
Log 5					
dB/ Offst 51.8 dB	Mary Sand Mary and Ma	and a second and the s		when when whether have	And the second second
#LgAv					
M1 S2 S3 FC					
£(f): FTun					
Swp					
Center 1.962 50	00 GHz				Span 2.5 MHz
#Res BW 2.4 MHz	2	#VBW 8 N	1Hz	Sweep	1 ms (601 pts)_

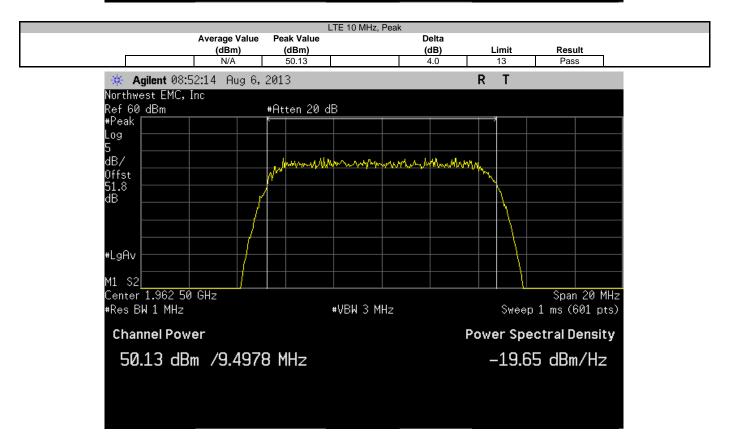


		WCI	DMA, Average (RMS)			
	Average Value	Peak Value	.,	Delta			
	(dBm)	(dBm)		(dB)	Limit	Result	
	47.077	N/A		N/A	N/A	N/A	
	6:40 Aug 6,20	013			RT		
Northwest EMC, 1	Inc				Mkr1	1.962 000	GHz
Ref 52 dBm	#f	Atten 20 d	В			47.077 d	Bm
#Avg							
Log							
5		_					
dB/							
Offst 51.8 dB							
51.8							
ap							
		_	+				
#PAvg							
50 M1 S2 S3 FS							
33 F3							
£(f):							
FTun							
Swp							
0"p							
							411
Center 1.962 50	0 GHz					Span 10 M	
#Res BW 8 MHz		+	⊭VBW 50 MH	Z	#Sweep 60	01 ms(601 p	ts)_

			WCDMA, Peak		_		
	Average Value	Peak Value		Delta			
	(dBm) N/A	(dBm) 55.06		(dB) 8.0	Limit 13	Result Pass	1
🔆 Agilent 11:5	57:18 Aug 6, 3	2013			RT		
Northwest EMC, 1		2013				1 1.961 633	GHz
Ref 60 dBm		#Atten 20 c	IB			55.06	
#Peak							
		u. u. <i>e.a A M-1997</i>					
dB/	Warner				and the second	man when the second	whyte a
0ffst 51.8 dB							
#LgAv							
V1 \$2 \$3 FC							
€(f): FTun							
Swp							
Center 1.962 50 #Res BW 8 MHz	0 GHz		⊭VBW 50 MHz	2	Swee	Span 10 p 1 ms (601 p	

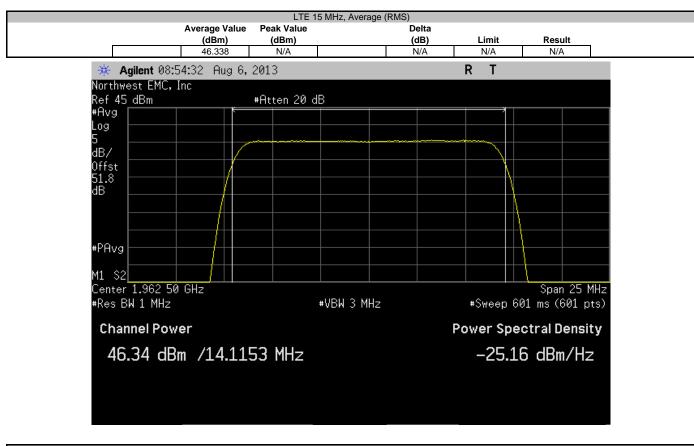


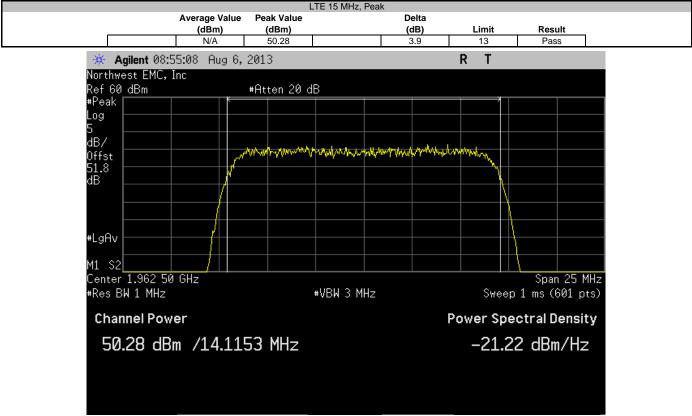






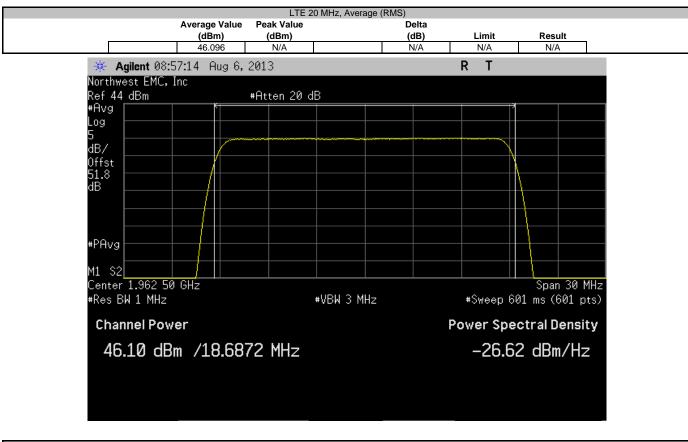
Peak to Average Ratio







Peak to Average Ratio





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
					Interval
Power Divider/Combiner	Fairview Microwave	MP0208-2	IAF	NCR	0
Power Divider/Combiner	Fairview Microwave	MP0208-2	IAE	NCR	0
Signal Generator	Agilent	E4422B	TGQ	3/5/2012	36
40 GHz DC block	Fairview Microwave	SD3379	AMI	10/5/2012	12
Attenuator - 20db, 'SMA'	SM Electronics	SA26B-20	RFW	4/12/2013	12
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
Signal Generator MXG	Agilent	N5183A	TIK	6/7/2012	36
Spectrum Analyzer	Agilent	E4440A	AAX	5/15/2012	24

MEASUREMENT UNCERTAINTY

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 for radiated emissions measurements is less than +/- 4 dB, and for conducted emissions measurements is less than +/- 2.7 dB. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for measurement uncertainty are available upon request.

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 bottom of the band.

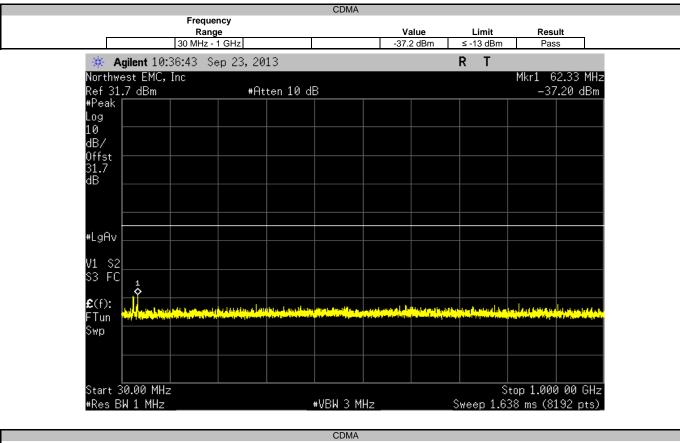
The antenna port spurious emissions were measured at the RF output terminal of the EUT with external attenuation on the RF input of the spectrum analyzer. Analyzer plots utilizing a 1MHz resolution bandwidth and no video filtering were made for each modulation type from 30 MHz to 20 GHz. The peak conducted 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.

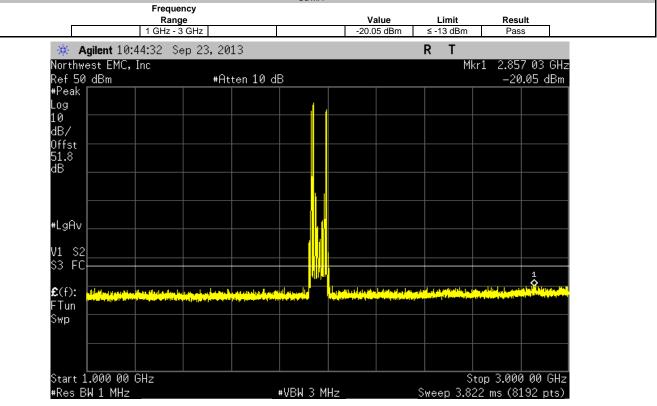


	Humidity	Temperature: 23.0°C				
	Barometric Pres.:					
evor Buls Power: 110VAC/60Hz S Test Method						
			1			
ANSI/TIA/EIA-603-C-2004						
- 00						
Jan or Bull						
			Result			
			Pass			
			Pass			
			Pass Pass			
			Pass			
			Pass			
			Pass			
			Pass			
			Pass			
			Pass			
			Pass			
		≤ -13 dBm ≤ -13 dBm	Pass			
3 GHz - 20 GHz	-34.01 dBm					
3 GHz - 20 GHz 30 MHz - 1 GHz 1 GHz - 3 GHz	-34.01 dBm -38.49 dBm -20.75 dBm	≤ -13 dBm ≤ -13 dBm ≤ -13 dBm	Pass			
	Power: 110VAC/60Hz Test Method ANSI/TIA/EIA-603-C-2004 ANSI/TIA/EIA-603-C-2004 ANSI/TIA/EIA-603-C-2004 Trequency Range 30 MHz - 1 GHz GHz 1 GHz - 3 GHz 3 GHz - 20 GHz 30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 20 GHz 3 GHz - 20 GHz 30 GHz - 1 GHz 3 GHz - 3 GHz 3 GHz - 3 GHz 3 GHz - 3 GHz 3 GHz - 1 GHz 3 GHz - 3 GHz 3 GHz - 1 GHz 3 GHz - 3 GHz 3 GHz - 1 GHz 3 GHz - 3 GHz 3 GHz - 3 GHz 3 GHz - 3 GHz 3 GHz - 3 GHz 3 GHz - 3 GHz 3 GHz - 3 GHz 3 GHz - 3 GHz	Test Method ANSI/TIA/EIA-603-C-2004 ANSI/TIA/EIA-603-C-2004 Terequency Range Value 30 MHz - 1 GHz -37.2 dBm 1 GHz - 3 GHz -20.05 dBm 3 GHz - 20 GHz -34.04 dBm 30 MHz - 1 GHz -38.21 dBm 1 GHz - 3 GHz -93.85 dBm 3 GHz - 20 GHz -34.04 dBm 3 GHz - 20 GHz -93.85 dBm 3 GHz - 20 GHz -93.85 dBm 3 GHz - 20 GHz -19.47 dBm 3 GHz - 20 GHz -93.85 dBm 3 GHz - 20 GHz -33.28 dBm 3 O MHz - 1 GHz -33.26 dBm 3 O MHz - 1 GHz -37.67 dBm	Test Method ANSUTIA/EIA-603-C-2004 ANSUTIA/EIA-603-C-2004			



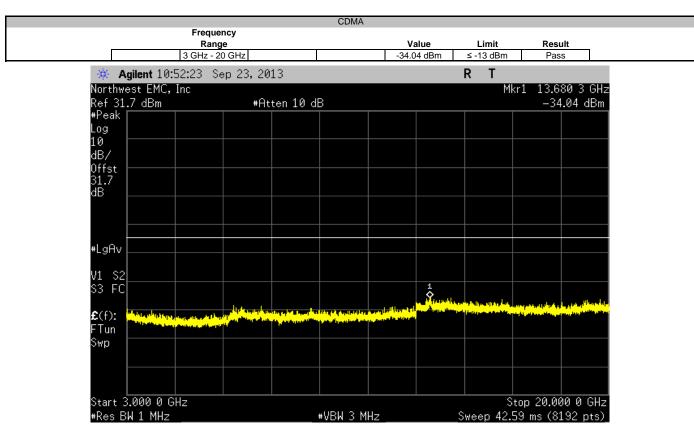








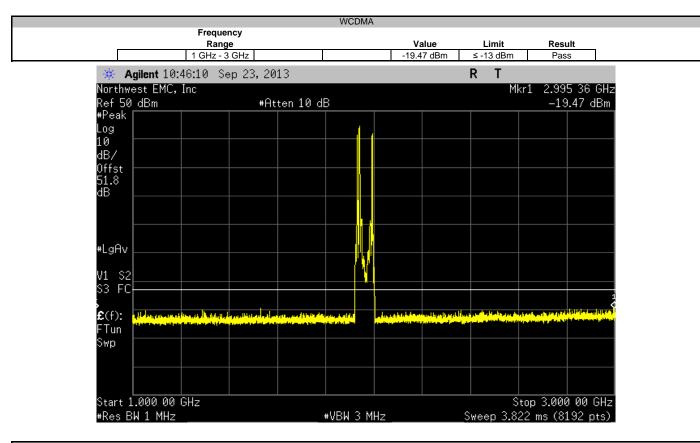




		WCDMA			
	quency				
	t <mark>ange</mark> Hz - 1 GHz			Limit Results 13 dBm Pas	
		-3			5
🔆 Agilent 10:38:58	Sep 23, 2013		R	Т	
Northwest EMC, Inc					2.33 MHz
Ref 31.7 dBm	#Atten 10 d	B		-38	.21 dBm
#Peak					
Log 10					
dB/					
Offst					
31.7					
dB					
#LgAv					
V1 52					
S3 FC 1					
£(f):					
	ومعاداته وبالمتعادية التابعة أرجه فاساتك	واوابياء وأوارط أتوجه وتوتد أتنبط وهجوا	فجار والعاد والعار وخافظ وغرابه		
Swp					
Start 30.00 MHz				Stop 1.000	1 00 GHz
#Res BW 1 MHz		∗VBW 3 MHz	Swe	ep 1.638 ms (81	
			0110	op 1.000 m3 (01	



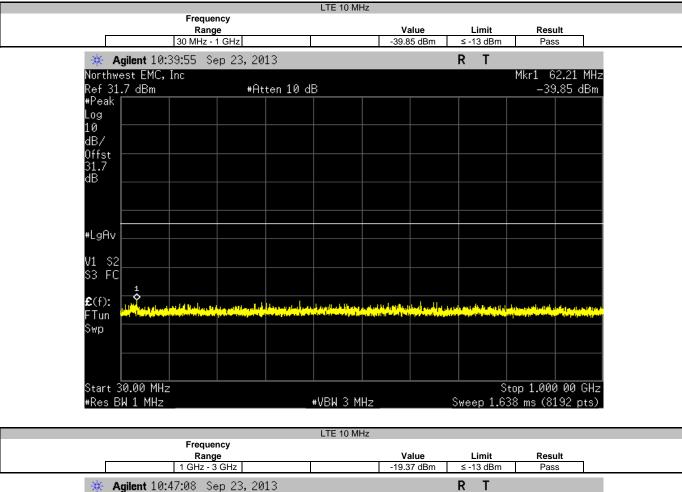


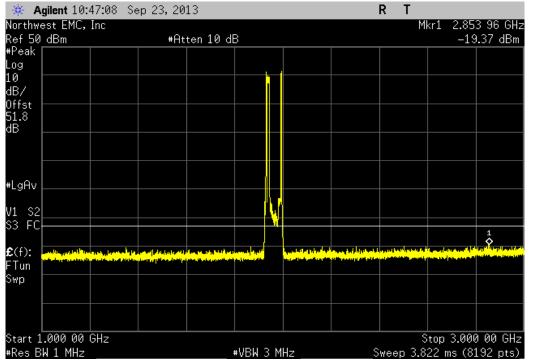


					WCDMA							
		Frequer							_			
		Range					alue 9 dBm	Limit ≤ -13 dBm	Res Pas			
3 GHz - 20 GHz						-34.4			Fda	55		
	gilent 10:5		ep 23, 20	13					Т			
Northwest EMC, Inc									13.676 1 GHz			
Ref 31.7 dBm			#At	ten 10 d	3			-34.49 dBm				
#Peak												
Log 10												
dB/												
ab/ Affst												
Offst 31.7 dB												
dB												
#LgAv												
V1 S2 S3 FC							1					
33 FC							\$	lander film stiller	. 1			
£ (f):	and an and a strength	dan ba										
FTun	No. of Concession, Name		Contraction of the second	ەنى ^{لىر} ىسەنىغى يىلەر مەنى	New York of the second seco	- ball Committee						
Swp												
0.110												
Start 3	.000 0 G	— Hz						S	ton 20.00	00 0 GHz		
	W 1 MHz				₩VBW 3 M	Hz	S			192 pts)_		
NOO DI							Ň		56 mo (0.	200 pto/_		



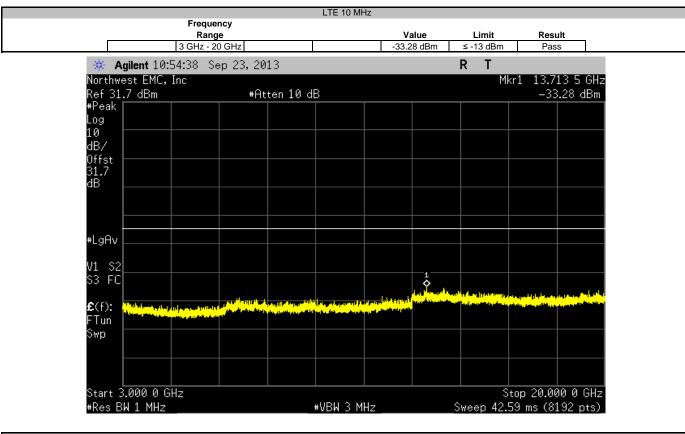








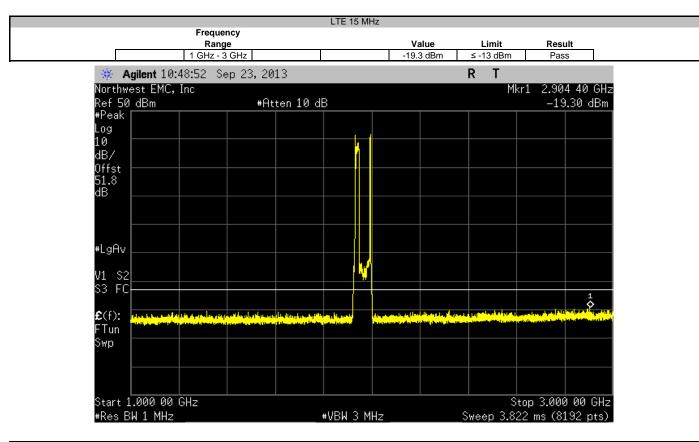


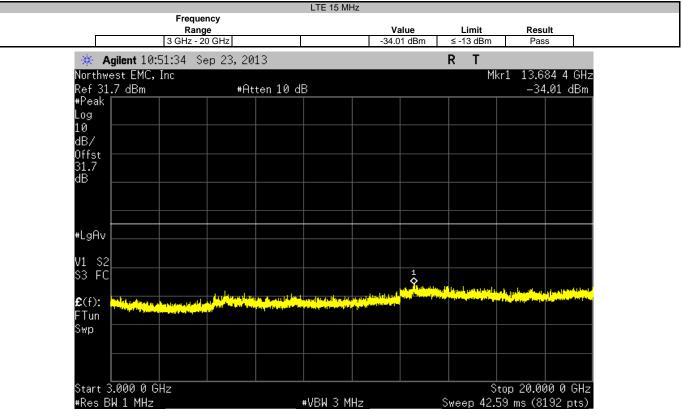


					LTE 15 MF	lz						
		Frequen										
	Range 30 MHz - 1 GHz					Value Limit -37.67 dBm ≤ -13 dBi				ult		
		30 MHz - 1	GHz			-37.6	-	≤ -13 dBm	Pas	S		
	Agilent 10:40:47 Sep 23, 2013 Northwest EMC, Inc							RT				
									2.57 MHz			
	31.7 dBm		#Att	ten 10 di	3					'.67 dBm		
#Pe												
Log												
10 dB/	,											
Ott adv	c+											
0ff 31. dB	7											
dB												
#Lg	Av											
V1	S2 FC											
\$3	FC 1											
0/1												
£(f F⊺u		. Al the try divide	dia dia dia d	legitalis kik		al kalentek			that has been defined	le dhè da shi dat		
Swp					<u>المحمد المحمد</u>		and the second state of th		- Fill devices			
0110	, 											
S+-												
	rt 30.00 MHz		#VBW 3 MHzSwee						Stop 1.000 00 GHz ep 1.638 ms (8192 pts)_			
#Ке	s BW 1 MHz		#VDW 3 MHZ					weep 1.0	isz pts)_			



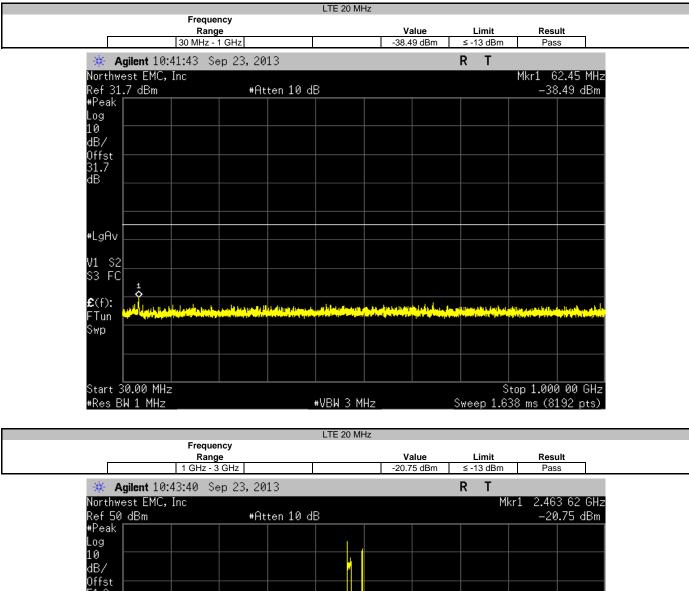


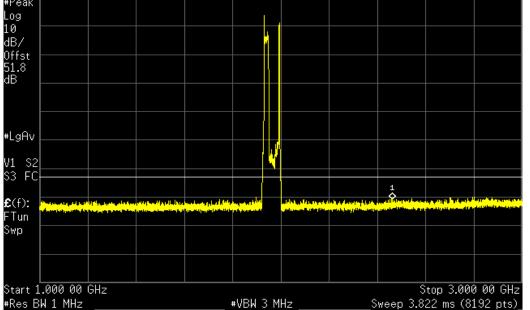
















						LTE 20 MH	Ηz							
			Frequer								_			
			8 GHz - 20					Value 3.14 dBm		.imit 3 dBm	Resi Pas			
							-30	3.14 dBm			Pas	s		
	**	•				R	Т							
Northwest EMC, Inc							Mkr1 13.694 8 GHz							
Ref 31.7 dBm #Atten 10 dB —3								-33	.14 dBm					
	#Pea	ak 🛛												
	Log													
	10													
	dB/													
	0ffs 31.7	it												
	dB													
	a.													
	#Lgf	а., Г												
	~E.91													
	٧1	S2												
	\$3	FC									la da selatan			
								and the design	head	المتا الله فتحرمه	ير الملود حرف ب	La Junititation a		
	£ (f)): (http://www.uk	مراجبا ليوصليك					1 ¹¹ Anna Dariba Barrai Anla	Card and a second second		handhard bear	the state of the last of		
	FTu	n	and the second second				[
	Swp													
	Star	t 3.000 0 G	Hz							St	on 20.00	00 0 GHz		
		s BW 1 MHz				#VBW 3 MHz				_Sweep 42.59 ms (8192 pts)_				
	-110													