Logic PD

AM3x SOM-M2

Report No. LGPD0023

Report Prepared By

NORTHWEST EMC

www.nwemc.com
1-888-EMI-CERT

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EMC Test Report

22975 NW Evergreen Parkway
Suite 400
Hillsboro, Oregon 97124

Certificate of Test

Last Date of Test: July 7, 2010
Logic PD
Model: AM3x SOM-M2

Emissions			
Test Description	**Specification**	**Test Method**	**Pass/Fail**
Occupied Bandwidth	FCC 15.247:2010	ANSI C63.10:2009	**Pass**
Output Power	FCC 15.247:2010	ANSI C63.10:2009	**Pass**
Band Edge Compliance	FCC 15.247:2010	ANSI C63.10:2009	**Pass**
Spurious Conducted Emissions	FCC 15.247:2010	ANSI C63.10:2009	**Pass**
Power Spectral Density	FCC 15.247:2010	ANSI C63.10:2009	**Pass**
Spurious Radiated Emissions	FCC 15.247:2010	ANSI C63.10:2009	**Pass**
AC Powerline Conducted Emissions	FCC 15.207:2010	ANSI C63.10:2009	**Pass**

Modifications made to the product
See the Modifications section of this report

Test Facility

The measurement facility used to collect the data is located at:

Northwest EMC, Inc.
9349 W Broadway Ave.
Brooklyn Park, MN 55445

Phone: (763) 425-2281 Fax: (763) 424-3469

This site has been fully described in a report filed with and accepted by the FCC (Federal Communications Commission) and Industry Canada (Site filing #2834E-1).

Approved By:

Don Facteau, IS Manager

NVLAP Lab Code: 200881-0

This report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government of the United States of America.

Product compliance is the responsibility of the client, therefore the tests and equipment modes of operation represented in this report were agreed upon by the client, prior to testing. This Report may only be duplicated in its entirety. The results of this test pertain only to the sample(s) tested. The specific description is noted in each of the individual sections of the test report supporting this certificate of test.

Revision History

Revision Number	Description	Date	Page Number
00	None		

Barometric Pressure

The recorded barometric pressure has been normalized to sea level.

Accreditations and Authorizations

FCC

Accredited by NVLAP for performance of FCC radio, digital, and ISM device testing. Our Open Area Test Sites, certification chambers, and conducted measurement facilities have been fully described in reports filed with the FCC and accepted by the FCC in letters maintained in our files. Northwest EMC has been accredited by ANSI to ISO / IEC Guide 65 as a product certifier. We have been designated by the FCC as a Telecommunications Certification Body (TCB). This allows Northwest EMC to certify transmitters to FCC specifications in accordance with 47 CFR 2.960 and 2.962.

NVLAP

Northwest EMC, Inc. is accredited under the United States Department of Commerce, National Institute of Standards and Technology, and National Voluntary Laboratory Accreditation Program for satisfactory compliance with the requirements of ISO/IEC 17025 for Testing Laboratories. The NVLAP accreditation encompasses Electromagnetic Compatibility Testing in accordance with the European Union EMC Directive 2004/108/EC, and ANSI C63.4. Additionally, Northwest EMC is accredited by NVLAP to perform radio testing in accordance with the European Union R&TTE Directive 1999/5/EEC, the requirements of FCC, and the RSS radio standards for Industry Canada.

NVLAP LAB CODE 200629-0
NVLAP LAB CODE 200630-0
NVLAP LAB CODE 200676-0
NVLAP LAB CODE 200761-0
NVLAP LAB CODE 200881-0

Industry Canada

Accredited by NVLAP for performance of Industry Canada RSS and ICES testing. Our Open Area Test Sites and certification chambers comply with RSS-Gen, Issue 2 and have been filed with Industry Canada and accepted. Northwest EMC has been accredited by ANSI to ISO / IEC Guide 65 as a product certifier. We have been designated by NIST and recognized by Industry Canada as a Certification Body (CB) per the APEC Mutual Recognition Arrangement (MRA). This allows Northwest EMC to certify transmitters to Industry Canada technical requirements. (*Site Filing Numbers - Hillsboro: 2834D-1, 2834D-2, Sultan: 2834C-1, Irvine: 2834B-1, 2834B-2, Brooklyn Park: 2834E-1)*

CAB

Designated by NIST and validated by the European Commission as a Conformity Assessment Body (CAB) to conduct tests and approve products to the EMC directive and transmitters to the R&TTE directive, as described in the U.S. - EU Mutual Recognition Agreement.

NEMKO

Assessed and accredited by NEMKO (Norwegian testing and certification body) for European emissions and immunity testing. As a result of NEMKO's laboratory assessment, they will accept test results from Northwest EMC, Inc. for product certification (Authorization No. ELA 119).

Accreditations and Authorizations

Australia/New Zealand

The National Association of Testing Authorities (NATA), Australia has been appointed by the ACA as an accreditation body to accredit test laboratories and competent bodies for EMC standards. Accredited test reports or assessments by competent bodies must carry the NATA logo. Test reports made by an overseas laboratory that has been accredited for the relevant standards by an overseas accreditation body that has a Mutual Recognition Agreement (MRA) with NATA are also accepted as technical grounds for product conformity. The report should be endorsed with the respective logo of the accreditation body (NVLAP).

VCCI

Accepted as an Associate Member to the VCCI, Acceptance No. 564. Conducted and radiated measurement facilities have been registered in accordance with Regulations for Voluntary Control Measures, Article 8. *(Registration Numbers. - Hillsboro: C-1071, R-1025, G-84, C-2687, T-1658, and R-2318, Irvine: R-1943, G-85, C-2766, and T-1659, Sultan: R-871, G-83, C-1784, and T-1511, Brooklyn Park: R-3125, G-86, G-141, C-3464, and T-1634).*

BSMI

Northwest EMC has been designated by NIST and validated by C-Taipei (BSMI) as a CAB to conduct tests as described in the APEC Mutual Recognition Agreement (US0017). License No.SL2-IN-E-1017.

GOST

Northwest EMC, Inc. has been assessed and accredited by the Russian Certification bodies Certinform VNIINMASH, CERTINFO, SAMTES, and Federal CHEC, to perform EMC and Hygienic testing for Information Technology Products. As a result of their laboratory assessment, they will accept test results from Northwest EMC, Inc. for product certification

KCC

Northwest EMC, Inc is a CAB designated by MRA partners and recognized by Korea. (*Assigned Lab Numbers: Hillsboro: US0017, Irvine: US0158, Sultan: US0157)*

VIETNAM

Vietnam MIC has approved Northwest EMC as an accredited test lab. Per Decision No. 194/QD-QLCL (dated December 15, 2009), Northwest EMC test reports can be used for Vietnam approval submissions.

SCOPE

For details on the Scopes of our Accreditations, please visit:
http://www.nwemc.com/accreditations/

Northwest EMC Locations

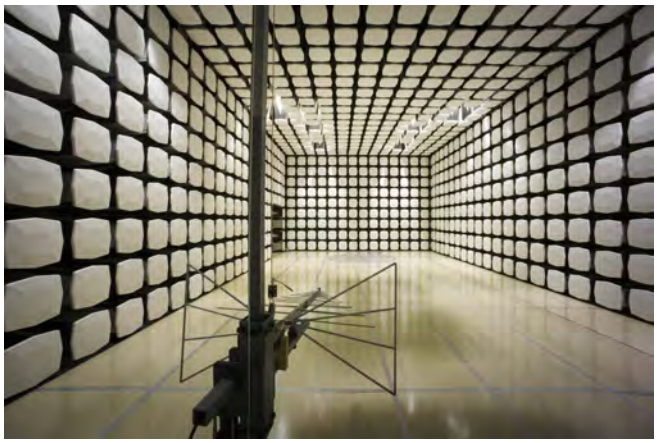
Oregon
Labs EV01-EV12
22975 NW Evergreen Pkwy
Suite 400
Hillsboro, OR 97124
(503) 844-4066

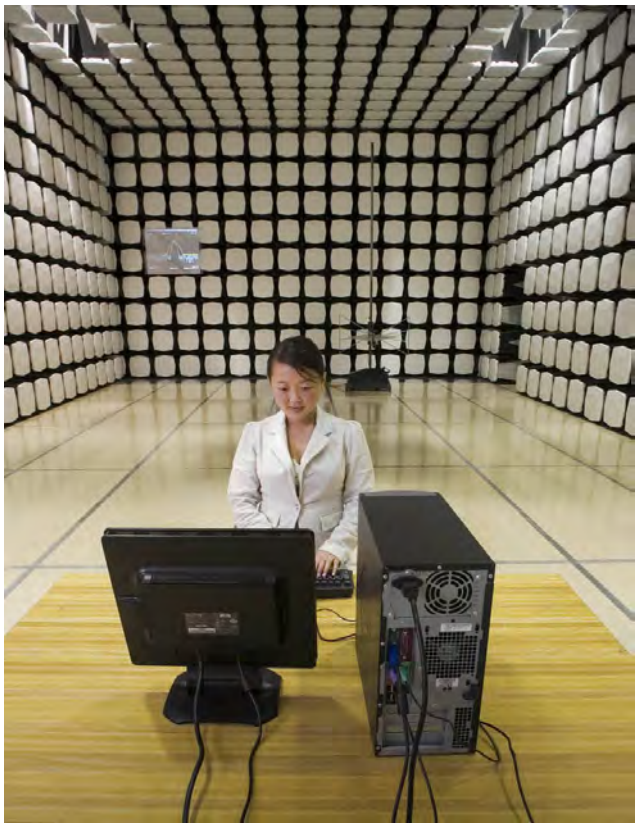
California
Labs OC01-OC13
41 Tesla
Irvine, CA 92618
(949) 861-8918

Minnesota
Labs MN01-MN08
9349 W Broadway Ave.
Brooklyn Park,
MN 55445
(763) 425-2281

Washington
Labs SU01-SU07
14128 339th Ave. SE
Sultan, WA 98294
(360) 793-8675

New York
Labs WA01-WA04
4939 Jordan Rd.
Elbridge, NY 13060
(315) 685-0796





Party Requesting the Test

Company Name:	Logic PD
Address:	411 Washington Avenue North, Suite 400
City, State, Zip:	Minneapolis, MN 55401
Test Requested By:	Nathan Kro
Model:	AM3x SOM-M2
First Date of Test:	June 29, 2010
Last Date of Test:	July 7, 2010
Receipt Date of Samples:	June 29, 2010
Equipment Design Stage:	Prototype
Equipment Condition:	No Damage

Information Provided by the Party Requesting the Test

Functional Description of the EUT (Equipment Under Test):
One combination 802.11b/g/n - Bluetooth radio module

Testing Objective:
Seeking approval of the 802.11 b/g/n portion of the radio under FCC 15.247.

CONFIGURATION 1 LGPD0023

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
SOM Module	Logic PD	1015597 Rev A	2010M00186

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Breakout Board	Logic PD	1014472 Rev B	4909M00209
Power Brick	Sceptre	AD2405A	PS2D-5038APL6A

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
DC Power	No	1.65m	No	Breakout Board	Power Brick
AC Power	No	1.5m	No	Power Brick	AC Mains
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

CONFIGURATION 2 LGPD0023

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
SOM Module	Logic PD	1015597 Rev A	2010M00186

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Breakout Board	Logic PD	1014472 Rev B	4909M00209
Power Brick	Sceptre	AD2405A	PS2D-5038APL6A

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
AC Power	No	1.5m	No	Power Brick	AC Mains
DC Power	No	1.35m	Yes	Breakout Board	Power Brick
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

Equipment modifications					
Item	Date	Test	Modification	Note	Disposition of EUT
1	6/29/2010	Occupied Bandwidth	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
2	6/29/2010	Output Power	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
3	6/30/2010	AC Powerline Conducted Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
4	7/1/2010	Spurious Radiated Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
5	7/6/2010	Spurious Conducted Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
6	7/6/2010	Band Edge Compliance	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
7	7/7/2010	Power Spectral Density	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

OCCUPIED BANDWIDTH

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Spectrum Analyzer	Agilent	E4446A	AAT	2/24/2010	12

MEASUREMENT UNCERTAINTY

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty for radiated emissions measurements is less than +/- 4 dB, and for conducted emissions measurements is less than +/- 2.7 dB. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for measurement uncertainty are available upon request.

TEST DESCRIPTION

The occupied bandwidth was measured with the EUT set to low, medium, and high transmit frequencies in the ISM band. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at the required data rates available in 802.11(b)/(g)/(n).

NORTHWEST EMC

OCCUPIED BANDWIDTH

XMit 2010.01.14

EUT:	AM3x SOM-M2	Work Order:	LGPD0023
Serial Number:	2010M00186	Date:	06/29/10
Customer:	Logic PD	Temperature:	22.55°C
Attendees:	None	Humidity:	47%
Project:	None	Barometric Pres.:	1022.1
Tested by:	Trevor Buls	Power: 120VAC/60Hz	Job Site: MN05

TEST SPECIFICATIONS	Test Method
FCC 15.247:2010	ANSI C63.10:2009

COMMENTS

None

DEVIATIONS FROM TEST STANDARD

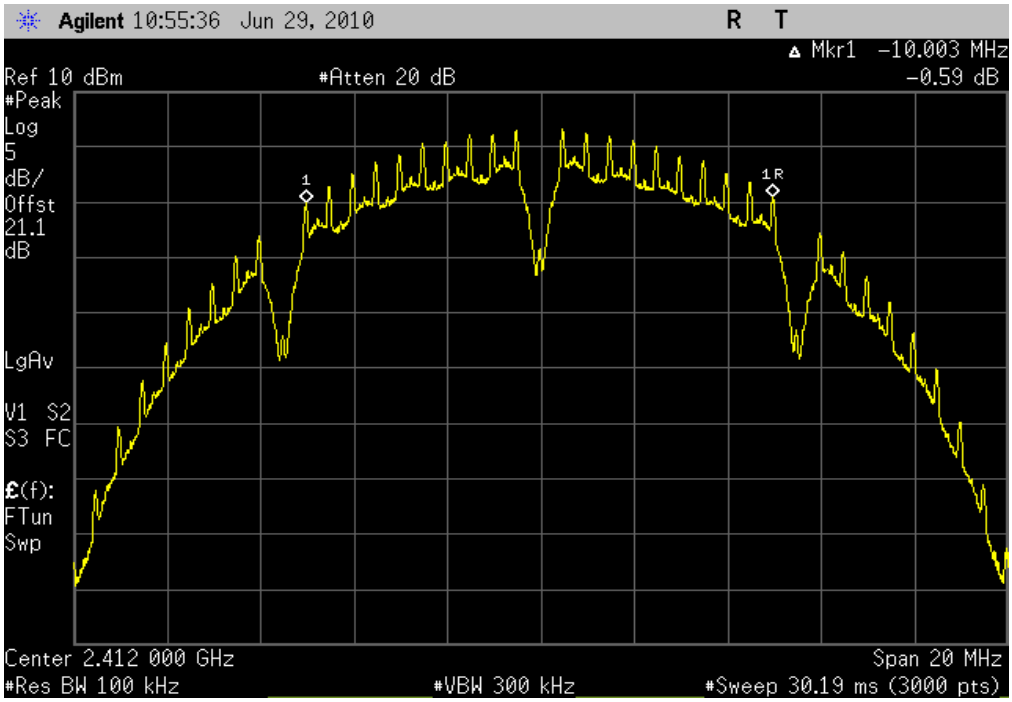
No Deviations

Configuration #	1	Signature Trevor Buls

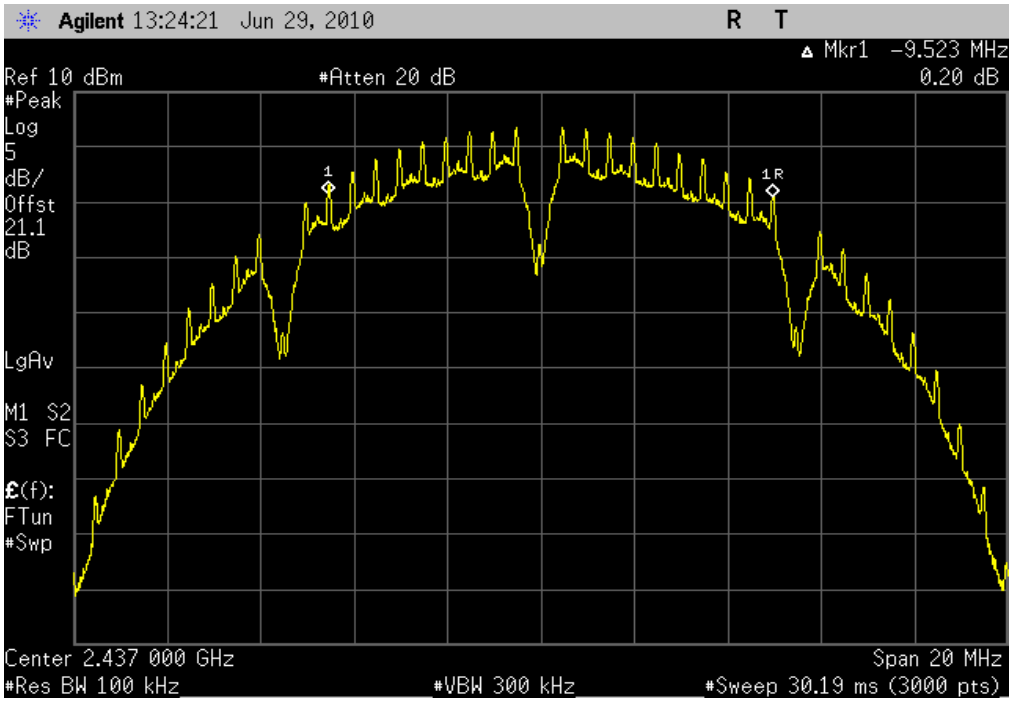
		Value	Limit	Results
802.11(b) 1 Mbps				
	Low Channel	10.003 MHz	> 500 kHz	Pass
	Mid Channel	9.523 MHz	> 500 kHz	Pass
	High Channel	9.553 MHz	> 500 kHz	Pass
802.11(b) 11 Mbps				
	Low Channel	10.343 MHz	> 500 kHz	Pass
	Mid Channel	11.087 MHz	> 500 kHz	Pass
	High Channel	10.359 MHz	> 500 kHz	Pass
802.11(g) 6 Mbps				
	Low Channel	15.619 MHz	> 500 kHz	Pass
	Mid Channel	15.774 MHz	> 500 kHz	Pass
	High Channel	15.772 MHz	> 500 kHz	Pass
802.11(g) 36 Mbps				
	Low Channel	16.022 MHz	> 500 kHz	Pass
	Mid Channel	16.333 MHz	> 500 kHz	Pass
	High Channel	16.399 MHz	> 500 kHz	Pass
802.11(g) 54 Mbps				
	Low Channel	16.387 MHz	> 500 kHz	Pass
	Mid Channel	16.373 MHz	> 500 kHz	Pass
	High Channel	16.389 MHz	> 500 kHz	Pass
802.11(n) MCS0				
	Low Channel	16.142 MHz	> 500 kHz	Pass
	Mid Channel	15.772 MHz	> 500 kHz	Pass
	High Channel	15.672 MHz	> 500 kHz	Pass
802.11(n) MCS7				
	Low Channel	17.660 MHz	> 500 kHz	Pass
	Mid Channel	16.904 MHz	> 500 kHz	Pass
	High Channel	16.966 MHz	> 500 kHz	Pass

OCCUPIED BANDWIDTH

802.11(b) 1 Mbps, Low Channel					
Result:	Pass	**Value:**	10.003 MHz	**Limit:**	> 500 kHz

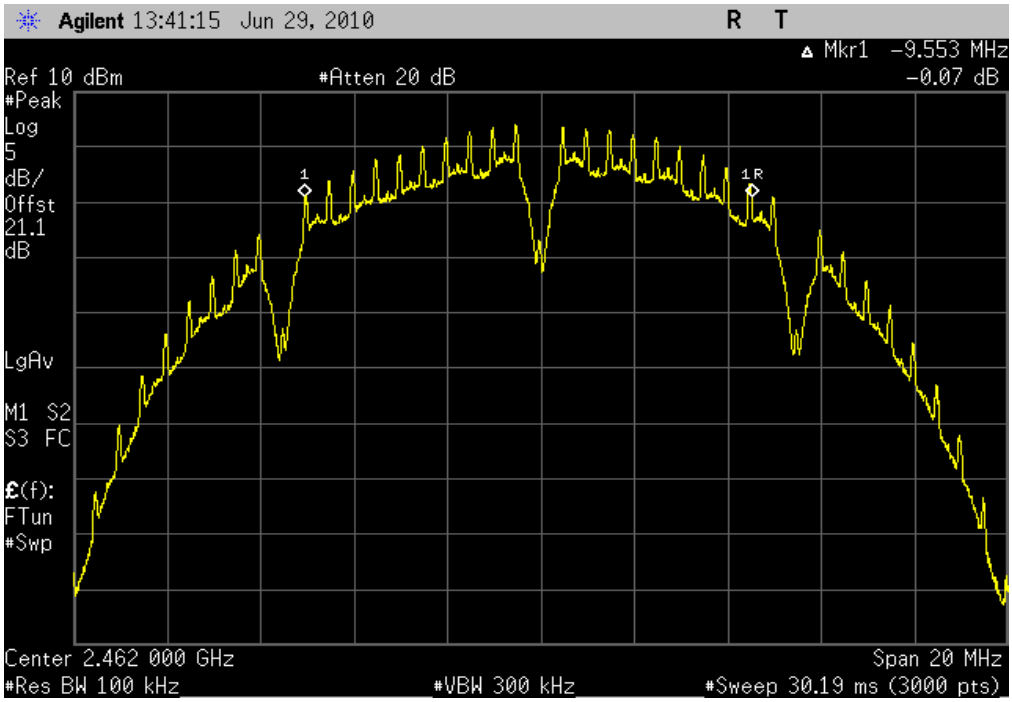


802.11(b) 1 Mbps, Mid Channel					
Result:	Pass	**Value:**	9.523 MHz	**Limit:**	> 500 kHz

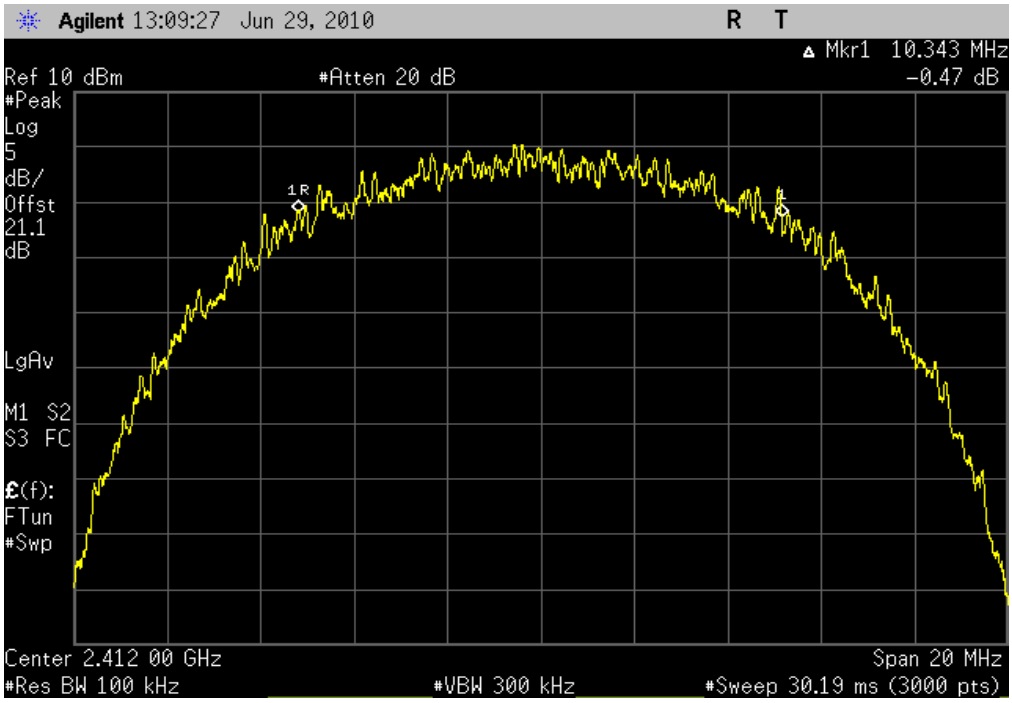


OCCUPIED BANDWIDTH

802.11(b) 1 Mbps, High Channel					
Result:	Pass	**Value:**	9.553 MHz	**Limit:**	> 500 kHz

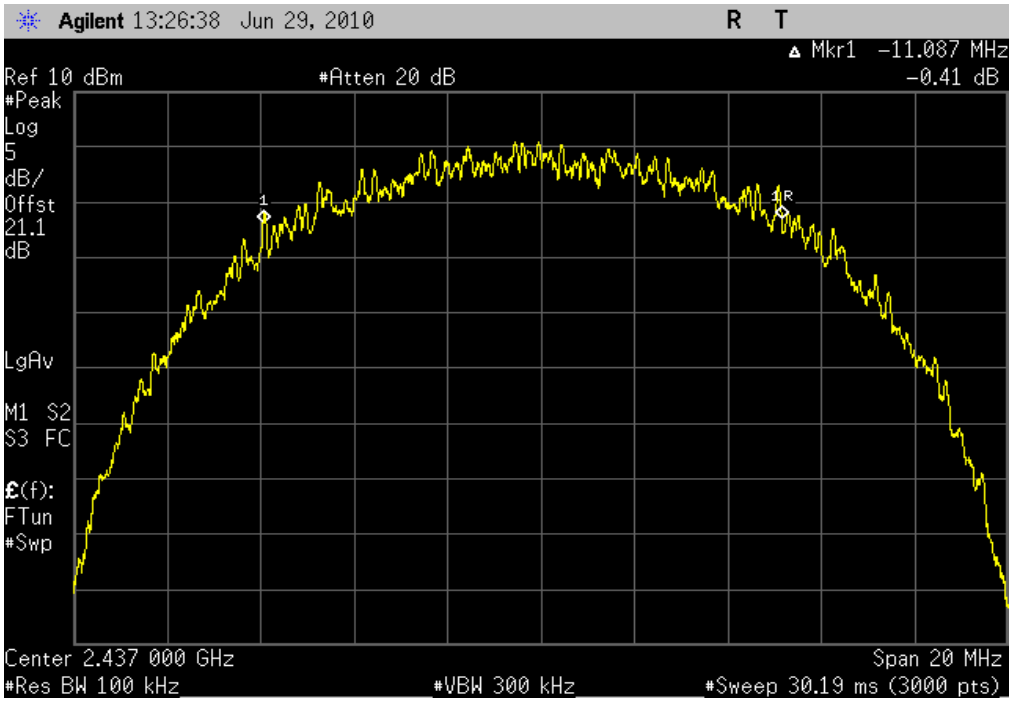


802.11(b) 11 Mbps, Low Channel					
Result:	Pass	**Value:**	10.343 MHz	**Limit:**	> 500 kHz

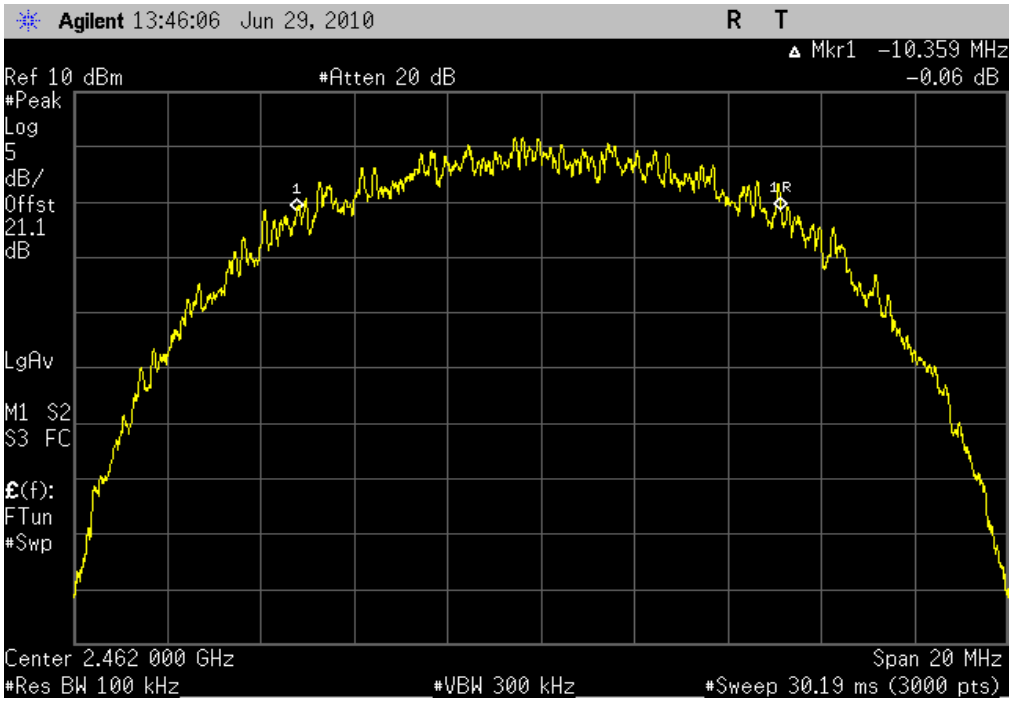


OCCUPIED BANDWIDTH

802.11(b) 11 Mbps, Mid Channel					
Result:	Pass	**Value:**	11.087 MHz	**Limit:**	> 500 kHz

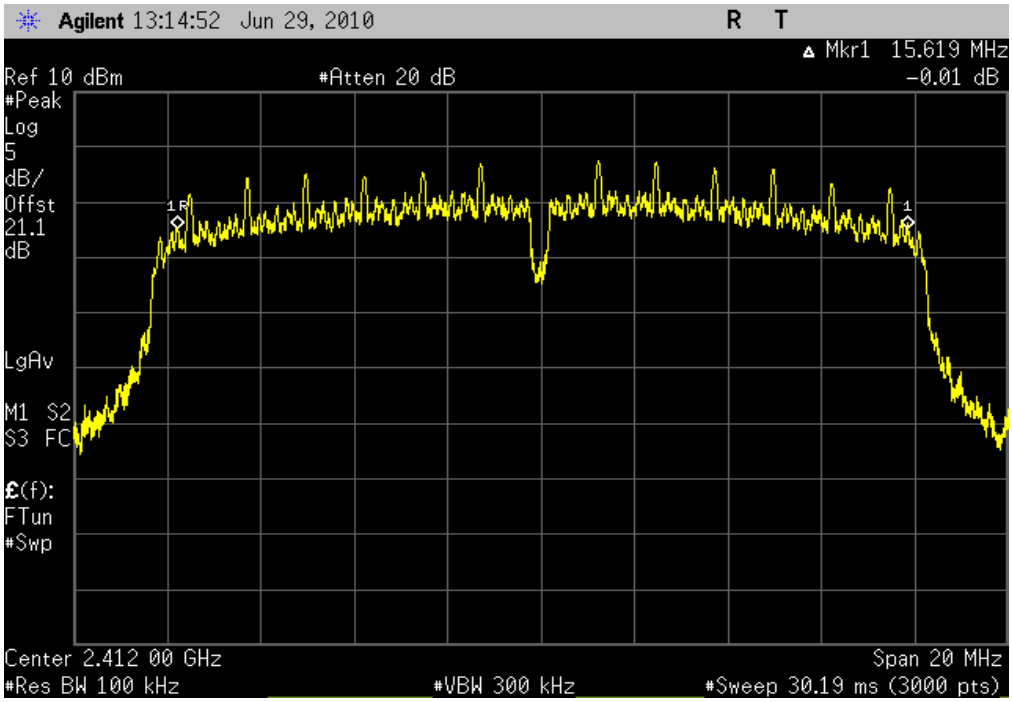


802.11(b) 11 Mbps, High Channel					
Result:	Pass	**Value:**	10.359 MHz	**Limit:**	> 500 kHz

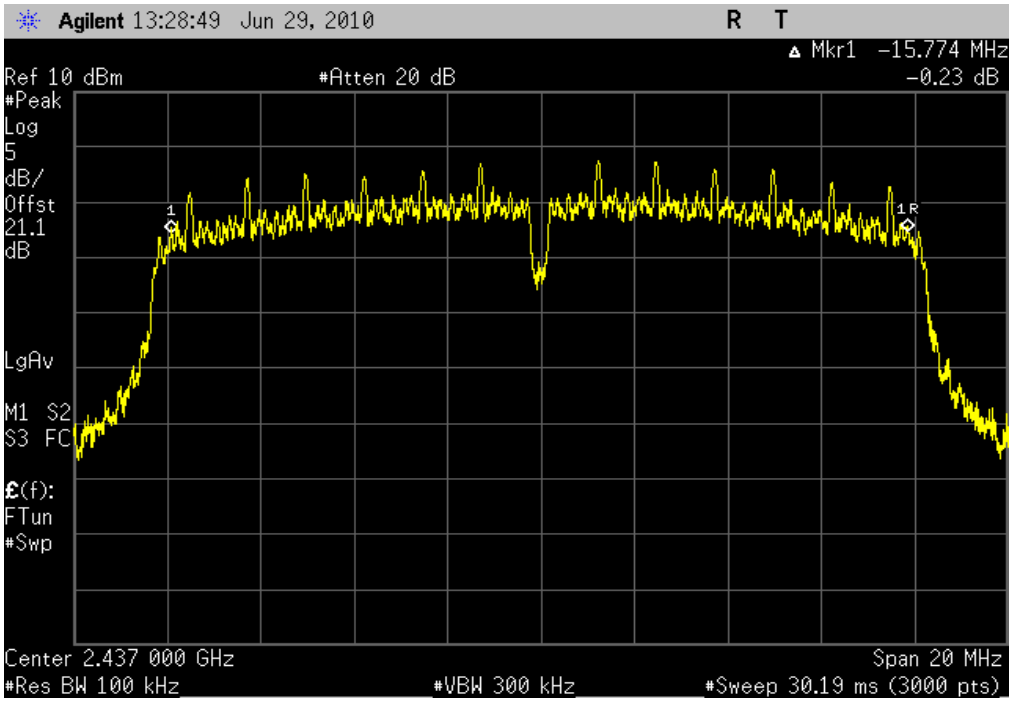


OCCUPIED BANDWIDTH

802.11(g) 6 Mbps, Low Channel					
Result:	Pass	**Value:**	15.619 MHz	**Limit:**	> 500 kHz

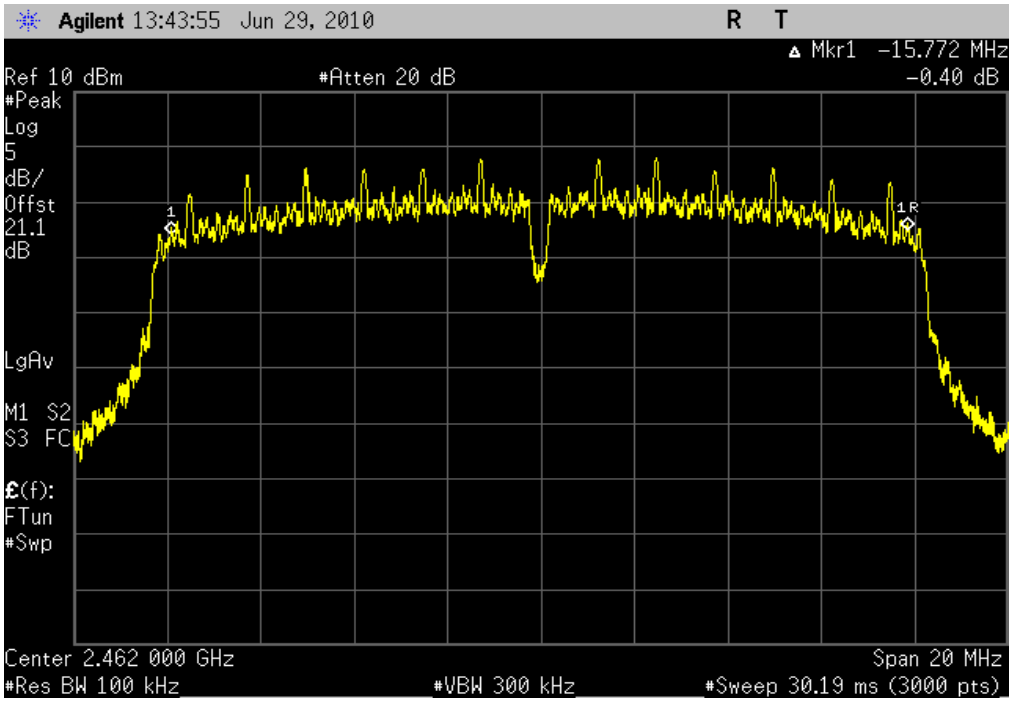


802.11(g) 6 Mbps, Mid Channel					
Result:	Pass	**Value:**	15.774 MHz	**Limit:**	> 500 kHz

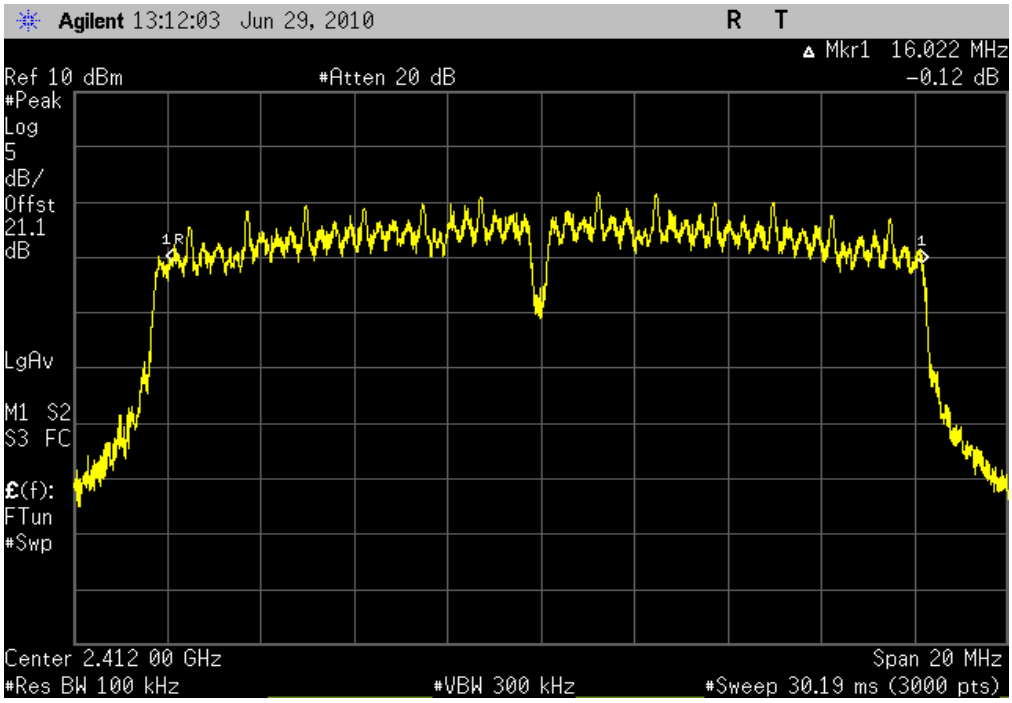


OCCUPIED BANDWIDTH

802.11(g) 6 Mbps, High Channel					
Result:	Pass	**Value:**	15.772 MHz	**Limit:**	> 500 kHz

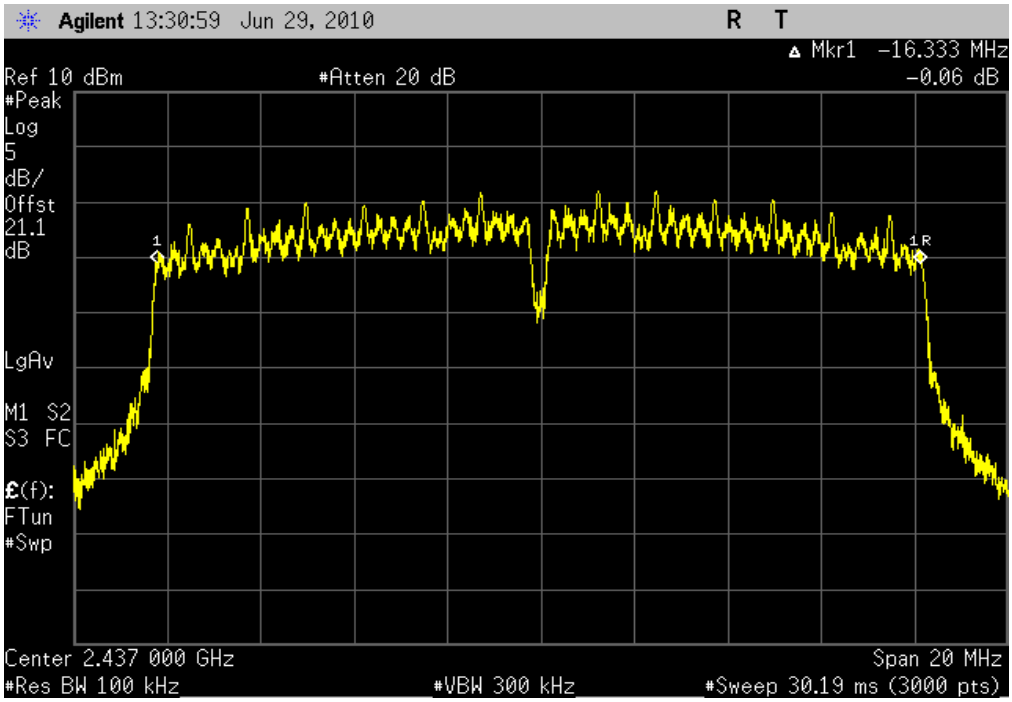


802.11(g) 36 Mbps, Low Channel					
Result:	Pass	**Value:**	16.022 MHz	**Limit:**	> 500 kHz

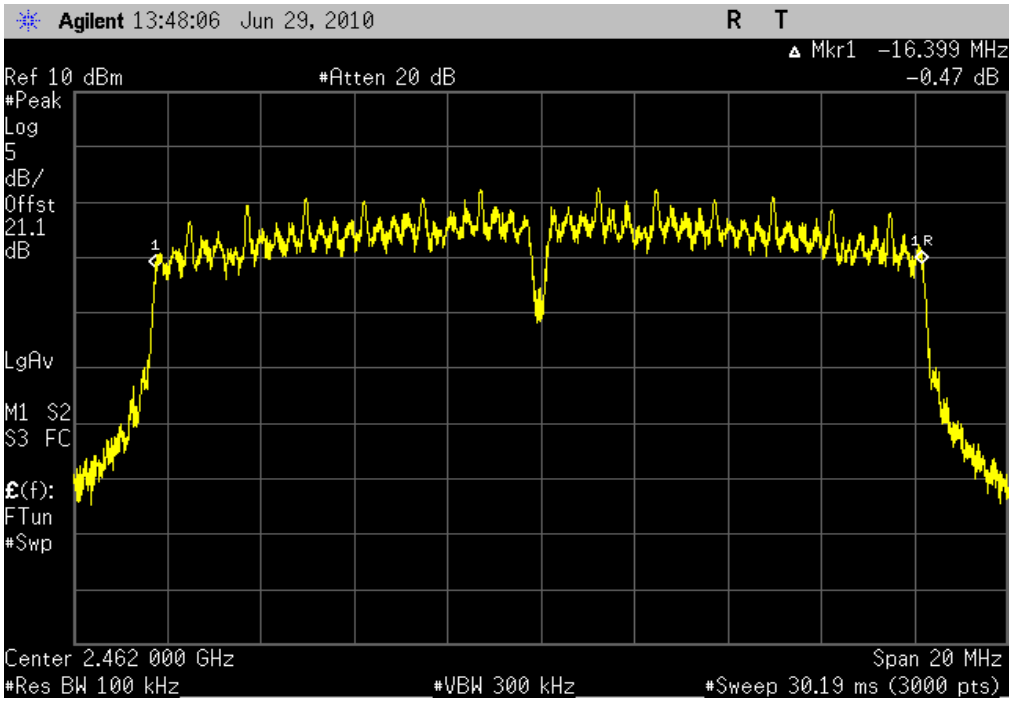


OCCUPIED BANDWIDTH

802.11(g) 36 Mbps, Mid Channel					
Result:	Pass	**Value:**	16.333 MHz	**Limit:**	> 500 kHz

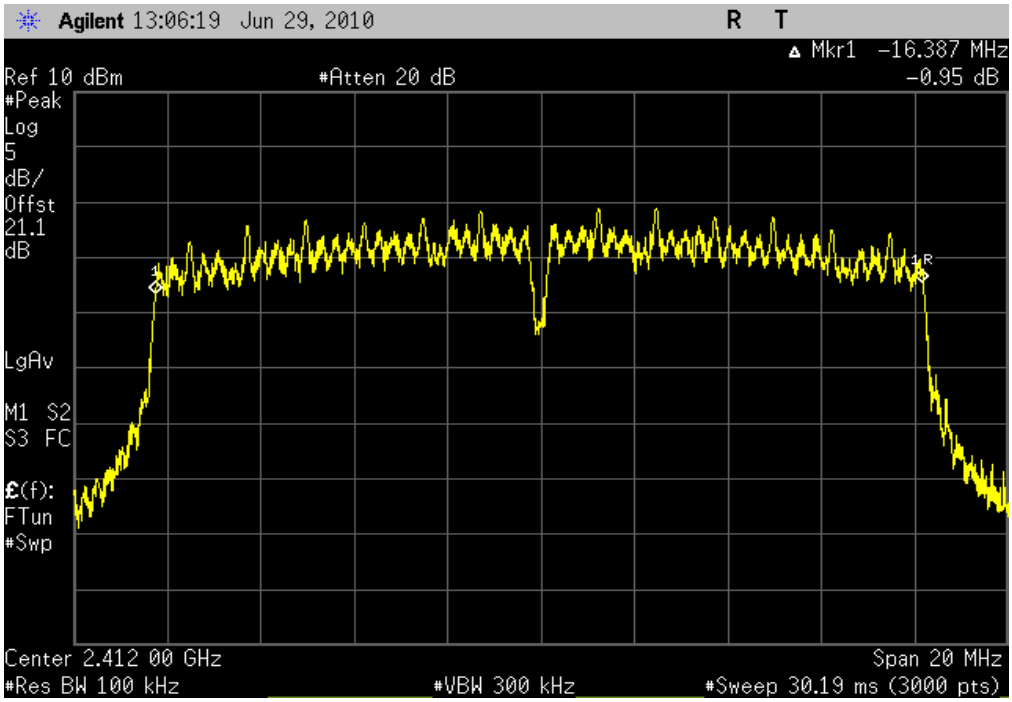


802.11(g) 36 Mbps, High Channel					
Result:	Pass	**Value:**	16.399 MHz	**Limit:**	> 500 kHz

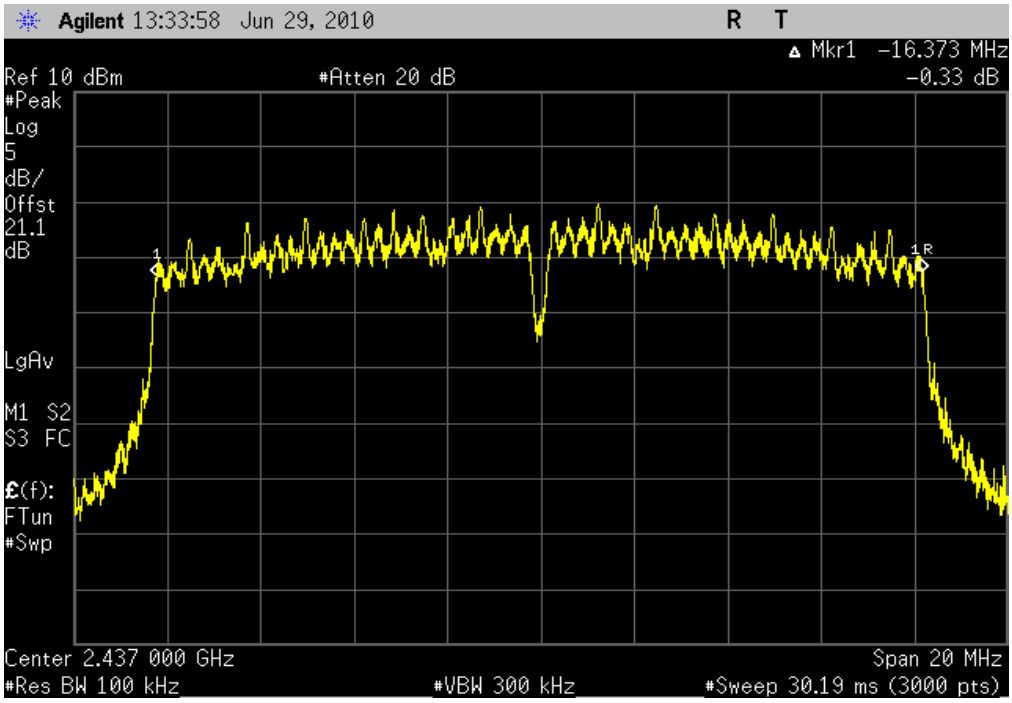


OCCUPIED BANDWIDTH

802.11(g) 54 Mbps, Low Channel					
Result:	Pass	**Value:**	16.387 MHz	**Limit:**	> 500 kHz

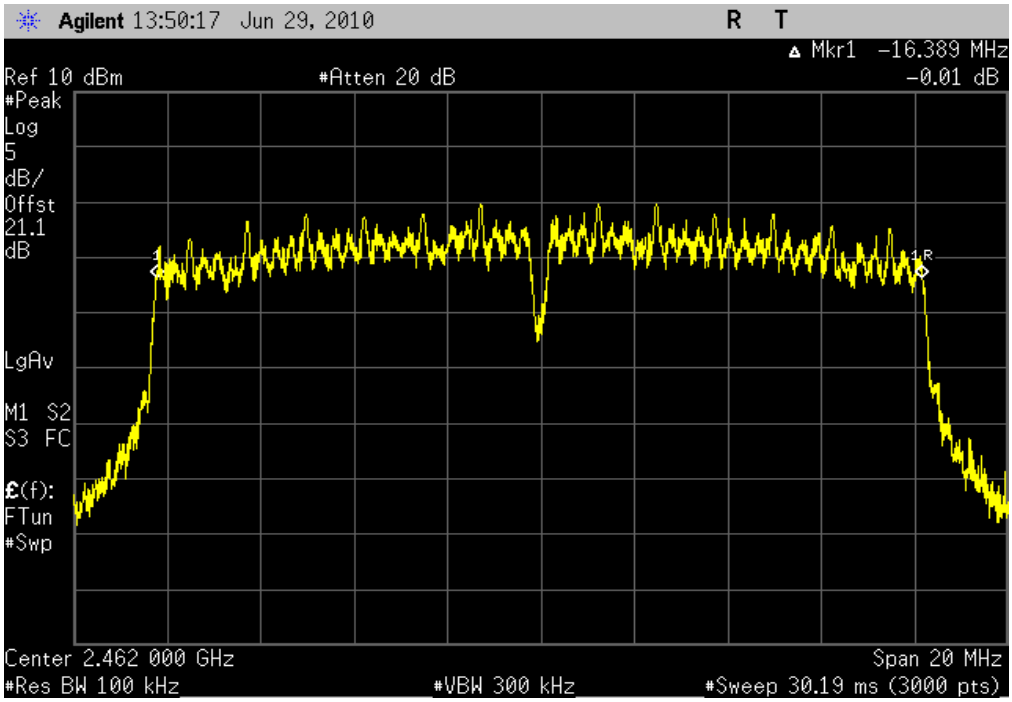


802.11(g) 54 Mbps, Mid Channel					
Result:	Pass	**Value:**	16.373 MHz	**Limit:**	> 500 kHz

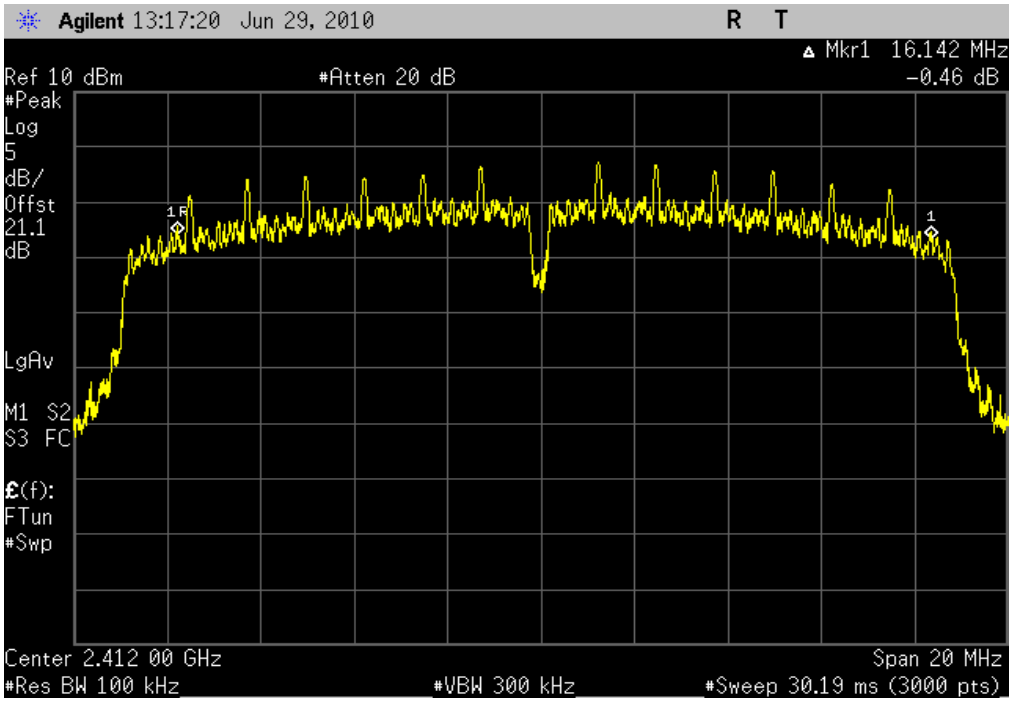


OCCUPIED BANDWIDTH

802.11(g) 54 Mbps, High Channel					
Result:	Pass	**Value:**	16.389 MHz	**Limit:**	> 500 kHz

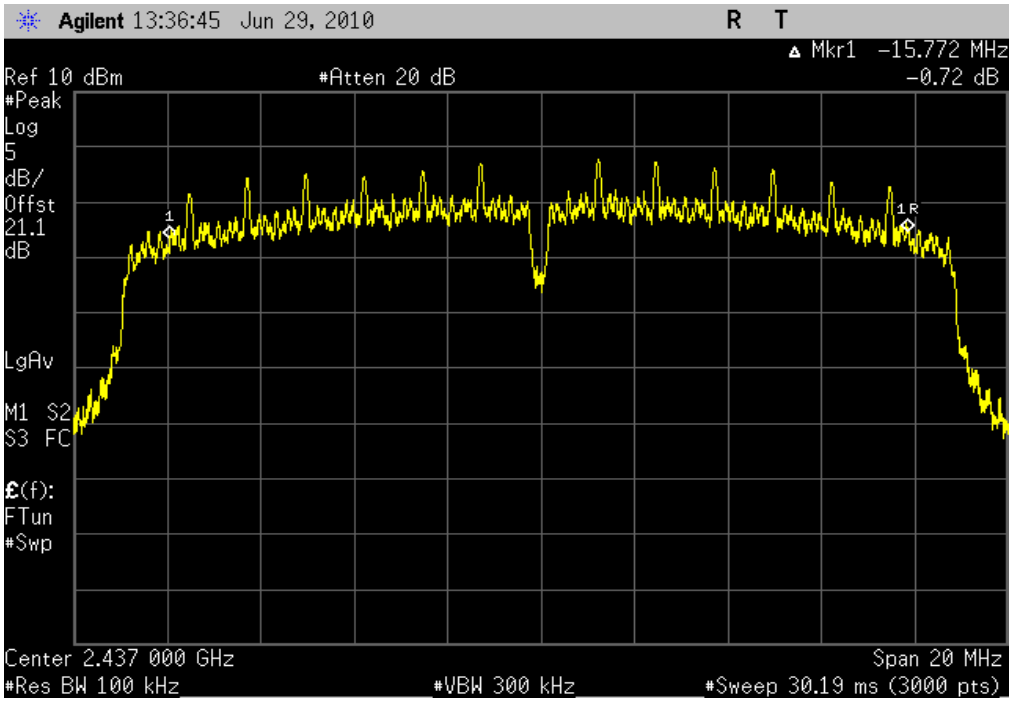


802.11(n) MCS0, Low Channel					
Result:	Pass	**Value:**	16.142 MHz	**Limit:**	> 500 kHz

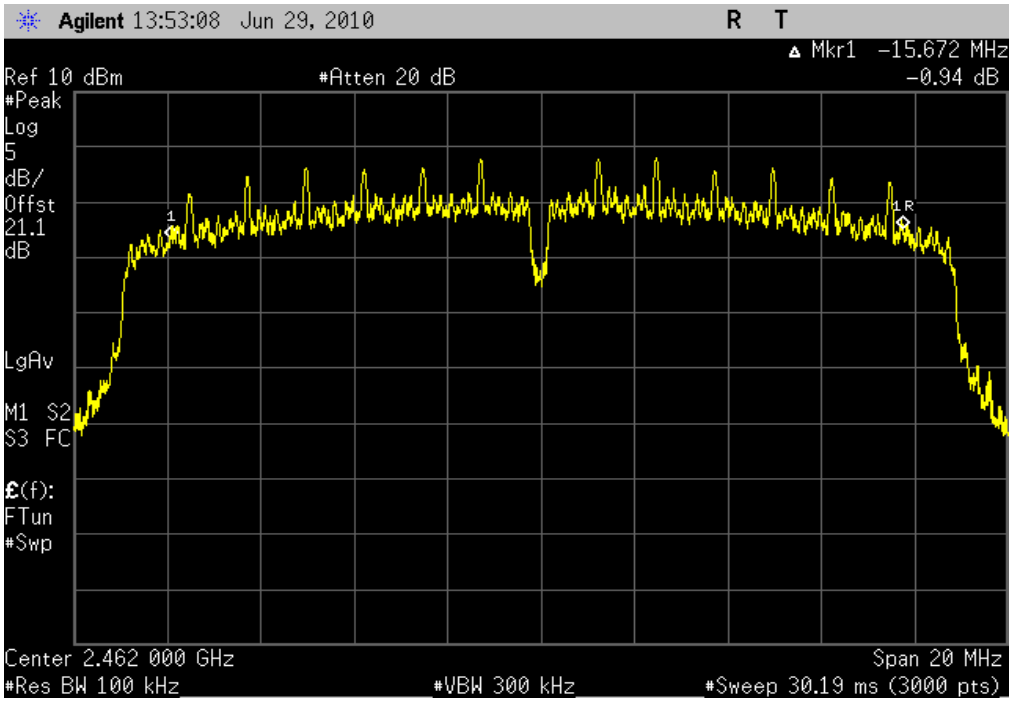


OCCUPIED BANDWIDTH

802.11(n) MCS0, Mid Channel					
Result:	Pass	**Value:**	15.772 MHz	**Limit:**	> 500 kHz

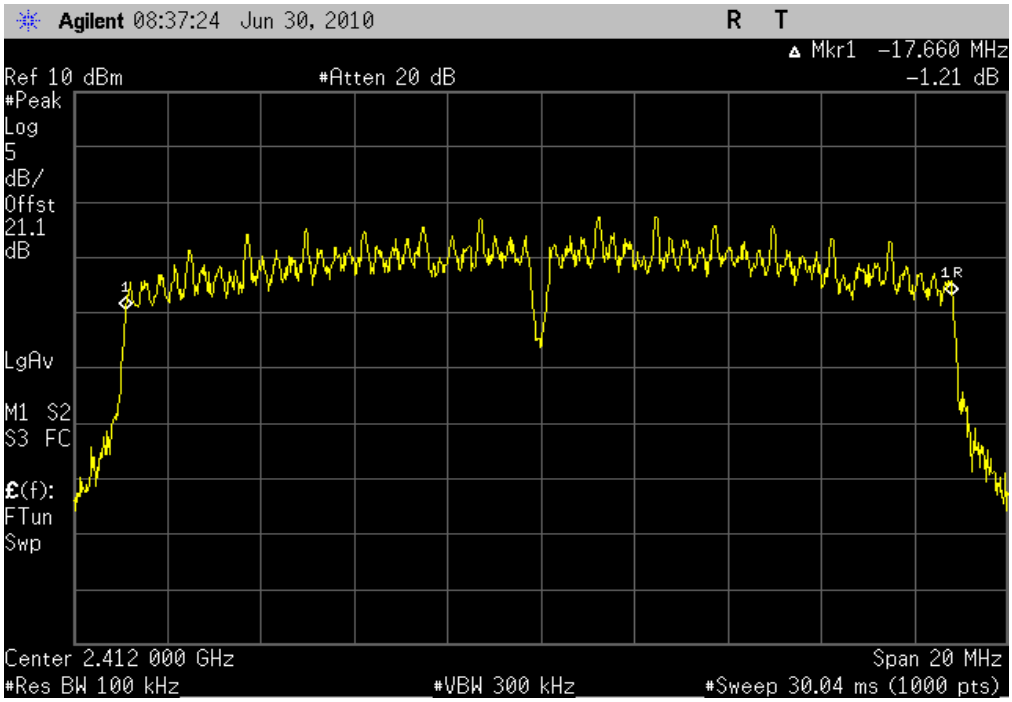


802.11(n) MCS0, High Channel					
Result:	Pass	**Value:**	15.672 MHz	**Limit:**	> 500 kHz

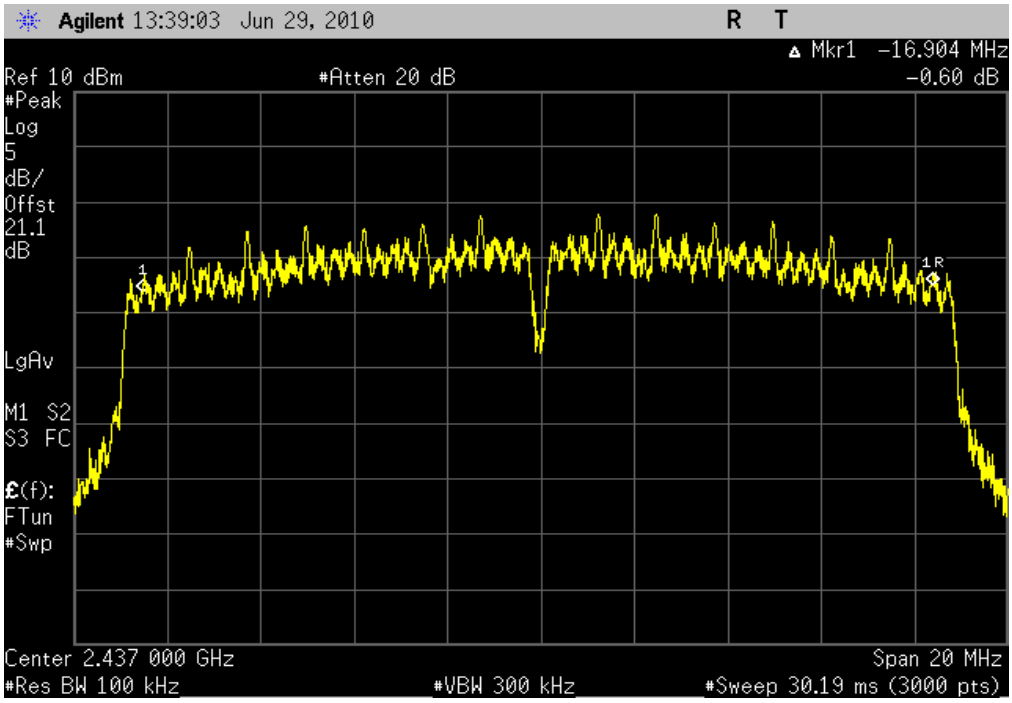


OCCUPIED BANDWIDTH

802.11(n) MCS7, Low Channel					
Result:	Pass	**Value:**	17.660 MHz	**Limit:**	> 500 kHz

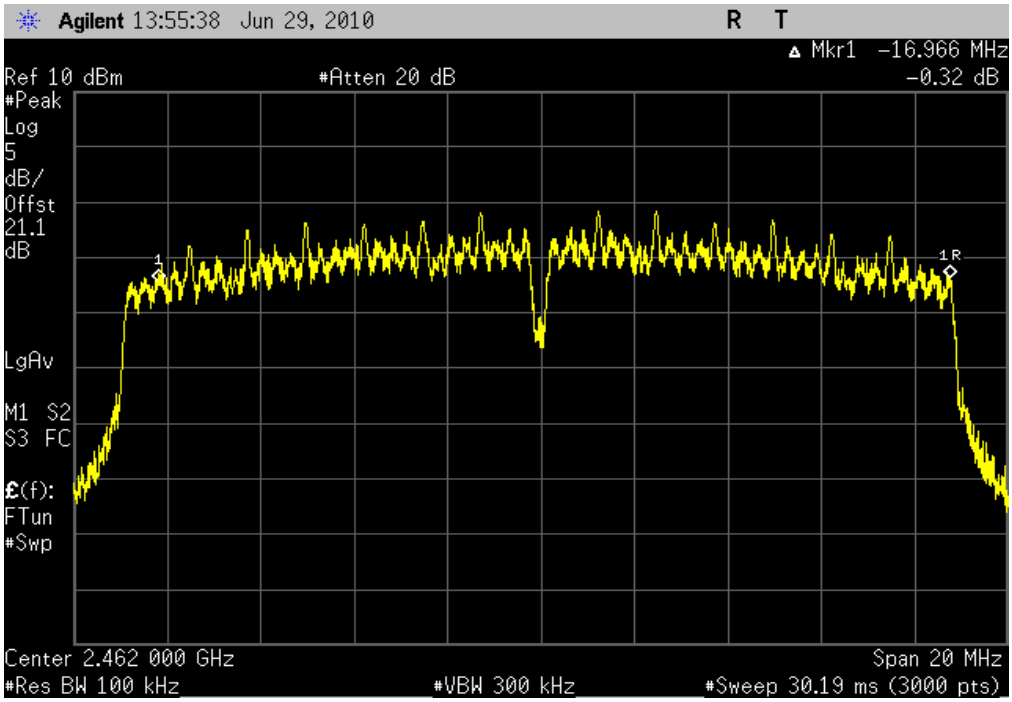


802.11(n) MCS7, Mid Channel					
Result:	Pass	**Value:**	16.904 MHz	**Limit:**	> 500 kHz



OCCUPIED BANDWIDTH

802.11(n) MCS7, High Channel					
Result:	Pass	**Value:**	16.966 MHz	**Limit:**	> 500 kHz



OUTPUT POWER

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Spectrum Analyzer	Agilent	E4446A	AAT	2/24/2010	12
Signal Generator	Agilent	N5183A	TIA	11/16/2008	24

MEASUREMENT UNCERTAINTY

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty for radiated emissions measurements is less than +/- 4 dB, and for conducted emissions measurements is less than +/- 2.7 dB. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for measurement uncertainty are available upon request.

TEST DESCRIPTION

The transmit frequency was set to the required channels in each band, at each of the required data rates. The transmit power was set to its default maximum. A direct connection was made between the RF output of the EUT and a spectrum analyzer. Attenuation and a DC block were used. The reference level offset on the spectrum analyzer was adjusted to compensate for cable loss and the external attenuation used between the RF output and the spectrum analyzer input.

- Prior to measuring peak transmit power; the emission bandwidth (B) was measured.
- Power was integrated across “B”, by using the channel power function of the spectrum analyzer and its default bandwidths.

NORTHWEST EMC

OUTPUT POWER

XMit 2010.01.14

EUT:	AM3x SOM-M2	Work Order:	LGPD0023
Serial Number:	2010M00186	Date:	06/29/10
Customer:	Logic PD	Temperature:	22.55°C
Attendees:	None	Humidity:	47%
Project:	None	Barometric Pres.:	1022.1
Tested by:	Trevor Buls	Power: 120VAC/60Hz	Job Site: MN05

TEST SPECIFICATIONS	Test Method
FCC 15.247:2010	ANSI C63.10:2009

COMMENTS

None

DEVIATIONS FROM TEST STANDARD

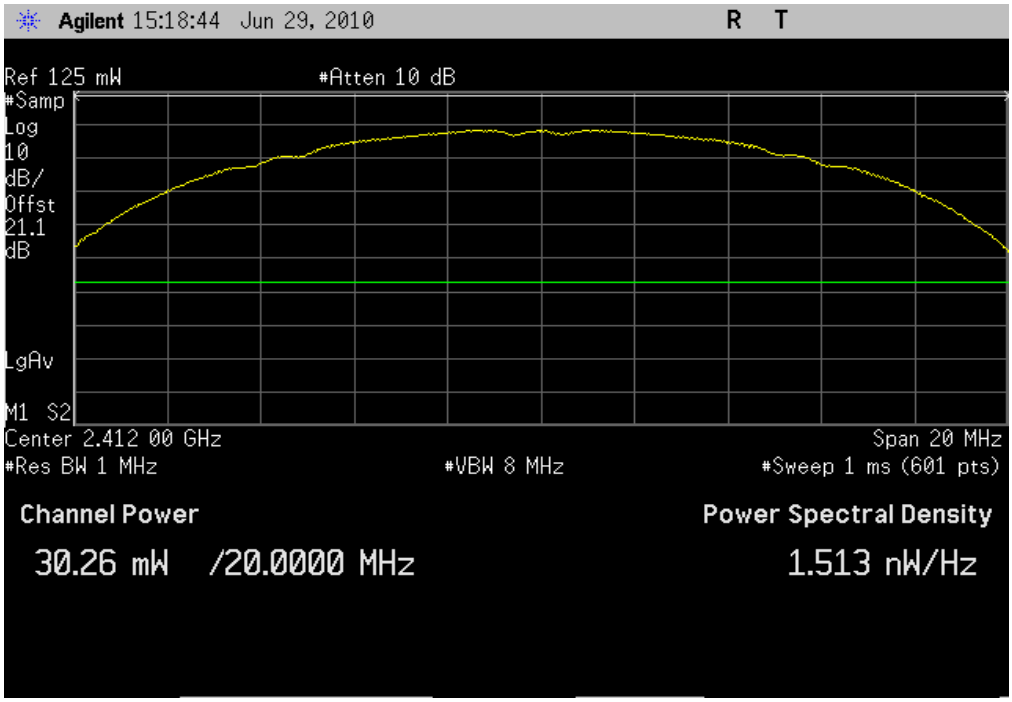
No Deviations

Configuration #	1	Signature Trevor Buls

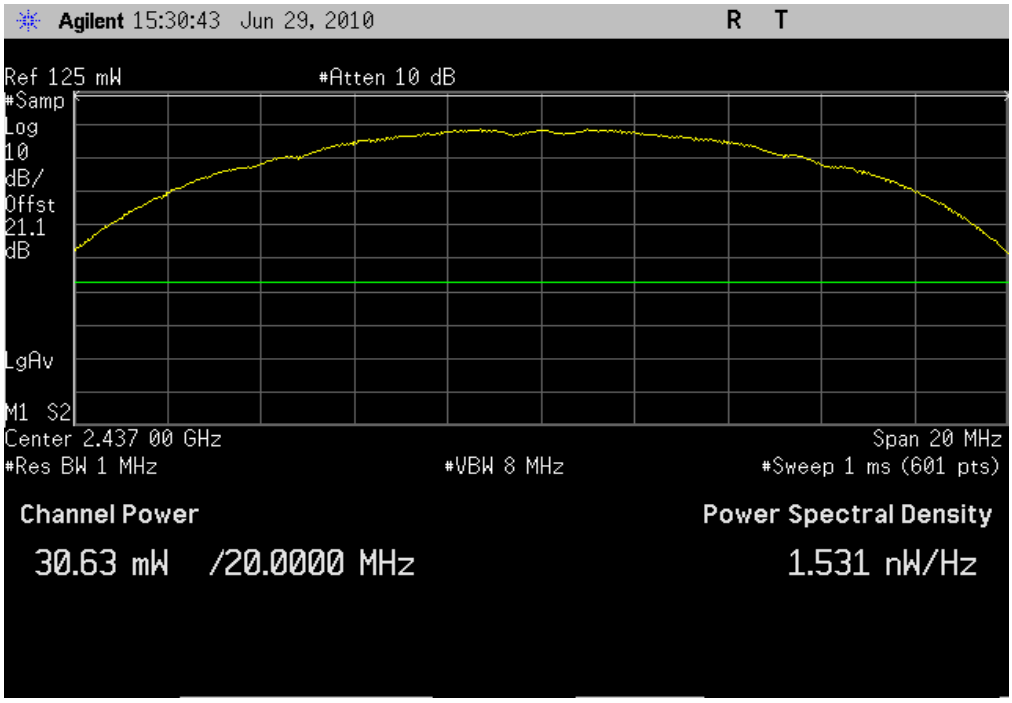
		Value	Limit	Results
802.11(b) 1 Mbps				
	Low Channel	30.26 mW	125 mW	Pass
	Mid Channel	30.63 mW	125 mW	Pass
	High Channel	32.27 mW	125 mW	Pass
802.11(b) 11 Mbps				
	Low Channel	30.81 mW	125 mW	Pass
	Mid Channel	32.43 mW	125 mW	Pass
	High Channel	29.63 mW	125 mW	Pass
802.11(g) 6 Mbps				
	Low Channel	27.07 mW	125 mW	Pass
	Mid Channel	27.48 mW	125 mW	Pass
	High Channel	30.28 mW	125 mW	Pass
802.11(g) 36 Mbps				
	Low Channel	4.887 mW	125 mW	Pass
	Mid Channel	6.434 mW	125 mW	Pass
	High Channel	5.536 mW	125 mW	Pass
802.11(g) 54 Mbps				
	Low Channel	2.626 mW	125 mW	Pass
	Mid Channel	3.214 mW	125 mW	Pass
	High Channel	3.310 mW	125 mW	Pass
802.11(n) MCS0				
	Low Channel	26.09 mW	125 mW	Pass
	Mid Channel	27.26 mW	125 mW	Pass
	High Channel	29.36 mW	125 mW	Pass
802.11(n) MCS7				
	Low Channel	2.411 mW	125 mW	Pass
	Mid Channel	2.504 mW	125 mW	Pass
	High Channel	2.454 mW	125 mW	Pass

OUTPUT POWER

802.11(b) 1 Mbps, Low Channel					
Result:	Pass	**Value:**	30.26 mW	**Limit:**	125 mW

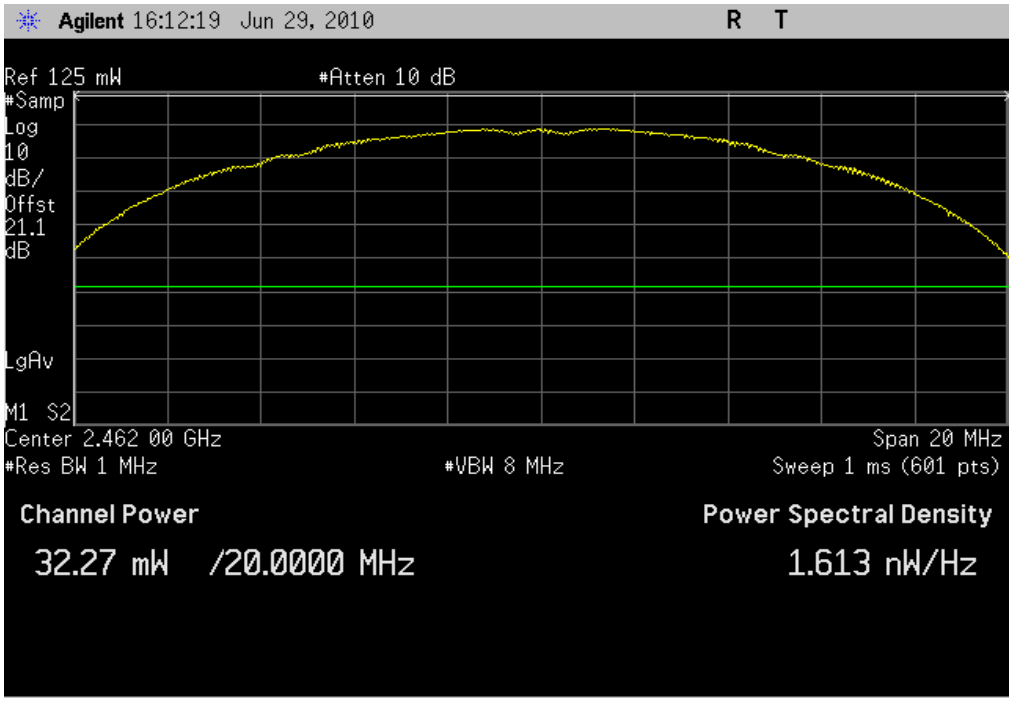


802.11(b) 1 Mbps, Mid Channel					
Result:	Pass	**Value:**	30.63 mW	**Limit:**	125 mW

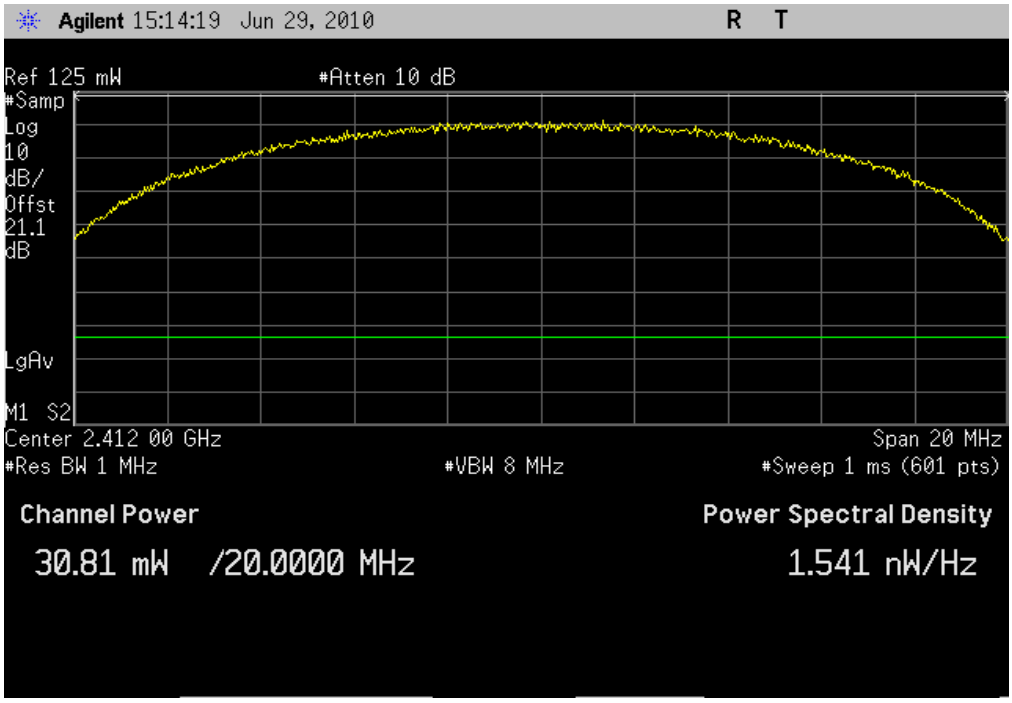


OUTPUT POWER

802.11(b) 1 Mbps, High Channel					
Result:	Pass	**Value:**	32.27 mW	**Limit:**	125 mW

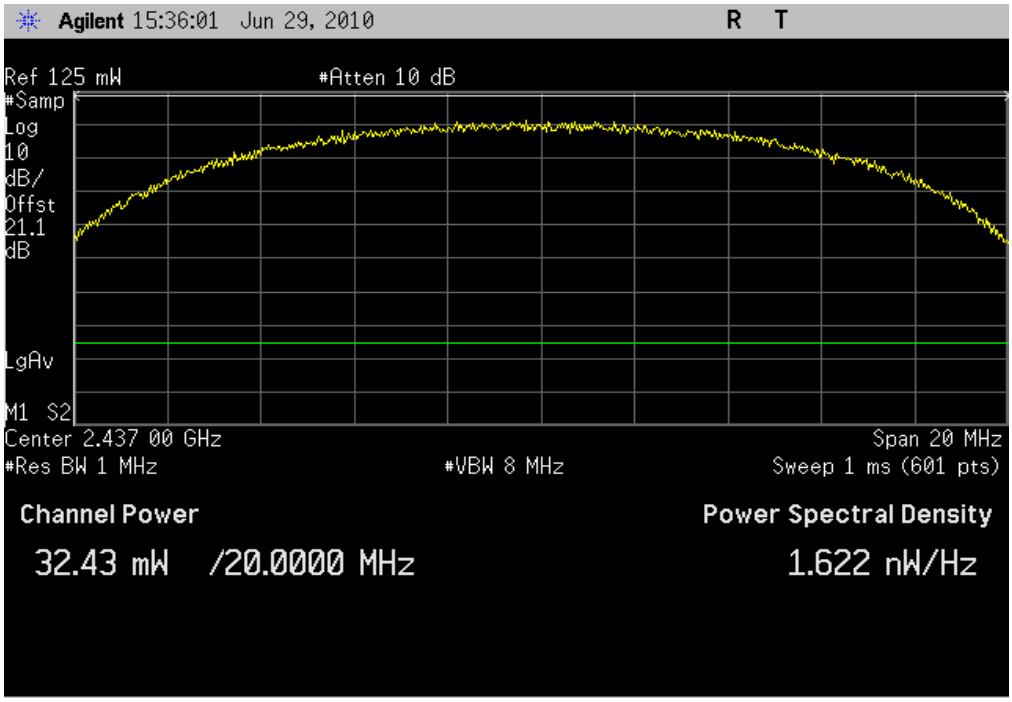


802.11(b) 11 Mbps, Low Channel					
Result:	Pass	**Value:**	30.81 mW	**Limit:**	125 mW

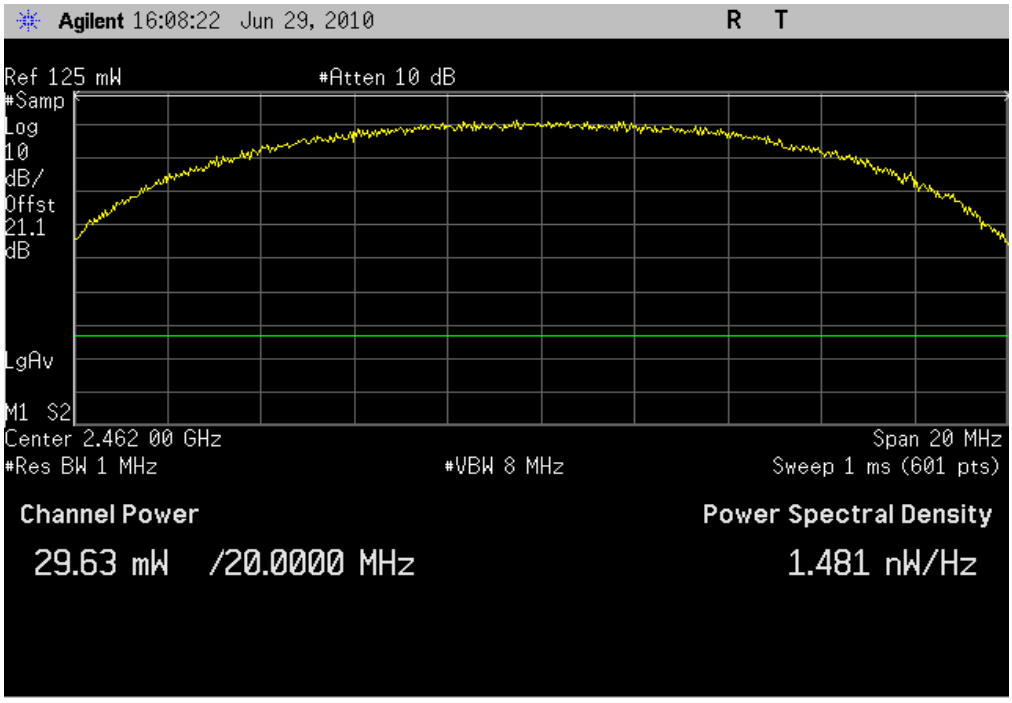


OUTPUT POWER

802.11(b) 11 Mbps, Mid Channel					
Result:	Pass	**Value:**	32.43 mW	**Limit:**	125 mW

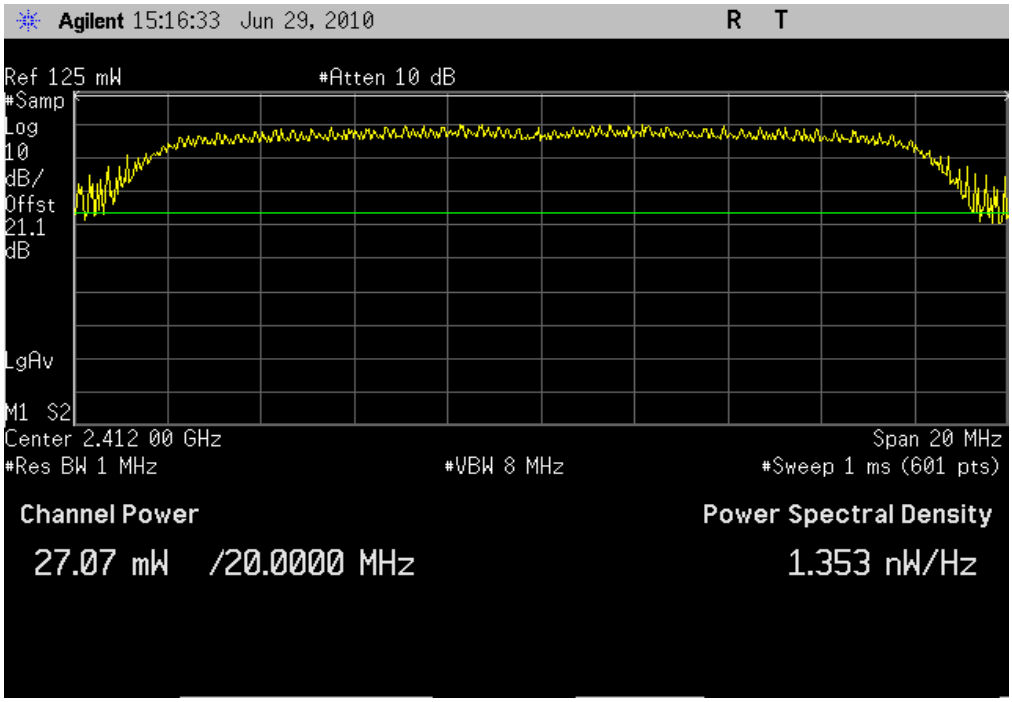


802.11(b) 11 Mbps, High Channel					
Result:	Pass	**Value:**	29.63 mW	**Limit:**	125 mW

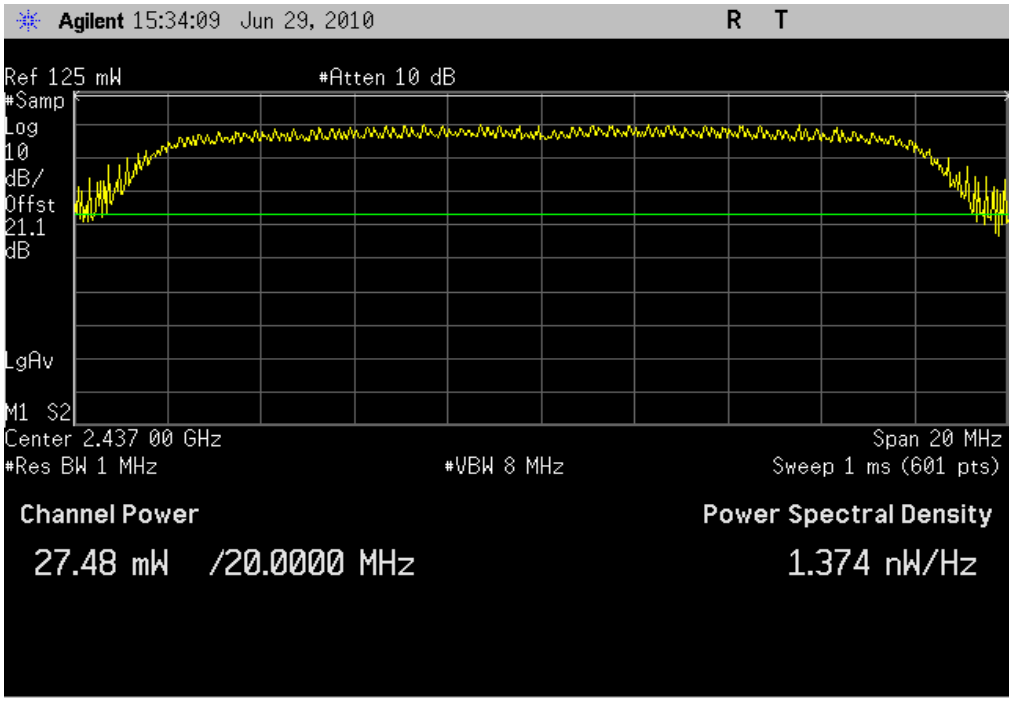


OUTPUT POWER

802.11(g) 6 Mbps, Low Channel					
Result:	Pass	**Value:**	27.07 mW	**Limit:**	125 mW

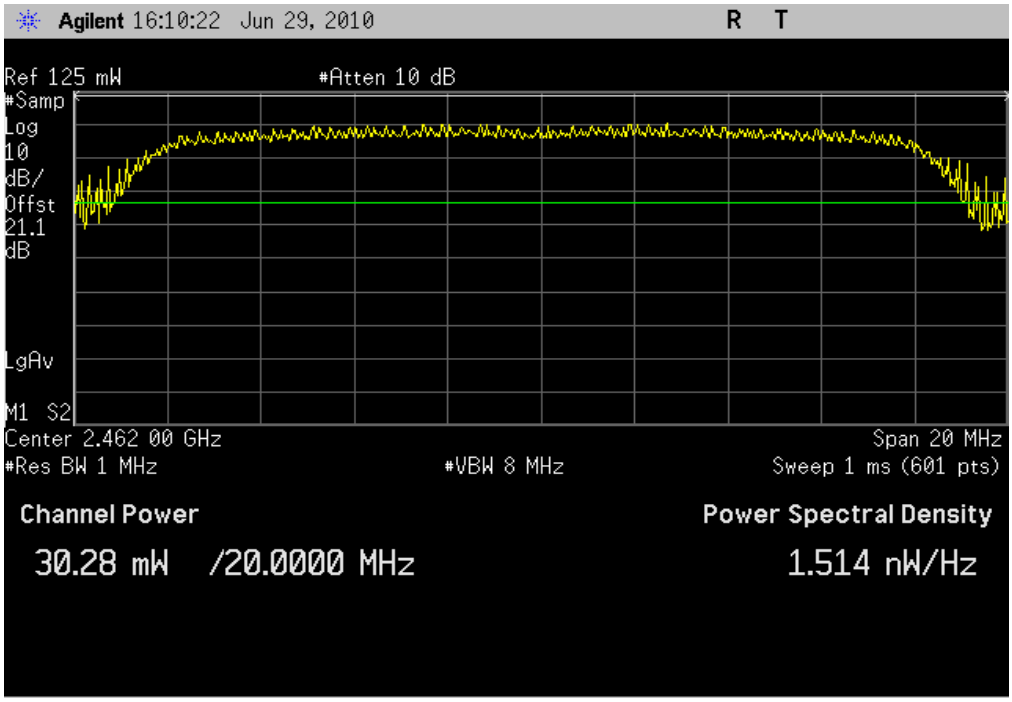


802.11(g) 6 Mbps, Mid Channel					
Result:	Pass	**Value:**	27.48 mW	**Limit:**	125 mW

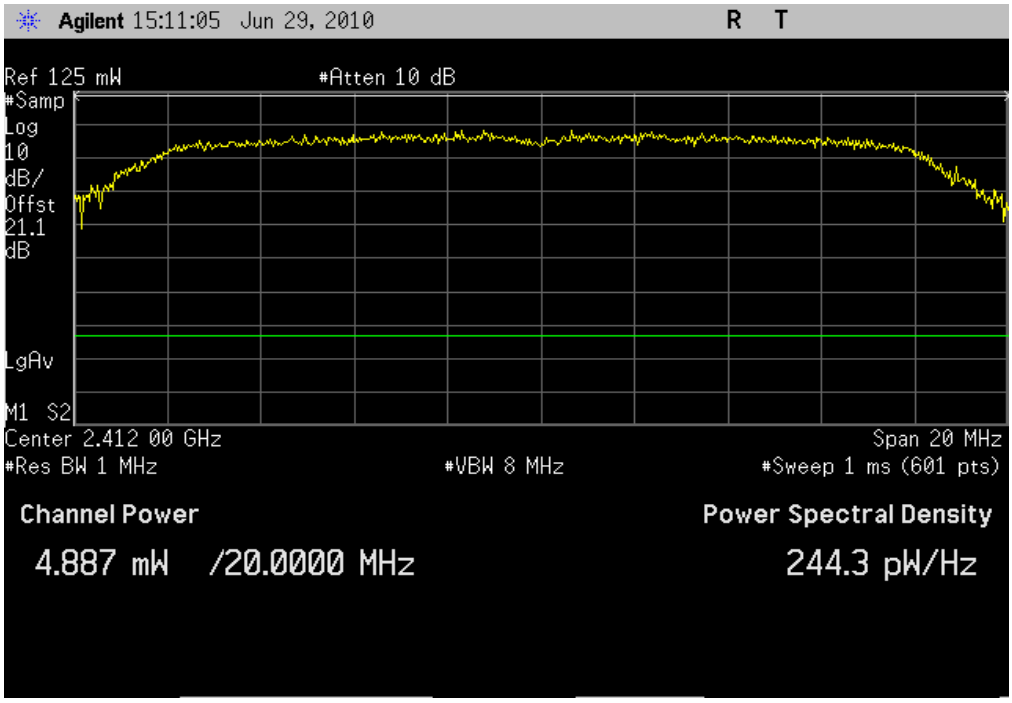


OUTPUT POWER

802.11(g) 6 Mbps, High Channel					
Result:	Pass	**Value:**	30.28 mW	**Limit:**	125 mW

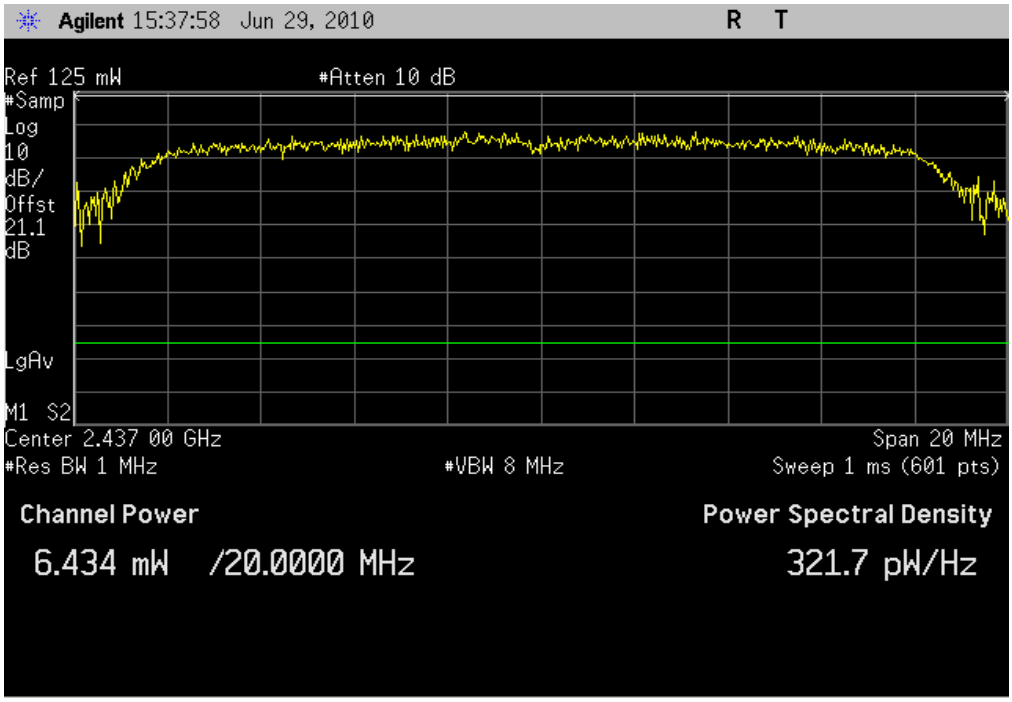


802.11(g) 36 Mbps, Low Channel					
Result:	Pass	**Value:**	4.887 mW	**Limit:**	125 mW

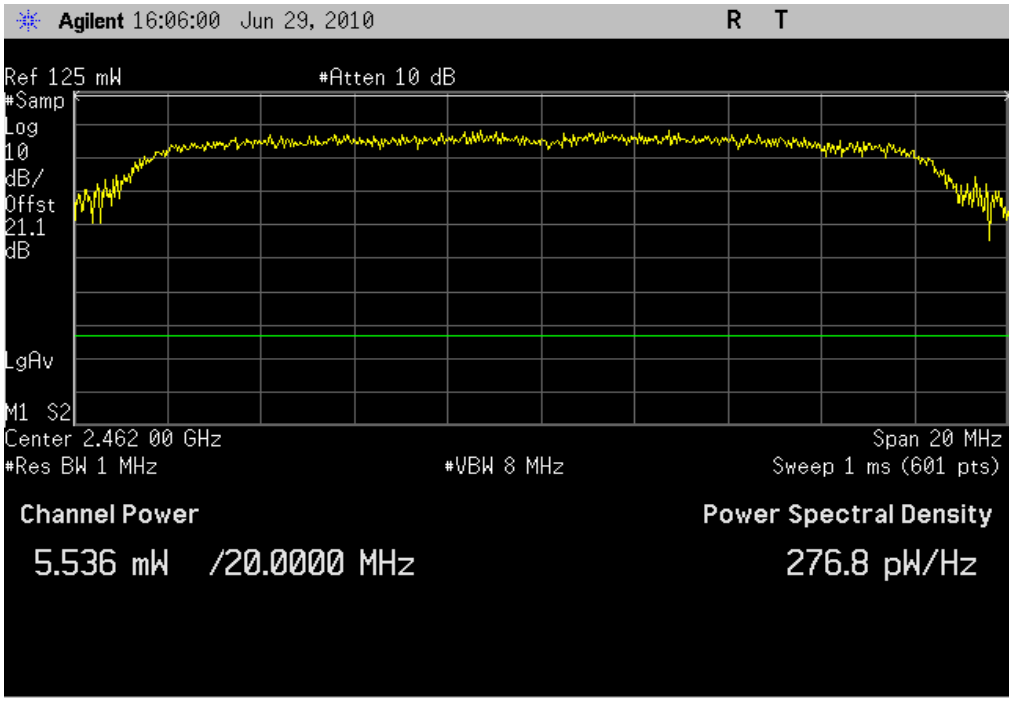


OUTPUT POWER

802.11(g) 36 Mbps, Mid Channel					
Result:	Pass	**Value:**	6.434 mW	**Limit:**	125 mW

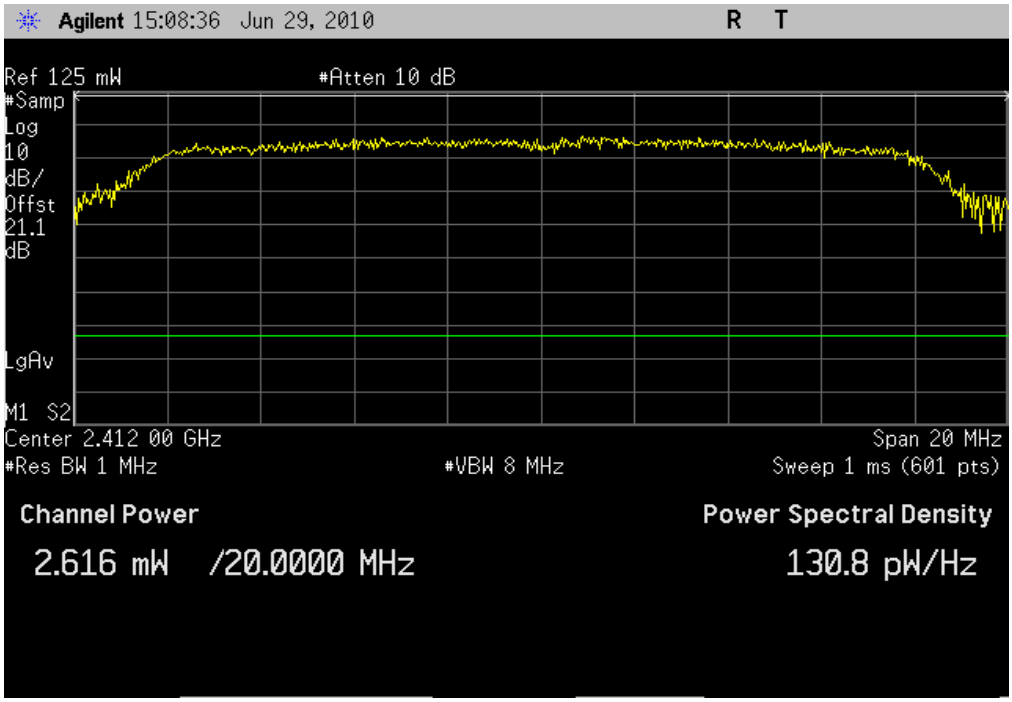


802.11(g) 36 Mbps, High Channel					
Result:	Pass	**Value:**	5.536 mW	**Limit:**	125 mW

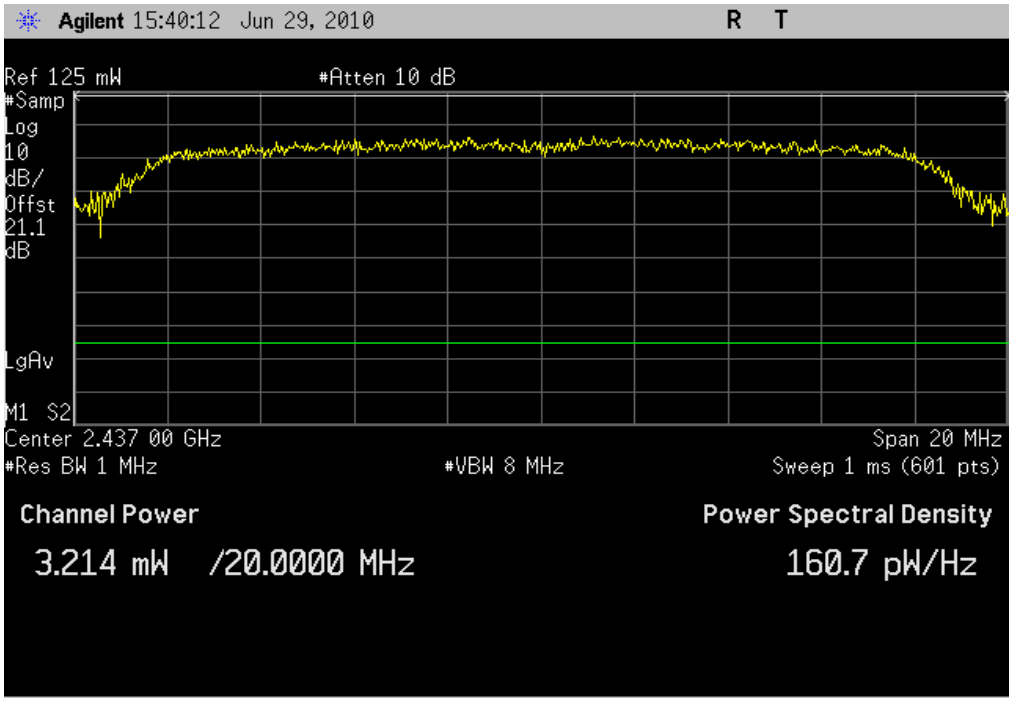


OUTPUT POWER

802.11(g) 54 Mbps, Low Channel					
Result:	Pass	**Value:**	2.626 mW	**Limit:**	125 mW

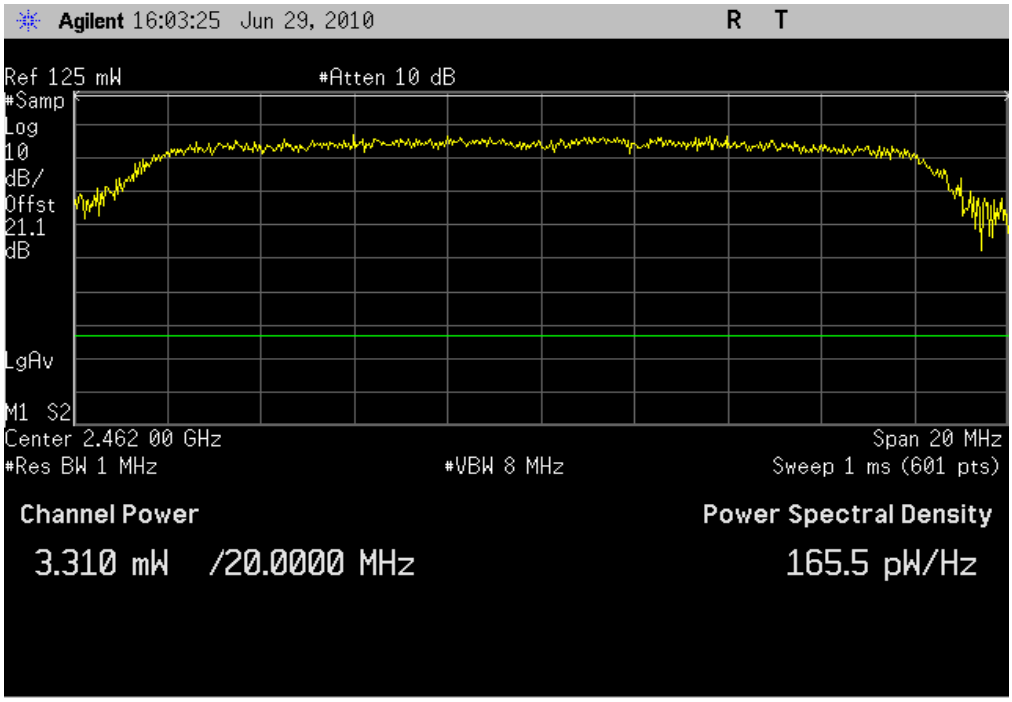


802.11(g) 54 Mbps, Mid Channel					
Result:	Pass	**Value:**	3.214 mW	**Limit:**	125 mW

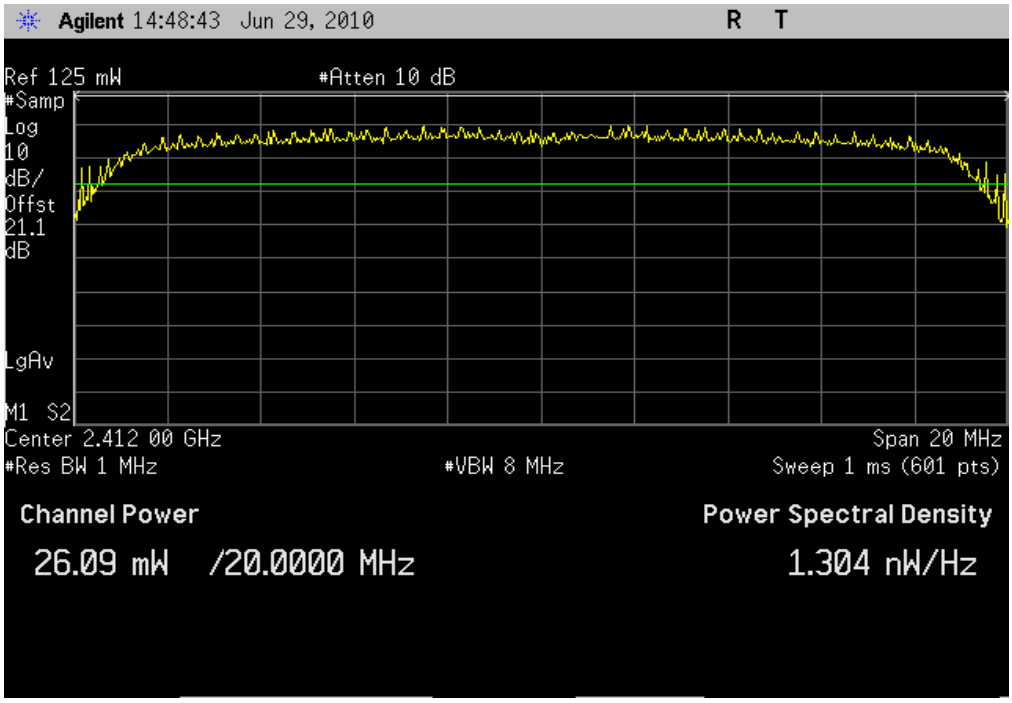


OUTPUT POWER

802.11(g) 54 Mbps, High Channel					
Result:	Pass	**Value:**	3.310 mW	**Limit:**	125 mW

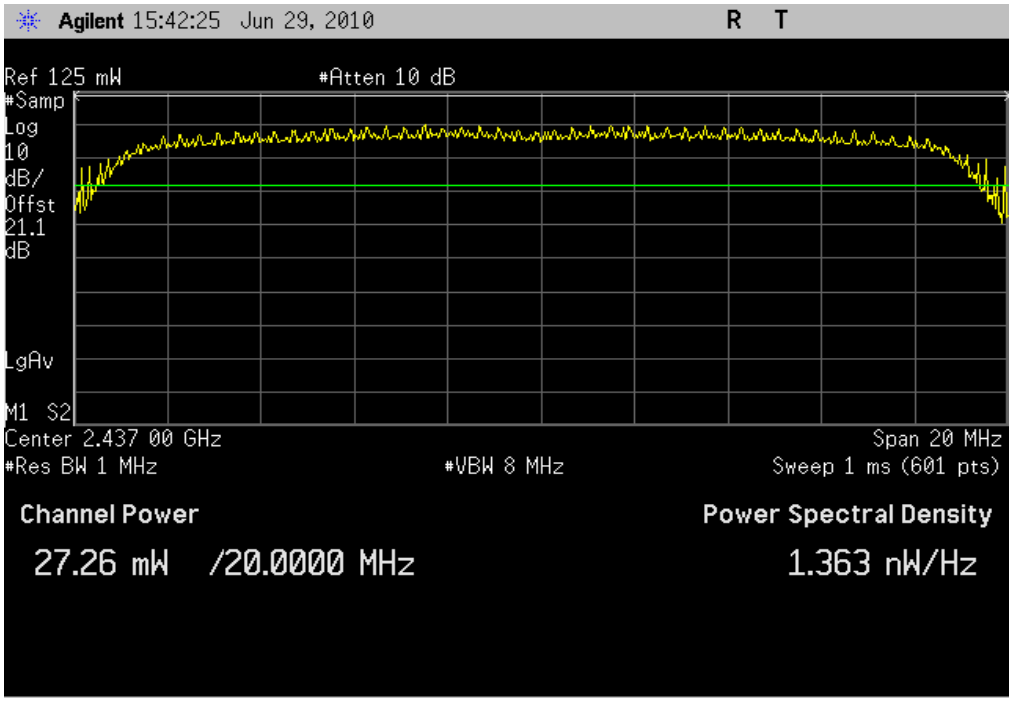


802.11(n) MCS0, Low Channel					
Result:	Pass	**Value:**	26.09 mW	**Limit:**	125 mW

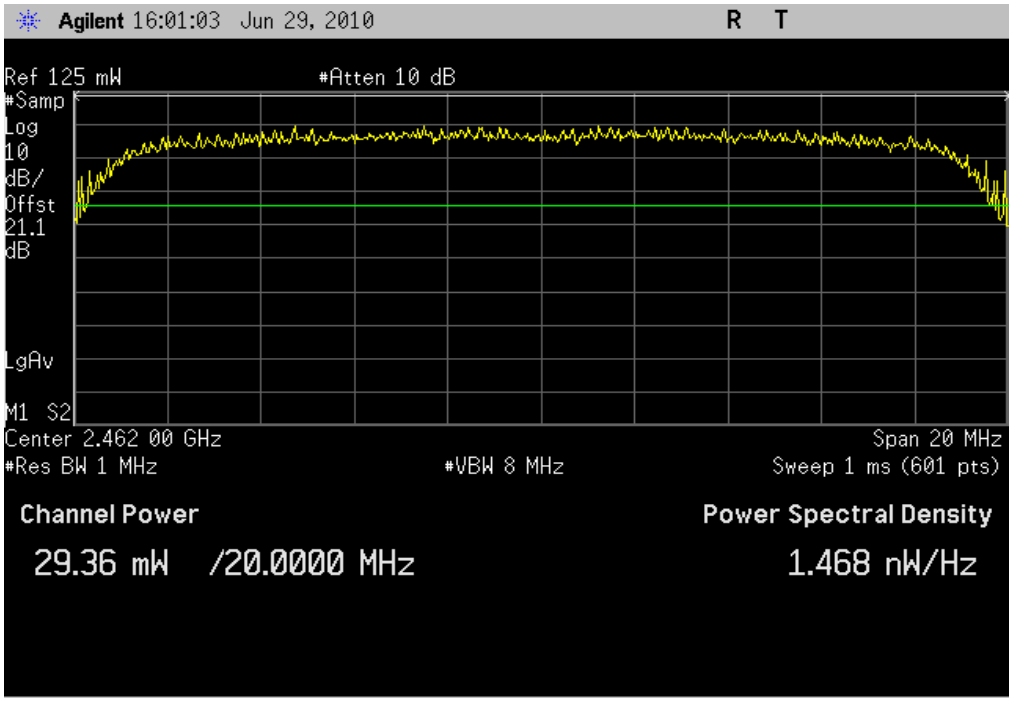


OUTPUT POWER

802.11(n) MCS0, Mid Channel					
Result:	Pass	**Value:**	27.26 mW	**Limit:**	125 mW

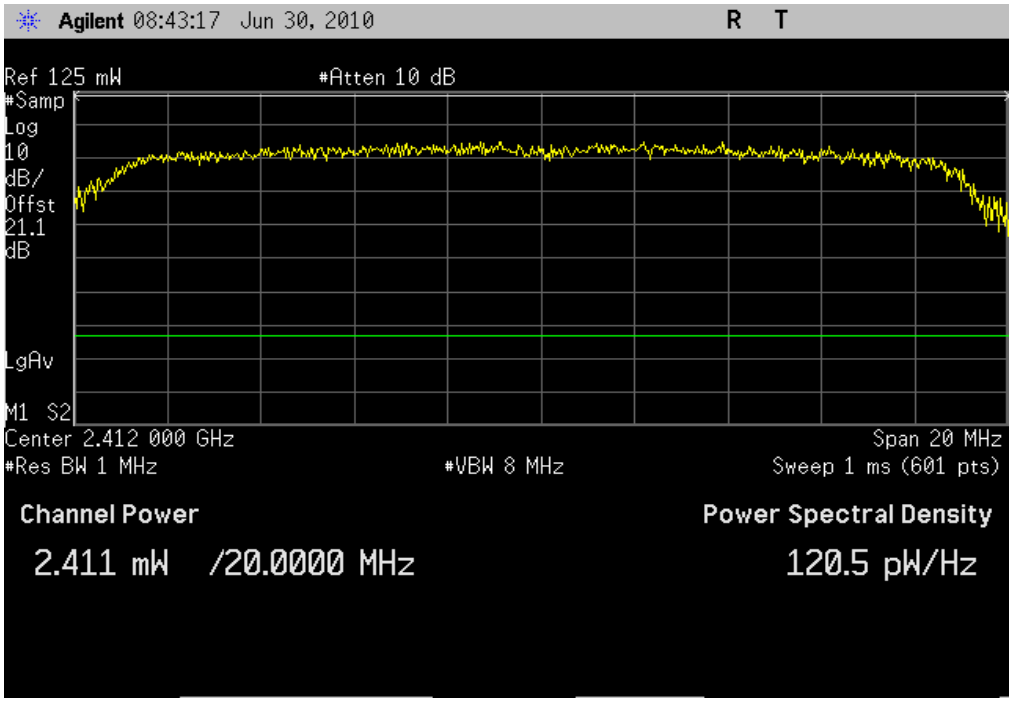


802.11(n) MCS0, High Channel					
Result:	Pass	**Value:**	29.36 mW	**Limit:**	125 mW

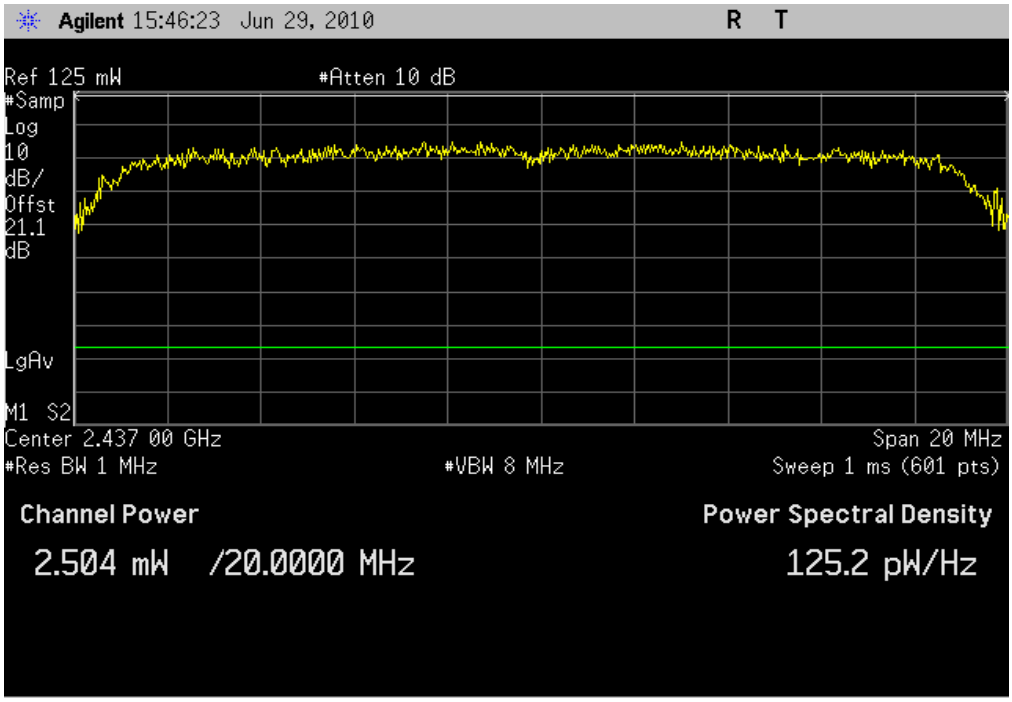


OUTPUT POWER

802.11(n) MCS7, Low Channel					
Result:	Pass	**Value:**	2.411 mW	**Limit:**	125 mW

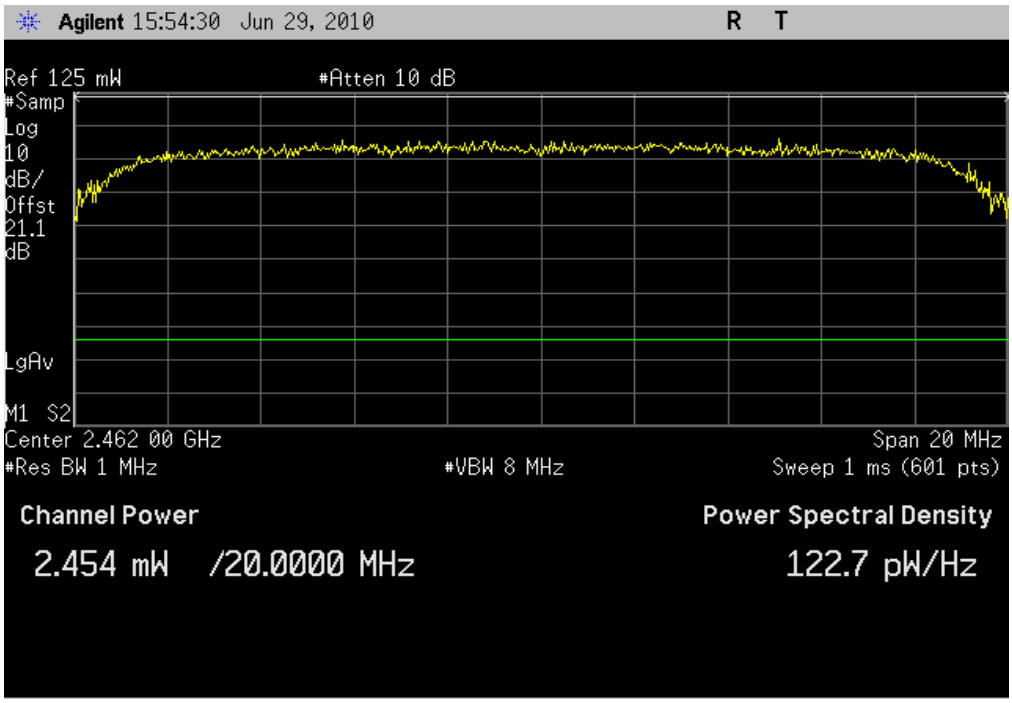


802.11(n) MCS7, Mid Channel					
Result:	Pass	**Value:**	2.504 mW	**Limit:**	125 mW



OUTPUT POWER

802.11(n) MCS7, High Channel					
Result:	Pass	**Value:**	2.454 mW	**Limit:**	125 mW



BAND EDGE COMPLIANCE

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Spectrum Analyzer	Agilent	E4446A	AAT	2/24/2010	12

MEASUREMENT UNCERTAINTY

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty for radiated emissions measurements is less than +/- 4 dB, and for conducted emissions measurements is less than +/- 2.7 dB. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for measurement uncertainty are available upon request.

TEST DESCRIPTION

The requirements of FCC 15.247(d) for emissions at least 20dB below the carrier in any 100kHz bandwidth outside the allowable band was measured with the EUT set to low and high transmit frequencies. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at its maximum data rate in a no hop mode. The channels closest to the band edges were selected. The spectrum was scanned across each band edge from at least 25 MHz below the band edge to 25 MHz above the band edge.

NORTHWEST EMC

BAND EDGE COMPLIANCE

XMit 2010.01.14

EUT:	AM3x SOM-M2			Work Order:	LGPD0023
Serial Number:	2010M00186			Date:	07/06/10
Customer:	Logic PD			Temperature:	23.06°C
Attendees:	None			Humidity:	62%
Project:	None			Barometric Pres.:	1010.9
Tested by:	Trevor Buls	Power:	120VAC/60Hz	Job Site:	MN05

TEST SPECIFICATIONS	Test Method
FCC 15.247:2010	ANSI C63.10:2009

COMMENTS

None

DEVIATIONS FROM TEST STANDARD

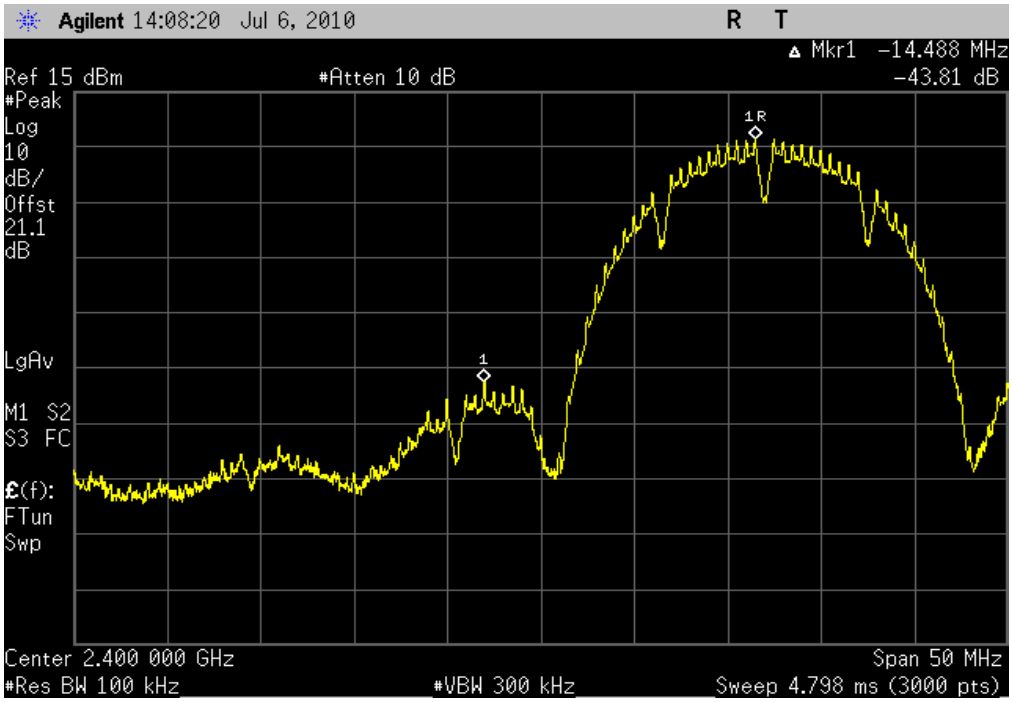
No Deviations

Configuration #	2	Signature Trevor Buls

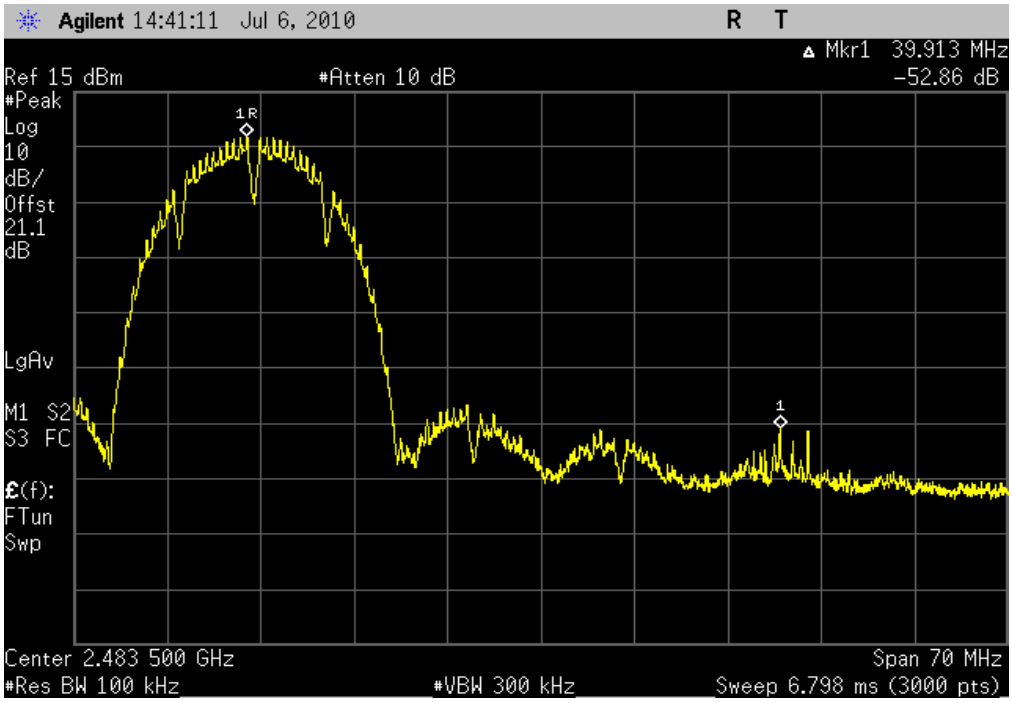
		Value	Limit	Results
802.11(b) 1 Mbps				
	Low Channel	-43.81 dBc	≤ -20 dBc	Pass
	High Channel	-52.86 dBc	≤ -20 dBc	Pass
802.11(b) 11 Mbps				
	Low Channel	-44.39 dBc	≤ -20 dBc	Pass
	High Channel	-54.13 dBc	≤ -20 dBc	Pass
802.11(g) 6 Mbps				
	Low Channel	-28.42 dBc	≤ -20 dBc	Pass
	High Channel	-42.46 dBc	≤ -20 dBc	Pass
802.11(g) 36 Mbps				
	Low Channel	-31.58 dBc	≤ -20 dBc	Pass
	High Channel	-45.59 dBc	≤ -20 dBc	Pass
802.11(g) 54 Mbps				
	Low Channel	-32.48 dBc	≤ -20 dBc	Pass
	High Channel	-48.67 dBc	≤ -20 dBc	Pass
802.11(n) MCS0				
	Low Channel	-27.94 dBc	≤ -20 dBc	Pass
	High Channel	-43.41 dBc	≤ -20 dBc	Pass
802.11(n) MCS7				
	Low Channel	-32.59 dBc	≤ -20 dBc	Pass
	High Channel	-49.33 dBc	≤ -20 dBc	Pass

BAND EDGE COMPLIANCE

802.11(b) 1 Mbps, Low Channel					
Result:	Pass	**Value:**	-43.81 dBc	**Limit:**	≤ -20 dBc

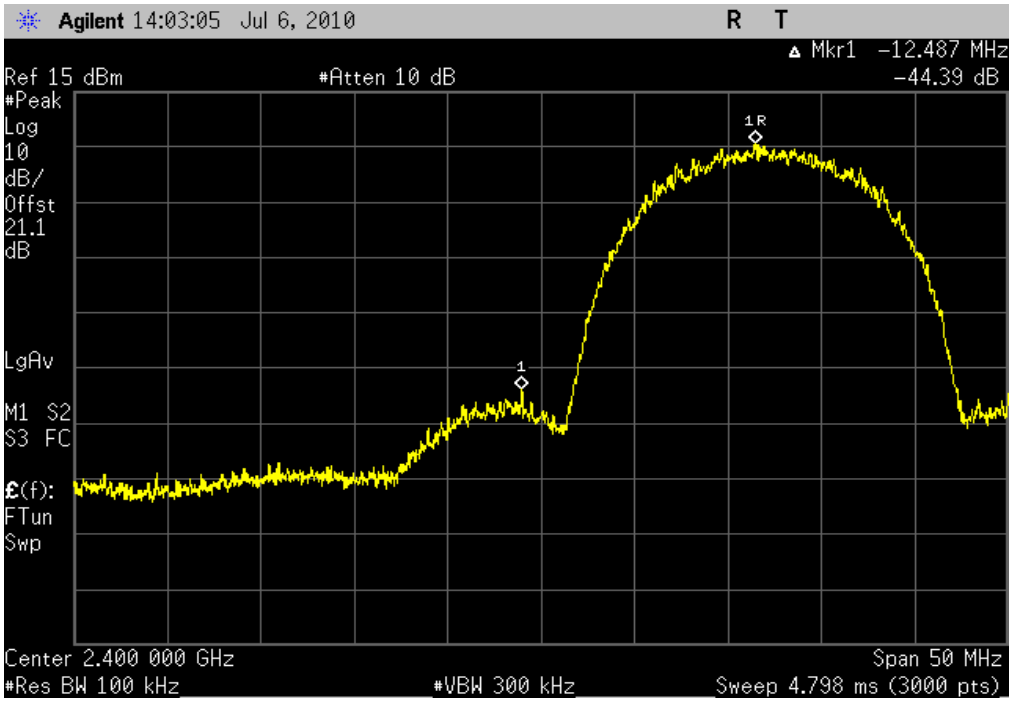


802.11(b) 1 Mbps, High Channel					
Result:	Pass	**Value:**	-52.86 dBc	**Limit:**	≤ -20 dBc

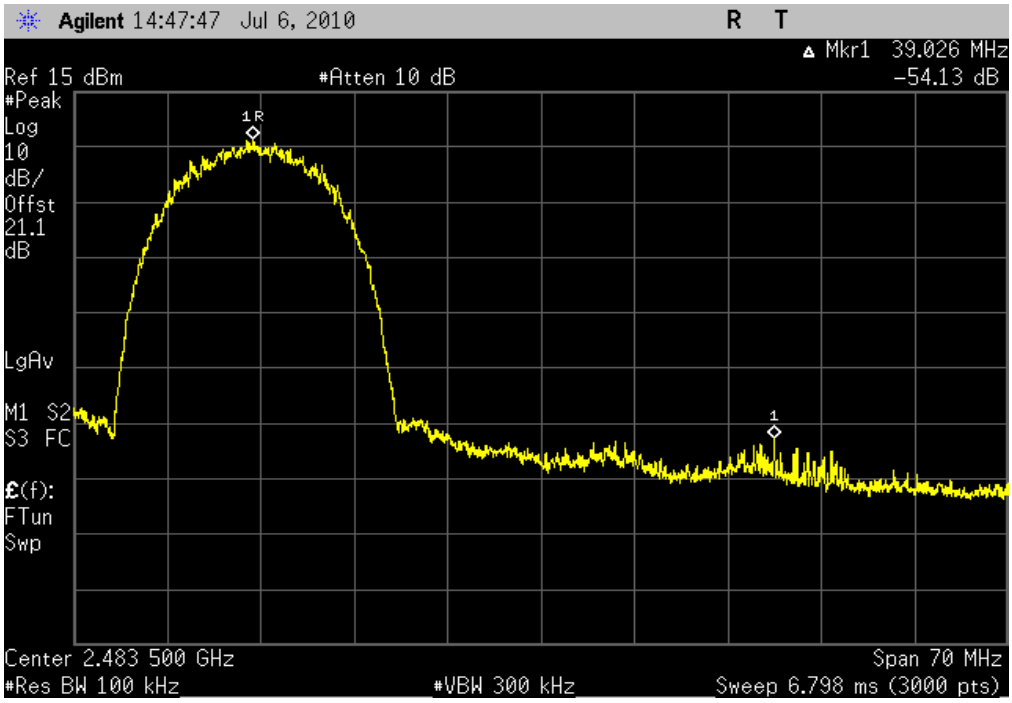


BAND EDGE COMPLIANCE

802.11(b) 11 Mbps, Low Channel					
Result:	Pass	**Value:**	-44.39 dBc	**Limit:**	≤ -20 dBc

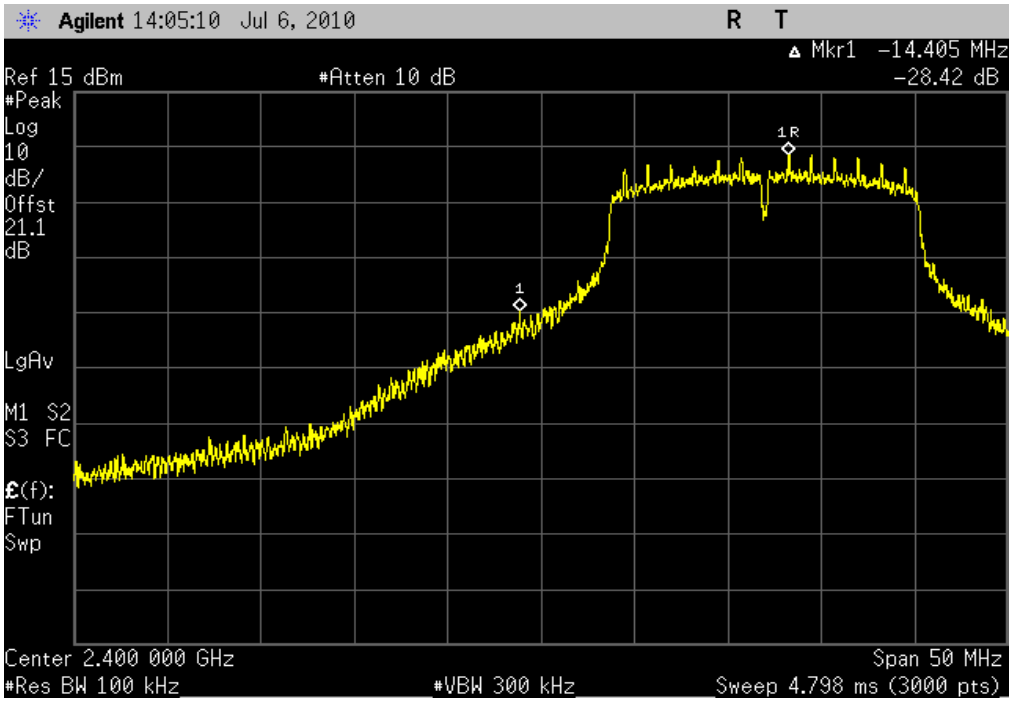


802.11(b) 11 Mbps, High Channel					
Result:	Pass	**Value:**	-54.13 dBc	**Limit:**	≤ -20 dBc

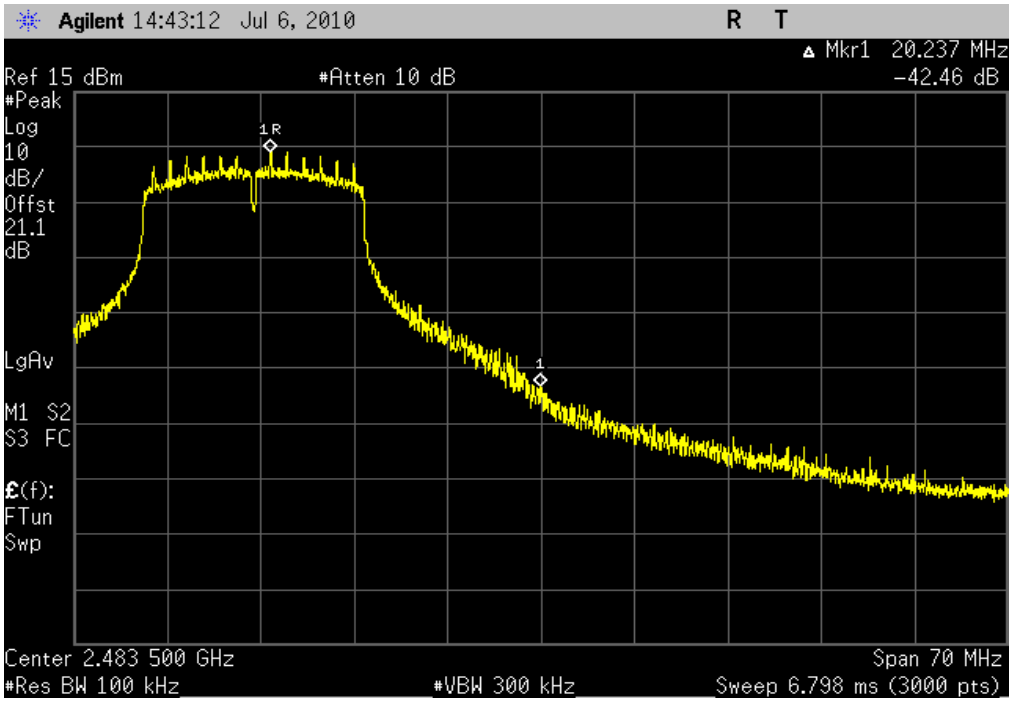


BAND EDGE COMPLIANCE

802.11(g) 6 Mbps, Low Channel					
Result:	Pass	**Value:**	-28.42 dBc	**Limit:**	≤ -20 dBc

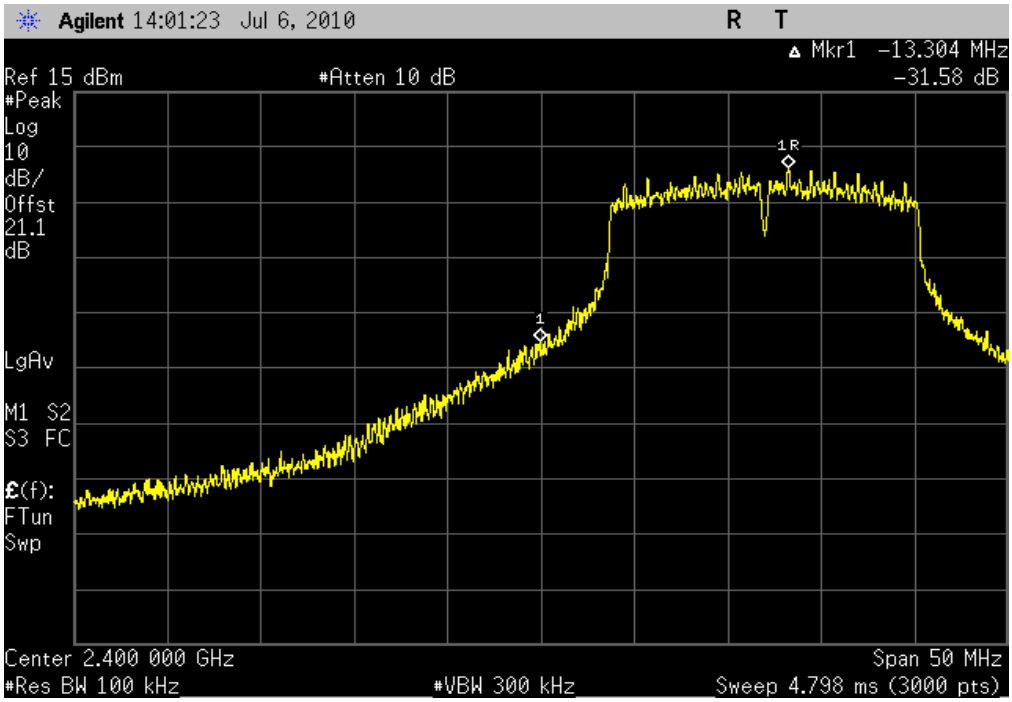


802.11(g) 6 Mbps, High Channel					
Result:	Pass	**Value:**	-42.46 dBc	**Limit:**	≤ -20 dBc

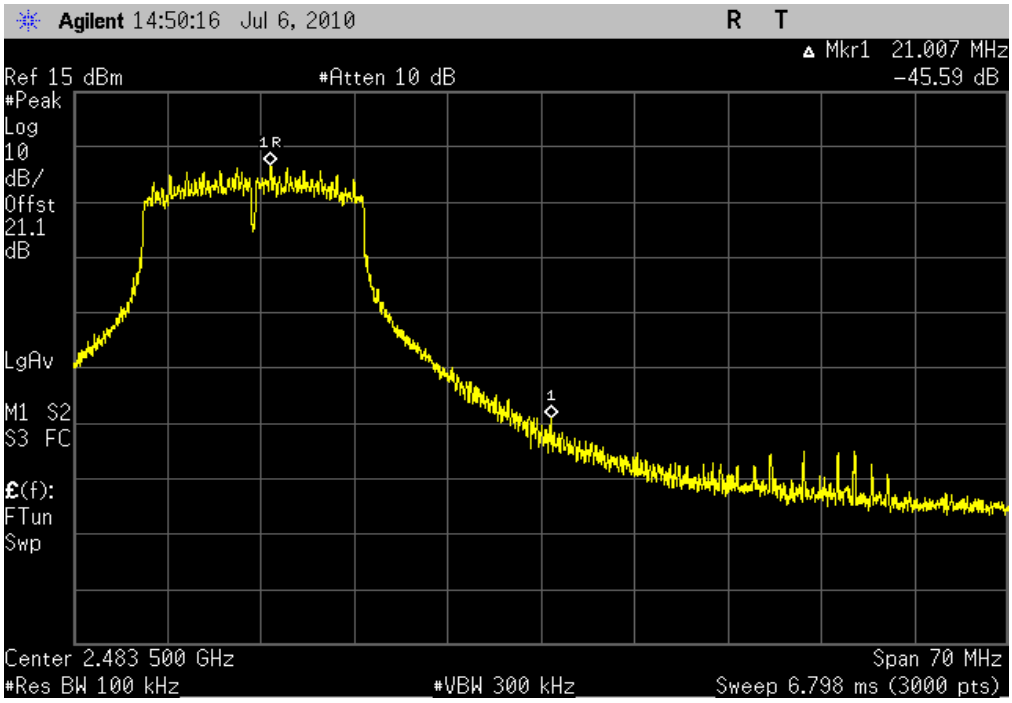


BAND EDGE COMPLIANCE

802.11(g) 36 Mbps, Low Channel					
Result:	Pass	**Value:**	-31.58 dBc	**Limit:**	≤ -20 dBc

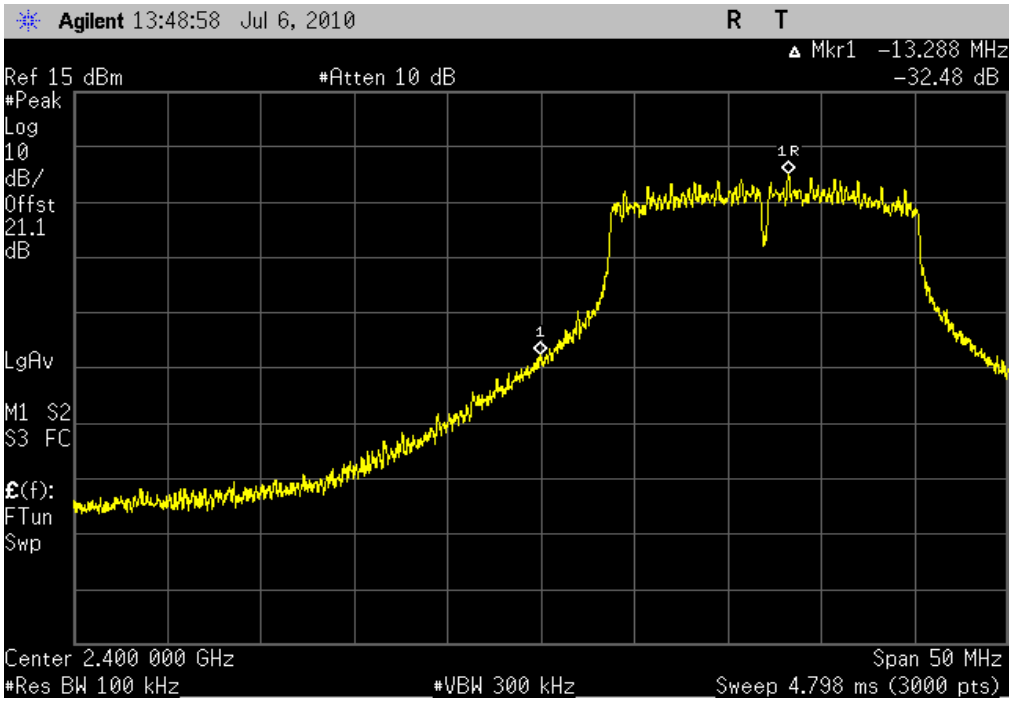


802.11(g) 36 Mbps, High Channel					
Result:	Pass	**Value:**	-45.59 dBc	**Limit:**	≤ -20 dBc

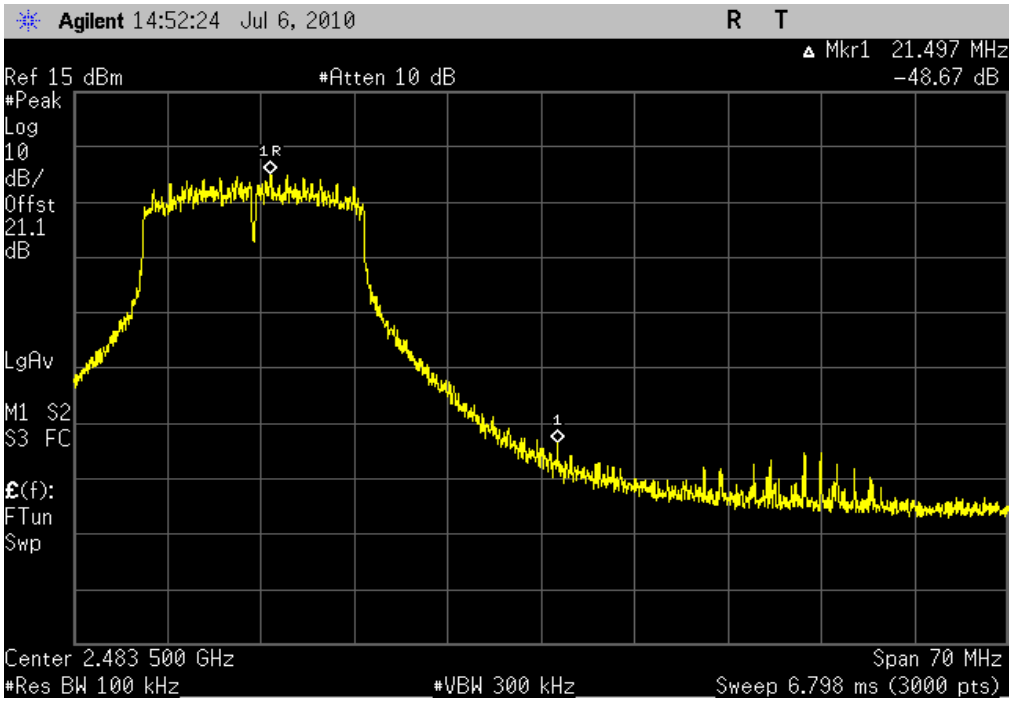


BAND EDGE COMPLIANCE

802.11(g) 54 Mbps, Low Channel					
Result:	Pass	**Value:**	-32.48 dBc	**Limit:**	≤ -20 dBc

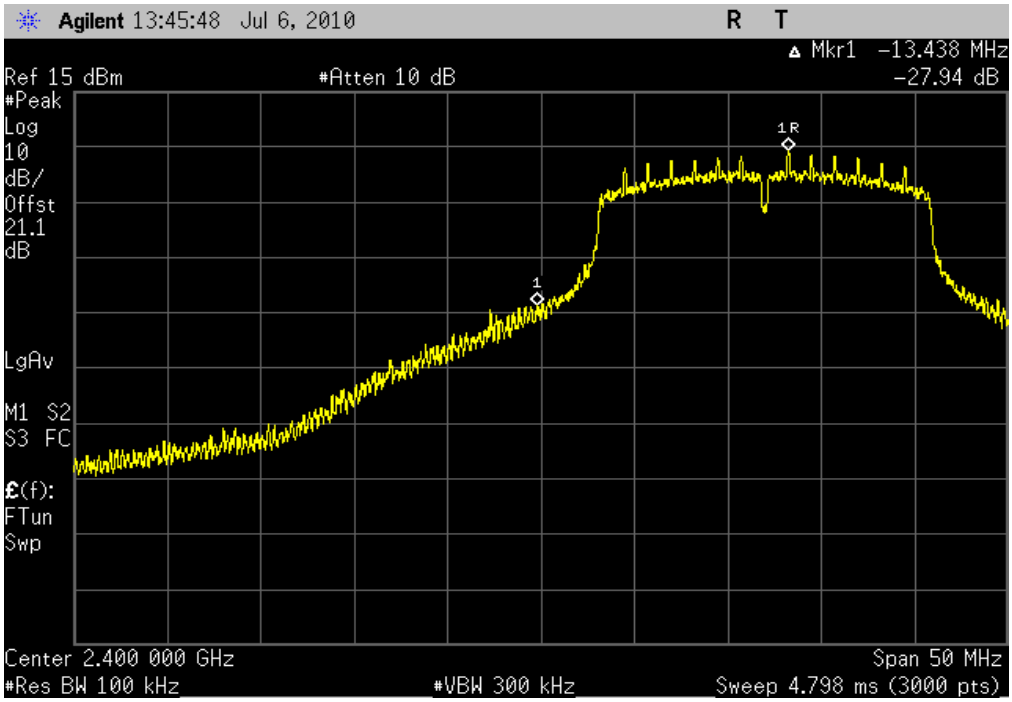


802.11(g) 54 Mbps, High Channel					
Result:	Pass	**Value:**	-48.67 dBc	**Limit:**	≤ -20 dBc

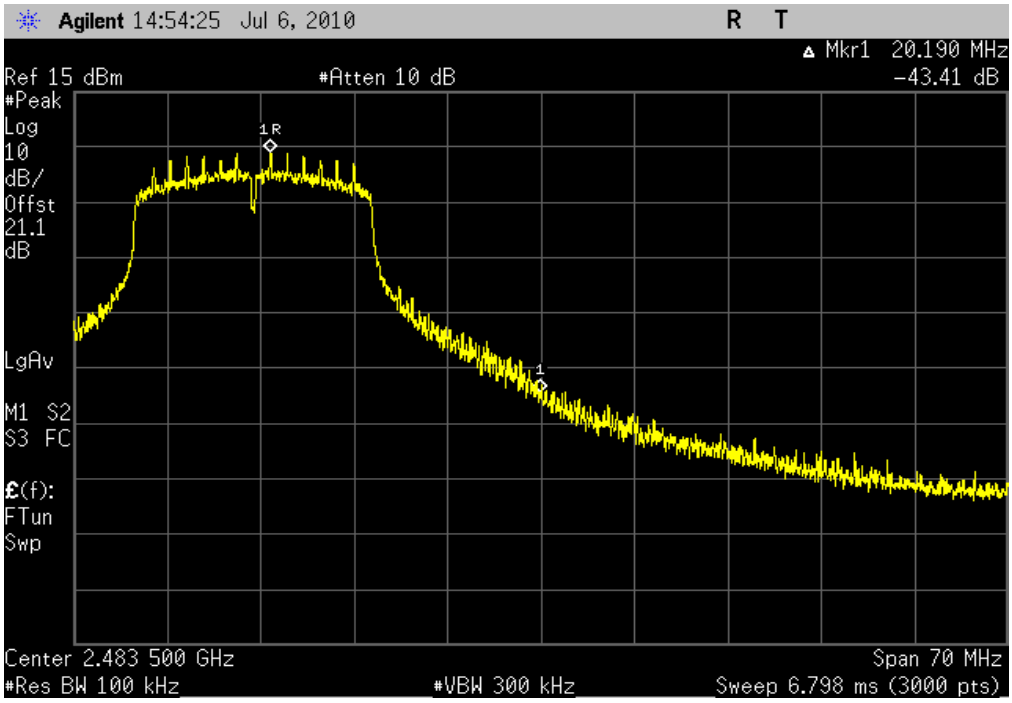


BAND EDGE COMPLIANCE

802.11(n) MCS0, Low Channel					
Result:	Pass	**Value:**	-27.94 dBc	**Limit:**	≤ -20 dBc

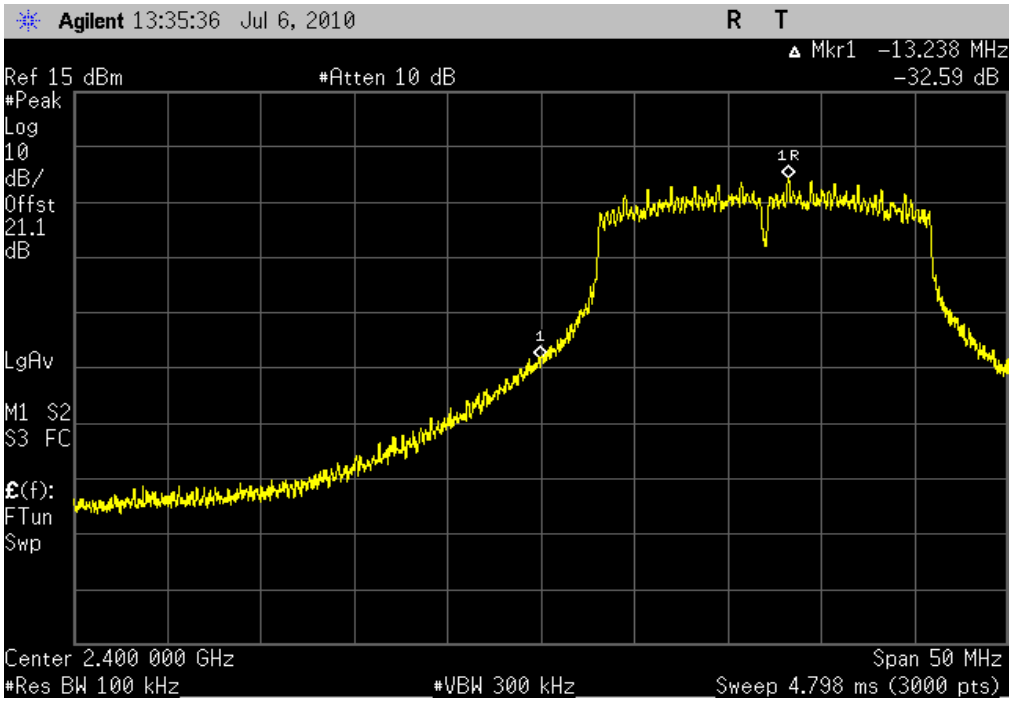


802.11(n) MCS0, High Channel					
Result:	Pass	**Value:**	-43.41 dBc	**Limit:**	≤ -20 dBc

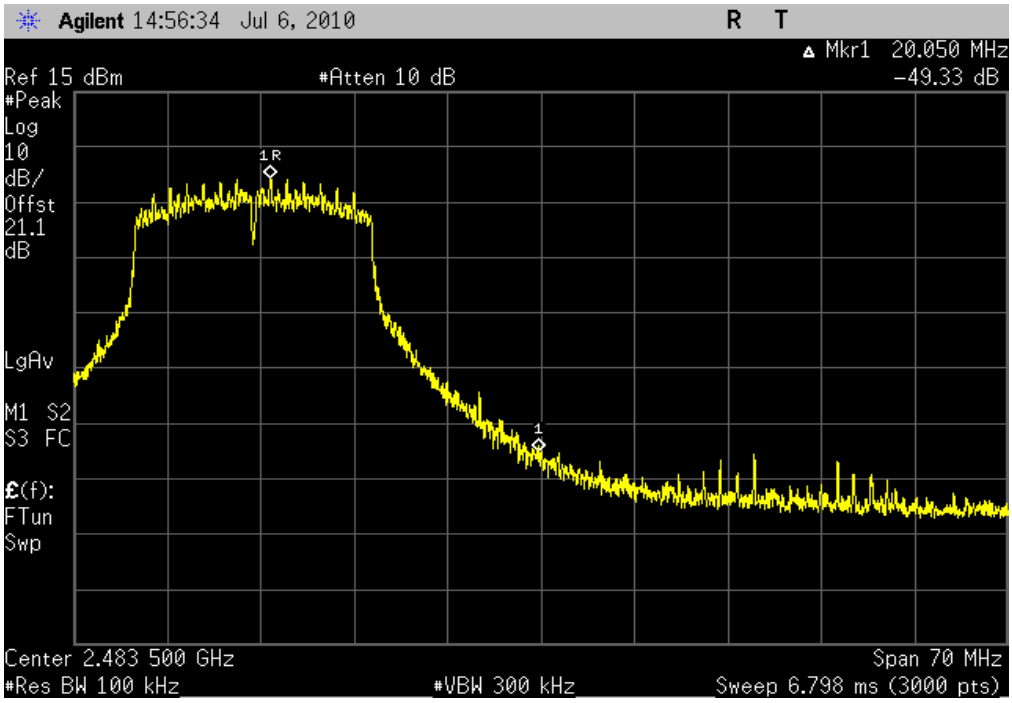


BAND EDGE COMPLIANCE

802.11(n) MCS7, Low Channel					
Result:	Pass	**Value:**	-32.59 dBc	**Limit:**	≤ -20 dBc



802.11(n) MCS7, High Channel					
Result:	Pass	**Value:**	-49.33 dBc	**Limit:**	≤ -20 dBc



SPURIOUS CONDUCTED EMISSIONS

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Spectrum Analyzer	Agilent	E4446A	AAT	2/24/2010	12

MEASUREMENT UNCERTAINTY

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty for radiated emissions measurements is less than +/- 4 dB, and for conducted emissions measurements is less than +/- 2.7 dB. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for measurement uncertainty are available upon request.

TEST DESCRIPTION

The spurious RF conducted emissions were measured with the EUT set to low, medium, and high transmit frequencies. The measurements were made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at its maximum data rate in a no hop mode. For each transmit frequency, the spectrum was scanned throughout the specified frequency.

NORTHWEST EMC

SPURIOUS CONDUCTED EMISSIONS

XMit 2010.01.14

EUT:	AM3x SOM-M2	Work Order:	LGPD0023
Serial Number:	2010M00186	Date:	07/06/10
Customer:	Logic PD	Temperature:	23.06°C
Attendees:	None	Humidity:	62%
Project:	None	Barometric Pres.:	1010.9
Tested by:	Trevor Buls	Power: 120VAC/60Hz	Job Site: MN05

TEST SPECIFICATIONS	Test Method
FCC 15.247:2010	ANSI C63.10:2009

COMMENTS

None

DEVIATIONS FROM TEST STANDARD

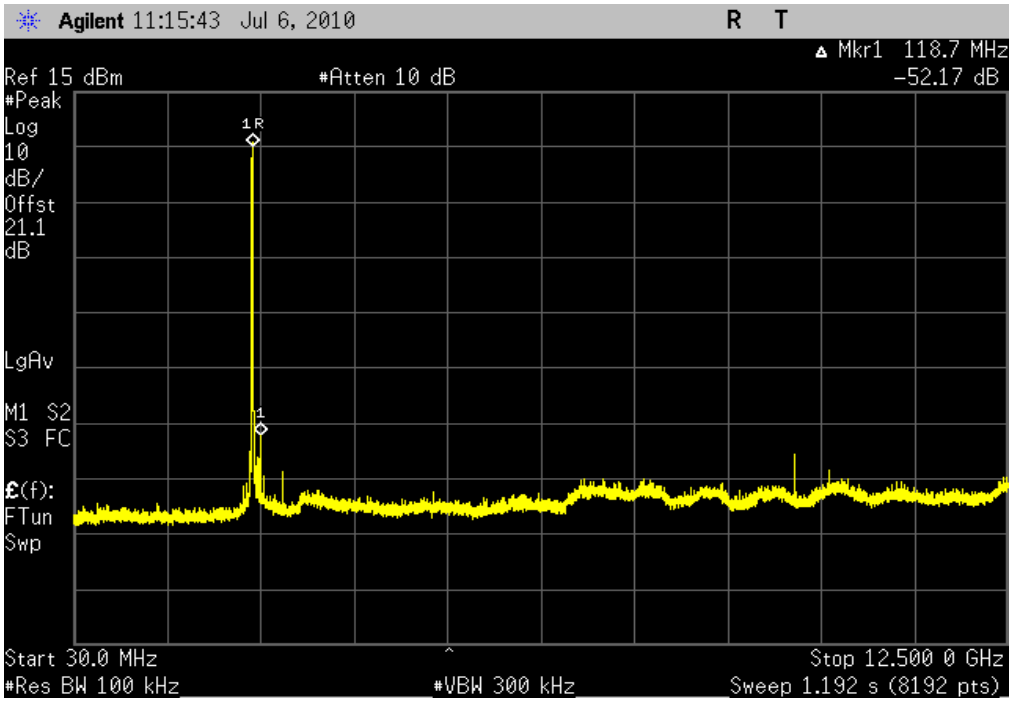
No Deviations

Configuration #	2	Signature Trevor Buls

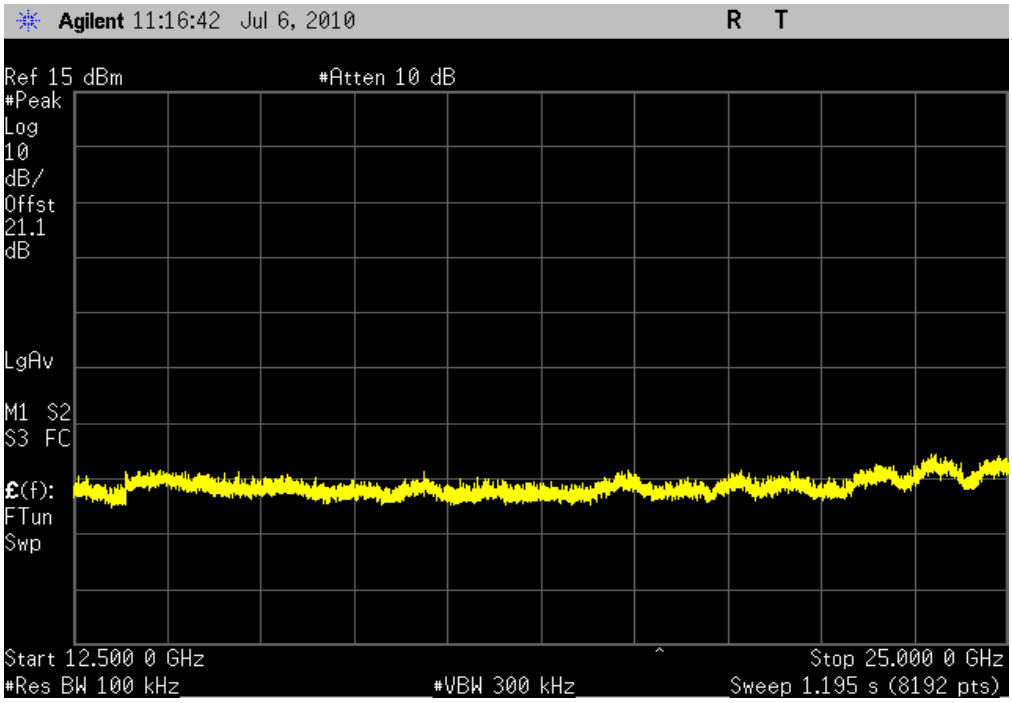
			Value	Limit	Results
802.11(b) 1 Mbps					
	Low Channel				
		30 MHz - 12.5 GHz	< -40 dBc	≤ -20 dBc	Pass
		12.5 GHz - 25 GHz	< -40 dBc	≤ -20 dBc	Pass
	Mid Channel				
		30 MHz - 12.5 GHz	< -40 dBc	≤ -20 dBc	Pass
		12.5 GHz - 25 GHz	< -40 dBc	≤ -20 dBc	Pass
	High Channel				
		30 MHz - 12.5 GHz	< -40 dBc	≤ -20 dBc	Pass
		12.5 GHz - 25 GHz	< -40 dBc	≤ -20 dBc	Pass
802.11(b) 11 Mbps					
	Low Channel				
		30 MHz - 12.5 GHz	< -40 dBc	≤ -20 dBc	Pass
		12.5 GHz - 25 GHz	< -40 dBc	≤ -20 dBc	Pass
	Mid Channel				
		30 MHz - 12.5 GHz	< -40 dBc	≤ -20 dBc	Pass
		12.5 GHz - 25 GHz	< -40 dBc	≤ -20 dBc	Pass
	High Channel				
		30 MHz - 12.5 GHz	< -40 dBc	≤ -20 dBc	Pass
		12.5 GHz - 25 GHz	< -40 dBc	≤ -20 dBc	Pass
802.11(g) 6 Mbps					
	Low Channel				
		30 MHz - 12.5 GHz	< -40 dBc	≤ -20 dBc	Pass
		12.5 GHz - 25 GHz	< -40 dBc	≤ -20 dBc	Pass
	Mid Channel				
		30 MHz - 12.5 GHz	< -40 dBc	≤ -20 dBc	Pass
		12.5 GHz - 25 GHz	< -40 dBc	≤ -20 dBc	Pass
	High Channel				
		30 MHz - 12.5 GHz	< -40 dBc	≤ -20 dBc	Pass
		12.5 GHz - 25 GHz	< -40 dBc	≤ -20 dBc	Pass
802.11(g) 36 Mbps					
	Low Channel				
		30 MHz - 12.5 GHz	< -40 dBc	≤ -20 dBc	Pass
		12.5 GHz - 25 GHz	< -40 dBc	≤ -20 dBc	Pass
	Mid Channel				
		30 MHz - 12.5 GHz	< -40 dBc	≤ -20 dBc	Pass
		12.5 GHz - 25 GHz	< -40 dBc	≤ -20 dBc	Pass
	High Channel				
		30 MHz - 12.5 GHz	< -40 dBc	≤ -20 dBc	Pass
		12.5 GHz - 25 GHz	< -40 dBc	≤ -20 dBc	Pass
802.11(g) 54 Mbps					
	Low Channel				
		30 MHz - 12.5 GHz	< -40 dBc	≤ -20 dBc	Pass
		12.5 GHz - 25 GHz	< -40 dBc	≤ -20 dBc	Pass
	Mid Channel				
		30 MHz - 12.5 GHz	< -40 dBc	≤ -20 dBc	Pass
		12.5 GHz - 25 GHz	< -40 dBc	≤ -20 dBc	Pass
	High Channel				
		30 MHz - 12.5 GHz	< -40 dBc	≤ -20 dBc	Pass
		12.5 GHz - 25 GHz	< -40 dBc	≤ -20 dBc	Pass
802.11(n) MCS0					
	Low Channel				
		30 MHz - 12.5 GHz	< -40 dBc	≤ -20 dBc	Pass
		12.5 GHz - 25 GHz	< -40 dBc	≤ -20 dBc	Pass
	Mid Channel				
		30 MHz - 12.5 GHz	< -40 dBc	≤ -20 dBc	Pass
		12.5 GHz - 25 GHz	< -40 dBc	≤ -20 dBc	Pass
	High Channel				
		30 MHz - 12.5 GHz	< -40 dBc	≤ -20 dBc	Pass
		12.5 GHz - 25 GHz	< -40 dBc	≤ -20 dBc	Pass
802.11(n) MCS7					
	Low Channel				
		30 MHz - 12.5 GHz	< -40 dBc	≤ -20 dBc	Pass
		12.5 GHz - 25 GHz	< -40 dBc	≤ -20 dBc	Pass
	Mid Channel				
		30 MHz - 12.5 GHz	< -40 dBc	≤ -20 dBc	Pass
		12.5 GHz - 25 GHz	< -40 dBc	≤ -20 dBc	Pass
	High Channel				
		30 MHz - 12.5 GHz	< -40 dBc	≤ -20 dBc	Pass
		12.5 GHz - 25 GHz	< -40 dBc	≤ -20 dBc	Pass

SPURIOUS CONDUCTED EMISSIONS

802.11(b) 1 Mbps, Low Channel, 30 MHz - 12.5 GHz					
Result:	Pass	**Value:**	< -40 dBc	**Limit:**	≤ -20 dBc

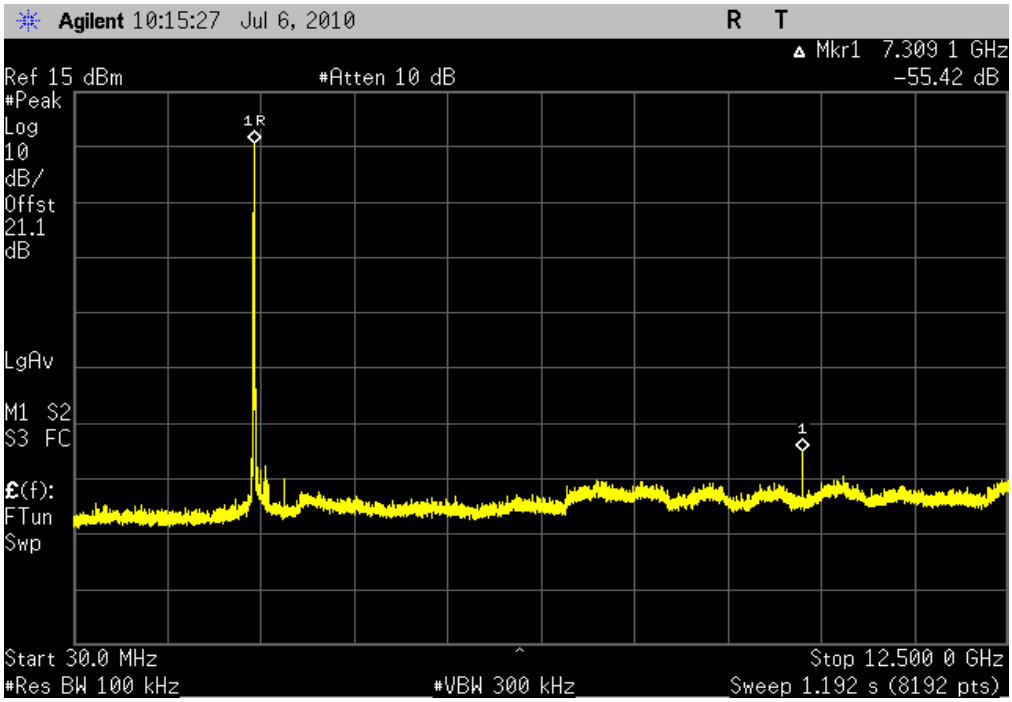


802.11(b) 1 Mbps, Low Channel, 12.5 GHz - 25 GHz					
Result:	Pass	**Value:**	< -40 dBc	**Limit:**	≤ -20 dBc

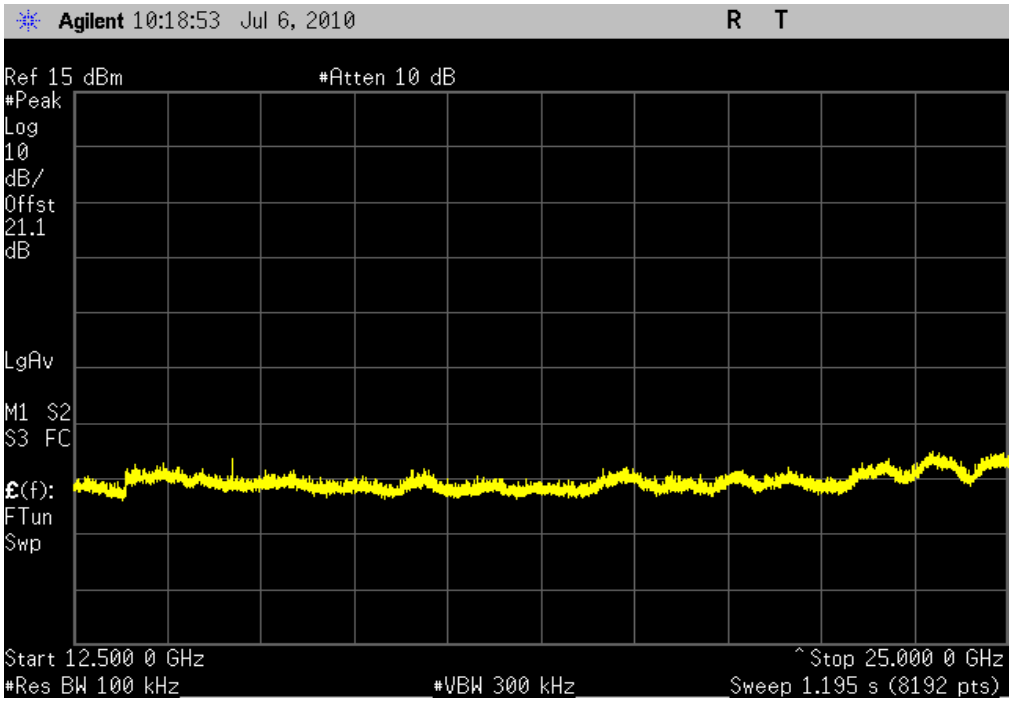


SPURIOUS CONDUCTED EMISSIONS

802.11(b) 1 Mbps, Mid Channel, 30 MHz - 12.5 GHz					
Result:	Pass	**Value:**	< -40 dBc	**Limit:**	≤ -20 dBc

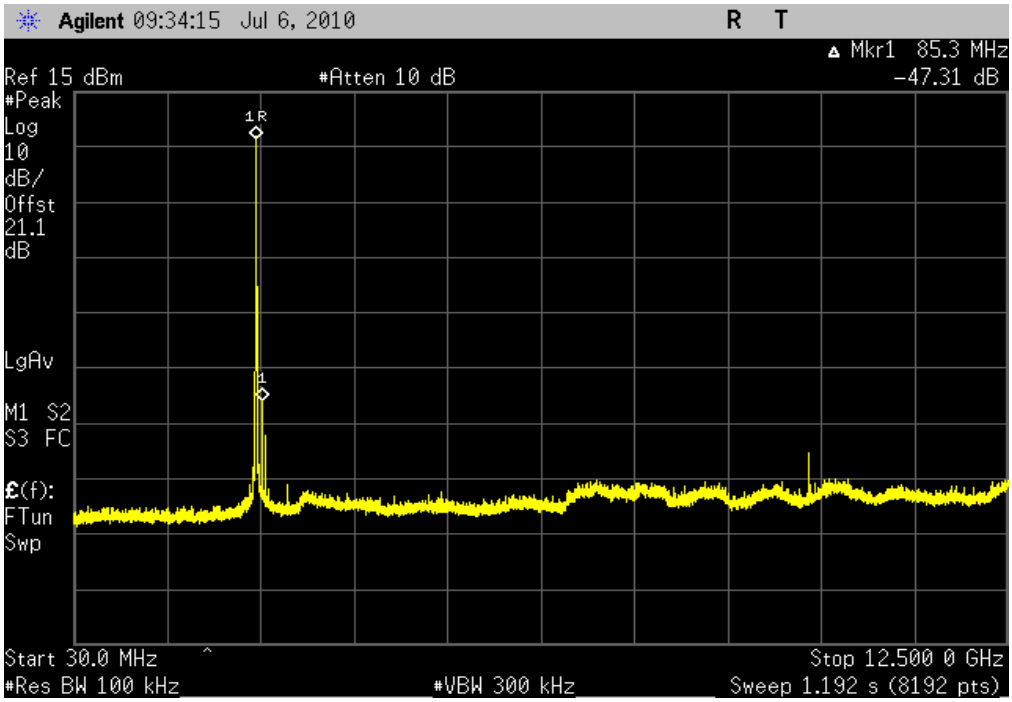


802.11(b) 1 Mbps, Mid Channel, 12.5 GHz - 25 GHz					
Result:	Pass	**Value:**	< -40 dBc	**Limit:**	≤ -20 dBc

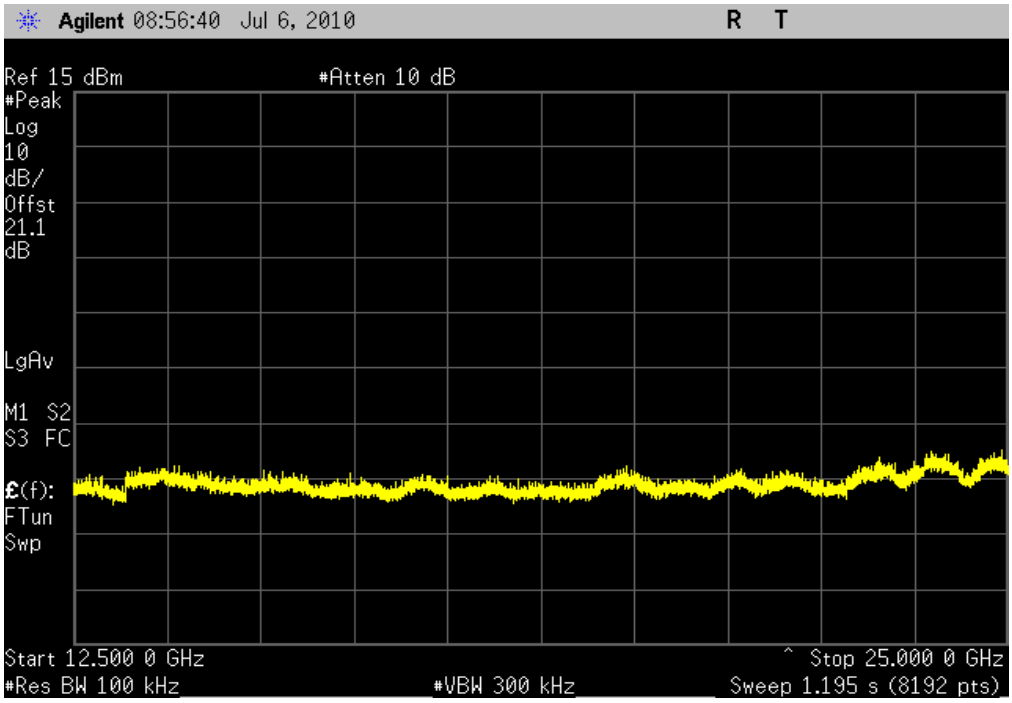


SPURIOUS CONDUCTED EMISSIONS

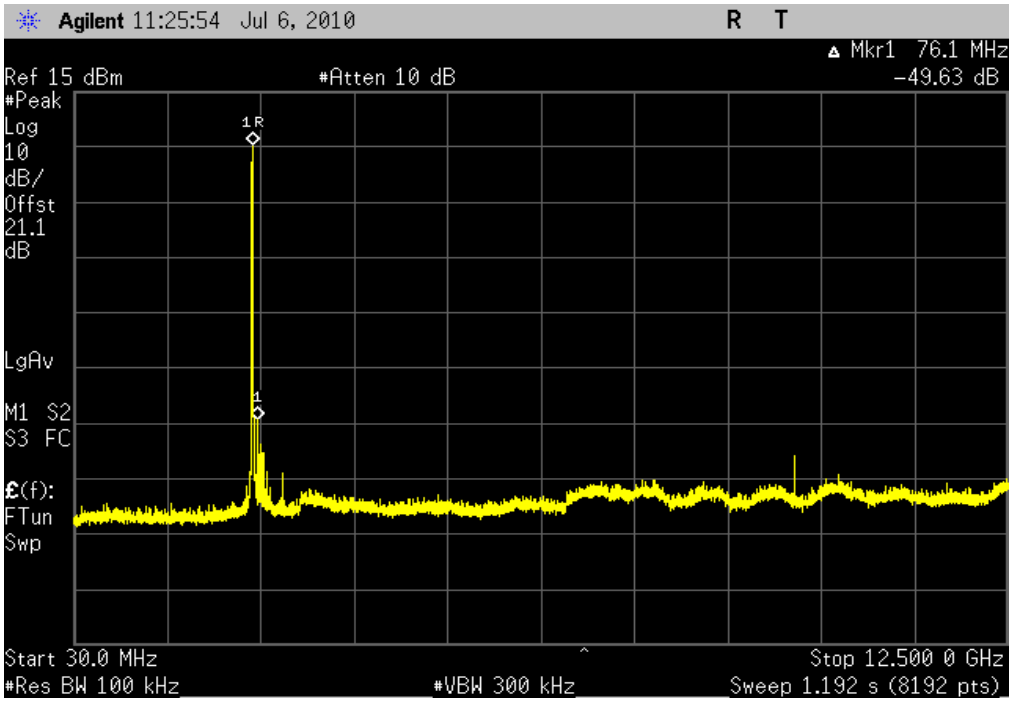
802.11(b) 1 Mbps, High Channel, 30 MHz - 12.5 GHz					
Result:	Pass	**Value:**	< -40 dBc	**Limit:**	≤ -20 dBc



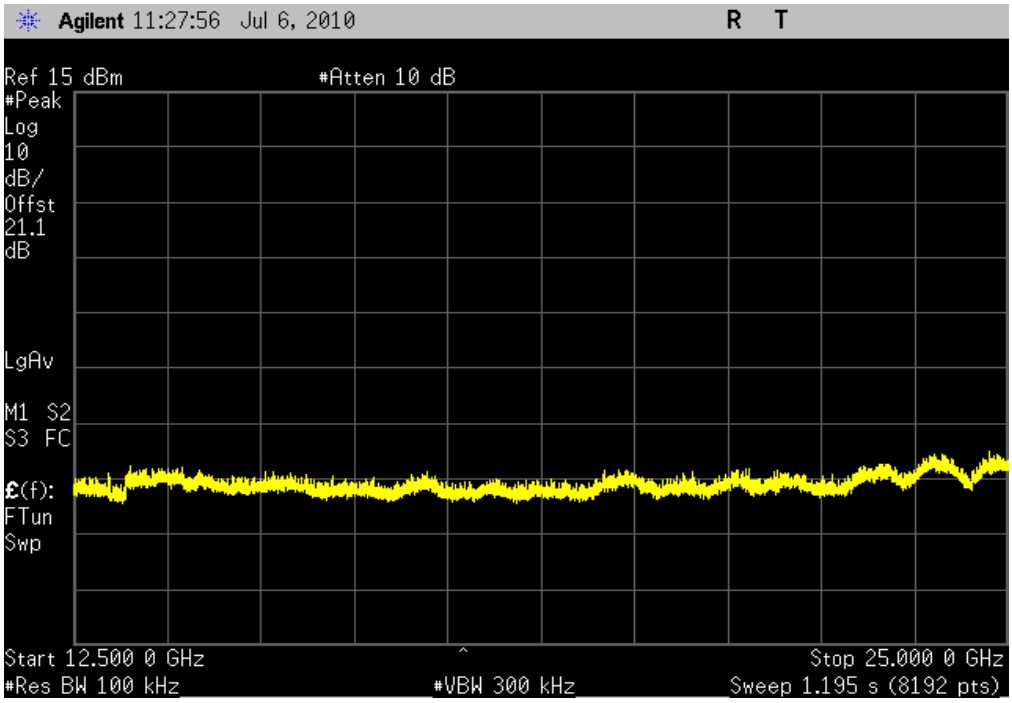
802.11(b) 1 Mbps, High Channel, 12.5 GHz - 25 GHz					
Result:	Pass	**Value:**	< -40 dBc	**Limit:**	≤ -20 dBc



802.11(b) 11 Mbps, Low Channel, 30 MHz - 12.5 GHz					
Result:	Pass	**Value:**	< -40 dBc	**Limit:**	≤ -20 dBc

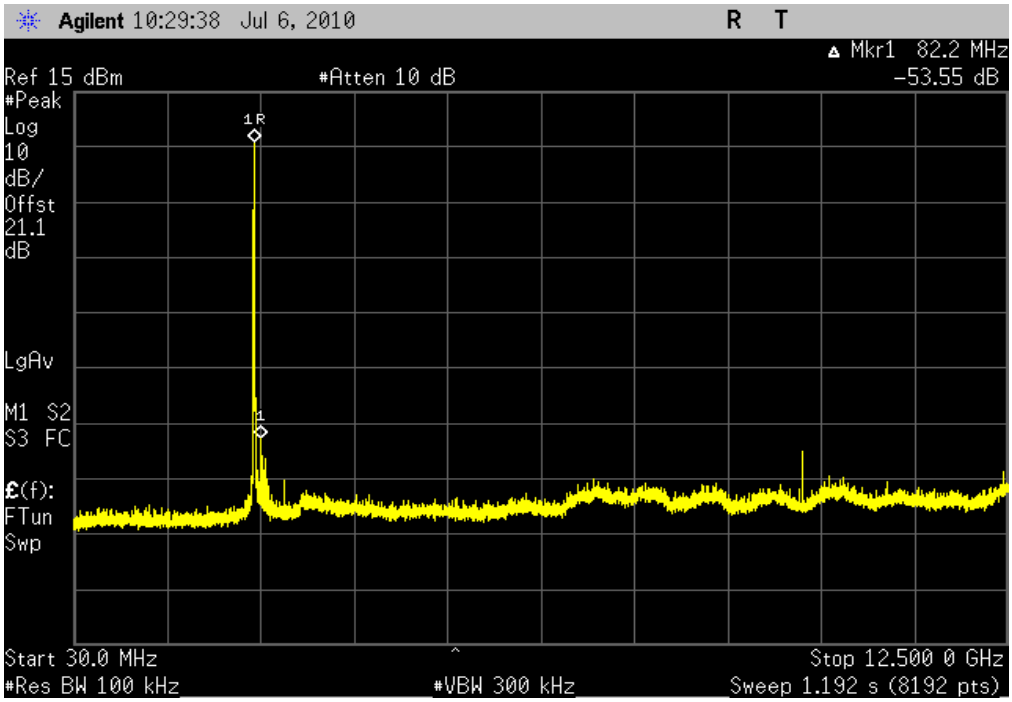


802.11(b) 11 Mbps, Low Channel, 12.5 GHz - 25 GHz					
Result:	Pass	**Value:**	< -40 dBc	**Limit:**	≤ -20 dBc

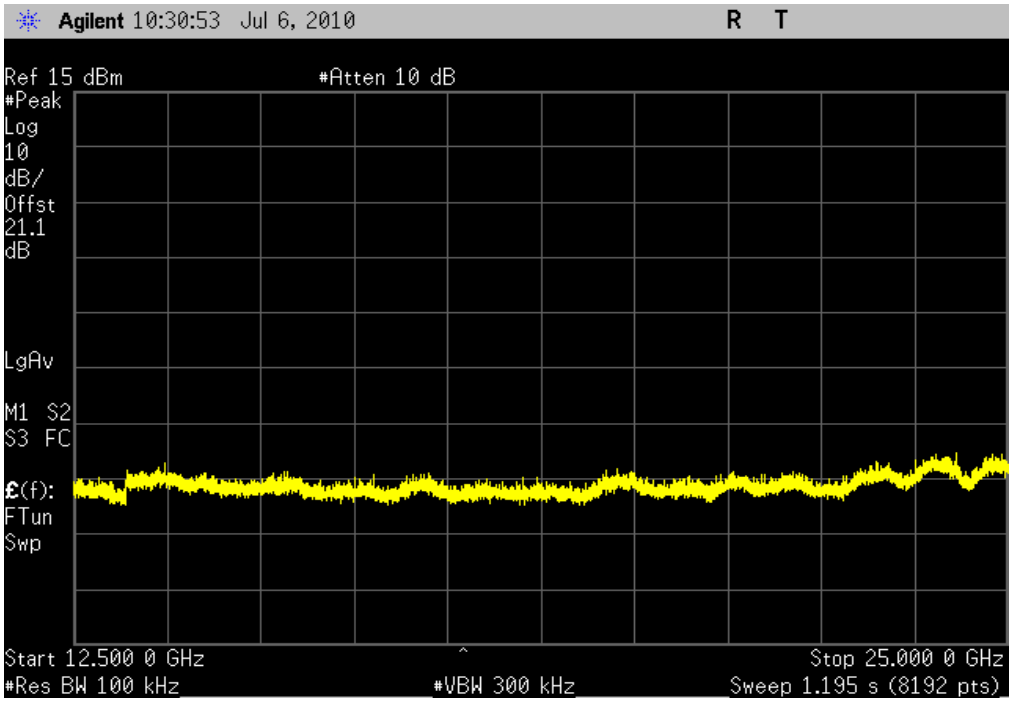


SPURIOUS CONDUCTED EMISSIONS

802.11(b) 11 Mbps, Mid Channel, 30 MHz - 12.5 GHz					
Result:	Pass	**Value:**	< -40 dBc	**Limit:**	≤ -20 dBc

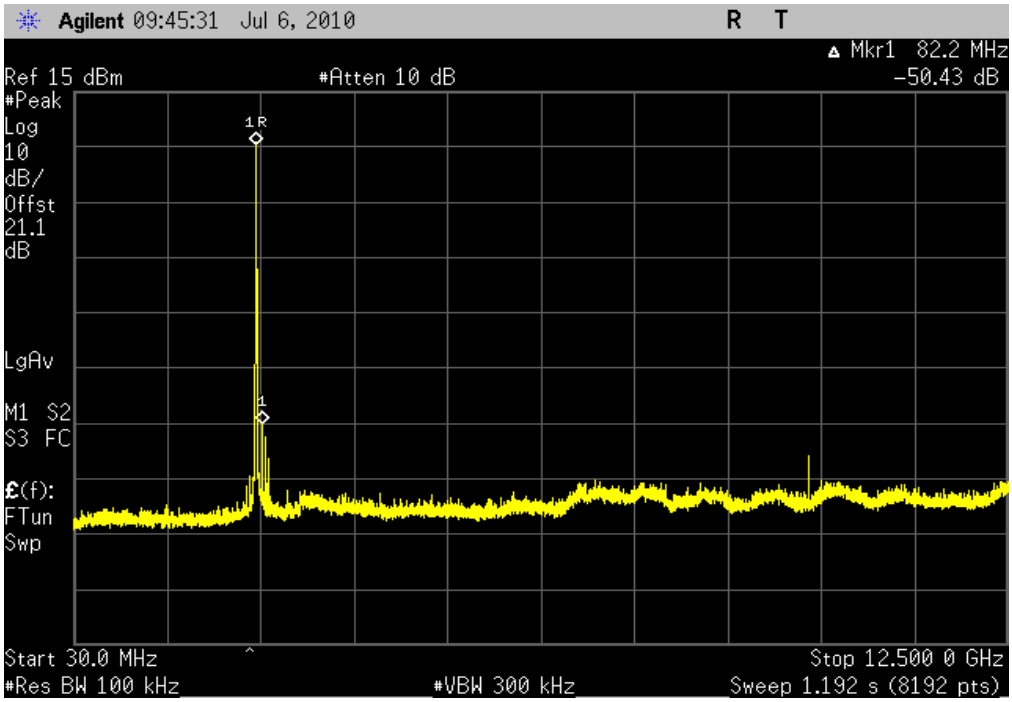


802.11(b) 11 Mbps, Mid Channel, 12.5 GHz - 25 GHz					
Result:	Pass	**Value:**	< -40 dBc	**Limit:**	≤ -20 dBc

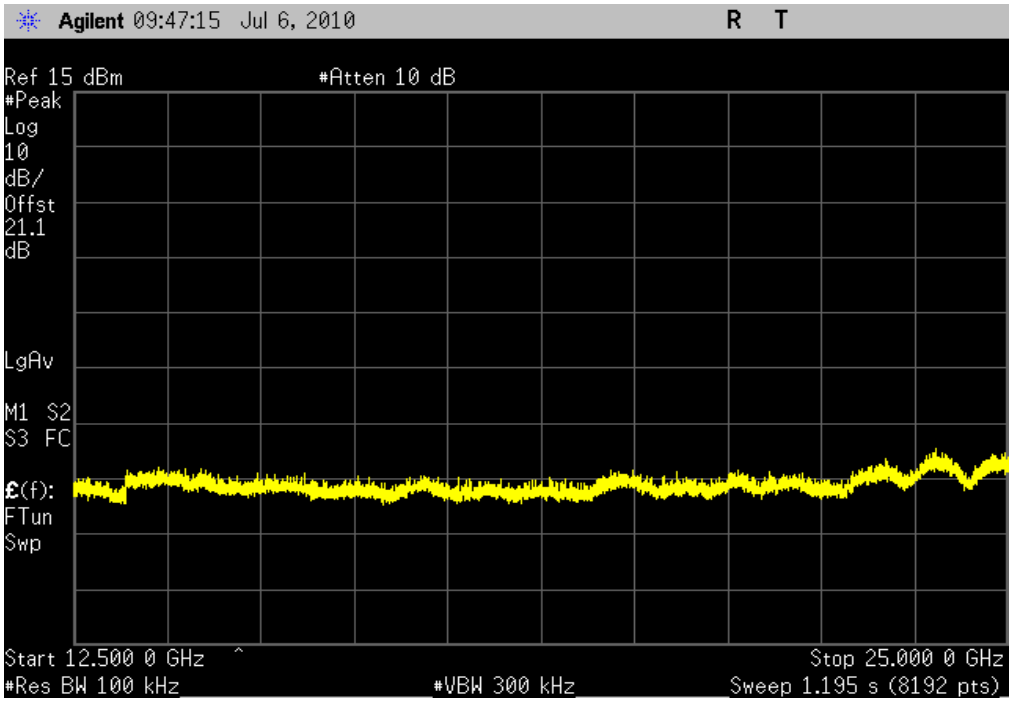


SPURIOUS CONDUCTED EMISSIONS

802.11(b) 11 Mbps, High Channel, 30 MHz - 12.5 GHz					
Result:	Pass	**Value:**	< -40 dBc	**Limit:**	≤ -20 dBc

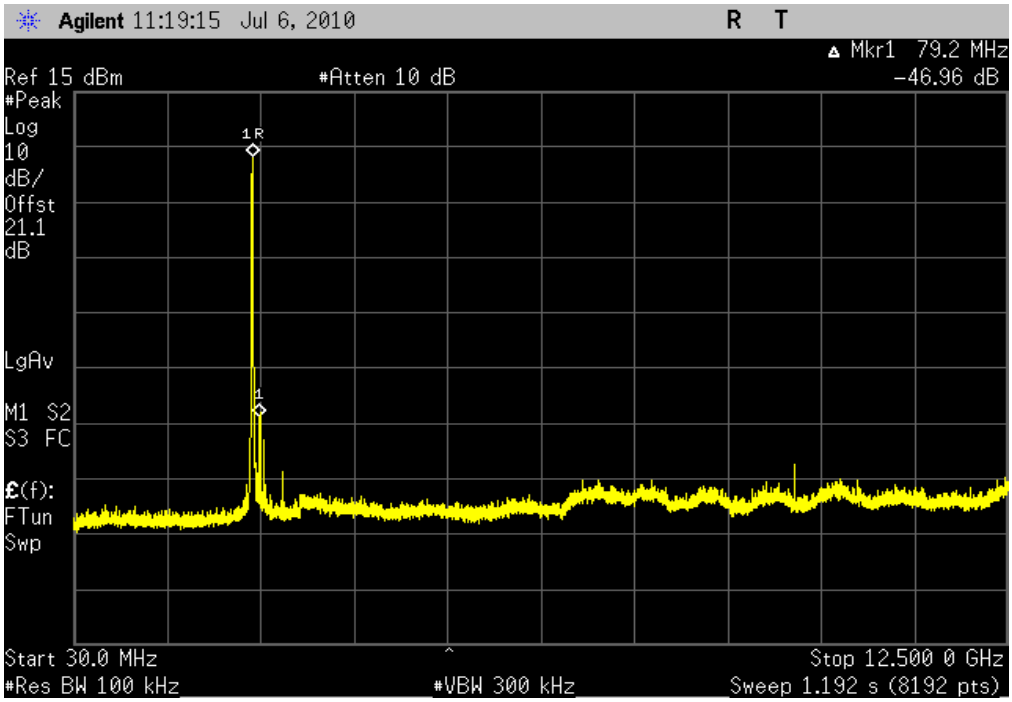


802.11(b) 11 Mbps, High Channel, 12.5 GHz - 25 GHz					
Result:	Pass	**Value:**	< -40 dBc	**Limit:**	≤ -20 dBc

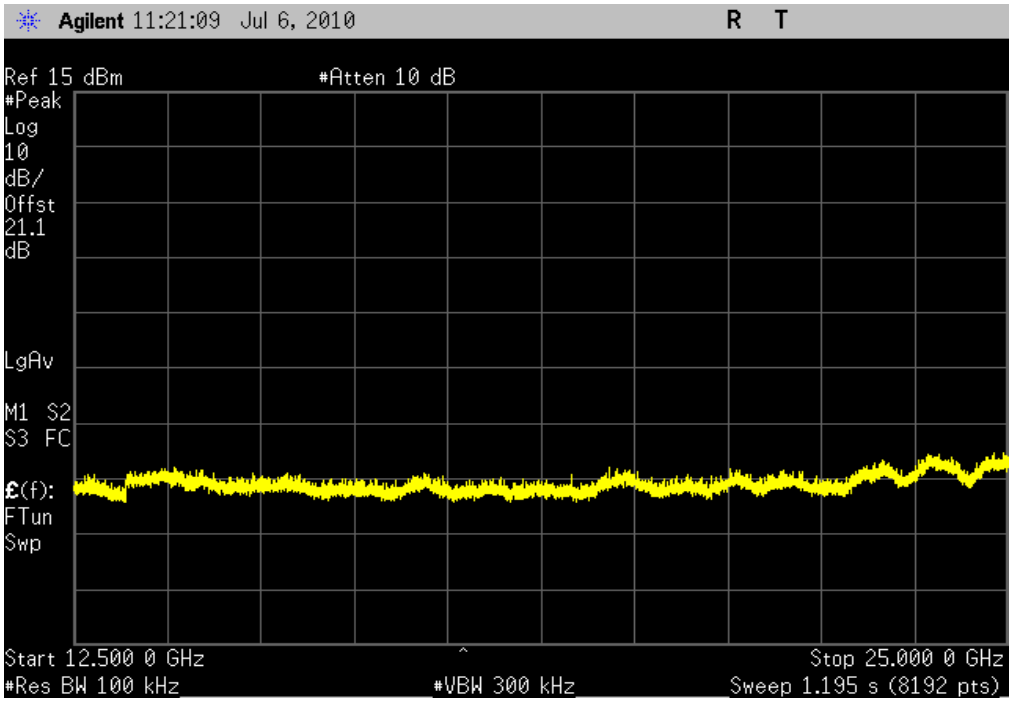


SPURIOUS CONDUCTED EMISSIONS

802.11(g) 6 Mbps, Low Channel, 30 MHz - 12.5 GHz					
Result:	Pass	**Value:**	< -40 dBc	**Limit:**	≤ -20 dBc

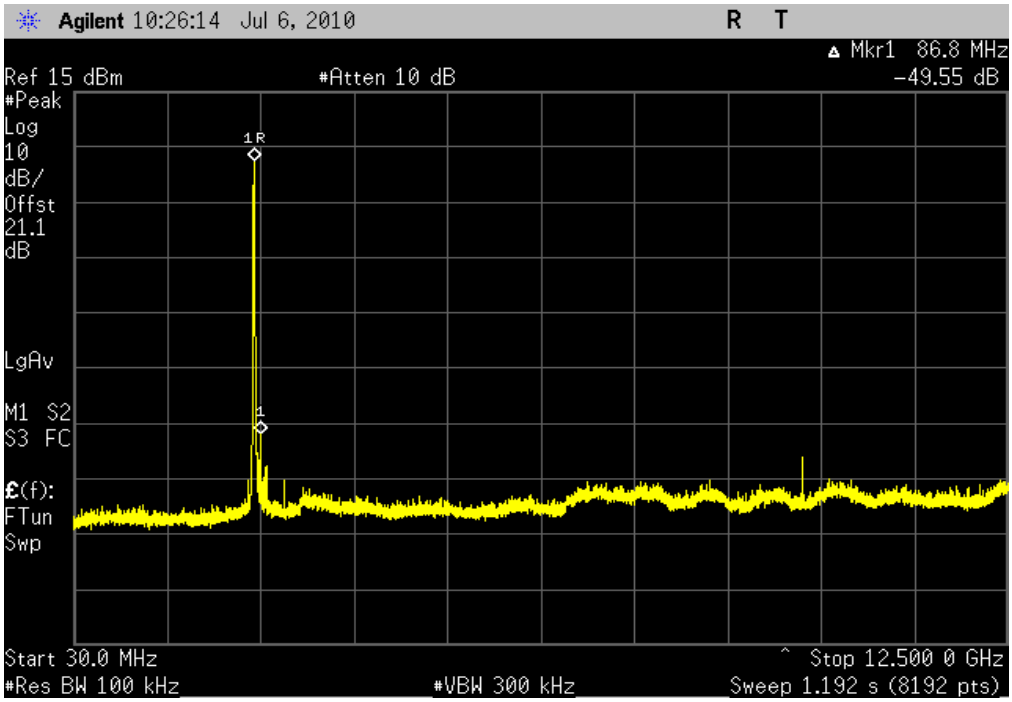


802.11(g) 6 Mbps, Low Channel, 12.5 GHz - 25 GHz					
Result:	Pass	**Value:**	< -40 dBc	**Limit:**	≤ -20 dBc

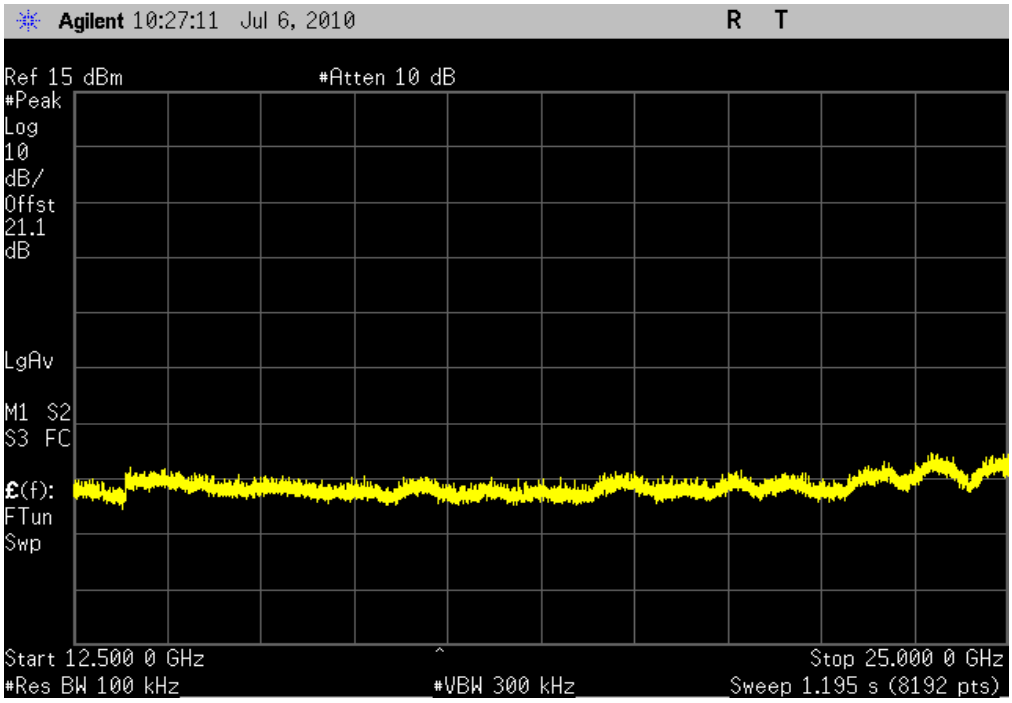


SPURIOUS CONDUCTED EMISSIONS

802.11(g) 6 Mbps, Mid Channel, 30 MHz - 12.5 GHz					
Result:	Pass	**Value:**	< -40 dBc	**Limit:**	≤ -20 dBc

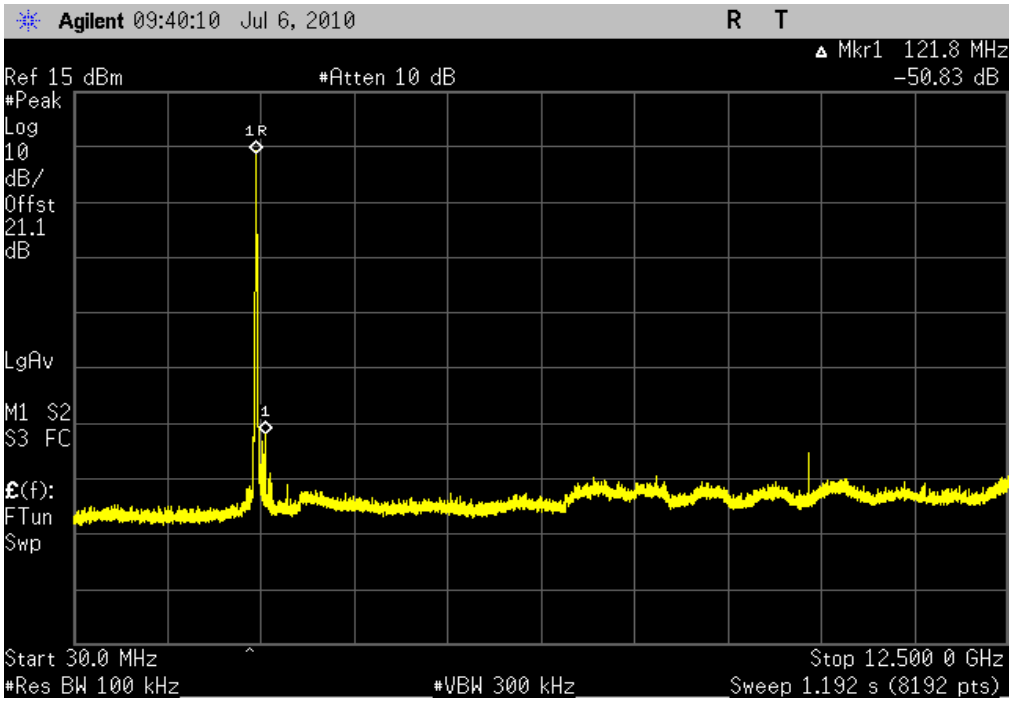


802.11(g) 6 Mbps, Mid Channel, 12.5 GHz - 25 GHz					
Result:	Pass	**Value:**	< -40 dBc	**Limit:**	≤ -20 dBc

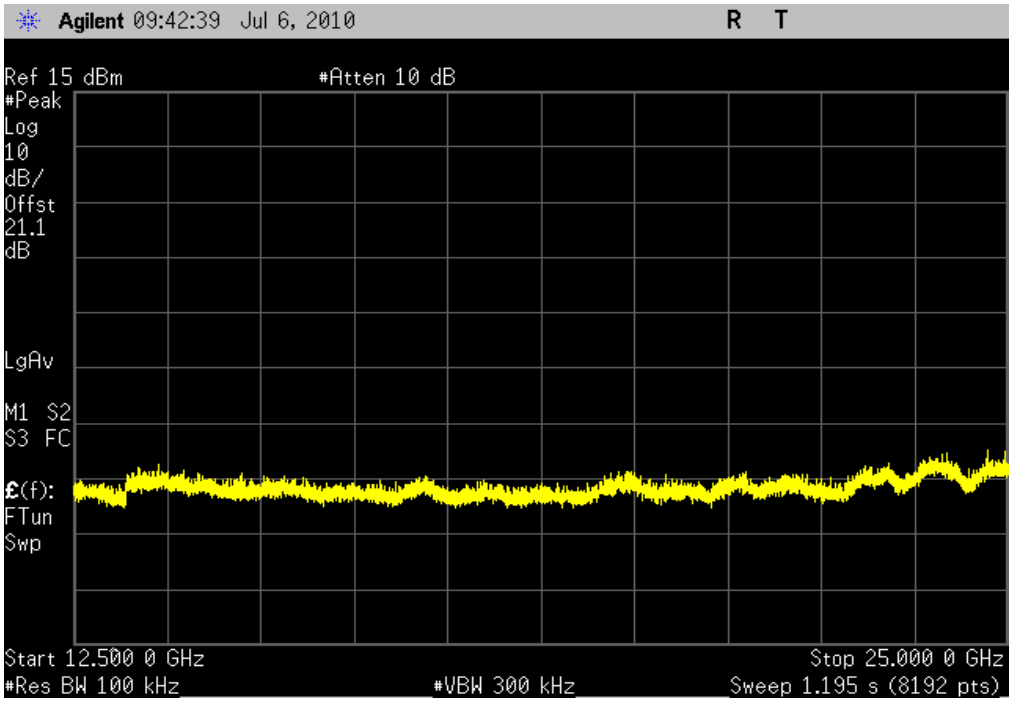


SPURIOUS CONDUCTED EMISSIONS

802.11(g) 6 Mbps, High Channel, 30 MHz - 12.5 GHz					
Result:	Pass	**Value:**	< -40 dBc	**Limit:**	≤ -20 dBc

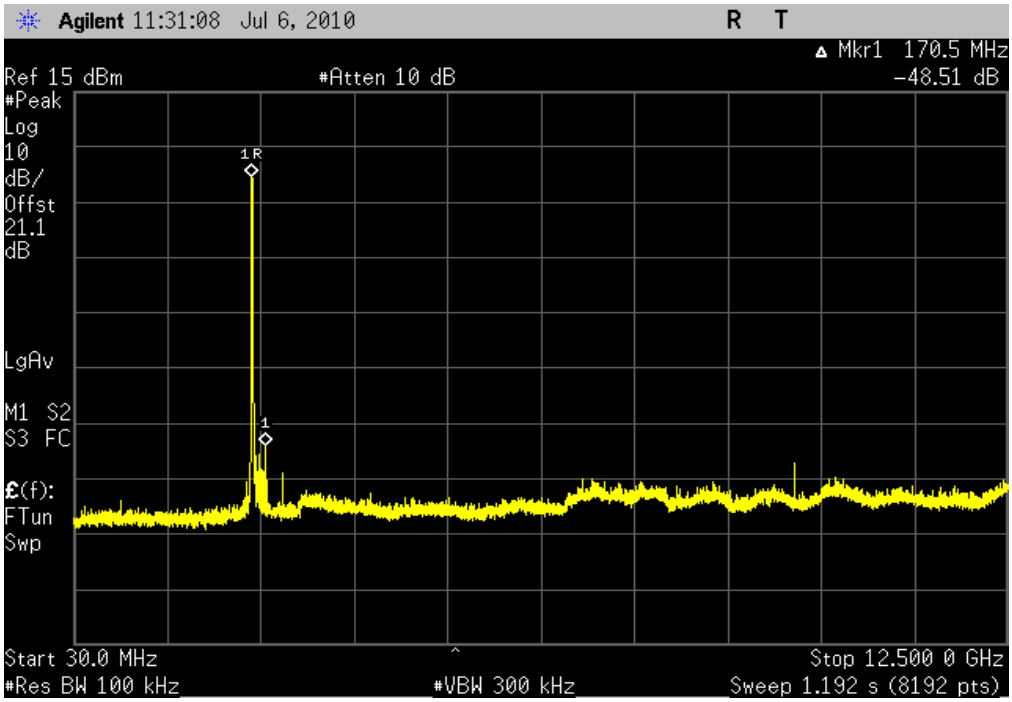


802.11(g) 6 Mbps, High Channel, 12.5 GHz - 25 GHz					
Result:	Pass	**Value:**	< -40 dBc	**Limit:**	≤ -20 dBc

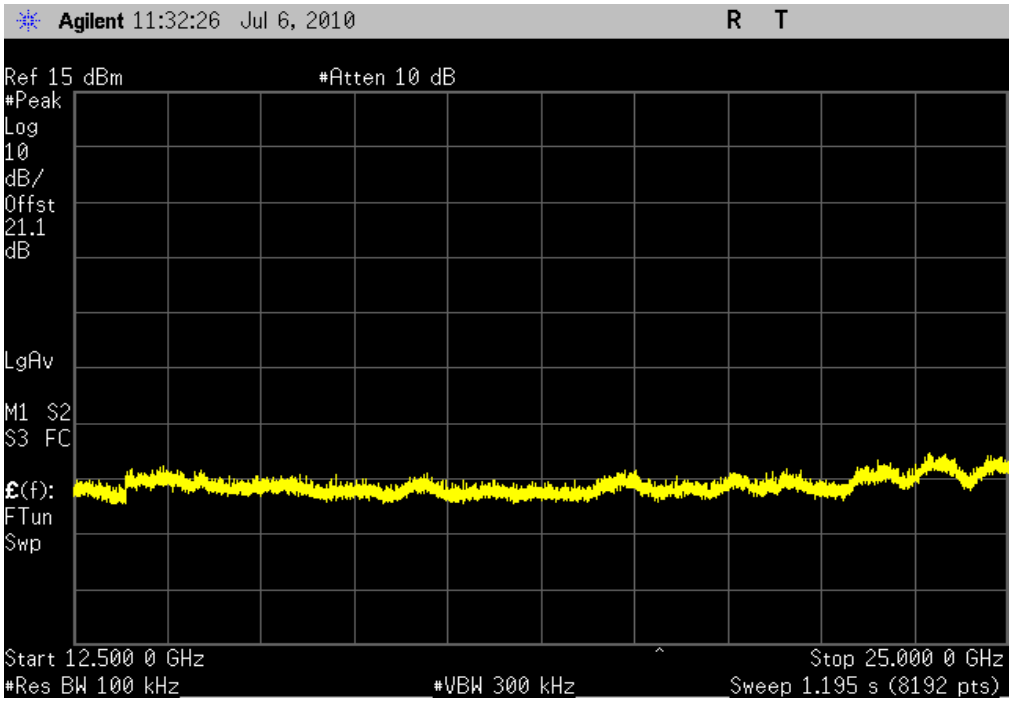


SPURIOUS CONDUCTED EMISSIONS

802.11(g) 36 Mbps, Low Channel, 30 MHz - 12.5 GHz					
Result:	Pass	**Value:**	< -40 dBc	**Limit:**	≤ -20 dBc

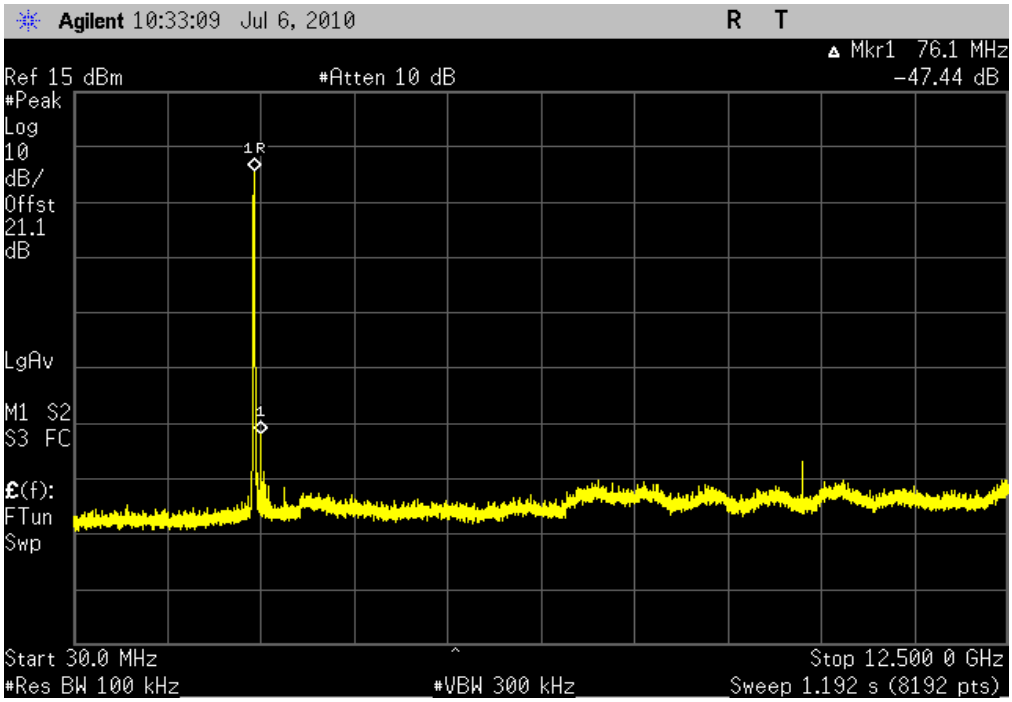


802.11(g) 36 Mbps, Low Channel, 12.5 GHz - 25 GHz					
Result:	Pass	**Value:**	< -40 dBc	**Limit:**	≤ -20 dBc

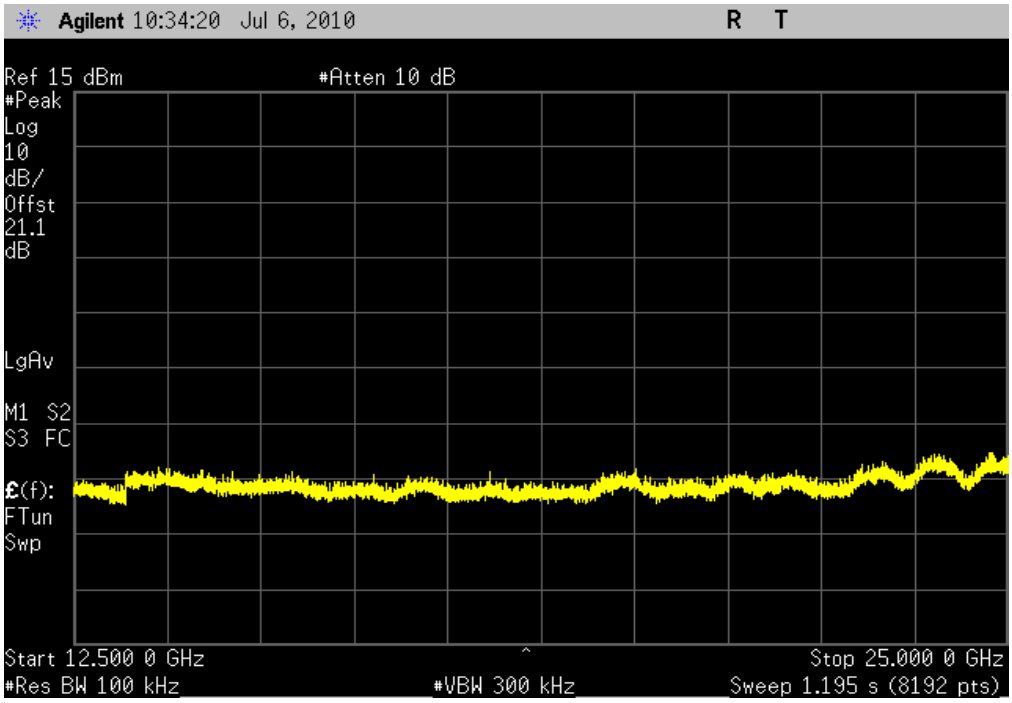


SPURIOUS CONDUCTED EMISSIONS

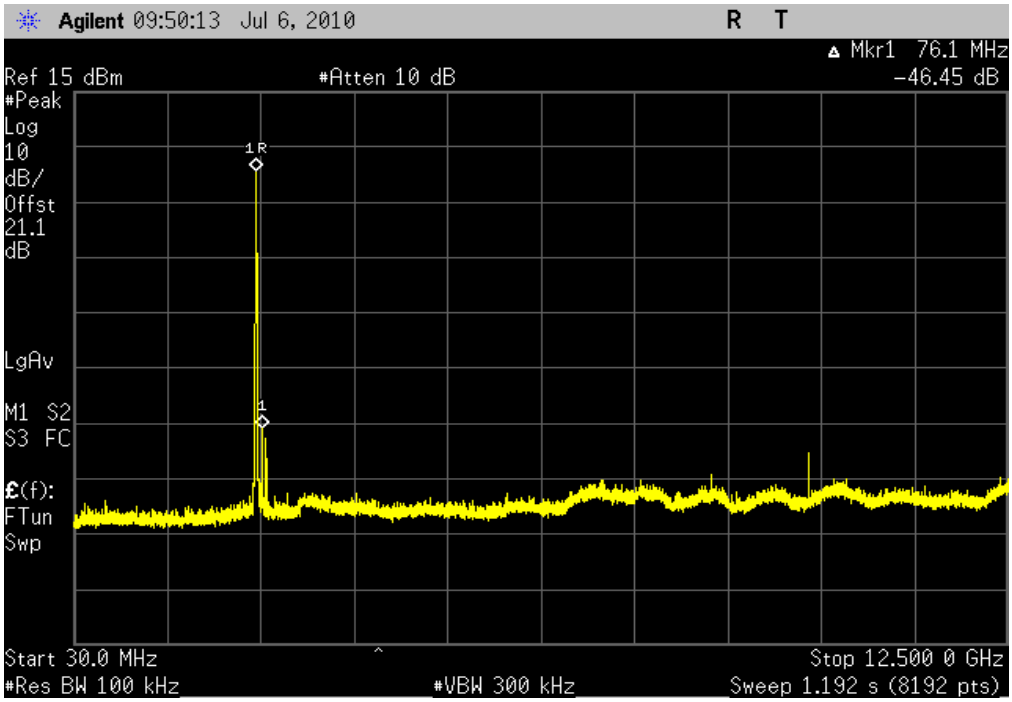
802.11(g) 36 Mbps, Mid Channel, 30 MHz - 12.5 GHz					
Result:	Pass	**Value:**	< -40 dBc	**Limit:**	≤ -20 dBc



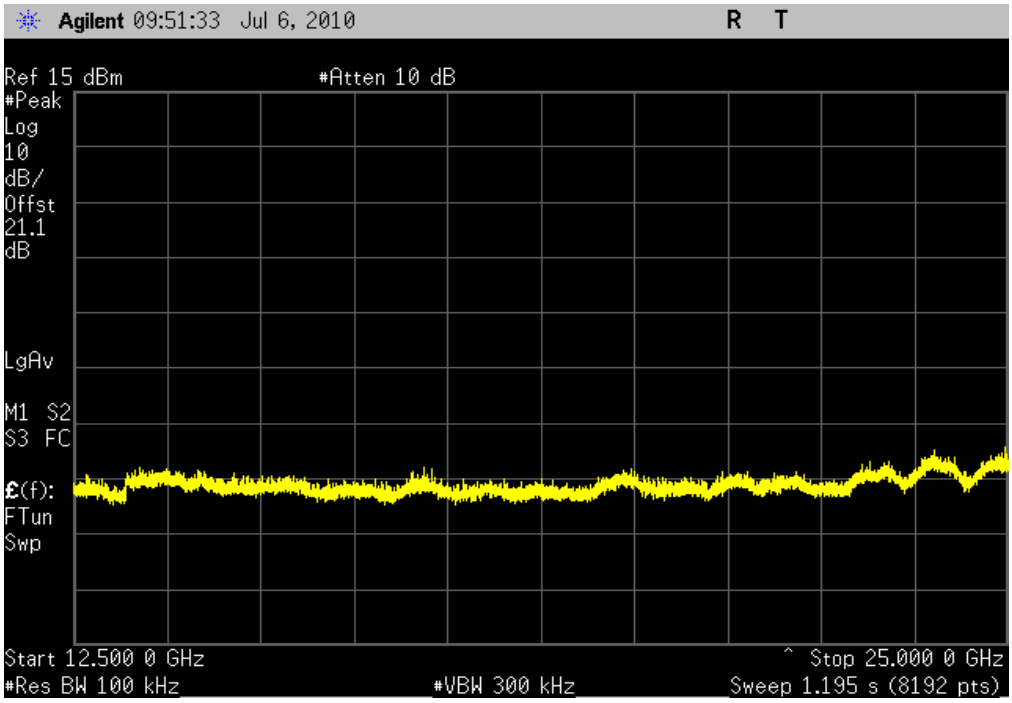
802.11(g) 36 Mbps, Mid Channel, 12.5 GHz - 25 GHz					
Result:	Pass	**Value:**	< -40 dBc	**Limit:**	≤ -20 dBc



802.11(g) 36 Mbps, High Channel, 30 MHz - 12.5 GHz					
Result:	Pass	**Value:**	< -40 dBc	**Limit:**	≤ -20 dBc

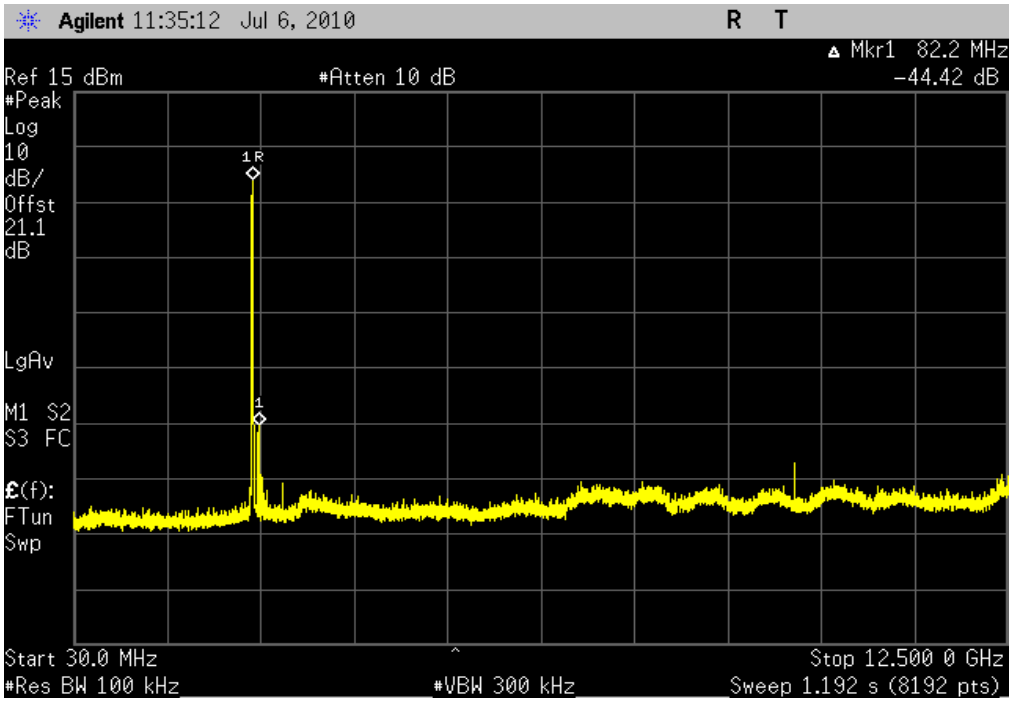


802.11(g) 36 Mbps, High Channel, 12.5 GHz - 25 GHz					
Result:	Pass	**Value:**	< -40 dBc	**Limit:**	≤ -20 dBc

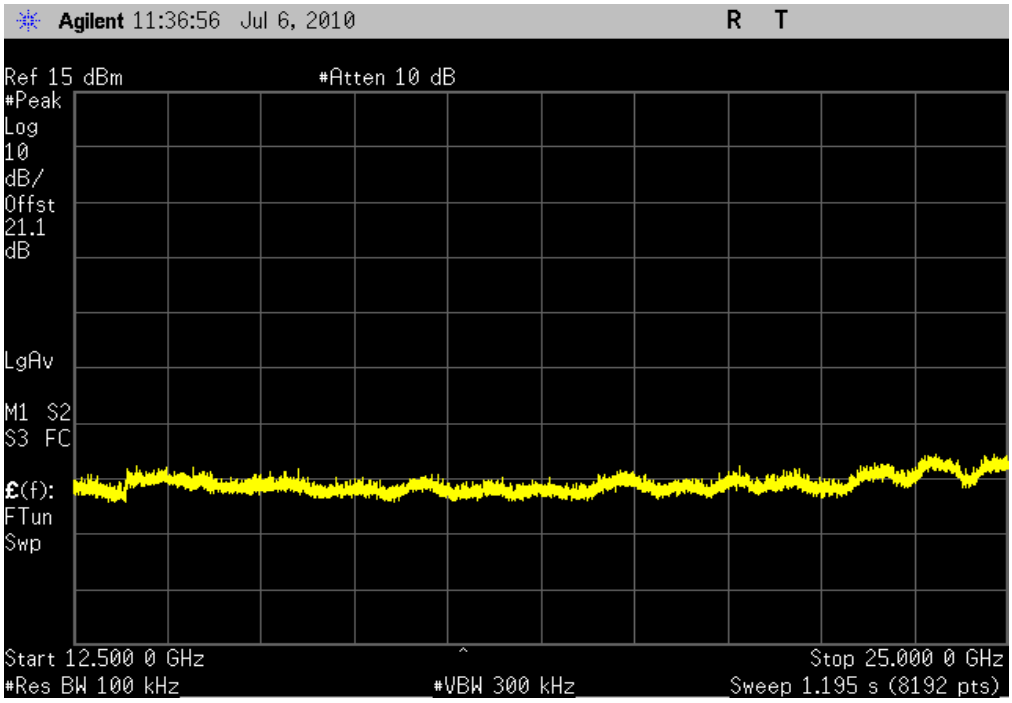


SPURIOUS CONDUCTED EMISSIONS

802.11(g) 54 Mbps, Low Channel, 30 MHz - 12.5 GHz					
Result:	Pass	**Value:**	< -40 dBc	**Limit:**	≤ -20 dBc

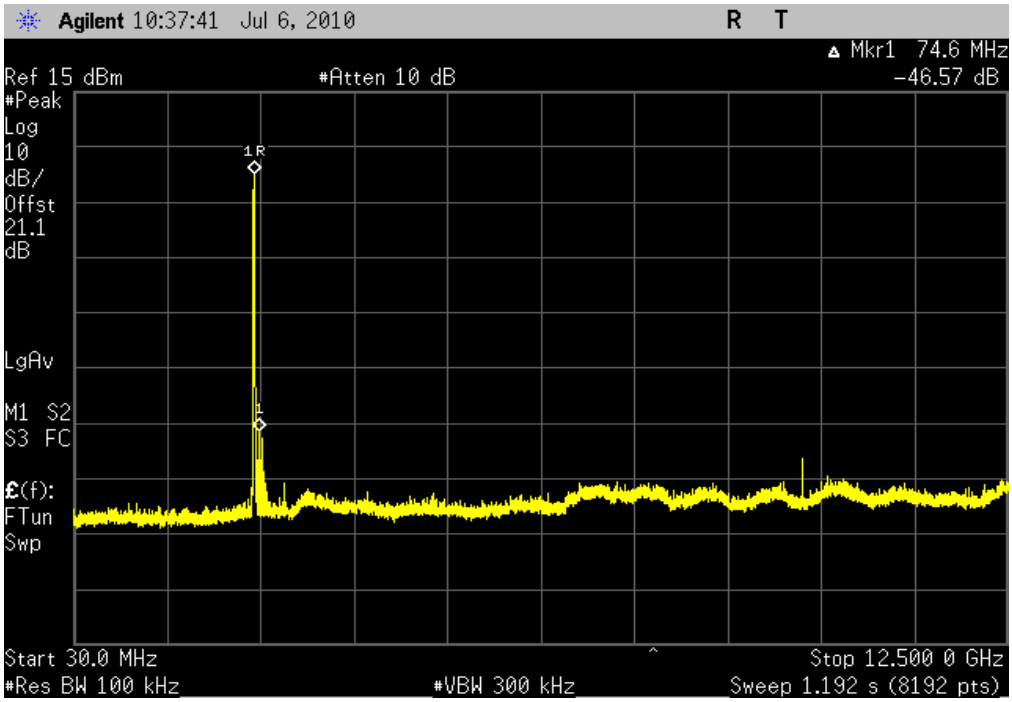


802.11(g) 54 Mbps, Low Channel, 12.5 GHz - 25 GHz					
Result:	Pass	**Value:**	< -40 dBc	**Limit:**	≤ -20 dBc

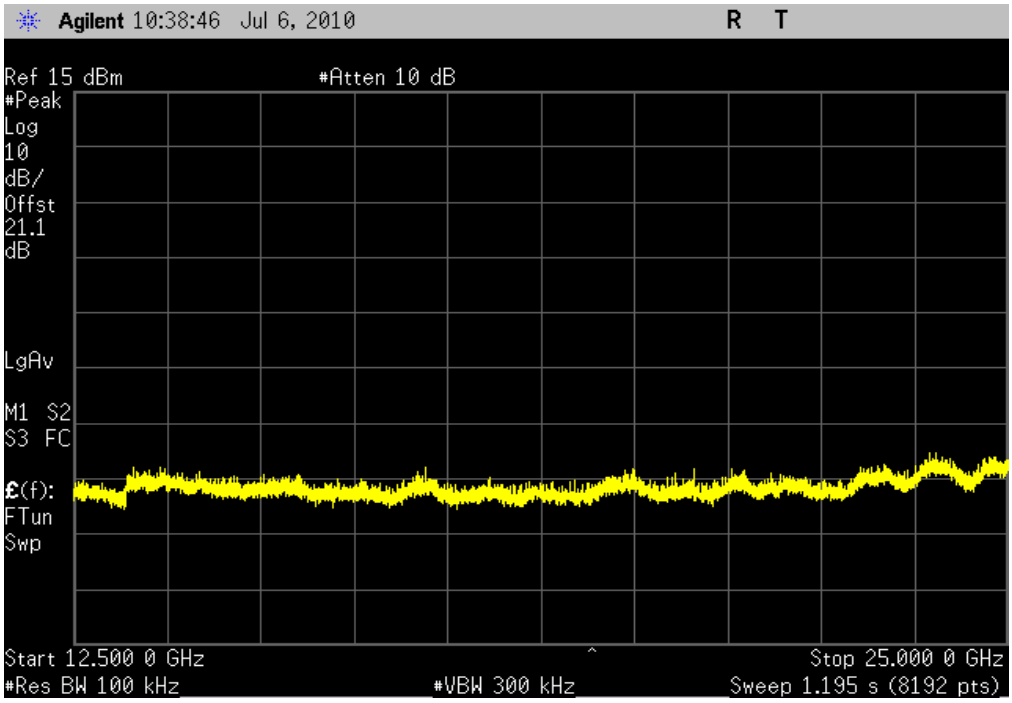


SPURIOUS CONDUCTED EMISSIONS

802.11(g) 54 Mbps, Mid Channel, 30 MHz - 12.5 GHz					
Result:	Pass	**Value:**	< -40 dBc	**Limit:**	≤ -20 dBc

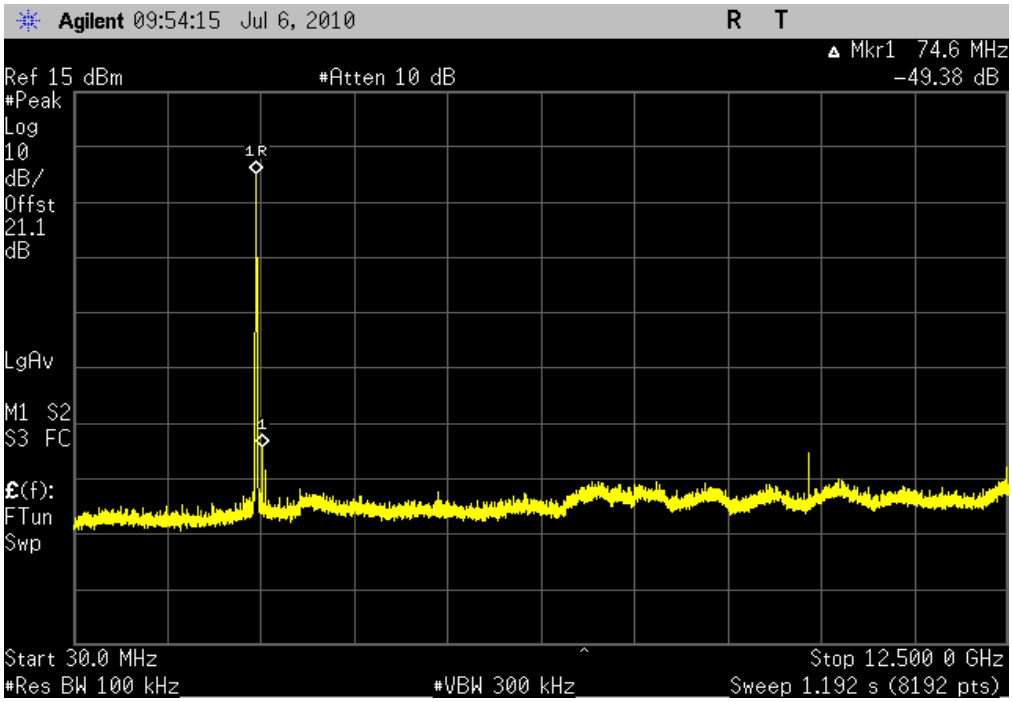


802.11(g) 54 Mbps, Mid Channel, 12.5 GHz - 25 GHz					
Result:	Pass	**Value:**	< -40 dBc	**Limit:**	≤ -20 dBc

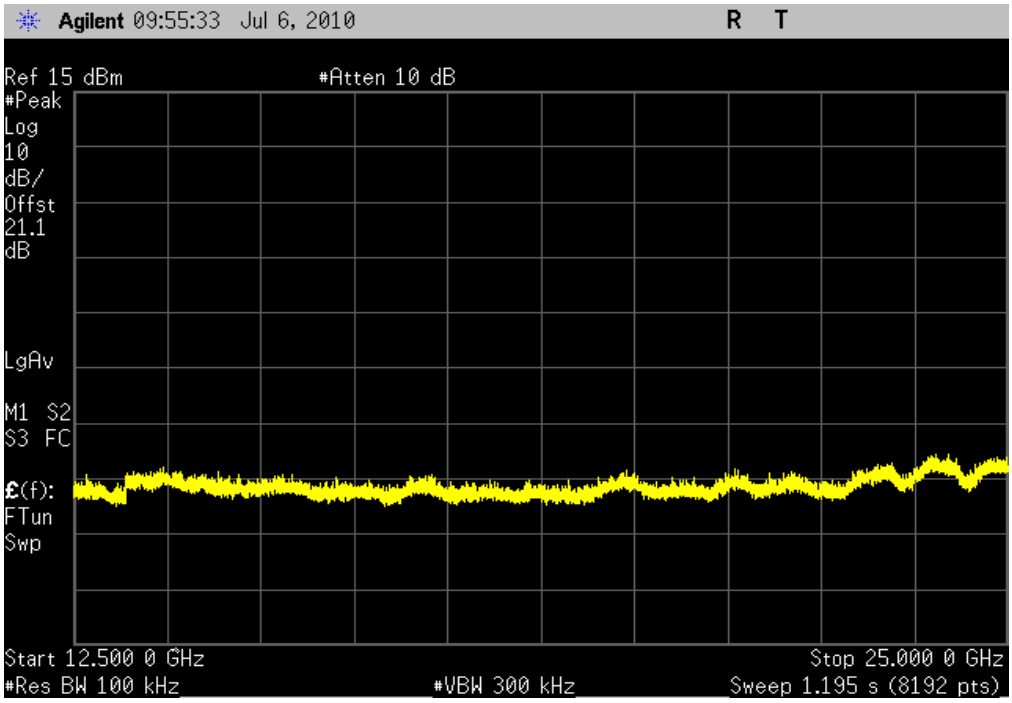


SPURIOUS CONDUCTED EMISSIONS

802.11(g) 54 Mbps, High Channel, 30 MHz - 12.5 GHz					
Result:	Pass	**Value:**	< -40 dBc	**Limit:**	≤ -20 dBc

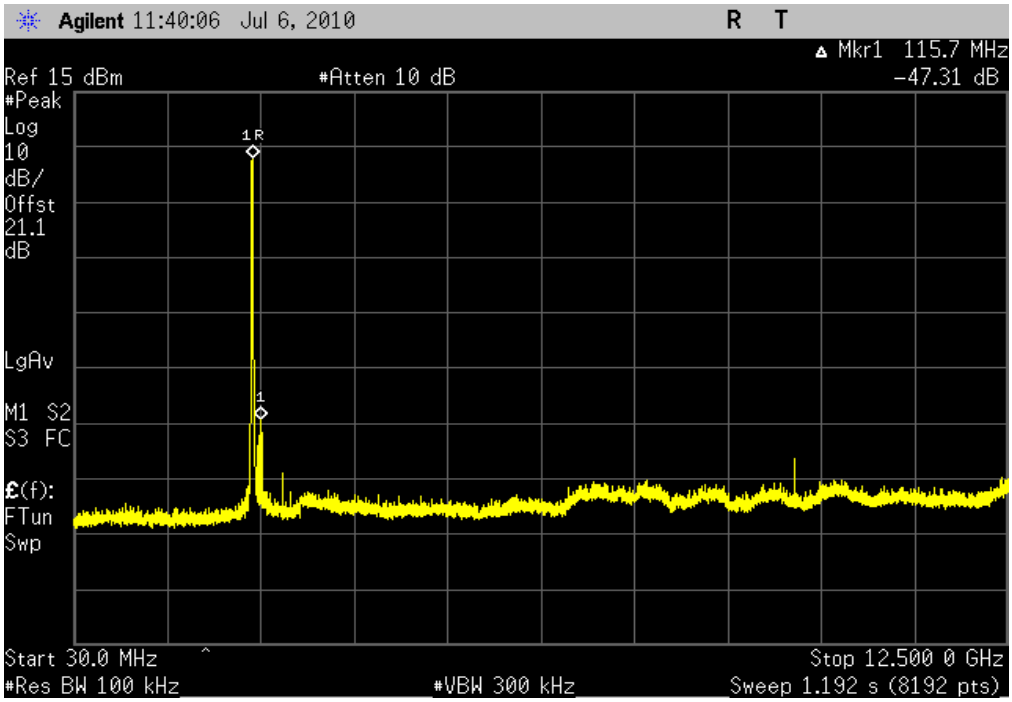


802.11(g) 54 Mbps, High Channel, 12.5 GHz - 25 GHz					
Result:	Pass	**Value:**	< -40 dBc	**Limit:**	≤ -20 dBc

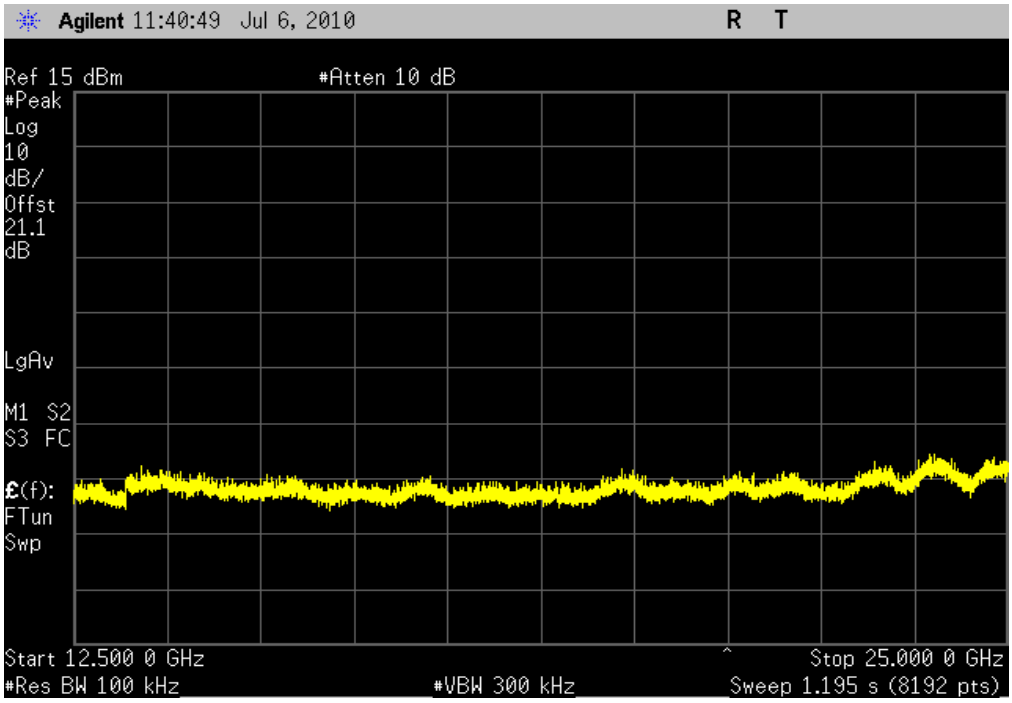


SPURIOUS CONDUCTED EMISSIONS

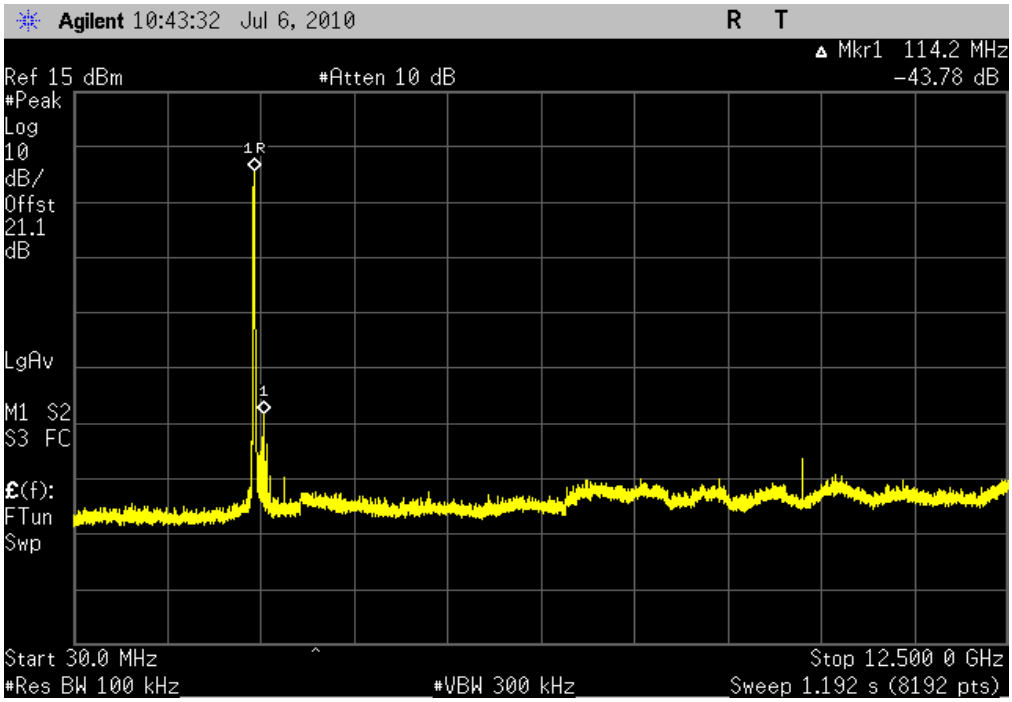
802.11(n) MCS0, Low Channel, 30 MHz - 12.5 GHz					
Result:	Pass	**Value:**	< -40 dBc	**Limit:**	≤ -20 dBc



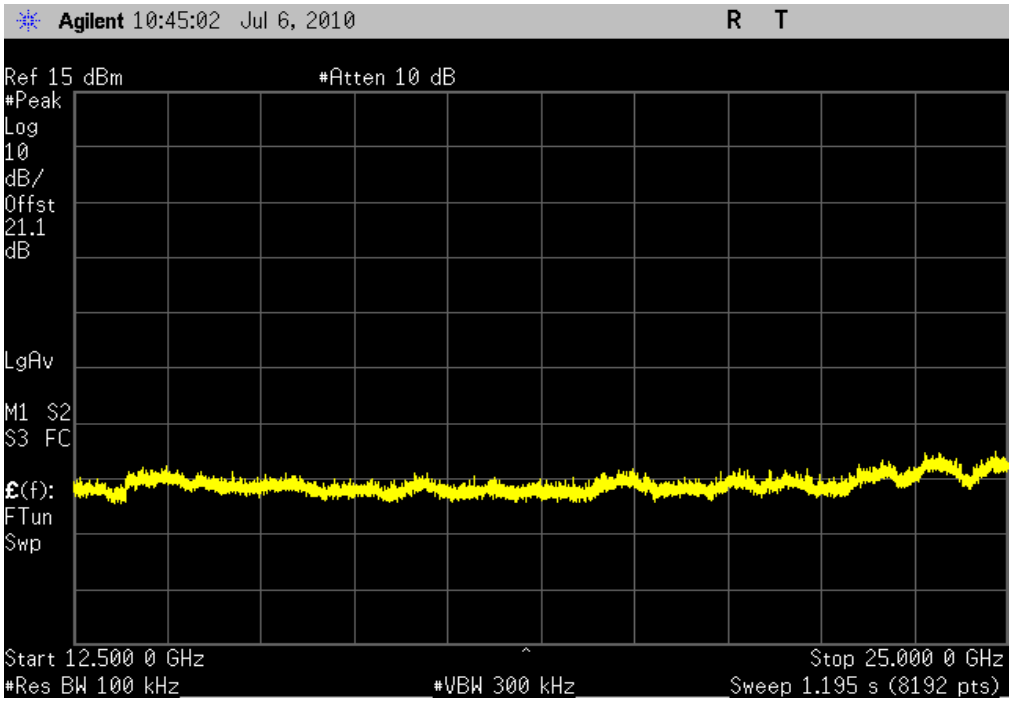
802.11(n) MCS0, Low Channel, 12.5 GHz - 25 GHz					
Result:	Pass	**Value:**	< -40 dBc	**Limit:**	≤ -20 dBc



802.11(n) MCS0, Mid Channel, 30 MHz - 12.5 GHz					
Result:	Pass	**Value:**	< -40 dBc	**Limit:**	≤ -20 dBc

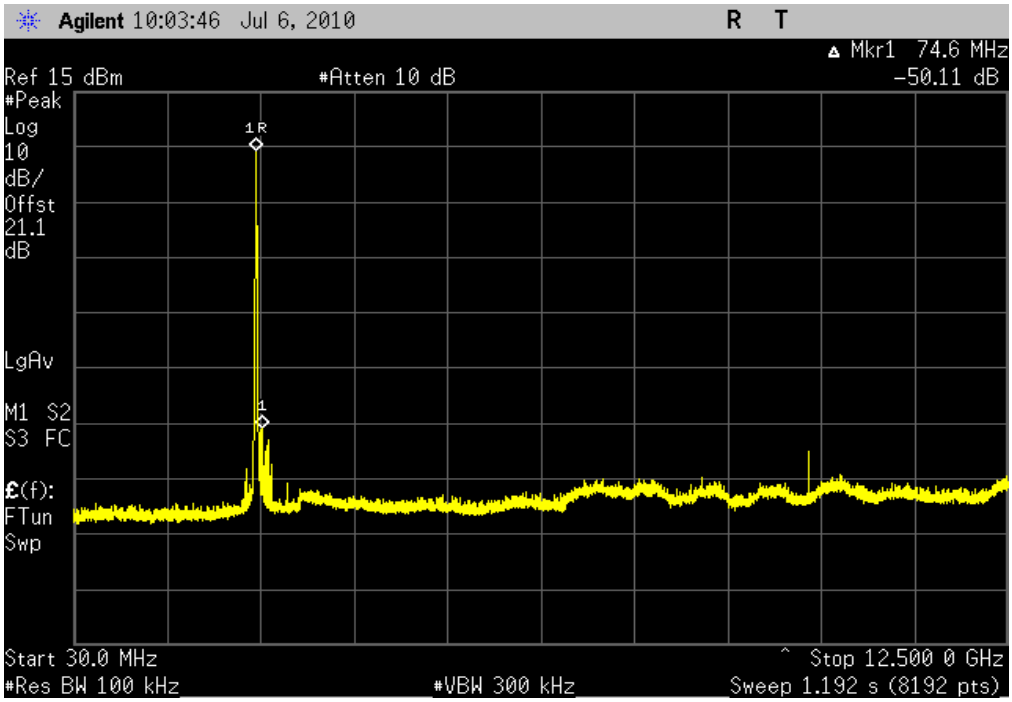


802.11(n) MCS0, Mid Channel, 12.5 GHz - 25 GHz					
Result:	Pass	**Value:**	< -40 dBc	**Limit:**	≤ -20 dBc

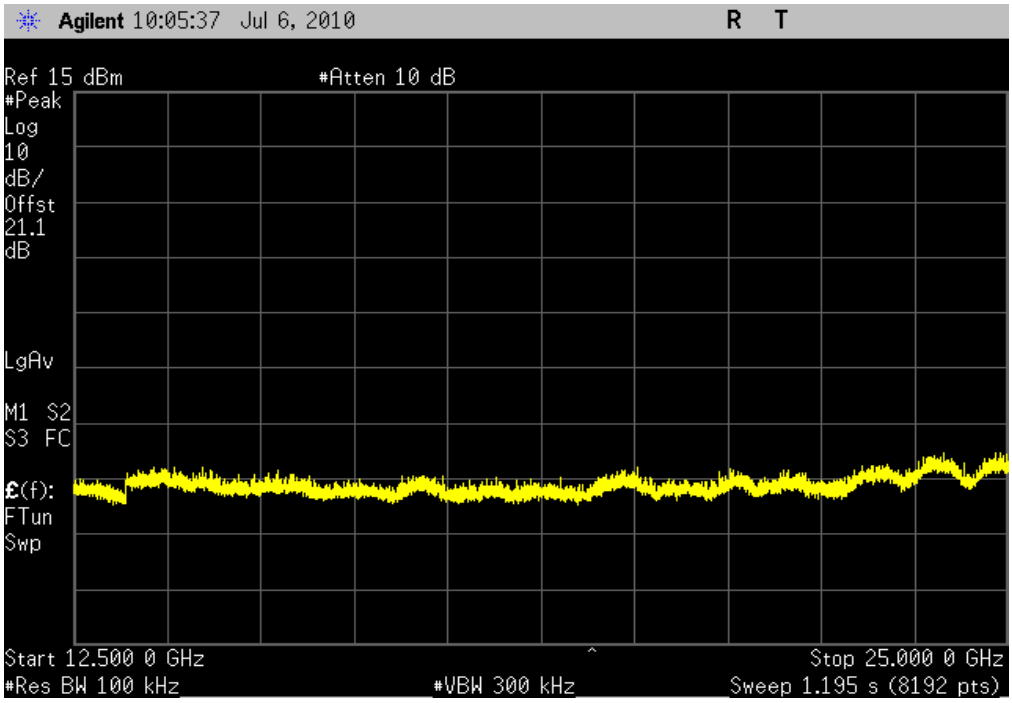


SPURIOUS CONDUCTED EMISSIONS

802.11(n) MCS0, High Channel, 30 MHz - 12.5 GHz					
Result:	Pass	**Value:**	< -40 dBc	**Limit:**	≤ -20 dBc

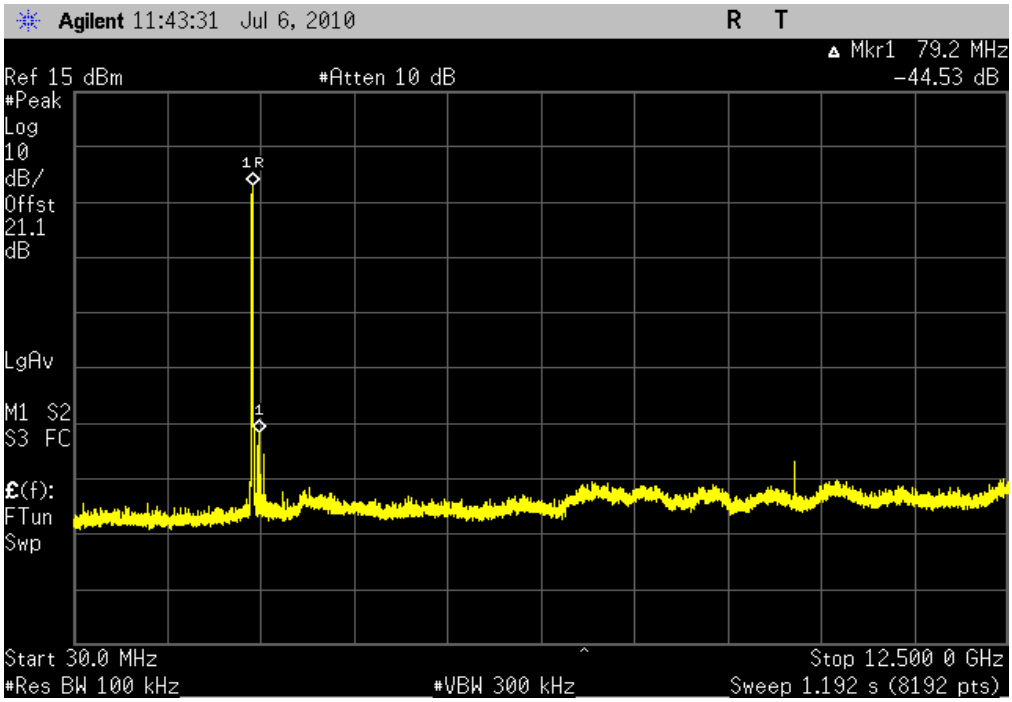


802.11(n) MCS0, High Channel, 12.5 GHz - 25 GHz					
Result:	Pass	**Value:**	< -40 dBc	**Limit:**	≤ -20 dBc

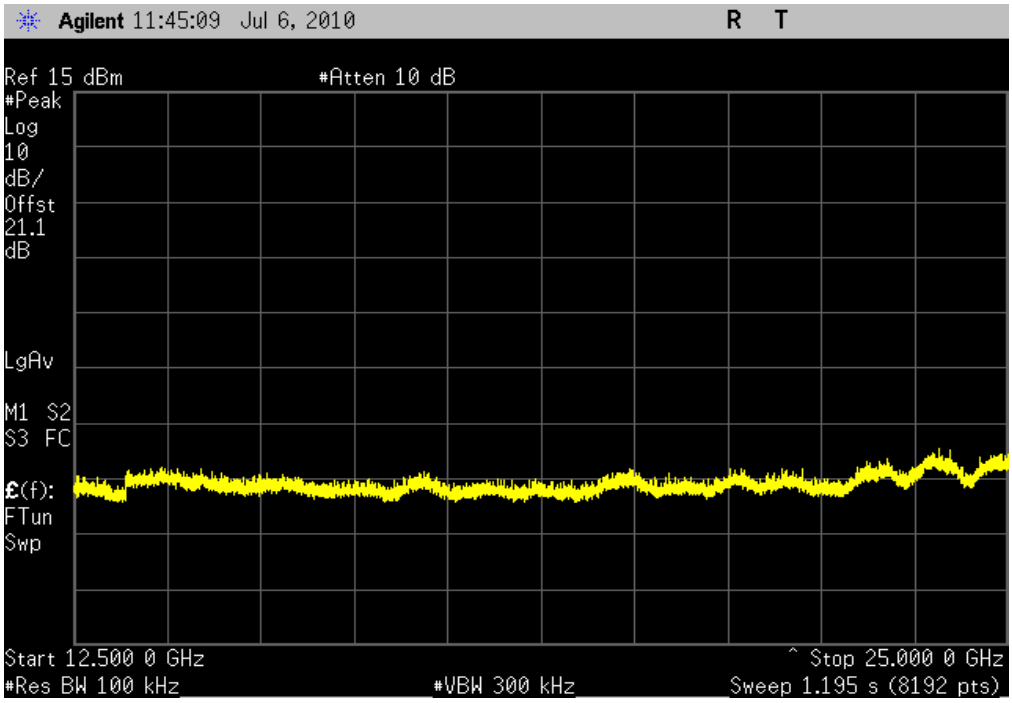


SPURIOUS CONDUCTED EMISSIONS

802.11(n) MCS7, Low Channel, 30 MHz - 12.5 GHz					
Result:	Pass	**Value:**	< -40 dBc	**Limit:**	≤ -20 dBc

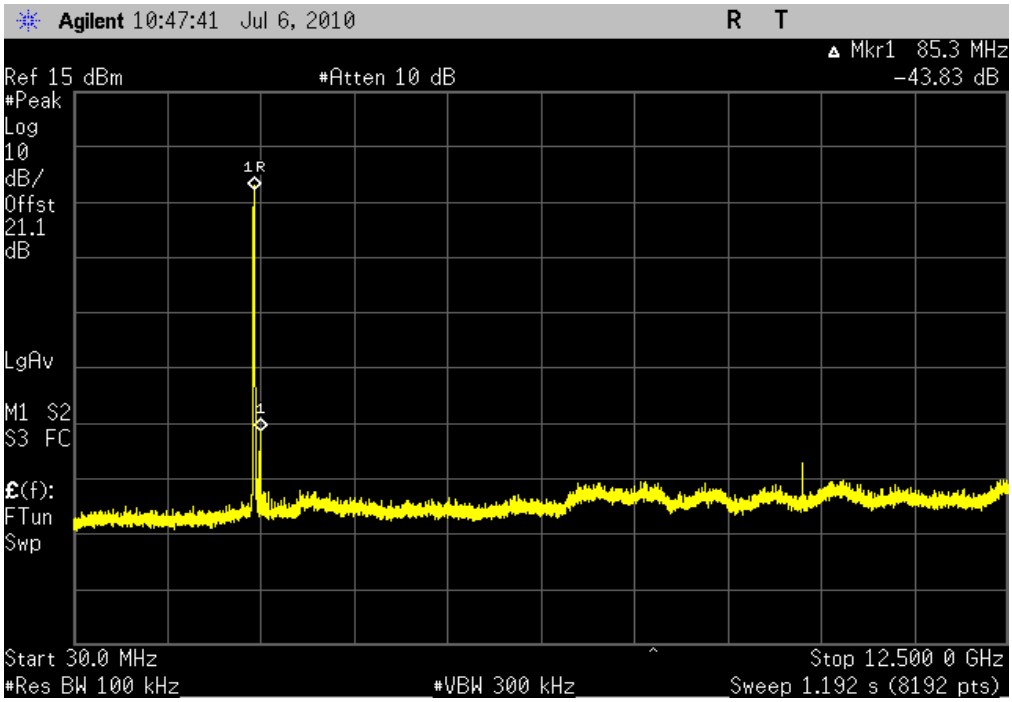


802.11(n) MCS7, Low Channel, 12.5 GHz - 25 GHz					
Result:	Pass	**Value:**	< -40 dBc	**Limit:**	≤ -20 dBc

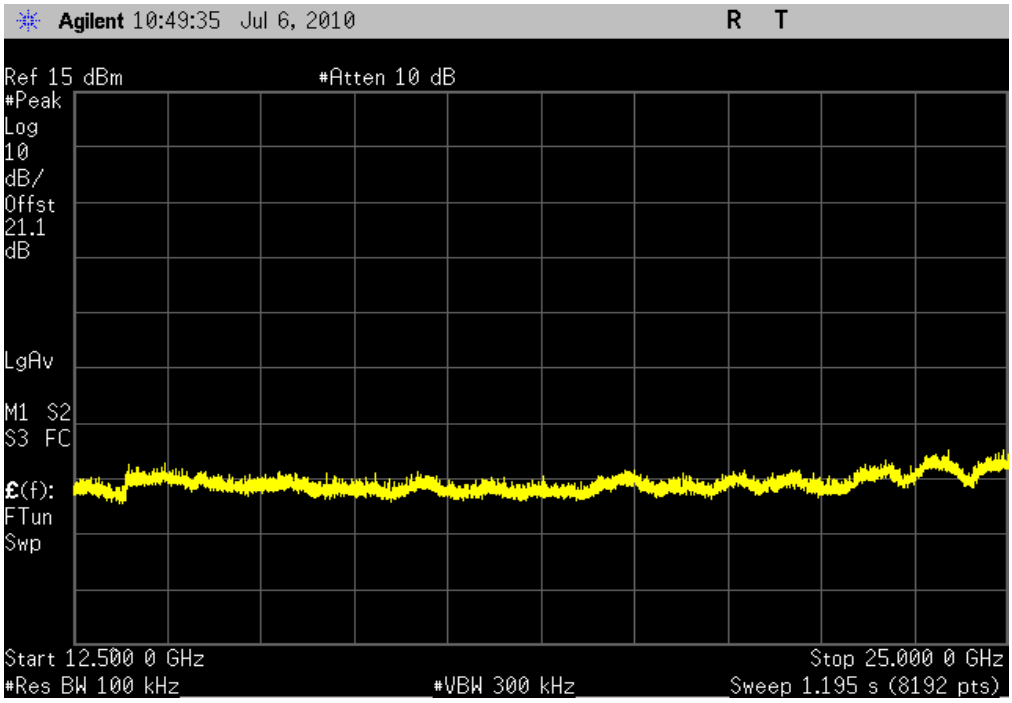


SPURIOUS CONDUCTED EMISSIONS

802.11(n) MCS7, Mid Channel, 30 MHz - 12.5 GHz					
Result:	Pass	**Value:**	< -40 dBc	**Limit:**	≤ -20 dBc

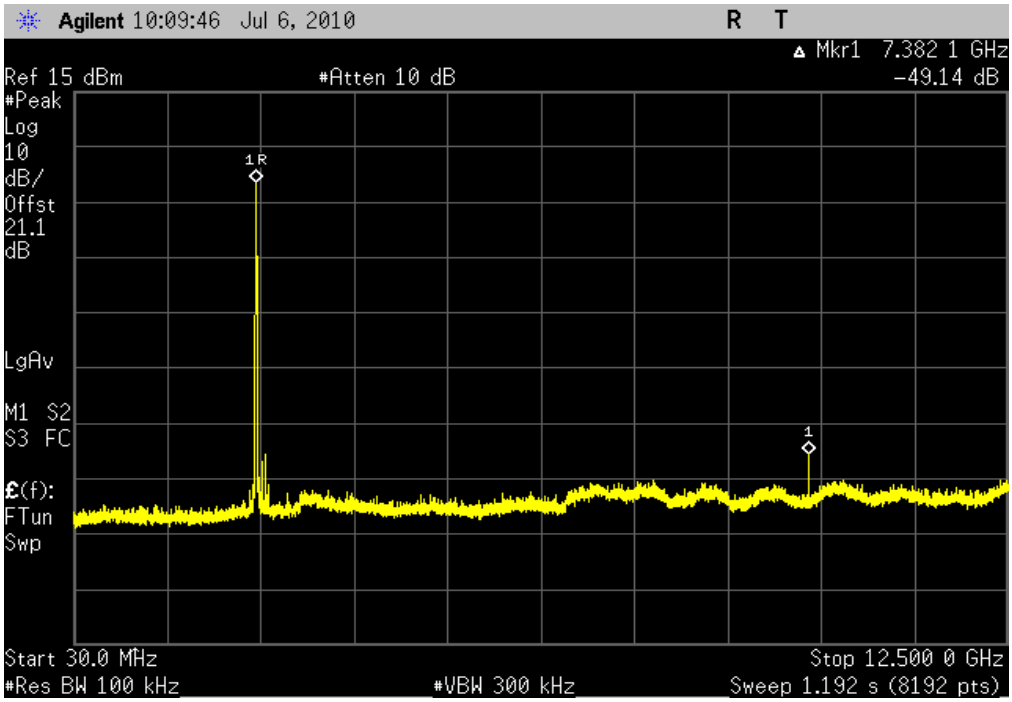


802.11(n) MCS7, Mid Channel, 12.5 GHz - 25 GHz					
Result:	Pass	**Value:**	< -40 dBc	**Limit:**	≤ -20 dBc

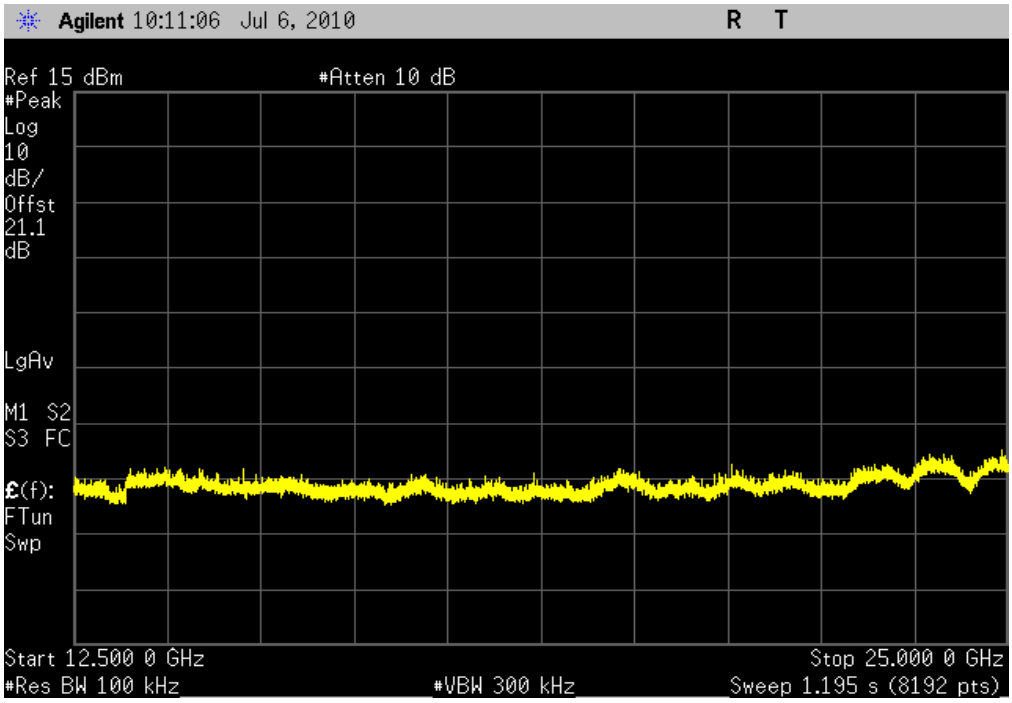


SPURIOUS CONDUCTED EMISSIONS

802.11(n) MCS7, High Channel, 30 MHz - 12.5 GHz					
Result:	Pass	**Value:**	< -40 dBc	**Limit:**	≤ -20 dBc



802.11(n) MCS7, High Channel, 12.5 GHz - 25 GHz					
Result:	Pass	**Value:**	< -40 dBc	**Limit:**	≤ -20 dBc



POWER SPECTRAL DENSITY

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Spectrum Analyzer	Agilent	E4446A	AAT	2/24/2010	12
Signal Generator	Agilent	N5183A	TIA	11/16/2008	24

MEASUREMENT UNCERTAINTY

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty for radiated emissions measurements is less than +/- 4 dB, and for conducted emissions measurements is less than +/- 2.7 dB. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for measurement uncertainty are available upon request.

TEST DESCRIPTION

The peak power spectral density measurements were measured with the EUT set to low, mid, and high transmit frequencies. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at its maximum data rate for each modulation type available. Per the procedure outlined in FCC KDB 558074, March 23, 2005, the spectrum analyzer was used as follows:

> The emission peak(s) were located and zoom in on within the passband. The resolution bandwidth was set to 3 kHz, the video bandwidth was set to greater than or equal to the resolution bandwidth. The sweep speed was set equal to the span divided by 3 kHz (sweep = (SPAN/3 kHz)). For example, given a span of 1.5 MHz, the sweep should be $1.5 \times 10^6 \div 3 \times 10^3 = 500$ seconds. External attenuation was used and added to the reading. The following FCC procedure was used for modifying the power spectral density measurements:

"If the spectrum line spacing cannot be resolved on the available spectrum analyzer, the noise density function on most modern conventional spectrum analyzers will directly measure the noise power density normalized to a 1 Hz noise power bandwidth. Add 35 dB for correction to 3 kHz."

NORTHWEST EMC

POWER SPECTRAL DENSITY

XMit 2010.01.14

EUT:	AM3x SOM-M2	Work Order:	LGPD0023
Serial Number:	2010M00186	Date:	07/07/10
Customer:	Logic PD	Temperature:	22.45°C
Attendees:	None	Humidity:	59%
Project:	None	Barometric Pres.:	1017.5
Tested by:	Trevor Buls	Power: 120VAC/60Hz	Job Site: MN05

TEST SPECIFICATIONS	Test Method
FCC 15.247:2010	ANSI C63.10:2009

COMMENTS

None

DEVIATIONS FROM TEST STANDARD

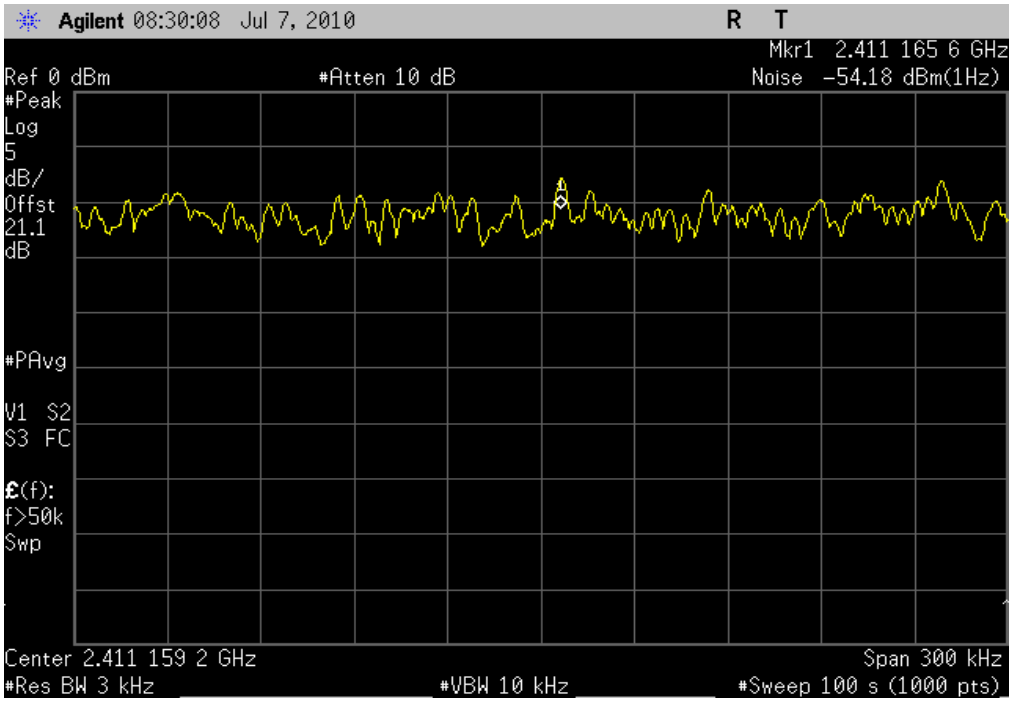
No Deviations

Configuration #	2	Signature Trevor Buls

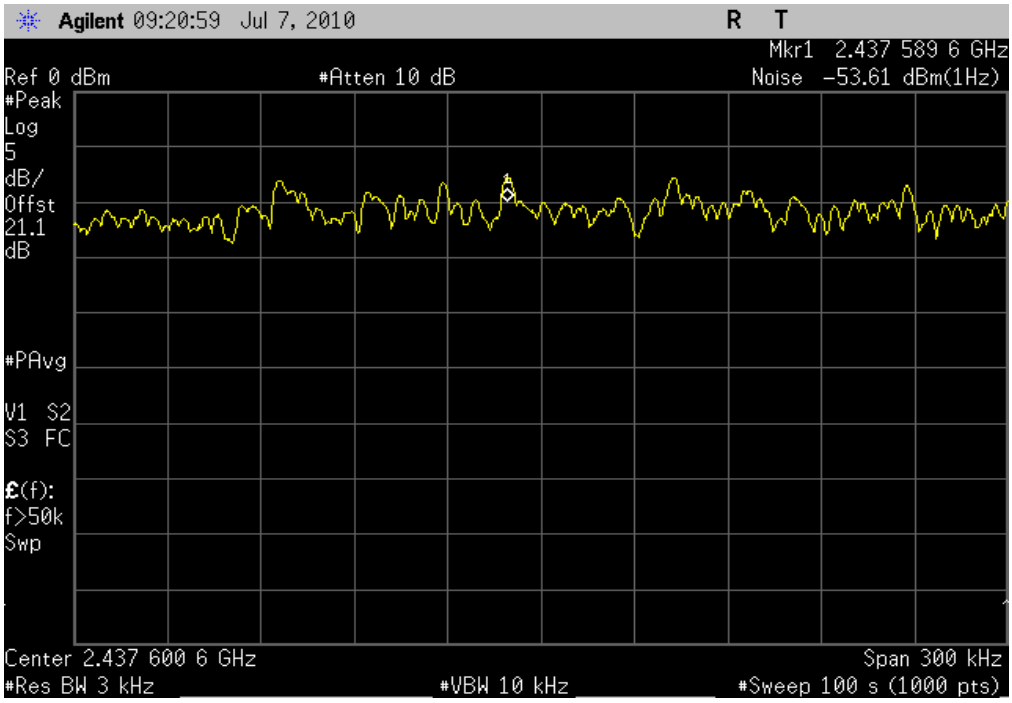
		Value	Limit	Results
802.11(b) 1 Mbps				
	Low Channel	-19.18 dBm / 3 kHz	8 dBm / 3 kHz	Pass
	Mid Channel	-18.61 dBm / 3 kHz	8 dBm / 3 kHz	Pass
	High Channel	-17.95 dBm / 3 kHz	8 dBm / 3 kHz	Pass
802.11(b) 11 Mbps				
	Low Channel	-21.23 dBm / 3 kHz	8 dBm / 3 kHz	Pass
	Mid Channel	-21.18 dBm / 3 kHz	8 dBm / 3 kHz	Pass
	High Channel	-21.08 dBm / 3 kHz	8 dBm / 3 kHz	Pass
802.11(g) 6 Mbps				
	Low Channel	-20.84 dBm / 3 kHz	8 dBm / 3 kHz	Pass
	Mid Channel	-21.19 dBm / 3 kHz	8 dBm / 3 kHz	Pass
	High Channel	-20.21 dBm / 3 kHz	8 dBm / 3 kHz	Pass
802.11(g) 54 Mbps				
	Low Channel	-26.43 dBm / 3 kHz	8 dBm / 3 kHz	Pass
	Mid Channel	-25.78 dBm / 3 kHz	8 dBm / 3 kHz	Pass
	High Channel	-25.16 dBm / 3 kHz	8 dBm / 3 kHz	Pass
802.11(g) 36 Mbps				
	Low Channel	-24.23 dBm / 3 kHz	8 dBm / 3 kHz	Pass
	Mid Channel	-23.92 dBm / 3 kHz	8 dBm / 3 kHz	Pass
	High Channel	-24.70 dBm / 3 kHz	8 dBm / 3 kHz	Pass
802.11(n) MCS0				
	Low Channel	-21.10 dBm / 3 kHz	8 dBm / 3 kHz	Pass
	Mid Channel	-21.10 dBm / 3 kHz	8 dBm / 3 kHz	Pass
	High Channel	-20.78 dBm / 3 kHz	8 dBm / 3 kHz	Pass
802.11(n) MCS7				
	Low Channel	-25.48 dBm / 3 kHz	8 dBm / 3 kHz	Pass
	Mid Channel	-26.88 dBm / 3 kHz	8 dBm / 3 kHz	Pass
	High Channel	-25.41 dBm / 3 kHz	8 dBm / 3 kHz	Pass

POWER SPECTRAL DENSITY

802.11(b) 1 Mbps, Low Channel					
Result:	Pass	**Value:**	-19.18 dBm / 3 kHz	**Limit:**	8 dBm / 3 kHz

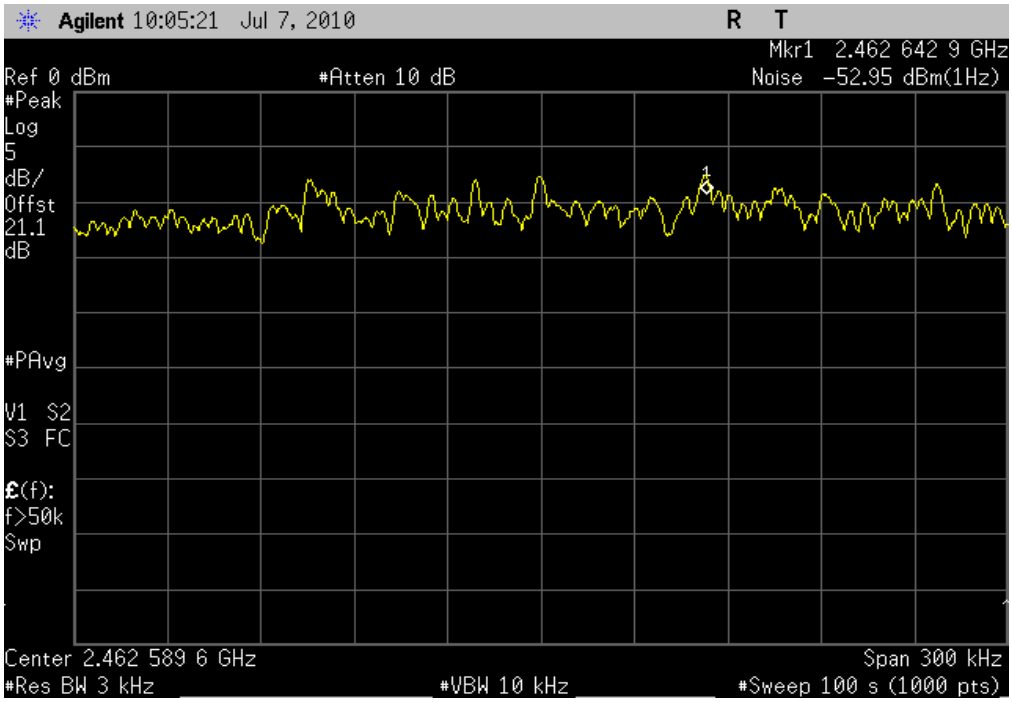


802.11(b) 1 Mbps, Mid Channel					
Result:	Pass	**Value:**	-18.61 dBm / 3 kHz	**Limit:**	8 dBm / 3 kHz

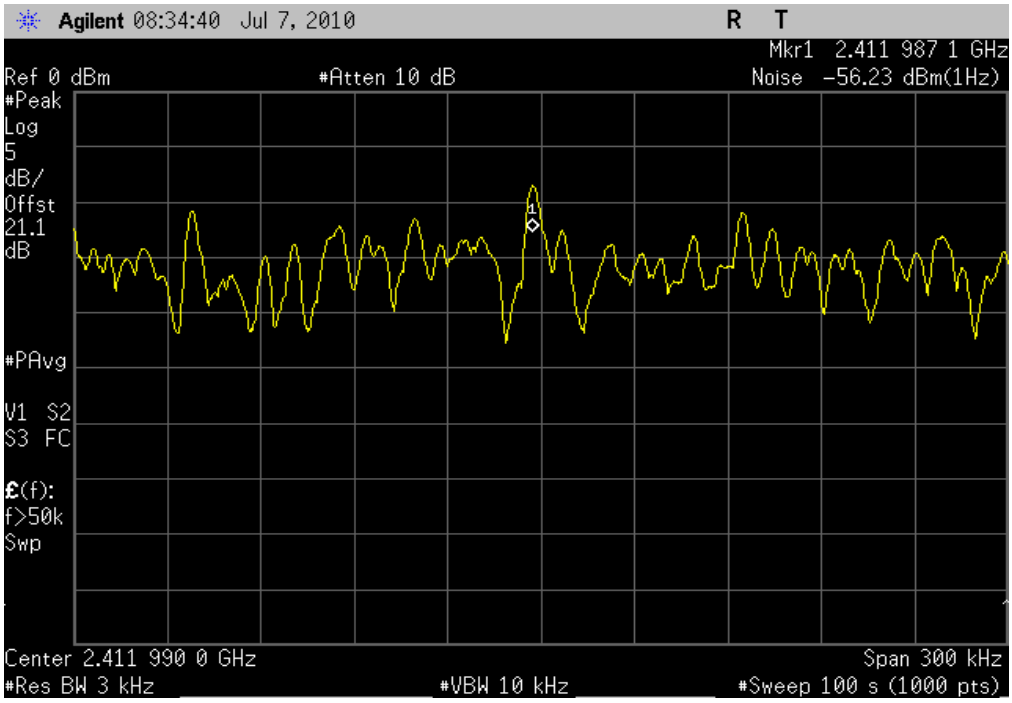


POWER SPECTRAL DENSITY

802.11(b) 1 Mbps, High Channel					
Result:	Pass	**Value:**	-17.95 dBm / 3 kHz	**Limit:**	8 dBm / 3 kHz

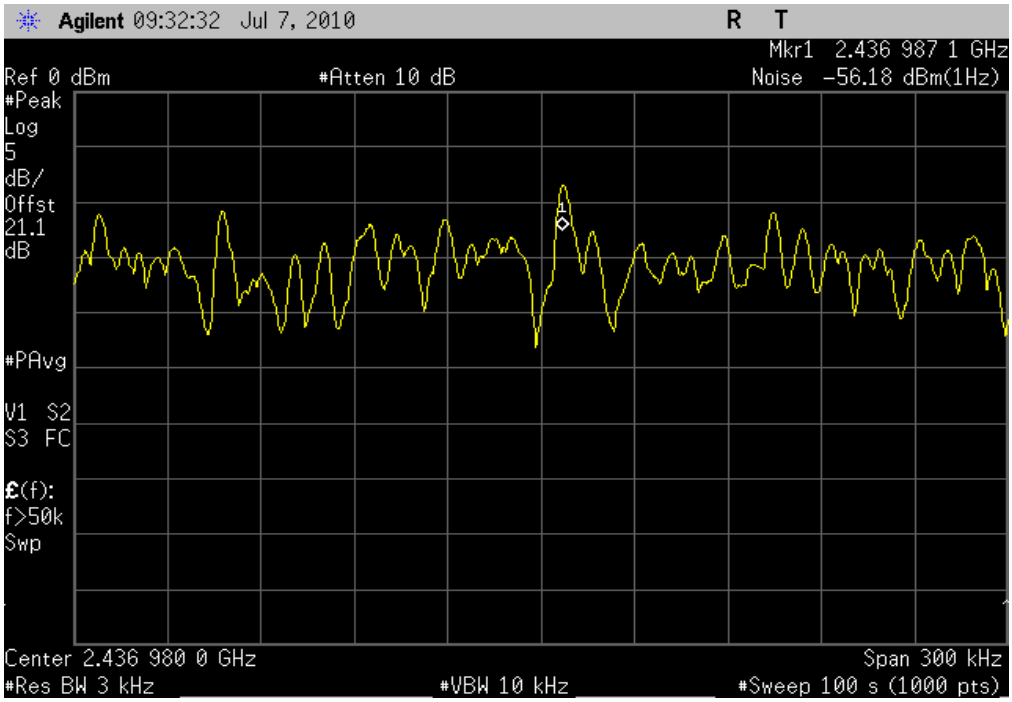


802.11(b) 11 Mbps, Low Channel					
Result:	Pass	**Value:**	-21.23 dBm / 3 kHz	**Limit:**	8 dBm / 3 kHz

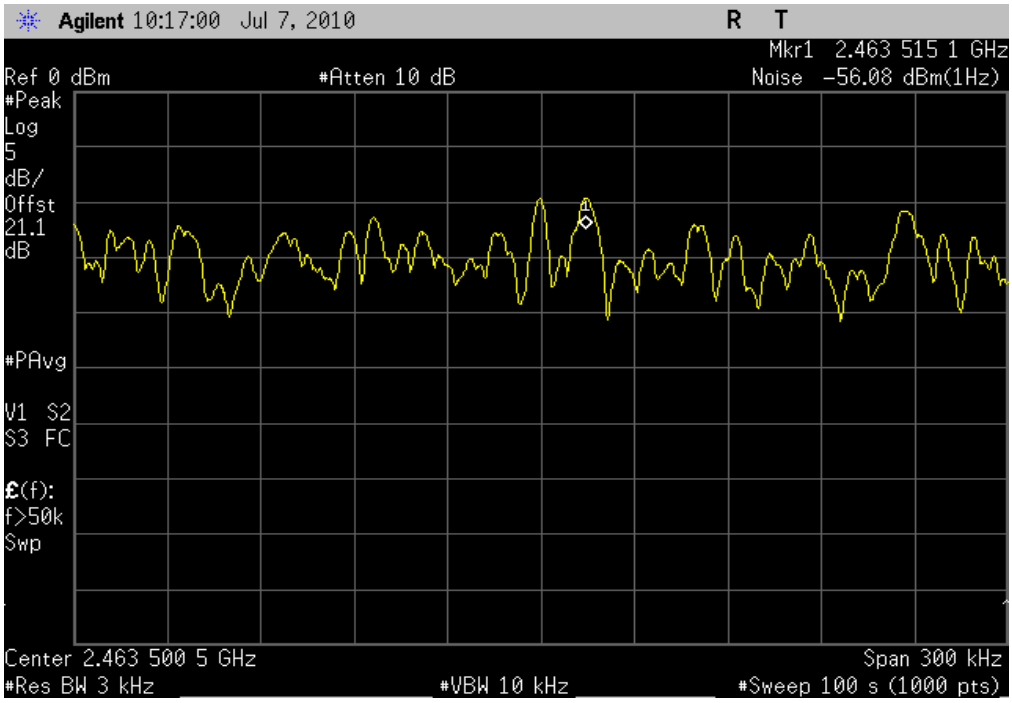


POWER SPECTRAL DENSITY

802.11(b) 11 Mbps, Mid Channel					
Result:	Pass	**Value:**	-21.18 dBm / 3 kHz	**Limit:**	8 dBm / 3 kHz

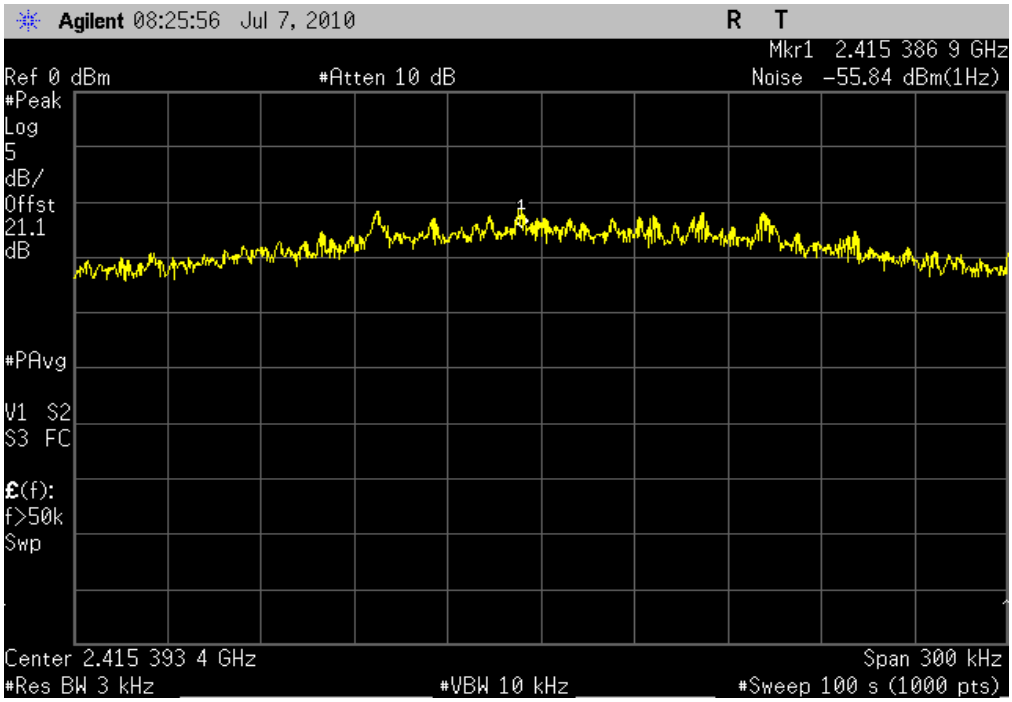


802.11(b) 11 Mbps, High Channel					
Result:	Pass	**Value:**	-21.08 dBm / 3 kHz	**Limit:**	8 dBm / 3 kHz

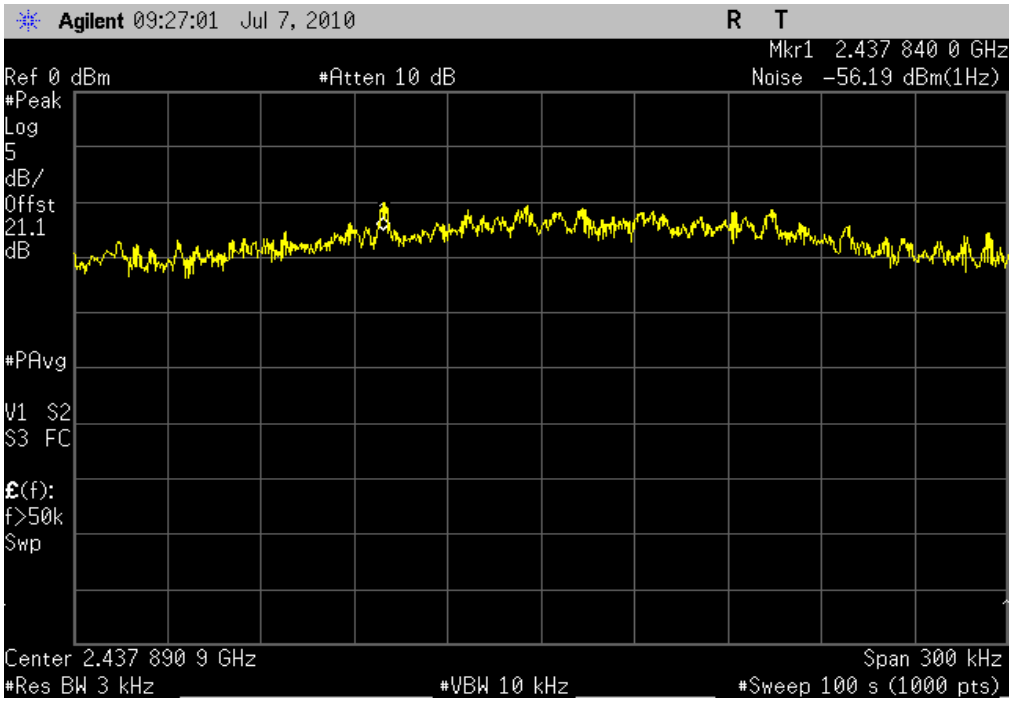


POWER SPECTRAL DENSITY

802.11(g) 6 Mbps, Low Channel					
Result:	Pass	**Value:**	-20.84 dBm / 3 kHz	**Limit:**	8 dBm / 3 kHz

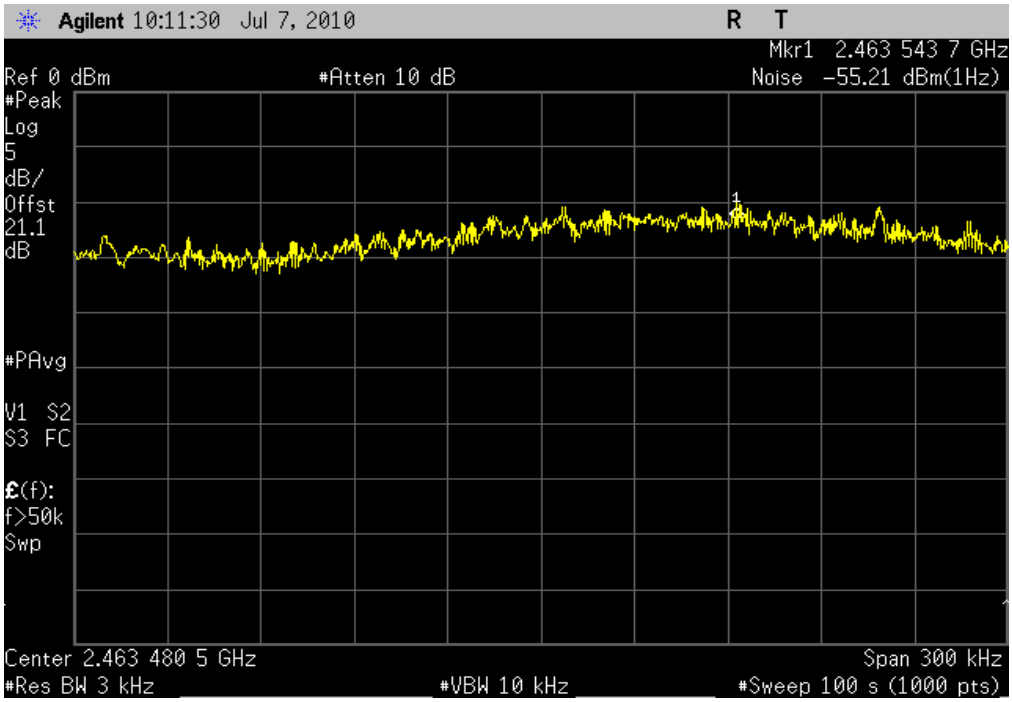


802.11(g) 6 Mbps, Mid Channel					
Result:	Pass	**Value:**	-21.19 dBm / 3 kHz	**Limit:**	8 dBm / 3 kHz

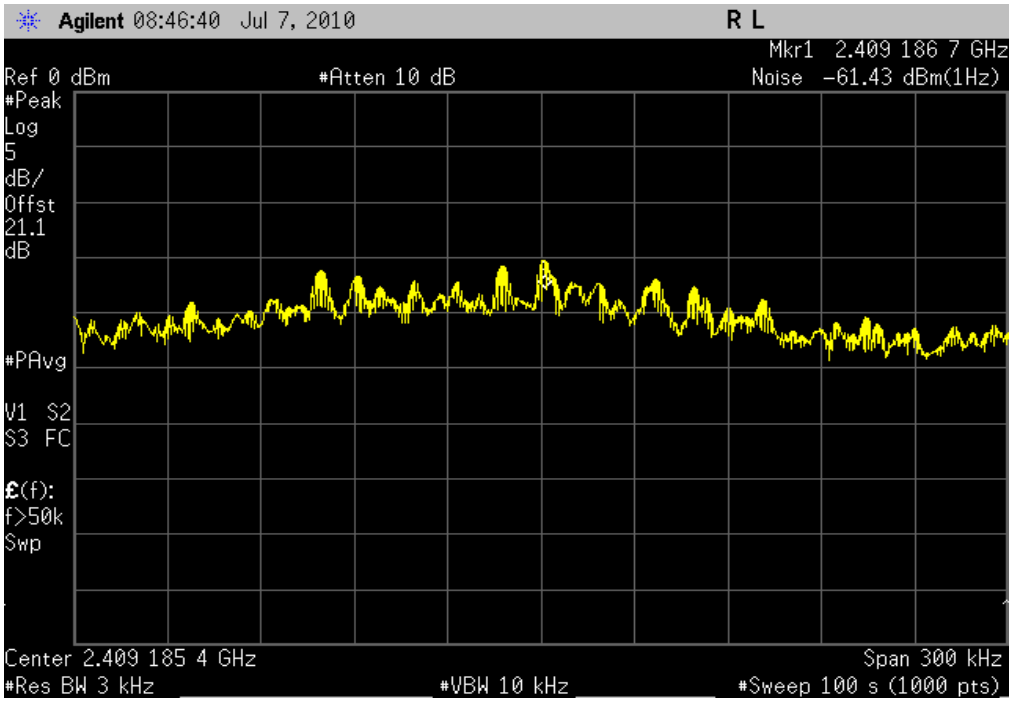


POWER SPECTRAL DENSITY

802.11(g) 6 Mbps, High Channel					
Result:	Pass	**Value:**	-20.21 dBm / 3 kHz	**Limit:**	8 dBm / 3 kHz

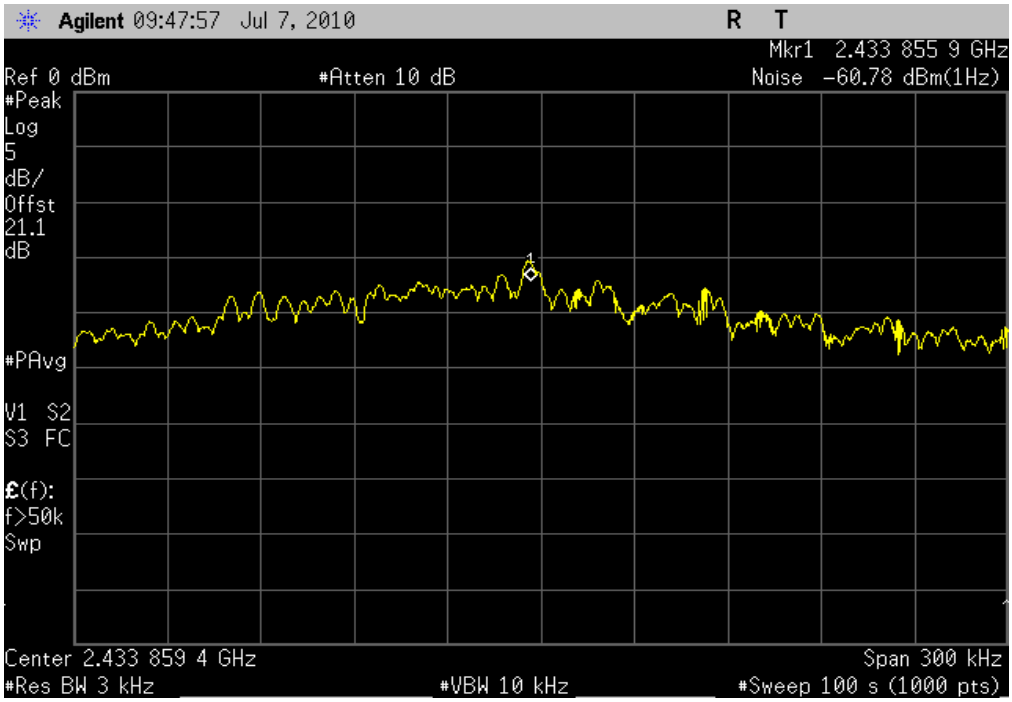


802.11(g) 54 Mbps, Low Channel					
Result:	Pass	**Value:**	-26.43 dBm / 3 kHz	**Limit:**	8 dBm / 3 kHz

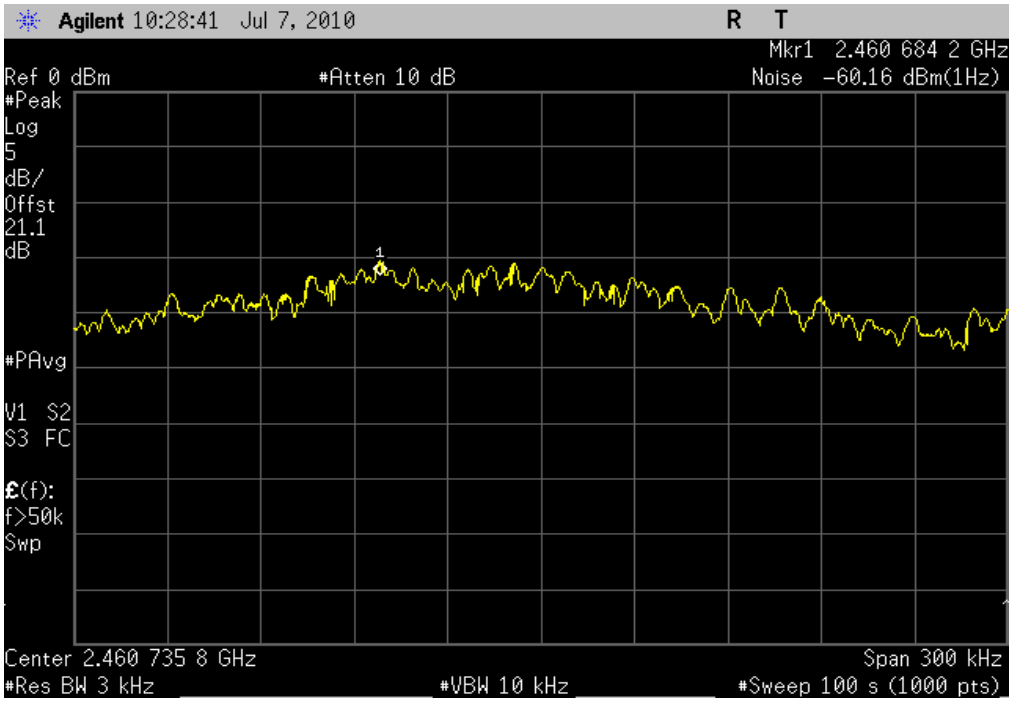


POWER SPECTRAL DENSITY

802.11(g) 54 Mbps, Mid Channel					
Result:	Pass	**Value:**	-25.78 dBm / 3 kHz	**Limit:**	8 dBm / 3 kHz

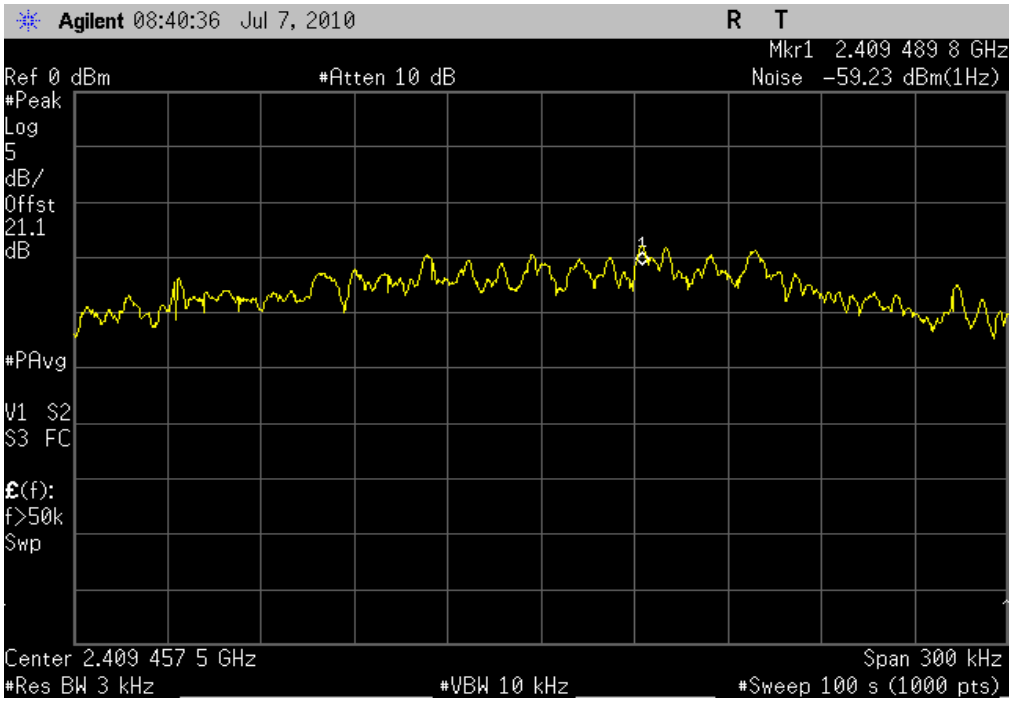


802.11(g) 54 Mbps, High Channel					
Result:	Pass	**Value:**	-25.16 dBm / 3 kHz	**Limit:**	8 dBm / 3 kHz

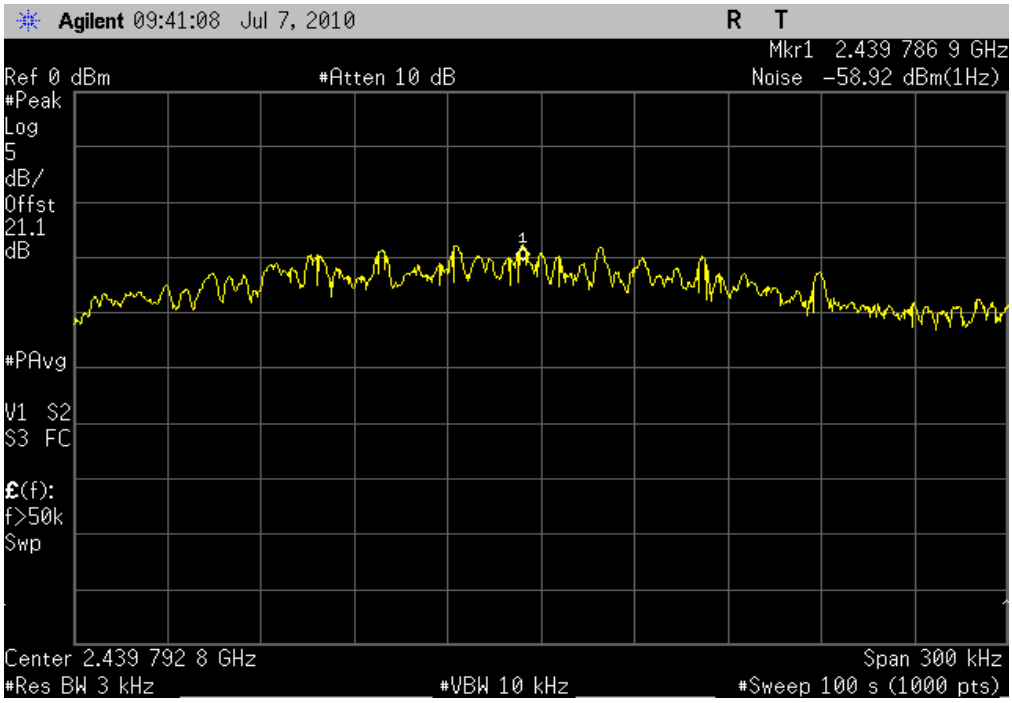


POWER SPECTRAL DENSITY

802.11(g) 36 Mbps, Low Channel					
Result:	Pass	**Value:**	-24.23 dBm / 3 kHz	**Limit:**	8 dBm / 3 kHz

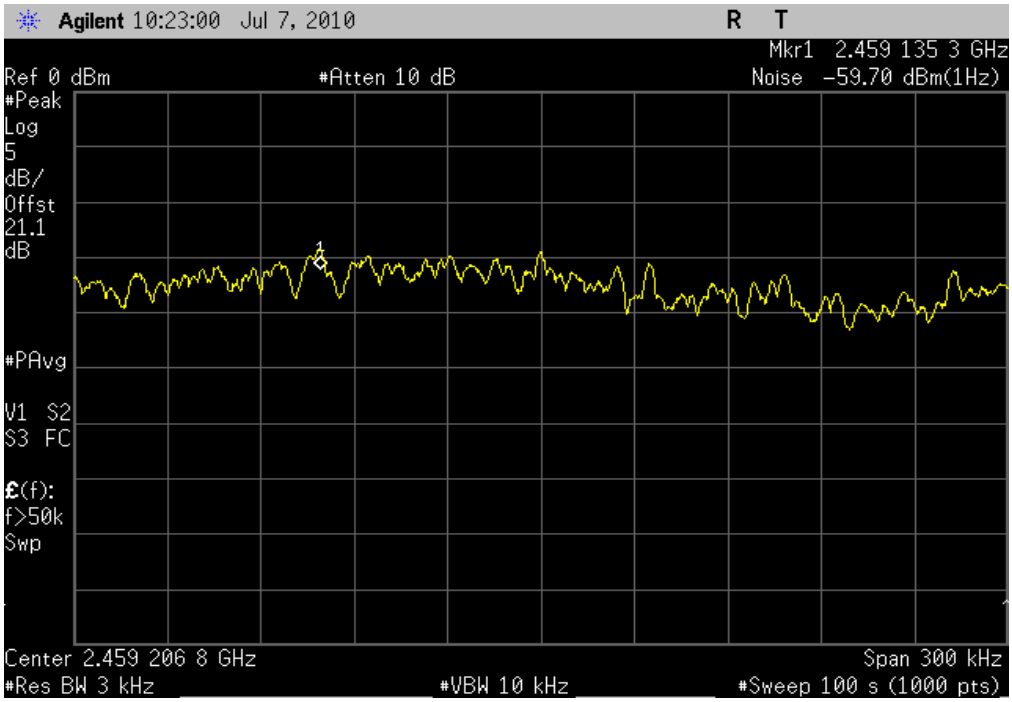


802.11(g) 36 Mbps, Mid Channel					
Result:	Pass	**Value:**	-23.92 dBm / 3 kHz	**Limit:**	8 dBm / 3 kHz

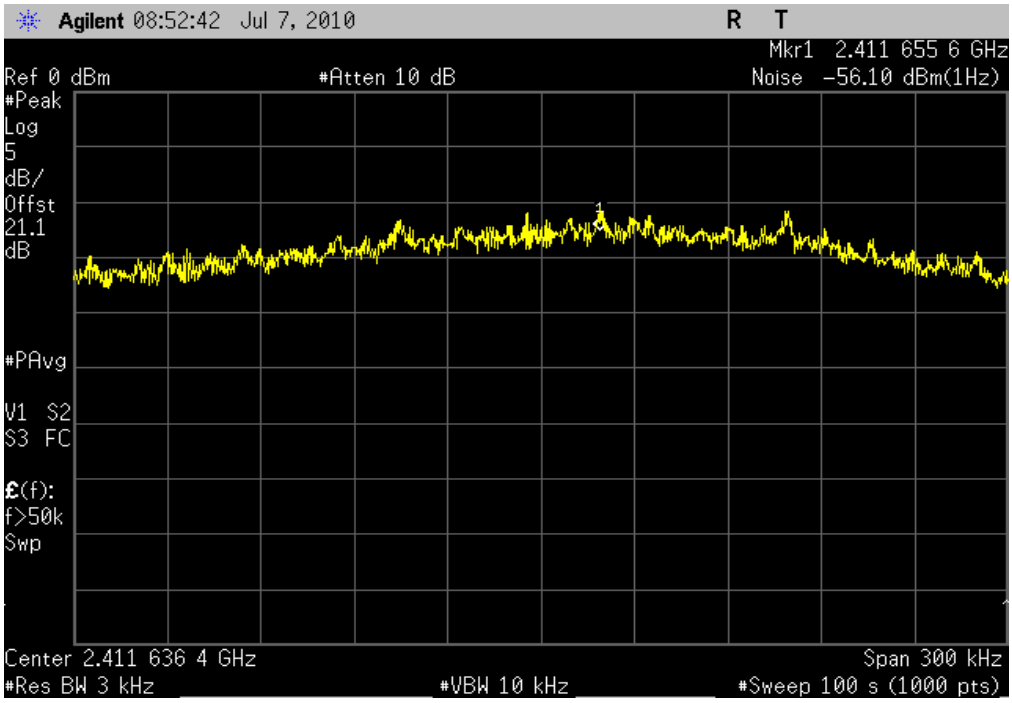


POWER SPECTRAL DENSITY

802.11(g) 36 Mbps, High Channel					
Result:	Pass	**Value:**	-24.70 dBm / 3 kHz	**Limit:**	8 dBm / 3 kHz

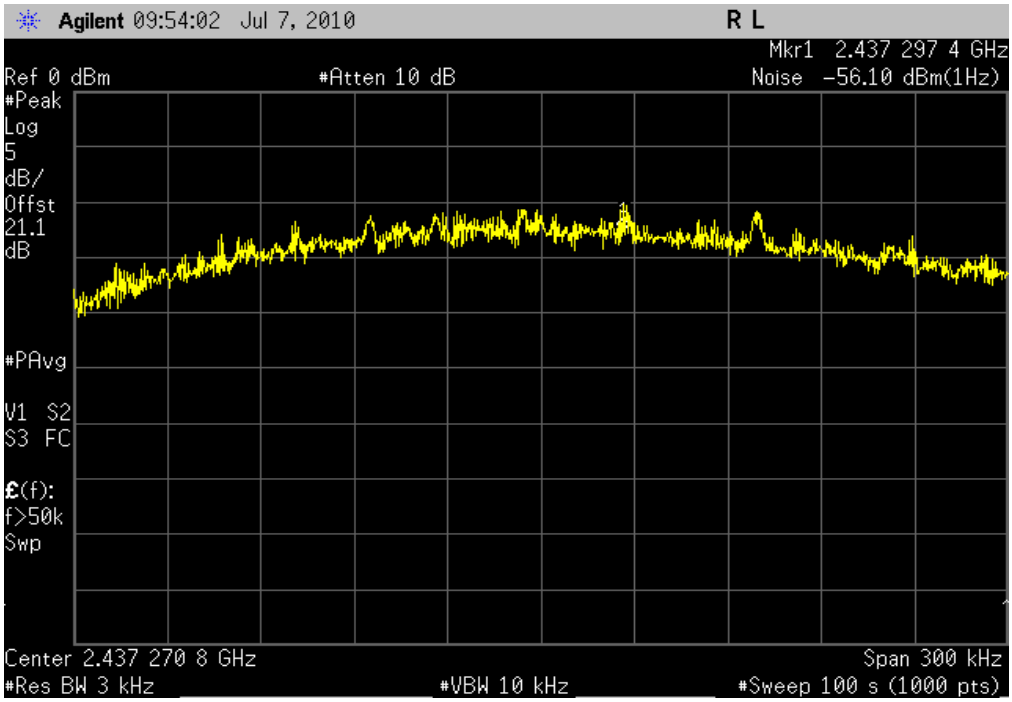


802.11(n) MCS0, Low Channel					
Result:	Pass	**Value:**	-21.10 dBm / 3 kHz	**Limit:**	8 dBm / 3 kHz

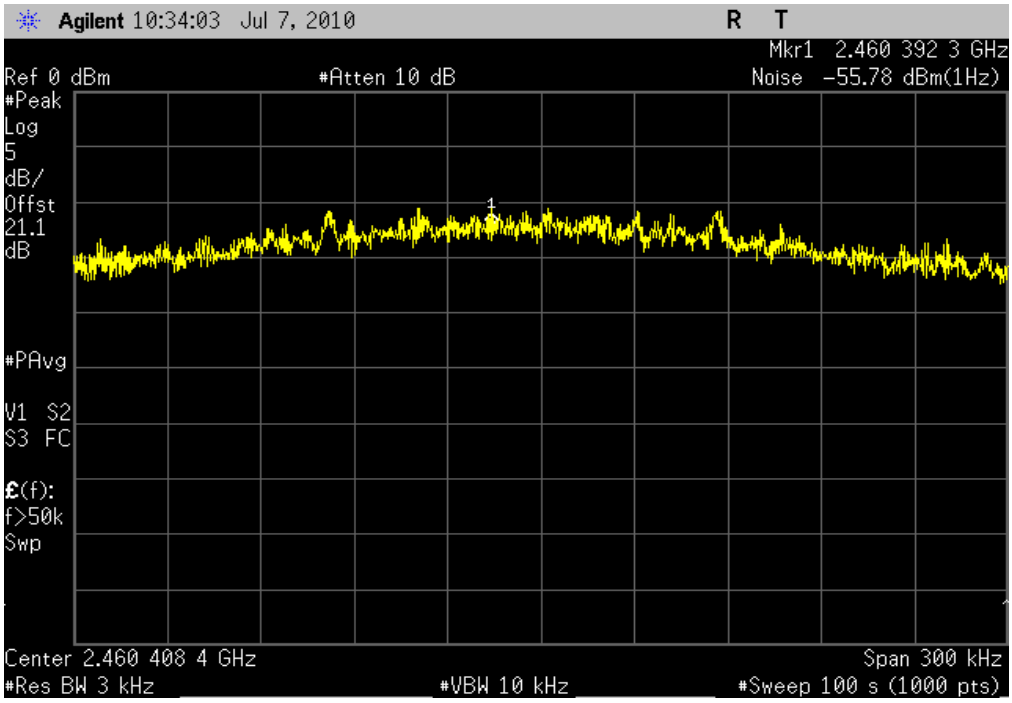


POWER SPECTRAL DENSITY

802.11(n) MCS0, Mid Channel					
Result:	Pass	**Value:**	-21.10 dBm / 3 kHz	**Limit:**	8 dBm / 3 kHz

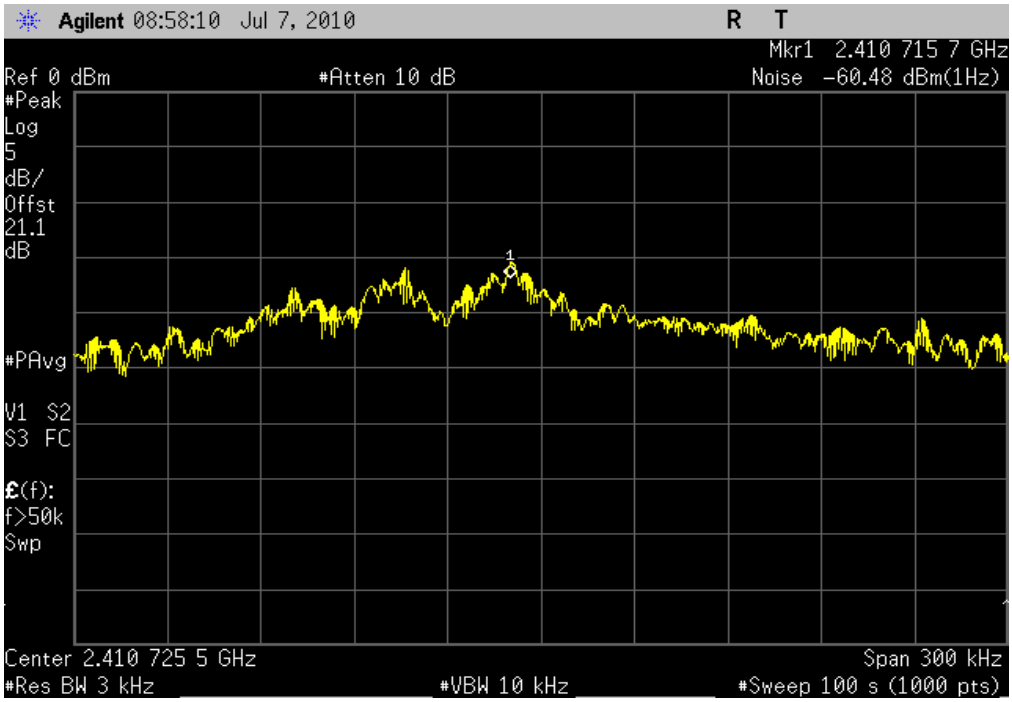


802.11(n) MCS0, High Channel					
Result:	Pass	**Value:**	-20.78 dBm / 3 kHz	**Limit:**	8 dBm / 3 kHz

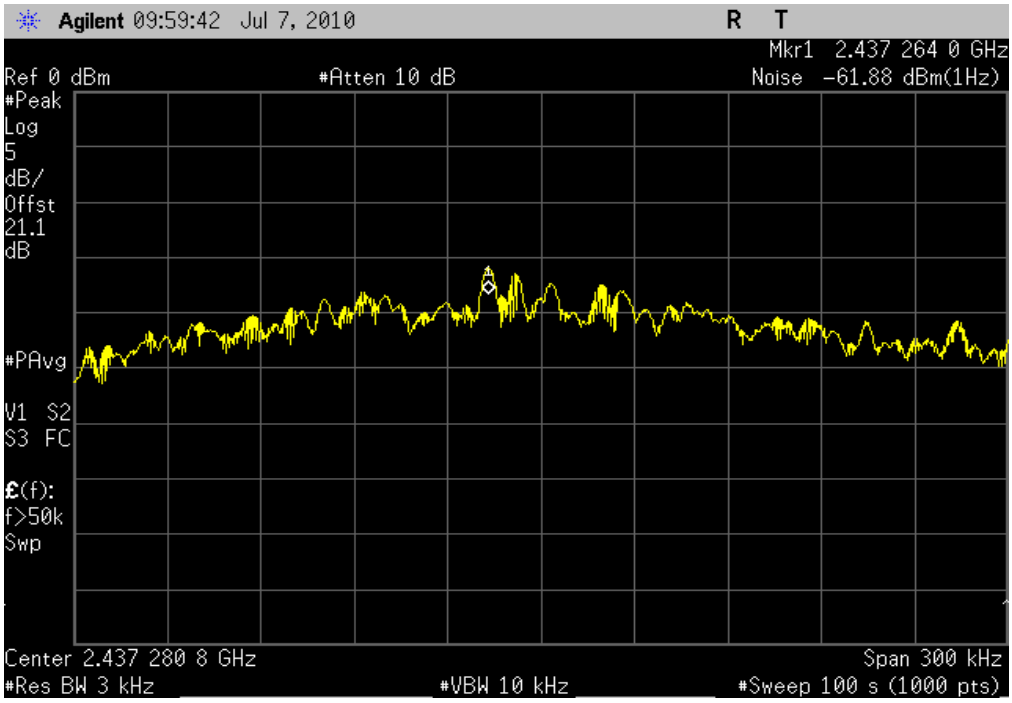


POWER SPECTRAL DENSITY

802.11(n) MCS7, Low Channel					
Result:	Pass	**Value:**	-25.48 dBm / 3 kHz	**Limit:**	8 dBm / 3 kHz

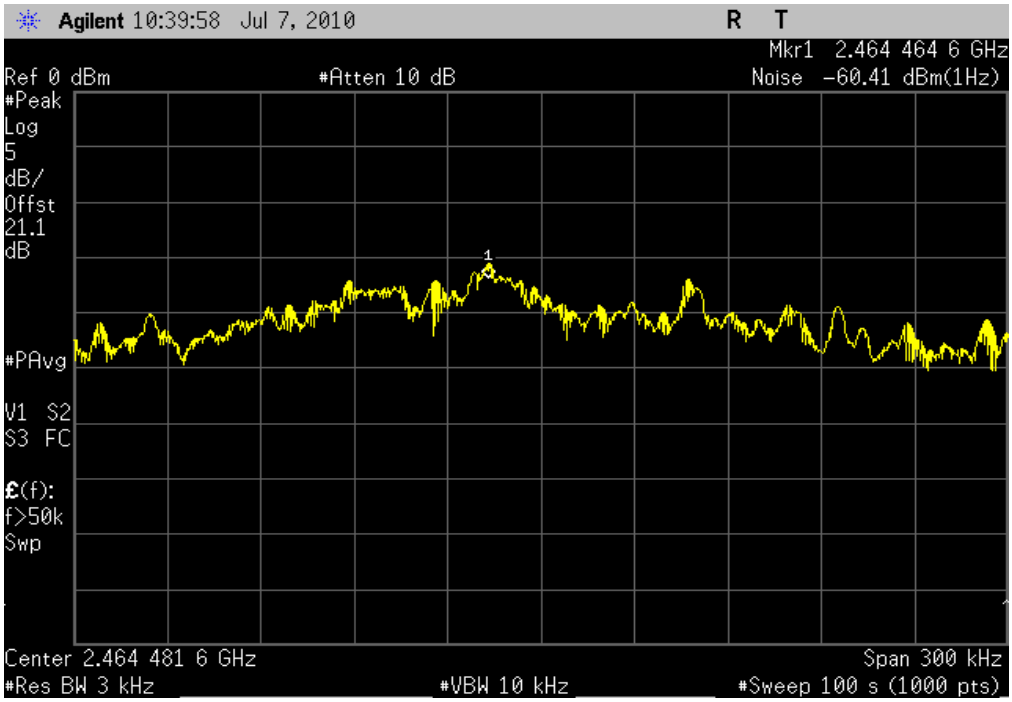


802.11(n) MCS7, Mid Channel					
Result:	Pass	**Value:**	-26.88 dBm / 3 kHz	**Limit:**	8 dBm / 3 kHz



POWER SPECTRAL DENSITY

802.11(n) MCS7, High Channel					
Result:	Pass	**Value:**	-25.41 dBm / 3 kHz	**Limit:**	8 dBm / 3 kHz



Spurious Radiated Emissions

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

MODES OF OPERATION
WiFi MCS7, Mid Channel 2437 MHz
WiFi MCS0, Mid Channel 2437 MHz
WiFi 54 Mbps, Mid Channel 2437 MHz
WiFi 36 Mbps, Mid Channel 2437 MHz
WiFi 11 Mbps, Mid Channel 2437 MHz
WiFi 6 Mbps, Mid Channel 2437 MHz
WiFi 1 Mbps, High Channel 2462 MHz
WiFi 1 Mbps, Mid Channel 2437 MHz
WiFi 1 Mbps, Low Channel 2412 MHz
WiFi Operation in the Restricted Bands

POWER SETTINGS INVESTIGATED
120VAC/60Hz

CONFIGURATIONS INVESTIGATED
LGPD0023 - 2

FREQUENCY RANGE INVESTIGATED			
Start Frequency	30 MHz	Stop Frequency	25 GHz

SAMPLE CALCULATIONS

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Pre-Amplifier	Miteq	JSD4-18002600-26-8P	APU	1/27/2010	13 mo
MN05 Cables	ESM Cable Corp.	18-26GHz Standard Gain Horn Cable	EVD	1/27/2010	13 mo
Antenna, Horn	ETS	3160-09	AHG	NCR	0 mo
Attenuator, 20 dB, 'SMA'	SM Electronics	SA6-20	REO	6/18/2009	13 mo
Low Pass Filter	Micro-Tronics	LPM50004	HGK	7/24/2009	12 mo
High Pass Filter	Micro-Tronics	HPM50111	HGQ	6/24/2009	13 mo
Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	AVW	7/1/2009	13 mo
Antenna, Horn	ETS Lindgren	3160-08	AIQ	NCR	0 mo
MN05 Cables	ESM Cable Corp.	Standard Gain Horn Cables	MNJ	7/1/2009	13 mo
Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AVV	7/1/2009	13 mo
Antenna, Horn	ETS	3160-07	AXP	NCR	0 mo
Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	AVX	7/1/2009	13 mo
MN05 Cables	ESM Cable Corp.	Double Ridge Guide Horn Cables	MNI	7/1/2009	13 mo
Antenna, Horn (DRG)	ETS Lindgren	3115	AIP	12/22/2009	24 mo
Pre-Amplifier	Miteq	AM-1616-1000	AVY	7/1/2009	13 mo
MN05 Cables	ESM Cable Corp.	Bilog Cables	MNH	1/15/2010	13 mo
Antenna, Biconilog	ETS Lindgren	3142D	AXN	12/30/2009	13 mo
Spectrum Analyzer	Agilent	E4446A	AAT	2/24/2010	12 mo

MEASUREMENT BANDWIDTHS

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

Measurements were made using the IF bandwidths and detectors specified. No video filter was used, except in the case of the FCC Average Measurements above 1GHz. In that case, a peak detector with a 10Hz video bandwidth was used.

MEASUREMENT UNCERTAINTY

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty for radiated emissions measurements is less than +/- 4 dB, and for conducted emissions measurements is less than +/- 2.7 dB. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for measurement uncertainty are available upon request.

TEST DESCRIPTION

The highest gain of each type of antenna to be used with the EUT was tested. The EUT was configured for low, mid, and high band transmit frequencies. For each configuration, the spectrum was scanned throughout the specified range. In addition, measurements were made in the restricted bands to verify compliance. While scanning, emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and the EUT antenna in three orthogonal axis, and adjusting measurement antenna height and polarization, and manipulating the EUT antenna in 3 orthogonal planes (per ANSI C63.10:2009). A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

NORTHWEST

EMC

Spurious Radiated Emissions

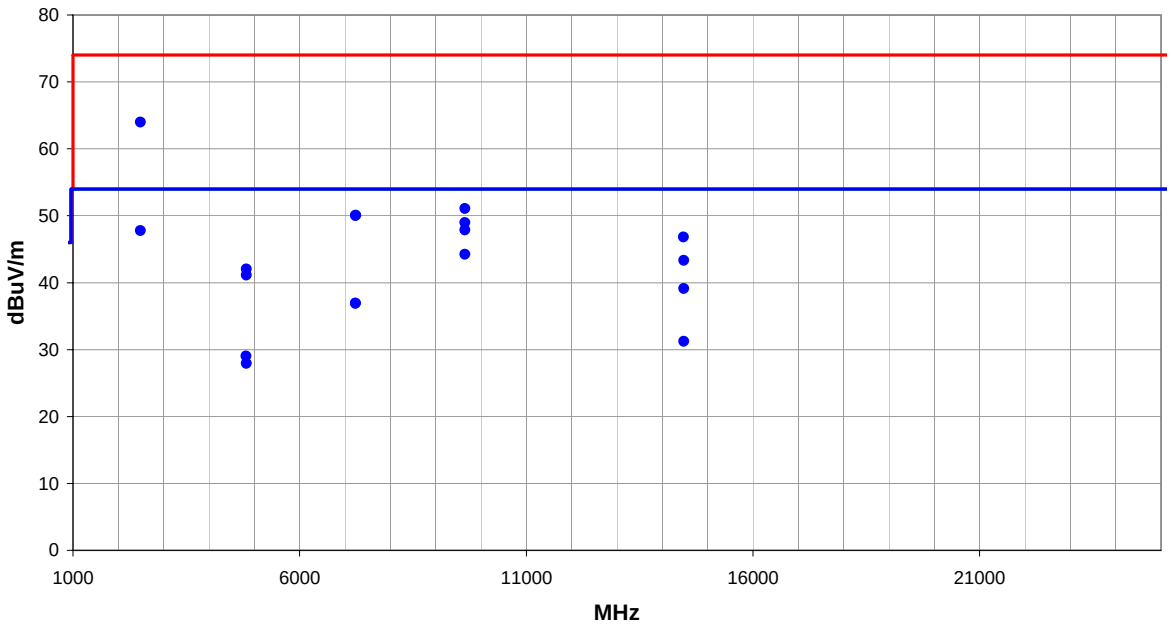
PSA-ESCI 2010.04.06
Version 2010.3.17

Work Order:	LGPD0023	**Date:**	07/01/10	Trevor Buls
Project:	None	**Temperature:**	22.55	
Job Site:	MN05	**Humidity:**	46.63	
Serial Number:	2010M00186	**Barometric Pres.:**	1022.1	**Tested by:** Trevor Buls

EUT:	AM3x SOM-M2
Configuration:	2 - AC Power Cable Ferrite
Customer:	Logic PD
Attendees:	None
EUT Power:	120VAC/60Hz
Operating Mode:	WiFi 1 Mbps, Low Channel 2412 MHz
Deviations:	None
Comments:	EUT antenna Vertical.

Test Specifications	**Test Method**
FCC 15.247:2010	ANSI C63.10:2009

Run #	4	**Test Distance (m)**	3	**Antenna Height(s)**	1-4m	**Results**	Pass



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)
9647.877	56.8	-7.8	1.2	316.0	3.0	0.0	Vert	AV	0.0	49.0	54.0	-5.0
2492.712	33.7	-5.9	1.0	178.0	3.0	20.0	Vert	AV	0.0	47.8	54.0	-6.2
9647.897	52.1	-7.8	1.3	79.0	3.0	0.0	Horz	AV	0.0	44.3	54.0	-9.7
2490.165	49.9	-5.9	1.0	178.0	3.0	20.0	Vert	PK	0.0	64.0	74.0	-10.0
14471.830	39.1	0.0	1.1	57.0	3.0	0.0	Vert	AV	0.0	39.1	54.0	-14.9
7235.413	27.5	9.4	1.3	175.0	3.0	0.0	Horz	AV	0.0	36.9	54.0	-17.1
7234.687	27.5	9.4	1.3	173.0	3.0	0.0	Vert	AV	0.0	36.9	54.0	-17.1
14471.770	31.2	0.0	1.6	231.0	3.0	0.0	Horz	AV	0.0	31.2	54.0	-22.8
9647.924	58.9	-7.8	1.2	316.0	3.0	0.0	Vert	PK	0.0	51.1	74.0	-22.9
7237.900	40.6	9.5	1.3	175.0	3.0	0.0	Horz	PK	0.0	50.1	74.0	-23.9
7234.093	40.6	9.4	1.3	173.0	3.0	0.0	Vert	PK	0.0	50.0	74.0	-24.0
4822.213	27.2	1.8	1.3	249.0	3.0	0.0	Horz	AV	0.0	29.0	54.0	-25.0
4823.973	26.1	1.8	1.3	216.0	3.0	0.0	Vert	AV	0.0	27.9	54.0	-26.1
9647.990	55.7	-7.8	1.3	79.0	3.0	0.0	Horz	PK	0.0	47.9	74.0	-26.1
14471.630	46.8	0.0	1.1	57.0	3.0	0.0	Vert	PK	0.0	46.8	74.0	-27.2
14472.480	43.3	0.0	1.6	231.0	3.0	0.0	Horz	PK	0.0	43.3	74.0	-30.7
4823.540	40.2	1.8	1.3	249.0	3.0	0.0	Horz	PK	0.0	42.0	74.0	-32.0
4824.047	39.3	1.8	1.3	216.0	3.0	0.0	Vert	PK	0.0	41.1	74.0	-32.9

NORTHWEST
EMC

Spurious Radiated Emissions

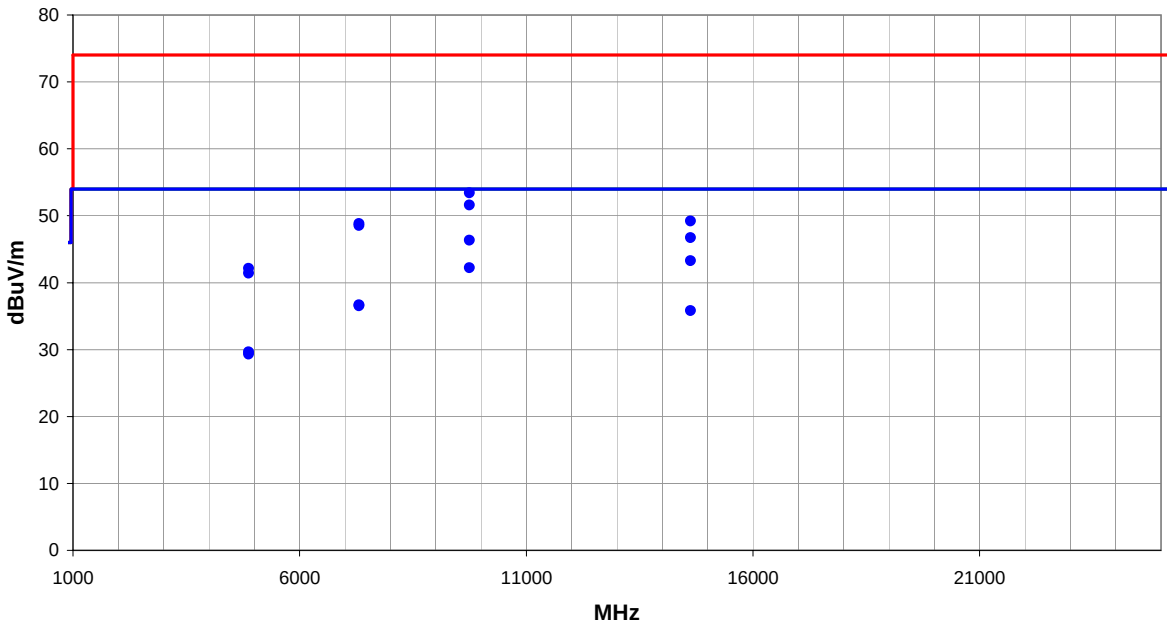
PSA-ESCI 2010.04.06
Version 2010.3.17

Work Order:	LGPD0023	**Date:**	07/01/10	Trevor Buls
Project:	None	**Temperature:**	22.55	
Job Site:	MN05	**Humidity:**	46.63	
Serial Number:	2010M00186	**Barometric Pres.:**	1022.1	**Tested by:** Trevor Buls

EUT:	AM3x SOM-M2
Configuration:	2 - AC Power Cable Ferrite
Customer:	Logic PD
Attendees:	None
EUT Power:	120VAC/60Hz
Operating Mode:	WiFi 1 Mbps, Mid Channel 2437 MHz
Deviations:	None
Comments:	EUT antenna Vertical.

Test Specifications	**Test Method**
FCC 15.247:2010	ANSI C63.10:2009

Run #	9	**Test Distance (m)**	3	**Antenna Height(s)**	1-4m	**Results**	Pass



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)
9747.901	59.4	-7.8	1.2	315.0	3.0	0.0	Vert	AV	0.0	51.6	54.0	-2.4
14621.850	43.4	-0.1	1.0	103.0	3.0	0.0	Vert	AV	0.0	43.3	54.0	-10.7
9747.909	50.0	-7.8	1.3	95.0	3.0	0.0	Horz	AV	0.0	42.2	54.0	-11.8
7313.400	26.6	10.1	1.2	216.0	3.0	0.0	Vert	AV	0.0	36.7	54.0	-17.3
7313.208	26.5	10.1	1.4	207.0	3.0	0.0	Horz	AV	0.0	36.6	54.0	-17.4
14621.820	35.9	-0.1	1.2	150.0	3.0	0.0	Horz	AV	0.0	35.8	54.0	-18.2
9747.643	61.2	-7.8	1.2	315.0	3.0	0.0	Vert	PK	0.0	53.4	74.0	-20.6
4873.875	27.5	2.1	1.2	299.0	3.0	0.0	Vert	AV	0.0	29.6	54.0	-24.4
4873.908	27.2	2.1	1.2	67.0	3.0	0.0	Horz	AV	0.0	29.3	54.0	-24.7
14621.940	49.3	-0.1	1.0	103.0	3.0	0.0	Vert	PK	0.0	49.2	74.0	-24.8
7308.683	38.8	10.0	1.2	216.0	3.0	0.0	Vert	PK	0.0	48.8	74.0	-25.2
7312.350	38.5	10.0	1.4	207.0	3.0	0.0	Horz	PK	0.0	48.5	74.0	-25.5
14621.710	46.8	-0.1	1.2	150.0	3.0	0.0	Horz	PK	0.0	46.7	74.0	-27.3
9747.618	54.1	-7.8	1.3	95.0	3.0	0.0	Horz	PK	0.0	46.3	74.0	-27.7
4873.975	40.0	2.1	1.2	299.0	3.0	0.0	Vert	PK	0.0	42.1	74.0	-31.9
4872.833	39.3	2.1	1.2	67.0	3.0	0.0	Horz	PK	0.0	41.4	74.0	-32.6

NORTHWEST
EMC

Spurious Radiated Emissions

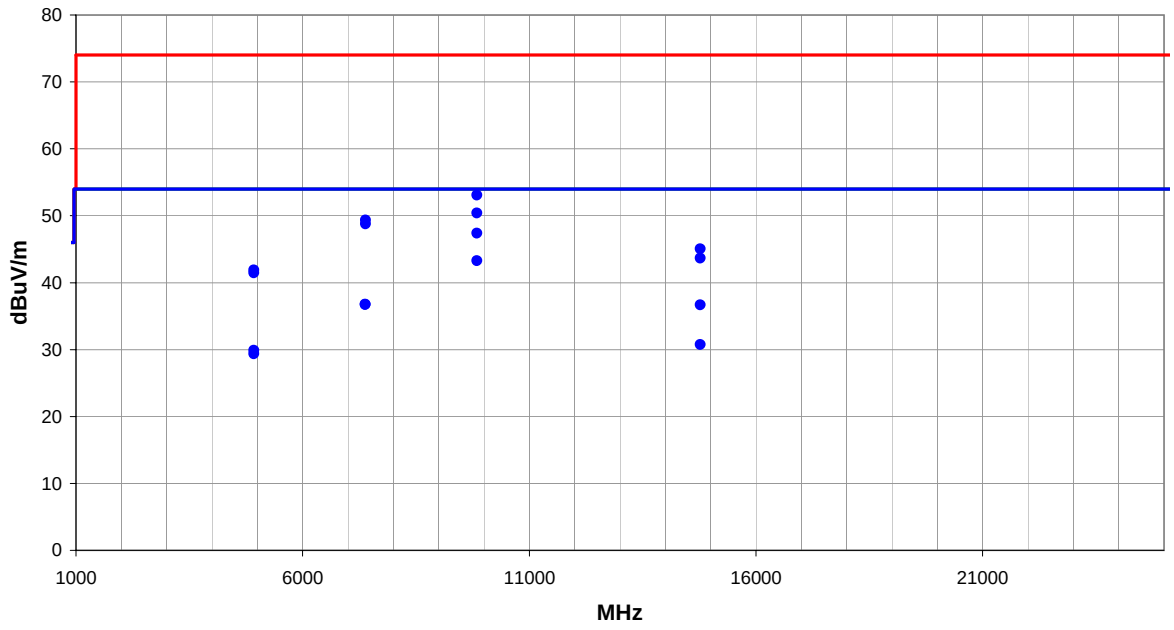
PSA-ESCI 2010.04.06
Version 2010.3.17

Work Order:	LGPD0023	**Date:**	07/01/10	Trevor Buls
Project:	None	**Temperature:**	22.55	
Job Site:	MN05	**Humidity:**	46.63	
Serial Number:	2010M00186	**Barometric Pres.:**	1022.1	**Tested by:** Trevor Buls

EUT:	AM3x SOM-M2
Configuration:	2 - AC Power Cable Ferrite
Customer:	Logic PD
Attendees:	None
EUT Power:	120VAC/60Hz
Operating Mode:	WiFi 1 Mbps, High Channel 2462 MHz
Deviations:	None
Comments:	EUT antenna Vertical.

Test Specifications	**Test Method**
FCC 15.247:2010	ANSI C63.10:2009

Run #	16	**Test Distance (m)**	3	**Antenna Height(s)**	1-4m	**Results**	Pass



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)
9847.886	58.1	-7.7	1.2	315.0	3.0	0.0	Vert	AV	0.0	50.4	54.0	-3.6
9847.886	51.0	-7.7	1.2	85.0	3.0	0.0	Horz	AV	0.0	43.3	54.0	-10.7
7383.725	26.3	10.4	1.2	180.0	3.0	0.0	Horz	AV	0.0	36.7	54.0	-17.3
7383.633	26.3	10.4	1.2	331.0	3.0	0.0	Vert	AV	0.0	36.7	54.0	-17.3
14771.780	36.9	-0.2	1.2	256.0	3.0	0.0	Vert	AV	0.0	36.7	54.0	-17.3
9847.744	60.8	-7.7	1.2	315.0	3.0	0.0	Vert	PK	0.0	53.1	74.0	-20.9
14771.880	31.0	-0.2	1.0	241.0	3.0	0.0	Horz	AV	0.0	30.8	54.0	-23.2
4923.975	27.5	2.4	1.2	70.0	3.0	0.0	Vert	AV	0.0	29.9	54.0	-24.1
4924.092	27.0	2.4	1.7	211.0	3.0	0.0	Horz	AV	0.0	29.4	54.0	-24.6
7384.975	38.9	10.5	1.2	180.0	3.0	0.0	Horz	PK	0.0	49.4	74.0	-24.6
7385.675	38.3	10.5	1.2	331.0	3.0	0.0	Vert	PK	0.0	48.8	74.0	-25.2
9847.827	55.1	-7.7	1.2	85.0	3.0	0.0	Horz	PK	0.0	47.4	74.0	-26.6
14771.150	45.3	-0.2	1.2	256.0	3.0	0.0	Vert	PK	0.0	45.1	74.0	-28.9
14771.720	43.9	-0.2	1.0	241.0	3.0	0.0	Horz	PK	0.0	43.7	74.0	-30.3
4924.817	39.5	2.4	1.2	70.0	3.0	0.0	Vert	PK	0.0	41.9	74.0	-32.1
4924.742	39.1	2.4	1.7	211.0	3.0	0.0	Horz	PK	0.0	41.5	74.0	-32.5

NORTHWEST
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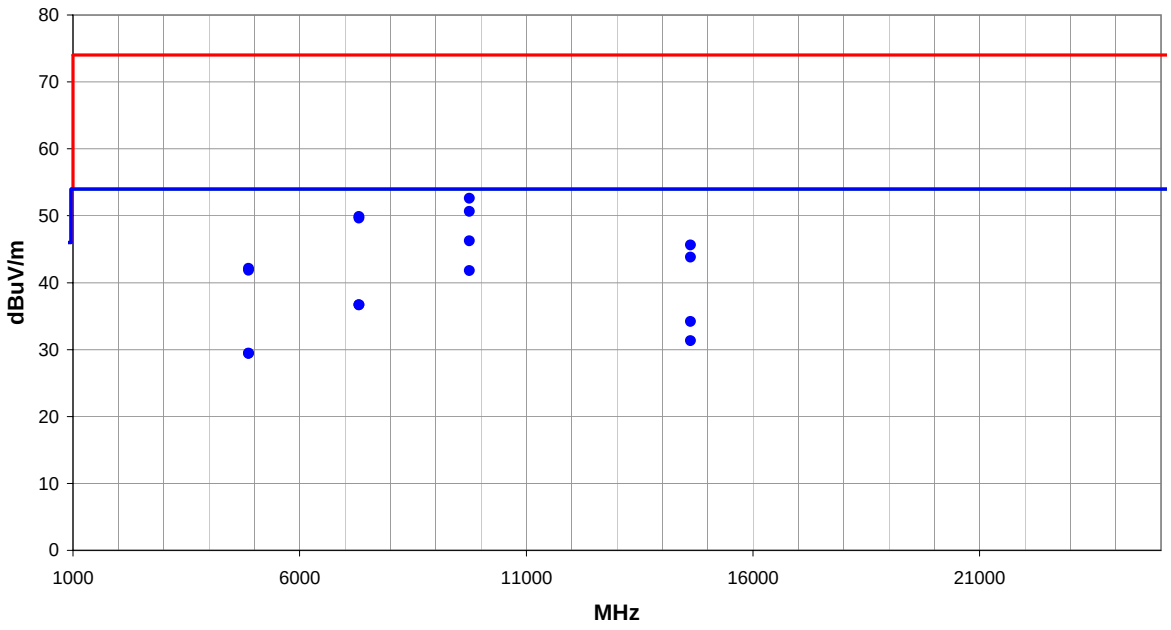
Spurious Radiated Emissions

PSA-ESCI 2010.04.06
Version 2010.3.17

Work Order:	LGPD0023	**Date:**	07/01/10	Trevor Buls
Project:	None	**Temperature:**	22.55	
Job Site:	MN05	**Humidity:**	46.63	
Serial Number:	2010M00186	**Barometric Pres.:**	1022.1	**Tested by:** Trevor Buls
EUT:	AM3x SOM-M2			
Configuration:	2 - AC Power Cable Ferrite			
Customer:	Logic PD			
Attendees:	None			
EUT Power:	120VAC/60Hz			
Operating Mode:	WiFi 6 Mbps, Mid Channel 2437 MHz			
Deviations:	None			
Comments:	EUT antenna Vertical.			

Test Specifications	**Test Method**
FCC 15.247:2010	ANSI C63.10:2009

Run #	26	**Test Distance (m)**	3	**Antenna Height(s)**	1-4m	**Results**	Pass



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)
9747.901	58.4	-7.8	1.2	301.0	3.0	0.0	Vert	AV	0.0	50.6	54.0	-3.4
9747.893	49.6	-7.8	1.2	82.0	3.0	0.0	Horz	AV	0.0	41.8	54.0	-12.2
7313.417	26.6	10.1	1.2	217.0	3.0	0.0	Vert	AV	0.0	36.7	54.0	-17.3
7313.208	26.6	10.1	1.6	94.0	3.0	0.0	Horz	AV	0.0	36.7	54.0	-17.3
14621.820	34.3	-0.1	1.1	95.0	3.0	0.0	Vert	AV	0.0	34.2	54.0	-19.8
9747.893	60.4	-7.8	1.2	301.0	3.0	0.0	Vert	PK	0.0	52.6	74.0	-21.4
14621.830	31.4	-0.1	1.0	206.0	3.0	0.0	Horz	AV	0.0	31.3	54.0	-22.7
7313.367	39.8	10.1	1.6	94.0	3.0	0.0	Horz	PK	0.0	49.9	74.0	-24.1
7309.267	39.6	10.0	1.2	217.0	3.0	0.0	Vert	PK	0.0	49.6	74.0	-24.4
4875.450	27.3	2.1	1.2	77.0	3.0	0.0	Horz	AV	0.0	29.4	54.0	-24.6
4874.475	27.3	2.1	3.7	349.0	3.0	0.0	Vert	AV	0.0	29.4	54.0	-24.6
9747.793	54.0	-7.8	1.2	82.0	3.0	0.0	Horz	PK	0.0	46.2	74.0	-27.8
14622.070	45.7	-0.1	1.1	95.0	3.0	0.0	Vert	PK	0.0	45.6	74.0	-28.4
14622.140	43.9	-0.1	1.0	206.0	3.0	0.0	Horz	PK	0.0	43.8	74.0	-30.2
4874.917	40.0	2.1	1.2	77.0	3.0	0.0	Horz	PK	0.0	42.1	74.0	-31.9
4875.475	39.7	2.1	3.7	349.0	3.0	0.0	Vert	PK	0.0	41.8	74.0	-32.2

NORTHWEST
EMC

Spurious Radiated Emissions

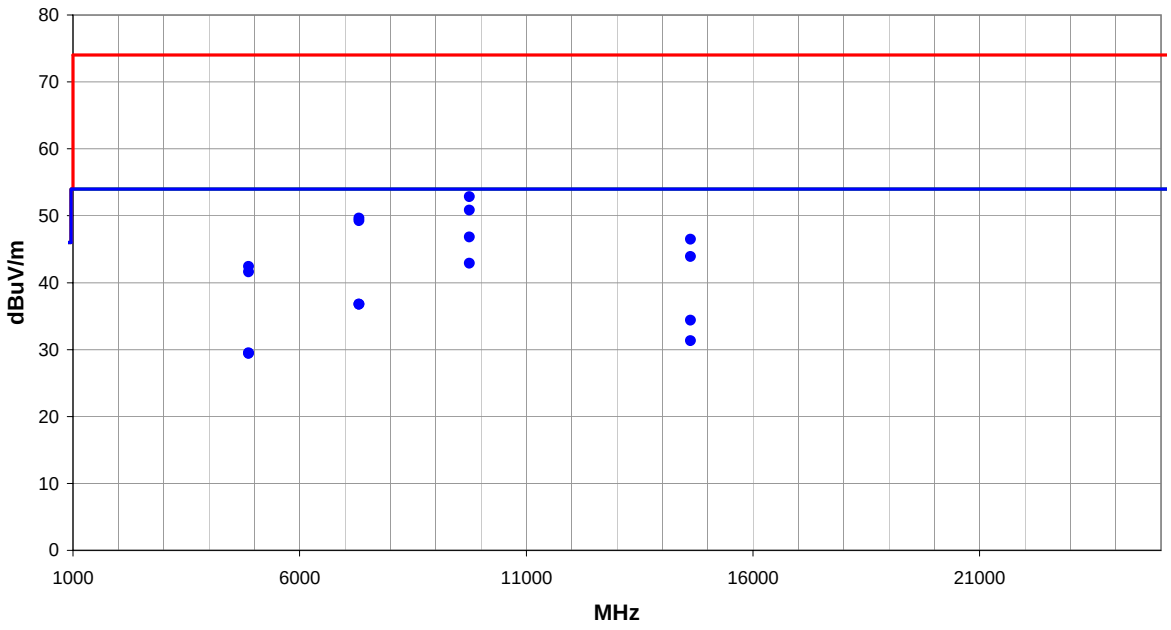
PSA-ESCI 2010.04.06
Version 2010.3.17

Work Order:	LGPD0023	**Date:**	07/01/10	Trevor Buls
Project:	None	**Temperature:**	22.55	
Job Site:	MN05	**Humidity:**	46.63	
Serial Number:	2010M00186	**Barometric Pres.:**	1022.1	**Tested by:** Trevor Buls

EUT:	AM3x SOM-M2
Configuration:	2 - AC Power Cable Ferrite
Customer:	Logic PD
Attendees:	None
EUT Power:	120VAC/60Hz
Operating Mode:	WiFi 11 Mbps, Mid Channel 2437 MHz
Deviations:	None
Comments:	EUT antenna Vertical.

Test Specifications	**Test Method**
FCC 15.247:2010	ANSI C63.10:2009

Run #	29	**Test Distance (m)**	3	**Antenna Height(s)**	1-4m	**Results**	Pass



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)
9747.901	58.6	-7.8	1.2	302.0	3.0	0.0	Vert	AV	0.0	50.8	54.0	-3.2
9747.901	50.7	-7.8	1.2	77.0	3.0	0.0	Horz	AV	0.0	42.9	54.0	-11.1
7313.442	26.7	10.1	1.2	19.0	3.0	0.0	Vert	AV	0.0	36.8	54.0	-17.2
7313.292	26.7	10.1	2.1	36.0	3.0	0.0	Horz	AV	0.0	36.8	54.0	-17.2
14621.840	34.5	-0.1	1.2	53.0	3.0	0.0	Vert	AV	0.0	34.4	54.0	-19.6
9747.926	60.6	-7.8	1.2	302.0	3.0	0.0	Vert	PK	0.0	52.8	74.0	-21.2
14621.930	31.4	-0.1	1.0	212.0	3.0	0.0	Horz	AV	0.0	31.3	54.0	-22.7
7308.817	39.6	10.0	2.1	36.0	3.0	0.0	Horz	PK	0.0	49.6	74.0	-24.4
4874.042	27.4	2.1	1.2	332.0	3.0	0.0	Vert	AV	0.0	29.5	54.0	-24.5
4874.600	27.3	2.1	1.8	20.0	3.0	0.0	Horz	AV	0.0	29.4	54.0	-24.6
7309.275	39.2	10.0	1.2	19.0	3.0	0.0	Vert	PK	0.0	49.2	74.0	-24.8
9747.851	54.6	-7.8	1.2	77.0	3.0	0.0	Horz	PK	0.0	46.8	74.0	-27.2
14621.770	46.6	-0.1	1.2	53.0	3.0	0.0	Vert	PK	0.0	46.5	74.0	-27.5
14623.340	44.0	-0.1	1.0	212.0	3.0	0.0	Horz	PK	0.0	43.9	74.0	-30.1
4874.800	40.3	2.1	1.8	20.0	3.0	0.0	Horz	PK	0.0	42.4	74.0	-31.6
4873.225	39.5	2.1	1.2	332.0	3.0	0.0	Vert	PK	0.0	41.6	74.0	-32.4

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Spurious Radiated Emissions

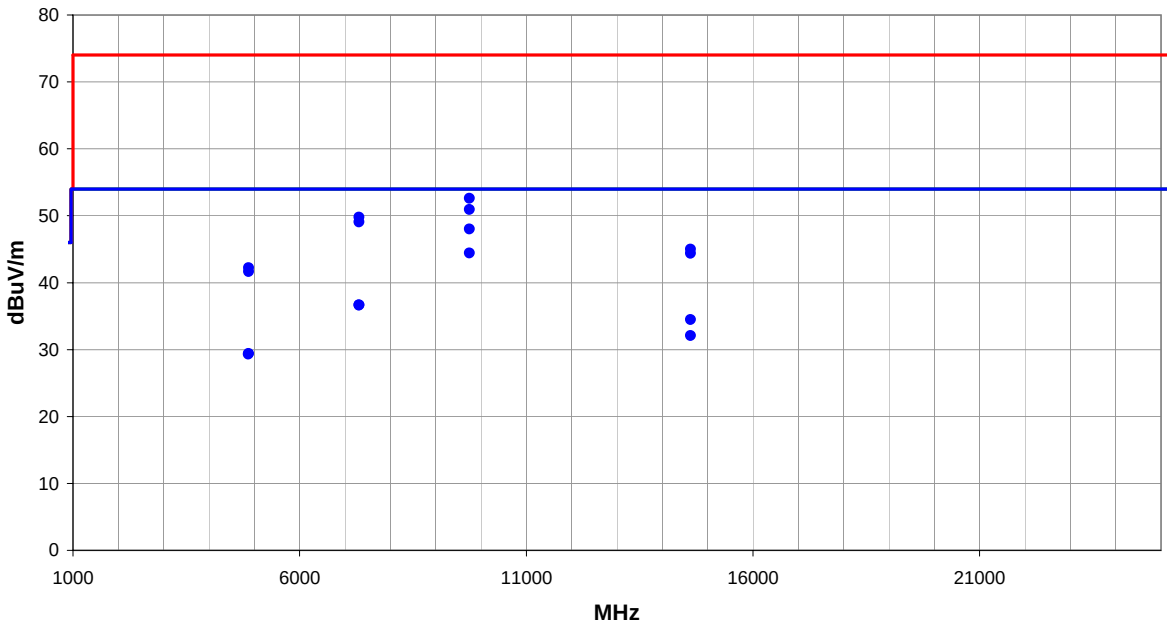
PSA-ESCI 2010.04.06
Version 2010.3.17

Work Order:	LGPD0023	**Date:**	07/01/10	Trevor Buls
Project:	None	**Temperature:**	22.55	
Job Site:	MN05	**Humidity:**	46.63	
Serial Number:	2010M00186	**Barometric Pres.:**	1022.1	**Tested by:** Trevor Buls

EUT:	AM3x SOM-M2
Configuration:	2 - AC Power Cable Ferrite
Customer:	Logic PD
Attendees:	None
EUT Power:	120VAC/60Hz
Operating Mode:	WiFi 36 Mbps, Mid Channel 2437 MHz
Deviations:	None
Comments:	EUT antenna Vertical.

Test Specifications	**Test Method**
FCC 15.247:2010	ANSI C63.10:2009

Run #	32	**Test Distance (m)**	3	**Antenna Height(s)**	1-4m	**Results**	Pass



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)
9747.901	58.7	-7.8	1.2	301.0	3.0	0.0	Vert	AV	0.0	50.9	54.0	-3.1
9747.901	52.2	-7.8	1.3	77.0	3.0	0.0	Horz	AV	0.0	44.4	54.0	-9.6
7313.325	26.6	10.1	3.6	304.0	3.0	0.0	Vert	AV	0.0	36.7	54.0	-17.3
7312.800	26.6	10.1	1.2	42.0	3.0	0.0	Horz	AV	0.0	36.7	54.0	-17.3
14621.780	34.6	-0.1	1.2	87.0	3.0	0.0	Vert	AV	0.0	34.5	54.0	-19.5
9747.909	60.4	-7.8	1.2	301.0	3.0	0.0	Vert	PK	0.0	52.6	74.0	-21.4
14621.880	32.2	-0.1	1.2	132.0	3.0	0.0	Horz	AV	0.0	32.1	54.0	-21.9
7313.458	39.7	10.1	1.2	42.0	3.0	0.0	Horz	PK	0.0	49.8	74.0	-24.2
4873.692	27.3	2.1	1.3	10.0	3.0	0.0	Vert	AV	0.0	29.4	54.0	-24.6
4871.508	27.2	2.1	1.2	11.0	3.0	0.0	Horz	AV	0.0	29.3	54.0	-24.7
7311.533	39.0	10.0	3.6	304.0	3.0	0.0	Vert	PK	0.0	49.0	74.0	-25.0
9747.793	55.8	-7.8	1.3	77.0	3.0	0.0	Horz	PK	0.0	48.0	74.0	-26.0
14621.790	45.1	-0.1	1.2	87.0	3.0	0.0	Vert	PK	0.0	45.0	74.0	-29.0
14622.670	44.5	-0.1	1.2	132.0	3.0	0.0	Horz	PK	0.0	44.4	74.0	-29.6
4873.975	40.1	2.1	1.2	11.0	3.0	0.0	Horz	PK	0.0	42.2	74.0	-31.8
4875.575	39.5	2.1	1.3	10.0	3.0	0.0	Vert	PK	0.0	41.6	74.0	-32.4

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Spurious Radiated Emissions

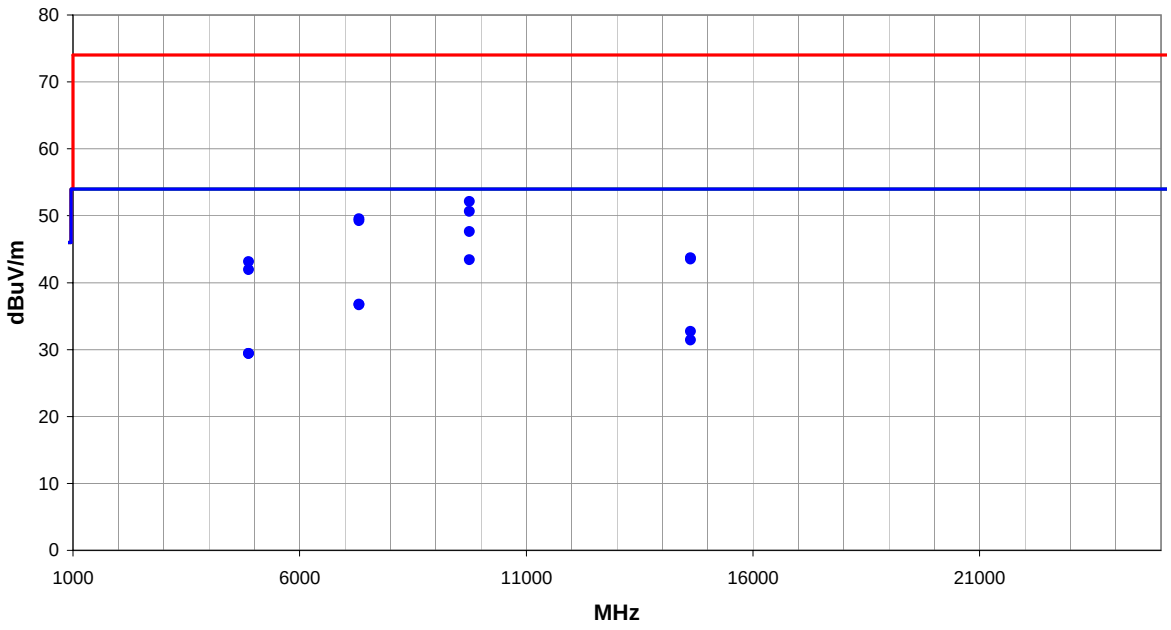
PSA-ESCI 2010.04.06
Version 2010.3.17

Work Order:	LGPD0023	**Date:**	07/01/10	Trevor Buls
Project:	None	**Temperature:**	22.55	
Job Site:	MN05	**Humidity:**	46.63	
Serial Number:	2010M00186	**Barometric Pres.:**	1022.1	**Tested by:** Trevor Buls

EUT:	AM3x SOM-M2
Configuration:	2 - AC Power Cable Ferrite
Customer:	Logic PD
Attendees:	None
EUT Power:	120VAC/60Hz
Operating Mode:	WiFi 54 Mbps, Mid Channel 2437 MHz
Deviations:	None
Comments:	EUT antenna Vertical.

Test Specifications	**Test Method**
FCC 15.247:2010	ANSI C63.10:2009

Run #	35	**Test Distance (m)**	3	**Antenna Height(s)**	1-4m	**Results**	Pass



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)
9747.893	58.4	-7.8	1.3	303.0	3.0	0.0	Vert	AV	0.0	50.6	54.0	-3.4
9747.893	51.2	-7.8	1.3	79.0	3.0	0.0	Horz	AV	0.0	43.4	54.0	-10.6
7313.408	26.7	10.1	1.2	25.0	3.0	0.0	Horz	AV	0.0	36.8	54.0	-17.2
7313.458	26.6	10.1	2.3	291.0	3.0	0.0	Vert	AV	0.0	36.7	54.0	-17.3
14621.840	32.8	-0.1	1.0	11.0	3.0	0.0	Vert	AV	0.0	32.7	54.0	-21.3
9748.026	59.9	-7.8	1.3	303.0	3.0	0.0	Vert	PK	0.0	52.1	74.0	-21.9
14621.910	31.5	-0.1	1.0	124.0	3.0	0.0	Horz	AV	0.0	31.4	54.0	-22.6
7309.400	39.5	10.0	2.3	291.0	3.0	0.0	Vert	PK	0.0	49.5	74.0	-24.5
4874.017	27.3	2.1	1.2	215.0	3.0	0.0	Horz	AV	0.0	29.4	54.0	-24.6
4873.967	27.3	2.1	1.8	199.0	3.0	0.0	Vert	AV	0.0	29.4	54.0	-24.6
7309.708	39.2	10.0	1.2	25.0	3.0	0.0	Horz	PK	0.0	49.2	74.0	-24.8
9748.018	55.4	-7.8	1.3	79.0	3.0	0.0	Horz	PK	0.0	47.6	74.0	-26.4
14621.080	43.8	-0.1	1.0	11.0	3.0	0.0	Vert	PK	0.0	43.7	74.0	-30.3
14621.370	43.6	-0.1	1.0	124.0	3.0	0.0	Horz	PK	0.0	43.5	74.0	-30.5
4874.758	41.0	2.1	1.8	199.0	3.0	0.0	Vert	PK	0.0	43.1	74.0	-30.9
4874.542	39.8	2.1	1.2	215.0	3.0	0.0	Horz	PK	0.0	41.9	74.0	-32.1

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Spurious Radiated Emissions

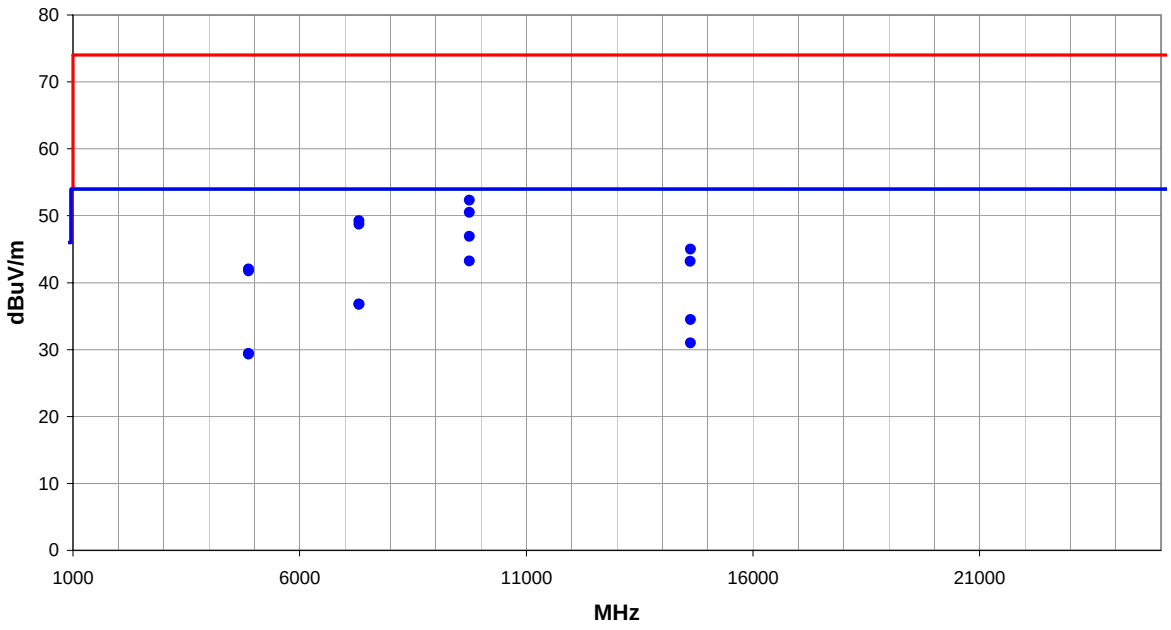
PSA-ESCI 2010.04.06
Version 2010.3.17

Work Order:	LGPD0023	**Date:**	07/01/10	Trevor Buls
Project:	None	**Temperature:**	22.55	
Job Site:	MN05	**Humidity:**	46.63	
Serial Number:	2010M00186	**Barometric Pres.:**	1022.1	**Tested by:** Trevor Buls

EUT:	AM3x SOM-M2
Configuration:	2 - AC Power Cable Ferrite
Customer:	Logic PD
Attendees:	None
EUT Power:	120VAC/60Hz
Operating Mode:	WiFi MCS0, Mid Channel 2437 MHz
Deviations:	None
Comments:	EUT antenna Vertical.

Test Specifications	**Test Method**
FCC 15.247:2010	ANSI C63.10:2009

Run #	38	**Test Distance (m)**	3	**Antenna Height(s)**	1-4m	**Results**	Pass



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)
9747.876	58.3	-7.8	1.2	301.0	3.0	0.0	Vert	AV	0.0	50.5	54.0	-3.5
9747.884	51.0	-7.8	1.2	79.0	3.0	0.0	Horz	AV	0.0	43.2	54.0	-10.8
7313.400	26.7	10.1	1.2	66.0	3.0	0.0	Horz	AV	0.0	36.8	54.0	-17.2
7312.875	26.7	10.1	1.2	162.0	3.0	0.0	Vert	AV	0.0	36.8	54.0	-17.2
14621.790	34.6	-0.1	1.2	86.0	3.0	0.0	Vert	AV	0.0	34.5	54.0	-19.5
9747.784	60.1	-7.8	1.2	301.0	3.0	0.0	Vert	PK	0.0	52.3	74.0	-21.7
14621.700	31.1	-0.1	1.8	293.0	3.0	0.0	Horz	AV	0.0	31.0	54.0	-23.0
4874.267	27.3	2.1	1.0	203.0	3.0	0.0	Vert	AV	0.0	29.4	54.0	-24.6
4874.108	27.2	2.1	1.5	217.0	3.0	0.0	Horz	AV	0.0	29.3	54.0	-24.7
7312.483	39.2	10.0	1.2	162.0	3.0	0.0	Vert	PK	0.0	49.2	74.0	-24.8
7309.383	38.7	10.0	1.2	66.0	3.0	0.0	Horz	PK	0.0	48.7	74.0	-25.3
9747.876	54.7	-7.8	1.2	79.0	3.0	0.0	Horz	PK	0.0	46.9	74.0	-27.1
14621.780	45.1	-0.1	1.2	86.0	3.0	0.0	Vert	PK	0.0	45.0	74.0	-29.0
14618.780	43.3	-0.1	1.8	293.0	3.0	0.0	Horz	PK	0.0	43.2	74.0	-30.8
4874.967	39.9	2.1	1.5	217.0	3.0	0.0	Horz	PK	0.0	42.0	74.0	-32.0
4875.175	39.6	2.1	1.0	203.0	3.0	0.0	Vert	PK	0.0	41.7	74.0	-32.3

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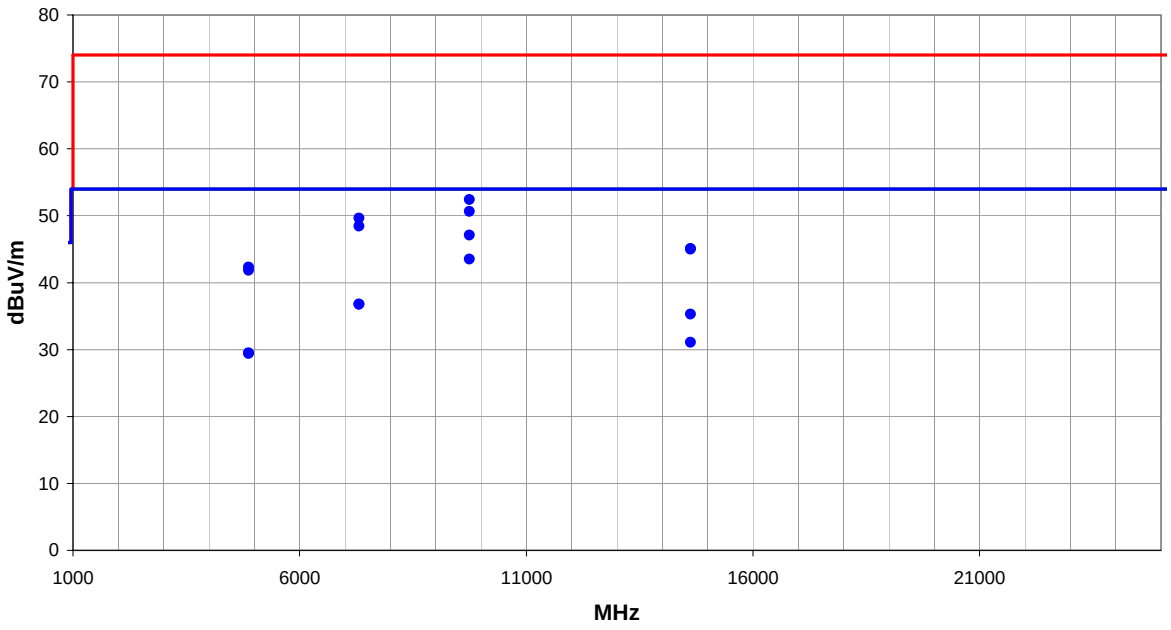
Spurious Radiated Emissions

PSA-ESCI 2010.04.06
Version 2010.3.17

Work Order:	LGPD0023	**Date:**	07/01/10	Trevor Buls
Project:	None	**Temperature:**	22.55	
Job Site:	MN05	**Humidity:**	46.63	
Serial Number:	2010M00186	**Barometric Pres.:**	1022.1	**Tested by:** Trevor Buls
EUT:	AM3x SOM-M2			
Configuration:	2 - AC Power Cable Ferrite			
Customer:	Logic PD			
Attendees:	None			
EUT Power:	120VAC/60Hz			
Operating Mode:	WiFi MCS7, Mid Channel 2437 MHz			
Deviations:	None			
Comments:	EUT antenna Vertical.			

Test Specifications	**Test Method**
FCC 15.247:2010	ANSI C63.10:2009

Run #	41	**Test Distance (m)**	3	**Antenna Height(s)**	1-4m	**Results**	Pass



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)
9747.901	58.4	-7.8	1.2	302.0	3.0	0.0	Vert	AV	0.0	50.6	54.0	-3.4
9747.893	51.3	-7.8	1.2	84.0	3.0	0.0	Horz	AV	0.0	43.5	54.0	-10.5
7313.433	26.7	10.1	1.2	52.0	3.0	0.0	Vert	AV	0.0	36.8	54.0	-17.2
7313.067	26.7	10.1	1.2	68.0	3.0	0.0	Horz	AV	0.0	36.8	54.0	-17.2
14621.780	35.4	-0.1	1.2	87.0	3.0	0.0	Vert	AV	0.0	35.3	54.0	-18.7
9747.818	60.2	-7.8	1.2	302.0	3.0	0.0	Vert	PK	0.0	52.4	74.0	-21.6
14622.050	31.2	-0.1	1.2	101.0	3.0	0.0	Horz	AV	0.0	31.1	54.0	-22.9
7311.092	39.6	10.0	1.2	68.0	3.0	0.0	Horz	PK	0.0	49.6	74.0	-24.4
4874.067	27.4	2.1	1.2	171.0	3.0	0.0	Vert	AV	0.0	29.5	54.0	-24.5
4874.192	27.3	2.1	3.7	53.0	3.0	0.0	Horz	AV	0.0	29.4	54.0	-24.6
7313.217	38.4	10.1	1.2	52.0	3.0	0.0	Vert	PK	0.0	48.5	74.0	-25.5
9748.009	54.9	-7.8	1.2	84.0	3.0	0.0	Horz	PK	0.0	47.1	74.0	-26.9
14621.130	45.2	-0.1	1.2	101.0	3.0	0.0	Horz	PK	0.0	45.1	74.0	-28.9
14621.880	45.1	-0.1	1.2	87.0	3.0	0.0	Vert	PK	0.0	45.0	74.0	-29.0
4874.542	40.2	2.1	1.2	171.0	3.0	0.0	Vert	PK	0.0	42.3	74.0	-31.7
4873.292	39.7	2.1	3.7	53.0	3.0	0.0	Horz	PK	0.0	41.8	74.0	-32.2

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Spurious Radiated Emissions

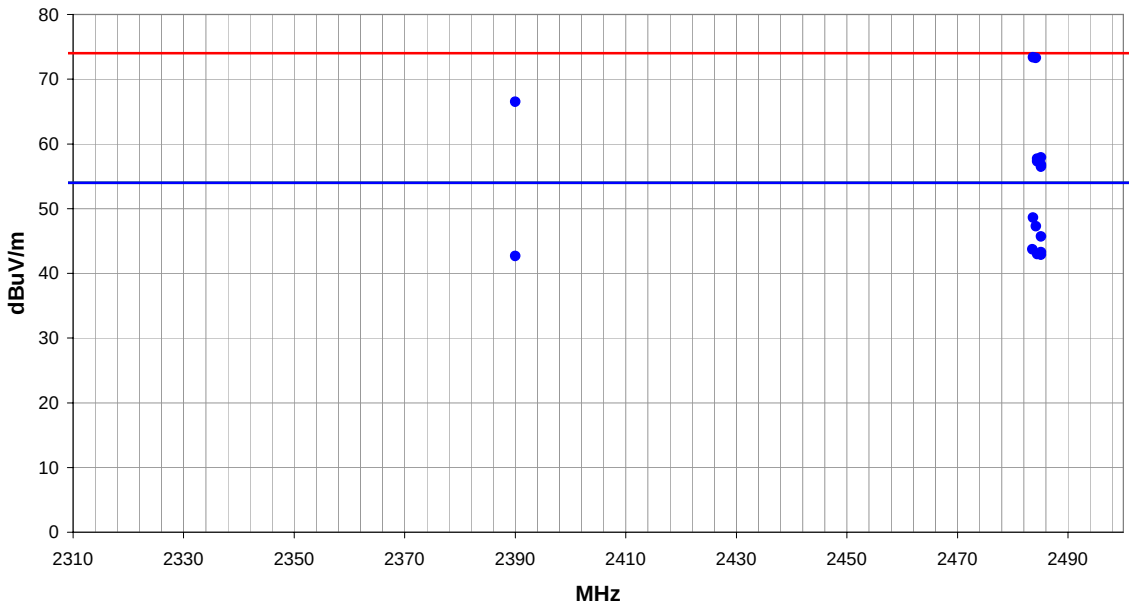
PSA-ESCI 2010.04.06
Version 2010.3.17

Work Order:	LGPD0023	**Date:**	07/13/10	Trevor Buls	
Project:	None	**Temperature:**	23.09		
Job Site:	MN05	**Humidity:**	57.65		
Serial Number:	2010M00186	**Barometric Pres.:**	1019.3	**Tested by:**	Trevor Buls

EUT:	AM3x SOM-M2
Configuration:	2 - AC Power Cable Ferrite
Customer:	Logic PD
Attendees:	None
EUT Power:	120VAC/60Hz
Operating Mode:	WiFi Operation in the Restricted Bands
Deviations:	None
Comments:	EUT antenna Vertical.

Test Specifications	**Test Method**
FCC 15.247:2010	ANSI C63.10:2009

Run #	68	**Test Distance (m)**	3	**Antenna Height(s)**	1-4m	**Results**	Pass



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
2483.700	59.3	-5.9	1.0	350.0	3.0	20.0	Vert	PK	0.0	73.4	74.0	-0.6	6 Mbps, 2462 MHz
2484.170	59.2	-5.9	1.2	52.0	3.0	20.0	Vert	PK	0.0	73.3	74.0	-0.7	MCS0, 2462 MHz
2483.700	34.5	-5.9	1.0	350.0	3.0	20.0	Vert	AV	0.0	48.6	54.0	-5.4	6 Mbps, 2462 MHz
2484.170	33.2	-5.9	1.2	52.0	3.0	20.0	Vert	AV	0.0	47.3	54.0	-6.7	MCS0, 2462 MHz
2390.000	52.4	-5.9	1.4	45.0	3.0	20.0	Vert	PK	0.0	66.5	74.0	-7.5	6 Mbps, 2412 MHz
2485.120	31.6	-5.9	1.2	313.0	3.0	20.0	Vert	AV	0.0	45.7	54.0	-8.3	1 Mbps, 2462 MHz
2483.530	29.6	-5.9	1.2	57.0	3.0	20.0	Vert	AV	0.0	43.7	54.0	-10.3	36 Mbps, 2462 MHz
2485.120	29.2	-5.9	1.2	181.0	3.0	20.0	Vert	AV	0.0	43.3	54.0	-10.7	11 Mbps, 2462 MHz
2484.400	28.9	-5.9	1.2	150.0	3.0	20.0	Vert	AV	0.0	43.0	54.0	-11.0	54 Mbps, 2462 MHz
2485.120	28.8	-5.9	1.2	157.0	3.0	20.0	Vert	AV	0.0	42.9	54.0	-11.1	MCS7, 2462 MHz
2390.000	28.6	-5.9	1.4	45.0	3.0	20.0	Vert	AV	0.0	42.7	54.0	-11.3	6 Mbps, 2412 MHz
2485.120	43.8	-5.9	1.2	313.0	3.0	20.0	Vert	PK	0.0	57.9	74.0	-16.1	1 Mbps, 2462 MHz
2484.420	43.6	-5.9	1.2	57.0	3.0	20.0	Vert	PK	0.0	57.7	74.0	-16.3	36 Mbps, 2462 MHz
2484.400	43.2	-5.9	1.2	150.0	3.0	20.0	Vert	PK	0.0	57.3	74.0	-16.7	54 Mbps, 2462 MHz
2485.120	42.7	-5.9	1.2	157.0	3.0	20.0	Vert	PK	0.0	56.8	74.0	-17.2	MCS7, 2462 MHz
2485.120	42.4	-5.9	1.2	181.0	3.0	20.0	Vert	PK	0.0	56.5	74.0	-17.5	11 Mbps, 2462 MHz

AC Powerline Conducted Emissions

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

MODES OF OPERATION

WiFi 1 Mbps, High Channel 2462 MHz
WiFi 1 Mbps, Mid Channel 2437 MHz
WiFi 1 Mbps, Low Channel 2412 MHz

POWER SETTINGS INVESTIGATED

120VAC/60Hz

CONFIGURATIONS INVESTIGATED

LGPD0023 - 1

SAMPLE CALCULATIONS

Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
MN03 Cables	ESM Cable Corp.	Conducted Cables	MNC	6/8/2010	13 mo
LISN	Solar	9252-50-R-24-BNC	LIO	3/12/2010	12 mo
Attenuator, 20 dB	SM Electronics	SA01B-20	REF	12/11/2009	13 mo
High Pass Filter	TTE	H97-100K-50-720B	HGN	6/28/2010	13 mo
Receiver	Rohde & Schwarz	ESCI	ARF	3/30/2010	12 mo

MEASUREMENT BANDWIDTHS

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

Measurements were made using the bandwidths and detectors specified. No video filter was used.

MEASUREMENT UNCERTAINTY

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty for radiated emissions measurements is less than +/- 4 dB, and for conducted emissions measurements is less than +/- 2.7 dB. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for measurement uncertainty are available upon request.

TEST DESCRIPTION

The EUT will be powered either directly or indirectly from the AC power line. Therefore, conducted emissions measurements were made on the AC input of the EUT, or on the AC input of the device used to power the EUT. The AC power line conducted emissions were measured with the EUT operating at the lowest, the highest, and a middle channel in the operational band. The EUT was transmitting at its maximum data rate. For each mode, the spectrum was scanned from 150 kHz to 30 MHz. The test setup and procedures were in accordance with ANSI C63.10-2009.

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AC Powerline Conducted Emissions

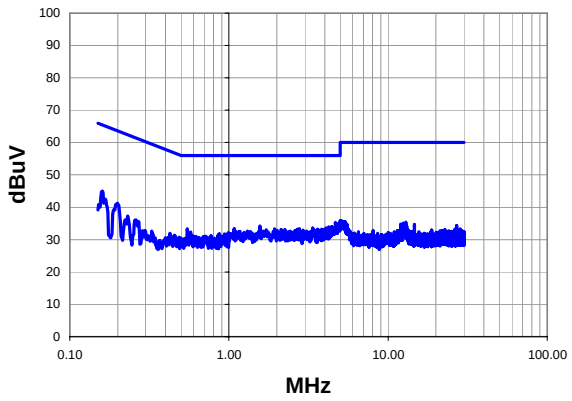
PSA-ESCI 2010.04.06
Version 2010.3.17

Work Order:	LGPD0023	**Date:**	06/30/10	Trevor Buls
Project:	None	**Temperature:**	22.55°C	
Job Site:	MN03	**Humidity:**	46.63	
Serial Number:	2010M00186	**Barometric Pres.:**	1022.1	**Tested by:** Trevor Buls
EUT:	AM3x SOM-M2			
Configuration:	1 - Basic Configuration			
Customer:	Logic PD			
Attendees:	None			
EUT Power:	120VAC/60Hz			
Operating Mode:	WiFi 1 Mbps, High Channel 2462 MHz			
Deviations:	None			
Comments:	None			

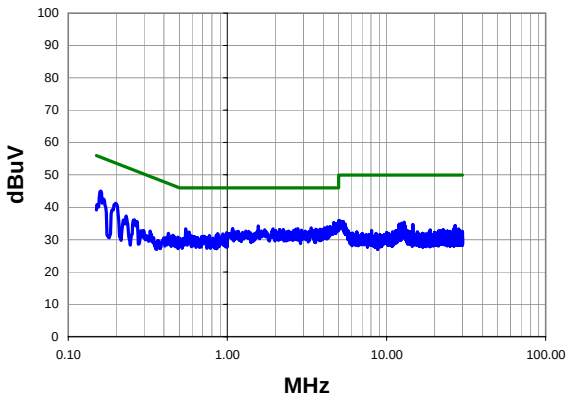
Test Specifications	**Test Method**
FCC 15.207:2010	ANSI C63.10:2009

Run #	7	**Line:**	High Line	**Ext. Attenuation:**	20	**Results**	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
4.992	15.4	20.5	35.9	56.0	-20.1
0.160	23.5	21.5	45.0	65.5	-20.5
4.672	14.8	20.5	35.3	56.0	-20.7
1.568	13.8	20.5	34.3	56.0	-21.7
4.240	13.4	20.5	33.9	56.0	-22.1
3.360	13.1	20.5	33.6	56.0	-22.4
4.088	13.1	20.5	33.6	56.0	-22.4
0.199	20.1	21.1	41.2	63.6	-22.4
1.080	13.0	20.4	33.4	56.0	-22.6
0.548	12.9	20.4	33.3	56.0	-22.7
2.776	12.8	20.5	33.3	56.0	-22.7
1.936	12.8	20.5	33.3	56.0	-22.7
2.688	12.7	20.5	33.2	56.0	-22.8
3.592	12.7	20.5	33.2	56.0	-22.8
3.816	12.7	20.5	33.2	56.0	-22.8
2.128	12.6	20.5	33.1	56.0	-22.9
2.920	12.4	20.5	32.9	56.0	-23.1
1.304	12.2	20.4	32.6	56.0	-23.4
0.575	11.9	20.4	32.3	56.0	-23.7
0.988	11.7	20.4	32.1	56.0	-23.9

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
4.992	15.4	20.5	35.9	46.0	-10.1
0.160	23.5	21.5	45.0	55.5	-10.5
4.672	14.8	20.5	35.3	46.0	-10.7
1.568	13.8	20.5	34.3	46.0	-11.7
4.240	13.4	20.5	33.9	46.0	-12.1
3.360	13.1	20.5	33.6	46.0	-12.4
4.088	13.1	20.5	33.6	46.0	-12.4
0.199	20.1	21.1	41.2	53.6	-12.4
1.080	13.0	20.4	33.4	46.0	-12.6
0.548	12.9	20.4	33.3	46.0	-12.7
2.776	12.8	20.5	33.3	46.0	-12.7
1.936	12.8	20.5	33.3	46.0	-12.7
2.688	12.7	20.5	33.2	46.0	-12.8
3.592	12.7	20.5	33.2	46.0	-12.8
3.816	12.7	20.5	33.2	46.0	-12.8
2.128	12.6	20.5	33.1	46.0	-12.9
2.920	12.4	20.5	32.9	46.0	-13.1
1.304	12.2	20.4	32.6	46.0	-13.4
0.575	11.9	20.4	32.3	46.0	-13.7
0.988	11.7	20.4	32.1	46.0	-13.9

NORTHWEST
EMC

AC Powerline Conducted Emissions

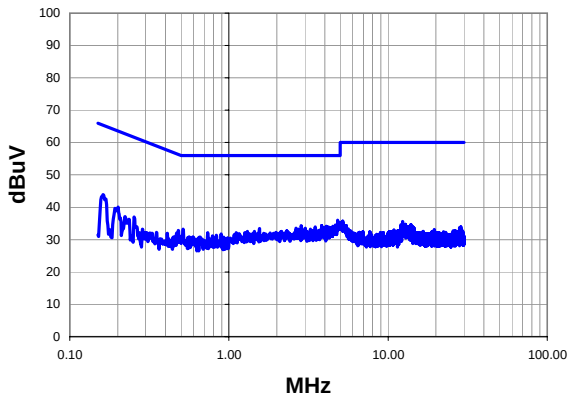
PSA-ESCI 2010.04.06
Version 2010.3.17

Work Order:	LGPD0023	**Date:**	06/30/10	Trevor Buls
Project:	None	**Temperature:**	22.55°C	
Job Site:	MN03	**Humidity:**	46.63	
Serial Number:	2010M00186	**Barometric Pres.:**	1022.1	**Tested by:** Trevor Buls
EUT:	AM3x SOM-M2			
Configuration:	1 - Basic Configuration			
Customer:	Logic PD			
Attendees:	None			
EUT Power:	120VAC/60Hz			
Operating Mode:	WiFi 1 Mbps, High Channel 2462 MHz			
Deviations:	None			
Comments:	None			

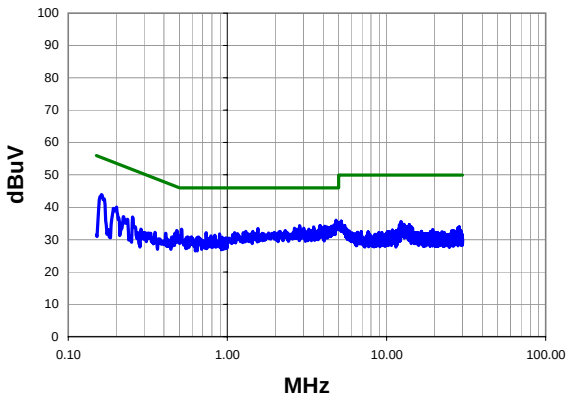
Test Specifications	**Test Method**
FCC 15.207:2010	ANSI C63.10:2009

Run #	8	**Line:**	Neutral	**Ext. Attenuation:**	20	**Results**	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
4.824	15.5	20.5	36.0	56.0	-20.0
0.162	22.4	21.5	43.9	65.4	-21.5
2.848	13.8	20.5	34.3	56.0	-21.7
3.824	13.8	20.5	34.3	56.0	-21.7
4.088	13.6	20.5	34.1	56.0	-21.9
3.480	13.4	20.5	33.9	56.0	-22.1
4.216	13.4	20.5	33.9	56.0	-22.1
2.640	13.0	20.5	33.5	56.0	-22.5
3.016	13.0	20.5	33.5	56.0	-22.5
1.560	13.0	20.5	33.5	56.0	-22.5
0.516	12.8	20.4	33.2	56.0	-22.8
3.256	12.7	20.5	33.2	56.0	-22.8
2.304	12.2	20.5	32.7	56.0	-23.3
1.448	12.1	20.4	32.5	56.0	-23.5
1.304	12.1	20.4	32.5	56.0	-23.5
0.201	19.0	21.1	40.1	63.6	-23.5
0.482	12.3	20.5	32.8	56.3	-23.5
0.735	11.7	20.4	32.1	56.0	-23.9
1.112	11.7	20.4	32.1	56.0	-23.9
0.893	11.4	20.4	31.8	56.0	-24.2

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
4.824	15.5	20.5	36.0	46.0	-10.0
0.162	22.4	21.5	43.9	55.4	-11.5
2.848	13.8	20.5	34.3	46.0	-11.7
3.824	13.8	20.5	34.3	46.0	-11.7
4.088	13.6	20.5	34.1	46.0	-11.9
3.480	13.4	20.5	33.9	46.0	-12.1
4.216	13.4	20.5	33.9	46.0	-12.1
2.640	13.0	20.5	33.5	46.0	-12.5
3.016	13.0	20.5	33.5	46.0	-12.5
1.560	13.0	20.5	33.5	46.0	-12.5
0.516	12.8	20.4	33.2	46.0	-12.8
3.256	12.7	20.5	33.2	46.0	-12.8
2.304	12.2	20.5	32.7	46.0	-13.3
1.448	12.1	20.4	32.5	46.0	-13.5
1.304	12.1	20.4	32.5	46.0	-13.5
0.201	19.0	21.1	40.1	53.6	-13.5
0.482	12.3	20.5	32.8	46.3	-13.5
0.735	11.7	20.4	32.1	46.0	-13.9
1.112	11.7	20.4	32.1	46.0	-13.9
0.893	11.4	20.4	31.8	46.0	-14.2

NORTHWEST
EMC

AC Powerline Conducted Emissions

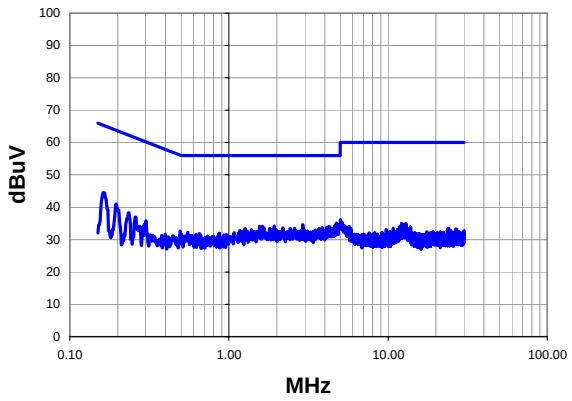
PSA-ESCI 2010.04.06
Version 2010.3.17

Work Order:	LGPD0023	**Date:**	06/30/10	Trevor Buls
Project:	None	**Temperature:**	22.55°C	
Job Site:	MN03	**Humidity:**	46.63	
Serial Number:	2010M00186	**Barometric Pres.:**	1022.1	**Tested by:** Trevor Buls
EUT:	AM3x SOM-M2			
Configuration:	1 - Basic Configuration			
Customer:	Logic PD			
Attendees:	None			
EUT Power:	120VAC/60Hz			
Operating Mode:	WiFi 1 Mbps, Mid Channel 2437 MHz			
Deviations:	None			
Comments:	None			

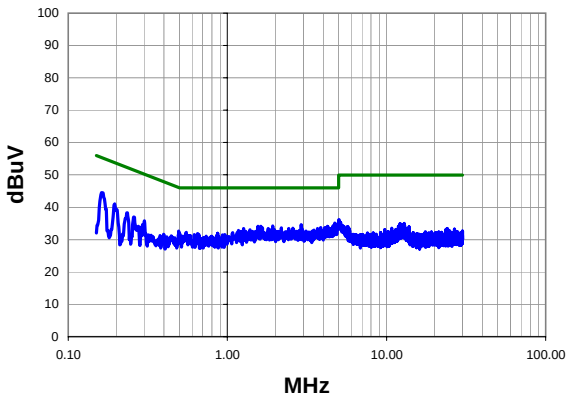
Test Specifications	**Test Method**
FCC 15.207:2010	ANSI C63.10:2009

Run #	9	**Line:**	High Line	**Ext. Attenuation:**	20	**Results**	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.162	23.0	21.5	44.5	65.4	-20.9
4.720	14.6	20.5	35.1	56.0	-20.9
2.912	14.1	20.5	34.6	56.0	-21.4
1.928	13.7	20.5	34.2	56.0	-21.8
1.624	13.7	20.5	34.2	56.0	-21.8
1.560	13.7	20.5	34.2	56.0	-21.8
4.248	13.6	20.5	34.1	56.0	-21.9
3.856	13.2	20.5	33.7	56.0	-22.3
2.184	13.1	20.5	33.6	56.0	-22.4
2.584	13.0	20.5	33.5	56.0	-22.5
1.808	13.0	20.5	33.5	56.0	-22.5
1.264	13.0	20.4	33.4	56.0	-22.6
2.432	12.9	20.5	33.4	56.0	-22.6
3.688	12.9	20.5	33.4	56.0	-22.6
2.944	12.8	20.5	33.3	56.0	-22.7
0.196	19.9	21.1	41.0	63.8	-22.7
1.856	12.6	20.5	33.1	56.0	-22.9
1.384	12.6	20.4	33.0	56.0	-23.0
1.176	12.4	20.4	32.8	56.0	-23.2
3.112	12.1	20.5	32.6	56.0	-23.4

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.162	23.0	21.5	44.5	55.4	-10.9
4.720	14.6	20.5	35.1	46.0	-10.9
2.912	14.1	20.5	34.6	46.0	-11.4
1.928	13.7	20.5	34.2	46.0	-11.8
1.624	13.7	20.5	34.2	46.0	-11.8
1.560	13.7	20.5	34.2	46.0	-11.8
4.248	13.6	20.5	34.1	46.0	-11.9
3.856	13.2	20.5	33.7	46.0	-12.3
2.184	13.1	20.5	33.6	46.0	-12.4
2.584	13.0	20.5	33.5	46.0	-12.5
1.808	13.0	20.5	33.5	46.0	-12.5
1.264	13.0	20.4	33.4	46.0	-12.6
2.432	12.9	20.5	33.4	46.0	-12.6
3.688	12.9	20.5	33.4	46.0	-12.6
2.944	12.8	20.5	33.3	46.0	-12.7
0.196	19.9	21.1	41.0	53.8	-12.7
1.856	12.6	20.5	33.1	46.0	-12.9
1.384	12.6	20.4	33.0	46.0	-13.0
1.176	12.4	20.4	32.8	46.0	-13.2
3.112	12.1	20.5	32.6	46.0	-13.4

NORTHWEST
EMC

AC Powerline Conducted Emissions

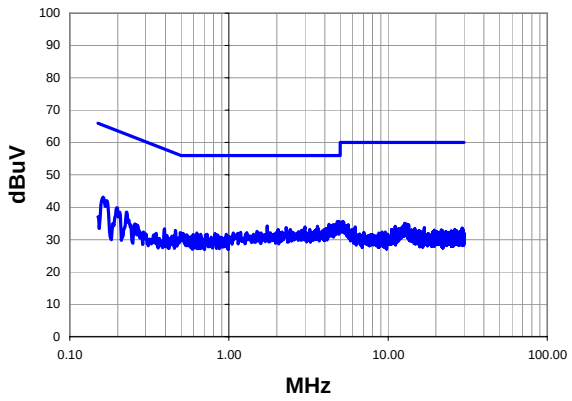
PSA-ESCI 2010.04.06
Version 2010.3.17

Work Order:	LGPD0023	**Date:**	06/30/10	Trevor Buls
Project:	None	**Temperature:**	22.55°C	
Job Site:	MN03	**Humidity:**	46.63	
Serial Number:	2010M00186	**Barometric Pres.:**	1022.1	**Tested by:** Trevor Buls
EUT:	AM3x SOM-M2			
Configuration:	1 - Basic Configuration			
Customer:	Logic PD			
Attendees:	None			
EUT Power:	120VAC/60Hz			
Operating Mode:	WiFi 1 Mbps, Mid Channel 2437 MHz			
Deviations:	None			
Comments:	None			

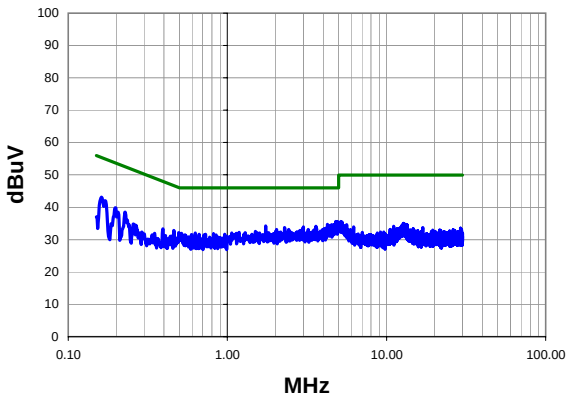
Test Specifications	**Test Method**
FCC 15.207:2010	ANSI C63.10:2009

Run #	10	**Line:**	Neutral	**Ext. Attenuation:**	20	**Results**	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
4.808	15.1	20.5	35.6	56.0	-20.4
4.904	15.1	20.5	35.6	56.0	-20.4
4.976	14.8	20.5	35.3	56.0	-20.7
4.256	14.2	20.5	34.7	56.0	-21.3
4.520	14.1	20.5	34.6	56.0	-21.4
1.744	13.7	20.5	34.2	56.0	-21.8
3.608	13.6	20.5	34.1	56.0	-21.9
3.000	13.4	20.5	33.9	56.0	-22.1
0.162	21.6	21.5	43.1	65.4	-22.3
2.288	13.2	20.5	33.7	56.0	-22.3
4.056	12.9	20.5	33.4	56.0	-22.6
2.040	12.6	20.5	33.1	56.0	-22.9
2.432	12.6	20.5	33.1	56.0	-22.9
3.216	12.6	20.5	33.1	56.0	-22.9
3.976	12.6	20.5	33.1	56.0	-22.9
1.504	12.1	20.5	32.6	56.0	-23.4
1.184	11.8	20.4	32.2	56.0	-23.8
1.296	11.7	20.4	32.1	56.0	-23.9
0.461	12.3	20.5	32.8	56.7	-23.9
0.198	18.7	21.1	39.8	63.7	-23.9

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
4.808	15.1	20.5	35.6	46.0	-10.4
4.904	15.1	20.5	35.6	46.0	-10.4
4.976	14.8	20.5	35.3	46.0	-10.7
4.256	14.2	20.5	34.7	46.0	-11.3
4.520	14.1	20.5	34.6	46.0	-11.4
1.744	13.7	20.5	34.2	46.0	-11.8
3.608	13.6	20.5	34.1	46.0	-11.9
3.000	13.4	20.5	33.9	46.0	-12.1
0.162	21.6	21.5	43.1	55.4	-12.3
2.288	13.2	20.5	33.7	46.0	-12.3
4.056	12.9	20.5	33.4	46.0	-12.6
2.040	12.6	20.5	33.1	46.0	-12.9
2.432	12.6	20.5	33.1	46.0	-12.9
3.216	12.6	20.5	33.1	46.0	-12.9
3.976	12.6	20.5	33.1	46.0	-12.9
1.504	12.1	20.5	32.6	46.0	-13.4
1.184	11.8	20.4	32.2	46.0	-13.8
1.296	11.7	20.4	32.1	46.0	-13.9
0.461	12.3	20.5	32.8	46.7	-13.9
0.198	18.7	21.1	39.8	53.7	-13.9

NORTHWEST
EMC

AC Powerline Conducted Emissions

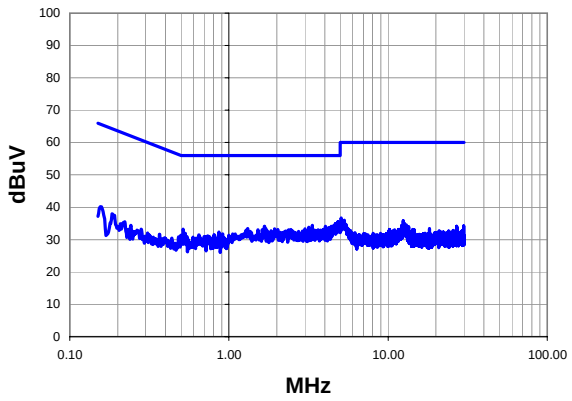
PSA-ESCI 2010.04.06
Version 2010.3.17

Work Order:	LGPD0023	**Date:**	06/30/10	Trevor Buls
Project:	None	**Temperature:**	22.55°C	
Job Site:	MN03	**Humidity:**	46.63	
Serial Number:	2010M00186	**Barometric Pres.:**	1022.1	**Tested by:** Trevor Buls
EUT:	AM3x SOM-M2			
Configuration:	1 - Basic Configuration			
Customer:	Logic PD			
Attendees:	None			
EUT Power:	120VAC/60Hz			
Operating Mode:	WiFi 1 Mbps, Low Channel 2412 MHz			
Deviations:	None			
Comments:	None			

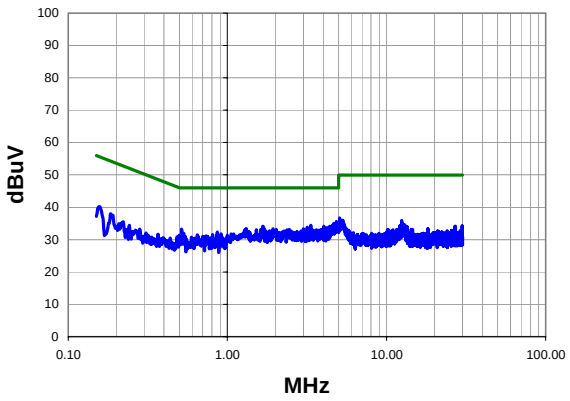
Test Specifications	**Test Method**
FCC 15.207:2010	ANSI C63.10:2009

Run #	11	**Line:**	High Line	**Ext. Attenuation:**	20	**Results**	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
4.840	15.0	20.5	35.5	56.0	-20.5
4.664	14.4	20.5	34.9	56.0	-21.1
3.336	13.9	20.5	34.4	56.0	-21.6
1.680	13.7	20.5	34.2	56.0	-21.8
4.040	13.6	20.5	34.1	56.0	-21.9
4.400	13.6	20.5	34.1	56.0	-21.9
3.176	13.3	20.5	33.8	56.0	-22.2
4.240	13.2	20.5	33.7	56.0	-22.3
1.312	13.0	20.4	33.4	56.0	-22.6
3.000	12.8	20.5	33.3	56.0	-22.7
1.936	12.8	20.5	33.3	56.0	-22.7
0.516	12.8	20.4	33.2	56.0	-22.8
2.456	12.6	20.5	33.1	56.0	-22.9
3.912	12.6	20.5	33.1	56.0	-22.9
1.520	12.6	20.5	33.1	56.0	-22.9
3.632	12.5	20.5	33.0	56.0	-23.0
1.840	12.3	20.5	32.8	56.0	-23.2
5.080	16.2	20.5	36.7	60.0	-23.3
1.752	12.2	20.5	32.7	56.0	-23.3
2.264	12.1	20.5	32.6	56.0	-23.4

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
4.840	15.0	20.5	35.5	46.0	-10.5
4.664	14.4	20.5	34.9	46.0	-11.1
3.336	13.9	20.5	34.4	46.0	-11.6
1.680	13.7	20.5	34.2	46.0	-11.8
4.040	13.6	20.5	34.1	46.0	-11.9
4.400	13.6	20.5	34.1	46.0	-11.9
3.176	13.3	20.5	33.8	46.0	-12.2
4.240	13.2	20.5	33.7	46.0	-12.3
1.312	13.0	20.4	33.4	46.0	-12.6
3.000	12.8	20.5	33.3	46.0	-12.7
1.936	12.8	20.5	33.3	46.0	-12.7
0.516	12.8	20.4	33.2	46.0	-12.8
2.456	12.6	20.5	33.1	46.0	-12.9
3.912	12.6	20.5	33.1	46.0	-12.9
1.520	12.6	20.5	33.1	46.0	-12.9
3.632	12.5	20.5	33.0	46.0	-13.0
1.840	12.3	20.5	32.8	46.0	-13.2
5.080	16.2	20.5	36.7	50.0	-13.3
1.752	12.2	20.5	32.7	46.0	-13.3
2.264	12.1	20.5	32.6	46.0	-13.4

NORTHWEST
EMC

AC Powerline Conducted Emissions

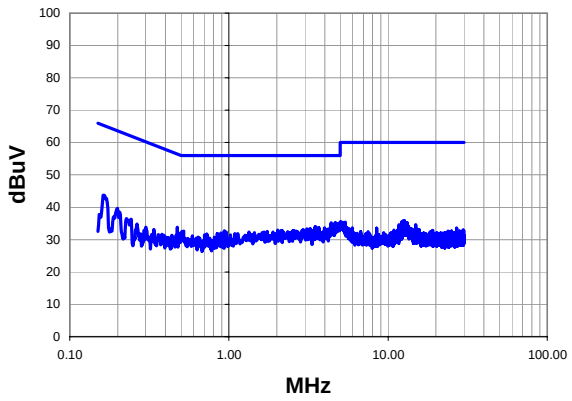
PSA-ESCI 2010.04.06
Version 2010.3.17

Work Order:	LGPD0023	**Date:**	06/30/10	Trevor Buls
Project:	None	**Temperature:**	22.55°C	
Job Site:	MN03	**Humidity:**	46.63	
Serial Number:	2010M00186	**Barometric Pres.:**	1022.1	**Tested by:** Trevor Buls
EUT:	AM3x SOM-M2			
Configuration:	1 - Basic Configuration			
Customer:	Logic PD			
Attendees:	None			
EUT Power:	120VAC/60Hz			
Operating Mode:	WiFi 1 Mbps, Low Channel 2412 MHz			
Deviations:	None			
Comments:	None			

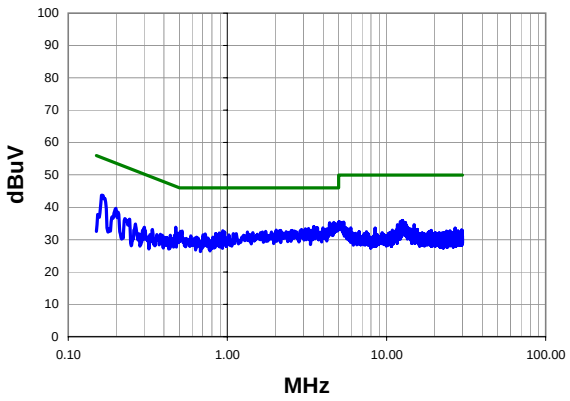
Test Specifications	**Test Method**
FCC 15.207:2010	ANSI C63.10:2009

Run #	12	**Line:**	Neutral	**Ext. Attenuation:**	20	**Results**	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
4.656	14.8	20.5	35.3	56.0	-20.7
4.384	14.7	20.5	35.2	56.0	-20.8
4.568	14.3	20.5	34.8	56.0	-21.2
0.164	22.3	21.5	43.8	65.3	-21.5
3.480	13.5	20.5	34.0	56.0	-22.0
3.648	13.2	20.5	33.7	56.0	-22.3
3.984	13.1	20.5	33.6	56.0	-22.4
3.232	12.9	20.5	33.4	56.0	-22.6
0.473	13.3	20.5	33.8	56.5	-22.7
3.096	12.8	20.5	33.3	56.0	-22.7
2.920	12.6	20.5	33.1	56.0	-22.9
2.024	12.4	20.5	32.9	56.0	-23.1
2.152	12.3	20.5	32.8	56.0	-23.2
2.544	12.3	20.5	32.8	56.0	-23.2
0.937	12.4	20.4	32.8	56.0	-23.2
2.128	12.2	20.5	32.7	56.0	-23.3
0.519	12.2	20.4	32.6	56.0	-23.4
2.176	12.1	20.5	32.6	56.0	-23.4
1.744	12.1	20.5	32.6	56.0	-23.4
0.961	12.0	20.4	32.4	56.0	-23.6

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
4.656	14.8	20.5	35.3	46.0	-10.7
4.384	14.7	20.5	35.2	46.0	-10.8
4.568	14.3	20.5	34.8	46.0	-11.2
0.164	22.3	21.5	43.8	55.3	-11.5
3.480	13.5	20.5	34.0	46.0	-12.0
3.648	13.2	20.5	33.7	46.0	-12.3
3.984	13.1	20.5	33.6	46.0	-12.4
3.232	12.9	20.5	33.4	46.0	-12.6
0.473	13.3	20.5	33.8	46.5	-12.7
3.096	12.8	20.5	33.3	46.0	-12.7
2.920	12.6	20.5	33.1	46.0	-12.9
2.024	12.4	20.5	32.9	46.0	-13.1
2.152	12.3	20.5	32.8	46.0	-13.2
2.544	12.3	20.5	32.8	46.0	-13.2
0.937	12.4	20.4	32.8	46.0	-13.2
2.128	12.2	20.5	32.7	46.0	-13.3
0.519	12.2	20.4	32.6	46.0	-13.4
2.176	12.1	20.5	32.6	46.0	-13.4
1.744	12.1	20.5	32.6	46.0	-13.4
0.961	12.0	20.4	32.4	46.0	-13.6