

## Parallel Wireless Inc.

CWS-3050-12

FCC 27:2016

FCC 27.53:2016

**Converged Wireless System Base Station** 

Report # KMWC0074





NVLAP Lab Code: 200676-0

## **CERTIFICATE OF TEST**



Last Date of Test: November 08, 2016
Parallel Wireless Inc.
Model: CWS-3050-12

## **Radio Equipment Testing**

#### **Standards**

C 10 10.0 0.0	
Specification	Method
FCC 27:2016	ANSI/TIA/EIA-603-D-2010
FCC 27.53:2016	ANOI/ HA/EIA-003-D-2010

#### Results

itesuit	Juito					
Method Clause	Test Description	Applied	Results	Comments		
2.2.1	Conducted Output Power	Yes	Pass			
2.2.1	Peak To Average Ratio	Yes	Pass			
2.2.2	Frequency Stability	Yes	Pass			
2.2.3	Occupied Bandwidth	Yes	Pass			
2.2.12	Out of Band Emissions - LTE Bands 12 and 17	Yes	Pass			
2.2.13	Spurious Emissions at the Antenna Terminals	Yes	Pass			
2.2.13	Band Edge Compliance	Yes	Pass			
2.2.13	Intermodulation	Yes	Pass			

#### **Deviations From Test Standards**

None

Approved By:

Victor Ratinoff, 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		

Report No. KMWC0074 3/161

# 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

**ISED** - Recognized by Innovation, Science and Economic Development Canada as a Certification Body (CB). Certification chambers and Open Area Test Sites are filed with ISED.

#### **European Union**

European Commission - Validated by the European Commission 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:

http://www.nwemc.com/accreditations/ http://gsi.nist.gov/global/docs/cabs/designations.html

Report No. KMWC0074 4/161

## 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 QM205.4.6. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty (K=2) can be found included as part of the applicable test description page. 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

Report No. KMWC0074 5/161

## **FACILITIES**





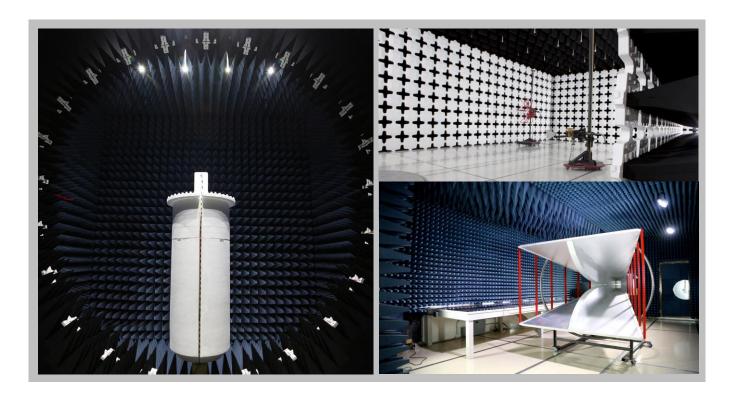


California
Labs OC01-13
41 Tesla
Irvine, CA 92618
(949) 861-8918

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<sup>th</sup> Ave NE
Bothell, WA 98011
(425)984-6600

(949) 861-8918	(612)-638-5136	,		(469) 304-5255	(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			
	Innovation, Science and Economic Development Canada							
2834B-1, 2834B-3	2834E-1	N/A	2834D-1, 2834D-2	2834G-1	2834F-1			
		BS	МІ					
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			



Report No. KMWC0074 6/161

## PRODUCT DESCRIPTION



## **Client and Equipment Under Test (EUT) Information**

Company Name:	Parallel Wireless Inc.
Address:	1 Tara Blvd, Suite #404
City, State, Zip:	Nashua, NH 03062
Test Requested By:	Edward Lee of KMW Communications
Model:	CWS-3050-12
First Date of Test:	August 29, 2016
Last Date of Test:	November 08, 2016
Receipt Date of Samples:	August 29, 2016
Equipment Design Stage:	Production
Equipment Condition:	No Damage

## **Information Provided by the Party Requesting the Test**

## Functional Description of the EUT:

Tower based Converged Wireless System Base Station operating in LTE Band 12 and Band 17 with 5 MHz and 10 MHz channel bandwidths.

#### **Testing Objective:**

To demonstrate compliance of the Cellular radio to FCC Part 27 requirements.

Report No. KMWC0074 7/161

## **CONFIGURATIONS**



## Configuration KMWC0074-1

Software/Firmware Running during test	
Description	Version
eNB2440_20160729_v0_1_41.pkg	41

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Converged Wireless System Base Station	Parallel Wireless Inc.	CWS-3050-12	K163300001

Peripherals in test setup boundary						
Description	ription Manufacturer Model/Part Number Serial Number					
High Power Terminator	Telcon	KTMO400800060	1111-0064			
Laptop	Samsung	NP300V5A	HGHS93-JBA00674K			
Laptop Power Supply	Delta Electronics, Inc.	SADP-90FH D	CNBA4400215ABZ040C18685			

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
DC Cable	No	5m	No	CWS-3050-12 Tower	DC Mains
RF Output Cable x2	Yes	5m	No	CWS-3050-12 Tower	High Power Terminator
Ethernet Cable	No	2.5m	No	CWS-3050-12 Tower	Laptop
AC Cable	No	1.5m	No	AC Mains	Laptop Power Supply
DC Cable	No	2.0m	Yes	Laptop	Laptop Power Supply

## Configuration KMWC0074- 2

Software/Firmware Running during test	
Description	Version
eNB2440_20160729_v0_1_41.pkg	41

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Converged Wireless System Base Station	Parallel Wireless Inc.	CWS-3050-12	K163300001

Peripherals in test setup boundary							
Description Manufacturer Model/Part Number Serial Number							
High Power Terminator	Telcon	KTMO400800060	1111-0064				
High Power Terminator Telcon KTMO400800060 1111-0004							

Cables							
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2		
DC Cable	No	5m	No	CWS-3050-12 Tower	DC Mains		
Ethernet Cable	No	2.5m	No	CWS-3050-12 Tower	Unterminated		
AISG Cable	Yes	3m	No	CWS-3050-12 Tower	Unterminated		
AISG (ALM) Cable	Yes	6.1m	No	CWS-3050-12 Tower	Unterminated		
RF Output Cable x2	Yes	5m	No	CWS-3050-12 Tower	High Power Terminator		
Optical Cable	No	10m	No	CWS-3050-12 Tower	Unterminated		
Ground Braid	No	2m	No	CWS-3050-12 Tower	Ground		

Report No. KMWC0074 8/161

## **CONFIGURATIONS**



## Configuration KMWC0077-1

Software/Firmware Running during test	
Description	Version
eNB2440_20160729_v0_1_41.pkg	41

EUT							
Description	Manufacturer	Model/Part Number	Serial Number				
Converged Wireless System Base Station	Parallel Wireless Inc.	CWS-3050-12	K163300001				

Peripherals in test setup boundary								
Description Manufacturer Model/Part Number Serial Number								
High Power Terminator	Telcon	KTMO400800060	1111-0064					
Laptop	Samsung	NP300V5A	HGHS93-JBA00674K					
Laptop Power Supply	Delta Electronics, Inc.	SADP-90FH D	CNBA4400215ABZ040C18685					

Cables								
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2			
DC Cable	No	5m	No	CWS-3050-12 Tower	DC Mains			
RF Output Cable x2	Yes	5m	No	CWS-3050-12 Tower	High Power Terminator			
Ethernet Cable	No	2.5m	No	CWS-3050-12 Tower	Laptop			
AC Cable	No	1.5m	No	AC Mains	Laptop Power Supply			
DC Cable	No	2.0m	Yes	Laptop	Laptop Power Supply			

## Configuration KMWC0077- 2

Software/Firmware Running during test	
Description	Version
eNB2440_20160729_v0_1_41.pkg	41

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Converged Wireless System Base Station	Parallel Wireless Inc.	CWS-3050-12	K163300001

Peripherals in test setup boundary							
Description Manufacturer Model/Part Number Serial Number							
High Power Terminator	Telcon	KTMO400800060	1111-0064				
High Power Terminator Telcon KTMO400800060 1111-0004							

Cables								
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2			
DC Cable	No	5m	No	CWS-3050-12 Tower	DC Mains			
Ethernet Cable	No	2.5m	No	CWS-3050-12 Tower	Unterminated			
AISG Cable	Yes	3m	No	CWS-3050-12 Tower	Unterminated			
AISG (ALM) Cable	Yes	6.1m	No	CWS-3050-12 Tower	Unterminated			
RF Output Cable x2	Yes	5m	No	CWS-3050-12 Tower	High Power Terminator			
Optical Cable	No	10m	No	CWS-3050-12 Tower	Unterminated			
Ground Braid	No	2m	No	CWS-3050-12 Tower	Ground			

Report No. KMWC0074 9/161

## **MODIFICATIONS**



## **Equipment Modifications**

I to use	Data	Tool	Madification	Note	Diamonitian of FUT
Item	Date	Test	Modification	Note No EMI our processor	Disposition of EUT
	0/00/0040	Band Edge	Tested as	No EMI suppression	EUT remained at
1	8/29/2016	Compliance	delivered to	devices were added or	Northwest EMC
		'	Test Station.	modified during this test.	following the test.
•	0/00/0040	Peak to Average	Tested as	No EMI suppression	EUT remained at
2	8/29/2016	Ratio	delivered to	devices were added or	Northwest EMC
			Test Station.	modified during this test.	following the test.
_		Conducted Output	Tested as	No EMI suppression	EUT remained at
3	8/29/2016	Power	delivered to	devices were added or	Northwest EMC
		1 01101	Test Station.	modified during this test.	following the test.
			Tested as	No EMI suppression	EUT remained at
4	8/29/2016	Occupied Bandwidth	delivered to	devices were added or	Northwest EMC
			Test Station.	modified during this test.	following the test.
			Tested as	No EMI suppression	EUT remained at
5	8/29/2016	Frequency Stability	delivered to	devices were added or	Northwest EMC
			Test Station.	modified during this test.	following the test.
		Out of Band	Tested as	No EMI suppression	EUT remained at
6	8/31/2016	Emissions - LTE	delivered to	devices were added or	Northwest EMC
		Band 12	Test Station.	modified during this test.	following the test.
		Intermodulation	Tested as	No EMI suppression	EUT remained at
7	9/12/2016		delivered to	devices were added or	Northwest EMC
			Test Station.	modified during this test.	following the test.
		Spurious Emissions at the Antenna Terminals	Tested as	No EMI suppression	EUT remained at
8	9/12/2016		delivered to	devices were added or	Northwest EMC
			Test Station.	modified during this test.	following the test.
		On a divista di Ovitavit	Tested as	No EMI suppression	EUT remained at
9	11/8/2016	Conducted Output Power	delivered to	devices were added or	Northwest EMC
		Power	Test Station.	modified during this test.	following the test.
		Daalata Assana	Tested as	No EMI suppression	EUT remained at
10	11/8/2016	Peak to Average	delivered to	devices were added or	Northwest EMC
		Ratio	Test Station.	modified during this test.	following the test.
			Tested as	No EMI suppression	EUT remained at
11	11/8/2016	Occupied Bandwidth	delivered to	devices were added or	Northwest EMC
			Test Station.	modified during this test.	following the test.
		Out of Band	Tested as	No EMI suppression	EUT remained at
12	11/8/2016	Emissions – LTE	delivered to	devices were added or	Northwest EMC
		Band 17	Test Station.	modified during this test.	following the test.
		Spurious Emissions	Tested as	No EMI suppression	EUT remained at
13	11/8/2016	at the Antenna	delivered to	devices were added or	Northwest EMC
		Terminals	Test Station.	modified during this test.	following the test.
			Tested as	No EMI suppression	EUT remained at
14	11/8/2016	Band Edge	delivered to	devices were added or	Northwest EMC
-		Compliance	Test Station.	modified during this test.	following the test.
			Tested as	No EMI suppression	
15	11/8/2016	Intermodulation	delivered to	devices were added or	Scheduled testing
. •	1 5. 25 . 6	IIIIGIIIIOUUIAUOII	Test Station.	modified during this test.	was completed.
	l	l .	. 501 01413111	autilia dalling tino tooti	l

Report No. KMWC0074 10/161



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.	Cal. Due
Power Supply - DC	Hewlett Packard	6574A	TPX	NCR	NCR
Generator - Signal	Agilent	E8257D	TGU	2/5/2015	2/5/2018
Cable	Fairview Microwave	SCA1814-0101-120	OCZ	NCR	NCR
Block - DC	Aeroflex	INMET 8535	AMO	4/4/2016	4/4/2017
Meter - Power	ETS Lindgren	7002-006	SRB	12/14/2015	12/14/2016

#### **CLIENT PROVIDED EQUIPMENT**

Description	Manufacturer	Model	Last Cal.	Cal. Due
High Power Attenuator - 30dB	Aeroflex/Weinschel	53-30-43	NCR	NCR
Attenuator - 20dB	N/A	N/A	NCR	NCR
Power Divider	Fairview Microwave	MP8748-2	NCR	NCR
50Ohm Terminator	Aeroflex/Weinschel	1455-4	NCR	NCR
High Power Terminator	Telcon	KTMO400800060	NCR	NCR

#### **TEST DESCRIPTION**

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer

The RF output power was measured with the EUT set to the modes called out in the datasheet. 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 ERP.

ERP = Max Measured Power + Antenna gain (dBi)

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

Report No. KMWC0074 11/161

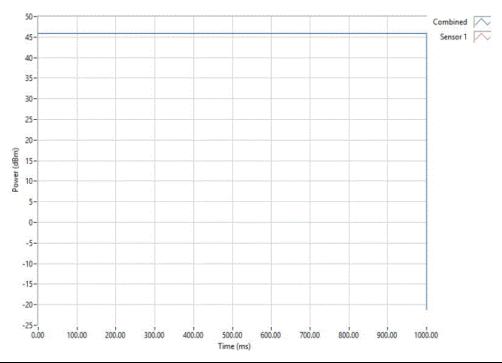


FUT.	CWS-3050-12							Work Order:	KMMC0074	
Serial Number:									08/29/16	
	Parallel Wireless Inc.							Temperature:		
Attendees:								Humidity:		
Project:								Barometric Pres.:		
	Johnny Candelas			P	ower: 48 VDC			Job Site:	OC13	
TEST SPECIFICATI	ONS				Test Method					
FCC 27:2016					ANSI/TIA/EIA-603-D-	2010				
COMMENTS										
Power Level Settin	a 40W. Reference Level C	Offset: DC Block + 30dB	Attenuator + 20	dB Attenua	tor + Power Divider + Cabl	e Loss = 54.8dB t	otal.			
Antenna Gain is as	sumed to be 0. per specif	ication antenna gain wi	II be re-evaluate	d durina fin	al installation taking heigh	nt into account.				
	its taken separately and a									
	TEST STANDARD									
None										
110110		I		0	1 1 1					
Configuration #	1		-1	e v	U. Com					
a a		Signature			-					
	l .	Signature			Avg Cond	Duty	Antenna	EIRP	Limit	
					Pwr (dBm)	Cycle (%)	Gain (dBi)	(dBm)	(dBm)	Results
Antenna Port 1					r wr (dbiil)	Sycie (70)	Jani (ubi)	(ubiii)	(ubiii)	INCOURTO
Antenna Port 1	Low Channel I TEE 724 F	MU-			45.0	100	0	45.0	60	Poss
	Low Channel LTE5, 731.5				45.9	100	0	45.9	60	Pass
	Mid Channel LTE5, 737.5				45.98	100	0	46.0	60	Pass
	High Channel LTE5, 743.5				45.9	100	0	45.9	60	Pass
	Low Channel LTE10, 734				45.97	100	0	46.0	60	Pass
	Mid Channel LTE10, 737.5				45.98	100	0	46.0	60	Pass
	High Channel LTE10, 741	MHz			46	100	0	46.0	60	Pass
Antenna Port 2										
	Low Channel LTE5, 731.5	MHz			45.99	100	0	46.0	60	Pass
	Mid Channel LTE5, 737.5	MHz			45.95	100	0	46.0	60	Pass
	High Channel LTE5, 743.5	MHz			45.96	100	0	46.0	60	Pass
	Low Channel LTE10, 734	MHz			46	100	0	46.0	60	Pass
	Mid Channel LTE10, 737.5	5 MHz			45.98	100	0	46.0	60	Pass
	High Channel LTE10, 741				46	100	Ö	46.0	60	Pass
Antenna Port 1 MIM										
	Low Channel LTE5, 731.5	MHz			45.99	100	0	46.0	60	Pass
	Mid Channel LTE5, 737.5				45.98	100	0	46.0	60	Pass
	High Channel LTE5, 743.5				45.98	100	0	46.0	60	Pass
	Low Channel LTE10, 734				45.98	100	0	46.0	60	Pass
	Mid Channel LTE10, 737.5				45.96 46	100	0	46.0	60	Pass
					46 45.99	100	0	46.0 46.0	60	Pass
Antonno Dort 2 Milha	High Channel LTE10, 741	IVITIZ			45.99	100	U	40.0	00	Pass
Antenna Port 2 MIM		MI I-			45.00	400	_	45.0	00	D
	Low Channel LTE5, 731.5				45.93	100	0	45.9	60	Pass
	Mid Channel LTE5, 737.5				45.97	100	0	46.0	60	Pass
	High Channel LTE5, 743.5				45.97	100	0	46.0	60	Pass
	Low Channel LTE10, 734				45.92	100	0	45.9	60	Pass
	Mid Channel LTE10, 737.5				45.97	100	0	46.0	60	Pass
	High Channel LTE10, 741	MHz			45.92	100	0	45.9	60	Pass
Linear Sum of the P	ower									
			Port 1 (mW)	Port 2 (m		Sum (dBm)				
	Low Channel LTE5, 731.5	MHz	39719.2	39174.2	2 78893.3	48.97	0	49.0	60	Pass
	Mid Channel LTE5, 737.5	MHz	39627.8	39536.7	7 79164.5	48.99	0	49.0	60	Pass
	High Channel LTE5, 743.5	MHz	39627.8	39536.7	7 79164.5	48.99	0	49.0	60	Pass
	Low Channel LTE10, 734		39627.8	39084.		48.96	Ō	49.0	60	Pass
	Mid Channel LTE10, 737.5		39810.7	39536.		49.00	0	49.0	60	Pass
	High Channel LTE10, 741		39719.2	39084.		48.97	0	49.0	60	Pass
	g 5114111161 E1 E10, 741		007 10.2	00004.	. 70000.2	40.01	Ü	40.0	00	1 400

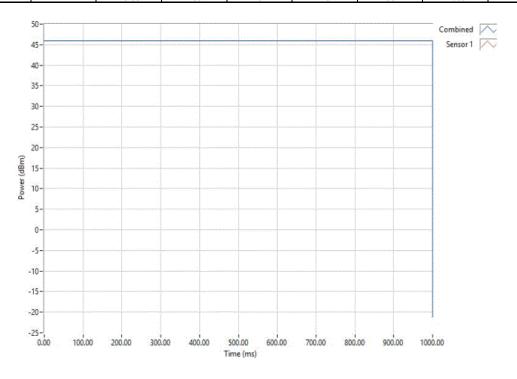
Report No. KMWC0074 12/161



		Antenna Port 1	, Low Channel LT	E5, 731.5 MHz		
	Avg Cond	Duty	Antenna	EIRP	Limit	
	Pwr (dBm)	Cycle (%)	Gain (dBi)	(dBm)	(dBm)	Results
1	45.9	100	0	45.9	60	Pass



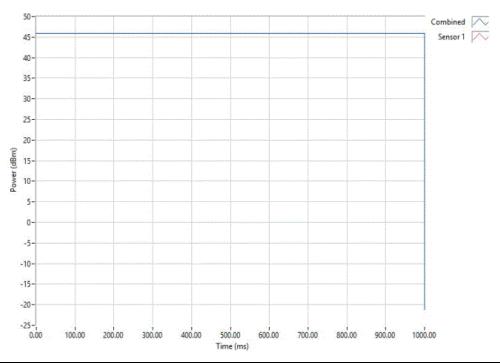
		Antenna Port 1	, Mid Channel LT	E5, 737.5 MHz		
	Avg Cond	Duty	Antenna	EIRP	Limit	
	Pwr (dBm)	Cycle (%)	Gain (dBi)	(dBm)	(dBm)	Results
	45.98	100	0	46	60	Pass



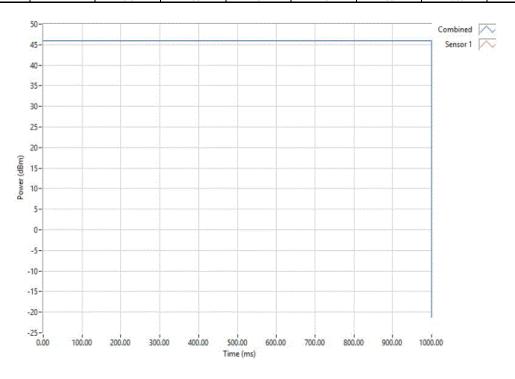
Report No. KMWC0074 13/161



		Antenna Port 1	, High Channel L	ΓΕ5, 743.5 MHz			
	Avg Cond	Duty	Antenna	EIRP	Limit		
	Pwr (dBm)	Cycle (%)	Gain (dBi)	(dBm)	(dBm)	Results	
	45.9	100	0	45.9	60	Pass	I



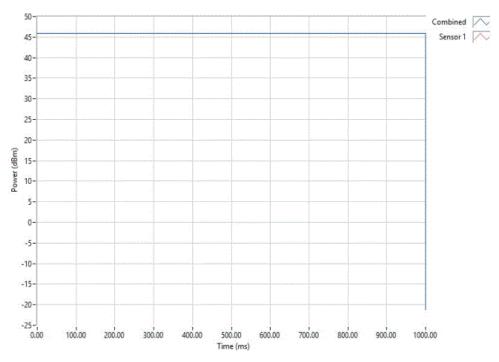
		Antenna Port 1	, Low Channel L	TE10, 734 MHz		
	Avg Cond	Duty	Antenna	EIRP	Limit	
	Pwr (dBm)	Cycle (%)	Gain (dBi)	(dBm)	(dBm)	Results
	45.97	100	0	46	60	Pass



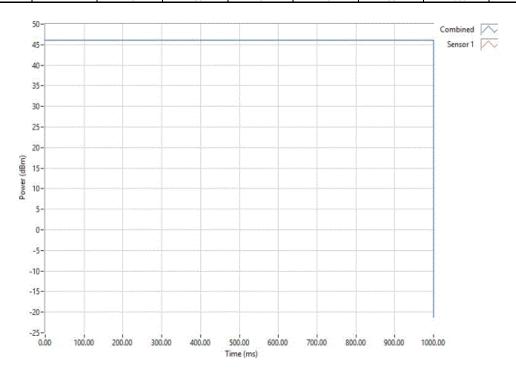
Report No. KMWC0074 14/161



	Antenna Port 1	Mid Channel LT	E10, 737.5 MHz			
Avg Cond	Duty	Antenna	EIRP	Limit		
Pwr (dBm)	Cycle (%)	Gain (dBi)	(dBm)	(dBm)	Results	
45.98	100	0	46	60	Pass	Ì



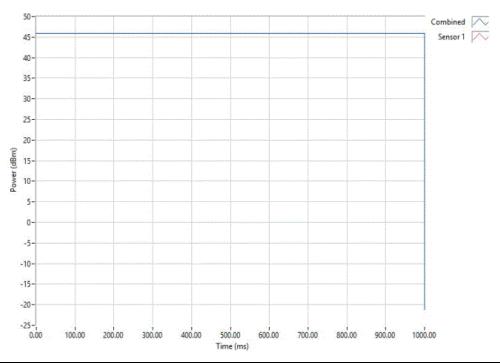
		Antenna Port 1	, High Channel L	TE10, 741 MHz		
	Avg Cond	Duty	Antenna	EIRP	Limit	
_	Pwr (dBm)	Cycle (%)	Gain (dBi)	(dBm)	(dBm)	Results
ĺ	46	100	0	46	60	Pass



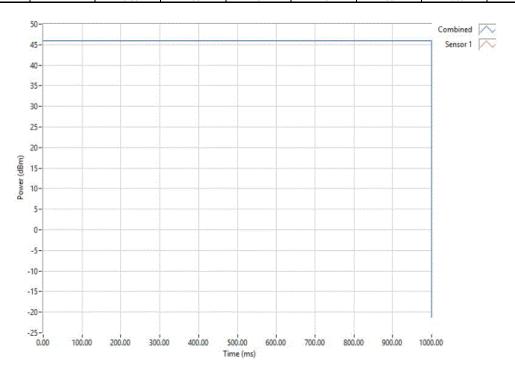
Report No. KMWC0074 15/161



	Antenna Port 2	, Low Channel LT	E5, 731.5 MHz		
Avg Cond	Duty	Antenna	EIRP	Limit	
Pwr (dBm)	Cycle (%)	Gain (dBi)	(dBm)	(dBm)	Results
45.99	100	0	46	60	Pass



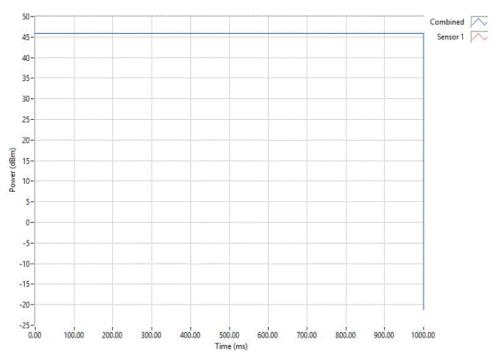
	Antenna Port 2	2, Mid Channel LT	E5, 737.5 MHz		
Avg Cond	Duty	Antenna	EIRP	Limit	
 Pwr (dBm)	Cycle (%)	Gain (dBi)	(dBm)	(dBm)	Results
45.95	100	0	46	60	Pass



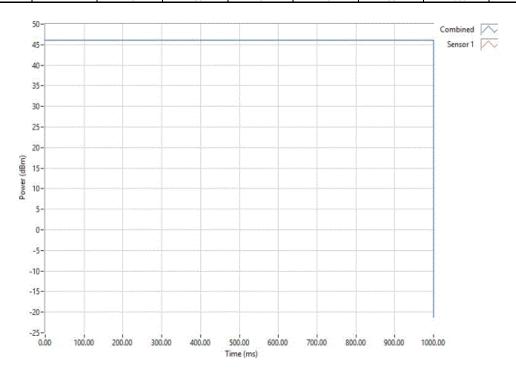
Report No. KMWC0074 16/161



	Antenna Port 2	, High Channel L	ΓΕ5, 743.5 MHz			
Avg Cond	Duty	Antenna	EIRP	Limit		
Pwr (dBm)	Cycle (%)	Gain (dBi)	(dBm)	(dBm)	Results	
45.96	100	0	46	60	Pass	ł



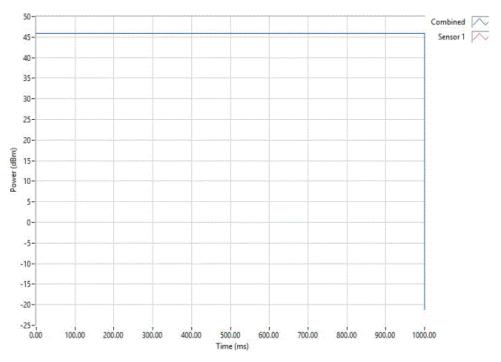
		Antenna Port 2	, Low Channel L	ΓΕ10, 734 MHz		
	Avg Cond	Duty	Antenna	EIRP	Limit	
_	Pwr (dBm)	Cycle (%)	Gain (dBi)	(dBm)	(dBm)	Results
ĺ	46	100	0	46	60	Pass



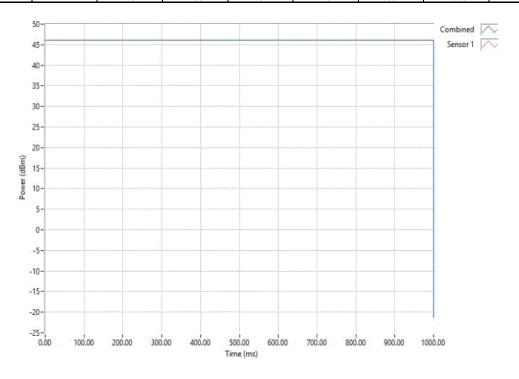
Report No. KMWC0074 17/161



		Antenna Port 2,	Mid Channel LT	E10, 737.5 MHz		
	Avg Cond	Duty	Antenna	EIRP	Limit	
	Pwr (dBm)	Cycle (%)	Gain (dBi)	(dBm)	(dBm)	Results
1	45.98	100	0	46	60	Pass

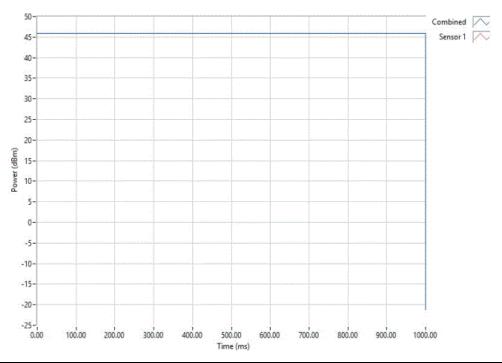


		Antenna Port 2	, High Channel L	TE10, 741 MHz		
	Avg Cond	Duty	Antenna	EIRP	Limit	
_	Pwr (dBm)	Cycle (%)	Gain (dBi)	(dBm)	(dBm)	Results
i ſ	46	100	0	46	60	Pass

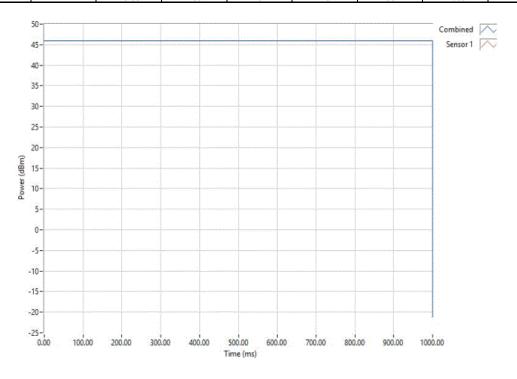




Α	ntenna Port 1 MI	MO, Low Channe	LTE5, 731.5 MH	łz		
Avg Cond	Duty	Antenna	EIRP	Limit		
 Pwr (dBm)	Cycle (%)	Gain (dBi)	(dBm)	(dBm)	Results	_
45.99	100	0	46	60	Pass	I

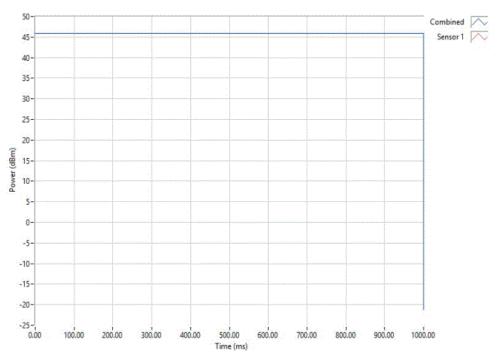


-	Antenna Port 1 MI	MO, Mid Channe	I LTE5, 737.5 MH	łz	
Avg Cond	Duty	Antenna	EIRP	Limit	
 Pwr (dBm)	Cycle (%)	Gain (dBi)	(dBm)	(dBm)	Results
45.98	100	0	46	60	Pass

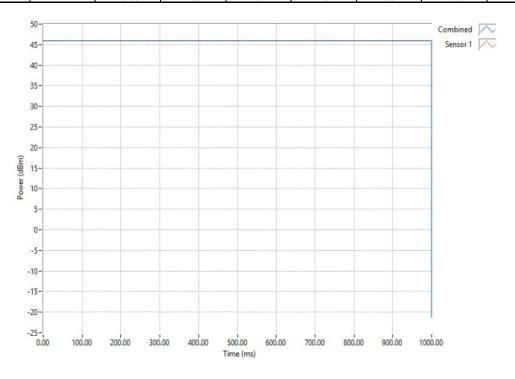




	Aı	ntenna Port 1 MIN	MO, High Channe	I LTE5, 743.5 MH	łz		
	Avg Cond	Duty	Antenna	EIRP	Limit		
	Pwr (dBm)	Cycle (%)	Gain (dBi)	(dBm)	(dBm)	Results	
	45.98	100	0	46	60	Pass	I

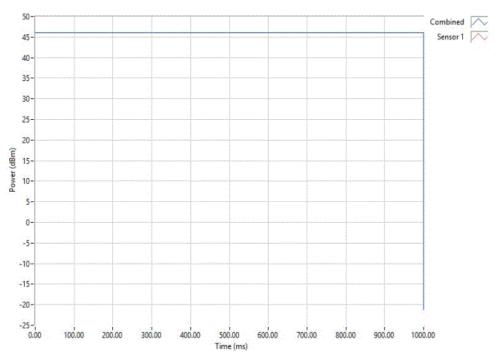


	А	Intenna Port 1 MI	MO, Low Channe	I LTE10, 734 MH	Z	
	Avg Cond	Duty	Antenna	EIRP	Limit	
	Pwr (dBm)	Cycle (%)	Gain (dBi)	(dBm)	(dBm)	Results
	45.98	100	0	46	60	Pass

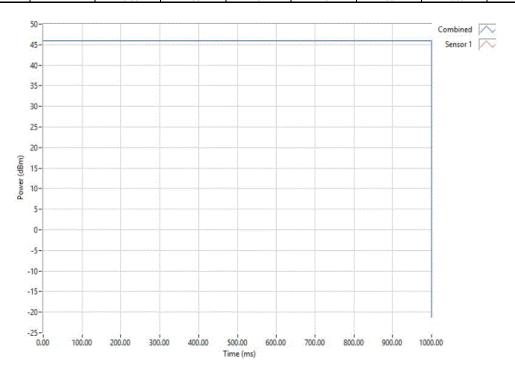




	Aı	ntenna Port 1 MIN	MO, Mid Channel	LTE10, 737.5 MH	Нz	
	Avg Cond	Duty	Antenna	EIRP	Limit	
	Pwr (dBm)	Cycle (%)	Gain (dBi)	(dBm)	(dBm)	Results
	46	100	0	46	60	Pass

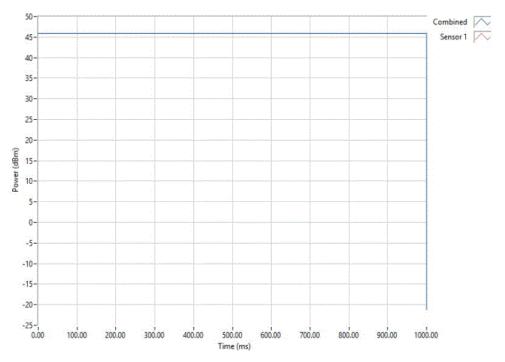


	А	ntenna Port 1 MII	MO, High Channe	el LTE10, 741 MF	łz	
	Avg Cond	Duty	Antenna	EIRP	Limit	
	Pwr (dBm)	Cycle (%)	Gain (dBi)	(dBm)	(dBm)	Results
1	45.99	100	0	46	60	Pass

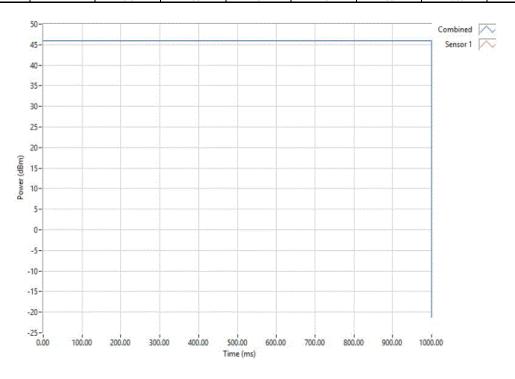




	А	ntenna Port 2 MI	MO, Low Channe	I LTE5, 731.5 MF	łz	
	Avg Cond	Duty	Antenna	EIRP	Limit	
	Pwr (dBm)	Cycle (%)	Gain (dBi)	(dBm)	(dBm)	Results
	45.93	100	0	45.9	60	Pass



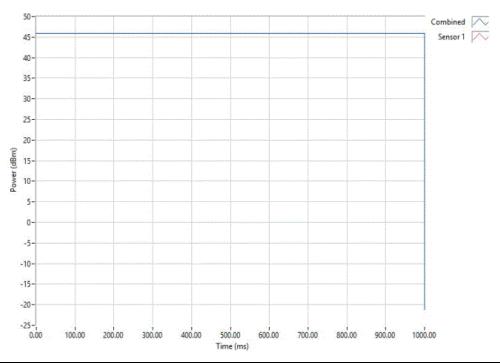
	A	Antenna Port 2 MI	MO, Mid Channe	I LTE5, 737.5 MF	łz	
	Avg Cond	Duty	Antenna	EIRP	Limit	
<u></u>	Pwr (dBm)	Cycle (%)	Gain (dBi)	(dBm)	(dBm)	Results
	45.97	100	0	46	60	Pass



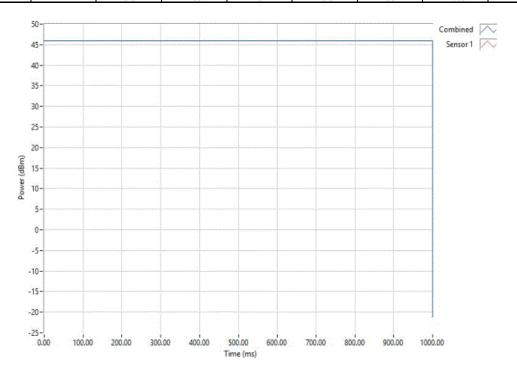
Report No. KMWC0074 22/161



A	ntenna Port 2 MII	MO, High Channe	I LTE5, 743.5 MF	łz		
Avg Cond	Duty	Antenna	EIRP	Limit		
 Pwr (dBm)	Cycle (%)	Gain (dBi)	(dBm)	(dBm)	Results	
45.97	100	0	46	60	Pass	ł



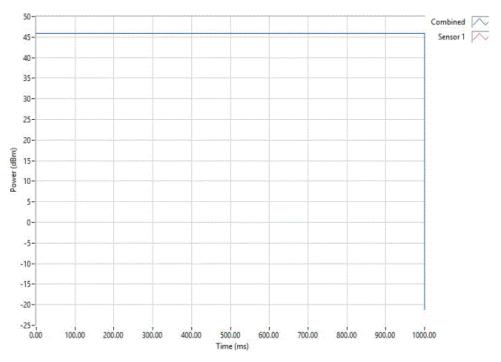
A	Antenna Port 2 MI	MO, Low Channe	el LTE10, 734 MH	lz	
Avg Cond	Duty	Antenna	EIRP	Limit	
 Pwr (dBm)	Cycle (%)	Gain (dBi)	(dBm)	(dBm)	Results
45.92	100	0	45.9	60	Pass



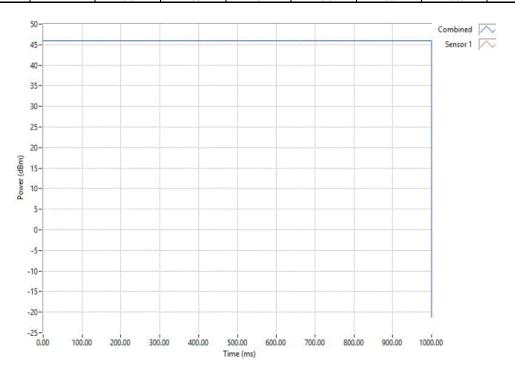
Report No. KMWC0074 23/161



	Ar	ntenna Port 2 MIN	MO, Mid Channel	LTE10, 737.5 MH	Ηz		
	Avg Cond	Duty	Antenna	EIRP	Limit		
	Pwr (dBm)	Cycle (%)	Gain (dBi)	(dBm)	(dBm)	Results	
1	45.97	100	0	46	60	Pass	



	А	ntenna Port 2 MI	MO, High Channe	el LTE10, 741 MF	łz	
	Avg Cond	Duty	Antenna	EIRP	Limit	
_	Pwr (dBm)	Cycle (%)	Gain (dBi)	(dBm)	(dBm)	Results
	45.92	100	0	45.9	60	Pass





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

#### **TEST EQUIPMENT**

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Power Supply - DC	Hewlett Packard	6574A	TPX	NCR	NCR
Generator - Signal	Keysight	N5182B	TFX	4/16/2015	4/16/2018
Cable	Fairview Microwave	SCA1814-0101-120	OCZ	NCR	NCR
Block - DC	Aeroflex	INMET 8535	AMO	4/4/2016	4/4/2017
Meter - Power	ETS Lindgren	7002-006	SRB	12/14/2015	12/14/2016

#### **CLIENT PROVIDED EQUIPMENT**

Description	Manufacturer	Model	Last Cal.	Cal. Due
High Power Attenuator - 30dB	Aeroflex/Weinschel	53-30-43	NCR	NCR
Attenuator - 20dB	N/A	N/A	NCR	NCR
Power Divider	Fairview Microwave	MP8748-2	NCR	NCR
50Ohm Terminator	Aeroflex/Weinschel	1455-4	NCR	NCR
High Power Terminator	Telcon	KTMO400800060	NCR	NCR

#### **TEST DESCRIPTION**

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer.

The RF output power was measured with the EUT set to the modes called out in the datasheet. 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 ERP.

ERP = Max Measured Power + Antenna gain (dBi)

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

Only the Low Channel for each channel bandwidth was tested, the Mid & High Channesl were previously tested in this band.

Report No. KMWC0074 25/161

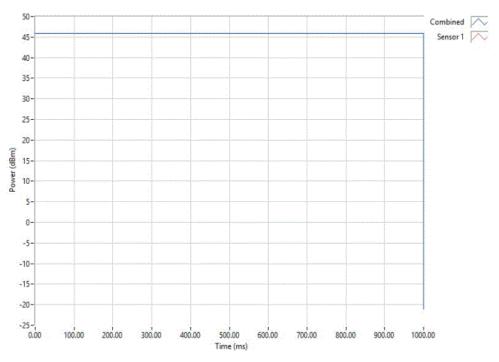


Serial Number:										
	CWS-3050-12	<u> </u>						Work Order:		
									11/08/16	
Customer:	Parallel Wireless Inc.							Temperature:	20.8 °C	
	Edward Lee							Humidity:		
Project:								Barometric Pres.:		
	Johnny Candelas			Power	48 VDC			Job Site:	OC13	
TEST SPECIFICATION	ONS				Test Method					
FCC 27:2016					ANSI/TIA/EIA-603-D	)-2010				
COMMENTS										
Power Level Setting	g 40W. Reference Level O	Offset: DC Block + 30dB	Attenuator + 20	dB Attenuator +	Power Divider + Cal	le Loss = 54.9dB t	otal.			
Antenna Gain is ass	sumed to be 0, per specif	ication antenna gain wil	l be re-evaluate	d during final ins	stallation taking heig	ht into account.				
	ts taken separately and a	ı linear summation was r	performed below	w						
DEVIATIONS FROM	TEST STANDARD									
None										
				0 1	La.					
Configuration #	1									
		Signature		ls .						
					Avg Cond	Duty	Antenna	EIRP	Limit	
					Pwr (dBm)	Cycle (%)	Gain (dBi)	(dBm)	(dBm)	Results
Antenna Port 1										
	Low Channel LTE5, 736.5				45.97	100	0	46.0	60	Pass
	Low Channel LTE10, 739 I	MHz			45.99	100	0			
Antenna Port 2								46.0	60	Pass
	Low Channel LTE5, 736.5				46.00	100	0	46.0	60	Pass
	Low Channel LTE10, 739 I				46.00 46.00	100 100	0			
Antenna Port 1 MIMC	Low Channel LTE10, 739 I	MHz			46.00	100	0	46.0 46.0	60 60	Pass Pass
Antenna Port 1 MIMC	Low Channel LTE10, 739 I Cow Channel LTE5, 736.5	MHz MHz			46.00 45.99	100	0	46.0 46.0 46.0	60 60	Pass Pass Pass
Antenna Port 1 MIMC	Low Channel LTE10, 739 I Cow Channel LTE5, 736.5 Low Channel LTE10, 739 I	MHz MHz			46.00	100	0	46.0 46.0	60 60	Pass Pass
Antenna Port 1 MIMC	Low Channel LTE10, 739 I C Low Channel LTE5, 736.5 Low Channel LTE10, 739 I C	MHz MHz MHz			46.00 45.99 45.99	100 100 100	0 0 0	46.0 46.0 46.0 46.0	60 60 60	Pass Pass Pass Pass
Antenna Port 1 MIMC Antenna Port 2 MIMC	Low Channel LTE10, 739 I Cow Channel LTE5, 736.5 Low Channel LTE10, 739 I Cow Channel LTE5, 736.5	MHz MHz MHz			46.00 45.99 45.99	100 100 100	0 0 0	46.0 46.0 46.0 46.0	60 60 60 60	Pass Pass Pass Pass
Antenna Port 1 MIMC Antenna Port 2 MIMC	Low Channel LTE10, 739 I Cow Channel LTE5, 736.5 Low Channel LTE10, 739 I Cow Channel LTE5, 736.5 Low Channel LTE5, 736.5 Low Channel LTE10, 739 I	MHz MHz MHz			46.00 45.99 45.99	100 100 100	0 0 0	46.0 46.0 46.0 46.0	60 60 60	Pass Pass Pass Pass
Antenna Port 1 MIMC Antenna Port 2 MIMC	Low Channel LTE10, 739 I Cow Channel LTE5, 736.5 Low Channel LTE10, 739 I Cow Channel LTE5, 736.5 Low Channel LTE5, 736.5 Low Channel LTE10, 739 I	MHz MHz MHz	Port 4 (m)AN	Port 2 (mM)	46.00 45.99 45.99 45.98 46.00	100 100 100 100 100	0 0 0	46.0 46.0 46.0 46.0	60 60 60 60	Pass Pass Pass Pass
Antenna Port 1 MIMC  Antenna Port 2 MIMC  Linear Sum of the Po	Low Channel LTE10, 739 I DOW Channel LTE5, 736.5 Low Channel LTE10, 739 I DOW Channel LTE5, 736.5 Low Channel LTE10, 739 I ower	MHz MHz MHz MHz MHz	Port 1 (mW)	Port 2 (mW)	45.99 45.99 45.98 46.00 <b>Sum (mW)</b>	100 100 100 100 100 100 <b>Sum (dBm)</b>	0 0 0	46.0 46.0 46.0 46.0 46.0 46.0	60 60 60 60 60	Pass Pass Pass Pass Pass Pass
Antenna Port 1 MIMC  Antenna Port 2 MIMC  Linear Sum of the Po	Low Channel LTE10, 739 I Cow Channel LTE5, 736.5 Low Channel LTE10, 739 I Cow Channel LTE5, 736.5 Low Channel LTE5, 736.5 Low Channel LTE10, 739 I	MHz MHz MHz MHz MHz	Port 1 (mW) 39719.155 39719.155	Port 2 (mW) 39627.803 39810.717	46.00 45.99 45.99 45.98 46.00	100 100 100 100 100	0 0 0	46.0 46.0 46.0 46.0	60 60 60 60	Pass Pass Pass Pass

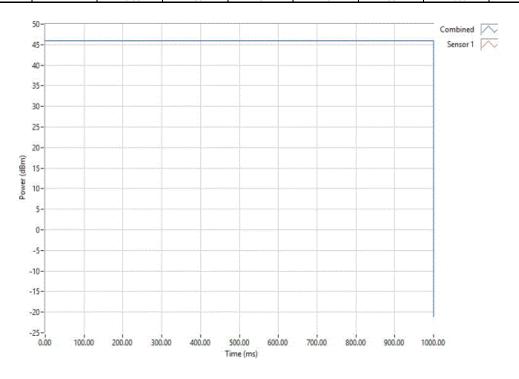
Report No. KMWC0074 26/161



		Antenna Port 1	, Low Channel LT	E5, 736.5 MHz		
	Avg Cond	Duty	Antenna	EIRP	Limit	
	Pwr (dBm)	Cycle (%)	Gain (dBi)	(dBm)	(dBm)	Results
	45.97	100	0	46	60	Pass



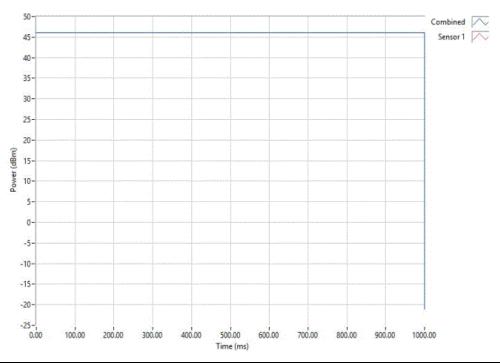
		Antenna Port 1	, Low Channel L	ΓΕ10, 739 MHz		
	Avg Cond	Duty	Antenna	EIRP	Limit	
_	Pwr (dBm)	Cycle (%)	Gain (dBi)	(dBm)	(dBm)	Results
l [	45.99	100	0	46	60	Pass



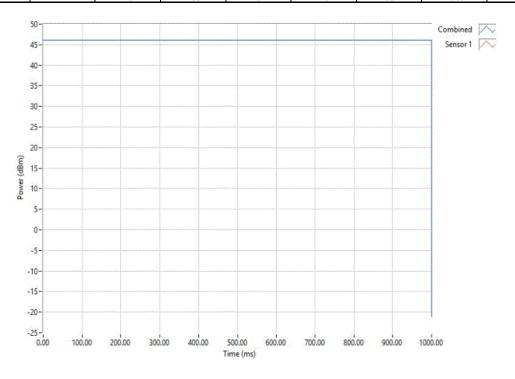
Report No. KMWC0074 27/161



		Antenna Port 2	, Low Channel LT	E5, 736.5 MHz		
	Avg Cond	Duty	Antenna	EIRP	Limit	
	Pwr (dBm)	Cycle (%)	Gain (dBi)	(dBm)	(dBm)	Results
	46	100	0	46	60	Pass



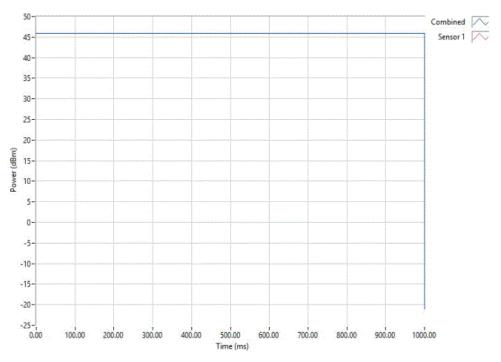
		Antenna Port 2	, Low Channel L	ΓΕ10, 739 MHz		
	Avg Cond	Duty	Antenna	EIRP	Limit	
	Pwr (dBm)	Cycle (%)	Gain (dBi)	(dBm)	(dBm)	Results
1	46	100	0	46	60	Pass



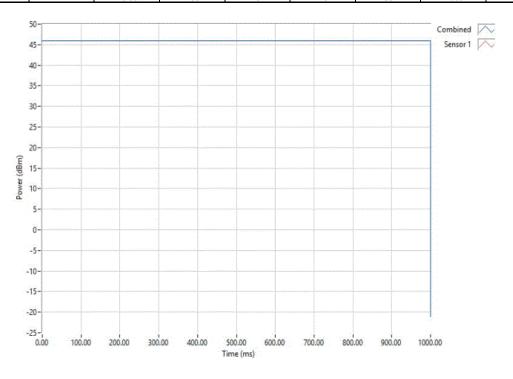
Report No. KMWC0074 28/161



	Α	ntenna Port 1 MI	MO, Low Channe	I LTE5, 736.5 MH	łz	
	Avg Cond	Duty	Antenna	EIRP	Limit	
	Pwr (dBm)	Cycle (%)	Gain (dBi)	(dBm)	(dBm)	Results
	45.99	100	0	46	60	Pass



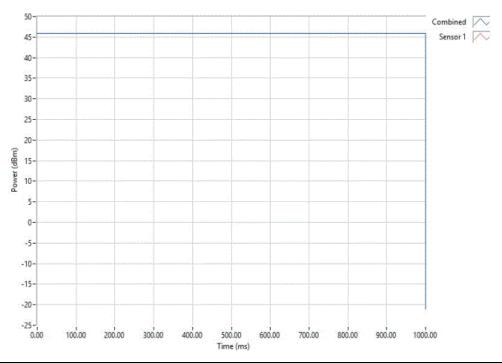
	А	Intenna Port 1 MI	MO, Low Channe	I LTE10, 739 MH	Z	
	Avg Cond	Duty	Antenna	EIRP	Limit	
	Pwr (dBm)	Cycle (%)	Gain (dBi)	(dBm)	(dBm)	Results
l	45.99	100	0	46	60	Pass



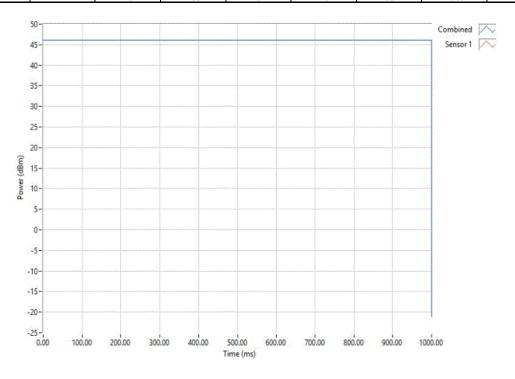
Report No. KMWC0074 29/161



	Α	ntenna Port 2 MI	MO, Low Channe	I LTE5, 736.5 MH	łz	
	Avg Cond	Duty	Antenna	EIRP	Limit	
	Pwr (dBm)	Cycle (%)	Gain (dBi)	(dBm)	(dBm)	Results
	45.98	100	0	46	60	Pass



	,	Antenna Port 2 MI	MO, Low Channe	el LTE10, 739 MH	lz	
	Avg Cond	Duty	Antenna	EIRP	Limit	
	Pwr (dBm)	Cycle (%)	Gain (dBi)	(dBm)	(dBm)	Results
1	46	100	0	46	60	Pass



Report No. KMWC0074 30/161



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**

1 2 1 2 3 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1					
Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Power Supply - DC	Hewlett Packard	6574A	TPX	NCR	NCR
Generator - Signal	Agilent	E8257D	TGU	2/5/2015	2/5/2018
Cable	Fairview Microwave	SCA1814-0101-120	OCZ	NCR	NCR
Block - DC	Aeroflex	INMET 8535	AMO	4/4/2016	4/4/2017
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFA	11/19/2015	11/19/2016

#### **CLIENT PROVIDED EQUIPMENT**

Description	Manufacturer	Model	Last Cal.	Cal. Due
High Power Attenuator - 30dB	Aeroflex/Weinschel	53-30-43	NCR	NCR
Attenuator - 20dB	N/A	N/A	NCR	NCR
Power Divider	Fairview Microwave	MP8748-2	NCR	NCR
50Ohm Terminator	Aeroflex/Weinschel	1455-4	NCR	NCR
High Power Terminator	Telcon	KTMO400800060	NCR	NCR

#### **TEST DESCRIPTION**

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer.

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 dR

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 traces was calculated:

▶1st Trace: Peak detector and trace max-hold.

>2nd Trace: The same procedure and settings as was used for conducted Output Power.

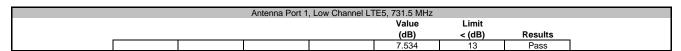
Report No. KMWC0074

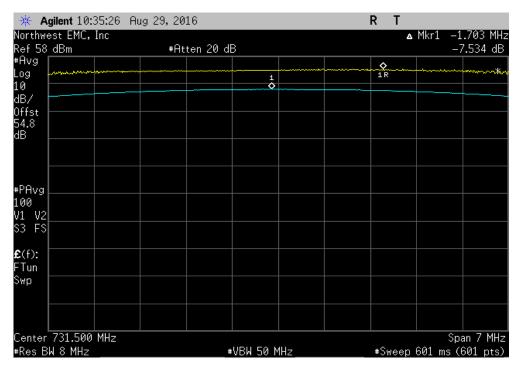


	: CWS-3050-12						KMWC0074	
Serial Number:							08/29/16	
	: Parallel Wireless Inc.					Temperature:		
Attendees:							46.4% RH	
Project:					В	arometric Pres.:		
	: Johnny Candelas		Power	: 48 VDC		Job Site:	OC13	
TEST SPECIFICAT	TIONS			Test Method				
FCC 27:2016				ANSI/TIA/EIA-603-D-2010				
COMMENTS								
ower Level Settin	ng 40W. Reference Level O	ffset: DC Block + 30dB Attenuate	or + 20dB Attenuator +	Power Divider + Cable Loss = 54	8dB total.			
DEVIATIONS FROM	M TEST STANDARD							
None								
Configuration #	1	Signature	for d.	Collen				
Configuration #	1	Signature	for d.	Coller		Value	Limit	
Configuration #	1	Signature	for d.	Collen		Value (dB)	Limit < (dB)	Results
	1	Signature	Je d.	Collen				Results
	Low Channel LTE5, 731.5	•	Je d.	Esther				Results Pass
		MHz	Je d.	like.		(dB)	< (dB)	
	Low Channel LTE5, 731.5	MHz MHz	for d.	lather .		(dB) 7.534	< (dB)	Pass
	Low Channel LTE5, 731.5 Mid Channel LTE5, 737.5 I	MHz MHz MHz	J. d.	- Collen-		7.534 7.116	< (dB)  13 13	Pass Pass
	Low Channel LTE5, 731.5 Mid Channel LTE5, 737.5 I High Channel LTE5, 743.5	MHz MHz MHz MHz	J. J.	- Collen-		7.534 7.116 7.341	< (dB)  13 13 13	Pass Pass Pass
Configuration # Antenna Port 1	Low Channel LTE5, 731.5 Mid Channel LTE5, 737.5 I High Channel LTE5, 743.5 Low Channel LTE10, 734 I	MHz WHz MHz WHz MHz MHz	J. J.	- Collen-		7.534 7.116 7.341 9.562	< (dB)  13 13 13 13 13	Pass Pass Pass Pass
ntenna Port 1	Low Channel LTE5, 731.5 Mid Channel LTE5, 737.5 High Channel LTE5, 743.5 Low Channel LTE10, 734.1 Mid Channel LTE10, 737.5 High Channel LTE10, 741	MHz MHz MHz MHz MHz MHz	J. d.	- Collen-		7.534 7.116 7.341 9.562 9.766 9.945	< (dB)  13 13 13 13 13 13 13	Pass Pass Pass Pass Pass Pass
Antenna Port 1	Low Channel LTE5, 731.5 Mid Channel LTE5, 737.5 High Channel LTE5, 743.5 Low Channel LTE10, 734 Mid Channel LTE10, 737.5 High Channel LTE10, 741 Low Channel LTE5, 731.5	MHz MHz MHz MHz MHz MHz MHz	for do	- Collen-		7.534 7.116 7.341 9.562 9.766 9.945	< (dB)  13 13 13 13 13 13 13 13	Pass Pass Pass Pass Pass Pass Pass
untenna Port 1	Low Channel LTE5, 731.5 Mid Channel LTE5, 737.5 High Channel LTE10, 734.5 Low Channel LTE10, 734.7 High Channel LTE10, 737.5 Low Channel LTE5, 731.5 Mid Channel LTE5, 737.5	MHz	J. J.	- Collen-		7.534 7.116 7.341 9.562 9.766 9.945 7.490 7.092	< (dB)  13 13 13 13 13 13 13 13 13 13	Pass Pass Pass Pass Pass Pass Pass Pass
untenna Port 1	Low Channel LTE5, 731.5 Mid Channel LTE5, 737.5 High Channel LTE5, 743.5 Low Channel LTE10, 734.7 Mid Channel LTE10, 737.5 High Channel LTE10, 741 Low Channel LTE5, 731.5 Mid Channel LTE5, 737.5 High Channel LTE5, 735.7	MHz	for do	- Collection - Col		7.534 7.116 7.341 9.562 9.766 9.945 7.490 7.092 7.348	< (dB)  13 13 13 13 13 13 13 13 13 13 13 13 13	Pass Pass Pass Pass Pass Pass Pass Pass
	Low Channel LTE5, 731.5 Mid Channel LTE5, 737.5 I High Channel LTE5, 743.5 Low Channel LTE10, 734 Mid Channel LTE10, 737.5 High Channel LTE5, 731.5 Mid Channel LTE5, 731.5 Mid Channel LTE5, 737.5 I High Channel LTE5, 737.5 Low Channel LTE10, 734 N	MHz VHz MHz MHz MHz MHz MHz MHz MHz MHz MHz M	for do	- Collen-		(dB)  7.534 7.116 7.341 9.562 9.766 9.945  7.490 7.092 7.348 9.912	< (dB)  13 13 13 13 13 13 13 13 13 13 13 13 13	Pass Pass Pass Pass Pass Pass Pass Pass
Antenna Port 1	Low Channel LTE5, 731.5 Mid Channel LTE5, 737.5 High Channel LTE5, 743.5 Low Channel LTE10, 734.7 Mid Channel LTE10, 737.5 High Channel LTE10, 741 Low Channel LTE5, 731.5 Mid Channel LTE5, 737.5 High Channel LTE5, 735.7	MHz	J. J.	- Collens		7.534 7.116 7.341 9.562 9.766 9.945 7.490 7.092 7.348	< (dB)  13 13 13 13 13 13 13 13 13 13 13 13 13	Pass Pass Pass Pass Pass Pass Pass Pass

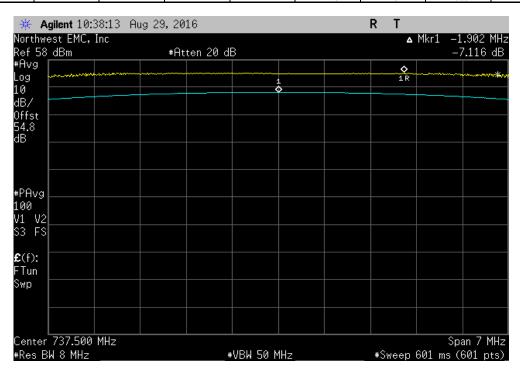
Report No. KMWC0074 32/161





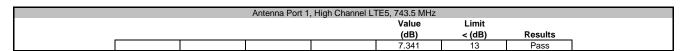


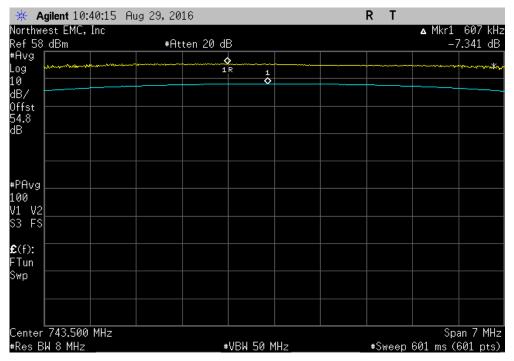
		Antenna Port 1	, Mid Channel LT	E5, 737.5 MHz		
				Value	Limit	
				(dB)	< (dB)	Results
i				7.116	13	Pass



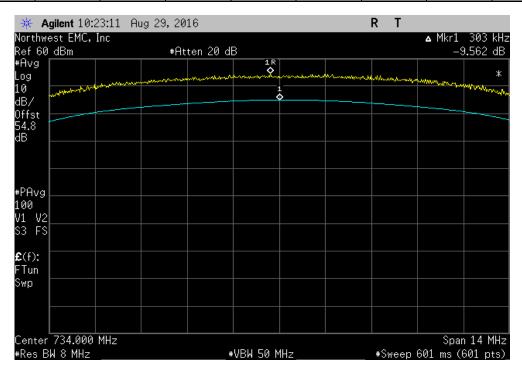
Report No. KMWC0074 33/161





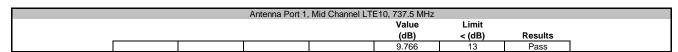


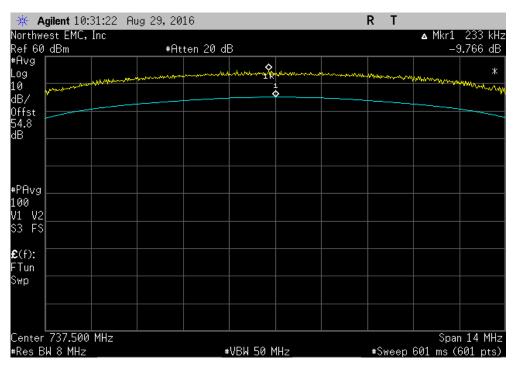
	Antenna Port 1	, Low Channel L	ΓΕ10, 734 MHz		
			Value	Limit	
			(dB)	< (dB)	Results
			9.562	13	Pass



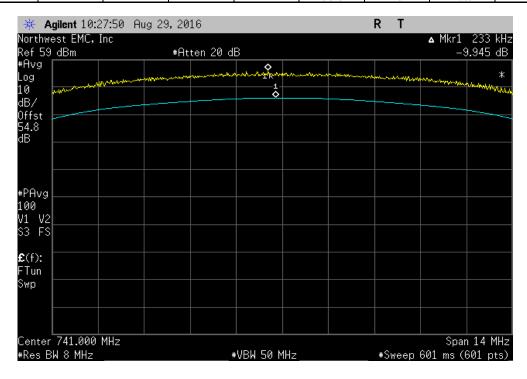
Report No. KMWC0074 34/161





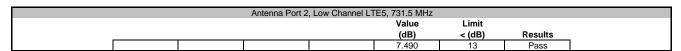


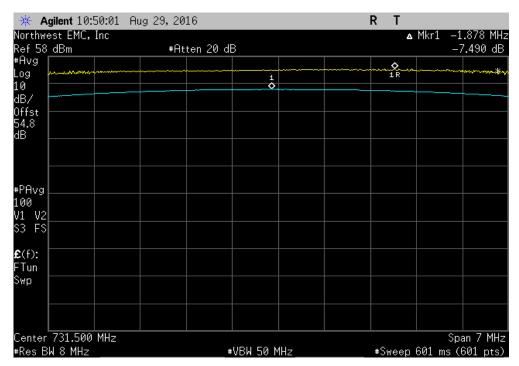
	Antenna Port 1	, High Channel L	TE10, 741 MHz		
			Value	Limit	
			(dB)	< (dB)	Results
			9.945	13	Pass



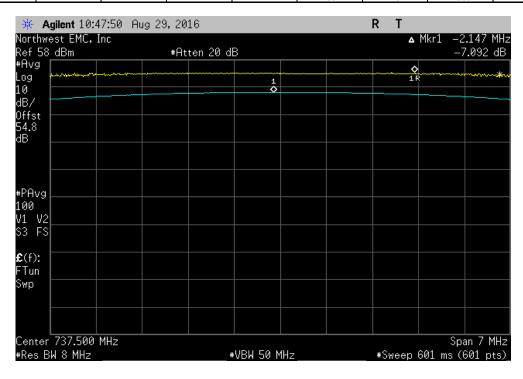
Report No. KMWC0074 35/161





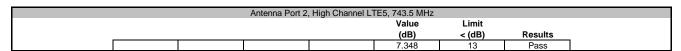


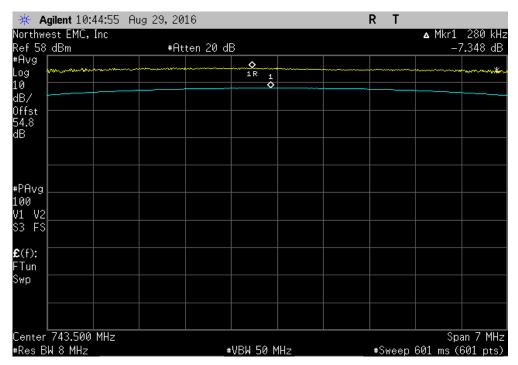
	Antenna Port 2	, Mid Channel LT	E5, 737.5 MHz		
			Value	Limit	
			(dB)	< (dB)	Results
			7.092	13	Pass



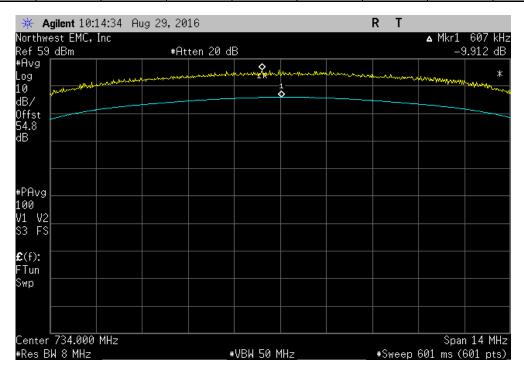
Report No. KMWC0074 36/161





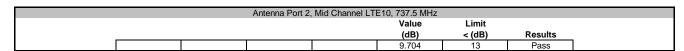


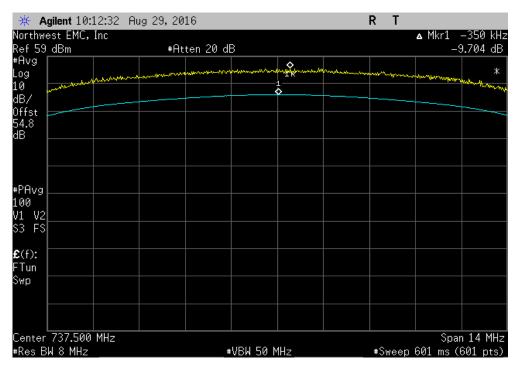
Antenna Port 2, Low Channel LTE10, 734 MHz							
Value Limit							
				(dB)	< (dB)	Results	
				9.912	13	Pass	



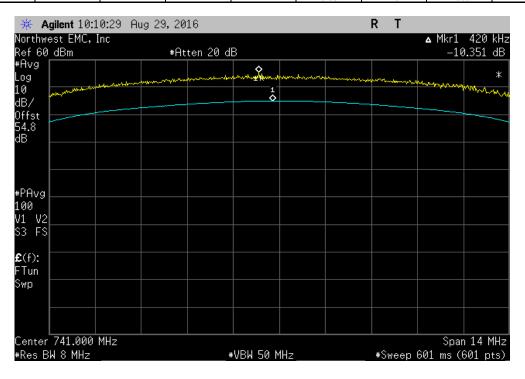
Report No. KMWC0074 37/161







Antenna Port 2, High Channel LTE10, 741 MHz							
Value Limit							
				(dB)	< (dB)	Results	
				10.351	13	Pass	



Report No. KMWC0074 38/161



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.	Cal. Due
Power Supply - DC	Hewlett Packard	6574A	TPX	NCR	NCR
Generator - Signal	Keysight	N5182B	TFX	4/16/2015	4/16/2018
Cable	Fairview Microwave	SCA1814-0101-120	OCZ	NCR	NCR
Block - DC	Aeroflex	INMET 8535	AMO	4/4/2016	4/4/2017
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFD	7/29/2016	7/29/2017

#### **CLIENT PROVIDED EQUIPMENT**

Description	Manufacturer	Model	Last Cal.	Cal. Due
High Power Attenuator - 30dB	Aeroflex/Weinschel	53-30-43	NCR	NCR
Attenuator - 20dB	N/A	N/A	NCR	NCR
Power Divider	Fairview Microwave	MP8748-2	NCR	NCR
500hm Terminator	Aeroflex/Weinschel	1455-4	NCR	NCR
High Power Terminator	Telcon	KTMO400800060	NCR	NCR

#### **TEST DESCRIPTION**

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer.

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 dB.

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 traces was calculated:

➤1st Trace: Peak detector and trace max-hold.

>2nd Trace: The same procedure and settings as was used for conducted Output Power.

Only the Low Channel for each channel bandwidth was tested, the Mid & High Channesl were previously tested in this band.

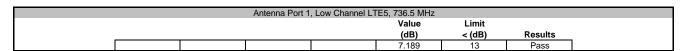
Report No. KMWC0074 39/161

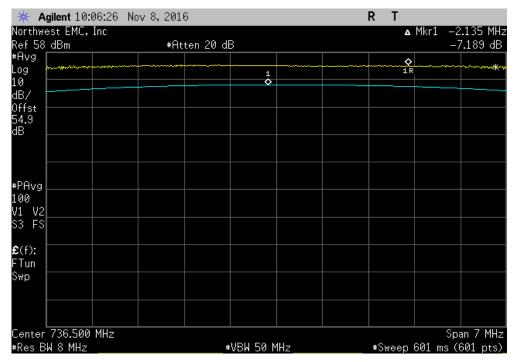


EUT	: CWS-3050-12				Work Order:	KMWC0077	,
Serial Number	: K163300001				Date:	11/08/16	,
Customer	: Parallel Wireless Inc.				Temperature:	20.8 °C	
Attendees	: Edward Lee				Humidity:		
Project	: None				Barometric Pres.:	1018 mbar	,
Tested by	: Johnny Candelas		Power:	48 VDC	Job Site:	OC13	
TEST SPECIFICAT	TIONS			Test Method			
FCC 27:2016				ANSI/TIA/EIA-603-D-2010			
COMMENTS							
		Offset: DC Block + 30dB Attenuator	+ 20dB Attenuator +	Power Divider + Cable Loss = 54.9dB	total.		
<b>DEVIATIONS FRO</b>	M TEST STANDARD						
None							
Configuration #	1	Signature	for di	little .			
					Value (dB)	Limit < (dB)	Results
Antenna Port 1							
	Low Channel LTE5, 736.5	MHz			7.189	13	Pass
	Low Channel LTE10, 739	MHz			10.204	13	Pass
Antenna Port 2							
	Low Channel LTE5, 736.5	MHz			7.208	13	Pass
	Low Channel LTE10, 739	MHz			9.71	13	Pass

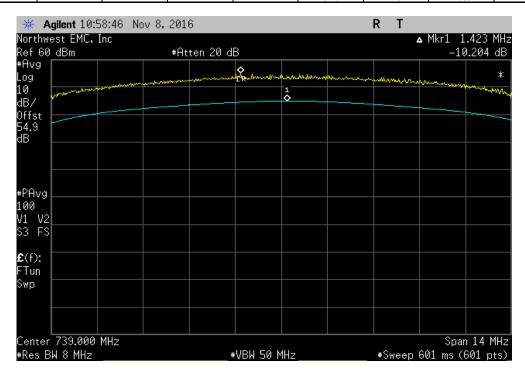
Report No. KMWC0074 40/161





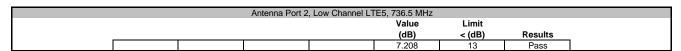


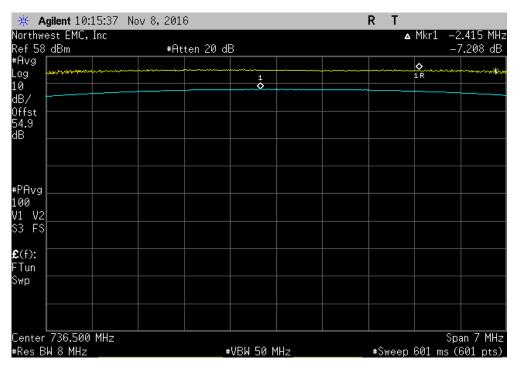
Antenna Port 1, Low Channel LTE10, 739 MHz							
Value Limit							
				(dB)	< (dB)	Results	
				10.204	13	Pass	



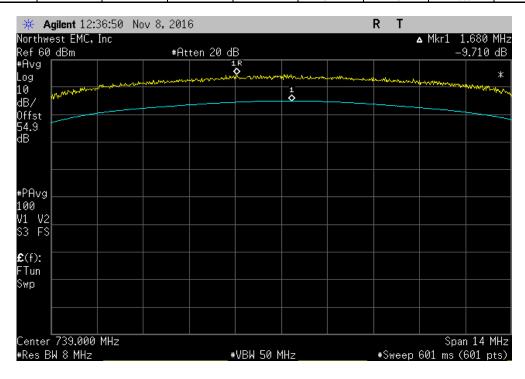
Report No. KMWC0074 41/161







Antenna Port 2, Low Channel LTE10, 739 MHz							
Value Limit							
				(dB)	< (dB)	Results	
				9.71	13	Pass	



Report No. KMWC0074 42/161



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.	Cal. Due	
Chamber - Temperature/Humidity	Cincinnati Sub Zero	ZPHS-32-3.5-	TBE	NCR	NCR	
Chamber - Temperature/Humluty	(CSZ)	SCT/AC	IDE	NON	NCK	
Thermometer	Omega Engineering, Inc.	HH311	DUC	10/3/2014	10/3/2017	
Power Supply - DC	Hewlett Packard	6574A	TPX	NCR	NCR	
Generator - Signal	Agilent	E8257D	TGU	2/5/2015	2/5/2018	
Cable	Fairview Microwave	SCA1814-0101-120	OCZ	NCR	NCR	
Block - DC	Aeroflex	INMET 8535	AMO	4/4/2016	4/4/2017	
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFA	11/19/2015	11/19/2016	

#### **CLIENT PROVIDED EQUIPMENT**

Description	Manufacturer	Model	Last Cal.	Cal. Due
High Power Attenuator - 30dB	Aeroflex/Weinschel	53-30-43	NCR	NCR
Attenuator - 20dB	N/A	N/A	NCR	NCR
Power Divider	Fairview Microwave	MP8748-2	NCR	NCR
50Ohm Terminator	Aeroflex/Weinschel	1455-4	NCR	NCR
High Power Terminator	Telcon	KTMO400800060	NCR	NCR

#### **TEST DESCRIPTION**

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer.

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 ° to +50 ° C) and at 10 °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 1ppm will still allow the radio to be operating within the band.

Report No. KMWC0074 43/161



	: CWS-3050-12			Work Order:		
Serial Number	: K163300001 : Parallel Wireless Inc.			Date: Temperature:	08/29/16	
	: Andy Ku				46.4% RH	
	None			Barometric Pres.:		
Tested by T SPECIFICAT	: Johnny Candelas	Power: 48 VDC Test Method		Job Site:	OC13	
27:2016	1010	ANSI/TIA/EIA-603-D-2010				
MMENTS	ng 40W. Reference Level Offset: DC Block + 30dB Attenuator + 20d	dR Attanuator + Power Divider + Cable Loss - 54 8dR	total			
wei Levei Setti	ig 40W. Reference Level Offset. DC Block + 30dB Attendator + 200	ub Attenuator + Power Divider + Cable Loss = 34.00b	totai.			
VIATIONS EDO	M TEST STANDARD					
ne						
	1	a d. lather				
nfiguration #	1 Signature	a view				
	Olghataro	Measured	Assigned	Error	Limit	
enna Port 1		Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results
enna Port i	Normal Temperature and Voltage					
	Low Channel, 731.5 MHz	731.500058	731.5	0.1	1	Pass
	Mid Channel, 737.5 MHz High Channel, 743.5 MHz	737.500051 743.500055	737.5 743.5	0.1 0.1	1 1	Pass Pass
	Extreme Voltage, 55.2 VDC	740.300033	740.0	0.1	'	1 000
	Low Channel, 731.5 MHz	731.500058	731.5	0.1	1	Pass
	Mid Channel, 737.5 MHz High Channel, 743.5 MHz	737.500051 743.500054	737.5 743.5	0.1 0.1	1	Pass Pass
	Extreme Voltage, 40.8 VAC	745.300054	7 -10.0	0.1		1 000
	Low Channel, 731.5 MHz	731.500058	731.5	0.1	1	Pass
	Mid Channel, 737.5 MHz High Channel, 743.5 MHz	737.50005 743.500055	737.5 743.5	0.1 0.1	1 1	Pass Pass
	Extreme Temperature, -30°C					
	Low Channel, 731.5 MHz	731.500057	731.5	0.1	1	Pass
	Mid Channel, 737.5 MHz High Channel, 743.5 MHz	737.500051 743.500055	737.5 743.5	0.1 0.1	1 1	Pass Pass
	Extreme Temperature, -20°C	110.00000	7 10.0	0.1	·	. 433
	Low Channel, 731.5 MHz	731.500058	731.5	0.1	1	Pass
	Mid Channel, 737.5 MHz High Channel, 743.5 MHz	737.500051 743.500055	737.5 743.5	0.1 0.1	1 1	Pass Pass
	Extreme Temperature, -10°C					
	Low Channel, 731.5 MHz	731.500058	731.5	0.1	1	Pass
	Mid Channel, 737.5 MHz High Channel, 743.5 MHz	737.500051 743.500055	737.5 743.5	0.1 0.1	1 1	Pass Pass
	Extreme Temperature, 0°C	110.000000			·	. 400
	Low Channel, 731.5 MHz	731.500041	731.5	0.1	1	Pass
	Mid Channel, 737.5 MHz High Channel, 743.5 MHz	737.500051 743.500055	737.5 743.5	0.1 0.1	1 1	Pass Pass
	Extreme Temperature, +10°C					
	Low Channel, 731.5 MHz Mid Channel, 737.5 MHz	731.500058 737.500485	731.5 737.5	0.1 0.7	1 1	Pass Pass
	High Channel, 743.5 MHz	743.500004	743.5	0.7	1	Pass
	Extreme Temperature, +20°C					
	Low Channel, 731.5 MHz Mid Channel, 737.5 MHz	731.500058 737.500051	731.5 737.5	0.1 0.1	1 1	Pass Pass
	High Channel, 743.5 MHz	743.500051	743.5	0.1	1	Pass
	Extreme Temperature, +30°C					
	Low Channel, 731.5 MHz Mid Channel, 737.5 MHz	731.500057 737.500067	731.5 737.5	0.1 0.1	1 1	Pass Pass
	High Channel, 743.5 MHz	743.50007	743.5	0.1	1	Pass
	Extreme Temperature, +40°C		mo: -			
	Low Channel, 731.5 MHz Mid Channel, 737.5 MHz	731.50006 737.500051	731.5 737.5	0.1 0.1	1 1	Pass Pass
	High Channel, 743.5 MHz	737.500051	743.5	0.1	1	Pass
	Extreme Temperature, +50°C					
	Low Channel, 731.5 MHz Mid Channel, 737.5 MHz	731.500043 737.500067	731.5 737.5	0.1 0.1	1 1	Pass Pass
	High Channel, 743.5 MHz	737.500007	743.5	0.1	1	Pass
enna Port 2						
	Normal Temperature and Voltage Low Channel, 731.5 MHz	731.500058	731.5	0.1	1	Pass
	Mid Channel, 737.5 MHz	737.500051	737.5	0.1	1	Pass
	High Channel, 743.5 MHz	743.500055	743.5	0.1	1	Pass
	Extreme Voltage, 55.2 VDC Low Channel, 731.5 MHz	731.500058	731.5	0.1	1	Pass
	Mid Channel, 737.5 MHz	737.50005	737.5	0.1	1	Pass
	High Channel, 743.5 MHz	743.500055	743.5	0.1	1	Pass
	Extreme Voltage, 40.8 VAC Low Channel, 731.5 MHz	731.500057	731.5	0.1	1	Pass
	Mid Channel, 737.5 MHz	737.50005	737.5	0.1	1	Pass
	High Channel, 743.5 MHz	743.500055	743.5	0.1	1	Pass
	Extreme Temperature, -30°C Low Channel, 731.5 MHz	731.500058	731.5	0.1	1	Pass
	Mid Channel, 731.5 MHz	731.500056	737.5	0.1	1	Pass
	High Channel, 743.5 MHz	743.500055	743.5	0.1	1	Pass
	Extreme Temperature, -20°C Low Channel, 731.5 MHz	731.500041	731.5	0.1	1	Pass
	Mid Channel, 731.5 MHz	731.500041 737.500051	737.5	0.1	1	Pass
			743.5	0.1	1	

Report No. KMWC0074 44/161

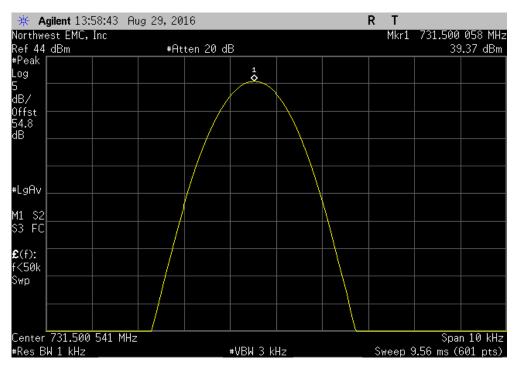
Extreme Temperature, -10°C					
Low Channel, 731.5 MHz	731.500058	731.5	0.1	1	Pass
Mid Channel, 737.5 MHz	737.500051	737.5	0.1	1	Pass
High Channel, 743.5 MHz	743.500055	743.5	0.1	1	Pass
Extreme Temperature, 0°C					
Low Channel, 731.5 MHz	731.500057	731.5	0.1	1	Pass
Mid Channel, 737.5 MHz	737.500051	737.5	0.1	1	Pass
High Channel, 743.5 MHz	743.500055	743.5	0.1	1	Pass
Extreme Temperature, +10°C					
Low Channel, 731.5 MHz	731.500058	731.5	0.1	1	Pass
Mid Channel, 737.5 MHz	737.500067	737.5	0.1	1	Pass
High Channel, 743.5 MHz	743.500055	743.5	0.1	1	Pass
Extreme Temperature, +20°C					
Low Channel, 731.5 MHz	731.500058	731.5	0.1	1	Pass
Mid Channel, 737.5 MHz	737.500051	737.5	0.1	1	Pass
High Channel, 743.5 MHz	743.500055	743.5	0.1	1	Pass
Extreme Temperature, +30°C					
Low Channel, 731.5 MHz	731.500058	731.5	0.1	1	Pass
Mid Channel, 737.5 MHz	737.500051	737.5	0.1	1	Pass
High Channel, 743.5 MHz	743.500054	743.5	0.1	1	Pass
Extreme Temperature, +40°C					
Low Channel, 731.5 MHz	731.50006	731.5	0.1	1	Pass
Mid Channel, 737.5 MHz	737.500067	737.5	0.1	1	Pass
High Channel, 743.5 MHz	743.500055	743.5	0.1	1	Pass
Extreme Temperature, +50°C					
Low Channel, 731.5 MHz	731.500058	731.5	0.1	1	Pass
Mid Channel, 737.5 MHz	737.50005	737.5	0.1	1	Pass
High Channel, 743.5 MHz	743.500055	743.5	0.1	1	Pass

Report No. KMWC0074

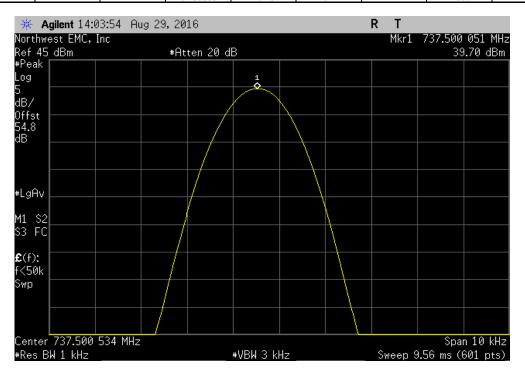
45/161



Antenna Port 1, Normal Temperature and Voltage, Low Channel, 731.5 MHz								
Measured Assigned Error Limit								
			Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results	
1			731.500058	731.5	0.1	1	Pass	



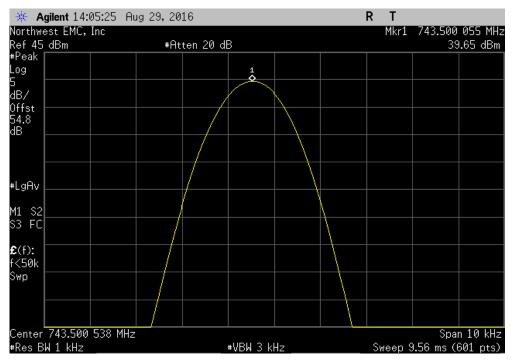
	Antenna Por	t 1, Normal Temp	perature and Volta	age, Mid Channe	l, 737.5 MHz	
		Measured	Assigned	Error	Limit	
		Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results
		737.500051	737.5	0.1	1	Pass



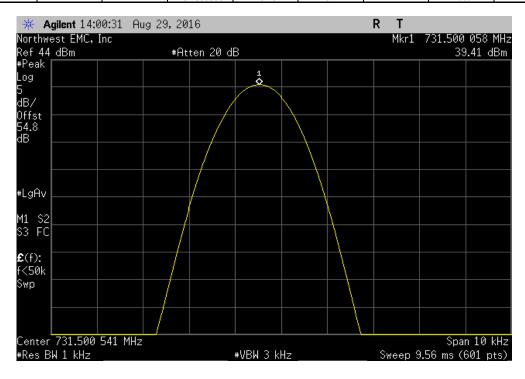
Report No. KMWC0074 46/161



	Antenna Por	t 1, Normal Temp	erature and Volta	ge, High Channe	l, 743.5 MHz	
		Measured	Assigned	Error	Limit	
		Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results
i		743.500055	743.5	0.1	1	Pass



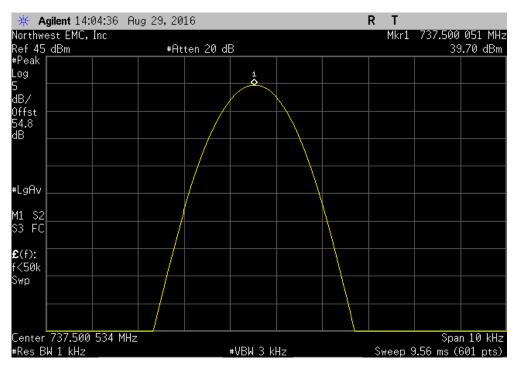
	Antenna Port 1, Extreme \	/oltage, 55.2 VDC	, Low Channel, 7	'31.5 MHz	
	Measured	Assigned	Error	Limit	
	Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results
	731.500058	731.5	0.1	1	Pass



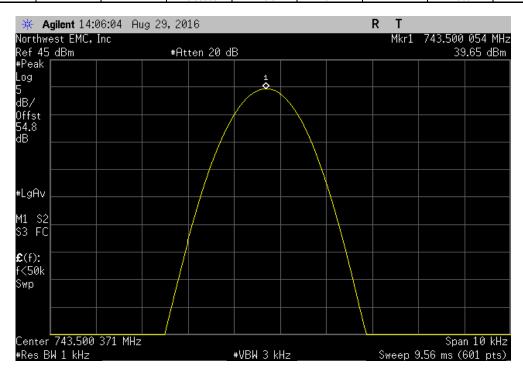
Report No. KMWC0074 47/161



	Antenna P	ort 1, Extreme V	oltage, 55.2 VDC	C, Mid Channel, 7	37.5 MHz		
		Measured	Assigned	Error	Limit		
		Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results	
		737.500051	737.5	0.1	1	Pass	ł



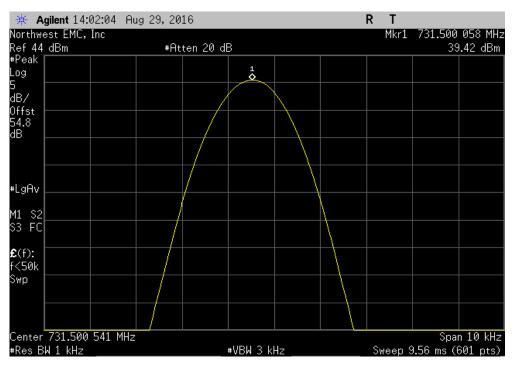
	Antenna Port 1, Extreme	Voltage, 55.2 VDC	C, High Channel,	743.5 MHz	
	Measured	Assigned	Error	Limit	
	Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results
	743.500054	743.5	0.1	1	Pass



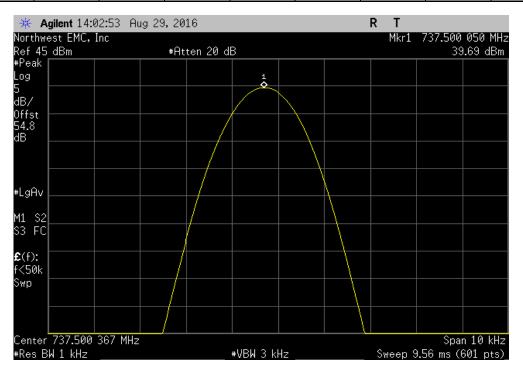
Report No. KMWC0074 48/161



	Antenna I	Port 1, Extreme V	oltage, 40.8 VAC	, Low Channel, 7	31.5 MHz	
		Measured	Assigned	Error	Limit	
		Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results
i		731.500058	731.5	0.1	1	Pass



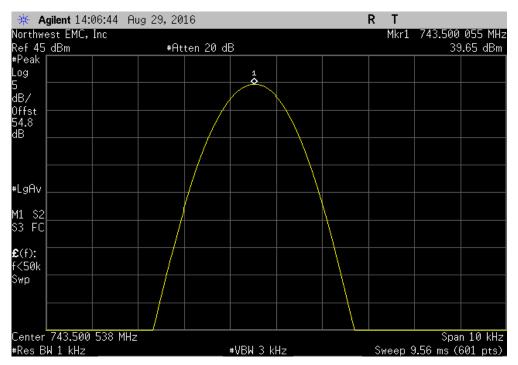
	Antenna Port 1, Extreme V	oltage, 40.8 VAC	C, Mid Channel, 7	37.5 MHz	
	Measured	Assigned	Error	Limit	
	Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results
	737.50005	737.5	0.1	1	Pass



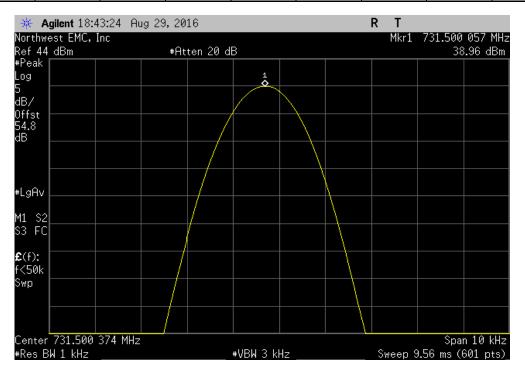
Report No. KMWC0074 49/161



	Antenna Po	ort 1, Extreme V	oltage, 40.8 VAC	, High Channel, 7	43.5 MHz		
		Measured	Assigned	Error	Limit		
		Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results	
		743.500055	743.5	0.1	1	Pass	



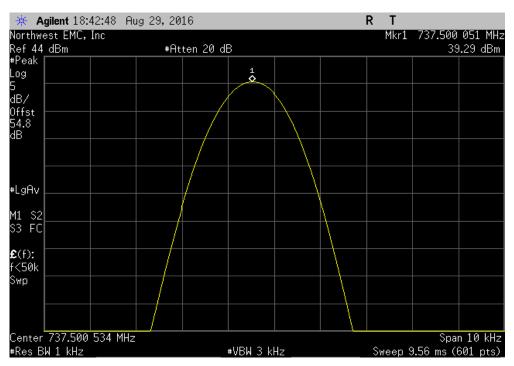
	Antenna Port 1, Extr	eme T	emperature, -30°0	C, Low Channel,	731.5 MHz	
	Measu	ıred	Assigned	Error	Limit	
	Value (	MHz)	Value (MHz)	(ppm)	(ppm)	Results
	731.50	0057	731.5	0.1	1	Pass



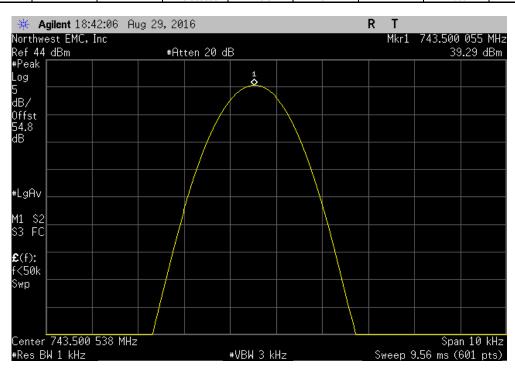
Report No. KMWC0074 50/161



	Antenna F	ort 1, Extreme Te	emperature, -30°0	C, Mid Channel, 7	'37.5 MHz	
		Measured	Assigned	Error	Limit	
		Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results
		737.500051	737.5	0.1	1	Pass



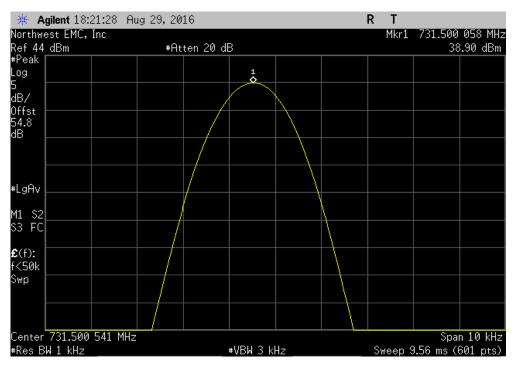
	Antenna Port 1, Extreme Te	emperature, -30°0	C, High Channel,	743.5 MHz	
	Measured	Assigned	Error	Limit	
	Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results
	743.500055	743.5	0.1	1	Pass



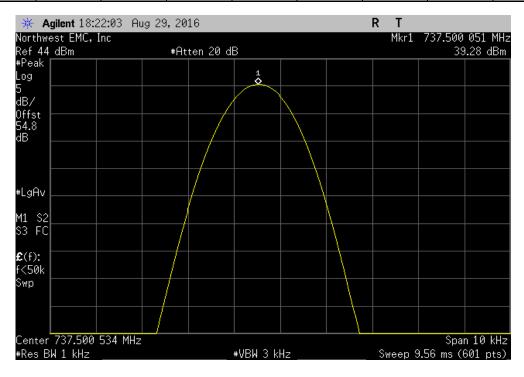
Report No. KMWC0074 51/161



	Antenna P	ort 1, Extreme Te	emperature, -20°0	C, Low Channel, 7	731.5 MHz	
		Measured	Assigned	Error	Limit	
		Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results
i		731.500058	731.5	0.1	1	Pass



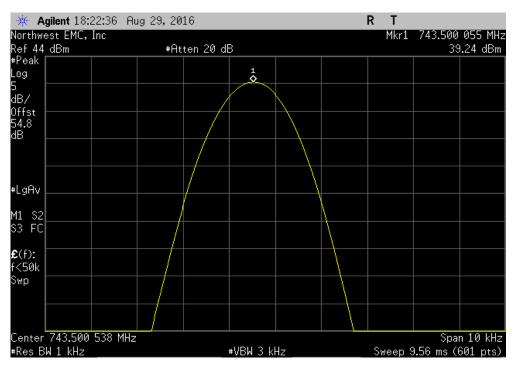
	Antenna Port 1,	, Extreme Te	emperature, -20°0	C, Mid Channel, 7	′37.5 MHz	
	Me	easured	Assigned	Error	Limit	
	Val	lue (MHz)	Value (MHz)	(ppm)	(ppm)	Results
	737	7.500051	737.5	0.1	1	Pass



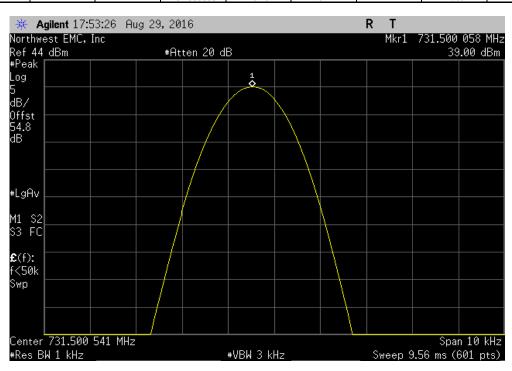
Report No. KMWC0074 52/161



	Antenna Port 1, Extreme	emperature, -20°0	C, High Channel,	743.5 MHz		
	Measured	Assigned	Error	Limit		
_	Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results	_
İ	743.500055	743.5	0.1	1	Pass	1



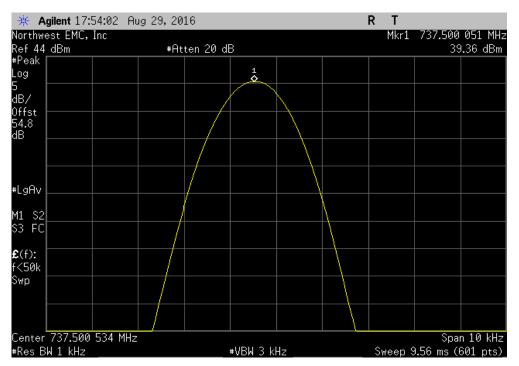
	Antenna Port 1, Extreme Te	emperature, -10°0	C, Low Channel,	731.5 MHz	
	Measured	Assigned	Error	Limit	
	Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results
	731.500058	731.5	0.1	1	Pass



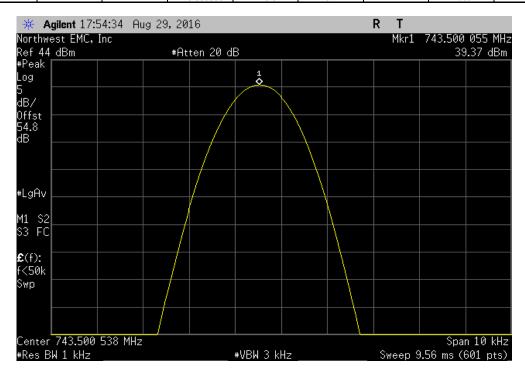
Report No. KMWC0074 53/161



	Antenna Po	ort 1, Extreme Te	emperature, -10°0	C, Mid Channel, 7	'37.5 MHz		
		Measured	Assigned	Error	Limit		
_		Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results	_
,		737.500051	737.5	0.1	1	Pass	



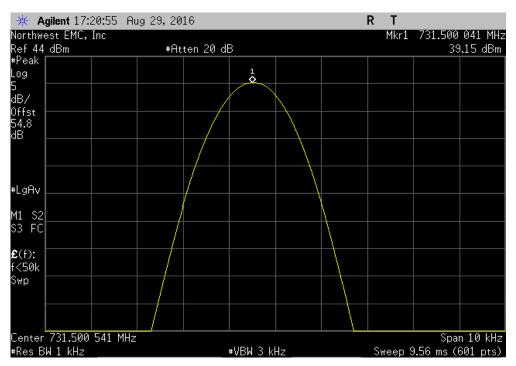
	Antenna Port 1, Extreme To	emperature, -10°0	C, High Channel,	743.5 MHz	
	Measured	Assigned	Error	Limit	
	 Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results
i	743.500055	743.5	0.1	1	Pass



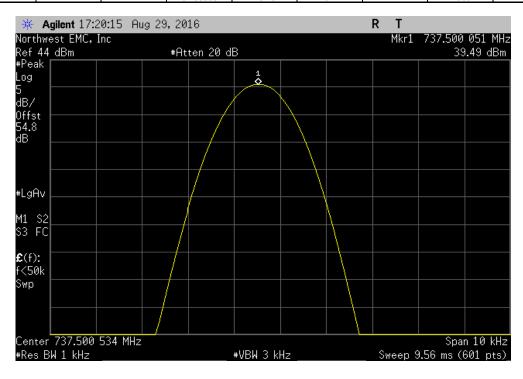
Report No. KMWC0074 54/161



	Antenna Port 1, Ext	reme T	emperature, 0°C	, Low Channel, 7	31.5 MHz		
	Measu	red	Assigned	Error	Limit		
	Value (I	/Hz)	Value (MHz)	(ppm)	(ppm)	Results	
	731.500	041	731.5	0.1	1	Pass	



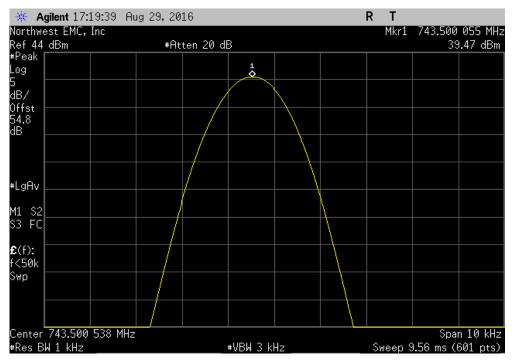
	Antenna Port 1, E	xtreme Te	emperature, 0°C	, Mid Channel, 73	37.5 MHz	
	Meas	ured	Assigned	Error	Limit	
	Value	(MHz)	Value (MHz)	(ppm)	(ppm)	Results
	737.50	00051	737.5	0.1	1	Pass



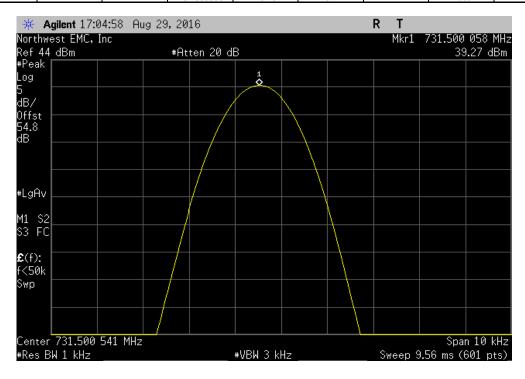
Report No. KMWC0074 55/161



	Antenna Port 1, Extreme	Temperature, 0°C	, High Channel, 7	43.5 MHz	
	Measured	Assigned	Error	Limit	
	Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results
	743.500055	743.5	0.1	1	Pass



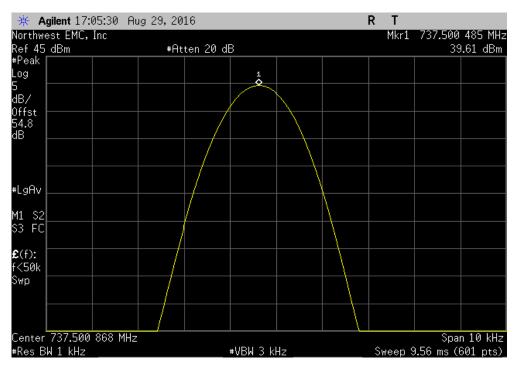
	Antenna Port 1, Extreme Te	emperature, +10°	C, Low Channel,	731.5 MHz	
	Measured	Assigned	Error	Limit	
	Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results
	731.500058	731.5	0.1	1	Pass



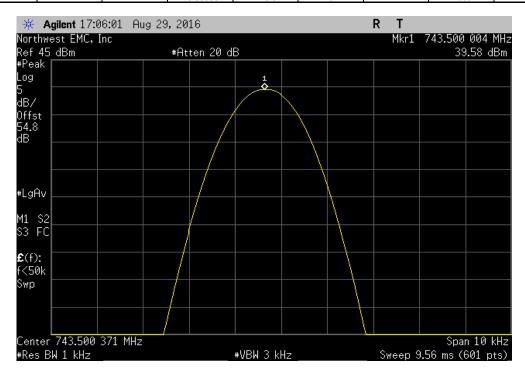
Report No. KMWC0074 56/161



	Antenna Port 1, Extreme	Temperature, +10°	C, Mid Channel,	737.5 MHz		
	Measured	Assigned	Error	Limit		
	Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results	
	737.500485	737.5	0.7	1	Pass	ĺ



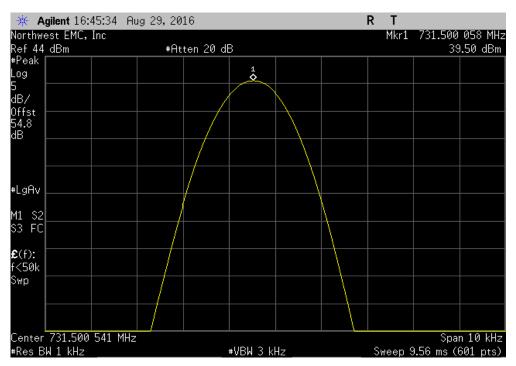
		Antenna Po	ort 1, Extreme Te	mperature, +10°0	C, High Channel,	743.5 MHz	
			Measured	Assigned	Error	Limit	
_			Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results
ı	·		743.500004	743.5	0	1	Pass



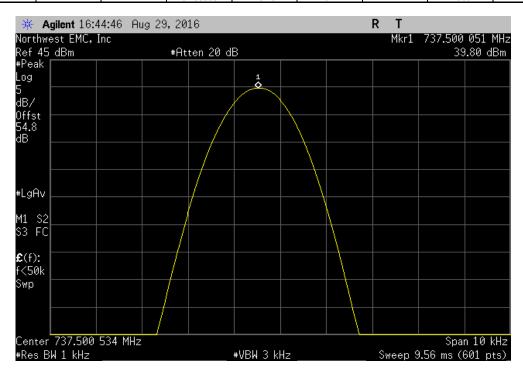
Report No. KMWC0074 57/161



	Antenna P	ort 1, Extreme Te	emperature, +20°0	C, Low Channel,	731.5 MHz	
		Measured	Assigned	Error	Limit	
		Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results
l		731.500058	731.5	0.1	1	Pass



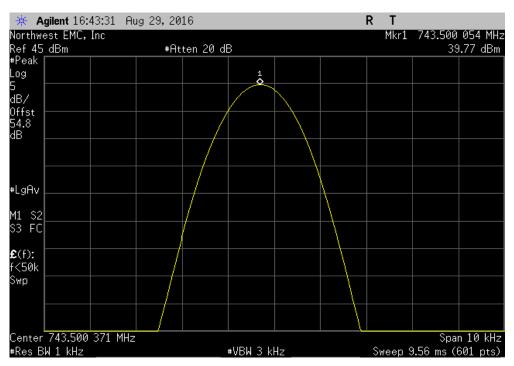
	Antenna Port 1, Extreme Te	emperature, +20°	C, Mid Channel,	737.5 MHz	
	Measured	Assigned	Error	Limit	
	Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results
	737.500051	737.5	0.1	1	Pass



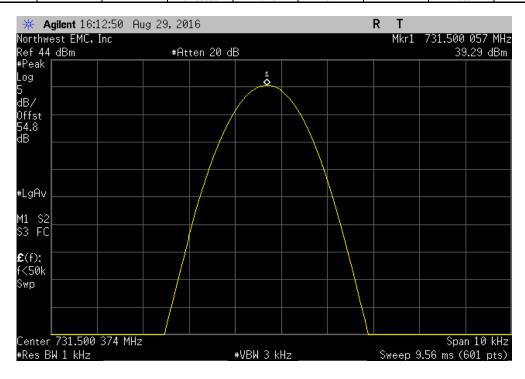
Report No. KMWC0074 58/161



	Antenna Po	ort 1, Extreme Te	mperature, +20°0	C, High Channel,	743.5 MHz	
		Measured	Assigned	Error	Limit	
		Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results
i		743.500054	743.5	0.1	1	Pass



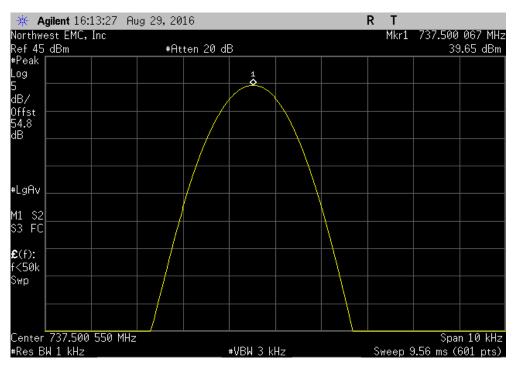
	Antenna Port 1, Extreme Te	emperature, +30°	C, Low Channel,	731.5 MHz	
	Measured	Assigned	Error	Limit	
	Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results
	731.500057	731.5	0.1	1	Pass



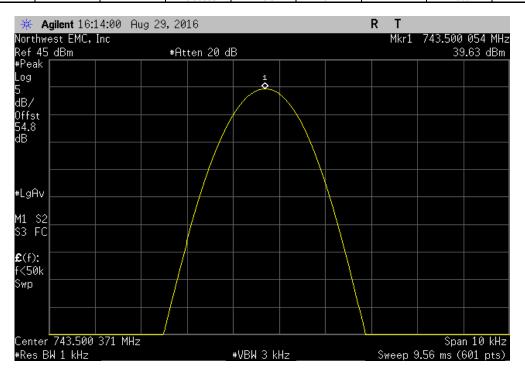
Report No. KMWC0074 59/161



	Antenna P	ort 1, Extreme Te	emperature, +30°	C, Mid Channel, 7	737.5 MHz	
		Measured	Assigned	Error	Limit	
		Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results
i		737.500067	737.5	0.1	1	Pass



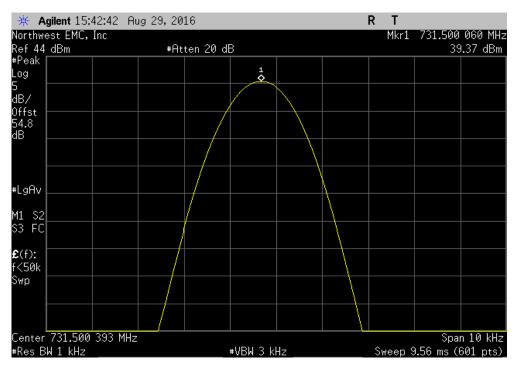
	Antenna Po	ort 1, Extreme Te	mperature, +30°0	C, High Channel,	743.5 MHz	
		Measured	Assigned	Error	Limit	
		Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results
1		743.500054	743.5	0.1	1	Pass



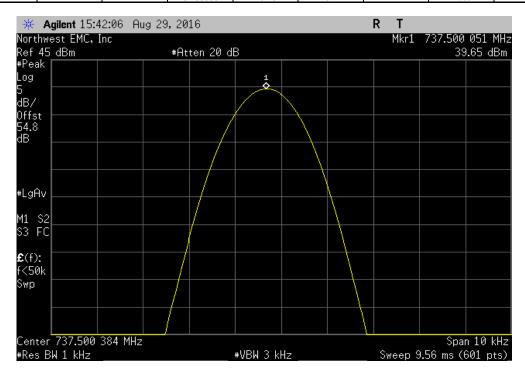
Report No. KMWC0074 60/161



	Antenna Po	ort 1, Extreme Te	emperature, +40°	C, Low Channel,	731.5 MHz		
		Measured	Assigned	Error	Limit		
		Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results	_
1		731.50006	731.5	0.1	1	Pass	ł



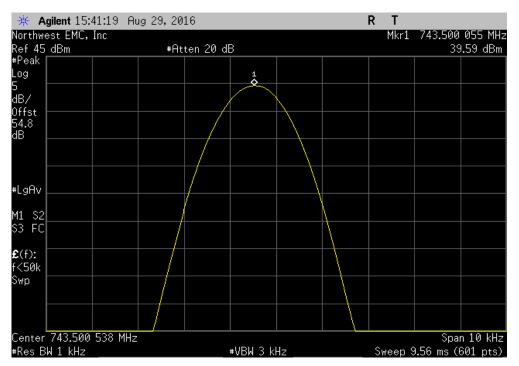
	Antenna Port 1, Extreme Te	emperature, +40°	C, Mid Channel,	737.5 MHz	
	Measured	Assigned	Error	Limit	
	Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results
	737.500051	737.5	0.1	1	Pass



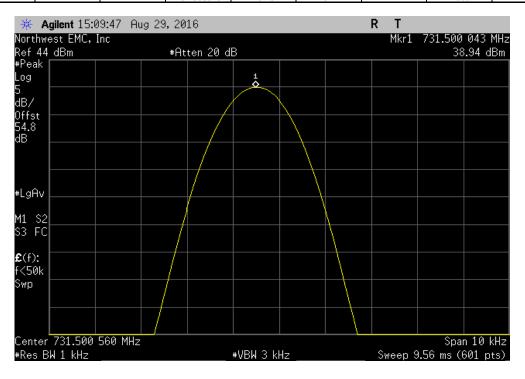
Report No. KMWC0074 61/161



	Antenna Port	t 1, Extreme Te	mperature, +40°0	C, High Channel,	743.5 MHz		
		Measured	Assigned	Error	Limit		
_	,	Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results	
ĺ		743.500055	743.5	0.1	1	Pass	



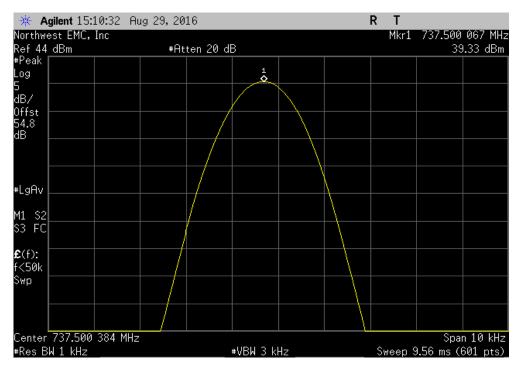
	Antenna Port 1, Ex	treme Te	emperature, +50°	C, Low Channel,	731.5 MHz	
	Meas	sured	Assigned	Error	Limit	
	Value	(MHz)	Value (MHz)	(ppm)	(ppm)	Results
	731.5	00043	731.5	0.1	1	Pass



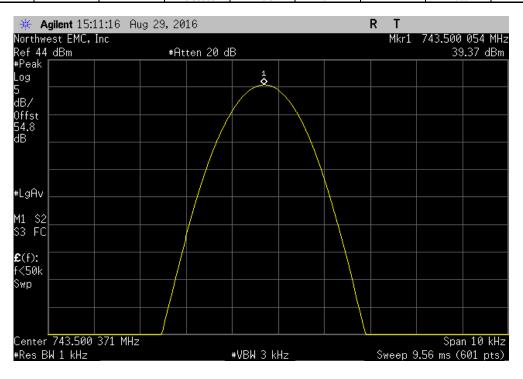
Report No. KMWC0074 62/161



	Antenna Po	ort 1, Extreme Te	emperature, +50°	C, Mid Channel,	737.5 MHz	
		Measured	Assigned	Error	Limit	
		Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results
i		737.500067	737.5	0.1	1	Pass



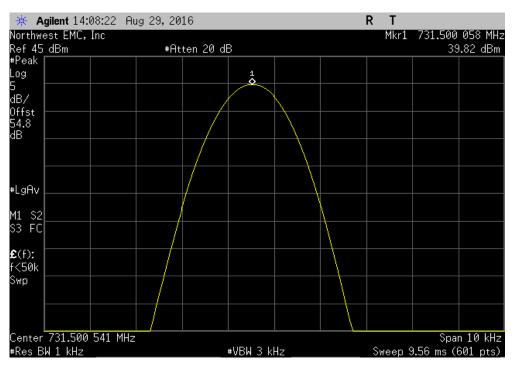
	Antenna Port 1, Ext	reme Te	mperature, +50°0	C, High Channel,	743.5 MHz	
	Meas	ured	Assigned	Error	Limit	
	Value	(MHz)	Value (MHz)	(ppm)	(ppm)	Results
	743.50	00054	743.5	0.1	1	Pass



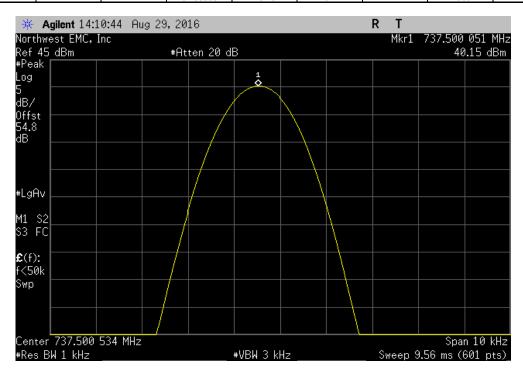
Report No. KMWC0074 63/161



	Antenna Por	t 2, Normal Temp	perature and Volta	age, Low Channe	I, 731.5 MHz	
		Measured	Assigned	Error	Limit	
		Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results
		731.500058	731.5	0.1	1	Pass



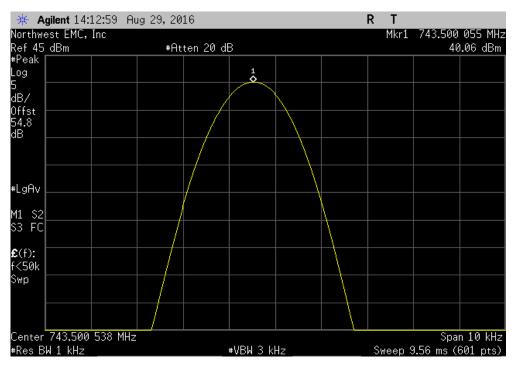
	Antenna Port	2, Normal Temp	perature and Volt	age, Mid Channel	l, 737.5 MHz	
		Measured	Assigned	Error	Limit	
		Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results
		737.500051	737.5	0.1	1	Pass



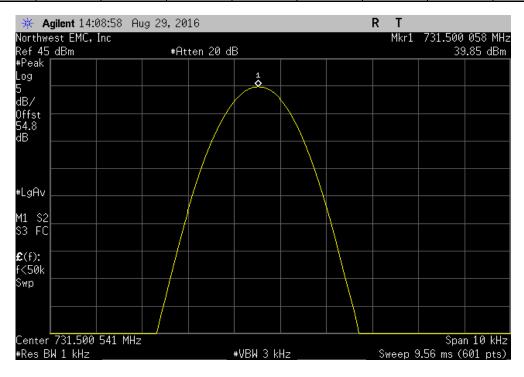
Report No. KMWC0074 64/161



	Antenna Port	2, Normal Temp	erature and Volta	ige, High Channe	l, 743.5 MHz	
		Measured	Assigned	Error	Limit	
		Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results
		743.500055	743.5	0.1	1	Pass



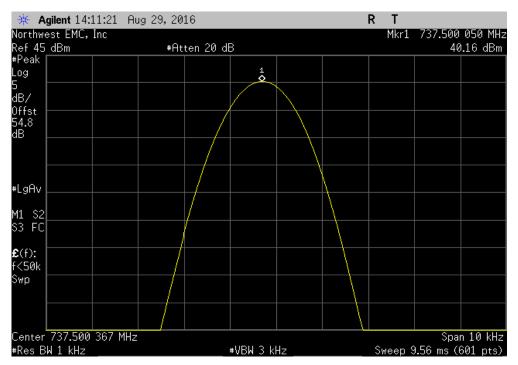
	Antenna F	ort 2, Extreme V	oltage, 55.2 VDC	, Low Channel, 7	'31.5 MHz	
		Measured	Assigned	Error	Limit	
		Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results
		731.500058	731.5	0.1	1	Pass



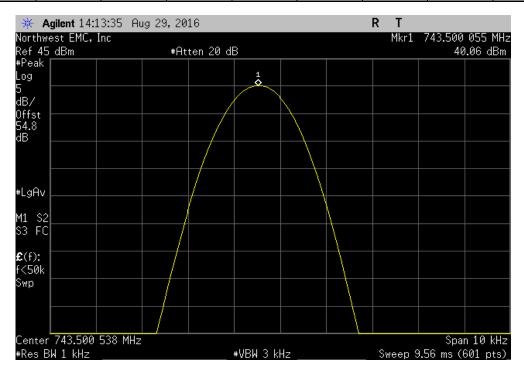
Report No. KMWC0074 65/161



	Antenna F	Port 2, Extreme V	oltage, 55.2 VDC	C, Mid Channel, 7	37.5 MHz		
		Measured	Assigned	Error	Limit		
		Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results	
,	-	737.50005	737.5	0.1	1	Pass	1



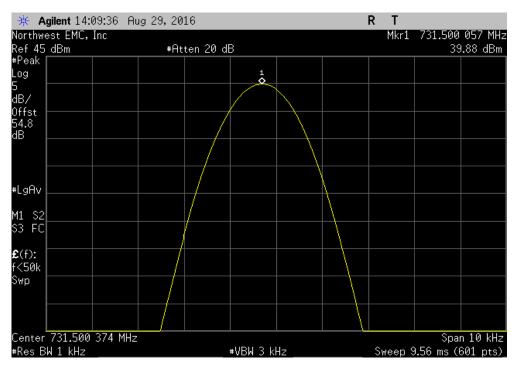
	Antenna P	ort 2, Extreme V	oltage, 55.2 VDC	, High Channel, 7	'43.5 MHz	
		Measured	Assigned	Error	Limit	
		Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results
		743.500055	743.5	0.1	1	Pass



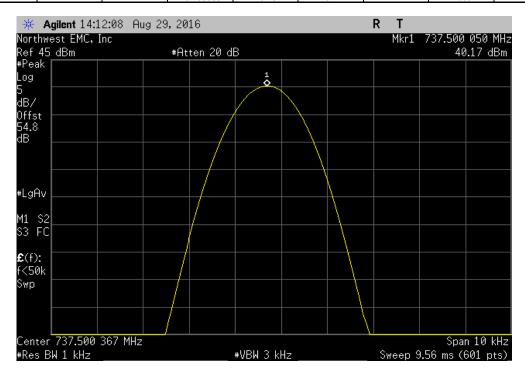
Report No. KMWC0074 66/161



	Antenna P	ort 2, Extreme V	oltage, 40.8 VAC	, Low Channel, 7	31.5 MHz		
		Measured	Assigned	Error	Limit		
		Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results	
,		731.500057	731.5	0.1	1	Pass	



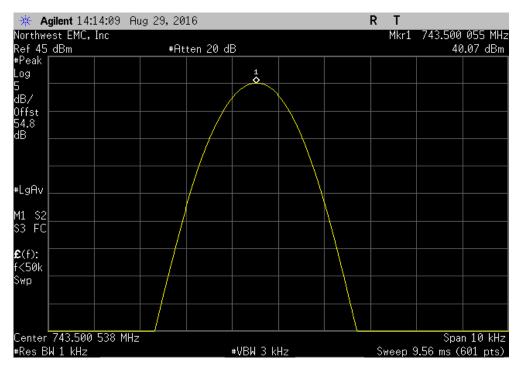
	Antenna F	Port 2, Extreme V	oltage, 40.8 VAC	C, Mid Channel, 7	37.5 MHz	
		Measured	Assigned	Error	Limit	
		Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results
		737.50005	737.5	0.1	1	Pass



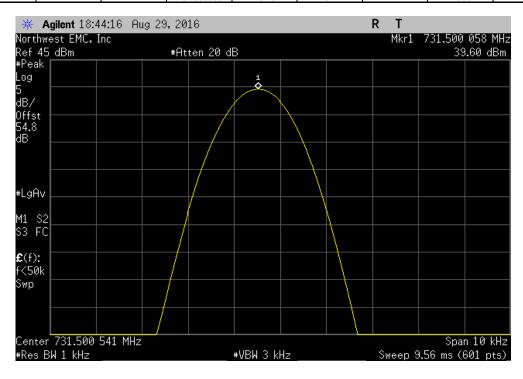
Report No. KMWC0074 67/161



	Antenna Po	ort 2, Extreme V	oltage, 40.8 VAC	, High Channel, 7	43.5 MHz		
		Measured	Assigned	Error	Limit		
		Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results	
		743.500055	743.5	0.1	1	Pass	



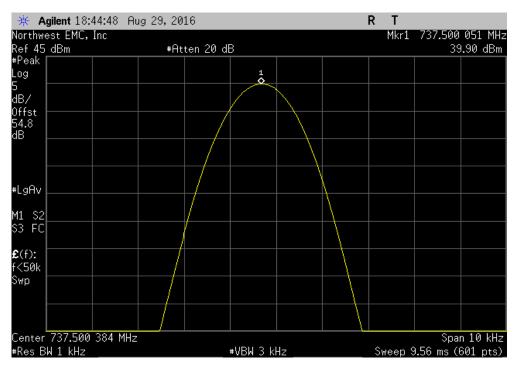
	Antenna Port 2, Extreme To	emperature, -30°0	C, Low Channel,	731.5 MHz	
	Measured	Assigned	Error	Limit	
	Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results
	731.500058	731.5	0.1	1	Pass



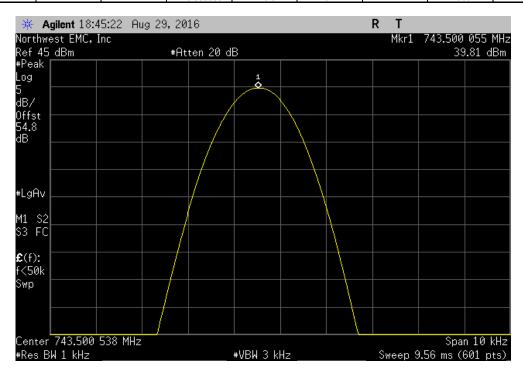
Report No. KMWC0074 68/161



	Antenna Po	ort 2, Extreme Te	emperature, -30°0	C, Mid Channel, 7	37.5 MHz		
		Measured	Assigned	Error	Limit		
		Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results	
l		737.500051	737.5	0.1	1	Pass	1



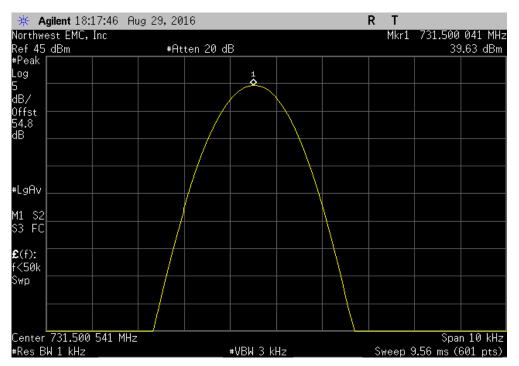
	Antenna Port 2, Extreme Te	emperature, -30°C	C, High Channel,	743.5 MHz	
	Measured	Assigned	Error	Limit	
	Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results
	743.500055	743.5	0.1	1	Pass



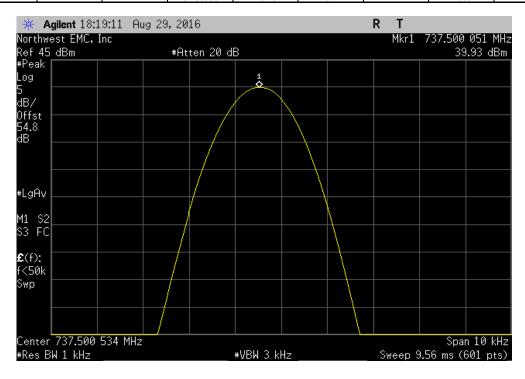
Report No. KMWC0074 69/161



	Antenna Po	rt 2, Extreme Te	emperature, -20°C	C, Low Channel, 7	731.5 MHz	
		Measured	Assigned	Error	Limit	
		Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results
ĺ		731.500041	731.5	0.1	1	Pass



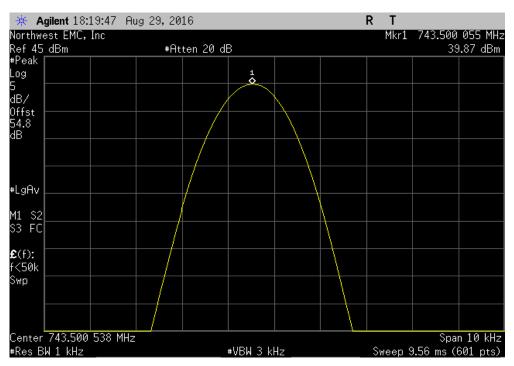
	Antenna Port 2, Extreme	Femperature, -20°	C, Mid Channel,	737.5 MHz	
	Measured	Assigned	Error	Limit	
	Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results
	737.500051	737.5	0.1	1	Pass



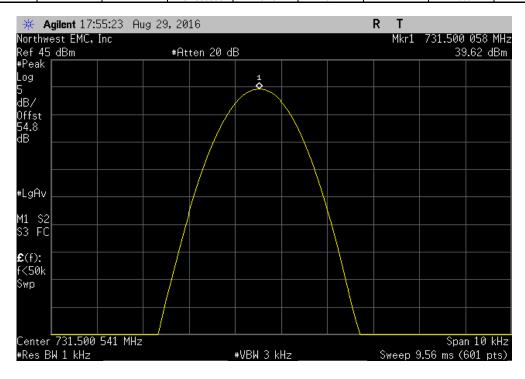
Report No. KMWC0074 70/161



	Antenna Port 2, Extreme T	emperature, -20°0	C, High Channel,	743.5 MHz		
	Measured	Assigned	Error	Limit		
_	Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results	
1	743.500055	743.5	0.1	1	Pass	



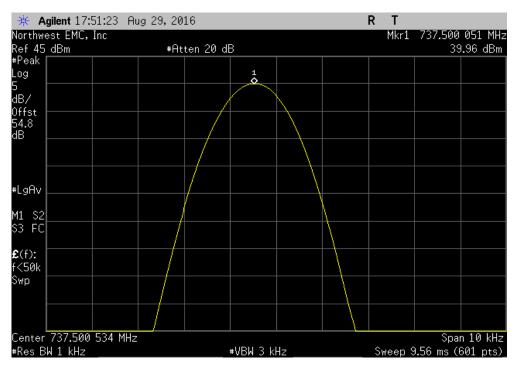
	Antenna Port 2, Extreme T	emperature, -10°0	C, Low Channel,	731.5 MHz	
	Measured	Assigned	Error	Limit	
	Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results
	731.500058	731.5	0.1	1	Pass



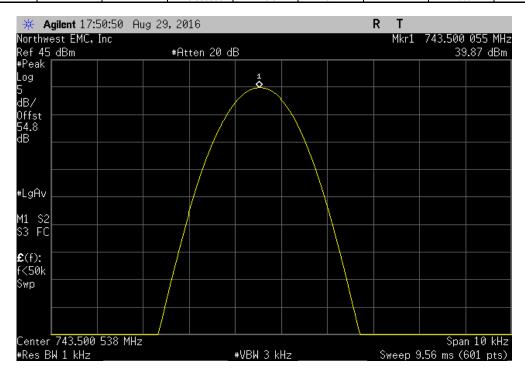
Report No. KMWC0074 71/161



	Antenna Po	ort 2, Extreme Te	emperature, -10°0	C, Mid Channel, 7	'37.5 MHz		
		Measured	Assigned	Error	Limit		
_		Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results	
1		737.500051	737.5	0.1	1	Pass	1



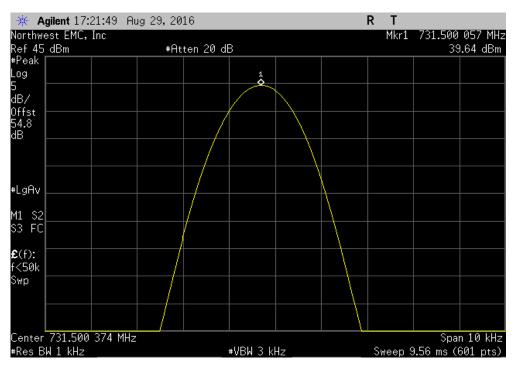
	Antenna Port 2, Extreme Te	emperature, -10°0	C, High Channel,	743.5 MHz	
	Measured	Assigned	Error	Limit	
	Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results
	743.500055	743.5	0.1	1	Pass



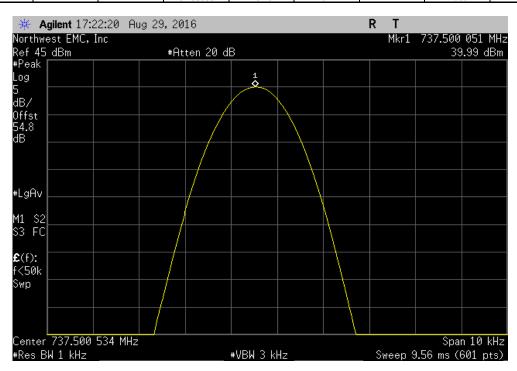
Report No. KMWC0074 72/161



	Antenna Port 2	2, Extreme T	emperature, 0°C	, Low Channel, 73	31.5 MHz		
	Me	easured	Assigned	Error	Limit		
_	Val	lue (MHz)	Value (MHz)	(ppm)	(ppm)	Results	
ĺ	73	1.500057	731.5	0.1	1	Pass	



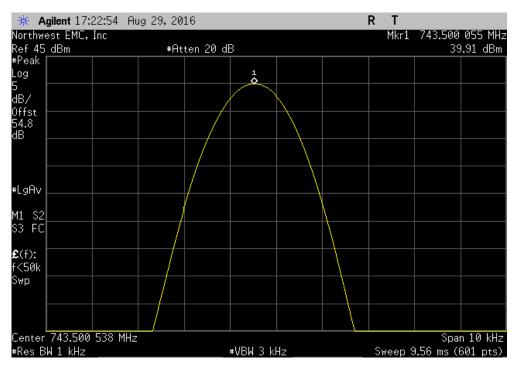
	Antenna Port 2, Extr	eme Temperat	ure, 0°C, N	Mid Channel, 73	37.5 MHz	
	Measur	ed Assiç	jned	Error	Limit	
	Value (N	IHz) Value	(MHz)	(ppm)	(ppm)	Results
	737.500	051 737	7.5	0.1	1	Pass



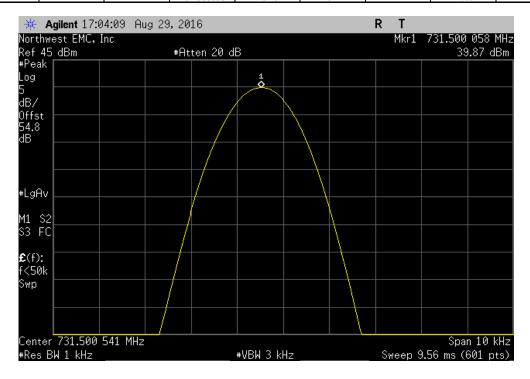
Report No. KMWC0074 73/161



	Antenna Po	ort 2, Extreme T	emperature, 0°C	High Channel, 7	43.5 MHz		
		Measured	Assigned	Error	Limit		
_		Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results	
l		743.500055	743.5	0.1	1	Pass	1



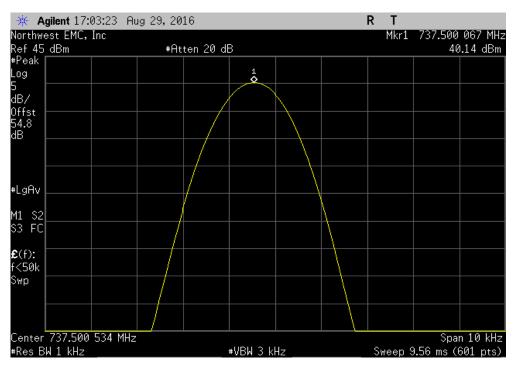
	Antenna Port 2, Extreme	Temperature, +10°	C, Low Channel,	731.5 MHz	
	Measured	Assigned	Error	Limit	
	 Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results
1	731.500058	731.5	0.1	1	Pass



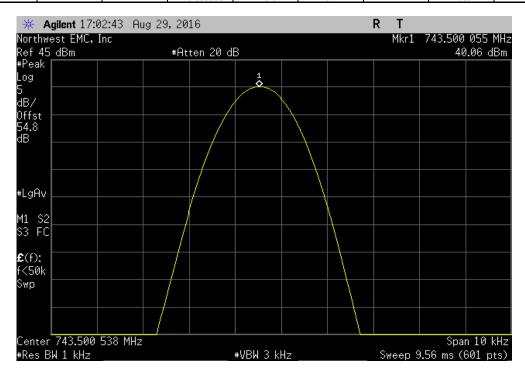
Report No. KMWC0074 74/161



	Antenna P	ort 2, Extreme Te	emperature, +10°	C, Mid Channel,	737.5 MHz	
		Measured	Assigned	Error	Limit	
		Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results
,		737.500067	737.5	0.1	1	Pass



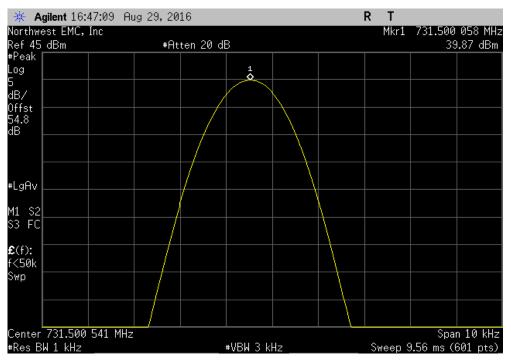
	Antenna Port 2, Extreme	Temperature, +10°	C, High Channel,	, 743.5 MHz	
	Measured	Assigned	Error	Limit	
	Value (MHz	Value (MHz)	(ppm)	(ppm)	Results
	743.500055	743.5	0.1	1	Pass



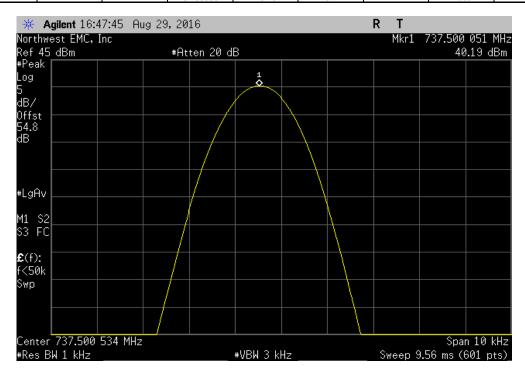
Report No. KMWC0074 75/161



	Antenna P	ort 2, Extreme Te	emperature, +20°0	C, Low Channel,	731.5 MHz	
		Measured	Assigned	Error	Limit	
		Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results
		731.500058	731.5	0.1	1	Pass



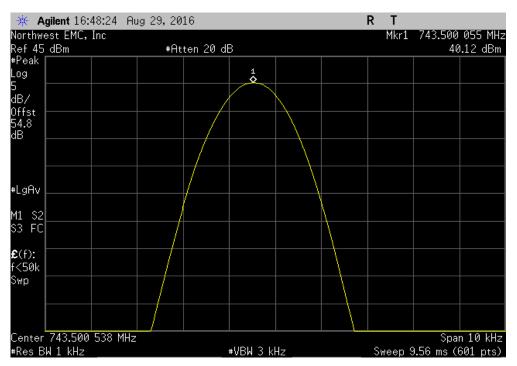
	Antenna Port 2, Extreme To	emperature, +20°	C, Mid Channel,	737.5 MHz	
	Measured	Assigned	Error	Limit	
	Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results
	737.500051	737.5	0.1	1	Pass



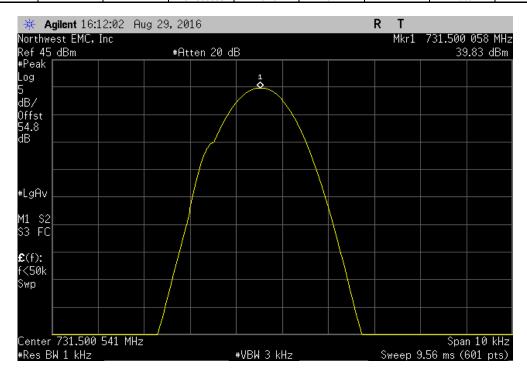
Report No. KMWC0074 76/161



	Antenna Po	ort 2, Extreme Te	mperature, +20°0	C, High Channel,	743.5 MHz	
		Measured	Assigned	Error	Limit	
		Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results
l		743.500055	743.5	0.1	1	Pass



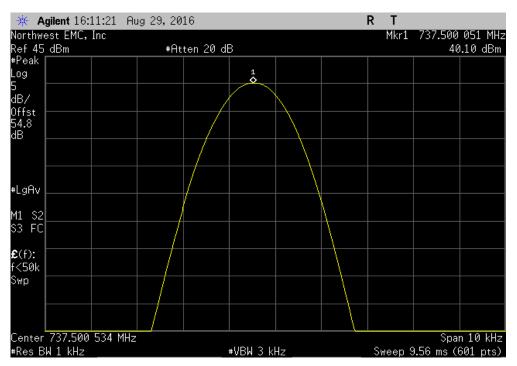
	Antenna Port 2, Extreme Te	emperature, +30°	C, Low Channel,	731.5 MHz	
	Measured	Assigned	Error	Limit	
	Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results
	731.500058	731.5	0.1	1	Pass



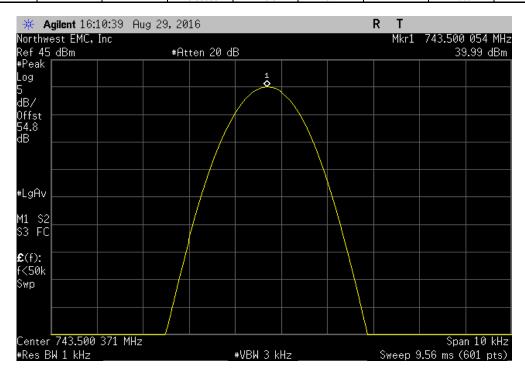
Report No. KMWC0074 77/161



	Antenna P	ort 2, Extreme Te	emperature, +30°	C, Mid Channel,	737.5 MHz	
		Measured	Assigned	Error	Limit	
		Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results
i		737.500051	737.5	0.1	1	Pass



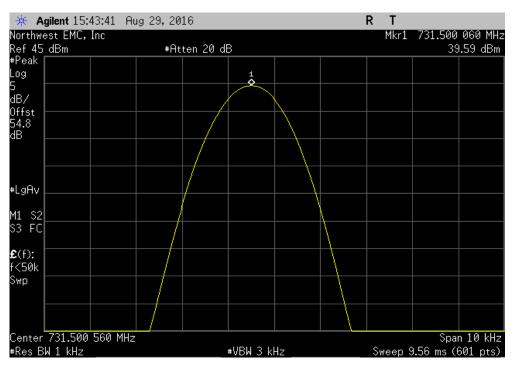
	Antenna Port 2, Extrem	e Temperature, +30°	C, High Channe	l, 743.5 MHz	
	Measure	d Assigned	Error	Limit	
	Value (MH	z) Value (MHz)	(ppm)	(ppm)	Results
	743.50005	4 743.5	0.1	1	Pass



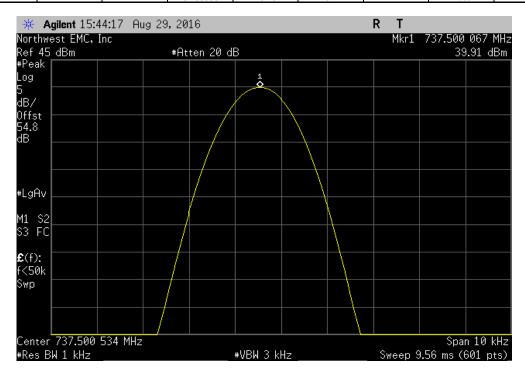
Report No. KMWC0074 78/161



	Antenna P	ort 2, Extreme Te	emperature, +40°	C, Low Channel,	731.5 MHz	
		Measured	Assigned	Error	Limit	
		Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results
		731.50006	731.5	0.1	1	Pass



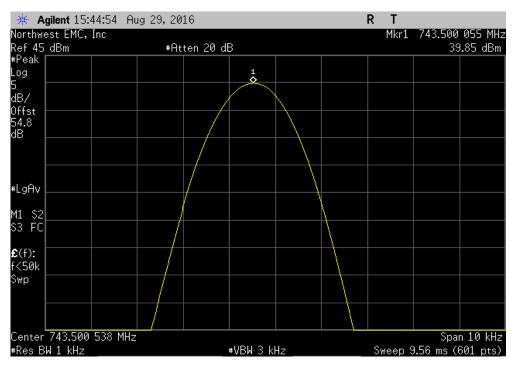
	Antenna Port 2, Extreme Te	emperature, +40°	C, Mid Channel,	737.5 MHz	
	Measured	Assigned	Error	Limit	
	Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results
	737.500067	737.5	0.1	1	Pass



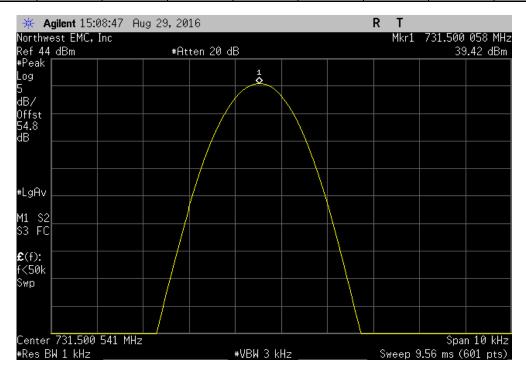
Report No. KMWC0074 79/161



	Antenna Por	rt 2, Extreme Te	mperature, +40°0	C, High Channel,	743.5 MHz		
		Measured	Assigned	Error	Limit		
_		Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results	_
		743.500055	743.5	0.1	1	Pass	



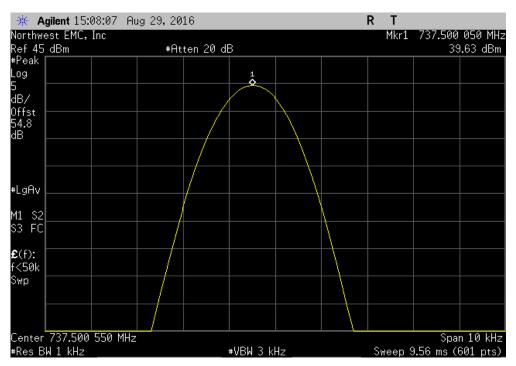
	Antenna Port 2, Ext	reme Te	emperature, +50°	C, Low Channel,	731.5 MHz	
	Meas	ured	Assigned	Error	Limit	
	Value	(MHz)	Value (MHz)	(ppm)	(ppm)	Results
	731.50	00058	731.5	0.1	1	Pass



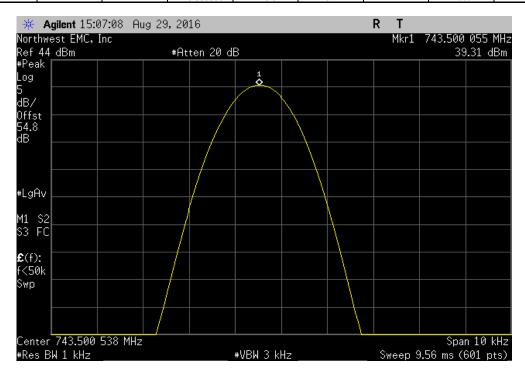
Report No. KMWC0074 80/161



	Antenna Po	ort 2, Extreme Te	emperature, +50°	C, Mid Channel, 7	737.5 MHz		
		Measured	Assigned	Error	Limit		
_		Value (MHz)	Value (MHz)	(ppm)	(ppm)	Results	_
ĺ		737.50005	737.5	0.1	1	Pass	ł



	Antenna Port 2,	Extreme Te	mperature, +50°0	C, High Channel,	743.5 MHz	
	Me	easured	Assigned	Error	Limit	
	Val	ue (MHz)	Value (MHz)	(ppm)	(ppm)	Results
	743	3.500055	743.5	0.1	1	Pass



Report No. KMWC0074 81/161



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.	Cal. Due
Power Supply - DC	Hewlett Packard	6574A	TPX	NCR	NCR
Generator - Signal	Agilent	E8257D	TGU	2/5/2015	2/5/2018
Cable	Fairview Microwave	SCA1814-0101-120	OCZ	NCR	NCR
Block - DC	Aeroflex	INMET 8535	AMO	4/4/2016	4/4/2017
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFA	11/19/2015	11/19/2016

#### **CLIENT PROVIDED EQUIPMENT**

Description	Manufacturer	Model	Last Cal.	Cal. Due
High Power Attenuator - 30dB	Aeroflex/Weinschel	53-30-43	NCR	NCR
Attenuator - 20dB	N/A	N/A	NCR	NCR
Power Divider	Fairview Microwave	MP8748-2	NCR	NCR
50Ohm Terminator	Aeroflex/Weinschel	1455-4	NCR	NCR
High Power Terminator	Telcon	KTMO400800060	NCR	NCR

#### **TEST DESCRIPTION**

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer.

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 report the results.

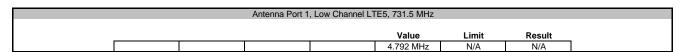
Report No. KMWC0074

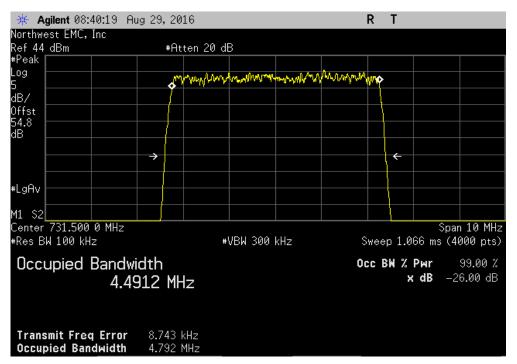


	CWS-3050-12				Work Order:		
Serial Number:						08/29/16	
	Parallel Wireless Inc.				Temperature:		
Attendees:						46.4% RH	
Project:					Barometric Pres.:	1017 mbar	
	Johnny Candelas		Power:	48 VDC	Job Site:	OC13	
TEST SPECIFICAT	IONS			Test Method			
FCC 27:2016				ANSI/TIA/EIA-603-D-2010			
COMMENTS							
	ng 40W. Reference Level O	otrset: DC Block + 30dB Attenua	tor + 200B Attenuator +	Power Divider + Cable Loss = 54.8dB	total.		
None	W TEST STANDARD						
None			1 .	2 -			
Configuration #	1	Signature	fe d.	Collen			
					Value	Limit	Result
Antenna Port 1							
Antenna Port 1	Low Channel LTE5, 731.5				4.792 MHz	N/A	N/A
Antenna Port 1	Mid Channel LTE5, 737.5 I	MHz			4.792 MHz 4.792 MHz	N/A N/A	N/A N/A
Antenna Port 1	Mid Channel LTE5, 737.5 High Channel LTE5, 743.5	MHz MHz			4.792 MHz 4.792 MHz 4.784 MHz	N/A N/A N/A	N/A N/A N/A
Antenna Port 1	Mid Channel LTE5, 737.5 High Channel LTE5, 743.5 Low Channel LTE10, 734 I	MHz MHz MHz			4.792 MHz 4.792 MHz 4.784 MHz 9.562 MHz	N/A N/A N/A N/A	N/A N/A N/A N/A
Antenna Port 1	Mid Channel LTE5, 737.5 High Channel LTE5, 743.5 Low Channel LTE10, 734 Mid Channel LTE10, 737.5	MHz   MHz MHz   MHz			4.792 MHz 4.792 MHz 4.784 MHz 9.562 MHz 9.556 MHz	N/A N/A N/A N/A N/A	N/A N/A N/A N/A N/A
	Mid Channel LTE5, 737.5 High Channel LTE5, 743.5 Low Channel LTE10, 734 I	MHz   MHz MHz   MHz			4.792 MHz 4.792 MHz 4.784 MHz 9.562 MHz	N/A N/A N/A N/A	N/A N/A N/A N/A
Antenna Port 1  Antenna Port 2	Mid Channel LTE5, 737.5 High Channel LTE5, 743.5 Low Channel LTE10, 734 Mid Channel LTE10, 737.5 High Channel LTE10, 741	MHz MHz MHz 5 MHz MHz			4.792 MHz 4.792 MHz 4.784 MHz 9.562 MHz 9.556 MHz 9.550 MHz	N/A N/A N/A N/A N/A N/A	N/A N/A N/A N/A N/A N/A
	Mid Channel LTE5, 737.5 High Channel LTE5, 743.5 Low Channel LTE10, 734 I Mid Channel LTE10, 737.5 High Channel LTE10, 741 Low Channel LTE5, 731.5	MHz MHz MHz 5 MHz MHz MHz			4.792 MHz 4.792 MHz 4.784 MHz 9.562 MHz 9.566 MHz 9.550 MHz 4.826 MHz	N/A N/A N/A N/A N/A N/A	N/A N/A N/A N/A N/A N/A
	Mid Channel LTE5, 737.5 High Channel LTE5, 743.5 Low Channel LTE10, 734 I Mid Channel LTE10, 737.5 High Channel LTE10, 741 Low Channel LTE5, 731.5 Mid Channel LTE5, 737.5	MHz MHz MHz MHz MHz MHz MHz			4.792 MHz 4.792 MHz 4.784 MHz 9.562 MHz 9.566 MHz 9.550 MHz 4.826 MHz 4.805 MHz	N/A N/A N/A N/A N/A N/A	N/A N/A N/A N/A N/A N/A
	Mid Channel LTE5, 737.5 High Channel LTE6, 743.5 Low Channel LTE10, 737.5 High Channel LTE10, 737.5 High Channel LTE10, 741 Low Channel LTE5, 731.5 Mid Channel LTE5, 737.5 High Channel LTE5, 737.5	MHz MHz MHz MHz MHz MHz MHz MHz MHz			4.792 MHz 4.792 MHz 4.784 MHz 9.562 MHz 9.556 MHz 9.550 MHz 4.826 MHz 4.805 MHz 4.786 MHz	N/A N/A N/A N/A N/A N/A N/A	N/A N/A N/A N/A N/A N/A N/A
	Mid Channel LTE5, 737.5 High Channel LTE16, 743.5 Low Channel LTE10, 734. Mid Channel LTE10, 737.5 High Channel LTE5, 731.5 Mid Channel LTE5, 731.5 Mid Channel LTE5, 737.5 Low Channel LTE5, 734.5 Low Channel LTE10, 734	MHz MHz MHz 5 MHz MHz MHz MHz MHz MHz			4.792 MHz 4.792 MHz 4.784 MHz 9.562 MHz 9.566 MHz 9.550 MHz 4.826 MHz 4.805 MHz 4.786 MHz 9.609 MHz	N/A N/A N/A N/A N/A N/A N/A N/A	N/A N/A N/A N/A N/A N/A N/A N/A
	Mid Channel LTE5, 737.5 High Channel LTE10, 734.5 Low Channel LTE10, 734.4 Mid Channel LTE10, 737.5 High Channel LTE10, 741 Low Channel LTE5, 731.5 Mid Channel LTE5, 737.5 High Channel LTE5, 737.5 Low Channel LTE10, 734.4 Mid Channel LTE10, 734.5	MHz MHz MHz MHz MHz MHz MHz MHz MHz MHz			4.792 MHz 4.792 MHz 4.784 MHz 9.562 MHz 9.566 MHz 9.550 MHz 4.826 MHz 4.805 MHz 4.786 MHz 9.609 MHz 9.554 MHz	N/A N/A N/A N/A N/A N/A N/A N/A N/A	N/A N/A N/A N/A N/A N/A N/A N/A N/A
	Mid Channel LTE5, 737.5 High Channel LTE16, 743.5 Low Channel LTE10, 734. Mid Channel LTE10, 737.5 High Channel LTE5, 731.5 Mid Channel LTE5, 731.5 Mid Channel LTE5, 737.5 Low Channel LTE5, 734.5 Low Channel LTE10, 734	MHz MHz MHz MHz MHz MHz MHz MHz MHz MHz			4.792 MHz 4.792 MHz 4.784 MHz 9.562 MHz 9.566 MHz 9.550 MHz 4.826 MHz 4.805 MHz 4.786 MHz 9.609 MHz	N/A N/A N/A N/A N/A N/A N/A N/A	N/A N/A N/A N/A N/A N/A N/A N/A

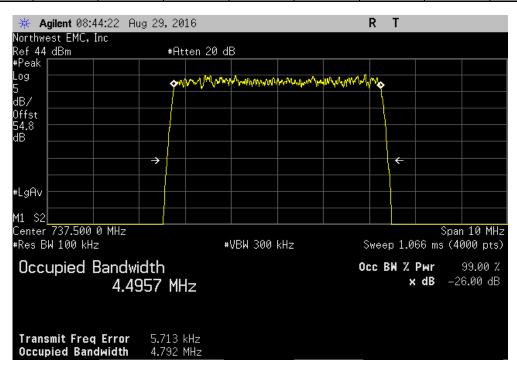
Report No. KMWC0074 83/161





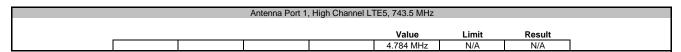


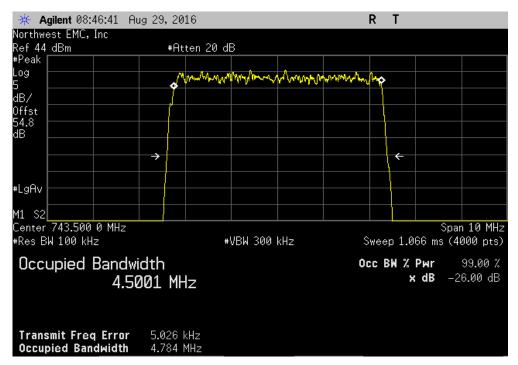
		Antenna Port 1	, Mid Channel LT	E5, 737.5 MHz			
				Value	Limit	Result	
•				4.792 MHz	N/A	N/A	



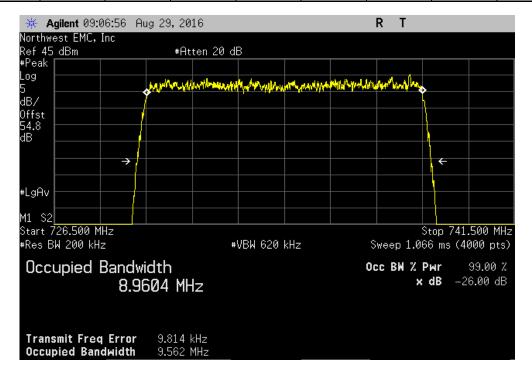
Report No. KMWC0074 84/161





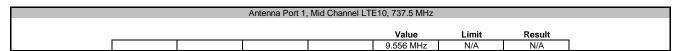


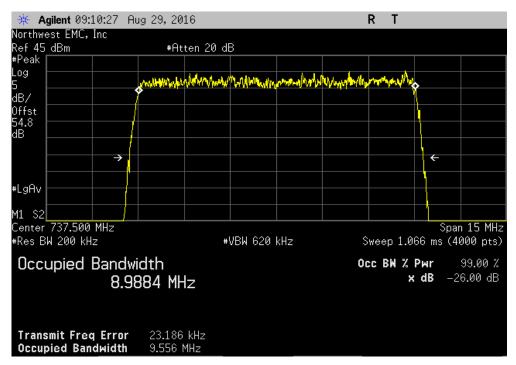
	Antenna Port 1	, Low Channel LT	ΓΕ10, 734 MHz		
			Value	Limit	Result
			9.562 MHz	N/A	N/A



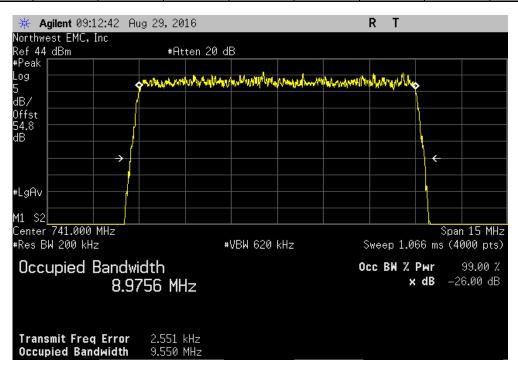
Report No. KMWC0074 85/161





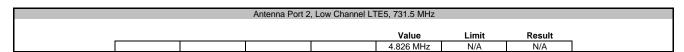


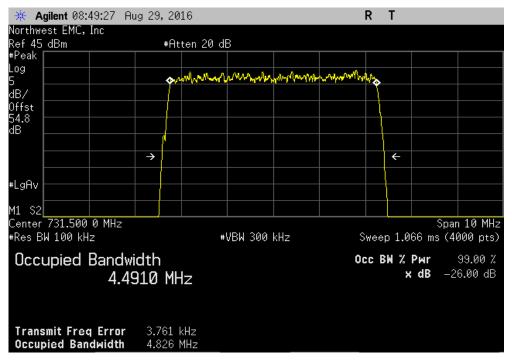
	Antenna Port 1	, High Channel L	TE10, 741 MHz		
			Value	Limit	Result
			9.550 MHz	N/A	N/A



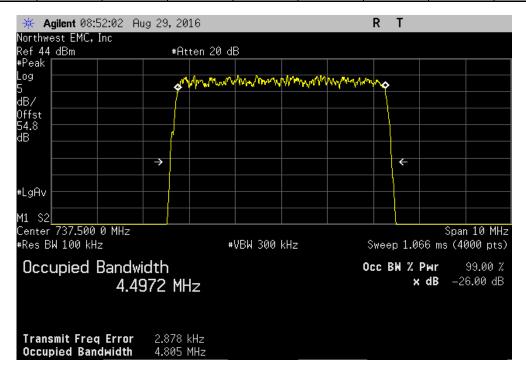
Report No. KMWC0074 86/161





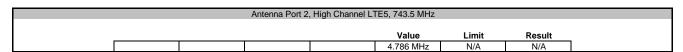


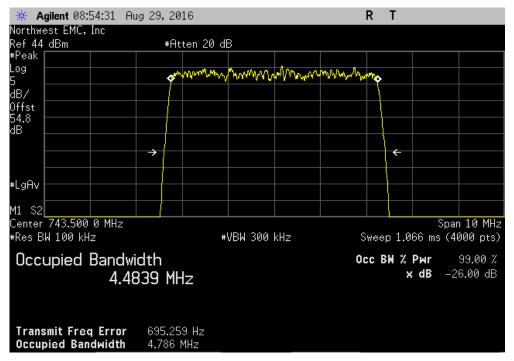
Antenna Port 2, Mid Channel LTE5, 737.5 MHz								
				Value	Limit	Result		
				4.805 MHz	N/A	N/A		



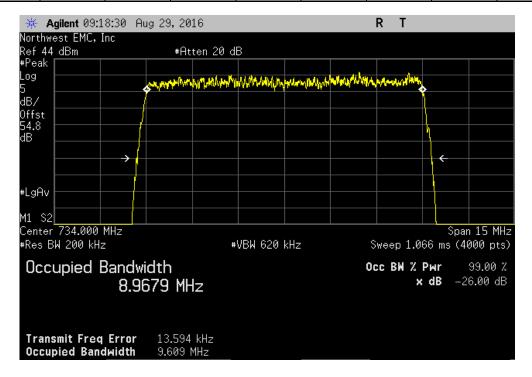
Report No. KMWC0074 87/161





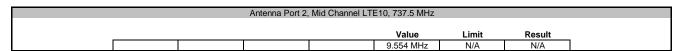


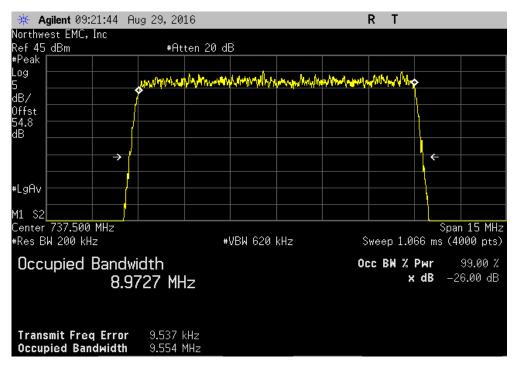
Antenna Port 2, Low Channel LTE10, 734 MHz								
				Value	Limit	Result		
				9.609 MHz	N/A	N/A		



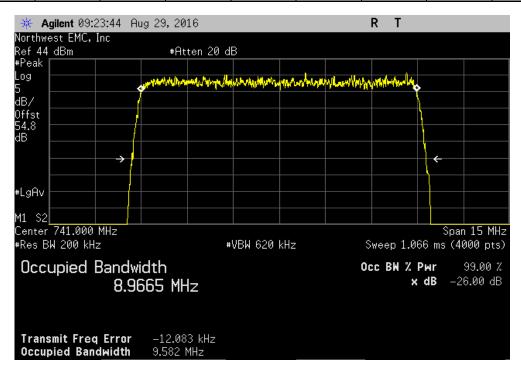
Report No. KMWC0074 88/161







Antenna Port 2, High Channel LTE10, 741 MHz								
				Value	Limit	Result		
				9.582 MHz	N/A	N/A		



Report No. KMWC0074 89/161



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.	Cal. Due
Power Supply - DC	Hewlett Packard	6574A	TPX	NCR	NCR
Generator - Signal	Keysight	N5182B	TFX	4/16/2015	4/16/2018
Cable	Fairview Microwave	SCA1814-0101-120	OCZ	NCR	NCR
Block - DC	Aeroflex	INMET 8535	AMO	4/4/2016	4/4/2017
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFD	7/29/2016	7/29/2017

#### **CLIENT PROVIDED EQUIPMENT**

Description	Manufacturer	Model	Last Cal.	Cal. Due
High Power Attenuator - 30dB	Aeroflex/Weinschel	53-30-43	NCR	NCR
Attenuator - 20dB	N/A	N/A	NCR	NCR
Power Divider	Fairview Microwave	MP8748-2	NCR	NCR
50Ohm Terminator	Aeroflex/Weinschel	1455-4	NCR	NCR
High Power Terminator	Telcon	KTMO400800060	NCR	NCR

#### **TEST DESCRIPTION**

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer.

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 report the results.

Only the Low Channel for each channel bandwidth was tested, the Mid & High Channesl were previously tested in this band.

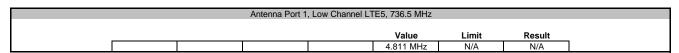
Report No. KMWC0074

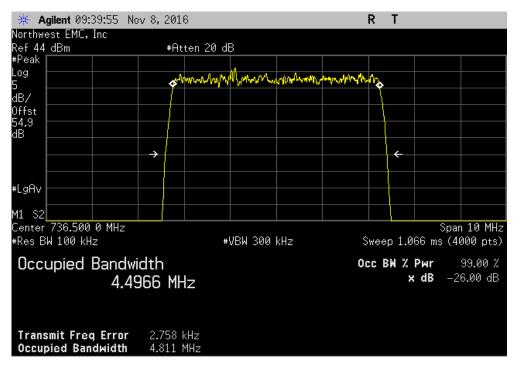


EUT:	CWS-3050-12				Work Order:	KMWC0077					
Serial Number:	K163300001					11/08/16					
Customer:	Parallel Wireless Inc.				Temperature:						
	Edward Lee					Humidity: 49% RH					
Project:	None				Barometric Pres.:	1018 mbar					
Tested by:	Johnny Candelas		Power:	48 VDC	Job Site:	OC13					
TEST SPECIFICAT	IONS			Test Method							
FCC 27:2016				ANSI/TIA/EIA-603-D-2010							
COMMENTS											
	wer Level Setting 40W. Reference Level Offset: DC Block + 30dB Attenuator + 20dB Attenuator + Power Divider + Cable Loss = 54.9dB total.										
	II TEST STANDARD										
None											
Configuration #	1	Signature	for de	Lat.							
					Value	Limit	Result				
Antenna Port 1											
	Low Channel LTE5, 736.5				4.811 MHz	N/A	N/A				
	Low Channel LTE10, 739 I	ИНz			9.583 MHz	N/A	N/A				
Antenna Port 2											
	Low Channel LTE5, 736.5				4.796 MHz	N/A	N/A				
	Low Channel LTE10, 739 I	MHz			9.577 MHz	N/A	N/A				

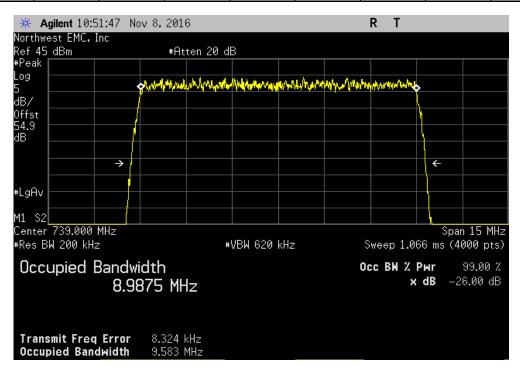
Report No. KMWC0074 91/161





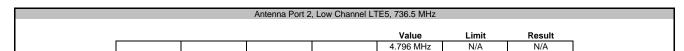


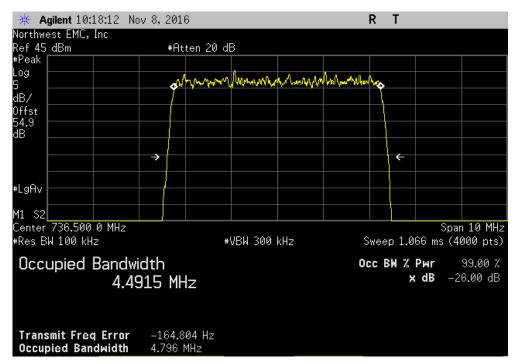
Antenna Port 1, Low Channel LTE10, 739 MHz								
				Value	Limit	Result		



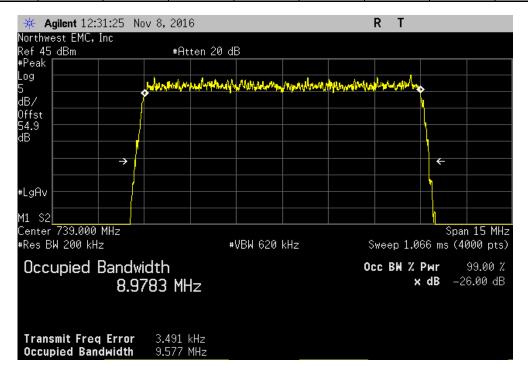
Report No. KMWC0074 92/161







Antenna Port 2, Low Channel LTE10, 739 MHz									
l					Value	Limit	Result		



Report No. KMWC0074 93/161

# **OUT OF BAND EMISSIONS - LTE BAND 12**



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 at LTE5, Low Ch (731.5MHz), Mid Ch (737.5MHz), and High Ch (743.5MHz) Transmitting at LTE10, Low Ch (734MHz), Mid Ch (737.5MHz), and High Ch (741MHz)

#### **POWER SETTINGS INVESTIGATED**

48 VDC

#### **CONFIGURATIONS INVESTIGATED**

KMWC0074 - 2

#### FREQUENCY RANGE INVESTIGATED

Start Frequency 30 MHz Stop Frequency 8000 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
Attenuator	S.M. Electronics	SA18H-10	REN	3/28/2016	12 mo
Attenuator	S.M. Electronics	SA6-20	REO	3/28/2016	12 mo
Amplifier - Pre-Amplifier	Miteq	AM-1616-1000	PAD	8/15/2016	12 mo
Cable	ESM Cable Corp.	1-8GHz cables	OCX	8/15/2016	12 mo
Cable	ESM Cable Corp.	30-1GHz cables	OCW	8/15/2016	12 mo
Filter - High Pass	Micro-Tronics	HPM50108	HGP	3/28/2016	12 mo
Filter - Low Pass	Micro-Tronics	LPM50004	HGK	3/28/2016	12 mo
Filter - Band Pass/Notch	K&L Microwave	3TNF-500/1000-N/N	HFR	3/3/2016	12 mo
Antenna - Biconilog	EMCO	3142	AXB	11/6/2015	24 mo
Amplifier - Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	AVJ	8/15/2016	12 mo
Antenna - Double Ridge	ETS Lindgren	3115	AIR	6/23/2016	24 mo
Analyzer - Spectrum Analyzer	Agilent	E4446A	AAY	11/5/2015	12 mo

#### **TEST DESCRIPTION**

The EUT was tested with shielded terminations on the RF output ports instead of antennas.

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.

Report No. KMWC0074 94/161

# **OUT OF BAND EMISSIONS - LTE BAND 12**



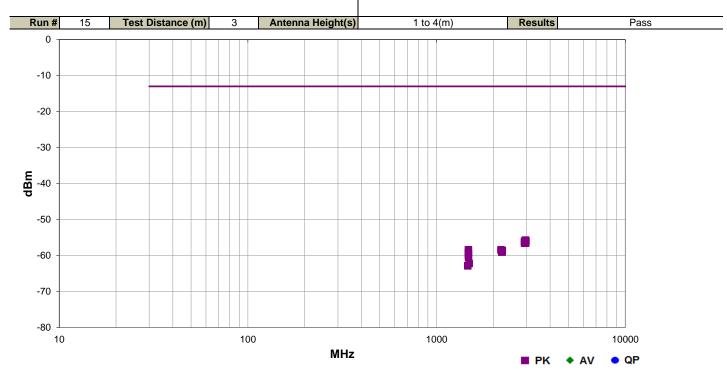
PSA-ESCI 2016.07.22 EmiR5 2016.07.22.1

Work Order:	KMWC0074	Date:	08/31/16	
Project:	None	Temperature:	19 °C	In day
Job Site:	OC07	Humidity:	42% RH	
Serial Number:	K163300001	Barometric Pres.:	1011 mbar	Tested by: Mike Tran
EUT:	CWS-3050-12	•		•
Configuration:	2			
Customer:	Parallel Wireless Inc.			
Attendees:	Andy Ku			
EUT Power:				
Operating Mode:	Transmitting at LTE5, Transmitting at LTE10	Low Ch (731.5MHz), M ), Low Ch (734MHz), M	lid Ch (737.5MHz), a id Ch (737.5MHz), ar	nd High Ch (743.5MHz) nd High Ch (741MHz)
Deviations:	None			
Comments:	2x40W			

Test Specifications

FCC 27.53:2016

Test Method ANSI/TIA/EIA-603-D-2010



Freq (MHz)	Antenna Height (meters)	Azimuth (degrees)	Polarity/ Transducer Type	Detector	ERP (Watts)	ERP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
 2961.950	3.1	0.0	Vert	PK	2.70E-09	-55.7	-13.0	-42.7	Dual Carrier Edge to Edge LTE5-LTE10, EUT Horz
2975.983	1.0	52.0	Vert	PK	2.58E-09	-55.9	-13.0	-42.9	Dual Carrier Edge to Edge LTE5, EUT Horz
2964.358	3.3	32.0	Horz	PK	2.58E-09	-55.9	-13.0	-42.9	Dual Carrier Edge to Edge LTE5-LTE10, EUT on Side
2926.158	2.6	91.0	Vert	PK	2.52E-09	-56.0	-13.0	-43.0	Low Ch, EUT Horz, LTE5
2962.833	1.0	122.0	Vert	PK	2.52E-09	-56.0	-13.0	-43.0	High Ch, EUT Horz, LTE10
2949.833	1.0	21.0	Horz	PK	2.52E-09	-56.0	-13.0	-43.0	Dual Carrier Edge to Edge LTE5, EUT on Side
2974.925	1.0	256.0	Horz	PK	2.47E-09	-56.1	-13.0	-43.1	Dual Carrier Edge to Edge LTE5, EUT on Side
2926.933	1.0	82.0	Horz	PK	2.47E-09	-56.1	-13.0	-43.1	Dual Carrier Edge to Edge LTE5-LTE10, EUT on Side
2938.108	2.2	0.0	Horz	PK	2.41E-09	-56.2	-13.0	-43.2	Low Ch, EUT on Side, LTE10
2952.358	1.0	255.0	Horz	PK	2.41E-09	-56.2	-13.0	-43.2	Mid Ch, EUT on Side, LTE10
2972.433	1.0	310.0	Horz	PK	2.36E-09	-56.3	-13.0	-43.3	High Ch, EUT on Side, LTE5
2935.850	1.4	240.0	Vert	PK	2.36E-09	-56.3	-13.0	-43.3	Low Ch, EUT Horz, LTE10
2965.442	1.0	68.0	Horz	PK	2.36E-09	-56.3	-13.0	-43.3	High Ch, EUT on Side, LTE10
2948.308	1.0	65.0	Vert	PK	2.36E-09	-56.3	-13.0	-43.3	Dual Carrier Edge to Edge LTE5, EUT Horz

Report No. KMWC0074 95/161

Freq (MHz)	Antenna Height (meters)	Azimuth (degrees)	Polarity/ Transducer Type	Detector	ERP (Watts)	ERP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
2927.900	2.7	219.0	Horz	PK	2.36E-09	-56.3	-13.0	-43.3	Dual Carrier Edge to Edge LTE5, EUT on Side
2947.808	1.0	305.0	Vert	PK	2.25E-09	-56.5	-13.0	-43.5	Mid Ch, EUT Horz, LTE5
2926.975	2.0	10.0	Horz	PK	2.25E-09	-56.5	-13.0	-43.5	Low Ch, EUT on Side, LTE5
2972.833	1.0	34.0	Vert	PK	2.25E-09	-56.5	-13.0	-43.5	High Ch, EUT Horz, LTE5
2927.167	2.4	272.0	Vert	PK	2.25E-09	-56.5	-13.0	-43.5	Dual Carrier Edge to Edge LTE5, EUT Horz
2949.958	1.0	275.0	Horz	PK	2.20E-09	-56.6	-13.0	-43.6	Mid Ch, EUT on Side, LTE5
2951.808	3.2	168.0	Vert	PK	2.20E-09	-56.6	-13.0	-43.6	Mid Ch, EUT Horz, LTE10
2926.508	1.9	349.0	Vert	PK	2.20E-09	-56.6	-13.0	-43.6	Dual Carrier Edge to Edge LTE5-LTE10, EUT Horz
1475.217	2.0	183.0	Vert	PK	1.45E-09	-58.4	-13.0	-45.4	Mid Ch, EUT Horz, LTE5
2195.100	3.5	1.0	Horz	PK	1.45E-09	-58.4	-13.0	-45.4	Low Ch, EUT on Side, LTE5
1474.750	2.4	264.0	Vert	PK	1.42E-09	-58.5	-13.0	-45.5	Mid Ch, EUT on Side, LTE5
2194.000	2.8	238.0	Vert	PK	1.42E-09	-58.5	-13.0	-45.5	Low Ch, EUT Horz, LTE5
2230.850	1.0	347.0	Vert	PK	1.39E-09	-58.6	-13.0	-45.6	High Ch, EUT Horz, LTE5
2214.058	1.0	191.0	Vert	PK	1.26E-09	-59.0	-13.0	-46.0	Mid Ch, EUT Horz, LTE5
2231.117	3.7	344.0	Horz	PK	1.26E-09	-59.0	-13.0	-46.0	High Ch, EUT on Side, LTE5
2214.567	1.0	217.0	Horz	PK	1.24E-09	-59.1	-13.0	-46.1	Mid Ch, EUT on Side, LTE5
1475.108	1.0	67.0	Horz	PK	1.18E-09	-59.3	-13.0	-46.3	Mid Ch, EUT on Side, LTE5
1474.792	1.0	237.0	Horz	PK	1.10E-09	-59.6	-13.0	-46.6	Mid Ch, EUT Horz, LTE5
1475.042	1.0	229.0	Vert	PK	9.82E-10	-60.1	-13.0	-47.1	Mid Ch, EUT Vert, LTE5
1475.250	1.0	132.0	Horz	PK	8.95E-10	-60.5	-13.0	-47.5	Mid Ch, EUT Vert, LTE5
1488.333	1.0	107.0	Horz	PK	6.05E-10	-62.2	-13.0	-49.2	High Ch, EUT on Side, LTE5
1488.717	1.0	346.0	Vert	PK	6.05E-10	-62.2	-13.0	-49.2	High Ch, EUT Horz, LTE5
1461.233	1.0	52.0	Horz	PK	5.27E-10	-62.8	-13.0	-49.8	Low Ch, EUT on Side, LTE5
1465.092	1.0	311.0	Vert	PK	5.15E-10	-62.9	-13.0	-49.9	Low Ch, EUT Horz, LTE5

Report No. KMWC0074 96/161

# **OUT OF BAND EMISSIONS - LTE Band 17**



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 at LTE5: Low Ch(736.5MHz) and LTE10: Low Ch(739MHz)

#### **POWER SETTINGS INVESTIGATED**

48 VDC

#### **CONFIGURATIONS INVESTIGATED**

KMWC0077 - 2

#### FREQUENCY RANGE INVESTIGATED

	Start Frequency 3	0 MHz	Stop Frequency	8000 MHz
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#### SAMPLE CALCULATIONS

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

#### **TEST EQUIPMENT**

Description	Manufacturer	Model	ID	Last Cal.	Interval
Generator - Signal	Keysight	N5182B	TFX	4/16/2015	36 mo
Antenna - Double Ridge	EMCO	3115	AHB	3/21/2016	24 mo
Filter - Low Pass	Micro-Tronics	LPM50003	LFA	10/17/2016	12 mo
Filter - Band Pass/Notch	K&L Microwave	3TNF-500/1000-N/N	HFR	3/3/2016	12 mo
Antenna - Double Ridge	ETS Lindgren	3115	AIR	6/23/2016	24 mo
Amplifier - Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	AVP	8/15/2016	12 mo
Filter - Low Pass	Micro-Tronics	LPM50003	HGO	3/28/2016	12 mo
Filter - High Pass	Micro-Tronics	HPM50108	HGP	3/28/2016	12 mo
Amplifier - Pre-Amplifier	Miteq	AM-1616-1000	PAD	8/15/2016	12 mo
Cable	ESM Cable Corp.	1-8GHz cables	OCX	9/19/2016	12 mo
Cable	ESM Cable Corp.	30-1GHz cables	OCW	9/19/2016	12 mo
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFN	4/11/2016	12 mo

#### **MEASUREMENT BANDWIDTHS**

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

#### **TEST DESCRIPTION**

The EUT was tested with shielded terminations on the RF output ports instead of antennas.

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. 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. 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.

Report No. KMWC0074 97/161

# **OUT OF BAND EMISSIONS - LTE Band 17**

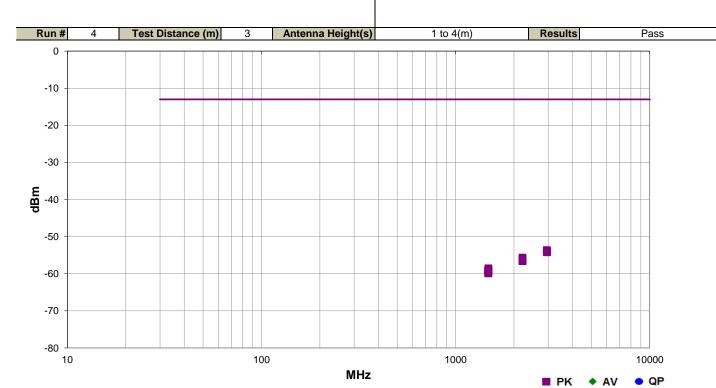


PSA-ESCI 2016.07.22 EmiR5 2016.08.26

Work Order:	KMWC0077	Date:	11/08/16	
Project:	None	Temperature:	21.5 °C	146,4
Job Site:	OC07	Humidity:	48.4% RH	
Serial Number:	K163300001	Barometric Pres.:	1017 mbar	Tested by: Mark Baytan
EUT:	CWS-3050-12			
Configuration:	2			
Customer:	Parallel Wireless Inc.			
Attendees:	Edward Lee			
EUT Power:	48 VDC			
Operating Mode:	Transmitting at LTE5:	Low Ch(736.5MHz) ar	nd LTE10: Low Ch(739	9MHz)
Deviations:	None			
Comments:	Power Level Setting 4	40W.		
Test Specifications			Test Meth	od

Test Specifications FCC 27.53:2016

Test Method ANSI/TIA/EIA-603-D-2010



Freq (MHz)	Antenna Height (meters)	Azimuth (degrees)	Polarity/ Transducer Type	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
2947.950	1.0	360.0	Horz	PK	4.34E-09	-53.6	-13.0	-40.6	EUT on Side, LTE5 Low Ch
2954.908	1.0	283.0	Vert	PK	4.24E-09	-53.7	-13.0	-40.7	EUT on Side, LTE10 Low Ch
2958.820	4.0	211.0	Horz	PK	4.14E-09	-53.8	-13.0	-40.8	EUT on Side, Dual Carrier Narrowband LTE5
2953.575	2.4	173.0	Horz	PK	4.05E-09	-53.9	-13.0	-40.9	EUT on Side, LTE10 Low Ch
2955.120	1.0	243.0	Horz	PK	4.05E-09	-53.9	-13.0	-40.9	EUT on Side, Dual Carrier Wideband LTE5
2957.400	1.0	348.0	Vert	PK	3.95E-09	-54.0	-13.0	-41.0	EUT on Side, Dual Carrier Narrowband LTE5
2948.483	1.0	114.0	Vert	PK	3.86E-09	-54.1	-13.0	-41.1	EUT on Side, LTE5 Low Ch
2957.870	3.8	344.0	Vert	PK	3.78E-09	-54.2	-13.0	-41.2	EUT on Side, Dual Carrier Wideband LTE5
2211.300	1.0	169.0	Horz	PK	2.74E-09	-55.6	-13.0	-42.6	EUT on Side, LTE5 Low Ch
2209.542	1.0	179.0	Vert	PK	2.50E-09	-56.0	-13.0	-43.0	EUT on Side, LTE5 Low Ch
2217.058	1.0	287.0	Horz	PK	2.44E-09	-56.1	-13.0	-43.1	EUT on Side, LTE10 Low Ch

Report No. KMWC0074 98/161

Freq (MHz)	Antenna Height (meters)	Azimuth (degrees)	Polarity/ Transducer Type	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
 2215.000	1.0	98.0	Vert	PK	2.28E-09	-56.4	-13.0	-43.4	EUT on Side, LTE10 Low Ch
2214.320	1.0	199.0	Vert	PK	2.28E-09	-56.4	-13.0	-43.4	EUT on Side, Dual Carrier Narrowband LTE5
2217.860	1.0	173.0	Vert	PK	2.28E-09	-56.4	-13.0	-43.4	EUT on Side, Dual Carrier Wideband LTE5
2215.010	1.0	316.0	Horz	PK	2.22E-09	-56.5	-13.0	-43.5	EUT on Side, Dual Carrier Wideband LTE5
2214.010	1.0	57.0	Horz	PK	2.17E-09	-56.6	-13.0	-43.6	EUT on Side, Dual Carrier Narrowband LTE5
1475.110	3.8	123.0	Vert	PK	1.40E-09	-58.5	-13.0	-45.5	EUT on Side, Dual Carrier Narrowband LTE5
1475.700	1.0	83.0	Horz	PK	1.31E-09	-58.8	-13.0	-45.8	EUT on Side, Dual Carrier Narrowband LTE5
1471.400	1.0	157.0	Vert	PK	1.28E-09	-58.9	-13.0	-45.9	EUT on Side, LTE5 Low Ch
1470.650	1.0	13.0	Horz	PK	1.19E-09	-59.2	-13.0	-46.2	EUT on Side, LTE5 Low Ch
1474.983	3.1	185.0	Horz	PK	1.19E-09	-59.2	-13.0	-46.2	EUT Vert, LTE5 Low Ch
1480.530	1.8	217.0	Horz	PK	1.19E-09	-59.2	-13.0	-46.2	EUT on Side, Dual Carrier Wideband LTE5
1471.475	1.3	349.0	Vert	PK	1.17E-09	-59.3	-13.0	-46.3	EUT Vert, LTE5 Low Ch
1479.542	1.0	6.0	Horz	PK	1.17E-09	-59.3	-13.0	-46.3	EUT on Side, LTE10 Low Ch
1478.140	3.4	61.0	Vert	PK	1.17E-09	-59.3	-13.0	-46.3	EUT on Side, Dual Carrier Wideband LTE5
1478.350	1.1	155.0	Vert	PK	1.14E-09	-59.4	-13.0	-46.4	EUT on Side, LTE10 Low Ch
1470.633	1.0	179.0	Horz	PK	1.04E-09	-59.8	-13.0	-46.8	EUT Horz, LTE5 Low Ch
1475.417	1.0	195.0	Vert	PK	1.02E-09	-59.9	-13.0	-46.9	EUT Horz, LTE5 Low Ch

Report No. KMWC0074



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.	Cal. Due
Filter - High Pass	Micro-Tronics	HPM50108	HGX	7/25/2016	7/25/2017
Power Supply - DC	Hewlett Packard	6574A	TPX	NCR	NCR
Generator - Signal	Agilent	E8257D	TGU	2/5/2015	2/5/2018
Cable	Fairview Microwave	SCA1814-0101-120	OCZ	NCR	NCR
Block - DC	Aeroflex	INMET 8535	AMO	4/4/2016	4/4/2017
 Analyzer - Spectrum Analyzer	Agilent	E4440A	AFA	11/19/2015	11/19/2016

#### **CLIENT PROVIDED EQUIPMENT**

Description	Manufacturer	Model	Last Cal.	Cal. Due
High Power Attenuator - 30dB	Aeroflex/Weinschel	53-30-43	NCR	NCR
Attenuator - 20dB	N/A	N/A	NCR	NCR
Power Divider	Fairview Microwave	MP8748-2	NCR	NCR
50Ohm Terminator	Aeroflex/Weinschel	1455-4	NCR	NCR
High Power Terminator	Telcon	KTMO400800060	NCR	NCR

#### **TEST DESCRIPTION**

The measurement was made using a direct connection between the RF output of the EUT and a 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.

Report No. KMWC0074 100/161

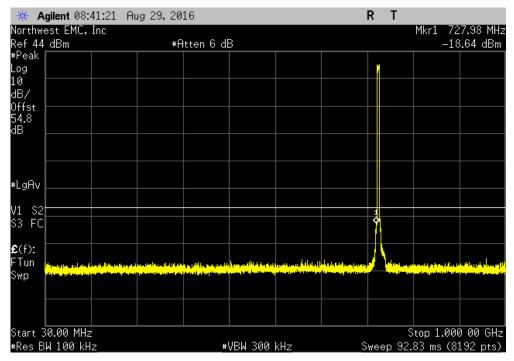


	CWS-3050-12		Work Order:		
Serial Number:	K163300001			09/12/16	
Customer:	Parallel Wireless Inc.		Temperature:		
Attendees:				50.2% RH	
Project:			Barometric Pres.:		
	Johnny Candelas	Power: 48 VDC	Job Site:	OC13	
TEST SPECIFICAT	IONS	Test Method			
FCC 27:2016		ANSI/TIA/EIA-603-D-2010			
COMMENTS					
Power Level Settin	g 40W. Reference Level Offset: DC Block + 30dB Attenuator +	20dB Attenuator + Power Divider + Cable Loss = 54.8	dB total.		
	M TEST STANDARD				
None					
0	_	for d. lather			
Configuration #		1			
	Signature				
		Frequency	Max Value	Limit ≤ (dBm)	Result
Antenna Port 1		Range	(dBm)	2 (ubiii)	Result
Antenna Port 1	Low Channel LTE5, 731.5 MHz	30 MHz - 1 GHz	10.64	12	Dees
		30 MHz - 1 GHz 1 GHz - 8 GHz	-18.64 -24.05	-13 -13	Pass
	Low Channel LTE5, 731.5 MHz Mid Channel LTE5, 737.5 MHz	30 MHz - 1 GHz	-24.05 -27.37	-13 -13	Pass Pass
	Mid Channel LTE5, 737.5 MHz	1 GHz - 8 GHz	-27.37 -24.21	-13 -13	Pass
	High Channel LTE5, 743.5 MHz	30 MHz - 1 GHz	-24.21 -17.95	-13 -13	Pass
	High Channel LTE5, 743.5 MHz	1 GHz - 8 GHz	-24.51	-13	Pass
	Low Channel LTE10, 734 MHz	30 MHz - 1 GHz	-24.51	-13	Pass
	Low Channel LTE10, 734 MHz	1 GHz - 8 GHz	-21.67	-13	Pass
	Mid Channel LTE10, 737.5 MHz	30 MHz - 1 GHz	-26.87	-13	Pass
	Mid Channel LTE10, 737.5 MHz	1 GHz - 8 GHz	-20.87	-13	Pass
	High Channel LTE10, 741 MHz	30 MHz - 1 GHz	-22.74	-13	Pass
	High Channel LTE10, 741 MHz	1 GHz - 8 GHz	-24.5	-13	Pass
Antenna Port 2	ringir Gradinos ETETO, FTT WILLE	TOTIL COTIL	24.0	10	1 433
	Low Channel LTE5, 731.5 MHz	30 MHz - 1 GHz	-23.70	-13	Pass
	Low Channel LTE5, 731.5 MHz	1 GHz - 8 GHz	-24.25	-13	Pass
	Mid Channel LTE5, 737.5 MHz	30 MHz - 1 GHz	-28.49	-13	Pass
	Mid Channel LTE5, 737.5 MHz	1 GHz - 8 GHz	-24.19	-13	Pass
	High Channel LTE5, 743.5 MHz	30 MHz - 1 GHz	-17.71	-13	Pass
	High Channel LTE5, 743.5 MHz	1 GHz - 8 GHz	-24.52	-13	Pass
	Low Channel LTE10, 734 MHz	30 MHz - 1 GHz	-21.25	-13	Pass
	Low Channel LTE10, 734 MHz	1 GHz - 8 GHz	-23.96	-13	Pass
	Mid Channel LTE10, 737.5 MHz	30 MHz - 1 GHz	-26.08	-13	Pass
	Mid Channel LTE10, 737.5 MHz	1 GHz - 8 GHz	-24.45	-13	Pass
	High Channel LTE10, 741 MHz	30 MHz - 1 GHz	-22.67	-13	Pass
	High Channel LTE10, 741 MHz	1 GHz - 8 GHz	-24.77	-13	Pass
	· · · · · · · · · · · · · · · · · · ·	. 2.12 0 0112	2	.0	. 200

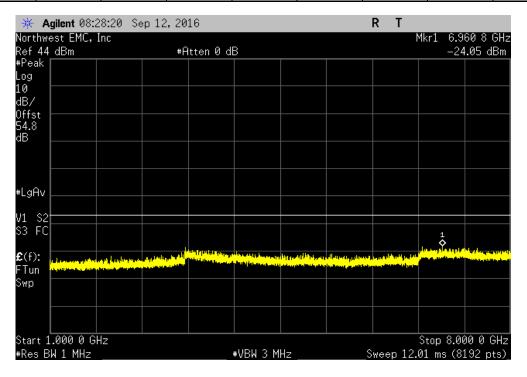
Report No. KMWC0074 101/161



Antenna Port 1,	Low Channel LTE5, 731.5 MHz			
Frequency	Max Value	Limit		
Range	(dBm)	≤ (dBm)	Result	
30 MHz - 1 GHz	-18.64	-13	Pass	



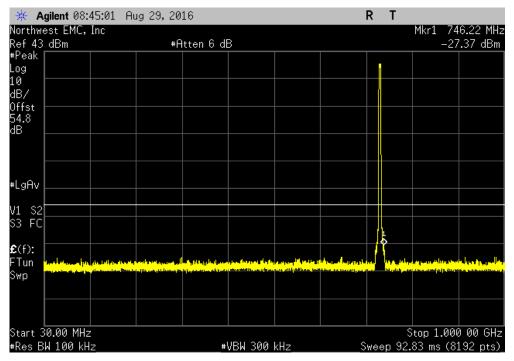
Antenna Port 1,	Low Channel LTE5, 731.5 MHz		
Frequency	Max Value	Limit	
Range	(dBm)	≤ (dBm)	Result
1 GHz - 8 GHz	-24.05	-13	Pass



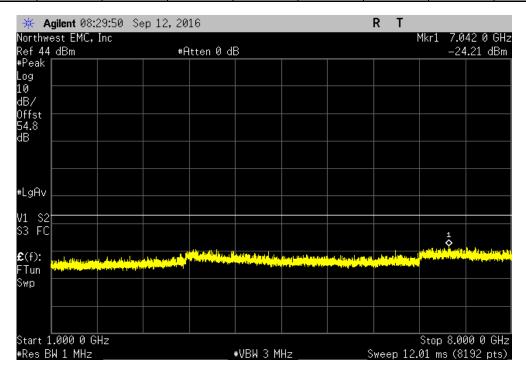
Report No. KMWC0074 102/161



Antenna F	ort 1, Mid Channel LTE5, 737.5 I	ИНz	
Frequency	Max Va	ue Limit	
Range	(dBm	) ≤ (dBm)	Result
30 MHz - 1 GHz	-27.3	· -13	Pass



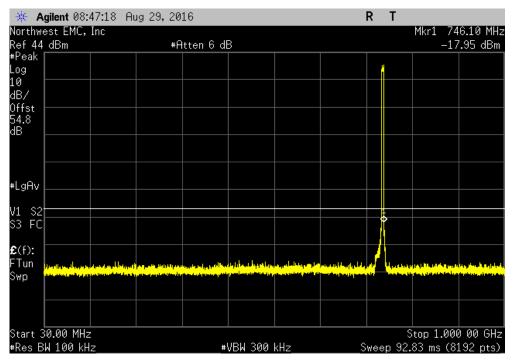
Antenna Port 1,	Mid Channel LTE5, 737.5 MHz		
Frequency	Max Value	Limit	
Range	(dBm)	≤ (dBm)	Result
1 GHz - 8 GHz	-24.21	-13	Pass



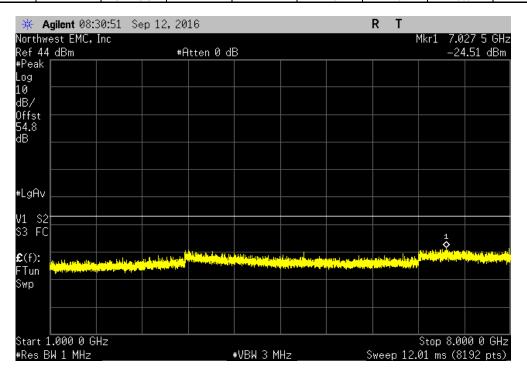
Report No. KMWC0074 103/161



Antenna Port 1,	High Channel LTE5, 743.5 MHz			
Frequency	Max Value	Limit		
Range	(dBm)	≤ (dBm)	Result	
30 MHz - 1 GHz	-17.95	-13	Pass	



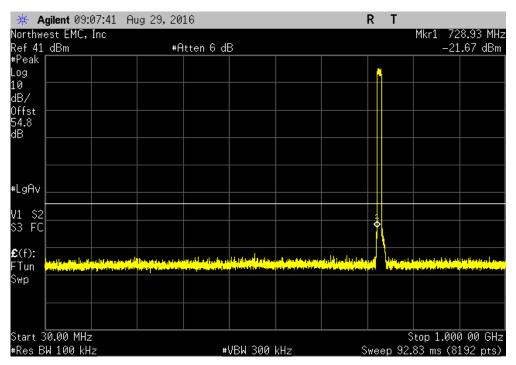
	Antenna Port	1, High Channel LTE5, 743.5 MHz		
	Frequency	Max Value	Limit	
	Range	(dBm)	≤ (dBm)	Result
,	1 GHz - 8 GHz	-24.51	-13	Pass



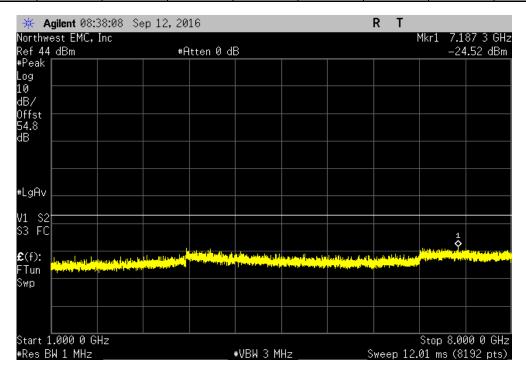
Report No. KMWC0074 104/161



Antenr	na Port 1, Low Channel L	TE10, 734 MHz			
Frequency		Max Value	Limit		
Range		(dBm)	≤ (dBm)	Result	
30 MHz - 1 GHz		-21.67	-13	Pass	



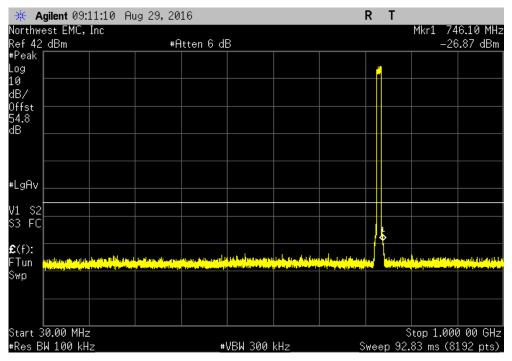
	Antenna Por	t 1, Low Channel L	ΓΕ10, 734 MHz		
	Frequency		Max Value	Limit	
_	Range		(dBm)	≤ (dBm)	Result
i í	1 GHz - 8 GHz		-24.52	-13	Pass



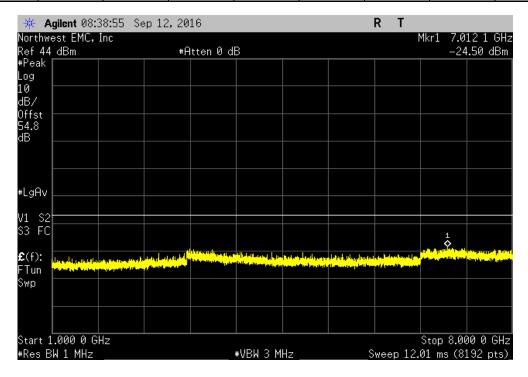
Report No. KMWC0074 105/161



	Antenna Port 1, Mid Channel LT	E10, 737.5 MHz		
Frequency		Max Value	Limit	
Range		(dBm)	≤ (dBm)	Result
30 MHz - 1 GHz		-26.87	-13	Pass



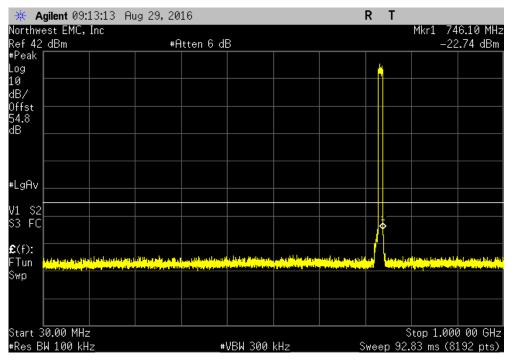
	Antenna Port	1, Mid Channel LT	E10, 737.5 MHz		
	Frequency		Max Value	Limit	
_	Range		(dBm)	≤ (dBm)	Result
l	1 GHz - 8 GHz		-24.50	-13	Pass



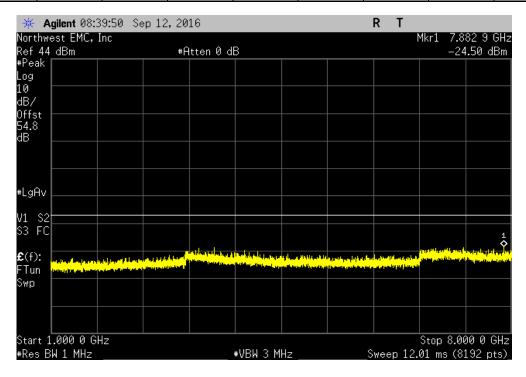
Report No. KMWC0074 106/161



	Antenna Port 1, High Channel L	TE10, 741 MHz		
Frequency	-	Max Value	Limit	
Range		(dBm)	≤ (dBm)	Result
30 MHz - 1 GHz		-22.74	-13	Pass



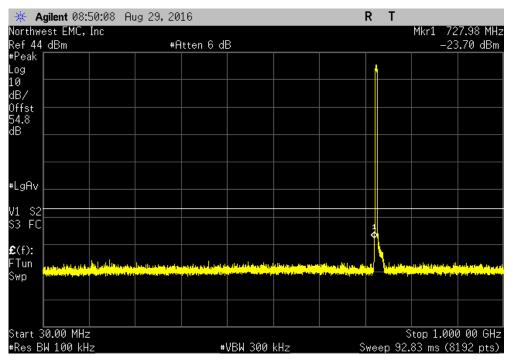
	Antenna Por	t 1, High Channel L	TE10, 741 MHz		
	Frequency		Max Value	Limit	
_	Range		(dBm)	≤ (dBm)	Result
l	1 GHz - 8 GHz		-24.50	-13	Pass



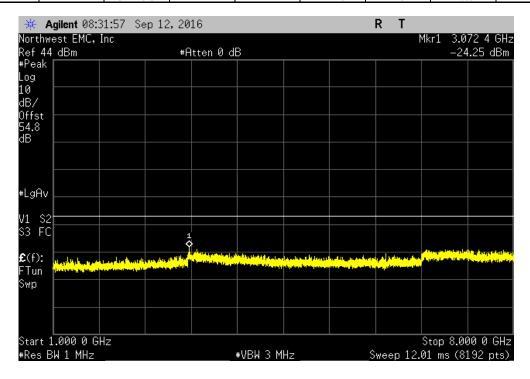
Report No. KMWC0074 107/161



Antenna Port 2, Low Channel LTE5, 731.5 MHz				
Frequency		Max Value	Limit	
Range		(dBm)	≤ (dBm)	Result
30 MHz - 1 GHz		-23.70	-13	Pass



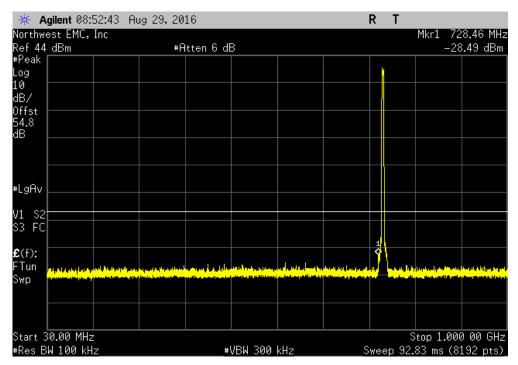
	Antenna Port 2, Low Channel L	TE5, 731.5 MHz		
Freque	ncy	Max Value	Limit	
Rang	je	(dBm)	≤ (dBm)	Result
1 GHz - 8	3 GHz	-24.25	-13	Pass



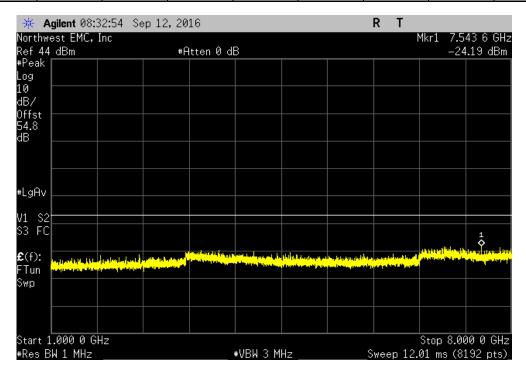
Report No. KMWC0074 108/161



	Antenna Port 2,	, Mid Channel LT	E5, 737.5 MHz		
Frequency			Max Value	Limit	
Range			(dBm)	≤ (dBm)	Result
30 MHz - 1 GHz			-28.49	-13	Pass



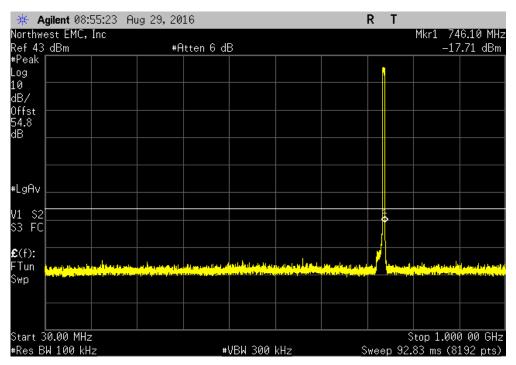
Antenna Port 2,	Mid Channel LTE5, 737.5 MHz		
Frequency	Max Value	Limit	
Range	(dBm)	≤ (dBm)	Result
1 GHz - 8 GHz	-24.19	-13	Pass



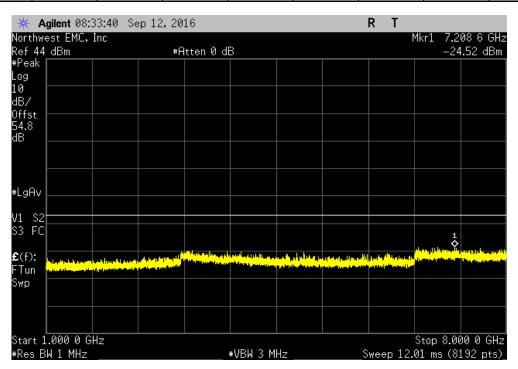
Report No. KMWC0074 109/161



Antenna Po	rt 2, High Channel LT	ΓΕ5, 743.5 MHz		
Frequency		Max Value	Limit	
Range		(dBm)	≤ (dBm)	Result
30 MHz - 1 GHz		-17.71	-13	Pass



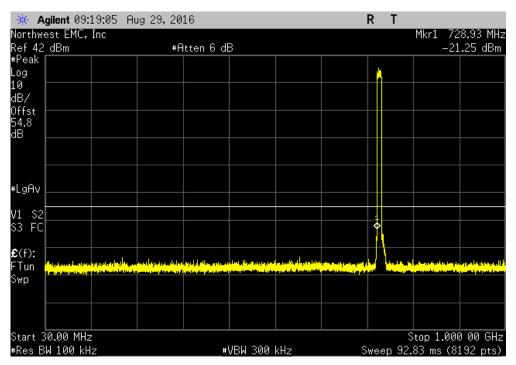
	Antenna Por	2, High Channel L	TE5, 743.5 MHz		
	Frequency		Max Value	Limit	
_	Range		(dBm)	≤ (dBm)	Result
i í	1 GHz - 8 GHz		-24.52	-13	Pass



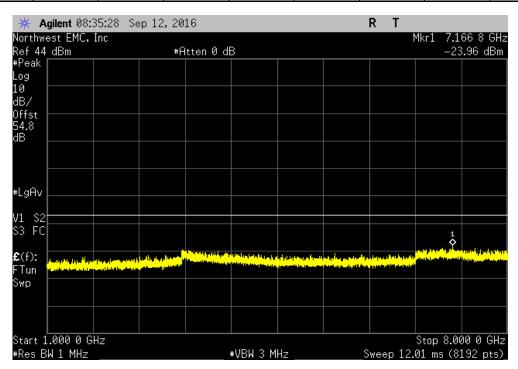
Report No. KMWC0074 110/161



	Antenna Port 2, Low Channel L1	ΓΕ10, 734 MHz		
Frequency		Max Value	Limit	
Range		(dBm)	≤ (dBm)	Result
30 MHz - 1 GHz		-21.25	-13	Pass



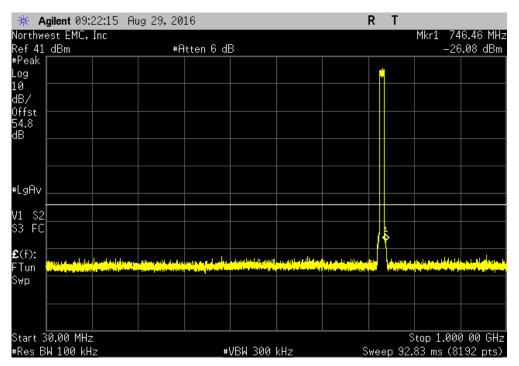
	Antenna Po	t 2, Low Channel L	ΓΕ10, 734 MHz		
	Frequency		Max Value	Limit	
_	Range		(dBm)	≤ (dBm)	Result
i í	1 GHz - 8 GHz		-23.96	-13	Pass



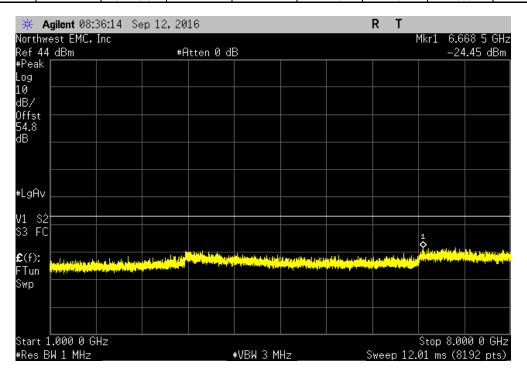
Report No. KMWC0074 111/161



Antenna Port 2, Mid C	hannel LTE10, 737.5 MHz			
Frequency	Max Value	Limit		
Range	(dBm)	≤ (dBm)	Result	
30 MHz - 1 GHz	-26.08	-13	Pass	

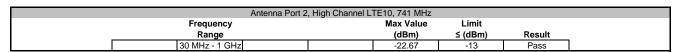


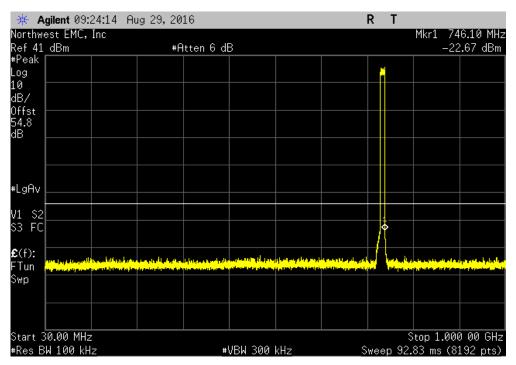
	Antenna Port 2, Mid Channel LTE10, 737.5	MHz	
Frequency	Max V	alue Limit	
Range	(dBr	n) ≤ (dBm)	Result
1 GHz - 8 GI	-24.4	5 -13	Pass



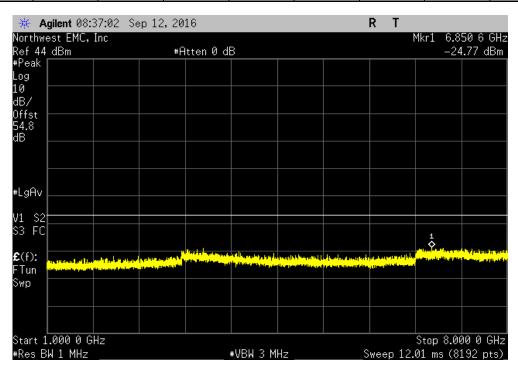
Report No. KMWC0074 112/161







	Antenna Por	t 2, High Channel L	TE10, 741 MHz		
	Frequency		Max Value	Limit	
_	Range		(dBm)	≤ (dBm)	Result
ĺ	1 GHz - 8 GHz		-24.77	-13	Pass



Report No. KMWC0074 113/161



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**

0 0					
Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Filter - High Pass	Micro-Tronics	HPM50108	HGX	7/25/2016	7/25/2017
Power Supply - DC	Hewlett Packard	6574A	TPX	NCR	NCR
Generator - Signal	Keysight	N5182B	TFX	4/16/2015	4/16/2018
Cable	Fairview Microwave	SCA1814-0101-120	OCZ	NCR	NCR
Block - DC	Aeroflex	INMET 8535	AMO	4/4/2016	4/4/2017
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFD	7/29/2016	7/29/2017

#### **CLIENT PROVIDED EQUIPMENT**

Description	Manufacturer	Model	Last Cal.	Cal. Due
High Power Attenuator - 30dB	Aeroflex/Weinschel	53-30-43	NCR	NCR
Attenuator - 20dB	N/A	N/A	NCR	NCR
Power Divider	Fairview Microwave	MP8748-2	NCR	NCR
50Ohm Terminator	Aeroflex/Weinschel	1455-4	NCR	NCR
High Power Terminator	Telcon	KTMO400800060	NCR	NCR

#### **TEST DESCRIPTION**

The measurement was made using a direct connection between the RF output of the EUT and a 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.

Only the Low Channel for each channel bandwidth was tested, the Mid & High ChannesI were previously tested in this band.

Report No. KMWC0074 114/161

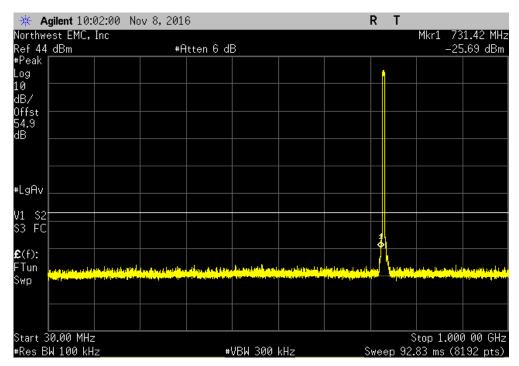


	CWS-3050-12						work Order	KMWC0077	
Serial Number:	K163300001						Date	11/08/16	
Customer:	Parallel Wireless Inc.					Т	Temperature:		
	Edward Lee						Humidity:		
Project:						Baro	metric Pres.:		
	Johnny Candelas			Power: 48 VDC			Job Site:	OC13	
TEST SPECIFICATI	TONS			Test Method					
FCC 27:2016				ANSI/TIA/EIA-6	03-D-2010				
COMMENTS									
rower Level Settin	ig 40W. Keterence Level O	ffset: DC Block + 30dB Atte	enuator + 20dB At	tenuator + Power Divider +	Cable Loss = 54.9dB	totai.			
DEVIATIONS FROM	M TEST STANDARD								
	M TEST STANDARD								
DEVIATIONS FROM None	M TEST STANDARD								
None	M TEST STANDARD		Le	S. Can	-				
	M TEST STANDARD	Signature	f	d. late					
None	M TEST STANDARD	Signature	f	Frequency		N	Max Value	Limit	
None	M TEST STANDARD	Signature	-f.			N	Max Value (dBm)	Limit ≤ (dBm)	Result
None Configuration #	M TEST STANDARD	Signature	f	Frequency		N			Result
None Configuration #	1 Low Channel LTE5, 736.5		- Gr	Frequency		N			Result Pass
None Configuration #	1	MHz	fe	Frequency Range	Hz	N	(dBm)	≤ (dBm)	
None	1 Low Channel LTE5, 736.5	MHz MHz	F	Frequency Range 30 MHz - 1 G	Hz Iz	N	(dBm) -25.69	≤ (dBm) -13	Pass
None  Configuration #  Antenna Port 1	Low Channel LTE5, 736.5 Low Channel LTE5, 736.5	MHz MHz MHz	F	Frequency Range 30 MHz - 1 G 1 GHz - 8 GH	Hz Iz Hz	N	-25.69 -23.51	≤ (dBm) -13 -13	Pass Pass
None Configuration # Antenna Port 1	Low Channel LTE5, 736.5 Low Channel LTE5, 736.5 Low Channel LTE10, 739 P	MHz MHz MHz	F	Frequency Range 30 MHz - 1 G 1 GHz - 8 GH 30 MHz - 1 G	Hz Iz Hz	N	-25.69 -23.51 -26.01	≤ (dBm)  -13 -13 -13	Pass Pass Pass
None Configuration # Antenna Port 1	Low Channel LTE5, 736.5 Low Channel LTE5, 736.5 Low Channel LTE10, 739 P	MHz MHz MHz MHz	f	Frequency Range 30 MHz - 1 G 1 GHz - 8 GH 30 MHz - 1 G	Hz łz Hz łz	N	-25.69 -23.51 -26.01	≤ (dBm)  -13 -13 -13	Pass Pass Pass
None Configuration #	Low Channel LTE5, 736.5 Low Channel LTE5, 736.5 Low Channel LTE10, 739 I Low Channel LTE10, 739 I	MHz MHz MHz MHz	f	Frequency Range 30 MHz - 1 G 1 GHz - 8 GF 30 MHz - 1 G 1 GHz - 8 GF	Hz łz Hz łz	N	-25.69 -23.51 -26.01 -23.53	≤ (dBm)  -13 -13 -13 -13	Pass Pass Pass Pass
None  Configuration #  Antenna Port 1	Low Channel LTE5, 736.5 Low Channel LTE5, 736.5 Low Channel LTE10, 739 I Low Channel LTE10, 739 I Low Channel LTE5, 736.5	MHz MHz MHz MHz MHz MHz	F	Frequency Range 30 MHz - 1 G 1 GHz - 8 GH 30 MHz - 1 G 1 GHz - 8 GH 30 MHz - 1 G	Hz Iz Hz Iz Hz Iz	N	-25.69 -23.51 -26.01 -23.53 -26.74	-13 -13 -13 -13 -13	Pass Pass Pass Pass

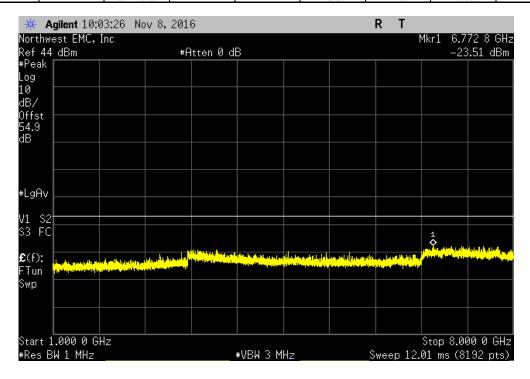
Report No. KMWC0074 115/161



Antonno Bort 4 Louis	Character Too F Mile		
Antenna Port 1, Low	Channel LTE5, 736.5 MHz		
Frequency	Max Value	Limit	
	(dBm)	≤ (dBm)	Dogult
Range	(abm)	≥ (aBm)	Result
30 MHz - 1 GHz	-25.69	-13	Pass



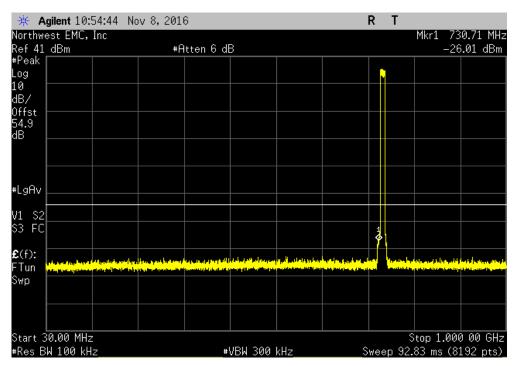
	Antenna Port 1, Low Channel LTE5, 736.5 MHz					
Frequency		Max Value	Limit			
Range		(dBm)	≤ (dBm)	Result		
1 GHz - 8 GHz		-23.51	-13	Pass		



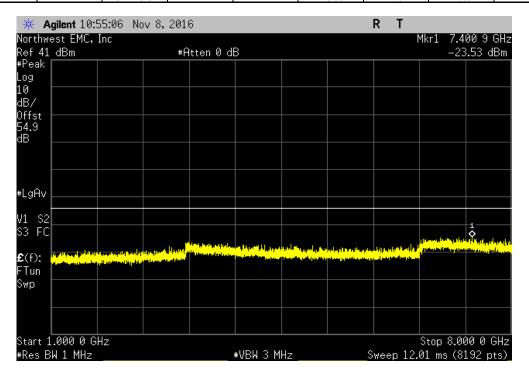
Report No. KMWC0074 116/161



Antenna Port	1, Low Channel LTE10, 739 MHz		
Frequency	Max Value	Limit	
Range	(dBm)	≤ (dBm)	Result
30 MHz - 1 GHz	-26.01	-13	Pass



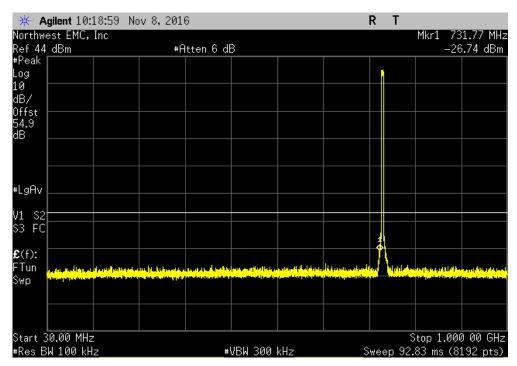
	Antenna Port 1, Low Channel LTE10, 739 MHz						
	Frequency	Max Value	Limit				
_	Range	(dBm)	≤ (dBm)	Result			
1	1 GHz - 8 GHz	-23.53	-13	Pass			



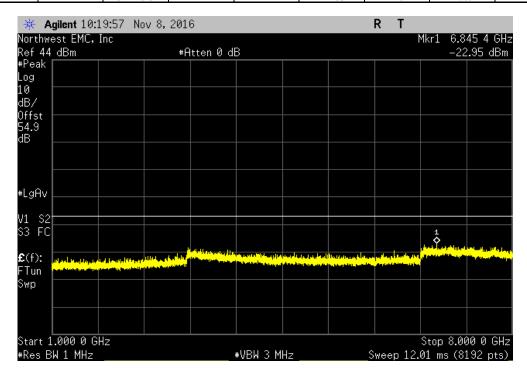
Report No. KMWC0074 117/161



	Antenna Port 2, Low Channel L	TE5, 736.5 MHz		
Frequency		Max Value	Limit	
Range		(dBm)	≤ (dBm)	Result
30 MHz - 1 GHz		-26.74	-13	Pass



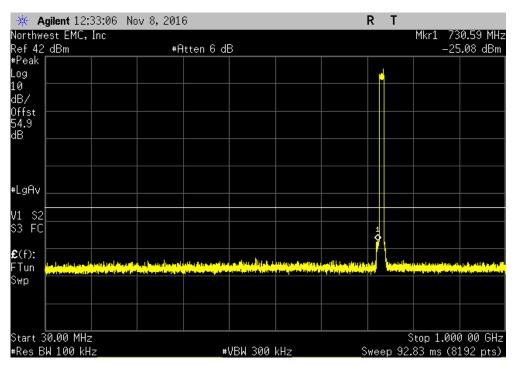
	Antenna Port 2, Low Channel LTE5, 736.5 MHz						
	Frequency		Max Value	Limit			
	Range		(dBm)	≤ (dBm)	Result		
i	1 GHz - 8 GHz		-22.95	-13	Pass		



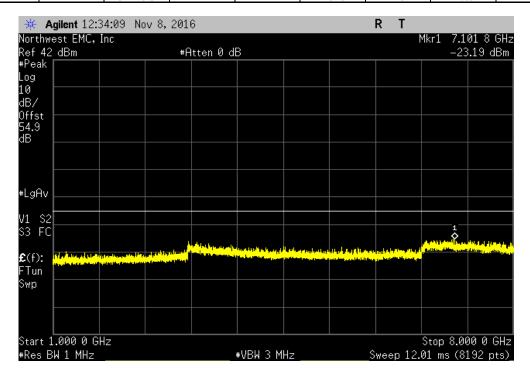
Report No. KMWC0074 118/161



Antenna Port 2, Low Channel LTE10, 739 MHz						
	Frequency	,	Max Value	Limit		
	Range		(dBm)	≤ (dBm)	Result	
	30 MHz - 1 GHz		-25.08	-13	Pass	



	Antenna Port 2, Low Channel LTE10, 739 MHz						
	Frequency	Max Value	Limit				
	Range	(dBm)	≤ (dBm)	Result			
İ	1 GHz - 8 GHz	-23.19	-13	Pass			



Report No. KMWC0074 119/161



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**

. 20. 20 2					
Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Power Supply - DC	Hewlett Packard	6574A	TPX	NCR	NCR
Generator - Signal	Agilent	E8257D	TGU	2/5/2015	2/5/2018
Cable	Fairview Microwave	SCA1814-0101-120	OCZ	NCR	NCR
Block - DC	Aeroflex	INMET 8535	AMO	4/4/2016	4/4/2017
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFA	11/19/2015	11/19/2016

#### **CLIENT PROVIDED EQUIPMENT**

Description	Manufacturer	Model	Last Cal.	Cal. Due
High Power Attenuator - 30dB	Aeroflex/Weinschel	53-30-43	NCR	NCR
Attenuator - 20dB	N/A	N/A	NCR	NCR
Power Divider	Fairview Microwave	MP8748-2	NCR	NCR
500hm Terminator	Aeroflex/Weinschel	1455-4	NCR	NCR
High Power Terminator	Telcon	KTMO400800060	NCR	NCR

#### **TEST DESCRIPTION**

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer.

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 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 30 kHz per the spcification. 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.

Report No. KMWC0074 120/161

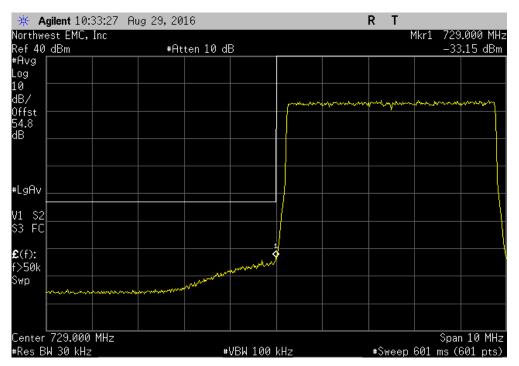


	: CWS-3050-12					W	ork Order:	INIVIA COOL 4	
Serial Number:	: K163300001						Date:	08/29/16	
Customer:	: Parallel Wireless Inc.					Ter	mperature:	21.4 °C	
Attendees:	: Andy Ku						Humidity:	46.4% RH	
Project:	: None					Barome	etric Pres.:	1017 mbar	
Tested by:	: Johnny Candelas			Power: 48 VDC			Job Site:	OC13	
TEST SPECIFICATI	TIONS			Test Method					
FCC 27:2016				ANSI/TIA/EIA-603-D-2	2010				
COMMENTS									
DEVIATIONS FROM	M TEST STANDARD								
DEVIATIONS FROM None	M TEST STANDARD			-					
None	M TEST STANDARD	Signature	f	I. lither					
None	M TEST STANDARD	Signature	fi	Frequency Range			x Value dBm)	Limit ≤ (dBm)	Result
None Configuration #	M TEST STANDARD	Signature	fi	Frequency					Result
None Configuration #	1  Low Channel LTE5, 731.5		- fr	Frequency		(c			<b>Result</b> Pass
None Configuration #	1	MHz	- Fe	Frequency Range		-3	dBm)	≤ (dBm)	
	1 Low Channel LTE5, 731.5	MHz MHz	fi	Frequency Range 724 MHz - 734 MHz		-3 -3	dBm) 33.15	≤ (dBm) -13	Pass
None Configuration #	Low Channel LTE5, 731.5 High Channel LTE5, 743.5	MHz MHz MHz	- Ju	Frequency Range 724 MHz - 734 MHz 741 MHz - 751 MHz		-3 -3 -3	33.15 33.58	≤ (dBm) -13 -13	Pass Pass
None  Configuration #  Antenna Port 1	Low Channel LTE5, 731.5 High Channel LTE5, 743.5 Low Channel LTE10, 734 N	MHz MHz MHz	- Ju	Frequency Range 724 MHz - 734 MHz 741 MHz - 751 MHz 719 MHz - 739 MHz		-3 -3 -3	33.15 33.58 38.33	≤ (dBm)  -13 -13 -13	Pass Pass Pass
None Configuration #	Low Channel LTE5, 731.5 High Channel LTE5, 743.5 Low Channel LTE10, 734 N	MHz MHz MHz MHz	- Fi	Frequency Range 724 MHz - 734 MHz 741 MHz - 751 MHz 719 MHz - 739 MHz		(c	33.15 33.58 38.33	≤ (dBm)  -13 -13 -13	Pass Pass Pass
None  Configuration #  Antenna Port 1	Low Channel LTE5, 731.5 High Channel LTE5, 743.5 Low Channel LTE10, 734 N High Channel LTE10, 741	MHz MHz MHz MHz MHz	J.	Frequency Range 724 MHz - 734 MHz 741 MHz - 751 MHz 719 MHz - 739 MHz 736 MHz - 756 MHz		(c	33.15 33.58 38.33 37.40	-13 -13 -13 -13 -13	Pass Pass Pass Pass
None  Configuration #  Antenna Port 1	Low Channel LTE5, 731.5 High Channel LTE5, 743.5 Low Channel LTE10, 734 N High Channel LTE10, 741 Low Channel LTE5, 731.5	MHz MHz MHz MHz MHz MHz	- Ju	Frequency Range 724 MHz - 734 MHz 741 MHz - 751 MHz 719 MHz - 739 MHz 736 MHz - 756 MHz 724 MHz - 734 MHz		(c	33.15 33.58 38.33 37.40	≤ (dBm)  -13 -13 -13 -13 -13	Pass Pass Pass Pass

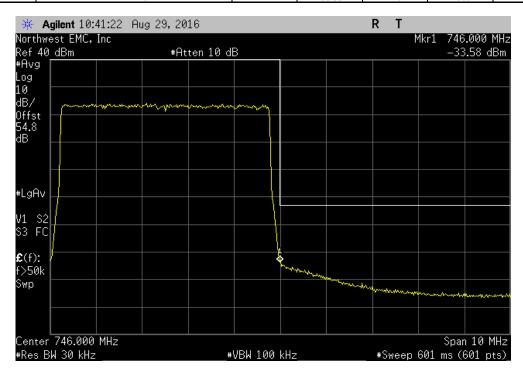
Report No. KMWC0074 121/161



Antenna Port 1,	Low Channel LTE5, 731.5 MHz		
Frequency	Max Value	Limit	
Range	(dBm)	≤ (dBm)	Result
724 MHz - 734 MHz	-33.15	-13	Pass

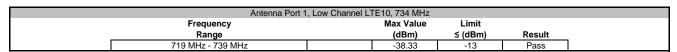


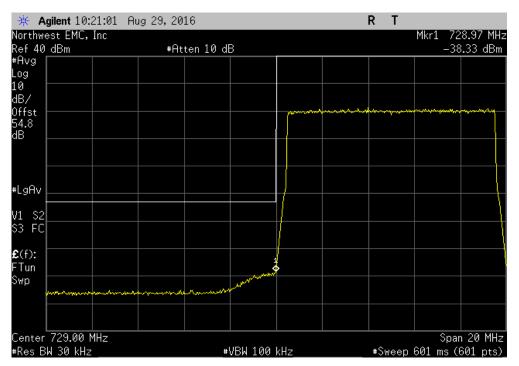
Antenna Port 1, High Channel LTE5, 743.5 MHz						
	Frequency		Max Value	Limit		
	Range		(dBm)	≤ (dBm)	Result	
7	'41 MHz - 751 MHz		-33.58	-13	Pass	



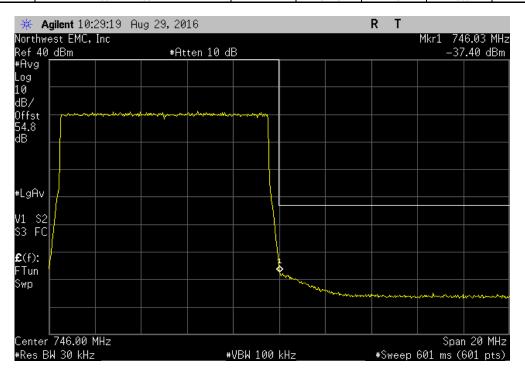
Report No. KMWC0074 122/161





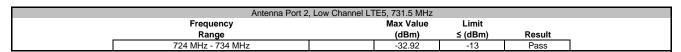


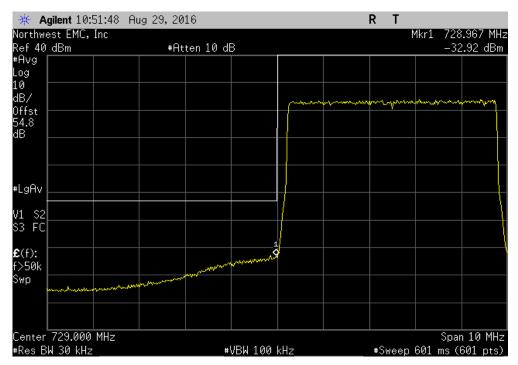
Antenna Port 1, High Channel LTE10, 741 MHz						
Frequency		Max Value	Limit			
Range		(dBm)	≤ (dBm)	Result		
736 MHz - 756 MHz	z	-37.40	-13	Pass		



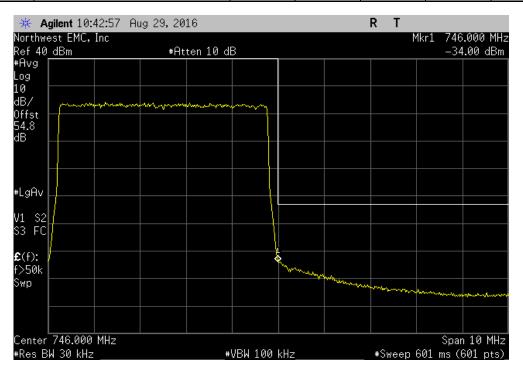
Report No. KMWC0074 123/161





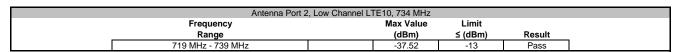


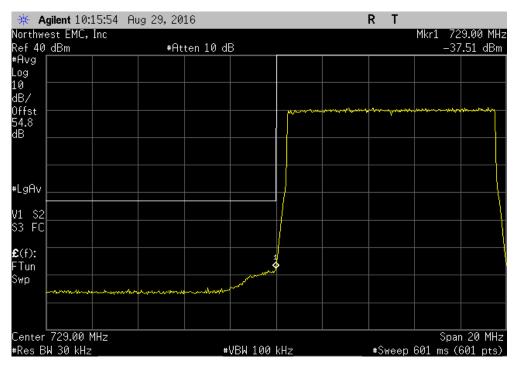
	Antenna Port 2, High Channel LTE5, 743.5 MHz						
	Frequency		Max Value	Limit			
_	Range		(dBm)	≤ (dBm)	Result		
l	741 MHz - 751 MHz		-34.00	-13	Pass		



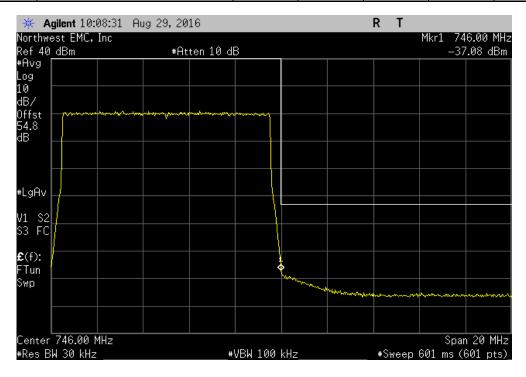
Report No. KMWC0074 124/161







	Antenna Port 2, High Channel LTE10, 741 MHz						
	Frequency		Max Value	Limit			
_	Range		(dBm)	≤ (dBm)	Result		
ĺ	736 MHz - 756 MHz		-37.08	-13	Pass		



Report No. KMWC0074 125/161



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.	Cal. Due
Power Supply - DC	Hewlett Packard	6574A	TPX	NCR	NCR
Generator - Signal	Keysight	N5182B	TFX	4/16/2015	4/16/2018
Cable	Fairview Microwave	SCA1814-0101-120	OCZ	NCR	NCR
Block - DC	Aeroflex	INMET 8535	AMO	4/4/2016	4/4/2017
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFD	7/29/2016	7/29/2017

#### **CLIENT PROVIDED EQUIPMENT**

Description	Manufacturer	Model	Last Cal.	Cal. Due
High Power Attenuator - 30dB	Aeroflex/Weinschel	53-30-43	NCR	NCR
Attenuator - 20dB	N/A	N/A	NCR	NCR
Power Divider	Fairview Microwave	MP8748-2	NCR	NCR
50Ohm Terminator	Aeroflex/Weinschel	1455-4	NCR	NCR
High Power Terminator	Telcon	KTMO400800060	NCR	NCR

#### **TEST DESCRIPTION**

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer.

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 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 30 kHz per the specification. 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.

Only the Low Channel for each channel bandwidth was tested, the High Channel was previously tested in this band.

Report No. KMWC0074 126/161

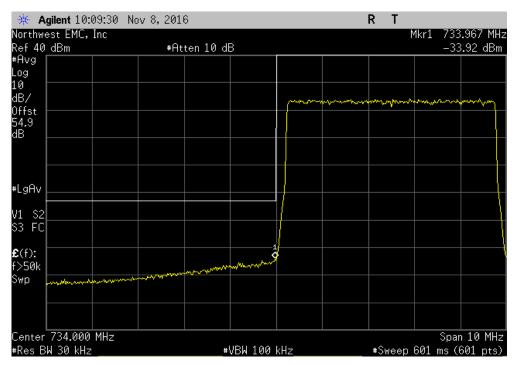


EUT	: CWS-3050-12			Work Order:	KMWC0077										
Serial Number	: K163300001		Date:	11/08/16											
Customer	: Parallel Wireless Inc.			Temperature:	20.8 °C										
Attendees	: Edward Lee			Humidity:	49% RH										
Project	: None			Barometric Pres.:	1018 mbar										
Tested by	: Johnny Candelas		Power: 48 VDC	Job Site:	OC13										
TEST SPECIFICAT	TIONS		Test Method												
FCC 27:2016			ANSI/TIA/EIA-603-D-2010												
COMMENTS			<u> </u>												
	an 40M/ Deference Level (	West DC Black . 20dB Attenuates	+ 20dB Attenuator + Power Divider + Cable Loss = 54.9dB	tetel											
-ower Level Setti	ig 40W. Reference Level C	DISEL DC BIOCK + 300B ALTERIDATOR	+ 2005 Attenuator + Fower Divider + Cable Loss = 54.505	iotai.											
DE1/// TIQUIQ ED Q															
	M IESI SIANDARD					DEVIATIONS FROM TEST STANDARD									
None			None												
Configuration #			1 1111												
Comiguration #	1		fe d. late.												
comiguration #	1	Signature	for d. latter												
	1		Frequency	Max Value	Limit										
	1		O	Max Value (dBm)	Limit ≤ (dBm)	Result									
-	1		Frequency			Result									
-	1 Low Channel LTE5, 736.5	Signature	Frequency			Result									
	Low Channel LTE5, 736.5 Low Channel LTE10, 739	Signature  MHz	Frequency Range	(dBm)	≤ (dBm)										
Antenna Port 1		Signature  MHz	Frequency Range 729 MHz - 739 MHz	(dBm) -33.92	≤ (dBm) -13	Pass									
Antenna Port 1  Antenna Port 2	Low Channel LTE10, 739	Signature MHz MHz	Frequency Range 729 MHz - 739 MHz 724 MHz - 744 MHz	(dBm) -33.92 -35.38	≤ (dBm) -13 -13	Pass Pass									
Antenna Port 1		Signature  MHz  MHz  MHz	Frequency Range 729 MHz - 739 MHz	(dBm) -33.92	≤ (dBm) -13	Pass									

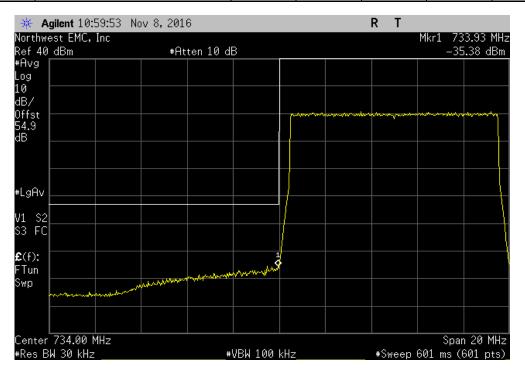
Report No. KMWC0074 127/161



	Antenna Port 1, Low Channel LTE5, 736.5 MHz							
	Frequency		Max Value	Limit				
	Range		(dBm)	≤ (dBm)	Result			
1	729 MHz - 739 MHz		-33.92	-13	Pass			



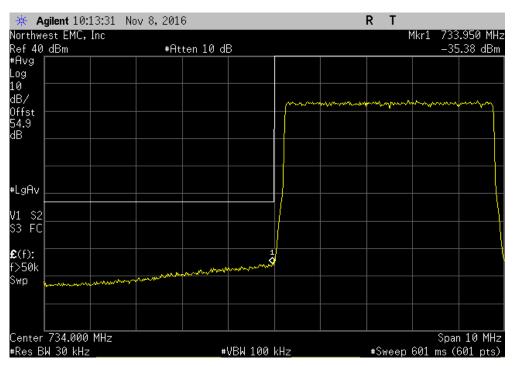
Antenna Port 1, Low Channel LTE10, 739 MHz						
Frequency		Max Value	Limit			
Range		(dBm)	≤ (dBm)	Result		
724 MHz - 744 MHz		-35.38	-13	Pass		



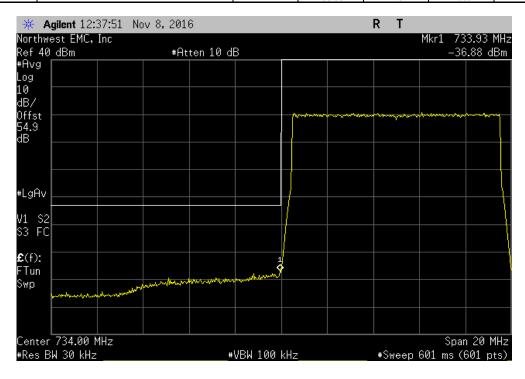
Report No. KMWC0074 128/161



Antenna Port 2, Low Channel LTE5, 736.5 MHz							
Frequency		Max Value	Limit				
Range		(dBm)	≤ (dBm)	Result			
729 MHz - 739 MHz		-35.38	-13	Pass			



Antenna Port 2, Low Channel LTE10, 739 MHz						
Frequency		Max Value	Limit			
Range		(dBm)	≤ (dBm)	Result		
724 MHz - 744 MHz	2	-36.88	-13	Pass		



Report No. KMWC0074 129/161



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.	Cal. Due
Filter - High Pass	Micro-Tronics	HPM50108	HGX	7/25/2016	7/25/2017
Power Supply - DC	Hewlett Packard	6574A	TPX	NCR	NCR
Generator - Signal	Agilent	E8257D	TGU	2/5/2015	2/5/2018
Cable	Fairview Microwave	SCA1814-0101-120	OCZ	NCR	NCR
Block - DC	Aeroflex	INMET 8535	AMO	4/4/2016	4/4/2017
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFA	11/19/2015	11/19/2016

#### **CLIENT PROVIDED EQUIPMENT**

Description	Manufacturer	Model	Last Cal.	Cal. Due
High Power Attenuator - 30dB	Aeroflex/Weinschel	53-30-43	NCR	NCR
Attenuator - 20dB	N/A	N/A	NCR	NCR
Power Divider	Fairview Microwave	MP8748-2	NCR	NCR
50Ohm Terminator	Aeroflex/Weinschel	1455-4	NCR	NCR
High Power Terminator	Telcon	KTMO400800060	NCR	NCR

#### **TEST DESCRIPTION**

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. Analyzer plots utilizing appropriate resolution bandwidth and no video filtering were made for each modulation type.

Since the EUT does not have an RF Input, the EUT was configured with two modulated carriers, 1 at the edge of the band and the 2nd either adjacent or at max seperation possible. 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 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.

Report No. KMWC0074 130/161

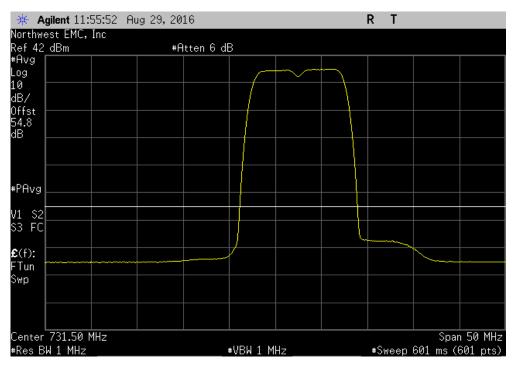


	CWS-3050-12			Work Order:		
Serial Number:					09/12/16	
	Parallel Wireless Inc.			Temperature:		
Attendees:					50.2% RH	
Project:				Barometric Pres.:		
	Johnny Candelas		Power: 48 VDC	Job Site:	OC13	
ST SPECIFICATI	ONS		Test Method			
CC 27:2016			ANSI/TIA/EIA-603-D-2010			
OMMENTS						
		offset: DC Block + 30dB Attenuator + 20dB Atte et secondary channel was not performed becau			hannel.	
	TEST STANDARD					
ne						
			V. Colle			
onfiguration #	1		a. Carre			
		Signature				
			Frequency	Max Value	Limit	
			Range	(dBm)	≤ (dBm)	Result
tenna Port 1						
	LTE5, 731.5 MHz, Low Ba	nd Edge, adjacent secondary channel	Fundamental	N/A	N/A	N/A
	LTE5, 731.5 MHz, Low Ba	nd Edge, adjacent secondary channel	30 MHz - 1 GHz	-16.55	-13	Pass
		nd Edge, adjacent secondary channel	1 GHz - 8 GHz	-23.80	-13	Pass
		nd Edge, max offset secondary channel	Fundamental	N/A	N/A	N/A
		nd Edge, max offset secondary channel	30 MHz - 1 GHz	-16.84	-13	Pass
		nd Edge, max offset secondary channel	1 GHz - 8 GHz	-24.23	-13	Pass
		and Edge, adjacent secondary channel	Fundamental	N/A	N/A	N/A
			30 MHz - 1 GHz	-20.22	-13	Pass
		and Edge, adjacent secondary channel				
		and Edge, adjacent secondary channel	1 GHz - 8 GHz	-23.90	-13	Pass
		nd Edge, adjacent secondary channel	Fundamental	N/A	N/A	N/A
		nd Edge, adjacent secondary channel	30 MHz - 1 GHz	-21.72	-13	Pass
		nd Edge, adjacent secondary channel	1 GHz - 8 GHz	-24.12	-13	Pass
	LTE10, 734 MHz, Low Bar	nd Edge, max offset secondary channel	Fundamental	N/A	N/A	N/A
	LTE10, 734 MHz, Low Bar	nd Edge, max offset secondary channel	30 MHz - 1 GHz	-22.65	-13	Pass
	LTE10, 734 MHz, Low Bar	nd Edge, max offset secondary channel	1 GHz - 8 GHz	-24.27	-13	Pass
	LTE10, 741 MHz, High Bai	nd Edge, adjacent secondary channel	Fundamental	N/A	N/A	N/A
	LTE10, 741 MHz, High Bar	nd Edge, adjacent secondary channel	30 MHz - 1 GHz	-23.94	-13	Pass
		nd Edge, adjacent secondary channel	1 GHz - 8 GHz	-24.44	-13	Pass
		nd Edge, max offset secondary channel	Fundamental	N/A	N/A	N/A
		nd Edge, max offset secondary channel	30 MHz - 1 GHz	-21.94	-13	Pass
		nd Edge, max offset secondary channel	1 GHz - 8 GHz	-24.08	-13	Pass
enna Port 2	LTETO, 741 WHZ, HIGH BA	lu Euge, max onset secondary channel	T GHZ - 8 GHZ	-24.08	-13	FdSS
	LTES 731 5 MHz Low Ba	nd Edge, adjacent secondary channel	Fundamental	N/A	N/A	N/A
		nd Edge, adjacent secondary channel	30 MHz - 1 GHz 1 GHz - 8 GHz	-16.45 -24.04	-13 -13	Pass Pass
		nd Edge, adjacent secondary channel				
		nd Edge, max offset secondary channel	Fundamental	N/A	N/A	N/A
		nd Edge, max offset secondary channel	30 MHz - 1 GHz	-16.64	-13	Pass
		nd Edge, max offset secondary channel	1 GHz - 8 GHz	-24.43	-13	Pass
		and Edge, adjacent secondary channel	Fundamental	N/A	N/A	N/A
		and Edge, adjacent secondary channel	30 MHz - 1 GHz	-19.11	-13	Pass
	LTE5, 743.5 MHz, High Ba	and Edge, adjacent secondary channel	1 GHz - 8 GHz	-23.34	-13	Pass
	LTE10, 734 MHz, Low Bar	nd Edge, adjacent secondary channel	Fundamental	N/A	N/A	N/A
	LTE10, 734 MHz, Low Bar	nd Edge, adjacent secondary channel	30 MHz - 1 GHz	-24.83	-13	Pass
		nd Edge, adjacent secondary channel	1 GHz - 8 GHz	-24.14	-13	Pass
		nd Edge, max offset secondary channel	Fundamental	N/A	N/A	N/A
		nd Edge, max offset secondary channel	30 MHz - 1 GHz	-22.47	-13	Pass
		nd Edge, max offset secondary channel	1 GHz - 8 GHz	-24.47	-13	Pass
			Fundamental	-24.47 N/A	-13 N/A	N/A
				IN/A		
	LTE10, 741 MHz, High Ba			00.44	40	
	LTE10, 741 MHz, High Ba LTE10, 741 MHz, High Ba	nd Edge, adjacent secondary channel	30 MHz - 1 GHz	-23.14	-13	Pass
	LTE10, 741 MHz, High Bar LTE10, 741 MHz, High Bar LTE10, 741 MHz, High Bar	nd Edge, adjacent secondary channel nd Edge, adjacent secondary channel	30 MHz - 1 GHz 1 GHz - 8 GHz	-24.24	-13	Pass
	LTE10, 741 MHz, High Bai LTE10, 741 MHz, High Bai LTE10, 741 MHz, High Bai LTE10, 741 MHz, High Bai LTE10, 741 MHz, High Bai	nd Edge, adjacent secondary channel nd Edge, adjacent secondary channel nd Edge, max offset secondary channel	30 MHz - 1 GHz 1 GHz - 8 GHz Fundamental	-24.24 N/A	-13 N/A	Pass N/A
	LTE10, 741 MHz, High Bai LTE10, 741 MHz, High Bai	nd Edge, adjacent secondary channel nd Edge, adjacent secondary channel	30 MHz - 1 GHz 1 GHz - 8 GHz	-24.24	-13	Pass

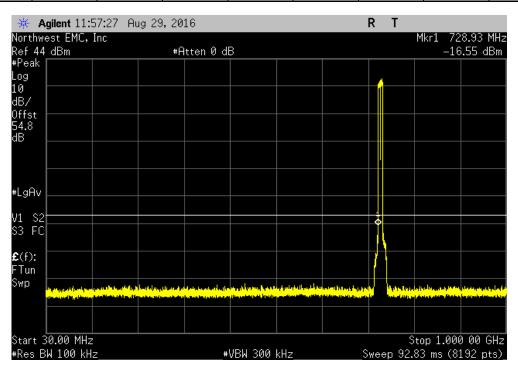
Report No. KMWC0074 131/161



Antenna Port 1, LTE5, 731.5	MHz. Low Band Ed	dge, adjacent seco	ndary channel	
Frequency		Max Value	Limit	
Range		(dBm)	≤ (dBm)	Result
Fundamental		N/A	N/A	N/A



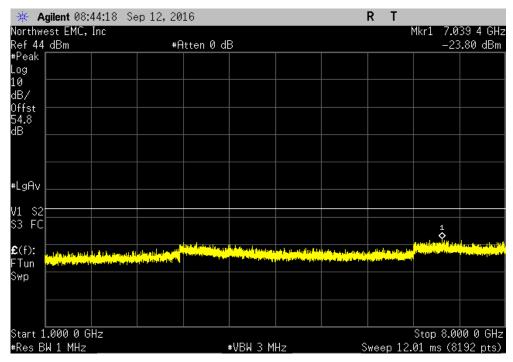
	Antenna Port 1, LTE5, 731.5 M	1Hz, Low Band Ed	ge, adjacent secc	ondary channel	
	Frequency		Max Value	Limit	
_	Range		(dBm)	≤ (dBm)	Result
l	30 MHz - 1 GHz		-16.55	-13	Pass



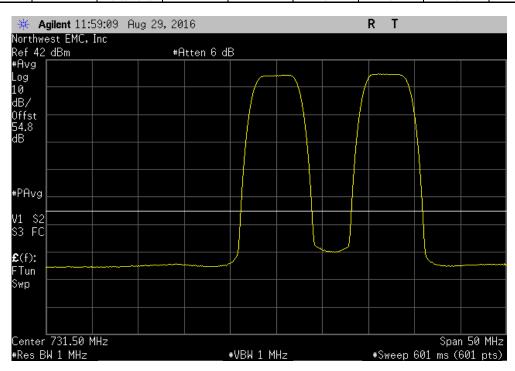
Report No. KMWC0074 132/161



Antenna Port 1, LTE5, 731.5	MHz, Low Band Ed	lge, adjacent seco	ondary channel	
Frequency		Max Value	Limit	
Range		(dBm)	≤ (dBm)	Result
1 GHz - 8 GHz		-23.80	-13	Pass



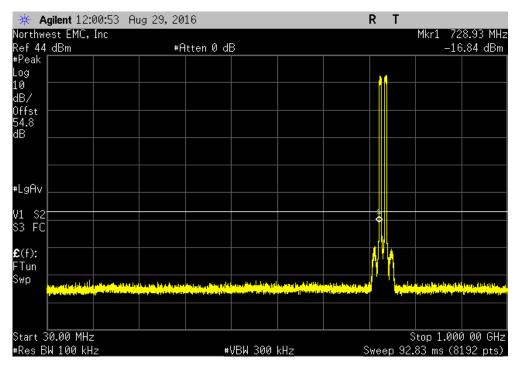
Antenna Port 1, LTE5, 731.5 MHz	, Low Band Edge, max offset sed	condary channel	
Frequency	Max Value	Limit	
Range	(dBm)	≤ (dBm)	Result
Fundamental	N/A	N/A	N/A



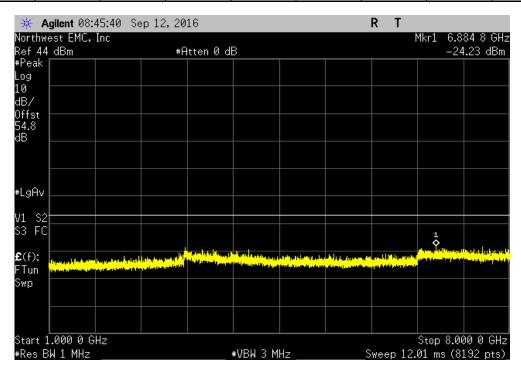
Report No. KMWC0074 133/161



Antenna Port 1, LTE5, 731.5 MHz	, Low Band Edge, max offset sed	ondary channel	
Frequency	Max Value	Limit	
Range	(dBm)	≤ (dBm)	Result
30 MHz - 1 GHz	-16.84	-13	Pass



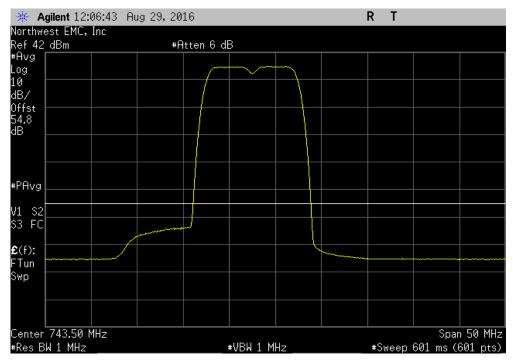
	Antenna Port 1, LTE5, 731.5 MI	Hz, Low Band Edg	e, max offset sec	ondary channel	
	Frequency		Max Value	Limit	
_	Range		(dBm)	≤ (dBm)	Result
l	1 GHz - 8 GHz		-24.23	-13	Pass



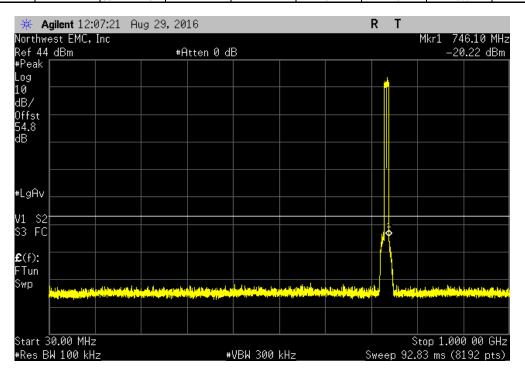
Report No. KMWC0074 134/161



Antenna Port 1, LTE5	Antenna Port 1, LTE5, 743.5 MHz, High Band Edge, adjacent secondary channel				
Frequency	, ,	Max Value	Limit		
Range		(dBm)	≤ (dBm)	Result	
Fundamental		N/A	N/A	N/A	



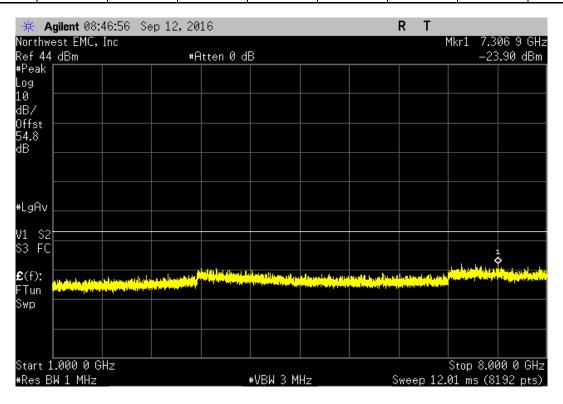
Antenna Port 1, LTE5, 743	3.5 MHz, High Band Edg	ge, adjacent sec	ondary channel	
Frequency		Max Value	Limit	
Range		(dBm)	≤ (dBm)	Result
30 MHz - 1 GHz		-20.22	-13	Pass



Report No. KMWC0074 135/161



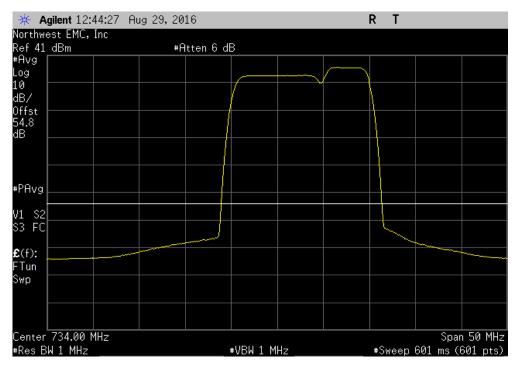
Antenna Port 1, LTE5, 743.5 MHz, High Band Edge, adjacent secondary channel			
Automa For 1, ETES, 748.8 Witz, Figh	Dana Lago, adjacon scool	idary charmer	
Frequency	Max Value	Limit	
rrequency	Wax Value	LIIIII	
Danna	(alDms)	≤ (dBm)	Decula
Range	(dBm)	≥ (ubiii)	Result
4 01 - 9 01 -	00.00	40	D
l   1 GHz - 8 GHz	-23.90	-13	l Pass



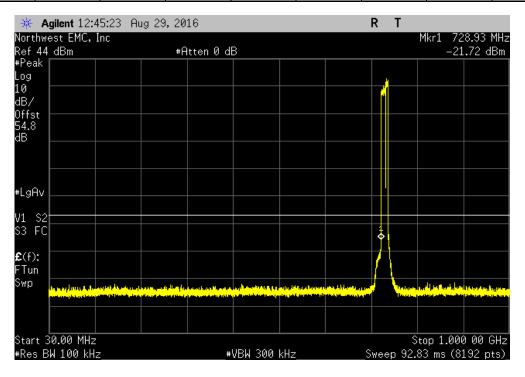
Report No. KMWC0074 136/161



Antenna Port 1, LTE10, 734 MHz, Low Band Edge, adjacent secondary channel				
Frequency		Max Value	Limit	
Range		(dBm)	≤ (dBm)	Result
Fundamental		N/A	N/A	N/A



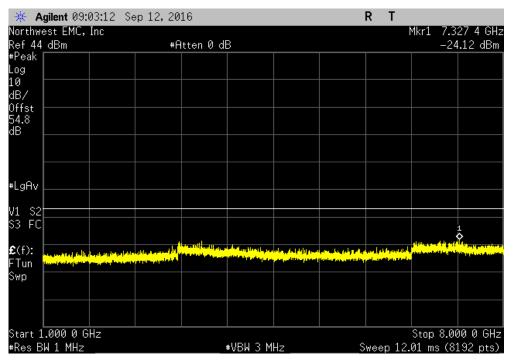
Antenna Port 1, LTE10, 734 MHz, Low Band Edge, adjacent secondary channel					
	Frequency		Max Value	Limit	
_	Range		(dBm)	≤ (dBm)	Result
l	30 MHz - 1 GHz		-21.72	-13	Pass



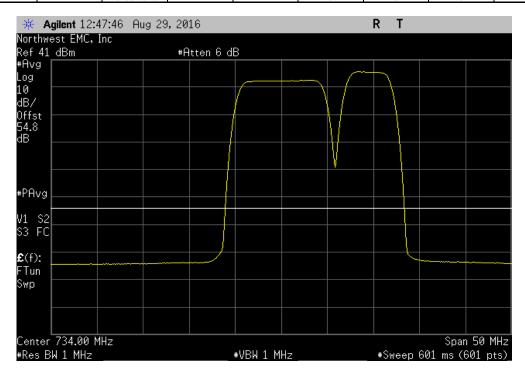
Report No. KMWC0074 137/161



Antenna Port 1, LTE10, 734 MHz, Low Band Edge, adjacent secondary channel					
F	Frequency Max \			Limit	
	Range		(dBm)	≤ (dBm)	Result
1 (	GHz - 8 GHz		-24.12	-13	Pass



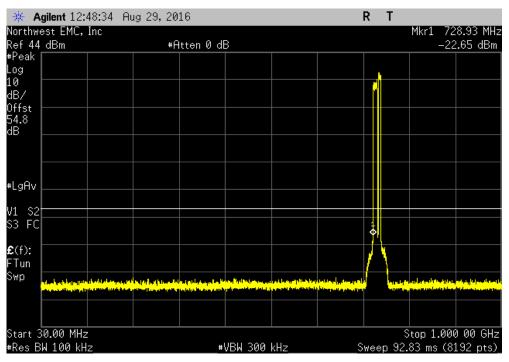
Antenna Port 1, LTE10, 734 MHz, Low Band Edge, max offset secondary channel					
Frequency		Max Value	Limit		
Range		(dBm)	≤ (dBm)	Result	
Fundamental		N/A	N/A	N/A	



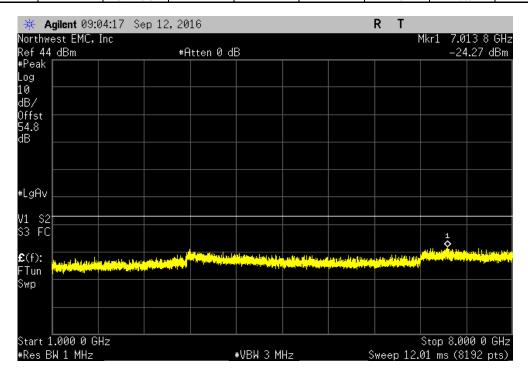
Report No. KMWC0074 138/161



Antenna Port 1, LTE10, 734 MHz, Low Band Edge, max offset secondary channel				
Frequency	Max Value	Limit		
Range	(dBm)	≤ (dBm)	Result	
30 MHz - 1 GHz	-22.65	-13	Pass	



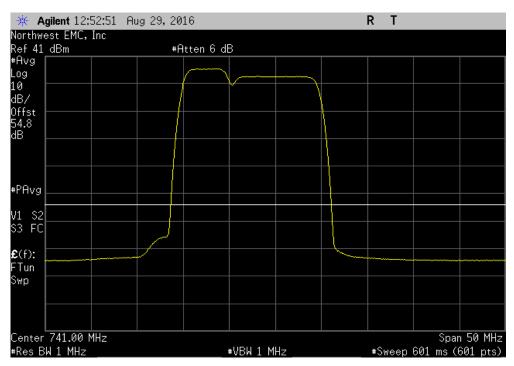
Antenna Port 1, LTE10, 734 MHz, Low Band Edge, max offset secondary channel					
Frequency			Max Value	Limit	
	Range		(dBm)	≤ (dBm)	Result
	1 GHz - 8 GHz		-24.27	-13	Pass



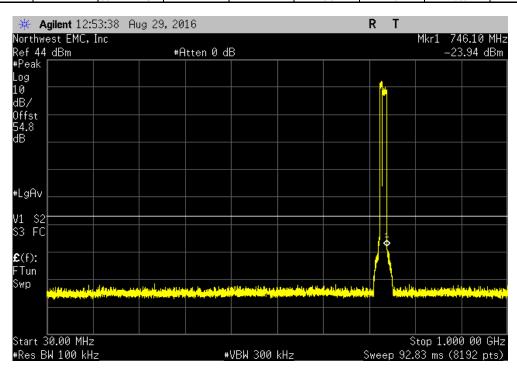
Report No. KMWC0074 139/161



Antenna Port 1, LTE10, 741 MHz, High Band Edge, adjacent secondary channel				
Frequency		Max Value	Limit	
Range		(dBm)	≤ (dBm)	Result
Fundamental		N/A	N/A	N/A



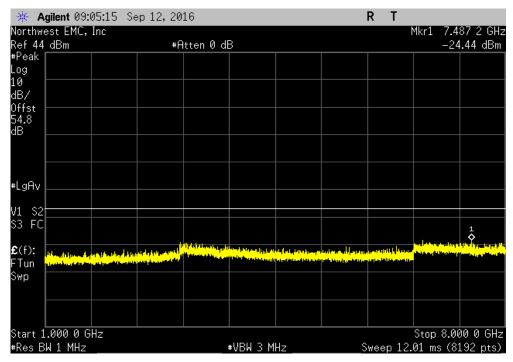
Antenna Port 1, LTE10, 741 MHz, High Band Edge, adjacent secondary channel				
Frequency	Max Value	Limit		
Range	(dBm)	≤ (dBm)	Result	
30 MHz - 1 GHz	-23.94	-13	Pass	



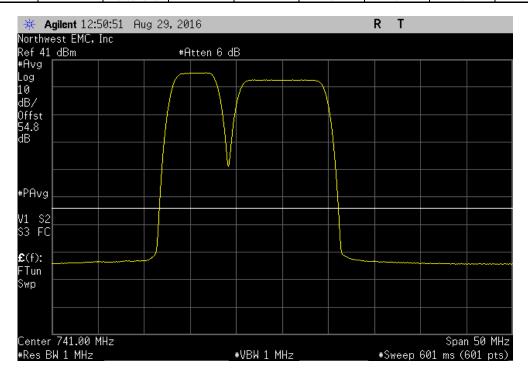
Report No. KMWC0074 140/161



Antenna Port 1, LTE10, 741 MHz, High Band Edge, adjacent secondary channel				
Frequency		Max Value	Limit	
Range		(dBm)	≤ (dBm)	Result
1 GHz - 8 GHz		-24.44	-13	Pass



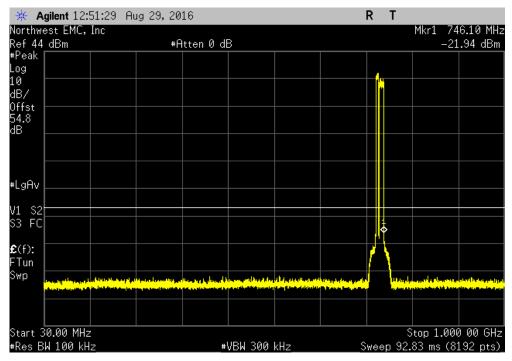
Antenna Port 1, LTE10, 741 MHz, High Band Edge, max offset secondary channel					
Frequency	Max Value	Limit			
Range	(dBm)	≤ (dBm)	Result		
Fundamental	N/A	N/A	N/A		



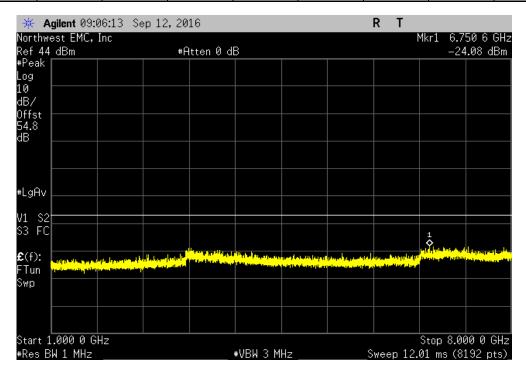
Report No. KMWC0074 141/161



Antenna Port 1, LTE10, 741 MHz, High Band Edge, max offset secondary channel				
Frequency	Max Value	Limit		
Range	(dBm)	≤ (dBm)	Result	
30 MHz - 1 GHz	-21.94	-13	Pass	



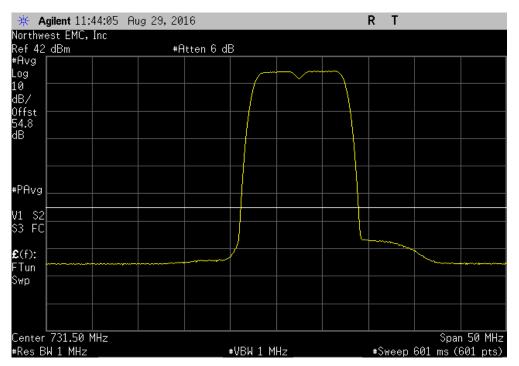
Antenna Port 1, LTE10, 741 MHz, High Band Edge, max offset secondary channel					
	Frequency		Max Value	Limit	
_	Range		(dBm)	≤ (dBm)	Result
ĺ	1 GHz - 8 GHz		-24.08	-13	Pass



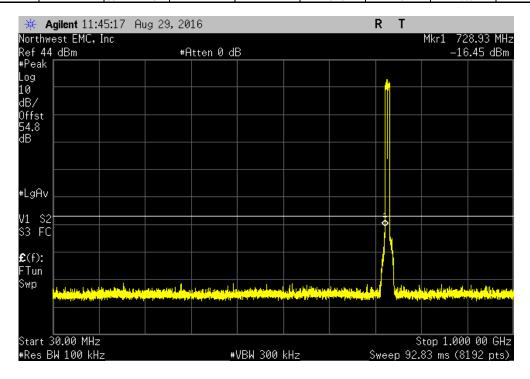
Report No. KMWC0074 142/161



Antenna Port 2, LTE5, 731.5 MHz, Low Band Edge, adjacent secondary channel				
Frequency		Max Value	Limit	
Range		(dBm)	≤ (dBm)	Result
Fundamental		N/A	N/A	N/A



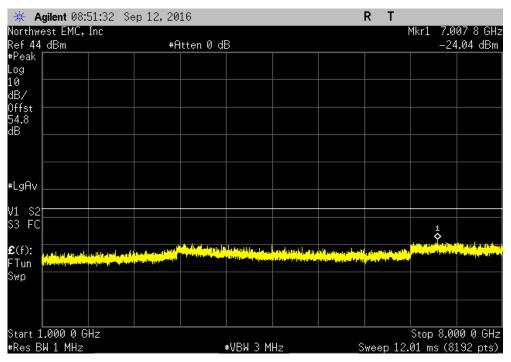
Antenna Port 2, LTE5, 731.5 MHz	Antenna Port 2, LTE5, 731.5 MHz, Low Band Edge, adjacent secondary channel				
Frequency	Max Value	Limit			
Range	(dBm)	≤ (dBm)	Result		
30 MHz - 1 GHz	-16.45	-13	Pass		



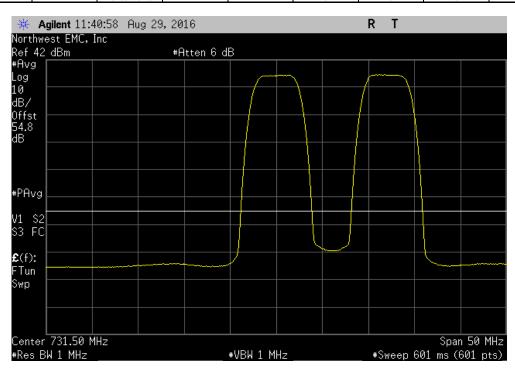
Report No. KMWC0074 143/161



Antenna Port 2, LTE5, 731.5 MHz, Low Band Edge, adjacent secondary channel				
Frequency		Max Value	Limit	
Range		(dBm)	≤ (dBm)	Result
1 GHz - 8 GHz		-24.04	-13	Pass



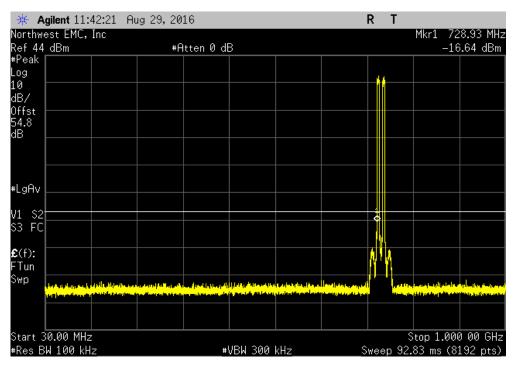
Antenna Port 2, LTE5, 731.5	MHz, Low Band Ed	ge, max offset sec	condary channel	
Frequency		Max Value	Limit	
Range		(dBm)	≤ (dBm)	Result
Fundamental		N/A	N/A	N/A



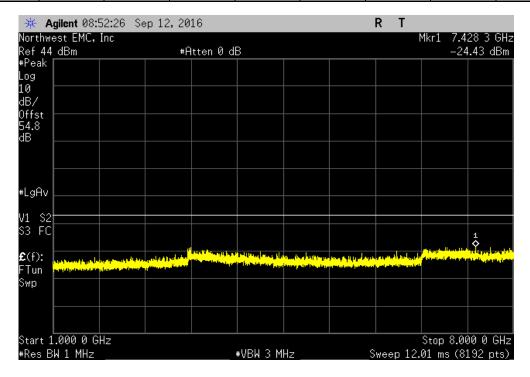
Report No. KMWC0074 144/161



Antenna Port 2, LTE5, 731.5 MHz, Low Band Edge, max offset secondary channel			
Frequency	Max Value	Limit	
Range	(dBm)	≤ (dBm)	Result
30 MHz - 1 GHz	-16.64	-13	Pass



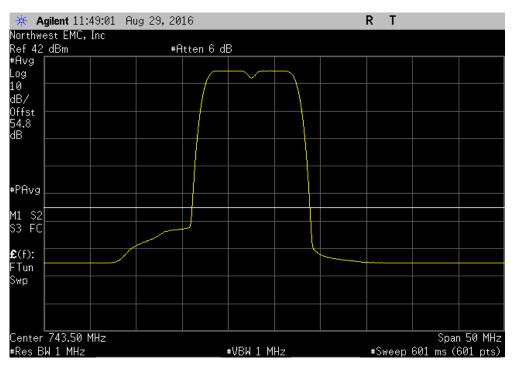
	Antenna Port 2, LTE5, 731.5 MI	Hz, Low Band Edg	e, max offset sec	ondary channel	
	Frequency		Max Value	Limit	
_	Range		(dBm)	≤ (dBm)	Result
l	1 GHz - 8 GHz		-24.43	-13	Pass



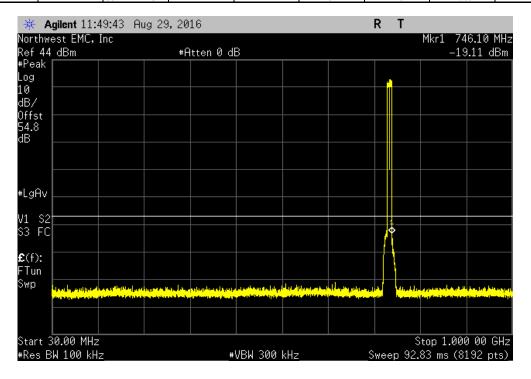
Report No. KMWC0074 145/161



Antenna Port 2, LTE5, 743.5	MHz, High Band Ed	dge, adjacent seco	ondary channel	
Frequency		Max Value	Limit	
Range		(dBm)	≤ (dBm)	Result
Fundamental		N/A	N/A	N/A



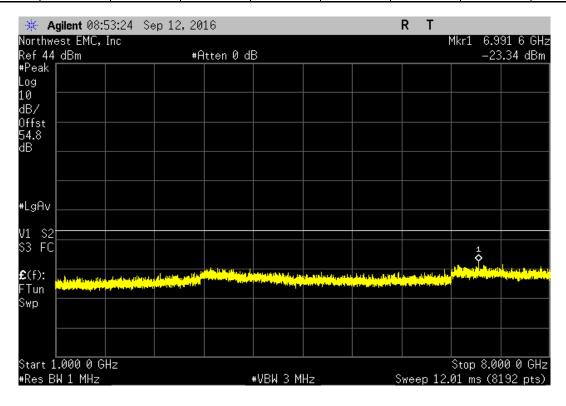
Antenna P	ort 2, LTE5, 743.5 MHz, High Band E	dge, adjacent seco	ondary channel	
Frequenc	y	Max Value	Limit	
Range		(dBm)	≤ (dBm)	Result
30 MHz - 1 0	GHz	-19.11	-13	Pass



Report No. KMWC0074 146/161



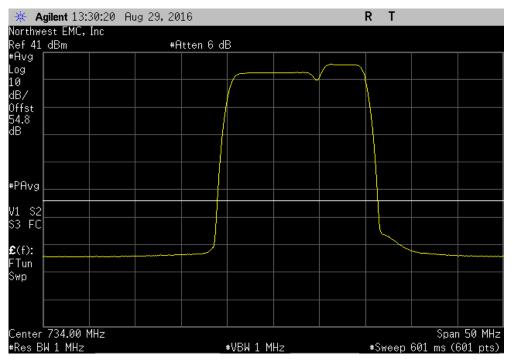
Antenna Port 2, LTE5, 743.5 MHz	, High Band Edge, adjacent sec	ondary channel		
Frequency	Max Value	Limit		
Range	(dBm)	≤ (dBm)	Result	
1 GHz - 8 GHz	-23.34	-13	Pass	



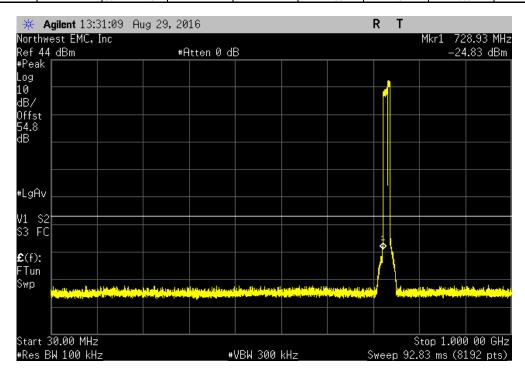
Report No. KMWC0074 147/161



Antenna Port 2, LTE10, 734 MHz,	Low Band Edge, adjacent seco	ndary channel	
7411011114 1 011 2, 21 210, 70 1 1111 12,			
Frequency	Max Value	Limit	
requency	Wax Value	Lilling	
Range	(dBm)	≤ (dBm)	Result
Kange	(ubili)	3 (abiii)	Nesuit
Fundamental	N/A	N/A	N/A
Fundamental	IN/A	IN/A	I IN/A



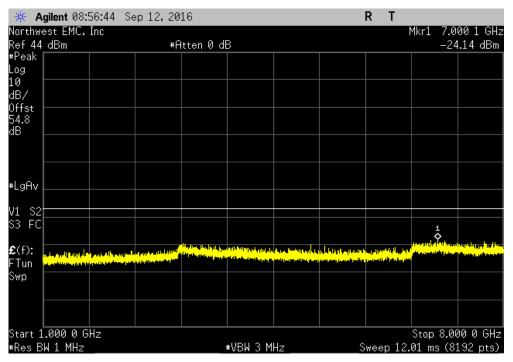
Antenna Port 2, LTE10, 734 MHz,	Low Band Edge, adjacent second	ondary channel	
Frequency	Max Value	Limit	
Range	(dBm)	≤ (dBm)	Result
30 MHz - 1 GHz	-24.83	-13	Pass



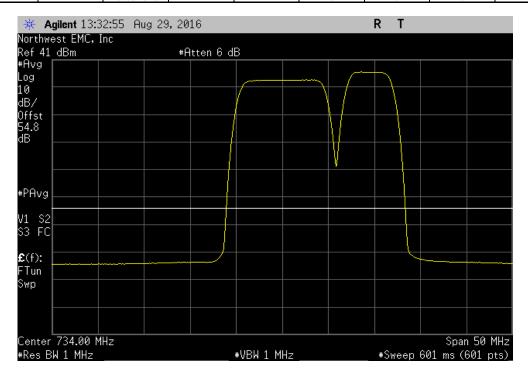
Report No. KMWC0074 148/161



Antenna Port 2, LTE10, 734	MHz, Low Band Ed	ge, adjacent seco	ndary channel	
Frequency		Max Value	Limit	
Range		(dBm)	≤ (dBm)	Result
1 GHz - 8 GHz		-24.14	-13	Pass



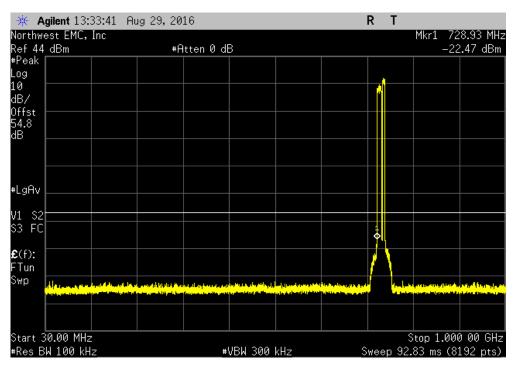
Antenna Port 2, LTE10, 734 MHz, Low Band Edge, max offset secondary channel			
Frequency	Max Value	Limit	
Range	(dBm)	≤ (dBm)	Result
Fundamental	N/A	N/A	N/A



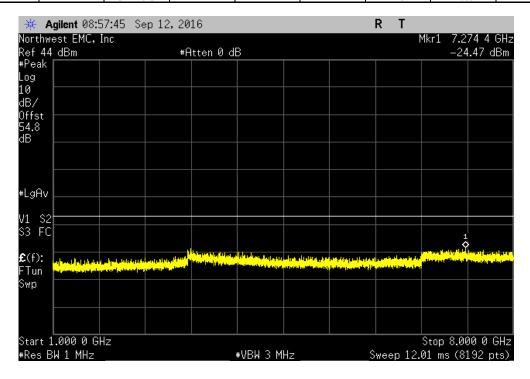
Report No. KMWC0074 149/161



Antenna Port 2, LTE10, 734 MHz, Low Band Edge, max offset secondary channel			
Frequency	Max Value	Limit	
Range	(dBm)	≤ (dBm)	Result
30 MHz - 1 GHz	-22.47	-13	Pass



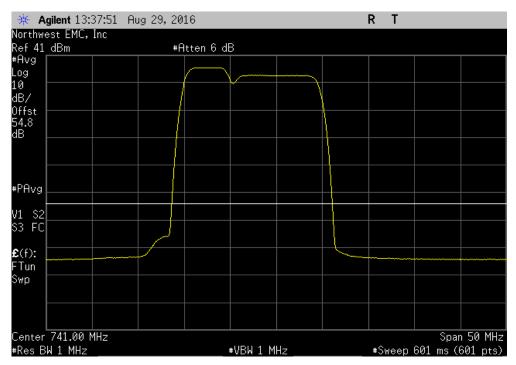
	Antenna Port 2, LTE10, 734 MHz, Low Band Edge, max offset secondary channel				
	Frequency		Max Value	Limit	
	Range		(dBm)	≤ (dBm)	Result
ı —	1 GHz - 8 GHz		-24.47	-13	Pass



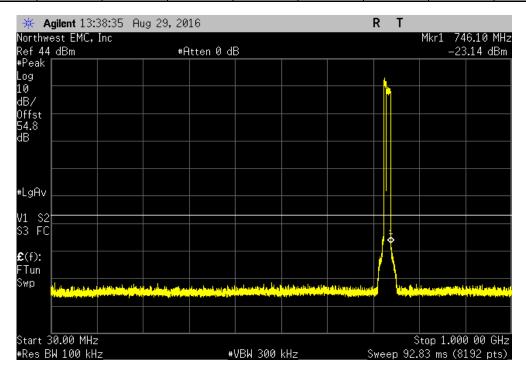
Report No. KMWC0074 150/161



Antenna Port 2, LTE10, 7	41 MHz, High Band Ed	lge, adjacent seco	ndary channel	
Frequency	, ,	Max Value	Limit	
Range		(dBm)	≤ (dBm)	Result
Fundamental		N/A	N/A	N/A



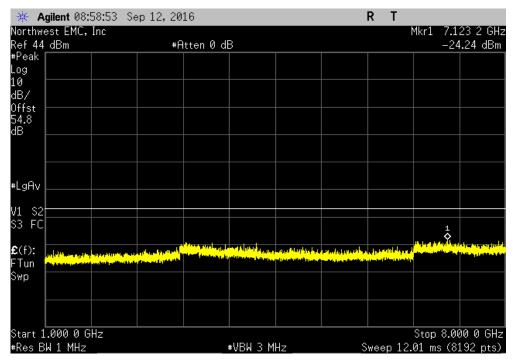
	Antenna Port 2, LTE10, 741 MI	Hz, High Band Ed	ge, adjacent secc	ndary channel	
	Frequency		Max Value	Limit	
_	Range		(dBm)	≤ (dBm)	Result
l	30 MHz - 1 GHz		-23.14	-13	Pass



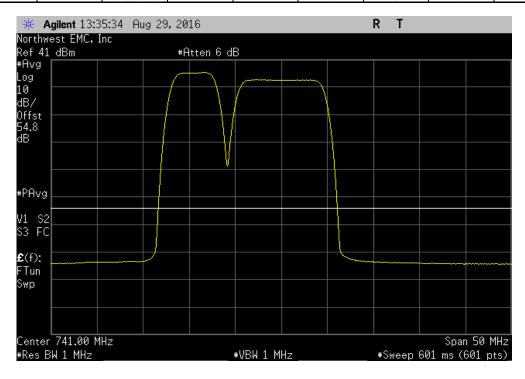
Report No. KMWC0074 151/161



Antenna Port 2, LTE10, 741 MF	dz, High Band Ed	ge, adjacent seco	ndary channel	
Frequency		Max Value	Limit	
Range		(dBm)	≤ (dBm)	Result
1 GHz - 8 GHz		-24.24	-13	Pass



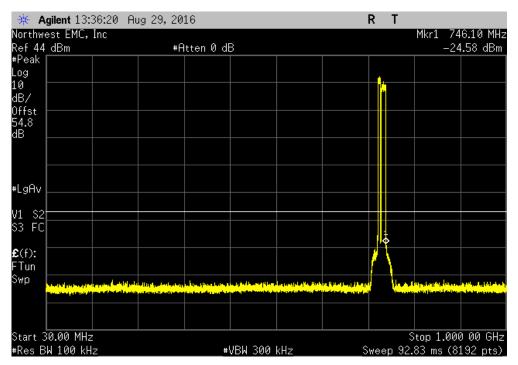
Antenna Port 2, LTE10, 74	41 MHz, High Band Edg	ge, max offset sec	ondary channel	
Frequency		Max Value	Limit	
Range		(dBm)	≤ (dBm)	Result
Fundamental		N/A	N/A	N/A



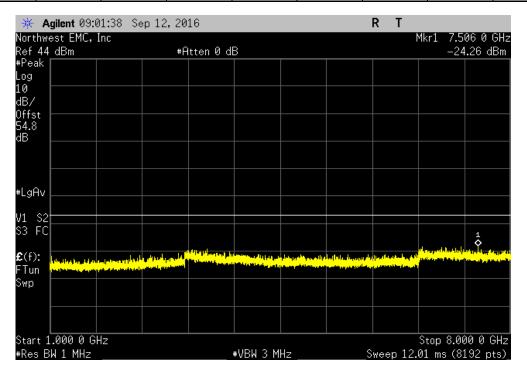
Report No. KMWC0074 152/161



Antenna Port 2, LTE10, 741 MHz,	, High Band Edge, max offset sed	ondary channel	
Frequency	Max Value	Limit	
Range	(dBm)	≤ (dBm)	Result
30 MHz - 1 GHz	-24.58	-13	Pass



	Antenna Port 2, LTE10, 741 MH:	z, High Band Edg	e, max offset sec	ondary channel	
	Frequency		Max Value	Limit	
_	Range		(dBm)	≤ (dBm)	Result
ĺ	1 GHz - 8 GHz		-24.26	-13	Pass



Report No. KMWC0074 153/161



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.	Cal. Due
Filter - High Pass	Micro-Tronics	HPM50108	HGX	7/25/2016	7/25/2017
Power Supply - DC	Hewlett Packard	6574A	TPX	NCR	NCR
Generator - Signal	Keysight	N5182B	TFX	4/16/2015	4/16/2018
Cable	Fairview Microwave	SCA1814-0101-120	OCZ	NCR	NCR
Block - DC	Aeroflex	INMET 8535	AMO	4/4/2016	4/4/2017
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFD	7/29/2016	7/29/2017

#### **CLIENT PROVIDED EQUIPMENT**

Description	Manufacturer	Model	Last Cal.	Cal. Due
High Power Attenuator - 30dB	Aeroflex/Weinschel	53-30-43	NCR	NCR
Attenuator - 20dB	N/A	N/A	NCR	NCR
Power Divider	Fairview Microwave	MP8748-2	NCR	NCR
500hm Terminator	Aeroflex/Weinschel	1455-4	NCR	NCR
High Power Terminator	Telcon	KTMO400800060	NCR	NCR

#### **TEST DESCRIPTION**

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. Analyzer plots utilizing appropriate resolution bandwidth and no video filtering were made for each modulation type.

Since the EUT does not have an RF Input, the EUT was configured with two modulated carriers, 1 at the edge of the band and the 2nd either adjacent or at max seperation possible. 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 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 re-measured using a RMS average detector.

Only the Low Channel for LTE5 channel bandwidth was tested. The High Channel was previously tested in this band. Also no LTE10 was tested since band is only 12MHz wide cannot fit more than 1(ea) 10MHz channel at a time.

Report No. KMWC0074 154/161

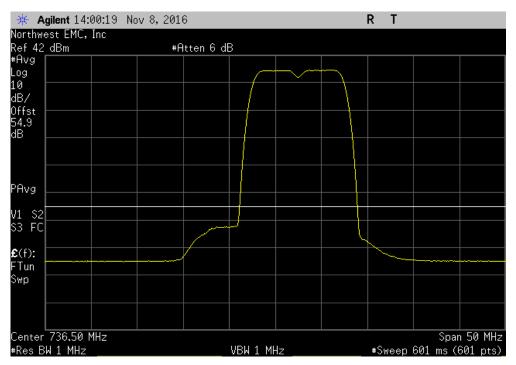


Antenna Port 1  LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset s	EUT:	CWS-3050-12				Work Order:	KMWC0077	
Attendees: Edward Lee	Serial Number:	K163300001				Date:	11/08/16	
Project:   None	Customer	Parallel Wireless Inc.						
Tested by: Johnny Candelas								
Test Method								
ANSI/TIA/EIA-603-D-2010				Power:	: 48 VDC	Job Site:	OC13	
Commission   Co		TONS						
Prover Level Setting 40W. Reference Level Offset: DC Block + 30dB Attenuator + 20dB Attenuator + Power Divider + Cable Loss = 54.9dB total.	FCC 27:2016				ANSI/TIA/EIA-603-D-2010			
Power Level Setting 40W. Reference Level Offset: DC Block + 30dB Attenuator + 20dB Attenuator + Power Divider + Cable Loss = 54.9dB total.    DEVIATIONS FROM TEST STANDARD								
DEVIATIONS FROM TEST STANDARD  None  Configuration # 1  Signature  Frequency Range  (dBm) ≤ (dBm) ≤ (dBm) Resi  Antenna Port 1  LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz JGHz - 8 GHz JGHz JGHZ JGHZ JGHZ JGHZ JGHZ JGHZ JGHZ JGHZ	COMMENTS							
Signature   Frequency Range   Max Value (dBm)   Example   Signature   Frequency Range   Max Value (dBm)   Example   Signature   Signature   Signature   Frequency Range   Signature   S	DEVIATIONS FROM	M TEST STANDARD						
Signature   Frequency Range   Max Value (dBm)   Color   Residue	None							
Antenna Port 1         Range         (dBm)         ≤ (dBm)         ≤ (dBm)         Residem)           Antenna Port 1           LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz         Fundamental         N/A         N/A         N/A           LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz         30 MHz - 1 GHz         -23.55         -13         Pas           LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz         1 GHz - 8 GHz         -22.42         -13         Pas           LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz         30 MHz - 1 GHz         -21.07         -13         Pas           Antenna Port 2         LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz         1 GHz - 8 GHz         -23.12         -13         Pas           Antenna Port 2         LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz         Fundamental         N/A         N/A         N/A           LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz         Fundamental         N/A         N/A         N/A           LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz         1 GHz - 8 GHz         -21.54         -13         Pas           LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz         1 GHz - 8 GHz<				1	100			
LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz SO MHz - 1 GHz SO M	Configuration #	1			Collection			
LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel		1			Frequency			Result
LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz SMIZE AGREE SMIZ		1	Signature		Frequency Range	(dBm)	≤ (dBm)	
LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz			Signature  Signature  and Edge, adjacent secondary channel at 74	1.5 MHz	Frequency Range Fundamental	(dBm) N/A	≤ (dBm) N/A	N/A
LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz 1 GHz 23.12 -13 Pas 1 GHz - 8 GHz 23.12 -13 Pas 1 GHz - 8 GHz 23.12 -13 Pas 1 GHz - 8 GHz 23.12 -13 Pas 1 GHz - 8 GHz 23.12 -13 Pas 1 GHz - 8 GHz 23.12 -13 Pas 1 GHz - 8 GHz 23.12 -13 Pas 1 GHz - 1 GHz 24.15 MHz 24.15 MHz 24.15 MHz 25.15 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz 25.15 MHz - 1 GHz 25.34 -13 Pas 1 GHz 25.36 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz 25.15	LTE5, 736.5 MHz, Low Bar	Signature  Ind Edge, adjacent secondary channel at 74 nd Edge, adjacent secondary channel at 74 nd Edge, adjacent secondary channel at 74	1.5 MHz 1.5 MHz	Frequency Range Fundamental 30 MHz - 1 GHz	(dBm) N/A -23.55	≤ (dBm) N/A -13	N/A Pass	
LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz  LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz  LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz  LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz  LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz  LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz  LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz  LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz  LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz  ANA  N/A  N/A  N/A  N/A  N/A  N/A  N/		LTE5, 736.5 MHz, Low Bar LTE5, 736.5 MHz, Low Bar	Signature  Ind Edge, adjacent secondary channel at 74 and Edge, adjacent secondary channel at 74 nd Edge, adjacent secondary channel at 74 nd Edge, adjacent secondary channel at 74 nd Edge, adjacent secondary channel at 74	1.5 MHz 1.5 MHz 1.5 MHz	Frequency Range Fundamental 30 MHz - 1 GHz 1 GHz - 8 GHz	N/A -23.55 -22.42	≤ (dBm) N/A -13 -13	N/A Pass Pass
Numerical Port 2   LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz   Fundamental   N/A		LTE5, 736.5 MHz, Low Bar LTE5, 736.5 MHz, Low Bar LTE5, 736.5 MHz, Low Bar	nd Edge, adjacent secondary channel at 74 nd Edge, adjacent secondary channel at 74 nd Edge, adjacent secondary channel at 74 nd Edge, max offset secondary channel at 7	1.5 MHz 1.5 MHz 1.5 MHz 743.5 MHz	Frequency Range  Fundamental 30 MHz - 1 GHz 1 GHz - 8 GHz Fundamental	N/A -23.55 -22.42 N/A	≤ (dBm)  N/A -13 -13 N/A	N/A Pass Pass N/A
LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz         Fundamental         N/A         N/A         N/A           LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz         30 MHz - 1 GHz         -21.54         -13         Pas           LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz         1 GHz - 8 GHz         -23.34         -13         Pas           LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz         Fundamental         N/A         N/A         N/A           LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz         30 MHz - 1 GHz         -22.41         -13         Pas		LTE5, 736.5 MHz, Low Bai LTE5, 736.5 MHz, Low Bai LTE5, 736.5 MHz, Low Bai LTE5, 736.5 MHz, Low Bai	Signature  Ind Edge, adjacent secondary channel at 74 nd Edge, adjacent secondary channel at 74 nd Edge, max offset secondary channel at 74 nd Edge, max offset secondary channel at 7 nd Edge, max offset secondary channel at 7 nd Edge, max offset secondary channel at 7 nd Edge, max offset secondary channel at 7 nd Edge, max offset secondary channel at 7 nd Edge, max offset secondary channel at 7 nd Edge, max offset secondary channel at 7 nd Edge, max offset secondary channel at 7 nd Edge, max offset secondary channel at 7 nd Edge, max offset secondary channel at 7 nd Edge, max offset secondary channel at 7 nd Edge, max offset secondary channel at 7 nd Edge, max offset secondary channel at 7 nd Edge, adjacent secondary channel at 7 nd Edge, max offset secondary ch	1.5 MHz 1.5 MHz 1.5 MHz 743.5 MHz 743.5 MHz	Frequency Range  Fundamental 30 MHz - 1 GHz 1 GHz - 8 GHz Fundamental 30 MHz - 1 GHz	(dBm)  N/A -23.55 -22.42 N/A -21.07	N/A -13 -13 N/A -13	N/A Pass Pass N/A Pass
LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz       30 MHz - 1 GHz       -21.54       -13       Pas         LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz       1 GHz - 8 GHz       -23.34       -13       Pas         LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz       Findamental       N/A       N/A       N/A         LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz       30 MHz - 1 GHz       -22.41       -13       Pas	ntenna Port 1	LTE5, 736.5 MHz, Low Bai LTE5, 736.5 MHz, Low Bai LTE5, 736.5 MHz, Low Bai LTE5, 736.5 MHz, Low Bai	Signature  Ind Edge, adjacent secondary channel at 74 nd Edge, adjacent secondary channel at 74 nd Edge, max offset secondary channel at 74 nd Edge, max offset secondary channel at 7 nd Edge, max offset secondary channel at 7 nd Edge, max offset secondary channel at 7 nd Edge, max offset secondary channel at 7 nd Edge, max offset secondary channel at 7 nd Edge, max offset secondary channel at 7 nd Edge, max offset secondary channel at 7 nd Edge, max offset secondary channel at 7 nd Edge, max offset secondary channel at 7 nd Edge, max offset secondary channel at 7 nd Edge, max offset secondary channel at 7 nd Edge, max offset secondary channel at 7 nd Edge, max offset secondary channel at 7 nd Edge, adjacent secondary channel at 7 nd Edge, max offset secondary ch	1.5 MHz 1.5 MHz 1.5 MHz 743.5 MHz 743.5 MHz	Frequency Range  Fundamental 30 MHz - 1 GHz 1 GHz - 8 GHz Fundamental 30 MHz - 1 GHz	(dBm)  N/A -23.55 -22.42 N/A -21.07	N/A -13 -13 N/A -13	N/A Pass Pass N/A
LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz       1 GHz - 8 GHz       -23.34       -13       Pas         LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz       Fundamental       N/A       N/A       N/A         LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz       30 MHz - 1 GHz       -22.41       -13       Pas	Antenna Port 1	LTE5, 736.5 MHz, Low Bai LTE5, 736.5 MHz, Low Bai LTE5, 736.5 MHz, Low Bai LTE5, 736.5 MHz, Low Bai LTE5, 736.5 MHz, Low Bai	Signature  and Edge, adjacent secondary channel at 74 and Edge, adjacent secondary channel at 74 and Edge, adjacent secondary channel at 74 and Edge, max offset secondary channel at 7 and Edge, max offset secondary channel at 7 and Edge, max offset secondary channel at 7 and Edge, max offset secondary channel at 7	1.5 MHz 1.5 MHz 1.5 MHz 43.5 MHz 743.5 MHz 743.5 MHz	Frequency Range  Fundamental 30 MHz - 1 GHz 1 GHz - 8 GHz Fundamental 30 MHz - 1 GHz 1 GHz - 8 GHz	(dBm)  N/A -23.55 -22.42 N/A -21.07 -23.12	≤ (dBm)  N/A -13 -13 N/A -13 -13	N/A Pass Pass N/A Pass Pass
LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz         Fundamental         N/A         N/A         N/A           LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz         30 MHz - 1 GHz         -22.41         -13         Pas	Antenna Port 1	LTE5, 736.5 MHz, Low Bai LTE5, 736.5 MHz, Low Bai	nd Edge, adjacent secondary channel at 74 nd Edge, adjacent secondary channel at 74 nd Edge, adjacent secondary channel at 74 nd Edge, max offset secondary channel at 7 nd Edge, max offset secondary channel at 7 nd Edge, max offset secondary channel at 7 nd Edge, max offset secondary channel at 7 nd Edge, adjacent secondary channel at 74 nd Edge, adjacent secondary channel at 74	1.5 MHz 1.5 MHz 1.5 MHz 743.5 MHz 743.5 MHz 743.5 MHz	Frequency Range  Fundamental 30 MHz - 1 GHz 1 GHz - 8 GHz Fundamental 30 MHz - 1 GHz 1 GHz - 8 GHz Fundamental	(dBm)  N/A -23.55 -22.42 N/A -21.07 -23.12  N/A	× (dBm)  N/A -13 -13 N/A -13 -13 N/A	N/A Pass Pass N/A Pass Pass
LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz 30 MHz - 1 GHz -22.41 -13 Pas	Antenna Port 1	LTE5, 736.5 MHz, Low Bai LTE5, 736.5 MHz, Low Bai	nd Edge, adjacent secondary channel at 74 nd Edge, adjacent secondary channel at 74 nd Edge, adjacent secondary channel at 74 nd Edge, max offset secondary channel at 7 nd Edge, max offset secondary channel at 7 nd Edge, max offset secondary channel at 7 nd Edge, adjacent secondary channel at 74 nd Edge, adjacent secondary channel at 74 nd Edge, adjacent secondary channel at 74 nd Edge, adjacent secondary channel at 74	1.5 MHz 1.5 MHz 1.5 MHz 743.5 MHz 743.5 MHz 743.5 MHz 1.5 MHz	Frequency Range  Fundamental 30 MHz - 1 GHz 1 GHz - 8 GHz Fundamental 30 MHz - 1 GHz 1 GHz - 8 GHz Fundamental 30 MHz - 1 GHz	(dBm)  N/A -23.55 -22.42 N/A -21.07 -23.12  N/A -21.54	≤ (dBm)  N/A -13 -13 N/A -13 -13 N/A -13	N/A Pass Pass N/A Pass Pass
	Antenna Port 1	LTE5, 736.5 MHz, Low Bai LTE5, 736.5 MHz, Low Bai	nd Edge, adjacent secondary channel at 74 nd Edge, adjacent secondary channel at 74 nd Edge, adjacent secondary channel at 74 nd Edge, max offset secondary channel at 74 nd Edge, max offset secondary channel at 7 nd Edge, max offset secondary channel at 74 nd Edge, adjacent secondary channel at 74 nd Edge at 24 nd Edge at 24 nd Edge at 24 nd Edge at 24 nd Edge at	1.5 MHz 1.5 MHz 1.5 MHz r43.5 MHz r43.5 MHz r43.5 MHz 1.5 MHz 1.5 MHz 1.5 MHz	Frequency Range  Fundamental 30 MHz - 1 GHz 1 GHz - 8 GHz Fundamental 30 MHz - 1 GHz 1 GHz - 8 GHz Fundamental 30 MHz - 1 GHz 1 GHz - 8 GHz Fundamental	(dBm)  N/A -23.55 -22.42 N/A -21.07 -23.12  N/A -21.54 -23.34	N/A -13 -13 N/A -13 -13 N/A -13 -13 -13	N/A Pass Pass N/A Pass Pass N/A Pass Pass
LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz 1 GHz - 8 GHz -23.5 -13 Pas	Antenna Port 1	LTE5, 736.5 MHz, Low Bai LTE5, 736.5 MHz, Low Bai	Signature  nd Edge, adjacent secondary channel at 74 nd Edge, adjacent secondary channel at 74 nd Edge, adjacent secondary channel at 74 nd Edge, max offset secondary channel at 7 nd Edge, max offset secondary channel at 7 nd Edge, max offset secondary channel at 7 nd Edge, adjacent secondary channel at 74 nd Edge, adjacent secondary channel at 74 nd Edge, adjacent secondary channel at 74 nd Edge, adjacent secondary channel at 74 nd Edge, max offset secondary channel at 74 nd Edge at 74 nd Edge at 74	1.5 MHz 1.5 MHz 1.5 MHz 43.5 MHz 43.5 MHz 43.5 MHz 1.5 MHz 1.5 MHz 1.5 MHz 43.5 MHz	Frequency Range  Fundamental 30 MHz - 1 GHz 1 GHz - 8 GHz Fundamental 30 MHz - 1 GHz 1 GHz 1 GHz 1 GHz 4 GHz Fundamental 30 MHz - 1 GHz 1 GHz - 8 GHz Fundamental	(dBm)  N/A -23.55 -22.42 N/A -21.07 -23.12  N/A -21.54 -23.34 N/A	N/A -13 -13 N/A -13 -13 N/A -13 -13 N/A -13 N/A	N/A Pass Pass N/A Pass Pass N/A Pass N/A Pass Pass

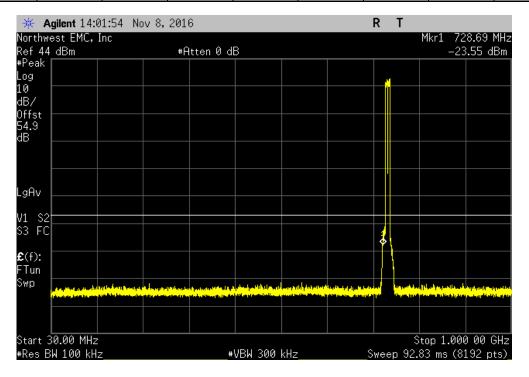
Report No. KMWC0074 155/161



Antenna Port 1, LTE5, 736.5 MHz, Low Band Edge, adjacent secondary channel at 741.5 MHz						
Frequency		Max Value	Limit			
Range		(dBm)	≤ (dBm)	Result		
Fundamenta	al	N/A	N/A	N/A		



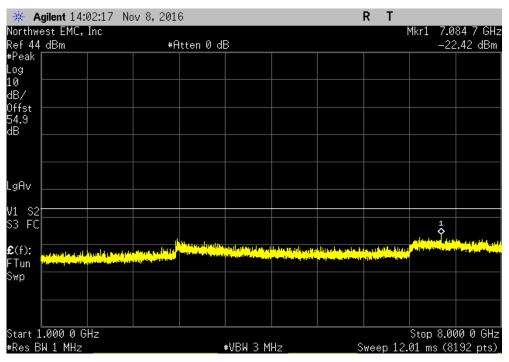
	Antenna Port 1, LTE5, 736.5 MHz, Lo	w Band Edge, adj	acent secondary	channel at 741.5	MHz
	Frequency		Max Value	Limit	
_	Range		(dBm)	≤ (dBm)	Result
ſ	30 MHz - 1 GHz		-23.55	-13	Pass



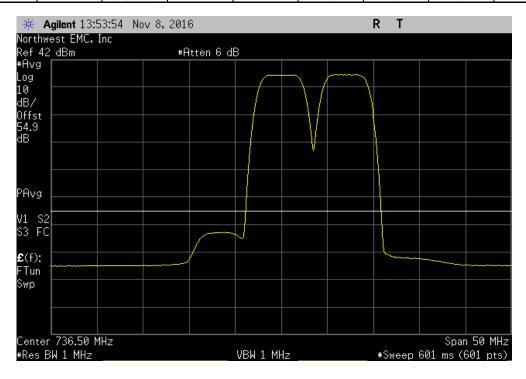
Report No. KMWC0074 156/161



Antenna Port 1, LTE5, 736.5 MHz, Lo	w Band Edge, adj	acent secondary	channel at 741.5	MHz	
Frequency		Max Value	Limit		
Range		(dBm)	≤ (dBm)	Result	
1 GHz - 8 GHz		-22.42	-13	Pass	



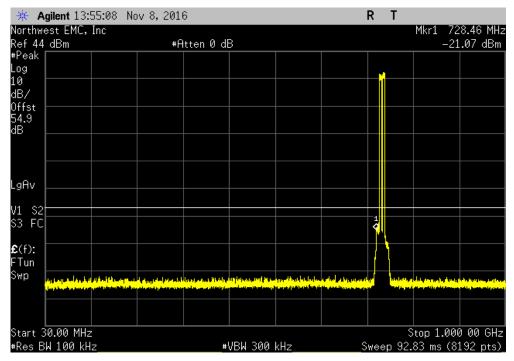
Antenna Port 1, LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz					
Frequency	Max Value	Limit			
Range	(dBm)	≤ (dBm)	Result		
Fundamental	N/A	N/A	N/A		



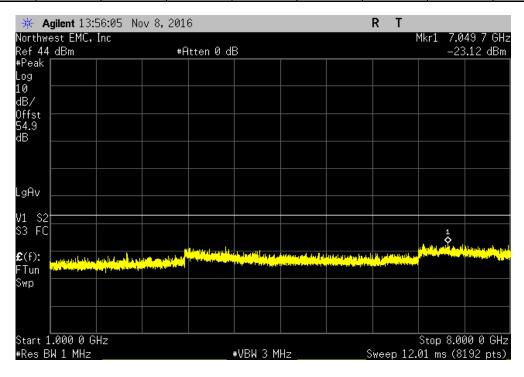
Report No. KMWC0074 157/161



Ante	Antenna Port 1, LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz				
	Frequency	_	Max Value	Limit	
	Range		(dBm)	≤ (dBm)	Result
	30 MHz - 1 GHz		-21.07	-13	Pass



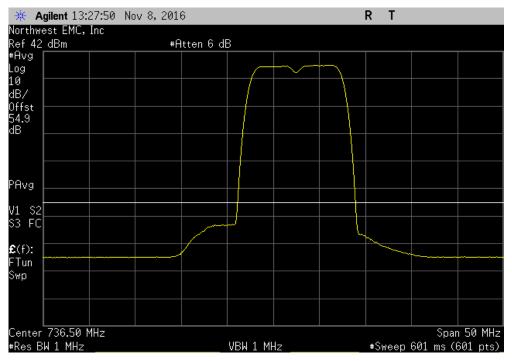
	Antenna Port 1, LTE5, 736.5 MHz, Low	Band Edge, max	offset secondary	channel at 743.5	MHz
	Frequency		Max Value	Limit	
_	Range		(dBm)	≤ (dBm)	Result
l	1 GHz - 8 GHz		-23.12	-13	Pass



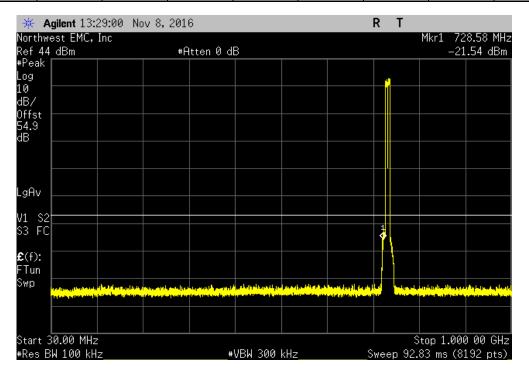
Report No. KMWC0074 158/161



Antenna Port 2, LTE5, 736.5 MHz, Low Ban	d Edge, adjacent secondary	channel at 741.5	MHz
Frequency	Max Value	Limit	
Frequency			
Range	(dBm)	≤ (dBm)	Result
Fundamental	N/A	N/A	N/A



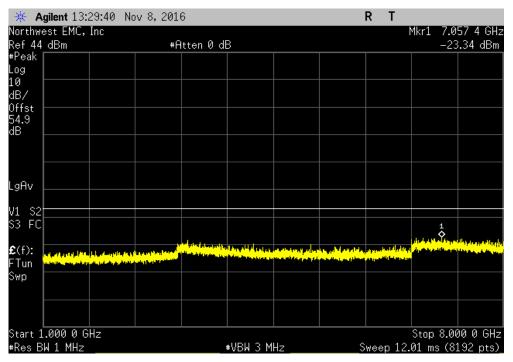
	Antenna Port 2, LTE5, 736.5 MHz, Lo	w Band Edge, adj	acent secondary	channel at 741.5	MHz
	Frequency		Max Value	Limit	
_	Range		(dBm)	≤ (dBm)	Result
l	30 MHz - 1 GHz		-21.54	-13	Pass



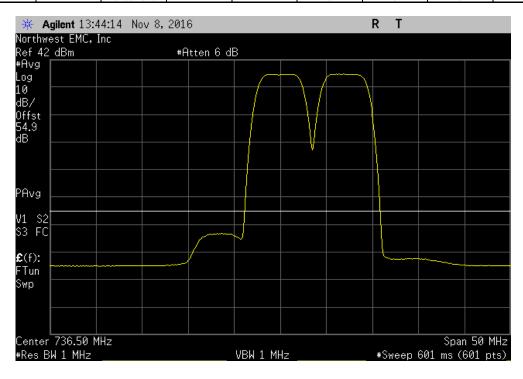
Report No. KMWC0074 159/161



Antenna Port 2, LTE5, 736.5 MHz, Lo	w Band Edge, adj	acent secondary	channel at 741.5	MHz	
Frequency		Max Value	Limit		
Range		(dBm)	≤ (dBm)	Result	
1 GHz - 8 GHz		-23.34	-13	Pass	



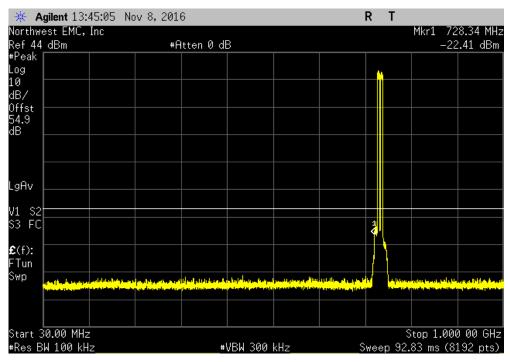
Antenna Port 2, LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz				
Frequency	Max Value	Limit		
Range	(dBm)	≤ (dBm)	Result	
Fundamental	N/A	N/A	N/A	



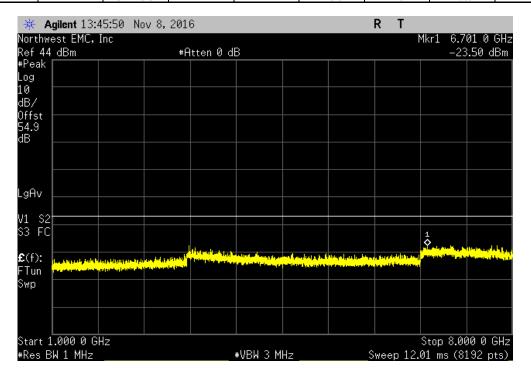
Report No. KMWC0074 160/161



Antenna Port 2, LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz				
Frequency	Max Val	ie Limit		
Range	(dBm)	≤ (dBm)	Result	
30 MHz - 1 GHz	-22.41	-13	Pass	



Antenna Port 2, LTE5, 736.5 MHz, Low Band Edge, max offset secondary channel at 743.5 MHz				
Frequency	Max Value	Limit		
Range	(dBm)	≤ (dBm)	Result	
1 GHz - 8 GHz	-23.5	-13	Pass	



Report No. KMWC0074 161/161