FCC and Industry Canada Testing of the DAQRI International Limited Model: DAQRI Compute Pack In accordance with FCC 47 CFR Part 15C, 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: 75936979-07 | Issue: 01

RESPONSIBLE FOR	NAME	DATE	SIGNATURE
Project Management	Steven White	02 June 2017	
Authorised Signatory	Matthew Russell	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 15C, 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	Graeme Lawler	02 June 2017	

FCC Accreditation
90987 Octagon House, Fareham Test Laboratory

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

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

TÜV SÜD Product Service
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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 and 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 15C: 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	04-May-2017
Name of Engineer(s)	Mehadi Choudhury and Graeme Lawler
Related Document(s)	ANSI C63.10 (2013)

Product Service

1.3 Brief Summary of Results

A brief summary of the tests carried out in accordance with FCC 47 CFR Part 15C is shown below.

Section	Specification Clause			Test Description	Result	Comments/Base Standard
	Part 15C	RSS-247	RSS-GEN			
Configuration: WLAN Transmitting						
-	15.207	-	8.8	AC Power Line Conducted Emissions	N/T	As per Document 75936979 Report 08*
Configuration: 802.11b						
2.1	15.247 (b)(3)	5.4	-	Maximum Conducted Output Power	Pass	ANSI C63.10 and KDB 662911 D01
2.2	15.247 (e)	5.2	-	Power Spectral Density	Pass	ANSI C63.10 and KDB 662911 D01
2.3	15.247 (a)(2)	5.2	-	Emission Bandwidth	Pass	ANSI C63.10
2.4	15.247 (d)	5.5	-	Authorised Band Edges	Pass	ANSI C63.10
2.5	15.205	-	8.10	Restricted Band Edges	Pass	ANSI C63.10
2.6	15.247 (d) and 15.205	5.5	-	Spurious Radiated Emissions	Pass	ANSI C63.10
Configuration: 802.11g						
2.1	15.247 (b)(3)	5.4	-	Maximum Conducted Output Power	Pass	ANSI C63.10 and KDB 662911 D01
2.2	15.247 (e)	5.2	-	Power Spectral Density	Pass	ANSI C63.10 and KDB 662911 D01
2.3	15.247 (a)(2)	5.2	-	Emission Bandwidth	Pass	ANSI C63.10
2.4	15.247 (d)	5.5	-	Authorised Band Edges	Pass	ANSI C63.10
2.5	15.205	-	8.10	Restricted Band Edges	Pass	ANSI C63.10
2.6	15.247 (d) and 15.205	5.5	-	Spurious Radiated Emissions	Pass	ANSI C63.10

Section	Specification Clause			Test Description	Result	Comments/Base Standard
Configuration: 802.11n (20 MHz Bandwidth)						
2.1	15.247 (b)(3)	5.4	-	Maximum Conducted Output Power	Pass	ANSI C63.10 and KDB 662911 D01
2.2	15.247 (e)	5.2	-	Power Spectral Density	Pass	ANSI C63.10 and KDB 662911 D01
2.3	15.247 (a)(2)	5.2	-	Emission Bandwidth	Pass	ANSI C63.10
2.4	15.247 (d)	5.5	-	Authorised Band Edges	Pass	ANSI C63.10
2.5	15.205	-	8.10	Restricted Band Edges	Pass	ANSI C63.10
2.6	15.247 (d) and 15.205	5.5	-	Spurious Radiated Emissions	Pass	ANSI C63.10
Configuration: 802.11n (40 MHz Bandwidth)						
2.1	15.247 (b)(3)	5.4	-	Maximum Conducted Output Power	Pass	ANSI C63.10 and KDB 662911 D01
2.2	15.247 (e)	5.2	-	Power Spectral Density	Pass	ANSI C63.10 and KDB 662911 D01
2.3	15.247 (a)(2)	5.2	-	Emission Bandwidth	Pass	ANSI C63.10
2.4	15.247 (d)	5.5	-	Authorised Band Edges	Pass	ANSI C63.10
2.5	15.205	-	8.10	Restricted Band Edges	Pass	ANSI C63.10

Table 2

N/T = Not Tested

*AC Power Line Conducted Emissions was only performed for the transmitter with the highest conducted RF output power as this was considered worst case for this test as this would draw the maximum amount of current. Test results can be found in Document 75936979 Report 08.

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.

Types of Modulations used by the Equipment	
☒	FHSS
☒	Other forms of modulation
In case of FHSS Modulation	
In case of non-Adaptive Frequency Hopping equipment:	
	Number of Hopping Frequencies:
In case of Adaptive Frequency Hopping Equipment:	
	Maximum number of Hopping Frequencies: 79
	Minimum number of Hopping Frequencies: 20
Dwell Time: Up to 3.2 ms for Bluetooth	
Adaptive / non-adaptive equipment:	
☐	non-adaptive Equipment
☒	adaptive Equipment without the possibility to switch to a non-adaptive mode
☐	adaptive Equipment which can also operate in a non-adaptive mode
In case of adaptive equipment:	
The maximum Channel Occupancy Time implemented by the equipment: ms	
☐	The equipment has implemented an LBT based DAA mechanism
In case of equipment using modulation different from FHSS:	
☐	The equipment is Frame Based equipment
☒	The equipment is Load Based equipment
☐	The equipment can switch dynamically between Frame Based and Load Based equipment
The CCA time implemented by the equipment: µs	
☒	The equipment has implemented an non-LBT based DAA mechanism
☐	The equipment can operate in more than one adaptive mode

In case of non-adaptive Equipment:
The maximum RF Output Power (e.i.r.p.): 19 dBm
The maximum (corresponding) Duty Cycle: 100 %
Equipment with dynamic behaviour, that behaviour is described here. (e.g. the different combinations of duty cycle and corresponding power levels to be declared):

The worst case operational mode for each of the following tests:
RF Output Power:
Power Spectral Density:
Duty cycle, Tx-Sequence, Tx-gap:
Accumulated Transmit Time, Frequency Occupation & Hopping Sequence (only for FHSS equipment):
Hopping Frequency Separation (only for FHSS equipment):
Medium Utilisation:
Adaptivity & Receiver Blocking:
Nominal Channel Bandwidth:
Transmitter unwanted emissions in the OOB domain:
Transmitter unwanted emissions in the spurious domain:
Receiver spurious emissions:

The different transmit operating modes (tick all that apply):		
☒	Operating mode 1: Single Antenna Equipment	
	☒	Equipment with only 1 antenna
	☒	Equipment with 2 diversity antennas but only 1 antenna active at any moment in time
	☐	Smart Antenna Systems with 2 or more antennas, but operating in a (legacy) mode where only 1 antenna is used. (e.g. IEEE 802.11™ [i.3] legacy mode in smart antenna systems)
☒	Operating mode 2: Smart Antenna Systems - Multiple Antennas without beam forming	
	☒	Single spatial stream / Standard throughput / (e.g. IEEE 802.11™ [i.3] legacy mode)
	☒	High Throughput (> 1 spatial stream) using Nominal Channel Bandwidth 1
	☒	High Throughput (> 1 spatial stream) using Nominal Channel Bandwidth 2
	☐	High Throughput (> 1 spatial stream) using Nominal Channel Bandwidth 3
	☐	High Throughput (> 1 spatial stream) using Nominal Channel Bandwidth 4
	☐	High Throughput (> 1 spatial stream) using Nominal Channel Bandwidth 5
NOTE: Add more lines if more channel bandwidths are supported.		
☐	Operating mode 3: Smart Antenna Systems - Multiple Antennas with beam forming	
	☐	Single spatial stream / Standard throughput (e.g. IEEE 802.11™ [i.3] legacy mode)
	☐	High Throughput (> 1 spatial stream) using Nominal Channel Bandwidth 1
	☐	High Throughput (> 1 spatial stream) using Nominal Channel Bandwidth 2
	☐	High Throughput (> 1 spatial stream) using Nominal Channel Bandwidth 3
	☐	High Throughput (> 1 spatial stream) using Nominal Channel Bandwidth 4
	☐	High Throughput (> 1 spatial stream) using Nominal Channel Bandwidth 5
NOTE: Add more lines if more channel bandwidths are supported.		

In case of Smart Antenna Systems:
The number of Receive chains: 2
The number of Transmit chains: 2
☒ symmetrical power distribution
☐ asymmetrical power distribution
In case of beam forming, the maximum (additional) beam forming gain: dB
NOTE: The additional beam forming gain does not include the basic gain of a single antenna.
Operating Frequency Range(s) of the equipment:
Operating Frequency Range 1: 2400 MHz to 2483.5 MHz
Operating Frequency Range 2: MHz to MHz
Operating Frequency Range 3: MHz to MHz
NOTE: Add more lines if more Frequency Ranges are supported.
Nominal Channel Bandwidth(s):
Nominal Channel Bandwidth1: 20 MHz
Nominal Channel Bandwidth2: 40 MHz
Nominal Channel Bandwidth3: Bluetooth 1 MHz
Nominal Channel Bandwidth4: BLE 2 MHz
Nominal Channel Bandwidth5: MHz
NOTE: Add more lines if more channel bandwidths are supported.
Type of Equipment (stand-alone, combined, plug-in radio device, etc.):
☒ Stand-alone
☐ Combined Equipment (Equipment where the radio part is fully integrated within another type of equipment)
☐ Plug-in radio device (Equipment intended for a variety of host systems)
☐ Other
The normal and extreme operating conditions that apply to the equipment:
Normal operating conditions (if applicable):
Operating temperature: °C
Other (please specify if applicable):
Extreme operating conditions:
Operating temperature range: Minimum 0 °C to Maximum 30 °C
Other (please specify if applicable): Minimum °C to Maximum °C
Details provided are for the:
☒ stand-alone equipment
☐ combined (or host) equipment
☐ test jig

The intended combination(s) of the radio equipment power settings and one or more antenna assemblies and their corresponding e.i.r.p levels:			
Antenna Type:			
☒ Integral Antenna (information to be provided in case of conducted measurements)			
Antenna Gain: 2 dBi			
If applicable, additional beamforming gain (excluding basic antenna gain): dB			
☒ Temporary RF connector provided			
☐ No temporary RF connector provided			
☐ Dedicated Antennas (equipment with antenna connector)			
☐ Single power level with corresponding antenna(s)			
☐ Multiple power settings and corresponding antenna(s)			
Number of different Power Levels:			
Power Level 1: dBm			
Power Level 2: dBm			
Power Level 3: dBm			
NOTE 1: Add more lines in case the equipment has more power levels.			
NOTE 2: These power levels are conducted power levels (at antenna connector).			
For each of the Power Levels, provide the intended antenna assemblies, their corresponding gains (G) and the resulting e.i.r.p. levels also taking into account the beamforming gain (Y) if applicable			
Power Level 1: 19 dBm			
Number of antenna assemblies provided for this power level:			
Assembly #	**Gain (dBi)**	**e.i.r.p (dBm)**	**Part number or model number**
1	2	19	Taoglas FXP840
2	2	19	Taoglas FXP840
3			
4			
NOTE: Add more rows in case more antenna assemblies are supported for this power level.			
Power Level 2: dBm			
Number of antenna assemblies provided for this power level:			
Assembly #	**Gain (dBi)**	**e.i.r.p (dBm)**	**Part number or model number**
1			
2			
3			
4			
NOTE: Add more rows in case more antenna assemblies are supported for this power level.			
Power Level 3: dBm			
Number of antenna assemblies provided for this power level:			
Assembly #	**Gain (dBi)**	**e.i.r.p (dBm)**	**Part number or model number**
1			
2			
3			
4			
NOTE: Add more rows in case more antenna assemblies are supported for this power level.			

The nominal voltages of the stand-alone radio equipment or the nominal voltages of the combined (host) equipment or test jig in case of plug-in devices:			
Details provided are for the:			
☒	stand-alone equipment		
☐	combined (or host) equipment		
☐	test jig		
Supply Voltage	☐ AC mains	State AC voltage	V
	☐ DC	State DC voltage	V
In case of DC, indicate the type of power source			
☐	Internal Power Supply		
☐	External Power Supply or AC/DC adapter		
☐	Battery		
☒	Other: Li-ion		
Describe the test modes available which can facilitate testing:			
The equipment type (e.g. Bluetooth®, IEEE 802.11™ [i.3] IEEE 802.15.4™ [i.4], proprietary, etc.):			
If applicable, the statistical analysis referred in clause 5.4.1 q)			
To be provided as separate attachment			
If applicable, the statistical analysis referred in clause 5.4.1 r)			
To be provided as separate attachment			
Geo-location capability supported by the equipment:			
☒ Yes			
☒	The geographical location determined by the equipment as defined in clause 4.3.1.13.2 or clause 4.3.2.12.2 is not accessible to the user.		
☐ No			
Describe the minimum performance criteria that apply to the equipment (see clause 4.3.1.12.3 or 4.3.2.11.3)			
Combination for testing (see clause 5.3.2.3 of EN 300 328 V21.1)			
From all combinations of conducted power settings and intended antenna assembly(ies) specified in clause 5.4.1 m), specify the combination resulting in the highest e.i.r.p. for the radio equipment. Unless otherwise specified in ETSI EN 300 328, this power setting is to be used for testing against the requirements of ETSI EN 300 328. In case there is more than one such conducted power setting resulting in the same (highest) e.i.r.p. level, the highest power setting is to be used for testing. See also ETS EN 300 328, clause 5.3.2.3			
Highest overall e.i.r.p. value: 19 dBm			
Corresponding Antenna assembly gain: 2 dBi		Antenna Assembly #:	
Corresponding conducted power setting: dBm (also the power level to be used for testing)		Listed as Power Setting #:	
Additional information provided by the applicant			
Modulation			
ITU Class(es) of emission: 20M0 G1D, 40M0 G1D, 2M00 G1D, 1M00 G1D			
Can the transmitter operate unmodulated? ☐ Yes ☒ No			

Duty Cycle	
The transmitter is intended for:	
☒	Continuous duty
☐	Intermittent duty
☐	Continuous operation possible for testing purposes

About the UUT	
☐	The equipment submitted are representative production models
☐	If not, the equipment submitted are pre-production models?
☒	If pre-production equipment are submitted, the final production equipment will be identical in all respects with the equipment tested
☐	If not, supply full details
☐	The equipment submitted is CE marked

Additional items and/or supporting equipment provided	
☒	Spare batteries (e.g. for portable equipment)
☒	Battery charging device
☒	External Power Supply or AC/DC adapter
☐	Test Jig or interface box
☐	RF test fixture (for equipment with integrated antennas)
☐	Host System
	Manufacturer
	Model
	Model Name
☐	Combined equipment
	Manufacturer
	Model
	Model Name
☒	User Manual
☐	Technical documentation (Handbook and circuit diagrams)

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: 802.11b		
Maximum Conducted Output Power	Mehadi Choudhury	UKAS
Power Spectral Density	Mehadi Choudhury	UKAS
Emission Bandwidth	Mehadi Choudhury	UKAS
Restricted Band Edges	Graeme Lawler	UKAS
Authorised Band Edges	Graeme Lawler	UKAS
Spurious Radiated Emissions	Graeme Lawler	UKAS
Configuration: 802.11g		
Maximum Conducted Output Power	Mehadi Choudhury	UKAS
Power Spectral Density	Mehadi Choudhury	UKAS
Emission Bandwidth	Mehadi Choudhury	UKAS
Restricted Band Edges	Graeme Lawler	UKAS
Authorised Band Edges	Graeme Lawler	UKAS
Spurious Radiated Emissions	Graeme Lawler	UKAS

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

Table 4

Office Address:

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

2 Test Details

2.1 Maximum Conducted Output Power

2.1.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.247 (b)(3)
Industry Canada RSS-247, Clause 5.4

2.1.2 Equipment Under Test and Modification State

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

2.1.3 Date of Test

02-May-2017

2.1.4 Test Method

The test was performed in accordance with ANSI C63.10, clause 11.9.2.2.3

The output power for transmitter modes of operation supporting MiMo were summed and added as described in KDB 662911 D01, clause E.2(a).

2.1.5 Environmental Conditions

Ambient Temperature	24.4 °C
Relative Humidity	32.8 %

2.1.6 Test Results

802.11b

Testing was performed on the Data Rate with the highest conducted output power. This Data Rate was 5.5 Mbps.

Frequency (MHz)	Output Power	
	(dBm)	(mW)
2412	22.16	164.46
2437	22.27	168.56
2462	21.52	142.05

Table 5

FCC 47 CFR Part 15C, Limit Clause 15.247 (b)

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt.

Industry Canada RSS-247, Limit Clause 5.4 (d)

For DTSs employing digital modulation techniques operating in the bands 902-928 MHz and 2400-2483.5 MHz, the maximum peak conducted output power shall not exceed 1 W. The e.i.r.p shall not exceed 4 W, except as provided in section 5.4(e) of the specification.

802.11g

Testing was performed on the Data Rate with the highest conducted output power. This Data Rate was 6 Mbps.

Frequency (MHz)	Output Power	
	(dBm)	(mW)
2412	20.71	117.80
2437	22.41	174.38
2462	19.08	80.98

Table 6

FCC 47 CFR Part 15C, Limit Clause 15.247 (b)

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt.

Industry Canada RSS-247, Limit Clause 5.4 (d)

For DTSs employing digital modulation techniques operating in the bands 902-928 MHz and 2400-2483.5 MHz, the maximum peak conducted output power shall not exceed 1 W. The e.i.r.p shall not exceed 4W, except as provided in section 5.4(e) of the specification.

802.11n (20 MHz Bandwidth)

Testing was performed on the Modulation Coding Scheme with the highest conducted output power. This Modulation Coding Scheme was MCS1.

Frequency (MHz)	Output Power	
	(dBm)	(mW)
2412	20.56	113.78
2437	22.03	159.54
2462	18.93	78.14

Table 7

FCC 47 CFR Part 15C, Limit Clause 15.247 (b)

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt.

Industry Canada RSS-247, Limit Clause 5.4 (d)

For DTSs employing digital modulation techniques operating in the bands 902-928 MHz and 2400-2483.5 MHz, the maximum peak conducted output power shall not exceed 1 W. The e.i.r.p shall not exceed 4 W, except as provided in section 5.4(e) of the specification.

802.11n (40 MHz Bandwidth)

Testing was performed on the Data Rate with the highest conducted output power. This Data Rate was MCS2.

Frequency (MHz)	Output Power	
	(dBm)	(mW)
2422	18.08	64.32
2437	20.01	100.20
2452	16.51	44.82

Table 8

FCC 47 CFR Part 15C, Limit Clause 15.247 (b)

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt.

Industry Canada RSS-247, Limit Clause 5.4 (d)

For DTSs employing digital modulation techniques operating in the bands 902-928 MHz and 2400-2483.5 MHz, the maximum peak conducted output power shall not exceed 1 W. The e.i.r.p shall not exceed 4 W, except as provided in section 5.4(e) of the specification.

2.1.7 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	08-Sep-2017
Frequency Standard	Spectracom	Secure Sync 1200-0408-0601	4393	6	09-Sep-2017
PXA Signal Analyser	Keysight Technologies	N9030A	4654	12	06-Oct-2017
2 metre SMA Cable	IW Microwave	3PS-1806LC-788-3PS	4829	12	24-Jan-2018

Table 9

O/P Mon – Output Monitored using calibrated equipment

2.2 Power Spectral Density

2.2.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.247 (e)
Industry Canada RSS-247, Clause 5.2(b)

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

04-May-2017

2.2.4 Test Method

The test was performed in accordance with ANSI C63.10, clause 11.10.6.

The output power for transmitter modes of operation supporting MiMo were summed and added as described in KDB 662911 D01, clause E.2(a).

2.2.5 Environmental Conditions

Ambient Temperature	25.0 °C
Relative Humidity	31.4 - 35.2 %

2.2.6 Test Results

802.11b

Data Rate: 5.5 Mbps

Port	Power Spectral Density (dBm)		
	2412 MHz	2437 MHz	2462 MHz
1	-0.81	-0.29	-0.43
2	-0.51	-0.67	-2.45
Total Power	2.35	2.54	1.69

Table 10

FCC 47 CFR Part 15C, Limit Clause 15.247 (e)

The power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

Industry Canada RSS-247, Limit Clause 5.2(b)

The transmitter power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

802.11g

Data Rate: 6 Mbps

Port	Power Spectral Density (dBm)		
	2412 MHz	2437 MHz	2462 MHz
1	-4.37	-2.60	-2.60
2	-4.43	-2.81	-6.44
Total Power	-1.39	0.30	-1.10

Table 11

FCC 47 CFR Part 15C, Limit Clause 15.247 (e)

The power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

Industry Canada RSS-247, Limit Clause 5.2(b)

The transmitter power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

802.11n (20 MHz Bandwidth)

Modulation Coding Scheme: MCS1

Port	Power Spectral Density (dBm)		
	2412 MHz	2437 MHz	2462 MHz
1	-4.53	-2.84	-5.73
2	-4.75	-3.26	-6.66
Total Power	-1.63	-0.03	-3.16

Table 12

FCC 47 CFR Part 15C, Limit Clause 15.247 (e)

The power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

Industry Canada RSS-247, Limit Clause 5.2(b)

The transmitter power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

802.11n (40 MHz Bandwidth)

Modulation Coding Scheme: MCS2

Port	Power Spectral Density (dBm)		
	2422 MHz	2437 MHz	2452 MHz
1	-9.25	-7.83	-11.96
2	-10.81	-9.03	-12.35
Total Power	-6.95	-5.38	-9.14

Table 13

FCC 47 CFR Part 15C, Limit Clause 15.247 (e)

The power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

Industry Canada RSS-247, Limit Clause 5.2(b)

The transmitter power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

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	08-Sep-2017
Frequency Standard	Spectracom	Secure Sync 1200-0408-0601	4393	6	09-Sep-2017
PXA Signal Analyser	Keysight Technologies	N9030A	4654	12	06-Oct-2017
2 metre SMA Cable	IW Microwave	3PS-1806LC-788-3PS	4829	12	24-Jan-2018

Table 14

O/P Mon – Output Monitored using calibrated equipment

2.3 Emission Bandwidth

2.3.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.247 (a)(2)
Industry Canada RSS-247, Clause 5.2(a)

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

04-May-2017

2.3.4 Test Method

The test was performed in accordance with ANSI C63.10, clause 11.8.2.

Preliminary checks were performed to determine the data rate with the widest bandwidth.

2.3.5 Environmental Conditions

Ambient Temperature	25.0 °C
Relative Humidity	35.2 %

2.3.6 Test Results

802.11b

Data Rate: 5.5 Mbps

Frequency (MHz)	6 dB Bandwidth (MHz)
2412	10.70
2437	10.48
2462	10.44

Table 15

Figure 1 - 2412 MHz

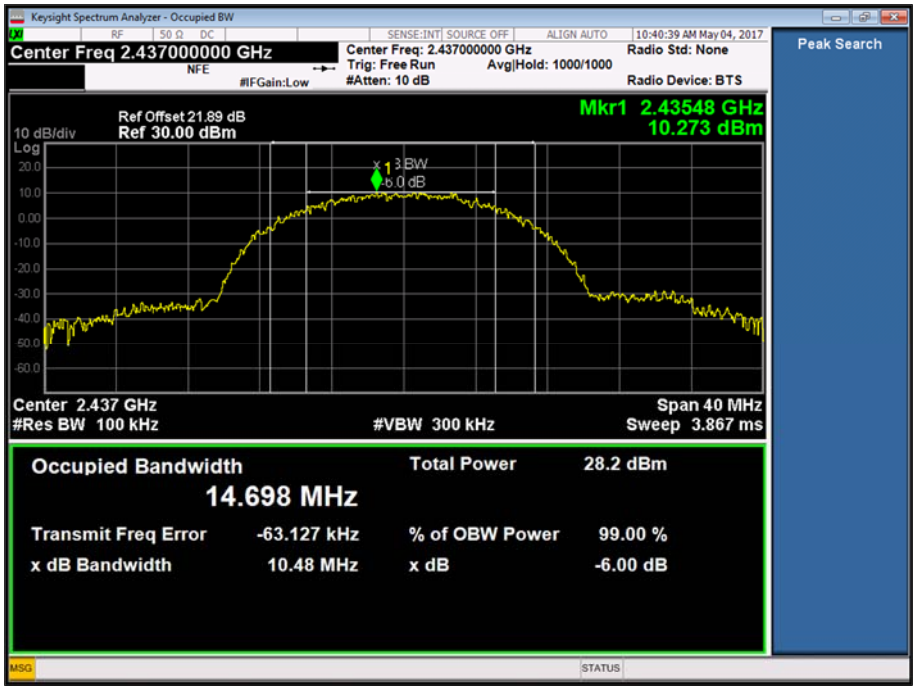

Figure 2 - 2437 MHz

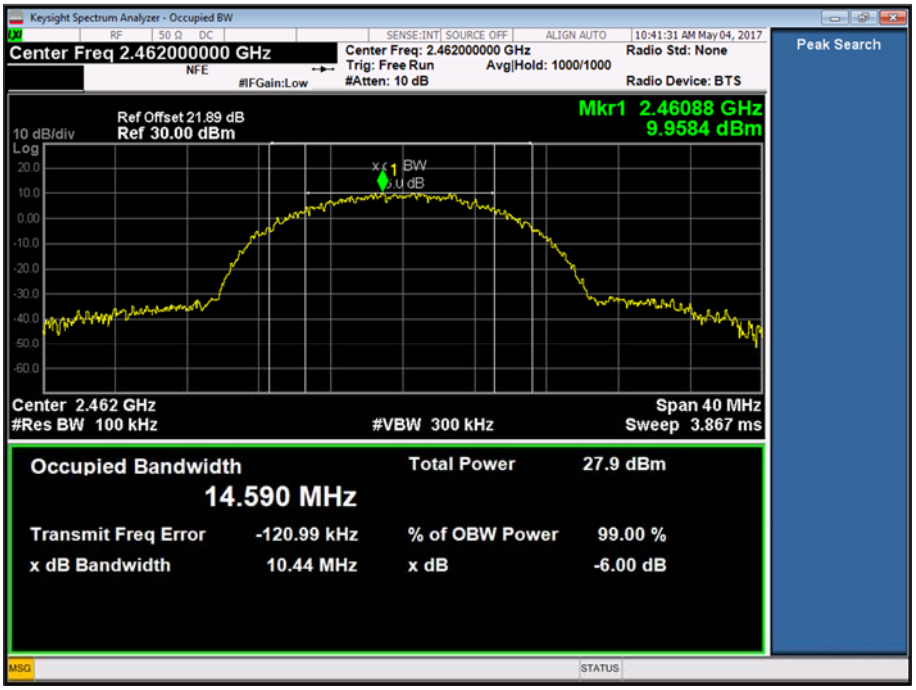

Figure 3 - 2462 MHz

FCC 47 CFR Part 15C, Limit Clause 15.247(a)(2)

The minimum 6 dB Bandwidth shall be at least 500 kHz.

Industry Canada RSS-247, Clause 5.2(a)

The minimum 6 dB Bandwidth shall be at least 500 kHz.

802.11g

Data Rate: 6 Mbps

Frequency (MHz)	6 dB Bandwidth (MHz)
2412	15.17
2437	15.16
2462	15.15

Table 16

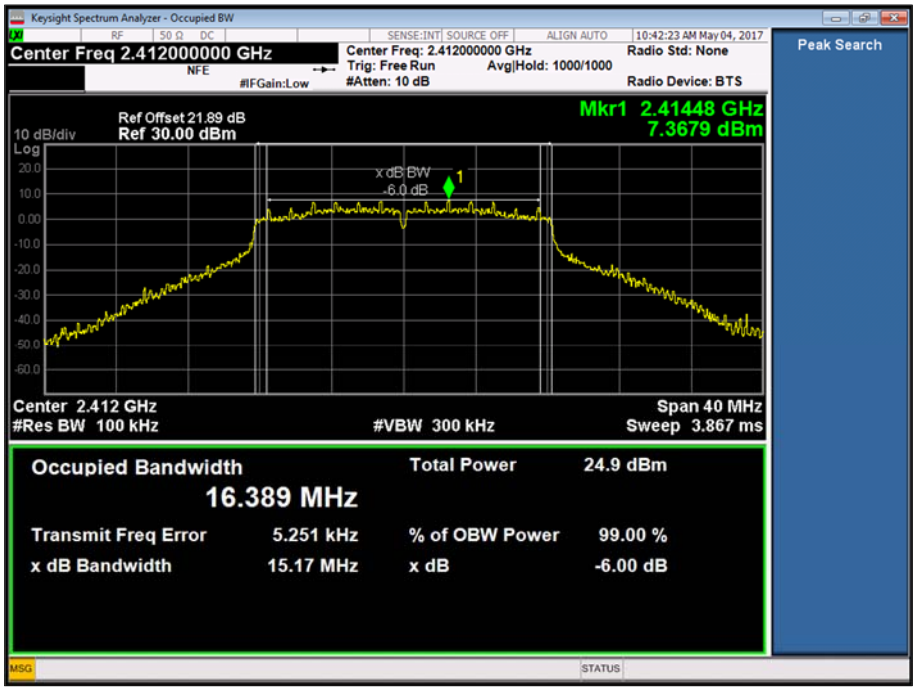

Figure 4 - 2412 MHz

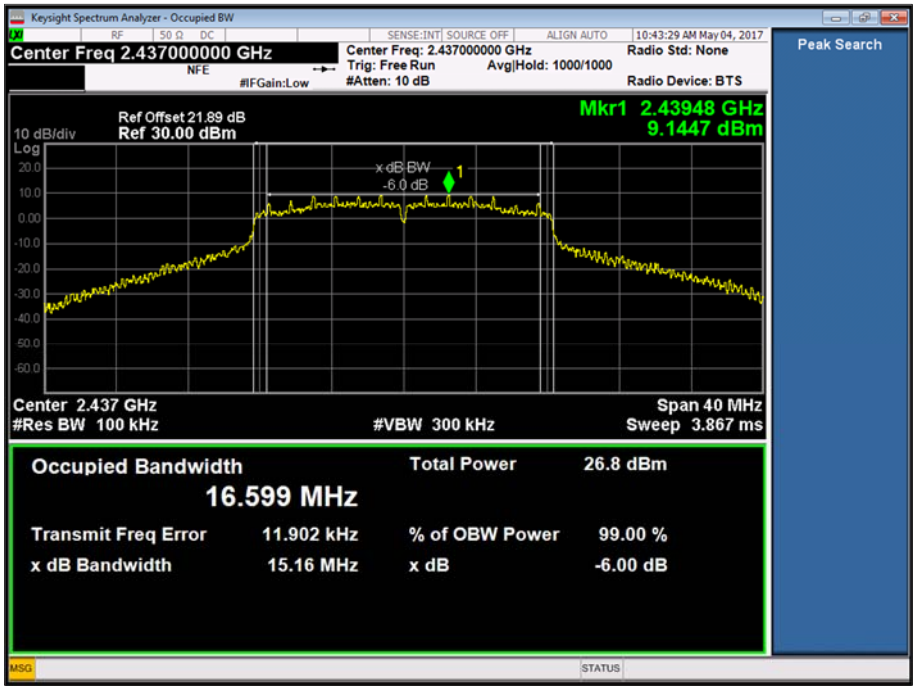

Figure 5 - 2437 MHz

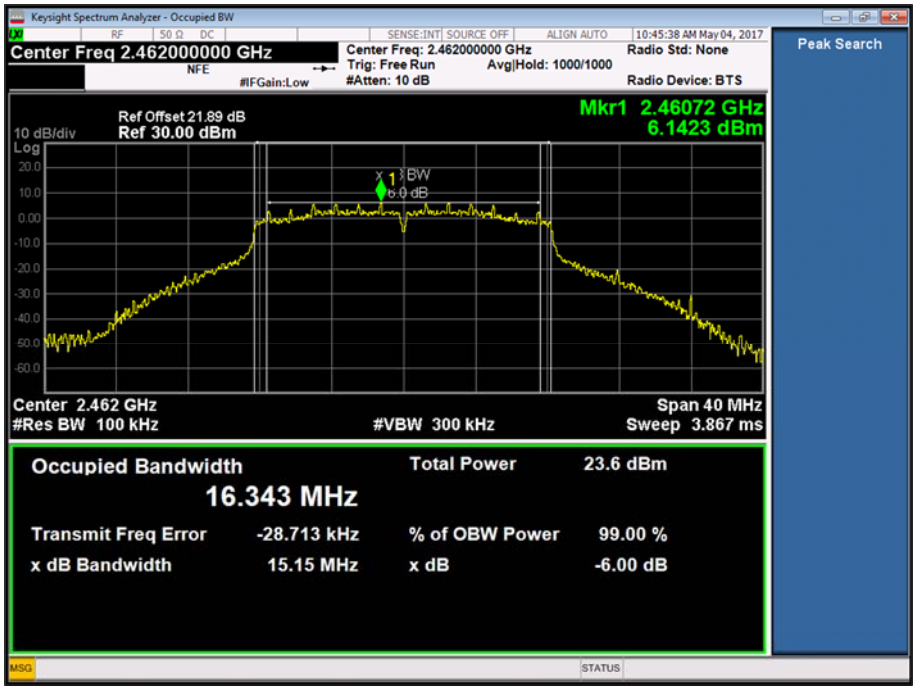

Figure 6 - 2462 MHz

FCC 47 CFR Part 15C, Limit Clause 15.247(a)(2)

The minimum 6 dB Bandwidth shall be at least 500 kHz.

Industry Canada RSS-247, Clause 5.2(a)

The minimum 6 dB Bandwidth shall be at least 500 kHz.

802.11n (20 MHz Bandwidth)

Modulation Coding Scheme: MCS1

Frequency (MHz)	6 dB Bandwidth (MHz)
2412	15.72
2437	15.15
2462	15.14

Table 17

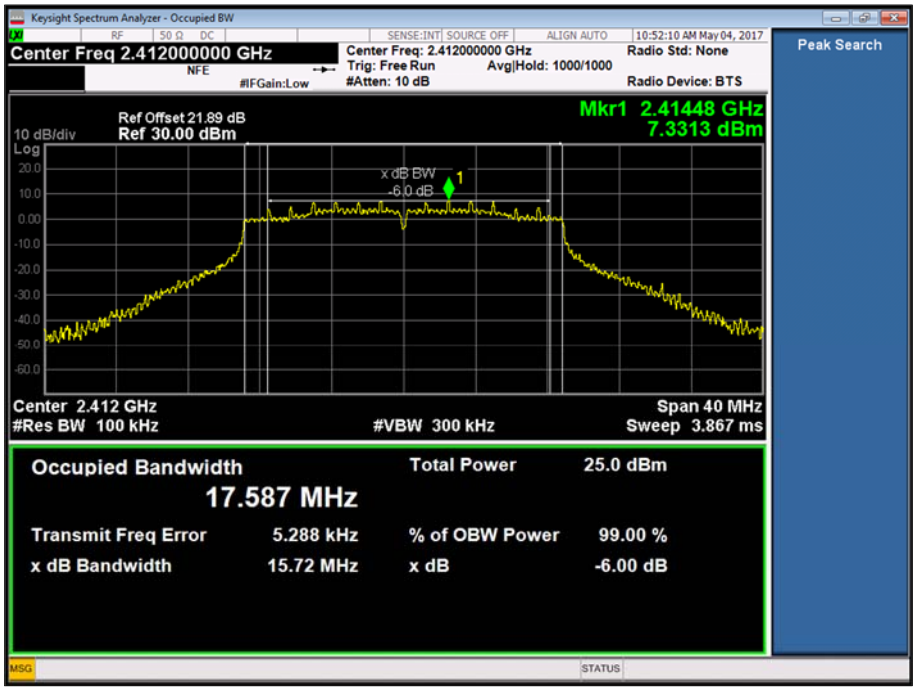

Figure 7 - 2412 MHz

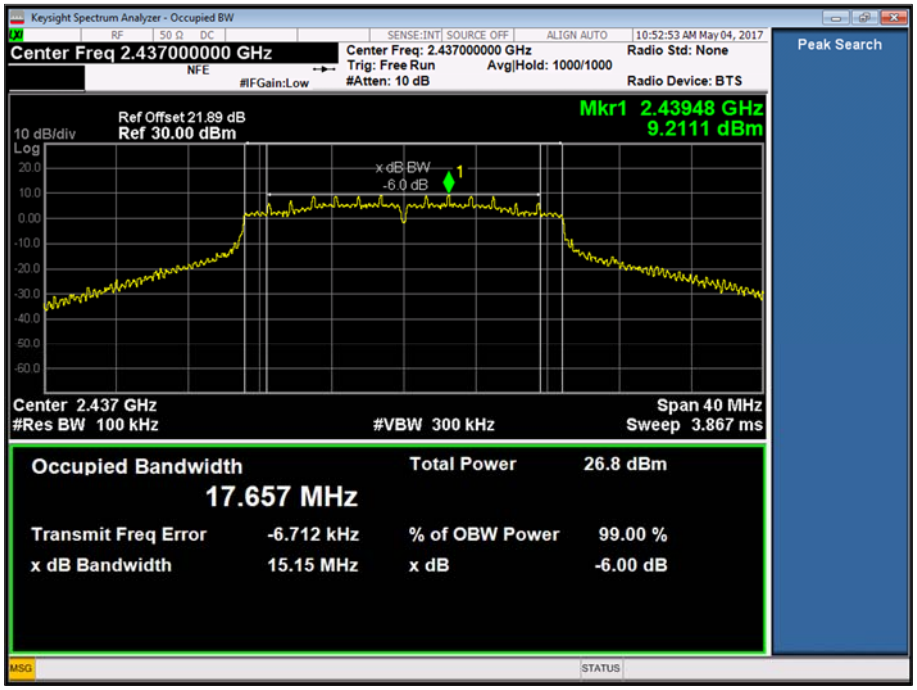

Figure 8 - 2437 MHz

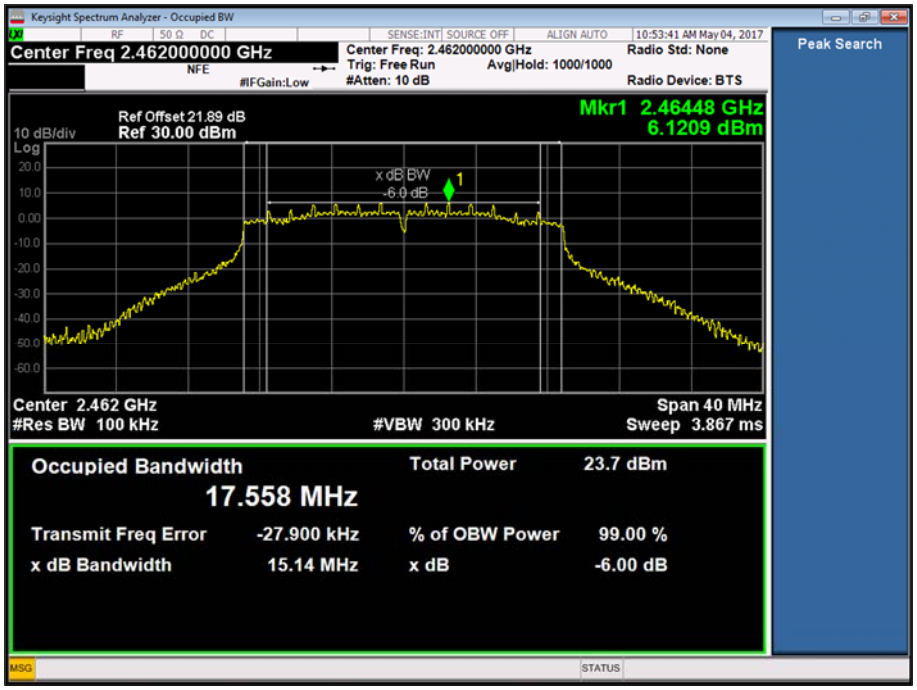

Figure 9 - 2462 MHz

FCC 47 CFR Part 15C, Limit Clause 15.247(a)(2)

The minimum 6 dB Bandwidth shall be at least 500 kHz.

Industry Canada RSS-247, Clause 5.2(a)

The minimum 6 dB Bandwidth shall be at least 500 kHz.

802.11n (40 MHz Bandwidth)

Modulation Coding Scheme: MCS2

Frequency (MHz)	6 dB Bandwidth (MHz)
2422	35.10
2437	35.08
2452	35.13

Table 18

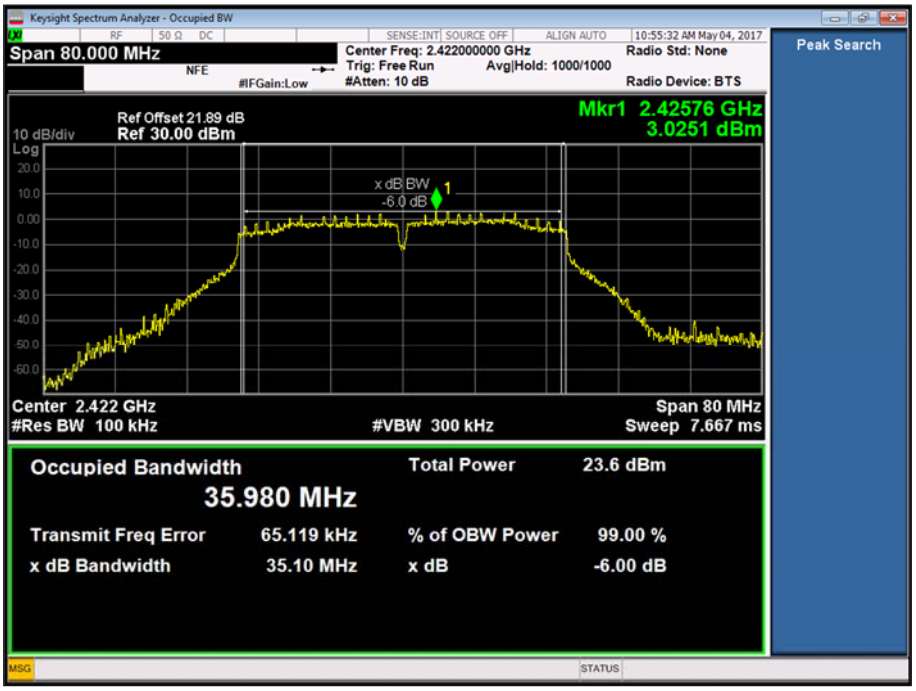

Figure 10 - 2422 MHz

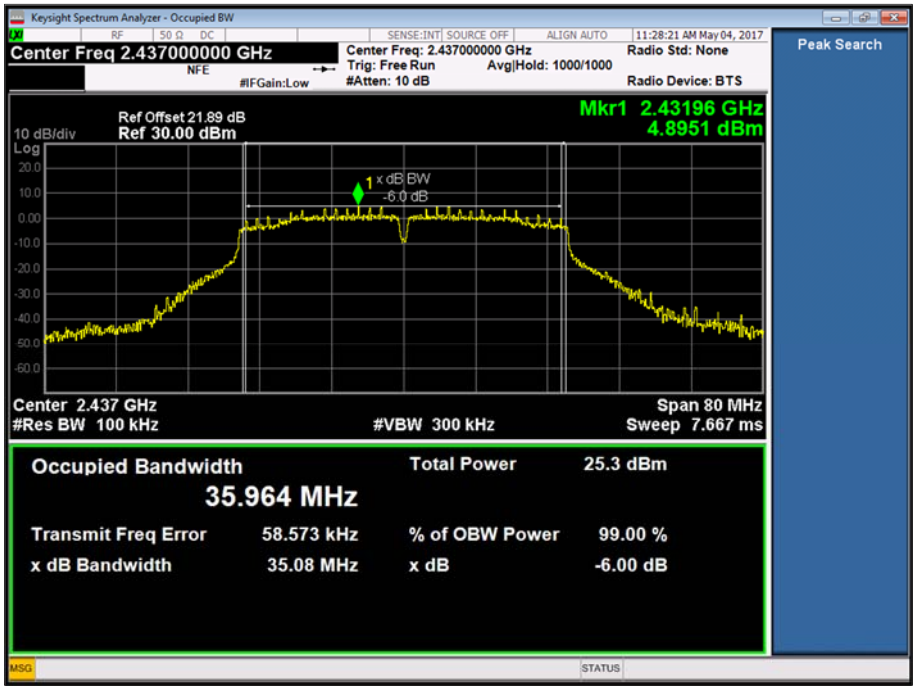

Figure 11 - 2437 MHz

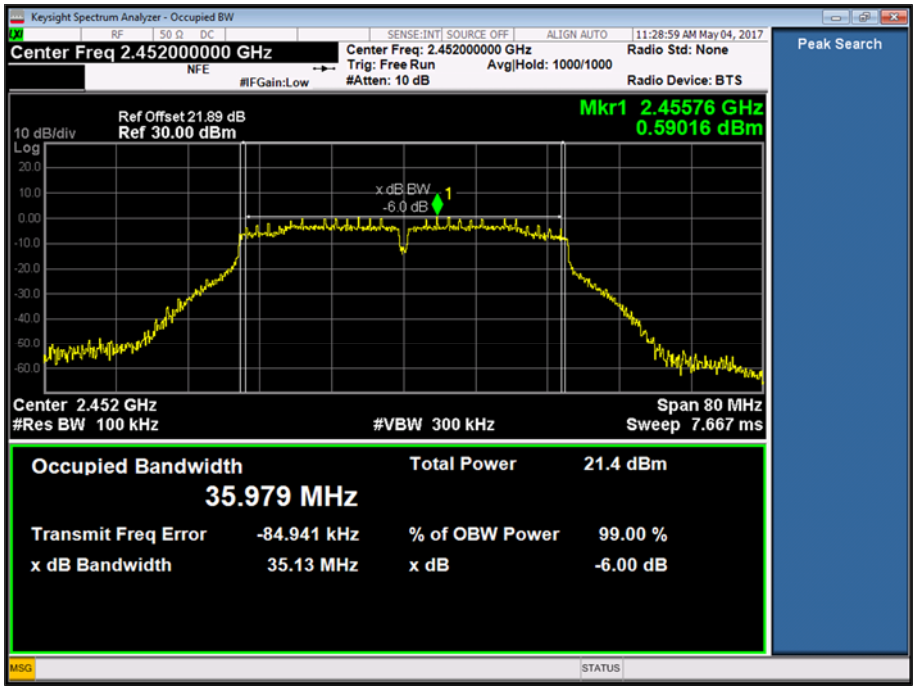

Figure 12 - 2452 MHz

FCC 47 CFR Part 15C, Limit Clause 15.247(a)(2)

The minimum 6 dB Bandwidth shall be at least 500 kHz.

Industry Canada RSS-247, Clause 5.2(a)

The minimum 6 dB Bandwidth shall be at least 500 kHz.

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	08-Sep-2017
Frequency Standard	Spectracom	Secure Sync 1200-0408-0601	4393	6	09-Sep-2017
PXA Signal Analyser	Keysight Technologies	N9030A	4654	12	06-Oct-2017
2 metre SMA Cable	IW Microwave	3PS-1806LC-788-3PS	4829	12	24-Jan-2018

Table 19

O/P Mon – Output Monitored using calibrated equipment

2.4 Authorised Band Edges

2.4.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.247 (d)
Industry Canada RSS-247, Clause 5.5

2.4.2 Equipment Under Test and Modification State

DAQRI Compute Pack, S/N: OA565-7DF-82K70497C1 - Modification State 0

2.4.3 Date of Test

18-April-2017 to 19-April-2017

2.4.4 Test Method

Testing was performed in accordance with ANSI C63.10, clause 11.13.1

2.4.5 Environmental Conditions

Ambient Temperature	17.9 - 18.6 °C
Relative Humidity	28.0 - 29.0 %

2.4.6 Test Results

802.11b

Mode	Data Rate/MCS	Frequency (MHz)	Measured Frequency (MHz)	Peak Level (dBµV/m)
Data Rate/MCS with Highest Power	5.5 Mbps	2412	2400.0	69.63
Data Rate/MCS with Highest Power	5.5 Mbps	2462	2483.5	49.98
Data Rate/MCS with Widest Bandwidth	1 Mbps	2412	2400.0	56.95
Data Rate/MCS with Widest Bandwidth	1 Mbps	2462	2483.5	48.53

Table 20

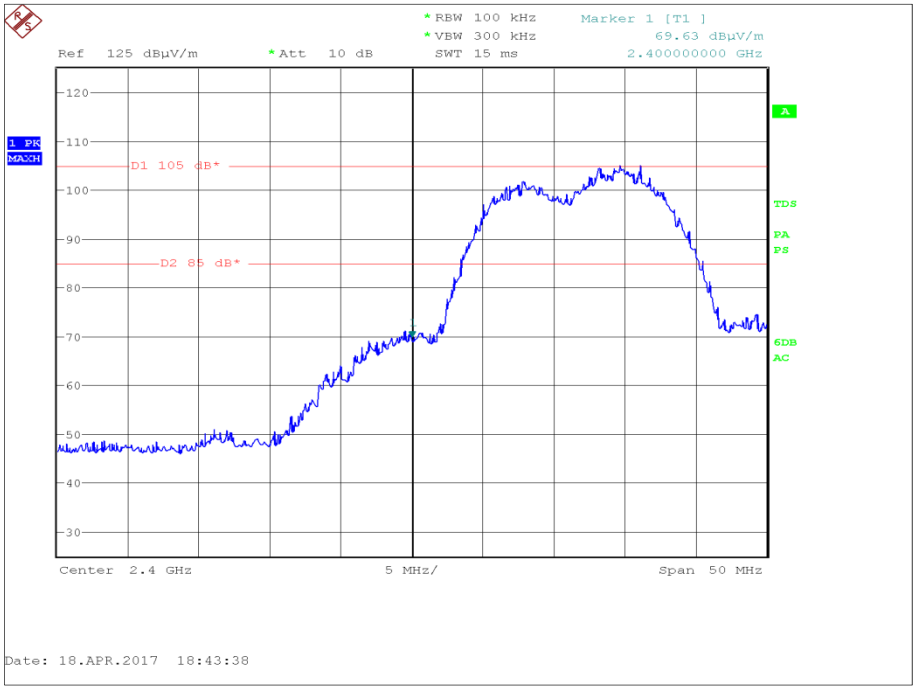

Figure 13 - Data Rate/MCS with Highest Power - 5.5 Mbps - 2412 MHz - Measured Frequency 2400.0 MHz

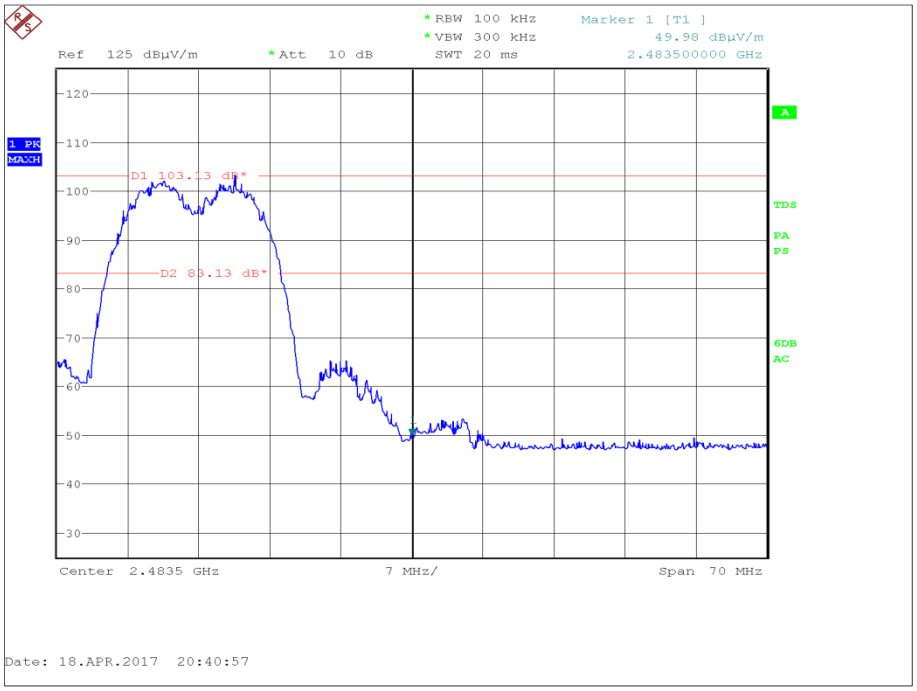

Figure 14 - Data Rate/MCS with Highest Power - 5.5 Mbps - 2462 MHz - Measured Frequency 2483.5 MHz

Figure 15 - Data Rate/MCS with Widest Bandwidth - 1 Mbps - 2412 MHz - Measured Frequency 2400.0 MHz

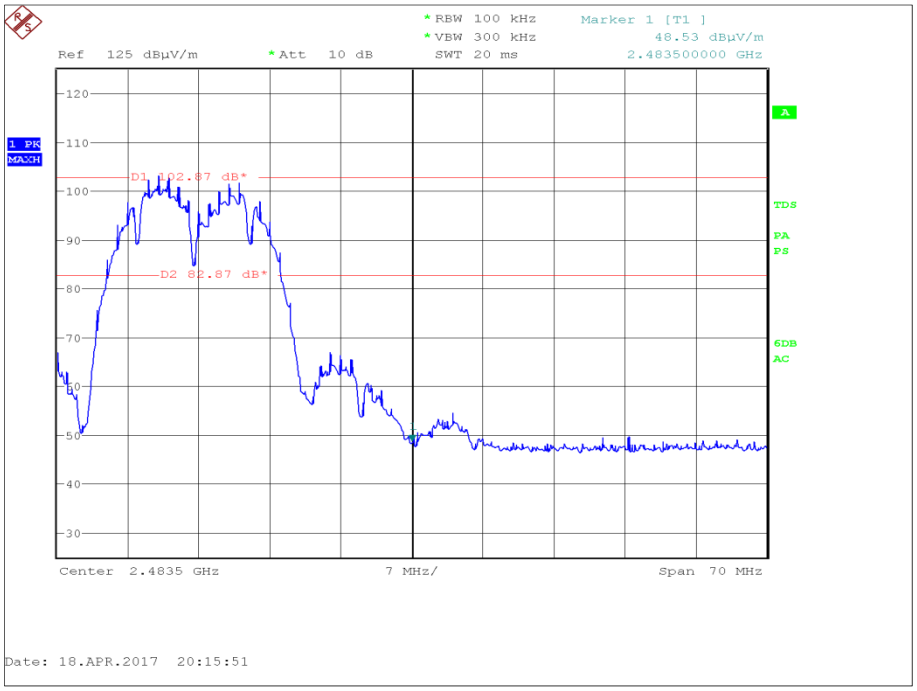

Figure 16 - Data Rate/MCS with Widest Bandwidth - 1 Mbps - 2462 MHz - Measured Frequency 2483.5 MHz

FCC 47 CFR Part 15C, Limit Clause 15.247 (d)

20 dB below the fundamental measured in a 100 kHz bandwidth using a peak detector. If the transmitter complies with the conducted power limits, based on the use of RMS averaging over a time interval, the attenuation required shall be 30 dB below the fundamental instead of 20 dB.

Industry Canada RSS-247, Limit Clause 5.5

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under Section 5.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

802.11g

Mode	Data Rate/MCS	Frequency (MHz)	Measured Frequency (MHz)	Peak Level (dBµV/m)
Data Rate/MCS with Highest Power and Widest Bandwidth	6 Mbps	2412	2400.0	64.18
Data Rate/MCS with Highest Power and Widest Bandwidth	6 Mbps	2462	2483.5	55.35

Table 21

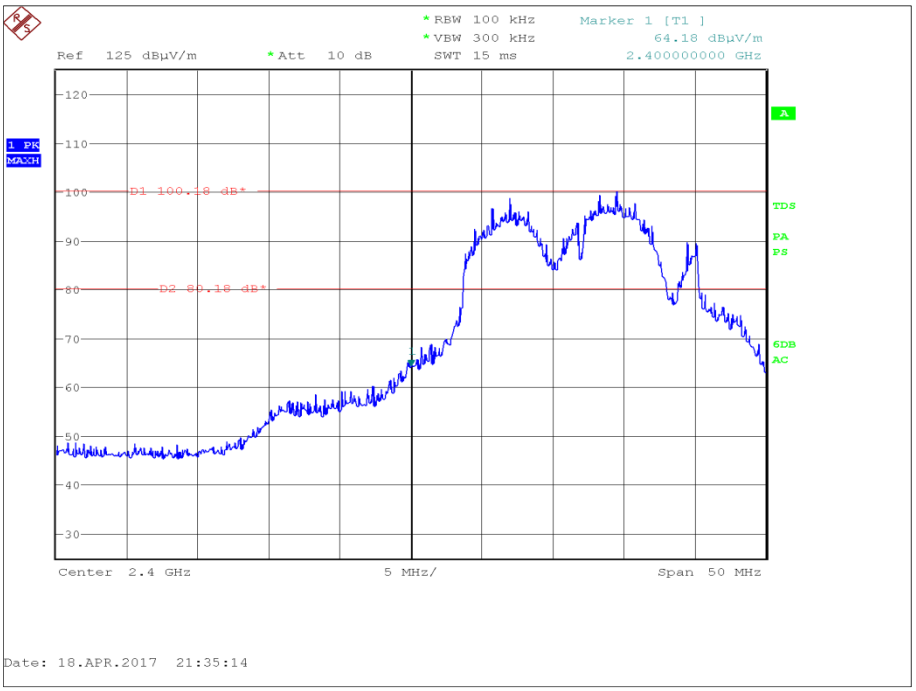

Figure 17 - Data Rate/MCS with Highest Power and Widest Bandwidth - 6 Mbps - 2412 MHz - Measured Frequency 2400.0 MHz

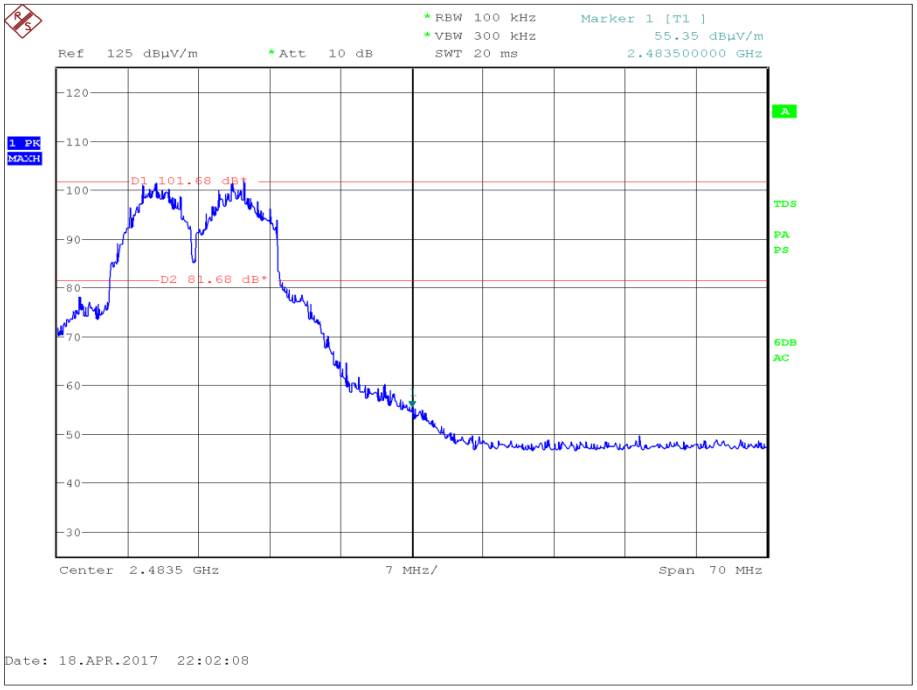

Figure 18 - Data Rate/MCS with Highest Power and Widest Bandwidth - 6 Mbps - 2462 MHz - Measured Frequency 2483.5 MHz

FCC 47 CFR Part 15C, Limit Clause 15.247 (d)

20 dB below the fundamental measured in a 100 kHz bandwidth using a peak detector. If the transmitter complies with the conducted power limits, based on the use of RMS averaging over a time interval, the attenuation required shall be 30 dB below the fundamental instead of 20 dB.

Industry Canada RSS-247, Limit Clause 5.5

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under Section 5.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

802.11n (20 MHz Bandwidth)

Mode	Data Rate/MCS	Frequency (MHz)	Measured Frequency (MHz)	Peak Level (dBµV/m)
Data Rate/MCS with Highest Power and Widest Bandwidth	MCS1	2412	2400.0	66.14
Data Rate/MCS with Highest Power and Widest Bandwidth	MCS1	2462	2483.5	51.87

Table 22

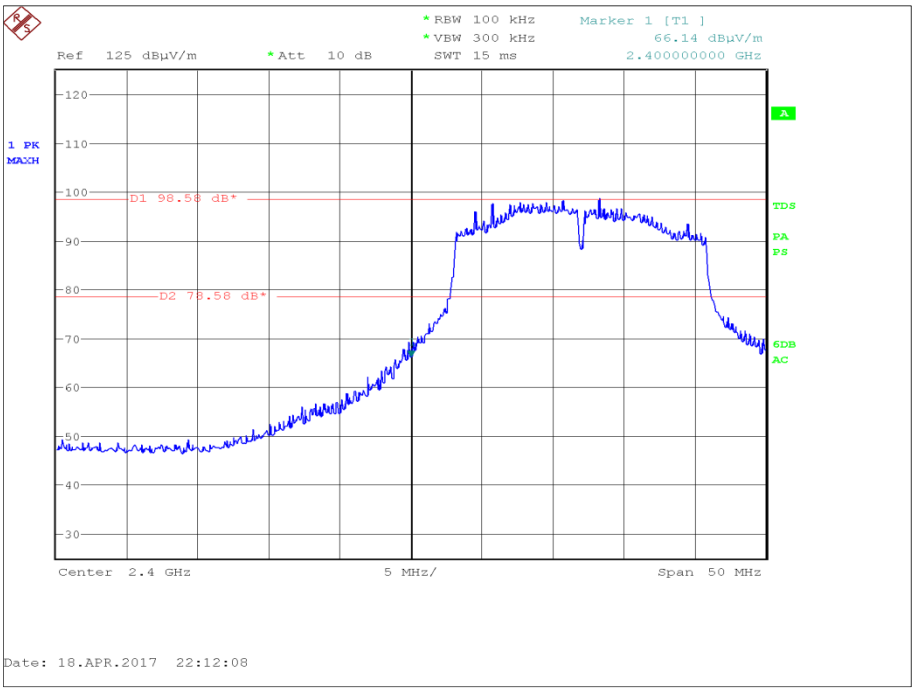

Figure 19 - Data Rate/MCS with Highest Power and Widest Bandwidth - MCS1 - 2412 MHz - Measured Frequency 2400.0 MHz

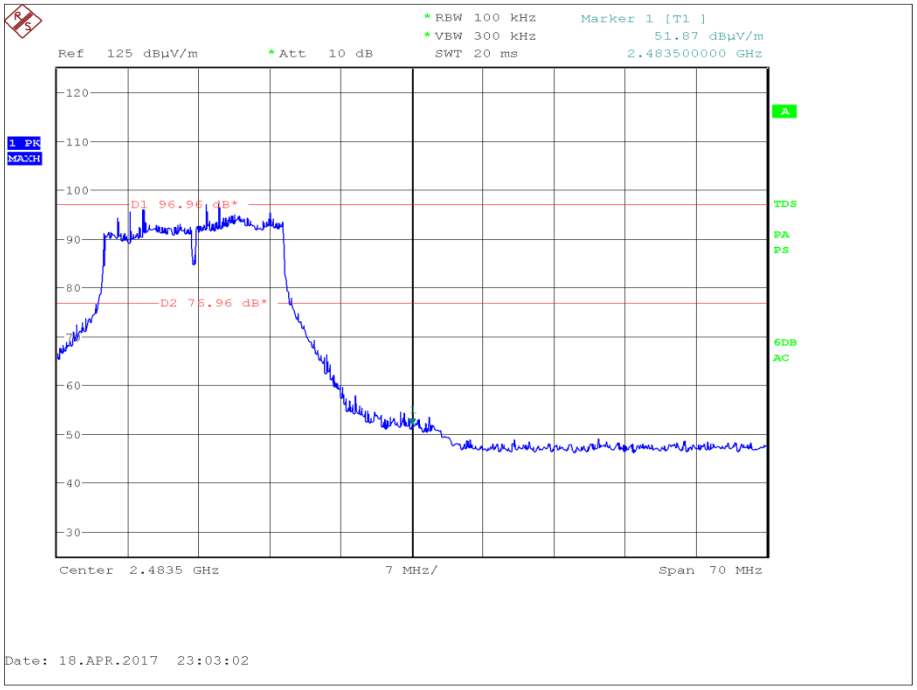

Figure 20 - Data Rate/MCS with Highest Power and Widest Bandwidth - MCS1 - 2462 MHz - Measured Frequency 2483.5 MHz

FCC 47 CFR Part 15C, Limit Clause 15.247 (d)

20 dB below the fundamental measured in a 100 kHz bandwidth using a peak detector. If the transmitter complies with the conducted power limits, based on the use of RMS averaging over a time interval, the attenuation required shall be 30 dB below the fundamental instead of 20 dB.

Industry Canada RSS-247, Limit Clause 5.5

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under Section 5.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

802.11n (40 MHz Bandwidth)

Mode	Data Rate/MCS	Frequency (MHz)	Measured Frequency (MHz)	Peak Level (dBµV/m)
Data Rate/MCS with Highest Power	MCS2	2422	2400.0	58.21
Data Rate/MCS with Highest Power	MCS2	2452	2483.5	50.56
Data Rate/MCS with Widest Bandwidth	MCS0	2422	2400.0	60.18
Data Rate/MCS with Widest Bandwidth	MCS0	2452	2483.5	50.15

Table 23

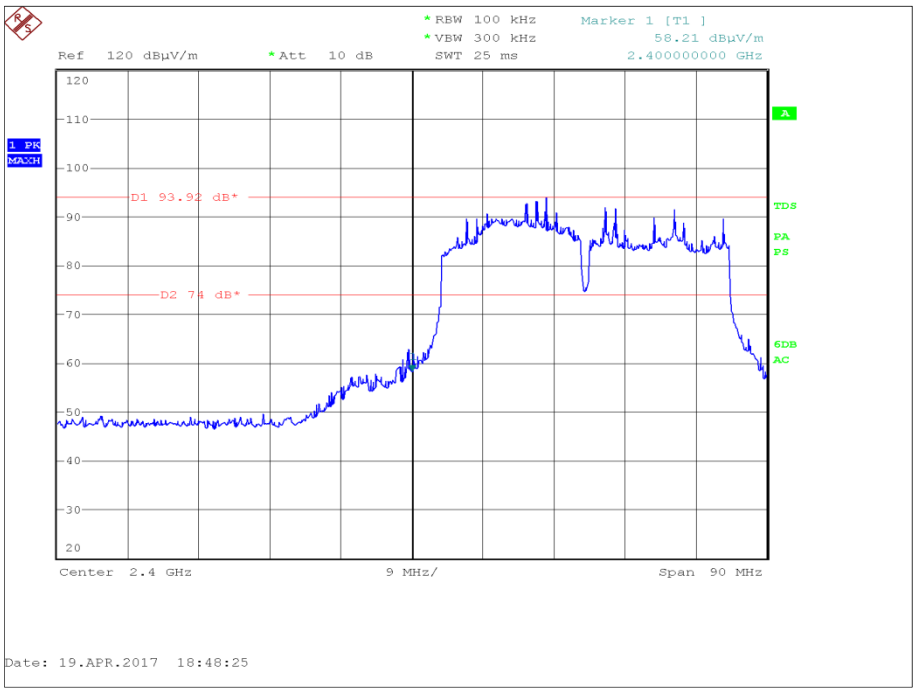

Figure 21 - Data Rate/MCS with Highest Power - MCS2 - 2422 MHz - Measured Frequency 2400.0 MHz

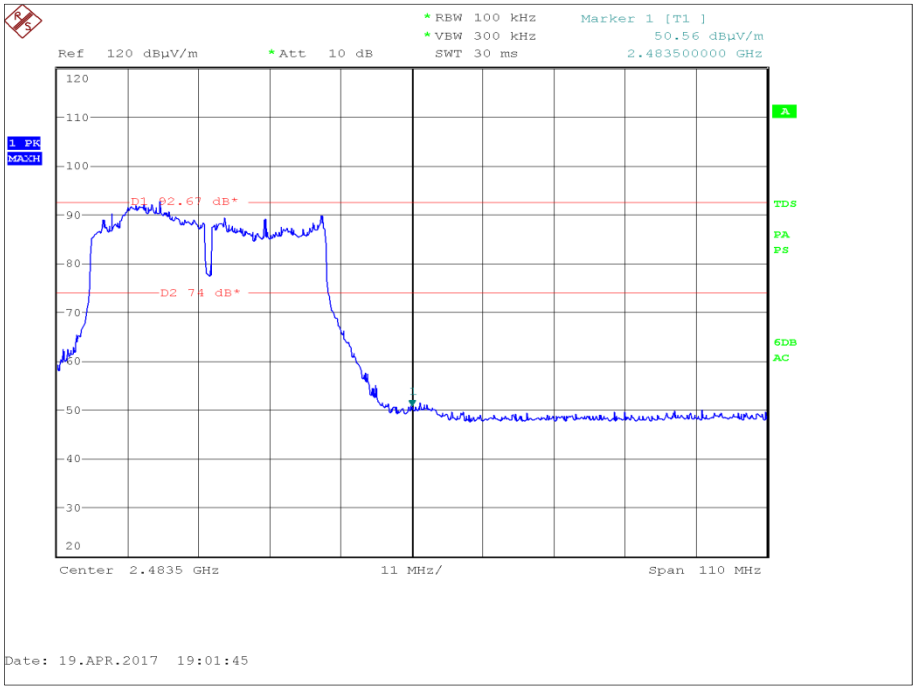

Figure 22 - Data Rate/MCS with Highest Power - MCS2 - 2452 MHz - Measured Frequency 2483.5 MHz

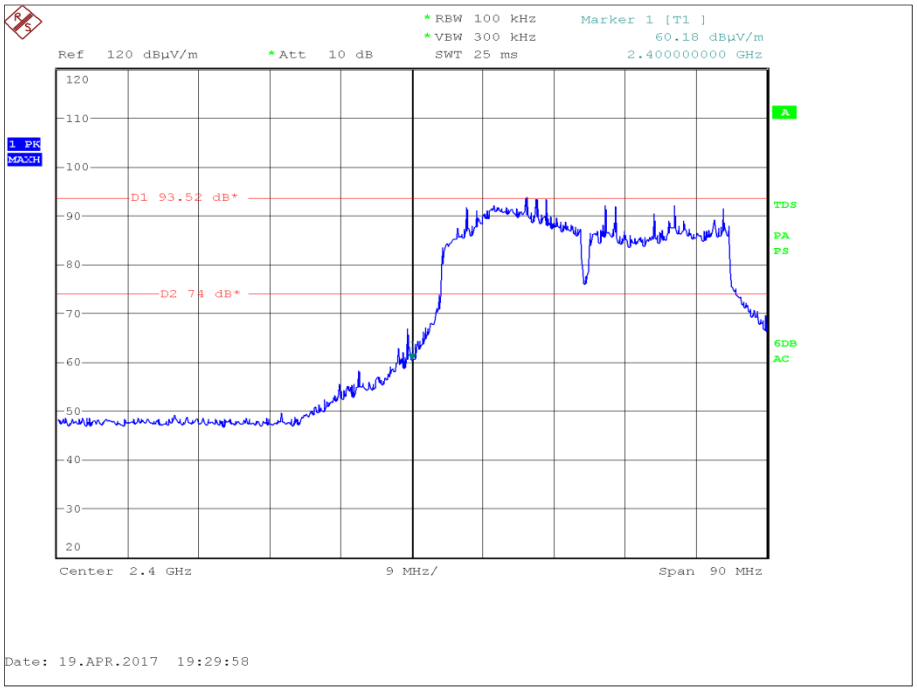

Figure 23 - Data Rate/MCS with Widest Bandwidth - MCS0 - 2422 MHz - Measured Frequency 2400.0 MHz

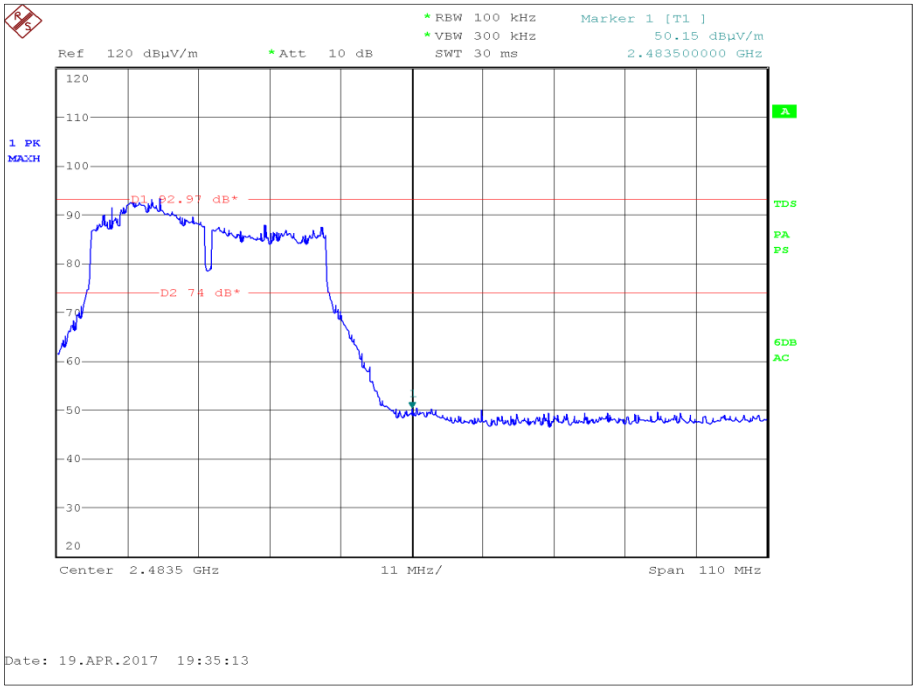

Figure 24 - Data Rate/MCS with Widest Bandwidth - MCS0 - 2452 MHz - Measured Frequency 2483.5 MHz

FCC 47 CFR Part 15C, Limit Clause 15.247 (d)

20 dB below the fundamental measured in a 100 kHz bandwidth using a peak detector. If the transmitter complies with the conducted power limits, based on the use of RMS averaging over a time interval, the attenuation required shall be 30 dB below the fundamental instead of 20 dB.

Industry Canada RSS-247, Limit Clause 5.5

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under Section 5.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

2.4.7 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
Screened Room (5)	Rainford	Rainford	1545	36	20-Dec-2017
Turntable Controller	Inn-Co GmbH	CO 1000	1606	-	TU
Hygromer	Rotronic	A1	2138	12	02-Feb-2018
Cable (N-N, 8m)	Rhophase	NPS-2302-8000-NPS	3248	-	O/P Mon
EMI Test Receiver	Rohde & Schwarz	ESU40	3506	12	12-Nov-2017
Tilt Antenna Mast	maturo Gmbh	TAM 4.0-P	3916	-	TU
Mast Controller	maturo Gmbh	NCD	3917	-	TU
Cable (Yellow, Rx, Km-Km 2m)	Scott Cables	KPS-1501-2000-KPS	4527	-	O/P Mon
Double Ridge Broadband Horn Antenna	Schwarzbeck	BBHA 9120 B	4848	12	17-Feb-2018

Table 24

TU - Traceability Unscheduled
O/P Mon – Output Monitored using calibrated equipment

2.5 Restricted Band Edges

2.5.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.205
Industry Canada RSS-GEN, Clause 8.10

2.5.2 Equipment Under Test and Modification State

DAQRI Compute Pack, S/N: OA565-7DF-82K70497C1 - Modification State 0

2.5.3 Date of Test

18-April-2017 to 19-April-2017

2.5.4 Test Method

Testing was performed in accordance with ANSI C63.10, clause 11.13.1

Plots for average measurements were taken in accordance with ANSI C63.10, clause 4.1.4.2.3

Final average measurements were taken in accordance with ANSI C63.10, clause 4.1.4.2.2

2.5.5 Environmental Conditions

Ambient Temperature	17.9 - 18.6 °C
Relative Humidity	28.0 - 29.0 %

2.5.6 Test Results

802.11b

Mode	Data Rate/MCS	Frequency (MHz)	Measured Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
Data Rate/MCS with Highest Power	5.5 Mbps	2412	2390.0	65.76	47.93
Data Rate/MCS with Highest Power	5.5 Mbps	2462	2483.5	66.06	46.00
Data Rate/MCS with Widest Bandwidth	1 Mbps	2412	2390.0	62.13	47.42
Data Rate/MCS with Widest Bandwidth	1 Mbps	2462	2483.5	65.02	44.73

Table 25

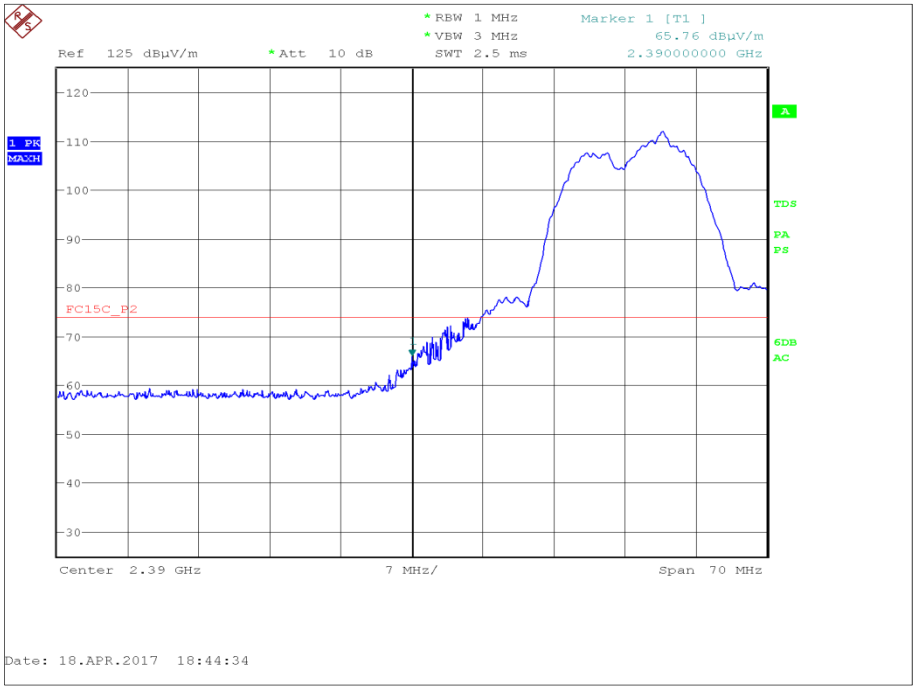

Figure 25 - Data Rate/MCS with Highest Power - 5.5 Mbps - 2412 MHz - Measured Frequency 2390.0 MHz - Peak

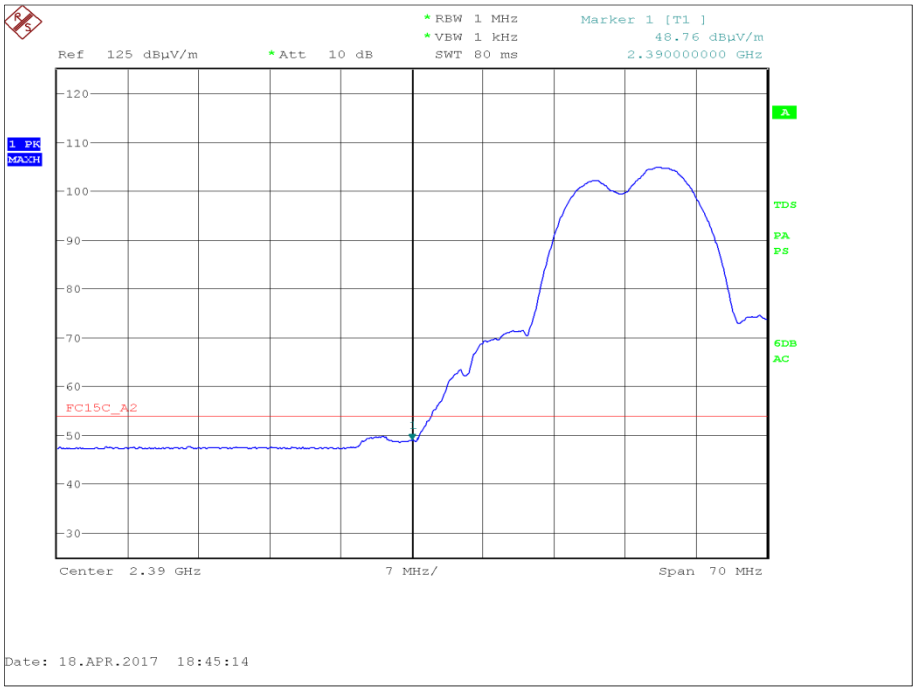

Figure 26 - Data Rate/MCS with Highest Power - 5.5 Mbps - 2412 MHz - Measured Frequency 2390.0 MHz - Average

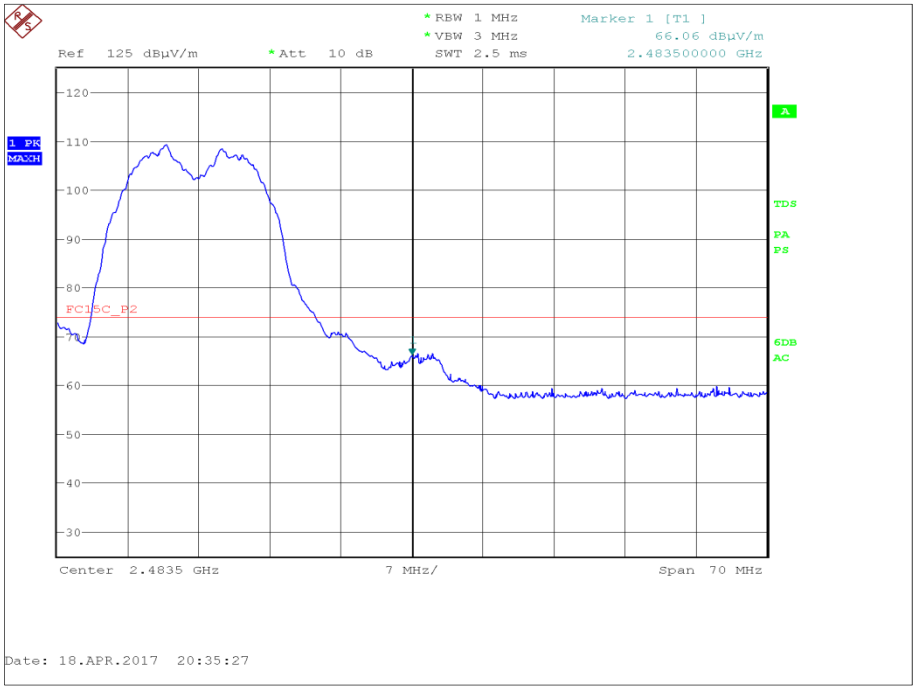

Figure 27 - Data Rate/MCS with Highest Power - 5.5 Mbps - 2462 MHz - Measured Frequency 2483.5 MHz - Peak

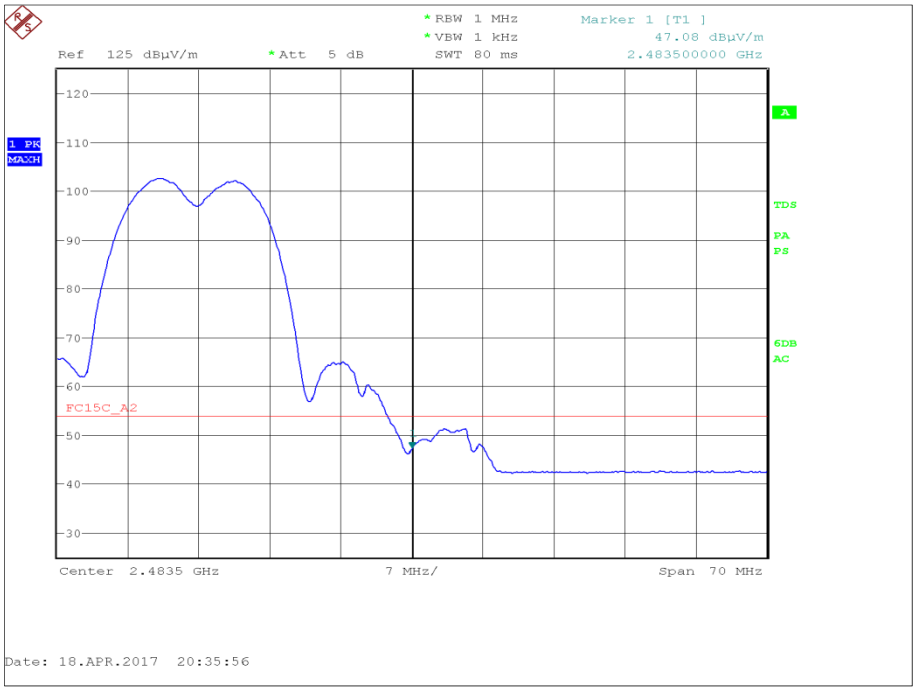

Figure 28 - Data Rate/MCS with Highest Power - 5.5 Mbps - 2462 MHz - Measured Frequency 2483.5 MHz - Average

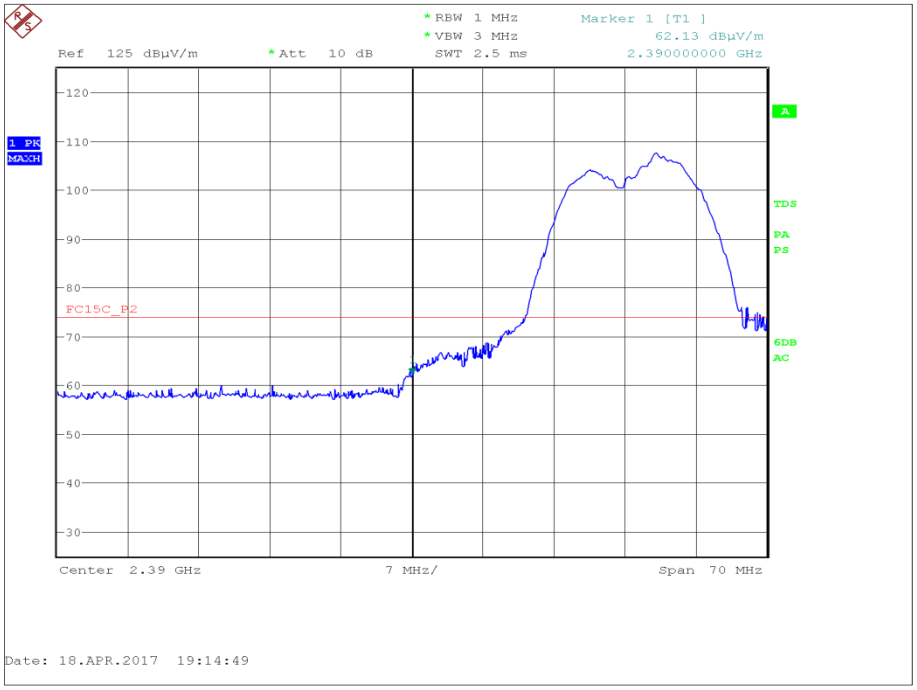

Figure 29 - Data Rate/MCS with Widest Bandwidth - 1 Mbps - 2412 MHz - Measured Frequency 2390.0 MHz - Peak

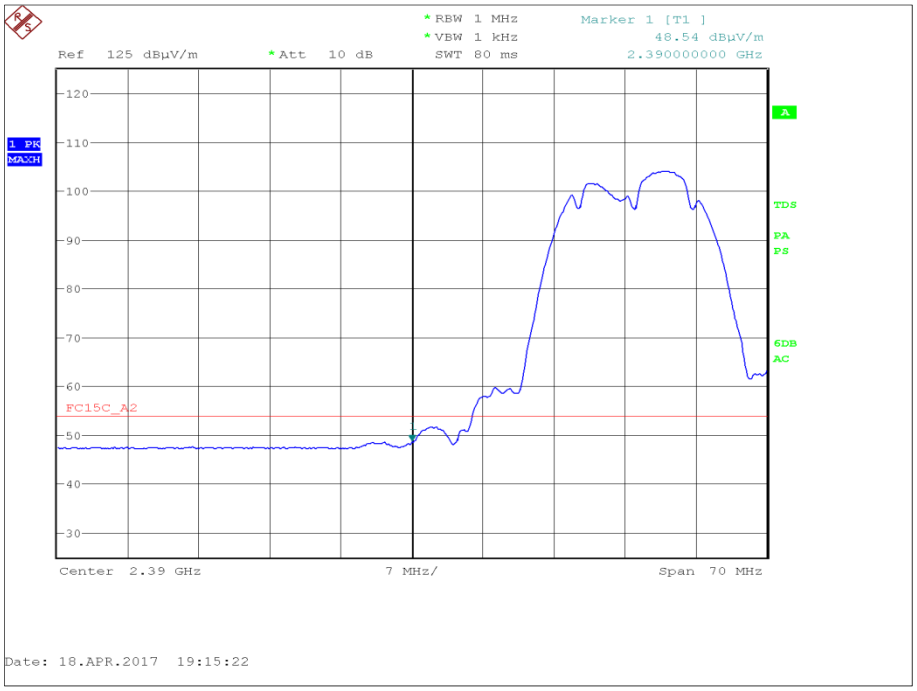

Figure 30 - Data Rate/MCS with Widest Bandwidth - 1 Mbps - 2412 MHz - Measured Frequency 2390.0 MHz - Average

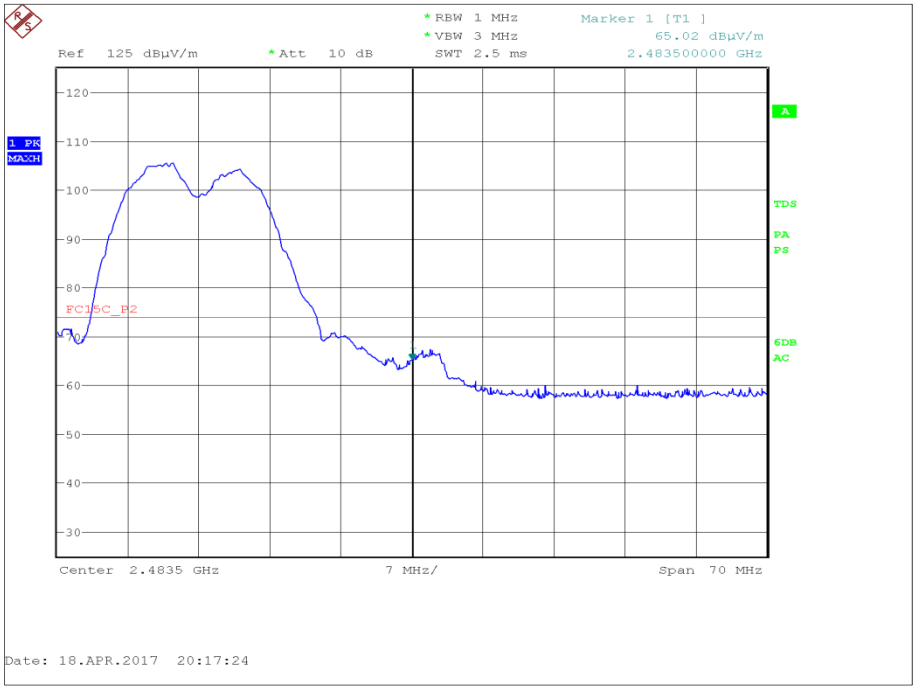

Figure 31 - Data Rate/MCS with Widest Bandwidth - 1 Mbps - 2462 MHz - Measured Frequency 2483.5 MHz - Peak

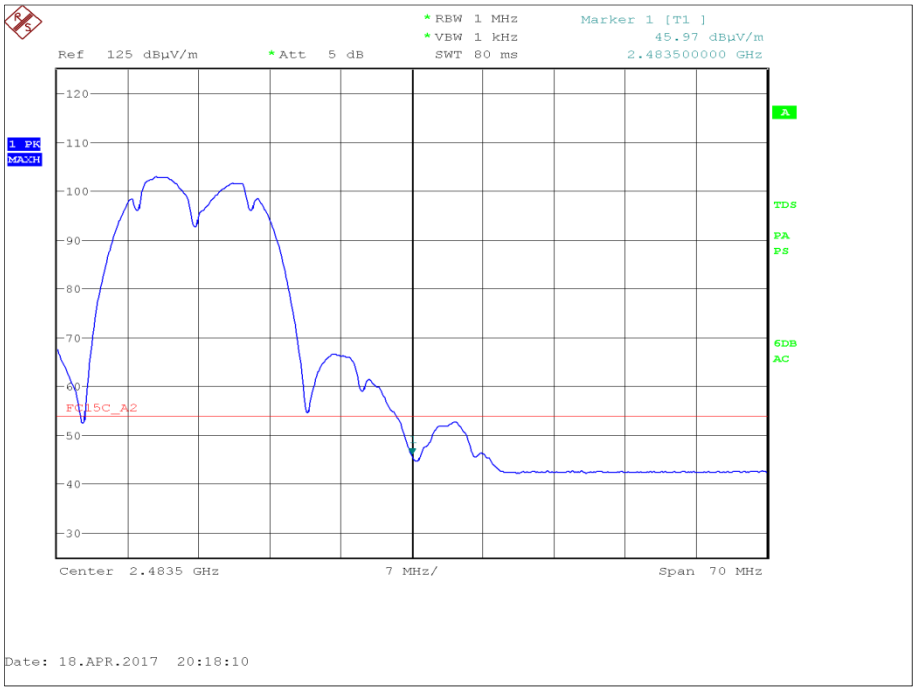

Figure 32 - Data Rate/MCS with Widest Bandwidth - 1 Mbps - 2462 MHz - Measured Frequency 2483.5 MHz - Average

FCC 47 CFR Part 15C, Limit Clause 15.205

	Peak (dBµV/m)	Average (dBµV/m)
Restricted Bands of Operation	74	54

Table 26

Industry Canada RSS-GEN, Limit Clause 8.9

Frequency (MHz)	Field Strength (µV/m at 3 metres)
30-88	100
88-216	150
216-960	200
Above 960*	500

Table 27

*Unless otherwise specified, for all frequencies greater than 1 GHz, the radiated emission limits for licence-exempt radio apparatus stated in applicable RSSs (including RSS-Gen) are based on measurements using a linear average detector function having a minimum resolution bandwidth of 1 MHz. If an average limit is specified for the EUT, then the peak emission shall also be measured with instrumentation properly adjusted for such factors as pulse desensitization to ensure the peak emission is less than 20 dB above the average limit.

802.11g

Mode	Data Rate/MCS	Frequency (MHz)	Measured Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
Data Rate/MCS with Highest Power and Widest Bandwidth	6 Mbps	2412	2390.0	68.60	52.14
Data Rate/MCS with Highest Power and Widest Bandwidth	6 Mbps	2462	2483.5	69.11	52.18

Table 28

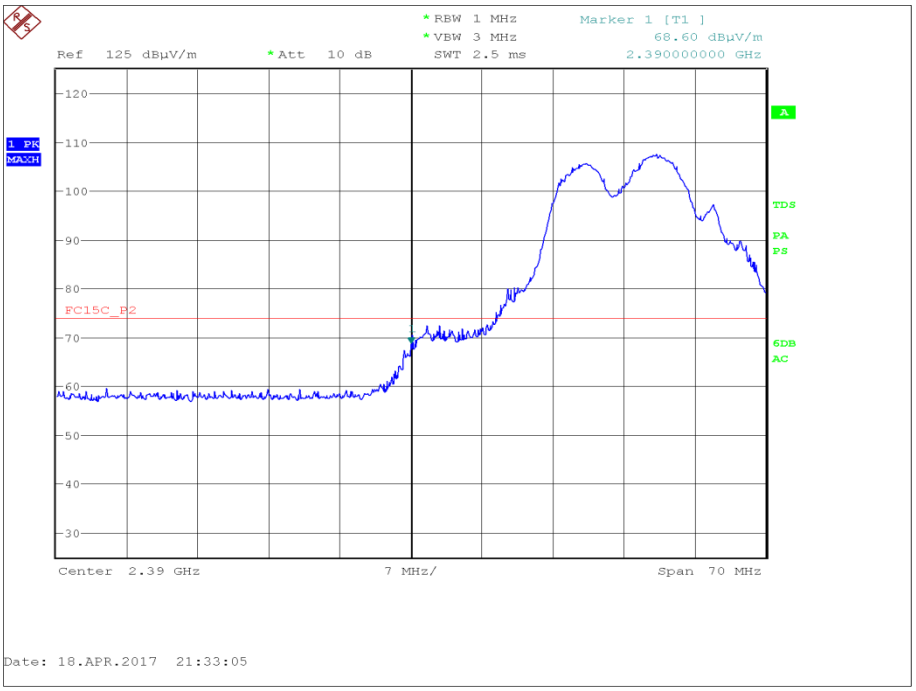

Figure 33 - Data Rate/MCS with Highest Power and Widest Bandwidth – 6 Mbps - 2412 MHz - Measured Frequency 2390.0 MHz - Peak

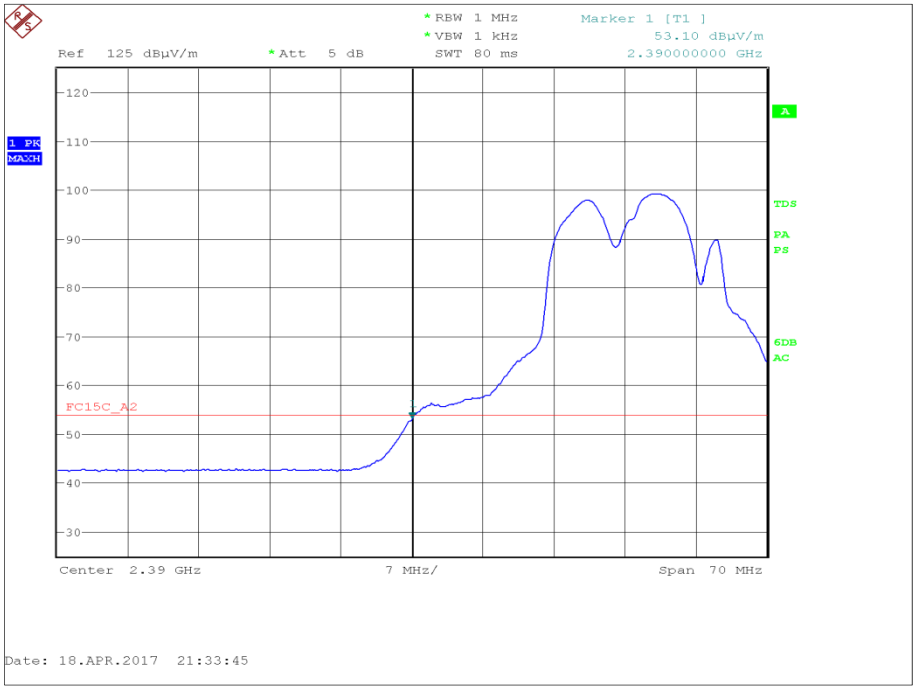

Figure 34 - Data Rate/MCS with Highest Power and Widest Bandwidth – 6 Mbps - 2412 MHz - Measured Frequency 2390.0 MHz - Average

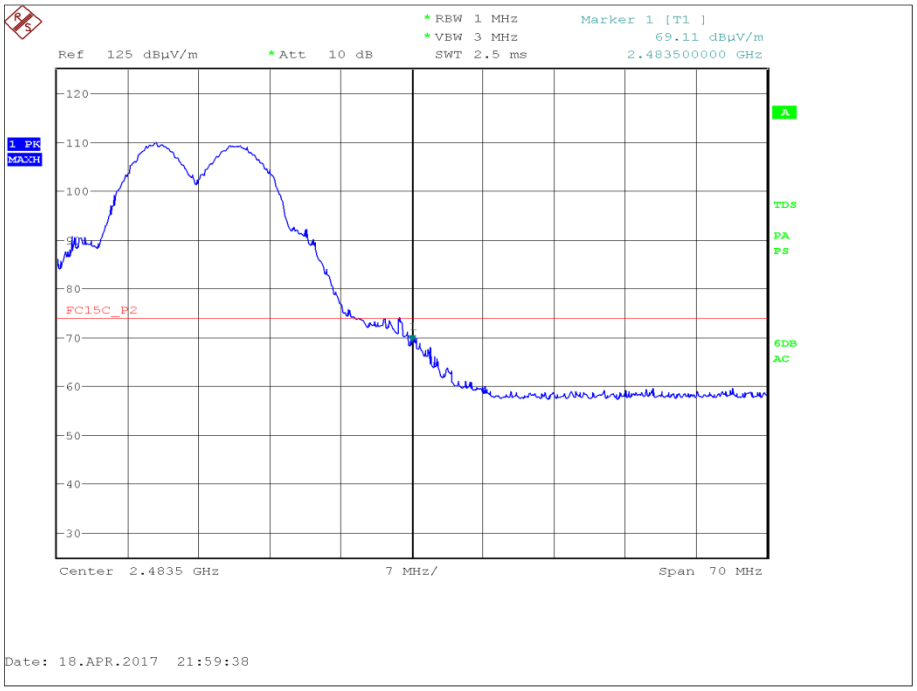

Figure 35 - Data Rate/MCS with Highest Power and Widest Bandwidth – 6 Mbps - 2462 MHz - Measured Frequency 2483.5 MHz - Peak

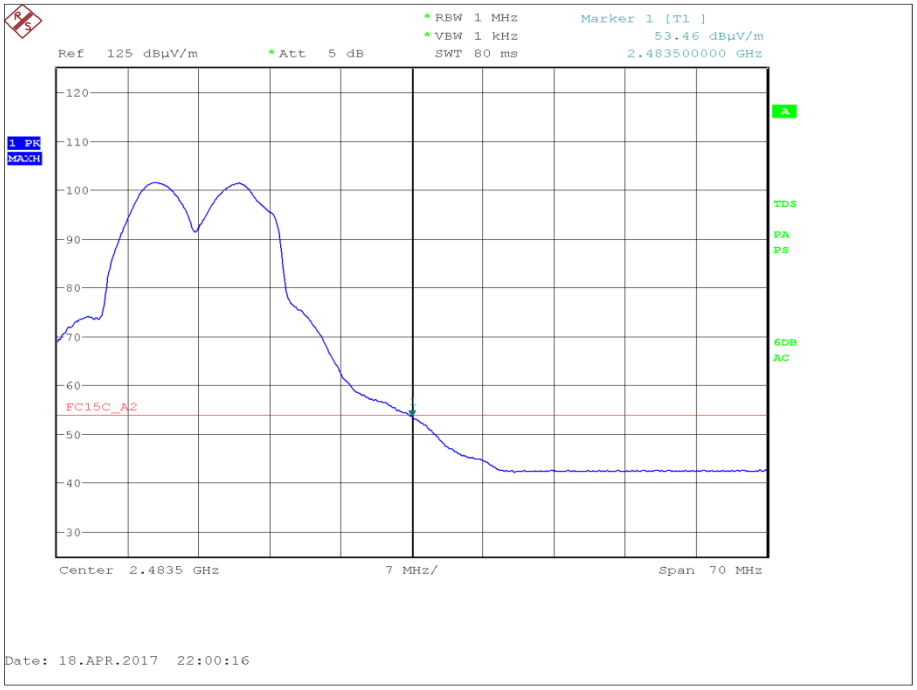

Figure 36 - Data Rate/MCS with Highest Power and Widest Bandwidth – 6 Mbps - 2462 MHz - Measured Frequency 2483.5 MHz - Average

FCC 47 CFR Part 15C, Limit Clause 15.205

	Peak (dBµV/m)	Average (dBµV/m)
Restricted Bands of Operation	74	54

Table 29

Industry Canada RSS-GEN, Limit Clause 8.9

Frequency (MHz)	Field Strength (µV/m at 3 metres)
30-88	100
88-216	150
216-960	200
Above 960*	500

Table 30

*Unless otherwise specified, for all frequencies greater than 1 GHz, the radiated emission limits for licence-exempt radio apparatus stated in applicable RSSs (including RSS-Gen) are based on measurements using a linear average detector function having a minimum resolution bandwidth of 1 MHz. If an average limit is specified for the EUT, then the peak emission shall also be measured with instrumentation properly adjusted for such factors as pulse desensitization to ensure the peak emission is less than 20 dB above the average limit.

802.11n (20 MHz Bandwidth)

Mode	Data Rate/MCS	Frequency (MHz)	Measured Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
Data Rate/MCS with Highest Power and Widest Bandwidth	MCS1	2412	2390.0	62.46	48.93
Data Rate/MCS with Highest Power and Widest Bandwidth	MCS1	2462	2483.5	64.21	48.89

Table 31

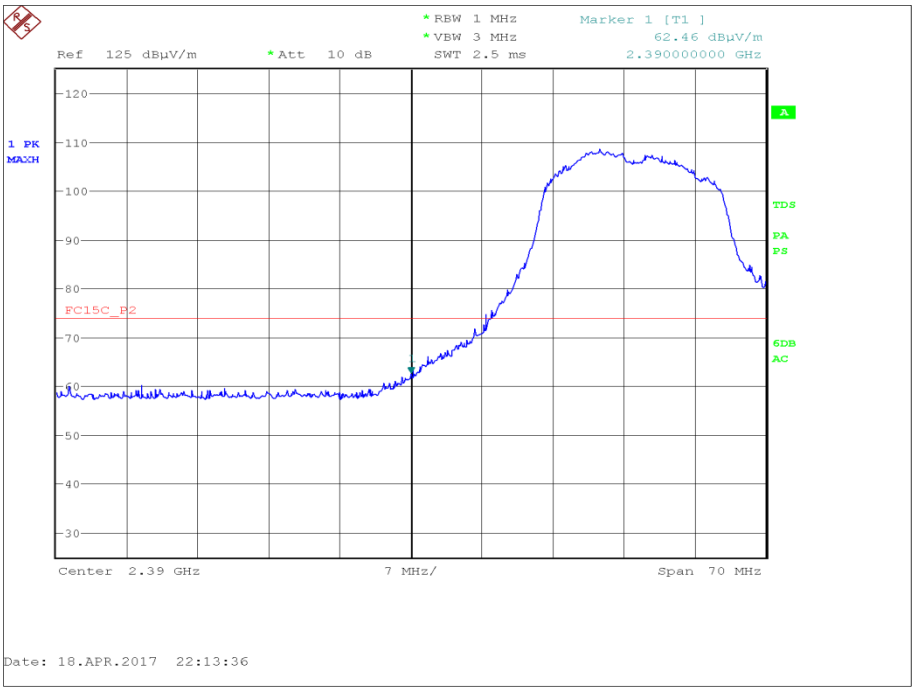

Figure 37 - Data Rate/MCS with Highest Power and Widest Bandwidth - MCS1 - 2412 MHz - Measured Frequency 2390.0 MHz - Peak

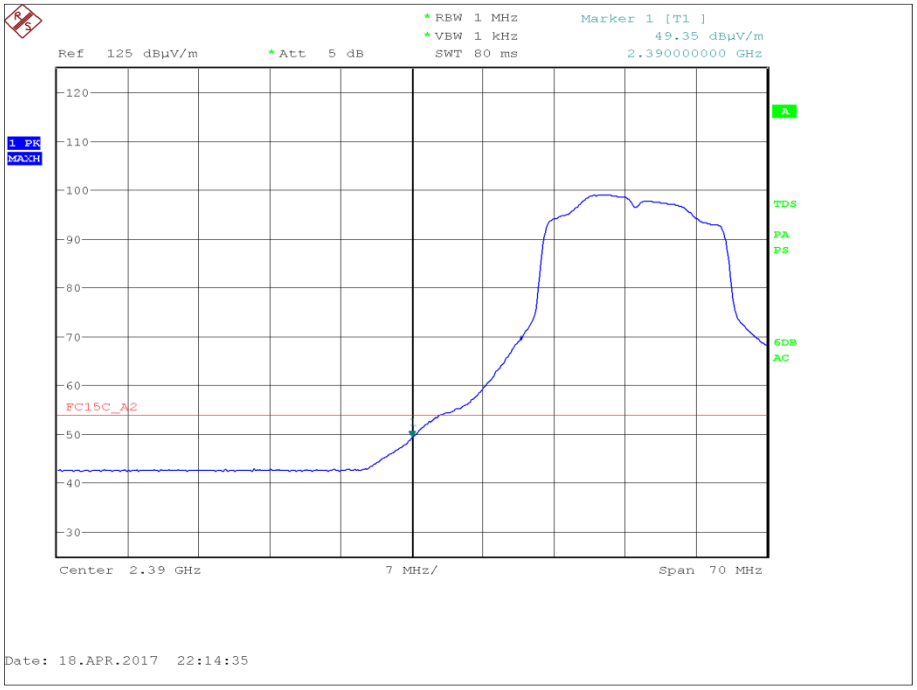

Figure 38 - Data Rate/MCS with Highest Power and Widest Bandwidth - MCS1 - 2412 MHz - Measured Frequency 2390.0 MHz - Average

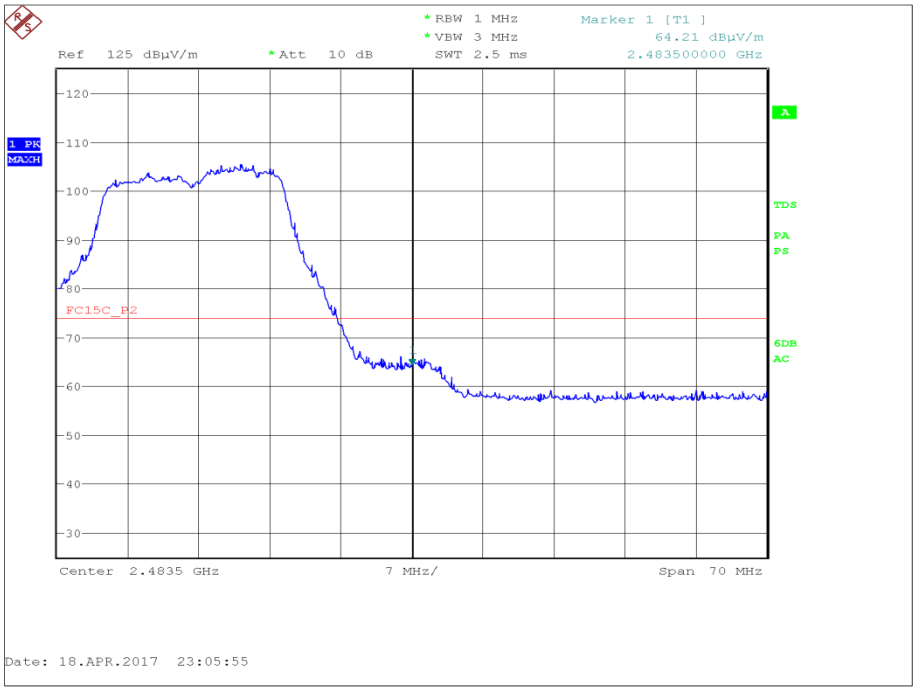

Figure 39 - Data Rate/MCS with Highest Power and Widest Bandwidth - MCS1 - 2462 MHz - Measured Frequency 2483.5 MHz - Peak

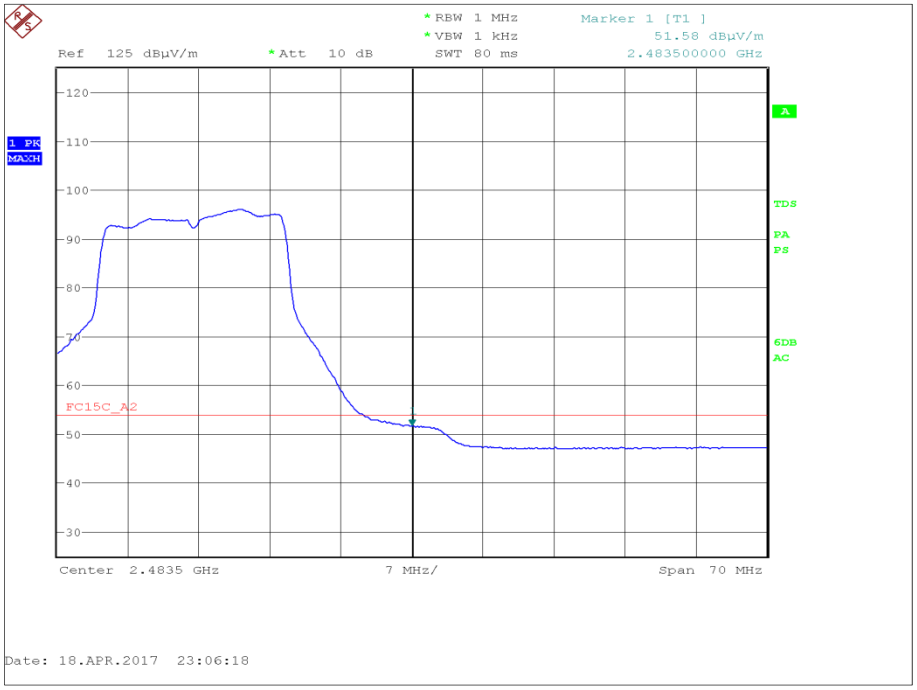

Figure 40 - Data Rate/MCS with Highest Power and Widest Bandwidth - MCS1 - 2462 MHz - Measured Frequency 2483.5 MHz – Average

FCC 47 CFR Part 15C, Limit Clause 15.205

	Peak (dBµV/m)	Average (dBµV/m)
Restricted Bands of Operation	74	54

Table 32

Industry Canada RSS-GEN, Limit Clause 8.9

Frequency (MHz)	Field Strength (µV/m at 3 metres)
30-88	100
88-216	150
216-960	200
Above 960*	500

Table 33

*Unless otherwise specified, for all frequencies greater than 1 GHz, the radiated emission limits for licence-exempt radio apparatus stated in applicable RSSs (including RSS-Gen) are based on measurements using a linear average detector function having a minimum resolution bandwidth of 1 MHz. If an average limit is specified for the EUT, then the peak emission shall also be measured with instrumentation properly adjusted for such factors as pulse desensitization to ensure the peak emission is less than 20 dB above the average limit.

802.11n (40 MHz Bandwidth)

Mode	Data Rate/MCS	Frequency (MHz)	Measured Frequency (MHz)	Peak Level (dBµV/m)	Average Level (dBµV/m)
Data Rate/MCS with Highest Power	MCS2	2422	2390.0	65.06	49.96
Data Rate/MCS with Highest Power	MCS2	2452	2483.5	59.80	47.91
Data Rate/MCS with Widest Bandwidth	MCS0	2422	2390.0	65.14	48.91
Data Rate/MCS with Widest Bandwidth	MCS0	2452	2483.5	59.60	47.60

Table 34

Figure 41 - Data Rate/MCS with Highest Power - MCS2 - 2422 MHz - Measured Frequency 2390.0 MHz - Peak

Figure 42 - Data Rate/MCS with Highest Power - MCS2 - 2422 MHz - Measured Frequency 2390.0 MHz - Average

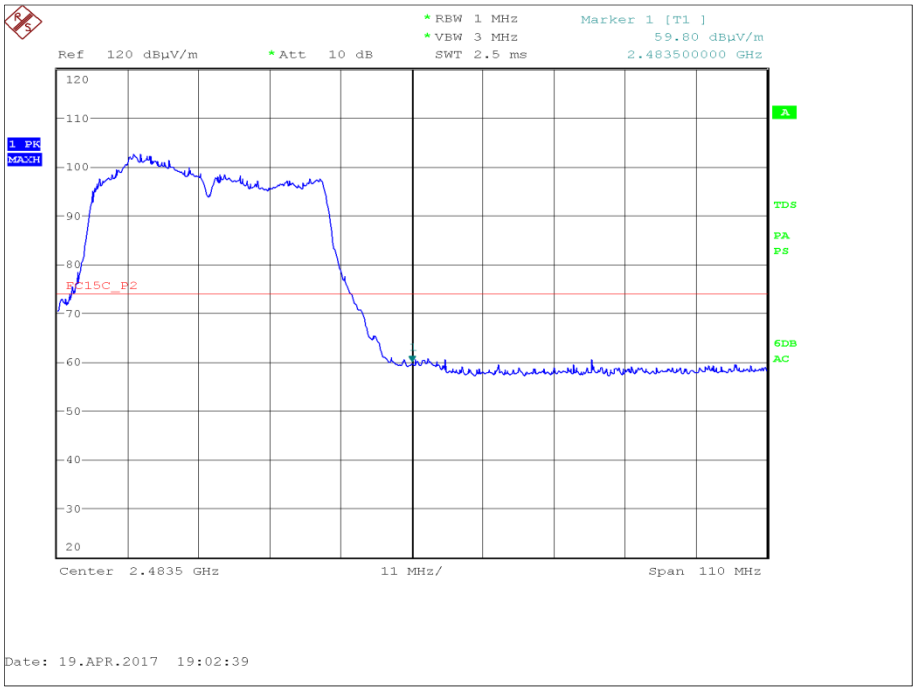

Figure 43 - Data Rate/MCS with Highest Power - MCS2 - 2452 MHz - Measured Frequency 2483.5 MHz - Peak

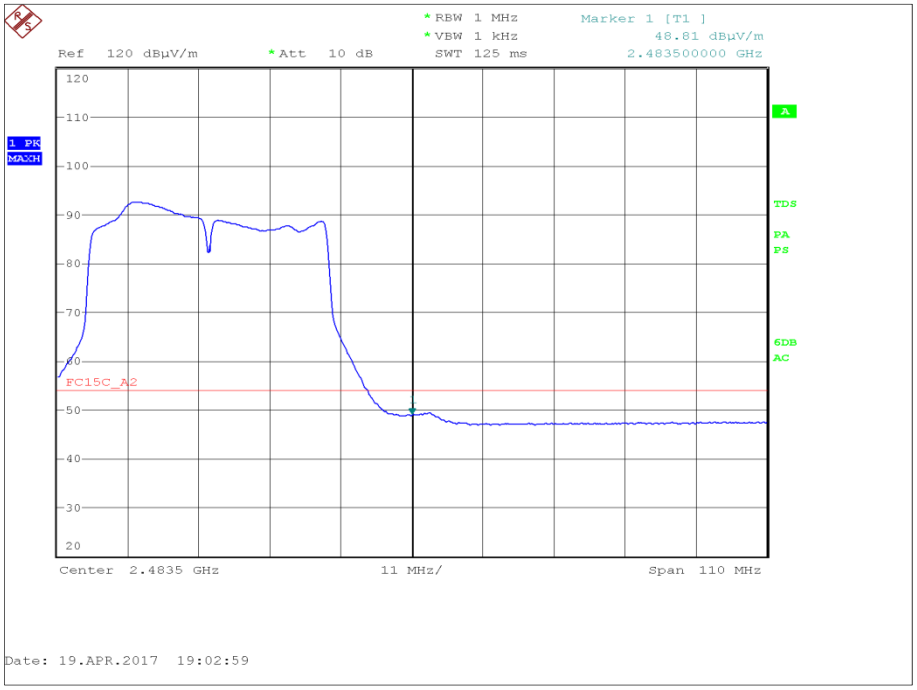

Figure 44 - Data Rate/MCS with Highest Power - MCS2 - 2452 MHz - Measured Frequency 2483.5 MHz - Average

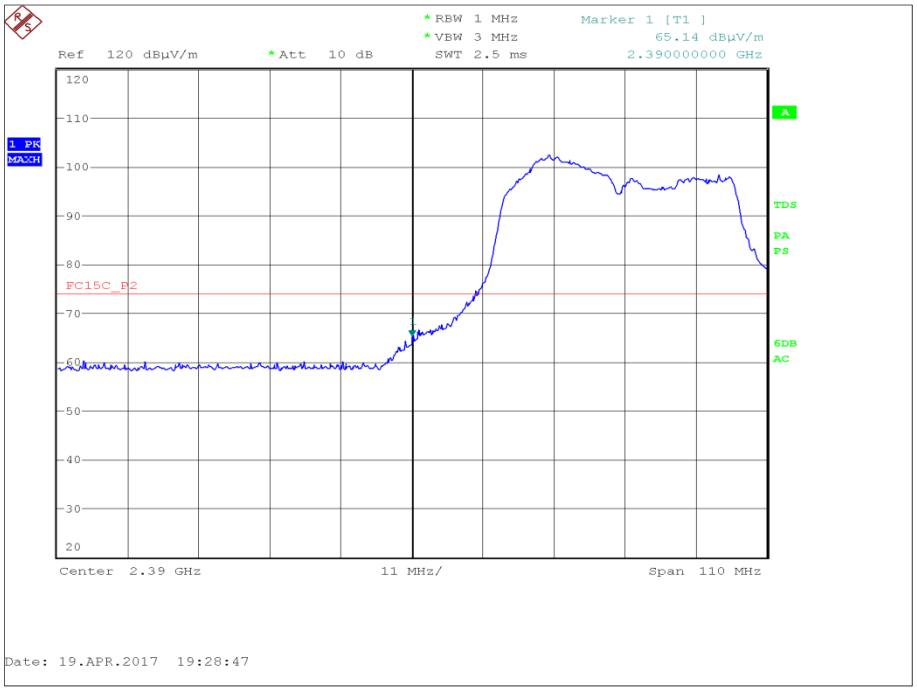

Figure 45 - Data Rate/MCS with Widest Bandwidth - MCS0 - 2422 MHz - Measured Frequency 2390.0 MHz - Peak

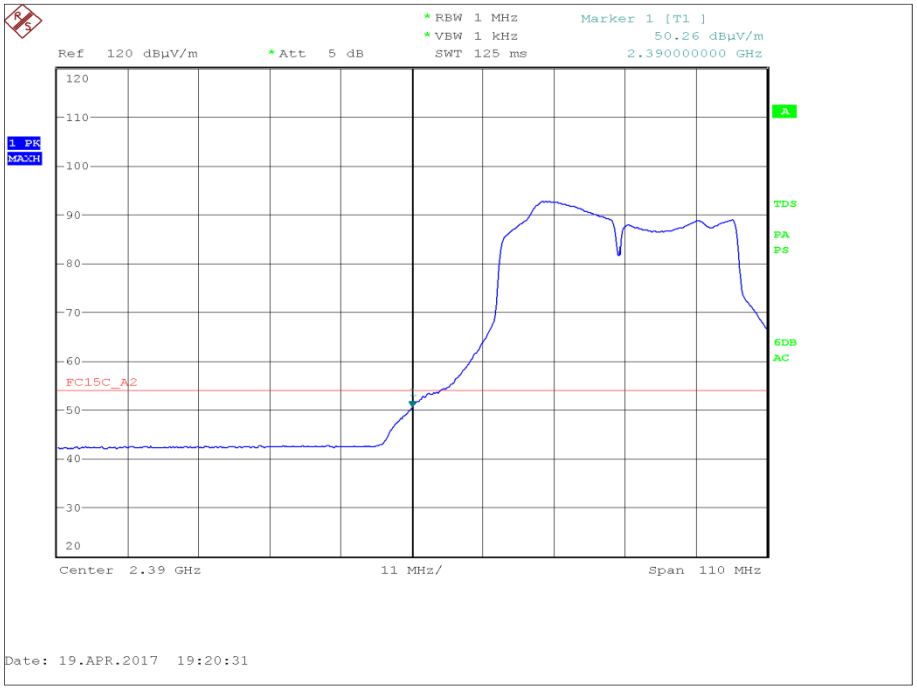

Figure 46 - Data Rate/MCS with Widest Bandwidth - MCS0 - 2422 MHz - Measured Frequency 2390.0 MHz - Average

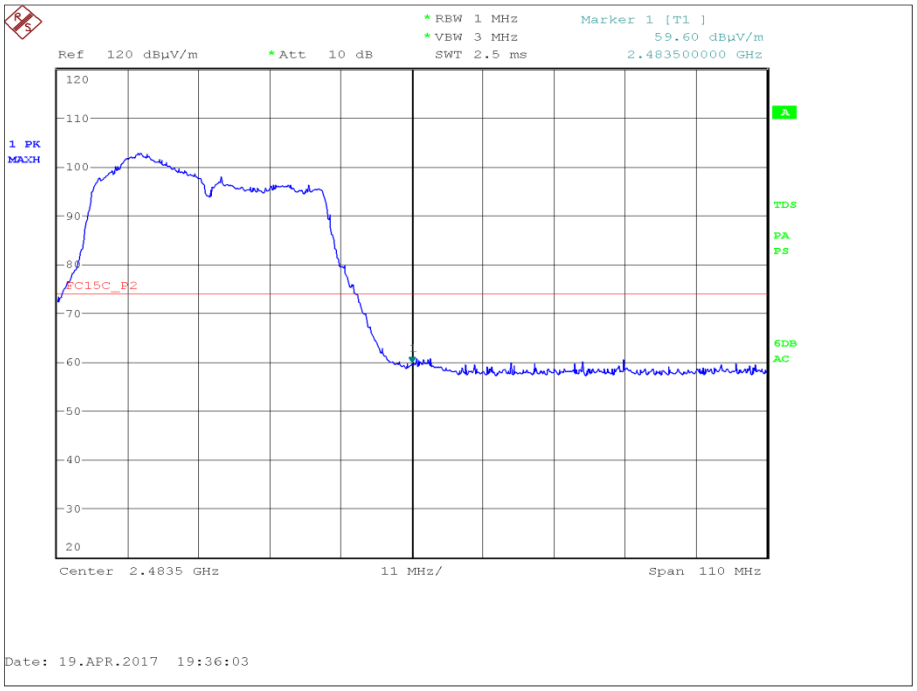

Figure 47 - Data Rate/MCS with Widest Bandwidth - MCS0 - 2452 MHz - Measured Frequency 2483.5 MHz - Peak

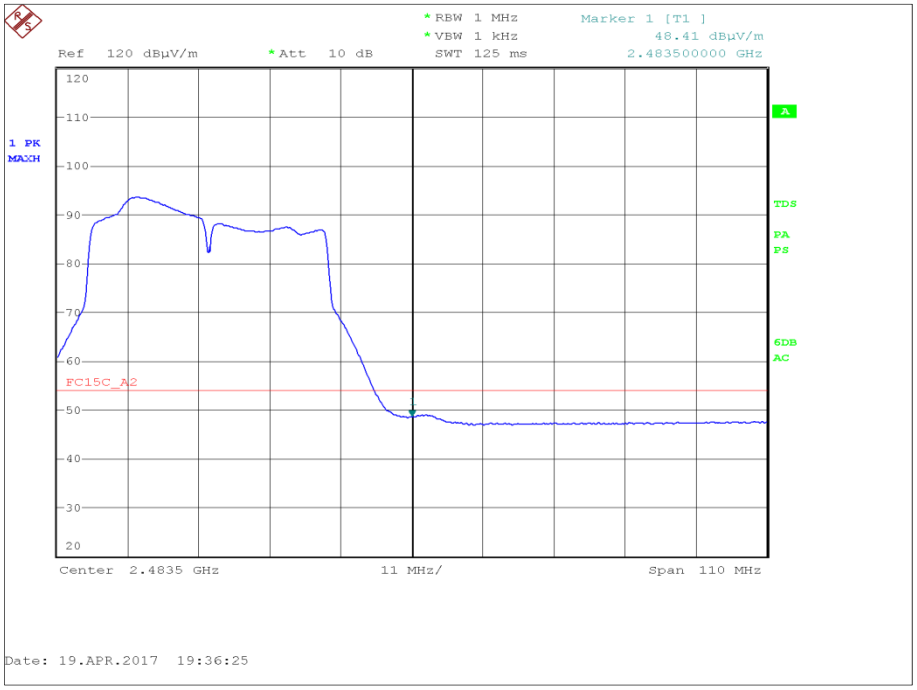

Figure 48 - Data Rate/MCS with Widest Bandwidth - MCS0 - 2452 MHz - Measured Frequency 2483.5 MHz - Average

FCC 47 CFR Part 15C, Limit Clause 15.205

	Peak (dBµV/m)	Average (dBµV/m)
Restricted Bands of Operation	74	54

Table 35

Industry Canada RSS-GEN, Limit Clause 8.9

Frequency (MHz)	Field Strength (µV/m at 3 metres)
30-88	100
88-216	150
216-960	200
Above 960*	500

Table 36

*Unless otherwise specified, for all frequencies greater than 1 GHz, the radiated emission limits for licence-exempt radio apparatus stated in applicable RSSs (including RSS-Gen) are based on measurements using a linear average detector function having a minimum resolution bandwidth of 1 MHz. If an average limit is specified for the EUT, then the peak emission shall also be measured with instrumentation properly adjusted for such factors as pulse desensitization to ensure the peak emission is less than 20 dB above the average limit.

2.5.7 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
Screened Room (5)	Rainford	Rainford	1545	36	20-Dec-2017
Turntable Controller	Inn-Co GmbH	CO 1000	1606	-	TU
Hygromer	Rotronic	A1	2138	12	02-Feb-2018
Cable (N-N, 8m)	Rhophase	NPS-2302-8000-NPS	3248	-	O/P Mon
EMI Test Receiver	Rohde & Schwarz	ESU40	3506	12	12-Nov-2017
Tilt Antenna Mast	maturo Gmbh	TAM 4.0-P	3916	-	TU
Mast Controller	maturo Gmbh	NCD	3917	-	TU
Cable (Yellow, Rx, Km-Km 2m)	Scott Cables	KPS-1501-2000-KPS	4527	-	O/P Mon
Double Ridge Broadband Horn Antenna	Schwarzbeck	BBHA 9120 B	4848	12	17-Feb-2018

Table 37

TU - Traceability Unscheduled
O/P Mon – Output Monitored using calibrated equipment

2.6 Spurious Radiated Emissions

2.6.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.247 (d) and 15.205
Industry Canada RSS-247, Clause 5.5.

2.6.2 Equipment Under Test and Modification State

DAQRI Compute Pack, S/N: OA565-7DF-82K70497C1 - Modification State 0

2.6.3 Date of Test

18-April-2017 to 27-April-2017

2.6.4 Test Method

Testing was performed in accordance with ANSI C63.10, clause 11.11, 11.12.1 and 11.12.2.7.

Plots for average measurements were taken in accordance with ANSI C63.10, clause 4.1.4.2.3.

Final average measurements were taken in accordance with ANSI C63.10, clause 4.1.4.2.2.

2.6.5 Environmental Conditions

Ambient Temperature	18.6 - 21.0 °C
Relative Humidity	24.0 - 33.0 %

2.6.6 Test Results

802.11b

Testing was performed on the Data Rate which resulted in the highest conducted output power. The Data Rate used during testing was 5.5 Mbps. For configurations supporting multiple bandwidths, emission measurements were only made in the bandwidth with the highest conducted output power.

Frequency (MHz)	QP Level (dBuV/m)	QP Limit (dBuV/m)	QP Margin (dBuV/m)	Angle(Deg)	Height(m)	Polarity
37.500	27.1	40.0	-12.9	193	1.00	Vertical
173.200	21.9	43.5	-21.6	0	1.00	Vertical
242.000	21.7	46.0	-24.3	198	1.00	Horizontal
326.544	24.8	46.0	-21.2	203	1.00	Horizontal
410.000	28.0	46.0	-18.0	0	1.00	Horizontal
614.000	30.6	46.0	-15.4	297	1.00	Horizontal

Table 38 - 2412 MHz - 30 MHz to 1 GHz

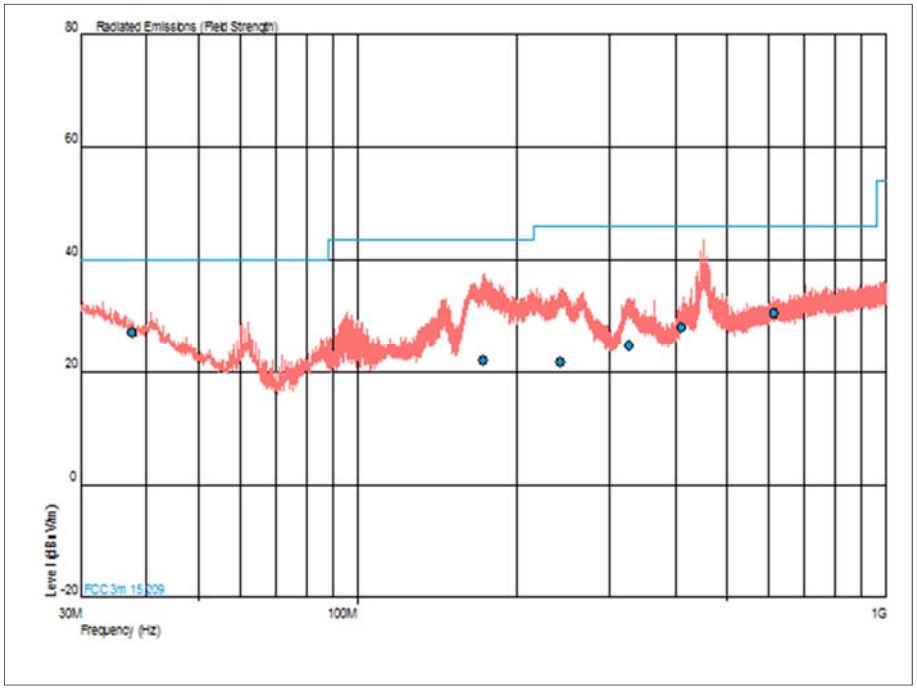

Figure 49 - 2412 MHz - 30 MHz to 1 GHz - Horizontal and Vertical

Frequency (GHz)	Result (µV/m)		Limit (µV/m)		Margin (µV/m)	
	Peak	Average	Peak	Average	Peak	Average
2.386554	884.10	213.80	5000	500	4115.90	286.20
4.818438	711.21	297.85	5000	500	4288.79	202.15

Table 39 - 2412 MHz - 1 GHz to 25 GHz

No other emissions were detected within 10 dB of the limit.

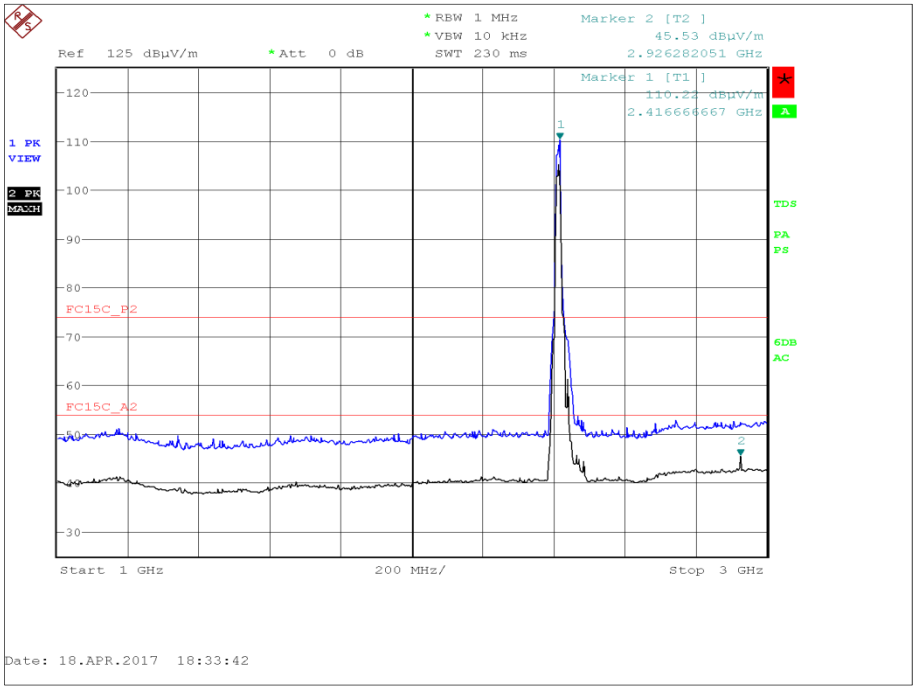

Figure 50 - 2412 MHz - 1 GHz to 3 GHz - Horizontal and Vertical

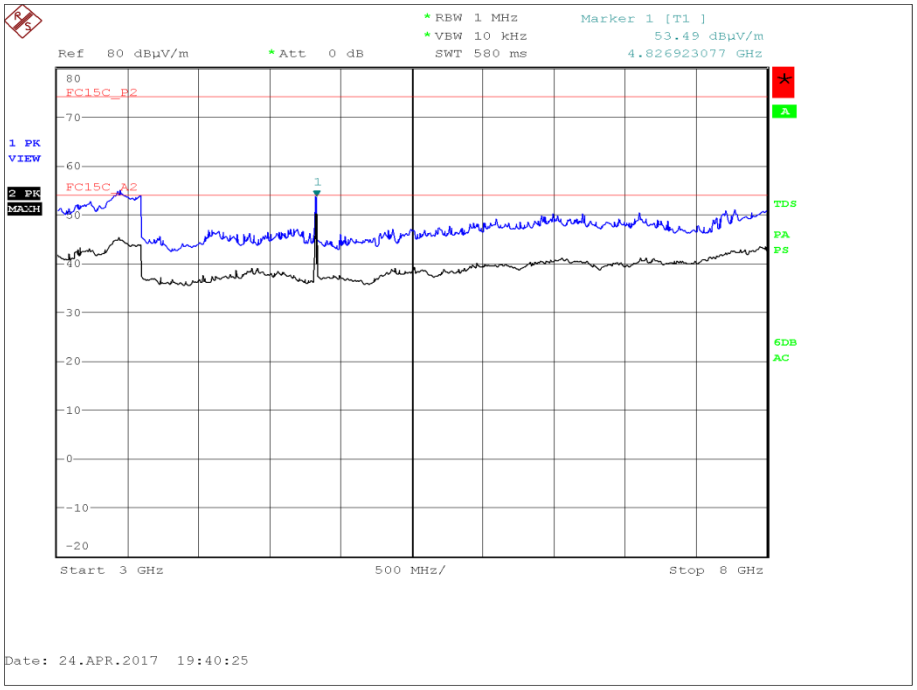

Figure 51 - 2412 MHz - 3 GHz to 8 GHz - Horizontal and Vertical

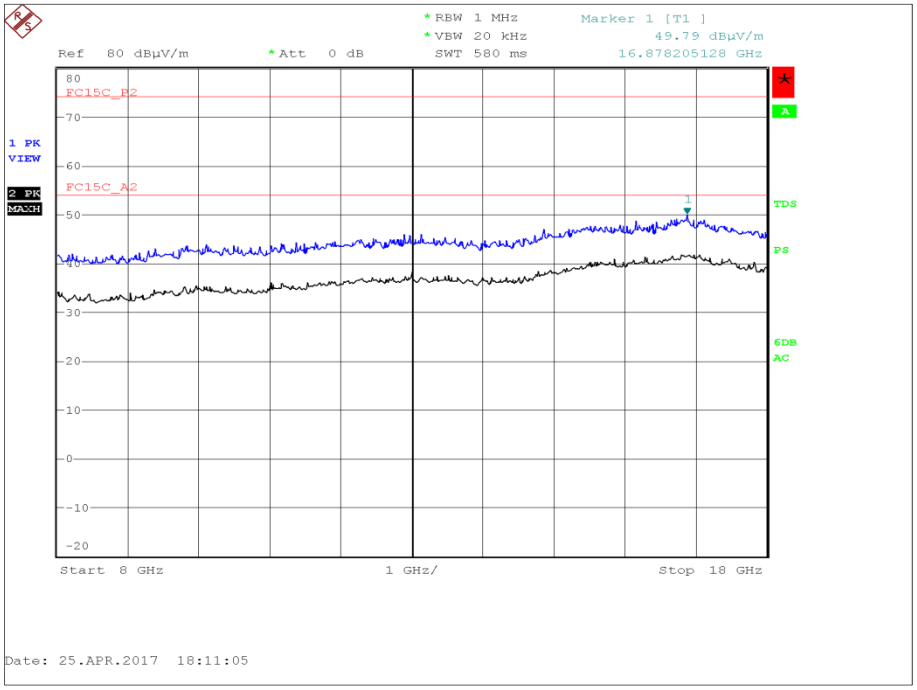

Figure 52 - 2412 MHz - 8 GHz to 18 GHz - Horizontal and Vertical

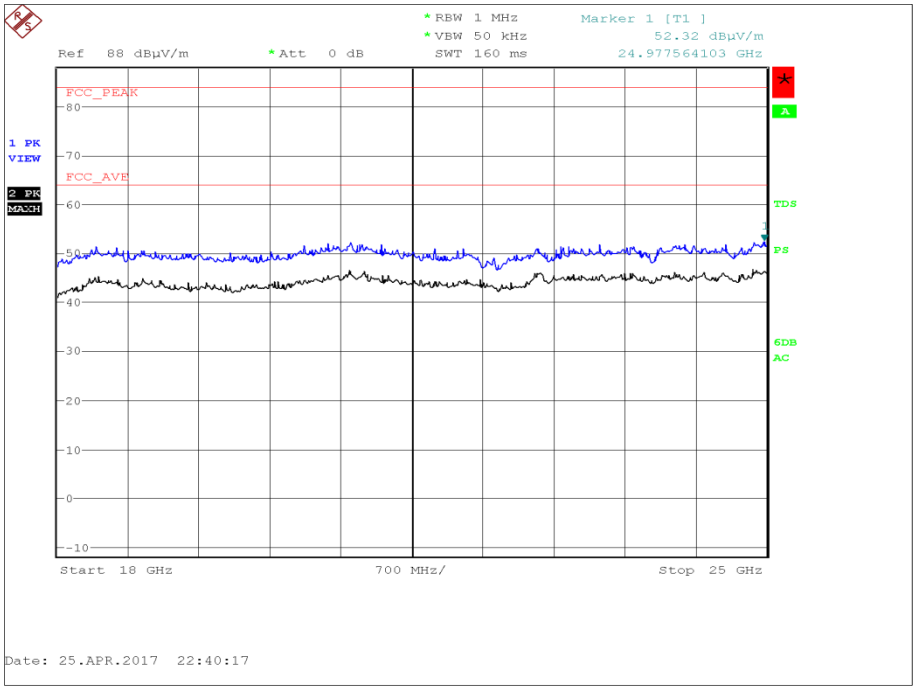

Figure 53 - 2412 MHz - 18 GHz to 25 GHz - Horizontal and Vertical

Frequency (MHz)	QP Level (dBuV/m)	QP Limit (dBuV/m)	QP Margin (dBuV/m)	Angle(Deg)	Height(m)	Polarity
37.500	27.0	40.0	-13.0	360	1.00	Vertical
173.200	32.8	43.5	-10.7	74	1.00	Vertical
244.327	20.8	46.0	-25.2	13	1.00	Horizontal
325.000	24.9	46.0	-21.1	50	1.00	Horizontal
410.000	27.9	46.0	-18.1	360	1.00	Horizontal
614.000	30.6	46.0	-15.4	28	1.00	Horizontal

Table 40 - 2437 MHz - 30 MHz to 1 GHz

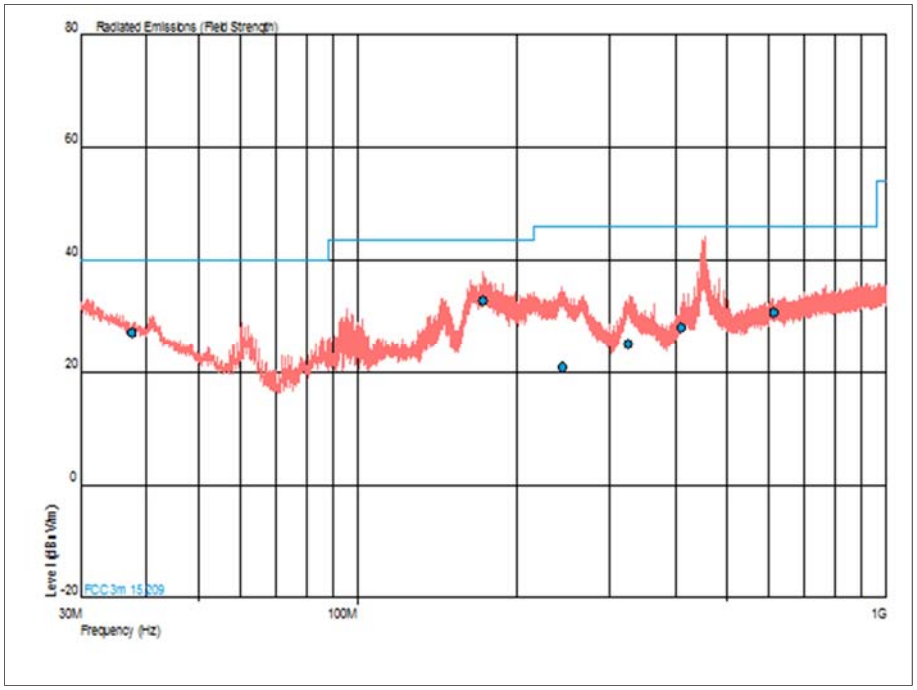

Figure 54 - 2437 MHz - 30 MHz to 1 GHz - Horizontal and Vertical

Frequency (GHz)	Result (µV/m)		Limit (µV/m)		Margin (µV/m)	
	Peak	Average	Peak	Average	Peak	Average
4.879127	612.35	204.88	5000	500	4387.65	295.12

Table 41 - 2437 MHz - 1 GHz to 25 GHz

No other emissions were detected within 10 dB of the limit.

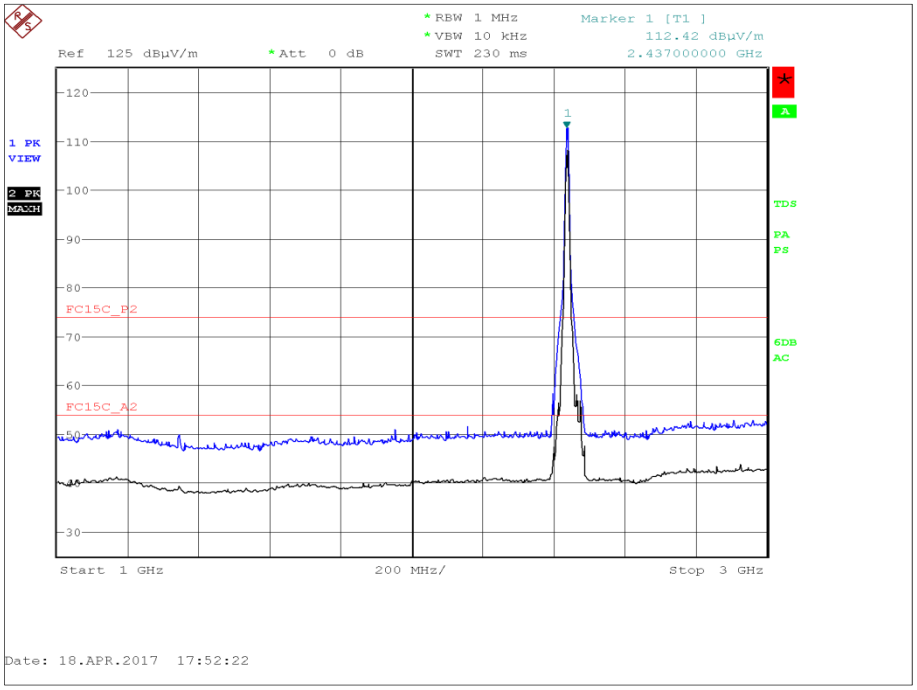

Figure 55 - 2437 MHz - 1 GHz to 3 GHz - Horizontal and Vertical

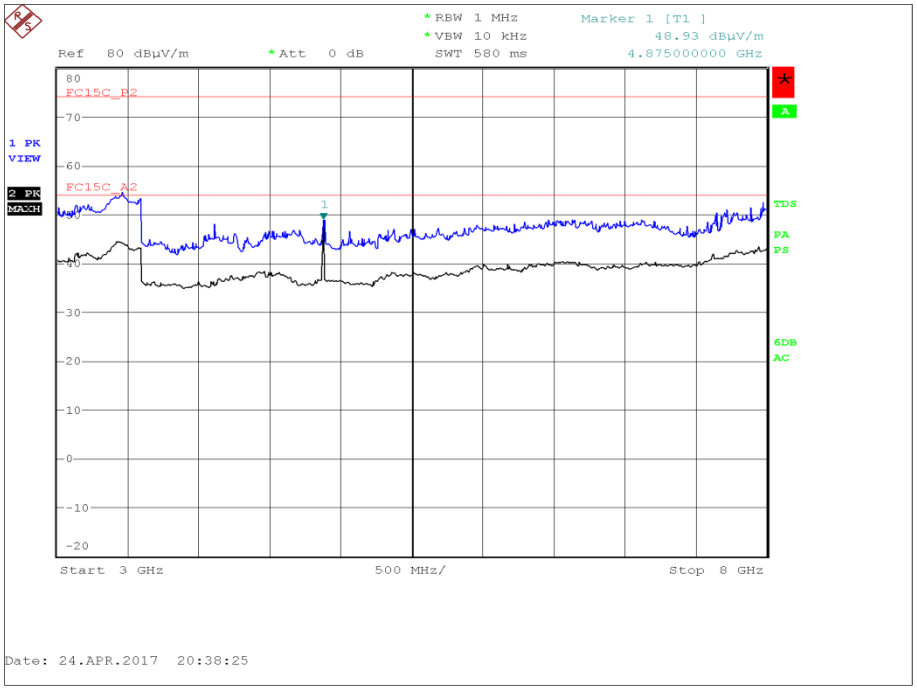

Figure 56 - 2437 MHz - 3 GHz to 8 GHz - Horizontal and Vertical

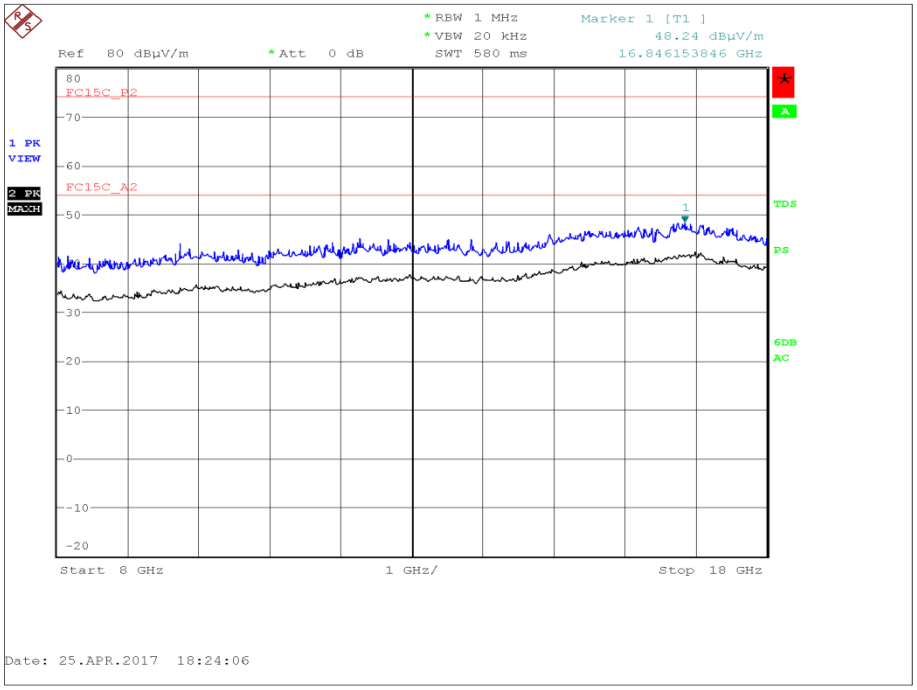

Figure 57 - 2437 MHz - 8 GHz to 18 GHz - Horizontal and Vertical

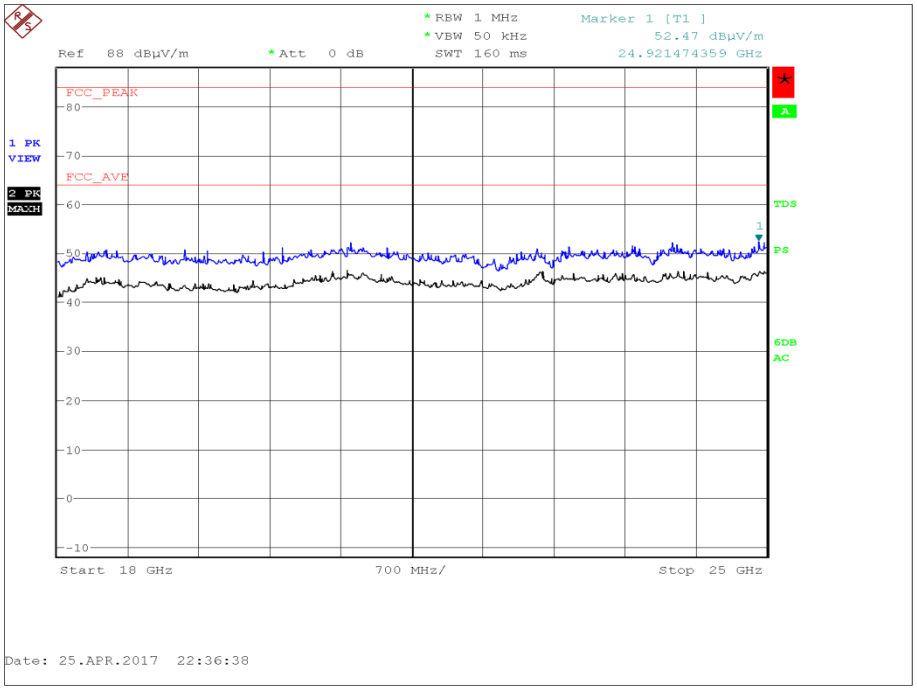

Figure 58 - 2437 MHz - 18 GHz to 25 GHz - Horizontal and Vertical

Frequency (MHz)	QP Level (dBuV/m)	QP Limit (dBuV/m)	QP Margin (dBuV/m)	Angle(Deg)	Height(m)	Polarity
37.500	27.1	40.0	-12.9	309	1.00	Vertical
173.021	35.4	43.5	-8.1	65	1.00	Vertical
240.072	29.1	46.0	-16.9	8	1.00	Vertical
327.244	31.1	46.0	-14.9	44	1.00	Horizontal
410.000	29.1	46.0	-16.9	360	1.00	Horizontal
614.000	30.9	46.0	-15.1	74	1.00	Horizontal

Table 42 - 2462 MHz - 30 MHz to 1 GHz

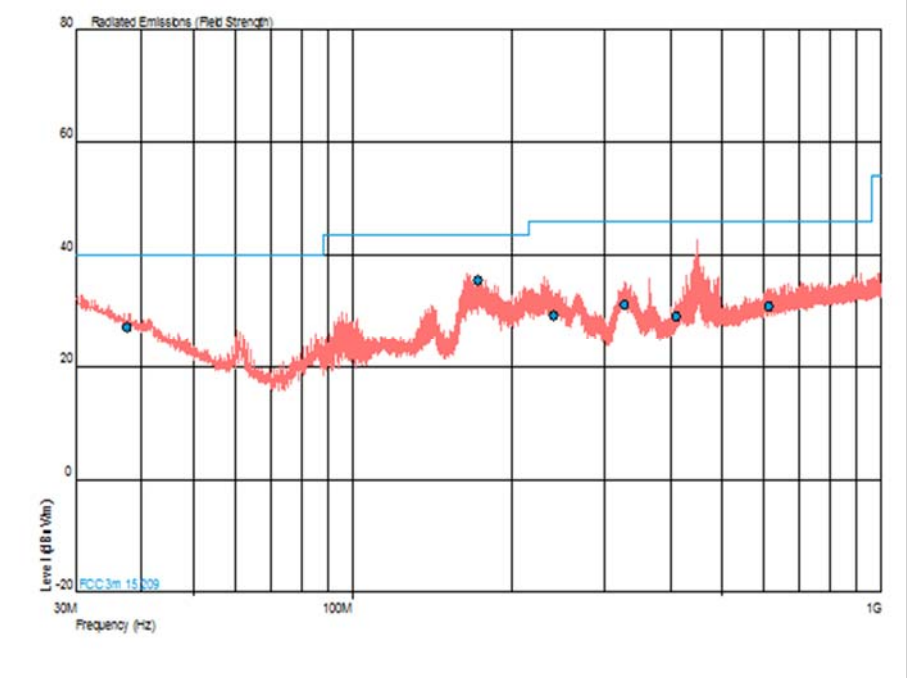

Figure 59 - 2462 MHz - 30 MHz to 1 GHz - Horizontal and Vertical

Frequency (GHz)	Result (µV/m)		Limit (µV/m)		Margin (µV/m)	
	Peak	Average	Peak	Average	Peak	Average
2.486712	2802.21	259.12	5000	500	2197.79	240.88

Table 43 - 2462 MHz - 1 GHz to 25 GHz

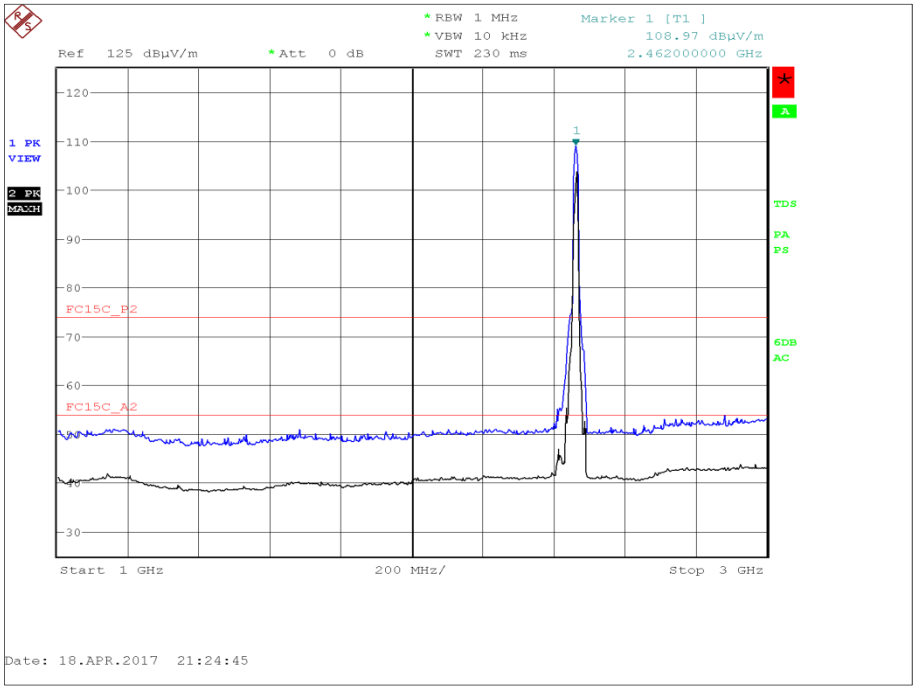

Figure 60 - 2462 MHz - 1 GHz to 3 GHz - Horizontal and Vertical

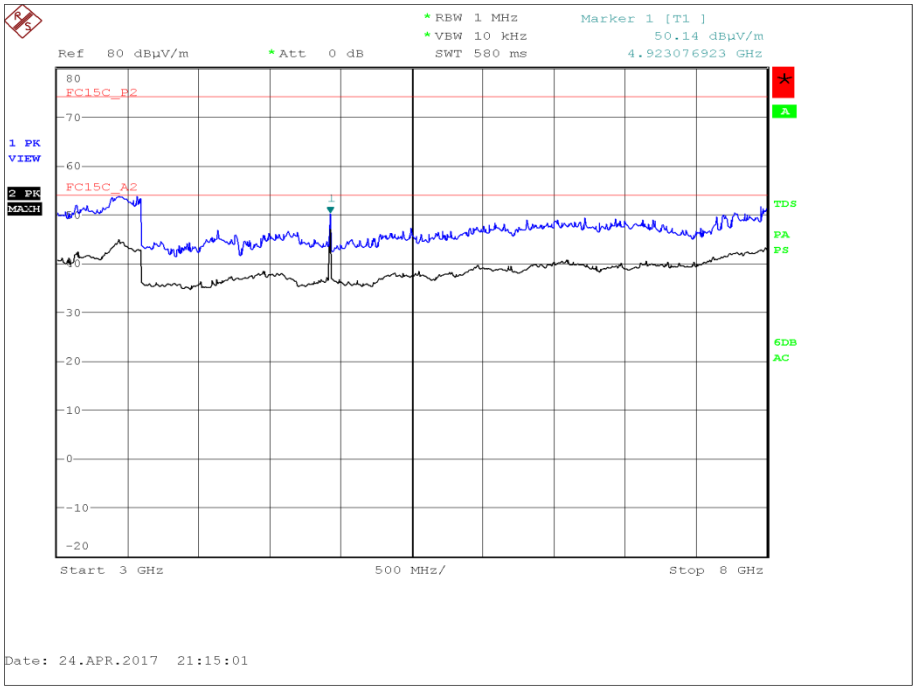

Figure 61 - 2462 MHz - 3 GHz to 8 GHz - Horizontal and Vertical

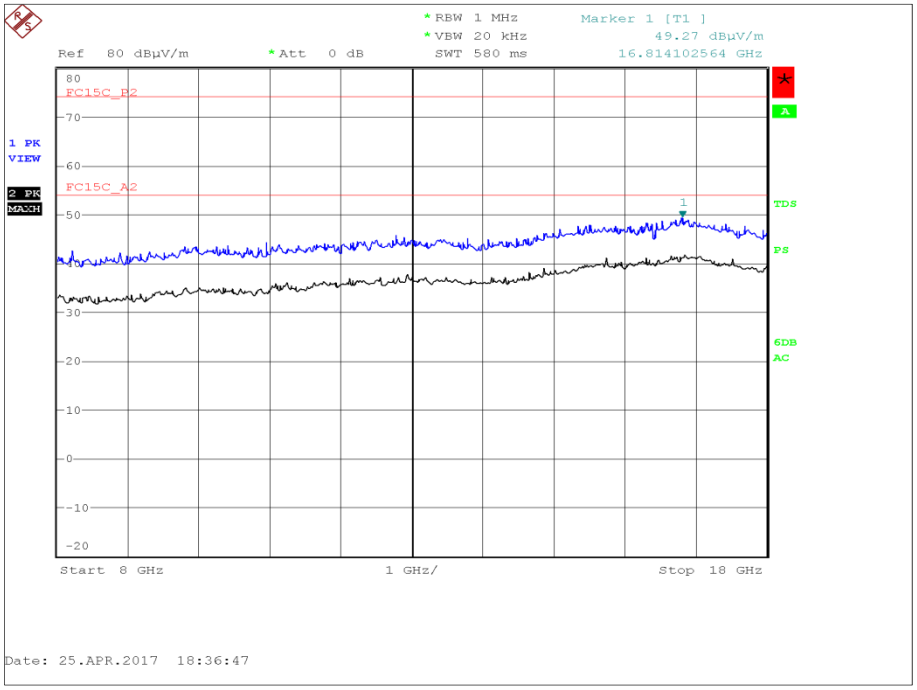

Figure 62 - 2462 MHz - 8 GHz to 18 GHz - Horizontal and Vertical

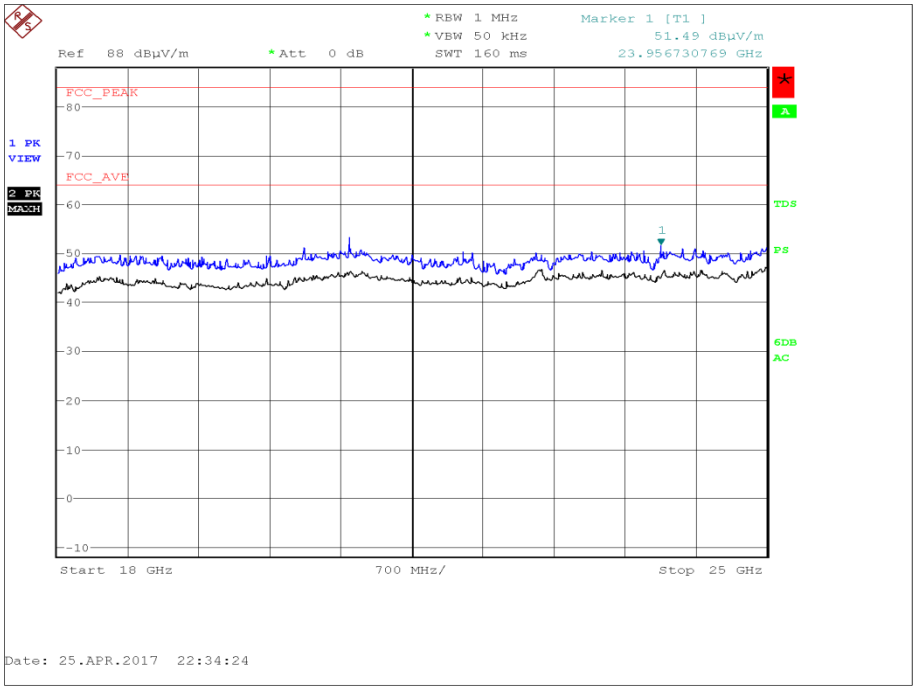

Figure 63 - 2462 MHz - 18 GHz to 25 GHz - Horizontal and Vertical

FCC 47 CFR Part 15C, Limit Clause 15.247 (d)

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

Attenuation below the general limits specified in § 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in 15.209(a).

Industry Canada RSS-247, Limit Clause 5.5

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under Section 5.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

802.11g

Testing was performed on the Data Rate which resulted in the highest conducted output power. The Data Rate used during testing was 6Mbps. For configurations supporting multiple bandwidths, emission measurements were only made in the bandwidth with the highest conducted output power.

Frequency (MHz)	QP Level (dBuV/m)	QP Limit (dBuV/m)	QP Margin (dBuV/m)	Angle(Deg)	Height(m)	Polarity
37.500	26.8	40.0	-13.2	270	1.00	Horizontal
173.200	27.7	43.5	-15.8	280	1.00	Vertical
240.505	29.7	46.0	-16.3	352	1.00	Vertical
323.271	27.1	46.0	-18.9	162	1.00	Vertical
410.000	29.2	46.0	-16.8	360	1.00	Horizontal
614.000	30.6	46.0	-15.4	140	1.00	Vertical

Table 44 - 2412 MHz - 30 MHz to 1 GHz

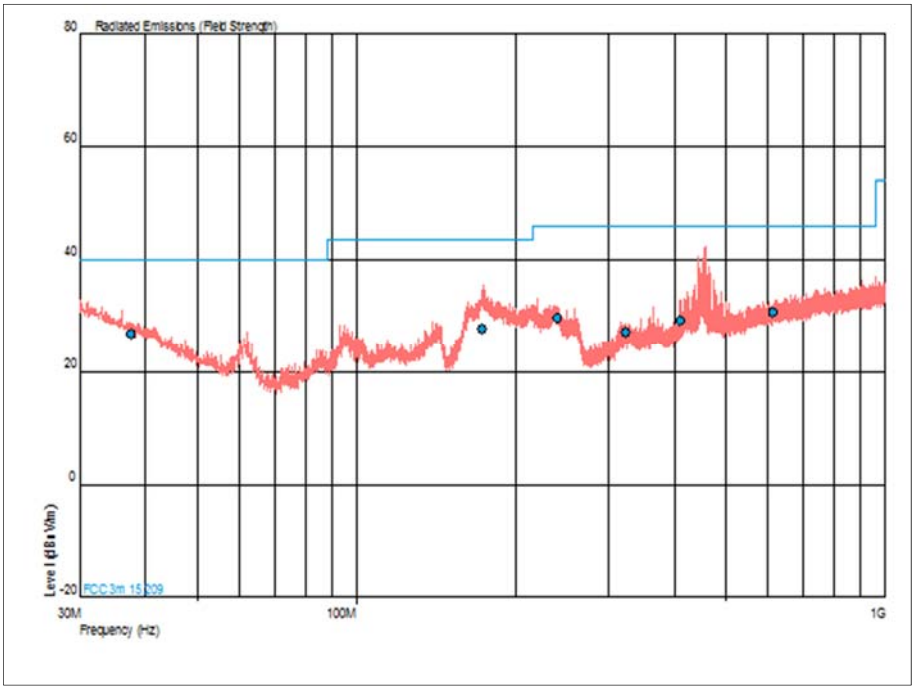

Figure 64 - 2412 MHz - 30 MHz to 1 GHz - Horizontal and Vertical

Frequency (GHz)	Result (µV/m)		Limit (µV/m)		Margin (µV/m)	
	Peak	Average	Peak	Average	Peak	Average
*						

Table 45 - 2412 MHz - 1 GHz to 25 GHz

*No emissions were detected within 10 dB of the limit.

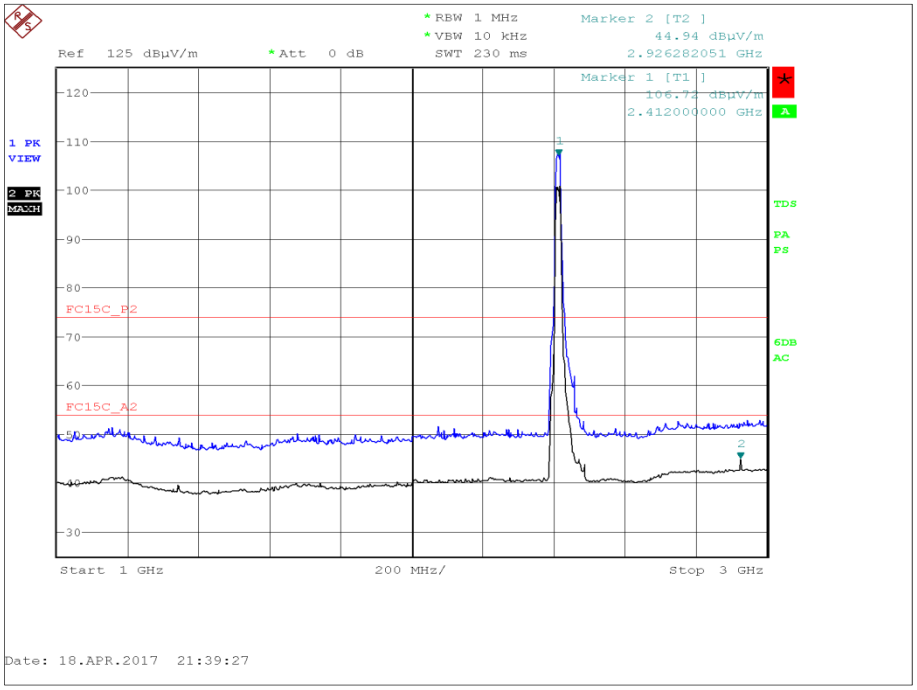

Figure 65 - 2412 MHz - 1 GHz to 3 GHz - Horizontal and Vertical

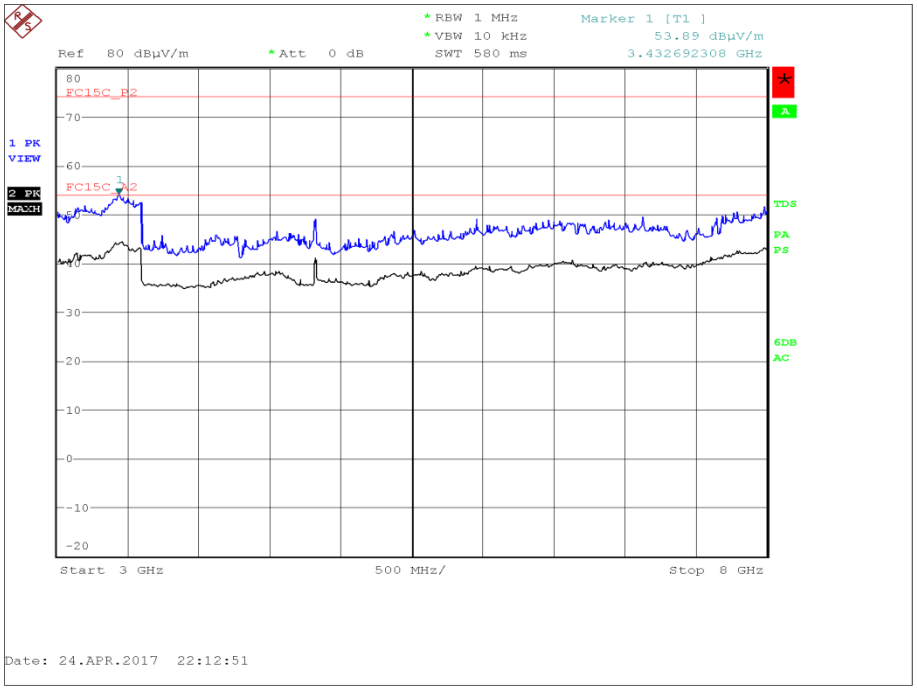

Figure 66 - 2412 MHz - 3 GHz to 8 GHz - Horizontal and Vertical

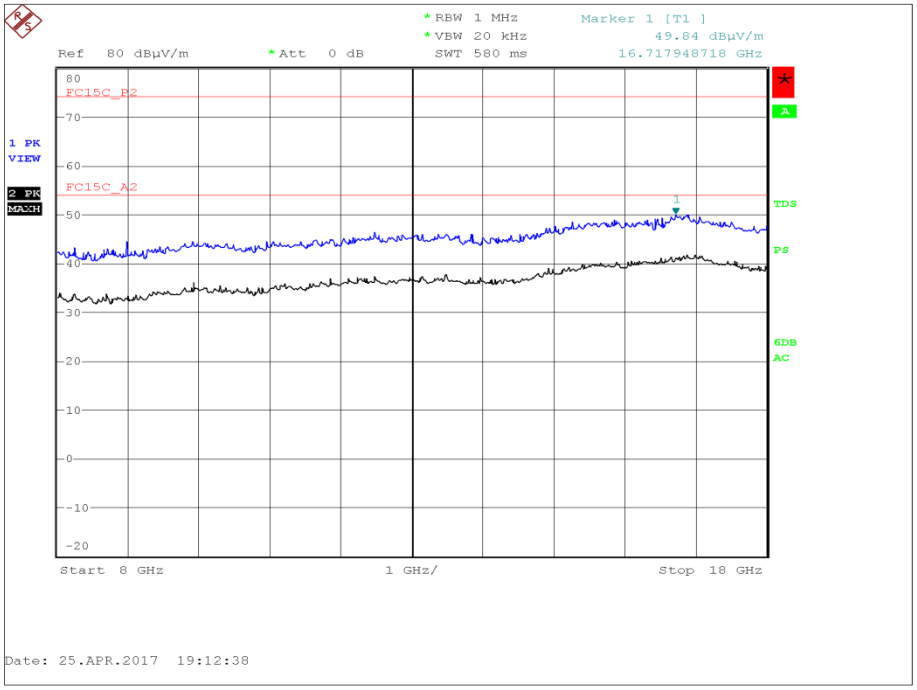

Figure 67 - 2412 MHz - 8 GHz to 18 GHz - Horizontal and Vertical

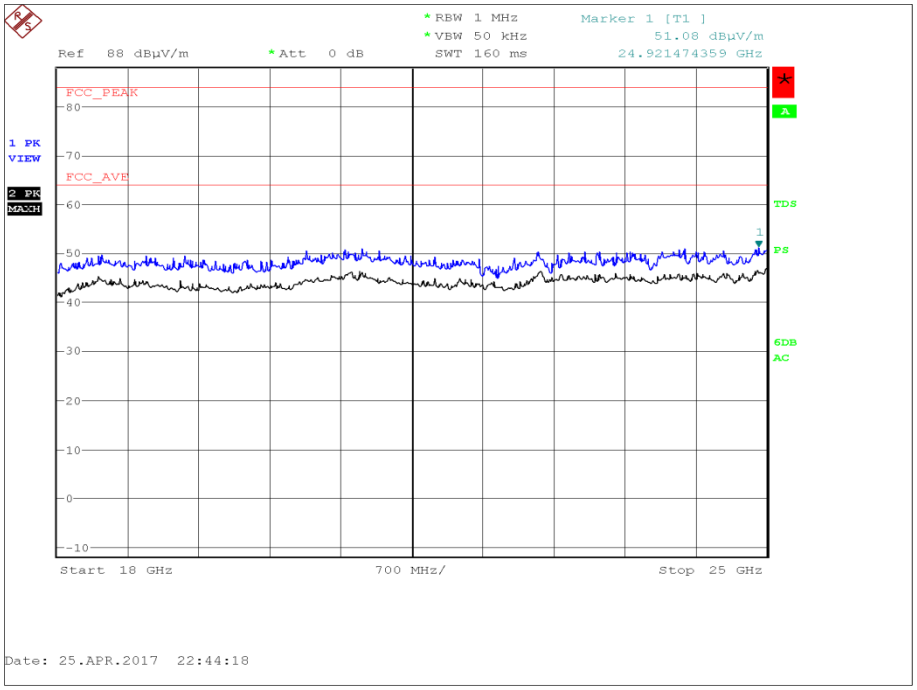

Figure 68 - 2412 MHz - 18 GHz to 25 GHz - Horizontal and Vertical

Frequency (MHz)	QP Level (dBuV/m)	QP Limit (dBuV/m)	QP Margin (dBuV/m)	Angle(Deg)	Height(m)	Polarity
37.500	26.9	40.0	-13.1	117	1.00	Vertical
172.365	20.6	43.5	-22.9	261	1.00	Vertical
260.769	22.5	46.0	-23.5	0	1.00	Vertical
328.604	25.9	46.0	-20.1	332	1.00	Horizontal
410.000	28.1	46.0	-17.9	0	1.00	Horizontal
614.000	30.6	46.0	-15.4	67	1.00	Horizontal

Table 46 - 2437 MHz - 30 MHz to 1 GHz Results

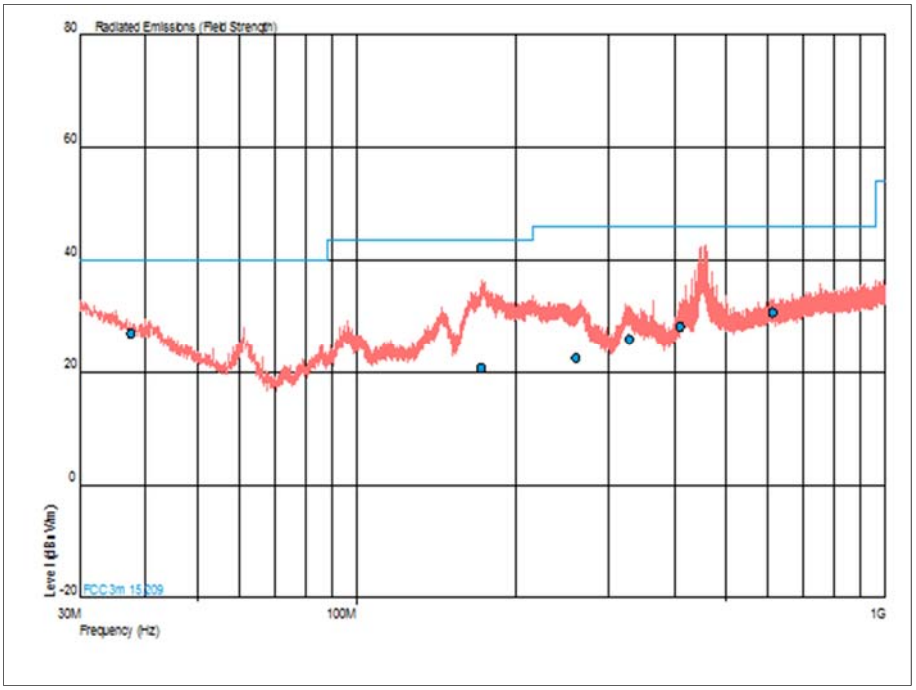

Figure 69 - 2437 MHz - 30 MHz to 1 GHz - Horizontal and Vertical

Frequency (GHz)	Result (µV/m)		Limit (µV/m)		Margin (µV/m)	
	Peak	Average	Peak	Average	Peak	Average
*						

Table 47 - 2437 MHz - 1 GHz to 25 GHz Results

*No emissions were detected within 10 dB of the limit.

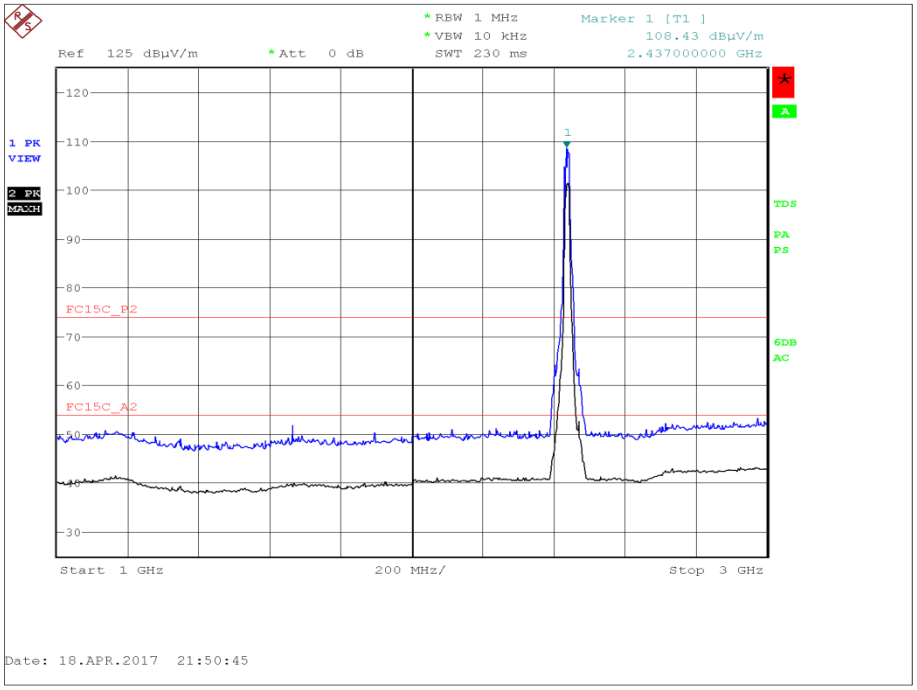

Figure 70 - 2437 MHz - 1 GHz to 3 GHz - Horizontal and Vertical

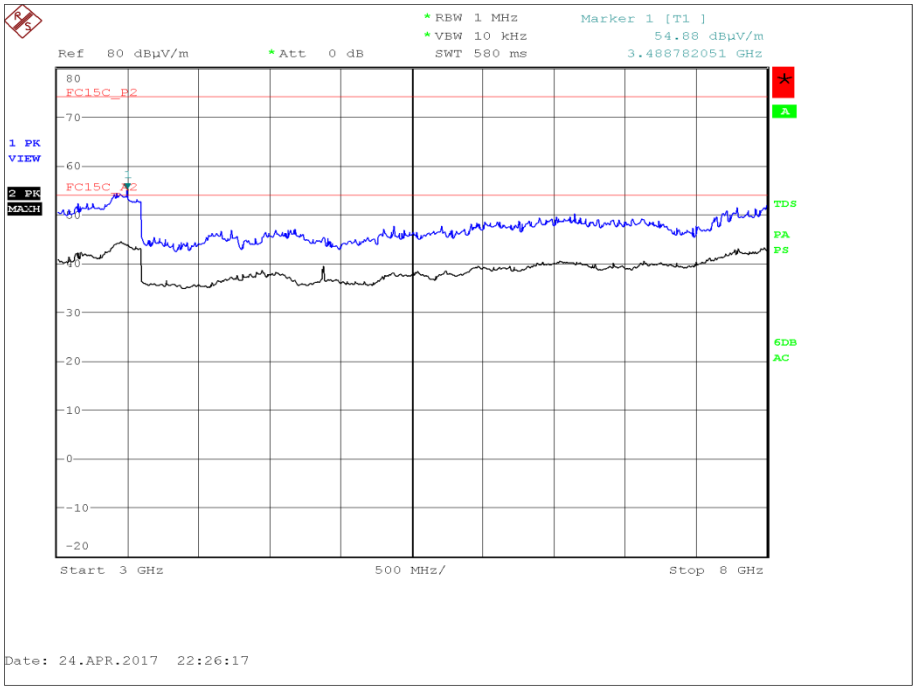

Figure 71 - 2437 MHz - 3 GHz to 8 GHz - Horizontal and Vertical

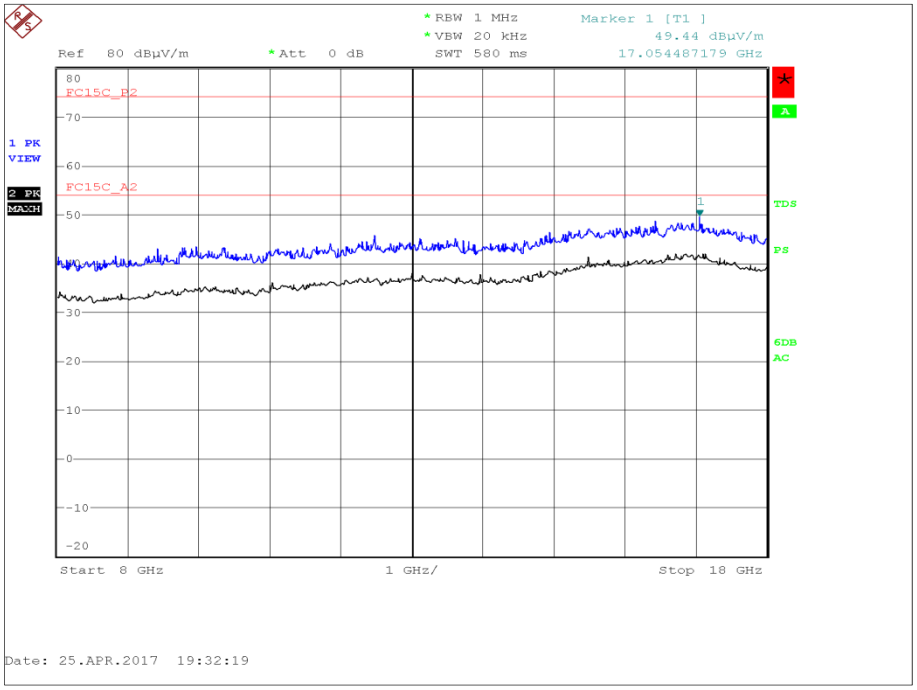

Figure 72 - 2437 MHz - 8 GHz to 18 GHz - Horizontal and Vertical

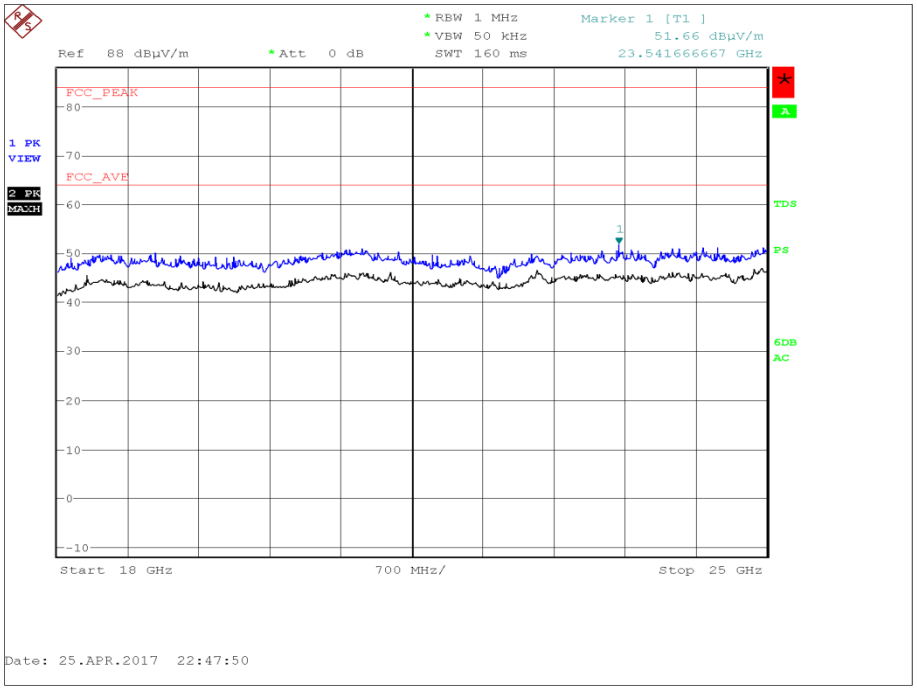

Figure 73 - 2437 MHz - 18 GHz to 25 GHz - Horizontal and Vertical

Frequency (MHz)	QP Level (dBuV/m)	QP Limit (dBuV/m)	QP Margin (dBuV/m)	Angle(Deg)	Height(m)	Polarity
37.500	27.4	40.0	-12.6	360	1.00	Vertical
172.812	31.8	43.5	-11.7	7	1.00	Vertical
251.099	37.3	46.0	-8.7	62	1.00	Vertical
322.938	25.9	46.0	-20.1	250	1.00	Horizontal
410.000	28.9	46.0	-17.1	95	1.00	Horizontal
614.000	30.8	46.0	-15.2	360	1.00	Horizontal

Table 48 - 2462 MHz - 30 MHz to 1 GHz Results

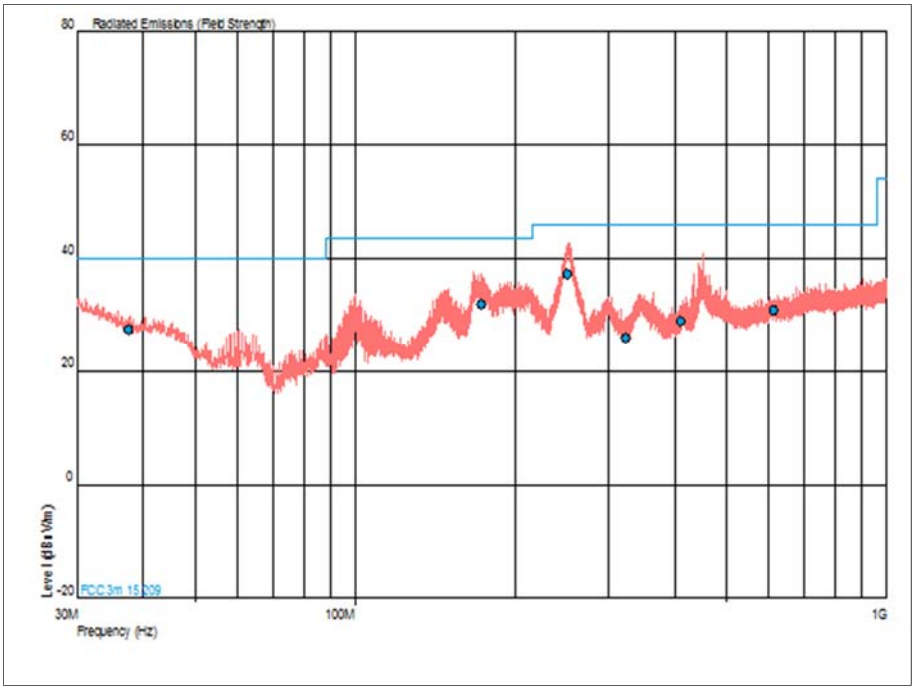

Figure 74 - 2462 MHz - 30 MHz to 1 GHz - Horizontal and Vertical

Frequency (GHz)	Result (µV/m)		Limit (µV/m)		Margin (µV/m)	
	Peak	Average	Peak	Average	Peak	Average
*						

Table 49 - 2462 MHz - 1 GHz to 25 GHz Results

*No emissions were detected within 10 dB of the limit.

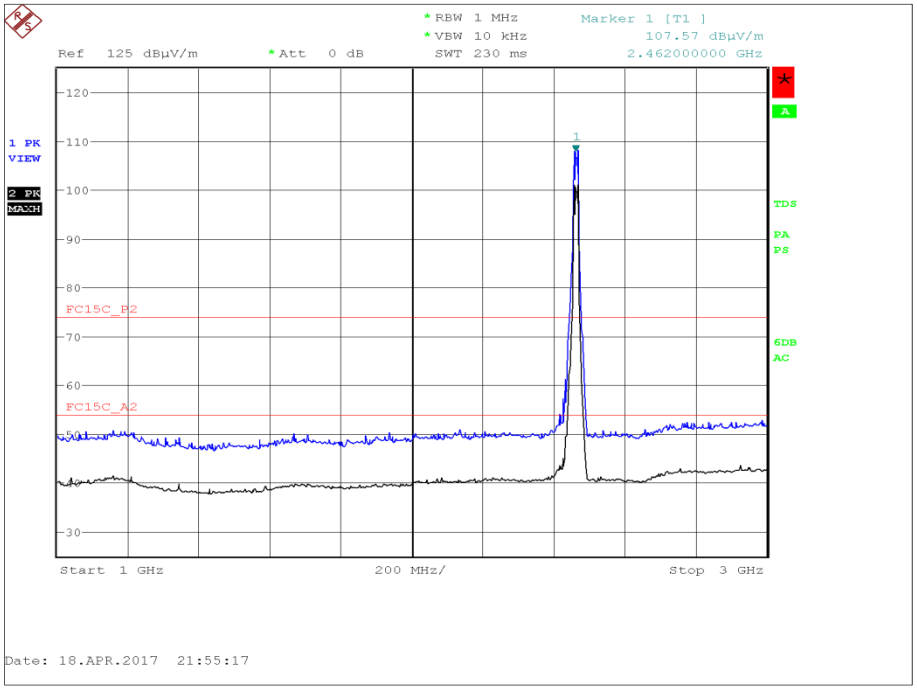

Figure 75 - 2462 MHz - 1 GHz to 3 GHz - Horizontal and Vertical

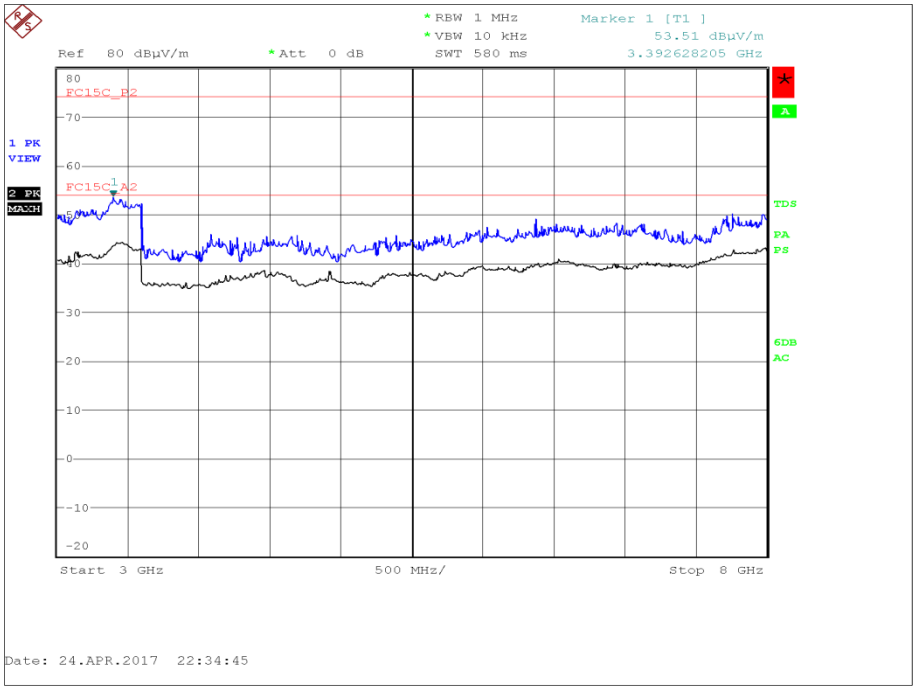

Figure 76 - 2462 MHz - 3 GHz to 8 GHz - Horizontal and Vertical

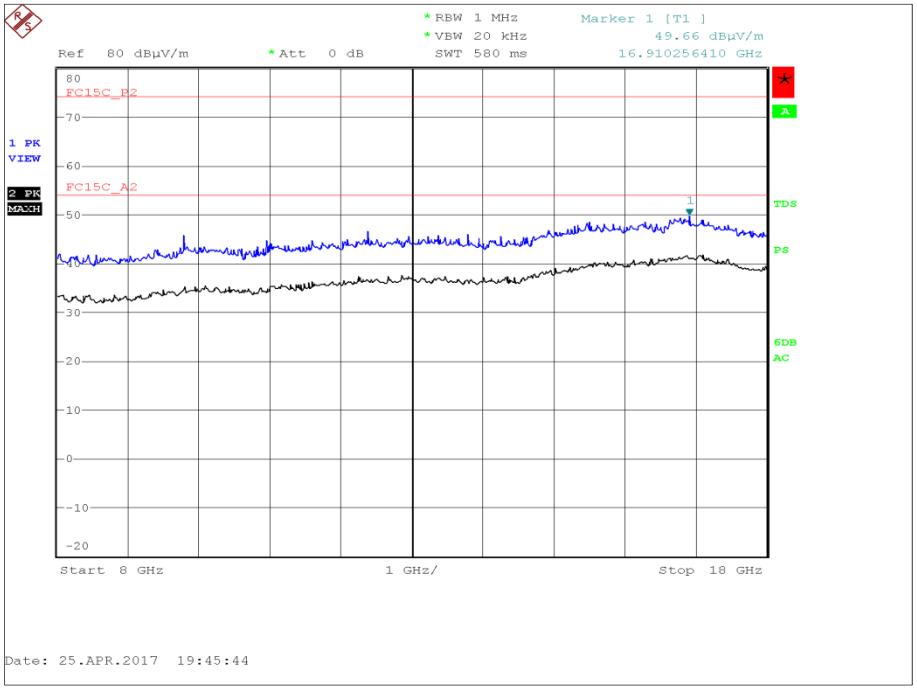

Figure 77 - 2462 MHz - 8 GHz to 18 GHz - Horizontal and Vertical

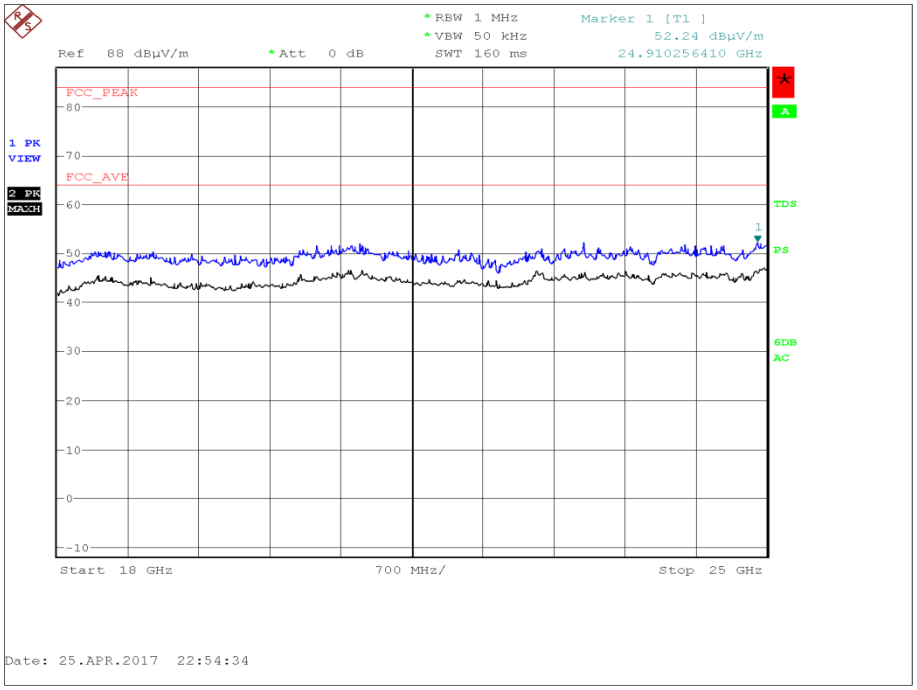

Figure 78 - 2462 MHz - 18 GHz to 25 GHz - Horizontal and Vertical

FCC 47 CFR Part 15C, Limit Clause 15.247 (d)

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

Attenuation below the general limits specified in § 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in 15.209(a).

Industry Canada RSS-247, Limit Clause 5.5

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under Section 5.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

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 MCS1. For configurations supporting multiple bandwidths, emission measurements were only made in the bandwidth with the highest conducted output power.

Frequency (MHz)	QP Level (dBuV/m)	QP Limit (dBuV/m)	QP Margin (dBuV/m)	Angle(Deg)	Height(m)	Polarity
37.500	27.1	40.0	-12.9	20	1.00	Vertical
168.205	24.2	43.5	-19.3	288	1.00	Vertical
252.000	22.4	46.0	-23.6	0	1.00	Vertical
323.708	24.1	46.0	-21.9	84	1.00	Horizontal
410.000	27.8	46.0	-18.2	256	1.00	Horizontal
614.000	30.9	46.0	-15.1	3	1.00	Vertical

Table 50 - 2412 MHz - 30 MHz to 1 GHz Results

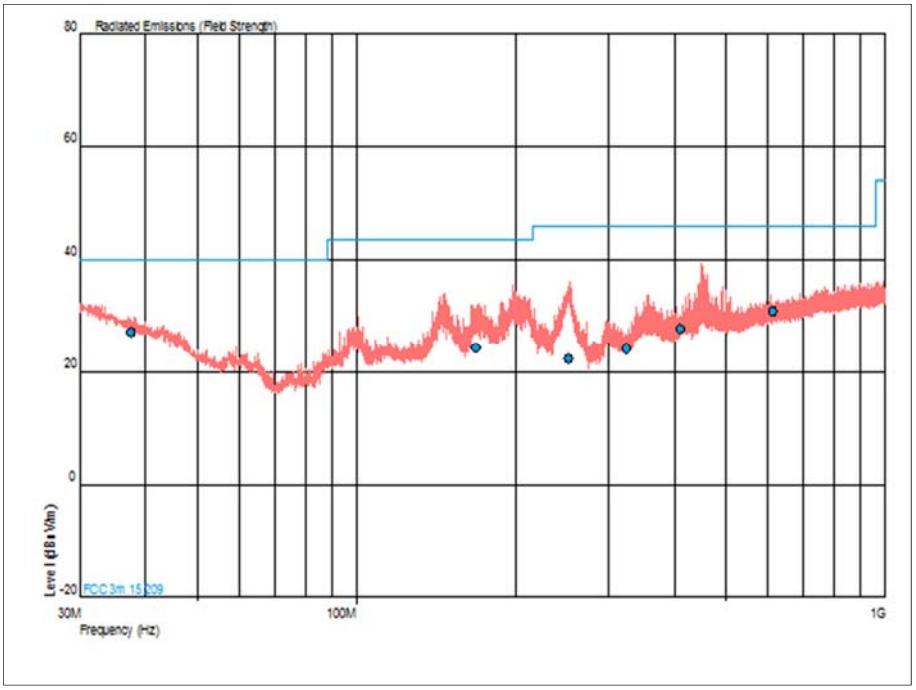

Figure 79 - 2412 MHz - 30 MHz to 1 GHz - Horizontal and Vertical

Frequency (MHz)	Result (µV/m)		Limit (µV/m)		Margin (µV/m)	
	Peak	Average	Peak	Average	Peak	Average
*						

Table 51 - 2412 MHz - 1 GHz to 25 GHz

*No emissions were detected within 10 dB of the limit.

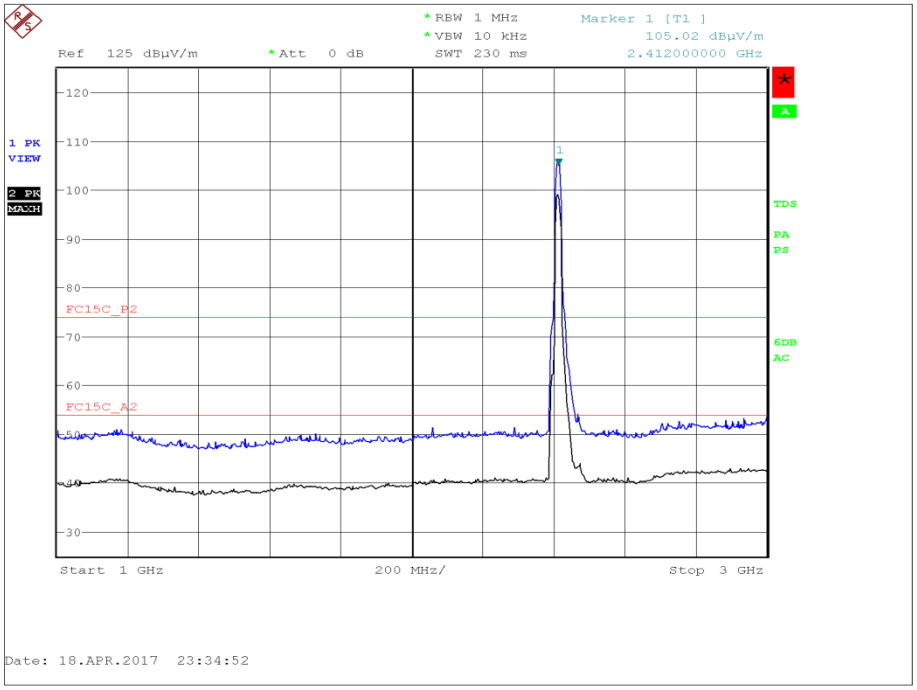

Figure 80 - 2412 MHz - 1 GHz to 3 GHz - Horizontal and Vertical

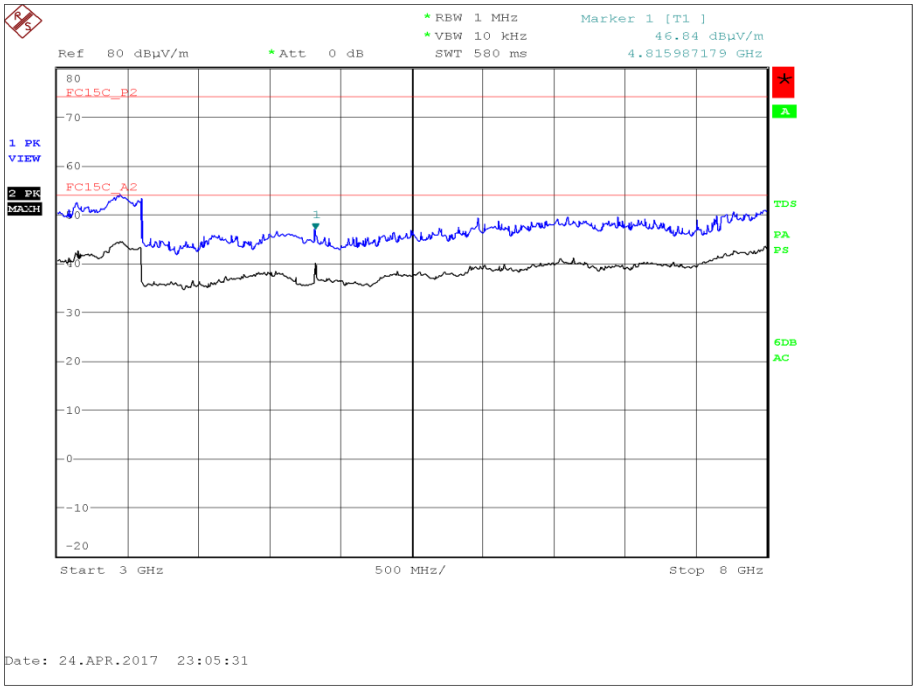

Figure 81 - 2412 MHz - 3 GHz to 8 GHz - Horizontal and Vertical

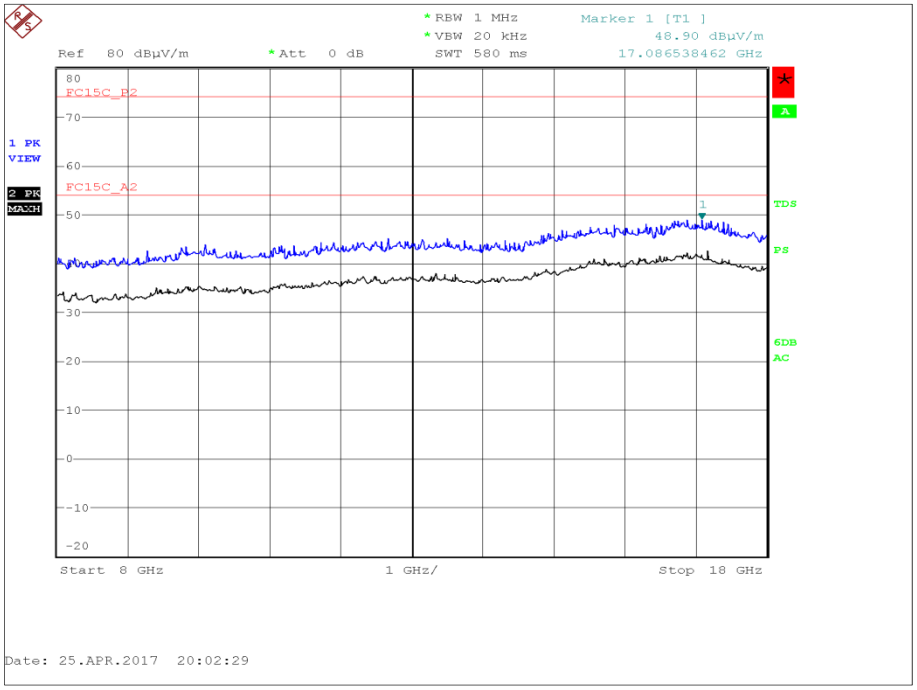

Figure 82 - 2412 MHz - 8 GHz to 18 GHz - Horizontal and Vertical

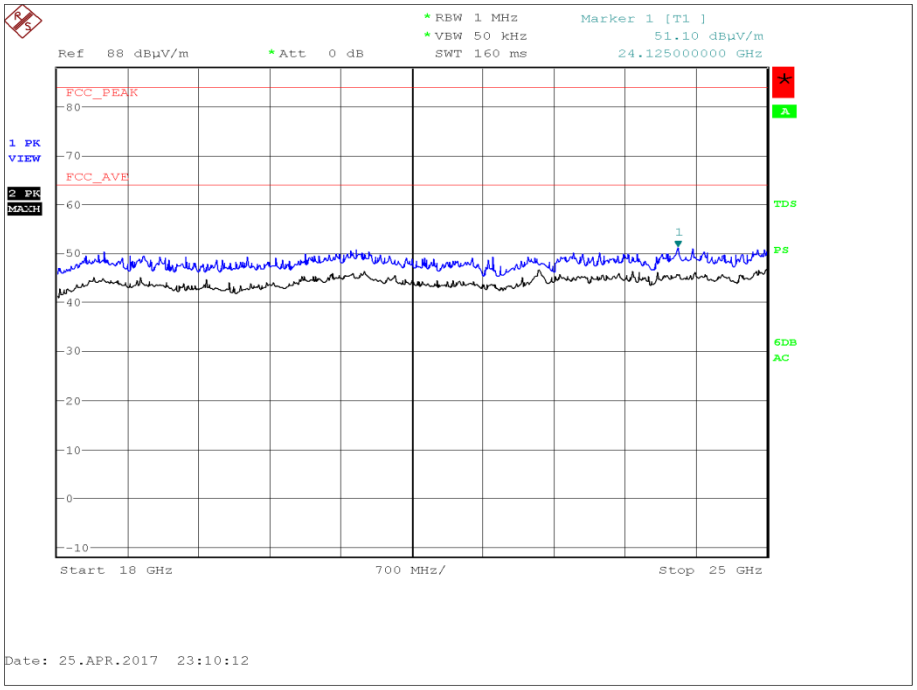

Figure 83 - 2412 MHz - 18 GHz to 25 GHz - Horizontal and Vertical

Frequency (MHz)	QP Level (dBuV/m)	QP Limit (dBuV/m)	QP Margin (dBuV/m)	Angle(Deg)	Height(m)	Polarity
37.500	27.4	40.0	-12.6	32	1.00	Vertical
172.337	31.3	43.5	-12.2	254	1.00	Vertical
251.178	37.1	46.0	-8.9	82	1.00	Vertical
323.292	25.9	46.0	-20.1	247	1.00	Horizontal
410.000	28.8	46.0	-17.2	254	1.00	Horizontal
614.000	30.8	46.0	-15.2	198	1.00	Horizontal

Table 52 - 2437 MHz - 30 MHz to 1 GHz

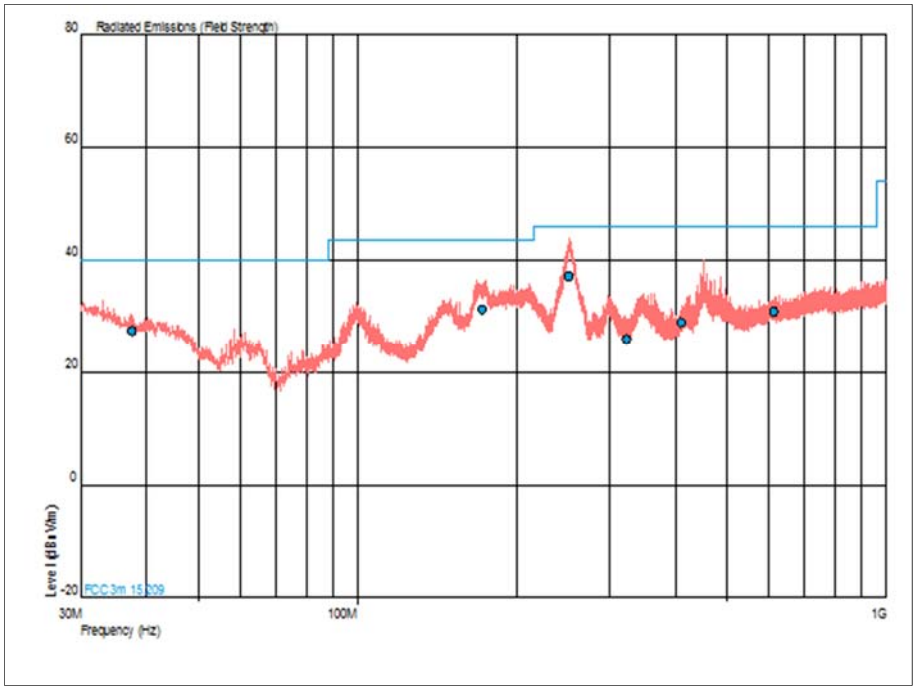

Figure 84 - 2437 MHz - 30 MHz to 1 GHz - Horizontal and Vertical

Frequency (GHz)	Result (µV/m)		Limit (µV/m)		Margin (µV/m)	
	Peak	Average	Peak	Average	Peak	Average
*						

Table 53 - 2437 MHz - 1 GHz to 25 GHz

*No emissions were detected within 10 dB of the limit.

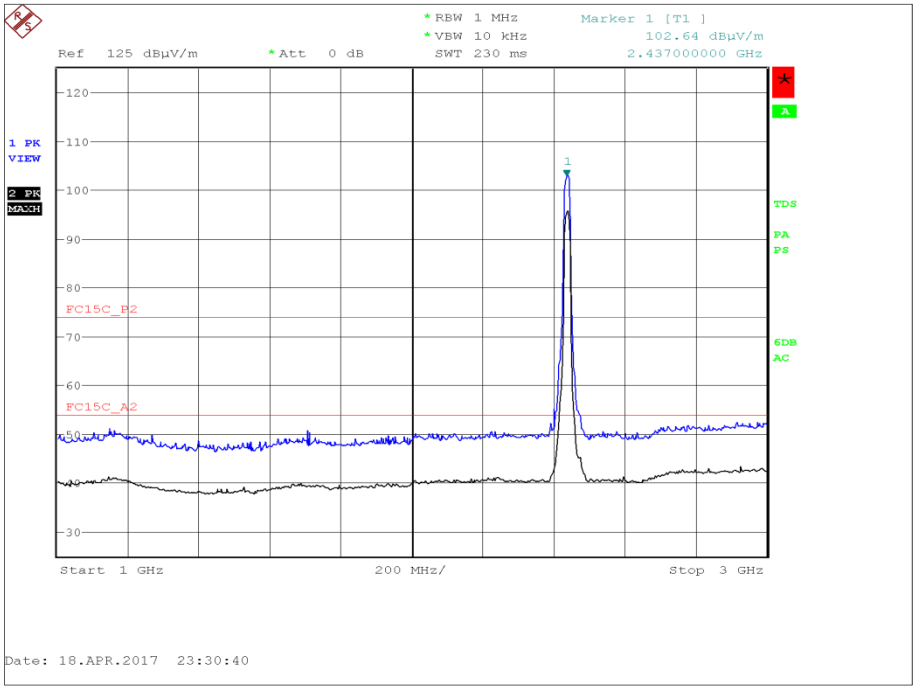

Figure 85 - 2437 MHz - 1 GHz to 3 GHz - Horizontal and Vertical

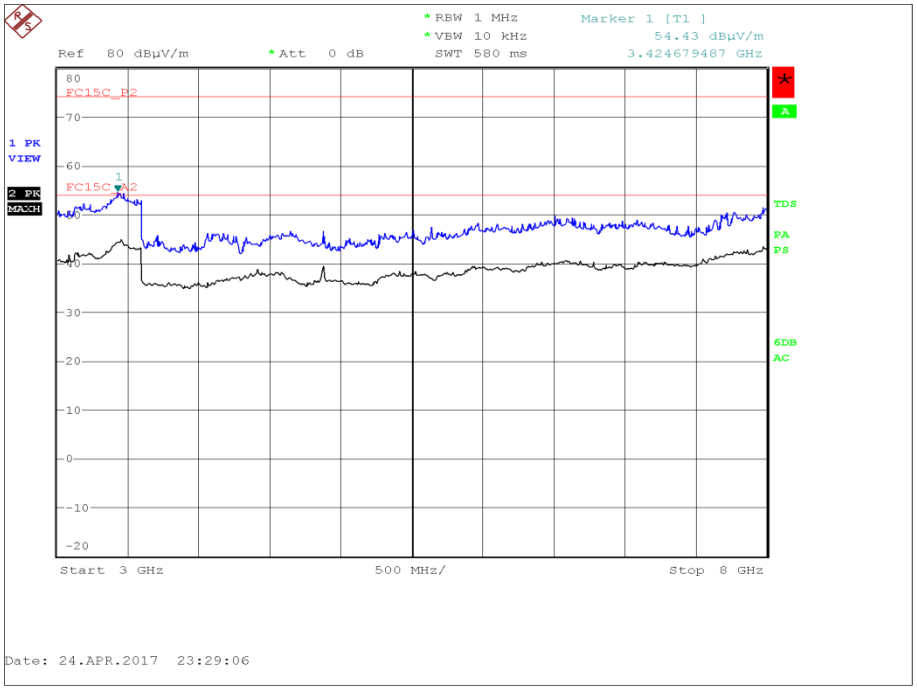

Figure 86 - 2437 MHz - 3 GHz to 8 GHz - Horizontal and Vertical

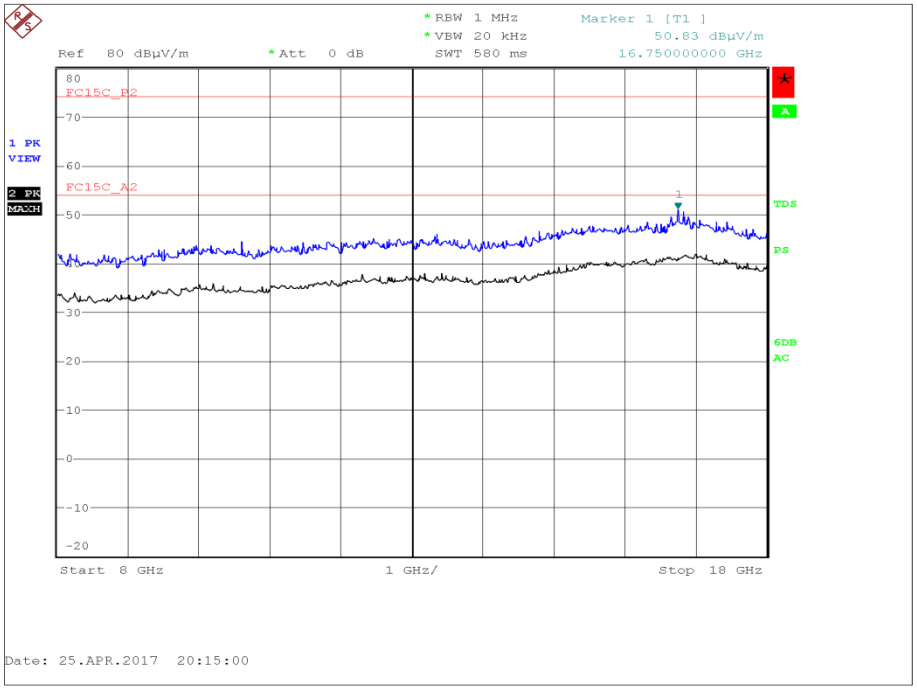

Figure 87 - 2437 MHz - 8 GHz to 18 GHz - Horizontal and Vertical

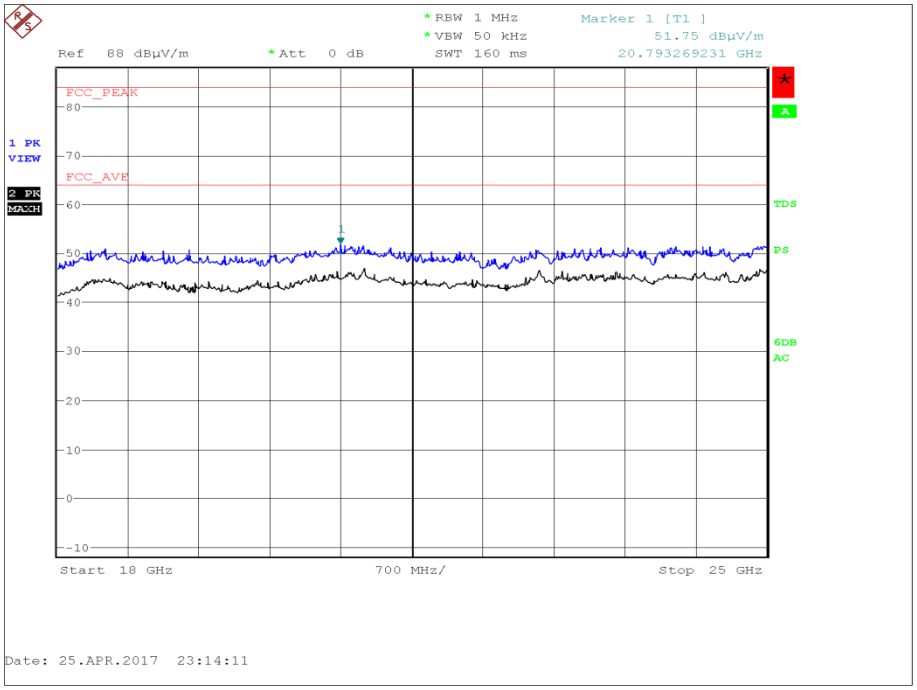

Figure 88 - 2437 MHz - 18 GHz to 25 GHz - Horizontal and Vertical

Frequency (MHz)	QP Level (dBuV/m)	QP Limit (dBuV/m)	QP Margin (dBuV/m)	Angle(Deg)	Height(m)	Polarity
37.500	27.4	40.0	-12.6	268	1.00	Vertical
172.269	26.2	43.5	-17.3	151	1.00	Vertical
251.200	40.8	46.0	-5.2	67	1.00	Vertical
322.193	27.6	46.0	-18.4	220	1.00	Horizontal
410.000	29.5	46.0	-16.5	269	1.00	Horizontal
614.000	31.4	46.0	-14.6	310	1.00	Horizontal

Table 54 - 2462 MHz - 30 MHz to 1 GHz

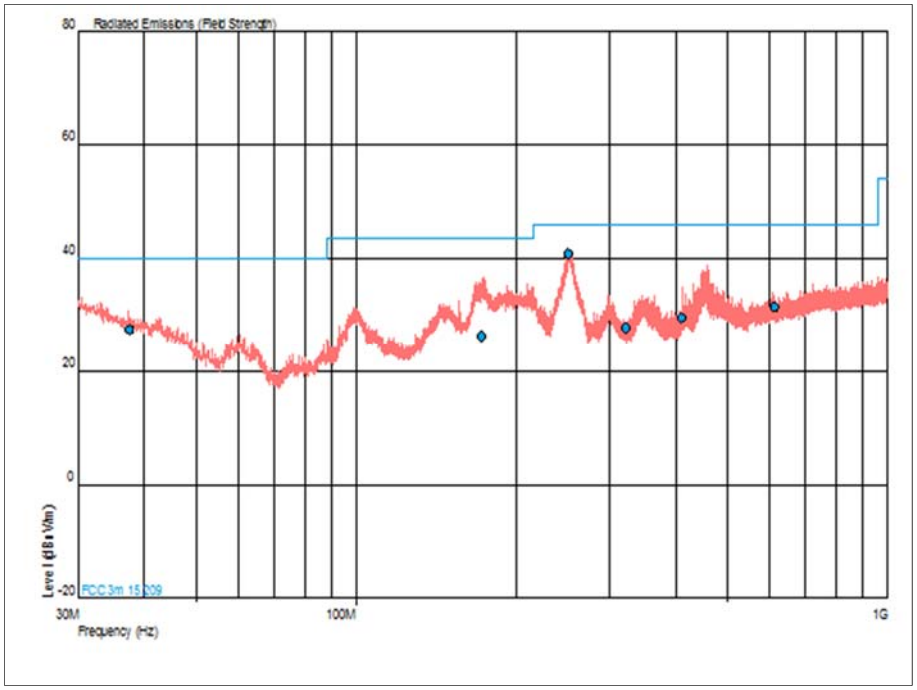

Figure 89 - 2462 MHz - 30 MHz to 1 GHz - Horizontal and Vertical

Frequency (GHz)	Result (µV/m)		Limit (µV/m)		Margin (µV/m)	
	Peak	Average	Peak	Average	Peak	Average
*						

Table 55 - 2462 MHz - 1 GHz to 25 GHz

*No emissions were detected within 10 dB of the limit.

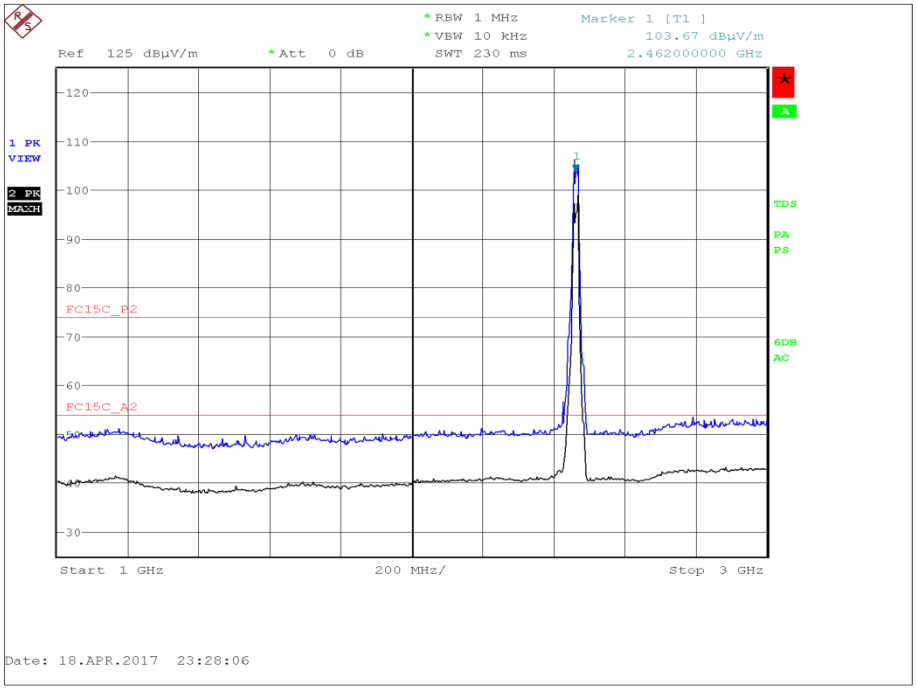

Figure 90 - 2462 MHz - 1 GHz to 3 GHz - Horizontal and Vertical

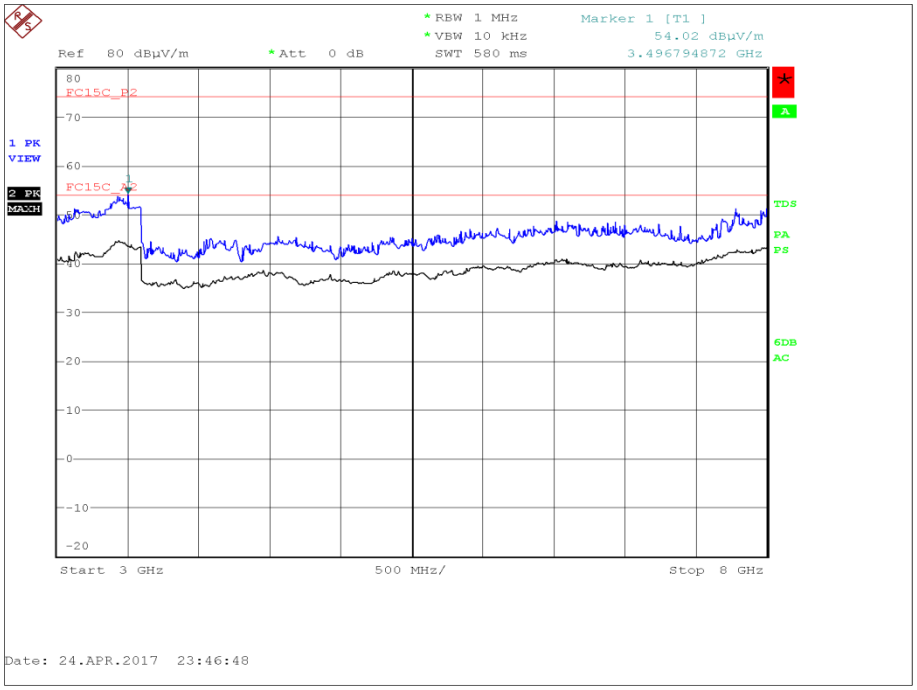

Figure 91 - 2462 MHz - 3 GHz to 8 GHz - Horizontal and Vertical

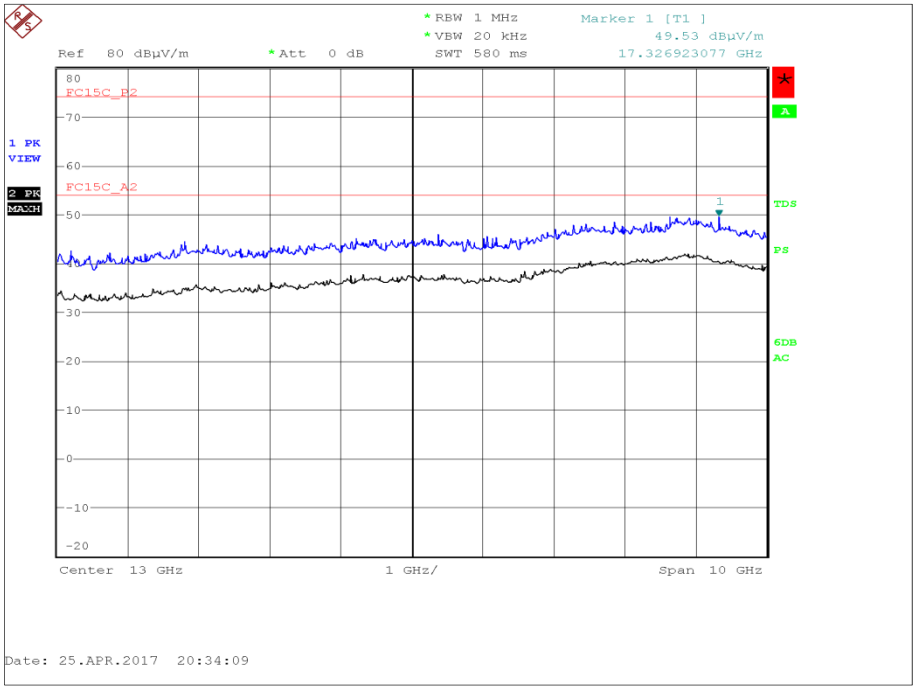

Figure 92 - 2462 MHz - 8 GHz to 18 GHz - Horizontal and Vertical

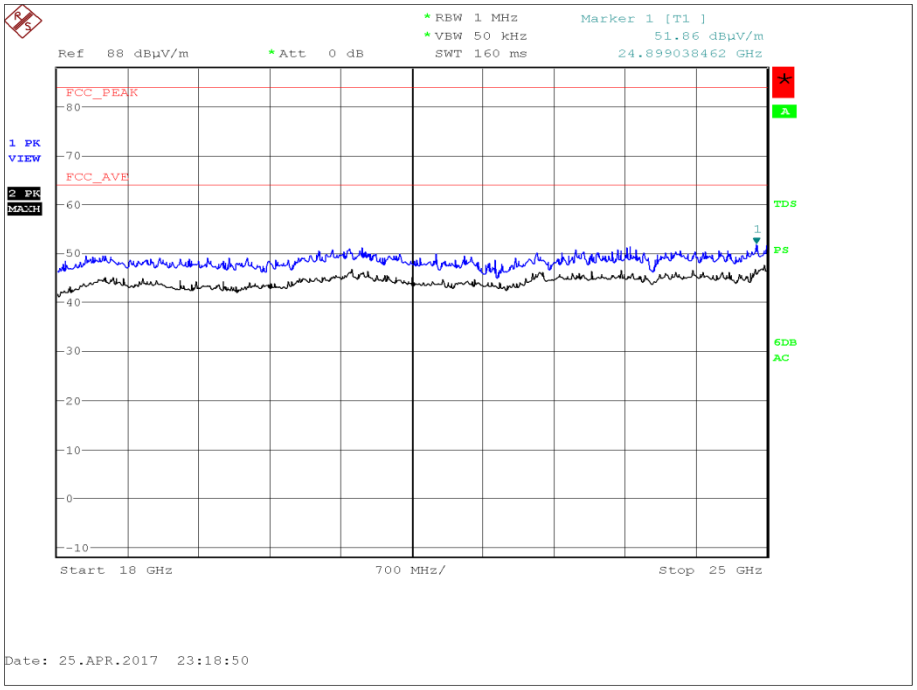

Figure 93 - 2462 MHz - 18 GHz to 25 GHz - Horizontal and Vertical

FCC 47 CFR Part 15C, Limit Clause 15.247 (d)

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

Attenuation below the general limits specified in § 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in 15.209(a).

Industry Canada RSS-247, Limit Clause 5.5

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under Section 5.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

2.6.7 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
Antenna 18-40GHz (Double Ridge Guide)	Link Microtek Ltd	AM180HA-K-TU2	230	24	12-Feb-2018
Signal Generator (10MHz to 40GHz)	Rohde & Schwarz	SMR40	1002	12	14-Oct-2017
Antenna 18-40GHz (Double Ridge Guide)	Q-Par Angus Ltd	QSH 180K	1511	24	07-Dec-2018
Pre-Amplifier	Phase One	PS04-0086	1533	12	29-Jul-2017
18GHz - 40GHz Pre-Amplifier	Phase One	PSO4-0087	1534	12	23-Jan-2018
Screened Room (5)	Rainford	Rainford	1545	36	20-Dec-2017
Turntable Controller	Inn-Co GmbH	CO 1000	1606	-	TU
Hygromer	Rotronic	A1	2138	12	02-Feb-2018
Filter (Hi Pass)	Lorch	9HP7-7000-SR	2833	12	06-Feb-2018
Antenna (Bilog)	Chase	CBL6143	2904	24	11-Jun-2017
Signal Generator (10MHz to 40GHz)	Rohde & Schwarz	SMR40	3171	12	02-Nov-2017
Cable (N-N, 8m)	Rhophase	NPS-2302-8000-NPS	3248	-	O/P Mon

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Due
Cable (N-N, 8m)	Rhophase	NPS-2302-8000-NPS	3248	12	02-May-2018
EMI Test Receiver	Rohde & Schwarz	ESU40	3506	12	12-Nov-2017
Tilt Antenna Mast	maturo Gmbh	TAM 4.0-P	3916	-	TU
Mast Controller	maturo Gmbh	NCD	3917	-	TU
Cable 1503 2M 2.92(P)m 2.92(P)m	Rhophase	KPS-1503A-2000-KPS	4293	12	23-Jan-2018
Suspended Substrate Highpass Filter	Advance Power Components	11SH10-3000/X18000-O/O	4411	12	22-May-2017
Cable (Rx, Km-Km 2m)	Scott Cables	KPS-1501-2000-KPS	4526	6	23-Jul-2017
Cable (Yellow, Rx, Km-Km 2m)	Scott Cables	KPS-1501-2000-KPS	4527	-	O/P Mon
Cable (Rx, SMAm-SMAm 0.5m)	Scott Cables	SLSLL18-SMSM-00.50M	4528	6	03-Feb-2017
Double Ridged Waveguide Horn Antenna	ETS-Lindgren	3117	4722	12	17-Feb-2018
9m N type RF cable	Rosenberger	2303-0 9.0m PNm PNm	4827	6	26-Jul-2017
Double Ridge Broadband Horn Antenna	Schwarzbeck	BBHA 9120 B	4848	12	17-Feb-2018

Table 56

TU - Traceability Unscheduled
O/P Mon – Output Monitored using calibrated equipment

3 Measurement Uncertainty

For a 95% confidence level, the measurement uncertainties for defined systems are:

Test Name	Measurement Uncertainty
Maximum Conducted Output Power	± 0.70 dB
Power Spectral Density	± 0.96 dB
Emission Bandwidth	± 212.114 kHz
Authorised Band Edges	Conducted: ± 3.08 dB Radiated: 30 MHz to 1 GHz: ± 5.1 dB Radiated: 1 GHz to 40 GHz: ± 6.3 dB
Restricted Band Edges	30 MHz to 1 GHz: ± 5.1 dB 1 GHz to 40 GHz: ± 6.3 dB
Spurious Radiated Emissions	30 MHz to 1 GHz: ± 5.1 dB 1 GHz to 40 GHz: ± 6.3 dB

Table 57