

FCC and Industry Canada Testing of the
Siemens AG
Access Point, Model: MSN65-W1-M12-E2
In accordance with FCC 47 CFR Part 15C,
Industry Canada RSS-247 and Industry Canada
RSS-GEN

Prepared for: Siemens AG
76181
Karlsruhe
Germany

FCC ID: LYHMSN65V1
IC: 267AA-MSN65V1



Product Service

Choose certainty.
Add value.

COMMERCIAL-IN-CONFIDENCE

Date: June 2017

Document Number: 75938097-03 | Issue: 01

RESPONSIBLE FOR	NAME	DATE	SIGNATURE
Project Management	Steven White	19 June 2017	
Authorised Signatory	Simon Bennett	19 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 and 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	Matthew Russell	19 June 2017	
Testing	Graeme Lawler	19 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, Industry Canada RSS-247 Issue 2 (2017-02) and Industry Canada RSS-GEN: Issue 4 (11-2014).



DISCLAIMER AND COPYRIGHT

This non-binding report has been prepared by TÜV SÜD Product Service with all reasonable skill and care. The document is confidential to the potential Client and TÜV SÜD Product Service. No part of this document may be reproduced without the prior written approval of TÜV SÜD Product Service. © 2017 TÜV SÜD Product Service.

ACCREDITATION

Our UKAS Accreditation does not cover opinions and interpretations and any expressed are outside the scope of our UKAS Accreditation. Results of tests not covered by our UKAS Accreditation Schedule are marked NUA (Not UKAS Accredited).

TÜV SÜD Product Service
is a trading name of TÜV SÜD Ltd
Registered in Scotland at East Kilbride,
Glasgow G75 0QF, United Kingdom
Registered number: SC215164

TÜV SÜD Ltd is a
TÜV SÜD Group Company

Phone: +44 (0) 1489 558100
Fax: +44 (0) 1489 558101
www.tuv-sud.co.uk

TÜV SÜD Product Service
Octagon House
Concorde Way
Fareham
Hampshire PO15 5RL
United Kingdom



Contents

1	Report Summary	2
1.1	Report Modification Record.....	2
1.2	Introduction.....	2
1.3	Brief Summary of Results	3
1.4	Application Form	8
1.5	Product Information	10
1.6	Deviations from the Standard.....	11
1.7	EUT Modification Record	11
1.8	Test Location.....	11
2	Test Details	15
2.1	Restricted Band Edges	15
2.2	Emission Bandwidth	71
2.3	Maximum Conducted Output Power	83
2.4	Authorised Band Edges	96
2.5	Spurious Radiated Emissions	131
2.6	Power Spectral Density	225
3	Measurement Uncertainty	238

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	19 June 2017

Table 1

1.2 Introduction

Applicant	Siemens Karlsruhe	
Manufacturer	Siemens AG	
Model Number(s)	MSN65-W1-M12-E2	
Serial Number(s)	Not Serialised (75938097-TSR0001)	
	Not Serialised (75938097-TSR0002)	
Hardware Version(s)	1	
Software Version(s)	6.1	
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	PO 4500299377	PO 4500300955
Date	20-February-2017	05 April 2017
Date of Receipt of EUT	23-February-2017	
Start of Test	06-March-2017	
Finish of Test	09-April-2017	
Name of Engineer(s)	Matthew Russell and Graeme Lawler	
Related Document(s)	ANSI C63.10 (2013)	
	KDB 662911 D01 v02r01	



1.3 Brief Summary of Results

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

Section	Specification Clause			Test Description	Result	Comments/Base Standard
	Part 15C	RSS-247	RSS-GEN			
Configuration: ANT795-4MX - 802.11b						
2.1	15.205	-	8.10	Restricted Band Edges	Pass	ANSI C63.10
2.2	15.247 (a)(2)	5.2	6.6	Emission Bandwidth	Pass	ANSI C63.10
2.3	15.247 (b)(3)	5.4	6.12	Maximum Conducted Output Power	Pass	ANSI C63.10
2.4	15.247 (d)	5.5	-	Authorised Band Edges	Pass	ANSI C63.10
2.5	15.247 (d) and 15.205	5.5	6.13	Spurious Radiated Emissions	Pass	ANSI C63.10
2.6	15.247 (e)	5.2	6.12	Power Spectral Density	Pass	ANSI C63.10
Configuration: ANT795-4MX - 802.11g						
2.1	15.205	-	8.10	Restricted Band Edges	Pass	ANSI C63.10
2.2	15.247 (a)(2)	5.2	6.6	Emission Bandwidth	Pass	ANSI C63.10
2.3	15.247 (b)(3)	5.4	6.12	Maximum Conducted Output Power	Pass	ANSI C63.10
2.4	15.247 (d)	5.5	-	Authorised Band Edges	Pass	ANSI C63.10
2.5	15.247 (d) and 15.205	5.5	6.13	Spurious Radiated Emissions	Pass	ANSI C63.10
2.6	15.247 (e)	5.2	6.12	Power Spectral Density	Pass	ANSI C63.10



Product Service

Section	Specification Clause			Test Description	Result	Comments/Base Standard
	Part 15C	RSS-247	RSS-GEN			
Configuration: ANT795-4MX - 802.11n 20 MHz Bandwidth						
2.1	15.205	-	8.10	Restricted Band Edges	Pass	ANSI C63.10
2.2	15.247 (a)(2)	5.2	6.6	Emission Bandwidth	Pass	ANSI C63.10
2.3	15.247 (b)(3)	5.4	-	Maximum Conducted Output Power	Pass	ANSI C63.10 and KDB 662911 D01
2.4	15.247 (d)	5.5	-	Authorised Band Edges	Pass	ANSI C63.10
2.6	15.247 (e)	5.2	-	Power Spectral Density	Pass	ANSI C63.10 and KDB 662911 D01
Configuration: ANT795-4MX - 802.11n 40 MHz Bandwidth						
2.1	15.205	-	8.10	Restricted Band Edges	Pass	ANSI C63.10
2.2	15.247 (a)(2)	5.2	6.6	Emission Bandwidth	Pass	ANSI C63.10
2.3	15.247 (b)(3)	5.4	-	Maximum Conducted Output Power	Pass	ANSI C63.10 and KDB 662911 D01
2.4	15.247 (d)	5.5	-	Authorised Band Edges	Pass	ANSI C63.10
2.5	15.247 (d) and 15.205	5.5	6.13	Spurious Radiated Emissions	Pass	ANSI C63.10
2.6	15.247 (e)	5.2	-	Power Spectral Density	Pass	ANSI C63.10 and KDB 662911 D01
Configuration: ANT792-6MN - 802.11b						
2.1	15.205	-	8.10	Restricted Band Edges	Pass	ANSI C63.10
2.3	15.247 (b)(3)	5.4	-	Maximum Conducted Output Power	Pass	ANSI C63.10
2.4	15.247 (d)	5.5	-	Authorised Band Edges	Pass	ANSI C63.10
2.5	15.247 (d) and 15.205	5.5	6.13	Spurious Radiated Emissions	Pass	ANSI C63.10
2.6	15.247 (e)	5.2	-	Power Spectral Density	Pass	ANSI C63.10 and KDB 662911 D01



Product Service

Section	Specification Clause			Test Description	Result	Comments/Base Standard
	Part 15C	RSS-247	RSS-GEN			
Configuration: ANT792-6MN - 802.11g						
2.1	15.205	-	8.10	Restricted Band Edges	Pass	ANSI C63.10
2.3	15.247 (b)(3)	5.4	-	Maximum Conducted Output Power	Pass	ANSI C63.10
2.4	15.247 (d)	5.5	-	Authorised Band Edges	Pass	ANSI C63.10
2.5	15.247 (d) and 15.205	5.5	6.13	Spurious Radiated Emissions	Pass	ANSI C63.10
2.6	15.247 (e)	5.4	-	Power Spectral Density	Pass	ANSI C63.10 and KDB 662911 D01
Configuration: ANT792-6MN - 802.11n 20 MHz Bandwidth						
2.1	15.205	-	8.10	Restricted Band Edges	Pass	ANSI C63.10
2.3	15.247 (b)(3)	5.4	-	Maximum Conducted Output Power	Pass	ANSI C63.10 and KDB 662911 D01
2.4	15.247 (d)	5.5	-	Authorised Band Edges	Pass	ANSI C63.10
2.6	15.247 (e)	5.2	-	Power Spectral Density	Pass	ANSI C63.10 and KDB 662911 D01
Configuration: ANT792-6MN - 802.11n 40 MHz Bandwidth						
2.1	15.205	-	8.10	Restricted Band Edges	Pass	ANSI C63.10
2.3	15.247 (b)(3)	5.4	-	Maximum Conducted Output Power	Pass	ANSI C63.10 and KDB 662911 D01
2.4	15.247 (d)	5.5	-	Authorised Band Edges	Pass	ANSI C63.10
2.5	15.247 (d) and 15.205	5.5	6.13	Spurious Radiated Emissions	Pass	ANSI C63.10
2.6	15.247 (e)	5.2	-	Power Spectral Density	Pass	ANSI C63.10 and KDB 662911 D01



Product Service

Section	Specification Clause			Test Description	Result	Comments/Base Standard
	Part 15C	RSS-247	RSS-GEN			
Configuration: ANT795-6DC - 802.11b						
2.1	15.205	-	8.10	Restricted Band Edges	Pass	ANSI C63.10
2.3	15.247 (b)(3)	5.4	-	Maximum Conducted Output Power	Pass	ANSI C63.10
2.4	15.247 (d)	5.5	-	Authorised Band Edges	Pass	ANSI C63.10
2.5	15.247 (d) and 15.205	5.5	6.13	Spurious Radiated Emissions	Pass	ANSI C63.10
2.6	15.247 (e)	5.2	-	Power Spectral Density	Pass	ANSI C63.10 and KDB 662911 D01
Configuration: ANT795-6DC - 802.11g						
2.1	15.205	-	8.10	Restricted Band Edges	Pass	ANSI C63.10
2.3	15.247 (b)(3)	5.4	-	Maximum Conducted Output Power	Pass	ANSI C63.10
2.4	15.247 (d)	5.5	-	Authorised Band Edges	Pass	ANSI C63.10
2.5	15.247 (d) and 15.205	5.5	6.13	Spurious Radiated Emissions	Pass	ANSI C63.10
2.6	15.247 (e)	5.2	-	Power Spectral Density	Pass	ANSI C63.10 and KDB 662911 D01
Configuration: ANT795-6DC - 802.11n 20 MHz Bandwidth						
2.1	15.205	-	8.10	Restricted Band Edges	Pass	ANSI C63.10
2.3	15.247 (b)(3)	5.4	-	Maximum Conducted Output Power	Pass	ANSI C63.10 and KDB 662911 D01
2.4	15.247 (d)	5.5	-	Authorised Band Edges	Pass	ANSI C63.10
2.6	15.247 (e)	5.2	-	Power Spectral Density	Pass	ANSI C63.10 and KDB 662911 D01



Section	Specification Clause			Test Description	Result	Comments/Base Standard
	Part 15C	RSS-247	RSS-GEN			
Configuration: ANT795-6DC - 802.11n 40 MHz Bandwidth						
2.1	15.205	-	8.10	Restricted Band Edges	Pass	ANSI C63.10
2.3	15.247 (b)(3)	5.4	-	Maximum Conducted Output Power	Pass	ANSI C63.10 and KDB 662911 D01
2.4	15.247 (d)	5.5	-	Authorised Band Edges	Pass	ANSI C63.10
2.5	15.247 (d) and 15.205	5.5	6.13	Spurious Radiated Emissions	Pass	ANSI C63.10
2.6	15.247 (e)	5.2	-	Power Spectral Density	Pass	ANSI C63.10 and KDB 662911 D01

Table 2

1.4 Application Form

EQUIPMENT DESCRIPTION	
Model Name/Number	MSN65-W1-M12-E2
Part Number	
Hardware Version	1
Software Version	6.1
FCC ID (if applicable)	LYHMSN65V1
Industry Canada ID (if applicable)	267AA-MSN65V1
Technical Description (Please provide a brief description of the intended use of the equipment)	802.11 a/b/g/n Wi-Fi Access Point. EUT can be operated in either Master or Client mode depending on firmware configuration. EUT supports 20 MHz and 40 MHz bandwidths and 2x2 MIMO data rates (MCS0-7 and MCS 8-15).

INTENTIONAL RADIATORS									
Technology	Frequency Band (MHz)	Conducted Declared Output Power (dBm)	Antenna Gain (dBi)	Supported Bandwidth (s) (MHz)	Modulation Scheme(s)	ITU Emission Designator	Test Channels (MHz)		
							Bottom	Middle	Top
802.11a	5	20	6	20	OFDM		5180	5500	5825
802.11b/g	2.4	20	0	20	CCK/DSS S/OFDM		2412	2437	2462
802.11n	2.4	20	0	20/40	OFDM		2412	2437	2462
802.11n	5	20	6	20/40	OFDM		5180	5500	5825

UN-INTENTIONAL RADIATOR	
Highest frequency generated or used in the device or on which the device operates or tunes	5835 MHz

Power Source			
AC	Single Phase	Three Phase	Nominal Voltage
External DC	Nominal Voltage		Maximum Current
	24		250mA@24V, 350mA@16.8V
Battery	Nominal Voltage		Battery Operating End Point Voltage
Can EUT transmit whilst being charged?			Yes ☐ No ☐

EXTREME CONDITIONS			
Maximum temperature	75	°C	Minimum temperature -30 °C



Ancillaries
Please list all ancillaries which will be used with the device.

ANTENNA CHARACTERISTICS				
☒	Antenna connector		State impedance	50 Ohm
☐	Temporary antenna connector		State impedance	Ohm
☐	Integral antenna	Type		
☒	External antenna	Type	Please see attached Antenna List	

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

Name: Malgorzata Janson

Position held: Project Manager Date: 29.05.2017

1.5 Product Information

1.5.1 Technical Description

802.11 a/b/g/n Wi-Fi Access Point. EUT can be operated in either Master or Client mode depending on firmware configuration. EUT supports 20 MHz and 40 MHz bandwidths and 2x2 MiMo data rates (MCS0-7 and MCS8-15).

1.5.2 Antenna Configuration

From the list of antennas to be supplied with the EUT as shown in table 4, three antennas were chosen by the manufacturer to perform testing with as listed in table 3. The antennas chosen were decided by the manufacturer and were decided based on the antenna gain and applicable conducted output power setting.

Model Number	Effective Antenna Gain (dBi)	Conducted Power Setting (dBm)
ANT795-4MX	2	18
ANT792-6MN	6	14
ANT795-6DC	9	11

Table 3 - Antennas used for Testing

Below is a full list of all the antennas which may be supplied with the product.

No.	Manufacturer Number	Radiation Pattern	Model Number	Connector	Band	Gain @2.4 GHz [dBi]	Gain @5 GHz [dBi]	Cable Loss	Effective Gain
1	6GK5793-8DK00-0AA0	Directed	ANT793-8DK	N	5 GHz	--	23	8.8	14.2
2	6GK5793-8DJ00-0AA0	Directed	ANT793-8DJ	N	5 GHz	--	18	4.4	13.6
3	6GK5793-8DL00-0AA0	Directed	ANT793-8DL	N	5 GHz	--	14		
4	6GK5793-8DP00-0AA0	Directed	ANT793-8DP	N	5 GHz	--	13.5		
5	6GK5795-6DC00-0AA0	Sector	ANT795-6DC	N	2.4 GHz + 5 GHz	9	9		
6	6GK5793-6DG00-0AA0	Sector	ANT793-6DG	N	5 GHz	--	9		
7	6GK5795-6MN10-0AA6	Omni	ANT795-6MN	N	2.4 GHz + 5 GHz	6	8		
8	6GK5793-6DT00-0AA0	Sector	ANT793-6DT	QMA	5 GHz	--	8		
9	6GK5896-6MM00-0AA0	Omni	ANT896-6MM	QMA	2.4 GHz + 5 GHz	6	7		
10	6GK5795-6MP00-0AA0	Omni	ANT795-6MP	N	2.4 GHz + 5 GHz	5	7		
11	6GK5793-4MN00-0AA6	Omni	ANT793-4MN	N	5 GHz	--	6		

No.	Manufacturer Number	Radiation Pattern	Model Number	Connector	Band	Gain @2.4 GHz [dBi]	Gain @5 GHz [dBi]	Cable Loss	Effective Gain
12	6GK5795-6MT00-0AA0	Omni	ANT795-6MT	QMA	2.4 GHz + 5 GHz	4	6		
13	6GK5793-6MN00-0AA6	Omni	ANT793-6MN	N	5 GHz	--	5		
14	6GK5795-4MA00-0AA3	Omni	ANT795-4MA	R-SMA	2.4 GHz + 5 GHz	3	5		
15	6GK5795-4MC00-0AA3	Omni	ANT795-4MC	N	2.4 GHz + 5 GHz	3	5		
16	6GK5795-4MD00-0AA3	Omni	ANT795-4MD	N	2.4 GHz + 5 GHz	3	5		
17	6GK5795-4MB00-0AA0	Omni	ANT795-4MB	R-SMA	2.4 GHz + 5 GHz	2	3		
18	6GK5795-4MX00-0AA0	Omni	ANT795-4MX	N	2.4 GHz + 5 GHz	2	2.5		
19	6XV1875-2D	Omni	IWLAN Rcoax Cable	N	5 GHz	--	0		
20	6GK5792-6MN00-0AA6	Omni	ANT792-6MN	N	2.4 GHz	6	--		
21	6GK5792-4DN00-0AA6	Omni	ANT792-4DN	N	2.4 GHz	4	--		
22	6XV1875-2A	Omni	IWLAN Rcoax Cable	N	2.4 GHz	0	--		

Table 4 - List of Antennas supplied with EUT

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: Not Serialised (75938097-TSR0001)			
0	As supplied by the customer	Not Applicable	Not Applicable
Serial Number: Not Serialised (75938097-TSR0002)			
0	As supplied by the customer	Not Applicable	Not Applicable

Table 5

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: ANT795-4MX - 802.11b		
Maximum Conducted Output Power	Matthew Russell	UKAS
Power Spectral Density	Matthew Russell	UKAS
Spurious Radiated Emissions	Graeme Lawler	UKAS
Restricted Band Edges	Graeme Lawler	UKAS
Authorised Band Edges	Graeme Lawler	UKAS
Emission Bandwidth	Matthew Russell	UKAS
Configuration: ANT795-4MX - 802.11g		
Maximum Conducted Output Power	Matthew Russell	UKAS
Power Spectral Density	Matthew Russell	UKAS
Spurious Radiated Emissions	Graeme Lawler	UKAS
Restricted Band Edges	Graeme Lawler	UKAS
Authorised Band Edges	Graeme Lawler	UKAS
Emission Bandwidth	Matthew Russell	UKAS
Configuration: ANT795-4MX - 802.11n 20 MHz Bandwidth		
Maximum Conducted Output Power	Matthew Russell	UKAS
Power Spectral Density	Matthew Russell	UKAS
Restricted Band Edges	Graeme Lawler	UKAS
Authorised Band Edges	Graeme Lawler	UKAS
Emission Bandwidth	Matthew Russell	UKAS
Configuration: ANT795-4MX - 802.11n 40 MHz Bandwidth		
Maximum Conducted Output Power	Matthew Russell	UKAS
Power Spectral Density	Matthew Russell	UKAS
Spurious Radiated Emissions	Graeme Lawler	UKAS
Restricted Band Edges	Graeme Lawler	UKAS
Authorised Band Edges	Graeme Lawler	UKAS
Emission Bandwidth	Matthew Russell	UKAS
Configuration: ANT792-6MN - 802.11b		
Maximum Conducted Output Power	Matthew Russell	UKAS
Power Spectral Density	Matthew Russell	UKAS
Spurious Radiated Emissions	Graeme Lawler	UKAS
Restricted Band Edges	Graeme Lawler	UKAS
Authorised Band Edges	Graeme Lawler	UKAS
Configuration: ANT792-6MN - 802.11g		
Maximum Conducted Output Power	Matthew Russell	UKAS

Test Name	Name of Engineer(s)	Accreditation
Power Spectral Density	Matthew Russell	UKAS
Spurious Radiated Emissions	Graeme Lawler	UKAS
Restricted Band Edges	Graeme Lawler	UKAS
Authorised Band Edges	Graeme Lawler	UKAS
Configuration: ANT792-6MN - 802.11n 20 MHz Bandwidth		
Maximum Conducted Output Power	Matthew Russell	UKAS
Power Spectral Density	Matthew Russell	UKAS
Restricted Band Edges	Graeme Lawler	UKAS
Authorised Band Edges	Graeme Lawler	UKAS
Configuration: ANT792-6MN - 802.11n 40 MHz Bandwidth		
Maximum Conducted Output Power	Matthew Russell	UKAS
Power Spectral Density	Matthew Russell	UKAS
Spurious Radiated Emissions	Graeme Lawler	UKAS
Restricted Band Edges	Graeme Lawler	UKAS
Authorised Band Edges	Graeme Lawler	UKAS
Configuration: ANT795-6DC - 802.11b		
Spurious Radiated Emissions	Graeme Lawler	UKAS
Maximum Conducted Output Power	Matthew Russell	UKAS
Power Spectral Density	Matthew Russell	UKAS
Restricted Band Edges	Graeme Lawler	UKAS
Authorised Band Edges	Graeme Lawler	UKAS
Configuration: ANT795-6DC - 802.11g		
Maximum Conducted Output Power	Matthew Russell	UKAS
Power Spectral Density	Matthew Russell	UKAS
Spurious Radiated Emissions	Graeme Lawler	UKAS
Restricted Band Edges	Graeme Lawler	UKAS
Authorised Band Edges	Graeme Lawler	UKAS
Configuration: ANT795-6DC - 802.11n 20 MHz Bandwidth		
Maximum Conducted Output Power	Matthew Russell	UKAS
Power Spectral Density	Matthew Russell	UKAS
Restricted Band Edges	Graeme Lawler	UKAS
Authorised Band Edges	Graeme Lawler	UKAS
Configuration: ANT795-6DC - 802.11n 40 MHz Bandwidth		
Maximum Conducted Output Power	Matthew Russell	UKAS
Power Spectral Density	Matthew Russell	UKAS
Spurious Radiated Emissions	Graeme Lawler	UKAS



Test Name	Name of Engineer(s)	Accreditation
Restricted Band Edges	Graeme Lawler	UKAS
Authorised Band Edges	Graeme Lawler	UKAS

Table 6

Office Address:

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

2 Test Details

2.1 Restricted Band Edges

2.1.1 Specification Reference

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

2.1.2 Equipment Under Test and Modification State

MSN65-W1-M12-E2, S/N: Not Serialised (75938097-TSR0001) - Modification State 0

2.1.3 Date of Test

22-March-2017 to 28-March-2017

2.1.4 Test Method

This test 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.

These are shown for information purposes and were used to determine the worst case measurement point. Final average measurements were then taken in accordance with ANSI C63.10 clause 4.1.4.2.2. to obtain the measurement result recorded in the test results tables.

2.1.5 Environmental Conditions

Ambient Temperature 18.2 - 19.2 °C
Relative Humidity 26.0 - 43.0 %

2.1.6 Test Results

ANT795-4MX - 802.11b

Mode	Data Rate/MCS	Frequency (MHz)	Measured Frequency (MHz)	Peak Level (dBμV/m)	Average Level (dBμV/m)
Data Rate with Highest Power and Widest Bandwidth	1 Mbps	2412	2390.0	65.86	46.77
Data Rate with Highest Power and Widest Bandwidth	1 Mbps	2462	2483.5	64.54	47.08

Table 7



Product Service

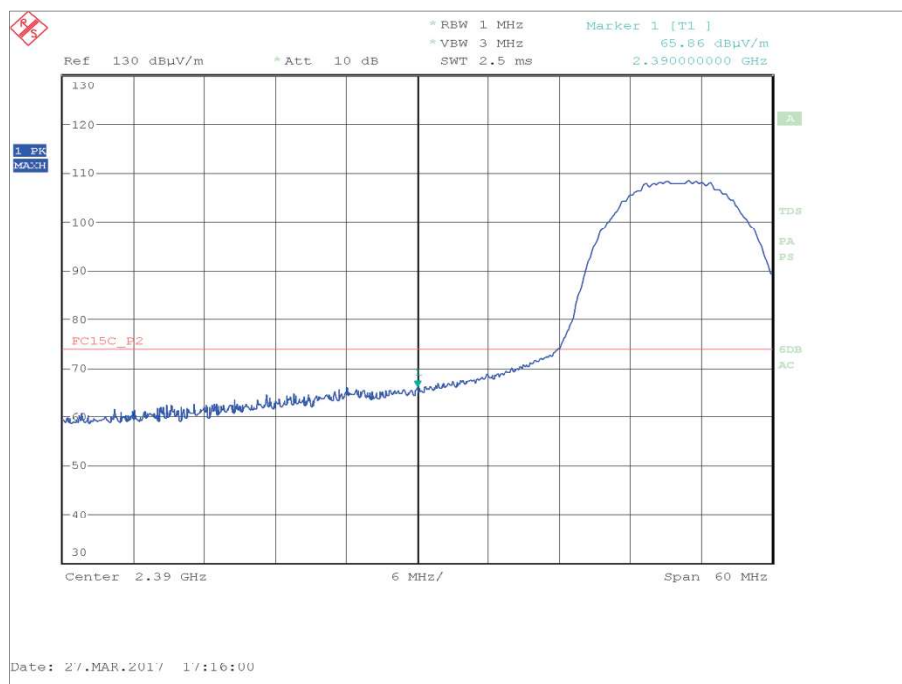


Figure 1 - Data Rate with Highest Power and Widest Bandwidth, 1 Mbps, 2412 MHz, Measured Frequency 2390.0 MHz, Peak

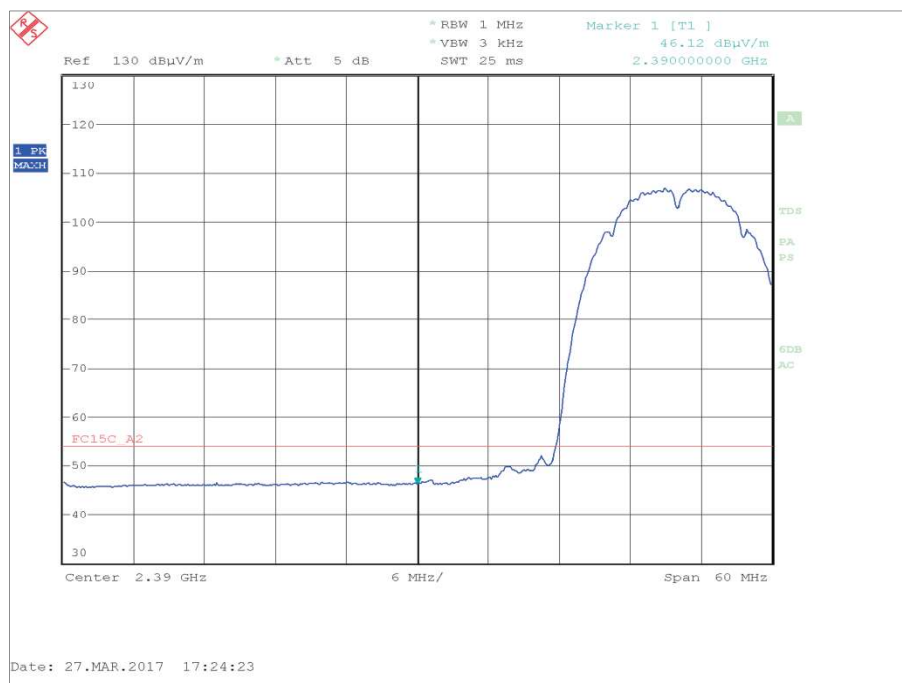


Figure 2 - Data Rate with Highest Power and Widest Bandwidth, 1 Mbps, 2412 MHz, Measured Frequency 2390.0 MHz, Average



Product Service

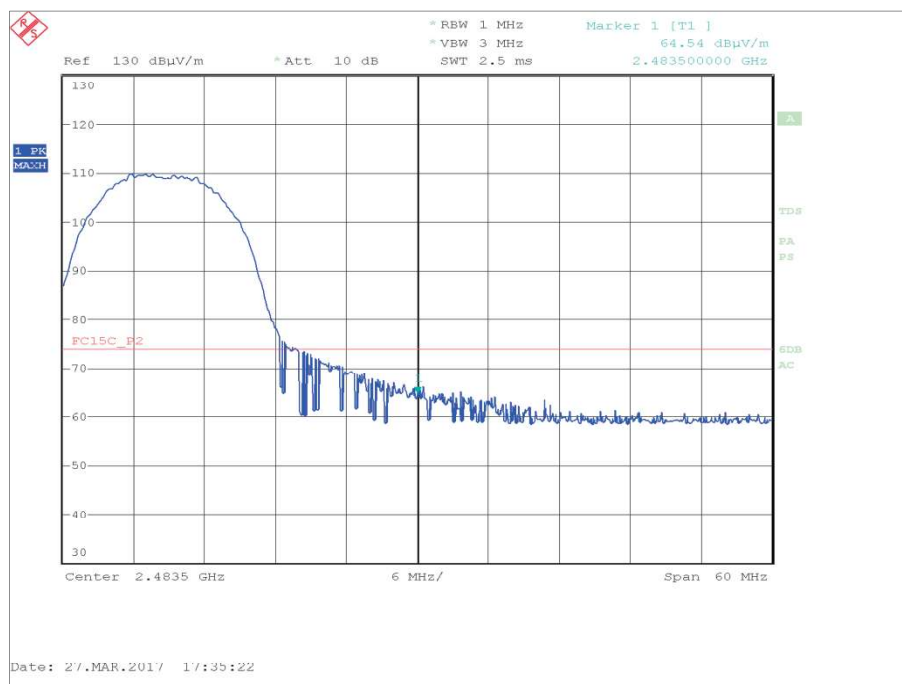


Figure 3 - Data Rate with Highest Power and Widest Bandwidth, 1 Mbps, 2462 MHz, Measured Frequency 2483.5 MHz, Peak

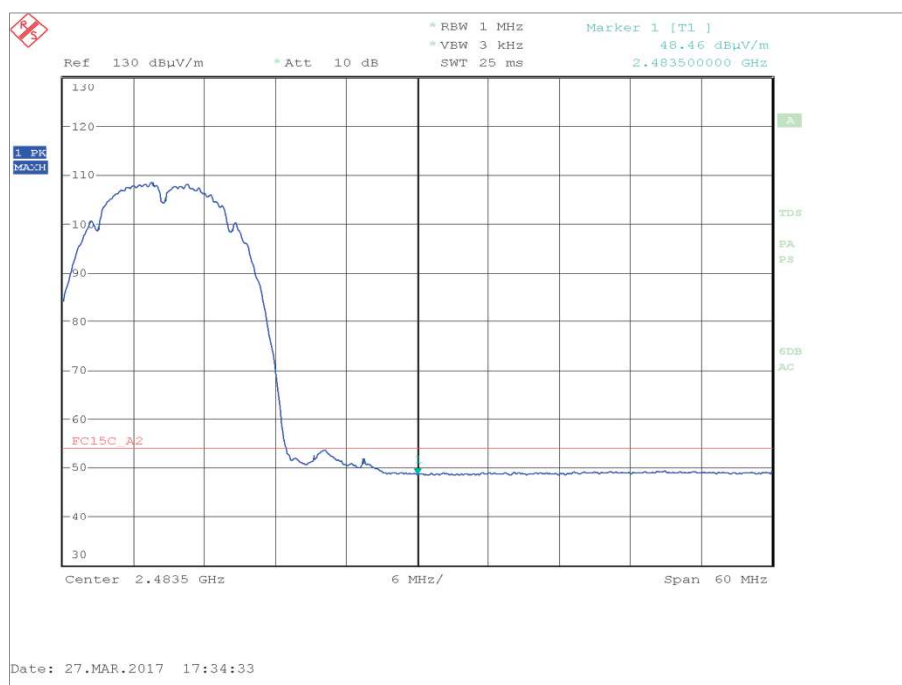


Figure 4 - Data Rate with Highest Power and Widest Bandwidth, 1 Mbps, 2462 MHz, Measured Frequency 2483.5 MHz, Average

FCC 47 CFR Part 15, Limit Clause 15.205

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

Table 8

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 9

*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.



ANT795-4MX - 802.11g

Mode	Data Rate/MCS	Frequency (MHz)	Measured Frequency (MHz)	Peak Level (dBμV/m)	Average Level (dBμV/m)
Data Rate with Highest Power	6 Mbps	2412	2390.0	72.50	50.25
Data Rate with Highest Power	6 Mbps	2462	2483.5	68.62	49.75
Data Rate with Widest Bandwidth	48 Mbps	2412	2390.0	65.74	48.86
Data Rate with Widest Bandwidth	48 Mbps	2462	2483.5	68.24	48.61

Table 10

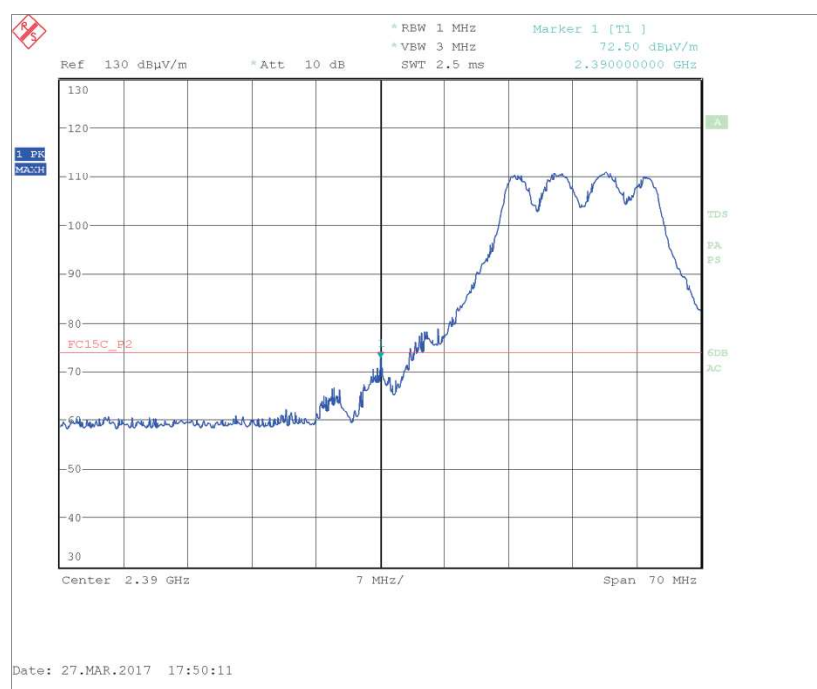
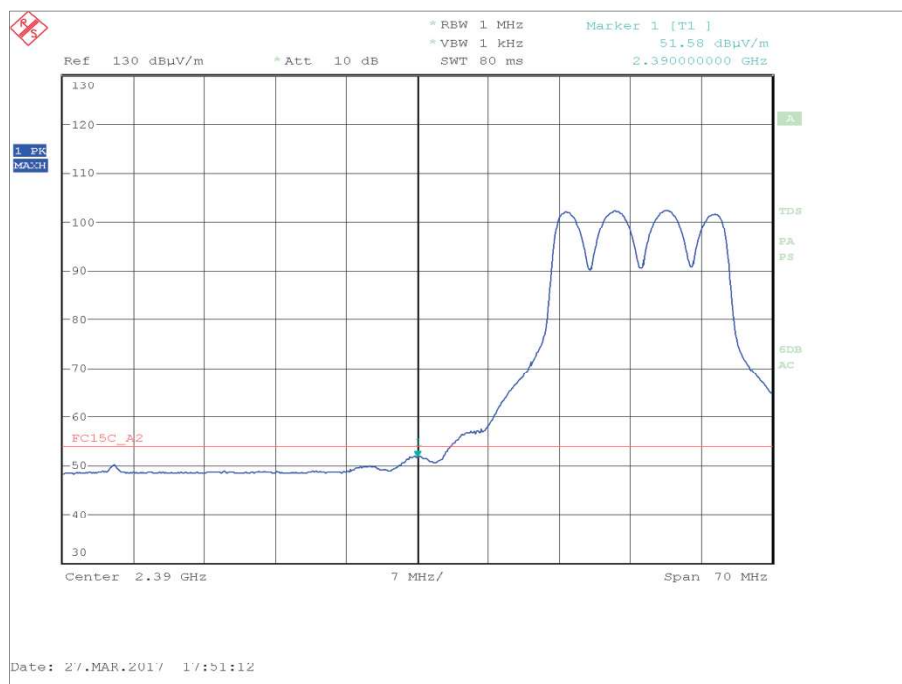


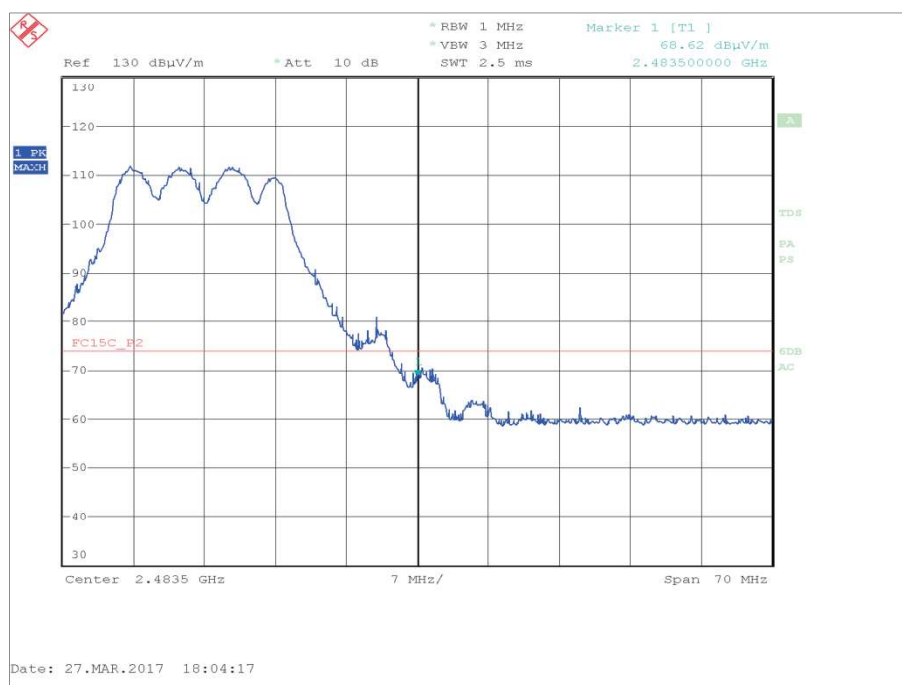
Figure 5 - Data Rate with Highest Power, 6 Mbps, 2412 MHz, Measured Frequency 2390.0 MHz, Peak



Product Service



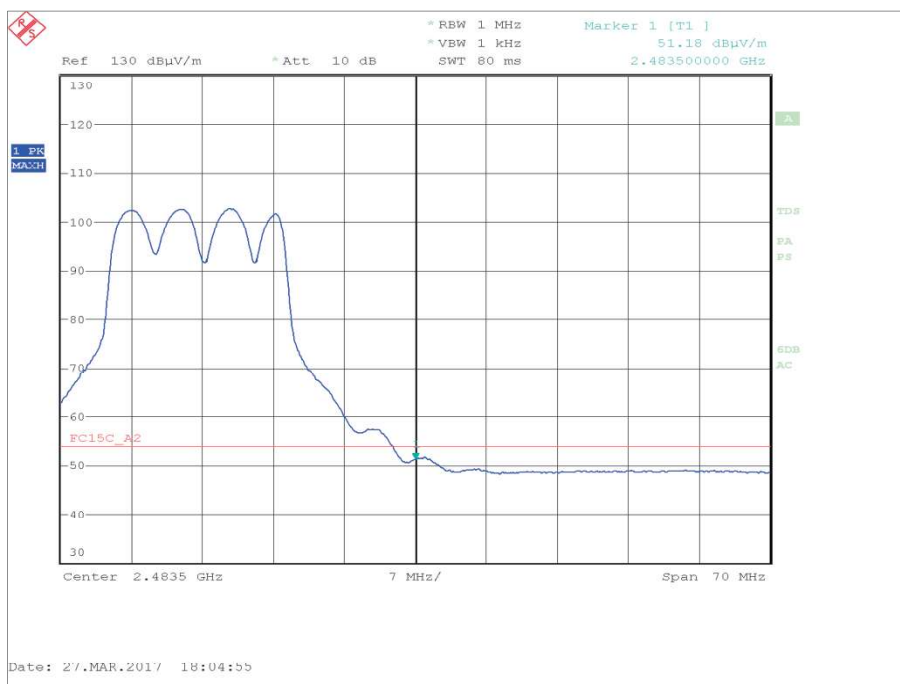
**Figure 6 - Data Rate with Highest Power, 6 Mbps,
2412 MHz, Measured Frequency 2390.0 MHz, Average**



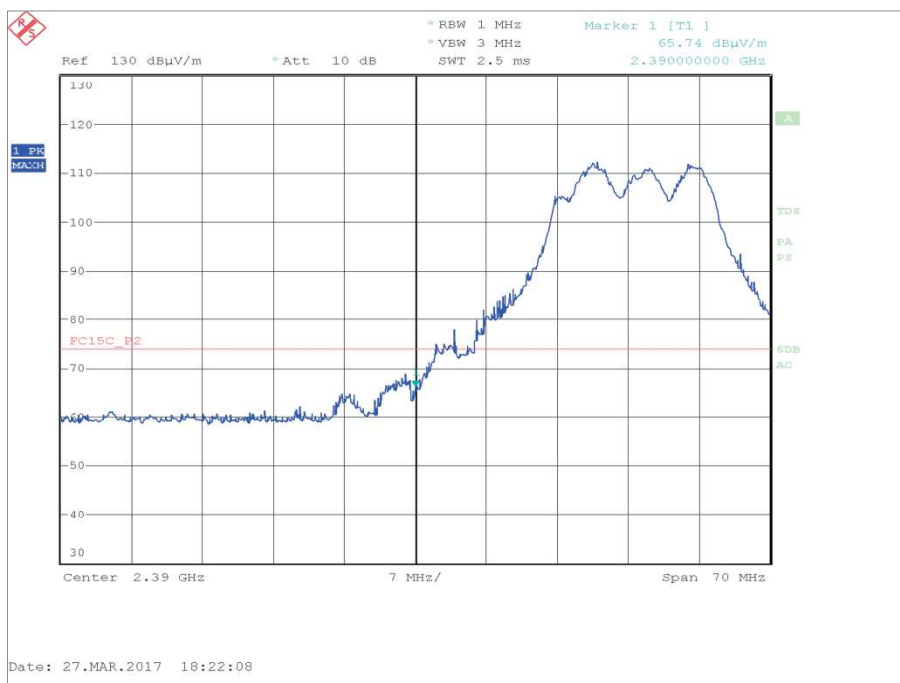
**Figure 7 - Data Rate with Highest Power, 6 Mbps,
2462 MHz, Measured Frequency 2483.5 MHz, Peak**



Product Service



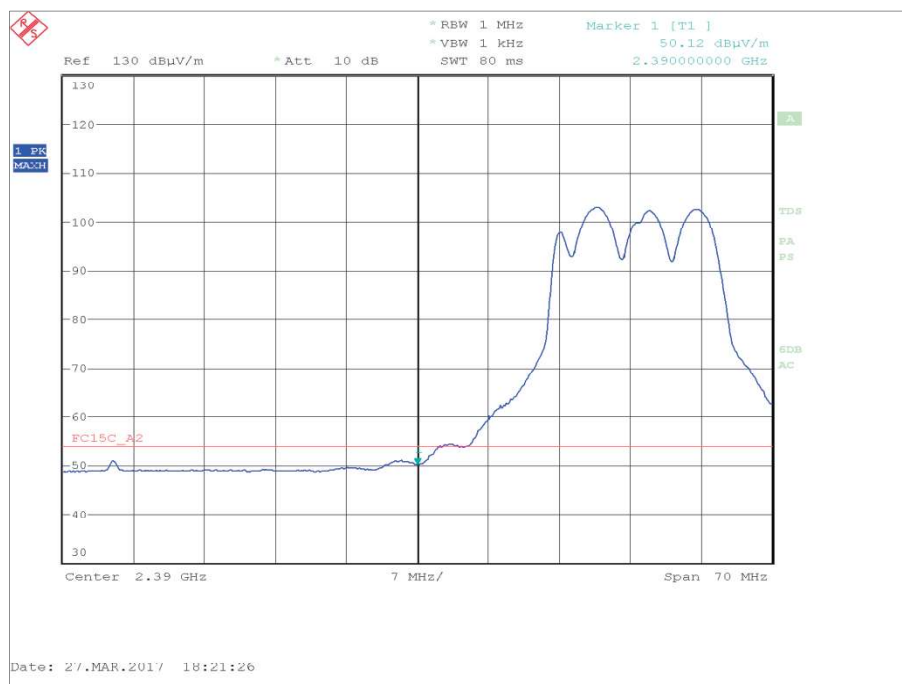
**Figure 8 - Data Rate with Highest Power, 6 Mbps,
2462 MHz, Measured Frequency 2483.5 MHz, Average**



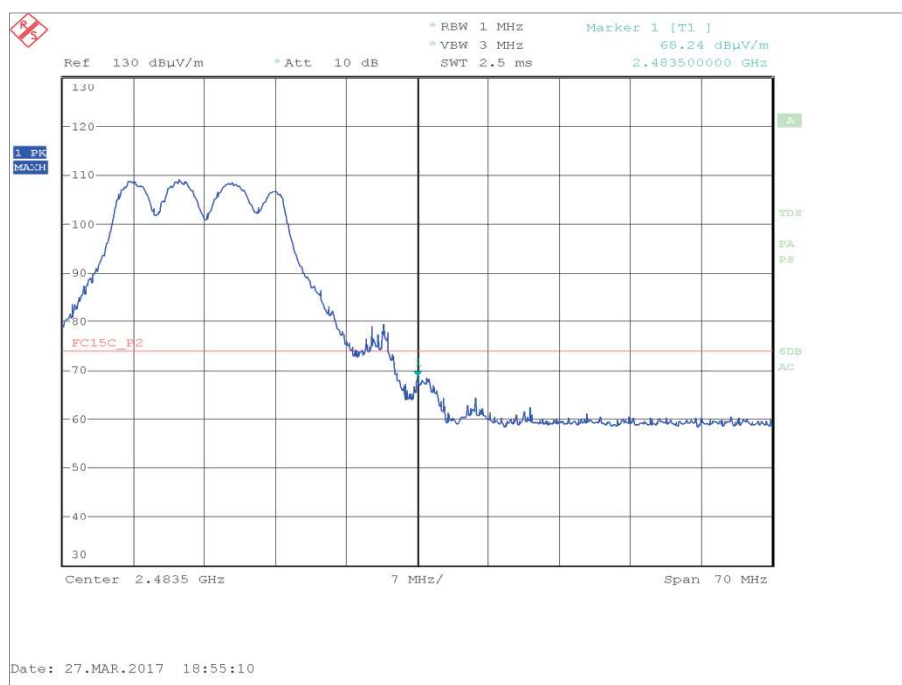
**Figure 9 - Data Rate with Widest Bandwidth, 48 Mbps,
2412 MHz, Measured Frequency 2390.0 MHz, Peak**



Product Service



**Figure 10 - Data Rate with Widest Bandwidth, 48 Mbps,
2412 MHz, Measured Frequency 2390.0 MHz, Average**



**Figure 11 - Data Rate with Widest Bandwidth, 48 Mbps,
2462 MHz, Measured Frequency 2483.5 MHz, Peak**

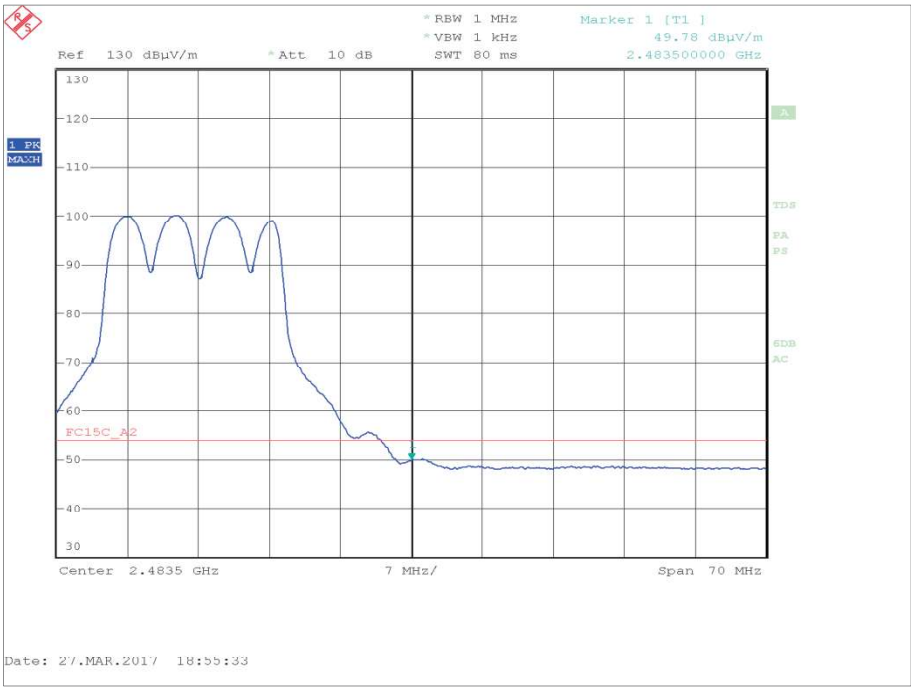


Figure 12 - Data Rate with Widest Bandwidth, 48 Mbps, 2462 MHz, Measured Frequency 2483.5 MHz, Average

FCC 47 CFR Part 15, Limit Clause 15.205

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

Table 11

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 12

*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.



ANT795-4MX - 802.11n 20 MHz Bandwidth

Mode	Data Rate/MCS	Frequency (MHz)	Measured Frequency (MHz)	Peak Level (dBμV/m)	Average Level (dBμV/m)
MCS with Highest Power	MCS0	2412	2390.0	68.84	48.16
MCS with Highest Power	MCS0	2462	2483.5	71.17	49.89
MCS with Widest Bandwidth	MCS2	2412	2390.0	70.13	48.81
MCS with Widest Bandwidth	MCS2	2462	2483.5	68.23	49.74

Table 13

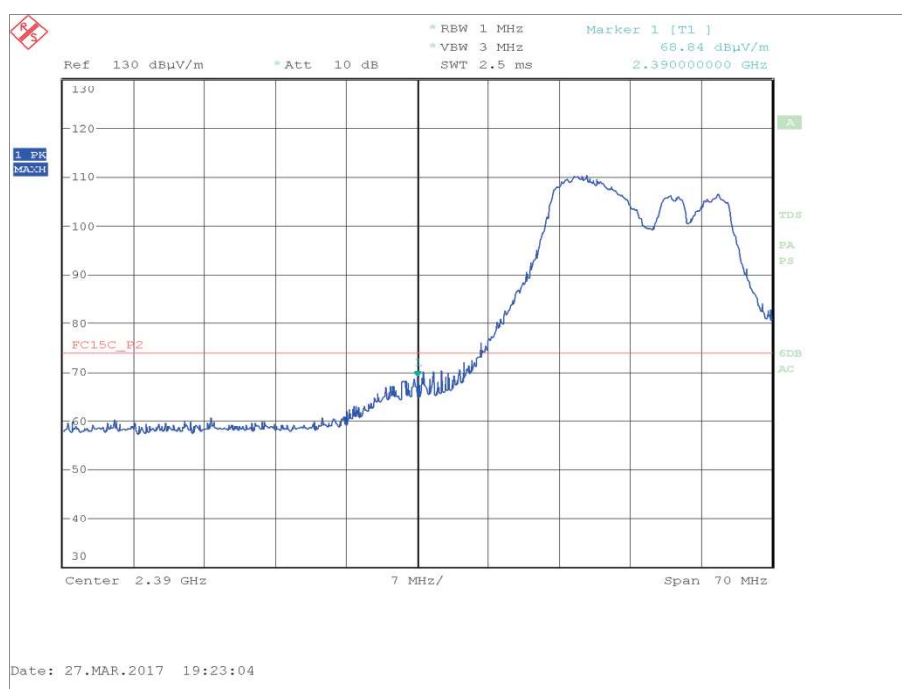
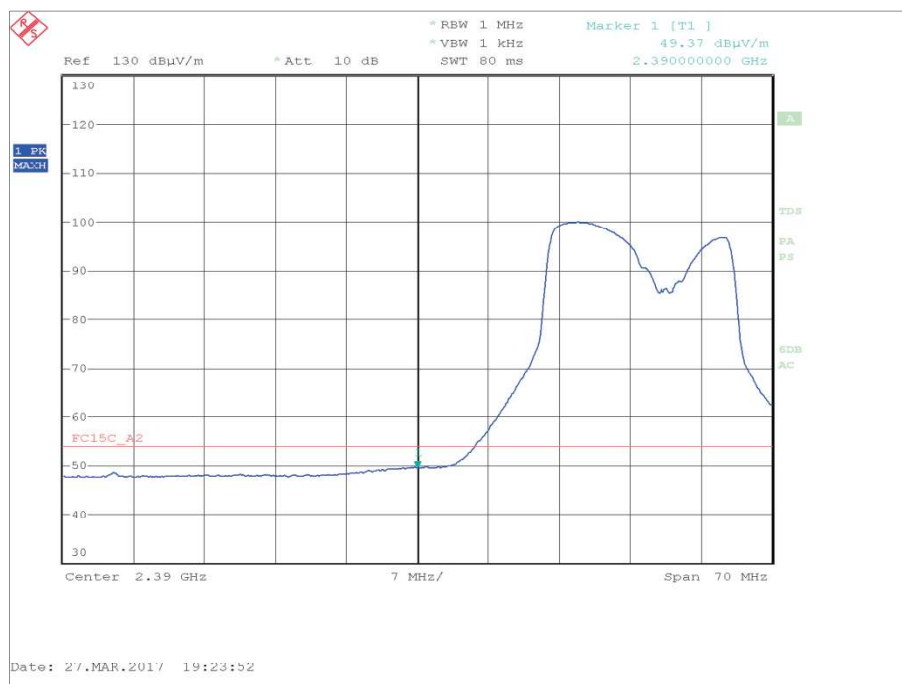


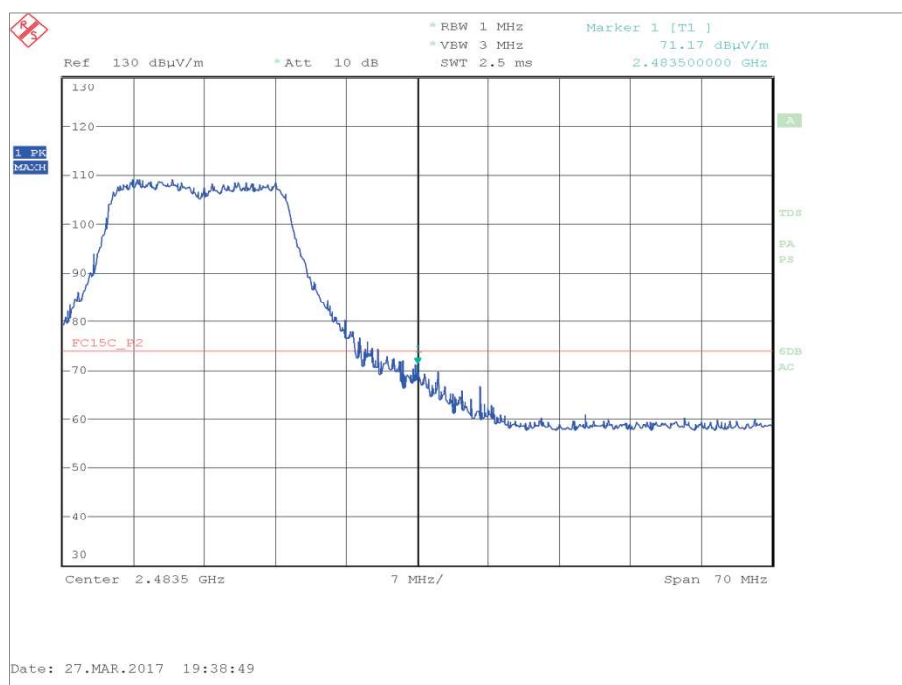
Figure 13 - MCS with Highest Power, MCS0, 2412 MHz, Measured Frequency 2390.0 MHz, Peak



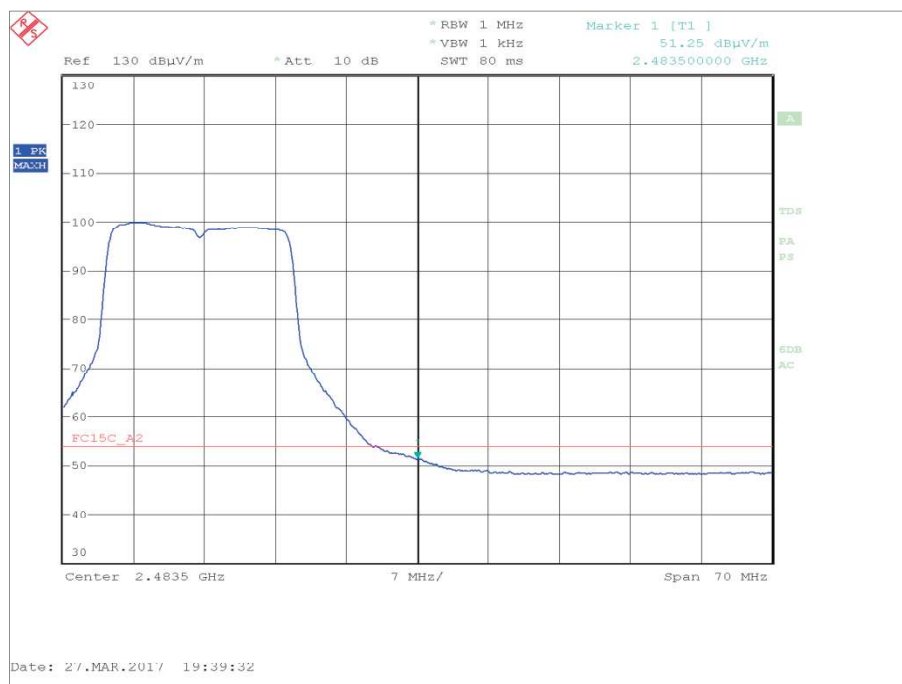
Product Service



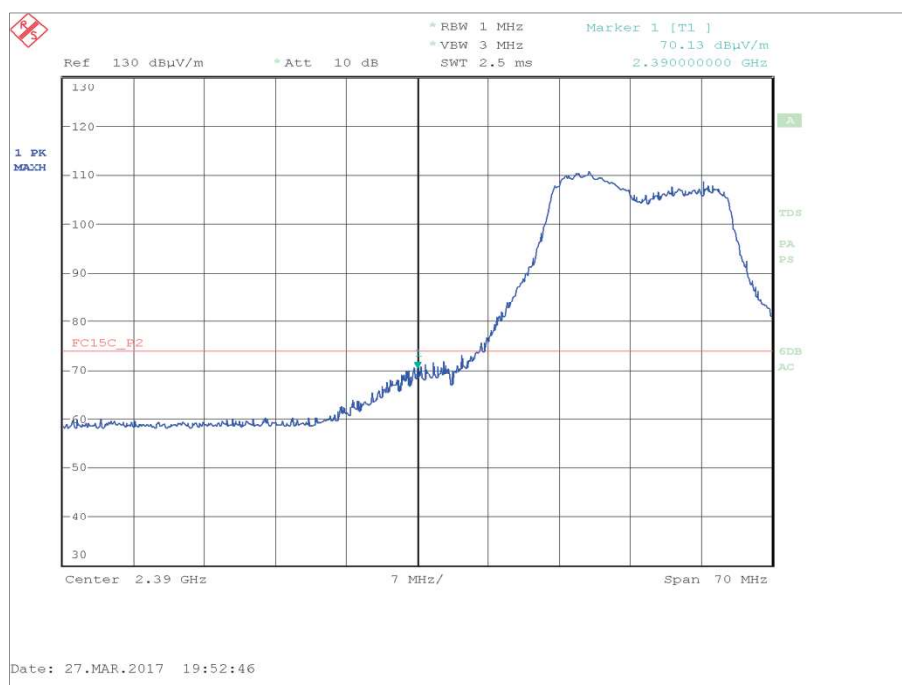
**Figure 14 - MCS with Highest Power, MCS0,
2412 MHz, Measured Frequency 2390.0 MHz, Average**



**Figure 15 - MCS with Highest Power, MCS0,
2462 MHz, Measured Frequency 2483.5 MHz, Peak**



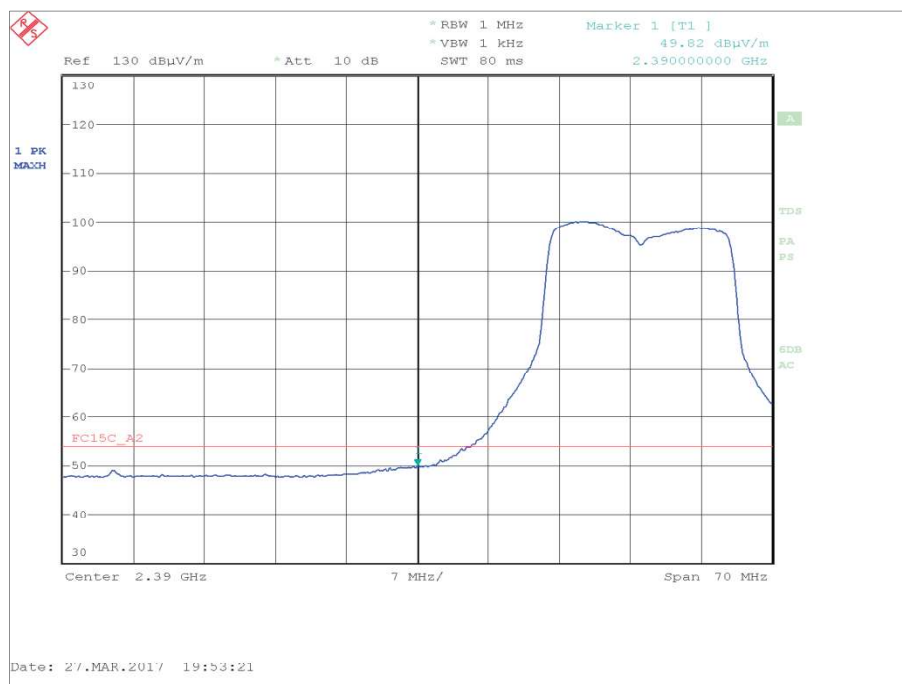
**Figure 16 - MCS with Highest Power, MCS0,
2462 MHz, Measured Frequency 2483.5 MHz, Average**



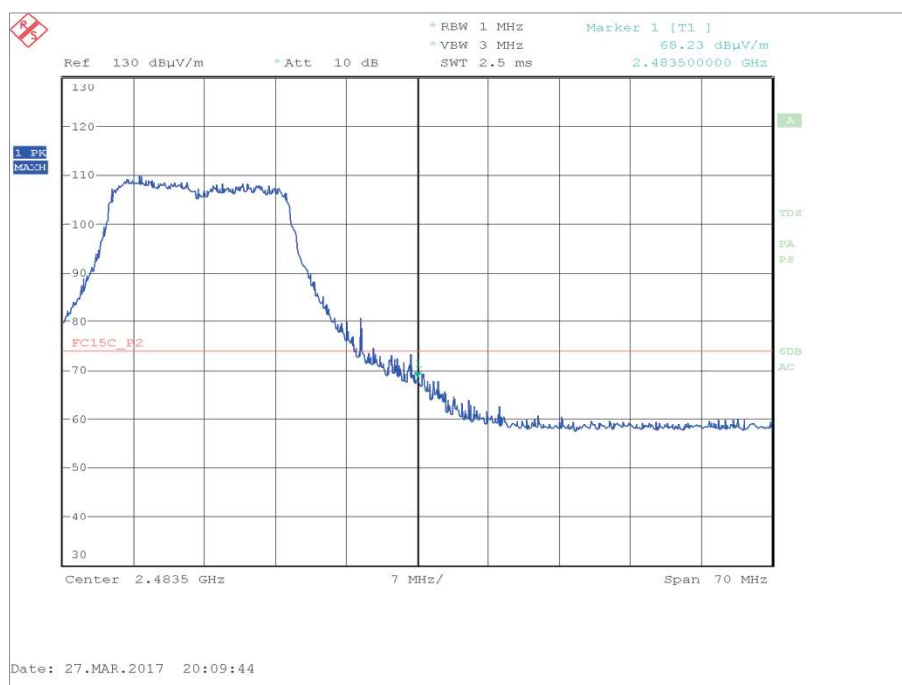
**Figure 17 - MCS with Widest Bandwidth, MCS2,
2412 MHz, Measured Frequency 2390.0 MHz, Peak**



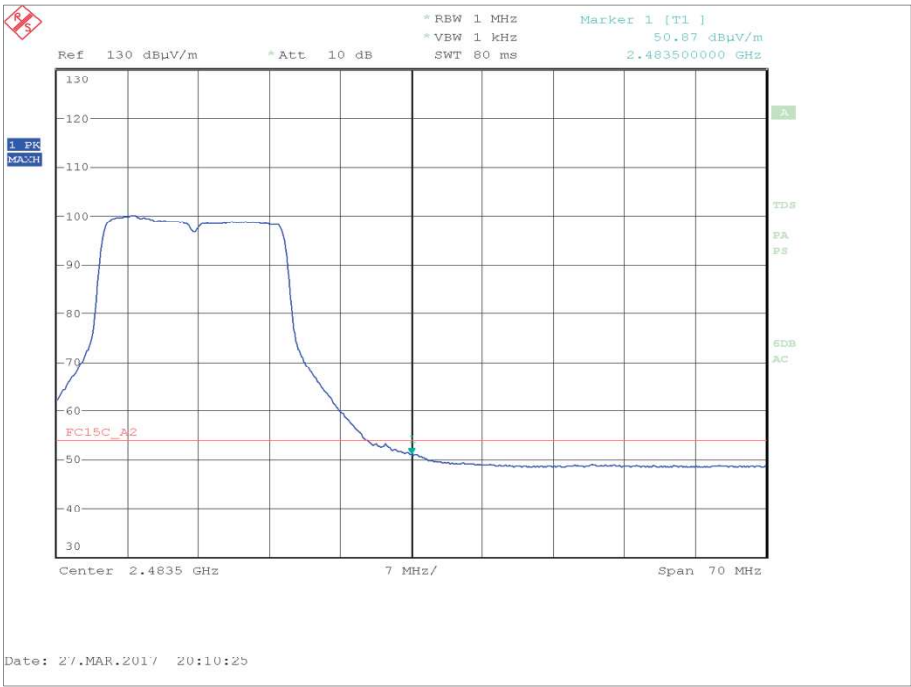
Product Service



**Figure 18 - MCS with Widest Bandwidth, MCS2,
2412 MHz, Measured Frequency 2390.0 MHz, Average**



**Figure 19 - MCS with Widest Bandwidth, MCS2,
2462 MHz, Measured Frequency 2483.5 MHz, Peak**



**Figure 20 - MCS with Widest Bandwidth, MCS2,
2462 MHz, Measured Frequency 2483.5 MHz, Average**

FCC 47 CFR Part 15, Limit Clause 15.205

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

Table 14

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 15

*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.



ANT795-4MX - 802.11n 40 MHz Bandwidth

Mode	Data Rate/MCS	Frequency (MHz)	Measured Frequency (MHz)	Peak Level (dBμV/m)	Average Level (dBμV/m)
MCS with Highest Power	MCS8	2422	2390.0	69.41	50.00
MCS with Highest Power	MCS8	2452	2483.5	71.12	51.73
MCS with Widest Bandwidth	MCS3	2422	2390.0	67.40	50.32
MCS with Widest Bandwidth	MCS3	2452	2483.5	71.02	50.00

Table 16

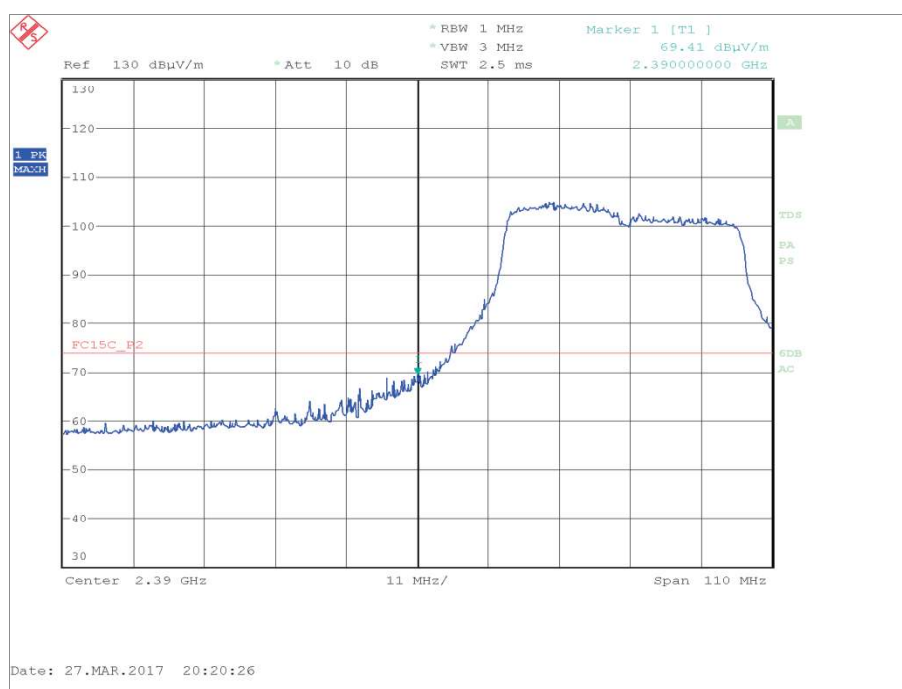
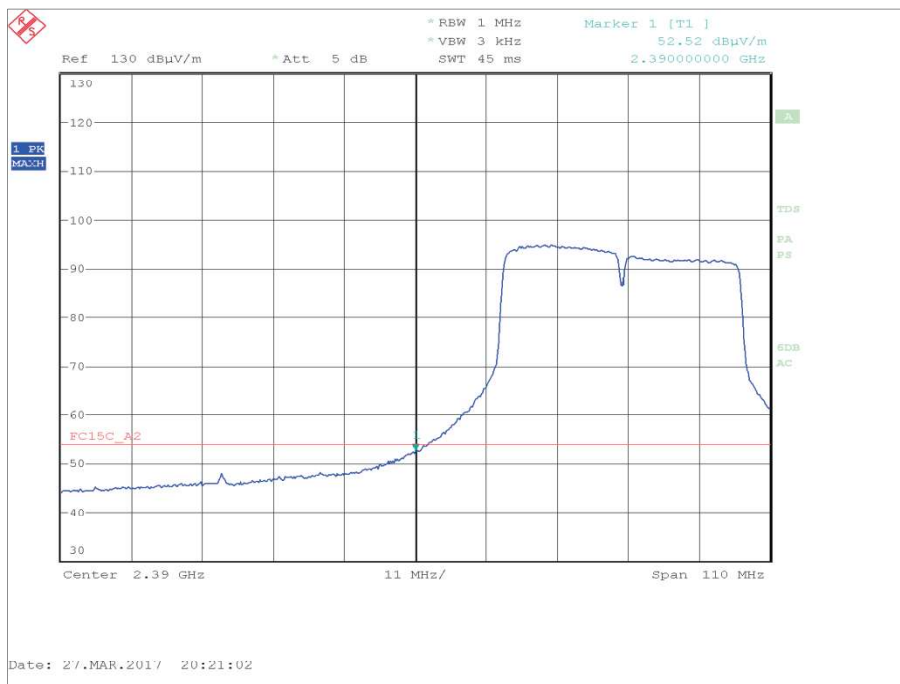


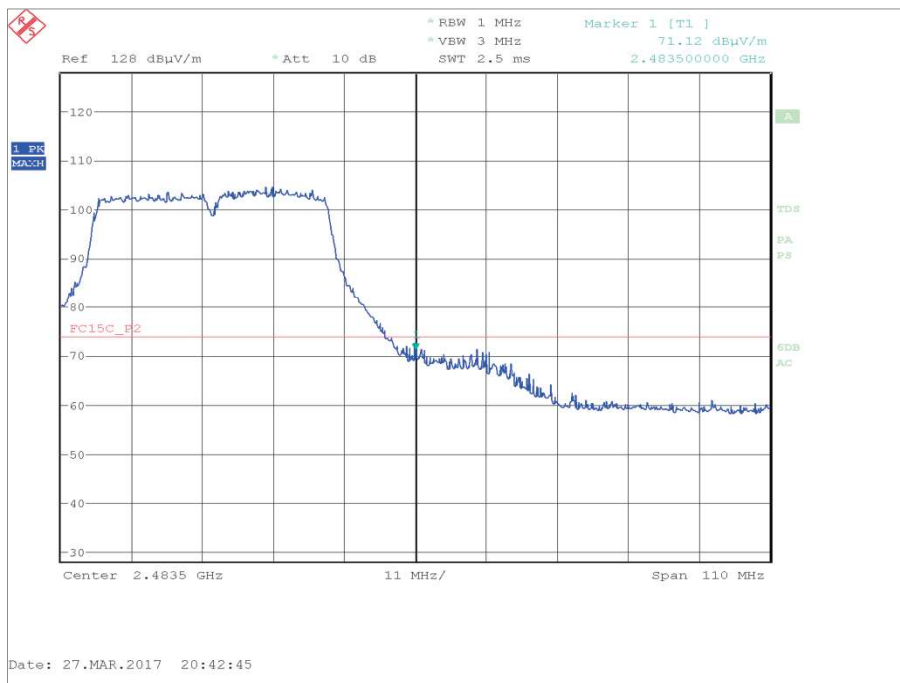
Figure 21 - MCS with Highest Power, MCS8, 2422 MHz, Measured Frequency 2390.0 MHz, Peak



Product Service



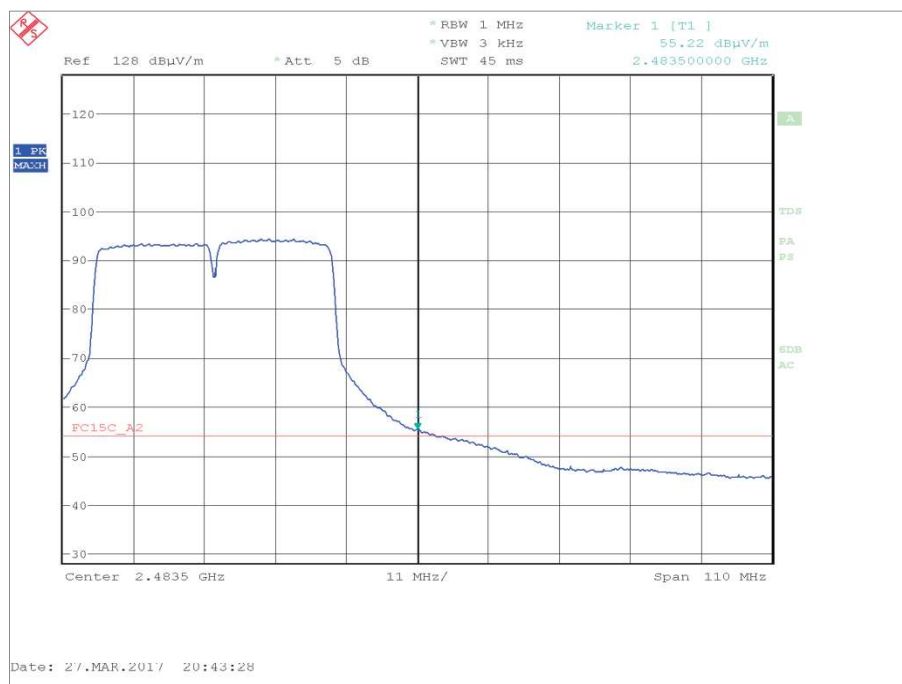
**Figure 22 - MCS with Highest Power, MCS8,
2422 MHz, Measured Frequency 2390.0 MHz, Average**



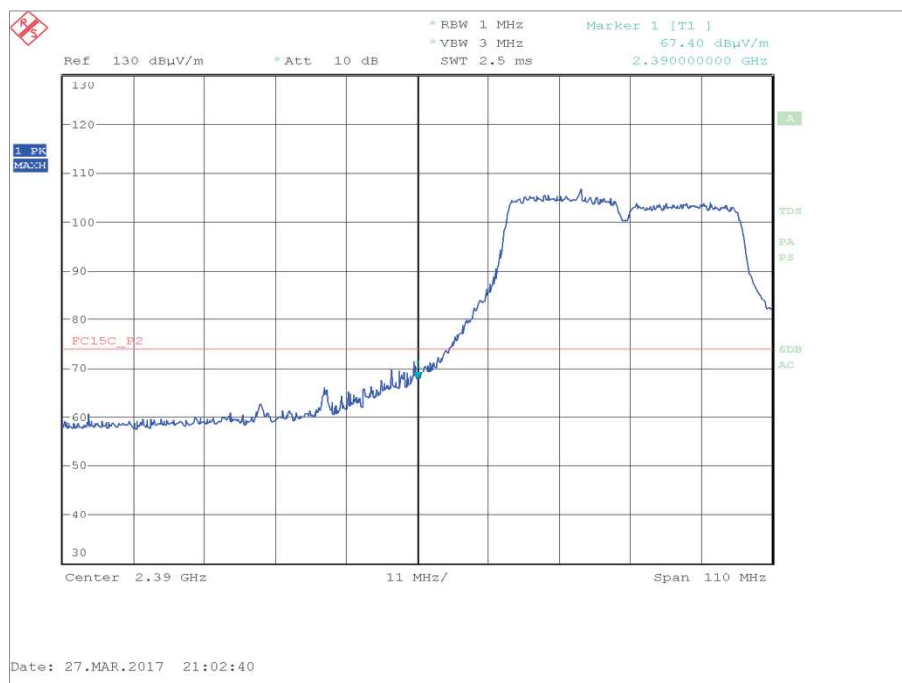
**Figure 23 - MCS with Highest Power, MCS8,
2452 MHz, Measured Frequency 2483.5 MHz, Peak**



Product Service



**Figure 24 - MCS with Highest Power, MCS8,
2452 MHz, Measured Frequency 2483.5 MHz, Average**



**Figure 25 - MCS with Widest Bandwidth, MCS3,
2422 MHz, Measured Frequency 2390.0 MHz, Peak**



Product Service

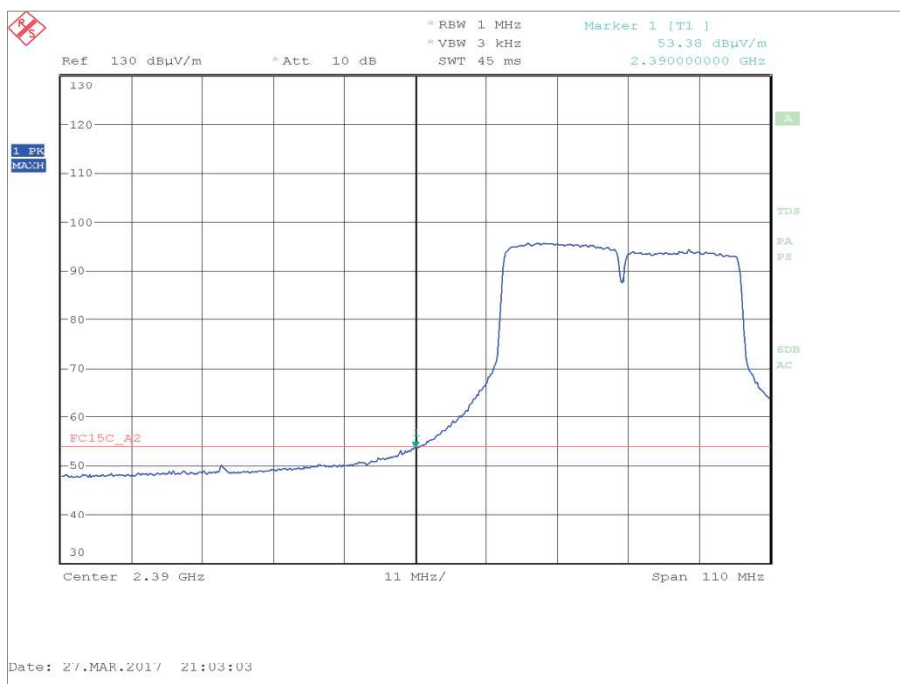


Figure 26 - MCS with Widest Bandwidth, MCS3, 2422 MHz, Measured Frequency 2390.0 MHz, Average

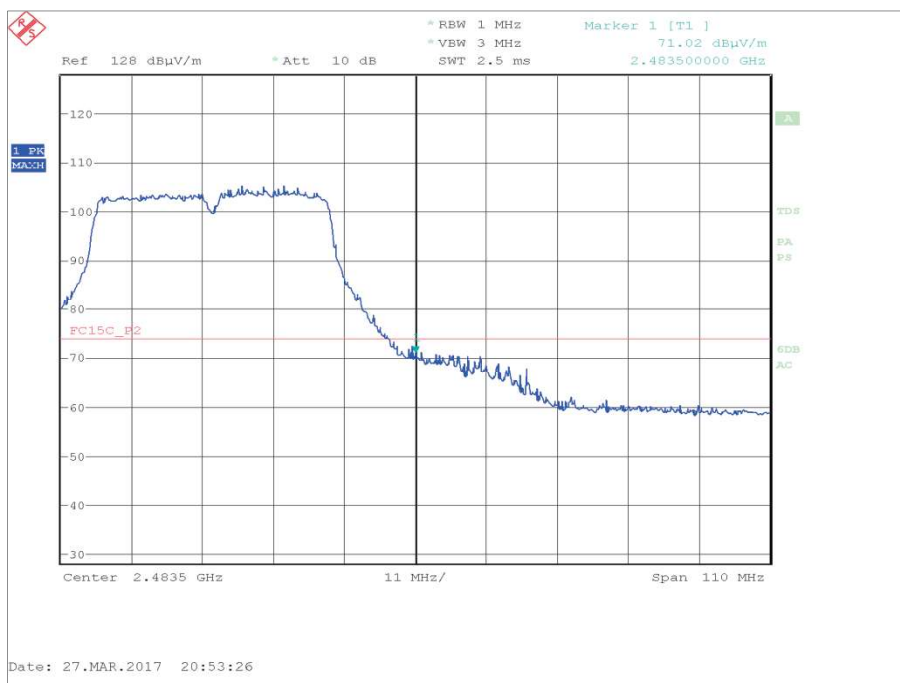
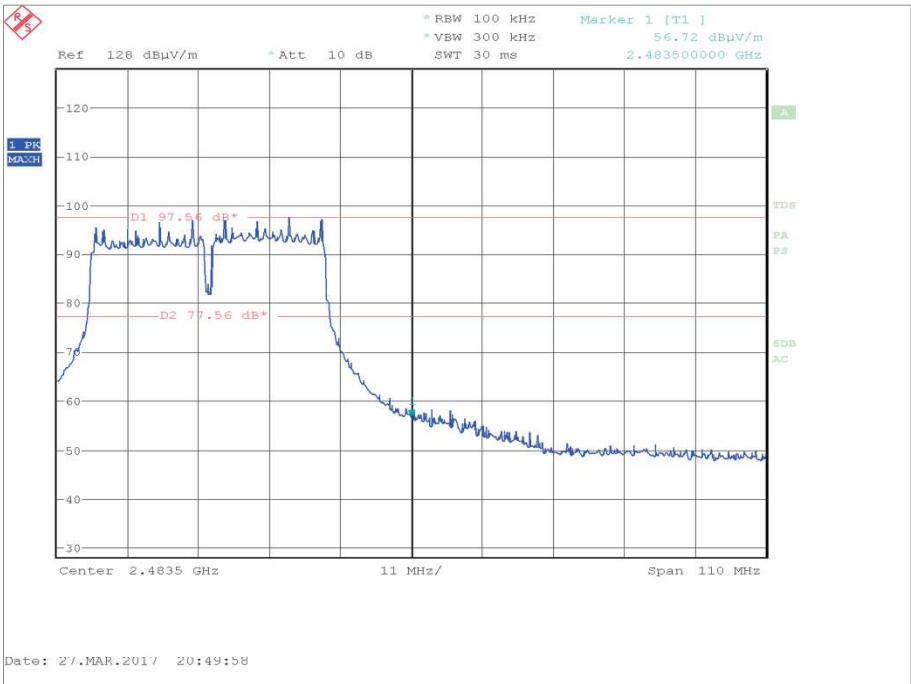


Figure 27 - MCS with Widest Bandwidth, MCS3, 2452 MHz, Measured Frequency 2483.5 MHz, Peak



**Figure 28 - MCS with Widest Bandwidth, MCS3,
2452 MHz, Measured Frequency 2483.5 MHz, Average**

FCC 47 CFR Part 15, Limit Clause 15.205

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

Table 17

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 18

*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.



ANT792-6MN - 802.11b

Mode	Data Rate/MCS	Frequency (MHz)	Measured Frequency (MHz)	Peak Level (dBμV/m)	Average Level (dBμV/m)
Data Rate with Highest Power and Widest Bandwidth	1 Mbps	2412	2390.0	61.84	45.98
Data Rate with Highest Power and Widest Bandwidth	1 Mbps	2462	2483.5	66.04	47.40

Table 19

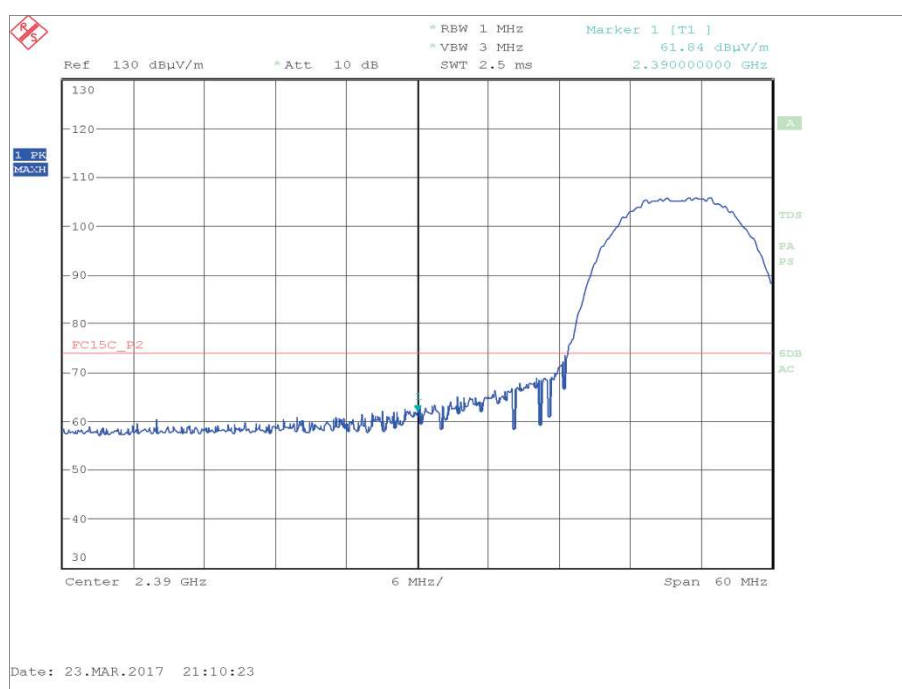


Figure 29 - Data Rate with Highest Power and Widest Bandwidth, 1 Mbps, 2412 MHz, Measured Frequency 2390.0 MHz, Peak



Product Service

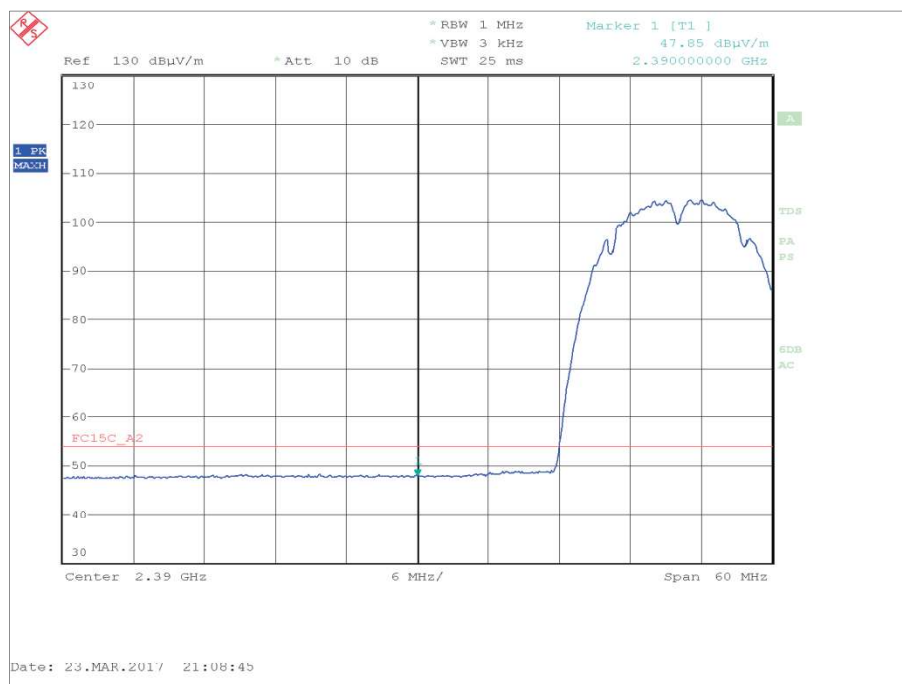


Figure 30 - Data Rate with Highest Power and Widest Bandwidth, 1 Mbps, 2412 MHz, Measured Frequency 2390.0 MHz, Average

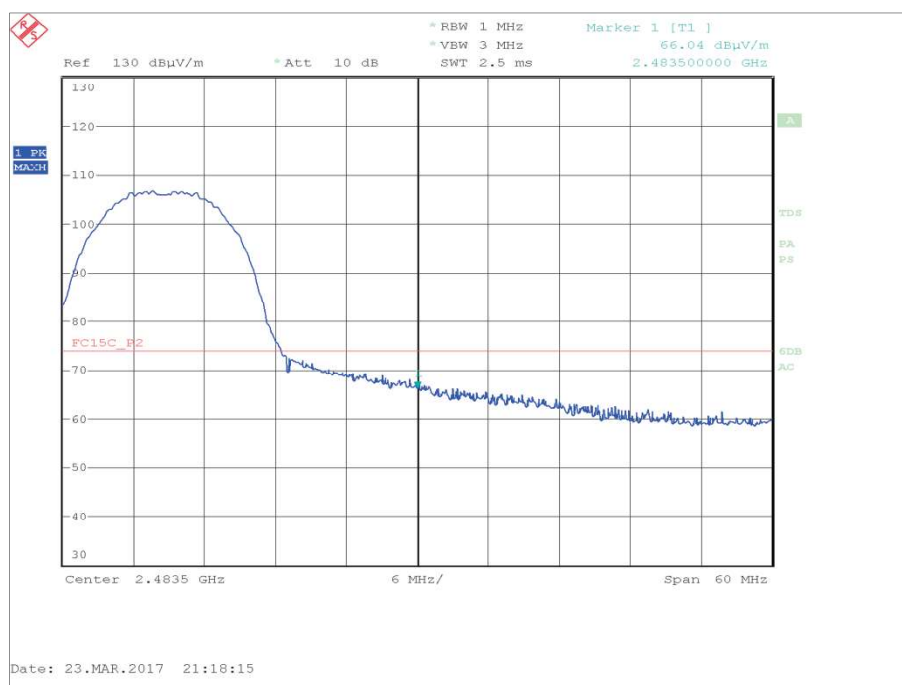


Figure 31 - Data Rate with Highest Power and Widest Bandwidth, 1 Mbps, 2462 MHz, Measured Frequency 2483.5 MHz, Peak

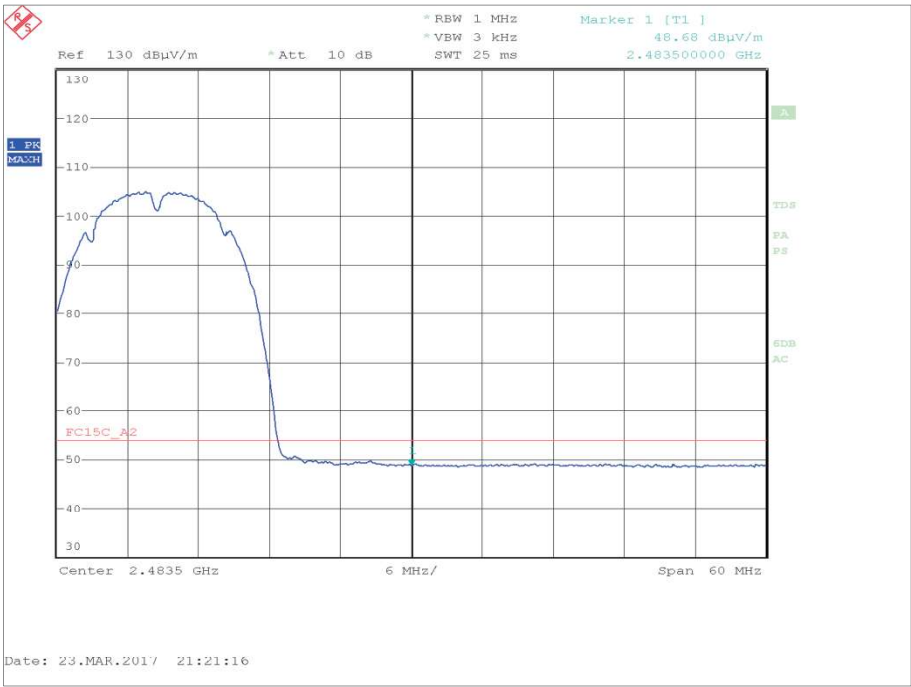


Figure 32 - Data Rate with Highest Power and Widest Bandwidth, 1 Mbps, 2462 MHz, Measured Frequency 2483.5 MHz, Average

FCC 47 CFR Part 15, Limit Clause 15.205

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

Table 20

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 21

*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.



ANT792-6MN - 802.11g

Mode	Data Rate/MCS	Frequency (MHz)	Measured Frequency (MHz)	Peak Level (dBμV/m)	Average Level (dBμV/m)
Data Rate with Highest Power	6 Mbps	2412	2390.0	59.95	46.94
Data Rate with Highest Power	6 Mbps	2462	2483.5	61.08	48.10
Data Rate with Widest Bandwidth	48 Mbps	2412	2390.0	57.84	46.72
Data Rate with Widest Bandwidth	48 Mbps	2462	2483.5	59.92	47.81

Table 22

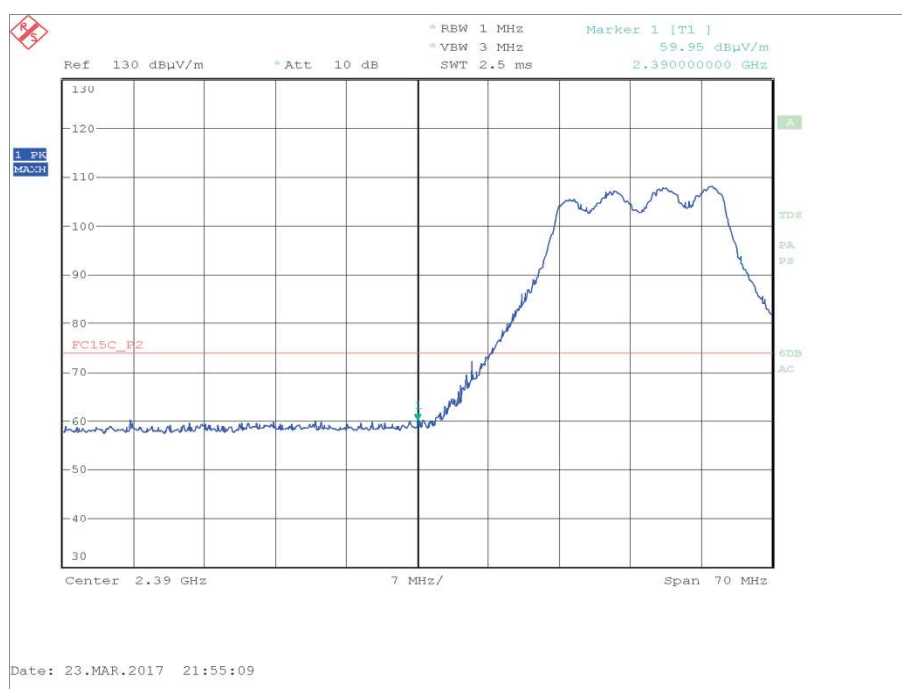


Figure 33 - Data Rate with Highest Power, 6 Mbps, 2412 MHz, Measured Frequency 2390.0 MHz, Peak



Product Service

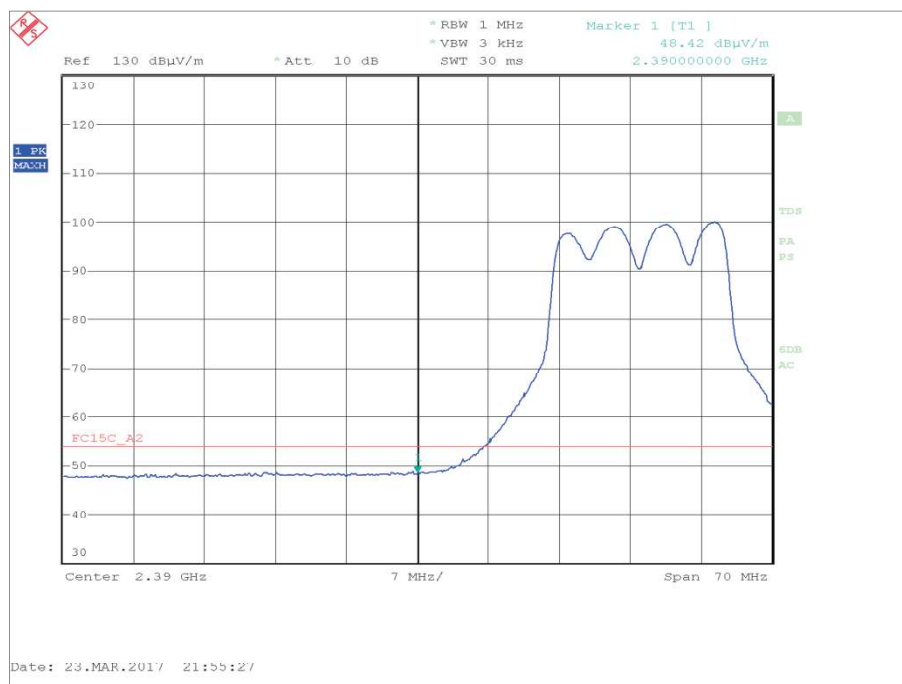


Figure 34 - Data Rate with Highest Power, 6 Mbps, 2412 MHz, Measured Frequency 2390.0 MHz, Average

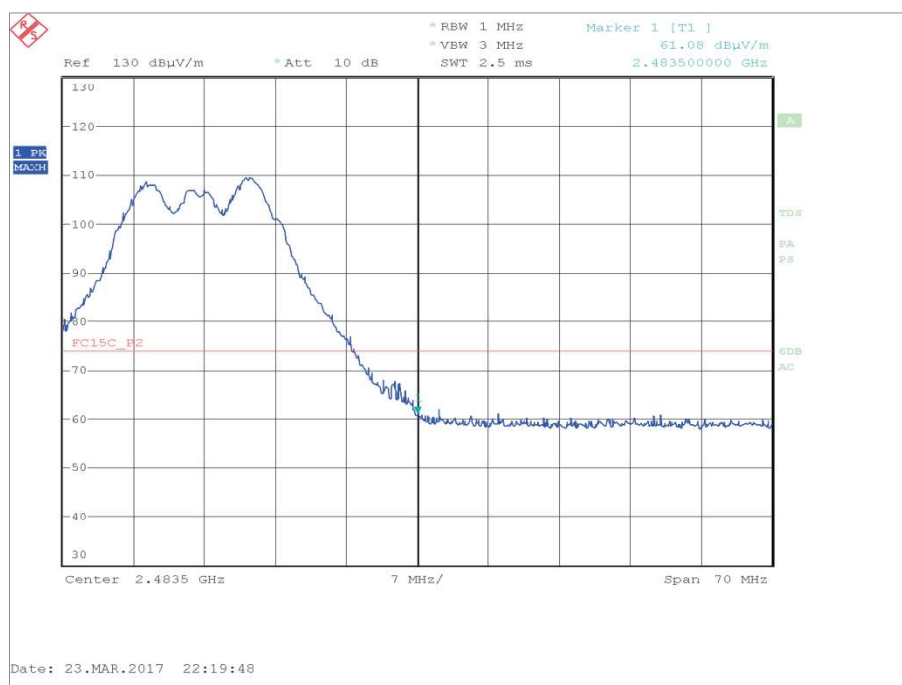
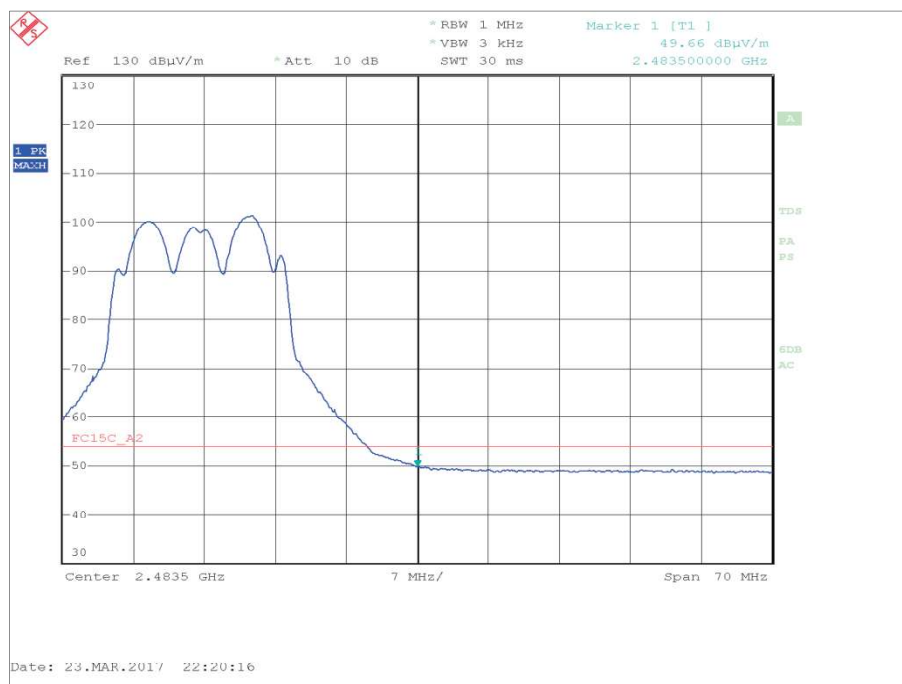


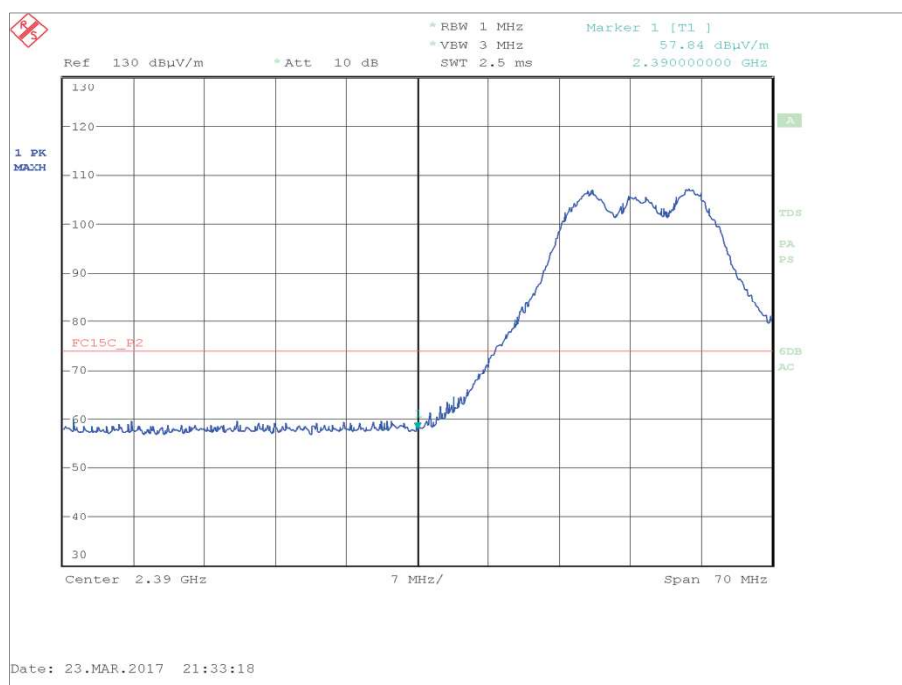
Figure 35 - Data Rate with Highest Power, 6 Mbps, 2462 MHz, Measured Frequency 2483.5 MHz, Peak



Product Service



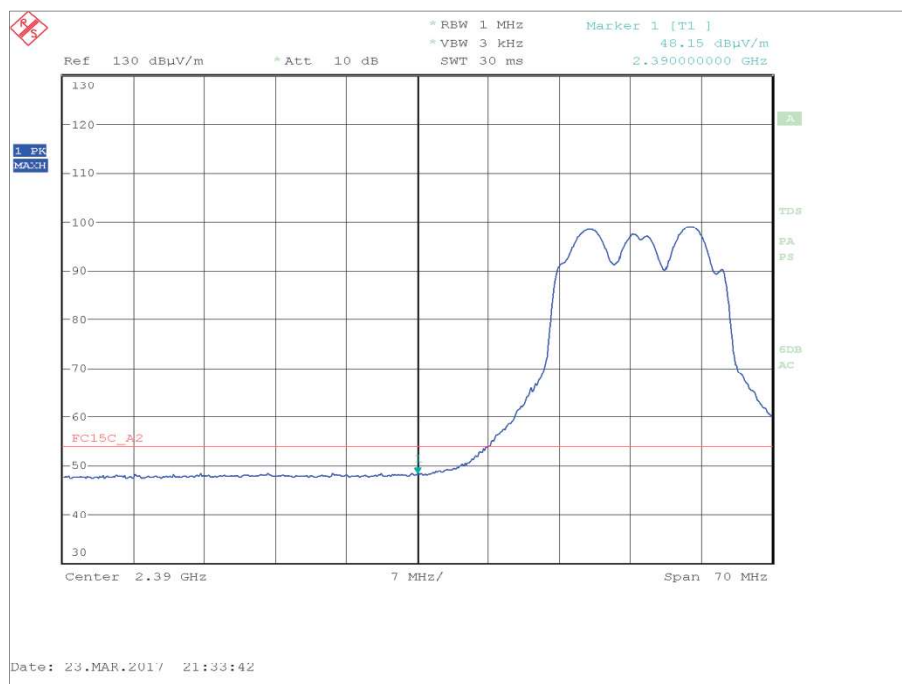
**Figure 36 - Data Rate with Highest Power, 6 Mbps,
2462 MHz, Measured Frequency 2483.5 MHz, Average**



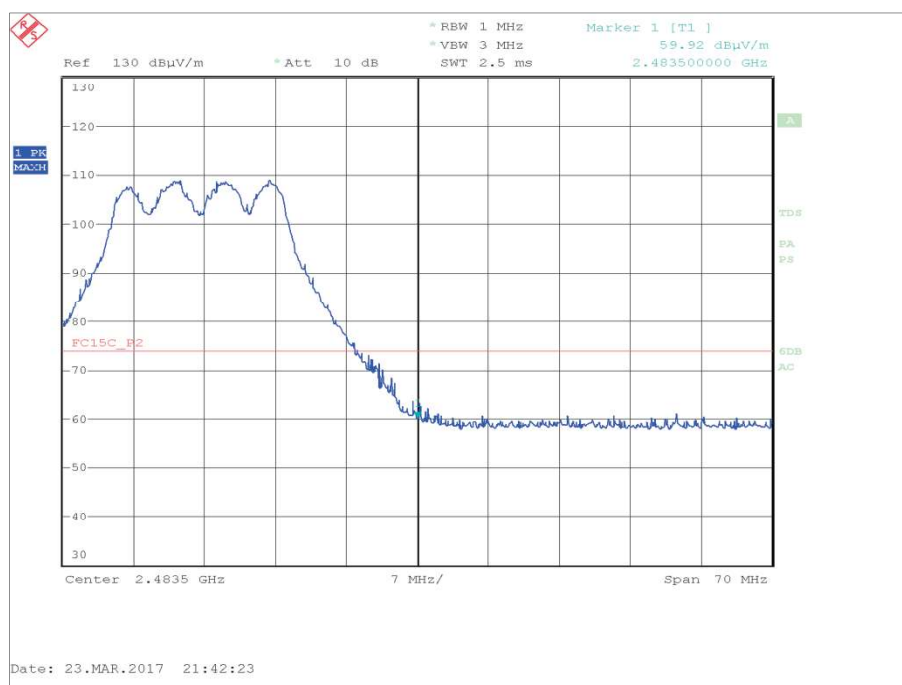
**Figure 37 - Data Rate with Widest Bandwidth, 48 Mbps,
2412 MHz, Measured Frequency 2390.0 MHz, Peak**



Product Service



**Figure 38 - Data Rate with Widest Bandwidth, 48 Mbps,
2412 MHz, Measured Frequency 2390.0 MHz, Average**



**Figure 39 - Data Rate with Widest Bandwidth, 48 Mbps,
2462 MHz, Measured Frequency 2483.5 MHz, Peak**

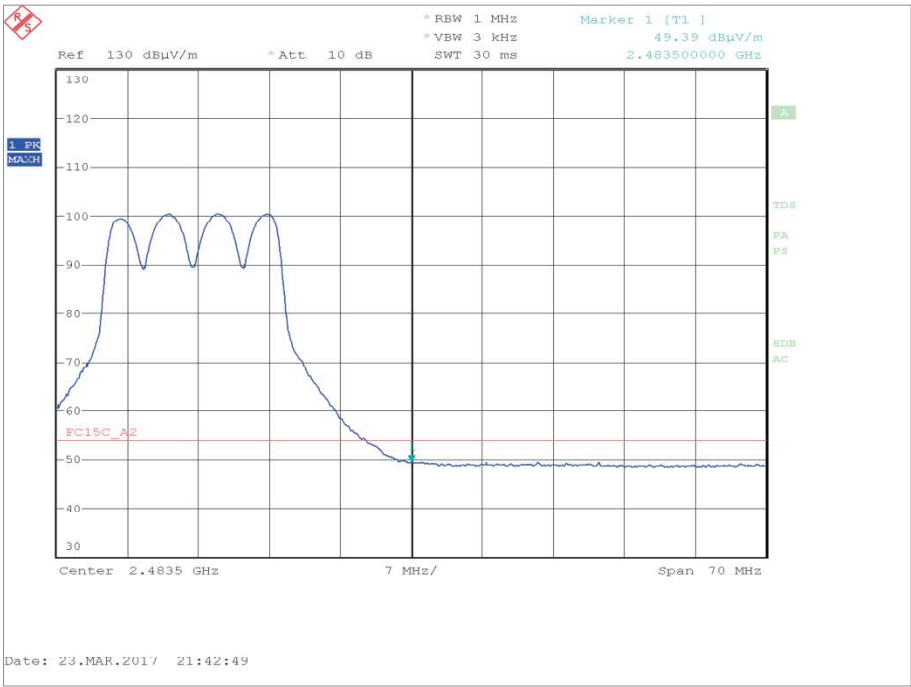


Figure 40 - Data Rate with Widest Bandwidth, 48 Mbps, 2462 MHz, Measured Frequency 2483.5 MHz, Average

FCC 47 CFR Part 15, Limit Clause 15.205

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

Table 23

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 24

*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.



ANT792-6MN - 802.11n 20 MHz Bandwidth

Mode	Data Rate/MCS	Frequency (MHz)	Measured Frequency (MHz)	Peak Level (dBμV/m)	Average Level (dBμV/m)
MCS with Highest Power	MCS0	2412	2390.0	60.07	46.77
MCS with Highest Power	MCS0	2462	2483.5	63.24	48.02
MCS with Widest Bandwidth	MCS2	2412	2390.0	58.27	46.89
MCS with Widest Bandwidth	MCS2	2462	2483.5	69.32	48.50

Table 25

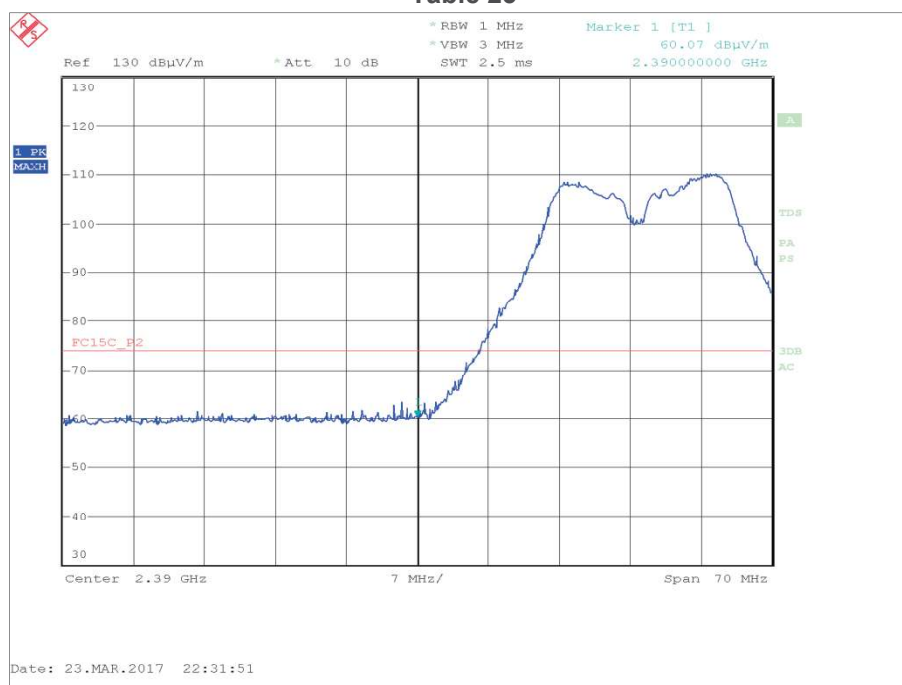


Figure 41 - MCS with Highest Power, MCS0, 2412 MHz, Measured Frequency 2390.0 MHz, Peak



Product Service

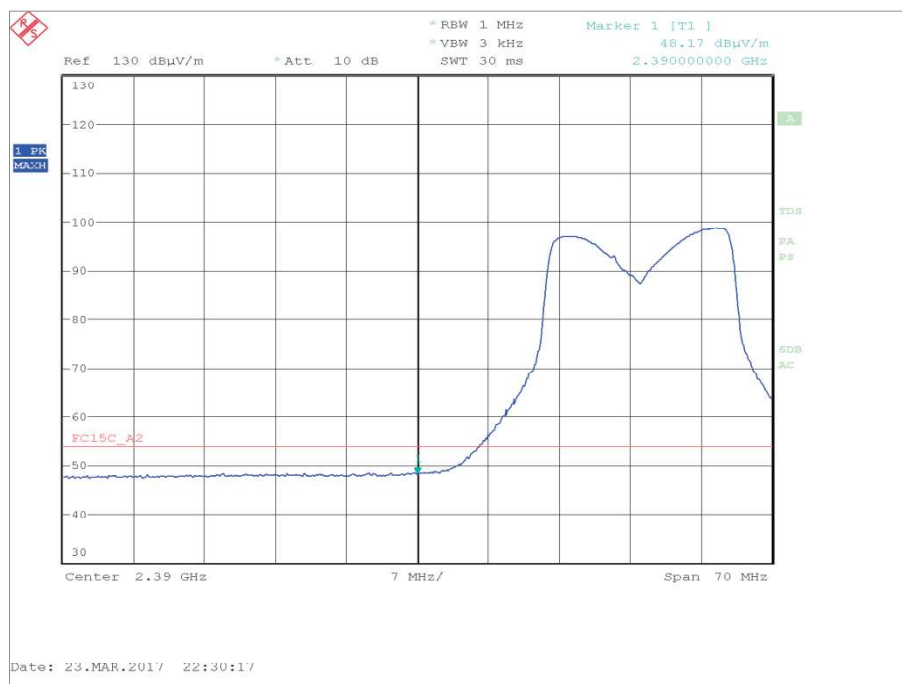


Figure 42 - MCS with Highest Power, MCS0, 2412 MHz, Measured Frequency 2390.0 MHz, Average

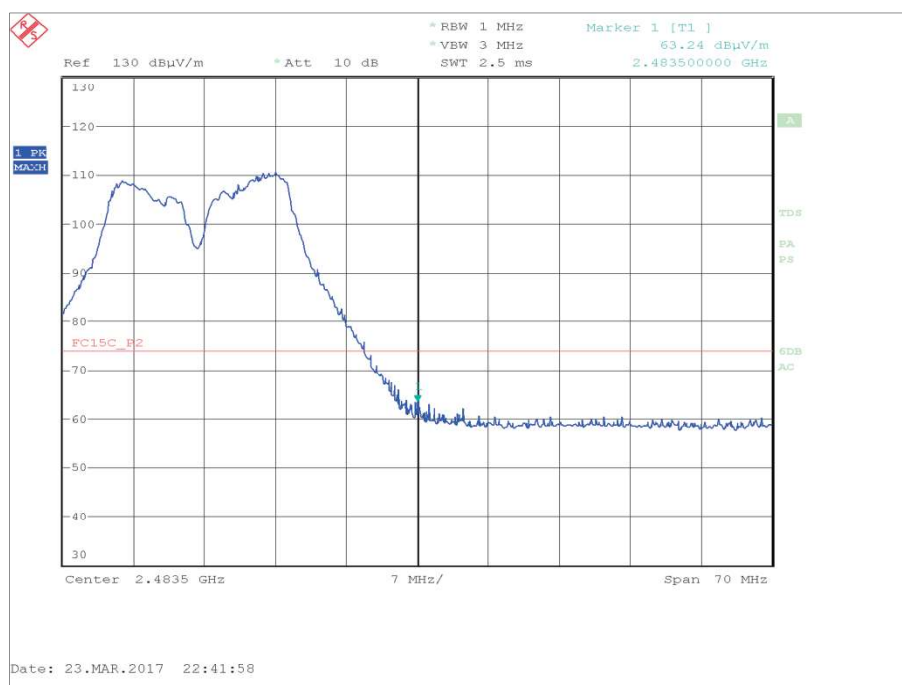
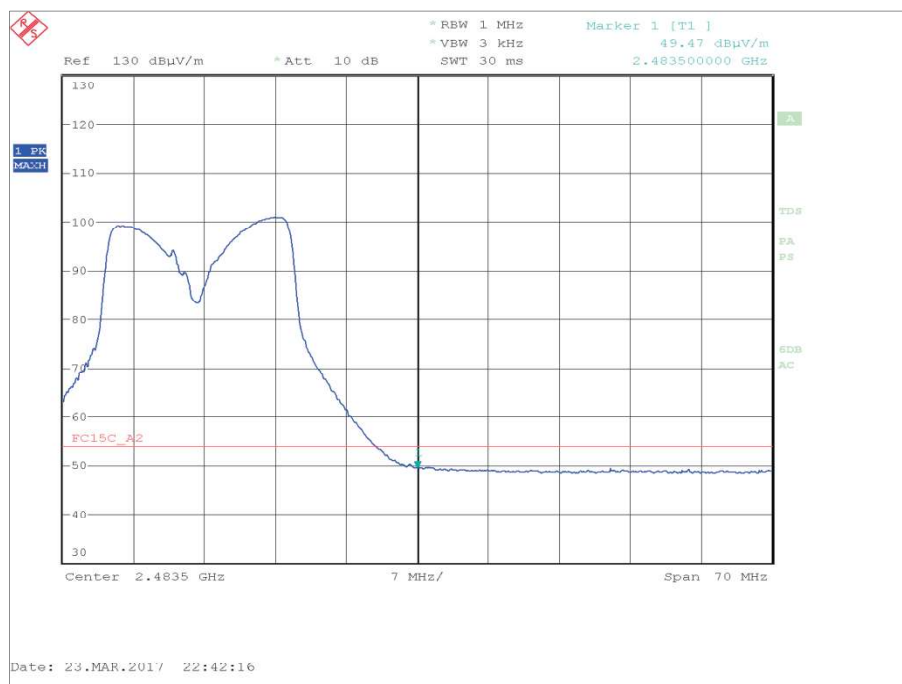


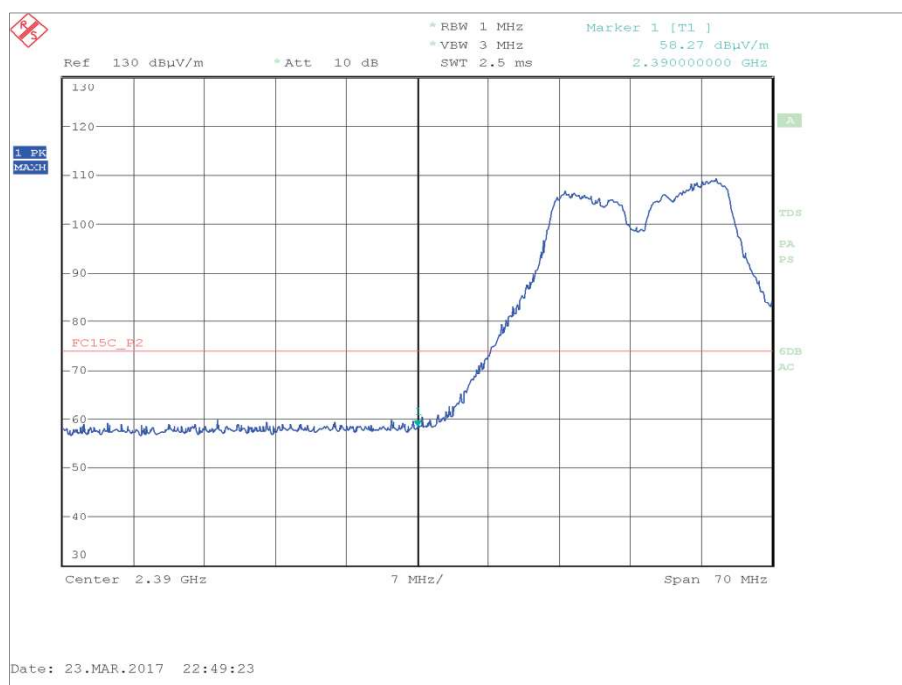
Figure 43 - MCS with Highest Power, MCS0, 2462 MHz, Measured Frequency 2483.5 MHz, Peak



Product Service



**Figure 44 - MCS with Highest Power, MCS0,
2462 MHz, Measured Frequency 2483.5 MHz, Average**



**Figure 45 - MCS with Widest Bandwidth, MCS2,
2412 MHz, Measured Frequency 2390.0 MHz, Peak**



Product Service

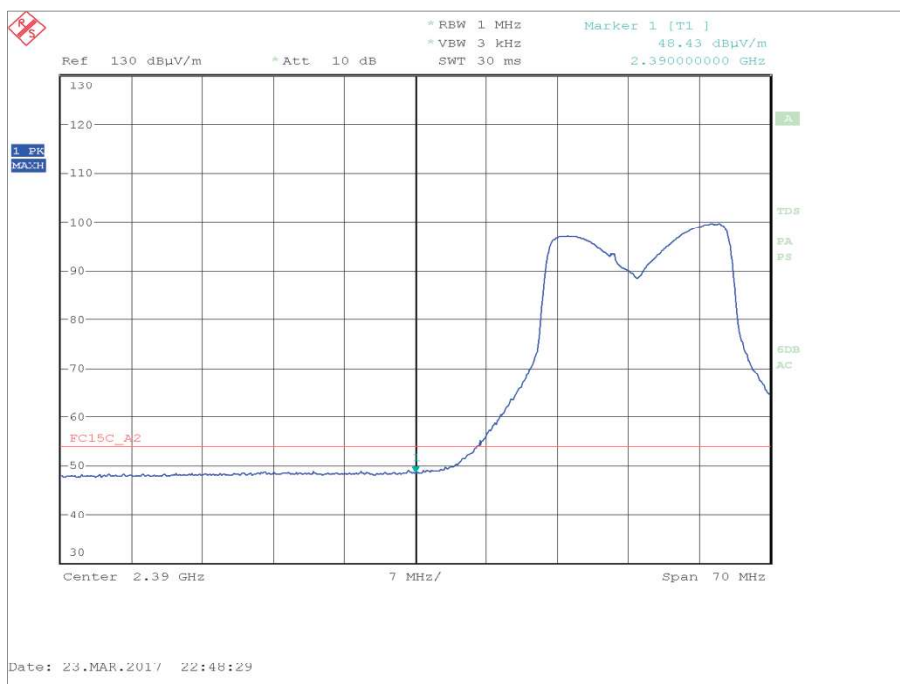


Figure 46 - MCS with Widest Bandwidth, MCS2, 2412 MHz, Measured Frequency 2390.0 MHz, Average

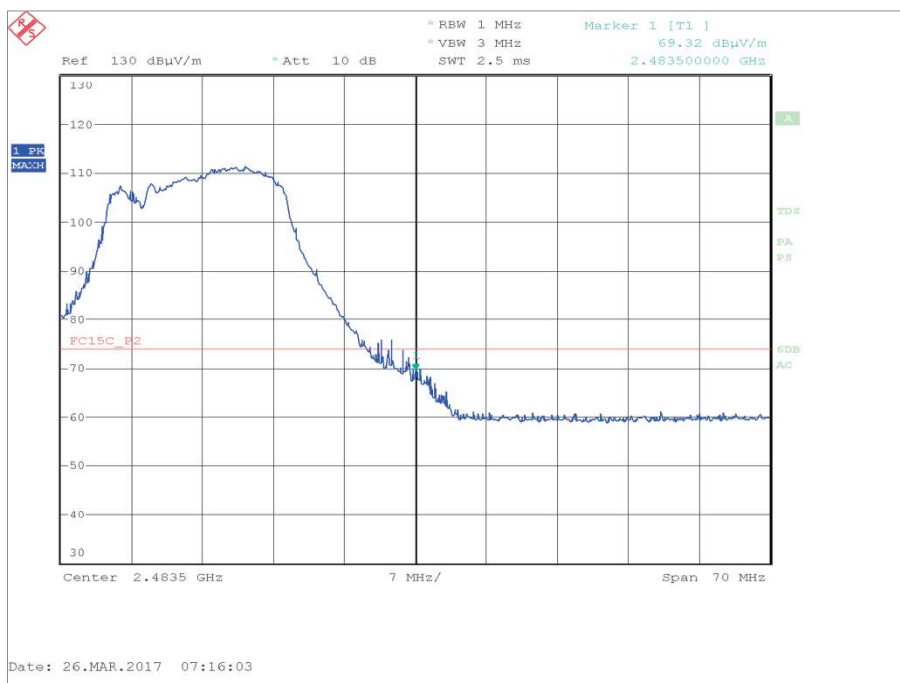


Figure 47 - MCS with Widest Bandwidth, MCS2, 2462 MHz, Measured Frequency 2483.5 MHz, Peak

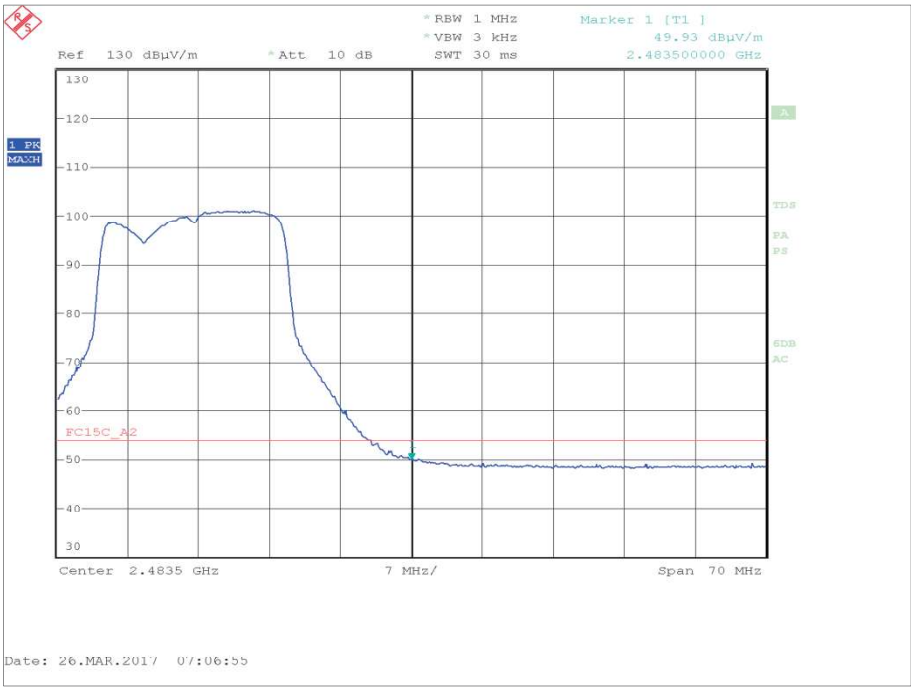


Figure 48 - MCS with Widest Bandwidth, MCS2, 2462 MHz, Measured Frequency 2483.5 MHz, Average

FCC 47 CFR Part 15, 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.



ANT792-6MN - 802.11n 40 MHz Bandwidth

Mode	Data Rate/MCS	Frequency (MHz)	Measured Frequency (MHz)	Peak Level (dBμV/m)	Average Level (dBμV/m)
MCS with Highest Power	MCS8	2422	2390.0	67.86	48.23
MCS with Highest Power	MCS8	2452	2483.5	69.88	50.15
MCS with Widest Bandwidth	MCS3	2422	2390.0	65.61	49.32
MCS with Widest Bandwidth	MCS3	2452	2483.5	69.26	50.30

Table 28

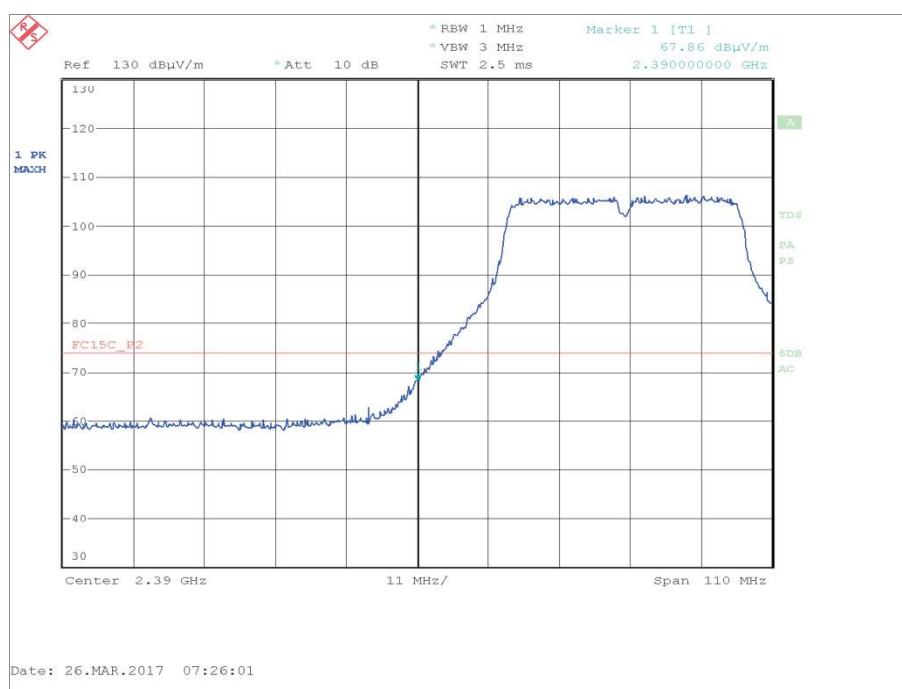
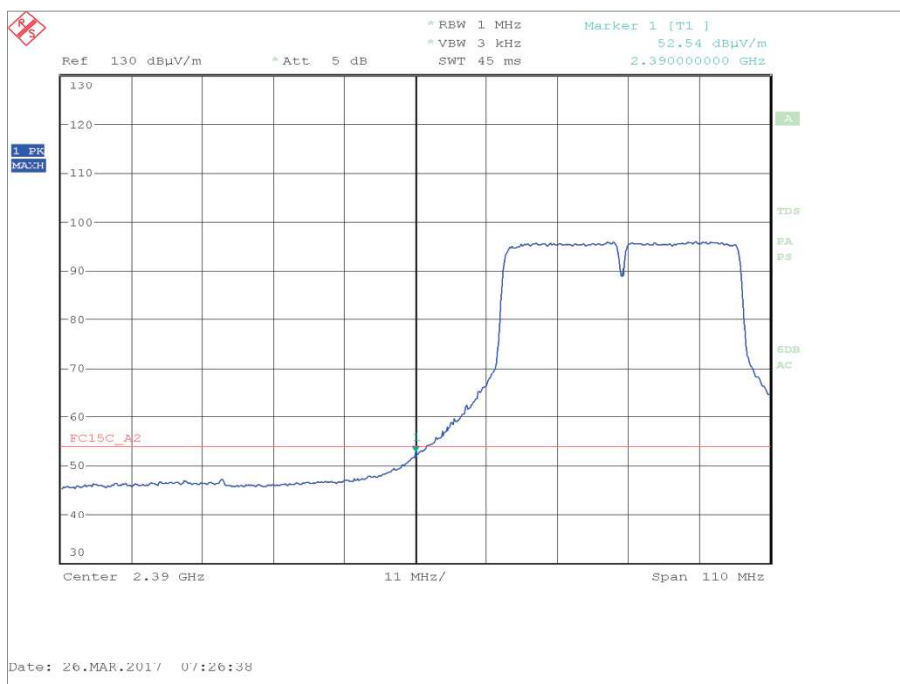


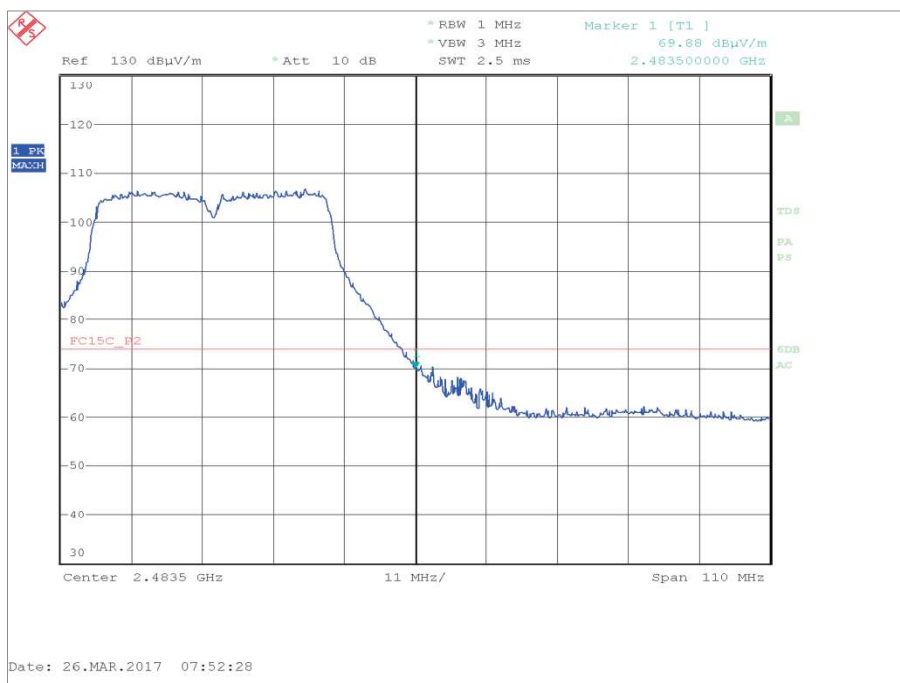
Figure 49 - MCS with Highest Power, MCS8, 2422 MHz, Measured Frequency 2390.0 MHz, Peak



Product Service



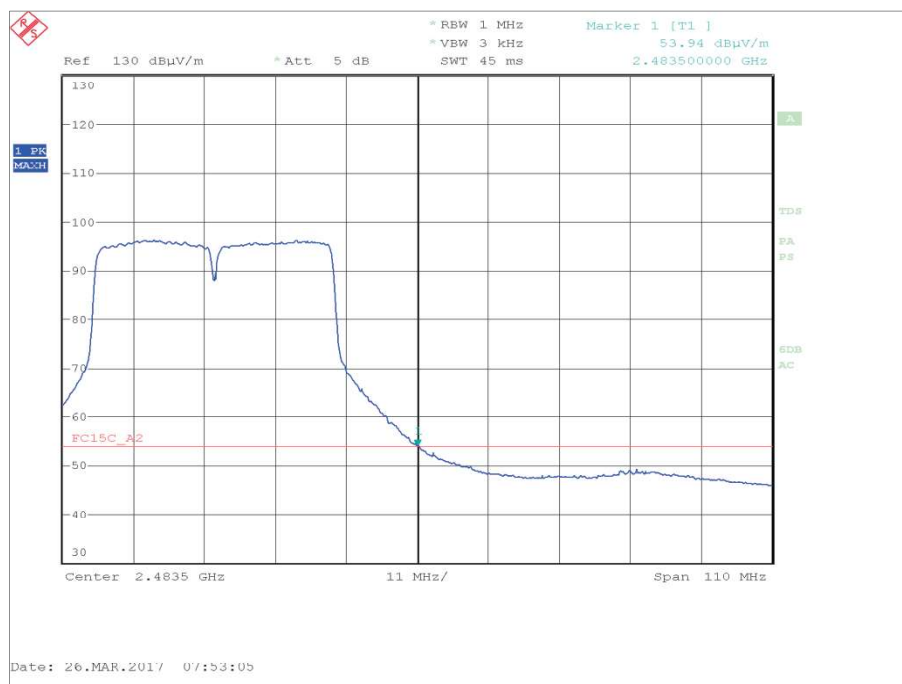
**Figure 50 - MCS with Highest Power, MCS8,
2422 MHz, Measured Frequency 2390.0 MHz, Average**



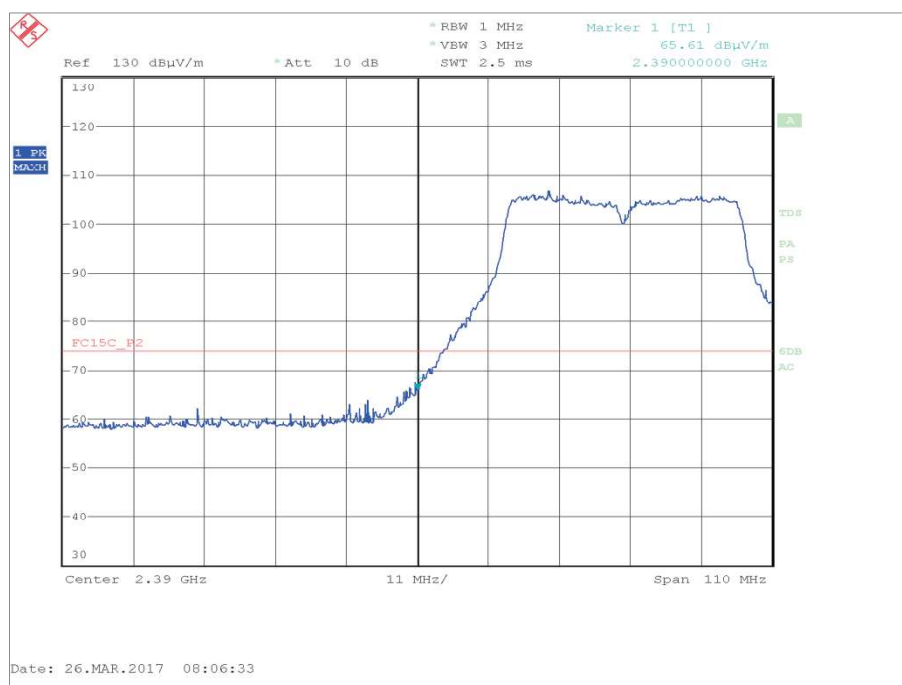
**Figure 51 - MCS with Highest Power, MCS8,
2452 MHz, Measured Frequency 2483.5 MHz, Peak**



Product Service



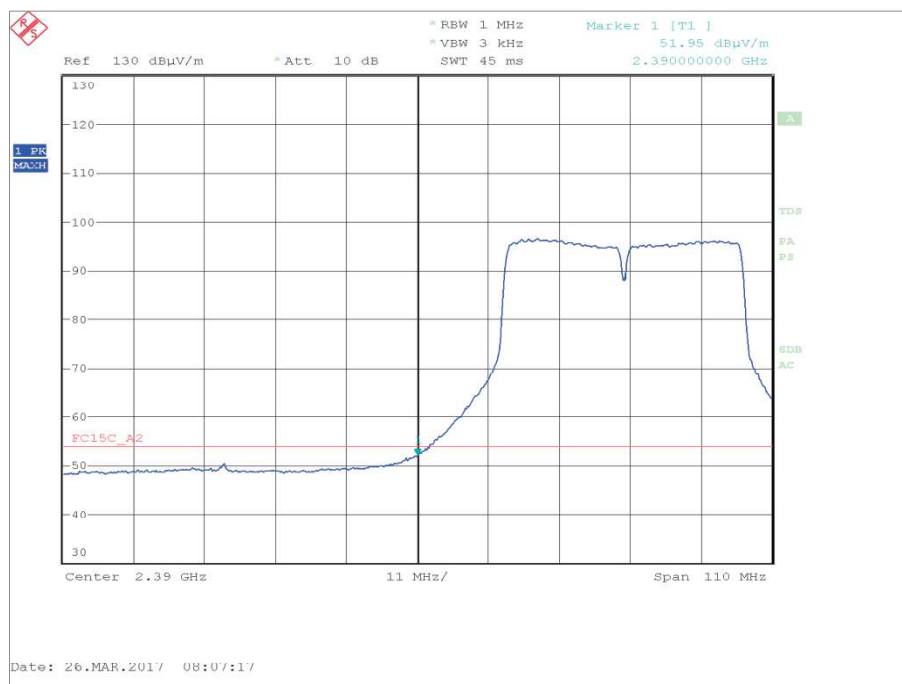
**Figure 52 - MCS with Highest Power, MCS8,
2452 MHz, Measured Frequency 2483.5 MHz, Average**



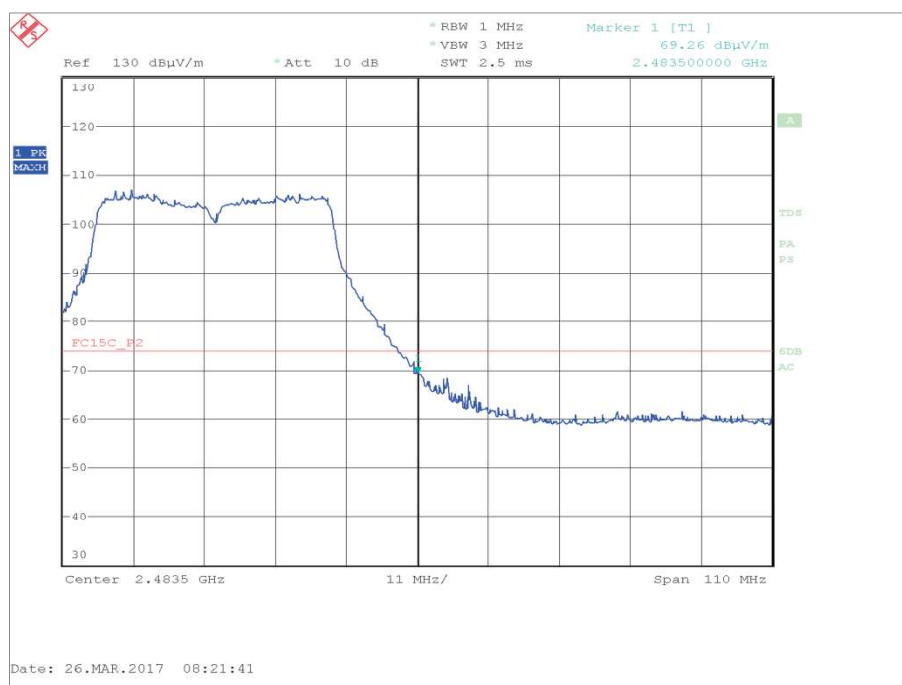
**Figure 53 - MCS with Widest Bandwidth, MCS3,
2422 MHz, Measured Frequency 2390.0 MHz, Peak**



Product Service



**Figure 54 - MCS with Widest Bandwidth, MCS3,
2422 MHz, Measured Frequency 2390.0 MHz, Average**



**Figure 55 - MCS with Widest Bandwidth, MCS3,
2452 MHz, Measured Frequency 2483.5 MHz, Peak**

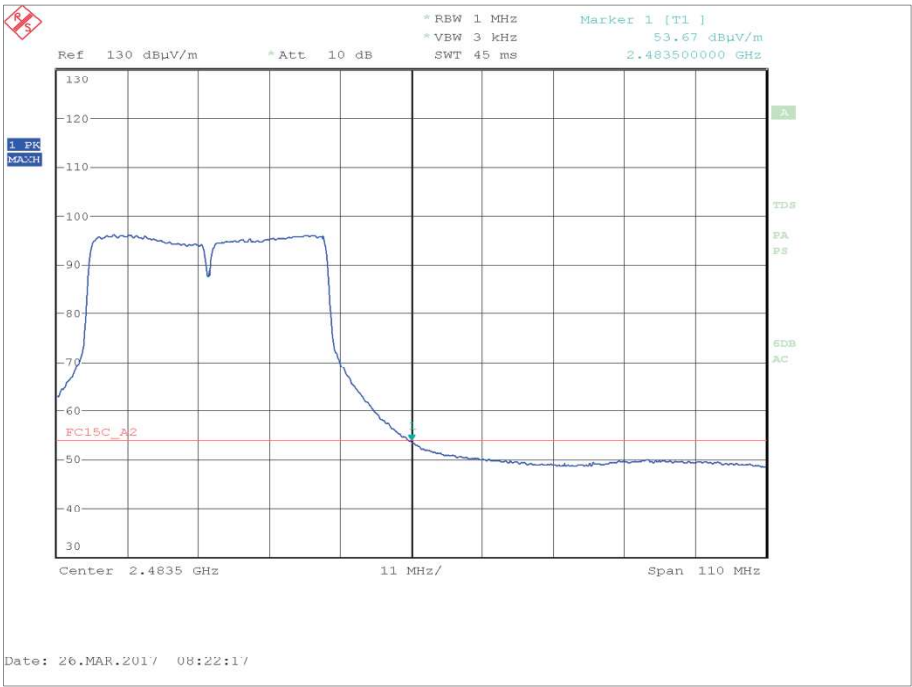


Figure 56 - MCS with Widest Bandwidth, MCS3, 2452 MHz, Measured Frequency 2483.5 MHz, Average

FCC 47 CFR Part 15, 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.



ANT795-6DC - 802.11b

Mode	Data Rate/MCS	Frequency (MHz)	Measured Frequency (MHz)	Peak Level (dBμV/m)	Average Level (dBμV/m)
Data Rate with Highest Power and Widest Bandwidth	1 Mbps	2412	2390.0	62.56	46.69
Data Rate with Highest Power and Widest Bandwidth	1 Mbps	2462	2483.5	62.38	46.53

Table 31

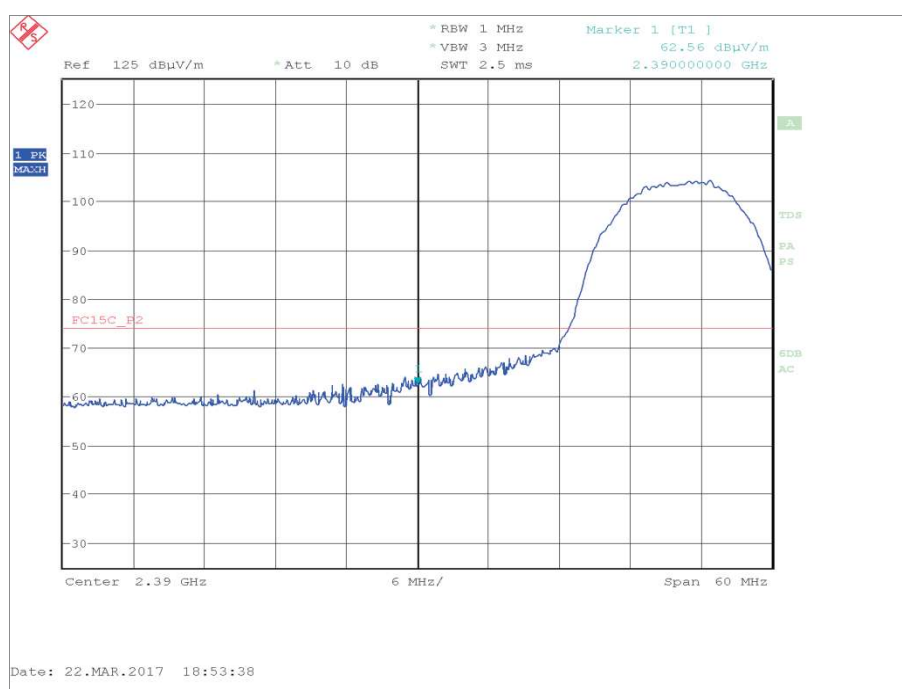


Figure 57 - Data Rate with Highest Power and Widest Bandwidth, 1 Mbps, 2412 MHz, Measured Frequency 2390.0 MHz, Peak



Product Service

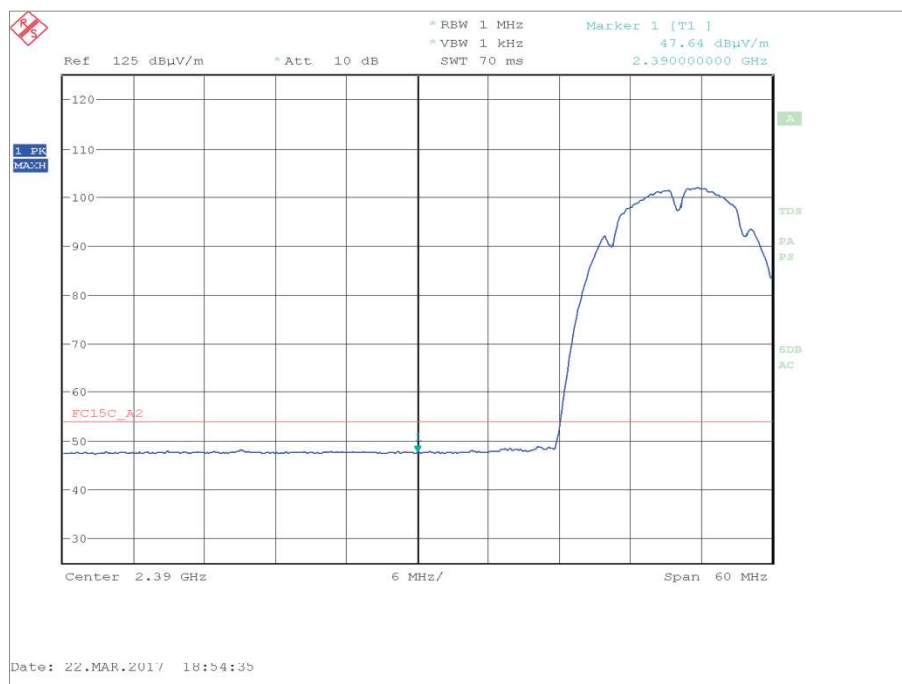


Figure 58 - Data Rate with Highest Power and Widest Bandwidth, 1 Mbps, 2412 MHz, Measured Frequency 2390.0 MHz, Average

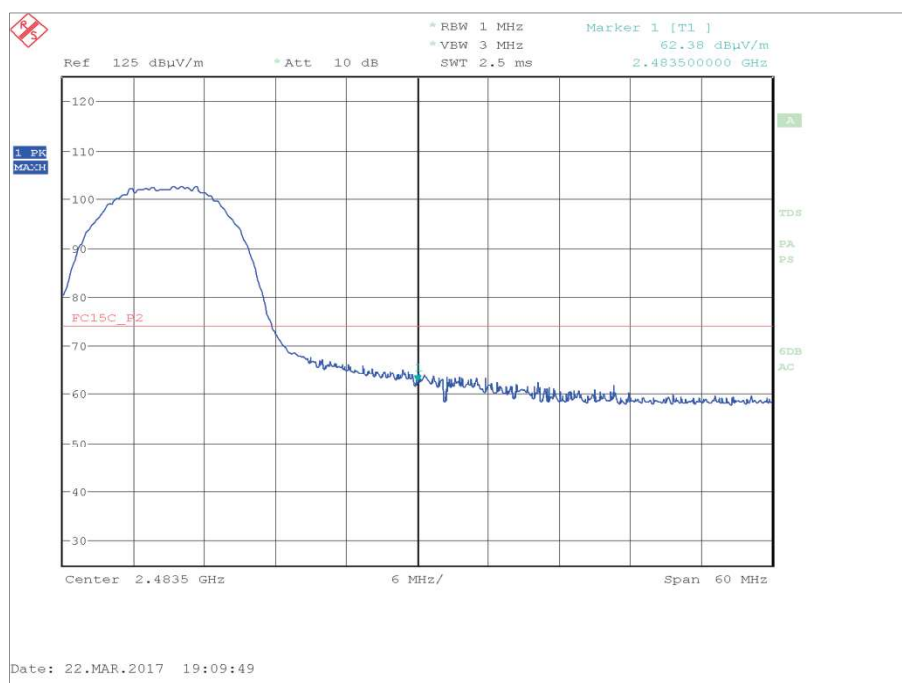


Figure 59 - Data Rate with Highest Power and Widest Bandwidth, 1 Mbps, 2462 MHz, Measured Frequency 2483.5 MHz, Peak

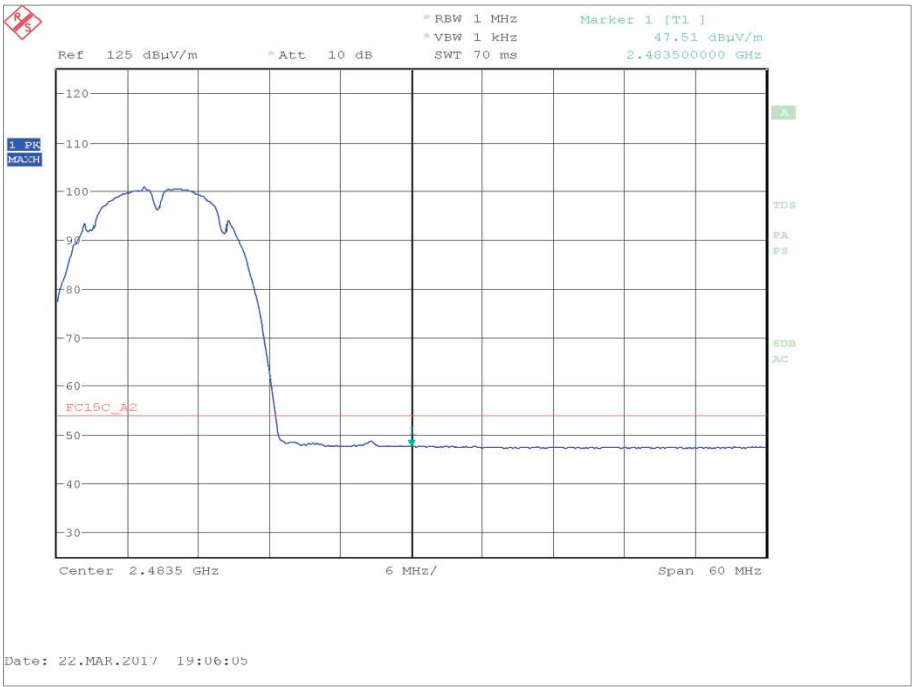


Figure 60 - Data Rate with Highest Power and Widest Bandwidth, 1 Mbps, 2462 MHz, Measured Frequency 2483.5 MHz, Average

FCC 47 CFR Part 15, 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.



ANT795-6DC - 802.11g

Mode	Data Rate/MCS	Frequency (MHz)	Measured Frequency (MHz)	Peak Level (dBμV/m)	Average Level (dBμV/m)
Data Rate with Highest Power	6 Mbps	2412	2390.0	59.71	47.87
Data Rate with Highest Power	6 Mbps	2462	2483.5	58.95	47.09
Data Rate with Widest Bandwidth	48 Mbps	2412	2390.0	60.21	47.93
Data Rate with Widest Bandwidth	48 Mbps	2462	2483.5	59.38	47.10

Table 34

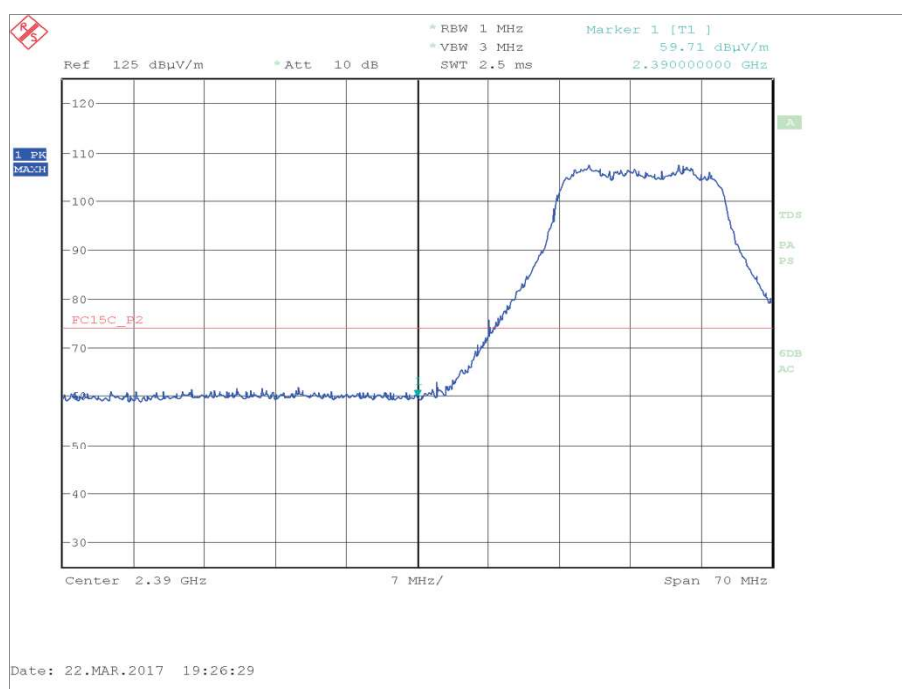
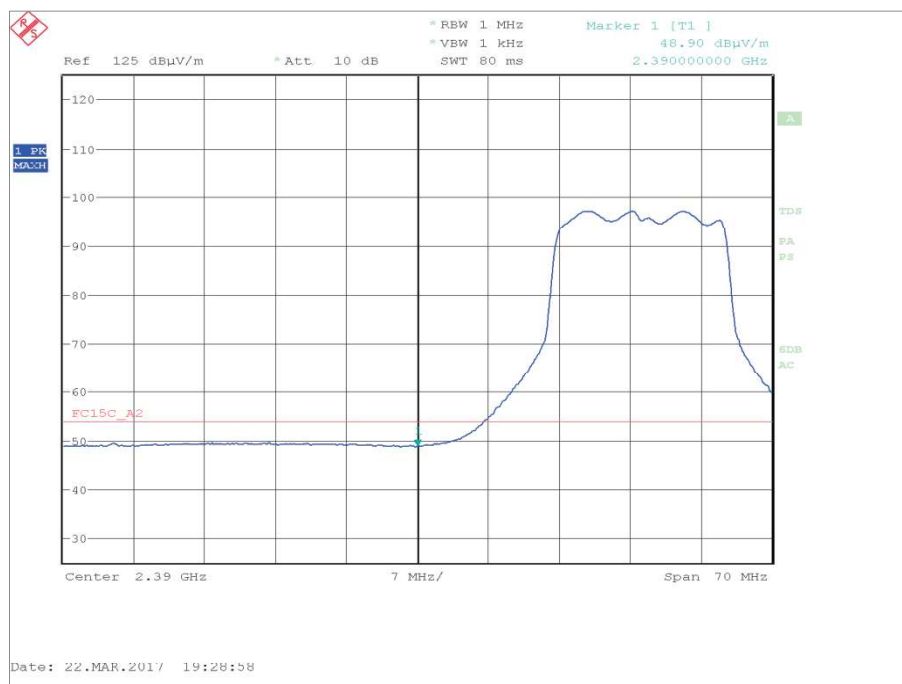


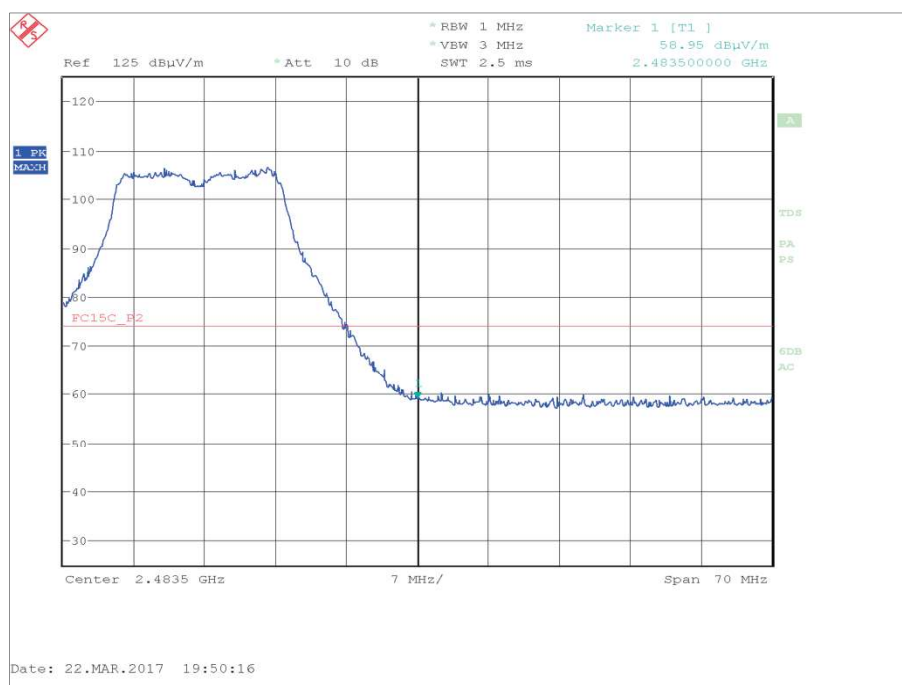
Figure 61 - Data Rate with Highest Power, 6 Mbps, 2412 MHz, Measured Frequency 2390.0 MHz, Peak



Product Service



**Figure 62 - Data Rate with Highest Power, 6 Mbps,
2412 MHz, Measured Frequency 2390.0 MHz, Average**



**Figure 63 - Data Rate with Highest Power, 6 Mbps,
2462 MHz, Measured Frequency 2483.5 MHz, Peak**



Product Service

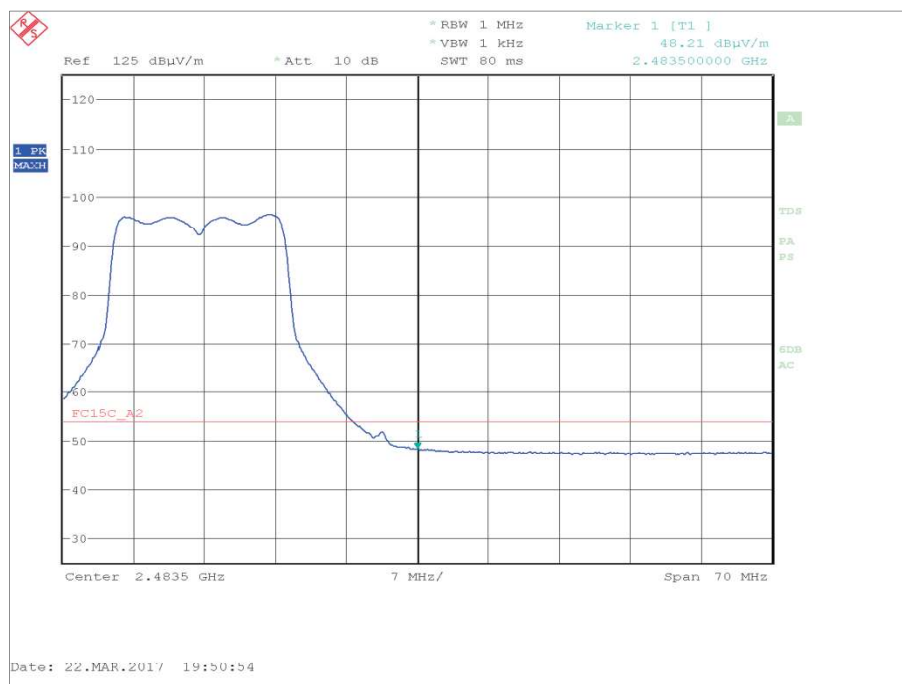


Figure 64 - Data Rate with Highest Power, 6 Mbps, 2462 MHz, Measured Frequency 2483.5 MHz, Average

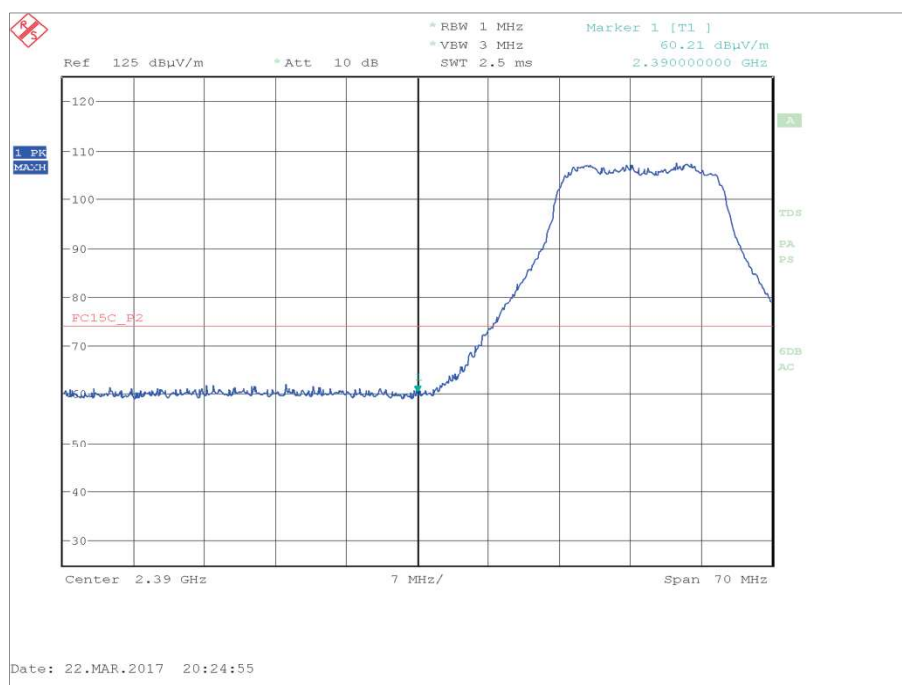
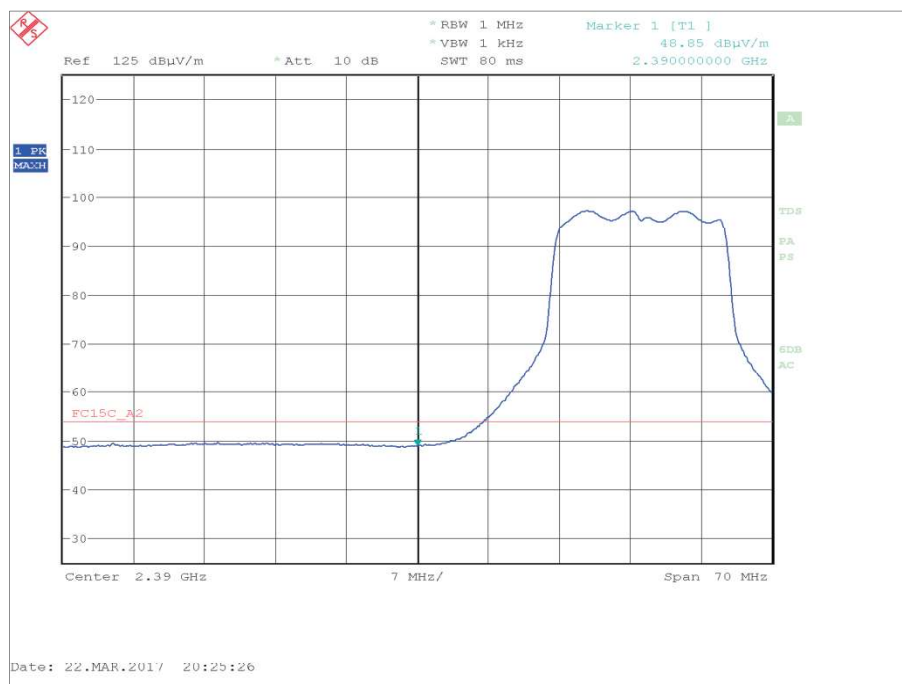


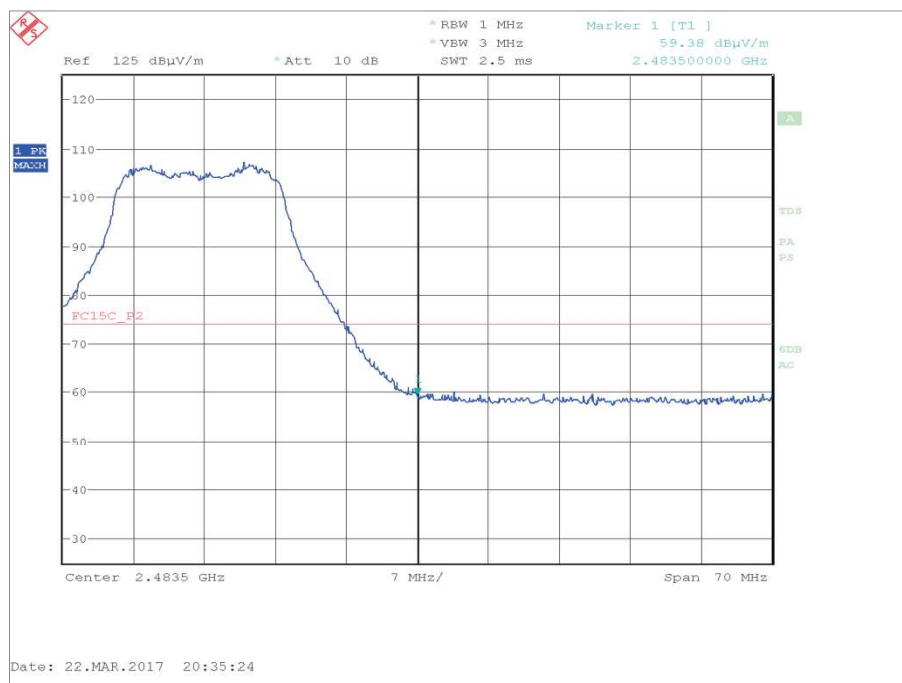
Figure 65 - Data Rate with Widest Bandwidth, 48 Mbps, 2412 MHz, Measured Frequency 2390.0 MHz, Peak



Product Service



**Figure 66 - Data Rate with Widest Bandwidth, 48 Mbps,
2412 MHz, Measured Frequency 2390.0 MHz, Average**



**Figure 67 - Data Rate with Widest Bandwidth, 48 Mbps,
2462 MHz, Measured Frequency 2483.5 MHz, Peak**

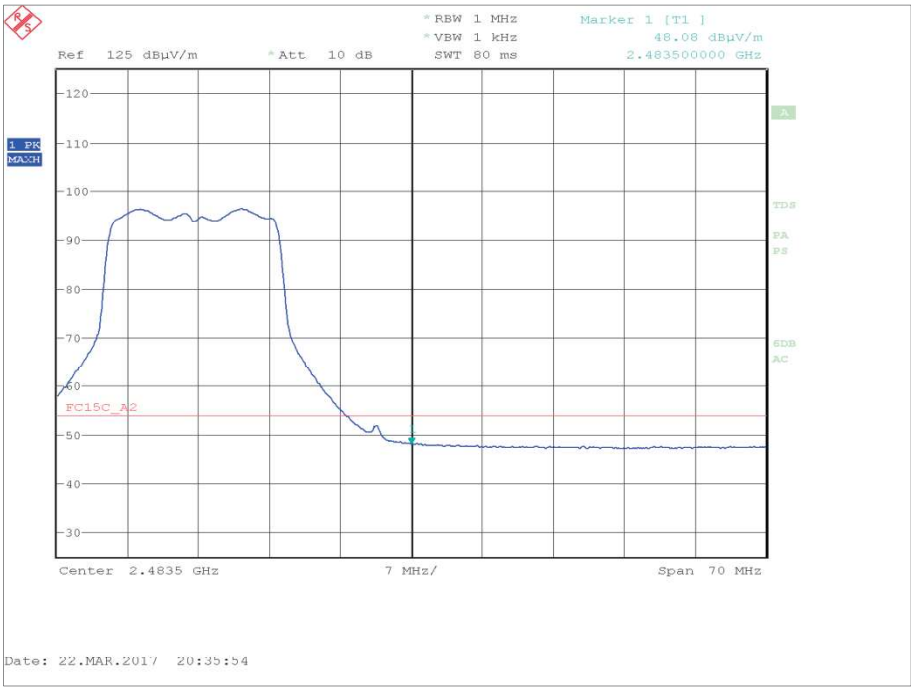


Figure 68 - Data Rate with Widest Bandwidth, 48 Mbps, 2462 MHz, Measured Frequency 2483.5 MHz, Average

FCC 47 CFR Part 15, 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.



ANT795-6DC - 802.11n 20 MHz Bandwidth

Mode	Data Rate/MCS	Frequency (MHz)	Measured Frequency (MHz)	Peak Level (dBμV/m)	Average Level (dBμV/m)
MCS with Highest Power	MCS0	2412	2390.0	60.52	48.09
MCS with Highest Power	MCS0	2462	2483.5	59.25	47.10
MCS with Widest Bandwidth	MCS2	2412	2390.0	60.00	48.12
MCS with Widest Bandwidth	MCS2	2462	2483.5	59.18	47.10

Table 37

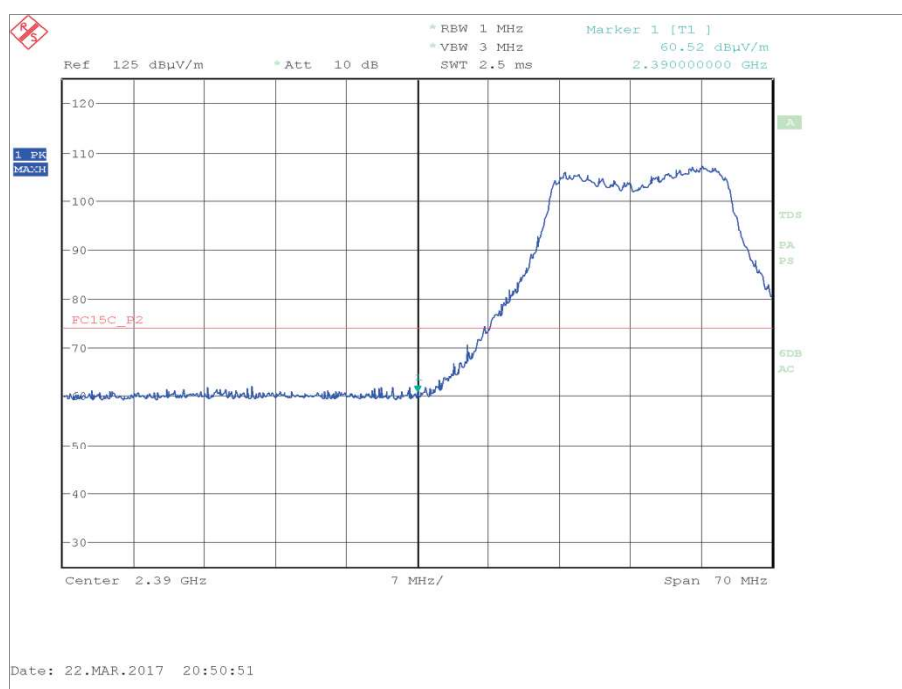
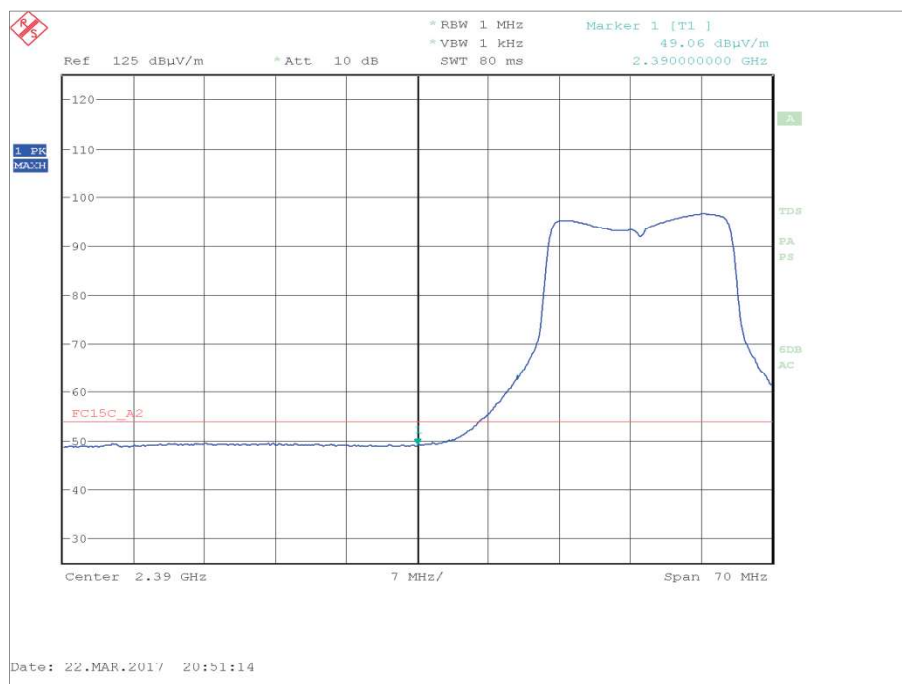


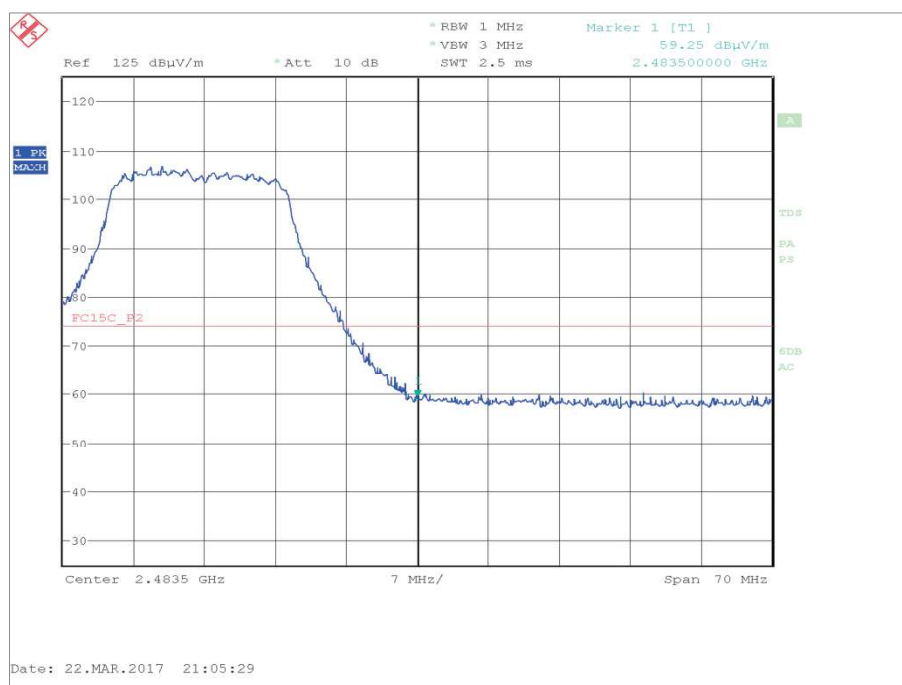
Figure 69 - MCS with Highest Power, MCS0, 2412 MHz, Measured Frequency 2390.0 MHz, Peak



Product Service



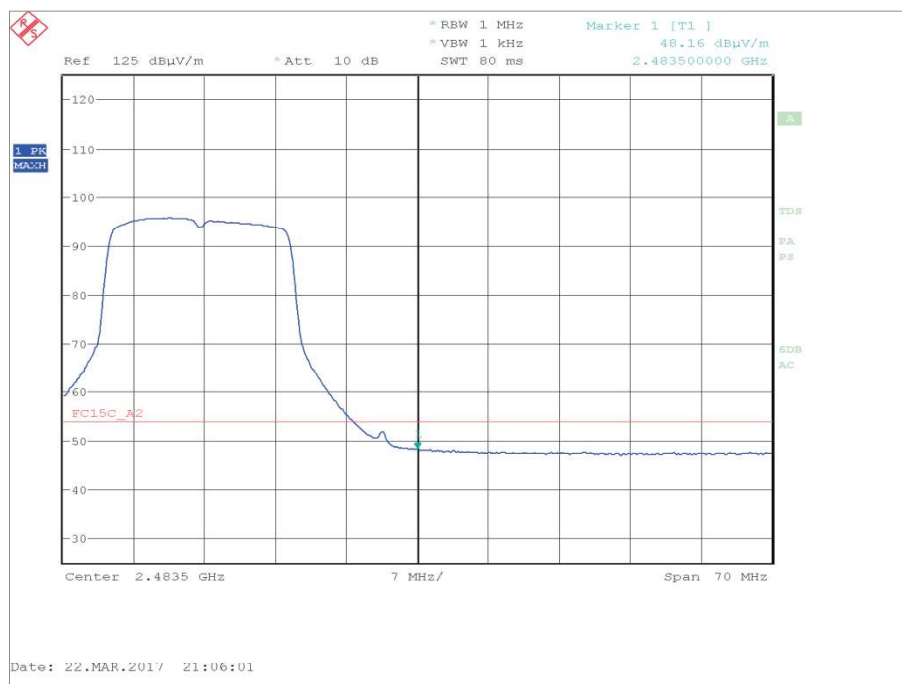
**Figure 70 - /MCS with Highest Power, MCS0,
2412 MHz, Measured Frequency 2390.0 MHz, Average**



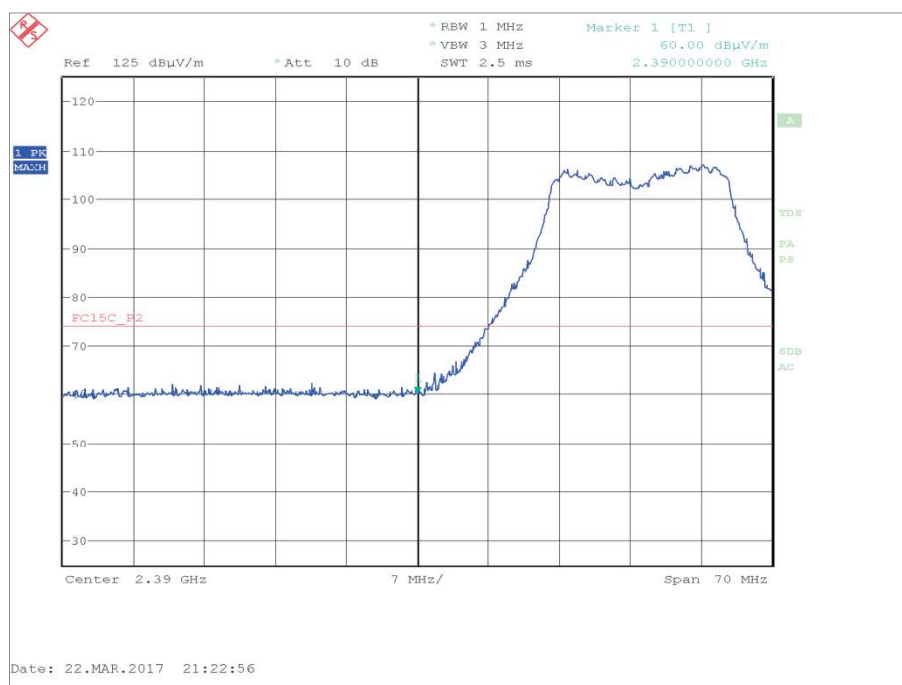
**Figure 71 - MCS with Highest Power, MCS0,
2462 MHz, Measured Frequency 2483.5 MHz, Peak**



Product Service



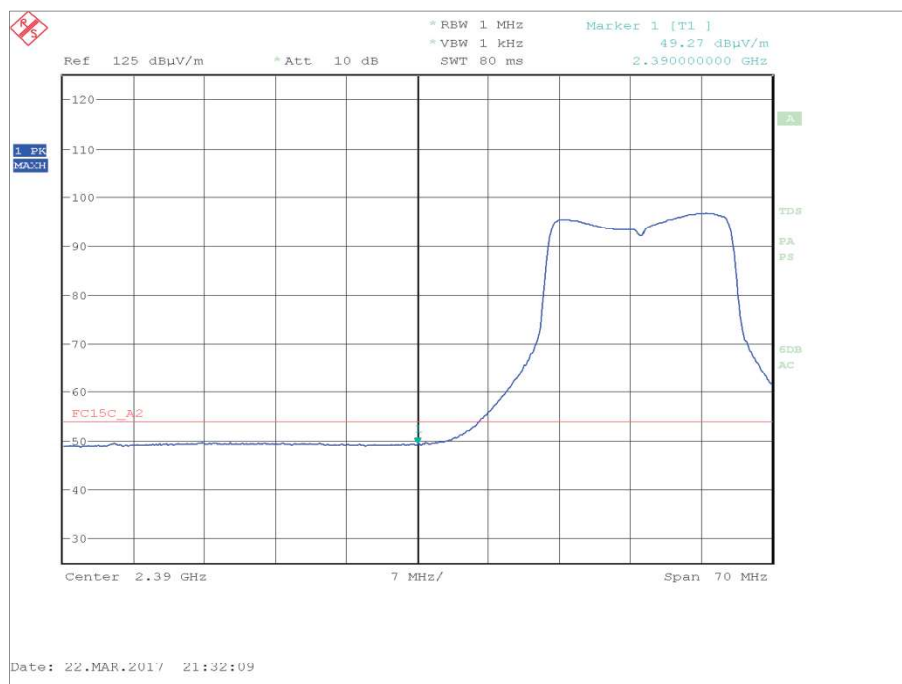
**Figure 72 - MCS with Highest Power, MCS0,
2462 MHz, Measured Frequency 2483.5 MHz, Average**



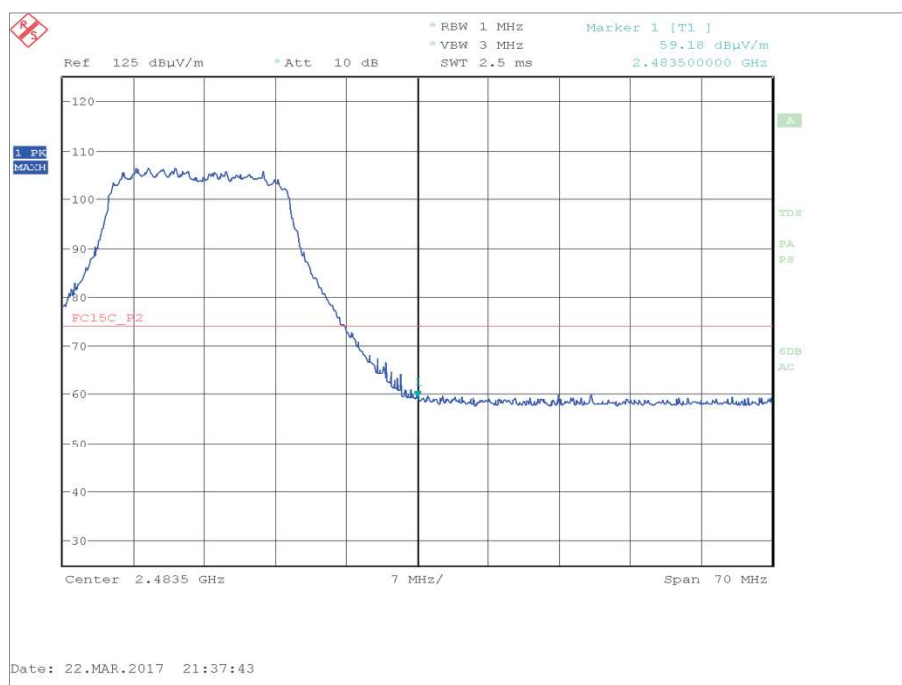
**Figure 73 - MCS with Widest Bandwidth, MCS2,
2412 MHz, Measured Frequency 2390.0 MHz, Peak**



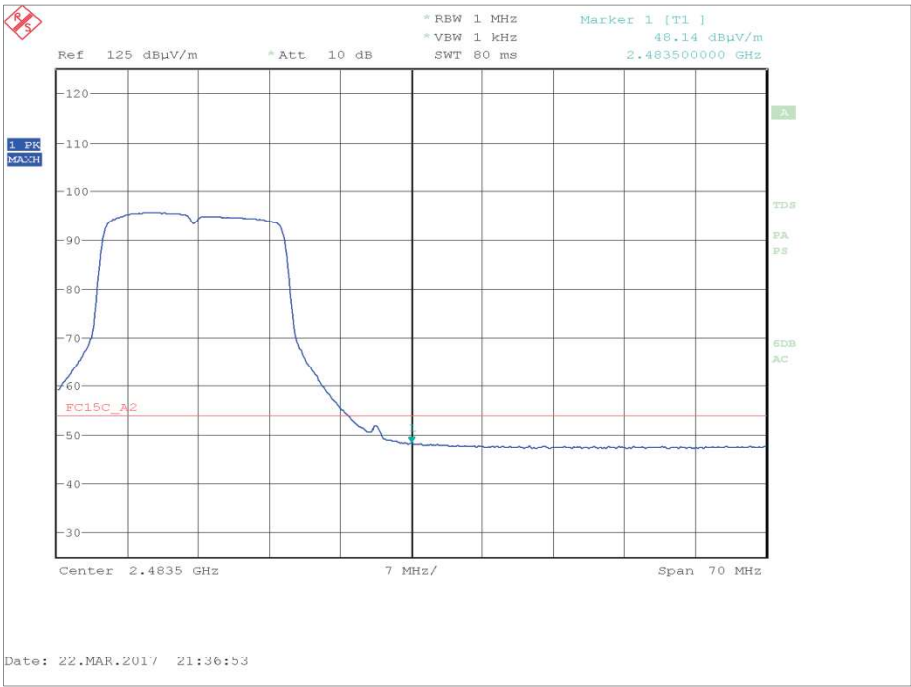
Product Service



**Figure 74 - MCS with Widest Bandwidth, MCS2,
2412 MHz, Measured Frequency 2390.0 MHz, Average**



**Figure 75 - MCS with Widest Bandwidth, MCS2,
2462 MHz, Measured Frequency 2483.5 MHz, Peak**



**Figure 76 - MCS with Widest Bandwidth, MCS2,
2462 MHz, Measured Frequency 2483.5 MHz, Average**

FCC 47 CFR Part 15, Limit Clause 15.205

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

Table 38

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 39

*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.



ANT795-6DC - 802.11n 40 MHz Bandwidth

Mode	Data Rate/MCS	Frequency (MHz)	Measured Frequency (MHz)	Peak Level (dBμV/m)	Average Level (dBμV/m)
MCS with Highest Power	MCS8	2422	2390.0	65.62	47.72
MCS with Highest Power	MCS8	2452	2483.5	64.73	48.02
MCS with Widest Bandwidth	MCS3	2422	2390.0	67.14	47.51
MCS with Widest Bandwidth	MCS3	2452	2483.5	68.33	49.73

Table 40

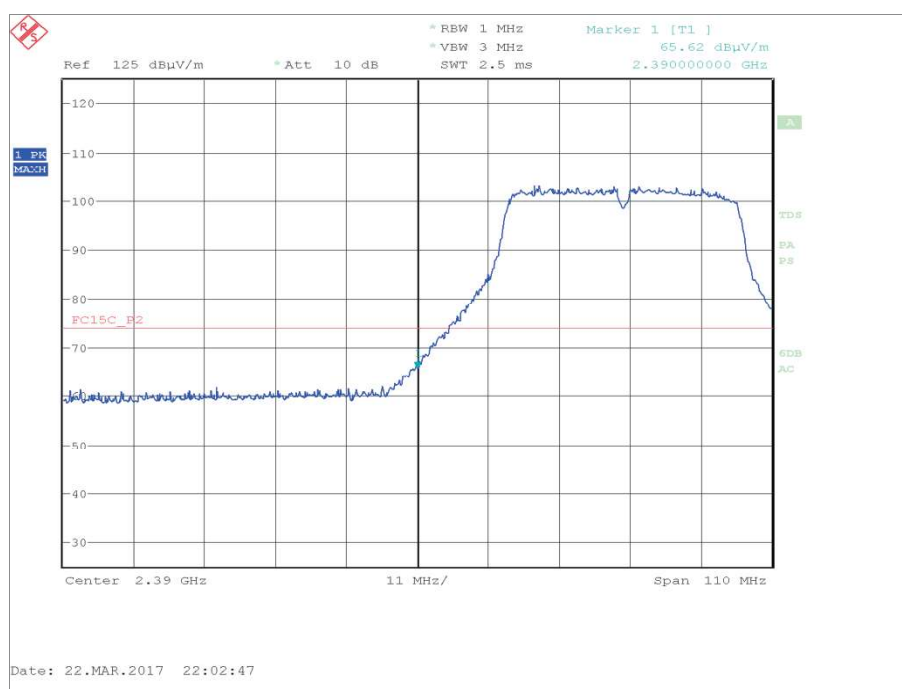


Figure 77 - MCS with Highest Power, MCS8, 2422 MHz, Measured Frequency 2390.0 MHz, Peak

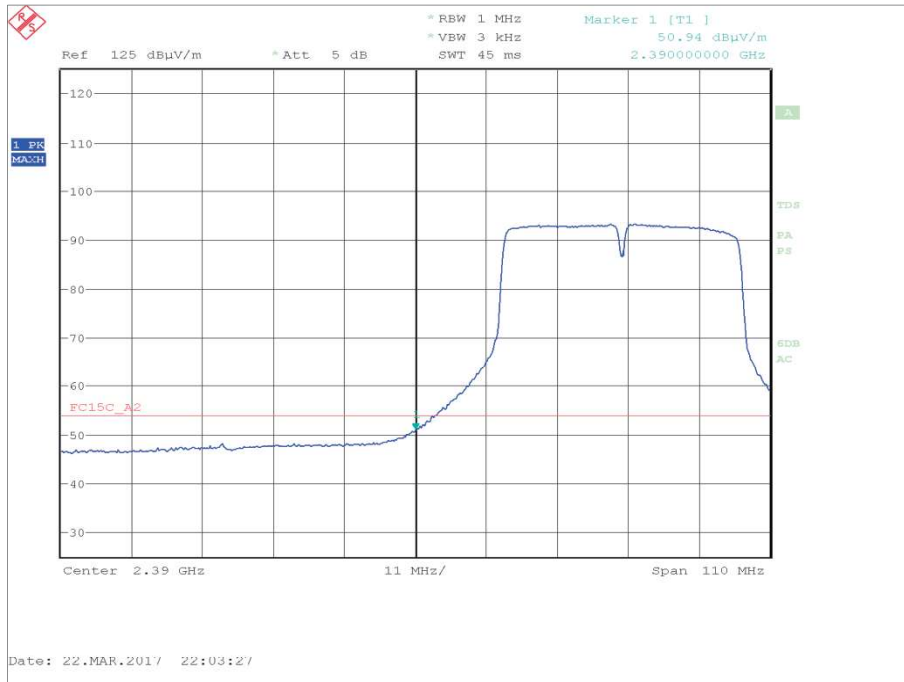


Figure 78 - MCS with Highest Power, MCS8, 2422 MHz, Measured Frequency 2390.0 MHz, Average

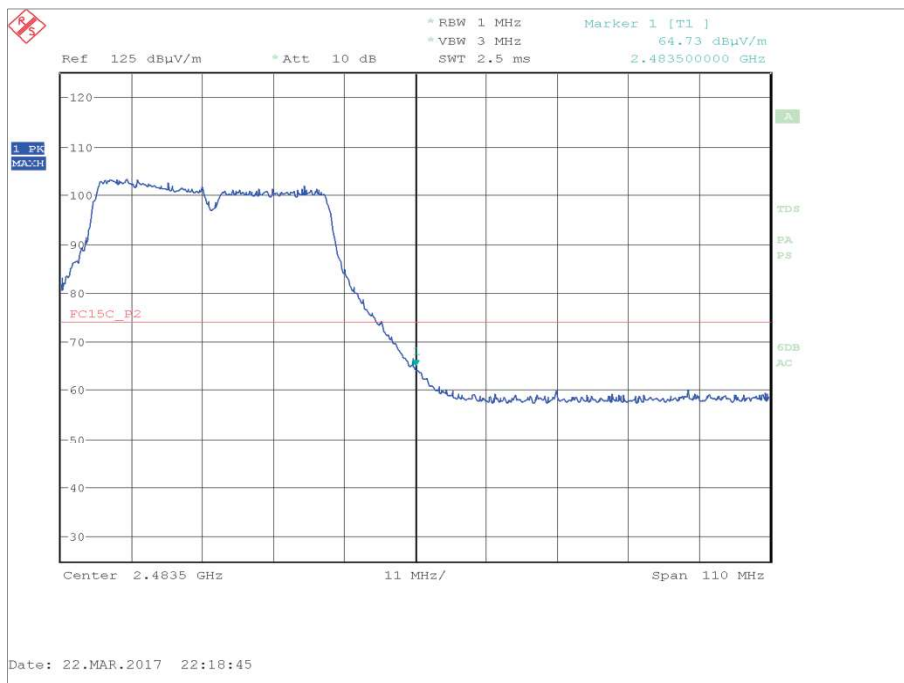
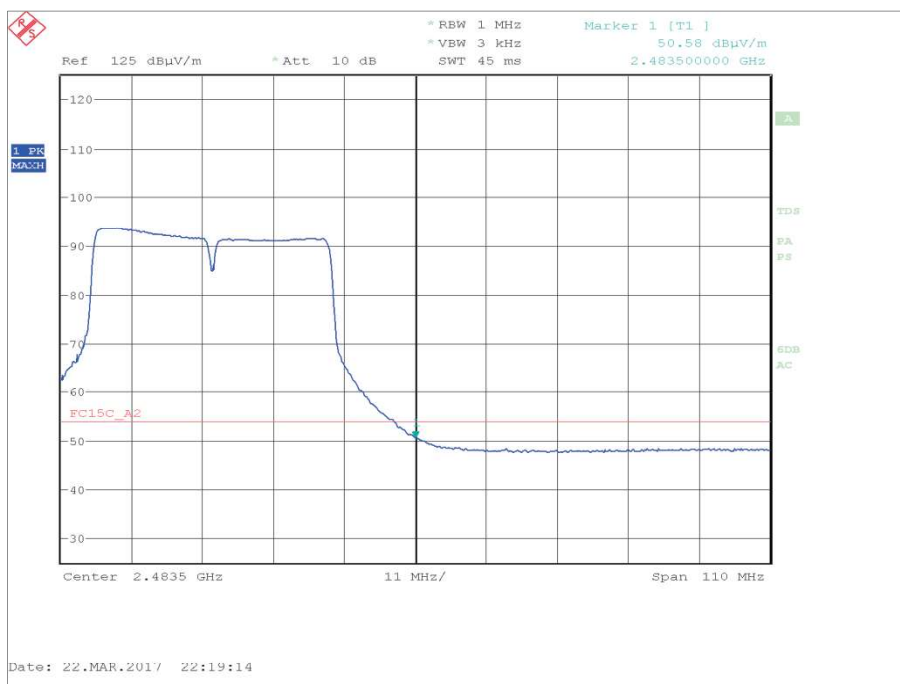


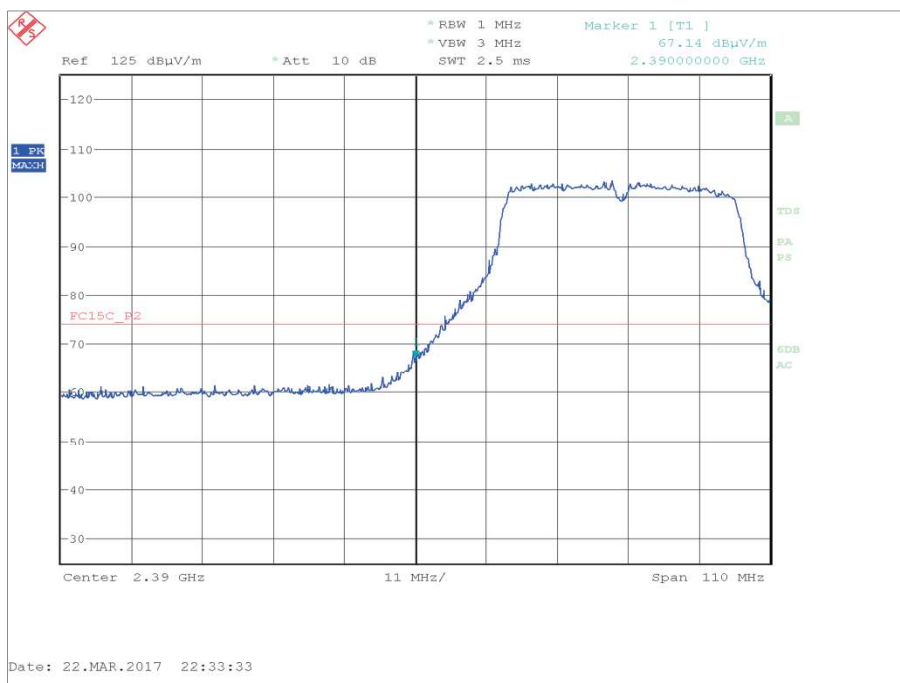
Figure 79 - MCS with Highest Power, MCS8, 2452 MHz, Measured Frequency 2483.5 MHz, Peak



Product Service



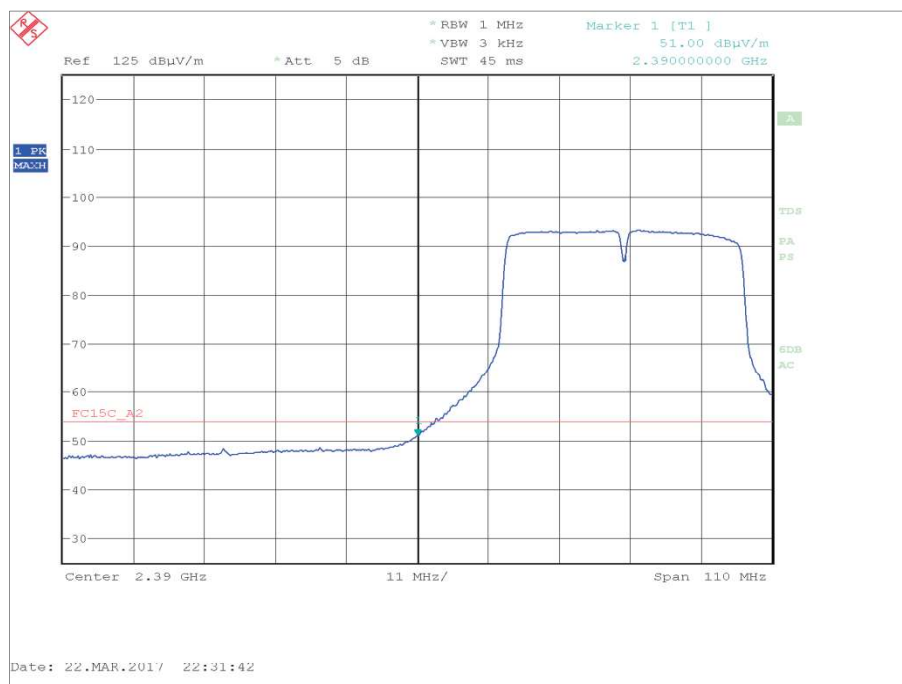
**Figure 80 - MCS with Highest Power, MCS8,
2452 MHz, Measured Frequency 2483.5 MHz, Average**



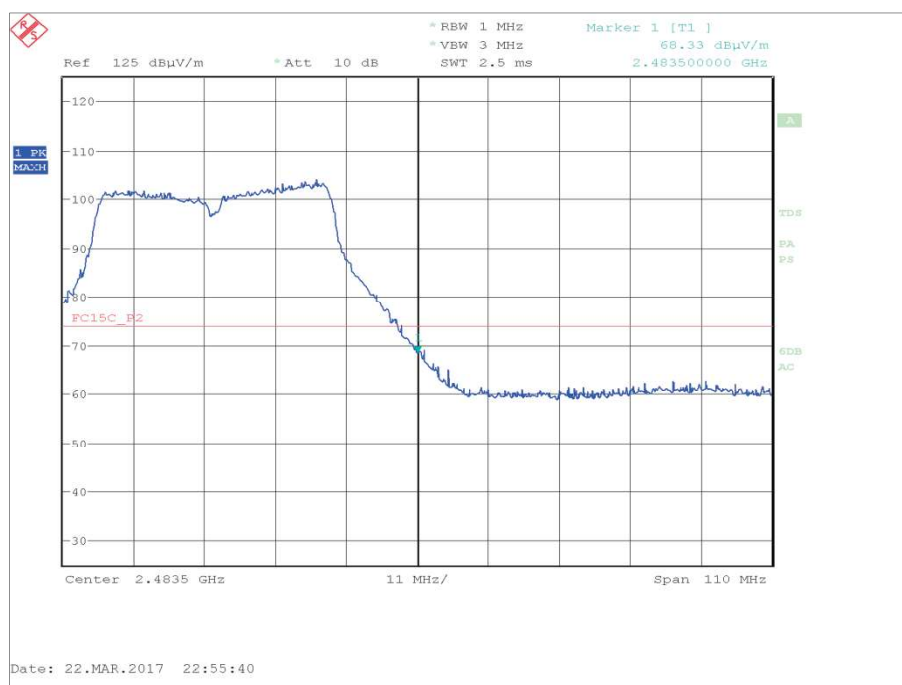
**Figure 81 - MCS with Widest Bandwidth, MCS3,
2422 MHz, Measured Frequency 2390.0 MHz, Peak**



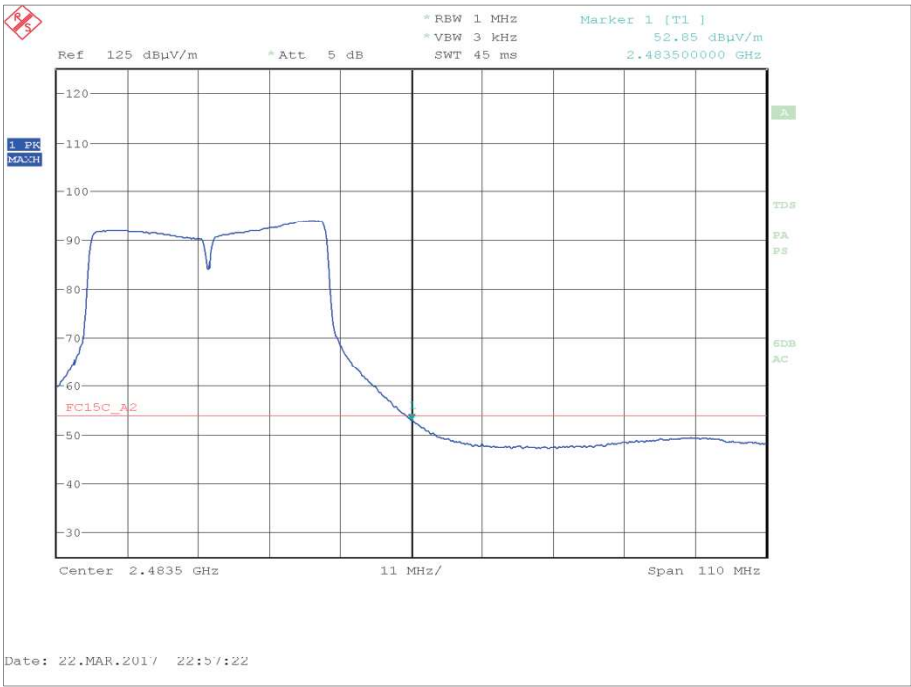
Product Service



**Figure 82 - MCS with Widest Bandwidth, MCS3,
2422 MHz, Measured Frequency 2390.0 MHz, Average**



**Figure 83 - MCS with Widest Bandwidth, MCS3,
2452 MHz, Measured Frequency 2483.5 MHz, Peak**



**Figure 84 - MCS with Widest Bandwidth, MCS3,
2452 MHz, Measured Frequency 2483.5 MHz, Average**

FCC 47 CFR Part 15, Limit Clause 15.205

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

Table 41

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 42

*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.

2.1.7 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
Hygrometer	Rotronic	A1	1388	12	13-Apr-2017
Screened Room (5)	Rainford	Rainford	1545	36	20-Dec-2017
Turntable Controller	Inn-Co GmbH	CO 1000	1606	-	TU
Cable (N-N, 8m)	Rhophase	NPS-2302-8000-NPS	3248	-	O/P Mon
EMI Test Receiver	Rohde & Schwarz	ESU40	3506	12	12-Nov-2017
Multimeter	Fluke	177	3813	12	14-Sep-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 43

TU - Traceability Unscheduled

O/P Mon – Output Monitored using calibrated equipment



2.2 Emission Bandwidth

2.2.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.247 (a)(2)
Industry Canada RSS-247, Clause 5.2
Industry Canada RSS-GEN, Clause 6.6

2.2.2 Equipment Under Test and Modification State

MSN65-W1-M12-E2, S/N: Not Serialised (75938097-TSR0001) - Modification State 0

2.2.3 Date of Test

06-March-2017

2.2.4 Test Method

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

2.2.5 Environmental Conditions

Ambient Temperature 23.2 °C
Relative Humidity 41.1 %

2.2.6 Test Results

ANT795-4MX - 802.11b

Modulation: DSSS

Data Rate: 1 Mbps

Frequency (MHz)	6 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
2412	10.11	13.89
2437	10.12	13.85
2462	10.11	13.85

Table 44



Product Service

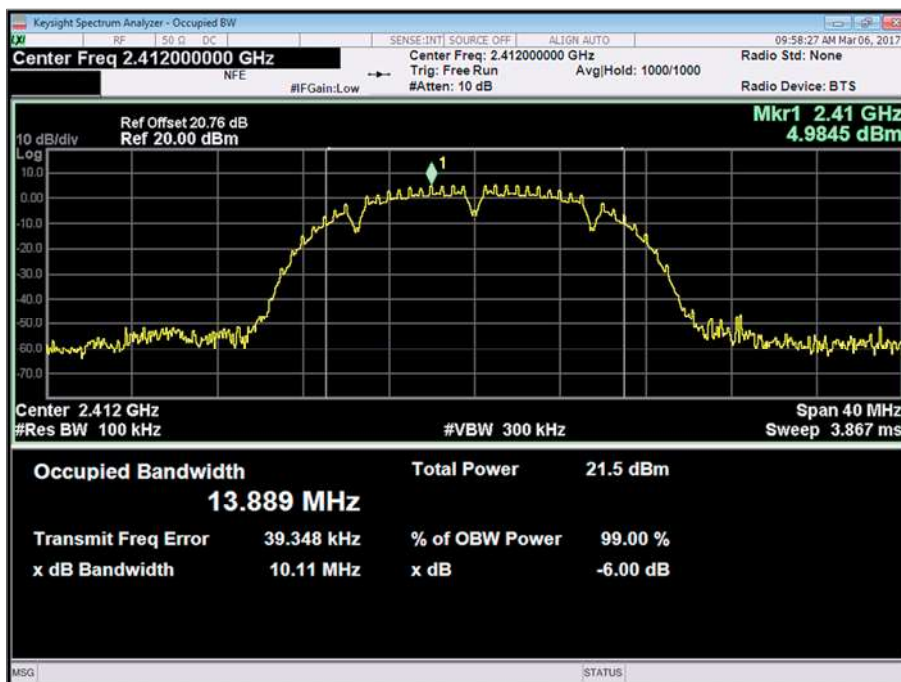


Figure 85 - 2412 MHz

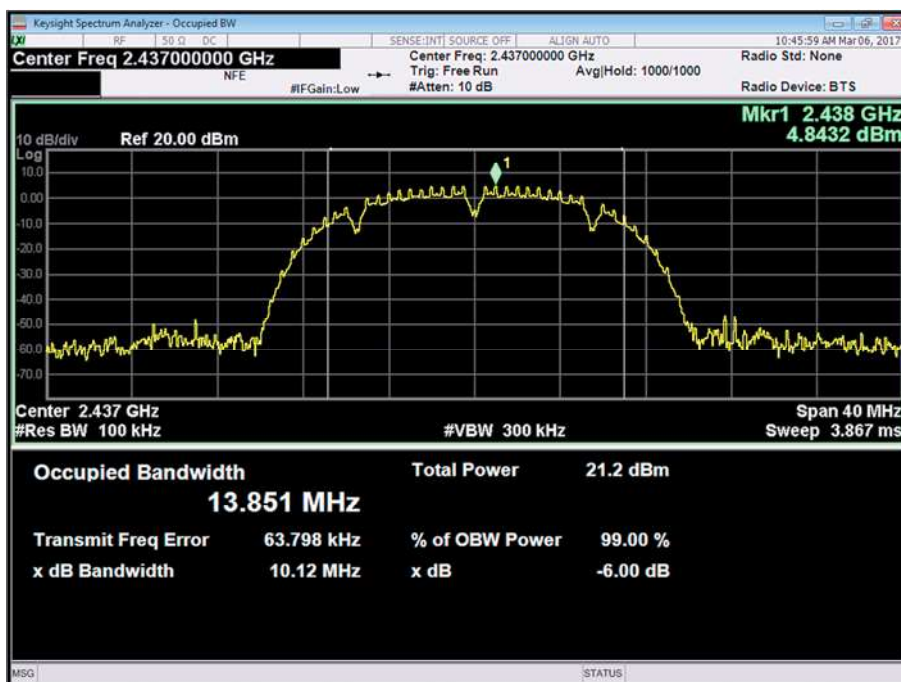


Figure 86 - 2437 MHz

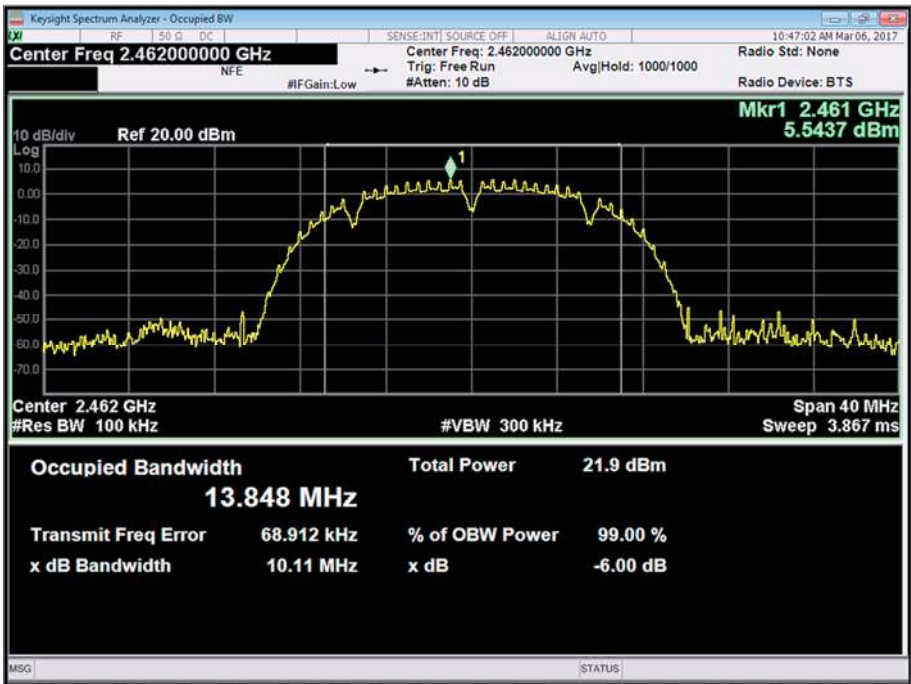


Figure 87 - 2462 MHz

FCC 47 CFR Part 15, 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.

ANT795-4MX - 802.11g

Modulation: OFDM

Data Rate: 6 Mbps

Frequency (MHz)	6 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
2412	16.39	16.50
2437	16.38	16.48
2462	16.38	16.53

Table 45

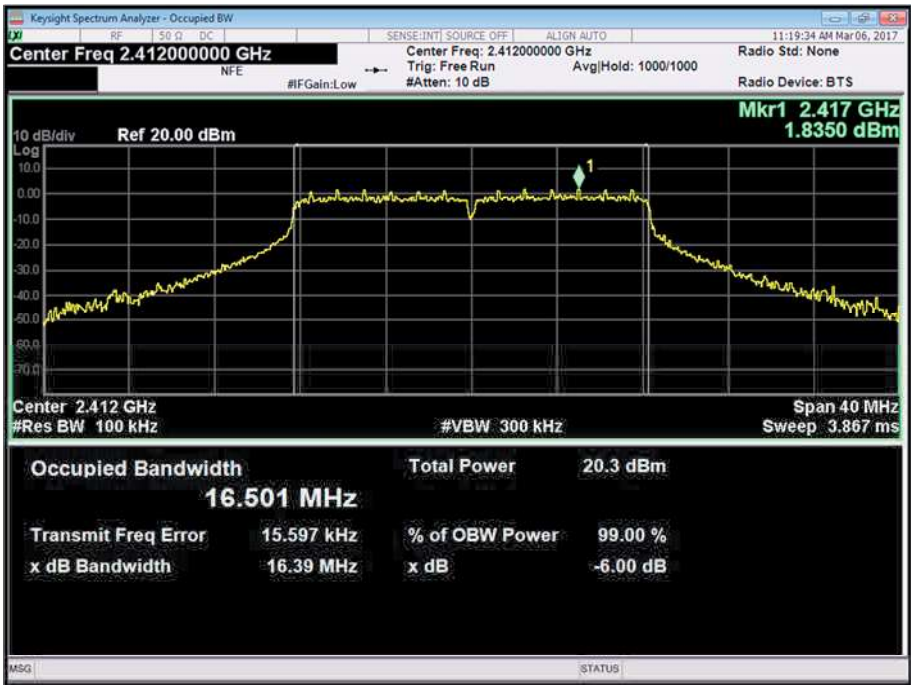


Figure 88 - 2412 MHz



Product Service

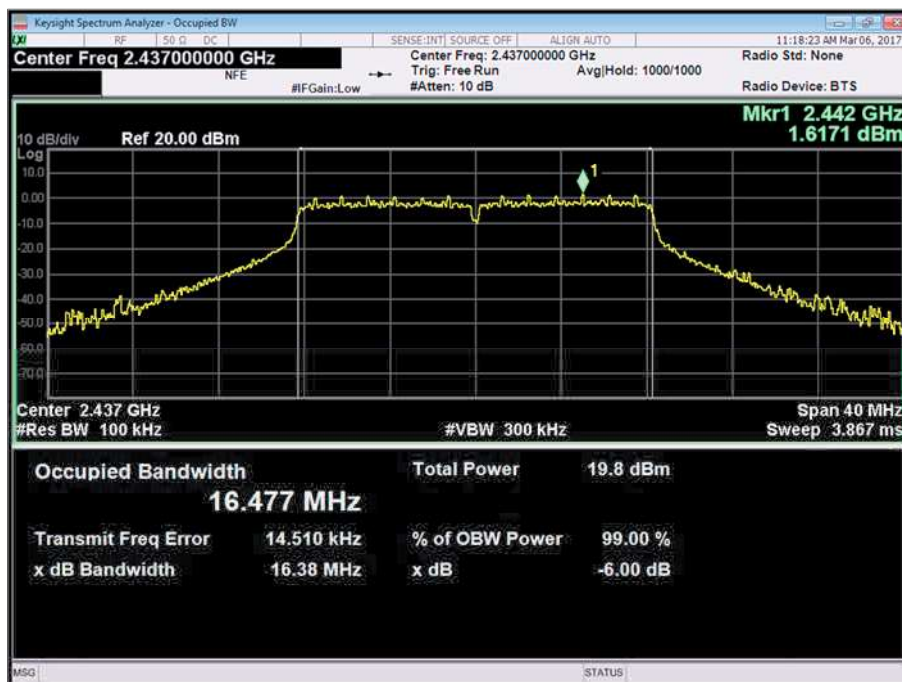


Figure 89 - 2437 MHz

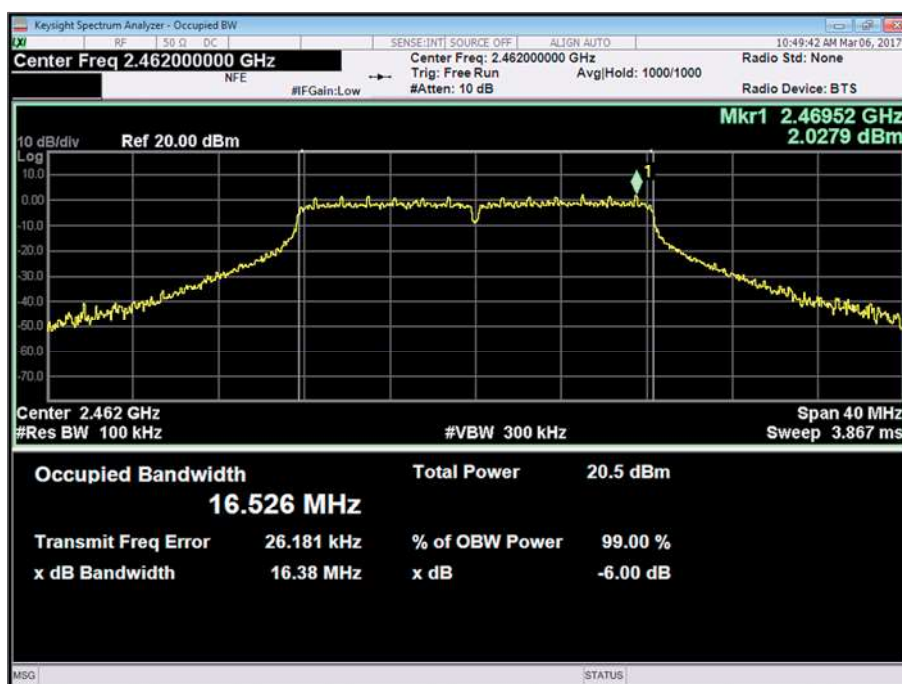


Figure 90 - 2462 MHz

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

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



Product Service

Industry Canada RSS-247, Clause 5.2(a)

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

ANT795-4MX - 802.11n 20 MHz Bandwidth

Modulation: OFDM

Modulation Coding Scheme: MCS0

Frequency (MHz)	6 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
2412	17.61	17.69
2437	17.62	17.69
2462	17.59	17.69

Table 46

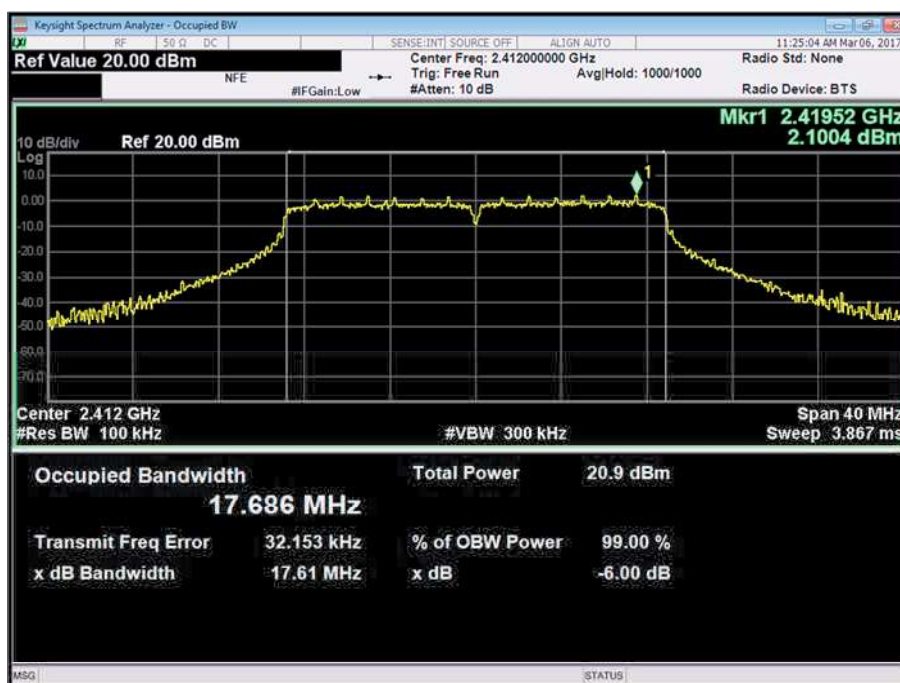


Figure 91 - 2412 MHz



Product Service

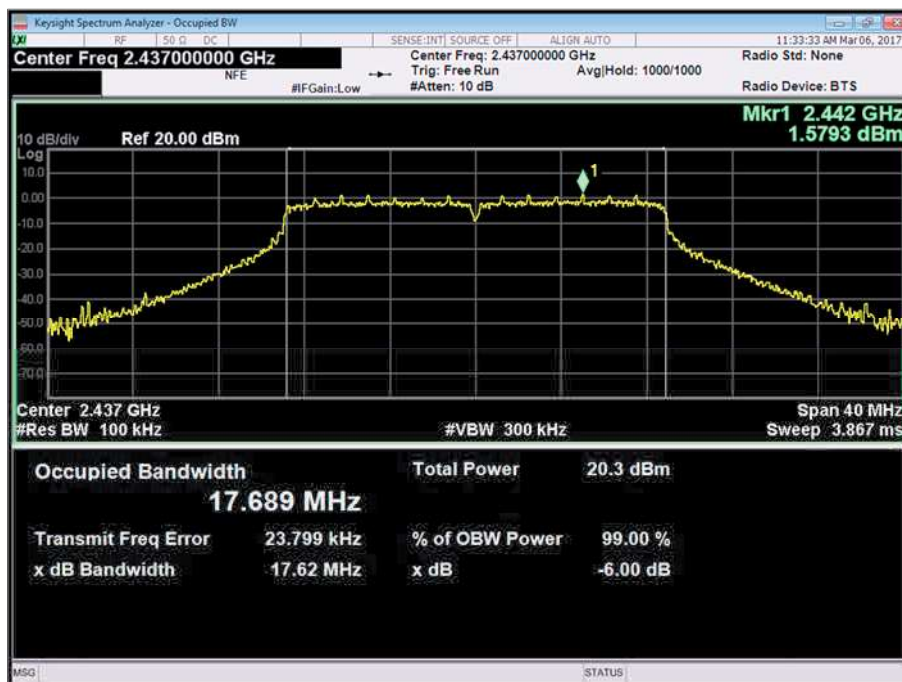


Figure 92 - 2437 MHz

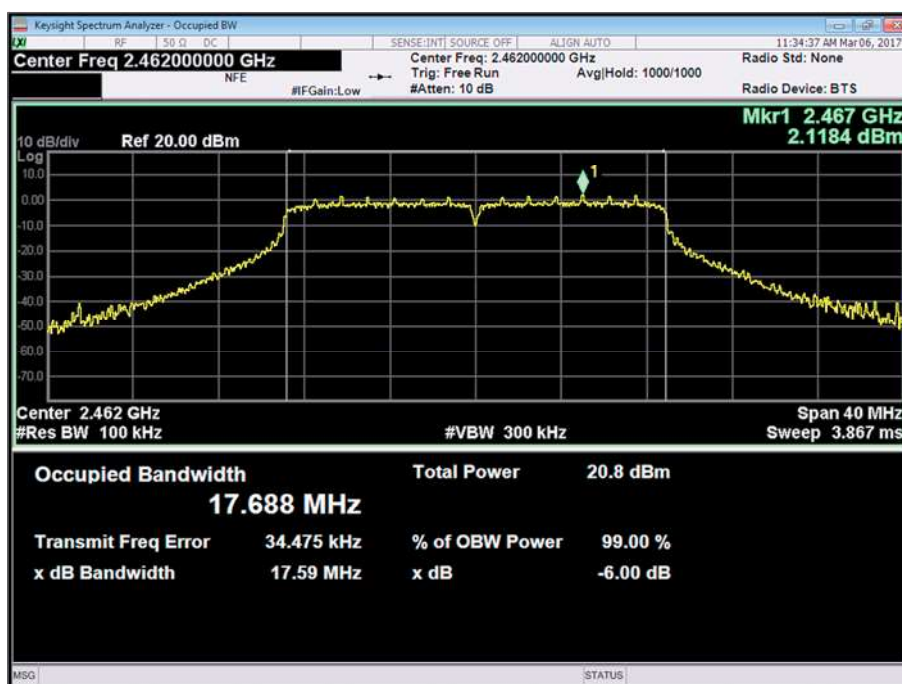


Figure 93 - 2462 MHz

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

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



Product Service

Industry Canada RSS-247, Clause 5.2(a)

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