

Commscope Prism 2.5 GHz TDD (2496.5-2571.5 MHz) HDM FCC 27:2015 Cellular Radio

Report # TECO0031



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. This Report may only be duplicated in its entirety





Last Date of Test: September 3, 2015 Commscope Model: Prism 2.5 GHz TDD (2496.5-2571.5 MHz) HDM

Radio Equipment Testing

Standards

Specification	Method
FCC 27:2015	ANSI/TIA/EIA-603-C-2004

Results

Method Clause	Test Description	Applied	Results	Comments
2.2.1	Equivalent Isotropic Radiated Power (EIRP)	Yes	Pass	
2.2.1	Peak To Average Ratio	No	N/A	Not required for this specific rule part.
2.2.12	Spurious Radiated Emissions	Yes	Pass	
2.2.13	Spurious Conducted Emissions	Yes	Pass	
2.2.13	Band Edge Compliance	Yes	Pass	
2.2.13	Intermodulation	Yes	Pass	
2.2.2	Frequency Stability	Yes	Pass	
2.2.3	Emissions Bandwidth	Yes	N/A	Measured for characterization purposes.

Deviations From Test Standards

None

Approved By:

moth

Tim O'Shea, Operations Manager

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. 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. This report reflects only those tests from the referenced standards shown in the certificate of test. It does not include inspection or verification of labels, identification, marking or user information.

REVISION HISTORY



Revision Number	Description	Date	Page Number
00	None		

ACCREDITATIONS AND AUTHORIZATIONS



United States

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

A2LA - Accredited by A2LA to ISO / IEC 17065 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

MSIP / 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.

Israel

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

Hong Kong

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

Vietnam

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

SCOPE

For details on the Scopes of our Accreditations, please visit: <u>http://www.nwemc.com/accreditations/</u> http://gsi.nist.gov/global/docs/cabs/designations.html

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 16-4-2 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.

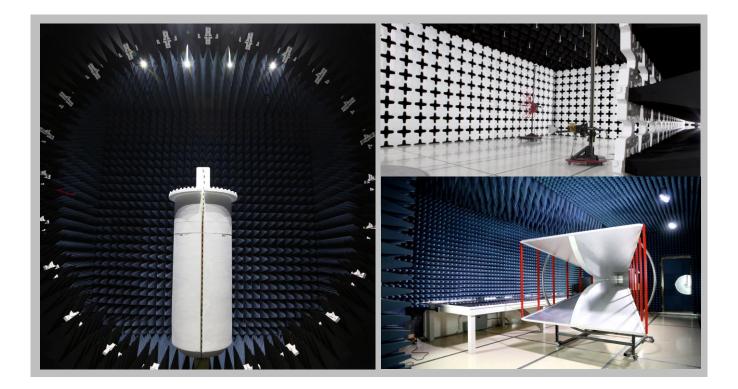
Test	+ MU	- <u>MU</u>
Frequency Accuracy (Hz)	0.0007%	-0.0007%
Amplitude Accuracy (dB)	1.2 dB	-1.2 dB
Conducted Power (dB)	0.3 dB	-0.3 dB
Radiated Power via Substitution (dB)	0.7 dB	-0.7 dB
Temperature (degrees C)	0.7°C	-0.7°C
Humidity (% RH)	2.5% RH	-2.5% RH
Voltage (AC)	1.0%	-1.0%
Voltage (DC)	0.7%	-0.7%
Field Strength (dB)	5.2 dB	-5.2 dB
AC Powerline Conducted Emissions (dB)	2.4 dB	-2.4 dB

FACILITIES





California Labs OC01-13 41 Tesla Irvine, CA 92618 (949) 861-8918	Minnesota Labs MN01-08, MN10 9349 W Broadway Ave. Brooklyn Park, MN 55445 (612)-638-5136	New York Labs NY01-04 4939 Jordan Rd. Elbridge, NY 13060 (315) 554-8214	Oregon Labs EV01-12 22975 NW Evergreen Pkwy Hillsboro, OR 97124 (503) 844-4066	Texas Labs TX01-09 3801 E Plano Pkwy Plano, TX 75074 (469) 304-5255	Washington Labs NC01-05 19201 120 th Ave NE Bothell, WA 9801 (425)984-6600		
	NVLAP						
NVLAP Lab Code: 200676-0	NVLAP Lab Code: 200881-0	NVLAP Lab Code: 200761-0	NVLAP Lab Code: 200630-0	NVLAP Lab Code:201049-0	NVLAP Lab Code: 200629-0		
	Industry Canada						
2834B-1, 2834B-3	2834E-1	N/A	2834D-1, 2834D-2	2834G-1	2834F-1		
		BS	MI				
SL2-IN-E-1154R	SL2-IN-E-1152R	N/A	SL2-IN-E-1017	SL2-IN-E-1158R	SL2-IN-E-1153R		
VCCI							
A-0029	A-0109	N/A	A-0108	A-0201	A-0110		
	Recognized Phase I CAB for ACMA, BSMI, IDA, KCC/RRA, MIC, MOC, NCC, OFCA						
US0158	US0175	N/A	US0017	US0191	US0157		



PRODUCT DESCRIPTION



Client and Equipment Under Test (EUT) Information

Company Name:	Commscope
Address:	1187 Park Place
City, State, Zip:	Shakopee, MN 55379
Test Requested By:	Joshua Wittman
Model:	Prism 2.5 GHz TDD (2496.5-2571.5 MHz) HDM
First Date of Test:	September 01, 2015
Last Date of Test:	September 03, 2015
Receipt Date of Samples:	September 01, 2015
Equipment Design Stage:	Production
Equipment Condition:	No Damage

Information Provided by the Party Requesting the Test

Functional Description of the EUT:

20W MIMO Cellular Repeater

Testing Objective:

To demonstrate compliance of the Cellular repeater requirements of FCC 27:2015

CONFIGURATIONS



Configuration TECO0031-1

Software/Firmware Running during test			
Description	Version		
Firmware	9.0.1.0dev3		

EUT						
Description	Manufacturer	Model/Part Number	Serial Number			
Prism 2.5 GHz TDD (2496.5- 2571.5 MHz) HDM	ADC Telecommunications / Commscope	FWP- T4MT000MOD-L	None			

Peripherals in test setup boundary						
Description Manufacturer		Model/Part Number	Serial Number			
RF Signal Generator	Agilent	E4438C	1178933			
Power Supply	Mean Well	SE-600-48	EB11101765			
IO Control Device	ADC Telecommunications / Commscope	SVT-GU-1011	None			
30 dB attenuator	Aeroflex	57-30-43	QY541			
Laptop	Lenovo	R61	L3-N9370			
Laptop Supply	Lenovo	42T4418	11S42T4418Z1ZGWG19659N			
30 dB attenuator	Aeroflex	86-30-12DC-22 GHz	369			

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
AC Power	No	> 3m	No	Prism 2.5 GHz TDD (2496.5-2571.5 MHz) HDM	AC Mains
Fiber	No	> 3m	No	Prism 2.5 GHz TDD (2496.5-2571.5 MHz) HDM	IO Control Device
RF	Yes	0.9m	No	Prism 2.5 GHz TDD (2496.5-2571.5 MHz) HDM	30 dB attenuator
RF x2	Yes	1.8m	No	IO Control Device	Splitter
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
RF	Yes	1.6m	No	Prism 2.5 GHz TDD (2496.5-2571.5 MHz) HDM	30 dB attenuator
RF	Yes	0.9m	No	Splitter	RF Signal Generator

CONFIGURATIONS



Configuration TECO0031-2

Software/Firmware Running during test			
Description	Version		
Firmware	9.0.1.0dev3		

EUT						
Description Manufacturer		Model/Part Number	Serial Number			
Prism 2.5 GHz TDD (2496.5-2571.5 MHz) HDM	ADC Telecommunications / Commscope	FWP-T4MT000MOD-L	None			

Peripherals in test setup boundary							
Description	Manufacturer	Model/Part Number	Serial Number				
30 dB attenuator	Aeroflex	57-30-43	QY541				
30 dB attenuator	Aeroflex	86-30-12DC-22 GHz	369				

Remote Equipment O	utside of Test Setup Boundar	ry	
Description	Manufacturer	Model/Part Number	Serial Number
RF Signal Generator	Agilent	E4438C	1178933
Power Supply	Mean Well	SE-600-48	EB11101765
IO Control Device	ADC Telecommunications / Commscope	SVT-GU-1011	None
Laptop	Lenovo	R61	L3-N9370
Laptop Supply	Lenovo	42T4418	11S42T4418Z1ZGWG19659N

Cables						
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2	
AC Power	No	> 3m	No	Prism 2.5 GHz TDD (2496.5-2571.5 MHz) HDM	AC Mains	
Fiber	No	> 3m	No	Prism 2.5 GHz TDD (2496.5-2571.5 MHz) HDM	IO Control Device	
RF	Yes	0.9m	No Prism 2.5 GHz TDD (2496.5-2571.5 MHz) HDM 30 dB		30 dB attenuator	
RF x2	Yes	1.8m	No	IO Control Device	Splitter	
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	
RF	RF Yes 1.6m No		No	Prism 2.5 GHz TDD (2496.5-2571.5 MHz) HDM	30 dB attenuator	
RF	Yes	0.9m	No	Splitter	RF Signal Generator	

MODIFICATIONS



Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	9/1/2015	Equivalent Isotropic Radiated Power (EIRP)	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	9/1/2015	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.
3	9/3/2015	Spurious Conducted 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.
4	9/3/2015	Spurious Radiated Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
5	9/3/2015	Intermodulation	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
6	9/3/2015	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	9/3/2015	Emissions Bandwidth	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was complete.



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

					Interval
Description	Manufacturer	Model	ID	Last Cal.	(mo)
Meter - Power	ETS Lindgren	7002-006	SRA	4/15/2015	12
Meter - Power	ETS Lindgren	7002-006	SRE	8/4/2015	12
Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNU	10/2/2014	12
Attenuator	S.M. Electronics	SA26B-20	RFW	3/10/2015	12
Block - DC	Fairview Microwave	SD3379	AMI	10/2/2014	12
Generator - Signal	Agilent	N5183A	TIK	10/17/2014	36
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	4/20/2015	12

TEST DESCRIPTION

The RF output power was measured with the EUT set to the frequencies listed in the datasheet.

The modulated signal was created by an RF signal generator and input into the EUT. The power measurement was made using a direct connection between the RF output of the EUT and an RF Power Sensor which only measures across the high time of the burst of the carrier.

The observed duty cycle was noted but not needed to calculate the EiRP.

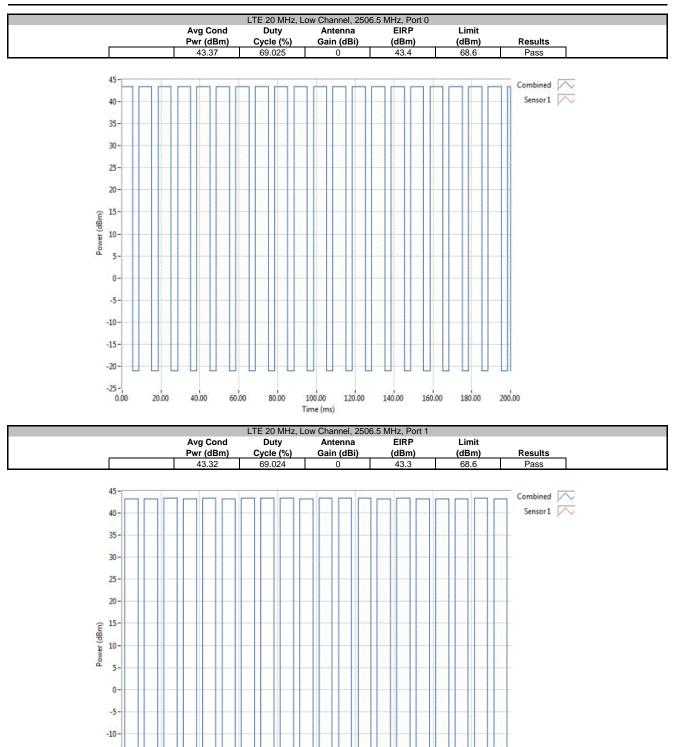
EiRP = Max Measured Power + Antenna gain (dBi)

The measurements from port 1 and port 2 were summed to determine the total average power in EIRP.



EUI	Prism 2.5 GHz TDD (2496.5	5-2571.5 MHz) HDM						Work Order:			
Serial Number	None							Date:	09/01/15		
Customer	ADC Telecommunications	/ Commscope						Temperature:	24.9°C		
Attendees	: Josh Wittman						Humidity: 60%				
Project	None						Barometric Pres.: 982.3				
Tested by	: Trevor Buls			Power: 1	110VAC/60Hz			Job Site:	MN08		
ST SPECIFICAT	LIONS			٦	Test Method						
C 27:2015				A	ANSI/TIA/EIA-603-C-	2004					
OMMENTS											
enna gain is as	ssumed to be 0, per custome	er the antenna gain will k	e reevaluated	l during installation	n. System is rated a	it 20W (+43 dBm)) per port. Limit is 33	3 dBW + 10log(Ma	ximum Bandwidth	/6 MHz) dBW	
Iversion nonn	dBW to dBm is dBW + 30 dB	= ubiii. 33 ubw + 1000g		12) ubw +30ub = 0	o.o ubiii. Fower me	asureu separater	iy on each port. A m	iear summation w	as periorneu on t	ne uala.	
VIATIONS FRO	M TEST STANDARD										
one											
			-	-	0 0						
onfiguration #	1		-		Buls						
		Signature	25	and c	0 00000						
		Signature	0)	and c	Avg Cond	Duty	Antenna	EIRP	Limit		
		Signature	0)	en c		Duty Cycle (%)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Results	
E 20 MHz		Signature	2)		Avg Cond					Result	
E 20 MHz	Low Channel, 2506.5 MHz	Signature	2)		Avg Cond Pwr (dBm)	Cycle (%)	Gain (dBi)	(dBm)	(dBm)		
E 20 MHz	Port 0	Signature	2))		Avg Cond Pwr (dBm) 43.37	Cycle (%) 69.025	Gain (dBi) 0	(dBm) 43.4	(dBm) 68.6	Pass	
E 20 MHz	Port 0 Port 1	Signature		- <i>000</i> c	Avg Cond Pwr (dBm)	Cycle (%)	Gain (dBi)	(dBm)	(dBm)		
E 20 MHz	Port 0 Port 1 Mid Channel, 2534 MHz	Signature			Avg Cond Pwr (dBm) 43.37 43.32	Cycle (%) 69.025 69.024	Gain (dBi) 0 0	(dBm) 43.4 43.3	(dBm) 68.6 68.6	Pass Pass	
E 20 MHz	Port 0 Port 1 Mid Channel, 2534 MHz Port 0	Signature			Avg Cond Pwr (dBm) 43.37 43.32 44.79	Cycle (%) 69.025 69.024 69.023	Gain (dBi) 0	(dBm) 43.4 43.3 44.8	(dBm) 68.6 68.6 68.6	Pass Pass Pass	
E 20 MHz	Port 0 Port 1 Mid Channel, 2534 MHz Port 0 Port 1	Signature		<i>wov</i> c	Avg Cond Pwr (dBm) 43.37 43.32	Cycle (%) 69.025 69.024	Gain (dBi) 0 0	(dBm) 43.4 43.3	(dBm) 68.6 68.6	Pass Pass	
E 20 MHz	Port 0 Port 1 Mid Channel, 2534 MHz Port 0 Port 1 High Channel, 2561.5 MHz	Signature			Avg Cond Pwr (dBm) 43.37 43.32 44.79 43.31	Cycle (%) 69.025 69.024 69.023 69.024	Gain (dBi) 0 0 0	(dBm) 43.4 43.3 44.8 43.3	(dBm) 68.6 68.6 68.6 68.6	Pass Pass Pass Pass	
E 20 MHz	Port 0 Port 1 Mid Channel, 2534 MHz Port 0 Port 1 High Channel, 2561.5 MHz Port 0	Signature			Avg Cond Pwr (dBm) 43.37 43.32 44.79 43.31 43.37	Cycle (%) 69.025 69.024 69.023 69.024 69.025	Gain (dBi) 0 0 0 0 0	(dBm) 43.4 43.3 44.8 43.3 43.4	(dBm) 68.6 68.6 68.6 68.6 68.6	Pass Pass Pass Pass Pass	
	Port 0 Port 1 Mid Channel, 2534 MHz Port 0 Port 1 High Channel, 2561.5 MHz Port 0 Port 1				Avg Cond Pwr (dBm) 43.37 43.32 44.79 43.31 43.31 43.37 43.17	Cycle (%) 69.025 69.024 69.023 69.024	Gain (dBi) 0 0 0	(dBm) 43.4 43.3 44.8 43.3	(dBm) 68.6 68.6 68.6 68.6	Pass Pass Pass Pass	
E 20 MHz	Port 0 Port 1 Mid Channel, 2534 MHz Port 0 Port 0 Port 1 High Channel, 2561.5 MHz Port 0 Port 1 Port 1	Port 0 (mW)	Port 1 (mW)	Sum (mW)	Avg Cond Pwr (dBm) 43.37 43.32 44.79 43.31 43.37 43.17 Sum (dBm)	Cycle (%) 69.025 69.024 69.023 69.024 69.025	Gain (dBi) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	(dBm) 43.4 43.3 44.8 43.3 43.4 43.2	(dBm) 68.6 68.6 68.6 68.6 68.6 68.6	Pass Pass Pass Pass Pass Pass	
	Port 0 Port 1 Mid Channel, 2534 MHz Port 0 Port 0 Port 1 High Channel, 2561.5 MHz Port 0 Port 1 Port 1 Port 1 Port 1 Port 1 Port 1 Port 2506.5 MHz	Port 0 (mW) 21727.0	Port 1 (mW) 21478.3	Sum (mW) 43205.3	Avg Cond Pwr (dBm) 43.37 43.32 44.79 43.31 43.37 43.37 43.37 5um (dBm) 46.4	Cycle (%) 69.025 69.024 69.023 69.024 69.025	Gain (dBi) 0 0 0 0 0	(dBm) 43.4 43.3 44.8 43.3 43.4 43.2 46.4	(dBm) 68.6 68.6 68.6 68.6 68.6 68.6 68.6 68.	Pass Pass Pass Pass Pass Pass Pass	
	Port 0 Port 1 Mid Channel, 2534 MHz Port 0 Port 0 Port 1 High Channel, 2561.5 MHz Port 0 Port 1 Port 1	Port 0 (mW)	Port 1 (mW)	Sum (mW)	Avg Cond Pwr (dBm) 43.37 43.32 44.79 43.31 43.37 43.17 Sum (dBm)	Cycle (%) 69.025 69.024 69.023 69.024 69.025	Gain (dBi) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	(dBm) 43.4 43.3 44.8 43.3 43.4 43.2	(dBm) 68.6 68.6 68.6 68.6 68.6 68.6	Pass Pass Pass Pass Pass Pass	





-15-

-25-¦ 0,00

20.00

40.00

60.00

80.00

100.00

Time (ms)

120.00

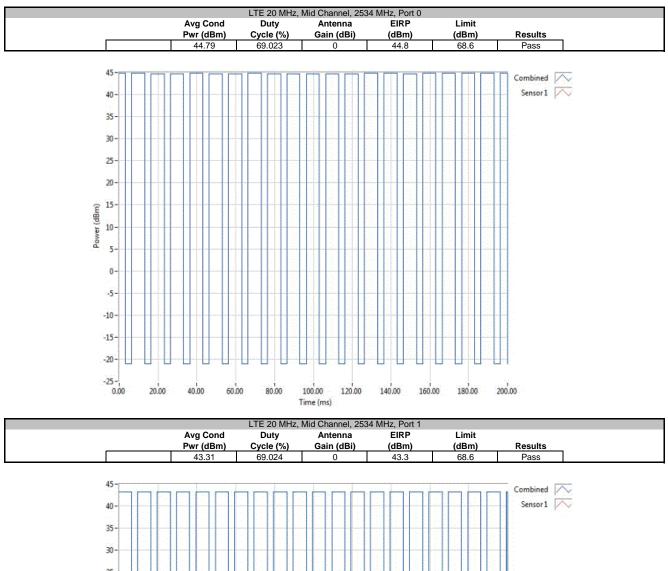
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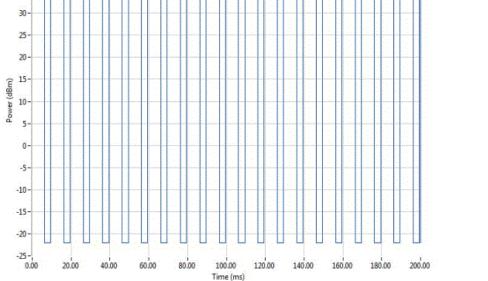
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200.00

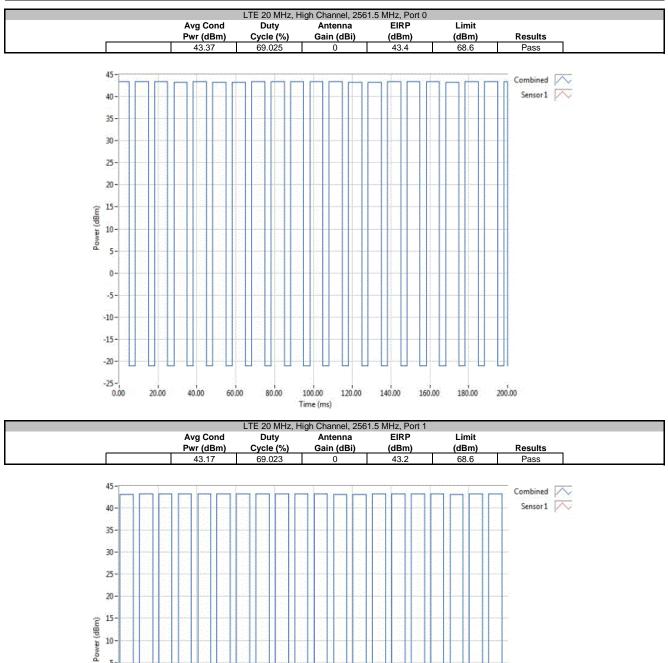
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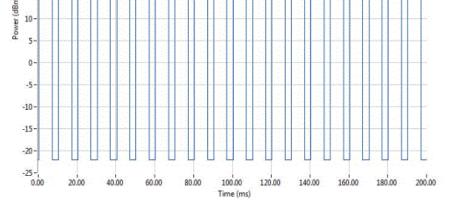














SPURIOUS RADIATED EMISSIONS

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

MODES OF OPERATION

Transmitting LTE 20MHz - low channel (2506.5 MHz), mid channel (2534 MHz), and high channel (2561.5 MHz); antenna 0 and 1.

POWER SETTINGS INVESTIGATED

110VAC/60Hz

CONFIGURATIONS INVESTIGATED

TECO0031 - 2

FREQUENCY RANGE INVESTIGATED Start Frequency 30 MHz

Stop Frequency 26500 MHz

SAMPLE CALCULATIONS

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Filter - Low Pass	Micro-Tronics	LPM50004	HGK	3/2/2015	12 mo
Filter - High Pass	Micro-Tronics	HPM50111	HGQ	3/2/2015	12 mo
Attenuator	S.M. Electronics	SA6-20	REO	3/2/2015	12 mo
		18-26GHz Standard Gain			
Cable	Northwest EMC	Horn Cable	MNP	10/3/2014	12 mo
Antenna - Standard Gain	ETS Lindgren	3160-09	AHG	NCR	0 mo
Amplifier - Pre-Amplifier	Miteq	JSD4-18002600-26-8P	APU	10/3/2014	12 mo
Antenna - Standard Gain	ETS Lindgren	3160-08	AIQ	NCR	0 mo
Amplifier - Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	AVW	3/2/2015	12 mo
Cable	ESM Cable Corp.	Standard Gain Horn Cables	MNJ	5/5/2015	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AVV	3/2/2015	12 mo
Antenna - Standard Gain	ETS Lindgren	3160-07	AXP	NCR	0 mo
Amplifier - Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	AVX	3/2/2015	12 mo
		Double Ridge Guide Horn			
Cable	ESM Cable Corp.	Cables	MNI	5/5/2015	12 mo
Antenna - Double Ridge	ETS Lindgren	3115	AJA	6/3/2014	24 mo
Amplifier - Pre-Amplifier	Miteq	AM-1616-1000	PAD	3/2/2015	12 mo
Cable	ESM Cable Corp.	Bilog Cables	MNH	3/30/2015	12 mo
Antenna - Biconilog	Teseq	CBL 6141B	AYD	12/17/2013	24 mo
Analyzer - Spectrum Analyzer	Agilent	N9010A	AFI	1/27/2015	12 mo

MEASUREMENT BANDWIDTHS

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

TEST DESCRIPTION

The 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). 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.



SPURIOUS RADIATED EMISSIONS

					-						
Woi	rk Order:		D0031		Date:	09/03		1	7	\sim	0
	Project:		one	Tei	mperature:	24.1	<u>°C</u>		ust	mto	ands
	Job Site:		N05	Denem	Humidity:	63.1%	RH		Testedles		
Serial	Number:		one		etric Pres.:	982.3 I	nbar		Tested by	: Dustin Sparks	5
Canfi			GHZ TDD (2496.5-257	'1.5 MHz) H	DM					
Config	guration:										
			communica	tions / Com	imscope						
	tendees:	110VAC/6	011-								
		The second second			hannal (250		d ahaaaal		-) and hig	h channel (256)	I.5 MHz); antenna
Operatir	ng Mode:	0 and 1.				0.5 IVIHZ), III	u channei	(2004 IVIN	z), anu niy	in channel (250	1.5 MHZ), antenna
		Nono									
De	viations:	NULLE									
		None									
Co	mments:										
00	minento.										
Test Specif	ications						est Meth				
FCC 27:201	5					/	ANSI/TIA/I	EIA-603-C-	2004		
D #	12	Test Di		<u> </u>	Automa			4 += 4(-==)		Desults	Deee
Run #	12	Test Dis	stance (m)	3	Antenna	Height(s)		1 to 4(m)		Results	Pass
0 T											
-10 +											
-20											
-30 -											
-50											
_											
- 40											
۳ ۲											
-50 -											
-60											
-70											
-80 ⊥						4000			40000		400000
10			100)		1000			10000		100000
						MHz				PK 🕨	AV OP
											1 V 🔍 M(I

Freq (MHz)	Antenna Height (meters)	Azimuth (degrees)	Polarity/ Transducer Type	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
7682.175	1.8	95.1	Vert	PK	1.01E-07	-39.9	-13.0	-26.9	High channel, antenna 0
7684.925	3.9	25.0	Vert	PK	9.89E-08	-40.0	-13.0	-27.0	High channel, antenna 1
7521.158	1.0	15.1	Vert	PK	9.16E-08	-40.4	-13.0	-27.4	Low channel, antenna 0
7517.733	1.0	54.0	Horz	PK	8.58E-08	-40.7	-13.0	-27.7	Low channel, antenna 0
7518.008	1.0	282.0	Vert	PK	8.58E-08	-40.7	-13.0	-27.7	Low channel, antenna 1
7604.425	1.0	147.0	Vert	PK	8.52E-08	-40.7	-13.0	-27.7	Mid channel, antenna 0
7686.308	1.0	24.0	Horz	PK	8.42E-08	-40.7	-13.0	-27.7	High channel, antenna 0
7602.658	1.7	160.1	Horz	PK	8.13E-08	-40.9	-13.0	-27.9	Mid channel, antenna 0
7602.967	2.8	42.0	Vert	PK	7.25E-08	-41.4	-13.0	-28.4	Mid channel, antenna 1
5123.250	1.0	25.0	Vert	PK	2.28E-08	-46.4	-13.0	-33.4	High channel, antenna 0
5012.225	1.9	69.1	Horz	PK	2.28E-08	-46.4	-13.0	-33.4	Low channel, antenna 0
5013.308	1.0	199.1	Vert	PK	2.03E-08	-46.9	-13.0	-33.9	Low channel, antenna 0
5068.158	1.0	204.0	Vert	PK	1.97E-08	-47.0	-13.0	-34.0	Mid channel, antenna 0
5069.358	1.0	30.1	Horz	PK	1.89E-08	-47.2	-13.0	-34.2	Mid channel, antenna 0
5124.092	1.0	202.1	Horz	PK	1.81E-08	-47.4	-13.0	-34.4	High channel, antenna 0
10245.050	1.0	26.1	Horz	PK	3.03E-09	-55.2	-13.0	-42.2	High channel, antenna 0
10026.120	1.0	113.1	Horz	PK	2.98E-09	-55.3	-13.0	-42.3	Low channel, antenna 0
10244.200	2.2	236.9	Vert	PK	2.70E-09	-55.7	-13.0	-42.7	High channel, antenna 0
10028.480	1.0	224.1	Vert	PK	2.66E-09	-55.8	-13.0	-42.8	Low channel, antenna 0
10136.670	1.3	46.0	Horz	PK	2.46E-09	-56.1	-13.0	-43.1	Mid channel, antenna 0
10134.380	3.4	330.9	Vert	PK	2.35E-09	-56.3	-13.0	-43.3	Mid channel, antenna 0

Г

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SPURIOUS RADIATED EMISSIONS

We	ork Order: Project:		D0031 Dne	Terr	Date: perature:		3/15 1 ℃	\mathcal{A}	F-d'	R	ards
	Job Site:		N05		Humidity:		% RH		man	nop	and
Seria	I Number:		one		tric Pres.:		mbar		Fested by:	Dustin Sparks	
			GHz TDD (2	2496.5-2571	.5 MHz) H	IDM					
Conf	iguration:	2									
			communicat	tions / Comr	nscope						
	ttendees:	None 110VAC/6									
					annol (250	65 MUz) n	aid channa	1/2534 MH-	y) and high	channel (2561	.5 MHz); antenna
Operat	ing Mode:	0 and 1.				0.3 1011 12), 1		1 (2004 1011 12	.), anu nign		.5 wir iz), ariterina
_	eviations:	None									
U	eviations:										
C	omments:	Results be	low are line	arly summe	d data for	MIMO mode	e because	EUT can no	t currently	be operated in	a true MIMO state.
Test Spec	ifications						Test Meth	od			
FCC 27:20								EIA-603-C-2	2004		
Run #	12	Test Di	stance (m)	3	Antenna	a Height(s)		1 to 4(m)		Results	Pass
-10 - -20 -											
-30 -											
щ - 40 - р									•		
-50 -											
-60 -											
-70 -											
-80											
1	0		100			1000 MHz			10000	■ PK ┥	100000 AV • QP
	Freq (MHz)	Antenna Height (meters)	Azimuth (degrees)	Polarity/ Transducer Type	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Cc	omments
	7682.175 7684.925 7521.158 7518.008	1.8 3.9 1.0 1.0	95.1 25.0 15.1 282.0	Vert Vert Vert Vert	РК РК РК РК	1.01E-07 9.89E-08 2.00E-07 9.16E-08 8.58E-08 1.77E-07	-39.9 -40.0 -37.0 -40.4 -40.7 -37.5	-13.0	-24.0 -24.5	High channel, an High channel, an High channel, Lir Low channel, an Low channel, an Low channel, an	tenna 1 near Sum tenna 0 tenna 1

7604.425

7602.967

1.0

2.8

147.0

42.0

Vert

Vert

ΡK

ΡK

8.52E-08

7.25E-08

1.58E-07

-40.7

-41.4

-38.0

-13.0

-25.0

Mid channel, antenna 0

Mid channel, antenna 1

Mid channel, Linear Sum



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

					Interval
Description	Manufacturer	Model	ID	Last Cal.	(mo)
Filter - High Pass	K&L Microwave	11SH10-18000/T50000-2.4	HIC	2/16/2015	12
Filter - High Pass	Micro-Tronics	HPM50111	HGY	8/31/2015	12
Filter - Low Pass	Micro-Tronics	LPM50004		8/31/2015	12
Cable	ESM Cable Corp.	TTBJ141 KMKM-72		10/2/2014	12
Attenuator	S.M. Electronics	SA26B-20	RFW	3/10/2015	12
Block - DC	Fairview Microwave	SD3379	AMI	10/2/2014	12
Generator - Signal	Agilent	N5183A	TIK	10/17/2014	36
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	4/20/2015	12

TEST DESCRIPTION

An RF signal generator was used to create the modulated signal(s) listed in the datasheets. These signals were input into the EUT.

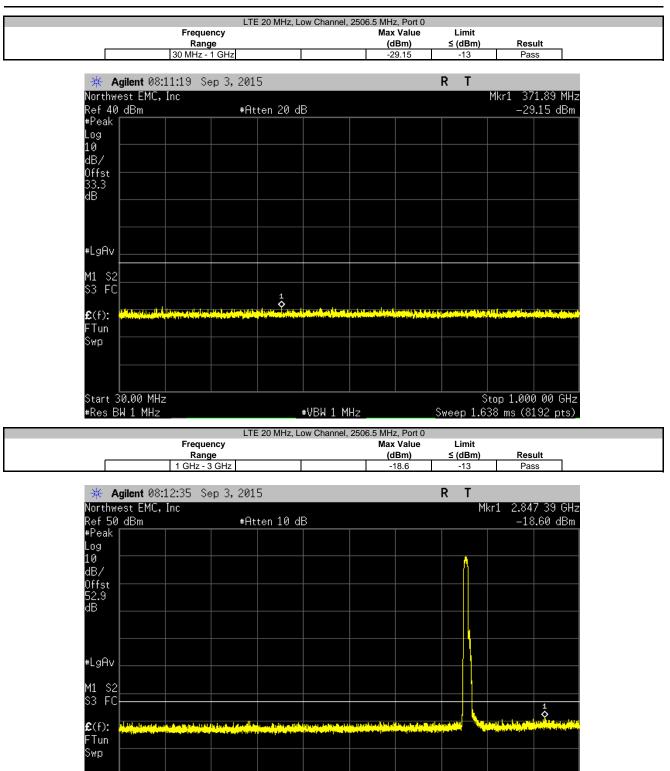
The antenna port spurious emissions were measured at the RF output terminal of the EUT with external attenuation on the RF input of the spectrum analyzer. Analyzer plots utilizing a 1 MHz resolution bandwidth and no video filtering were made for each mode listed in the datasheet.

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 the limit. Emissions close to the limit were re-measured using an RMS Average detector to match the method used during output power measurements.

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	XMit	2015.01.14

	Prism 2.5 GHz TDD (2496.5-25	5/1.5 MHZ) HDM		Work Order:	TECO0031	
Serial Number:	None			Date:	09/03/15	
Customer:	ADC Telecommunications / C	Commscope		Temperature:	24.1°C	
Attendees:	None	•		Humidity:		
Project:	None			Barometric Pres.:	982.8	
	Trevor Buls		Power: 110VAC/60Hz	Job Site:	MN08	
EST SPECIFICATI	IONS		Test Method		• •	
CC 27:2015			ANSI/TIA/EIA-603-C-2004			
OMMENTS			• •			
ort 0 was determi	ned to be worst case.					
EVIATIONS FROM	M TEST STANDARD					
lone						
onfiguration #	1	-	Trevor Buls			
		Signature	Merro C a suite			
			Frequency	Max Value	Limit	
			Range	(dBm)	≤ (dBm)	Result
	_					Result
	Low Channel, 2506.5 MHz					Result
	Port 0		Range 30 MHz - 1 GHz	(dBm) -29.15	≤ (dBm) -13	Pass
			Range	(dBm)	≤ (dBm)	
	Port 0 Port 0 Port 0		Range 30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 18 GHz	(dBm) -29.15 -18.6 -33.04	≤ (dBm) -13 -13 -13	Pass
	Port 0 Port 0		Range 30 MHz - 1 GHz 1 GHz - 3 GHz	(dBm) -29.15 -18.6	≤ (dBm) -13 -13	Pass Pass
	Port 0 Port 0 Port 0		Range 30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 18 GHz	(dBm) -29.15 -18.6 -33.04	≤ (dBm) -13 -13 -13	Pass Pass Pass
	Port 0 Port 0 Port 0 Port 0		Range 30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 18 GHz	(dBm) -29.15 -18.6 -33.04	≤ (dBm) -13 -13 -13	Pass Pass Pass
	Port 0 Port 0 Port 0 Port 0 Mid Channel, 2534 MHz		Range 30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 18 GHz 18 GHz - 26 GHz	(dBm) -29.15 -18.6 -33.04 -31.18	≤ (dBm) -13 -13 -13 -13	Pass Pass Pass Pass
	Port 0 Port 0 Port 0 Port 0 Mid Channel, 2534 MHz Port 0		Range 30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 18 GHz 18 GHz - 26 GHz 30 MHz - 1 GHz	(dBm) -29.15 -18.6 -33.04 -31.18 -29.62	≤ (dBm) -13 -13 -13 -13 -13	Pass Pass Pass Pass Pass
	Port 0 Port 0 Port 0 Port 0 Mid Channel, 2534 MHz Port 0 Port 0 Port 0		Range 30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 18 GHz 18 GHz - 26 GHz 30 MHz - 1 GHz 1 GHz - 3 GHz	(dBm) -29.15 -18.6 -33.04 -31.18 -29.62 -19.1	≤ (dBm) -13 -13 -13 -13 -13 -13 -13	Pass Pass Pass Pass Pass Pass
	Port 0 Port 0 Port 0 Port 0 Mid Channel, 2534 MHz Port 0 Port 0 Port 0 Port 0		Range 30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 18 GHz 18 GHz - 26 GHz 30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 16 GHz 3 GHz - 16 GHz 3 GHz - 16 GHz	(dBm) -29.15 -18.6 -33.04 -31.18 -29.62 -19.1 -33.12	≤ (dBm) -13 -13 -13 -13 -13 -13 -13	Pass Pass Pass Pass Pass Pass Pass Pass
	Port 0 Port 0 Port 0 Port 0 Mid Channel, 2534 MHz Port 0 Port 0 Port 0 Port 0 Port 0		Range 30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 18 GHz 18 GHz - 26 GHz 30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 16 GHz 3 GHz - 16 GHz 3 GHz - 16 GHz	(dBm) -29.15 -18.6 -33.04 -31.18 -29.62 -19.1 -33.12	≤ (dBm) -13 -13 -13 -13 -13 -13 -13	Pass Pass Pass Pass Pass Pass Pass Pass
	Port 0 Port 0 Port 0 Port 0 Mid Channel, 2534 MHz Port 0 Port 0 Port 0 Port 0 Port 0 High Channel, 2561.5 MHz Port 0		Range 30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 18 GHz 18 GHz - 26 GHz 30 MHz - 1 GHz 1 GHz - 3 GHz 30 MHz - 1 GHz 1 GHz - 3 GHz 30 GHz - 18 GHz 3 GHz - 26 GHz	(dBm) -29.15 -18.6 -33.04 -31.18 -29.62 -19.1 -33.12 -30.98 -29.63	≤ (dBm) -13 -13 -13 -13 -13 -13 -13 -13	Pass Pass Pass Pass Pass Pass Pass Pass
	Port 0 Port 0 Port 0 Port 0 Mid Channel, 2534 MHz Port 0 Port 0 Port 0 Port 0 High Channel, 2561.5 MHz		Stange 30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 18 GHz 18 GHz - 26 GHz 30 MHz - 1 GHz 1 GHz - 3 GHz 30 MHz - 1 GHz 1 GHz - 3 GHz 30 MHz - 26 GHz 30 MHz - 26 GHz 30 MHz - 1 GHz 18 GHz - 16 GHz 30 MHz - 1 GHz	(dBm) -29.15 -18.6 -33.04 -31.18 -29.62 -19.1 -33.12 -30.98	≤ (dBm) -13 -13 -13 -13 -13 -13 -13 -13	Pass Pass Pass Pass Pass Pass Pass Pass





#VBW 1 MHz

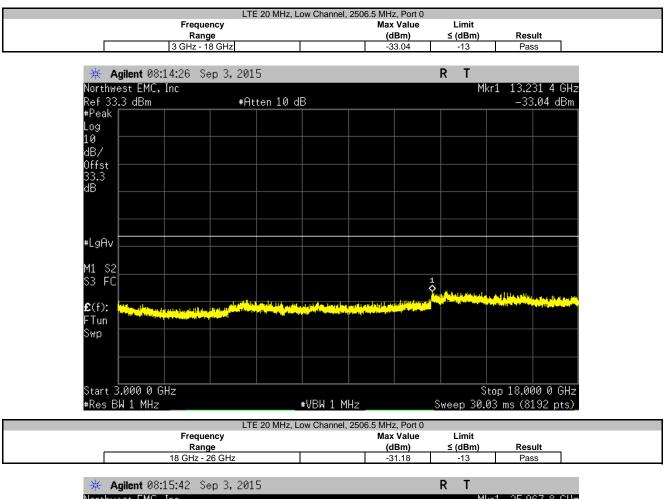
Start 1.000 00 GHz

#Res BW 1 MHz

Stop 3.000 00 GHz

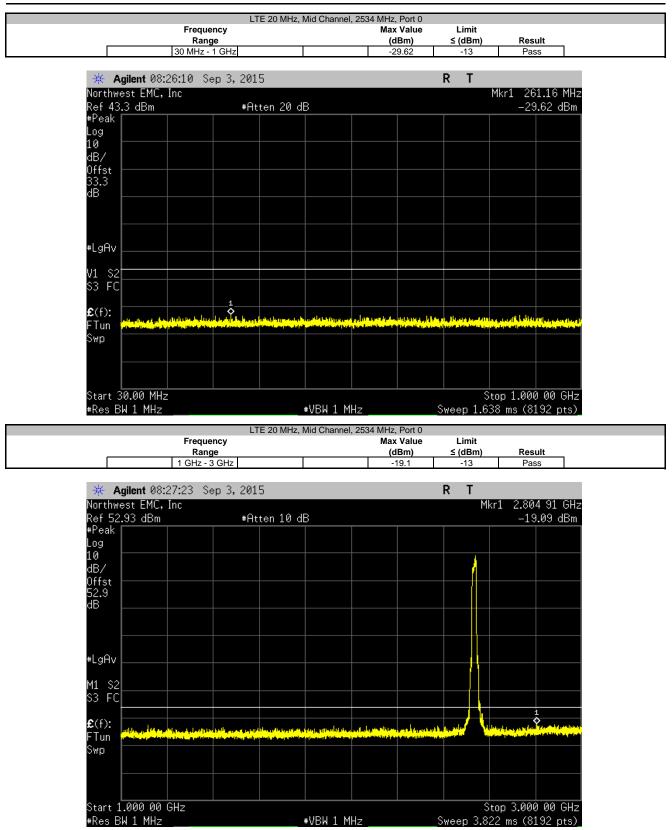
Sweep 3.822 ms (8192 pts)



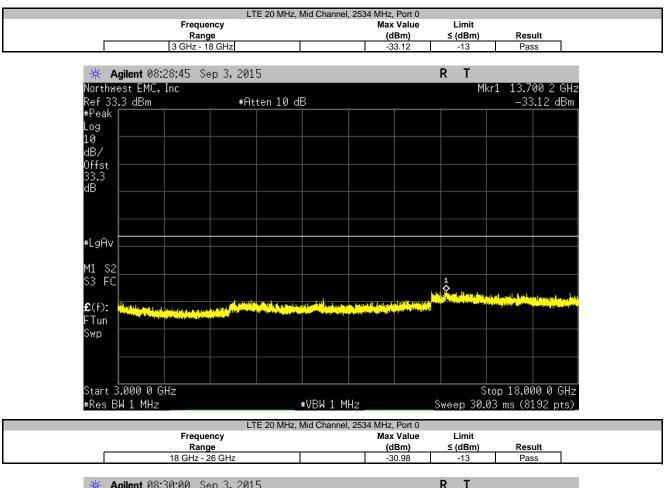


🔆 🔆 🗛	gilent 08:	15:42 Se	p 3,201	5				RT		
	əst EMC,	Inc						М	kr1 25.9	67 8 GHz
Ref 33.	.3 dBm		#At	ten 10 di	3				-31	.18 dBm
#Peak										
Log										
10 dB/										
0ffst										
33.3										
dB										
#LgAv										
M1 S2										
S3 FC										1
	and the second	k	يلو يعور بالدار الدا	والمراجع والمروانية	ورائر والمريدينان	ر. روالدر اولار اولار اولار	differences white	والمراجع والمحرجة	den de la de	
£ (f):		and the state of the second	alles des plantes d	ية يعر من يولية أيكتر. الم	all and the second s	the second second	والمتلفان التنوير والمألاة	And in the other	مے بھیتر _{نہ} یلر	
FTun										
Swp										
	8.000 0	GHz							Stop 26.00	
#Res B	W 1 MHz				₩VBW 1 M	Hz		Sweep 20	0.2 ms (81	192 pts)_



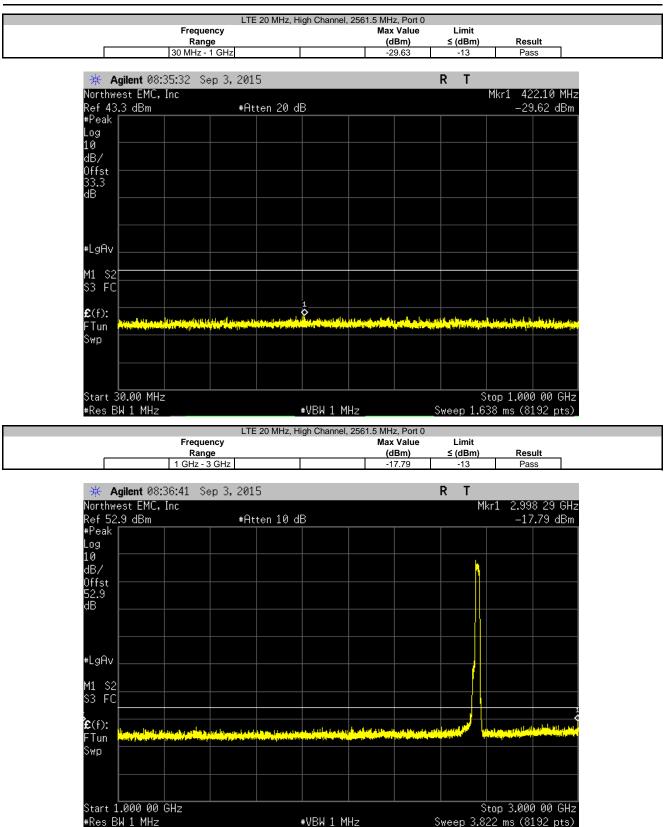




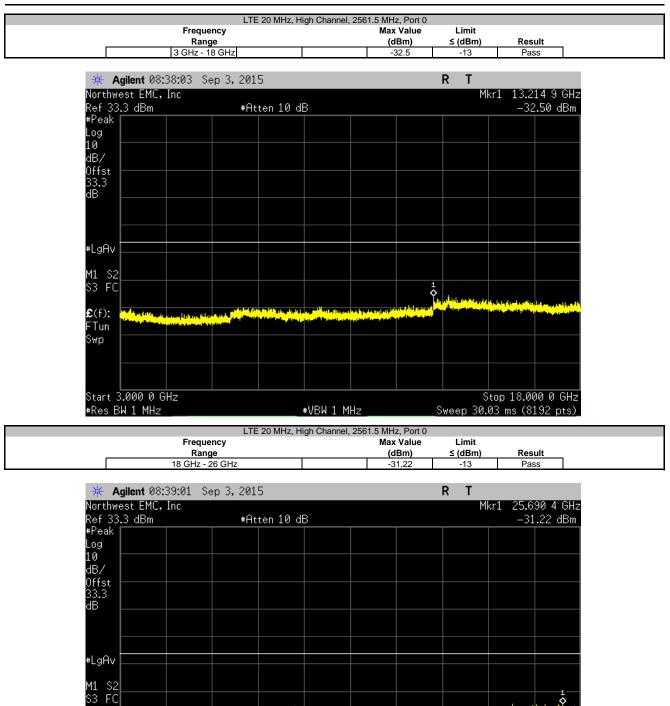


🔆 🔆 Agilent 08:30:00 S	Sep 3, 2015		RT	
Northwest EMC, Inc			М	kr1 25.915 0 GHz
Ref 33.3 dBm	#Atten 10 dl	В		-30.98 dBm
#Peak				
Log				
10 dB/				
Offst				
33.3				
33.3 dB				
#LgAv				
uu oo				
M1 S2 S3 FC				1
		u su tutular	and the second second	And a block of a ball of the particular strengthe
£(f):				and the second secon
FTun				
Swp				
Start 18.000 0 GHz			<u> </u>	top 26.000 0 GHz
#Res BW 1 MHz		₩VBW 1 MHz		0.2 ms (8192 pts)_









#VBW 1 MHz

€(f): FTun Swp

Start 18.000 0 GHz

#Res BW 1 MHz

Stop 26.000 0 GHz

Sweep 20.2 ms (8192 pts)



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

					Interval
Description	Manufacturer	Model	ID	Last Cal.	(mo)
Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNU	10/2/2014	12
Attenuator	S.M. Electronics	SA26B-20	RFW	3/10/2015	12
Block - DC	Fairview Microwave	SD3379	AMI	10/2/2014	12
Generator - Signal	Agilent	N5183A	TIK	10/17/2014	36
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	4/20/2015	12

TEST DESCRIPTION

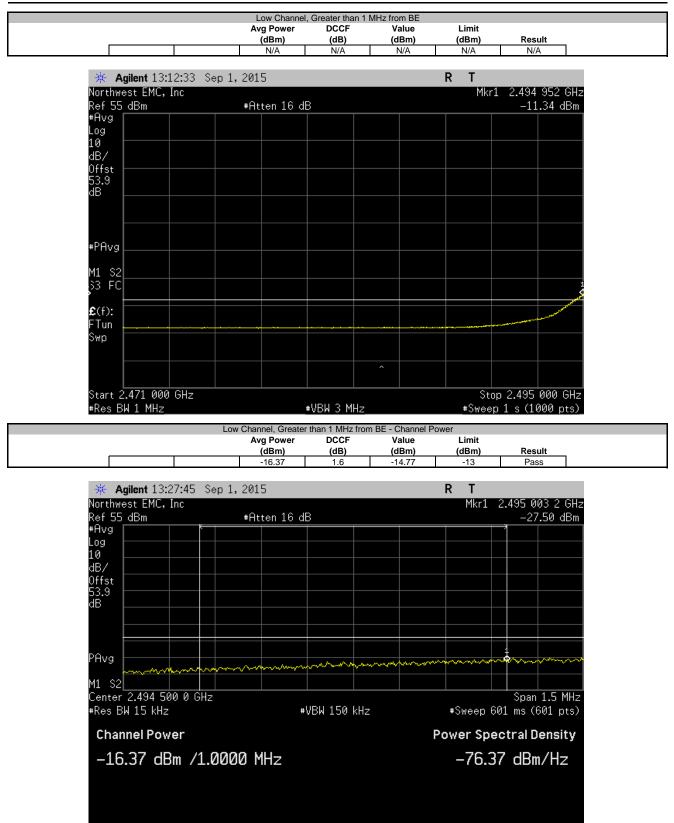
The spurious RF conducted emissions at the edges of the authorized bands were measured with the EUT set to low and high transmit frequencies in the available band. The channels closest to the band edges were selected. The measurement was made using a direct connection between the RF output of the EUT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

The spectrum was scanned below the lower band edge and above the higher band edge. The resolution bandwidth was set to approximately 1% of the measured emissions bandwidth within the first 1 MHz block adjacent to the transmit band. 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 limit at the band edge.



	Prism 2.5 GHz TDD (2496	5-2571.5 MHz) HDM					Work Order:	TECO0031	
Serial Number		· · · · ·						09/01/15	
Custome	r: ADC Telecommunication	s / Commscope					Temperature:	24.9°C	
	s: Josh Wittman	•					Humidity:		
Project	t: None						Barometric Pres.:	982.3	
Tested by	/: Trevor Buls		Power:	110VAC/60Hz			Job Site:	MN08	
TEST SPECIFICAT	TIONS			Test Method					
CC 27:2015				ANSI/TIA/EIA-603-C-2	2004				
·									
COMMENTS									
EVIATIONS FRO	M TEST STANDARD								
DEVIATIONS FRO None Configuration #	DM TEST STANDARD		Trange	Buls					
lone	DM TEST STANDARD	Signature	Trevor	Buls	Avg Power (dBm)	DCCF (dB)	Value (dBm)	Limit (dBm)	Result
one onfiguration #	1		Trevor	Buls	(dBm)	(dB)	(dBm)	(dBm)	
lone	1 Greater than 1 MHz from E	3E	Trevor	Buls	(dBm) N/A	(dB) N/A	(dBm) N/A	(dBm) N/A	N/A
lone	1 Greater than 1 MHz from E Greater than 1 MHz from E	3E	Trevor	Buls	(dBm) N/A -16.37	(dB) N/A 1.6	(dBm) N/A -14.8	(dBm) N/A -13	N/A Pass
lone	1 Greater than 1 MHz from E	3E	Trevor	Buls	(dBm) N/A	(dB) N/A	(dBm) N/A	(dBm) N/A	N/A







No Re #A Lo 10 dB) }/ fst .9		Avg P (dB -15.0 1, 2015 #Atter	m) 079	DCCF (dB) 1.6		Value (dBm) -13.5	Lim (dBr -11 R 1 M	m) 3	Result Pass .495 985 -15.07	
No Re ±0 10 dB 0f	rthwest EMC, if 55 dBm g g k j fst i,9		-15.0	079	1.6			-1: R 1	з́Г	Pass	5 2 GHz
No Re ≇A Lo 10 dB	rthwest EMC, if 55 dBm g g k j fst i,9		1,2015				-13.5	R 1		.495 985	5 2 GHz
No Re ±0 10 dB 0f	rthwest EMC, if 55 dBm g g k j fst i,9			16 d	B						
No Re Lo 10 dB	rthwest EMC, if 55 dBm g g k j fst i,9			16 d	B						
Re #A Lo 10 dB 0f	ef 55 dBm lvg g 3/ fst .9		#Atter	16 d	IB						
#A Lo: 10 dB 0f	lvg g }/ fst										
10 dB 0f) }/ fst .9										
dB 0f	3/ fst .9										
Of	fst 3.9										
53	3.9 I I										
	3										
dB											
	Avg										
10											
23 MT	S2 SFS										
	, ı v										1
£	(f): AAAAAA	www		***		~~~~				www	www
f>	50k (VVVVV	0000000	~~~~	2 V V V	******	****	*****	11.1	· · · ·		
Sw	an di										
	art 2.495 000									496 000	
#R	es BW 200 kH	Z		#	ŧVBW 620	kHz		#Swe	ep 60	1 ms (60	01 pts)_
				High C	hannel, High	Band Edg	ge				
			Avg P		DCCF		Value	Lim			
			(dB		(dB) N/A		(dBm) -23.28	(dBi -13		Result Pass	

✤ Agilent 13:36:40 Northwest EMC, Inc	Sep 1, 2015		RT	r1 2.690 00 GHz
Ref 55 dBm	#Atten 16 df	3	118	–23.28 dBm
Avg .og				
0 B/ ffst				
3.9 B				
PAvg				
1 52				
3 FC				
(f): Tun		1 		
wp				
enter 2.690 0 GHz Res BW 1 MHz		≢VBW 3 MHz	#Swee	Span 300 MHz p 2 s (2000 pts)



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

					Interval
Description	Manufacturer	Model	ID	Last Cal.	(mo)
Power Divider/Combiner	Fairview Microwave	MP0208-2	IAF	NCR	0
Power Divider/Combiner	Fairview Microwave	MP0208-2	IAE	NCR	0
Filter - High Pass	K&L Microwave	11SH10-18000/T50000-2.4	HIC	2/16/2015	12
Filter - High Pass	Micro-Tronics	HPM50111	HGY	8/31/2015	12
Filter - Low Pass	Micro-Tronics	LPM50004	HGV	8/31/2015	12
Generator - Signal	Agilent	E4422B	TGQ	3/17/2015	36
Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNU	10/2/2014	12
Attenuator	S.M. Electronics	SA26B-20	RFW	3/10/2015	12
Block - DC	Fairview Microwave	SD3379	AMI	10/2/2014	12
Generator - Signal	Agilent	N5183A	TIK	10/17/2014	36
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	4/20/2015	12

TEST DESCRIPTION

An RF signal generator was used to create the modulated signal(s) listed in the datasheets. These signals were input into the EUT.

The EUT was configured with an input of two CW pulses at the edges of the band and a modulated pulse in the band. The purpose of the test is to insure that no additional signals are creating by having multiple carriers in the passband of the EUT.

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.

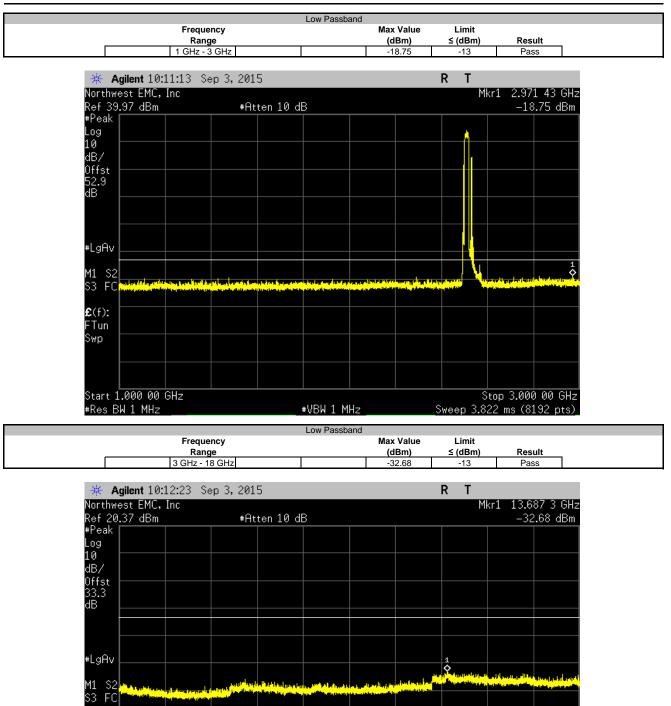
The peak conducted power of spurious emissions, up to the 10th harmonic of the transmit frequency, were investigated to ensure they were less than or equal to the spurious conducted emissions limits. Measurements close to the limit were remeasured using a RMS average detector.



	sm 2.5 GHz TDD (2496.5-257	71.5 MHz) HDM		Work Order:		
Serial Number: Nor	ne			Date:	09/03/15	
Customer: AD	C Telecommunications / Co	ommscope		Temperature:	24.1°C	
Attendees: Nor				Humidity:		
Project: Nor				Barometric Pres.:		
Tested by: Tre			Power: 110VAC/60Hz	Job Site:	MN08	
ST SPECIFICATIONS	8		Test Method			
C 27:2015			ANSI/TIA/EIA-603-C-2004			
OMMENTS						
ort 0 was determined	to be worst case.					
VIATIONS FROM TE	ST STANDARD					
one						
onfiguration #	1		Trevor Buls			
		Signature	0,0000			
		Signature	Frequency Range	Max Value (dBm)	Limit ≤ (dBm)	Resul
v Passband		Signature	Frequency			Resul Pass
		Signature	Frequency Range	(dBm)	≤ (dBm)	
Passband	I	Signature	Frequency Range Fundamental	(dBm) -16.83	≤ (dBm) -13	Pass Pass
Passband Passband		Signature	Frequency Range Fundamental 30 MHz - 1 GHz	(dBm) -16.83 -29.23	<mark>≤ (dBm)</mark> -13 -13	Pass Pass Pass
/ Passband / Passband / Passband / Passband		Signature	Frequency Range Fundamental 30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 18 GHz 18 GHz - 26 GHz	(dBm) -16.83 -29.23 -18.75 -32.68 -30.21	≤ (dBm) -13 -13 -13 -13 -13 -13	Pass Pass Pass Pass Pass
/ Passband / Passband / Passband / Passband Passband		Signature	Frequency Range Fundamental 30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 18 GHz 18 GHz - 26 GHz Fundamental	(dBm) -16.83 -29.23 -18.75 -32.68 -30.21 -30.32	≤ (dBm) -13 -13 -13 -13 -13 -13 -13	Pass Pass Pass Pass Pass Pass
v Passband v Passband v Passband v Passband I Passband I Passband		Signature	Frequency Range Fundamental 30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 18 GHz 18 GHz - 18 GHz 18 GHz - 26 GHz Fundamental 30 MHz - 1 GHz	(dBm) -16.83 -29.23 -18.75 -32.68 -30.21 -30.32 -29.25	≤ (dBm) -13 -13 -13 -13 -13 -13 -13 -13	Pass Pass Pass Pass Pass Pass Pass
v Passband v Passband v Passband v Passband I Passband I Passband I Passband		Signature	Frequency Range Fundamental 30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 18 GHz 18 GHz - 26 GHz Fundamental 30 MHz - 1 GHz 1 GHz - 3 GHz	(dBm) -16.83 -29.23 -18.75 -32.68 -30.21 -30.32 -29.25 -19.59	≤ (dBm) -13 -13 -13 -13 -13 -13 -13 -13	Pass Pass Pass Pass Pass Pass Pass Pass
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/ Passband / Passband / Passband Passband Passband Passband Passband Passband Passband Passband		Signature	Frequency Range Fundamental 30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 18 GHz 18 GHz - 26 GHz Fundamental 30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 18 GHz 1 GHz - 26 GHz	(dBm) -16.83 -29.23 -18.75 -32.68 -30.21 -30.32 -29.25 -19.59 -33 -31.3	≤ (dBm) -13 -13 -13 -13 -13 -13 -13 -13 -13 -13	Pass Pass Pass Pass Pass Pass Pass Pass
v Passband v Passband v Passband v Passband I Passband I Passband I Passband I Passband I Passband I Passband I Passband		Signature	Frequency Range Fundamental 30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 18 GHz 18 GHz - 26 GHz Fundamental 30 MHz - 1 GHz 1 GHz - 3 GHz 1 GHz - 3 GHz 3 GHz - 18 GHz 1 GHz - 3 GHz 1 GHz - 3 GHz 1 GHz - 18 GHz 1 GHz - 26 GHz 1 GHz - 26 GHz 1 GHz - 26 GHz 18 GHz - 18 GHz	(dBm) -16.83 -29.23 -18.75 -32.68 -30.21 -30.32 -29.25 -19.59 -33 -31.3 -11.3 -15.82	≤ (dBm) -13 -13 -13 -13 -13 -13 -13 -13	Pass Pass Pass Pass Pass Pass Pass Pass
v Passband v Passband v Passband J Passband J Passband J Passband J Passband J Passband h Passband h Passband		Signature	Frequency Range Fundamental 30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 18 GHz 18 GHz - 26 GHz Fundamental 30 MHz - 1 GHz 1 GHz - 3 GHz 1 GHz - 2 GHz 1 GHz - 2 GHz 1 GHz - 2 GHz 18 GHz - 1 GHz 10 MHz - 1 GHz	(dBm) -16.83 -29.23 -18.75 -32.68 -30.21 -30.32 -29.25 -19.59 -33 -31.3 -15.82 -29.31	≤ (dBm) -13 -13 -13 -13 -13 -13 -13 -13	Pass Pass Pass Pass Pass Pass Pass Pass
w Passband w Passband w Passband H Passband J Passband J Passband J Passband J Passband J Passband h Passband h Passband h Passband		Signature	Frequency Range Fundamental 30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 18 GHz 18 GHz - 26 GHz Fundamental 30 MHz - 1 GHz 1 GHz - 3 GHz 1 GHz - 3 GHz 3 GHz - 18 GHz 1 GHz - 3 GHz 1 GHz - 26 GHz Fundamental 30 MHz - 26 GHz Fundamental 30 MHz - 1 GHz 1 GHz - 3 GHz Fundamental 30 MHz - 1 GHz 1 GHz - 3 GHz	(dBm) -16.83 -29.23 -18.75 -32.68 -30.21 -30.32 -29.25 -19.59 -33 -31.3 -15.82 -29.31 -18.56	≤ (dBm) -13 -13 -13 -13 -13 -13 -13 -13	Pass Pass Pass Pass Pass Pass Pass Pass
w Passband w Passband w Passband w Passband d Passband d Passband d Passband d Passband d Passband gh Passband gh Passband gh Passband gh Passband gh Passband gh Passband		Signature	Frequency Range Fundamental 30 MHz - 1 GHz 1 GHz - 3 GHz 3 GHz - 18 GHz 18 GHz - 26 GHz Fundamental 30 MHz - 1 GHz 1 GHz - 3 GHz 1 GHz - 2 GHz 1 GHz - 2 GHz 1 GHz - 2 GHz 18 GHz - 1 GHz 10 MHz - 1 GHz	(dBm) -16.83 -29.23 -18.75 -32.68 -30.21 -30.32 -29.25 -19.59 -33 -31.3 -15.82 -29.31	≤ (dBm) -13 -13 -13 -13 -13 -13 -13 -13	Pass

		Low Passband			
	Frequency Range		Max Value (dBm)	Limit ≤ (dBm)	Result
	Fundamental		-16.83	-13	Pass
Ne Bullant 1 Get	08:47 Sep 3, 2015			RT	
Northwest EMC,					1kr1 2.566 2 GH:
Ref 50 dBm	#Atte	n 10 dB			-16.83 dBm
#Avg Log					
10					
dB/ Offst					
52.9 dB					
dB					
			-) I ()		
#PAvg					
M1 S2					
S3 FC					
£ (f):					
FTun Swp					L
unb (
Center 2.506 50	0 GHz				Span 200 MHz
#Res BW 1 MHz	00 0112	#VBW 1 MHz		#Swaan 60	1.2 ms (601 pts)
		- VDN 1 1112		⊷oweeh oo	T'E 1113 (AAT b(2)
		Low Passband		"Jneep 00	1.2 113 (001 pt3)
	Frequency Range		Max Value	Limit	
	Frequency Range 30 MHz - 1 GHz				Result Pass
	Range 30 MHz - 1 GHz		Max Value (dBm)	Limit ≤ (dBm) -13	Result
∰ Agilent 10:: Northwest EMC,	Range 30 MHz - 1 GHz 10:05 Sep 3, 2015 Inc	Low Passband	Max Value (dBm)	Limit ≤ (dBm) -13 R T	Result Pass Mkr1 171.63 MH:
<mark>⊯ Agilent</mark> 10: Northwest EMC, Ref 20.37 dBm	Range 30 MHz - 1 GHz 10:05 Sep 3, 2015 Inc		Max Value (dBm)	Limit ≤ (dBm) -13 R T	Result Pass
<mark>∦≹ Agilent</mark> 10: Northwest EMC, Ref 20.37 dBm #Peak Log	Range 30 MHz - 1 GHz 10:05 Sep 3, 2015 Inc	Low Passband	Max Value (dBm)	Limit ≤ (dBm) -13 R T	Result Pass Mkr1 171.63 MH:
★ Agilent 10: Northwest EMC, Ref 20.37 dBm #Peak Log 10	Range 30 MHz - 1 GHz 10:05 Sep 3, 2015 Inc	Low Passband	Max Value (dBm)	Limit ≤ (dBm) -13 R T	Result Pass Mkr1 171.63 MH:
★ Agilent 10: Northwest EMC, Ref 20.37 dBm #Peak Log 10 dB/ 0ffst	Range 30 MHz - 1 GHz 10:05 Sep 3, 2015 Inc	Low Passband	Max Value (dBm)	Limit ≤ (dBm) -13 R T	Result Pass Mkr1 171.63 MH:
Agilent 10: Northwest EMC, Ref 20.37 dBm #Peak Log 10 dB/ Offst 33.3	Range 30 MHz - 1 GHz 10:05 Sep 3, 2015 Inc	Low Passband	Max Value (dBm)	Limit ≤ (dBm) -13 R T	Result Pass Mkr1 171.63 MH:
★ Agilent 10: Northwest EMC, Ref 20.37 dBm #Peak Log 10 dB/ Offst	Range 30 MHz - 1 GHz 10:05 Sep 3, 2015 Inc	Low Passband	Max Value (dBm)	Limit ≤ (dBm) -13 R T	Result Pass Mkr1 171.63 MH:
★ Agilent 10:: Northwest EMC, Ref 20.37 dBm #Peak Log 10 dB/ Offst 33.3 dB	Range 30 MHz - 1 GHz 10:05 Sep 3, 2015 Inc #Atte	Low Passband	Max Value (dBm) -29.23	Limit ≤ (dBm) -13 R T	Result Pass Mkr1 171.63 MH -29.23 dBm
Agilent 10:: Northwest EMC, Ref 20.37 dBm #Peak Log 10 dB/ Offst 33.3 dB	Range 30 MHz - 1 GHz 10:05 Sep 3, 2015 Inc #Atte	Low Passband	Max Value (dBm) -29.23	Limit ≤ (dBm) -13 R T	Result Pass Mkr1 171.63 MH -29.23 dBm
Control Agilent 10:: Northwest EMC, Ref 20.37 dBm #Peak	Range 30 MHz - 1 GHz 10:05 Sep 3, 2015 Inc #Atte	Low Passband	Max Value (dBm) -29.23	Limit ≤ (dBm) -13 R T	Result Pass Mkr1 171.63 MH -29.23 dBm
★ Agilent 10:: Northwest EMC, Ref 20.37 dBm #Peak Log 10 dB/ Offst 33.3 dB #LgAv	Range 30 MHz - 1 GHz 10:05 Sep 3, 2015 Inc	Low Passband	Max Value (dBm) -29.23	Limit ≤ (dBm) -13 R T	Result Pass Mkr1 171.63 MH -29.23 dBm
Agilent 10:: Northwest EMC, Ref 20.37 dBm #Peak Log 10 dB/ Offst 33.3 dB #LgAv *LgAv V1 S2 S3 FC	Range 30 MHz - 1 GHz 10:05 Sep 3, 2015 Inc #Atte	Low Passband	Max Value (dBm) -29.23	Limit ≤ (dBm) -13 R T	Result Pass Mkr1 171.63 MH -29.23 dBm
Agilent 10:: Northwest EMC, Ref 20.37 dBm #Peak Log 10 dB/ 0ffst 33.3 dB #LgAv V1 S2 S3 FC £(f):	Range 30 MHz - 1 GHz 10:05 Sep 3, 2015 Inc #Atte	Low Passband	Max Value (dBm) -29.23	Limit ≤ (dBm) -13 R T	Result Pass Mkr1 171.63 MH -29.23 dBm
Agilent 10:: Northwest EMC, Ref 20.37 dBm #Peak Log 10 dB/ Offst 33.3 dB #LgAv Y1 S3 FC	Range 30 MHz - 1 GHz 10:05 Sep 3, 2015 Inc #Atte	Low Passband	Max Value (dBm) -29.23	Limit ≤ (dBm) -13 R T	Result Pass Mkr1 171.63 MH -29.23 dBm
★ Agilent 10:: Northwest EMC, Ref 20.37 dBm #Peak Log 10 dB/ Offst 33.3 dB #LgAv #LgAv V1 S2 S3 FC £(f): FTun	Range 30 MHz - 1 GHz 10:05 Sep 3, 2015 Inc #Atte	Low Passband	Max Value (dBm) -29.23	Limit ≤ (dBm) -13 R T	Result Pass Mkr1 171.63 MH -29.23 dBm
★ Agilent 10:: Northwest EMC, Ref 20.37 dBm #Peak Log 10 dB/ Offst 33.3 dB #LgAv #LgAv V1 S2 S3 FC £(f): FTun	Range 30 MHz - 1 GHz 10:05 Sep 3, 2015 Inc #Atte	Low Passband	Max Value (dBm) -29.23	Limit ≤ (dBm) -13 R T	Result Pass Mkr1 171.63 MH -29.23 dBm
Agilent 10:: Northwest EMC, Ref 20.37 dBm #Peak Log 10 dB/ Offst 33.3 dB #LgAv Withwestell V1 \$33 FC #LgAv	Range 30 MHz - 1 GHz 10:05 Sep 3, 2015 Inc #Atte	Low Passband	Max Value (dBm) -29.23	Limit ≤ (dBm) -13 R T	Result Pass Mkr1 171.63 MH -29.23 dBm





#VBW 1 MHz

€(f): FTun Swp

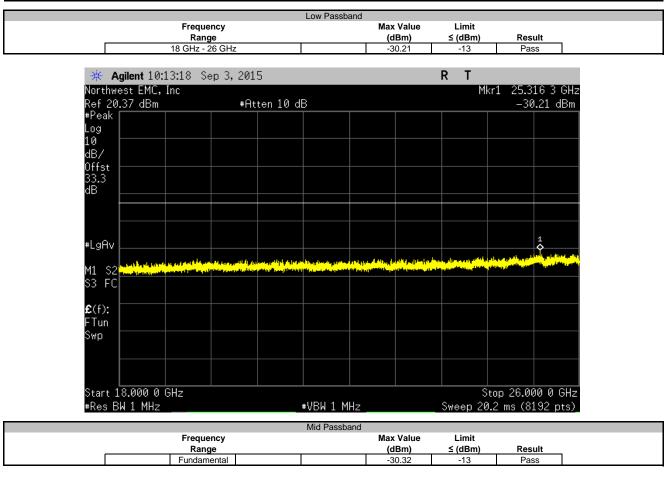
Start 3.000 0 GHz

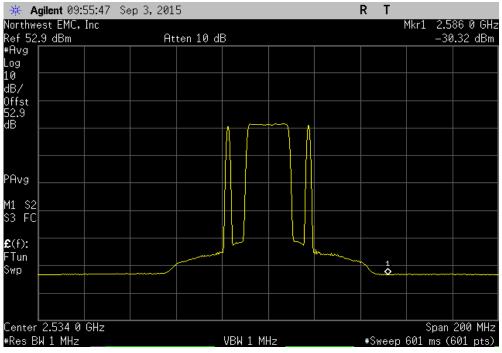
#Res BW 1 MHz

Stop 18.000 0 GHz

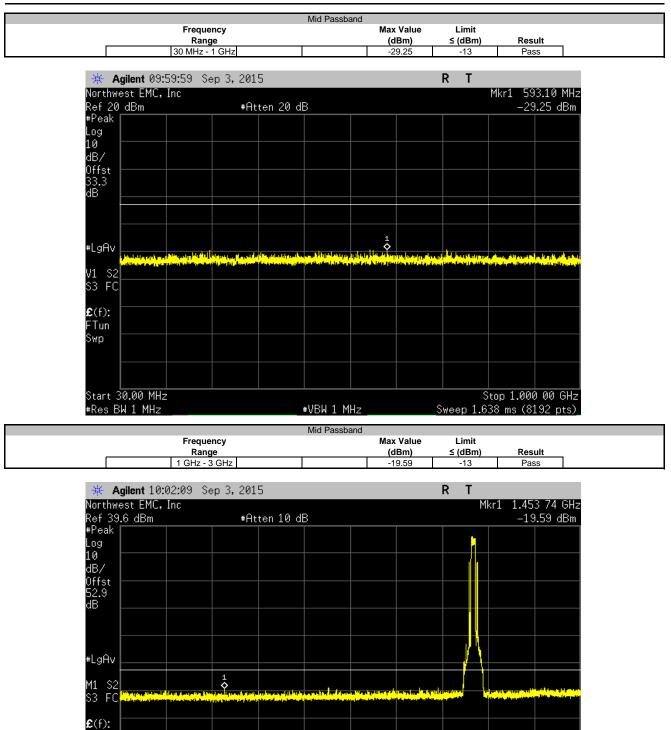
Sweep 30.03 ms (8192 pts)











#VBW 1 MHz

FTun Swp

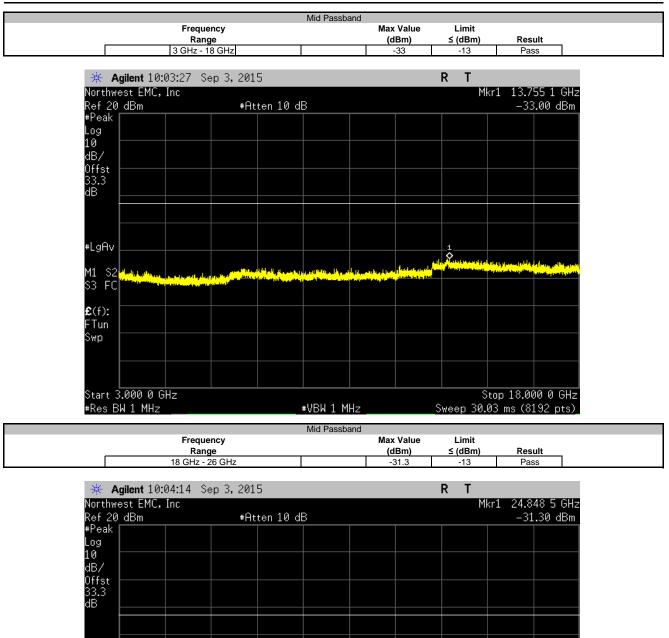
Start 1.000 00 GHz

#Res BW 1 MHz

Stop 3.000 00 GHz

Sweep 3.822 ms (8192 pts)

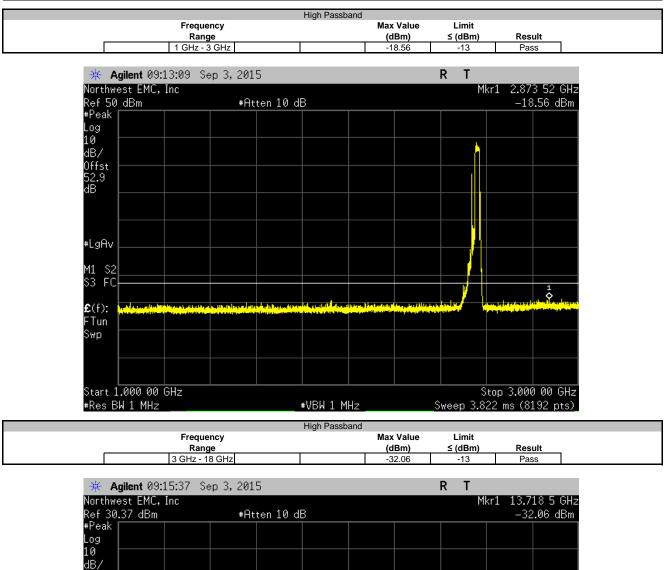


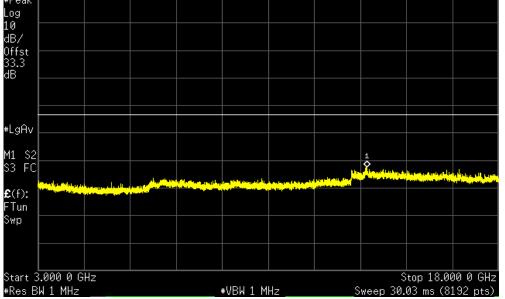


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#LgAv	the strengths	المراجع والمعارك	libela, debaid	فالأروار والعاما	lin I salah silayasil	a	hand the second state	a and the optimum		
M1 S2	Stored and the state of all the	and the first of the state	State and state	and the second	in the second states	lines and the state	Contraction of the later of the			
\$3 FC										
£ (f):										
FTun										
Ѕพр										
Start 1	8.000 0	GHz						S	top 26.00)0 0 GHz
	W 1 MHz				∗VBW 1 M	Hz).2 ms (81	

				List Develo					
		Frequency		High Passba		Value	Limit		
		Range				Bm)	≤ (dBm)	Res	
		Fundamental			-15	5.82	-13	Pas	5
来 1	Agilent 09:22:	52 Sep 3, 201	5				RT		
Northw	vest EMC, Inc	;						Mkr1 2.4	
Ref 52	2 . 9 dBm	At	ten 10 dE	3				-15	.82 dBm
#Avg Log									
10									
dB7									
Offst 52 9									
Offst 52.9 dB			A		~				
			l H		A				
PAvg			<u> </u>						
M1 S2 S3 F0	2								
53 FU	-			- have	U (
£ (f):		ľ							
FTun		J			/				
Swp						<u> </u>			
Cente	r 2.561 5 GH	z						Span	200 MHz
#Res B	⊃II 1 MII_								
	OW I MHZ _			VBW 1 MH:	Ζ	_	#Sweep	601 ms (8	601 pts)
		_		VBW 1 MH: High Passba	nd	_		601 ms (6	301 pts)
		Frequency Range			nd Max	Value 3m)	#Sweep Limit ≤ (dBm)	601 ms (6	
					nd Max (dl		Limit		ult
C	30	Range 0 MHz - 1 GHz			nd Max (dl	3m) 9.31	Limit <u>≤ (dBm)</u> -13	Res	ult
	30 Agilent 09:11:	Range 0 MHz - 1 GHz 38 Sep 3, 2011			nd Max (dl	3m) 9.31	Limit ≤ (dBm)	Res i Pas	ultss
₩ ¥ Northw Ref 43	jac Agilent 09:11: rest EMC, Inc 3.3 dBm	Range D MHz - 1 GHz 38 Sep 3, 201		High Passba	nd Max (dl	3m) 9.31	Limit <u>≤ (dBm)</u> -13	Res Pas Mkr1 85	ultss
₩ / Northw Ref 43 #Peak	jac Agilent 09:11: rest EMC, Inc 3.3 dBm	Range D MHz - 1 GHz 38 Sep 3, 201	5	High Passba	nd Max (dl	3m) 9.31	Limit <u>≤ (dBm)</u> -13	Res Pas Mkr1 85	ult ss 7.18 MHz
₩ / Northw Ref 43 #Peak Log	jac Agilent 09:11: rest EMC, Inc 3.3 dBm	Range D MHz - 1 GHz 38 Sep 3, 201	5	High Passba	nd Max (dl	3m) 9.31	Limit <u>≤ (dBm)</u> -13	Res Pas Mkr1 85	ult ss 7.18 MHz
Northw Ref 43 #Peak Log 10 dB/	jac Agilent 09:11: rest EMC, Inc 3.3 dBm	Range D MHz - 1 GHz 38 Sep 3, 201	5	High Passba	nd Max (dl	3m) 9.31	Limit <u>≤ (dBm)</u> -13	Res Pas Mkr1 85	ult ss 7.18 MHz
Northw Ref 43 #Peak Log 10 dB/ Offst	jac Agilent 09:11: rest EMC, Inc 3.3 dBm	Range D MHz - 1 GHz 38 Sep 3, 201	5	High Passba	nd Max (dl	3m) 9.31	Limit <u>≤ (dBm)</u> -13	Res Pas Mkr1 85	ult ss 7.18 MHz
Northw Ref 43 #Peak Log 10 dB/	jac Agilent 09:11: rest EMC, Inc 3.3 dBm	Range D MHz - 1 GHz 38 Sep 3, 201	5	High Passba	nd Max (dl	3m) 9.31	Limit <u>≤ (dBm)</u> -13	Res Pas Mkr1 85	ult ss 7.18 MHz
Northw Ref 43 #Peak Log 10 dB/ Offst 33.3	jac Agilent 09:11: rest EMC, Inc 3.3 dBm	Range D MHz - 1 GHz 38 Sep 3, 201	5	High Passba	nd Max (dl	3m) 9.31	Limit <u>≤ (dBm)</u> -13	Res Pas Mkr1 85	ult ss 7.18 MHz
Worthw Ref 43 #Peak Log 10 dB/ Offst 33.3	jac Agilent 09:11: rest EMC, Inc 3.3 dBm	Range D MHz - 1 GHz 38 Sep 3, 201	5	High Passba	nd Max (dl	3m) 9.31	Limit <u>≤ (dBm)</u> -13	Res Pas Mkr1 85	ult ss 7.18 MHz
Northw Ref 43 #Peak Log 10 dB/ Offst 33.3 dB	Agilent 09:11: Yest EMC, Inc 3.3 dBm	Range D MHz - 1 GHz 38 Sep 3, 201	5	High Passba	nd Max (dl	3m) 9.31	Limit <u>≤ (dBm)</u> -13	Res Pas Mkr1 85	ult ss 7.18 MHz
<mark>₩</mark> Northw Ref 43 #Peak Log 10 dB/ Offst 33.3 dB #LgAv	30 Agilent 09:11: Yest EMC, Inc 3.3 dBm	Range D MHz - 1 GHz 38 Sep 3, 201	5	High Passba	nd Max (dl	3m) 9.31	Limit <u>≤ (dBm)</u> -13	Res Pas Mkr1 85	ult ss 7.18 MHz
<mark>₩</mark> Northw Ref 43 #Peak Log 10 dB/ Offst 33.3 dB #LgAv	30 Agilent 09:11: Yest EMC, Inc 3.3 dBm	Range D MHz - 1 GHz 38 Sep 3, 201	5	High Passba	nd Max (dl	3m) 9.31	Limit <u>≤ (dBm)</u> -13	Res Pas Mkr1 85	ult ss 7.18 MHz
Northw Ref 43 #Peak Log 10 dB/ Offst 33.3 dB	30 Agilent 09:11: rest EMC, Inc 3.3 dBm	Range 0 MHz - 1 GHz 38 Sep 3, 201 38 HAT #At	5 ten 20 dE	High Passba	nd Max (df	3m) 9.31	Limit ≤ (dBm) -13 R T	Resi Pas Mkr1 85 -29	ult 55 7.18 MHz 1.31 dBm
₩ / Northw Ref 43 #Peak Log 10 dB/ Offst 33.3 dB #LgAv V1 \$2 \$3 FC	30 Agilent 09:11: rest EMC, Inc 3.3 dBm	Range 0 MHz - 1 GHz 38 Sep 3, 201 38 HAT #At	5 ten 20 dE	High Passba	nd Max (df	3m) 9.31	Limit ≤ (dBm) -13 R T	Resi Pas Mkr1 85 -29	ult 55 7.18 MHz 1.31 dBm
₩ / Northw Ref 43 #Peak Log 10 dB/ Offst 33.3 dB #LgAv V1 \$2 \$3 FC \$3 FC \$5 FTun	30 Agilent 09:11: rest EMC, Inc 3.3 dBm	Range 0 MHz - 1 GHz 38 Sep 3, 201 38 HAT #At	5 ten 20 dE	High Passba	nd Max (df	3m) 9.31	Limit ≤ (dBm) -13 R T	Resi Pas Mkr1 85 -29	ult 55 7.18 MHz 1.31 dBm
₩ / Northw Ref 43 #Peak Log 10 dB/ 0ffst 33.3 dB #LgAv V1 \$2 \$3 FC \$3 FC	30 Agilent 09:11: rest EMC, Inc 3.3 dBm	Range 0 MHz - 1 GHz 38 Sep 3, 201 38 HAT #At	5 ten 20 dE	High Passba	nd Max (df	3m) 9.31	Limit ≤ (dBm) -13 R T	Resi Pas Mkr1 85 -29	ult 55 7.18 MHz 1.31 dBm
₩ / Northw Ref 43 #Peak Log 10 dB/ Offst 33.3 dB #LgAv V1 \$2 \$3 FC \$3 FC \$5 FTun	30 Agilent 09:11: rest EMC, Inc 3.3 dBm	Range D MHz - 1 GHz 38 Sep 3, 201	5 ten 20 dE	High Passba	nd Max (df	3m) 9.31	Limit ≤ (dBm) -13 R T	Resi Pas Mkr1 85 -29	ult 55 7.18 MHz 1.31 dBm
₩ / Northw Ref 43 #Peak Log 10 dB/ Offst 33.3 dB #LgAv V1 \$2 \$3 FC \$3 FC \$5 FTun	30 Agilent 09:11: rest EMC, Inc 3.3 dBm	Range 0 MHz - 1 GHz 38 Sep 3, 201 38 HAT #At	5 ten 20 dE	High Passba	nd Max (df	3m) 9.31	Limit ≤ (dBm) -13 R T	Resi Pas Mkr1 85 -29	ult 55 7.18 MHz 1.31 dBm
₩ ✓ Northw Ref 43 #Peak Log 10 dB/ 0ffst 33.3 dB ✓ #LgAv V1 \$3.3 FO £(f): FTun Swp Start	Agilent 09:11: rest EMC, Inc 3.3 dBm	Range 0 MHz - 1 GHz 38 Sep 3, 201 38 HAT #At	5 ten 20 dE	High Passba	nd Max (df -29	3m) 9.31	Limit ≤ (dBm) -13 R T	Resi Pas Mkr1 85 29	ult 55 7.18 MHz 31 dBm
₩ / Northw Ref 43 #Peak Log 10 dB/ 0ffst 33.3 dB / #LgAv V1 \$3.3 FO £(f): FTun Swp Start	Agilent 09:11: rest EMC, Inc 3.3 dBm	Range 0 MHz - 1 GHz 38 Sep 3, 201 38 HAT #At	5 ten 20 dE	High Passba	nd Max (df -29	3m) 9.31	Limit ≤ (dBm) -13 R T	Resi Pas Mkr1 85 29	ult 55 7.18 MHz 31 dBm









Frequency Max Value Limit Range (dBm) ≤ (dBm) Result 18 GHz - 26 GHz -31.63 -13 Pass						High Passb	and			
Is GHz - 26 GHz -31.63 -13 Pass Agilent 09:16:28 Sep 3, 2015 R T Northwest EMC, Inc Mkr1 25.476 5 GHz Ref 30.37 dBm #Atten 10 dB -31.63 dBm #Peak Log -31.63 -31.63 dBm Ide -31.63 -31.63 dBm #Peak Log -31.63 dBm 10 -31.63 -31.63 dBm #Peak -31.63 -31.63 dBm #Peak -31.63 -31.63 dBm #Peak -31.63 -31.63 dBm #Peak -31.63 -31.63 10 -31.63 -31.63 10 -31.63 -31.63 10 -31.63 -31.63 10 -31.63 -31.63 10 -31.63 -31.63 10 -31.63 -31.63 10 -31.63 -31.63 10 -31.63 -31.63 10 -31.63 -31.63 10 -31.63 -31.63 10 -31.63 -31.63 10 -31.63 -31.63 10 -31.63 -31.63 10 -31.63 -31.63 <t< td=""><td></td><td></td><td></td><td></td><td></td><td>-</td><td></td><td></td><td>D</td><td></td></t<>						-			D	
Agilent 09:16:28 Sep 3, 2015 R T Northwest EMC, Inc Mkr1 25.476 5 GHz Ref 30.37 dBm #Atten 10 dB #Peak										
Northwest EMC, Inc Mkr1 25.476 5 GHz Ref 30.37 dBm #Atten 10 dB -31.63 dBm #Peak Log 10 10 10 dB/ 10 10 10 dB/ 0 10 10 10 10 dB/ 0 10 10 10 10 10 dB/ 0 10 10 10 10 10 10 dB/ 0 10							<u>.</u>			
Ref 30.37 dBm #Atten 10 dB -31.63 dBm #Peak Log 10 10 10 dB/ 10 10 dB/ 0ffst 33.3 10 10 dB 4 10 10 10 wtgRv 10 10 10 10 dB/ 0ffst 10 10 10 dB/ 10 10 10 10 dB/ 0ffst 10 10 10 dB/ 10 10 10 10 10 dB/ 10 10 10 10 10 10 dB/ 10 <td></td> <td></td> <td></td> <td>Sep 3, 201</td> <td>5</td> <td></td> <td></td> <td>RT</td> <td></td> <td></td>				Sep 3, 201	5			RT		
#Peak								М		
Log Image: Constraint of the second sec	Ref	30.37 dB	m	#At	ten 10 d	B		 	-31	1.63 dBm
10 dB/ Offst 33.3 dB #LgAv M1 \$2 \$3 FC the the the the the the the the the the		ak								
dB/ Offst 33.3 dB #LgAv	L09 10									
Offst 33.3 dB #LgAv #LgAv M1 S2 S3 FC Initial lands, and the life lands of the	dB/									
<pre>#LgAv M1 S2 S3 FC Interface and additional addition and additional addit</pre>	Offs	t								
<pre>#LgAv M1 S2 S3 FC Interface and additional addition and additional addit</pre>	33.3 4B	3								
M1 S2 S3 FC this last for the first state of the fi	uD									
M1 S2 S3 FC this last for the first state of the fi										
M1 S2 S3 FC this last for the first state of the fi										
S3 FC his has done of the state of the stat	#Lgf	Αv								
S3 FC his has done of the state of the stat	644	~								
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£(+): FTun		a tulus bi tu di	a di tata katika		a hili a hala					
	£ (f)):								
	Swp									
Start 18.000 0 GHz Stop 26.000 0 GHz	Star	+ 18 000	0 GH-2						 Stop 26 Ø	000CH-
#Res BW 1 MHz #VBW 1 MHz Sweep 20.2 ms (8192 pts)_						#VBW 1_M	Hz	Sween 2	лор 20.0 Л.2 ms <u>(8</u>	192 nts)



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

					Interval
Description	Manufacturer	Model	ID	Last Cal.	(mo)
Meter - Multimeter	Fluke	117/EFSP	MLR	5/27/2015	36
Thermometer	Omega Engineering, Inc.	HH311	DUB	11/3/2014	36
Chamber - Temperature/Humidity	Cincinnati Sub Zero (CSZ)	ZPH-32-3.5-SCT/AC	TBF	10/10/2014	12
Transformer	Powerstat	246	XFR	NCR	0
Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNU	10/2/2014	12
Attenuator	S.M. Electronics	SA26B-20	RFW	3/10/2015	12
Block - DC	Fairview Microwave	SD3379	AMI	10/2/2014	12
Generator - Signal	Agilent	N5183A	TIK	10/17/2014	36
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	4/20/2015	12

TEST DESCRIPTION

An RF signal generator was used to create the modulated signal(s) listed in the datasheets. These signals were input into the EUT.

A direct connect measurement was made between the EUT's antenna cable and a spectrum analyzer. The spectrum analyzer is equipped with a precision frequency reference that exceeds the stability requirement of the EUT.

Measurements were made at the edges of the main transmit bands as called out on the data sheets. Testing was done with an absence of modulation in a CW mode of operation.

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

Per the requirements of FCC Part 27.54:

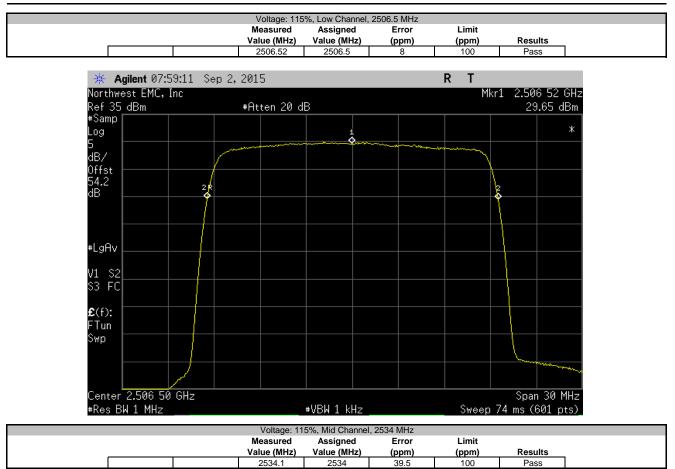
"The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation."

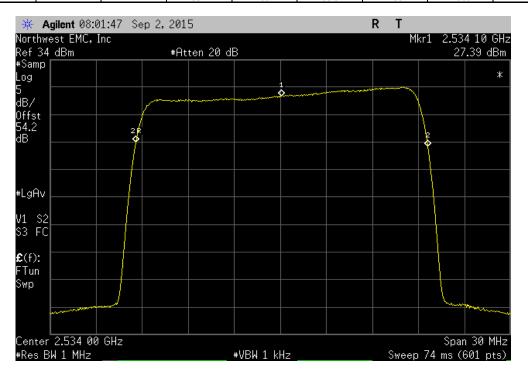
No specific limits are provided in either FCC 27.54, the product specific rule part, or FCC 2.1055, the equipment authorization procedure for testing frequency stability. While there are no limits called out, any results less than 100ppm will still allow the radio to be operating within the band.

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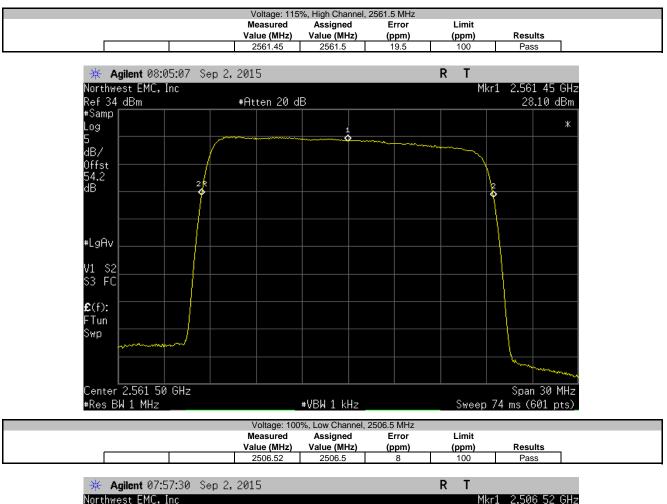
Attendees: N Project: N Tested by: T EST SPECIFICATIO CC 27:2015 OMMENTS	ADC Telecommunications / Co lone lone revor Buls	mmscope		10/40/60Hz			Date: Temperature: Humidity:		
Attendees: N Project: N Tested by: 1 ST SPECIFICATIO C 27:2015 DMMENTS ort 0 was determine	ione Ione revor Buls NS	mmscope	Te	10/40/60Hz					
Project: N Tested by: 1 EST SPECIFICATIO CC 27:2015 DMMENTS ort 0 was determine EVIATIONS FROM	lone revor Buls NS		Te	10/40/60Hz			Humidity:	65%	
Project: N Tested by: 1 EST SPECIFICATIO CC 27:2015 DMMENTS ort 0 was determine EVIATIONS FROM	lone revor Buls NS		Te						
Tested by: T EST SPECIFICATIO CC 27:2015 DMMENTS Drt 0 was determine EVIATIONS FROM	revor Buls NS		Te	10VAC/60Hz		E	Barometric Pres.:		
EST SPECIFICATIO CC 27:2015 OMMENTS Ort 0 was determine EVIATIONS FROM	NS		Te				Job Site:		
CC 27:2015 OMMENTS Ort 0 was determine EVIATIONS FROM				est Method					
OMMENTS ort 0 was determine EVIATIONS FROM 1	ed to be worst case.		Δ	NSI/TIA/EIA-603-C-20	004				
ort 0 was determine	ed to be worst case.		74	100/10/20/0000 20					
ort 0 was determine	ed to be worst case.								
EVIATIONS FROM	ed to be worst case.								
one	TEST STANDARD								
			-	0 0					
onfiguration #	1		Trevor	BUND					
		Signature	sterroc	o share					
					Measured	Assigned	Error	Limit	
				,	Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results
oltage: 115%					14140 (11112)	raido (iiiii2)	(PP)	(PPIII)	
	ow Channel, 2506.5 MHz				2506.52	2506.5	8	100	Deee
									Pass
	Id Channel, 2534 MHz				2534.1	2534	39.5	100	Pass
	ligh Channel, 2561.5 MHz				2561.45	2561.5	19.5	100	Pass
oltage: 100%									
	ow Channel, 2506.5 MHz				2506.52	2506.5	8	100	Pass
Ņ	/lid Channel, 2534 MHz				2534.1	2534	39.5	100	Pass
	ligh Channel, 2561.5 MHz				2561.42	2561.5	31.2	100	Pass
oltage: 85%									
	ow Channel, 2506.5 MHz				2506.52	2506.5	8	100	Pass
	lid Channel, 2534 MHz				2534.1	2534	39.5	100	Pass
	ligh Channel, 2561.5 MHz				2561.45	2561.5	19.5	100	Pass
emperature: +50°					2001110	200110	1010	100	1 400
	ow Channel, 2506.5 MHz				2506.52	2506.5	8	100	Pass
						2534	31.6	100	Pass
	Id Channel, 2534 MHz				2534.08				
	ligh Channel, 2561.5 MHz				2561.45	2561.5	19.5	100	Pass
emperature: +40°									
	ow Channel, 2506.5 MHz				2506.55	2506.5	20	100	Pass
	/id Channel, 2534 MHz				2534.08	2534	31.6	100	Pass
	ligh Channel, 2561.5 MHz				2561.45	2561.5	19.5	100	Pass
emperature: +30°									
	ow Channel, 2506.5 MHz				2506.5	2506.5	0	100	Pass
P. C.	/lid Channel, 2534 MHz				2534.08	2534	31.6	100	Pass
ŀ	ligh Channel, 2561.5 MHz				2561.45	2561.5	19.5	100	Pass
emperature: +20°									
	ow Channel, 2506.5 MHz				2506.52	2506.5	8	100	Pass
	/id Channel, 2534 MHz				2534.1	2534	39.5	100	Pass
	ligh Channel, 2561.5 MHz				2561.45	2561.5	19.5	100	Pass
emperature: +10°					2301.43	2001.0	13.5	100	1 455
	ow Channel, 2506.5 MHz				2506.52	2506.5	8	100	Pass
	Iid Channel, 2534 MHz				2534.1	2534	39.5	100	Pass
	ligh Channel, 2561.5 MHz				2561.45	2561.5	19.5	100	Pass
emperature: 0°									
	ow Channel, 2506.5 MHz				2506.55	2506.5	20	100	Pass
	/lid Channel, 2534 MHz				2534.1	2534	39.5	100	Pass
ŀ	ligh Channel, 2561.5 MHz				2561.45	2561.5	19.5	100	Pass
emperature: -10°									
	ow Channel. 2506.5 MHz				2506.5	2506.5	0	100	Pass
	/id Channel, 2534 MHz				2534.08	2534	31.6	100	Pass
	ligh Channel, 2561.5 MHz				2561.42	2561.5	31.2	100	Pass
emperature: -20°					2301.42	2001.0	51.2	100	1 855
	ow Channel, 2506.5 MHz				2506.52	2506.5	8	100	Pass
	Aid Channel, 2534 MHz				2534.08	2534	31.6	100	Pass
	ligh Channel, 2561.5 MHz				2561.45	2561.5	19.5	100	Pass
emperature: -30°									
L	ow Channel, 2506.5 MHz				2506.52	2506.5	8	100	Pass
1	/lid Channel, 2534 MHz				2534.08	2534	31.6	100	Pass
	ligh Channel, 2561.5 MHz				2561.45	2561.5	19.5	100	Pass

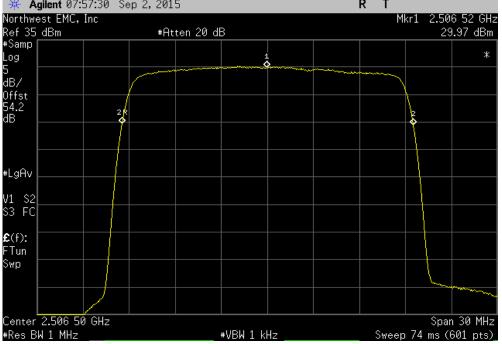




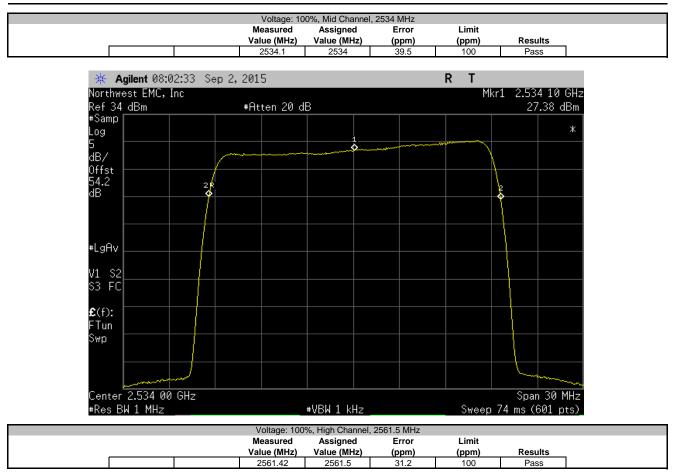


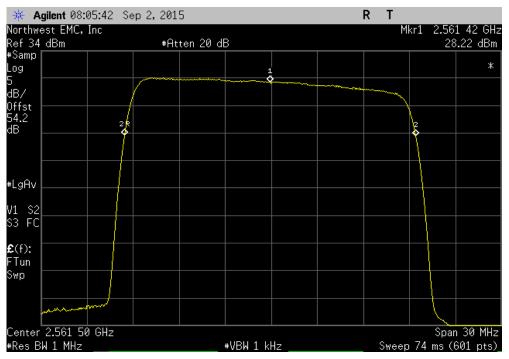




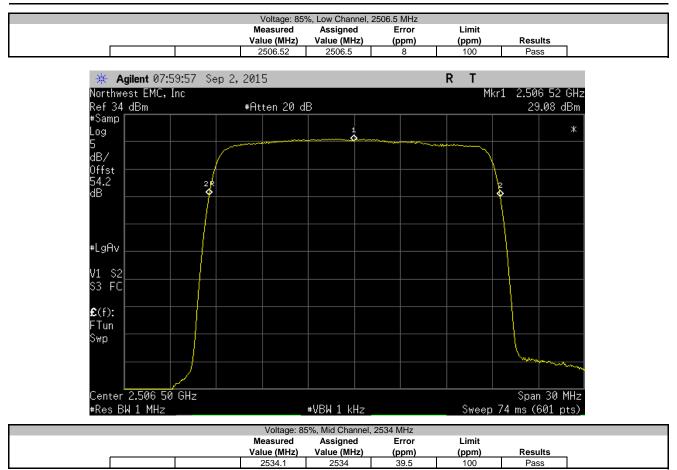


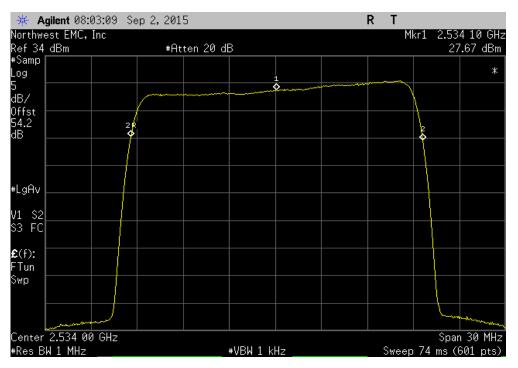




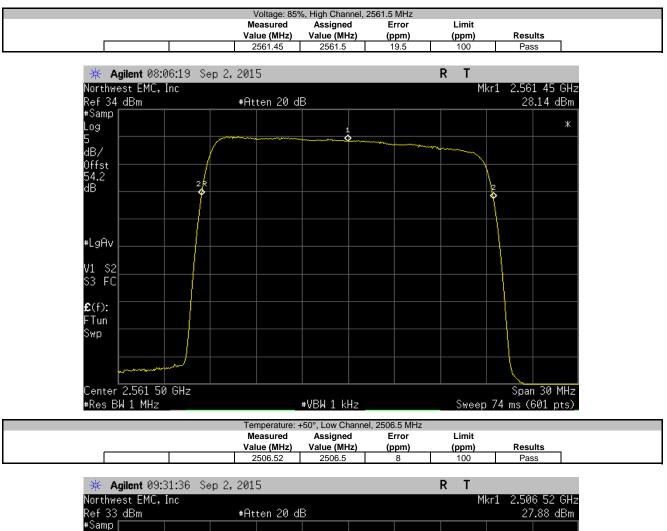


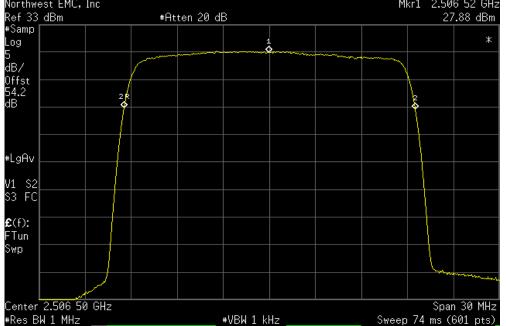




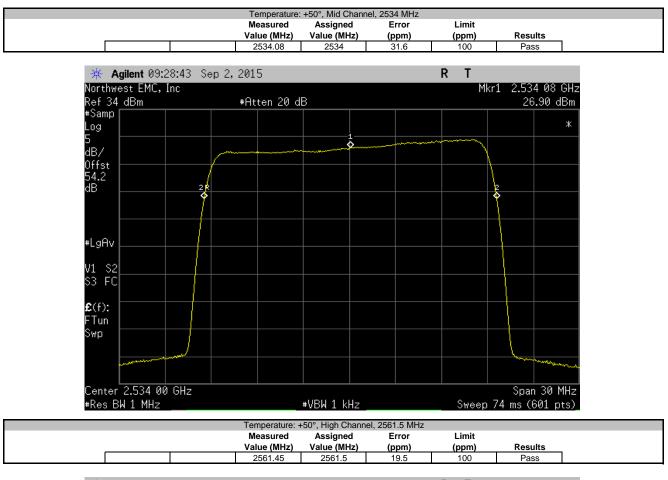


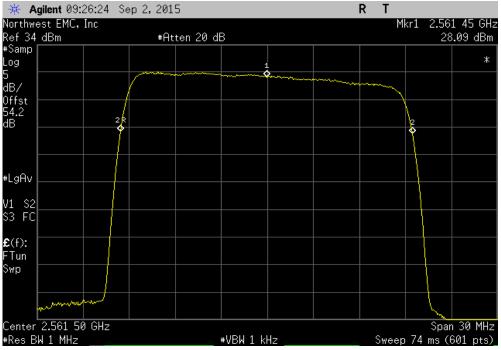




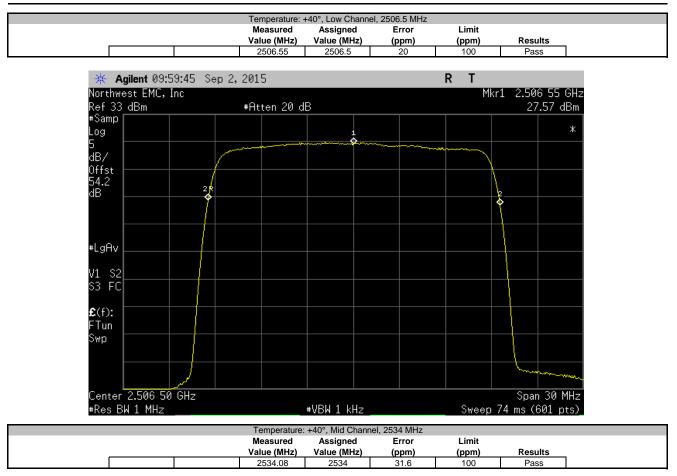






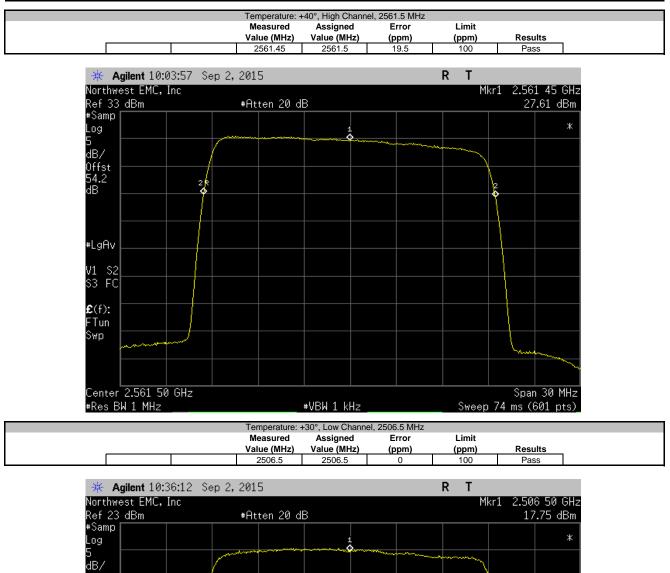


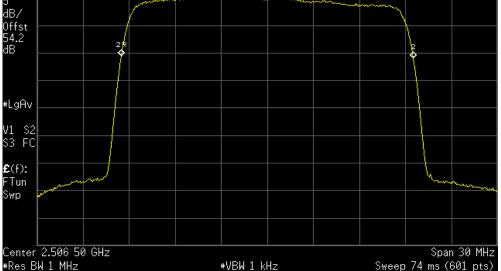




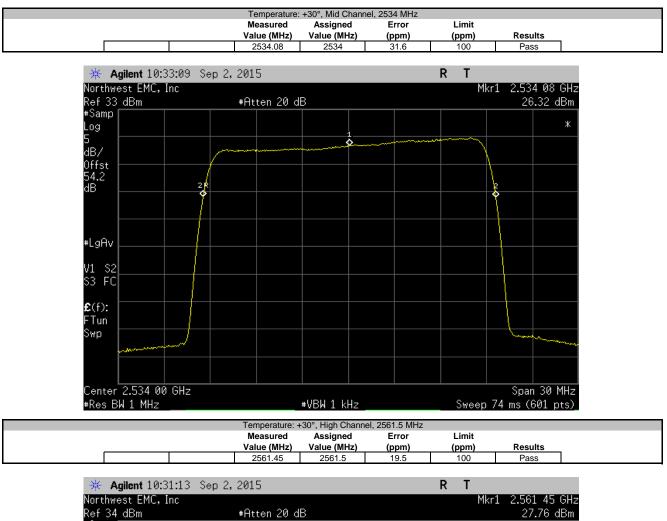






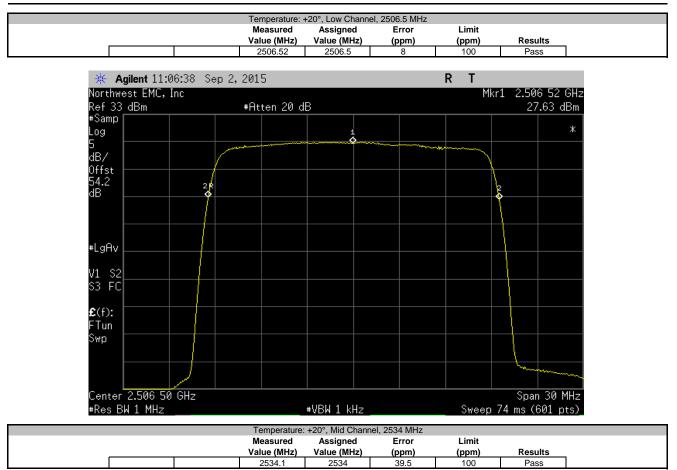


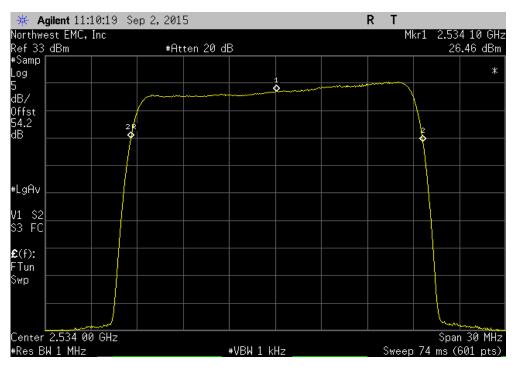




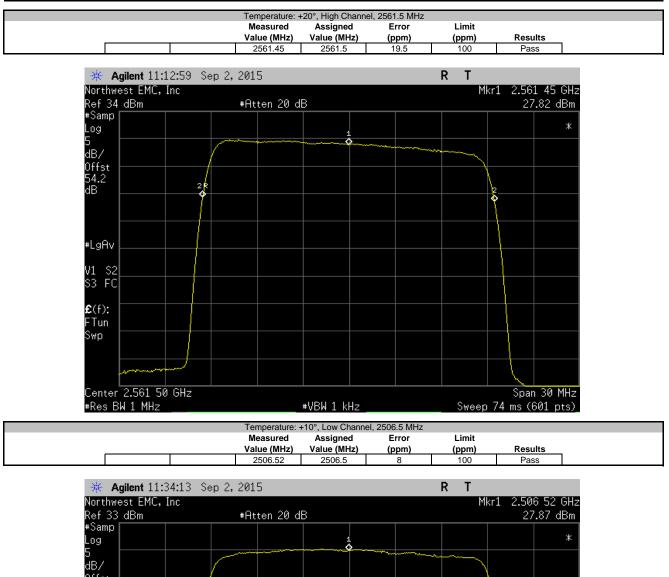












 dB/ Offst 54.2 dB
 2*

 dB
 2*

 dB
 2*

 dB
 2*

 dB
 2*

 *LgAv
 2*

 *LgAv
 2*

 V1 S2
 2*

 S3 FC
 2*

 £(f):
 5*

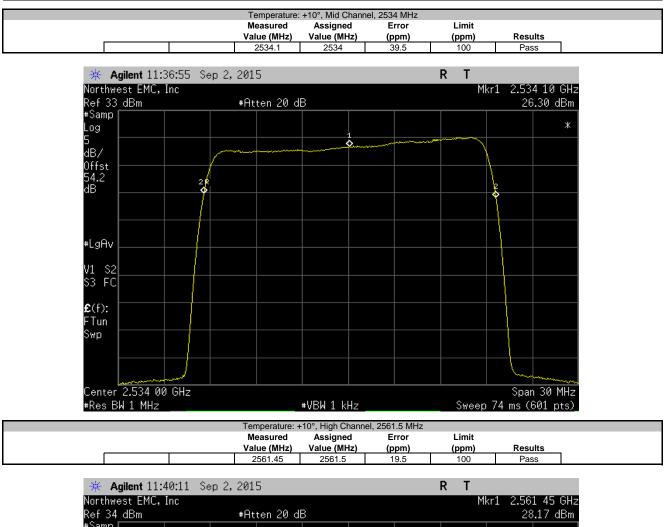
 FTun
 5*

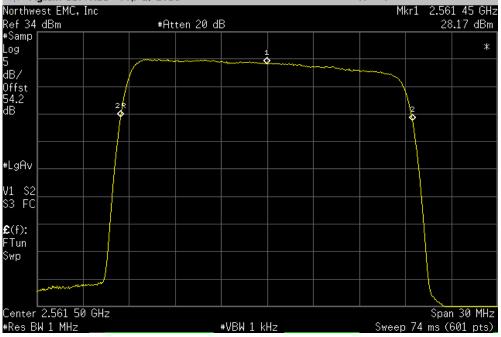
 Swp
 5*

 Center 2.506 50 GHz
 *VBW 1 kHz

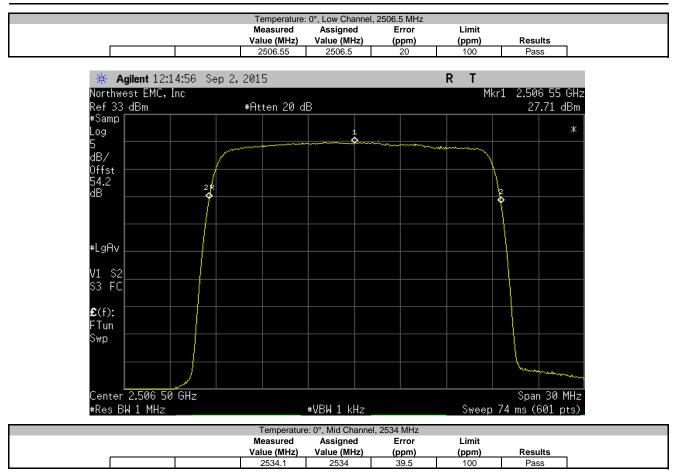
 *Res BW 1 MHz
 *VBW 1 kHz





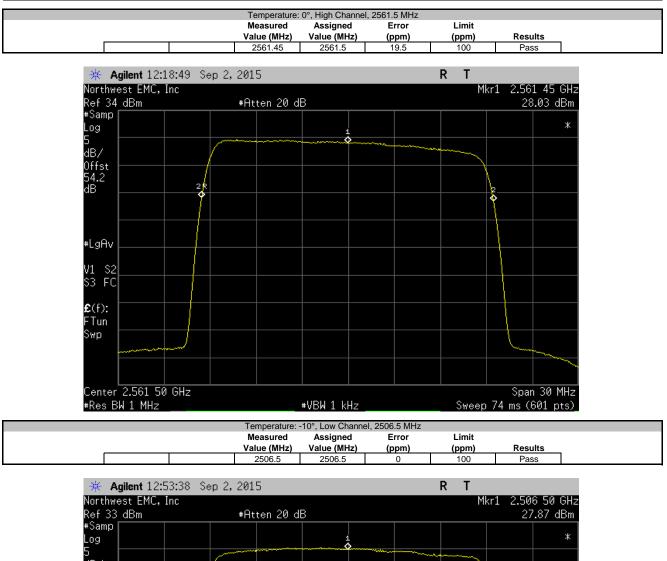


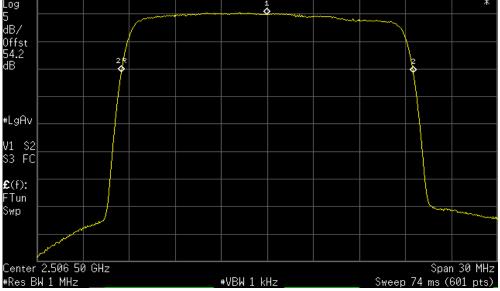




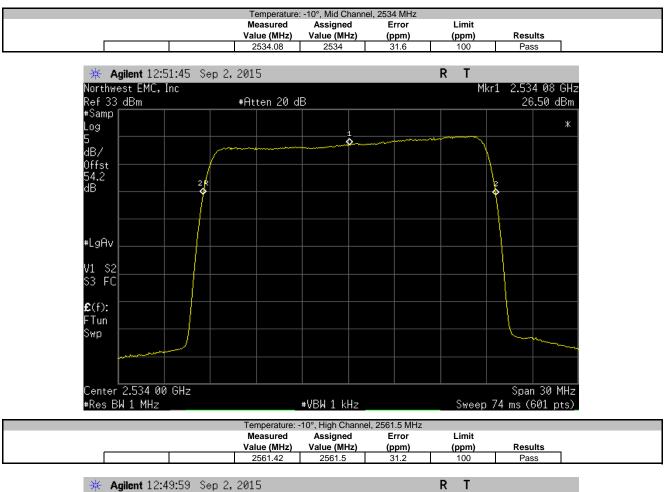


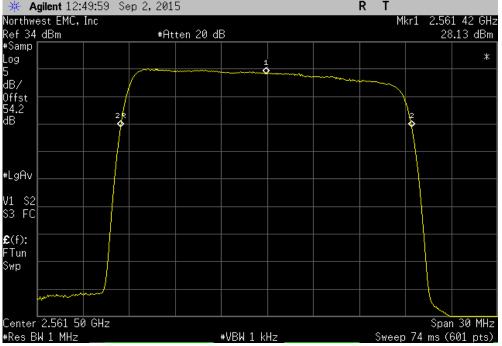




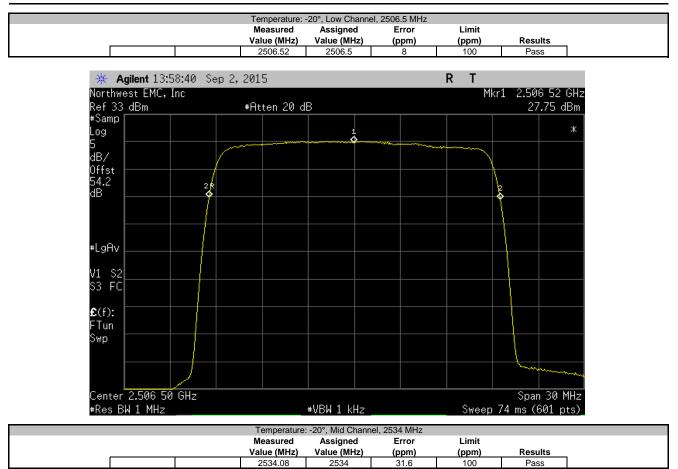


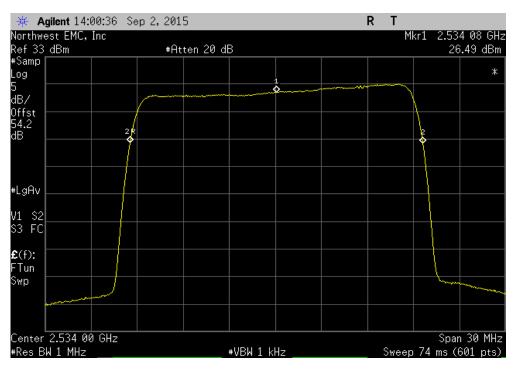




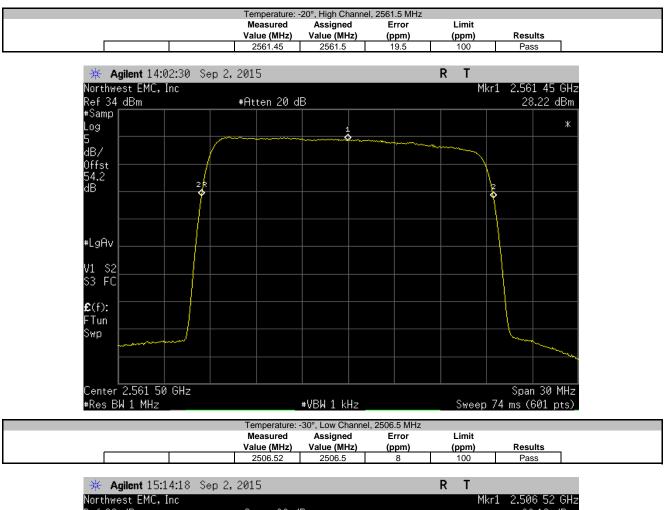






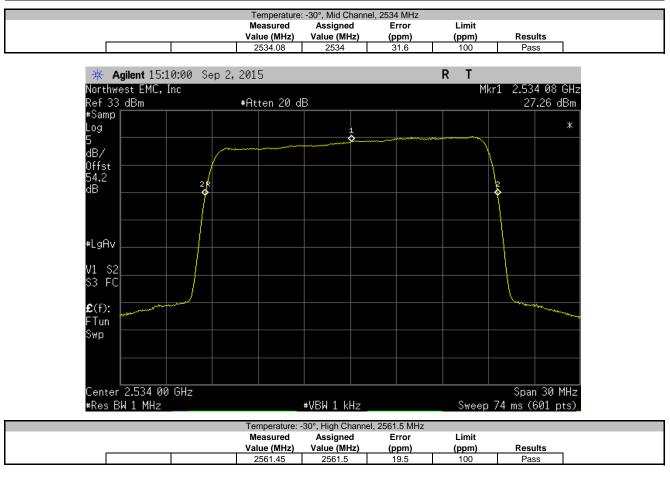


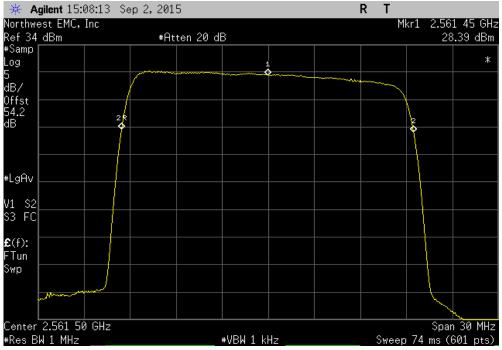




- 🔆 Agilent 15:1	.4:18 Sep 2, 201		RT					
Northwest EMC, 1				Μ	lkr1 2.506 52 GHz			
Ref 33 dBm	#A1	tten 20 dB			28.13 dBm			
#Samp Log			1		*			
5			\$					
dB/								
Offst								
Offst 54.2 dB	2 R				2			
#LgAv								
V1 S2								
\$3 FC								
€(f): FTun								
Swp	<u>/</u>							
4.10								
Center 2.506 50	GHz				Span 30 MHz			
#Res BW 1 MHz		#VBW 1	kHz	Sweep	o 74 ms (601 pts)_			









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

					Interval
Description	Manufacturer	Model	ID	Last Cal.	(mo)
Cable	ESM Cable Corp.	TTBJ141 KMKM-72	MNU	10/2/2014	12
Attenuator	S.M. Electronics	SA26B-20	RFW	3/10/2015	12
Block - DC	Fairview Microwave	SD3379	AMI	10/2/2014	12
Generator - Signal	Agilent	N5183A	TIK	10/17/2014	36
Analyzer - Spectrum Analyzer	Agilent	E4440A	AAX	4/20/2015	12

TEST DESCRIPTION

An RF signal generator was used to create the modulated signal(s) listed in the datasheets. These signals were input into the EUT.

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:

RBW = Approx. 1% of the emission bandwidth (B). This was an iterative process to determine the RBW based on the emissions bandwidth (B).

≻VBW= > RBW

≻A peak detector was used

>Trace max hold.

The spectrum analyzer occupied bandwidth measurement function was then used to measure the 26 dB emission bandwidth.

There is no required limit to be met in the rule part for this test. The purpose of the test is to both report the results and to utilize the emission bandwidth for setting the channel power integration bandwidth during conducted output power testing.



EUT:	Prism 2.5 GHz TDD (249	6.5-2571.5 MHz) HDM				Work Order:		
Serial Number:	None						09/03/15	
Customer:	ADC Telecommunicatio	ns / Commscope				Temperature:	24.1°C	
Attendees:						Humidity:		
Project:	None					Barometric Pres.:		
	Trevor Buls			Power:	110VAC/60Hz	Job Site:	MN08	
TEST SPECIFICATI	IONS				Test Method			
FCC 27:2015					ANSI/TIA/EIA-603-C-2004			
COMMENTS								
Port 0 was determi	ned to be worst case.							
DEVIATIONS FROM	I TEST STANDARD							
None								
Configuration #	1		-1	-	Buls			
		Signature	2.	nevoc	. v mie			
						Value	Limit	Result
LTE 20 MHz								
	Low Channel, 2506.5 MH	z						
	Port 0					19.883 MHz	N/A	N/A
	Mid Channel, 2534 MHz							
	Port 0					19.853 MHz	N/A	N/A
	Input Signal					19.865 MHz	N/A	N/A
	High Channel, 2561.5 MH							
	Port 0					19.725 MHz	N/A	N/A



