FCC and Industry Canada Testing of the DAQRI International Limited Model: DAQRI Compute Pack In accordance with FCC 47 CFR Part 15E, Industry Canada RSS-247 and Industry Canada RSS-GEN

Product Service

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Prepared for: DAQRI LLC
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FCC ID: 2AEWMDQR002001
IC: TBC

COMMERCIAL-IN-CONFIDENCE

Date: June 2017
Document Number: 75936979-08 | Issue: 01

RESPONSIBLE FOR	NAME	DATE	SIGNATURE
Project Management	Steven White	02 June 2017	
Authorised Signatory	Nic Forsyth	02 June 2017	

Signatures in this approval box have checked this document in line with the requirements of TÜV SÜD Product Service document control rules.

ENGINEERING STATEMENT

The measurements shown in this report were made in accordance with the procedures described on test pages. All reported testing was carried out on a sample equipment to demonstrate limited compliance with FCC 47 CFR Part 15E, Industry Canada RSS-247 and Industry Canada RSS-GEN. The sample tested was found to comply with the requirements defined in the applied rules.

RESPONSIBLE FOR	NAME	DATE	SIGNATURE
Testing	Mehadi Choudhury	02 June 2017	
Testing	Jack Tuckwell	02 June 2017	
Testing	Graeme Lawler	02 June 2017	

FCC Accreditation
90987 Octagon House, Fareham Test Laboratory

Industry Canada Accreditation
IC2932B-1 Octagon House, Fareham Test Laboratory

EXECUTIVE SUMMARYA sample of this product was tested and found to be in compliance with FCC 47 CFR Part 15E: 2016 and Industry Canada RSS-247: Issue 2 (2017-02) and Industry Canada RSS-GEN: Issue 4 (2014-11).

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Product Service

Contents

1 Report Summary

1.1 Report Modification Record

Alterations and additions to this report will be issued to the holders of each copy in the form of a complete document.

Issue	Description of Change	Date of Issue
1	First Issue	02 June 2017

Table 1

1.2 Introduction

Applicant	DAQRI LLC
Manufacturer	DAQRI International Limited
Model Number(s)	DAQRI Compute Pack
Serial Number(s)	OA565-7DF-5A51EMTGNF OA565-7DF-82K70497C1
Hardware Version(s)	DCP DE
Software Version(s)	V16
Number of Samples Tested	2
Test Specification/Issue/Date	FCC 47 CFR Part 15E: 2016 Industry Canada RSS-247: Issue 2 (2017-02) Industry Canada RSS-GEN: Issue 4 (2014-11)
Order Number Date	106966 16-November-2016
Date of Receipt of EUT	09-January-2017 and 19-April-2017
Start of Test	18-April-2017
Finish of Test	24-May-2017
Name of Engineer(s)	Matthew Russell, Mehadi Choudhury, Jack Tuckwell and Graeme Lawler
Related Document(s)	ANSI C63.10 (2013) KDB 662911 D01 v02r02

Product Service

1.3 Brief Summary of Results

A brief summary of the tests carried out in accordance with FCC 47 CFR Part 15E, Industry Canada RSS-247 and Industry Canada RSS-GEN is shown below.

Section	Specification Clause			Test Description	Result	Comments/Base Standard
	Part 15E	RSS-247	RSS-GEN			
Configuration: WLAN Transmitting						
2.1	15.207	-	8.8	AC Power Line Conducted Emissions	Pass	ANSI C63.10
Configuration: 802.11a						
2.2	15.407 (a)	6.2	-	Maximum Conducted Output Power	Pass	ANSI C63.10 and KDB 662911 D01
2.3	15.407 (a)	6.2	-	Maximum Conducted Power Spectral Density	Pass	ANSI C63.10 and KDB 662911 D01
2.4	15.407 (a)	6.2	-	Emission Bandwidth	Pass	ANSI C63.10
2.5	15.407 (b)	6.2	-	Authorised Band Edges	Pass	ANSI C63.10
2.6	15.205	-	8.10	Restricted Band Edges	Pass	ANSI C63.10
2.7	15.407 (b) and 15.205	6.2	-	Spurious Radiated Emissions	Pass	ANSI C63.10
Configuration: 802.11n (20 MHz Bandwidth)						
2.2	15.407 (a)	6.2	-	Maximum Conducted Output Power	Pass	ANSI C63.10 and KDB 662911 D01
2.3	15.407 (a)	6.2	-	Maximum Conducted Power Spectral Density	Pass	ANSI C63.10 and KDB 662911 D01
2.4	15.407 (a)	6.2	-	Emission Bandwidth	Pass	ANSI C63.10
2.5	15.407 (b)	6.2	-	Authorised Band Edges	Pass	ANSI C63.10
2.6	15.205	-	8.10	Restricted Band Edges	Pass	ANSI C63.10
2.7	15.407 (b) and 15.205	6.2	-	Spurious Radiated Emissions	Pass	ANSI C63.10

Section	Specification Clause			Test Description	Result	Comments/Base Standard
	Part 15E	RSS-247	RSS-GEN			
Configuration: 802.11n (40 MHz Bandwidth)						
2.2	15.407 (a)	6.2	-	Maximum Conducted Output Power	Pass	ANSI C63.10 and KDB 662911 D01
2.3	15.407 (a)	6.2	-	Maximum Conducted Power Spectral Density	Pass	ANSI C63.10 and KDB 662911 D01
2.4	15.407 (a)	6.2	-	Emission Bandwidth	Pass	ANSI C63.10
2.5	15.407 (b)	6.2	-	Authorised Band Edges	Pass	ANSI C63.10
2.6	15.205	-	8.10	Restricted Band Edges	Pass	ANSI C63.10
Configuration: 802.11ac (20 MHz Bandwidth)						
2.2	15.407 (a)	6.2	-	Maximum Conducted Output Power	Pass	ANSI C63.10 and KDB 662911 D01
2.3	15.407 (a)	6.2	-	Maximum Conducted Power Spectral Density	Pass	ANSI C63.10 and KDB 662911 D01
2.4	15.407 (a)	6.2	-	Emission Bandwidth	Pass	ANSI C63.10
2.5	15.407 (b)	6.2	-	Authorised Band Edges	Pass	ANSI C63.10
2.6	15.205	-	8.10	Restricted Band Edges	Pass	ANSI C63.10
2.7	15.407 (b) and 15.205	6.2	-	Spurious Radiated Emissions	Pass	ANSI C63.10
Configuration: 802.11ac (40 MHz Bandwidth)						
2.2	15.407 (a)	6.2	-	Maximum Conducted Output Power	Pass	ANSI C63.10 and KDB 662911 D01
2.3	15.407 (a)	6.2	-	Maximum Conducted Power Spectral Density	Pass	ANSI C63.10 and KDB 662911 D01
2.4	15.407 (a)	6.2	-	Emission Bandwidth	Pass	ANSI C63.10
2.5	15.407 (b)	6.2	-	Authorised Band Edges	Pass	ANSI C63.10
2.6	15.205	-	8.10	Restricted Band Edges	Pass	ANSI C63.10

Section	Specification Clause			Test Description	Result	Comments/Base Standard
	Part 15E	RSS-247	RSS-GEN			
Configuration: 802.11ac (80 MHz Bandwidth)						
2.2	15.407 (a)	6.2	-	Maximum Conducted Output Power	Pass	ANSI C63.10 and KDB 662911 D01
2.3	15.407 (a)	6.2	-	Maximum Conducted Power Spectral Density	Pass	ANSI C63.10 and KDB 662911 D01
2.4	15.407 (a)	6.2	-	Emission Bandwidth	Pass	ANSI C63.10
2.5	15.407 (b)	6.2	-	Authorised Band Edges	Pass	ANSI C63.10
2.6	15.205	-	8.10	Restricted Band Edges	Pass	ANSI C63.10

Table 2

Product Service

1.4 Application Form

EQUIPMENT DESCRIPTION	
Model Name/Number	DAQRI Compute Pack
Part Number	870-00163
Hardware Version	DCP DE
Software Version	V16
FCC ID (if applicable)	2AEWMDQR002001
Industry Canada ID (if applicable)	TBC
Technical Description (Please provide a brief description of the intended use of the equipment)	DAQRI Compute Pack is a mobile computer that powers a lightweight wearable human-machine interface that connects workers in a variety of industries and environments to real time information and augmented work instruction.

INFORMATION REQUIRED			
Modes:			
☒ 802.11(a)		☐ 802.11(ac)	
☒ 802.11(n)			
a) The occupied channel bandwidth(s):			
☐ Channel Bandwidth 1:	MHz	☐ Channel Bandwidth 2:	MHz
☐ Channel Bandwidth 3:	MHz		
NOTE: Add more lines if the equipment has more channel Bandwidths.			
b) The DFS related operating mode(s) of the equipment:			
☐ Master			
☐ Slave with radar detection			
☒ Slave without radar detection			
NOTE: If the equipment has more than 1 operating mode, tick all that apply.			
c) The equipment can operate in ad-hoc mode:			
☐ no ad-hoc operation			
☐ ad-hoc operation in the frequency range 5150MHz to 5250MHz without DFS			
☒ ad-hoc operation with DFS			
NOTE: If more than 1 is applicable, tick all that apply			
d) Operating Frequency Range(s):			
☒	Range 1: 5150MHz to 5250MHz		
☒	Range 2: 5250MHz to 5350MHz		
☒	Range 3: 5470MHz to 5725MHz		
☒	Range 4: 5725MHz to 5825MHz		
NOTE: If the equipment has more than 1 Operating Frequency Range, tick all that apply.			
e) TPC feature available:		☐ Yes	☒ No

INFORMATION REQUIRED			
f) If the equipment has a TPC range, the lowest and highest power level (or lowest and highest EIRP level in case of integrated antenna equipment), intended antenna assemblies and corresponding operating frequency range for the TPC range (or for each of the TPC ranges if more than one is implemented).			
TPC range: Applicable Frequency Range:			
☐	5250MHz to 5350MHz		
☐	5470 MHz to 5725 MHz		
☐	A TPC mechanism is not required for systems with an e.i.r.p of less than 500 mW		
DFS Threshold level:	dBm		
☐	at the antenna connector	☐	in front of the antenna
NOTE: For equipment with a maximum EIRP below 200 mW, the DFS threshold level shall be -62 dBm or less, for equipment with an EIRP of 200 mW or above, the DFS threshold level shall be -64 dBm or less. These levels assume a 0 dBi antenna gain. To define the applicable threshold level at the (temporary) antenna connector, the gain of the antenna (in dBi) shall be added to the threshold level. If more than one antenna is intended for this TPC range or power setting, the antenna gain of the antenna with the lowest gain shall be used.			
Power Setting 1: Applicable Frequency Range: 5150 MHz to 5250 MHz			
Conducted Average Power		Average EIRP	
Power Setting 2: Applicable Frequency Range: 5250 MHz to 5350 MHz			
Conducted Average Power		Average EIRP	
Power Setting 3: Applicable Frequency Range: 5470 MHz to 5725MHz			
Conducted Average Power		Average EIRP	
Power Setting 4: Applicable Frequency Range: 5725 MHz to 5825MHz			
Conducted Average Power		Average EIRP	

Table 3: Intended Antenna Assemblies

Antenna Assembly name	Antenna Gain (dBi)
Taoglas FXP840 x 2	2.4GHz 2dBi / 5.8 GHz 2.5 dBi

INFORMATION REQUIRED	
h) The extreme operating temperature range that apply to the equipment:	
Please state conditions of normal operation as specified in the users manual:	
Supply Voltage:	
☐	AC mains. State AC voltage
☒	DC. State DC voltage
☒	State DC current
In case of DC, indicate the type of power source:	
☐	Internal Power Supply
☐	External Power Supply or AC/DC adapter
☐	Battery Nickel Cadmium
☐	Alkaline
☐	Nickel-Metal Hydride
☒	Lithium-Ion
☐	Lead acid (Vehicle regulated)
☐	Other (please specify):

ADDITIONAL INFORMATION PROVIDED BY THE SUBMITTER						
a) Modulation:						
Continuous duty			☐	Yes	☐	No
Can the transmitter operate un-modulated?			☐	Yes	☒	No
b) Duty Cycle						
Is transmitter intended for :						
Continuous duty			☐	Yes	☐	No
Intermittent duty only			☐	Yes	☐	No
If intermittent duty state DUTY CYCLE						
Transmitter ON	Seconds	Transmitter OFF	Seconds			
☐ Continuous operation possible for testing purposes						
Details:						

I hereby declare that that the information supplied is correct and complete.

Name: Dave Williams Position held: Certification Test Manager
Date: 26th May 2017

1.5 Product Information

1.5.1 Technical Description

DAQRI Compute Pack is a mobile computer that powers a lightweight wearable human-machine interface that connects workers in a variety of industries and environments to real time information and augmented work instruction.

1.6 Deviations from the Standard

No deviations from the applicable test standard were made during testing.

1.7 EUT Modification Record

The table below details modifications made to the EUT during the test programme.
The modifications incorporated during each test are recorded on the appropriate test pages.

Modification State	Description of Modification still fitted to EUT	Modification Fitted By	Date Modification Fitted
Serial Number: OA565-7DF-5A51EMTGNF			
0	As supplied by the customer	Not Applicable	Not Applicable
Serial Number: OA565-7DF-82K70497C1			
0	As supplied by the customer	Not Applicable	Not Applicable

Table 3

1.8 Test Location

TÜV SÜD Product Service conducted the following tests at our Fareham Test Laboratory.

Test Name	Name of Engineer(s)	Accreditation
Configuration: 802.11a		
AC Power Line Conducted Emissions	Jack Tuckwell	UKAS
Maximum Conducted Output Power	Mehadi Choudhury	UKAS
Maximum Conducted Power Spectral Density	Mehadi Choudhury	UKAS
Emission Bandwidth	Mehadi Choudhury	UKAS
Authorised Band Edges	Jack Tuckwell	UKAS
Restricted Band Edges	Jack Tuckwell	UKAS
Spurious Radiated Emissions	Graeme Lawler and Jack Tuckwell	UKAS
Configuration: 802.11n (20 MHz Bandwidth)		
Maximum Conducted Output Power	Matthew Russell and Mehadi Choudhury	UKAS
Maximum Conducted Power Spectral Density	Matthew Russell and Mehadi Choudhury	UKAS
Emission Bandwidth	Mehadi Choudhury	UKAS
Authorised Band Edges	Jack Tuckwell	UKAS
Restricted Band Edges	Jack Tuckwell	UKAS
Spurious Radiated Emissions	Graeme Lawler and Jack Tuckwell	UKAS

Test Name	Name of Engineer(s)	Accreditation
Configuration: 802.11n (40 MHz Bandwidth)		
Maximum Conducted Output Power	Matthew Russell and Mehadi Choudhury	UKAS
Maximum Conducted Power Spectral Density	Matthew Russell and Mehadi Choudhury	UKAS
Emission Bandwidth	Mehadi Choudhury	UKAS
Authorised Band Edges	Jack Tuckwell	UKAS
Restricted Band Edges	Jack Tuckwell	UKAS
Configuration: 802.11ac (20 MHz Bandwidth)		
Maximum Conducted Output Power	Matthew Russell and Mehadi Choudhury	UKAS
Maximum Conducted Power Spectral Density	Matthew Russell and Mehadi Choudhury	UKAS
Emission Bandwidth	Mehadi Choudhury	UKAS
Authorised Band Edges	Jack Tuckwell	UKAS
Restricted Band Edges	Jack Tuckwell	UKAS
Spurious Radiated Emissions	Graeme Lawler and Jack Tuckwell	UKAS
Configuration: 802.11ac (40 MHz Bandwidth)		
Maximum Conducted Output Power	Matthew Russell and Mehadi Choudhury	UKAS
Maximum Conducted Power Spectral Density	Matthew Russell and Mehadi Choudhury	UKAS
Emission Bandwidth	Mehadi Choudhury	UKAS
Authorised Band Edges	Jack Tuckwell	UKAS
Restricted Band Edges	Jack Tuckwell	UKAS
Configuration: 802.11ac (80 MHz Bandwidth)		
Maximum Conducted Output Power	Mehadi Choudhury	UKAS
Maximum Conducted Power Spectral Density	Mehadi Choudhury	UKAS
Emission Bandwidth	Mehadi Choudhury	UKAS
Authorised Band Edges	Jack Tuckwell	UKAS
Restricted Band Edges	Jack Tuckwell	UKAS

Table 4

Office Address:

Octagon House
Concorde Way
Segensworth North
Fareham
Hampshire
PO15 5RL
United Kingdom

2 Test Details

2.1 AC Power Line Conducted Emissions

2.1.1 Specification Reference

FCC 47 CFR Part 15E, Clause 15.207
Industry Canada RSS-GEN, Clause 8.8

2.1.2 Equipment Under Test and Modification State

LOKI, S/N: OA565-7DF-82K70497C1 - Modification State 0

2.1.3 Date of Test

25-May-2017

2.1.4 Test Method

The test was performed in accordance with ANSI C63.10, clause 6.2.

2.1.5 Environmental Conditions

Ambient Temperature	21.1 °C
Relative Humidity	46.0 %

2.1.6 Test Results

802.11a

Applied supply Voltage: 60 Hz

Applied supply frequency: 120 Vac

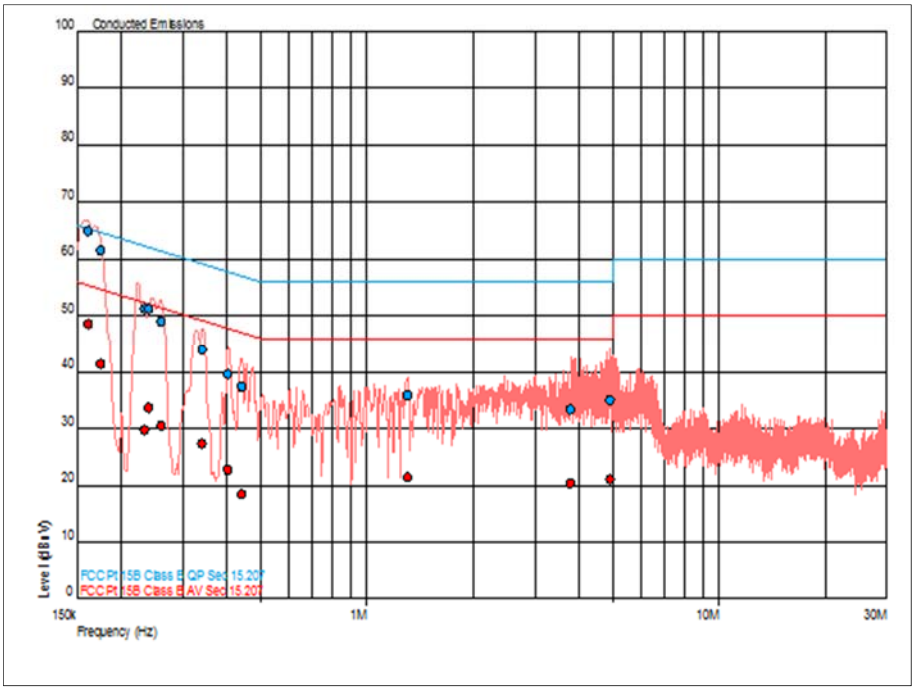

Figure 1 - Live Line - 150 kHz to 30 MHz

Frequency (MHz)	QP Level (dBuV)	QP Limit (dBuV)	QP Margin (dBuV)	AV Level (dBuV)	AV Limit (dBuV)	AV Margin (dBuV)
0.161	64.9	65.4	-0.5	48.6	55.4	-6.8
0.175	61.6	64.7	-3.1	41.4	54.7	-13.3
0.234	51.3	62.3	-11.1	29.8	52.3	-22.5
0.240	51.3	62.1	-10.8	33.7	52.1	-18.4
0.260	49.0	61.4	-12.4	30.6	51.4	-20.8
0.341	43.9	59.2	-15.3	27.4	49.2	-21.8
0.402	39.6	57.8	-18.2	22.7	47.8	-25.1
0.441	37.3	57.0	-19.7	18.4	47.0	-28.6
1.306	35.9	56.0	-20.1	21.4	46.0	-24.6
3.789	33.4	56.0	-22.6	20.4	46.0	-25.6
4.904	35.0	56.0	-21.0	21.1	46.0	-24.9

Table 5 - Live Line - Emissions Results

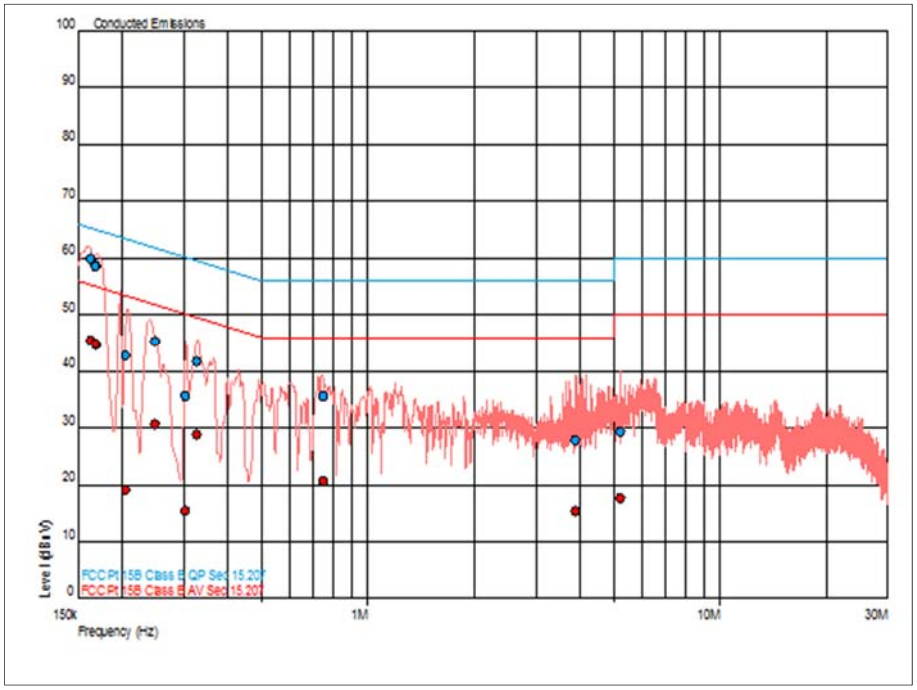

Figure 2 - Neutral Line - 150 kHz to 30 MHz

Frequency (MHz)	QP Level (dBuV)	QP Limit (dBuV)	QP Margin (dBuV)	AV Level (dBuV)	AV Limit (dBuV)	AV Margin (dBuV)
0.163	60.0	65.3	-5.3	45.4	55.3	-9.9
0.168	58.6	65.0	-6.4	44.8	55.0	-10.3
0.169	58.7	65.0	-6.3	44.7	55.0	-10.3
0.205	42.8	63.4	-20.6	19.2	53.4	-34.2
0.248	45.3	61.8	-16.5	30.7	51.8	-21.1
0.303	35.6	60.2	-24.6	15.5	50.2	-34.7
0.327	41.7	59.5	-17.9	28.9	49.5	-20.7
0.749	35.7	56.0	-20.3	20.7	46.0	-25.3
3.898	27.8	56.0	-28.2	15.5	46.0	-30.5
5.211	29.3	60.0	-30.7	17.6	50.0	-32.4

Table 6 - Neutral Line - Emissions Results

FCC 47 CFR Part 15, Limit Clause 15.207 and Industry Canada RSS-GEN, Clause 8.8

Frequency of Emission (MHz)	Conducted Limit (dBµV)	
	Quasi-Peak	Average
0.15 to 0.5	66 to 56*	56 to 46*
0.5 to 5	56	46
5 to 30	60	50

Table 7

*Decreases with the logarithm of the frequency.

2.1.7 Test Location and Test Equipment Used

This test was carried out in EMC Chamber 5.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Due
LISN (1 Phase)	Chase	MN 2050	336	12	7-Apr-2018
Screened Room (5)	Rainford	Rainford	1545	36	20-Dec-2017
Hygromer	Rotronic	A1	2138	12	2-Feb-2018
Transient Limiter	Hewlett Packard	11947A	2378	12	6-Jul-2017
EMI Test Receiver	Rohde & Schwarz	ESU40	3506	12	12-Nov-2017

Table 8

2.2 Maximum Conducted Output Power

2.2.1 Specification Reference

FCC 47 CFR Part 15E, Clause 15.407 (a)
Industry Canada RSS-247, Clause 6.2

2.2.2 Equipment Under Test and Modification State

DAQRI Compute Pack, S/N: OA565-7DF-5A51EMTGNF - Modification State 0

2.2.3 Date of Test

03-May-2017 and 24-May-2017

2.2.4 Test Method

The test was performed in accordance with ANSI C63.10, clause 12.3.2.3.

The transmitter outputs for operational modes supporting MiMo were summed and added as described in KDB 662911, Clause E.2b.

For the U-NII-1 sub-band, the power table of the EUT for USA and Canada are different, therefore testing was performed in this sub-band only with the country code set to both US for USA and CA for Canada. For other U-NII sub-bands, the power table for USA and Canada are the same.

Results for Canada in U-NII-1, where the limit is specified in terms of EIRP, the declared antenna gain has been added to the conducted power result.

2.2.5 Environmental Conditions

Ambient Temperature	24.4 - 24.5 °C
Relative Humidity	31.5 - 32.8 %

2.2.6 Test Results

802.11a

Testing was performed on the Data Rate which resulted in the highest conducted output power. The Data Rate used during testing was 6 Mbps.

The antenna gain was declared by the manufacturer as 2.5 dBi.

The duty cycle of the EUT was measured as 100%

Port	Maximum Conducted Output Power (dBm)		
	5180 MHz	5200 MHz	5240 MHz
1	17.90	19.40	19.40
2	18.30	19.40	19.80

Table 9 - UNII-1 Conducted Power Results - US Country Code Power Setting

Port	Maximum Conducted Output Power (dBm)		
	5180 MHz	5200 MHz	5240 MHz
1	5.83	16.60	16.50
2	6.15	16.90	17.00

Table 10 - UNII-1 EIRP Results - CA Country Code Power Setting

Port	Maximum Conducted Output Power (dBm)		
	5260 MHz	5300 MHz	5320 MHz
1	19.90	19.60	17.10
2	19.80	19.80	18.30

Table 11 - UNII-2a Conducted Power Results

Port	Maximum Conducted Output Power (dBm)		
	5500 MHz	5600 MHz	5700 MHz
1	17.40	19.50	15.90
2	17.10	18.90	15.10

Table 12 - UNII-2c Conducted Power Results

Port	Maximum Conducted Output Power (dBm)		
	5745 MHz	5785 MHz	5825 MHz
1	19.90	19.90	19.50
2	19.10	19.30	19.30

Table 13 - UNII-3 Conducted Power Results

FCC 47 CFR Part 15E, Limit Clause 15.407(a)

Condition of Operation	Frequency Range (MHz)			
	5150-5250	5250-5350	5470-5725	5725-5850
Max Conducted TX Power	30 dBm (1W) for master device 24 dBm (250 mW) for client device	24 dBm (250 mW) or 11 dBm + 10 Log B, whichever is lower (B = 26 dB emission BW)		30 dBm (1 W)
Max EIRP	4W (36 dBm) with 6 dBi antenna 200 W (53 dBm) for fixed P-t-P application with 23 dBi antenna Additional rule for outdoor operation: Max_EIRP < 125 mW (21 dBm) at any elevation angle > 30° from horizon.	1 W (30 dBm) with 6 dBi antenna		4 W (36 dBm) with 6 dBi antenna. No EIRP limit for fixed P-t-P application (i.e. no antenna gain limit)

Industry Canada RSS-247, Limit Clause 6.2.1.1, 6.2.2.1, 6.2.3.1 and 6.2.4.1

Device	Frequency Range (MHz)			
	5150-5250	5250-5350	5470-5725	5725-5850
OEM installed in vehicles	30 mW or 1.76 + 10 $\log_{10}$B, dBm (EIRP); whichever is less	30 mW or 1.76 + 10 $\log_{10}$B, dBm (EIRP)); whichever is less	-	-
Other	200 mW or 10 + 10$\log_{10}$B dBm (EIRP); whichever is less	250 mW or 11 + 10 $\log_{10}$B); whichever is less 1.0 W or 17 + 10$\log_{10}$B dBm EIRP; whichever is less	250 mW or 11 + 10 $\log_{10}$B); whichever is less 1.0 W or 17 + 10$\log_{10}$B dBm EIRP; whichever is less	1W 4W EIRP

802.11n (20 MHz Bandwidth)

Testing was performed on the Modulation Coding Scheme which resulted in the highest conducted output power. The Modulation Coding Scheme used during testing was MCS7.

The antenna gain was declared by the manufacturer as 2.5 dBi.

The duty cycle of the EUT was measured as 100%

Port	Maximum Conducted Output Power (dBm)		
	5180 MHz	5200 MHz	5240 MHz
1	15.10*	17.20*	17.20*
2	15.50*	17.50*	17.20*
Total Power	18.31*	20.36*	20.21*

Table 14 - UNII-1 Conducted Power Results - US Country Code Power Setting

Port	Maximum Conducted Output Power (dBm)		
	5180 MHz	5200 MHz	5240 MHz
1	14.60*	14.40*	14.30*
2	15.80*	15.60*	15.90*
Total Power	18.25*	18.05*	18.18*

Table 15 - UNII-1 EIRP Results - CA Country Code Power Setting

Port	Maximum Conducted Output Power (dBm)		
	5260 MHz	5300 MHz	5320 MHz
1	17.50*	16.10*	13.20*
2	16.90*	17.50*	13.70*
Total Power	20.22*	19.87*	16.47*

Table 16 - UNII-2a Conducted Power Results

Port	Maximum Conducted Output Power (dBm)		
	5500 MHz	5600 MHz	5700 MHz
1	17.30	17.00*	15.80
2	17.00	17.60*	15.30
Total Power	20.16	20.32*	18.57

Table 17 - UNII-2c Conducted Power Results

Port	Maximum Conducted Output Power (dBm)		
	5745 MHz	5785 MHz	5825 MHz
1	19.80	19.80	19.60
2	19.20	19.40	19.30
Total Power	22.52	22.61	22.46

Table 18 - UNII-3 Conducted Power Results

Remarks

Measurements on both ports were made using the SiSo power settings then summed as this represented worst case conditions. Where measurements have been made in the reduced power for MiMo, this is denoted by an asterisk.

FCC 47 CFR Part 15E, Limit Clause 15.407(a)

Condition of Operation	Frequency Range (MHz)			
	5150-5250	5250-5350	5470-5725	5725-5850
Max Conducted TX Power	30 dBm (1W) for master device 24 dBm (250 mW) for client device	24 dBm (250 mW) or 11 dBm + 10 Log B, whichever is lower (B = 26 dB emission BW)		30 dBm (1 W)
Max EIRP	4W (36 dBm) with 6 dBi antenna 200 W (53 dBm) for fixed P-t-P application with 23 dBi antenna Additional rule for outdoor operation: Max_EIRP < 125 mW (21 dBm) at any elevation angle > 30° from horizon.	1 W (30 dBm) with 6 dBi antenna		4 W (36 dBm) with 6 dBi antenna. No EIRP limit for fixed P-t-P application (i.e. no antenna gain limit)

Industry Canada RSS-247, Limit Clause 6.2.1.1, 6.2.2.1, 6.2.3.1 and 6.2.4.1

Device	Frequency Range (MHz)			
	5150-5250	5250-5350	5470-5725	5725-5850
OEM installed in vehicles	30 mW or 1.76 + 10 $\log_{10}$B, dBm (EIRP); whichever is less	30 mW or 1.76 + 10 $\log_{10}$B, dBm (EIRP)); whichever is less	-	-
Other	200 mW or 10 + 10$\log_{10}$B dBm (EIRP); whichever is less	250 mW or 11 + 10 $\log_{10}$B); whichever is less 1.0 W or 17 + 10$\log_{10}$B dBm EIRP; whichever is less	250 mW or 11 + 10 $\log_{10}$B); whichever is less 1.0 W or 17 + 10$\log_{10}$B dBm EIRP; whichever is less	1W 4W EIRP

802.11n (40 MHz Bandwidth)

Testing was performed on the Modulation Coding Scheme which resulted in the highest conducted output power. The Modulation Coding Scheme used during testing was MCS0.

The antenna gain was declared by the manufacturer as 2.5 dBi.

The duty cycle of the EUT was measured as 100%

Port	Maximum Conducted Output Power (dBm)	
	5190 MHz	5230 MHz
1	16.20	16.90*
2	17.20	16.90*
Total Power	19.74	19.90*

Table 19 - UNII-1 Conducted Power Results - US Country Code Power Setting

Port	Maximum Conducted Output Power (dBm)	
	5190 MHz	5230 MHz
1	13.40*	13.30*
2	14.20*	14.30*
Total Power	16.83*	16.84*

Table 20 - UNII-1 EIRP Results - CA Country Code Power Setting

Port	Maximum Conducted Output Power (dBm)	
	5270 MHz	5310 MHz
1	20.30	14.00
2	20.40	15.40
Total Power	23.36	17.77

Table 21 - UNII-2a Conducted Power Results

Port	Maximum Conducted Output Power (dBm)		
	5510 MHz	5590 MHz	5670 MHz
1	14.30	19.80	17.00
2	15.20	19.30	17.00
Total Power	17.78	22.57	20.01

Table 22 - UNII-2c Conducted Power Results

Port	Maximum Conducted Output Power (dBm)	
	5755 MHz	5795 MHz
1	20.20	20.30
2	20.00	20.30
Total Power	23.11	23.31

Table 23 - UNII-3 Conducted Power Results

Remarks

Measurements on both ports were made using the SiSo power settings then summed as this represented worst case conditions. Where measurements have been made in the reduced power for MiMo, this is denoted by an asterisk.

FCC 47 CFR Part 15E, Limit Clause 15.407(a)

Condition of Operation	Frequency Range (MHz)			
	5150-5250	5250-5350	5470-5725	5725-5850
Max Conducted TX Power	30 dBm (1W) for master device 24 dBm (250 mW) for client device	24 dBm (250 mW) or 11 dBm + 10 Log B, whichever is lower (B = 26 dB emission BW)		30 dBm (1 W)
Max EIRP	4W (36 dBm) with 6 dBi antenna 200 W (53 dBm) for fixed P-t-P application with 23 dBi antenna Additional rule for outdoor operation: Max_EIRP < 125 mW (21 dBm) at any elevation angle > 30° from horizon.	1 W (30 dBm) with 6 dBi antenna		4 W (36 dBm) with 6 dBi antenna. No EIRP limit for fixed P-t-P application (i.e. no antenna gain limit)

Industry Canada RSS-247, Limit Clause 6.2.1.1, 6.2.2.1, 6.2.3.1 and 6.2.4.1

Device	Frequency Range (MHz)			
	5150-5250	5250-5350	5470-5725	5725-5850
OEM installed in vehicles	30 mW or 1.76 + 10 $\log_{10}$B, dBm (EIRP); whichever is less	30 mW or 1.76 + 10 $\log_{10}$B, dBm (EIRP)); whichever is less	-	-
Other	200 mW or 10 + 10$\log_{10}$B dBm (EIRP); whichever is less	250 mW or 11 + 10 $\log_{10}$B); whichever is less 1.0 W or 17 + 10$\log_{10}$B dBm EIRP; whichever is less	250 mW or 11 + 10 $\log_{10}$B); whichever is less 1.0 W or 17 + 10$\log_{10}$B dBm EIRP; whichever is less	1W 4W EIRP

802.11ac (20 MHz Bandwidth)

Testing was performed on the Modulation Coding Scheme which resulted in the highest conducted output power. The Modulation Coding Scheme used during testing was MCS5.

The antenna gain was declared by the manufacturer as 2.5 dBi.

The duty cycle of the EUT was measured as 100%

Port	Maximum Conducted Output Power (dBm)		
	5180 MHz	5200 MHz	5240 MHz
1	14.40*	16.50*	16.50*
2	14.90*	17.00*	16.90*
Total Power	17.67*	19.77*	19.71*

Table 24 - UNII-1 Conducted Power Results - US Country Code Power Setting

Port	Maximum Conducted Output Power (dBm)		
	5180 MHz	5200 MHz	5240 MHz
1	14.10*	13.90*	13.90*
2	15.20*	15.80*	15.20*
Total Power	17.70*	17.96*	17.61*

Table 25 - UNII-1 EIRP Results - CA Country Code Power Setting

Port	Maximum Conducted Output Power (dBm)		
	5260 MHz	5300 MHz	5320 MHz
1	16.40*	16.70*	12.60*
2	17.30*	17.00*	13.30*
Total Power	19.88*	19.86*	15.97*

Table 26 - UNII-2a Conducted Power Results

Port	Maximum Conducted Output Power (dBm)		
	5500 MHz	5600 MHz	5700 MHz
1	17.40	16.60*	15.80
2	17.70	17.00*	15.60
Total Power	20.56	19.81*	18.71

Table 27 - UNII-2c Conducted Power Results

Port	Maximum Conducted Output Power (dBm)		
	5745 MHz	5785 MHz	5825 MHz
1	19.80	19.80	19.60
2	19.60	19.90	19.80
Total Power	22.71	22.86	22.71

Table 28 - UNII-3 Conducted Power Results

Remarks

Measurements on both ports were made using the SiSo power settings then summed as this represented worst case conditions. Where measurements have been made in the reduced power for MiMo, this is denoted by an asterisk.

FCC 47 CFR Part 15E, Limit Clause 15.407(a)

Condition of Operation	Frequency Range (MHz)			
	5150-5250	5250-5350	5470-5725	5725-5850
Max Conducted TX Power	30 dBm (1W) for master device 24 dBm (250 mW) for client device	24 dBm (250 mW) or 11 dBm + 10 Log B, whichever is lower (B = 26 dB emission BW)		30 dBm (1 W)
Max EIRP	4W (36 dBm) with 6 dBi antenna 200 W (53 dBm) for fixed P-t-P application with 23 dBi antenna Additional rule for outdoor operation: Max_EIRP < 125 mW (21 dBm) at any elevation angle > 30° from horizon.	1 W (30 dBm) with 6 dBi antenna		4 W (36 dBm) with 6 dBi antenna. No EIRP limit for fixed P-t-P application (i.e. no antenna gain limit)

Industry Canada RSS-247, Limit Clause 6.2.1.1, 6.2.2.1, 6.2.3.1 and 6.2.4.1

Device	Frequency Range (MHz)			
	5150-5250	5250-5350	5470-5725	5725-5850
OEM installed in vehicles	30 mW or 1.76 + 10 $\log_{10}$B, dBm (EIRP); whichever is less	30 mW or 1.76 + 10 $\log_{10}$B, dBm (EIRP)); whichever is less	-	-
Other	200 mW or 10 + 10$\log_{10}$B dBm (EIRP); whichever is less	250 mW or 11 + 10 $\log_{10}$B); whichever is less 1.0 W or 17 + 10$\log_{10}$B dBm EIRP; whichever is less	250 mW or 11 + 10 $\log_{10}$B); whichever is less 1.0 W or 17 + 10$\log_{10}$B dBm EIRP; whichever is less	1W 4W EIRP

802.11ac (40 MHz Bandwidth)

Testing was performed on the Modulation Coding Scheme which resulted in the highest conducted output power. The Modulation Coding Scheme used during testing was MCS0.

The antenna gain was declared by the manufacturer as 2.5 dBi.

The duty cycle of the EUT was measured as 100%

Port	Maximum Conducted Output Power (dBm)	
	5190 MHz	5230 MHz
1	16.10	16.90*
2	17.10	16.90*
Total Power	19.64	19.90*

Table 29 - UNII-1 Conducted Power Results - US Country Code Power Setting

Port	Maximum Conducted Output Power (dBm)	
	5190 MHz	5230 MHz
1	13.40*	13.40*
2	14.30*	14.30*
Total Power	16.88*	16.88*

Table 30 - UNII-1 EIRP Results - CA Country Code Power Setting

Port	Maximum Conducted Output Power (dBm)	
	5270 MHz	5310 MHz
1	20.30	13.90
2	20.40	14.50
Total Power	23.36	17.22

Table 31 - UNII-2a Conducted Power Results

Port	Maximum Conducted Output Power (dBm)		
	5510 MHz	5590 MHz	5670 MHz
1	14.50	19.80	17.00
2	15.30	19.90	17.10
Total Power	17.93	22.86	20.06

Table 32 - UNII-2c Conducted Power Results

Port	Maximum Conducted Output Power (dBm)	
	5755 MHz	5795 MHz
1	20.20	20.30
2	20.10	20.40
Total Power	23.16	23.36

Table 33 - UNII-3 Conducted Power Results

Remarks

Measurements on both ports were made using the SiSo power settings then summed as this represented worst case conditions. Where measurements have been made in the reduced power for MiMo, this is denoted by an asterisk.

FCC 47 CFR Part 15E, Limit Clause 15.407(a)

Condition of Operation	Frequency Range (MHz)			
	5150-5250	5250-5350	5470-5725	5725-5850
Max Conducted TX Power	30 dBm (1W) for master device 24 dBm (250 mW) for client device	24 dBm (250 mW) or 11 dBm + 10 Log B, whichever is lower (B = 26 dB emission BW)		30 dBm (1 W)
Max EIRP	4W (36 dBm) with 6 dBi antenna 200 W (53 dBm) for fixed P-t-P application with 23 dBi antenna Additional rule for outdoor operation: Max_EIRP < 125 mW (21 dBm) at any elevation angle > 30° from horizon.	1 W (30 dBm) with 6 dBi antenna		4 W (36 dBm) with 6 dBi antenna. No EIRP limit for fixed P-t-P application (i.e. no antenna gain limit)

Industry Canada RSS-247, Limit Clause 6.2.1.1, 6.2.2.1, 6.2.3.1 and 6.2.4.1

Device	Frequency Range (MHz)			
	5150-5250	5250-5350	5470-5725	5725-5850
OEM installed in vehicles	30 mW or 1.76 + 10 $\log_{10}$B, dBm (EIRP); whichever is less	30 mW or 1.76 + 10 $\log_{10}$B, dBm (EIRP)); whichever is less	-	-
Other	200 mW or 10 + 10$\log_{10}$B dBm (EIRP); whichever is less	250 mW or 11 + 10 $\log_{10}$B); whichever is less 1.0 W or 17 + 10$\log_{10}$B dBm EIRP; whichever is less	250 mW or 11 + 10 $\log_{10}$B); whichever is less 1.0 W or 17 + 10$\log_{10}$B dBm EIRP; whichever is less	1W 4W EIRP

802.11ac (80 MHz Bandwidth)

Testing was performed on the Modulation Coding Scheme which resulted in the highest conducted output power. The Modulation Coding Scheme used during testing was MCS0.

The antenna gain was declared by the manufacturer as 2.5 dBi.

The duty cycle of the EUT was measured as 100%

Port	Maximum Conducted Output Power (dBm)
	5210 MHz
1	13.80
2	14.40
Total Power	17.12

Table 34 - UNII-1 EIRP Results - US Country Code Power Setting

Port	Maximum Conducted Output Power (dBm)
	5210 MHz
1	13.30*
2	14.20*
Total Power	16.78*

Table 35 - UNII-1 Conducted Power Results - CA Country Code Power Setting

Port	Maximum Conducted Output Power (dBm)
	5290 MHz
1	11.80
2	13.40
Total Power	15.68

Table 36 - UNII-2a Conducted Power Results

Port	Maximum Conducted Output Power (dBm)	
	5530 MHz	5610 MHz
1	13.00	19.40
2	13.00	20.10
Total Power	16.01	22.77

Table 37 - UNII-2c Conducted Power Results

Port	Maximum Conducted Output Power (dBm)
	5775 MHz
1	19.70
2	20.30
Total Power	23.02

Table 38 - UNII-3 Conducted Power Results

FCC 47 CFR Part 15E, Limit Clause 15.407(a)

Condition of Operation	Frequency Range (MHz)			
	5150-5250	5250-5350	5470-5725	5725-5850
Max Conducted TX Power	30 dBm (1W) for master device 24 dBm (250 mW) for client device	24 dBm (250 mW) or 11 dBm + 10 Log B, whichever is lower (B = 26 dB emission BW)		30 dBm (1 W)
Max EIRP	4W (36 dBm) with 6 dBi antenna 200 W (53 dBm) for fixed P-t-P application with 23 dBi antenna Additional rule for outdoor operation: Max_EIRP < 125 mW (21 dBm) at any elevation angle > 30° from horizon.	1 W (30 dBm) with 6 dBi antenna		4 W (36 dBm) with 6 dBi antenna. No EIRP limit for fixed P-t-P application (i.e. no antenna gain limit)

Industry Canada RSS-247, Limit Clause 6.2.1.1, 6.2.2.1, 6.2.3.1 and 6.2.4.1

Device	Frequency Range (MHz)			
	5150-5250	5250-5350	5470-5725	5725-5850
OEM installed in vehicles	30 mW or 1.76 + 10 $\log_{10}$B, dBm (EIRP); whichever is less	30 mW or 1.76 + 10 $\log_{10}$B, dBm (EIRP)); whichever is less	-	-
Other	200 mW or 10 + 10$\log_{10}$B dBm (EIRP); whichever is less	250 mW or 11 + 10 $\log_{10}$B); whichever is less 1.0 W or 17 + 10$\log_{10}$B dBm EIRP; whichever is less	250 mW or 11 + 10 $\log_{10}$B); whichever is less 1.0 W or 17 + 10$\log_{10}$B dBm EIRP; whichever is less	1W 4W EIRP

2.2.7 Test Location and Test Equipment Used

This test was carried out in RF Laboratory 1.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Due
20dB/2W Attenuator	Narda	4772-20	462	-	O/P Mon
Attenuator (20dB, 1W)	Sealectro	60-674-1020-89	1520	12	30-Jun-2017
Hygrometer	Rotronic	I-1000	3220	12	23-Aug-2017
Network Analyser	Rohde & Schwarz	ZVA 40	3548	12	15-Sep-2017
Calibration Unit	Rohde & Schwarz	ZV-Z54	4368	12	8-Sep-2017
Frequency Standard	Spectracom	Secure Sync 1200-0408-0601	4393	6	9-Sep-2017
PXA Signal Analyser	Keysight Technologies	N9030A	4654	12	6-Oct-2017
2 metre SMA Cable	IW Microwave	3PS-1806LC-788-3PS	4829	12	24-Jan-2018

Table 39

O/P Mon – Output Monitored using calibrated equipment

2.3 Maximum Conducted Power Spectral Density

2.3.1 Specification Reference

FCC 47 CFR Part 15E, Clause 15.407 (a)
Industry Canada RSS-247, Clause 6.2

2.3.2 Equipment Under Test and Modification State

DAQRI Compute Pack, S/N: OA565-7DF-5A51EMTGNF - Modification State 0

2.3.3 Date of Test

02-May-2017 to 24-May-2017

2.3.4 Test Method

The test was performed in accordance with ANSI C63.10 clause 12.5.

The transmitter outputs for operational modes supporting MiMo were summed and added as described in KDB 662911, Clause E.2b.

For the U-NII-1 sub-band, the power table of the EUT for USA and Canada are different, therefore testing was performed in this sub-band only with the country code set to both US for USA and CA for Canada. For other U-NII sub-bands, the power table for USA and Canada are the same.

Results for Canada in U-NII-1, where the limit is specified in terms of EIRP, the declared antenna gain has been added to the conducted power result.

2.3.5 Environmental Conditions

Ambient Temperature	24.4 - 24.5 °C
Relative Humidity	31.5 - 32.8 %

2.3.6 Test Results

802.11a

Testing was performed on the Data Rate which resulted in the highest conducted output power. The Data Rate used during testing was 6Mbps.

Port	Maximum Conducted Output Power (dBm)		
	5180 MHz	5200 MHz	5240 MHz
1	7.15	8.71	8.60
2	7.54	8.59	8.93

Table 40 - UNII-1 Conducted Power Spectral Density Results - US Country Code Power Setting

Port	Maximum Conducted Output Power (dBm)		
	5180 MHz	5200 MHz	5240 MHz
1	16.70	5.76	5.66
2	17.00	6.12	6.08

Table 41 - UNII-1 EIRP Power Spectral Density Results - CA Country Code Power Setting

Port	Maximum Conducted Power Spectral Density (dBm)		
	5260 MHz	5300 MHz	5320 MHz
1	9.11	8.80	6.35
2	9.00	8.93	7.49

Table 42 - UNII-2a Conducted Power Spectral Density Results

Port	Maximum Conducted Power Spectral Density (dBm)		
	5500 MHz	5600 MHz	5700 MHz
1	6.54	8.65	5.11
2	6.30	8.07	4.31

Table 43 - UNII-2c Conducted Power Spectral Density Results

Port	Maximum Conducted Power Spectral Density (dBm)		
	5745 MHz	5785 MHz	5825 MHz
1	9.03	9.12	8.67
2	8.32	8.41	8.51

Table 44 - UNII-3 Conducted Power Spectral Density Results

FCC 47 CFR Part 15E, Limit Clause 15.407(a)

Condition of Operation	Frequency Range (MHz)			
	5150-5250	5250-5350	5470-5725	5725-5850
Max Conducted Power Spectral Density	17 dBm/MHz for master device 11 dBm/MHz for mobile/portable client device	11 dBm/MHz		30 dBm/500 kHz

Industry Canada RSS-247, Limit Clause 6.2.1.1, 6.2.2.1, 6.2.3.1 and 6.2.4.1

Device	Frequency Range (MHz)			
	5150-5250	5250-5350	5470-5725	5725-5850
OEM installed in vehicles	-	-	-	-
Other	≤10 dBm/MHz EIRP	≤11 dBm/MHz	≤11 dBm/MHz	≤30 dBm/500kHz

802.11n (20 MHz Bandwidth)

Testing was performed on the Modulation Coding Scheme which resulted in the highest conducted output power. The Modulation Coding Scheme used during testing was MCS7.

Port	Maximum Conducted Output Power (dBm)		
	5180 MHz	5200 MHz	5240 MHz
1	4.00*	6.13*	6.16*
2	4.45*	6.48*	6.11*
Total Power	7.24*	9.32*	9.15*

Table 45 - UNII-1 Conducted Power Spectral Density Results - US Country Code Power Setting

Port	Maximum Conducted Output Power (dBm)		
	5180 MHz	5200 MHz	5240 MHz
1	3.58*	3.49*	3.38*
2	4.85*	4.70*	5.00*
Total Power	7.27*	7.15*	7.28*

Table 46 - UNII-1 EIRP Power Spectral Density Results - CA Country Code Power Setting

Port	Maximum Conducted Power Spectral Density (dBm)		
	5260 MHz	5300 MHz	5320 MHz
1	6.47*	5.10*	2.13*
2	5.87*	6.42*	2.61*
Total Power	9.19*	8.82*	5.39*

Table 47 - UNII-2a Conducted Power Spectral Density Results

Port	Maximum Conducted Power Spectral Density (dBm)		
	5500 MHz	5600 MHz	5700 MHz
1	6.38	5.89*	4.82
2	5.94	6.49*	4.44
Total Power	9.18	9.21*	7.65

Table 48 - UNII-2c Conducted Power Spectral Density Results

Port	Maximum Conducted Power Spectral Density (dBm)		
	5745 MHz	5785 MHz	5825 MHz
1	8.74	8.77	8.58
2	8.40	8.52	8.45
Total Power	11.59	11.66	11.52

Table 49 - UNII-3 Conducted Power Spectral Density Results

Remarks

Measurements on both ports were made using the SiSo power settings then summed as this represented worst case conditions. Where measurements have been made in the reduced power for MiMo, this is denoted by an asterisk.

FCC 47 CFR Part 15E, Limit Clause 15.407(a)

Condition of Operation	Frequency Range (MHz)			
	5150-5250	5250-5350	5470-5725	5725-5850
Max Conducted Power Spectral Density	17 dBm/MHz for master device 11 dBm/MHz for mobile/portable client device	11 dBm/MHz		30 dBm/500 kHz

Industry Canada RSS-247, Limit Clause 6.2.1.1, 6.2.2.1, 6.2.3.1 and 6.2.4.1

Device	Frequency Range (MHz)			
	5150-5250	5250-5350	5470-5725	5725-5850
OEM installed in vehicles	-	-	-	-
Other	≤10 dBm/MHz EIRP	≤11 dBm/MHz	≤11 dBm/MHz	≤30 dBm/500kHz

802.11n (40 MHz Bandwidth)

Testing was performed on the Modulation Coding Scheme which resulted in the highest conducted output power. The Modulation Coding Scheme used during testing was MCS0.

Port	Maximum Conducted Output Power (dBm)	
	5190 MHz	5230 MHz
1	2.03	2.50*
2	2.92	2.50*
Total Power	5.51	5.50*

Table 50 - UNII-1 Conducted Power Spectral Density Results - US Country Code Power Setting

Port	Maximum Conducted Output Power (dBm)	
	5190 MHz	5230 MHz
1	-0.85*	-0.97*
2	-0.10*	0.01*
Total Power	2.55*	2.56*

Table 51 - UNII-1 EIRP Power Spectral Density Results - CA Country Code Power Setting

Port	Maximum Conducted Power Spectral Density (dBm)	
	5270 MHz	5310 MHz
1	6.04	-0.27
2	5.94	1.08
Total Power	9.00	3.47

Table 52 - UNII-2a Conducted Power Spectral Density Results

Port	Maximum Conducted Power Spectral Density (dBm)		
	5510 MHz	5590 MHz	5670 MHz
1	-0.02	5.52	2.67
2	0.86	4.93	5.67
Total Power	3.45	8.25	7.43

Table 53 - UNII-2c Conducted Power Spectral Density Results

Port	Maximum Conducted Power Spectral Density (dBm)	
	5755 MHz	5795 MHz
1	5.82	6.00
2	5.64	5.97
Total Power	8.74	9.00

Table 54 - UNII-3 Conducted Power Spectral Density Results

Remarks

Measurements on both ports were made using the SiSo power settings then summed as this represented worst case conditions. Where measurements have been made in the reduced power for MiMo, this is denoted by an asterisk.

FCC 47 CFR Part 15E, Limit Clause 15.407(a)

Condition of Operation	Frequency Range (MHz)			
	5150-5250	5250-5350	5470-5725	5725-5850
Max Conducted Power Spectral Density	17 dBm/MHz for master device 11 dBm/MHz for mobile/portable client device	11 dBm/MHz		30 dBm/500 kHz

Industry Canada RSS-247, Limit Clause 6.2.1.1, 6.2.2.1, 6.2.3.1 and 6.2.4.1

Device	Frequency Range (MHz)			
	5150-5250	5250-5350	5470-5725	5725-5850
OEM installed in vehicles	-	-	-	-
Other	≤10 dBm/MHz EIRP	≤11 dBm/MHz	≤11 dBm/MHz	≤30 dBm/500kHz

802.11ac (20 MHz Bandwidth)

Testing was performed on the Modulation Coding Scheme which resulted in the highest conducted output power. The Modulation Coding Scheme used during testing was MCS5.

Port	Maximum Conducted Output Power (dBm)		
	5180 MHz	5200 MHz	5240 MHz
1	3.39*	5.50*	5.48*
2	3.79*	5.98*	5.80*
Total Power	6.60*	8.76*	8.65*

Table 55 - UNII-1 Conducted Power Spectral Density Results - US Country Code Power Setting

Port	Maximum Conducted Output Power (dBm)		
	5180 MHz	5200 MHz	5240 MHz
1	3.12*	2.94*	2.99*
2	4.34*	5.01*	4.43*
Total Power	6.78*	7.11*	6.78*

Table 56 - UNII-1 EIRP Power Spectral Density Results - CA Country Code Power Setting

Port	Maximum Conducted Power Spectral Density (dBm)		
	5260 MHz	5300 MHz	5320 MHz
1	5.57*	5.65*	1.67*
2	6.27*	5.88*	2.29*
Total Power	8.94*	8.78*	5.00*

Table 57 - UNII-2a Conducted Power Spectral Density Results

Port	Maximum Conducted Power Spectral Density (dBm)		
	5500 MHz	5600 MHz	5700 MHz
1	6.41	5.47*	4.83
2	6.57	5.93*	4.58
Total Power	9.50	8.72*	7.72

Table 58 - UNII-2c Conducted Power Spectral Density Results

Port	Maximum Conducted Power Spectral Density (dBm)		
	5745 MHz	5785 MHz	5825 MHz
1	8.70	8.76	8.52
2	8.53	8.78	8.71
Total Power	11.63	11.78	11.63

Table 59 - UNII-3 Conducted Power Spectral Density Results

Remarks

Measurements on both ports were made using the SiSo power settings then summed as this represented worst case conditions. Where measurements have been made in the reduced power for MiMo, this is denoted by an asterisk.

FCC 47 CFR Part 15E, Limit Clause 15.407(a)

Condition of Operation	Frequency Range (MHz)			
	5150-5250	5250-5350	5470-5725	5725-5850
Max Conducted Power Spectral Density	17 dBm/MHz for master device 11 dBm/MHz for mobile/portable client device	11 dBm/MHz		30 dBm/500 kHz

Industry Canada RSS-247, Limit Clause 6.2.1.1, 6.2.2.1, 6.2.3.1 and 6.2.4.1

Device	Frequency Range (MHz)			
	5150-5250	5250-5350	5470-5725	5725-5850
OEM installed in vehicles	-	-	-	-
Other	≤10 dBm/MHz EIRP	≤11 dBm/MHz	≤11 dBm/MHz	≤30 dBm/500kHz

802.11ac (40 MHz Bandwidth)

Testing was performed on the Modulation Coding Scheme which resulted in the highest conducted output power. The Modulation Coding Scheme used during testing was MCS0.

Port	Maximum Conducted Output Power (dBm)	
	5190 MHz	5230 MHz
1	1.93	2.53*
2	2.74	2.53*
Total Power	5.36	5.53*

Table 60 - UNII-1 Conducted Power Spectral Density Results - US Country Code Power Setting

Port	Maximum Conducted Output Power (dBm)	
	5190 MHz	5230 MHz
1	-0.87*	-0.84*
2	-0.04*	-0.07*
Total Power	2.58*	2.57*

Table 61 - UNII-1 EIRP Power Spectral Density Results - CA Country Code Power Setting

Port	Maximum Conducted Power Spectral Density (dBm)	
	5270 MHz	5310 MHz
1	5.97	-0.25
2	6.23	0.19
Total Power	9.12	2.99

Table 62 - UNII-2a Conducted Power Spectral Density Results

Port	Maximum Conducted Power Spectral Density (dBm)		
	5510 MHz	5590 MHz	5670 MHz
1	0.17	5.56	2.67
2	0.91	5.48	2.66
Total Power	3.57	8.53	5.67

Table 63 - UNII-2c Conducted Power Spectral Density Results

Port	Maximum Conducted Power Spectral Density (dBm)	
	5755 MHz	5795 MHz
1	5.94	6.08
2	5.73	6.04
Total Power	8.85	9.07

Table 64 - UNII-3 Conducted Power Spectral Density Results

Remarks

Measurements on both ports were made using the SiSo power settings then summed as this represented worst case conditions. Where measurements have been made in the reduced power for MiMo, this is denoted by an asterisk.

FCC 47 CFR Part 15E, Limit Clause 15.407(a)

Condition of Operation	Frequency Range (MHz)			
	5150-5250	5250-5350	5470-5725	5725-5850
Max Conducted Power Spectral Density	17 dBm/MHz for master device 11 dBm/MHz for mobile/portable client device	11 dBm/MHz		30 dBm/500 kHz

Industry Canada RSS-247, Limit Clause 6.2.1.1, 6.2.2.1, 6.2.3.1 and 6.2.4.1

Device	Frequency Range (MHz)			
	5150-5250	5250-5350	5470-5725	5725-5850
OEM installed in vehicles	-	-	-	-
Other	≤10 dBm/MHz EIRP	≤11 dBm/MHz	≤11 dBm/MHz	≤30 dBm/500kHz

802.11ac (80 MHz Bandwidth)

Testing was performed on the Modulation Coding Scheme which resulted in the highest conducted output power. The Modulation Coding Scheme used during testing was MCS0.

Port	Maximum Conducted Output Power (dBm)
	5210 MHz
1	-3.25
2	-2.81
Total Power	-0.02

Table 65 - UNII-1 Conducted Power Spectral Density Results - US Country Code Power Setting

Port	Maximum Conducted Output Power (dBm)
	5210 MHz
1	-3.80*
2	-2.95*
Total Power	-0.34*

Table 66 - UNII-1 EIRP Power Spectral Density Results - CA Country Code Power Setting

Port	Maximum Conducted Power Spectral Density (dBm)
	5290 MHz
1	-5.31
2	-3.75
Total Power	-1.45

Table 67 - UNII-2a Conducted Power Spectral Density Results

Port	Maximum Conducted Power Spectral Density (dBm)	
	5530 MHz	5610 MHz
1	-4.10	2.18
2	-4.08	2.78
Total Power	-1.08	5.50

Table 68 - UNII-2c Conducted Power Spectral Density Results

Port	Maximum Conducted Power Spectral Density (dBm)
	5775 MHz
1	2.51
2	3.15
Total Power	5.85

Table 69 - UNII-3 Conducted Power Spectral Density Results

FCC 47 CFR Part 15E, Limit Clause 15.407(a)

Condition of Operation	Frequency Range (MHz)			
	5150-5250	5250-5350	5470-5725	5725-5850
Max Conducted Power Spectral Density	17 dBm/MHz for master device 11 dBm/MHz for mobile/portable client device	11 dBm/MHz		30 dBm/500 kHz

Industry Canada RSS-247, Limit Clause 6.2.1.1, 6.2.2.1, 6.2.3.1 and 6.2.4.1

Device	Frequency Range (MHz)			
	5150-5250	5250-5350	5470-5725	5725-5850
OEM installed in vehicles	-	-	-	-
Other	≤10 dBm/MHz EIRP	≤11 dBm/MHz	≤11 dBm/MHz	≤30 dBm/500kHz

2.3.7 Test Location and Test Equipment Used

This test was carried out in RF Laboratory 1.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Due
20dB/2W Attenuator	Narda	4772-20	462	-	O/P Mon
Attenuator (20dB, 1W)	Sealectro	60-674-1020-89	1520	12	30-Jun-2017
Hygrometer	Rotronic	I-1000	3220	12	23-Aug-2017
Network Analyser	Rohde & Schwarz	ZVA 40	3548	12	15-Sep-2017
Calibration Unit	Rohde & Schwarz	ZV-Z54	4368	12	8-Sep-2017
Frequency Standard	Spectracom	Secure Sync 1200-0408-0601	4393	6	9-Sep-2017
PXA Signal Analyser	Keysight Technologies	N9030A	4654	12	6-Oct-2017
2 metre SMA Cable	IW Microwave	3PS-1806LC-788-3PS	4829	12	24-Jan-2018

Table 70

O/P Mon – Output Monitored using calibrated equipment

2.4 Emission Bandwidth

2.4.1 Specification Reference

FCC 47 CFR Part 15E, Clause 15.407 (a)
Industry Canada RSS-247, Clause 6.2

2.4.2 Equipment Under Test and Modification State

DAQRI Compute Pack, S/N: OA565-7DF-5A51EMTGNF - Modification State 0

2.4.3 Date of Test

26-April-2017

2.4.4 Test Method

The test was performed in accordance with ANSI C63.10, clause 12.4.1.

2.4.5 Environmental Conditions

Ambient Temperature	22.8 °C
Relative Humidity	22.6 %

2.4.6 Test Results

802.11a

The Data Rate used during testing was 6 Mbps.

26 dB Bandwidth (MHz)		
5180 MHz	5200 MHz	5240 MHz
21.36	23.98	24.72

Table 71 - U-NII 1 - 26 dB Bandwidth

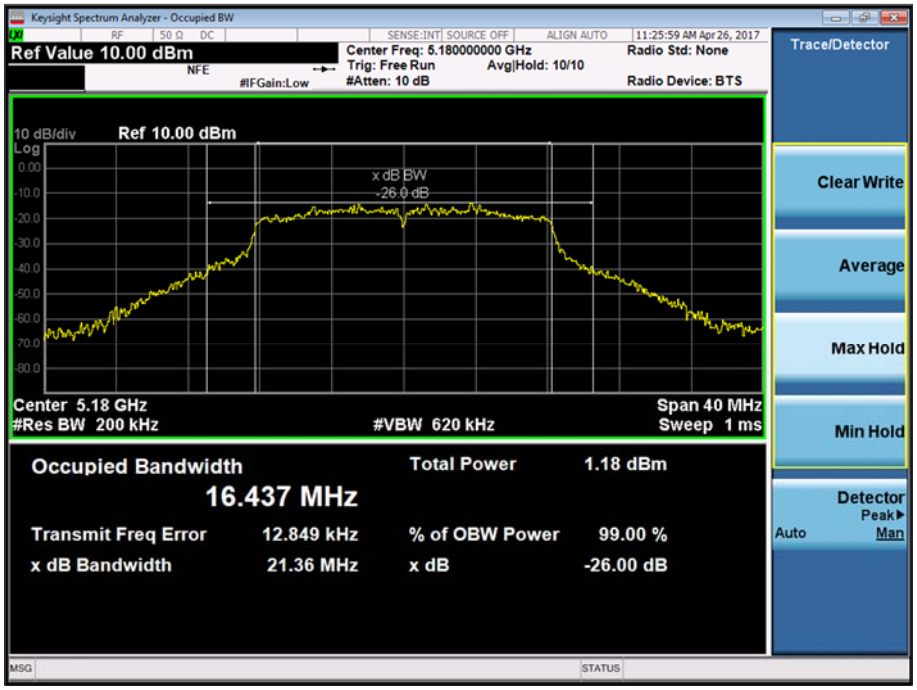

Figure 3 - U-NII 1 - 5180 MHz - 26 dB Bandwidth

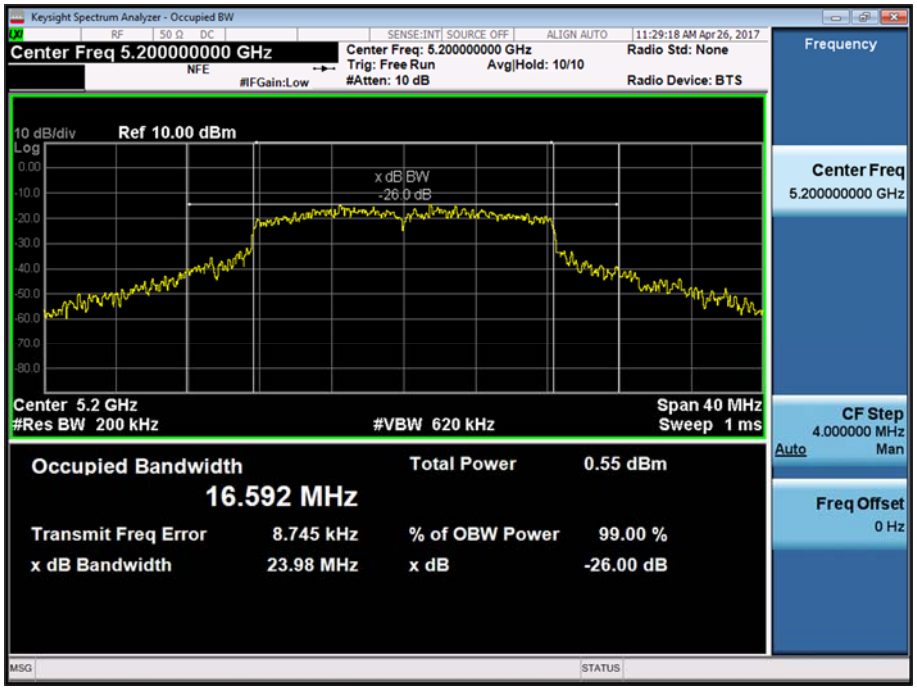

Figure 4 - U-NII 1 - 5200 MHz - 26 dB Bandwidth

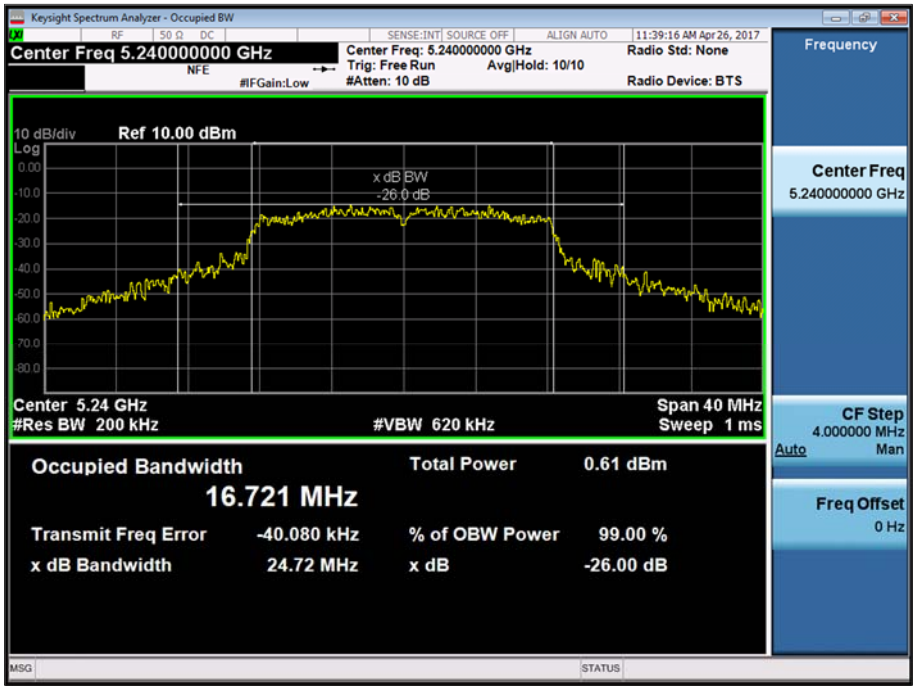

Figure 5 - U-NII 1 - 5240 MHz - 26 dB Bandwidth

26 dB Bandwidth (MHz)		
5260 MHz	5300 MHz	5320 MHz
26.76	24.95	22.31

Table 72 - U-NII 2a - 26 dB Bandwidth

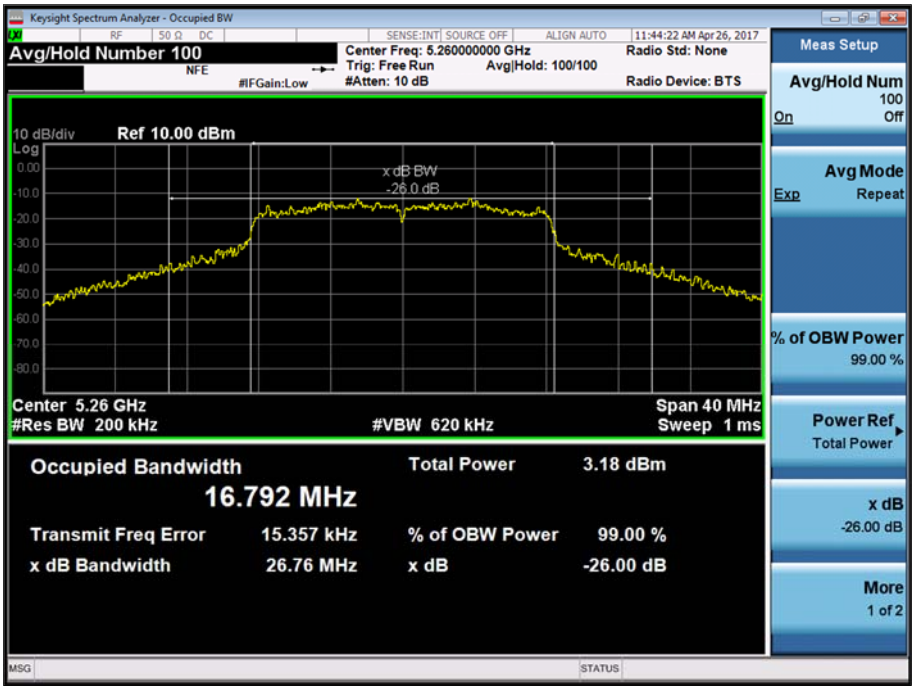

Figure 6 - U-NII 2a - 5260 MHz - 26 dB Bandwidth

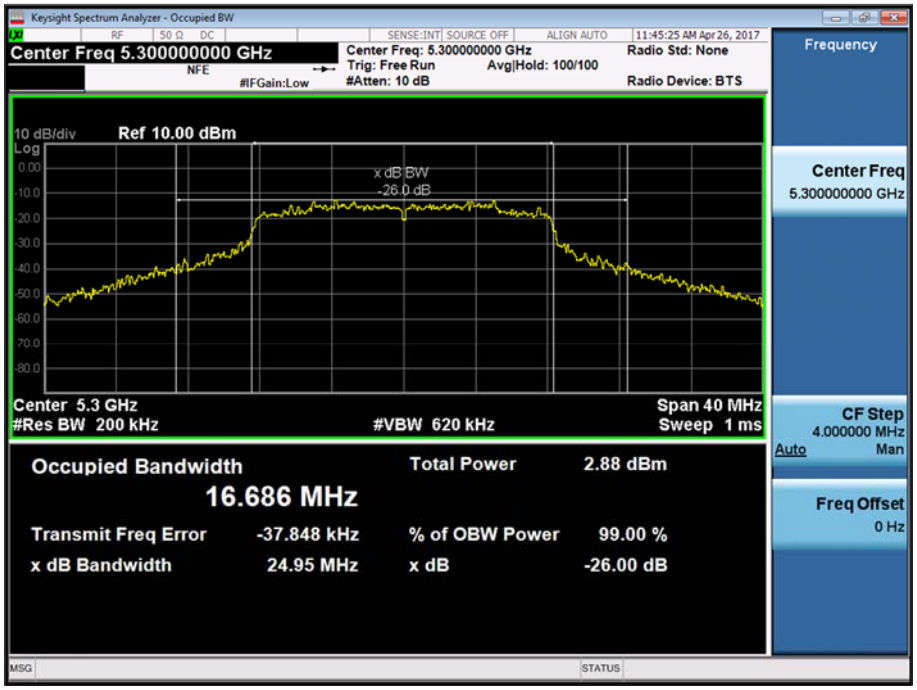

Figure 7 - U-NII 2a - 5300 MHz - 26 dB Bandwidth

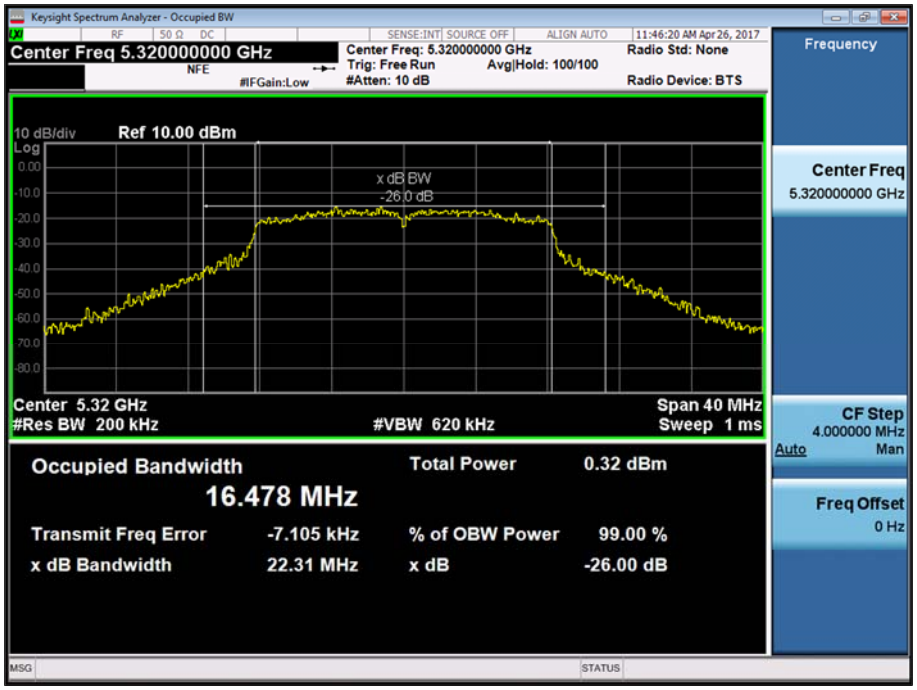

Figure 8 - U-NII 2a - 5320 MHz - 26 dB Bandwidth

26 dB Bandwidth (MHz)		
5500 MHz	5600 MHz	5700 MHz
21.53	26.79	22.40

Table 73 - U-NII 2c - 26 dB Bandwidth

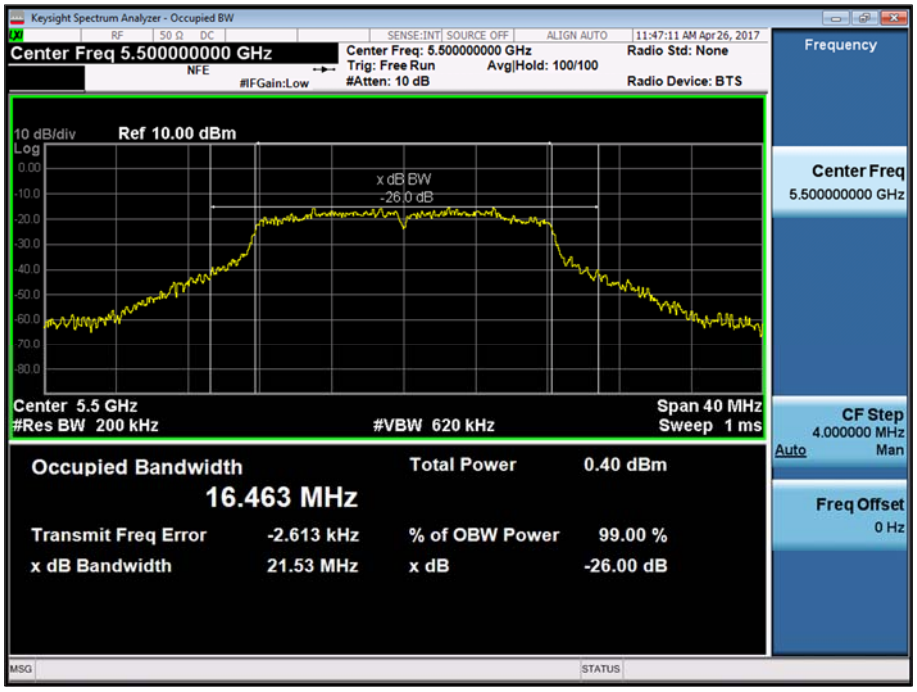

Figure 9 - U-NII 2c - 5500 MHz - 26 dB Bandwidth

Figure 10 - U-NII 2c - 5600 MHz - 26 dB Bandwidth

Figure 11 - U-NII 2c - 5700 MHz - 26 dB Bandwidth

6 dB Bandwidth (MHz)		
5745 MHz	5785 MHz	5825 MHz
25.93	26.51	25.11

Table 74 - U-NII 3 - 6 dB Bandwidth

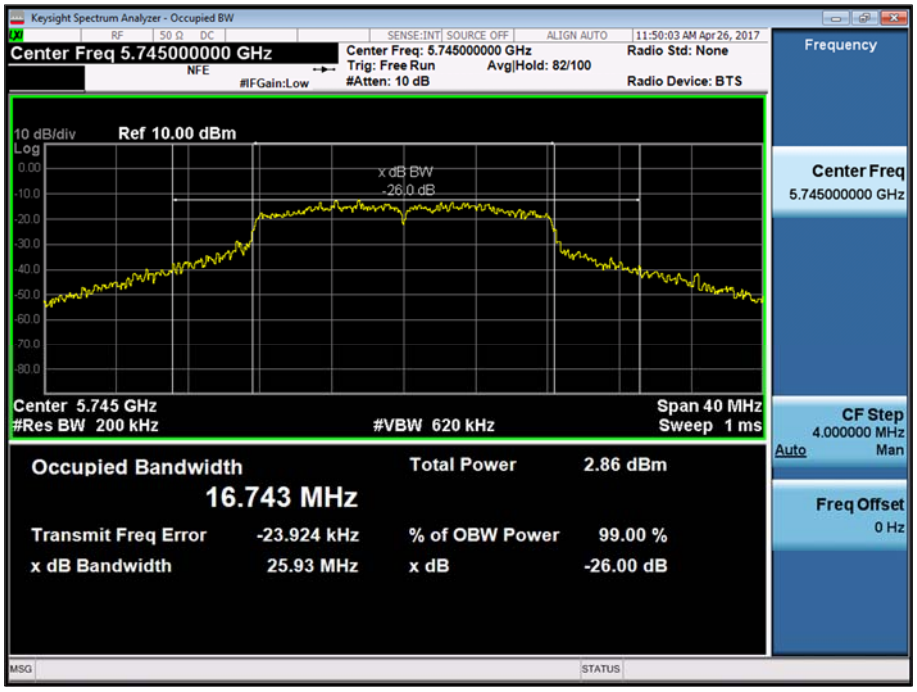

Figure 12 - U-NII 3 - 5745 MHz - 6 dB Bandwidth

Figure 13 - U-NII 3 - 5785 MHz - 6 dB Bandwidth

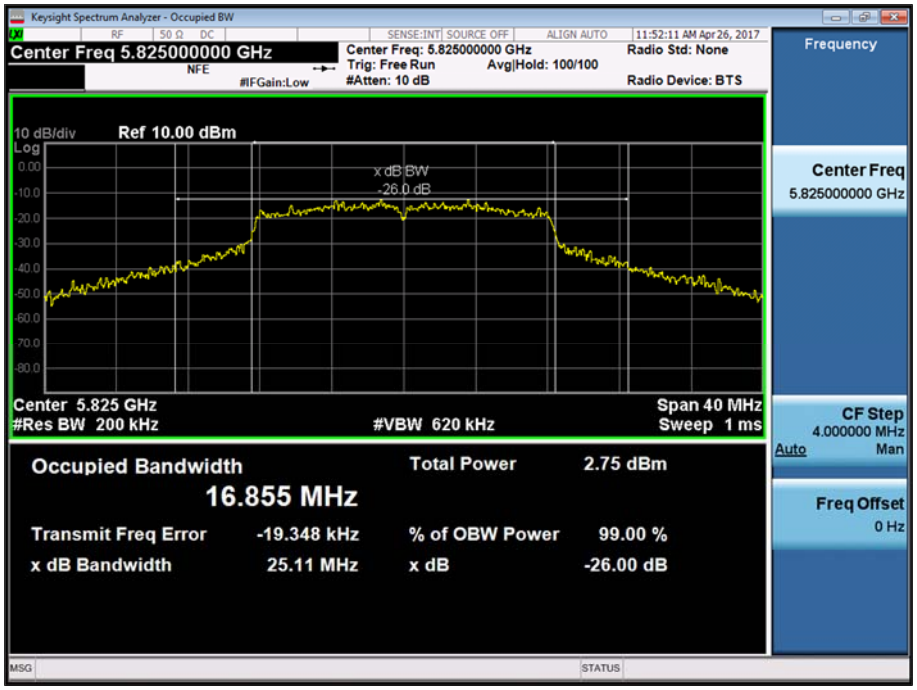

Figure 14 - U-NII 3 - 5825 MHz - 6 dB Bandwidth

FCC 47 CFR Part 15E, Limit Clause 15.407

5150 MHz to 5250 MHz: None specified.
5250 MHz to 5350 MHz: None specified.
5470 MHz to 5725 MHz: None specified.
5725 MHz to 5850 MHz: > 500 kHz.

Industry Canada RSS-247, Limit Clause 6.2.1.1, 6.2.2.1, 6.2.3.1 and 6.2.4.1

5150 MHz to 5250 MHz: None specified.
5250 MHz to 5350 MHz: None specified.
5470 MHz to 5725 MHz: None specified.
5725 MHz to 5850 MHz: > 500 kHz.

802.11n (20 MHz Bandwidth)

The Modulation Coding Scheme used during testing was MCS7.

26 dB Bandwidth (MHz)		
5180 MHz	5200 MHz	5240 MHz
21.34	20.74	21.23

Table 75 - U-NII 1 - 26 dB Bandwidth

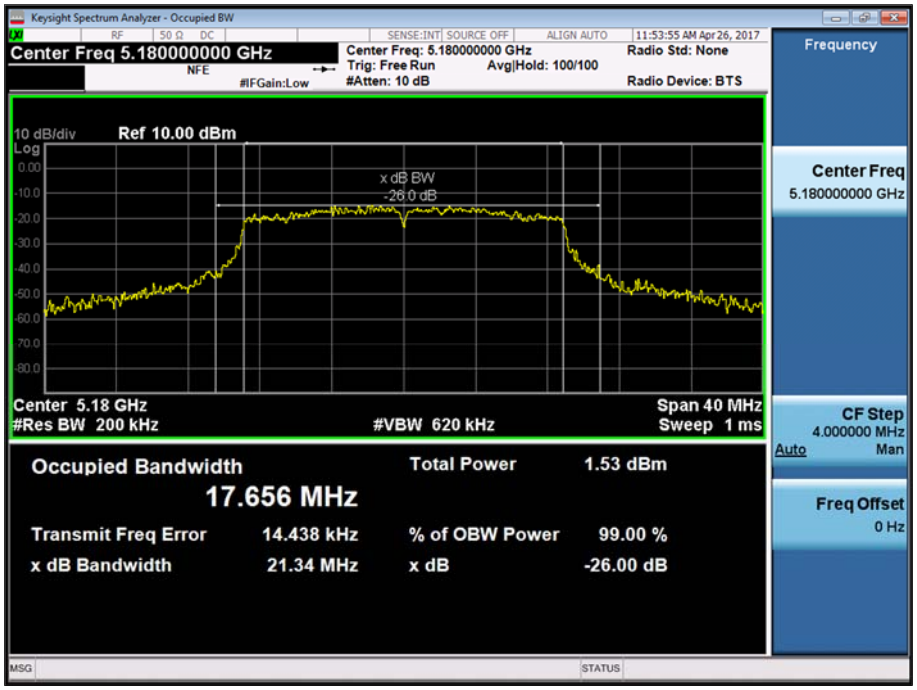

Figure 15 - U-NII 1 - 5180 MHz - 26 dB Bandwidth

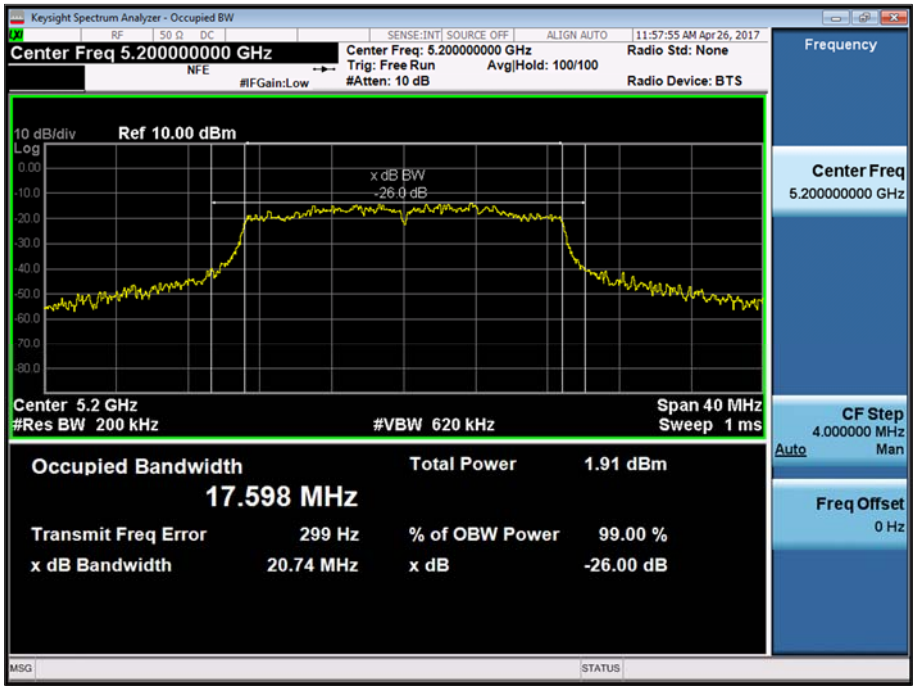

Figure 16 - U-NII 1 - 5200 MHz - 26 dB Bandwidth

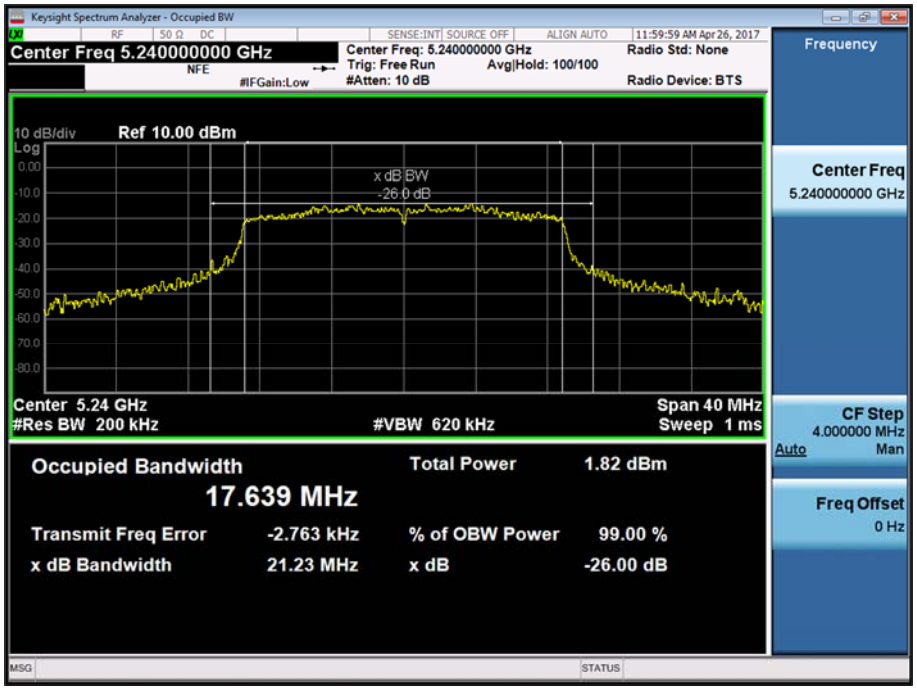

Figure 17 - U-NII 1 - 5240 MHz - 26 dB Bandwidth

26 dB Bandwidth (MHz)		
5260 MHz	5300 MHz	5320 MHz
20.70	22.35	21.35

Table 76 - U-NII 2a - 26 dB Bandwidth

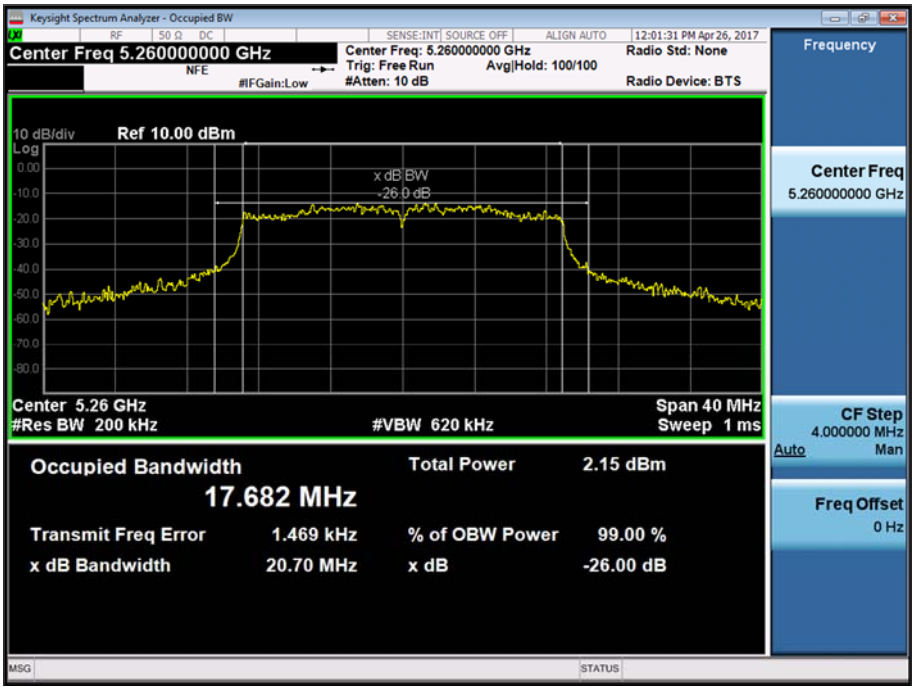

Figure 18 - U-NII 2a - 5260 MHz - 26 dB Bandwidth

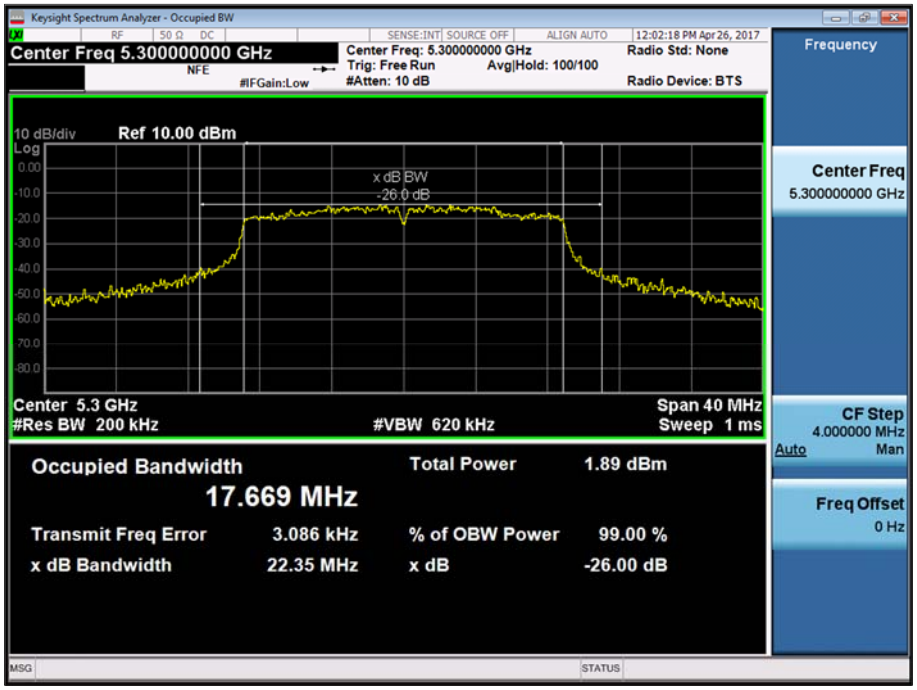

Figure 19 - U-NII 2a - 5300 MHz - 26 dB Bandwidth

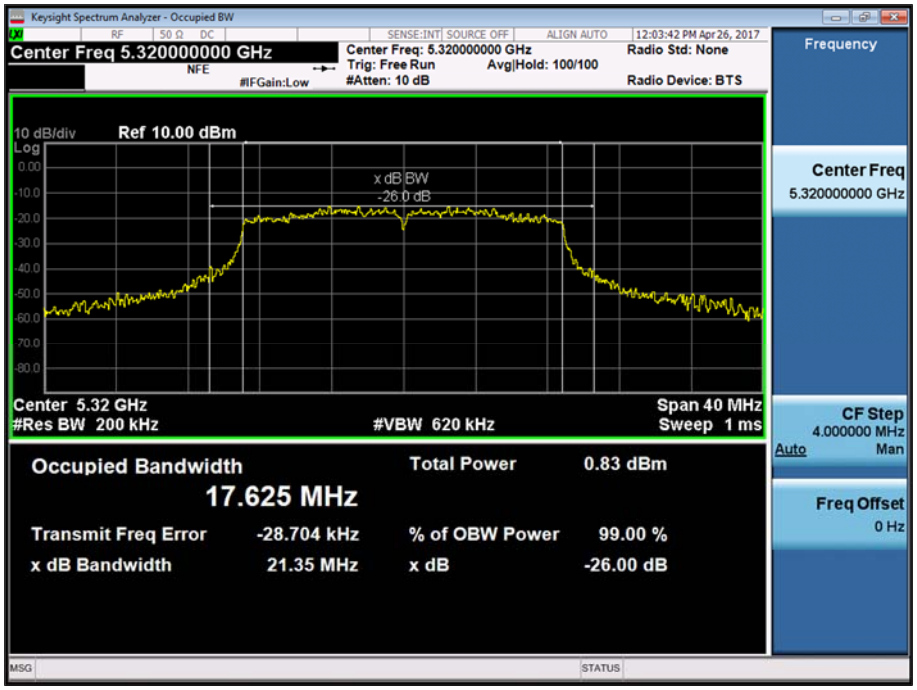

Figure 20 - U-NII 2a - 5320 MHz - 26 dB Bandwidth

26 dB Bandwidth (MHz)		
5500 MHz	5600 MHz	5700 MHz
20.34	20.26	20.19

Table 77 - U-NII 2c - 26 dB Bandwidth

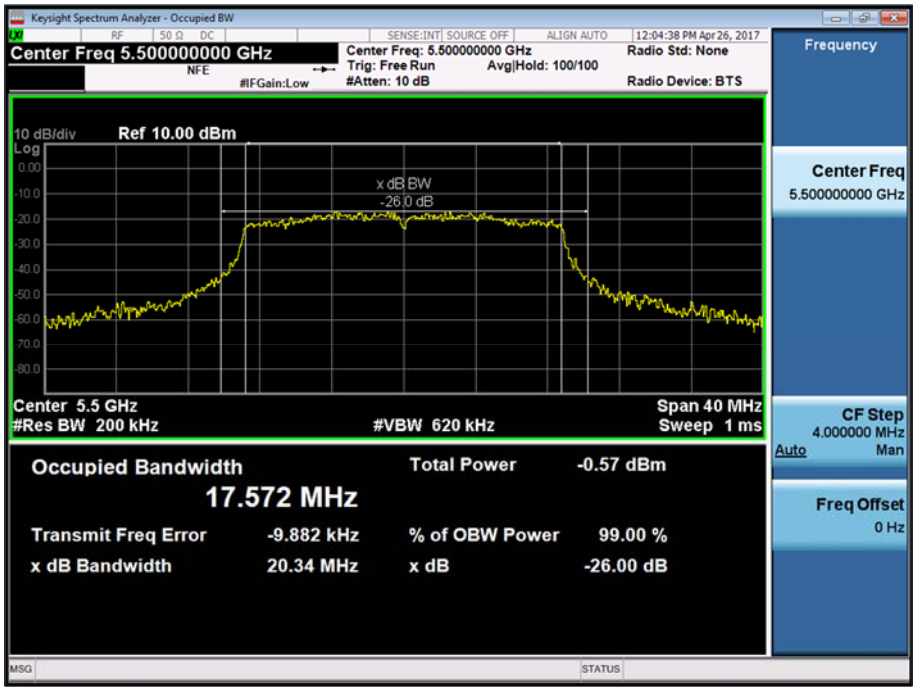

Figure 21 - U-NII 2c - 5500 MHz - 26 dB Bandwidth

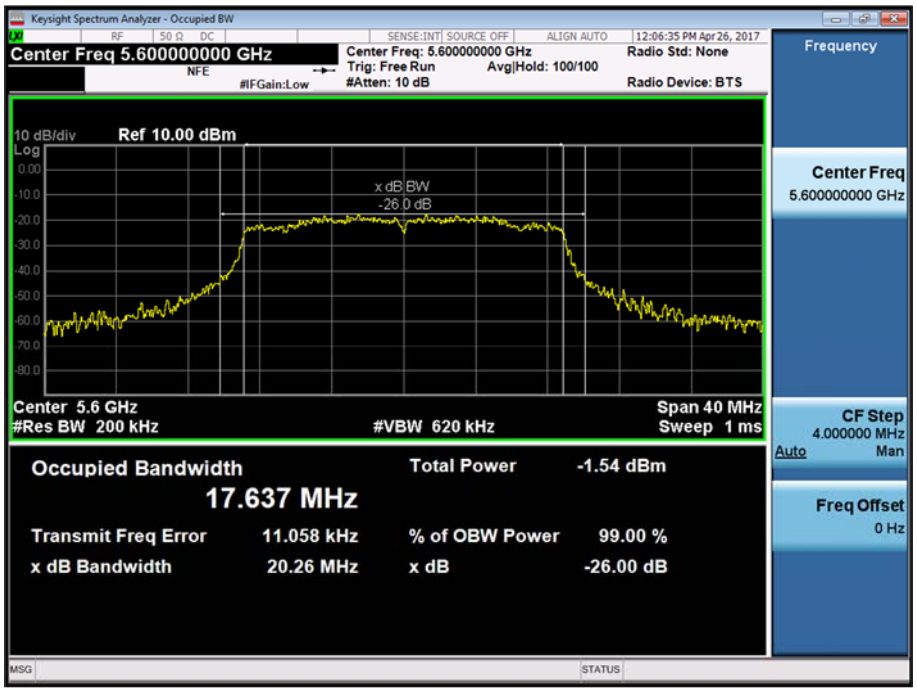

Figure 22 - U-NII 2c - 5600 MHz - 26 dB Bandwidth

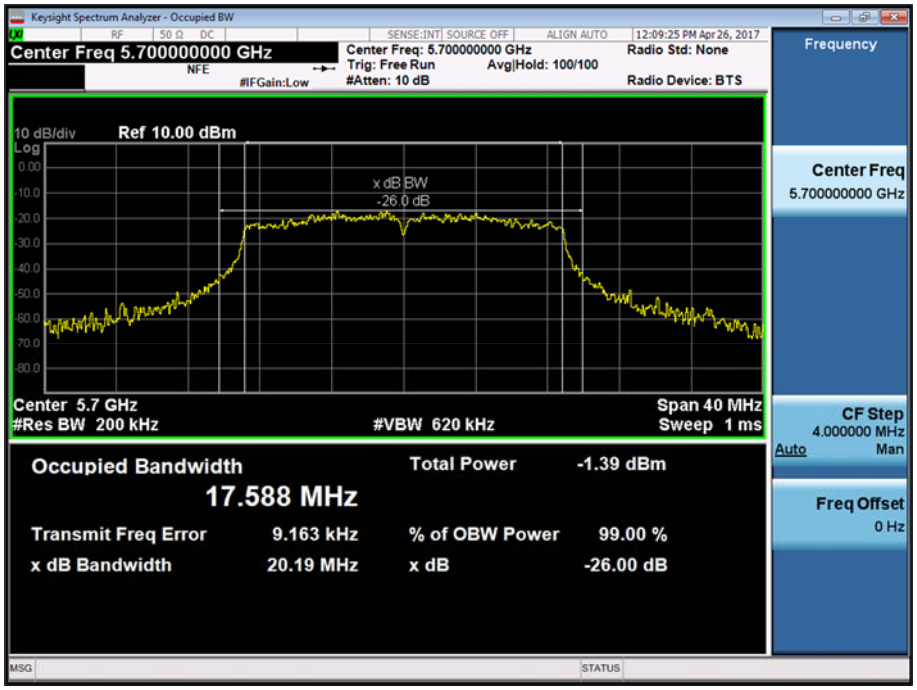

Figure 23 - U-NII 2c - 5700 MHz - 26 dB Bandwidth

6 dB Bandwidth (MHz)		
5745 MHz	5785 MHz	5825 MHz
20.27	20.47	20.24

Table 78 - U-NII 3 - 6 dB Bandwidth

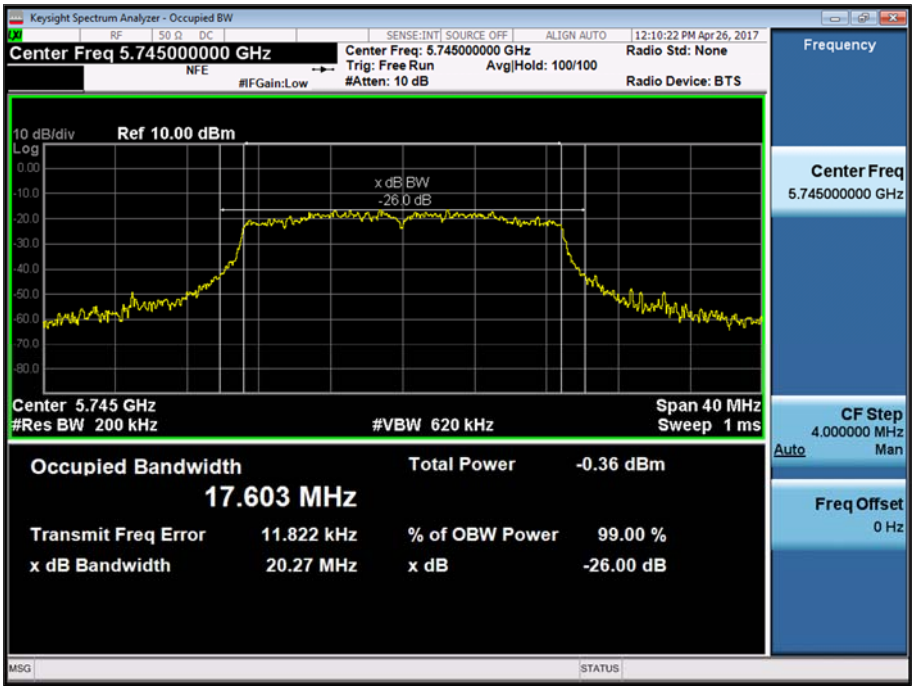

Figure 24 - U-NII 3 - 5745 MHz - 6 dB Bandwidth

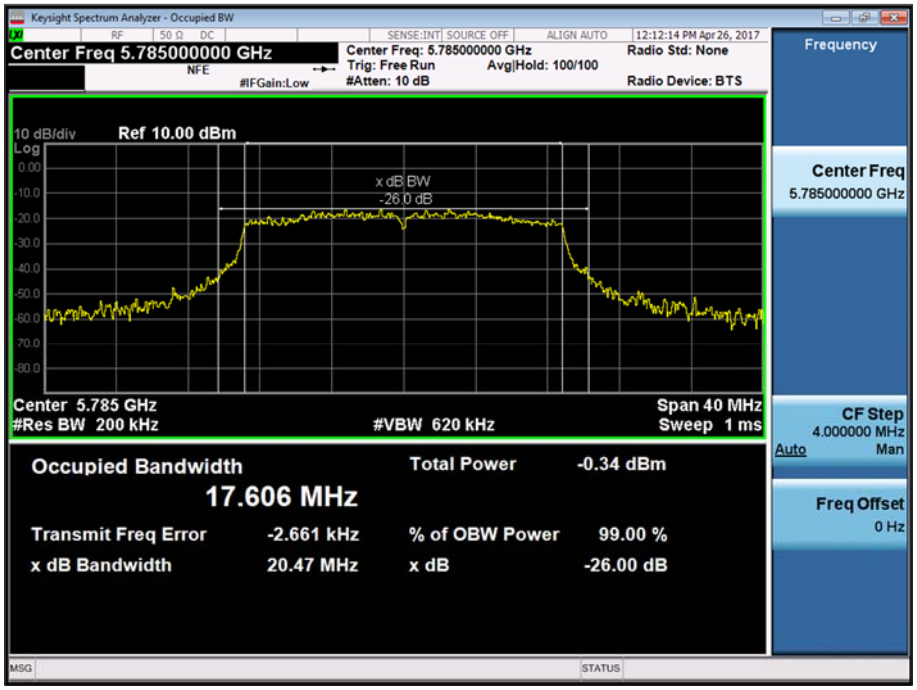

Figure 25 - U-NII 3 - 5785 MHz - 6 dB Bandwidth

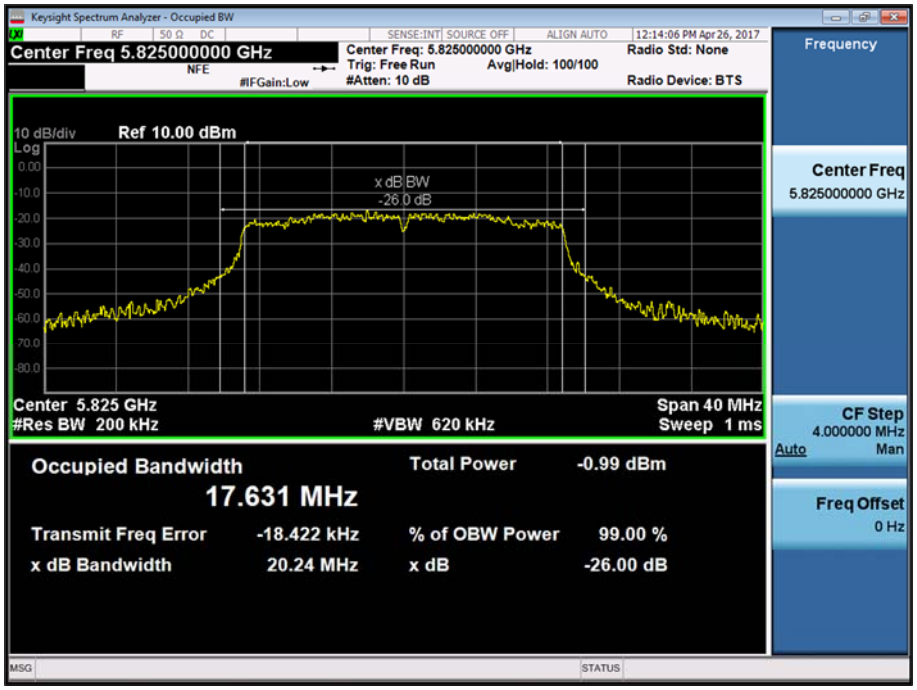

Figure 26 - U-NII 3 - 5825 MHz - 6 dB Bandwidth

FCC 47 CFR Part 15E, Limit Clause 15.407

5150 MHz to 5250 MHz: None specified.
5250 MHz to 5350 MHz: None specified.
5470 MHz to 5725 MHz: None specified.
5725 MHz to 5850 MHz: > 500 kHz.

Industry Canada RSS-247, Limit Clause 6.2.1.1, 6.2.2.1, 6.2.3.1 and 6.2.4.1

5150 MHz to 5250 MHz: None specified.
5250 MHz to 5350 MHz: None specified.
5470 MHz to 5725 MHz: None specified.
5725 MHz to 5850 MHz: > 500 kHz.

IS THERE A LIMIT FOR RSS-GEN?

802.11n (40 MHz Bandwidth)

The Modulation Coding Scheme used during testing was MCS0.

26 dB Bandwidth (MHz)	
5190 MHz	5230 MHz
42.37	45.62

Table 79 - U-NII 1 - 26 dB Bandwidth

Figure 27 - U-NII 1 - 5190 MHz - 26 dB Bandwidth

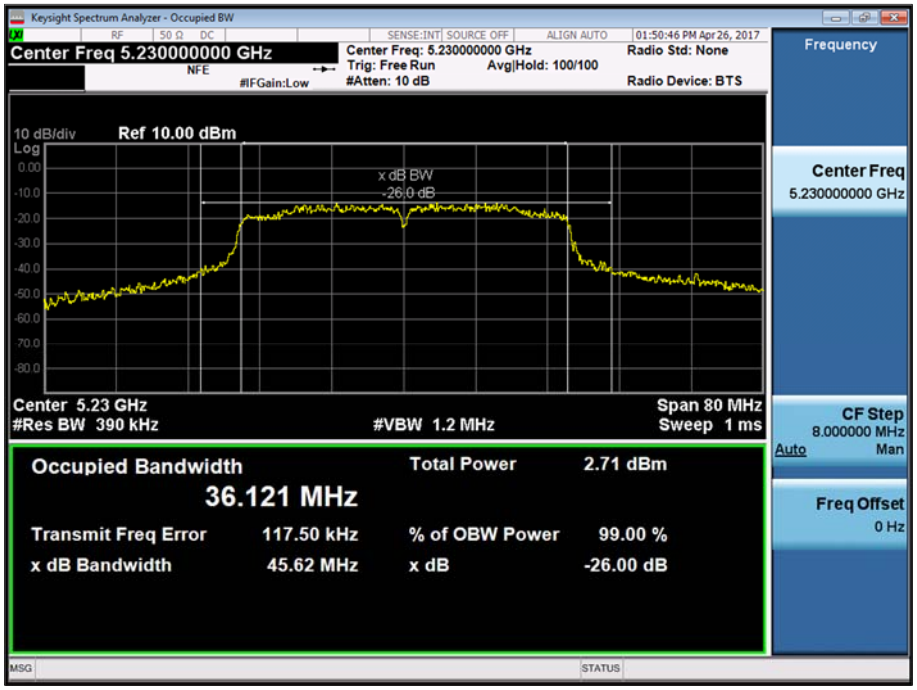

Figure 28 - U-NII 1 - 5230 MHz - 26 dB Bandwidth

26 dB Bandwidth (MHz)	
5270 MHz	5310 MHz
46.60	41.60

Table 80 - U-NII 2a - 26 dB Bandwidth

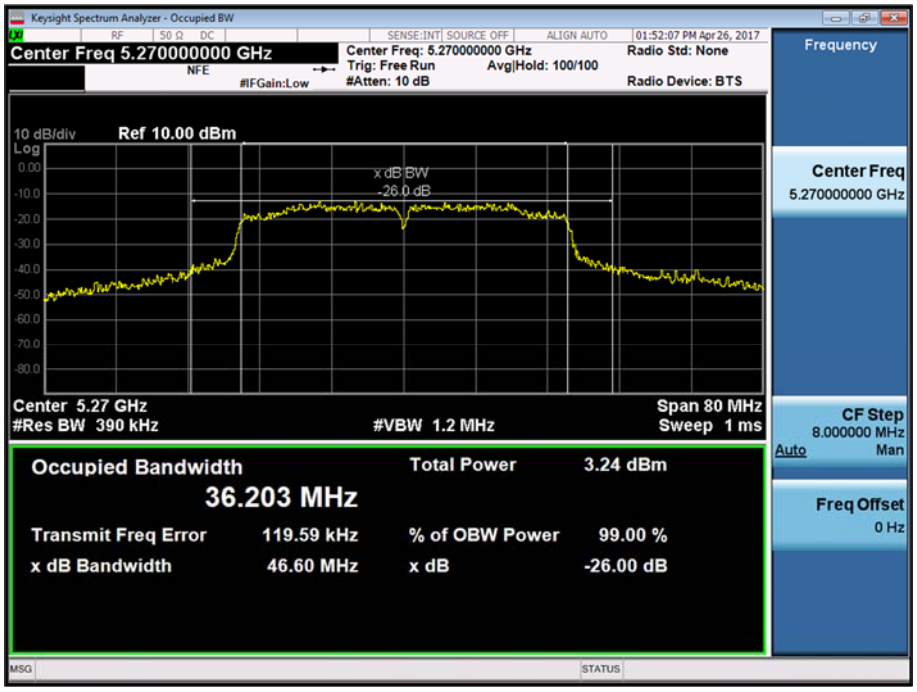

Figure 29 - U-NII 2a - 5270 MHz - 26 dB Bandwidth

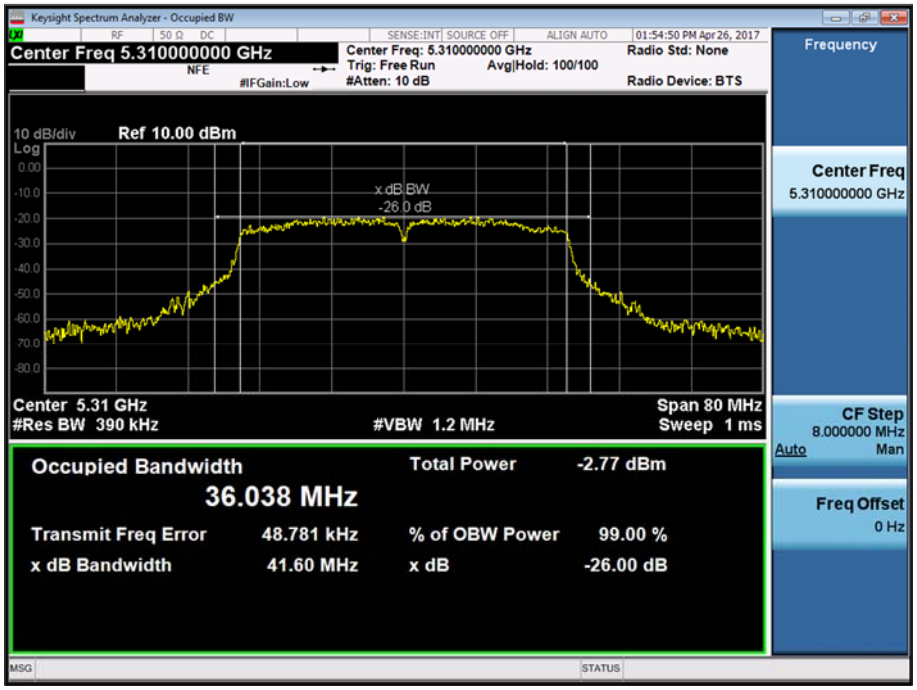

Figure 30 - U-NII 2a - 5310 MHz - 26 dB Bandwidth

26 dB Bandwidth (MHz)		
5510 MHz	5590 MHz	5670 MHz
42.51	50.68	40.32

Table 81 - U-NII 2c - 26 dB Bandwidth

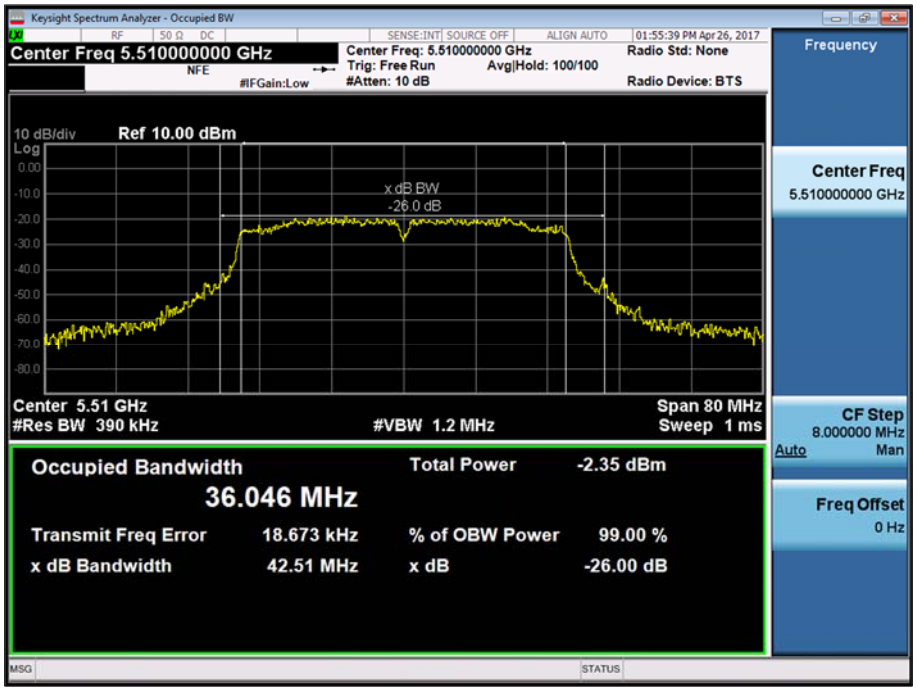

Figure 31 - U-NII 2c - 5510 MHz - 26 dB Bandwidth

Figure 32 - U-NII 2c - 5590 MHz - 26 dB Bandwidth

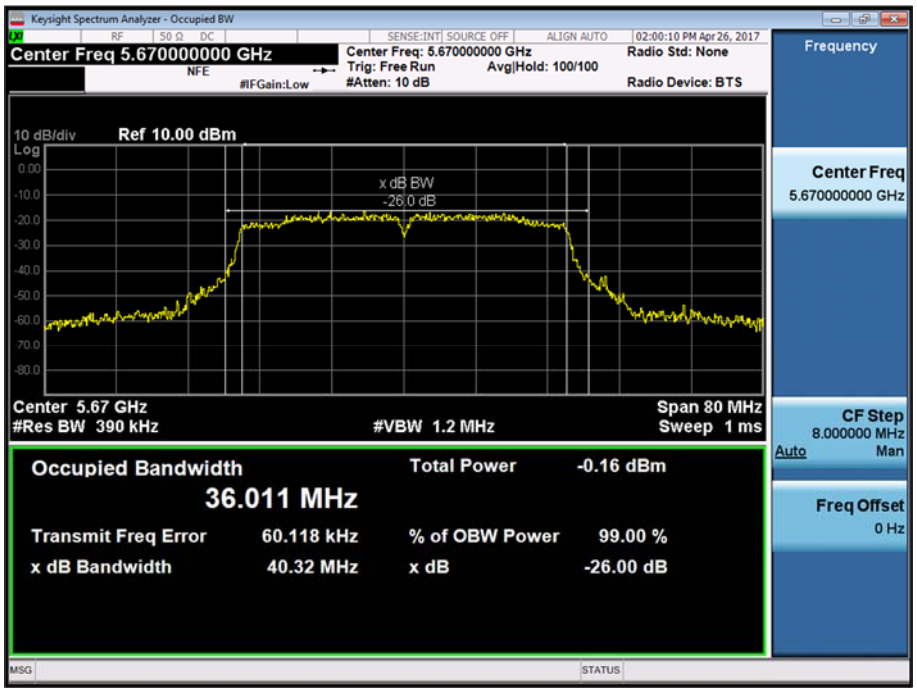

Figure 33 - U-NII 2c - 5670 MHz - 26 dB Bandwidth

6 dB Bandwidth (MHz)	
5755 MHz	5795 MHz
52.91	53.40

Table 82 - U-NII 3 - 6 dB Bandwidth

Figure 34 - U-NII 3 - 5755 MHz - 6 dB Bandwidth

Figure 35 - U-NII 3 - 5795 MHz - 6 dB Bandwidth

FCC 47 CFR Part 15E, Limit Clause 15.407

5150 MHz to 5250 MHz: None specified.
5250 MHz to 5350 MHz: None specified.
5470 MHz to 5725 MHz: None specified.
5725 MHz to 5850 MHz: > 500 kHz.

Industry Canada RSS-247, Limit Clause 6.2.1.1, 6.2.2.1, 6.2.3.1 and 6.2.4.1

5150 MHz to 5250 MHz: None specified.
5250 MHz to 5350 MHz: None specified.
5470 MHz to 5725 MHz: None specified.
5725 MHz to 5850 MHz: > 500 kHz.

IS THERE A LIMIT FOR RSS-GEN?

802.11ac (20 MHz Bandwidth)

The Modulation Coding Scheme used during testing was MCS5.

26 dB Bandwidth (MHz)		
5180 MHz	5200 MHz	5240 MHz
20.96	22.20	22.45

Table 83 - U-NII 1 - 26 dB Bandwidth

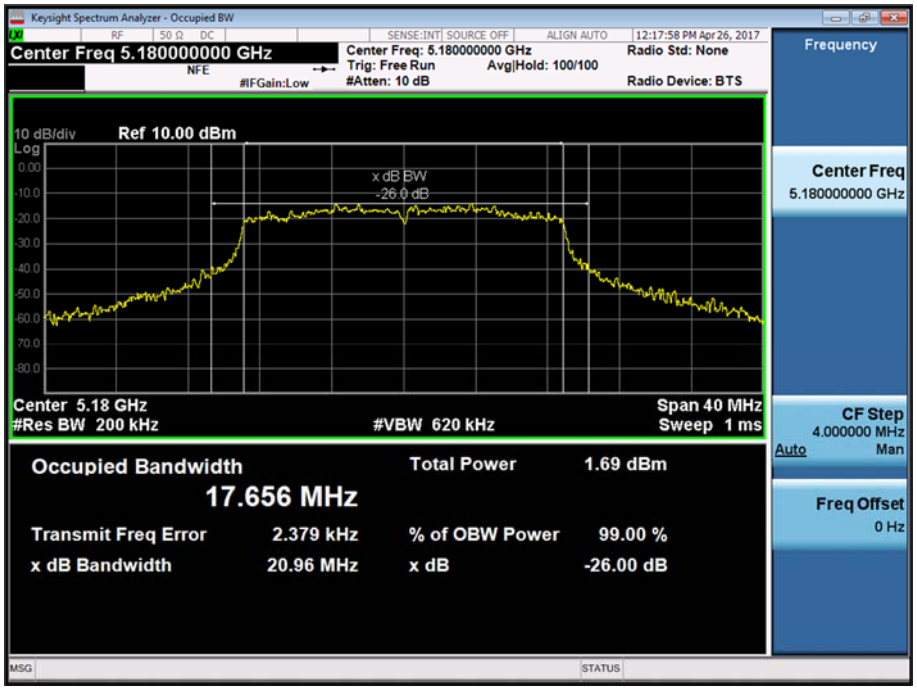

Figure 36 - U-NII 1 - 5180 MHz - 26 dB Bandwidth

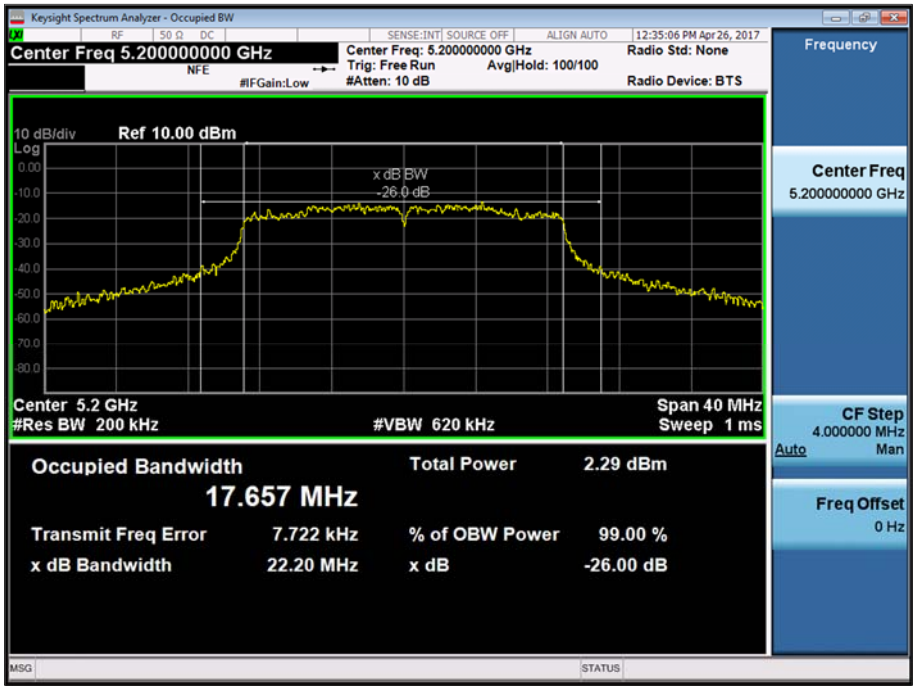

Figure 37 - U-NII 1 - 5200 MHz - 26 dB Bandwidth

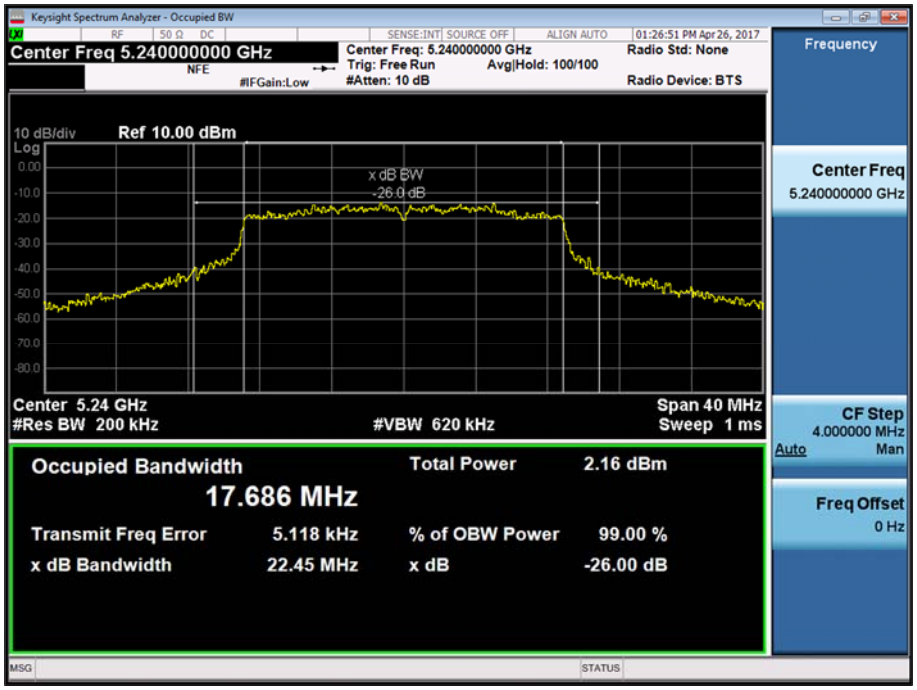

Figure 38 - U-NII 1 - 5240 MHz - 26 dB Bandwidth

26 dB Bandwidth (MHz)		
5260 MHz	5300 MHz	5320 MHz
21.29	21.59	20.70

Table 84 - U-NII 2a - 26 dB Bandwidth

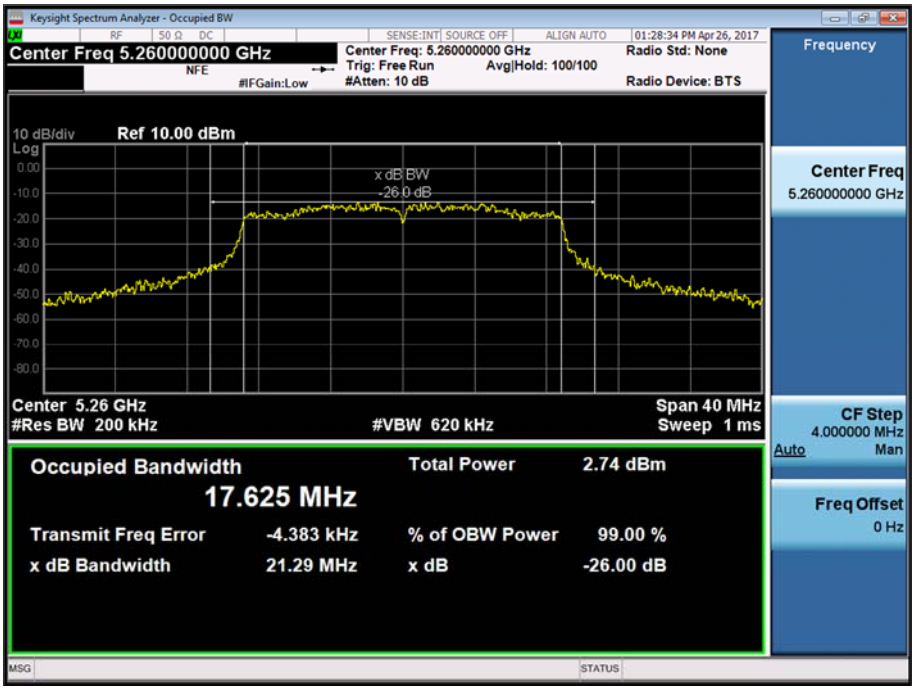

Figure 39 - U-NII 2a - 5260 MHz - 26 dB Bandwidth

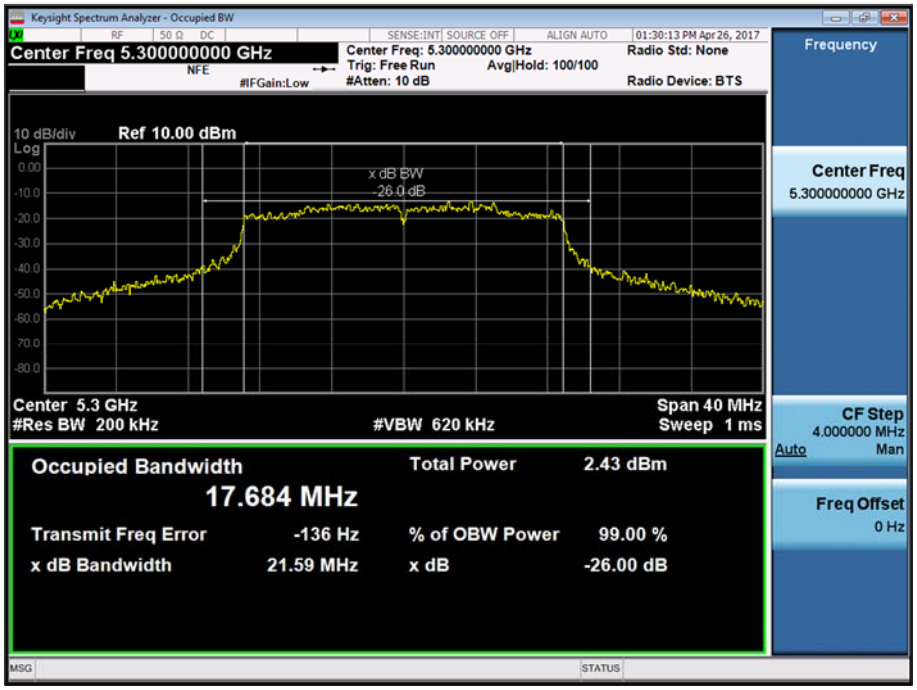

Figure 40 - U-NII 2a - 5300 MHz - 26 dB Bandwidth

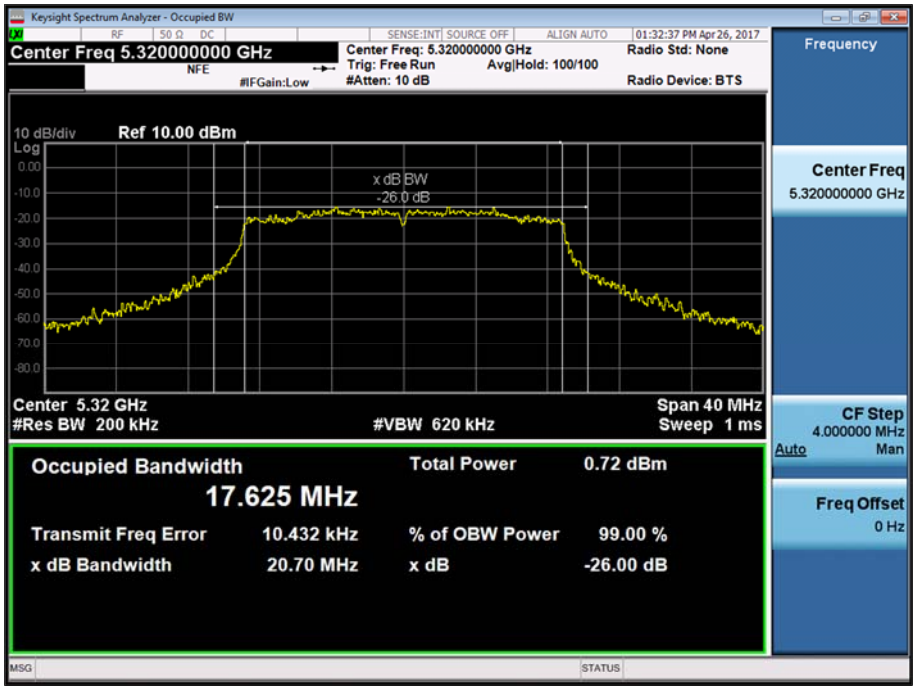

Figure 41 - U-NII 2a - 5320 MHz - 26 dB Bandwidth

26 dB Bandwidth (MHz)		
5500 MHz	5600 MHz	5700 MHz
21.25	21.86	20.50

Table 85 - U-NII 2c - 26 dB Bandwidth

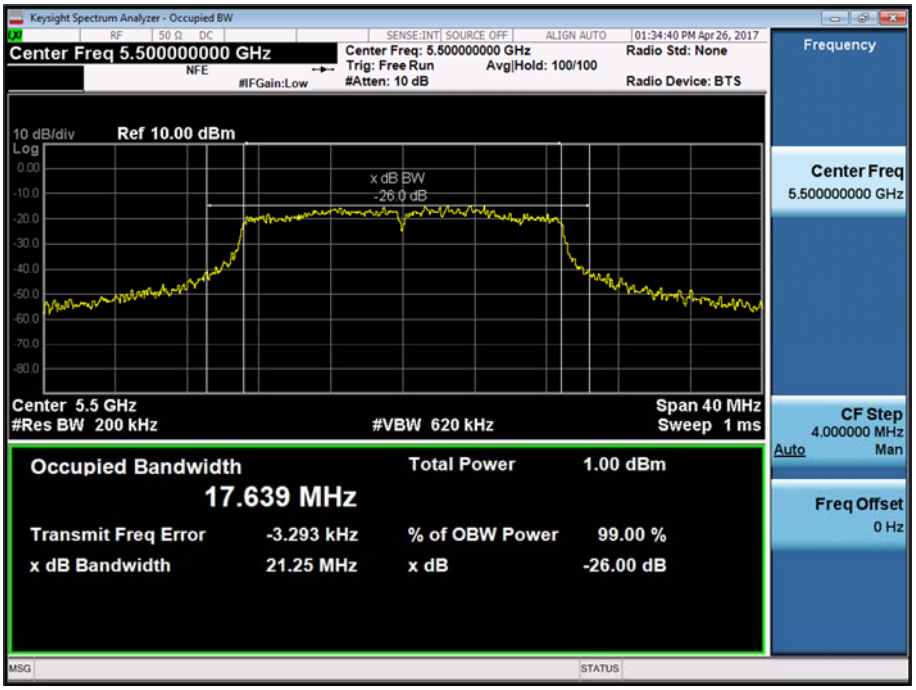

Figure 42 - U-NII 2c - 5500 MHz - 26 dB Bandwidth

Figure 43 - U-NII 2c - 5600 MHz - 26 dB Bandwidth

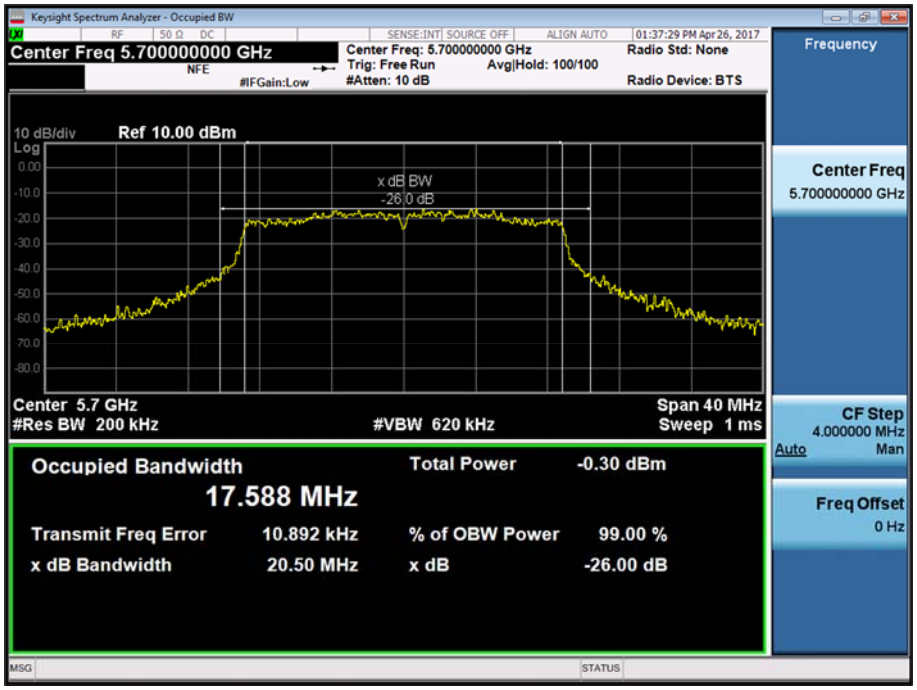

Figure 44 - U-NII 2c - 5700 MHz - 26 dB Bandwidth

6 dB Bandwidth (MHz)		
5745 MHz	5785 MHz	5825 MHz
20.89	20.57	22.21

Table 86 - U-NII 3 - 6 dB Bandwidth

Figure 45 - U-NII 3 - 5745 MHz - 6 dB Bandwidth

Figure 46 - U-NII 3 - 5785 MHz - 6 dB Bandwidth

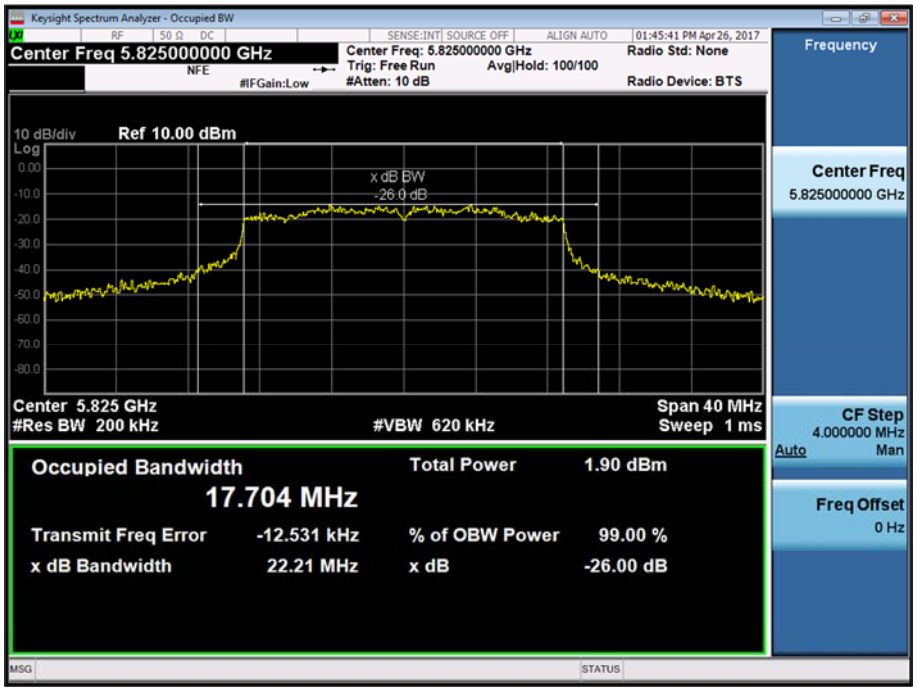

Figure 47 - U-NII 3 - 5825 MHz - 6 dB Bandwidth

FCC 47 CFR Part 15E, Limit Clause 15.407

5150 MHz to 5250 MHz: None specified.
5250 MHz to 5350 MHz: None specified.
5470 MHz to 5725 MHz: None specified.
5725 MHz to 5850 MHz: > 500 kHz.

Industry Canada RSS-247, Limit Clause 6.2.1.1, 6.2.2.1, 6.2.3.1 and 6.2.4.1

5150 MHz to 5250 MHz: None specified.
5250 MHz to 5350 MHz: None specified.
5470 MHz to 5725 MHz: None specified.
5725 MHz to 5850 MHz: > 500 kHz.

IS THERE A LIMIT FOR RSS-GEN?

802.11ac (40 MHz Bandwidth)

The Data Rate used during testing was MCS0.

26 dB Bandwidth (MHz)	
5190 MHz	5230 MHz
45.57	46.70

Table 87 - U-NII 1 - 26 dB Bandwidth

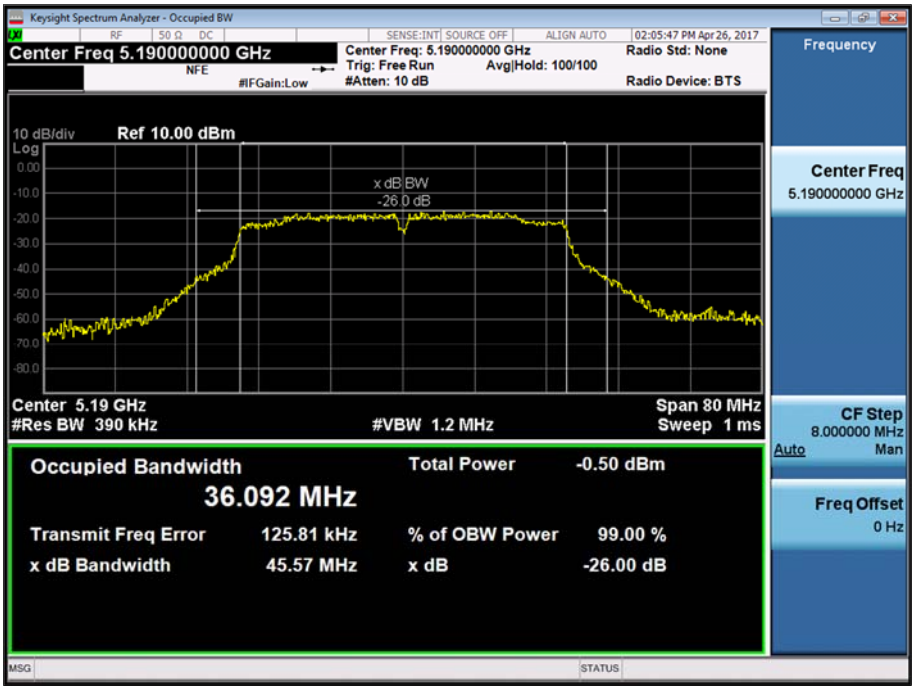

Figure 48 - U-NII 1 - 5190 MHz - 26 dB Bandwidth

Figure 49 - U-NII 1 - 5230 MHz - 26 dB Bandwidth