# Logic PD

## AM3x SOM-M2

EMC Test Report

**Report No. LGPD0023**

Report Prepared By

NORTHWEST EMC

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

NORTHWEST EMC

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 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



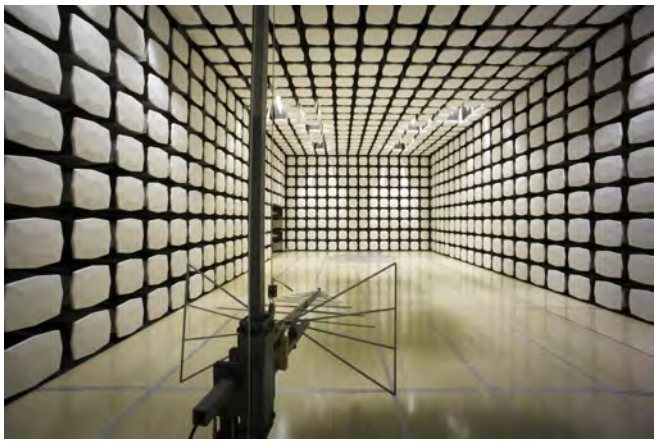
Oregon
Labs EV01-EV12
22975 NW Evergreen Pkwy
Suite 400
Hillsboro, OR 97124
(503) 844-4066

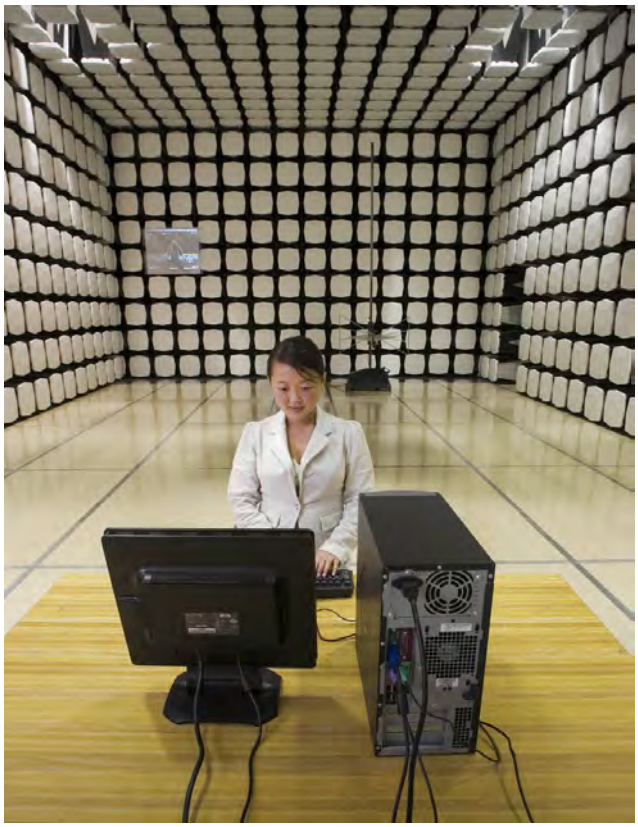
California
Labs OC01-OC13
41 Tesla
Irvine, CA 92618
(949) 861-8918

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. |

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

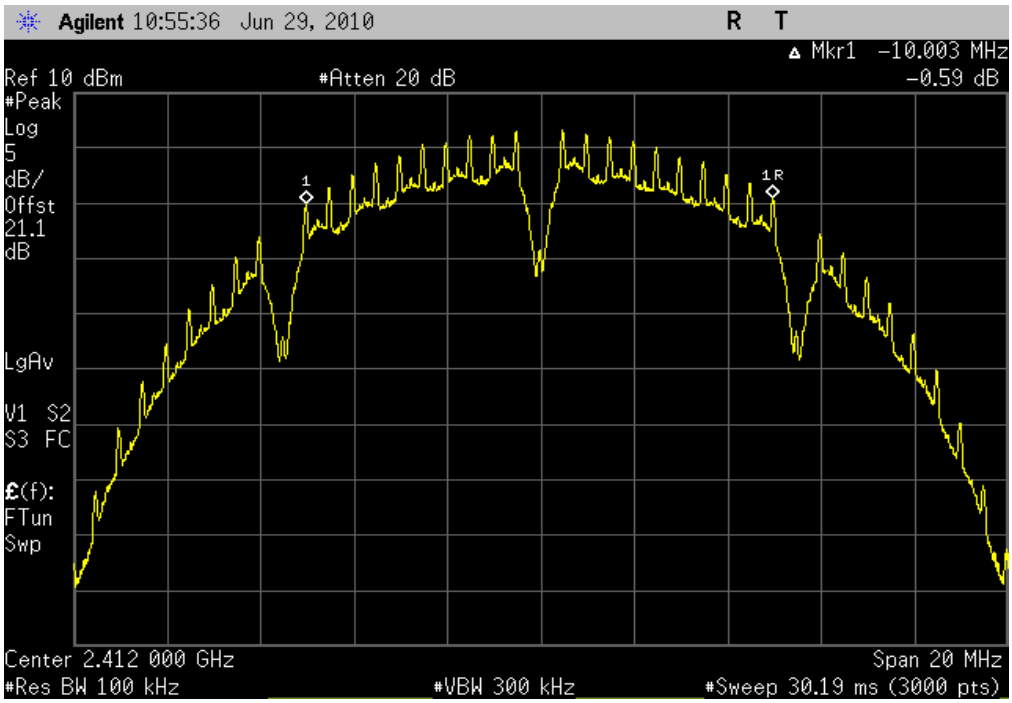
**DEVIATIONS FROM TEST STANDARD**

No Deviations

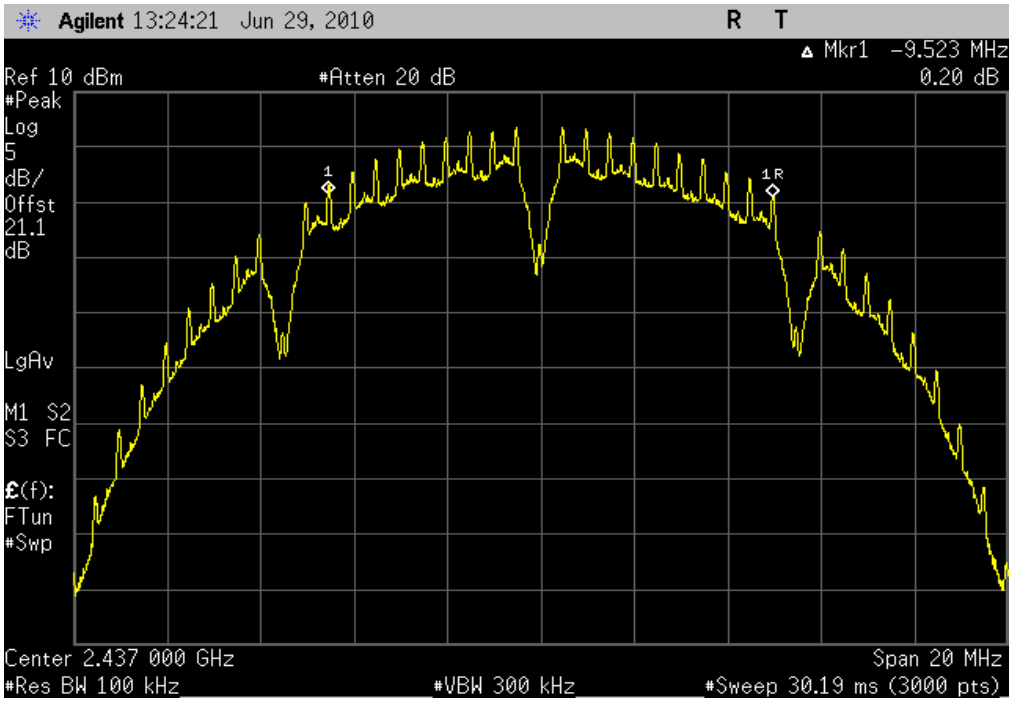
| Configuration # | 1 | Signature | Trevor Buls |
|---|---|---|---|

| | | 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 |

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

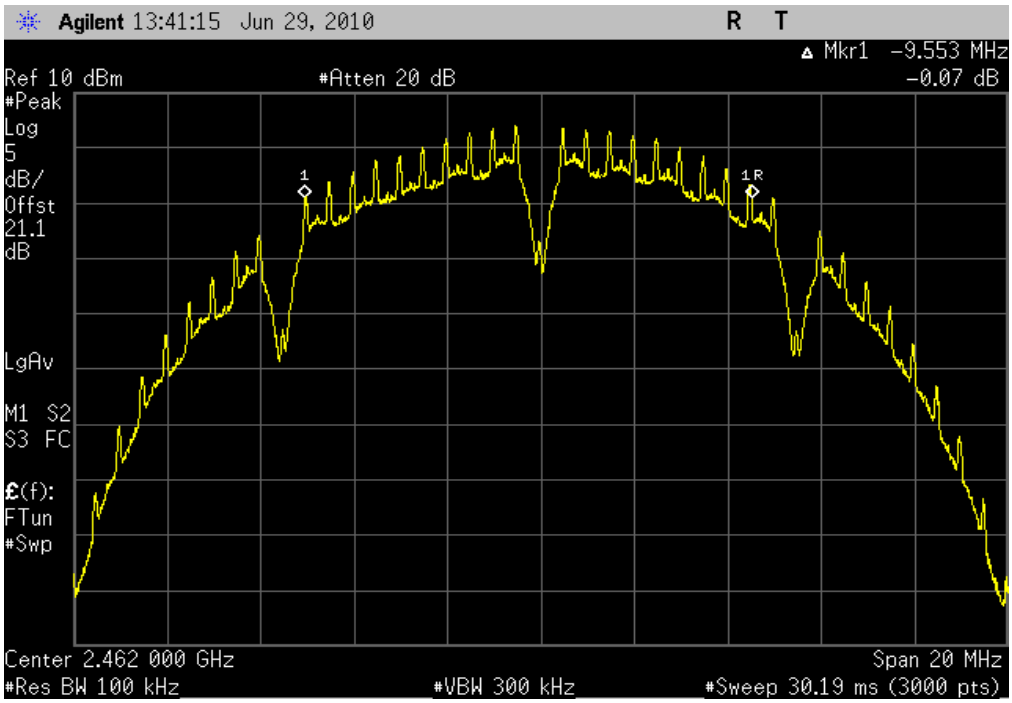



| 802.11(b) 1 Mbps, Mid Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | 9.523 MHz | **Limit:** | > 500 kHz |

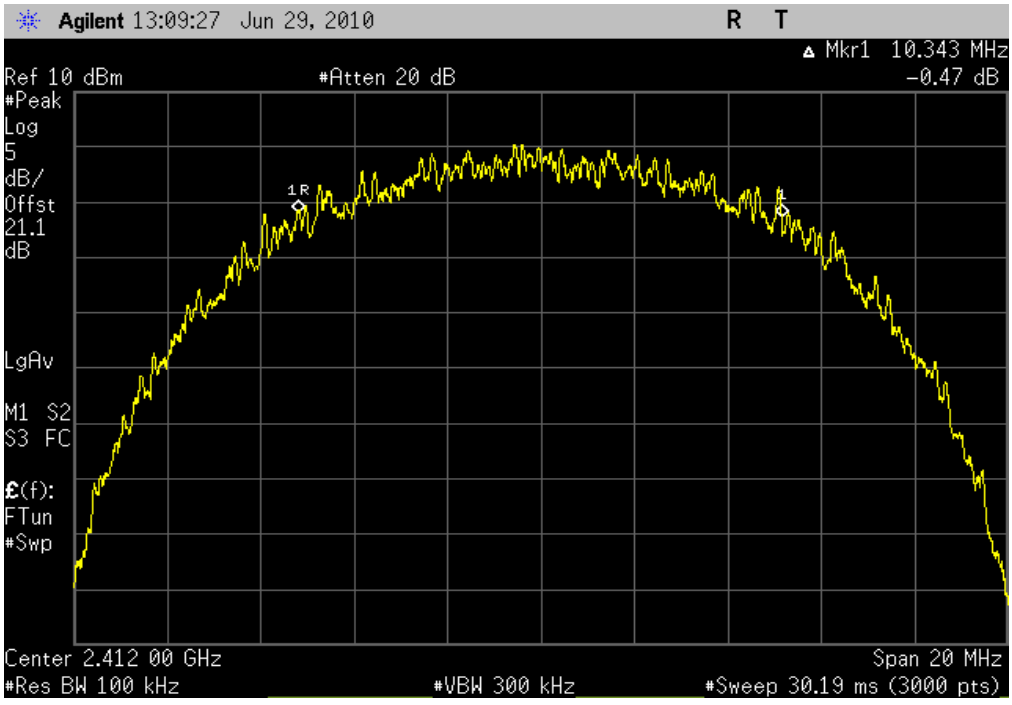


# OCCUPIED BANDWIDTH

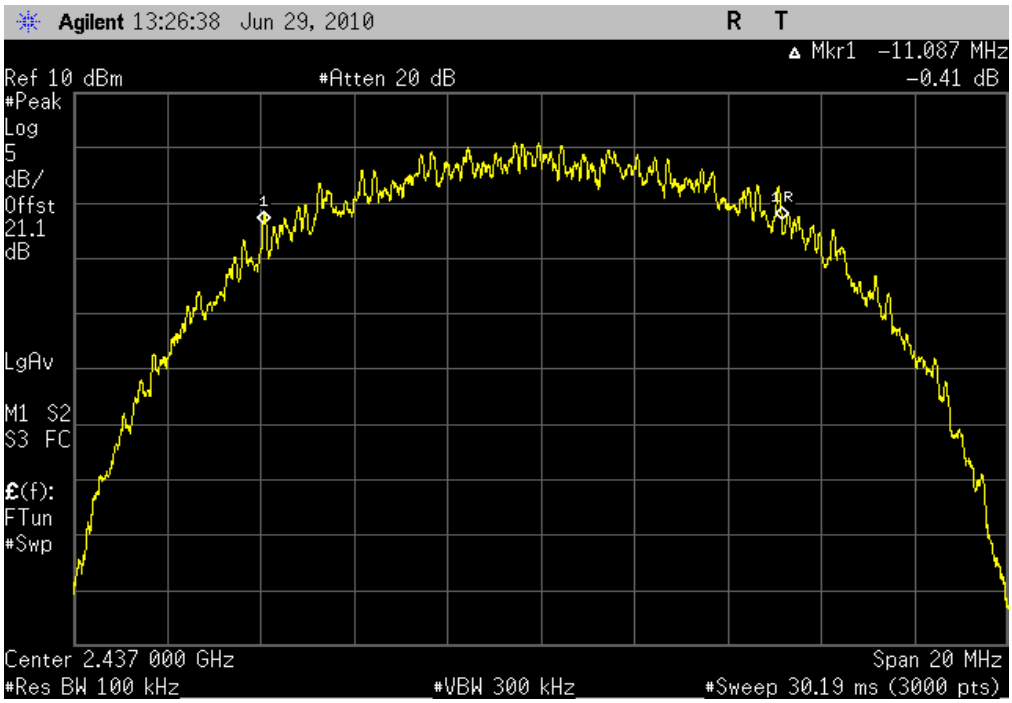
| 802.11(b) 1 Mbps, High Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | 9.553 MHz | **Limit:** | > 500 kHz |



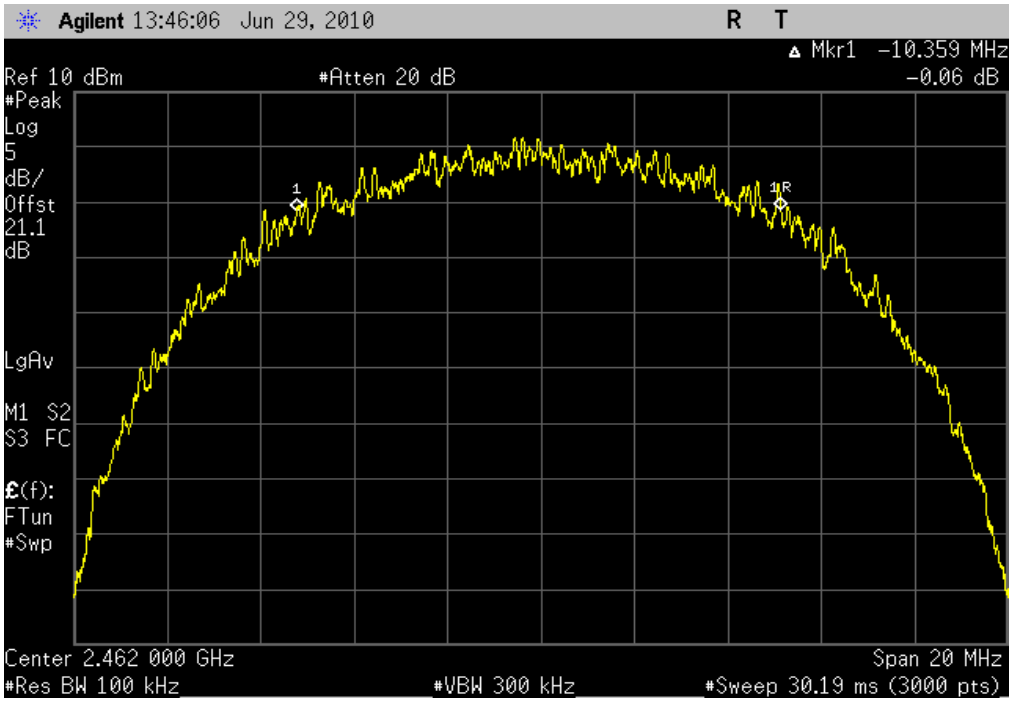

| 802.11(b) 11 Mbps, Low Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | 10.343 MHz | **Limit:** | > 500 kHz |



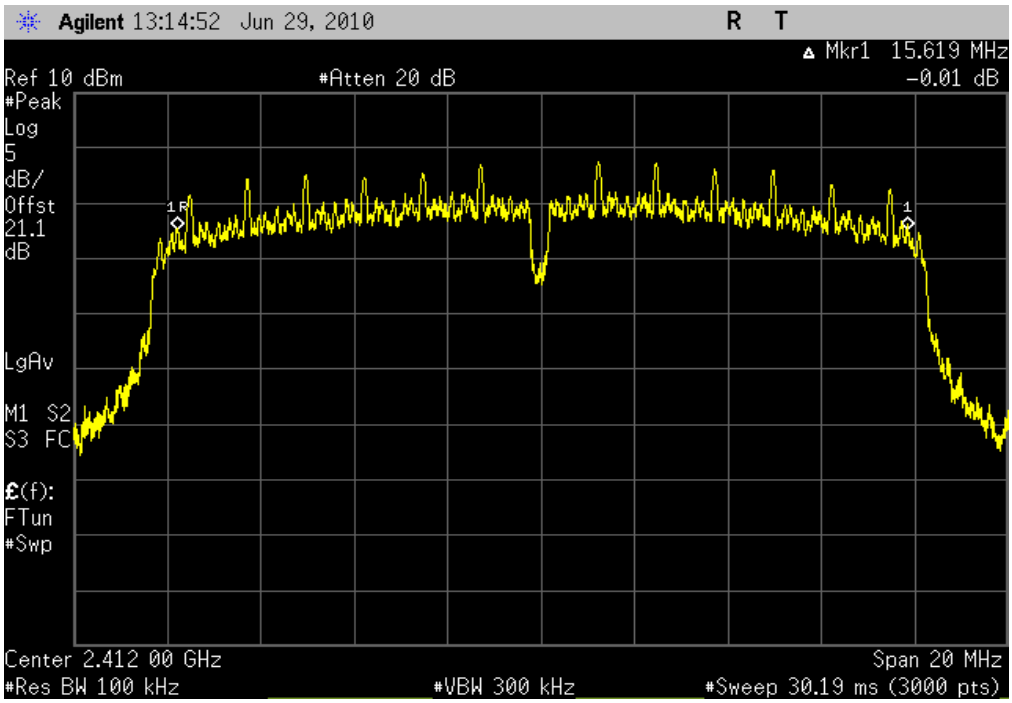
| 802.11(b) 11 Mbps, Mid Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | 11.087 MHz | **Limit:** | > 500 kHz |



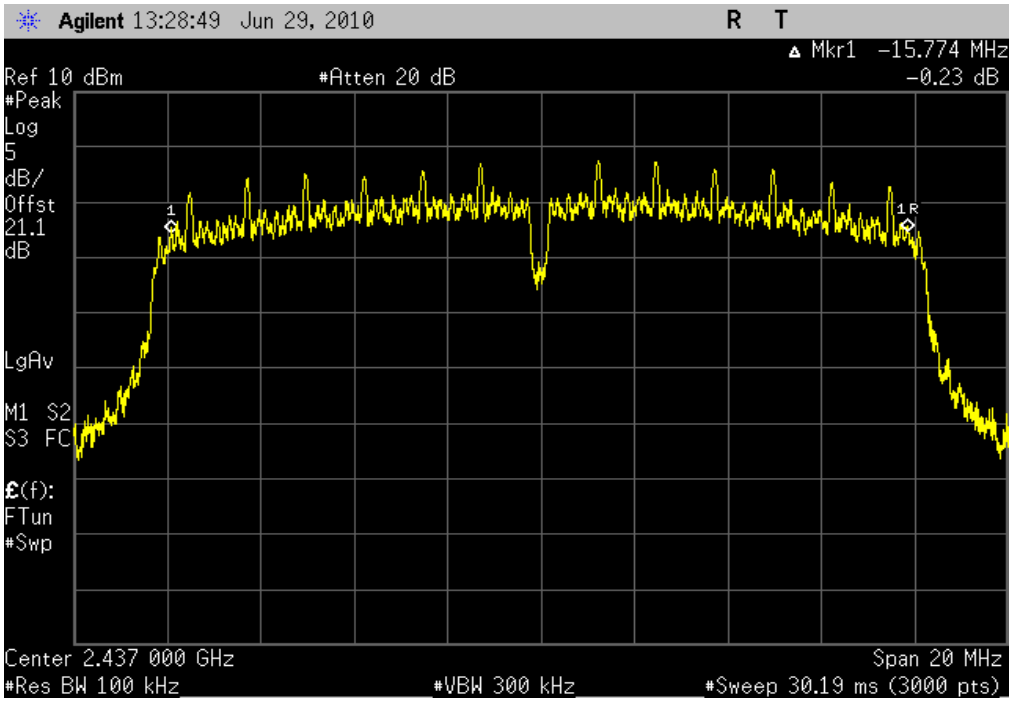

| 802.11(b) 11 Mbps, High Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | 10.359 MHz | **Limit:** | > 500 kHz |



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

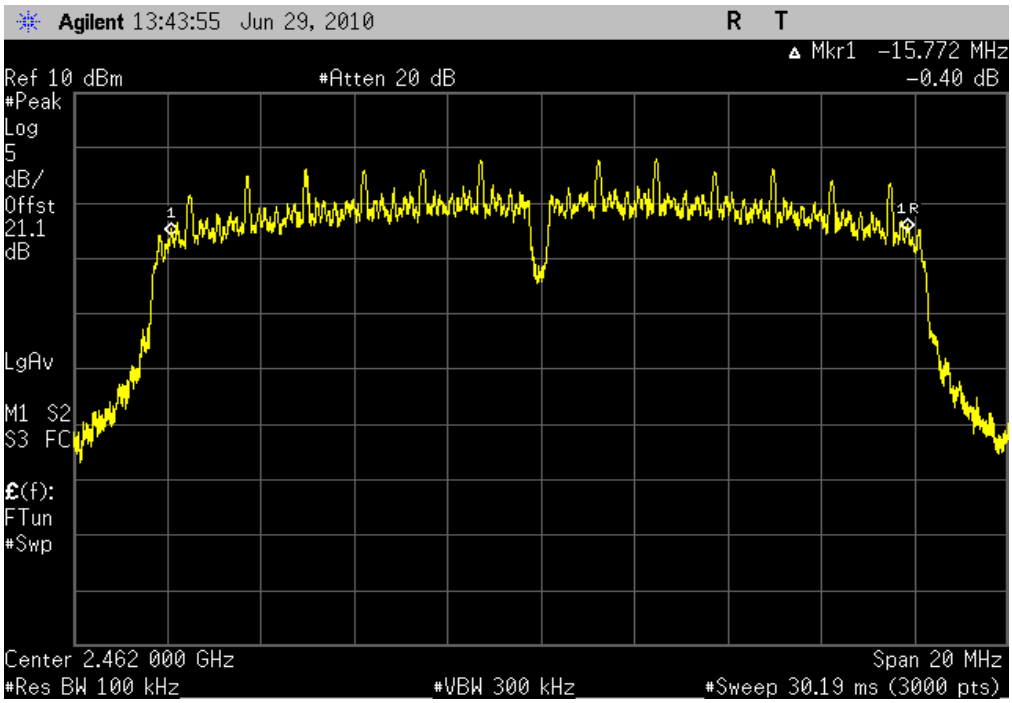



| 802.11(g) 6 Mbps, Mid Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | 15.774 MHz | **Limit:** | > 500 kHz |

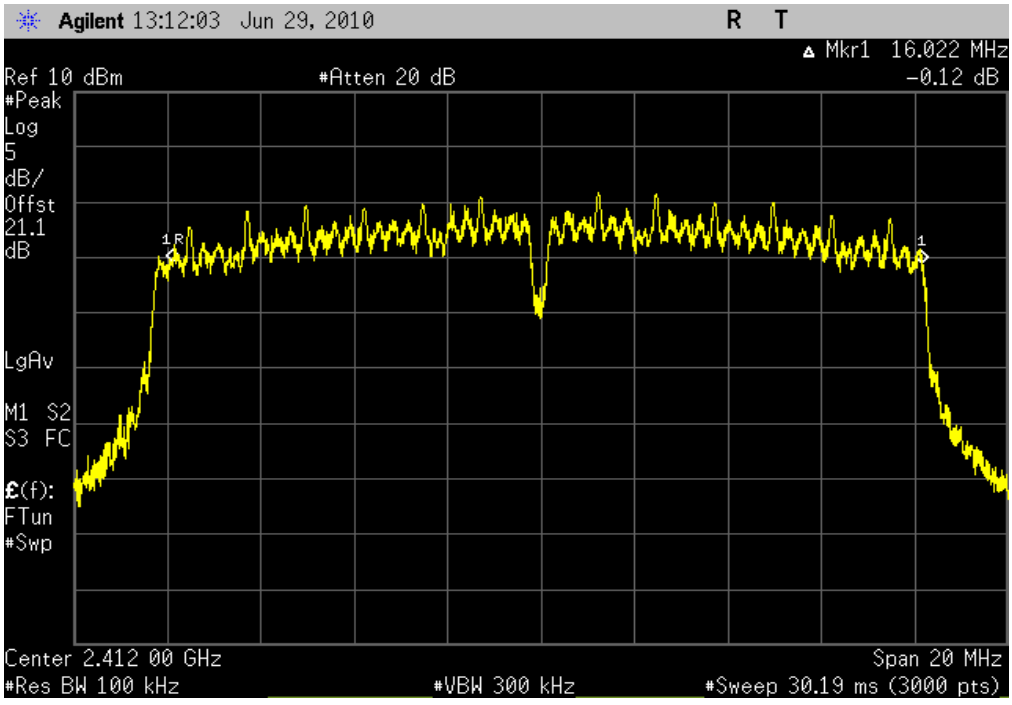


# OCCUPIED BANDWIDTH

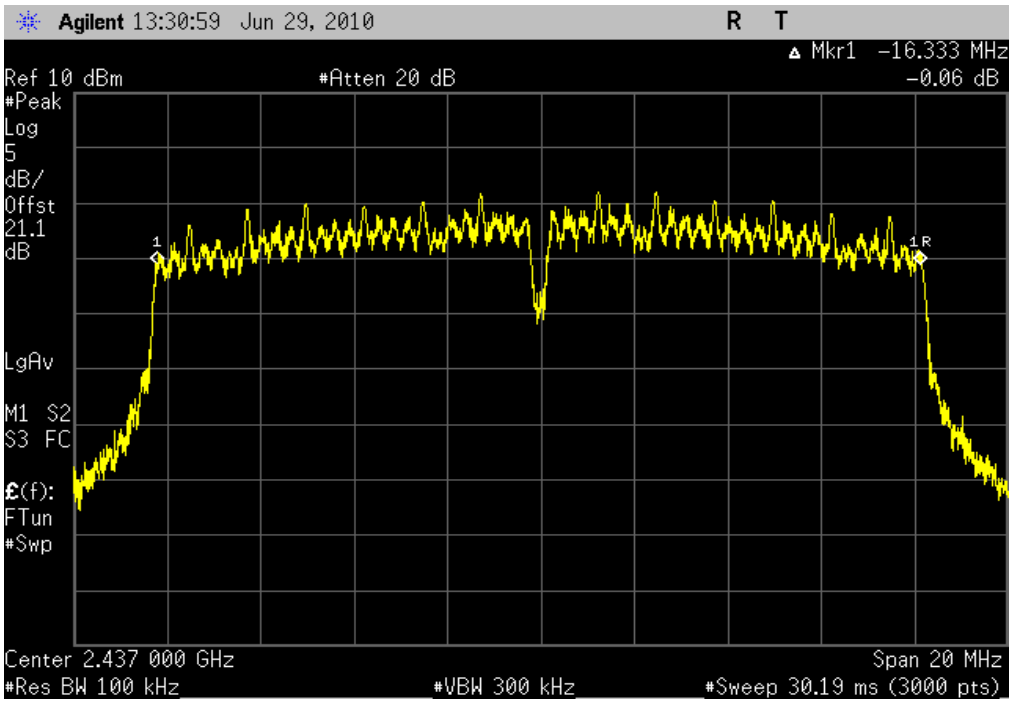
| 802.11(g) 6 Mbps, High Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | 15.772 MHz | **Limit:** | > 500 kHz |



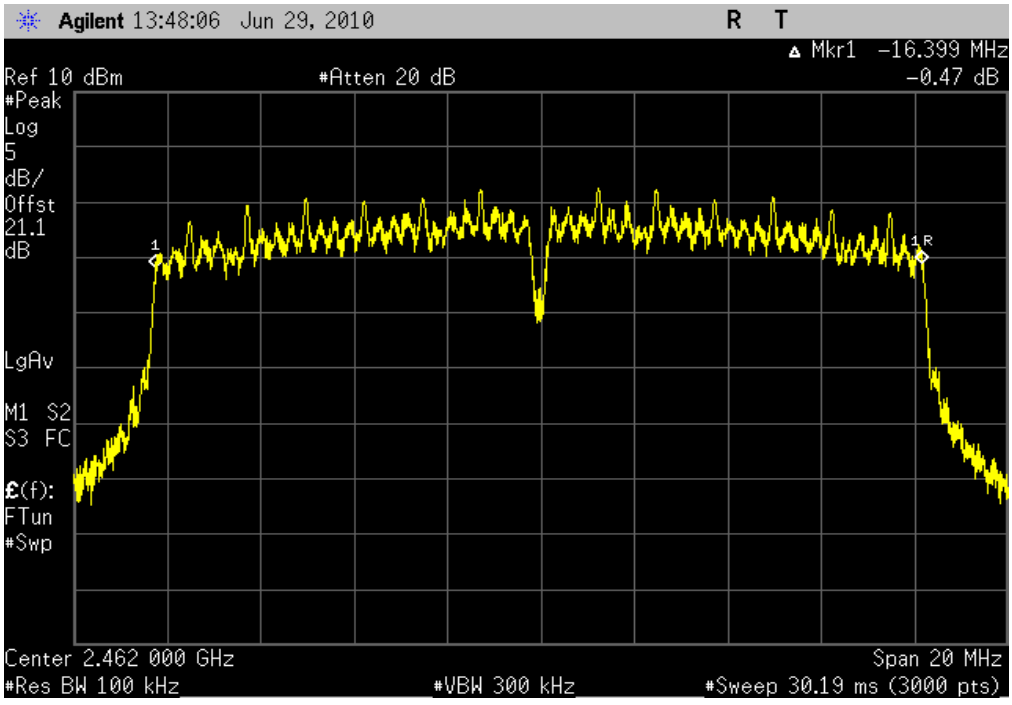

| 802.11(g) 36 Mbps, Low Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | 16.022 MHz | **Limit:** | > 500 kHz |



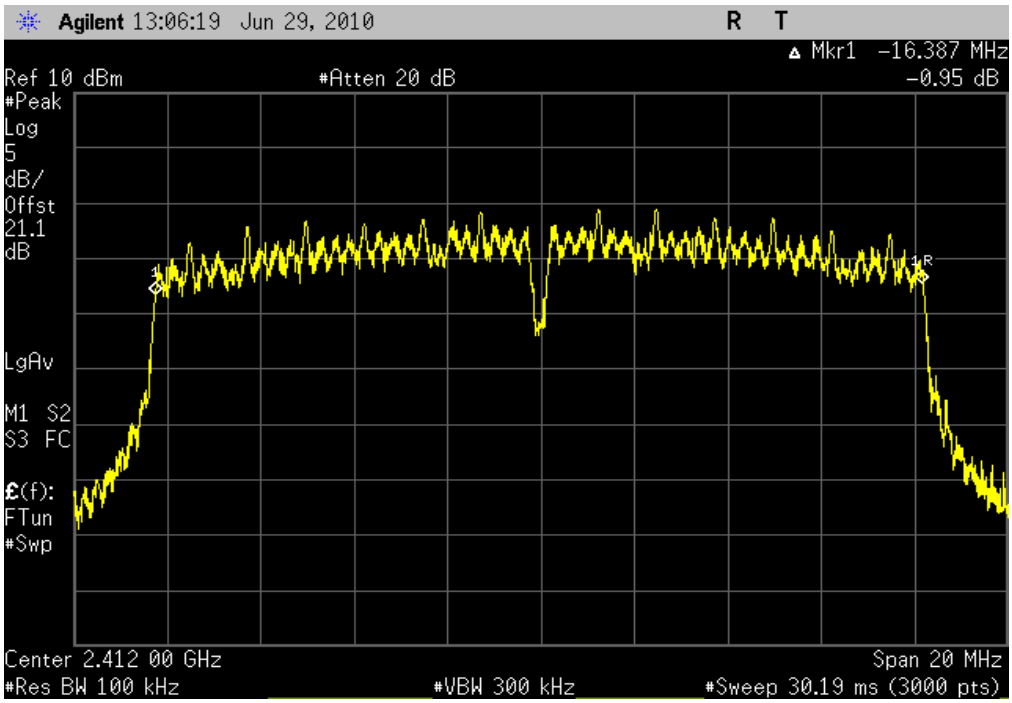
| 802.11(g) 36 Mbps, Mid Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | 16.333 MHz | **Limit:** | > 500 kHz |



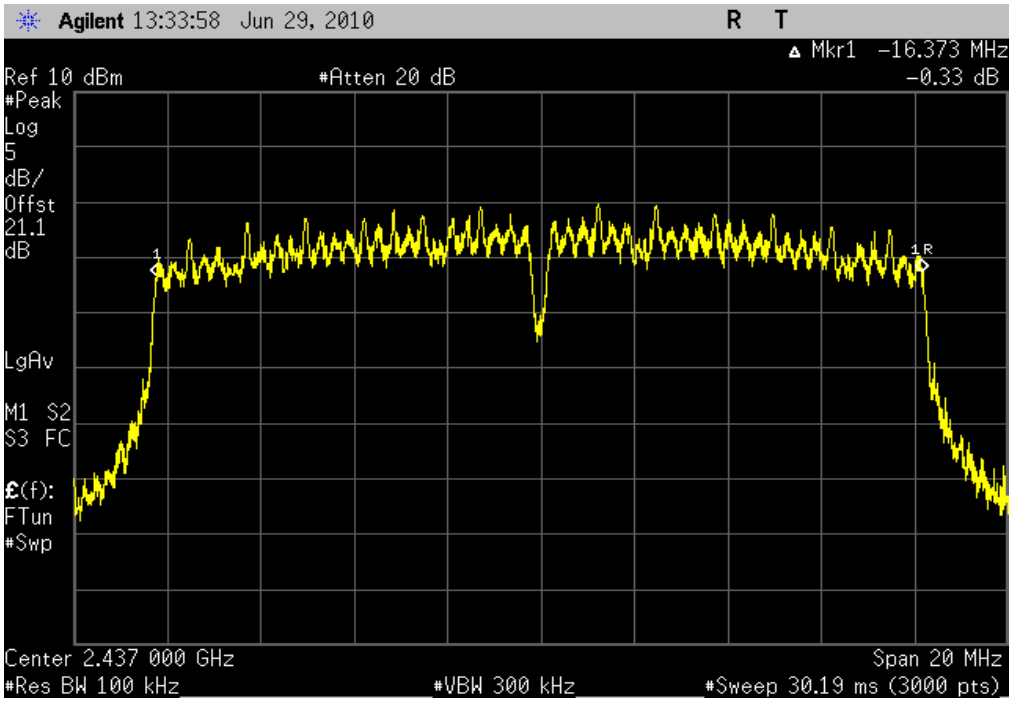

| 802.11(g) 36 Mbps, High Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | 16.399 MHz | **Limit:** | > 500 kHz |



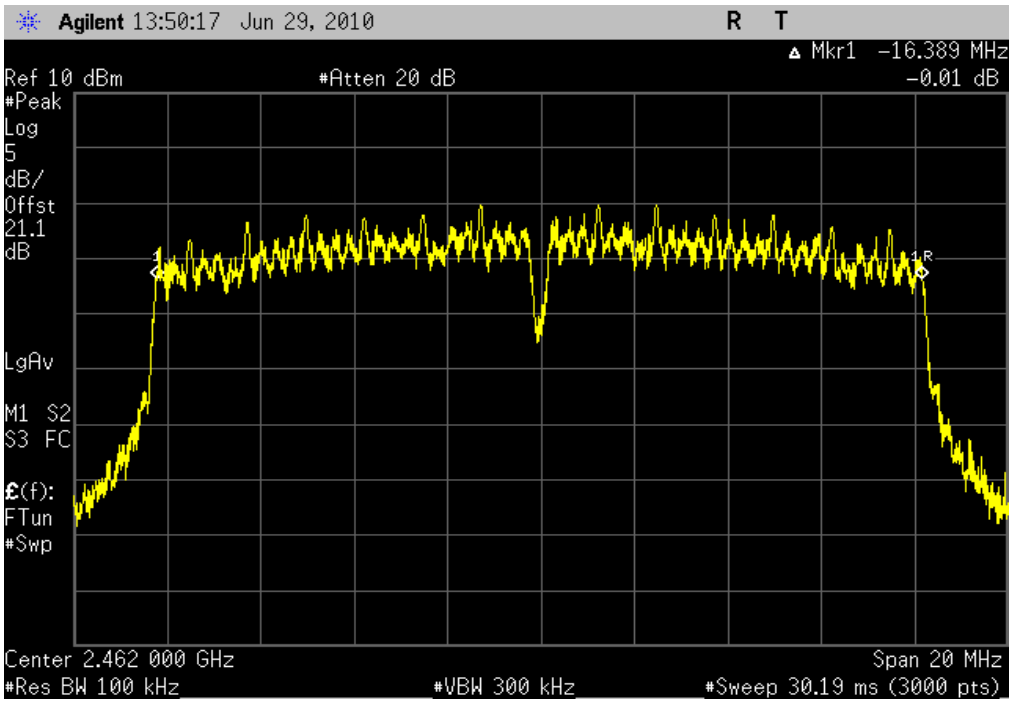
| 802.11(g) 54 Mbps, Low Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | 16.387 MHz | **Limit:** | > 500 kHz |



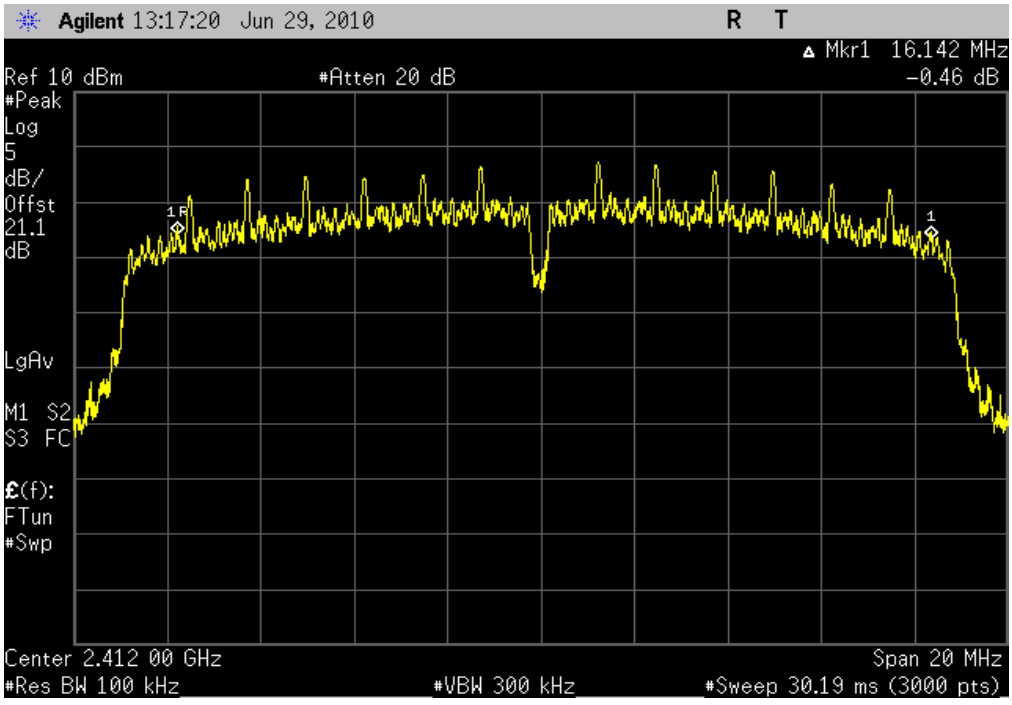

| 802.11(g) 54 Mbps, Mid Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | 16.373 MHz | **Limit:** | > 500 kHz |



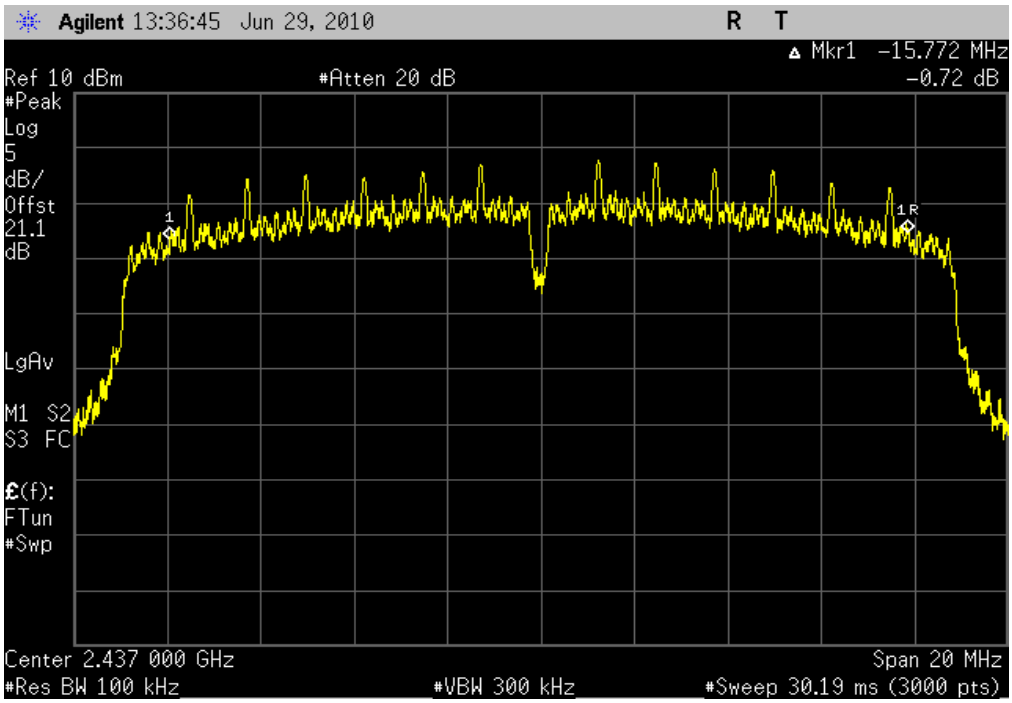
| 802.11(g) 54 Mbps, High Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | 16.389 MHz | **Limit:** | > 500 kHz |



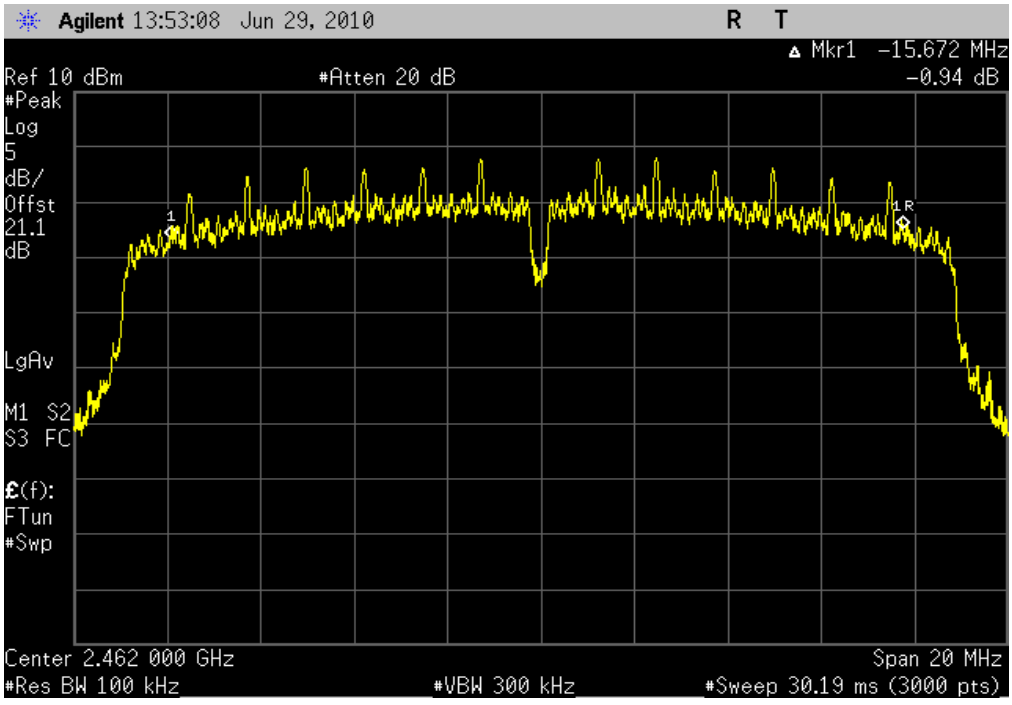

| 802.11(n) MCS0, Low Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | 16.142 MHz | **Limit:** | > 500 kHz |



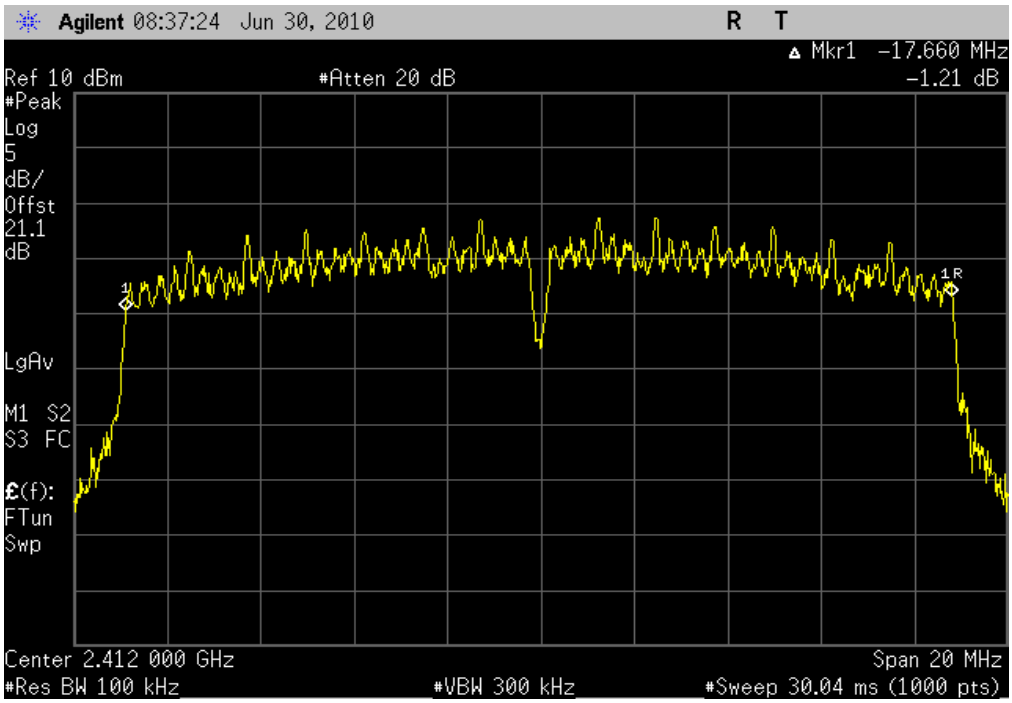
| 802.11(n) MCS0, Mid Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | 15.772 MHz | **Limit:** | > 500 kHz |



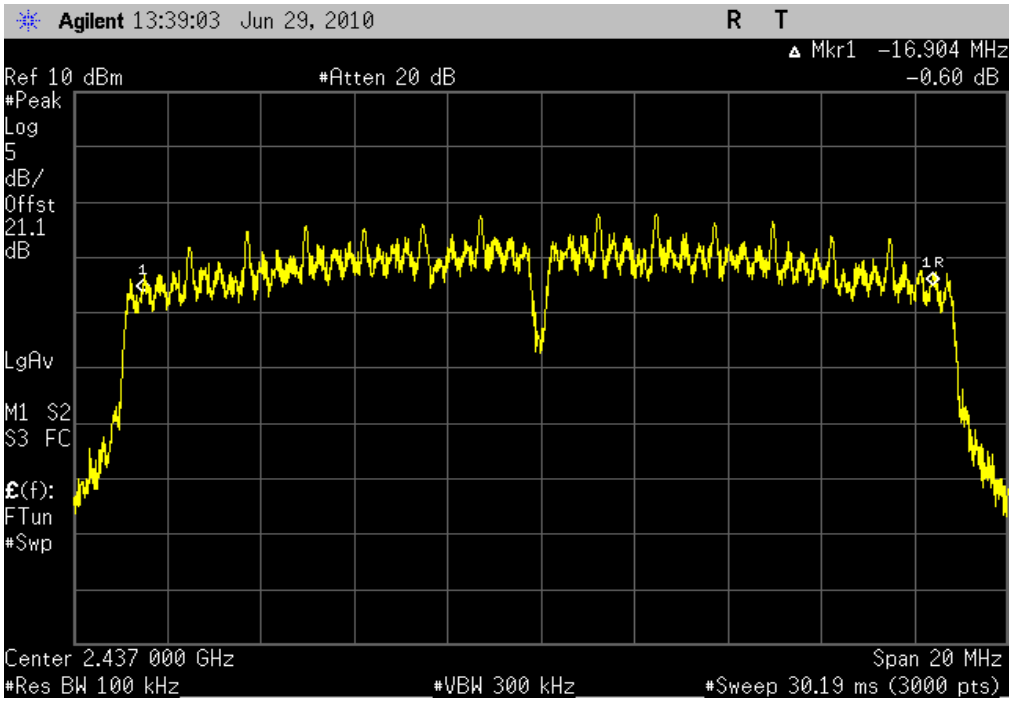

| 802.11(n) MCS0, High Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | 15.672 MHz | **Limit:** | > 500 kHz |



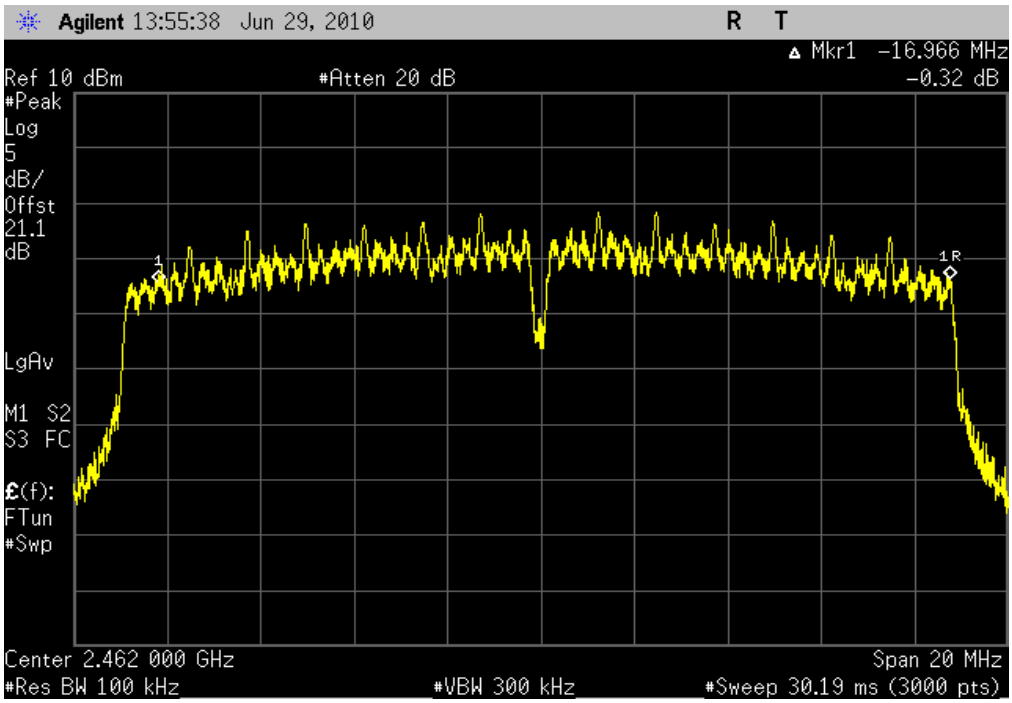
| 802.11(n) MCS7, Low Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | 17.660 MHz | **Limit:** | > 500 kHz |




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



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



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**

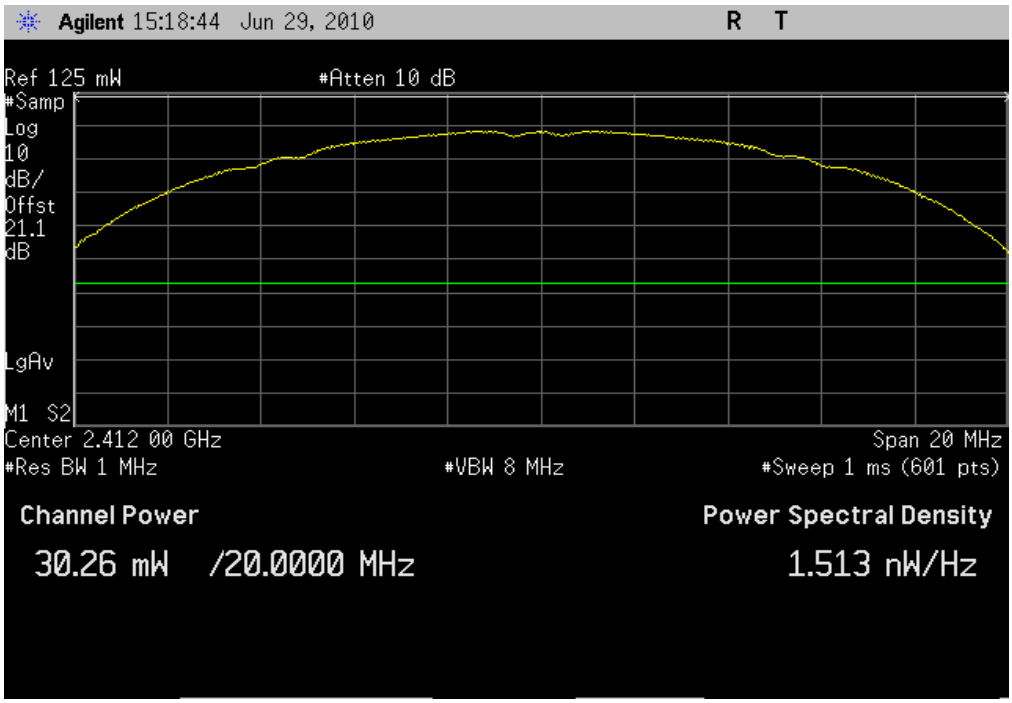
No Deviations

| Configuration # | 1 | Signature Trevor Buls |
|---|---|---|

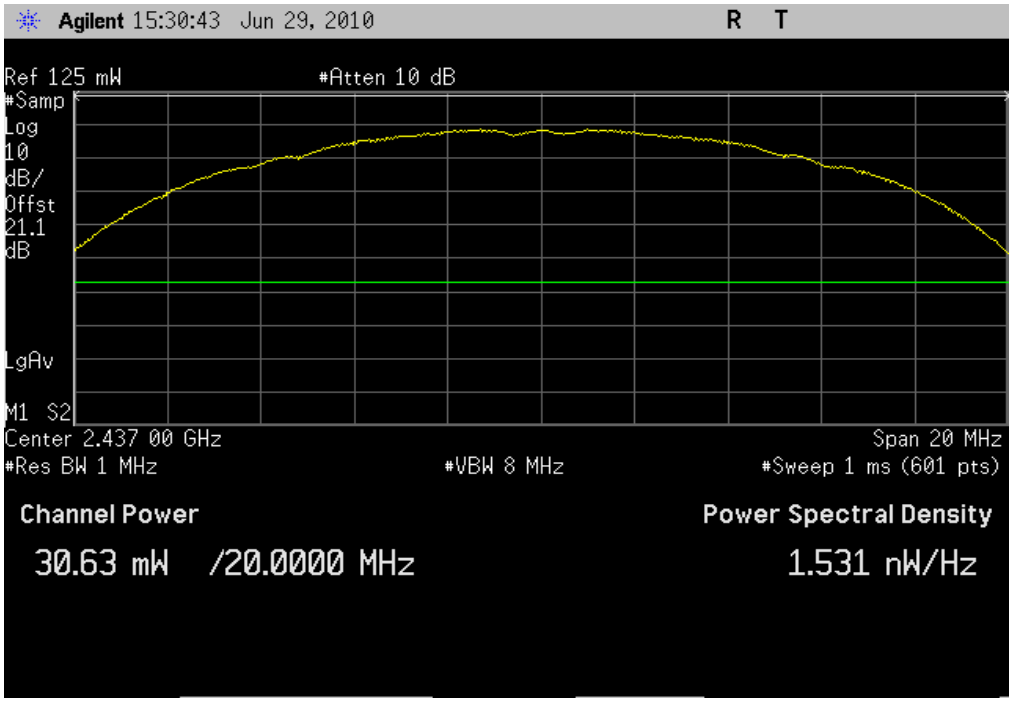
| | | Value | Limit | Results |
|---|---|---|---|---|
| 802.11(b) 1 Mbps | | | | |
| | Low Channel | 30.26 mW | 125 mW | Pass |
| | Mid Channel | 30.63 mW | 125 mW | Pass |
| | High Channel | 32.27 mW | 125 mW | Pass |
| 802.11(b) 11 Mbps | | | | |
| | Low Channel | 30.81 mW | 125 mW | Pass |
| | Mid 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 |

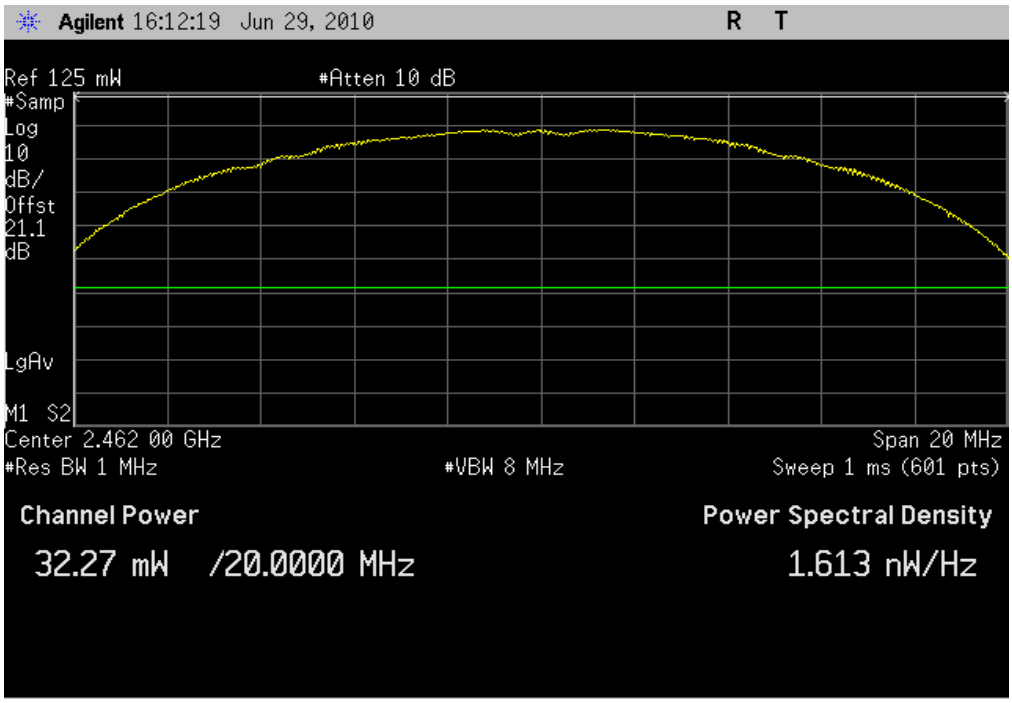



| 802.11(b) 1 Mbps, Mid Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | 30.63 mW | **Limit:** | 125 mW |

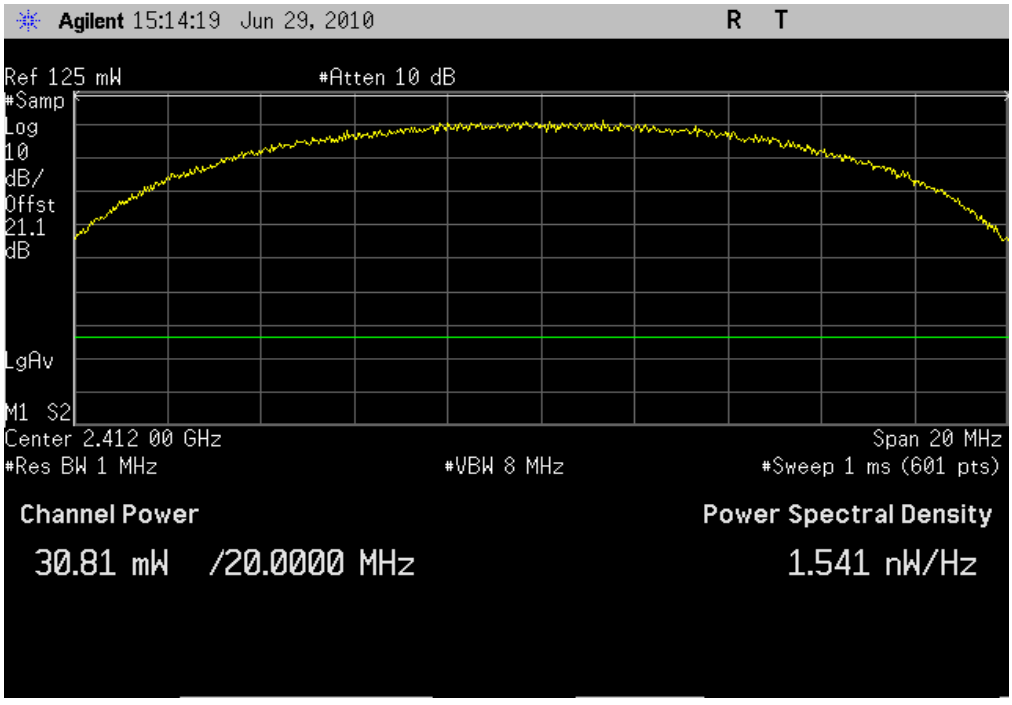


# OUTPUT POWER

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

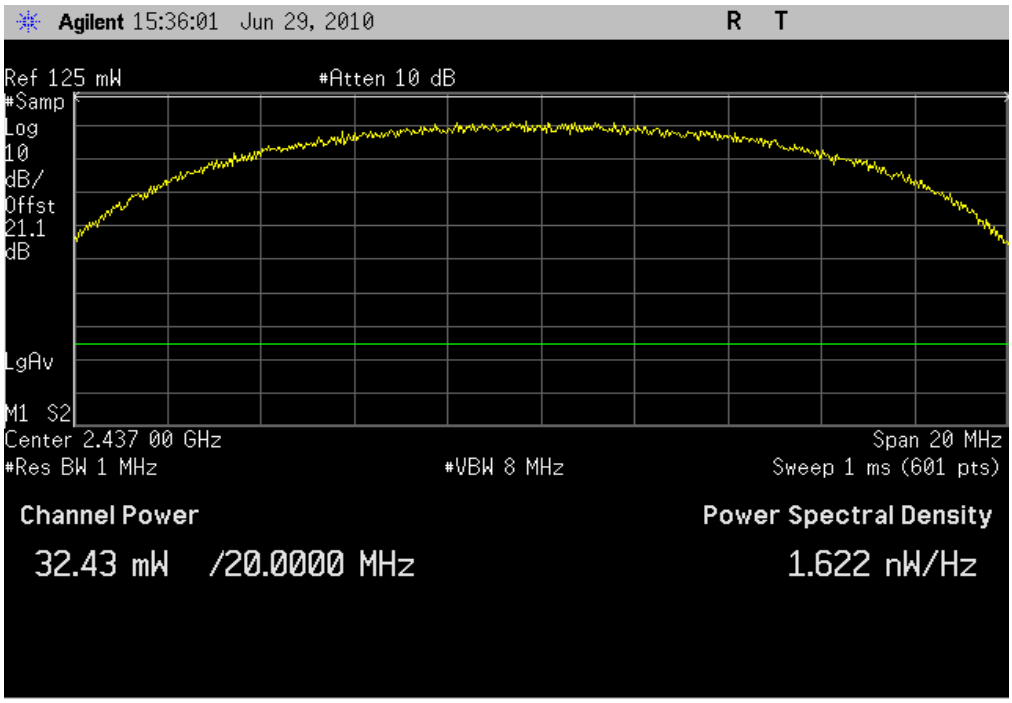



| 802.11(b) 11 Mbps, Low Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | 30.81 mW | **Limit:** | 125 mW |

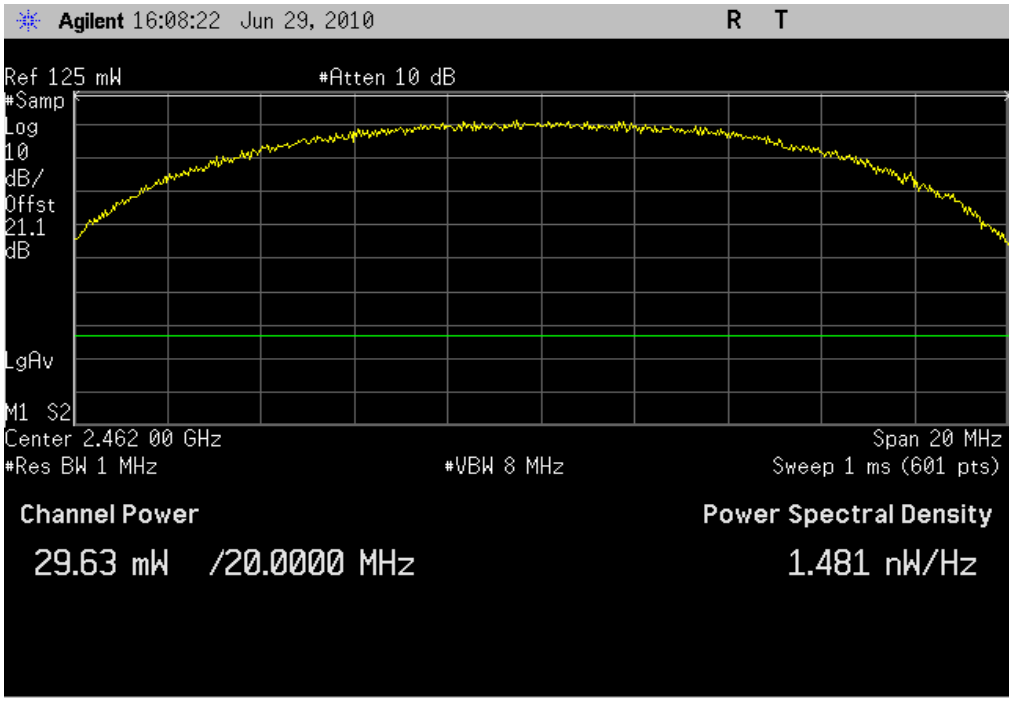


# OUTPUT POWER

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

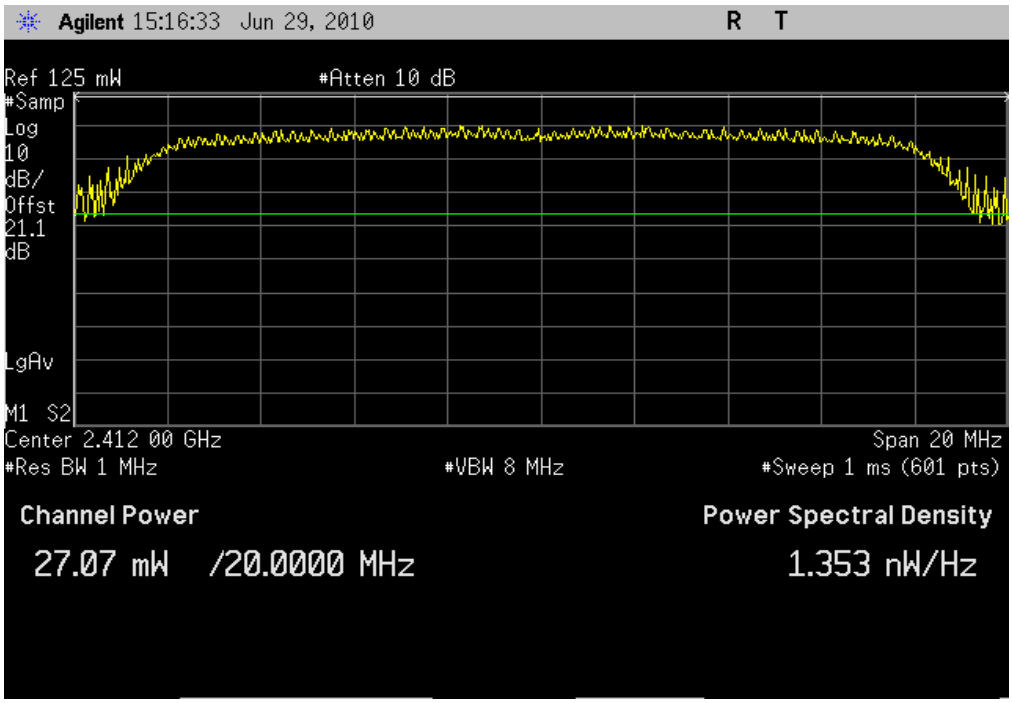



| 802.11(b) 11 Mbps, High Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | 29.63 mW | **Limit:** | 125 mW |

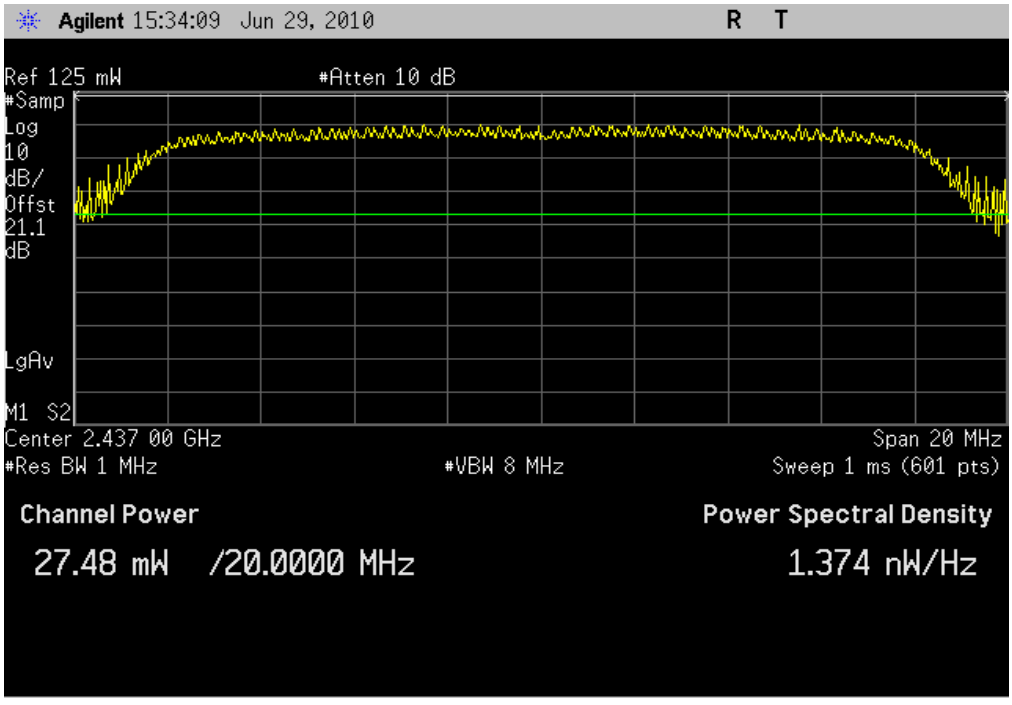


# OUTPUT POWER

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

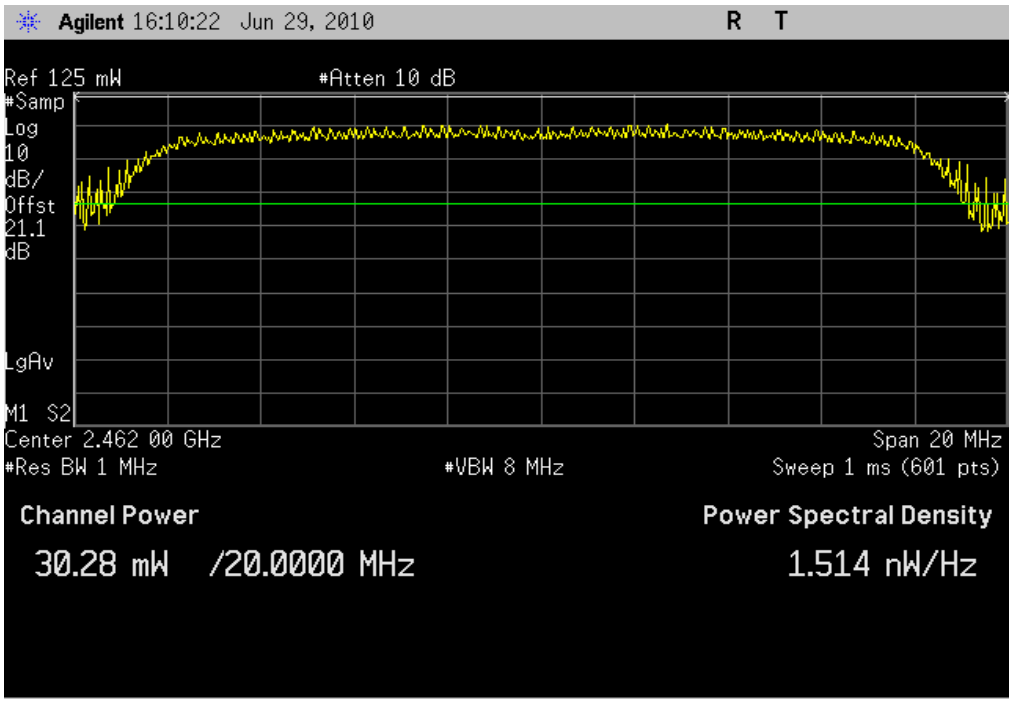



| 802.11(g) 6 Mbps, Mid Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | 27.48 mW | **Limit:** | 125 mW |

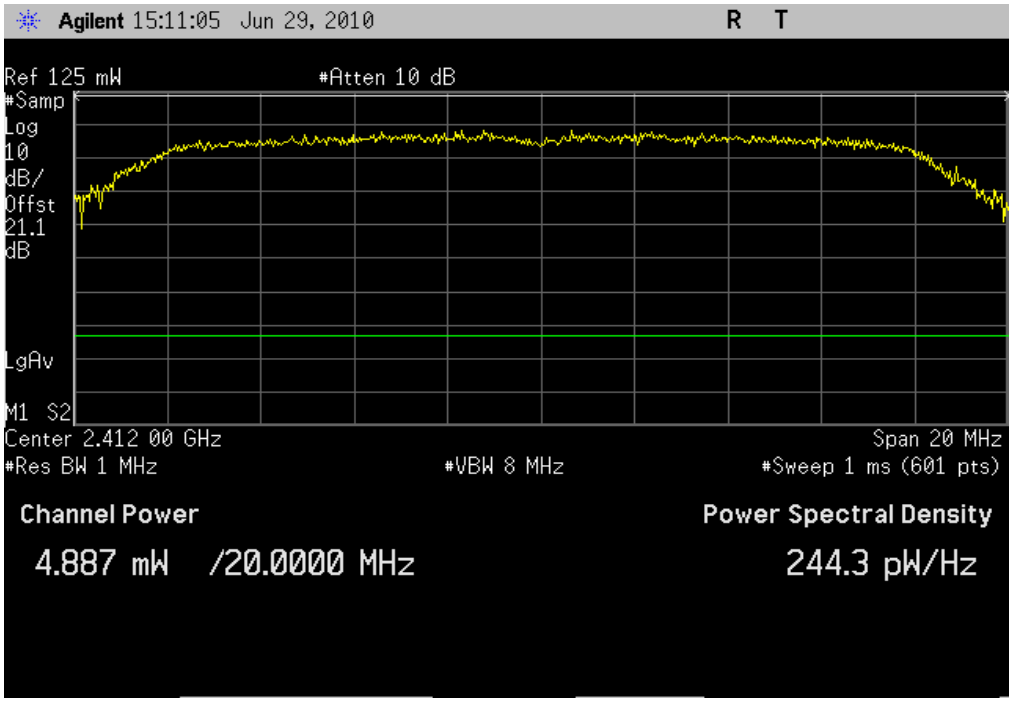


# OUTPUT POWER

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

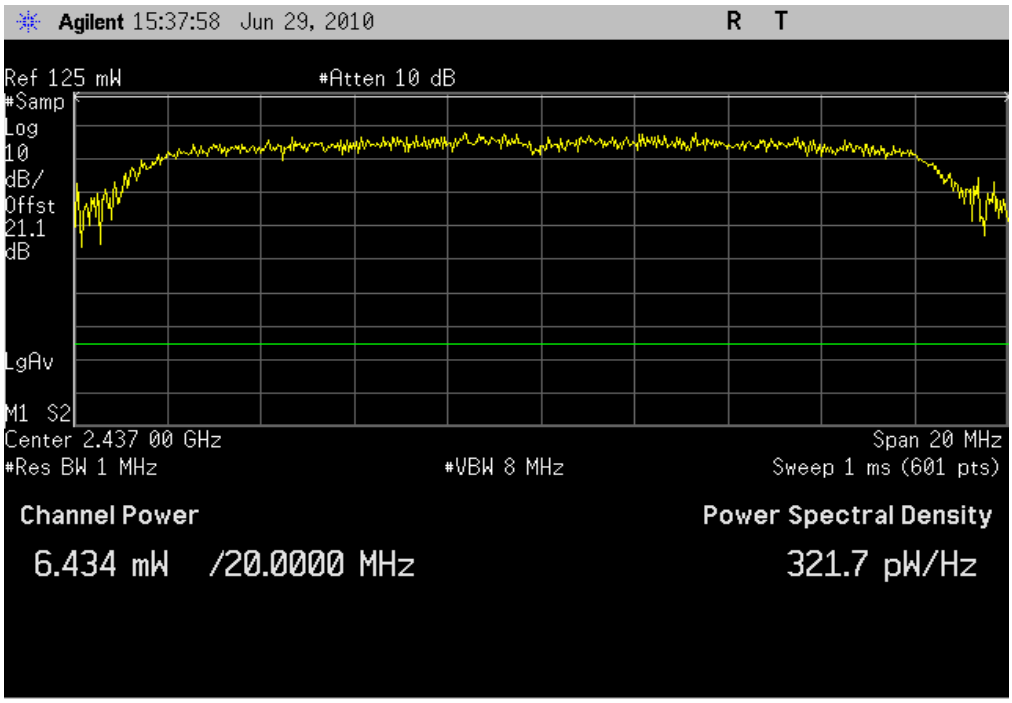



| 802.11(g) 36 Mbps, Low Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | 4.887 mW | **Limit:** | 125 mW |

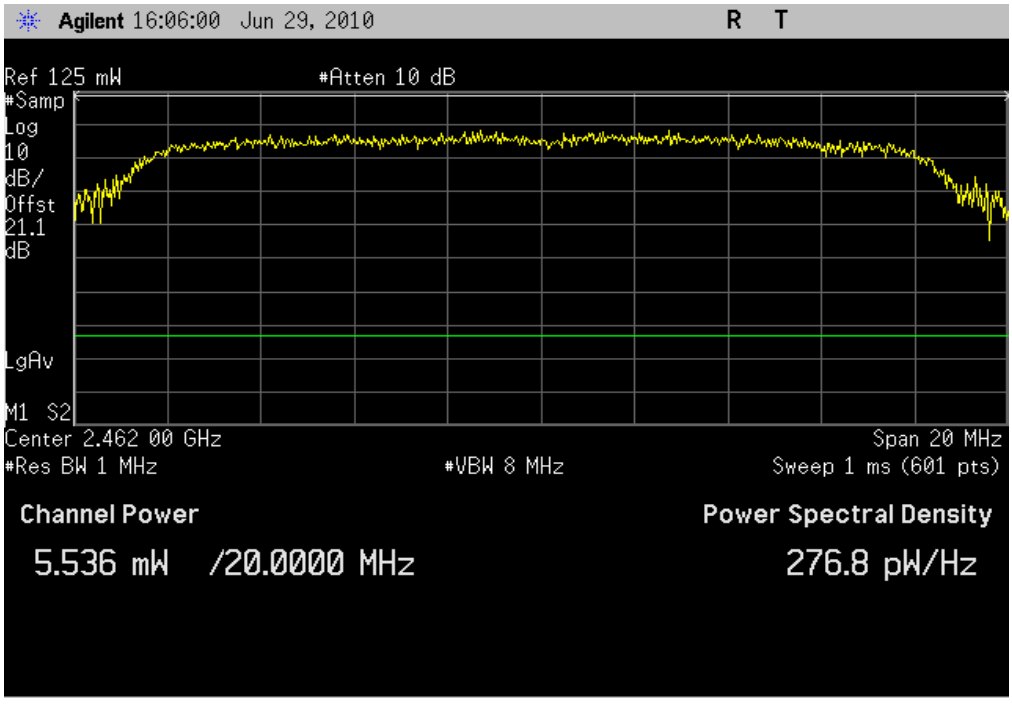


# OUTPUT POWER

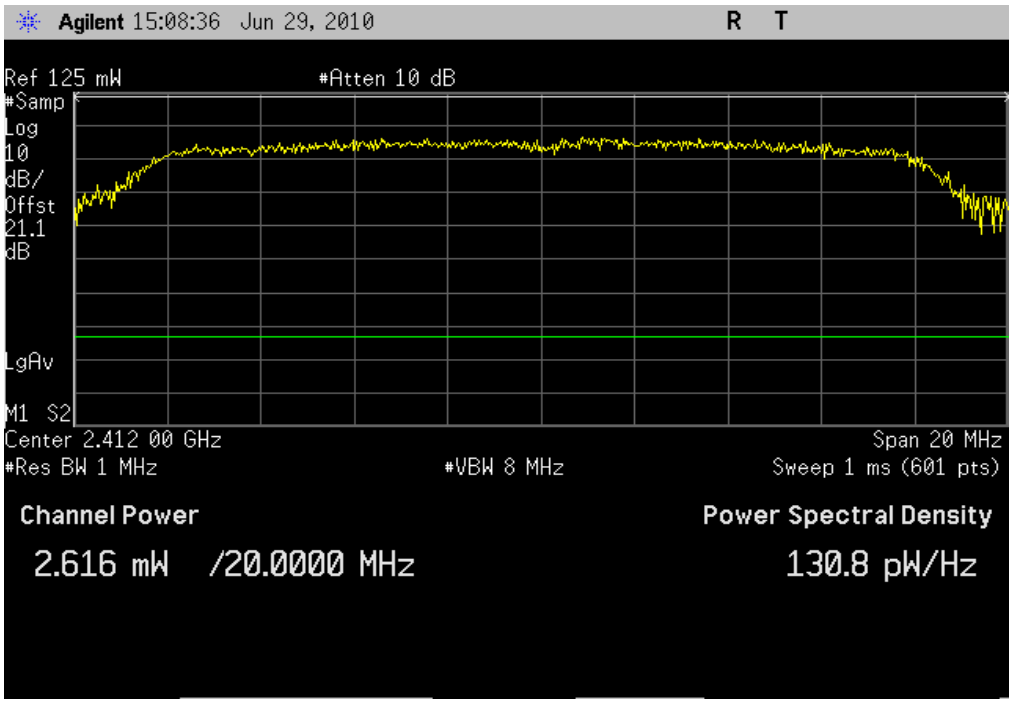
| 802.11(g) 36 Mbps, Mid Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | 6.434 mW | **Limit:** | 125 mW |



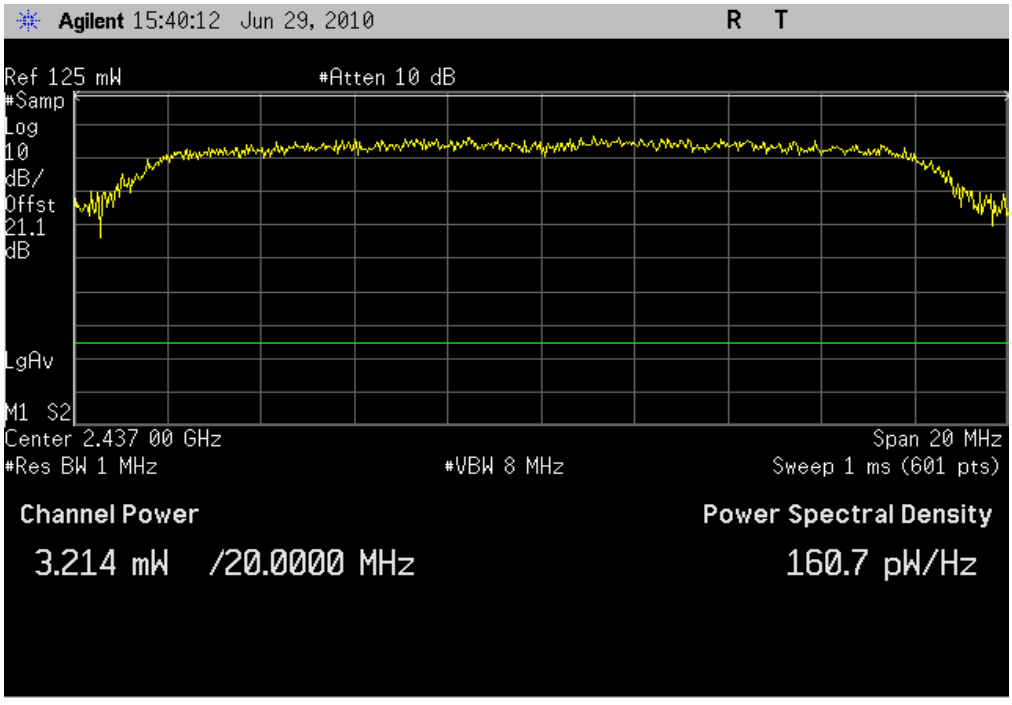

| 802.11(g) 36 Mbps, High Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | 5.536 mW | **Limit:** | 125 mW |



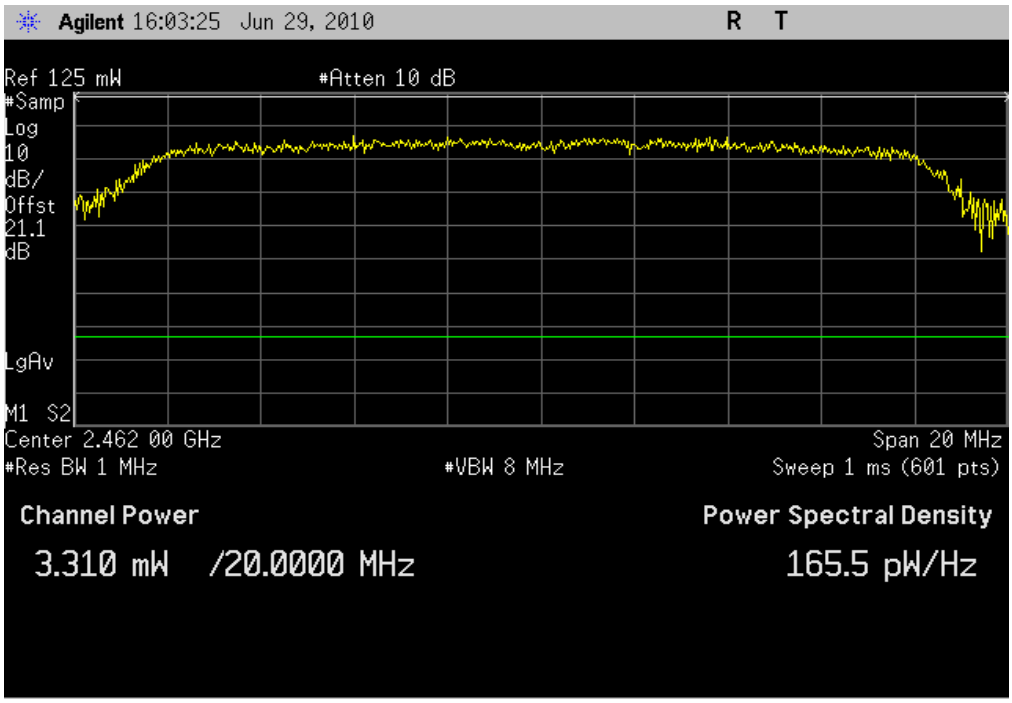
| 802.11(g) 54 Mbps, Low Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | 2.626 mW | **Limit:** | 125 mW |



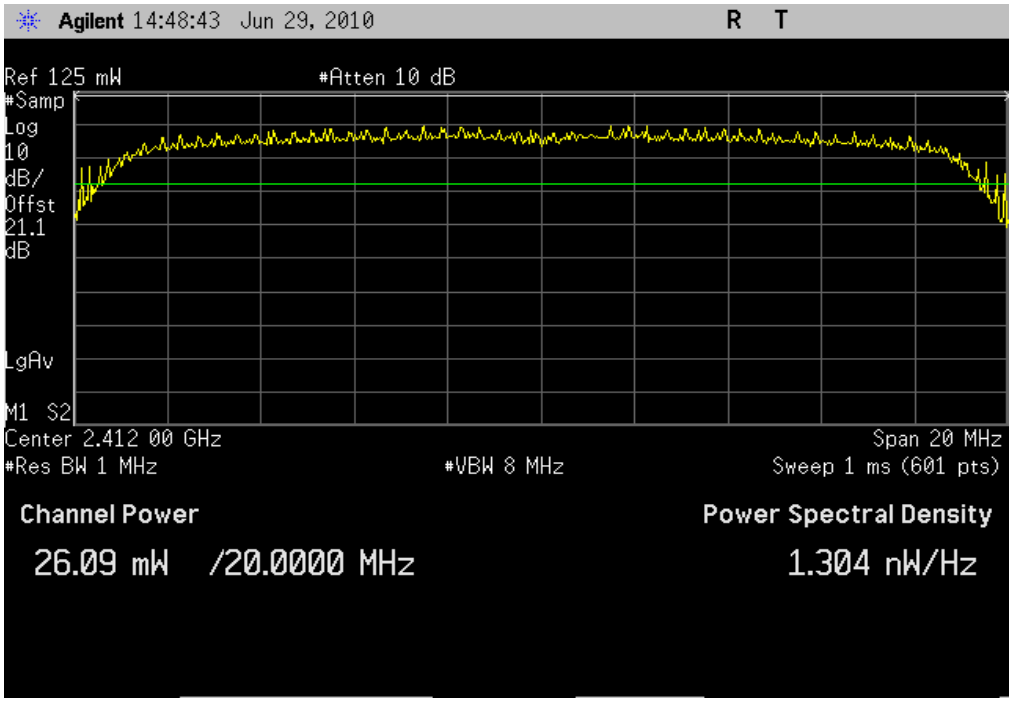

| 802.11(g) 54 Mbps, Mid Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | 3.214 mW | **Limit:** | 125 mW |



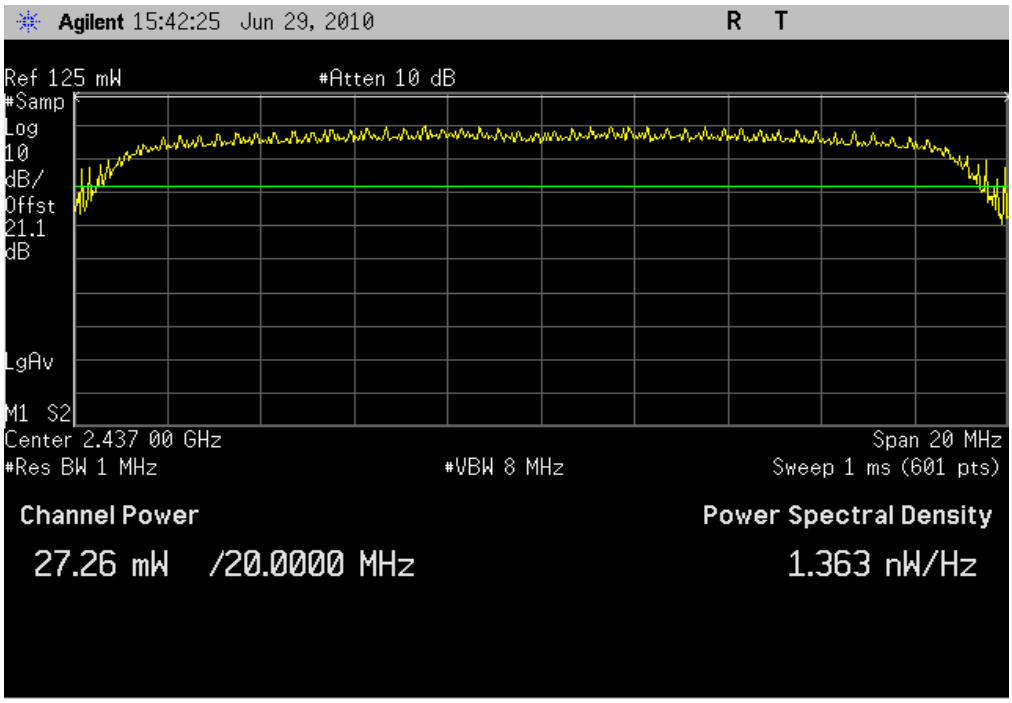
| 802.11(g) 54 Mbps, High Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | 3.310 mW | **Limit:** | 125 mW |



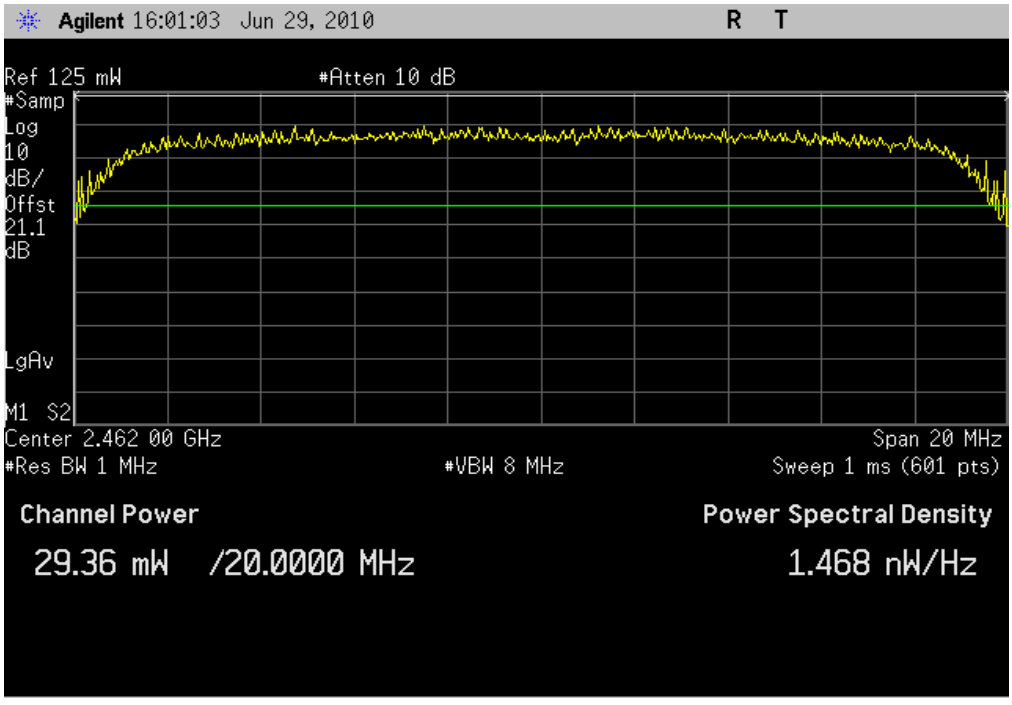

| 802.11(n) MCS0, Low Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | 26.09 mW | **Limit:** | 125 mW |



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

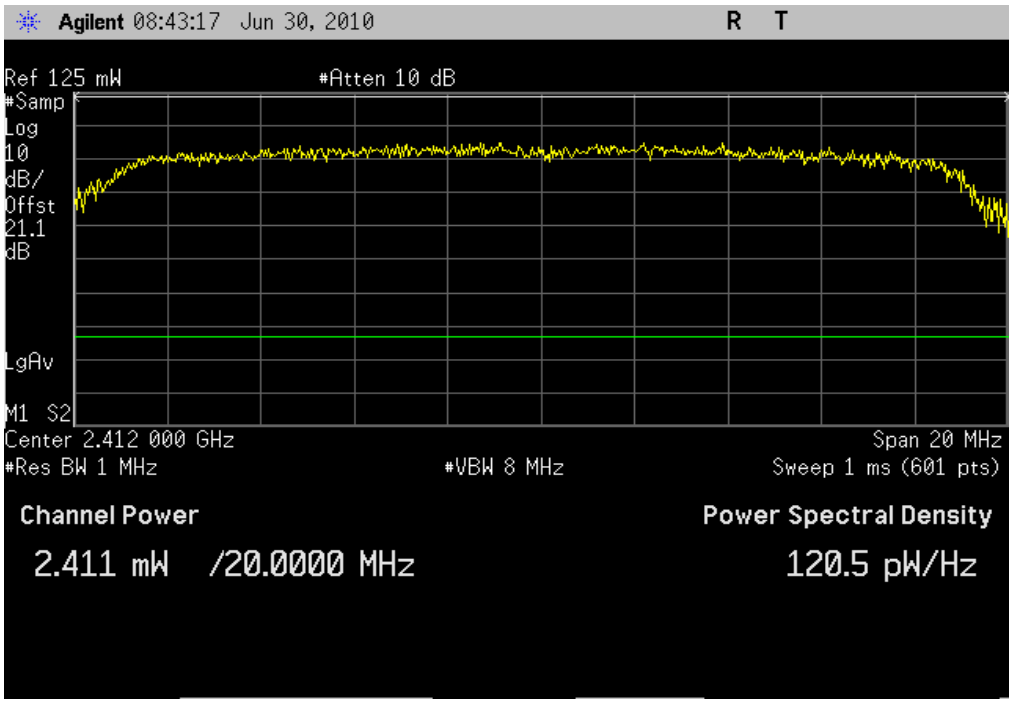



| 802.11(n) MCS0, High Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | 29.36 mW | **Limit:** | 125 mW |

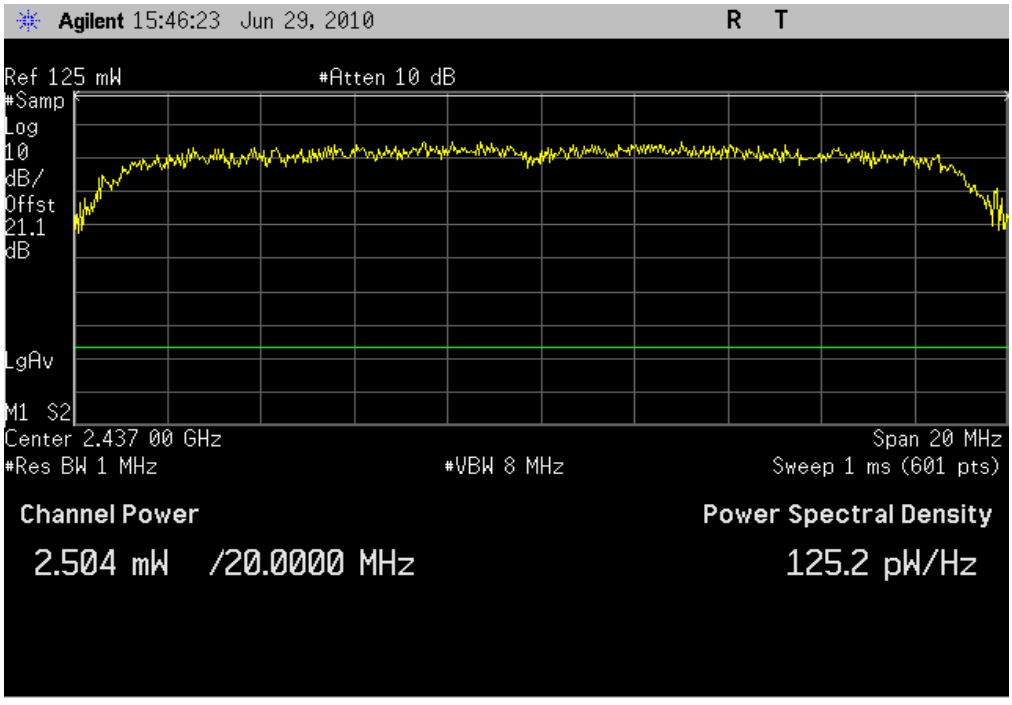


# OUTPUT POWER

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

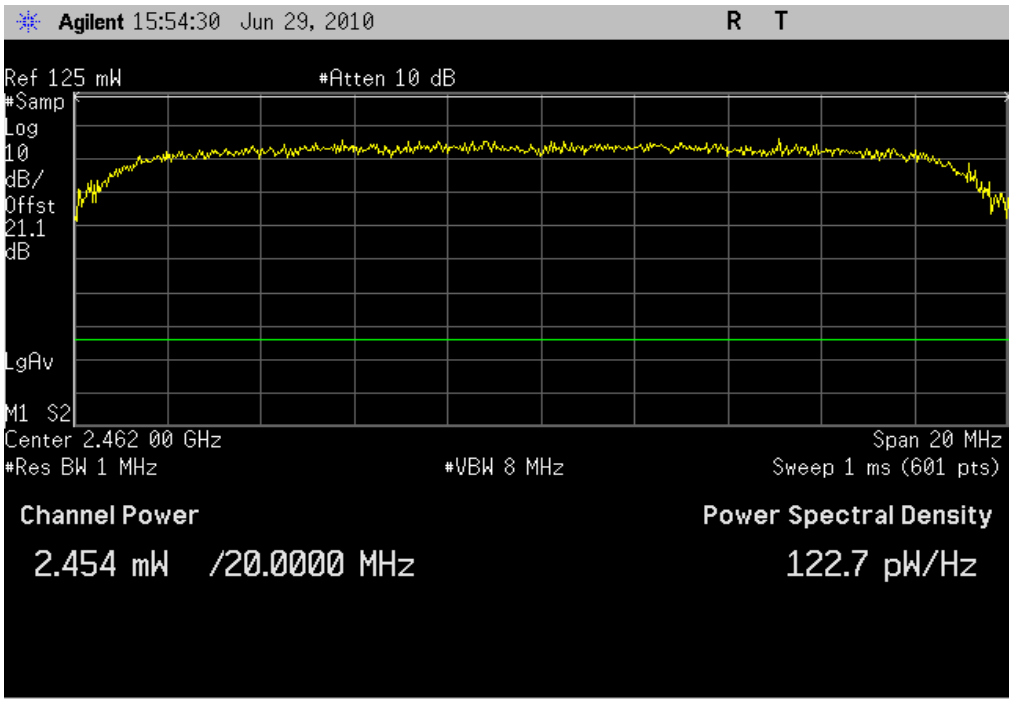



| 802.11(n) MCS7, Mid Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | 2.504 mW | **Limit:** | 125 mW |



# 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

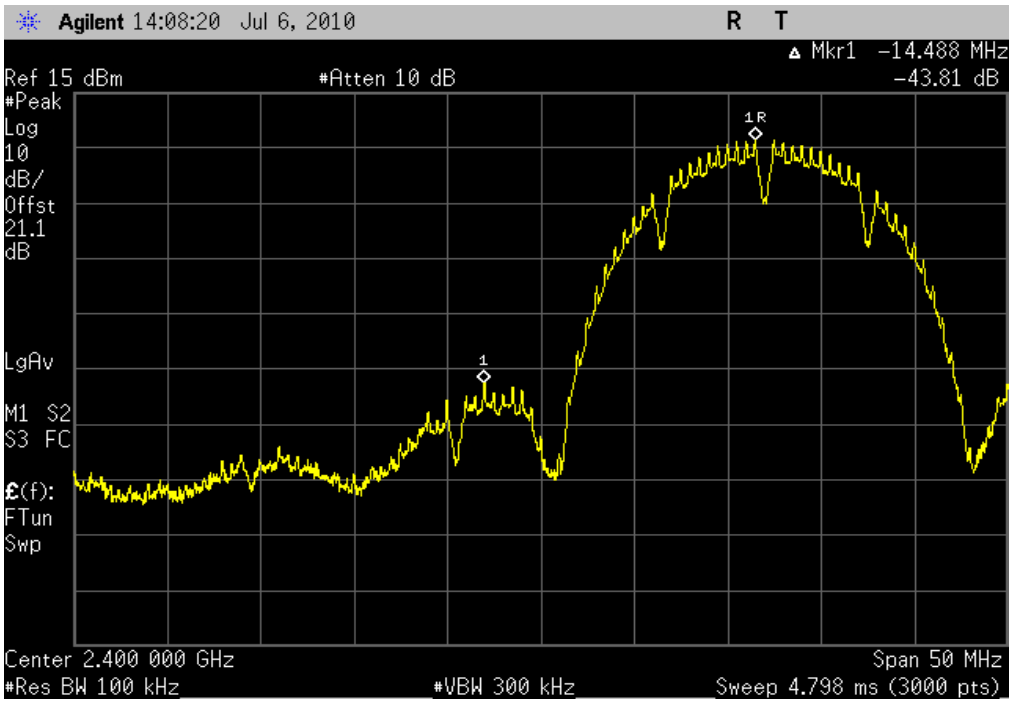
**DEVIATIONS FROM TEST STANDARD**

No Deviations

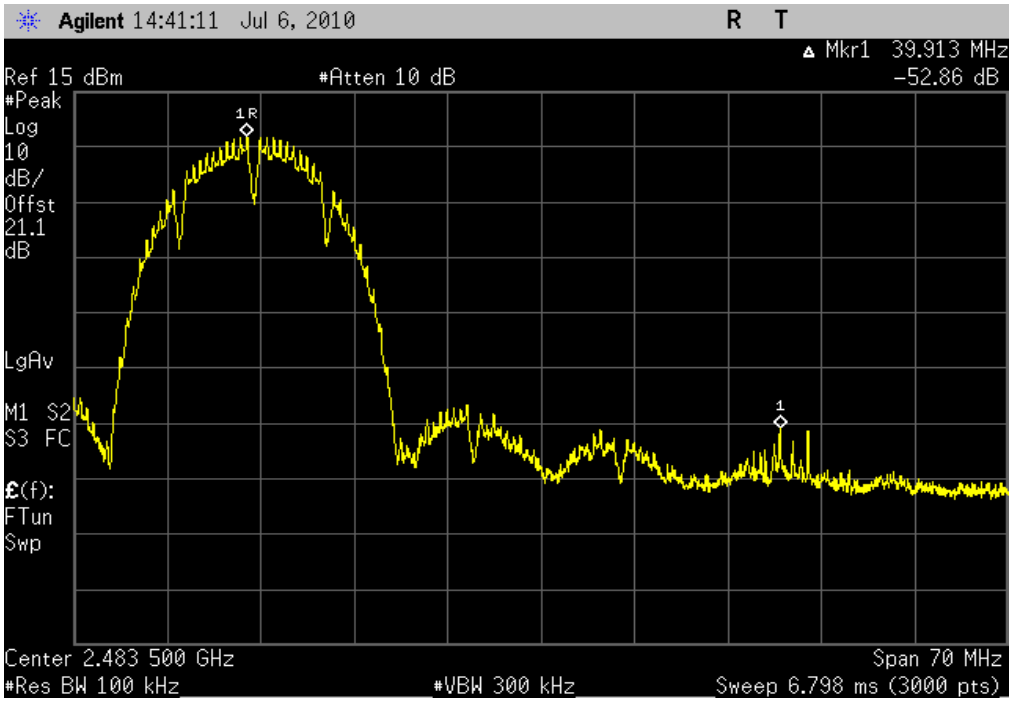
| Configuration # | 2 | Signature | Trevor Buls |
|---|---|---|---|

| | | 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 |

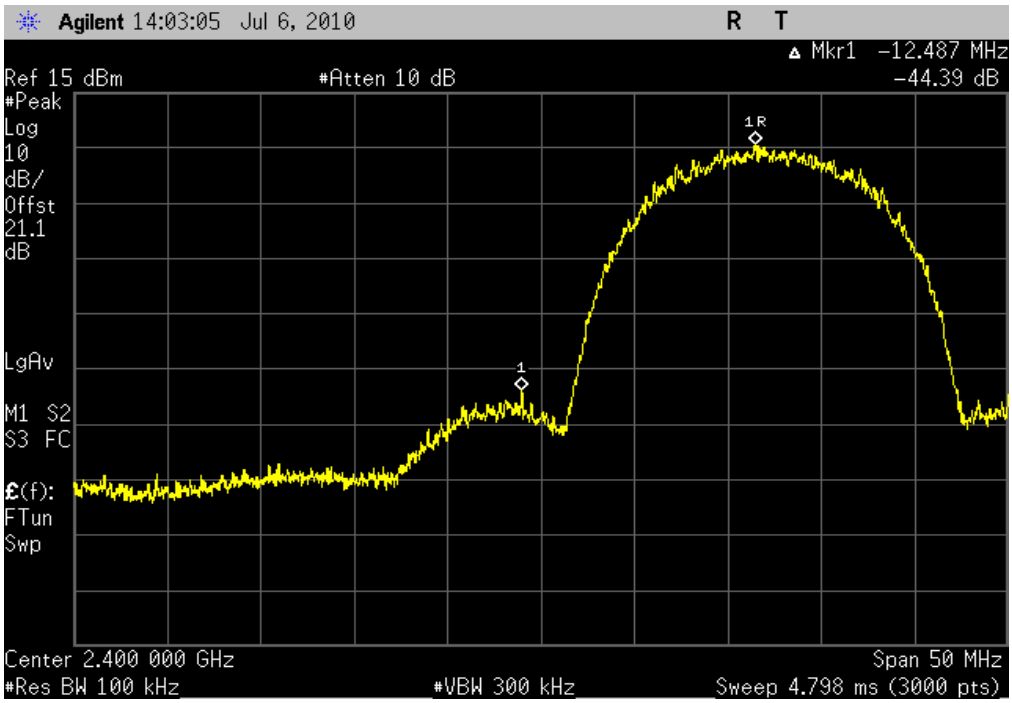
| 802.11(b) 1 Mbps, Low Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | -43.81 dBc | **Limit:** | ≤ -20 dBc |



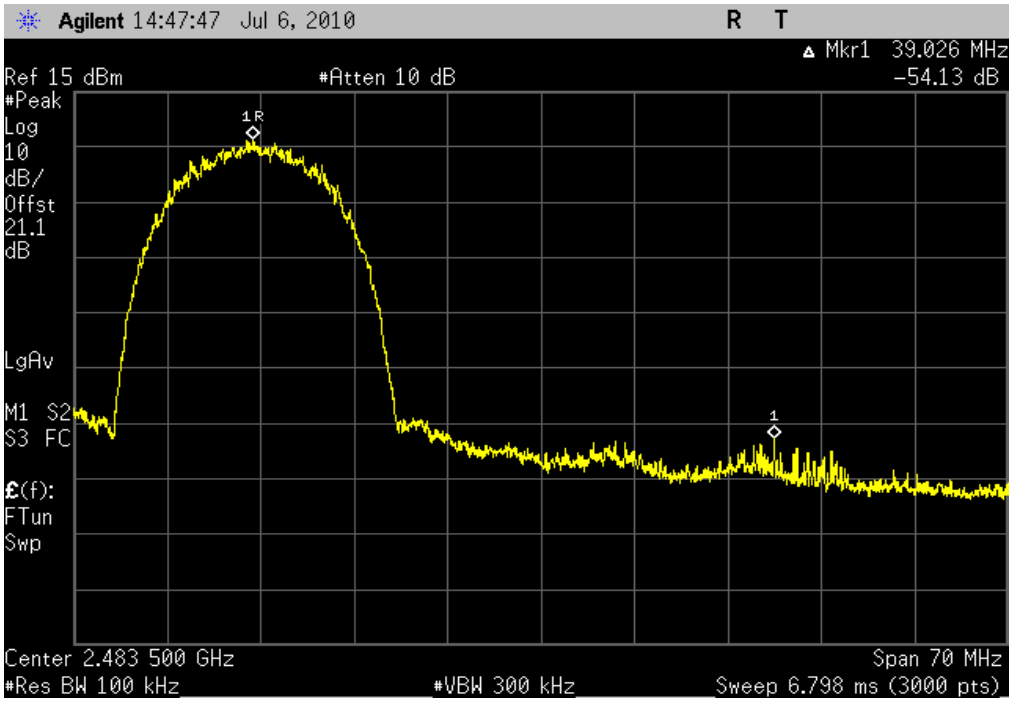

| 802.11(b) 1 Mbps, High Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | -52.86 dBc | **Limit:** | ≤ -20 dBc |



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

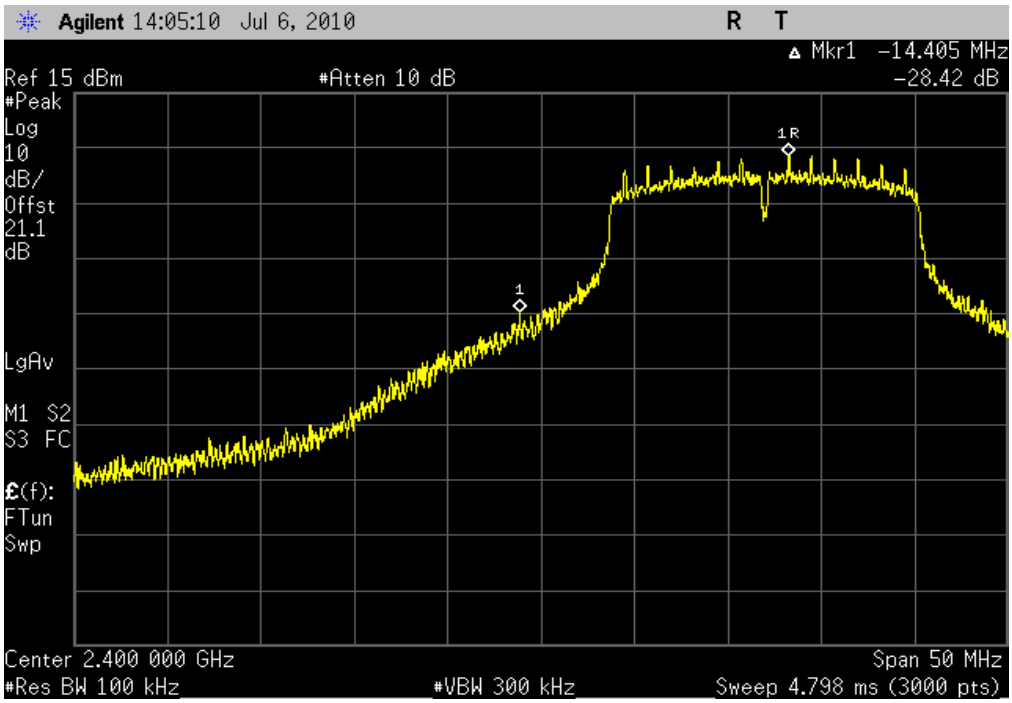



| 802.11(b) 11 Mbps, High Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | -54.13 dBc | **Limit:** | ≤ -20 dBc |

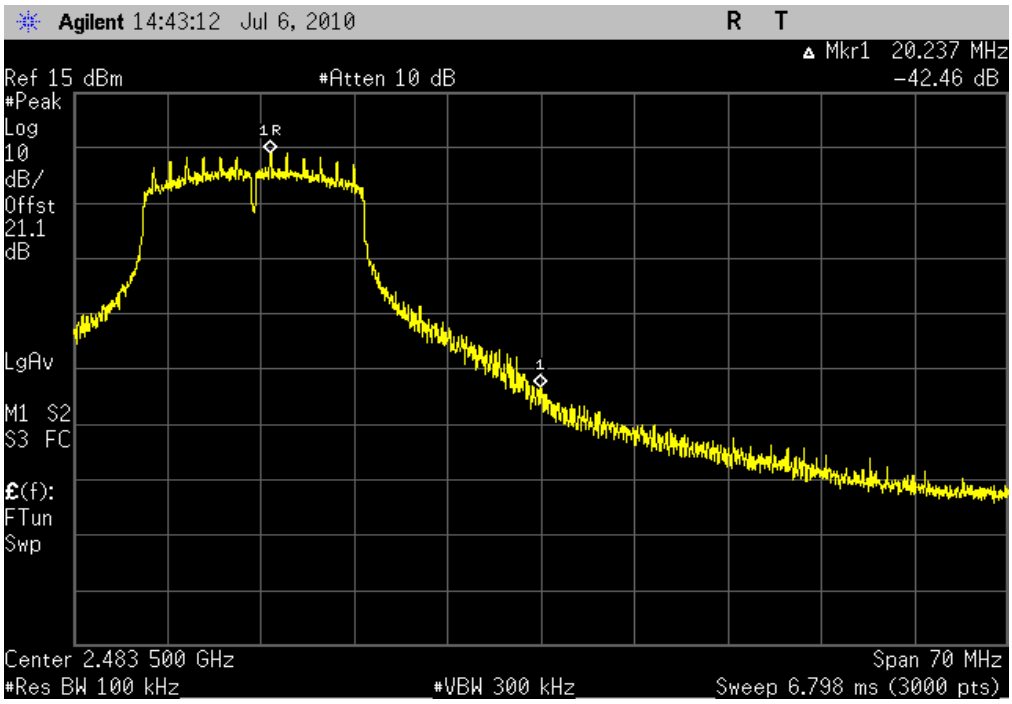


# BAND EDGE COMPLIANCE

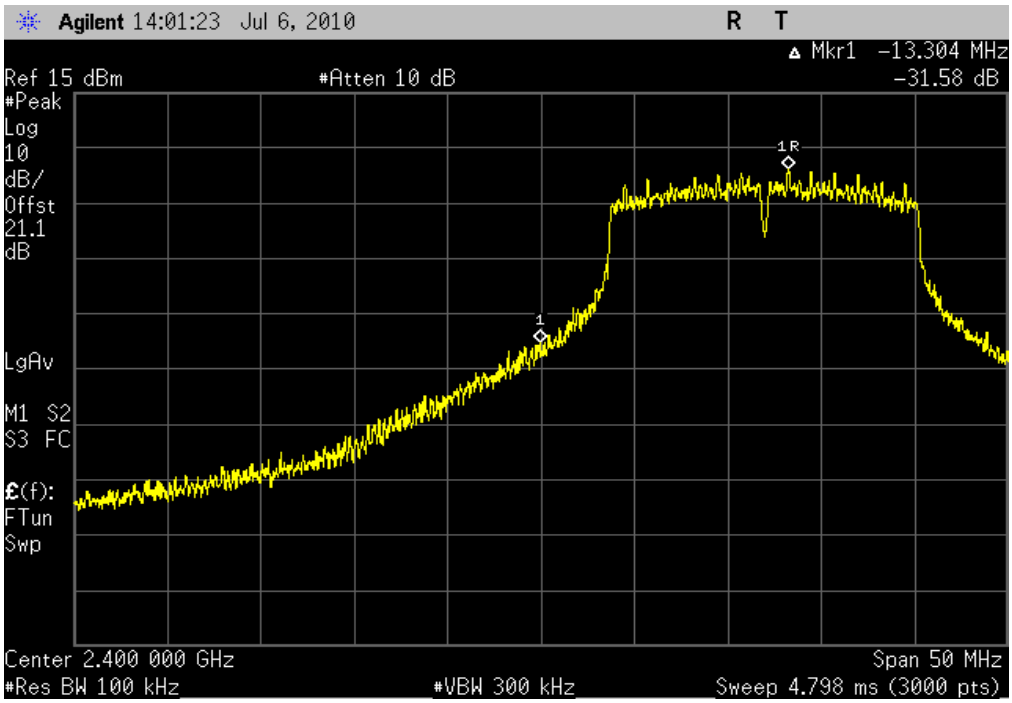
| 802.11(g) 6 Mbps, Low Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | -28.42 dBc | **Limit:** | ≤ -20 dBc |



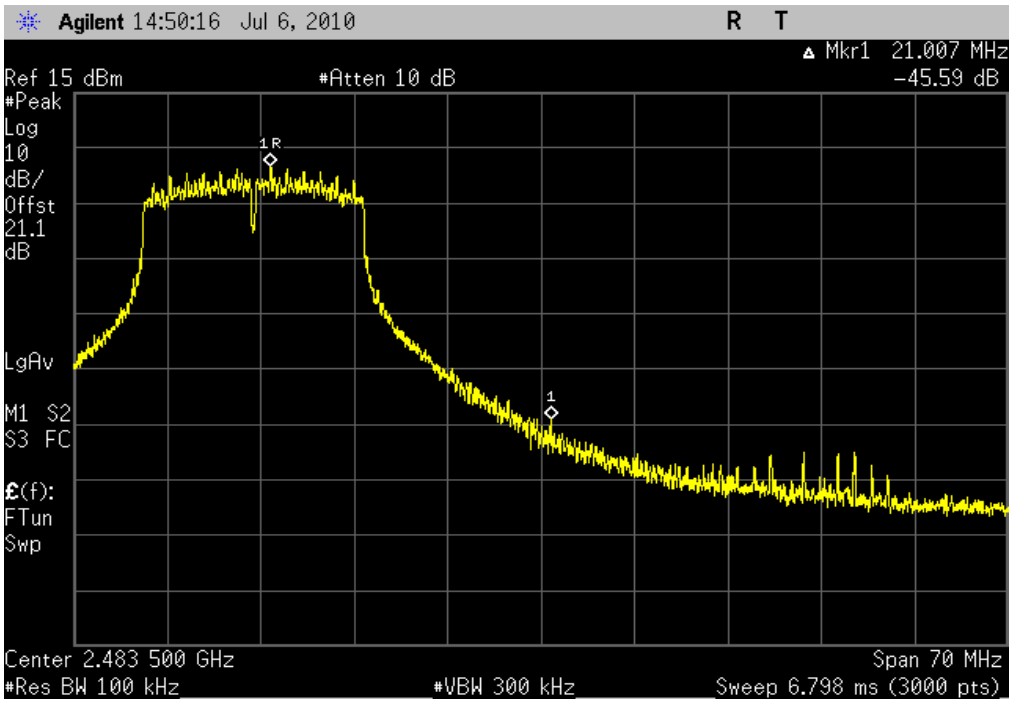

| 802.11(g) 6 Mbps, High Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | -42.46 dBc | **Limit:** | ≤ -20 dBc |



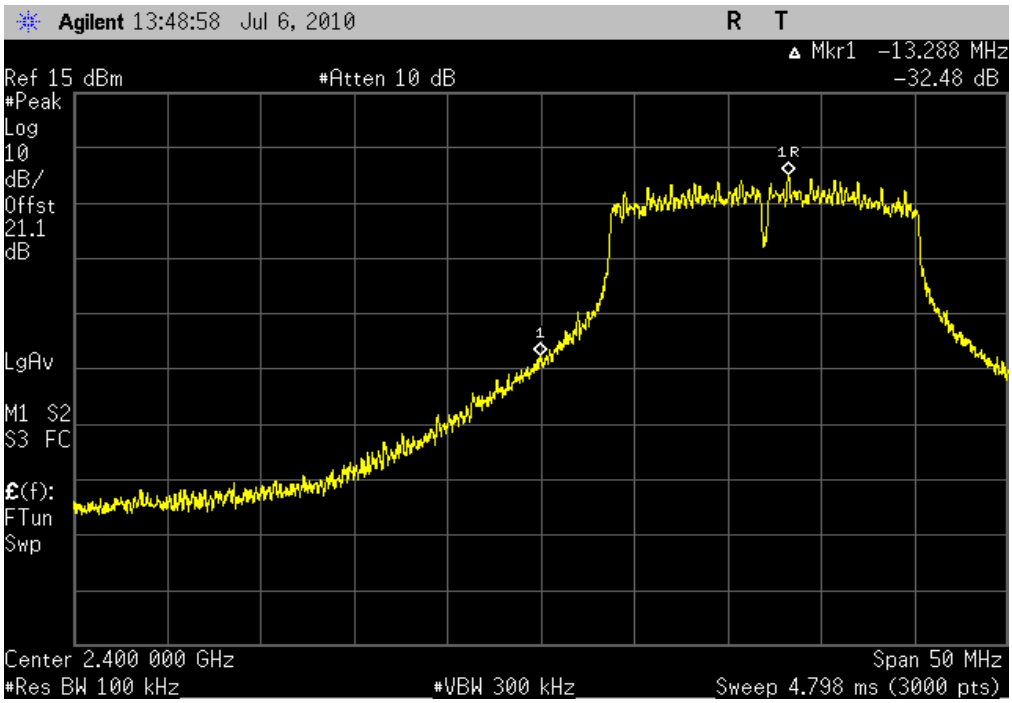
| 802.11(g) 36 Mbps, Low Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | -31.58 dBc | **Limit:** | ≤ -20 dBc |



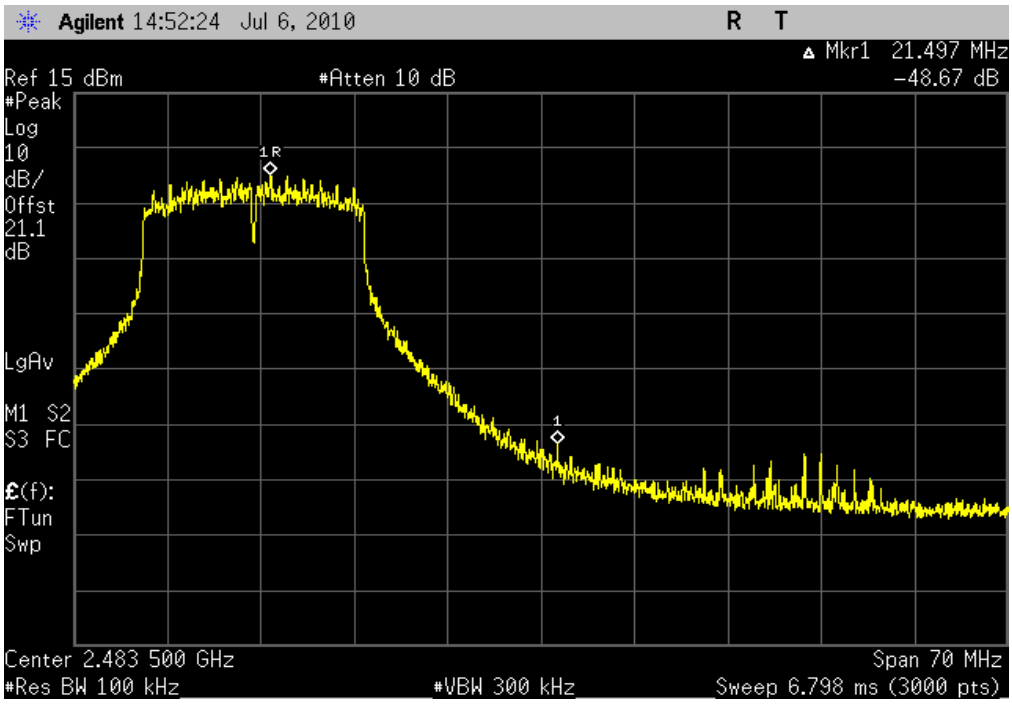

| 802.11(g) 36 Mbps, High Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | -45.59 dBc | **Limit:** | ≤ -20 dBc |



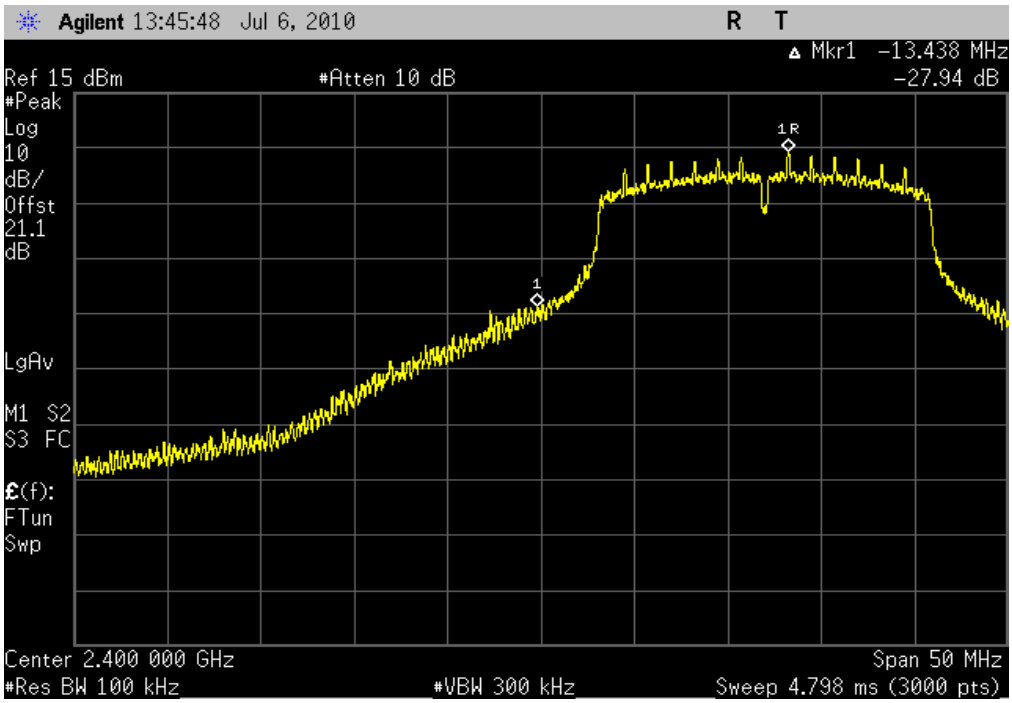
| 802.11(g) 54 Mbps, Low Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | -32.48 dBc | **Limit:** | ≤ -20 dBc |



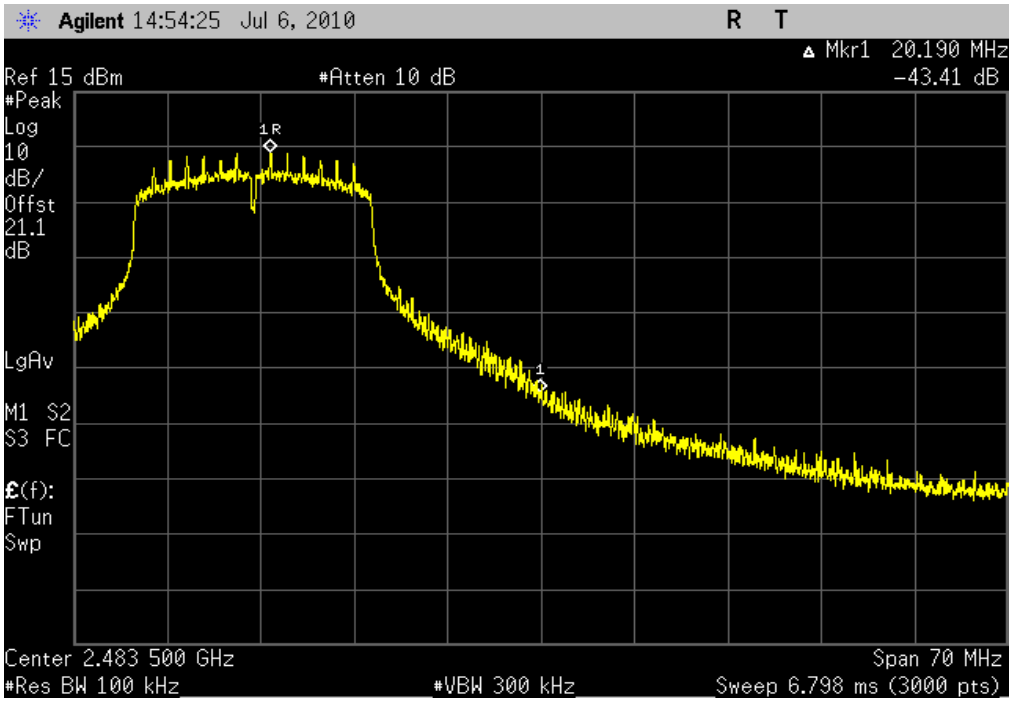

| 802.11(g) 54 Mbps, High Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | -48.67 dBc | **Limit:** | ≤ -20 dBc |



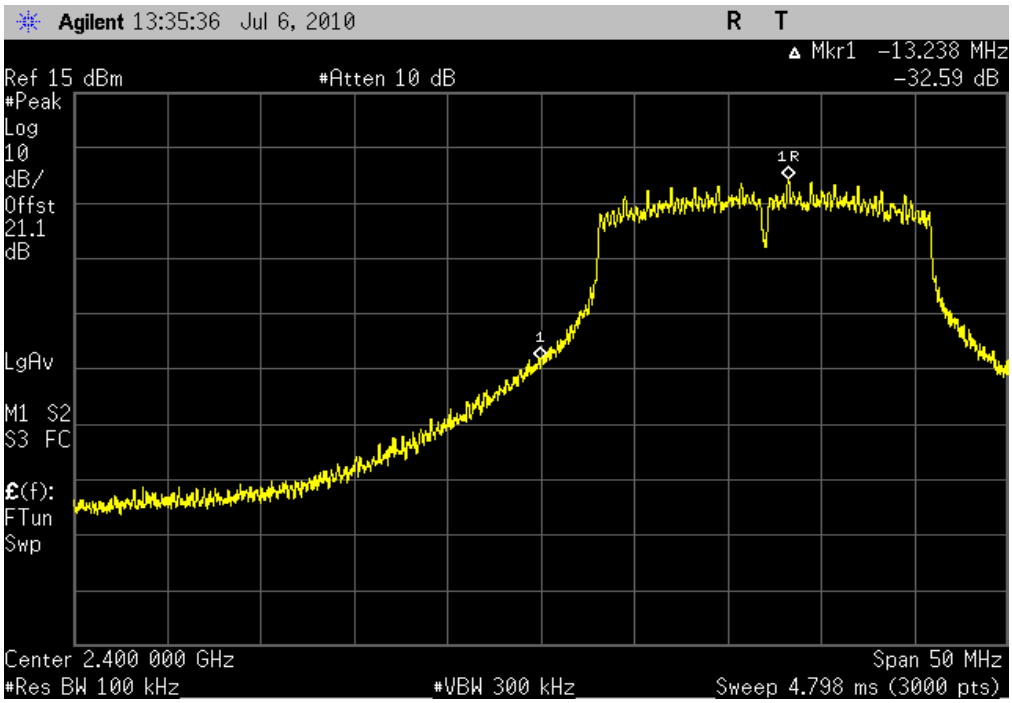
| 802.11(n) MCS0, Low Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | -27.94 dBc | **Limit:** | ≤ -20 dBc |



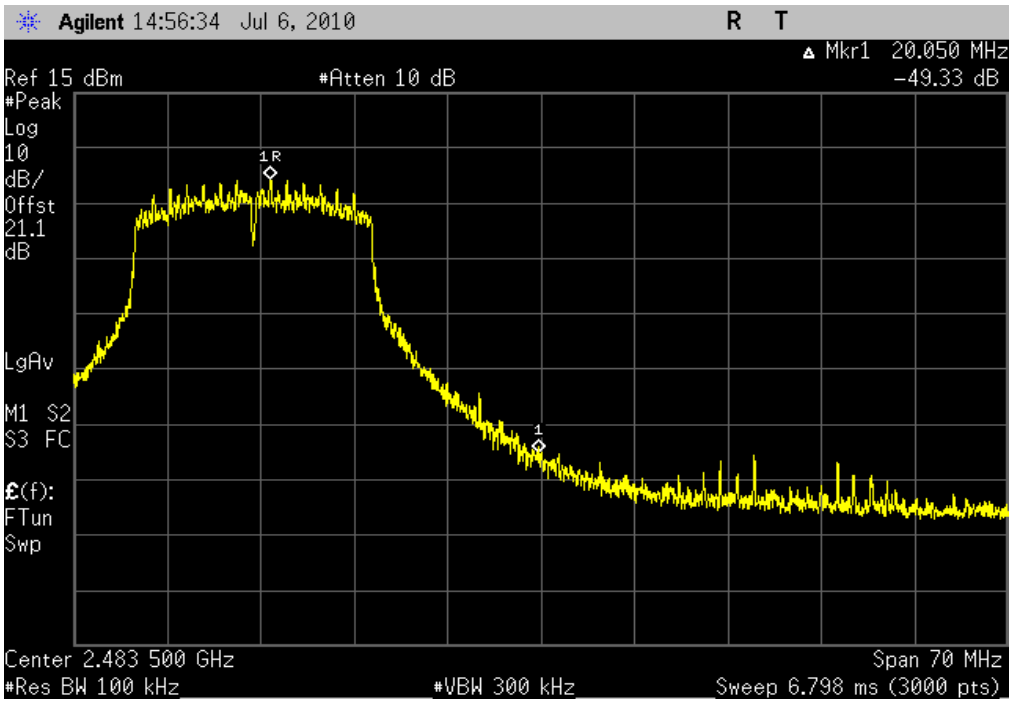

| 802.11(n) MCS0, High Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | -43.41 dBc | **Limit:** | ≤ -20 dBc |



| 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

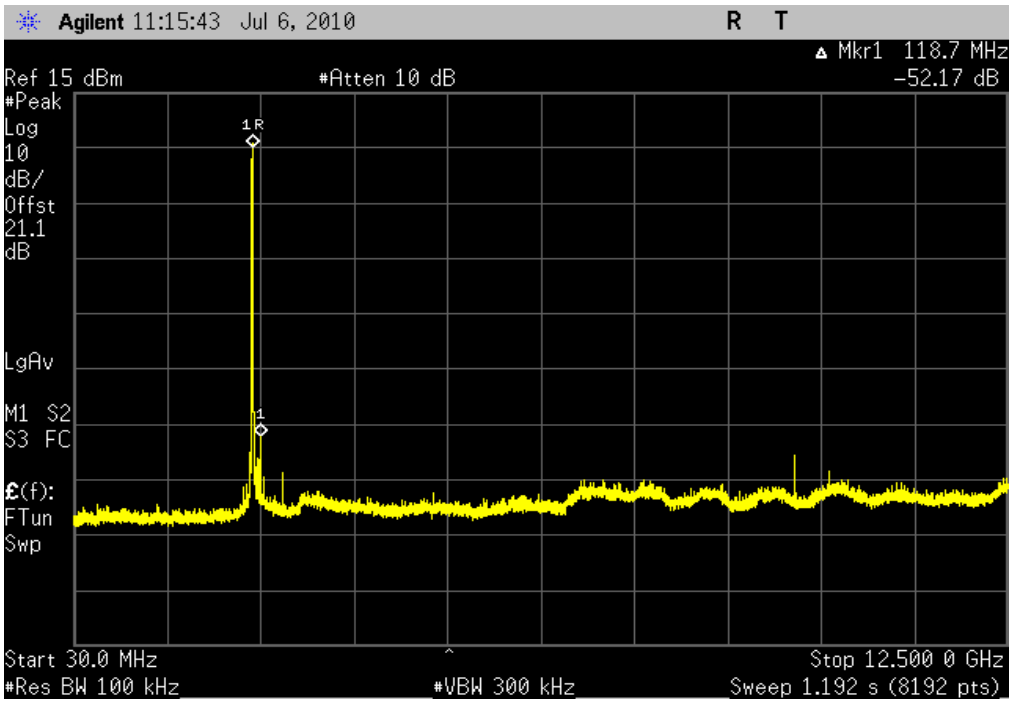
**DEVIATIONS FROM TEST STANDARD**

No Deviations

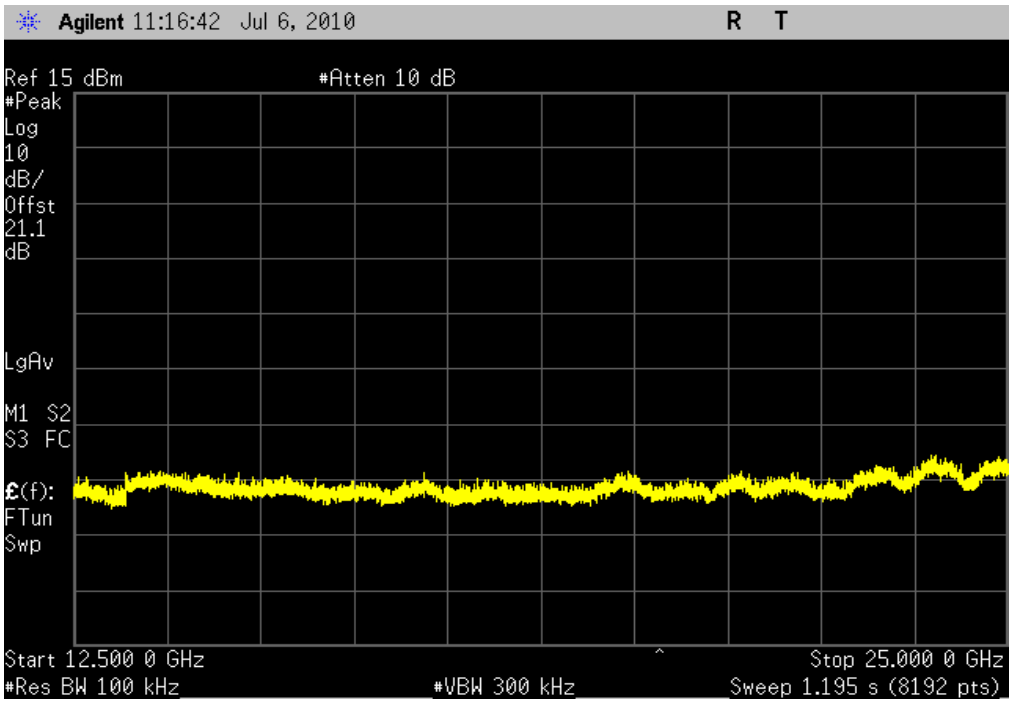
| Configuration # | 2 | Signature | Trevor Buls |
|---|---|---|---|

| | | 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 |

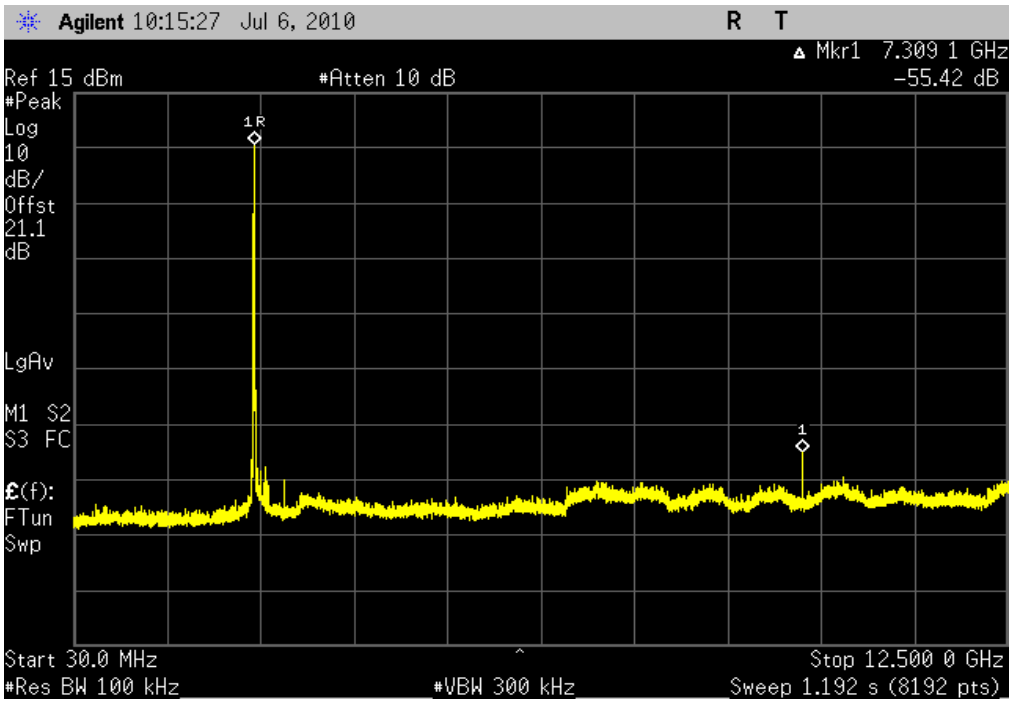
| 802.11(b) 1 Mbps, Low Channel, 30 MHz - 12.5 GHz | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | < -40 dBc | **Limit:** | ≤ -20 dBc |



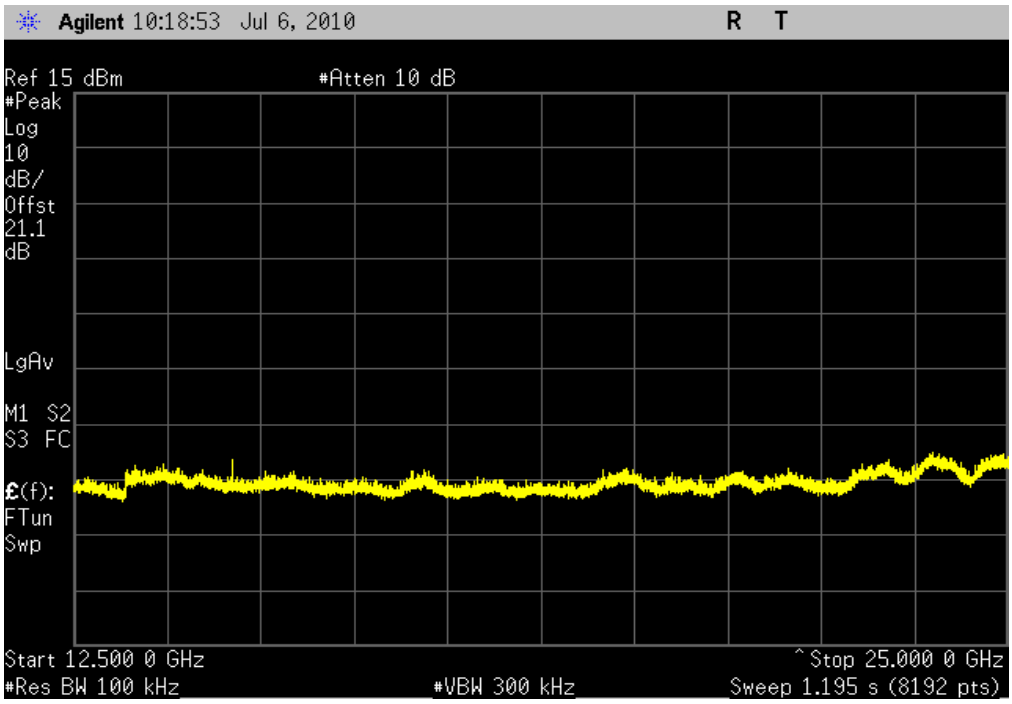

| 802.11(b) 1 Mbps, Low Channel, 12.5 GHz - 25 GHz | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | < -40 dBc | **Limit:** | ≤ -20 dBc |



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

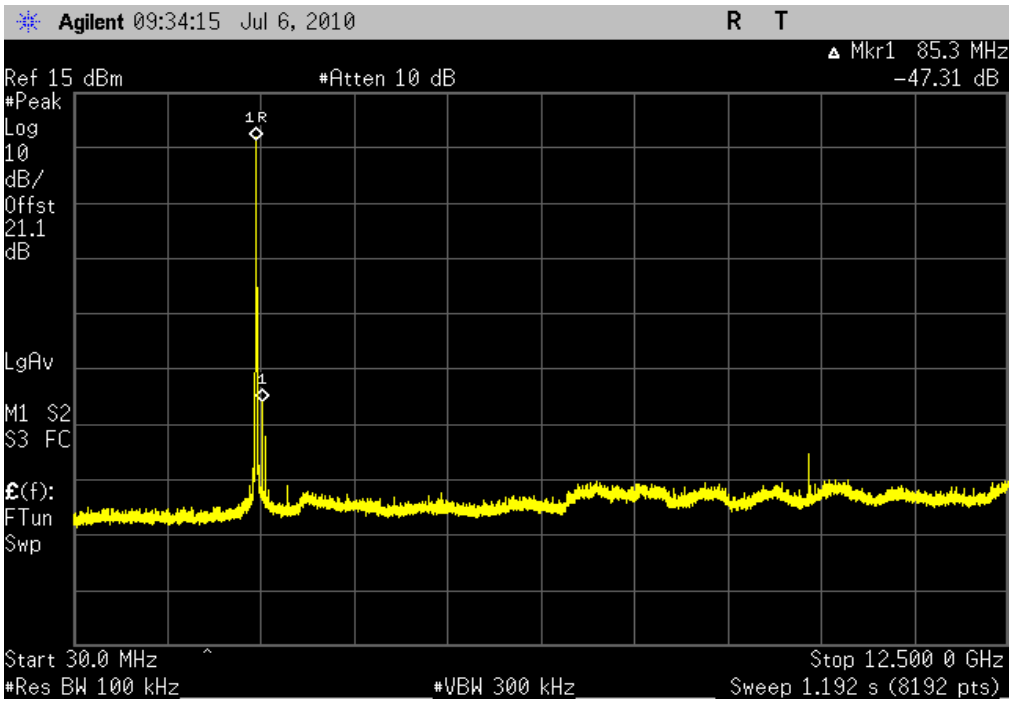



| 802.11(b) 1 Mbps, Mid Channel, 12.5 GHz - 25 GHz | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | < -40 dBc | **Limit:** | ≤ -20 dBc |

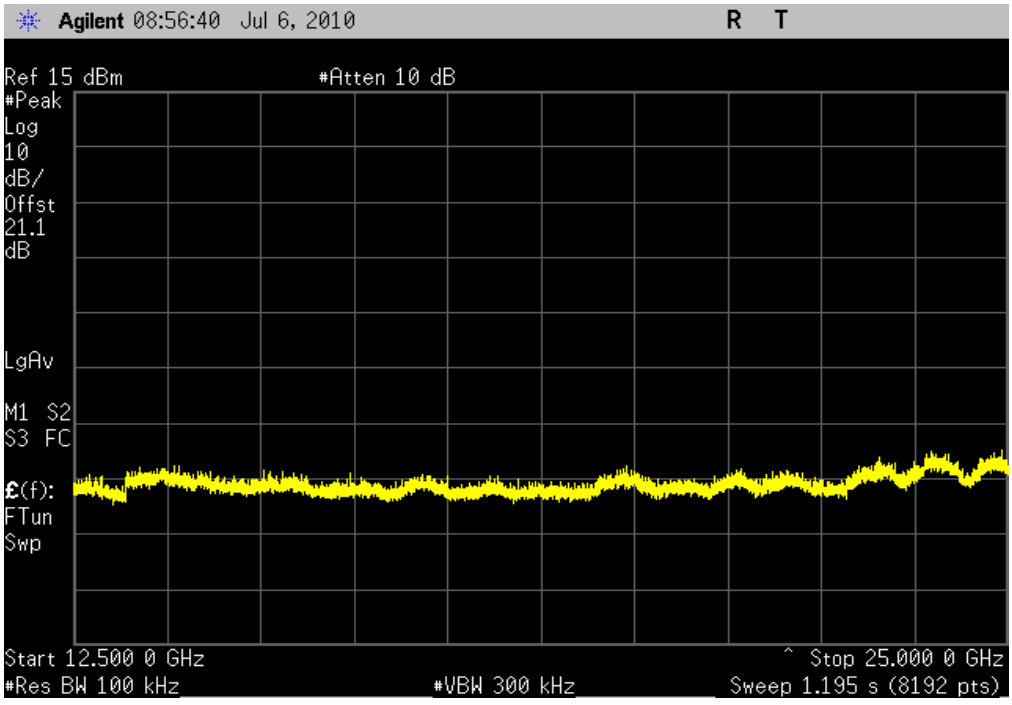


# SPURIOUS CONDUCTED EMISSIONS

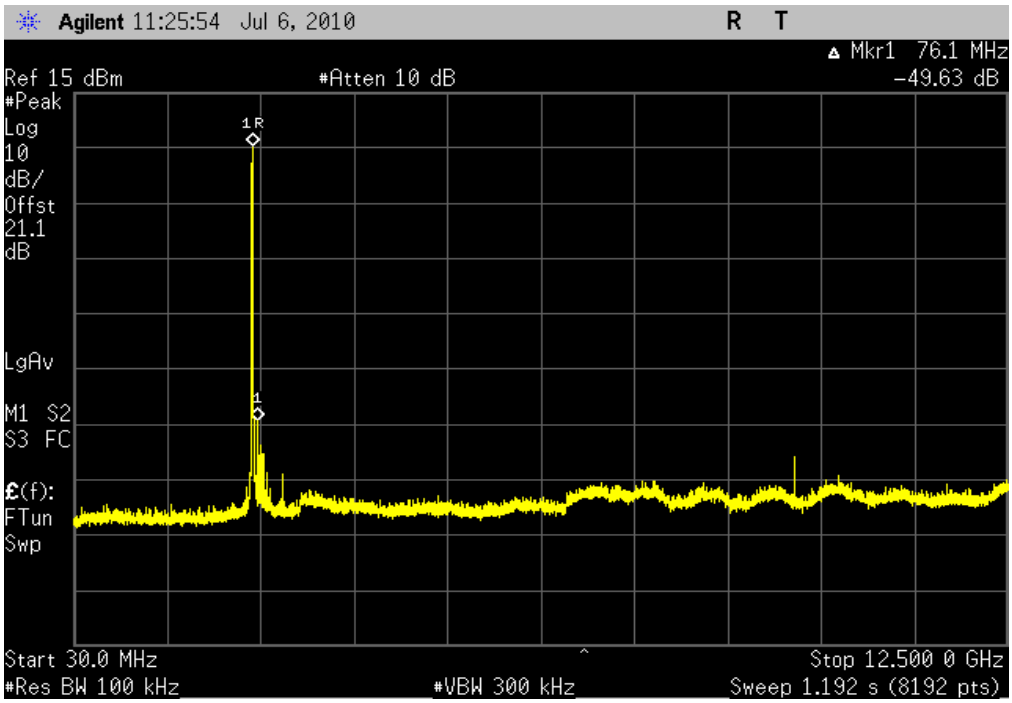
| 802.11(b) 1 Mbps, High Channel, 30 MHz - 12.5 GHz | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | < -40 dBc | **Limit:** | ≤ -20 dBc |



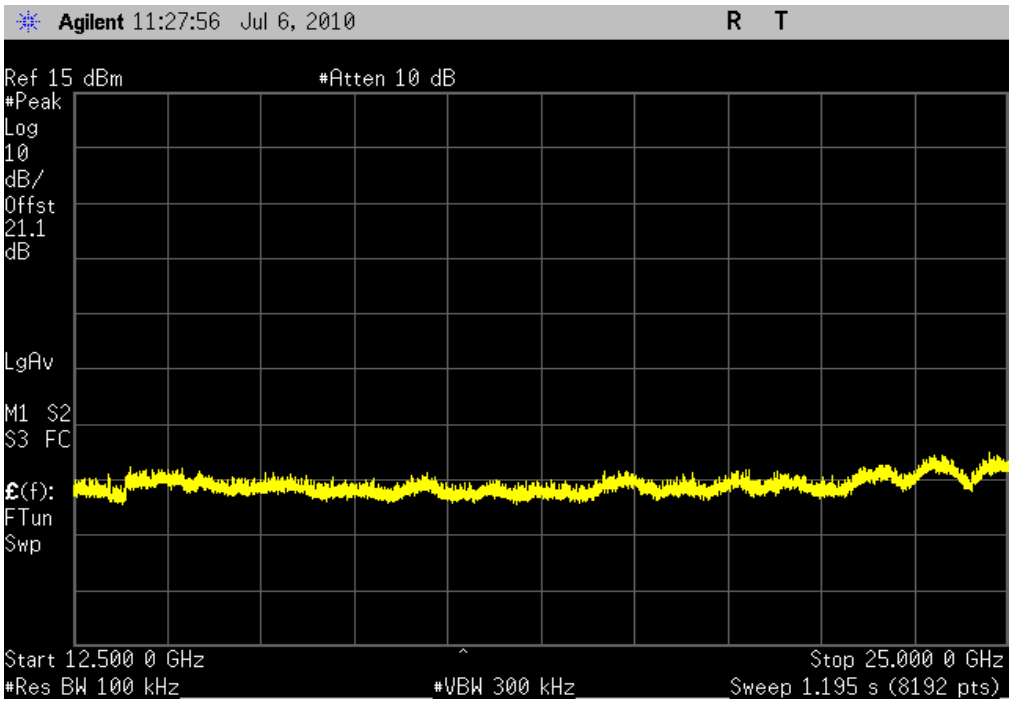

| 802.11(b) 1 Mbps, High Channel, 12.5 GHz - 25 GHz | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | < -40 dBc | **Limit:** | ≤ -20 dBc |



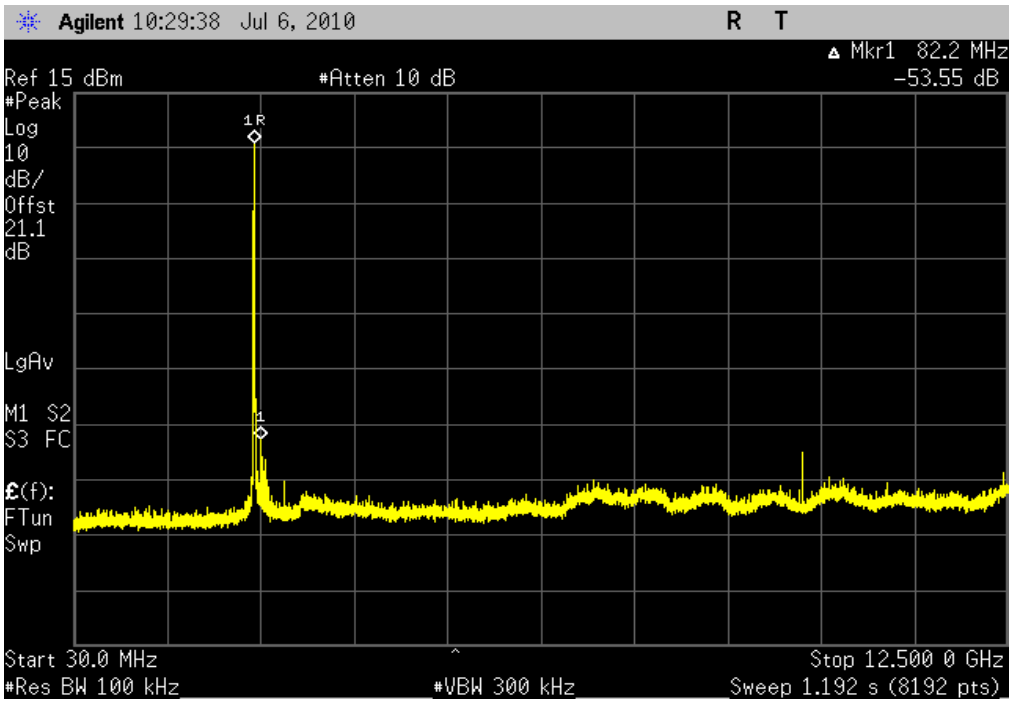
| 802.11(b) 11 Mbps, Low Channel, 30 MHz - 12.5 GHz | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | < -40 dBc | **Limit:** | ≤ -20 dBc |



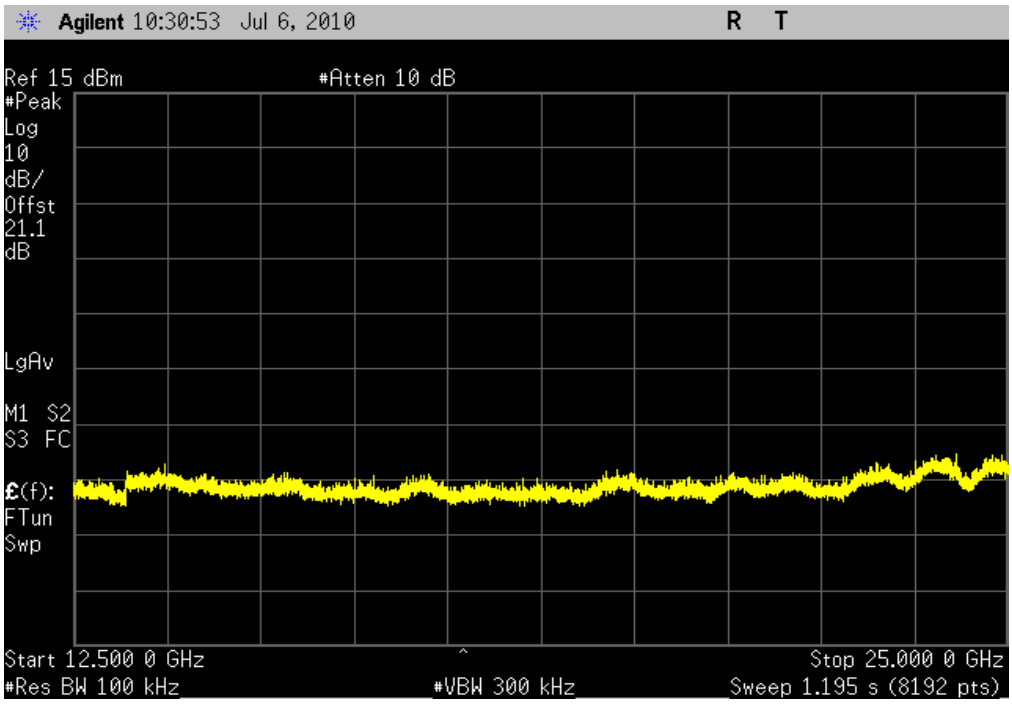

| 802.11(b) 11 Mbps, Low Channel, 12.5 GHz - 25 GHz | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | < -40 dBc | **Limit:** | ≤ -20 dBc |



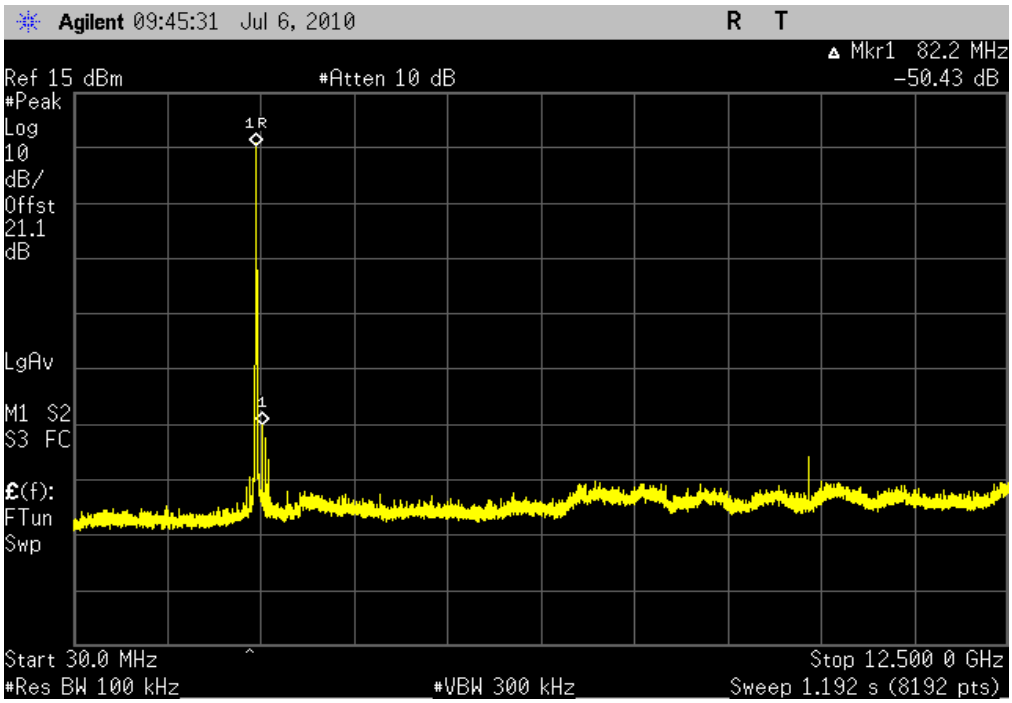
| 802.11(b) 11 Mbps, Mid Channel, 30 MHz - 12.5 GHz | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | < -40 dBc | **Limit:** | ≤ -20 dBc |



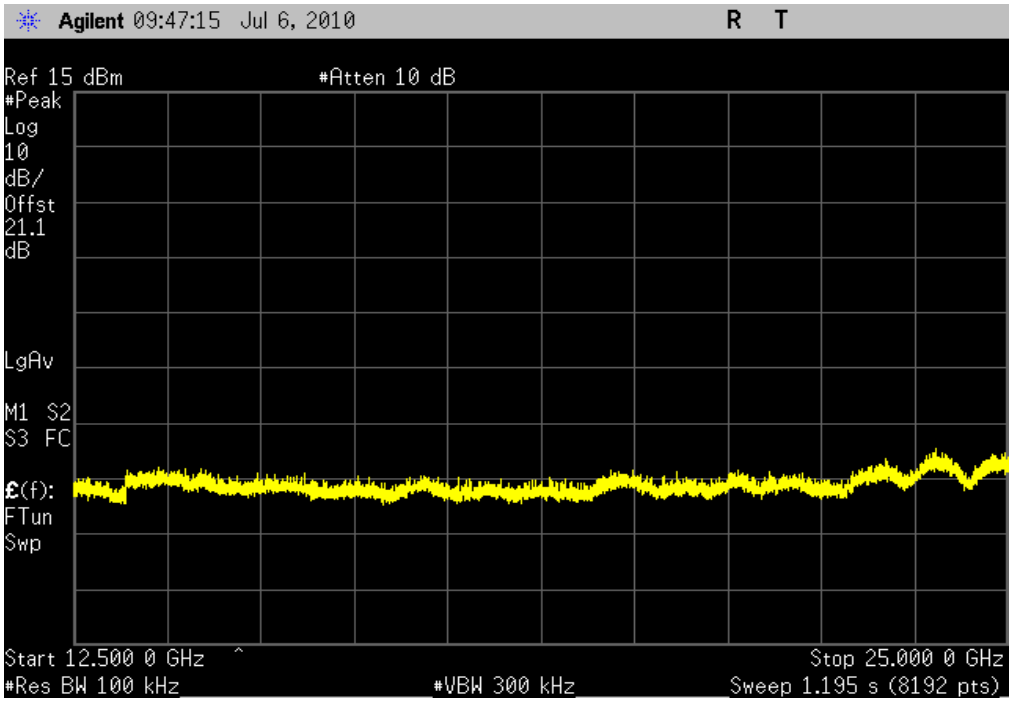

| 802.11(b) 11 Mbps, Mid Channel, 12.5 GHz - 25 GHz | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | < -40 dBc | **Limit:** | ≤ -20 dBc |



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

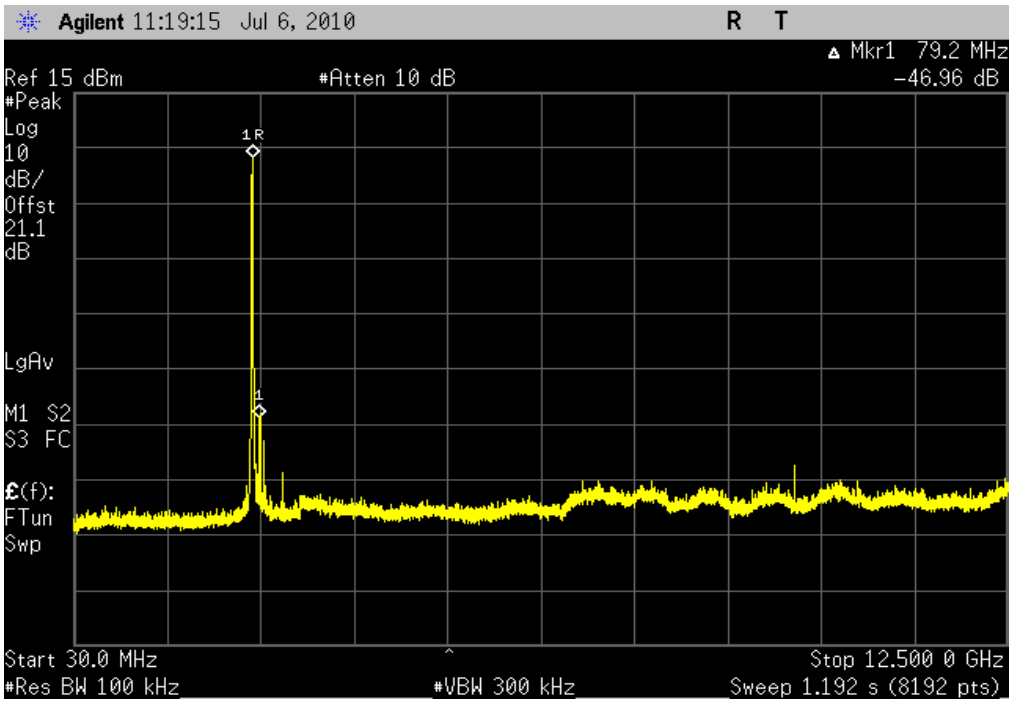



| 802.11(b) 11 Mbps, High Channel, 12.5 GHz - 25 GHz | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | < -40 dBc | **Limit:** | ≤ -20 dBc |

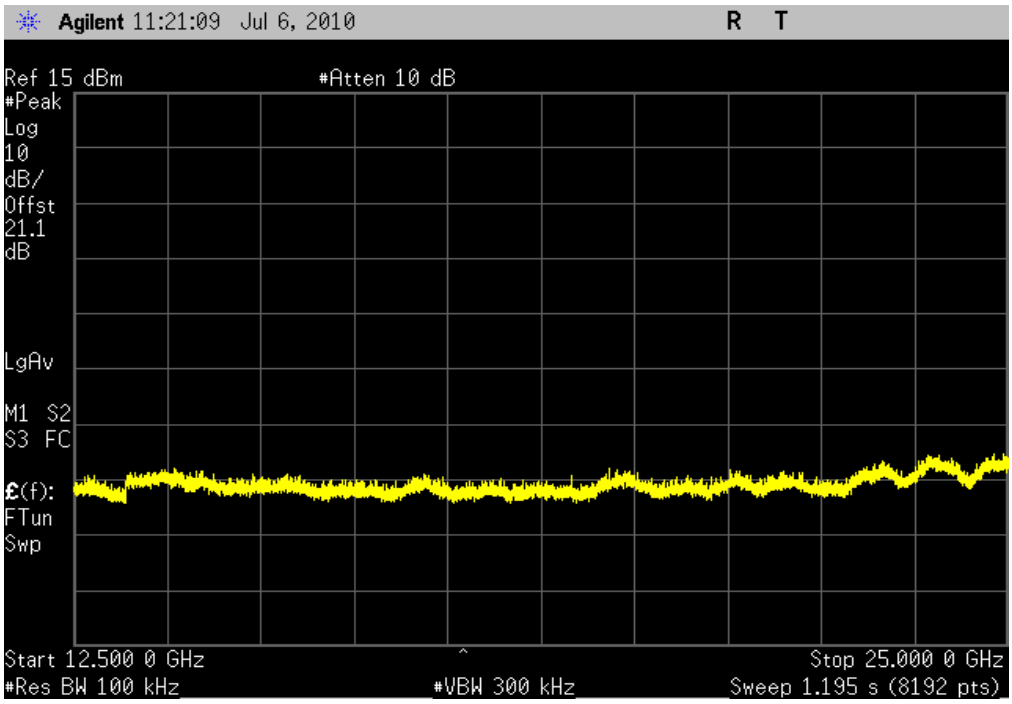


# SPURIOUS CONDUCTED EMISSIONS

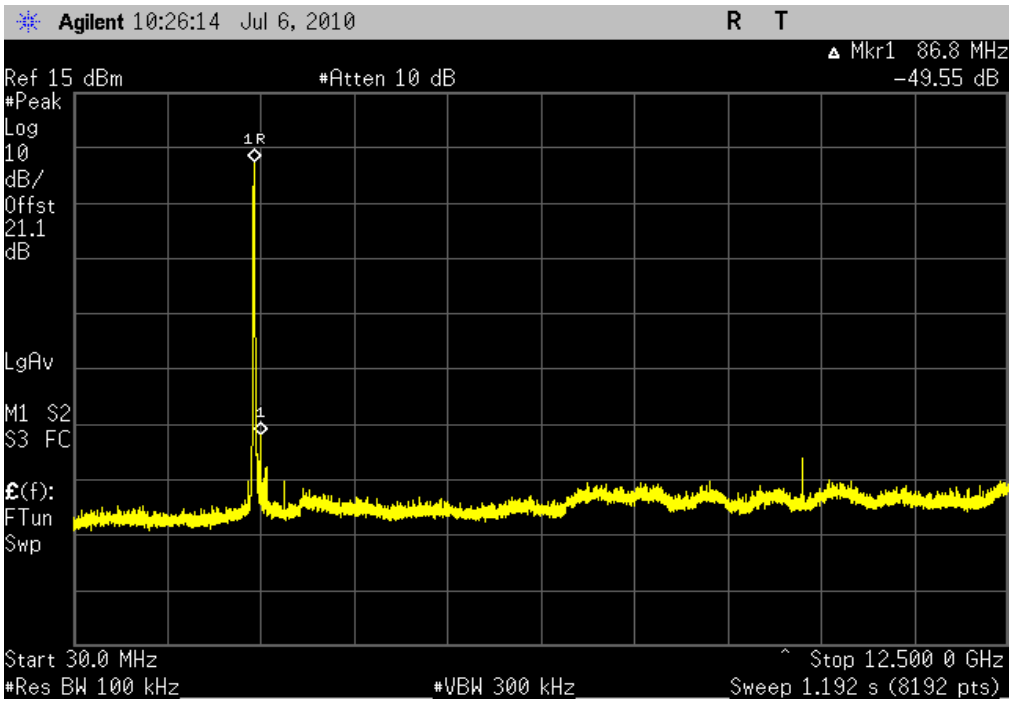
| 802.11(g) 6 Mbps, Low Channel, 30 MHz - 12.5 GHz | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | < -40 dBc | **Limit:** | ≤ -20 dBc |



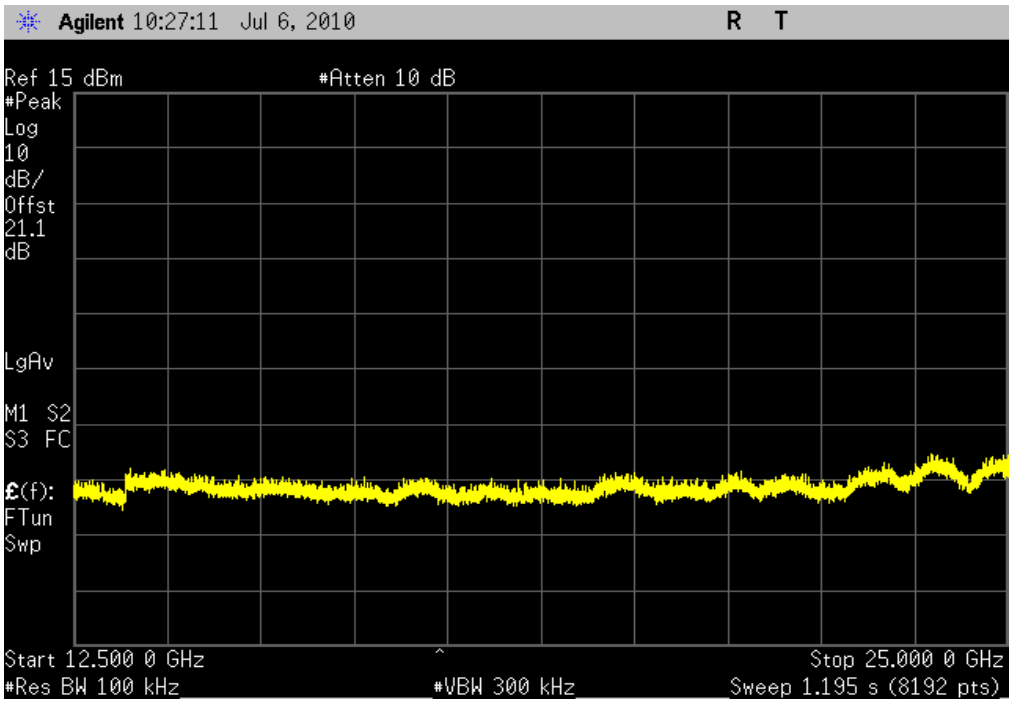

| 802.11(g) 6 Mbps, Low Channel, 12.5 GHz - 25 GHz | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | < -40 dBc | **Limit:** | ≤ -20 dBc |



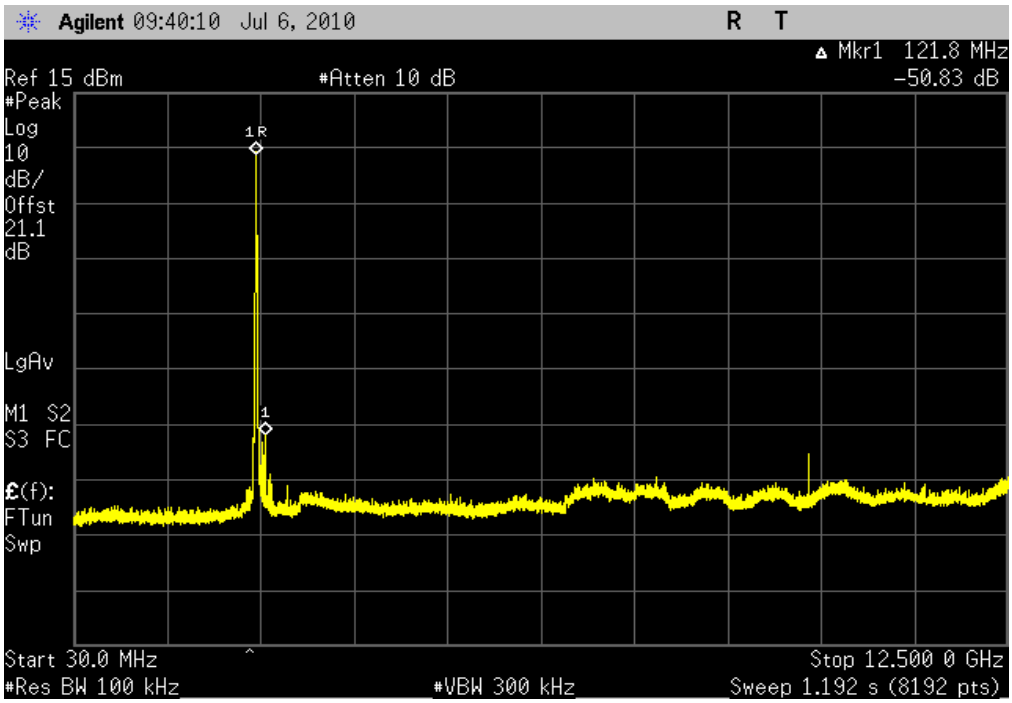
| 802.11(g) 6 Mbps, Mid Channel, 30 MHz - 12.5 GHz | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | < -40 dBc | **Limit:** | ≤ -20 dBc |



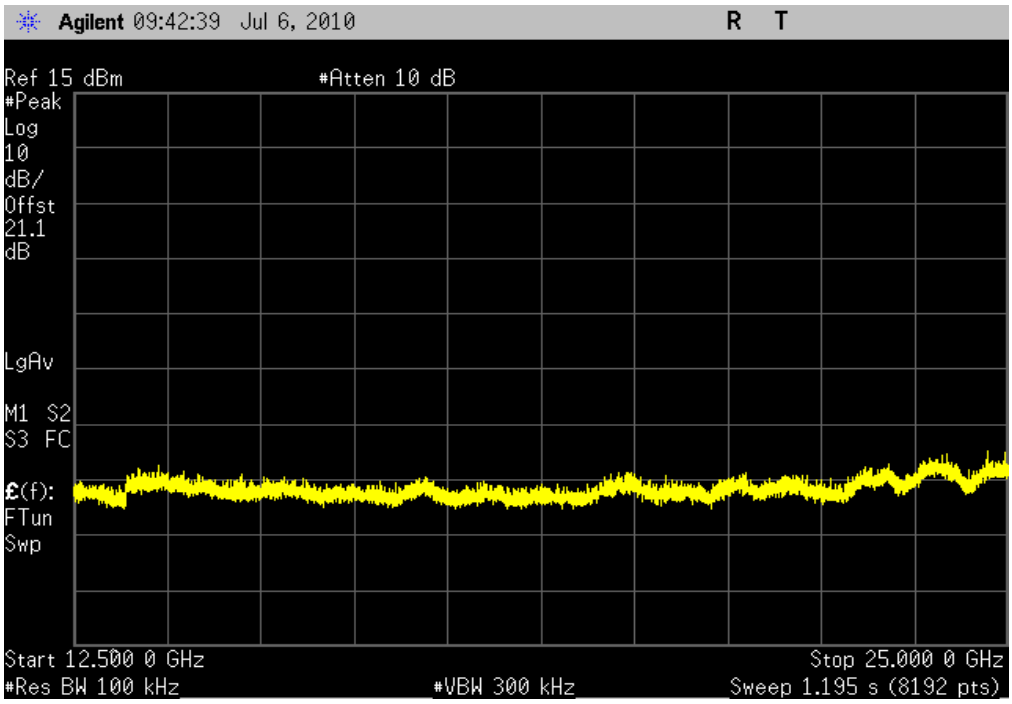

| 802.11(g) 6 Mbps, Mid Channel, 12.5 GHz - 25 GHz | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | < -40 dBc | **Limit:** | ≤ -20 dBc |



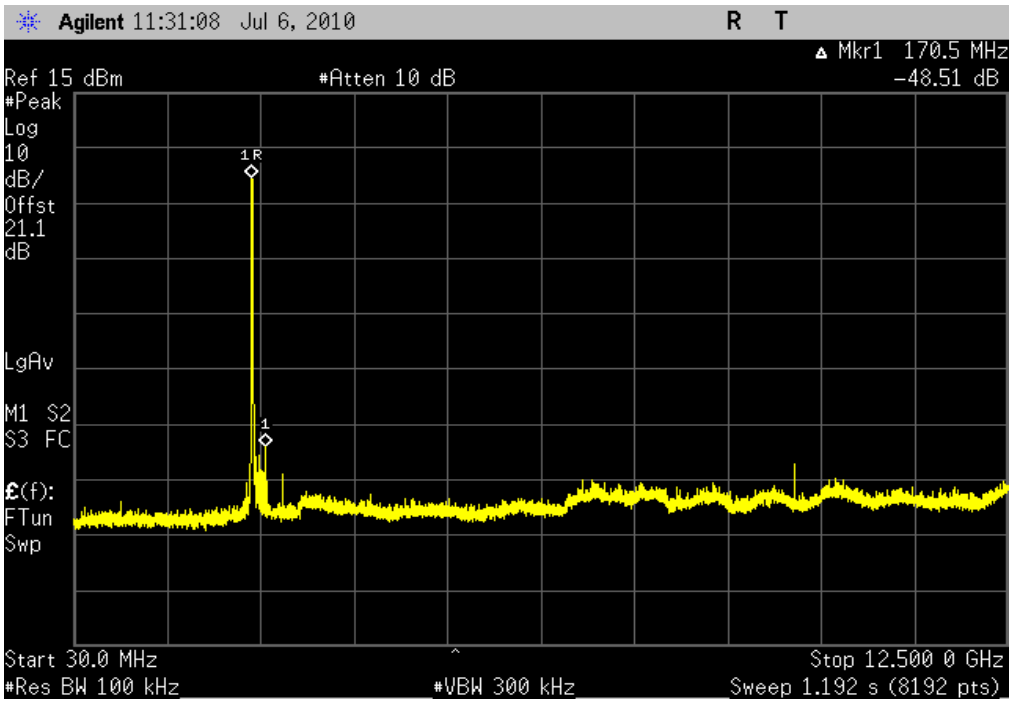
| 802.11(g) 6 Mbps, High Channel, 30 MHz - 12.5 GHz | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | < -40 dBc | **Limit:** | ≤ -20 dBc |



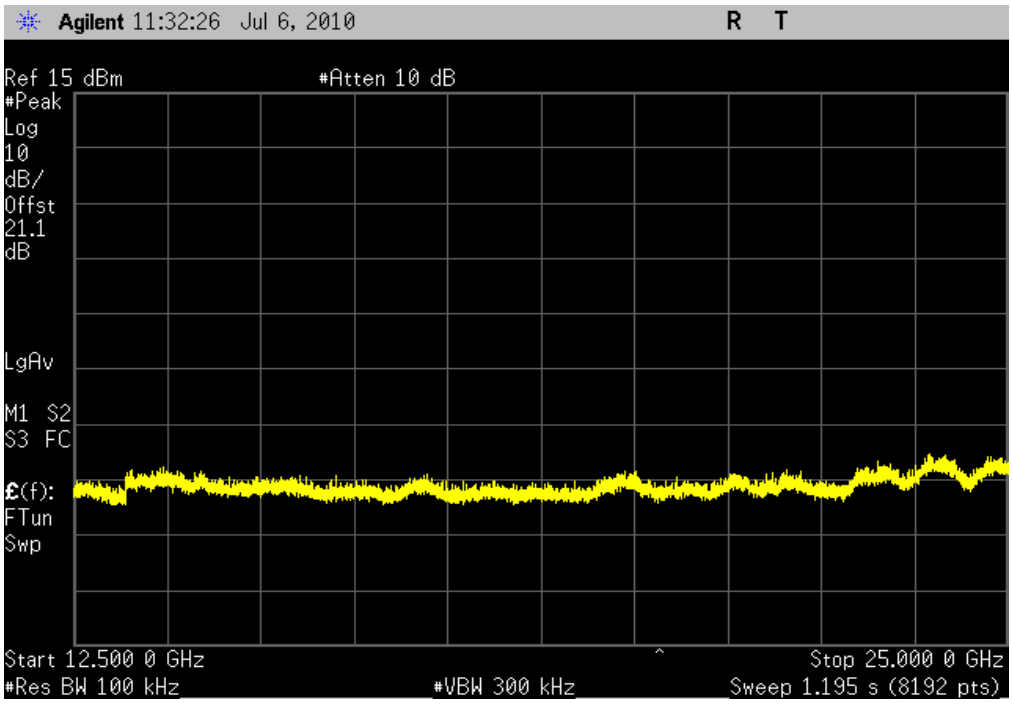

| 802.11(g) 6 Mbps, High Channel, 12.5 GHz - 25 GHz | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | < -40 dBc | **Limit:** | ≤ -20 dBc |



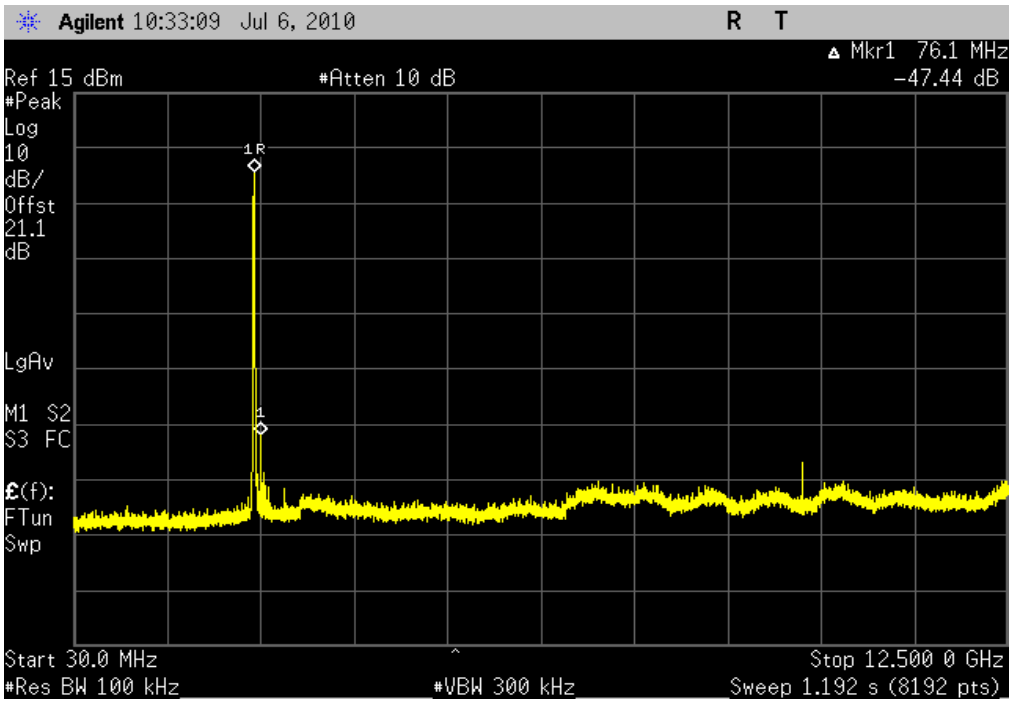
| 802.11(g) 36 Mbps, Low Channel, 30 MHz - 12.5 GHz | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | < -40 dBc | **Limit:** | ≤ -20 dBc |



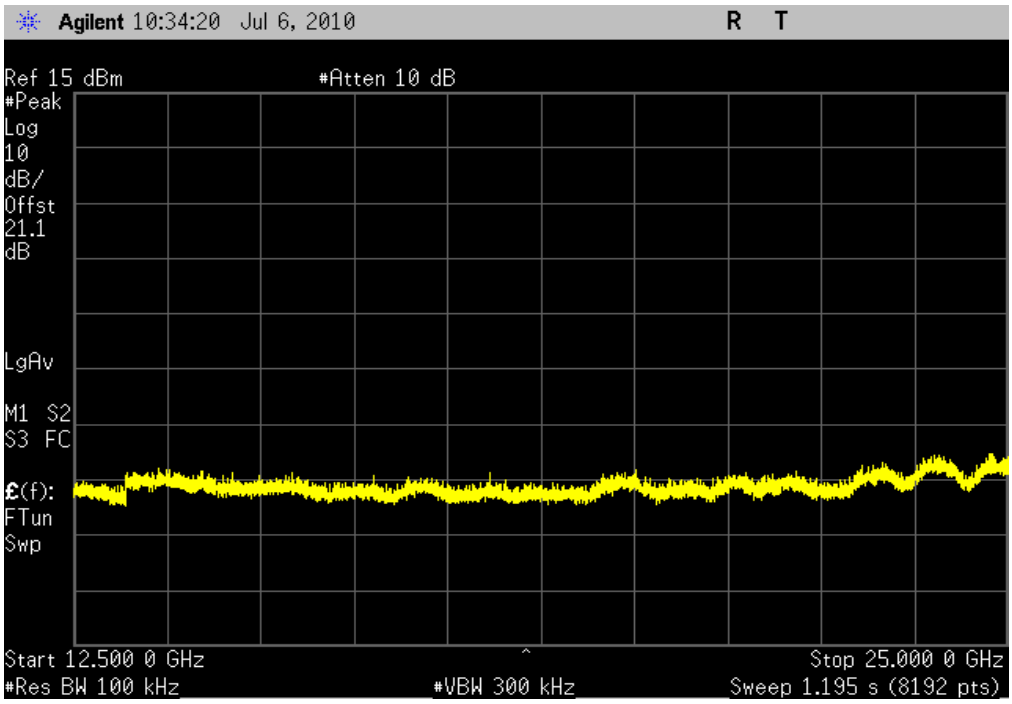

| 802.11(g) 36 Mbps, Low Channel, 12.5 GHz - 25 GHz | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | < -40 dBc | **Limit:** | ≤ -20 dBc |



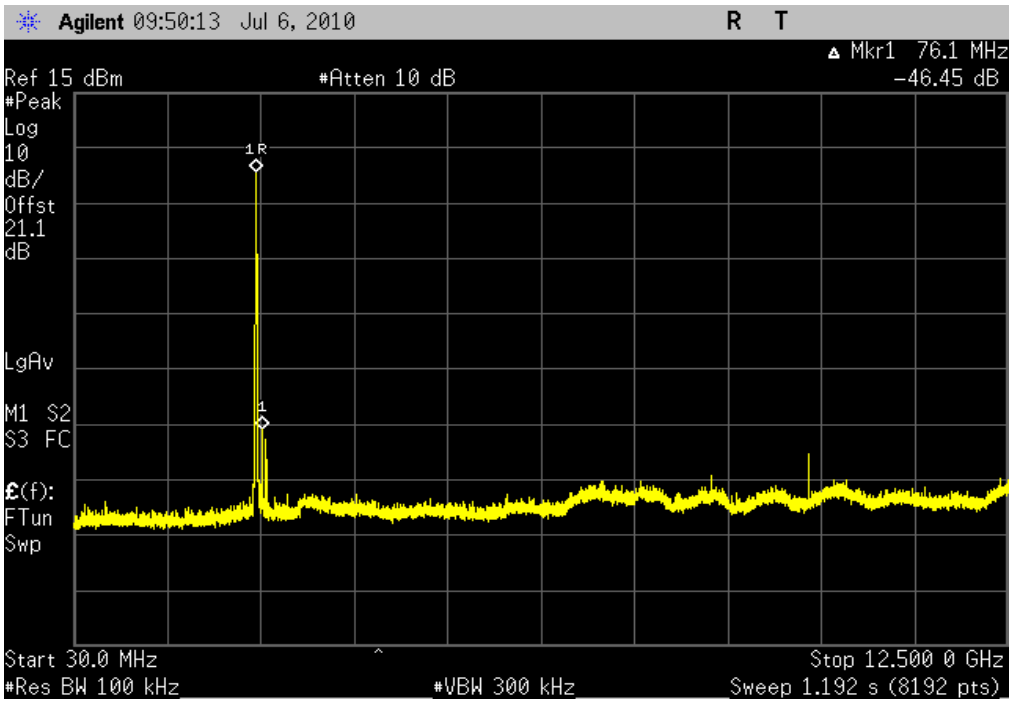
| 802.11(g) 36 Mbps, Mid Channel, 30 MHz - 12.5 GHz | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | < -40 dBc | **Limit:** | ≤ -20 dBc |



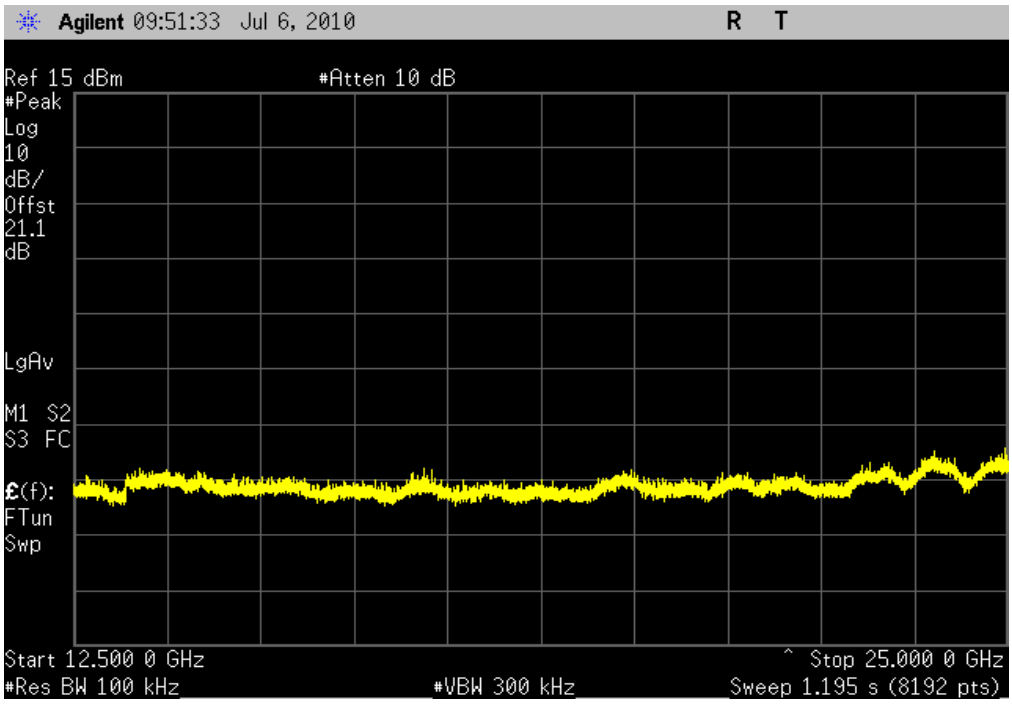

| 802.11(g) 36 Mbps, Mid Channel, 12.5 GHz - 25 GHz | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | < -40 dBc | **Limit:** | ≤ -20 dBc |



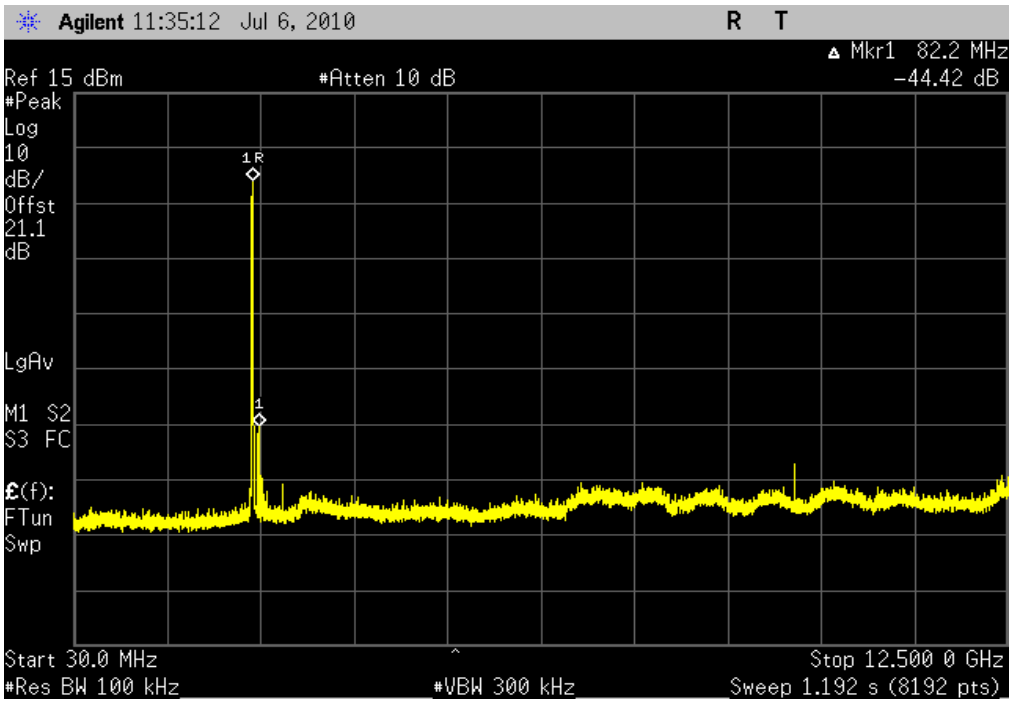
| 802.11(g) 36 Mbps, High Channel, 30 MHz - 12.5 GHz | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | < -40 dBc | **Limit:** | ≤ -20 dBc |



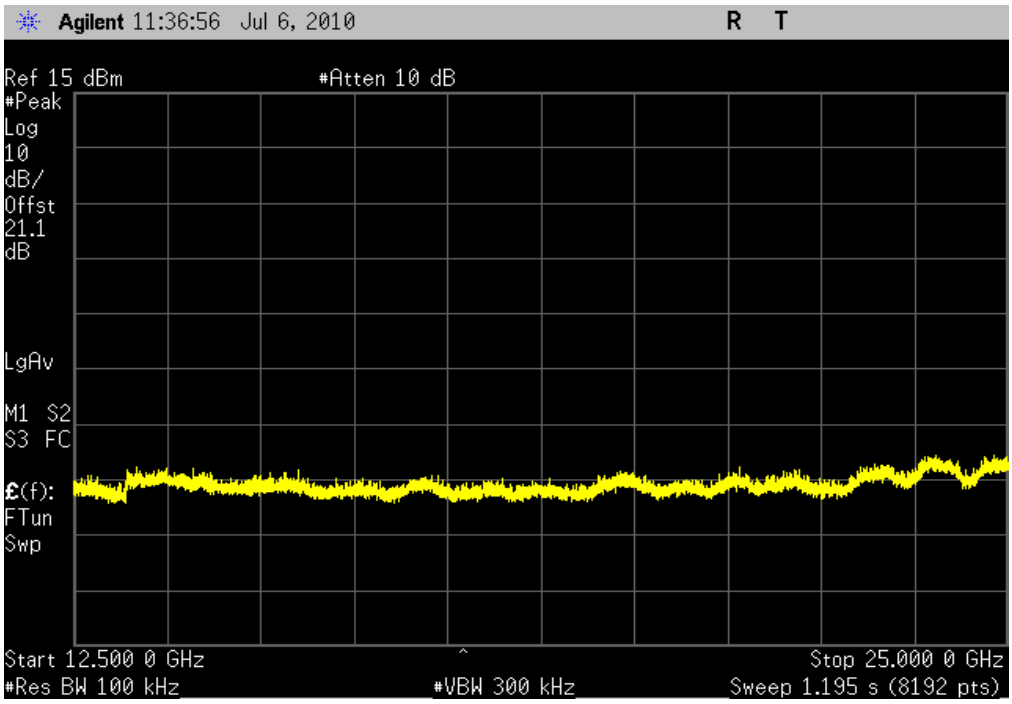

| 802.11(g) 36 Mbps, High Channel, 12.5 GHz - 25 GHz | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | < -40 dBc | **Limit:** | ≤ -20 dBc |



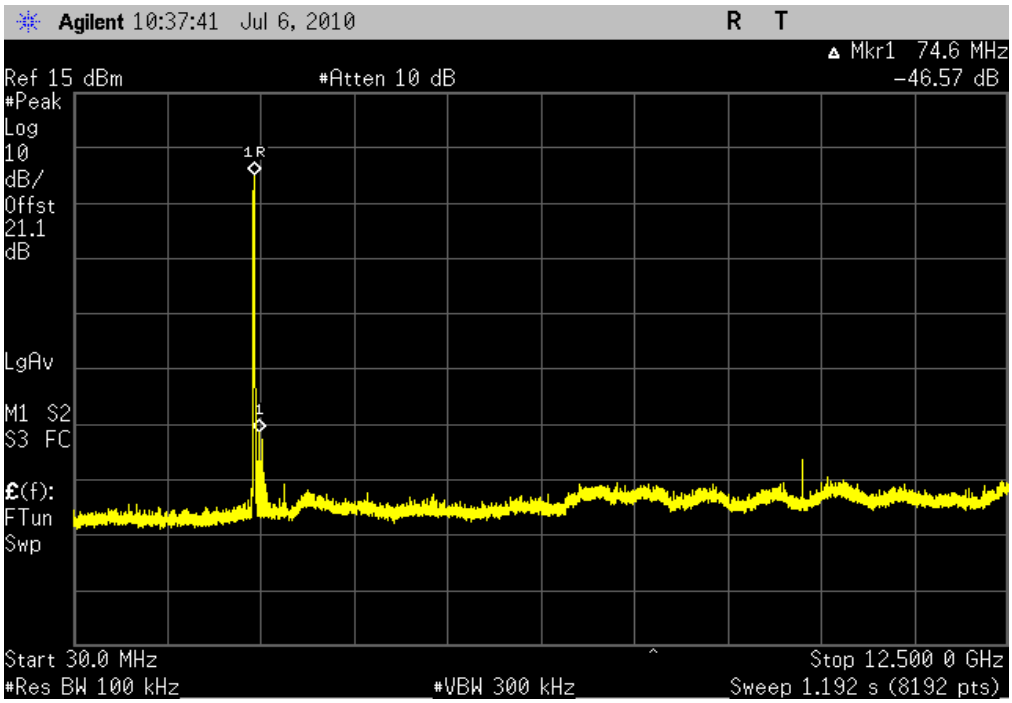
| 802.11(g) 54 Mbps, Low Channel, 30 MHz - 12.5 GHz | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | < -40 dBc | **Limit:** | ≤ -20 dBc |



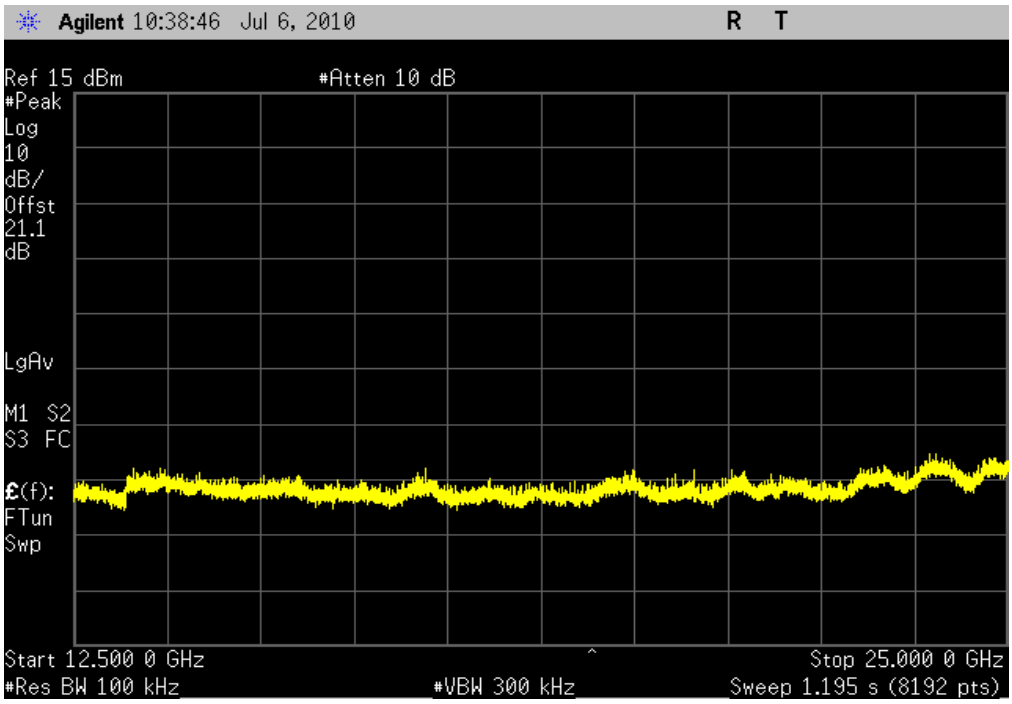

| 802.11(g) 54 Mbps, Low Channel, 12.5 GHz - 25 GHz | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | < -40 dBc | **Limit:** | ≤ -20 dBc |



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

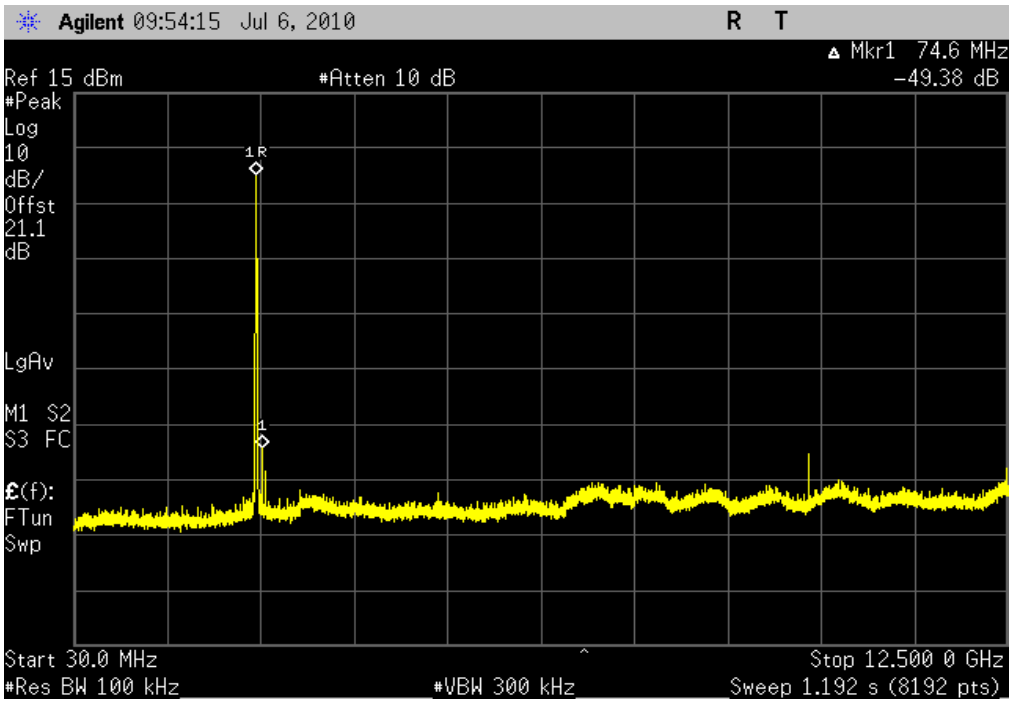



| 802.11(g) 54 Mbps, Mid Channel, 12.5 GHz - 25 GHz | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | < -40 dBc | **Limit:** | ≤ -20 dBc |

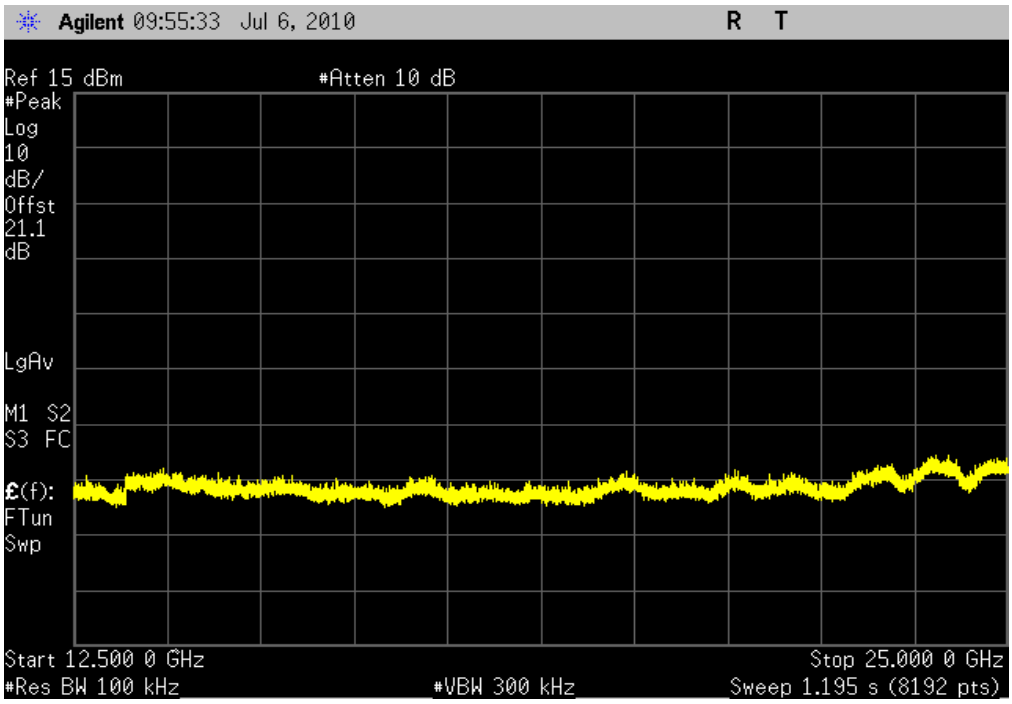


# SPURIOUS CONDUCTED EMISSIONS

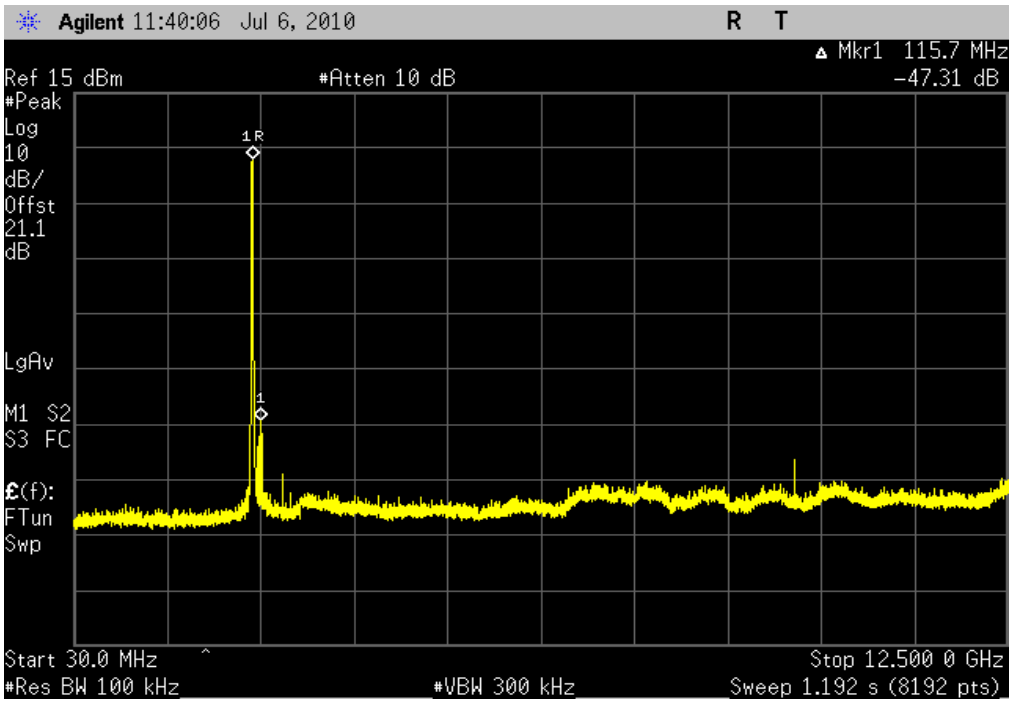
| 802.11(g) 54 Mbps, High Channel, 30 MHz - 12.5 GHz | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | < -40 dBc | **Limit:** | ≤ -20 dBc |



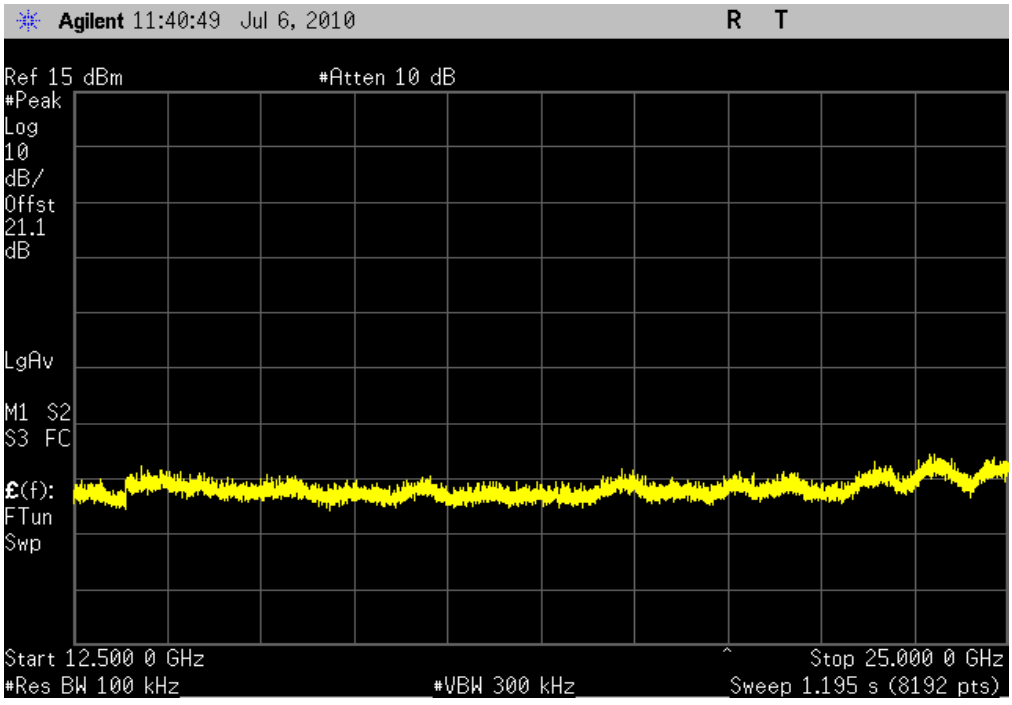

| 802.11(g) 54 Mbps, High Channel, 12.5 GHz - 25 GHz | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | < -40 dBc | **Limit:** | ≤ -20 dBc |



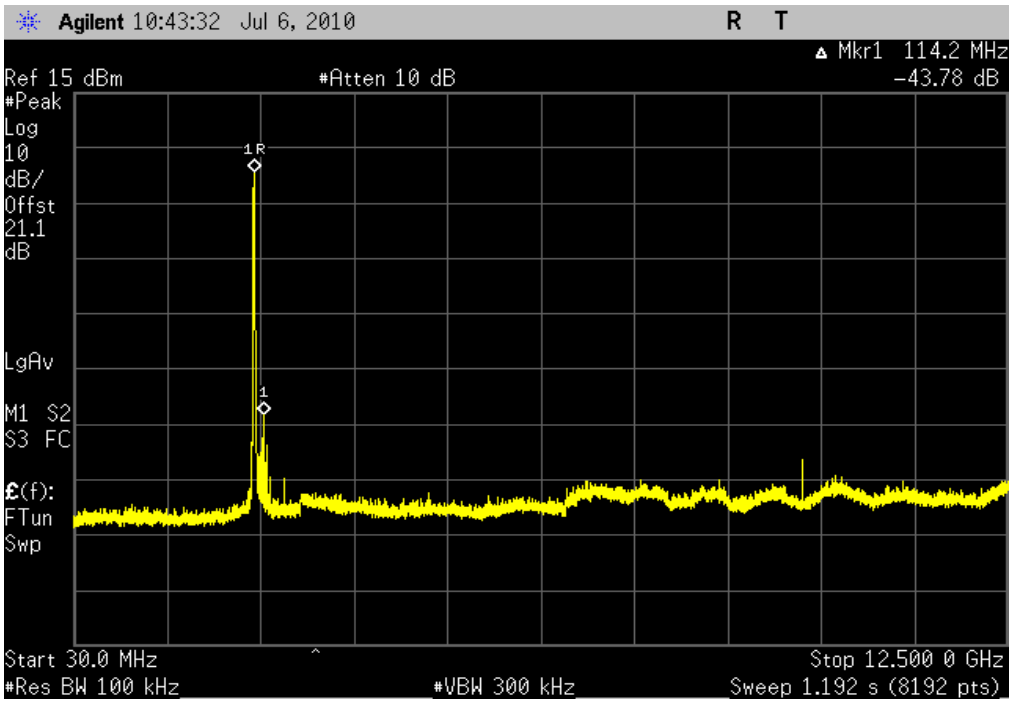
| 802.11(n) MCS0, Low Channel, 30 MHz - 12.5 GHz | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | < -40 dBc | **Limit:** | ≤ -20 dBc |



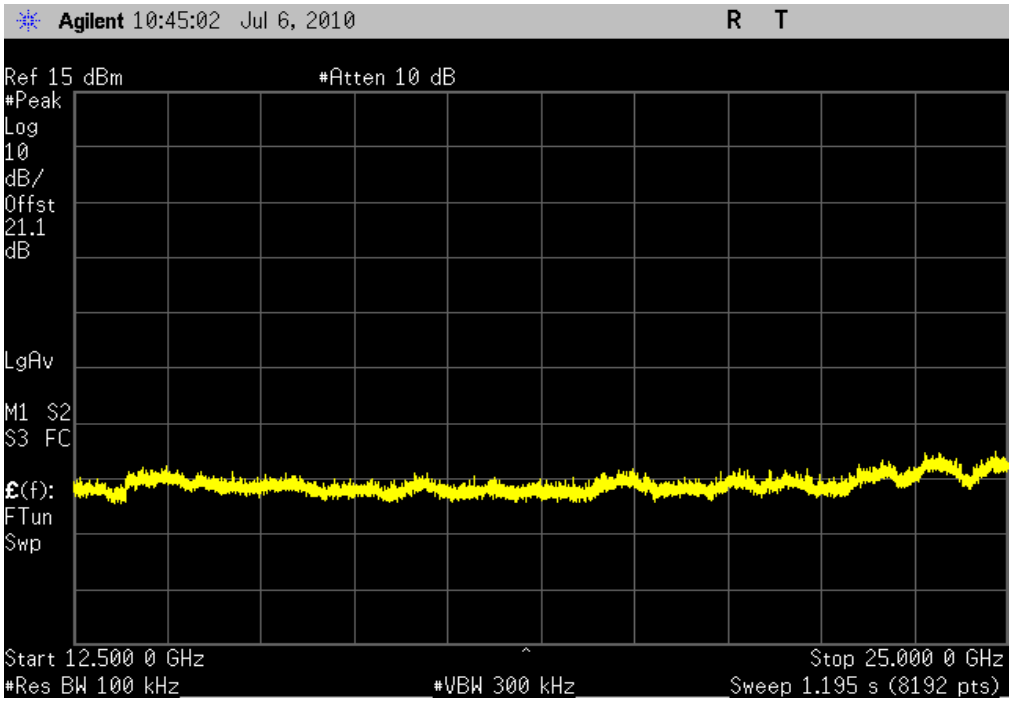

| 802.11(n) MCS0, Low Channel, 12.5 GHz - 25 GHz | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | < -40 dBc | **Limit:** | ≤ -20 dBc |



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

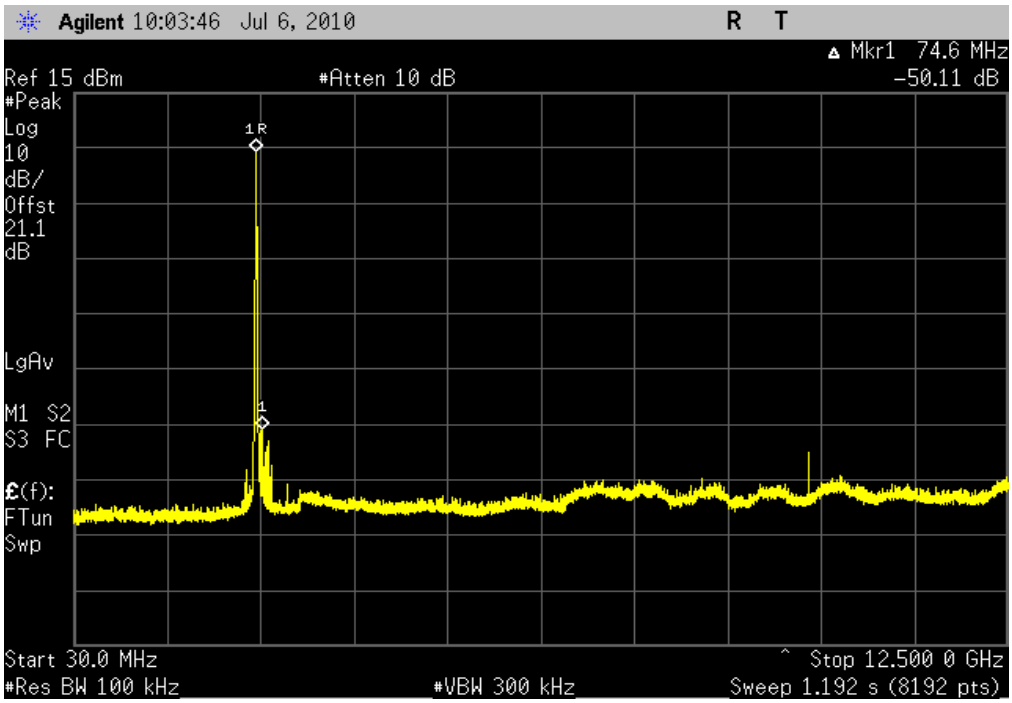



| 802.11(n) MCS0, Mid Channel, 12.5 GHz - 25 GHz | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | < -40 dBc | **Limit:** | ≤ -20 dBc |

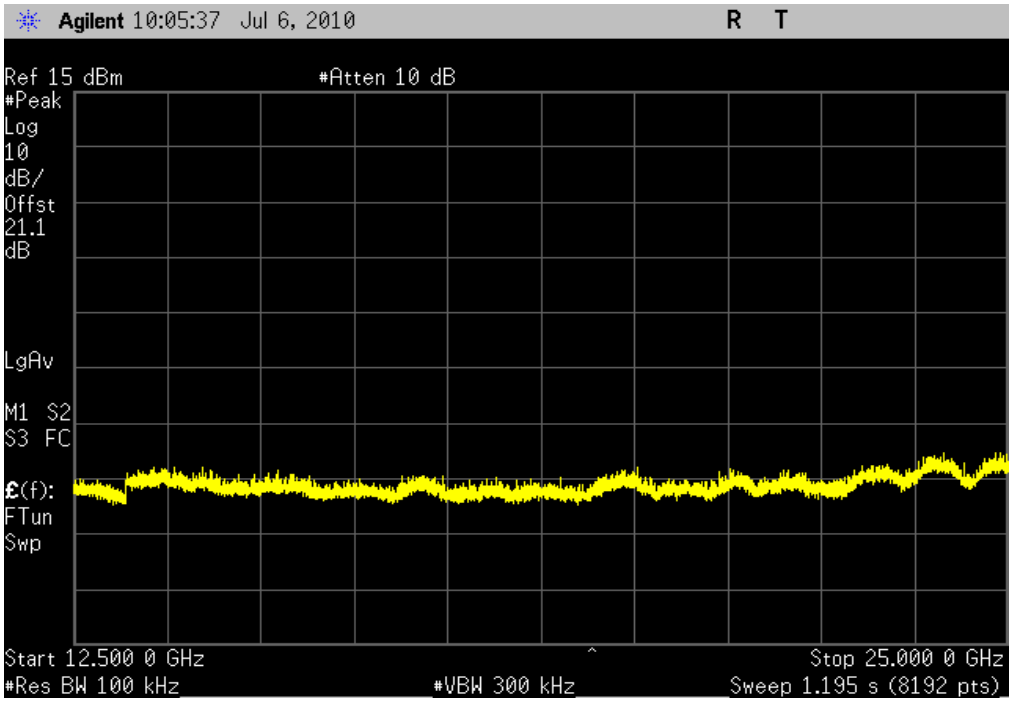


# SPURIOUS CONDUCTED EMISSIONS

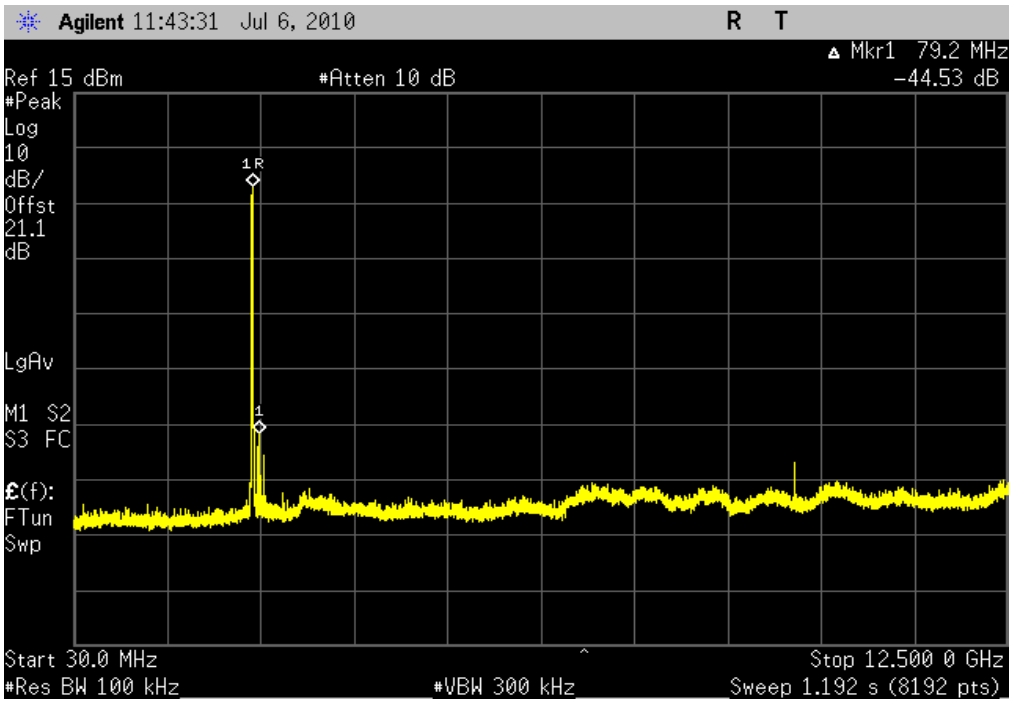
| 802.11(n) MCS0, High Channel, 30 MHz - 12.5 GHz | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | < -40 dBc | **Limit:** | ≤ -20 dBc |



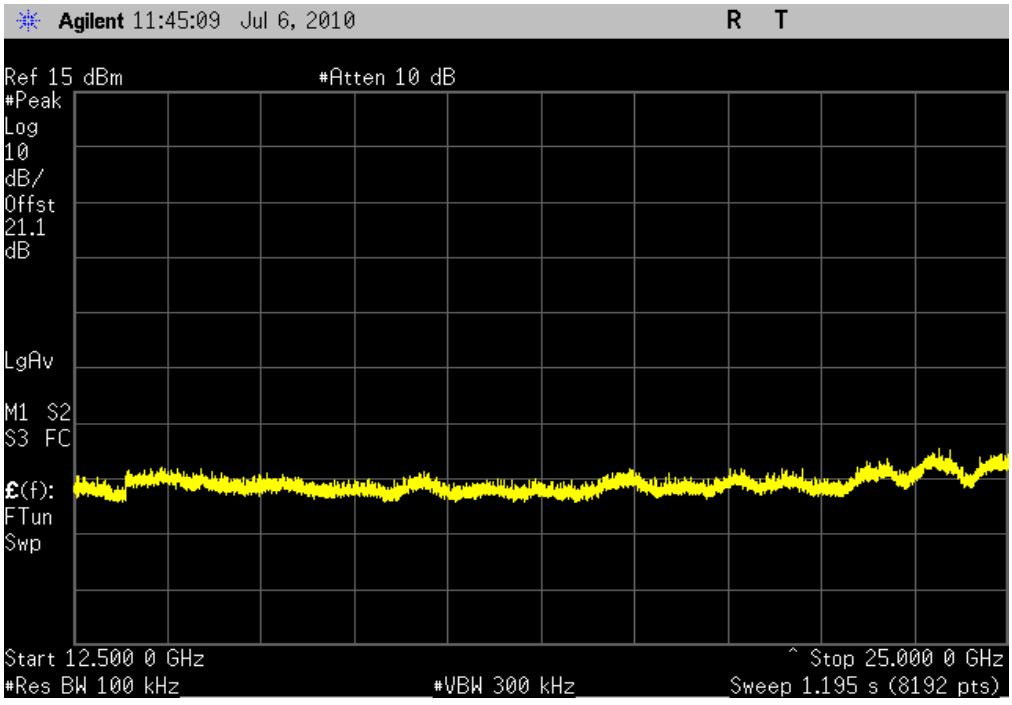

| 802.11(n) MCS0, High Channel, 12.5 GHz - 25 GHz | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | < -40 dBc | **Limit:** | ≤ -20 dBc |



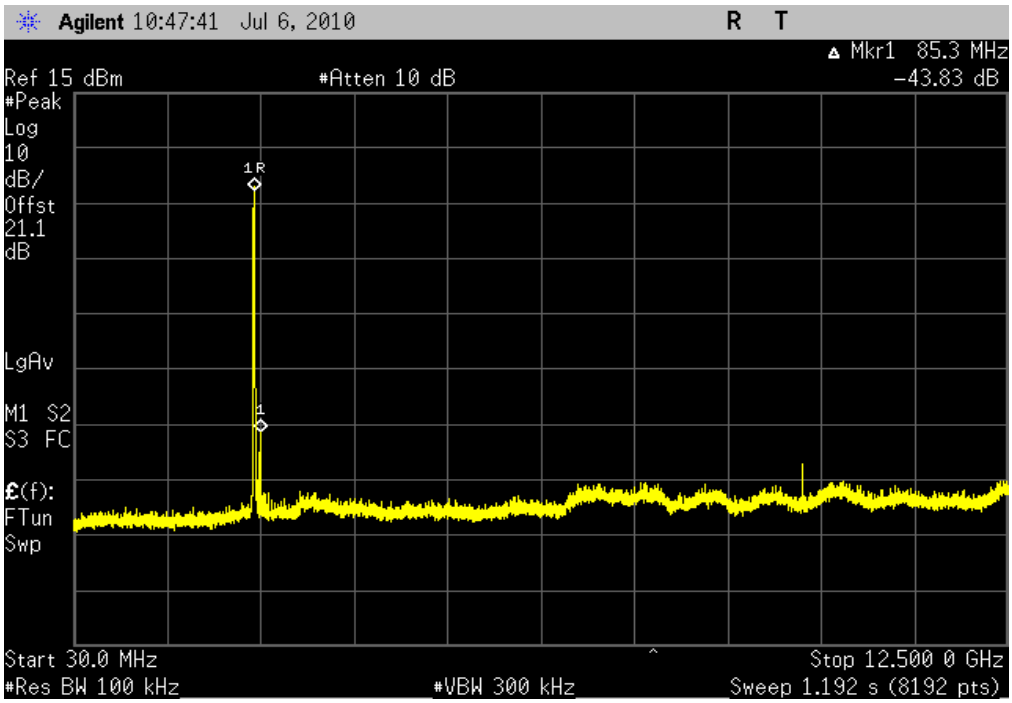
| 802.11(n) MCS7, Low Channel, 30 MHz - 12.5 GHz | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | < -40 dBc | **Limit:** | ≤ -20 dBc |



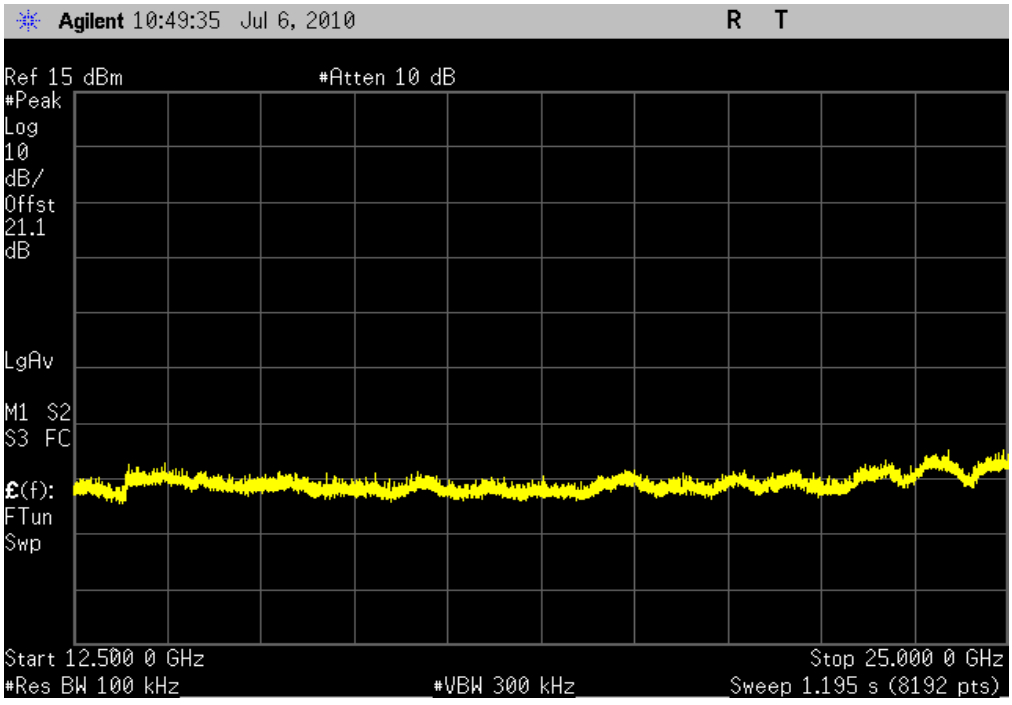

| 802.11(n) MCS7, Low Channel, 12.5 GHz - 25 GHz | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | < -40 dBc | **Limit:** | ≤ -20 dBc |



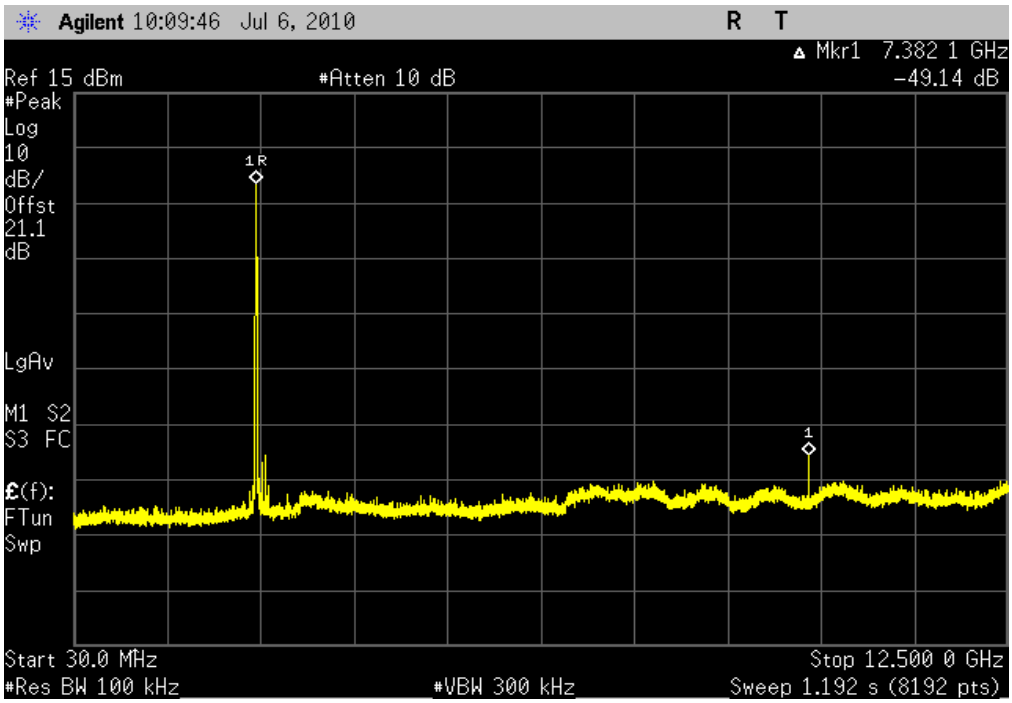
| 802.11(n) MCS7, Mid Channel, 30 MHz - 12.5 GHz | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | < -40 dBc | **Limit:** | ≤ -20 dBc |



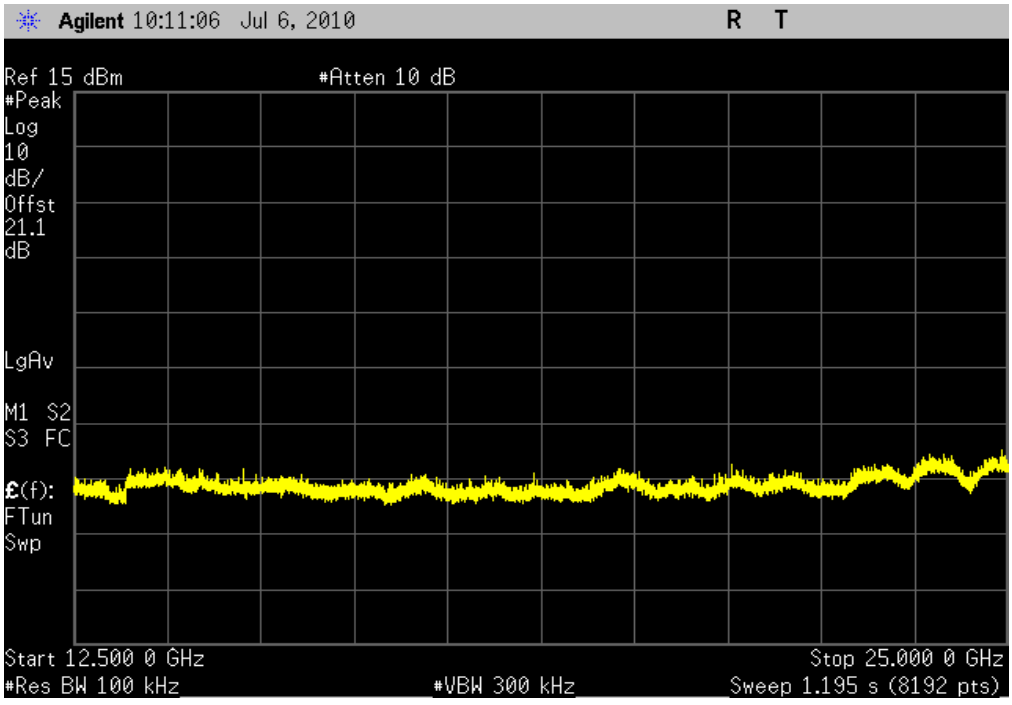

| 802.11(n) MCS7, Mid Channel, 12.5 GHz - 25 GHz | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | < -40 dBc | **Limit:** | ≤ -20 dBc |



| 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 |



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 x $10^6$ ÷ 3 x $10^3$ = 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

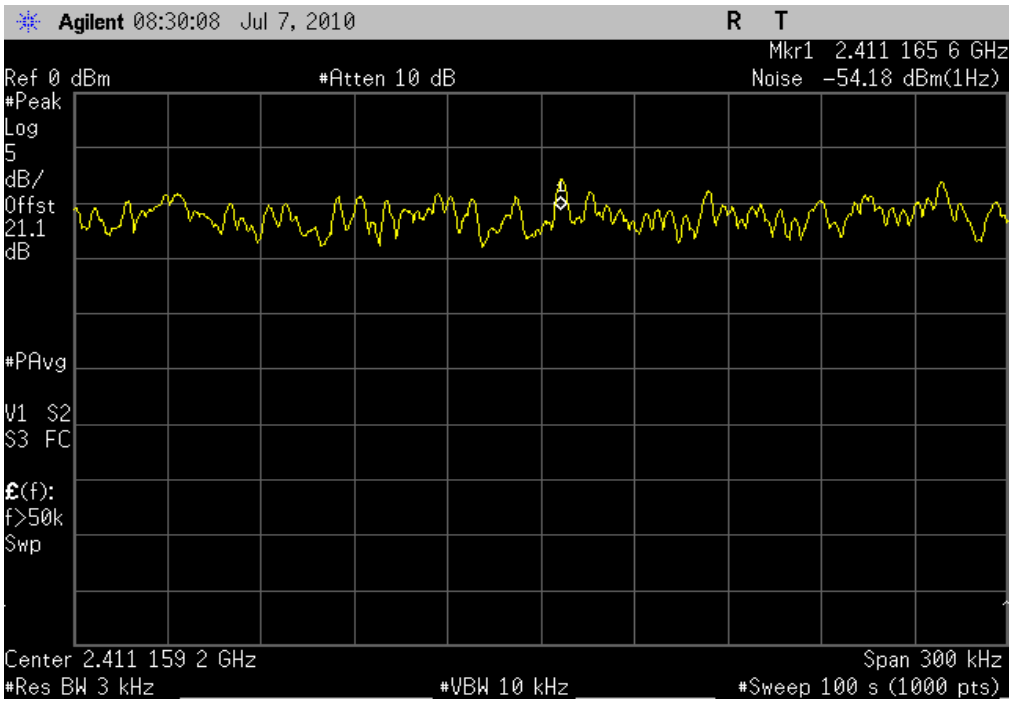
**DEVIATIONS FROM TEST STANDARD**

No Deviations

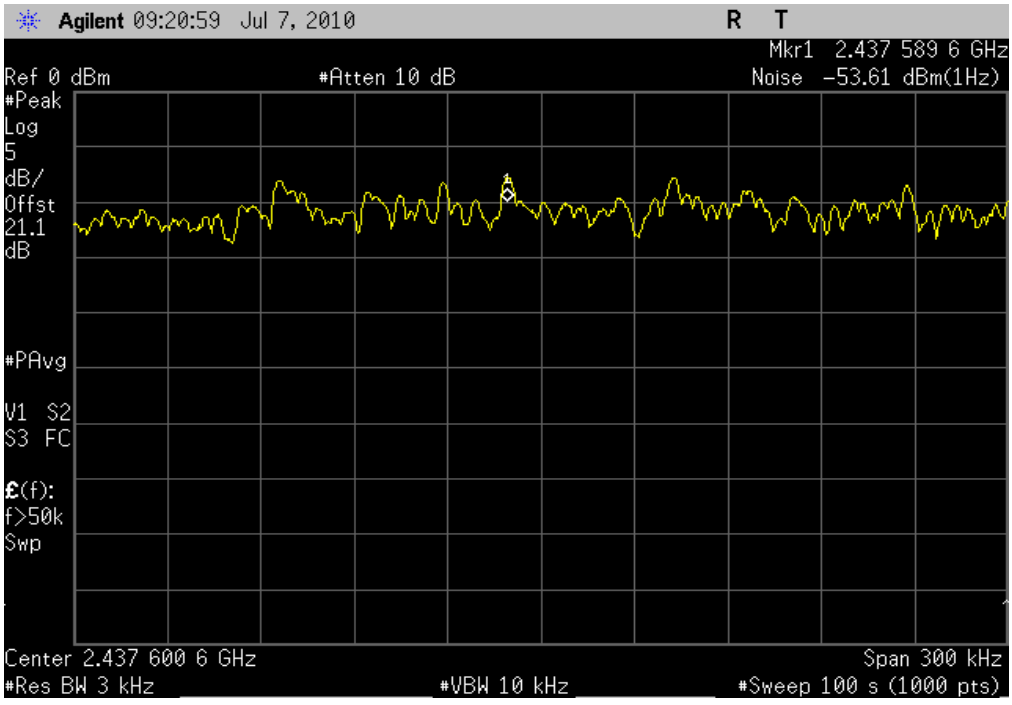
| Configuration # | 2 | Signature | Trevor Buls |
|---|---|---|---|

| | | 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 |

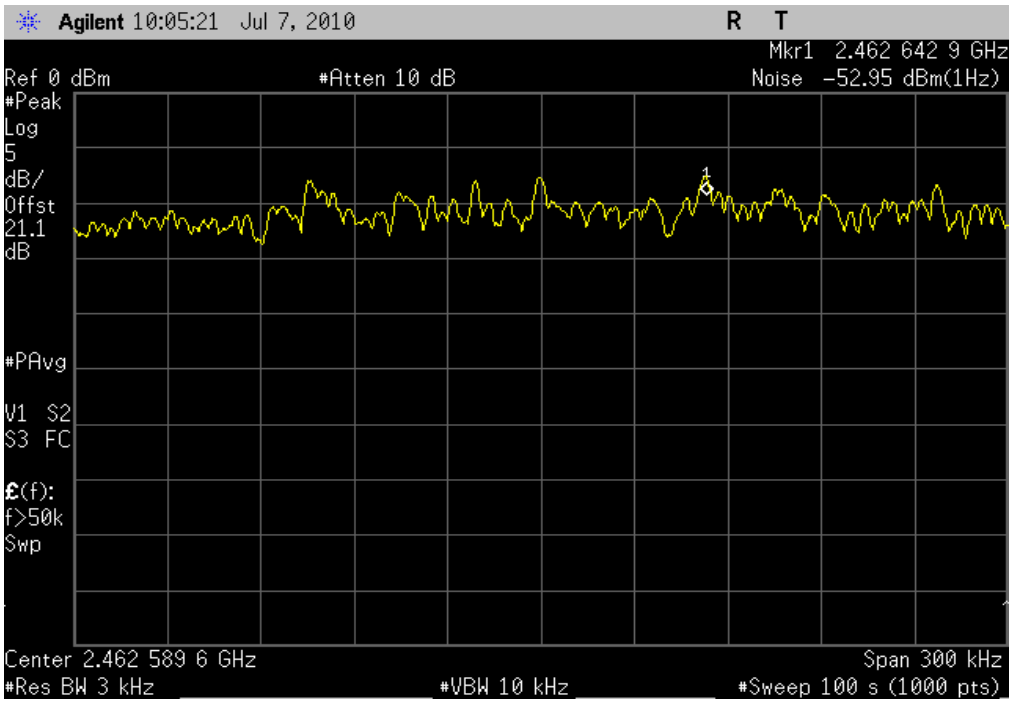
| 802.11(b) 1 Mbps, Low Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | -19.18 dBm / 3 kHz | **Limit:** | 8 dBm / 3 kHz |



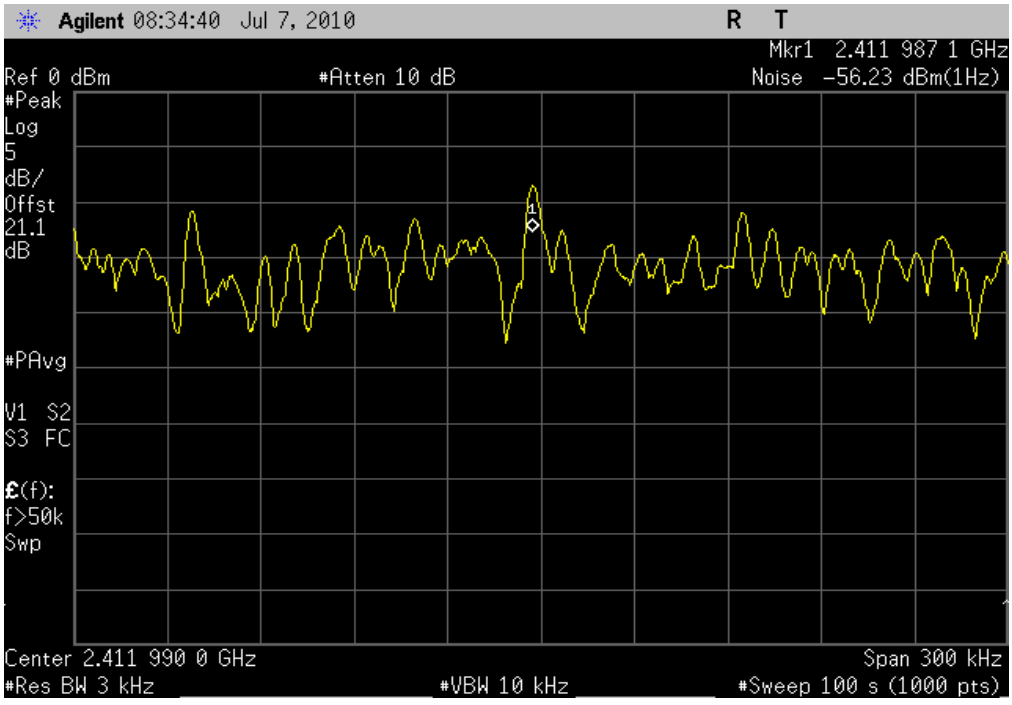

| 802.11(b) 1 Mbps, Mid Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | -18.61 dBm / 3 kHz | **Limit:** | 8 dBm / 3 kHz |



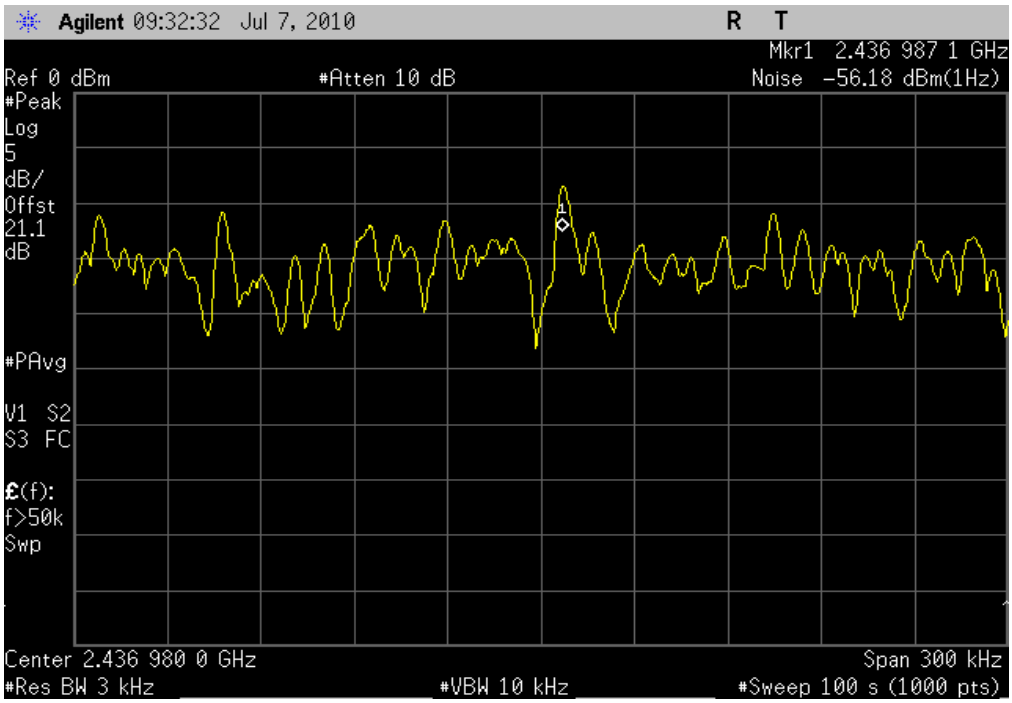
| 802.11(b) 1 Mbps, High Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | -17.95 dBm / 3 kHz | **Limit:** | 8 dBm / 3 kHz |



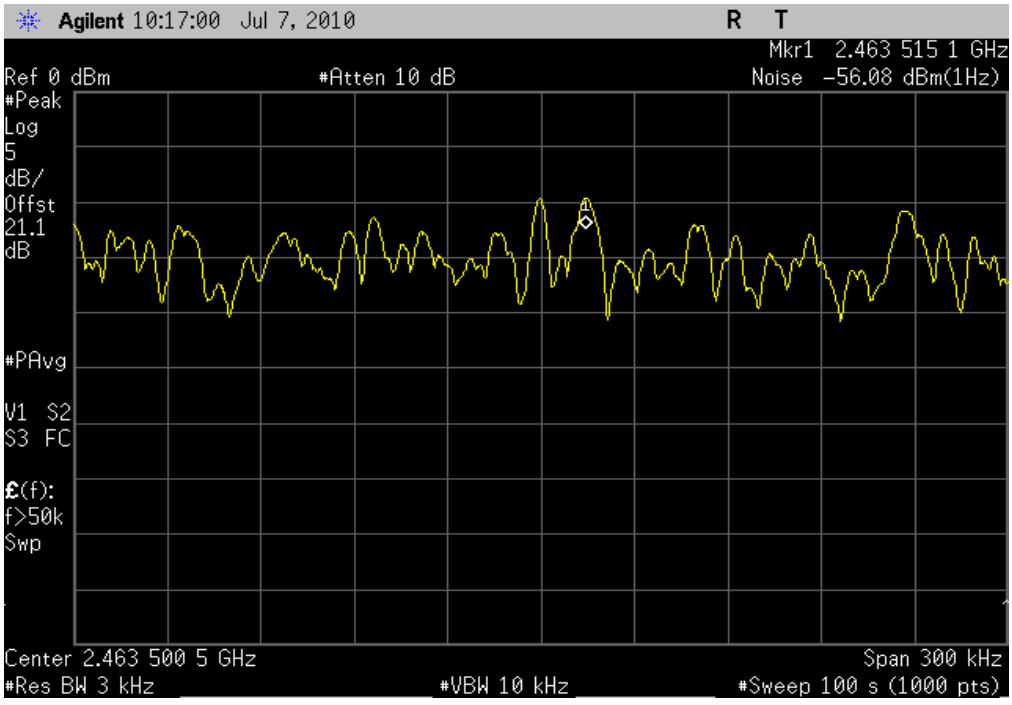

| 802.11(b) 11 Mbps, Low Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | -21.23 dBm / 3 kHz | **Limit:** | 8 dBm / 3 kHz |



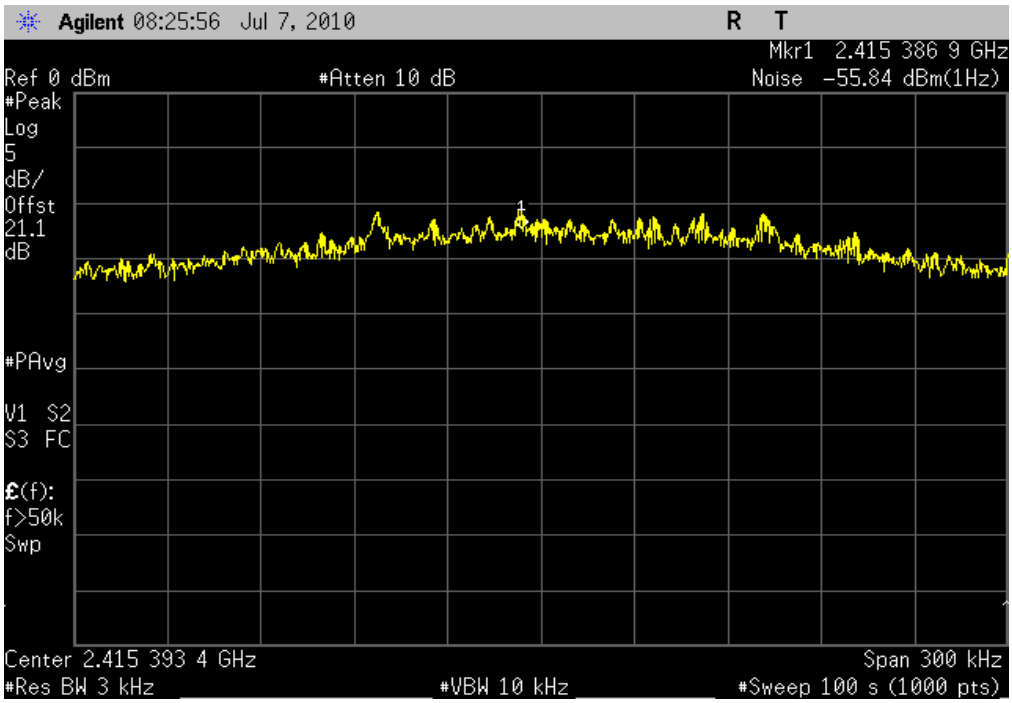
| 802.11(b) 11 Mbps, Mid Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | -21.18 dBm / 3 kHz | **Limit:** | 8 dBm / 3 kHz |



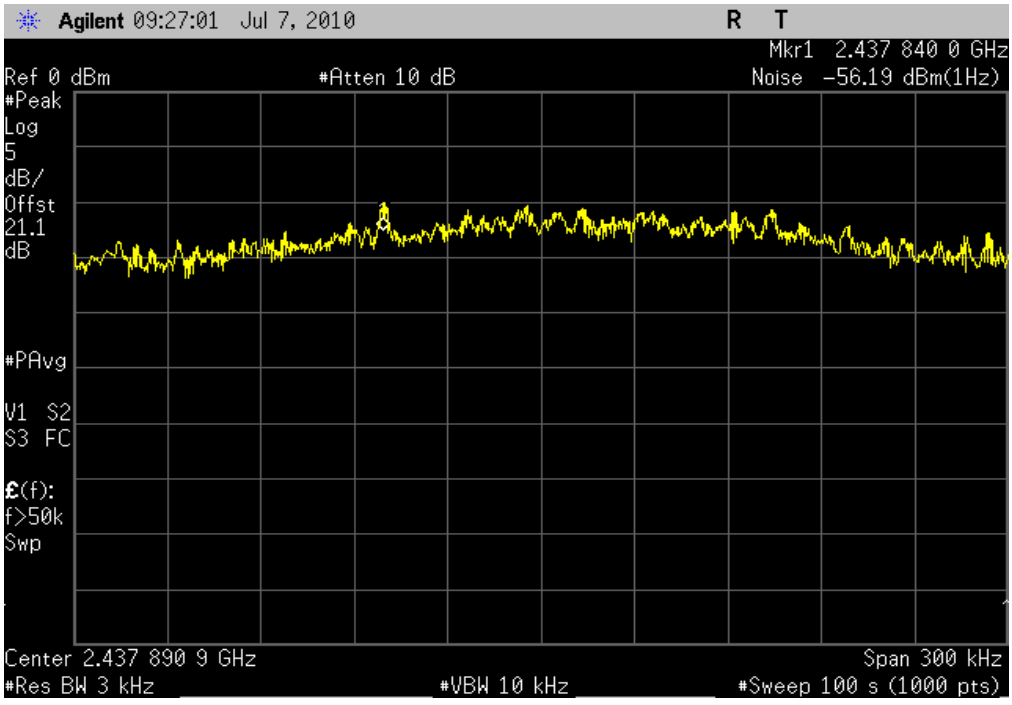

| 802.11(b) 11 Mbps, High Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | -21.08 dBm / 3 kHz | **Limit:** | 8 dBm / 3 kHz |



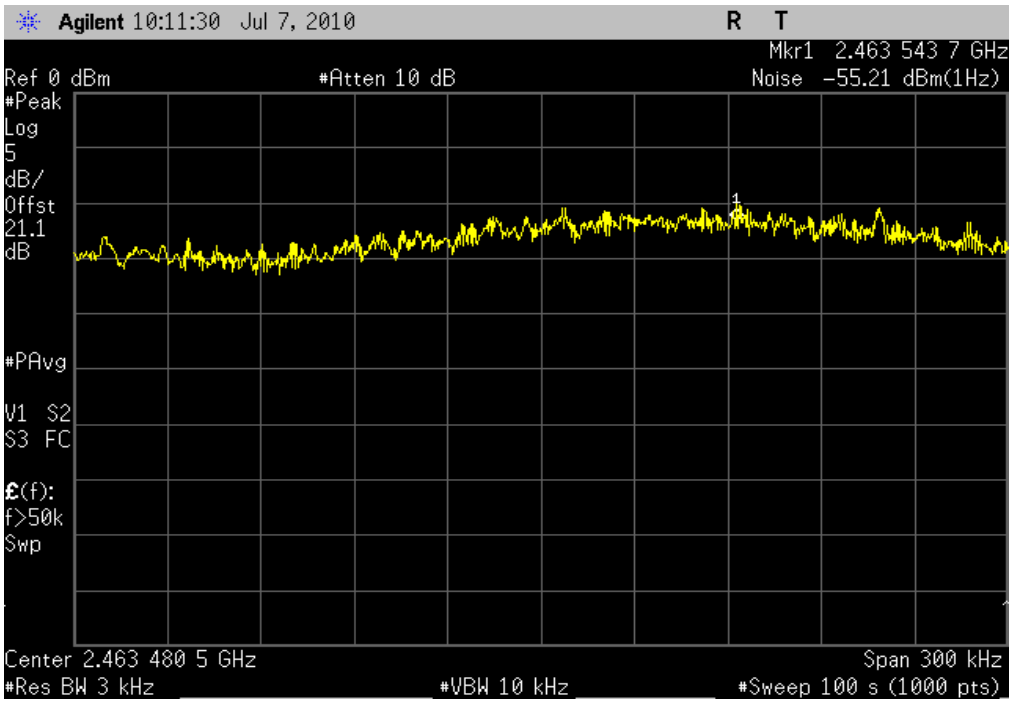
| 802.11(g) 6 Mbps, Low Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | -20.84 dBm / 3 kHz | **Limit:** | 8 dBm / 3 kHz |



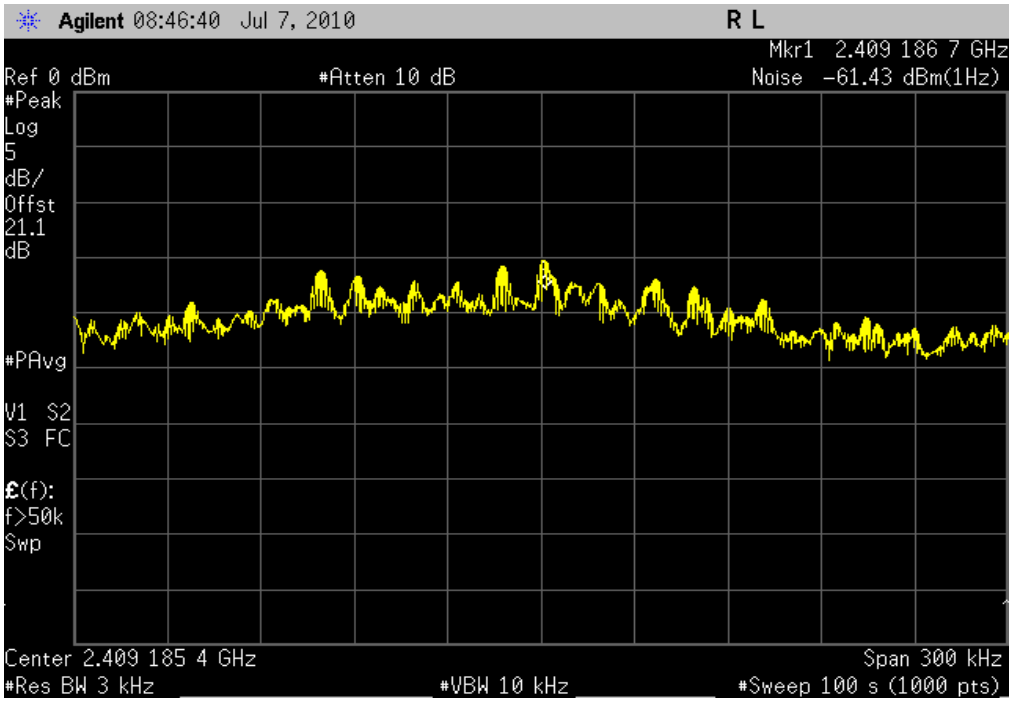

| 802.11(g) 6 Mbps, Mid Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | -21.19 dBm / 3 kHz | **Limit:** | 8 dBm / 3 kHz |



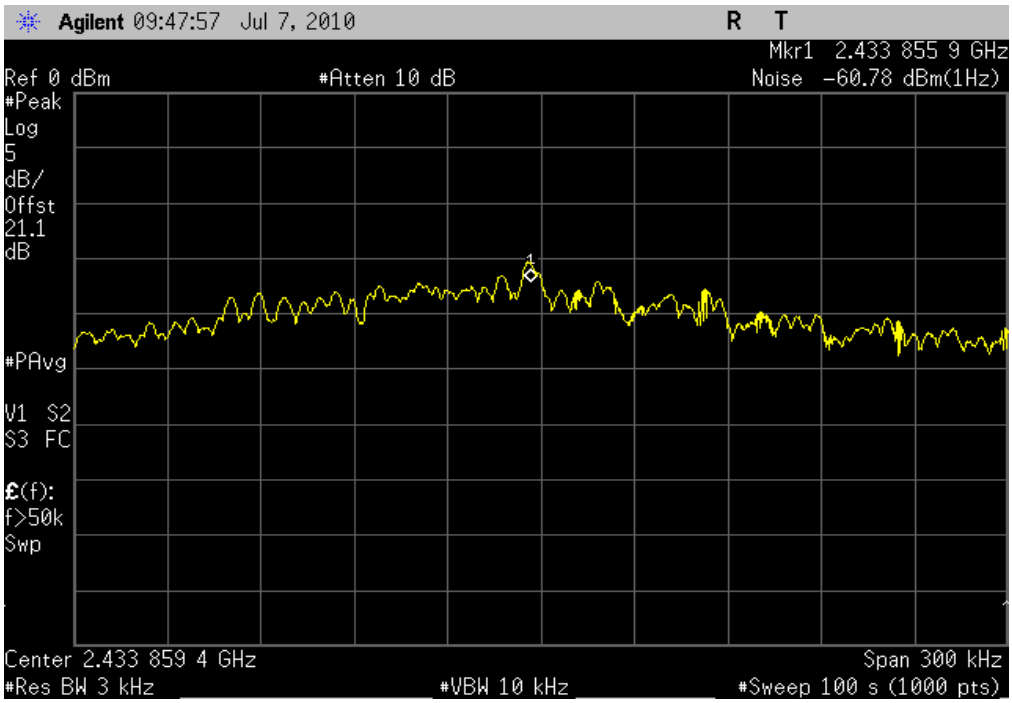
| 802.11(g) 6 Mbps, High Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | -20.21 dBm / 3 kHz | **Limit:** | 8 dBm / 3 kHz |



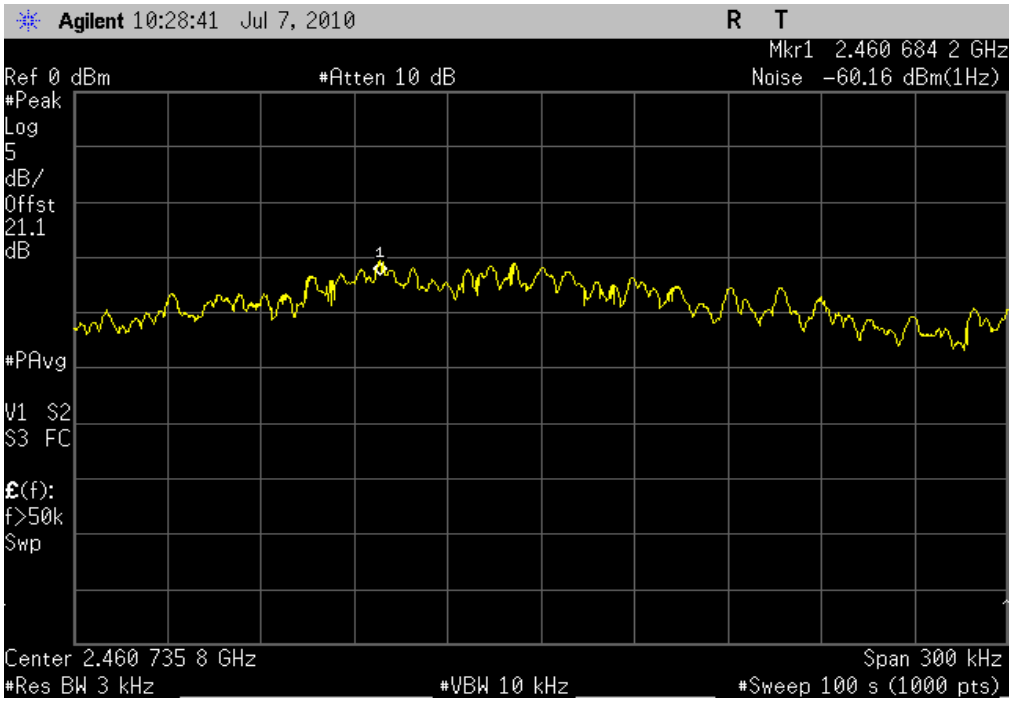

| 802.11(g) 54 Mbps, Low Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | -26.43 dBm / 3 kHz | **Limit:** | 8 dBm / 3 kHz |



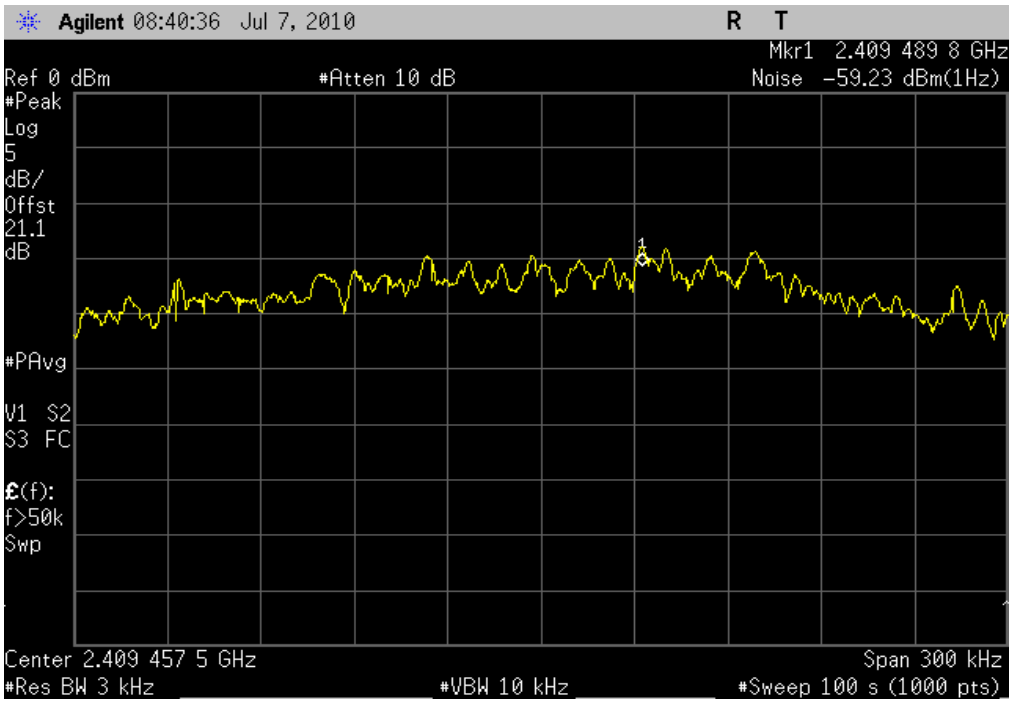
| 802.11(g) 54 Mbps, Mid Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | -25.78 dBm / 3 kHz | **Limit:** | 8 dBm / 3 kHz |



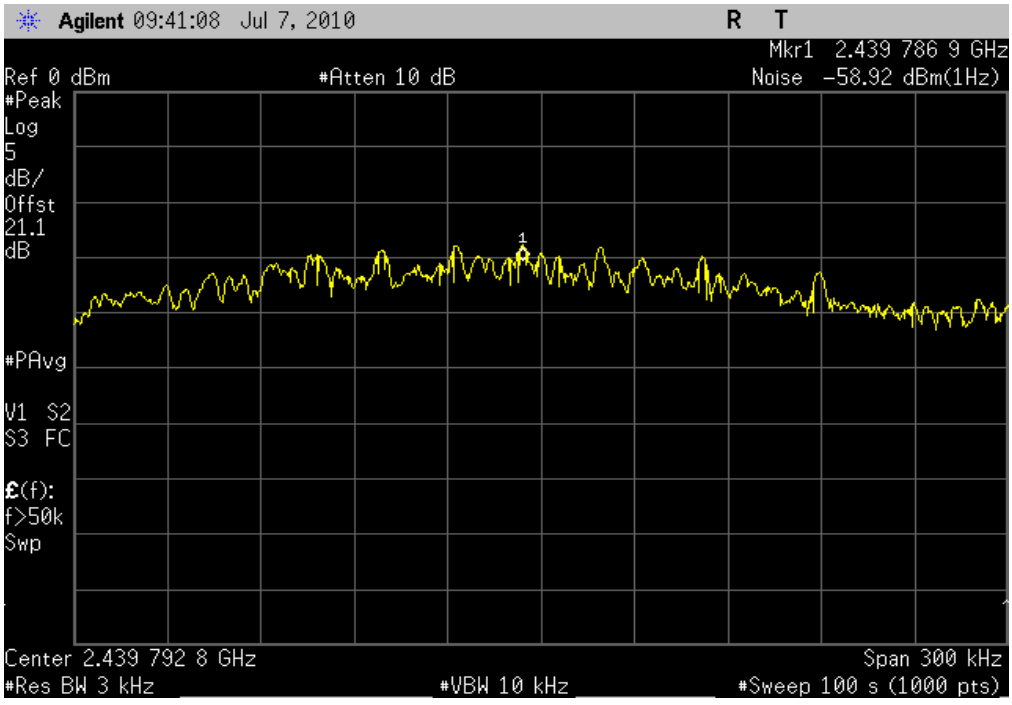

| 802.11(g) 54 Mbps, High Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | -25.16 dBm / 3 kHz | **Limit:** | 8 dBm / 3 kHz |



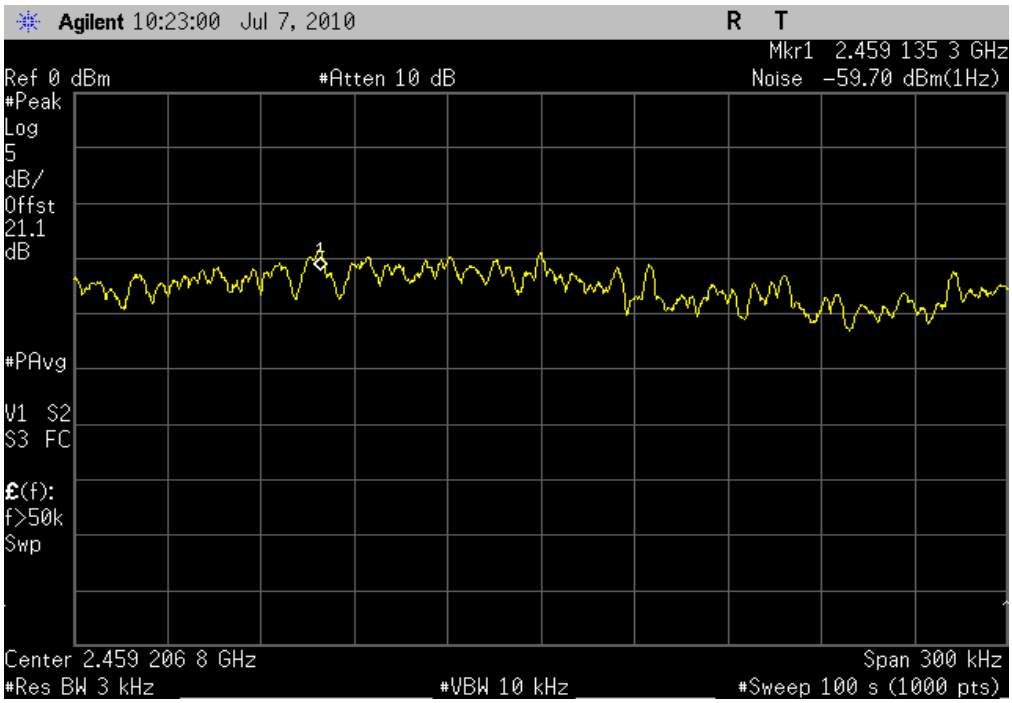
| 802.11(g) 36 Mbps, Low Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | -24.23 dBm / 3 kHz | **Limit:** | 8 dBm / 3 kHz |



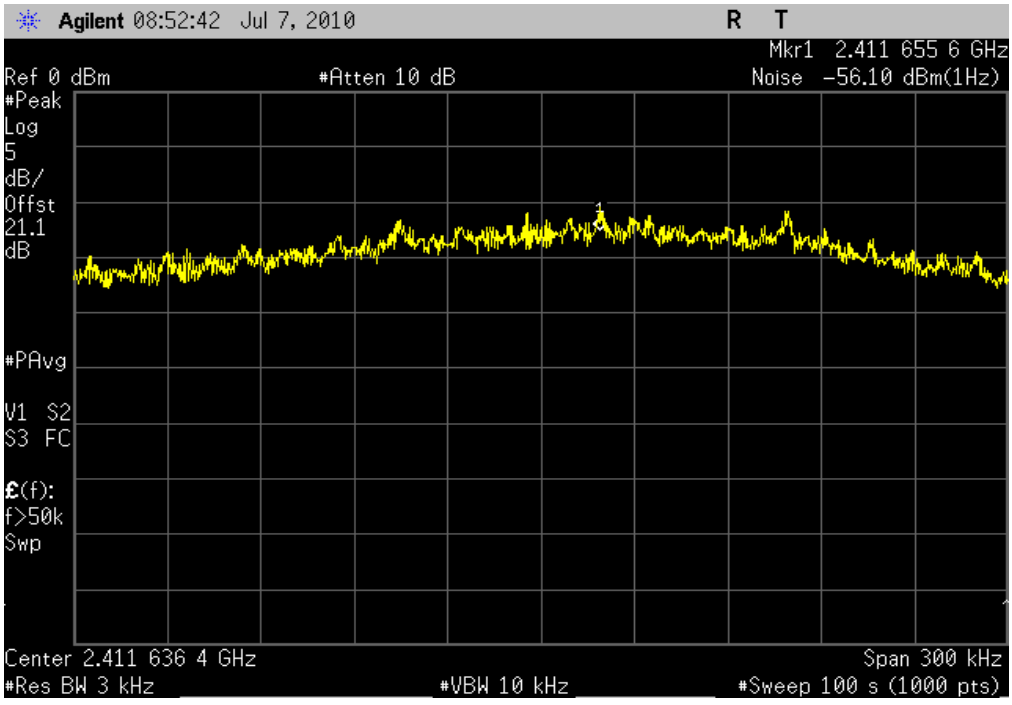

| 802.11(g) 36 Mbps, Mid Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | -23.92 dBm / 3 kHz | **Limit:** | 8 dBm / 3 kHz |



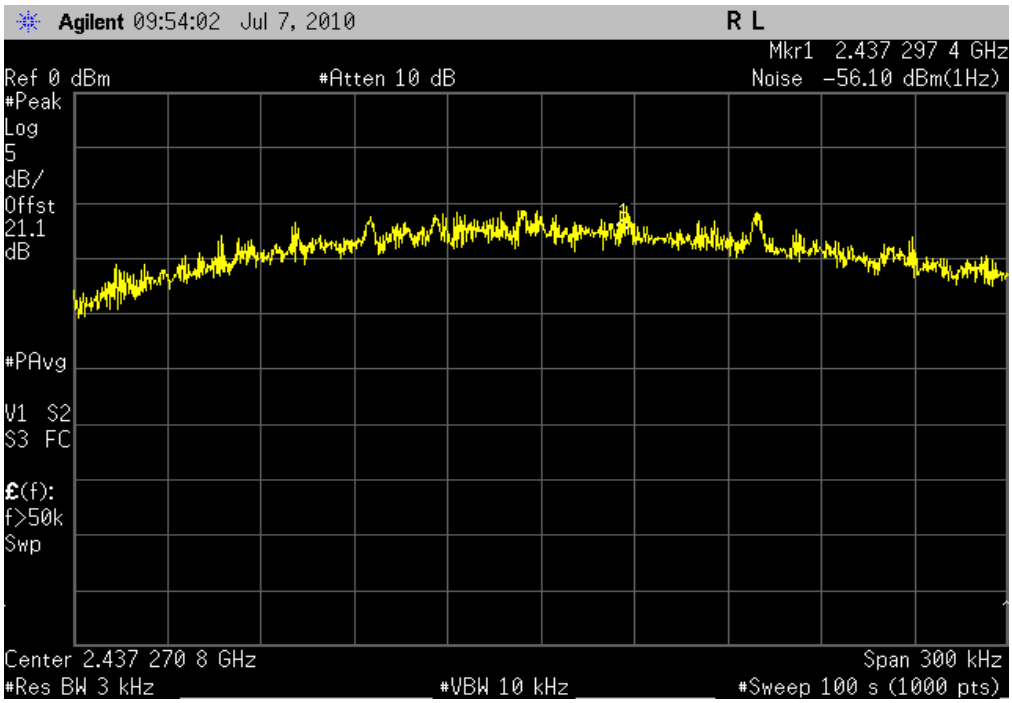
| 802.11(g) 36 Mbps, High Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | -24.70 dBm / 3 kHz | **Limit:** | 8 dBm / 3 kHz |



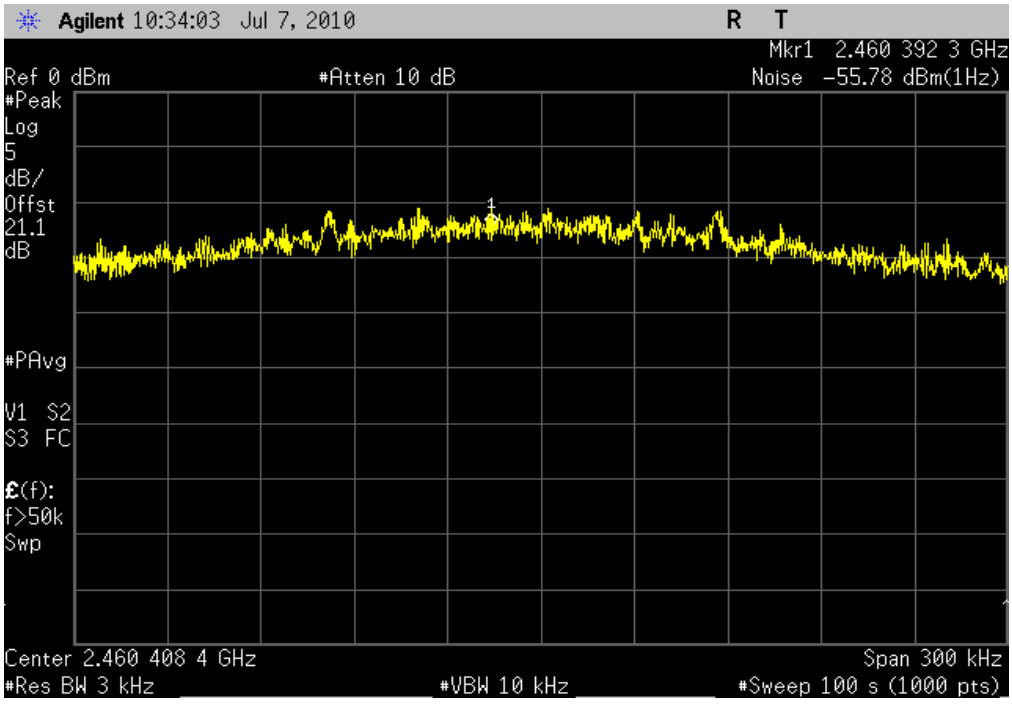

| 802.11(n) MCS0, Low Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | -21.10 dBm / 3 kHz | **Limit:** | 8 dBm / 3 kHz |



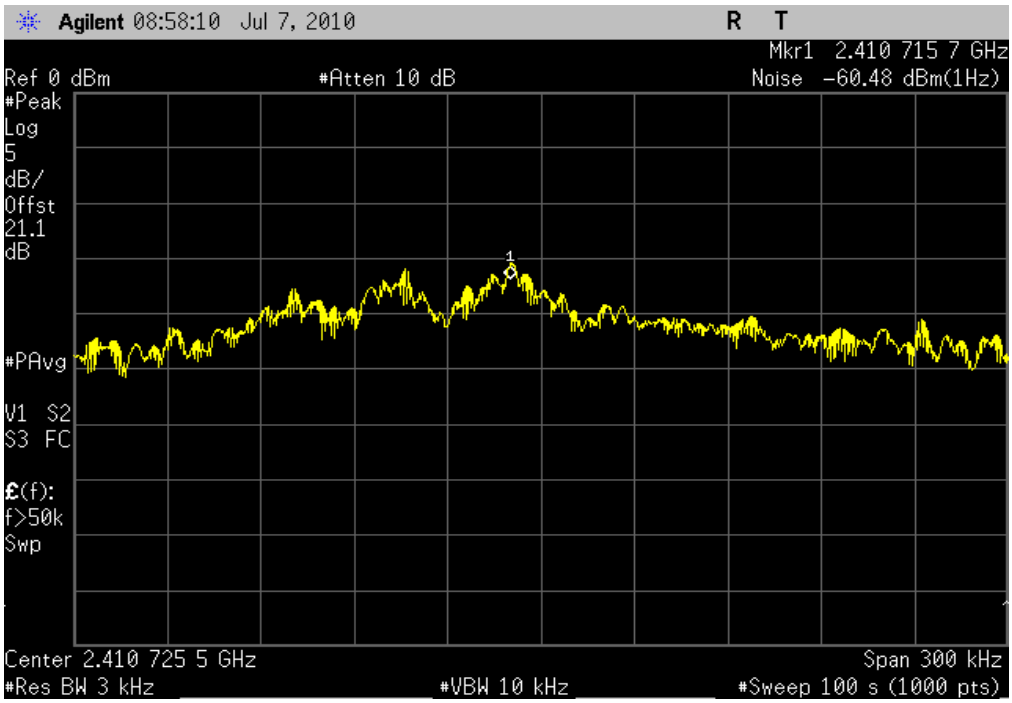
| 802.11(n) MCS0, Mid Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | -21.10 dBm / 3 kHz | **Limit:** | 8 dBm / 3 kHz |



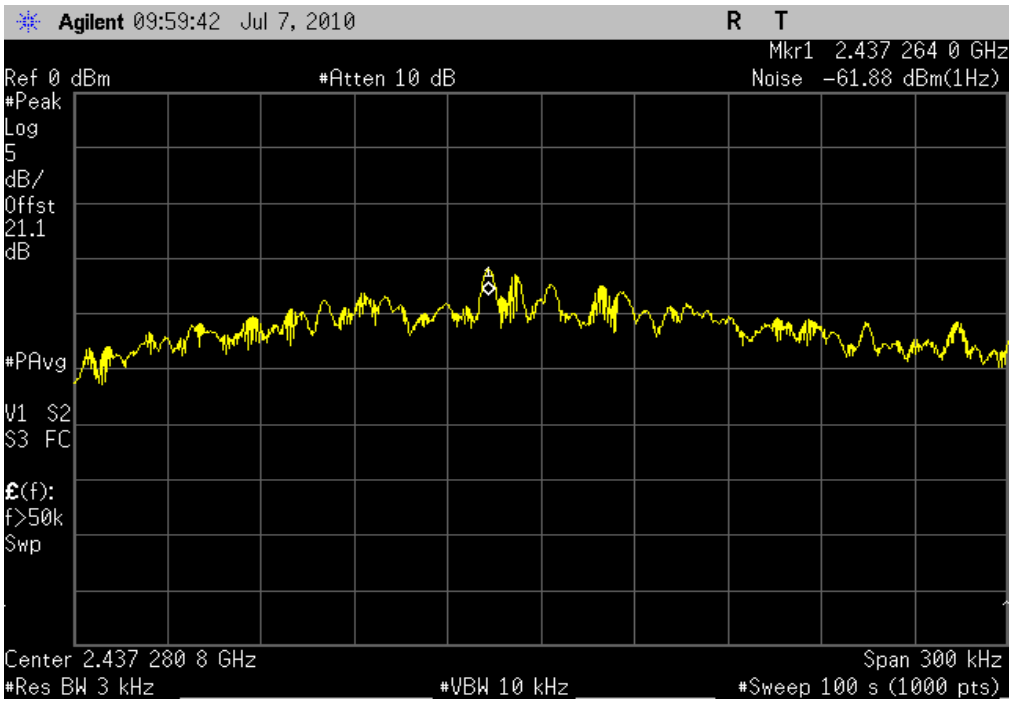

| 802.11(n) MCS0, High Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | -20.78 dBm / 3 kHz | **Limit:** | 8 dBm / 3 kHz |



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



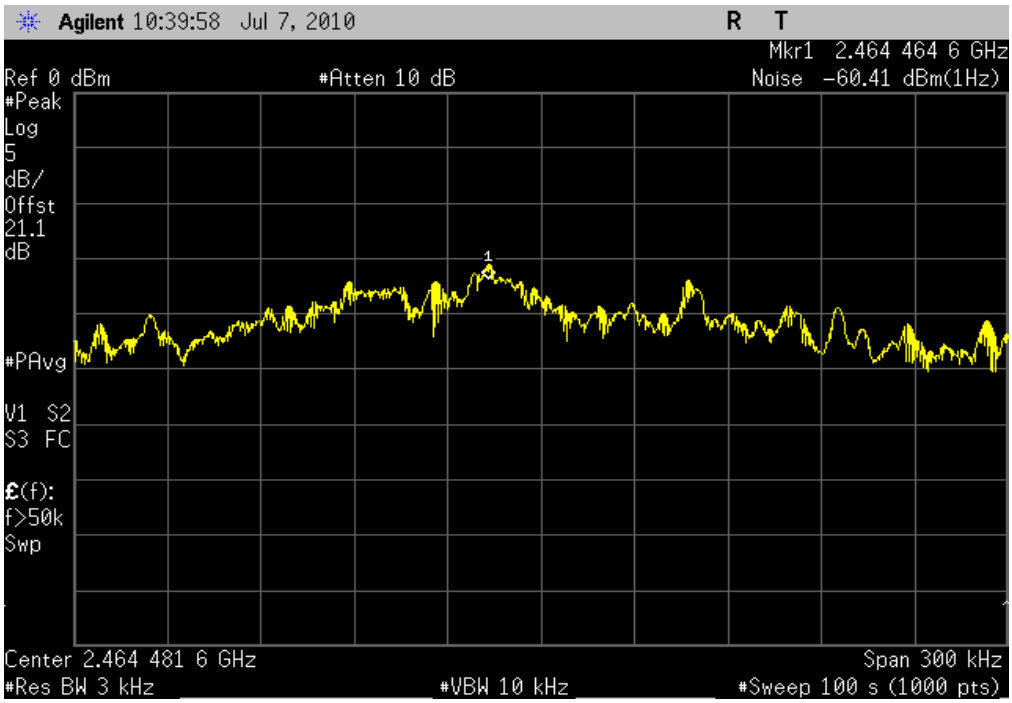

| 802.11(n) MCS7, Mid Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | -26.88 dBm / 3 kHz | **Limit:** | 8 dBm / 3 kHz |



# 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

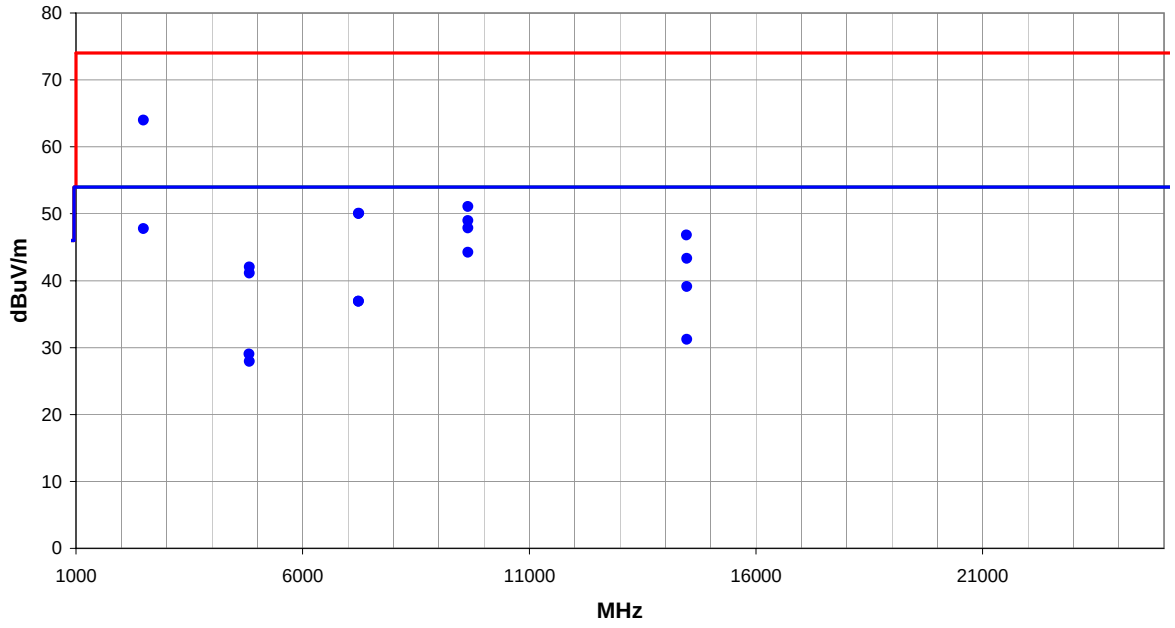
## Spurious Radiated Emissions

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

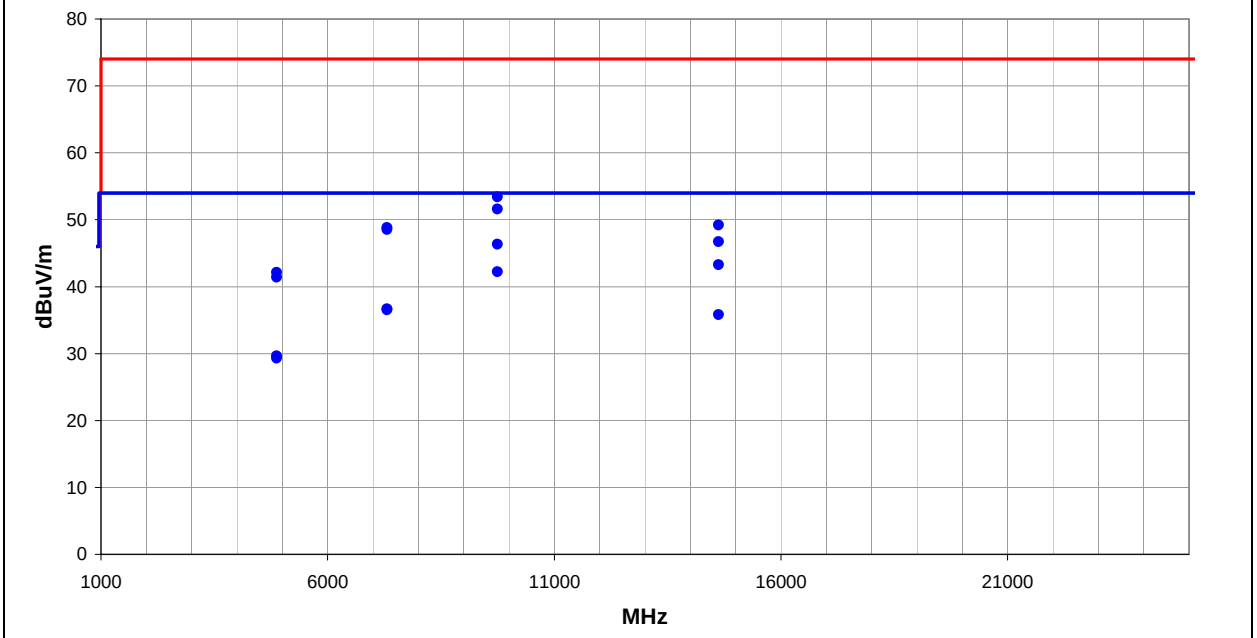
## Spurious Radiated Emissions

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

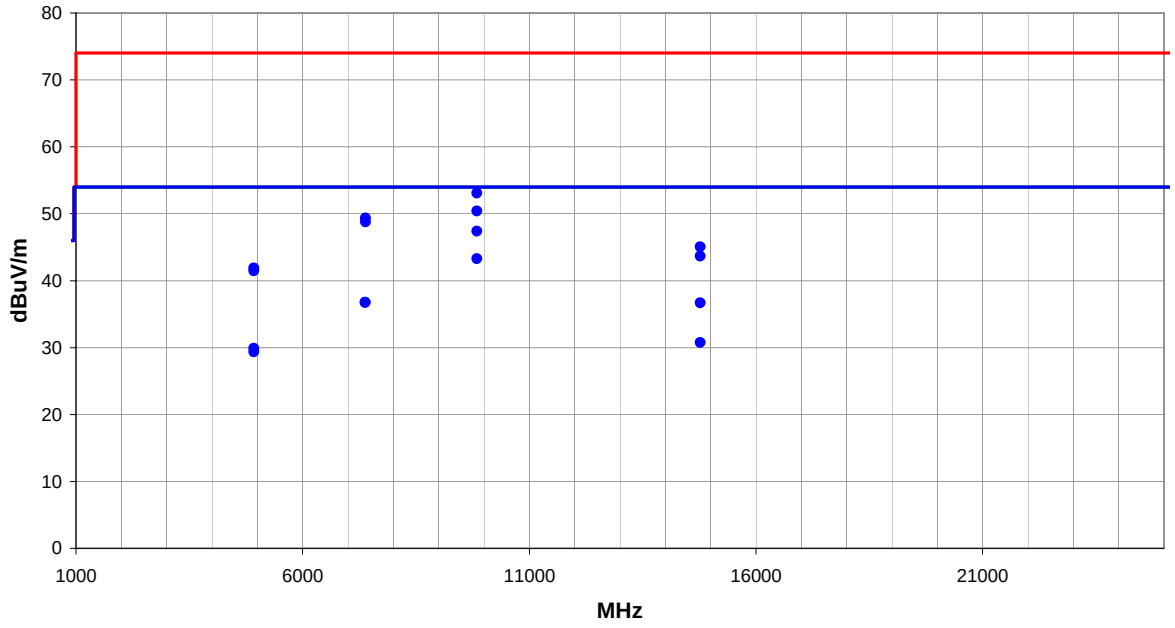
## Spurious Radiated Emissions

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

# EMC

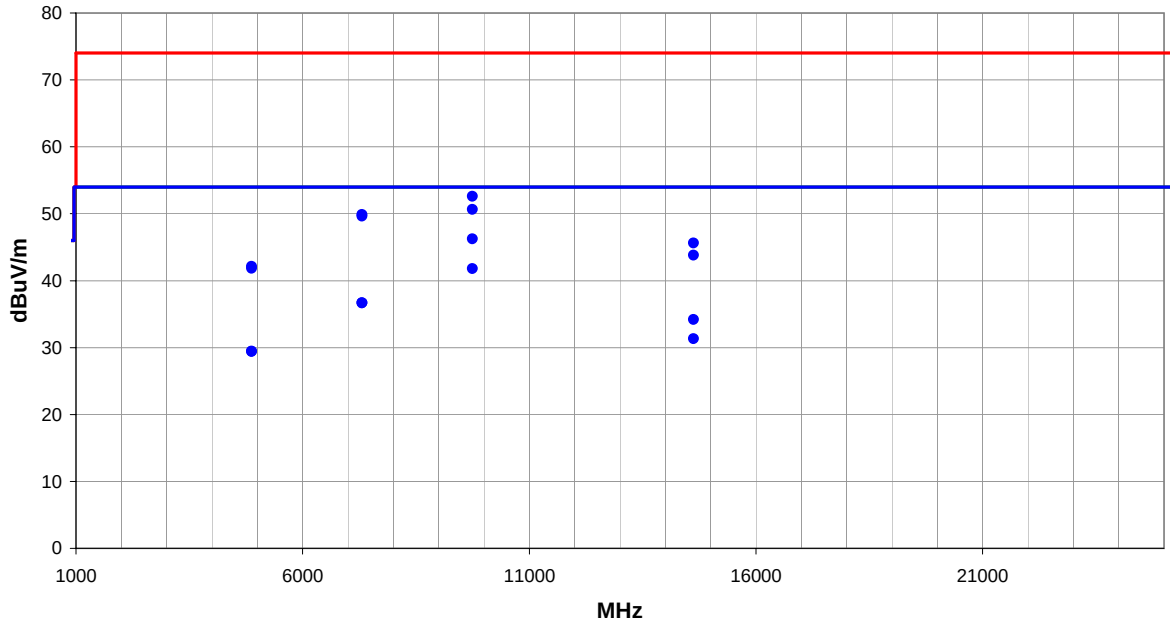
## Spurious Radiated Emissions

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 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

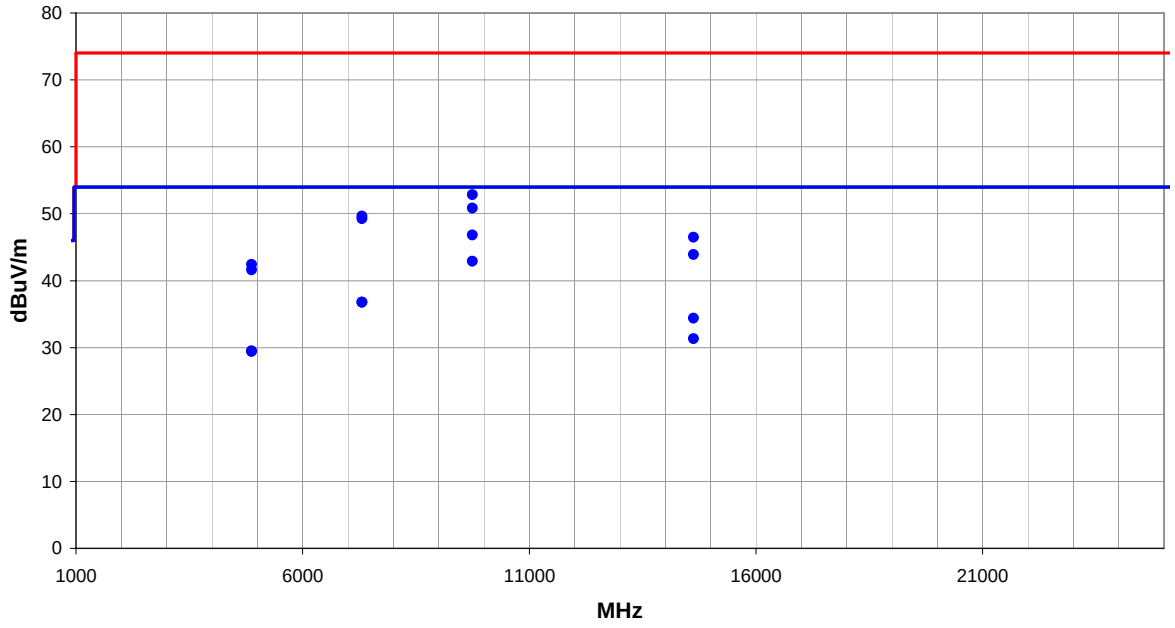
## Spurious Radiated Emissions

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 |

NORTHWEST

# EMC

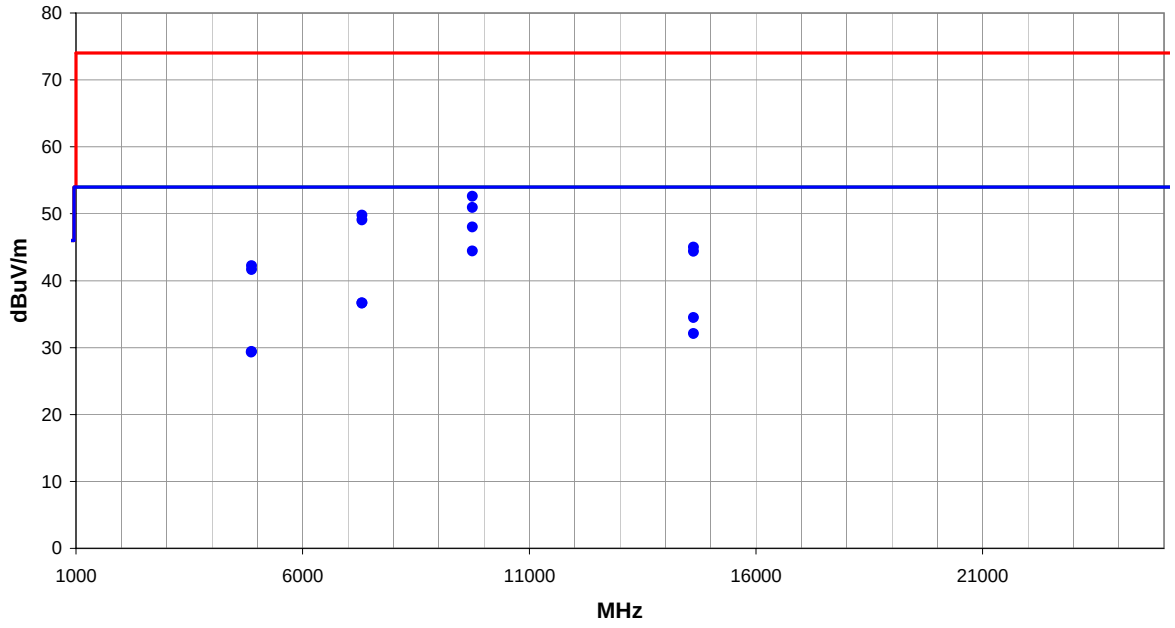
## Spurious Radiated Emissions

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 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 |

NORTHWEST

# EMC

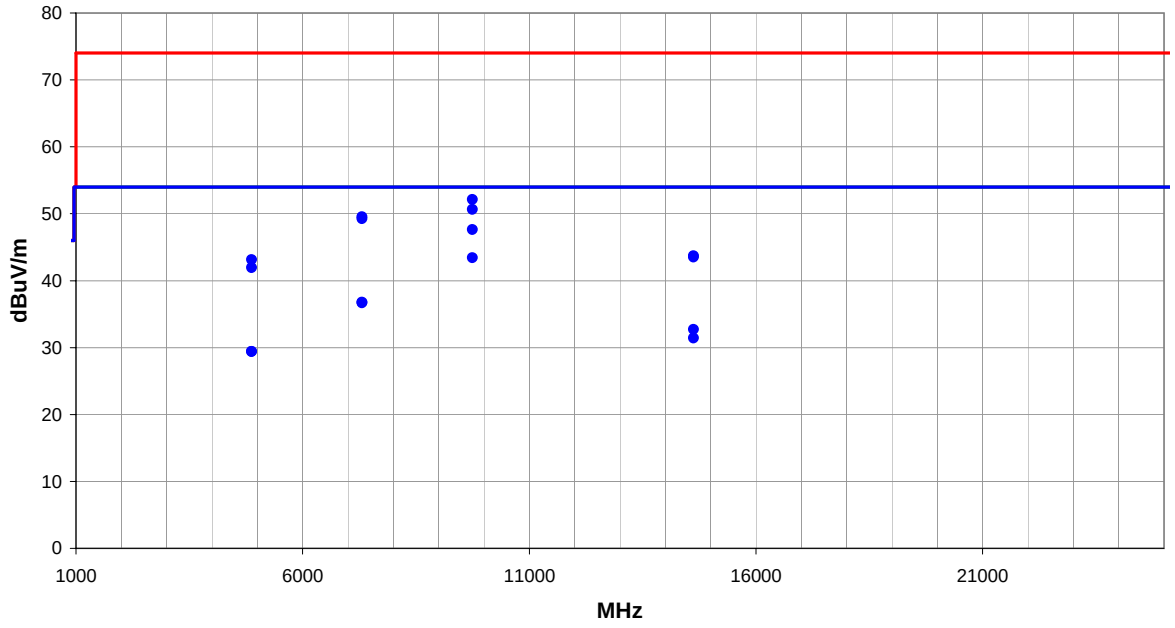
## Spurious Radiated Emissions

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 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 |

NORTHWEST

# EMC

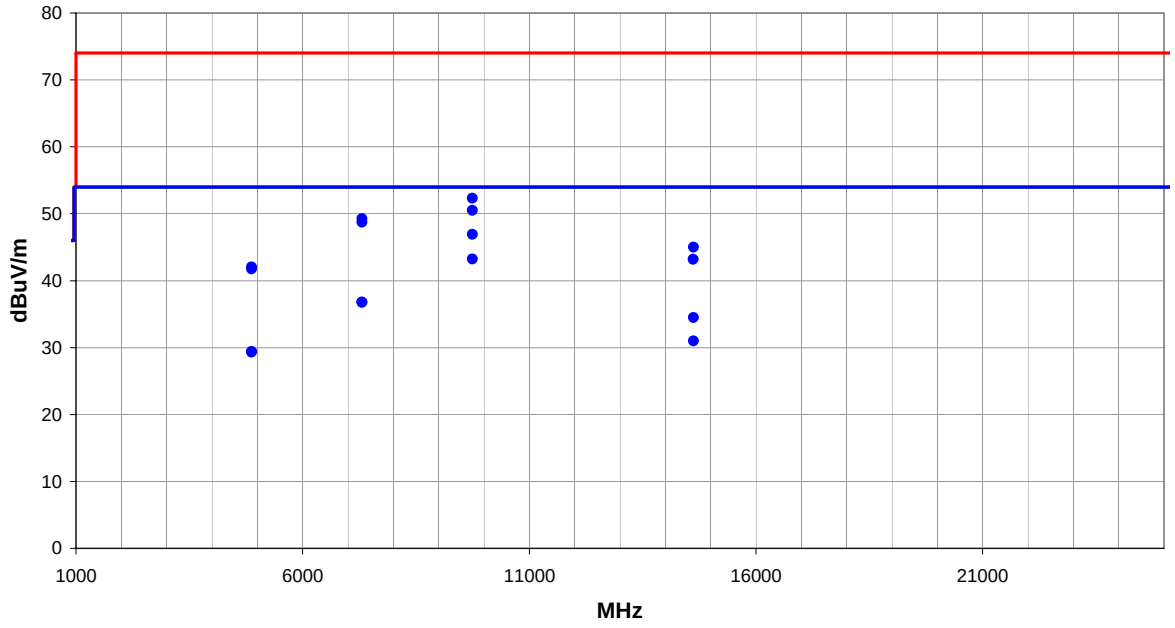
## Spurious Radiated Emissions

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 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 |

NORTHWEST

# EMC

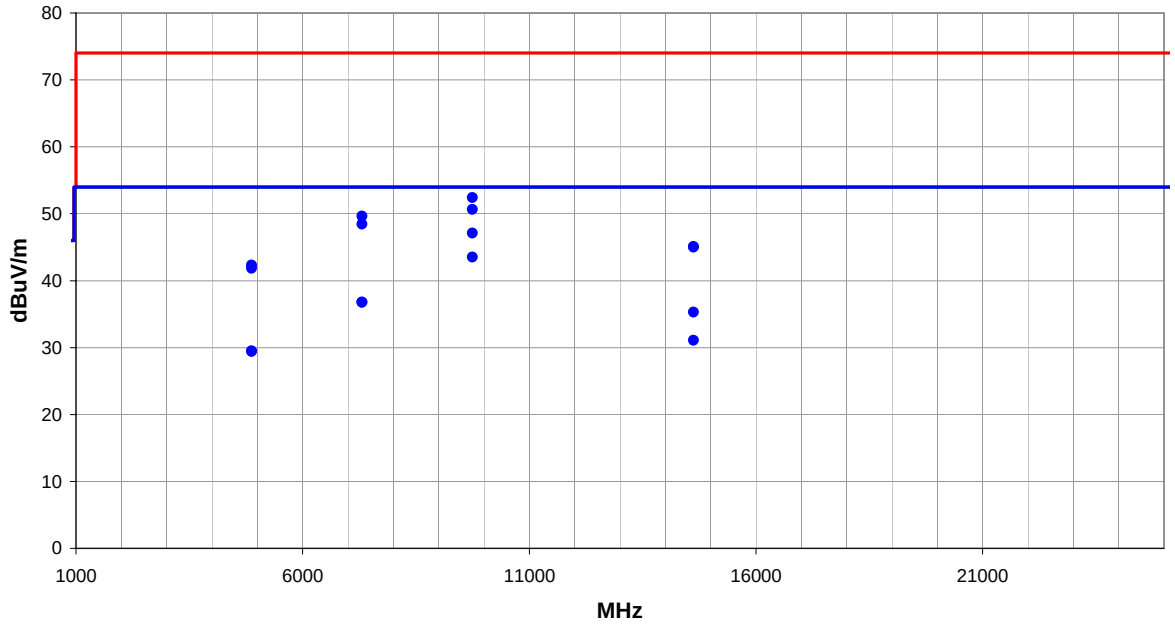
## Spurious Radiated Emissions

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 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 |

NORTHWEST
# EMC

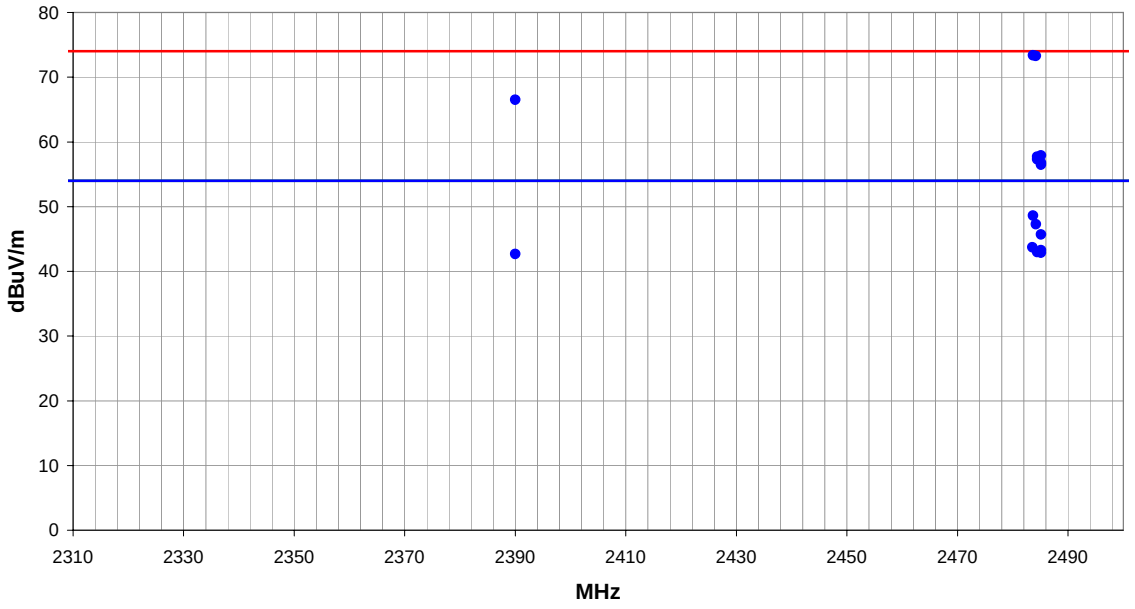
## Spurious Radiated Emissions

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 |

# EMC 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.

NORTHWEST

# EMC

## AC Powerline Conducted Emissions

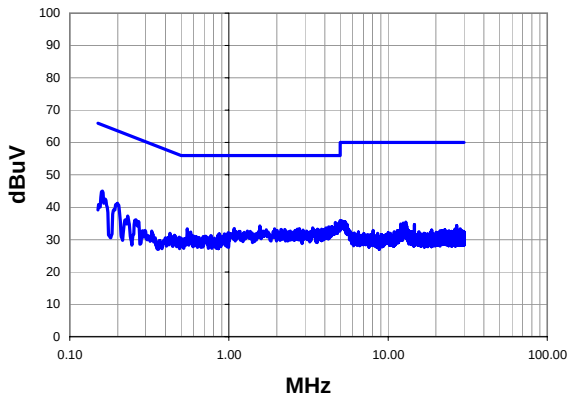
PSA-ESCI 2010.04.06
Version 2010.3.17

| | | | | |
|---|---|---|---|---|
| **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 | | | |

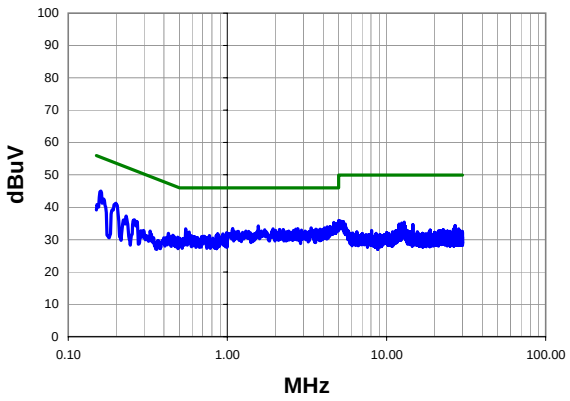
| **Test Specifications** | **Test Method** |
|---|---|
| FCC 15.207:2010 | ANSI C63.10:2009 |

| **Run #** | 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 |

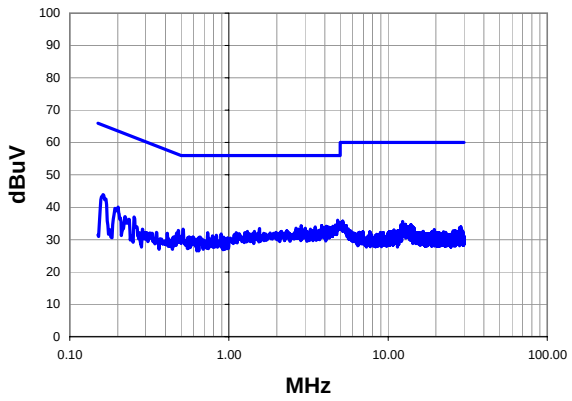
# AC Powerline Conducted Emissions

| | | | | |
|---|---|---|---|---|
| **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 | | | |

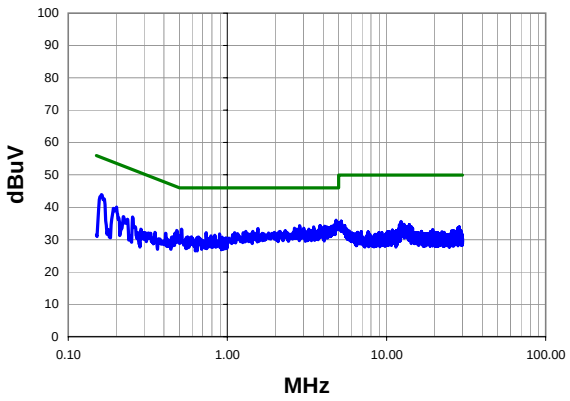
| **Test Specifications** | **Test Method** |
|---|---|
| FCC 15.207:2010 | ANSI C63.10:2009 |

| **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 |

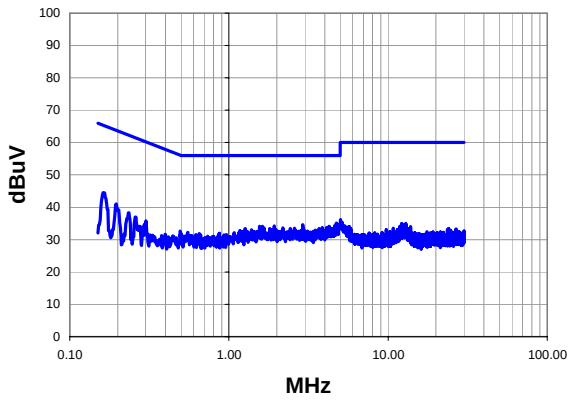
# AC Powerline Conducted Emissions

| | | | | | |
|---|---|---|---|---|---|
| **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 | | | | |

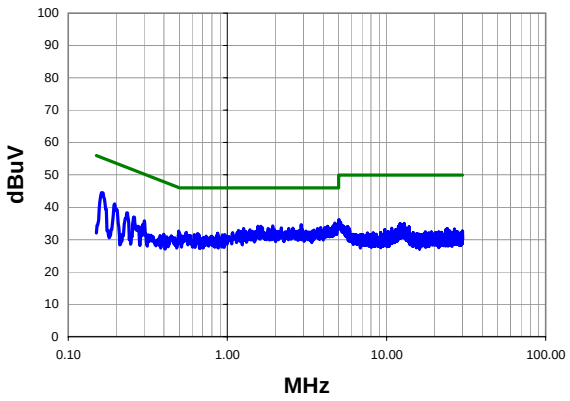
| **Test Specifications** | **Test Method** |
|---|---|
| FCC 15.207:2010 | ANSI C63.10:2009 |

| **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 |

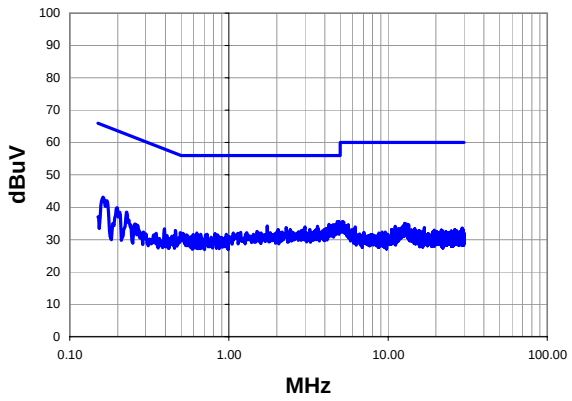
# AC Powerline Conducted Emissions

| | | | | |
|---|---|---|---|---|
| **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 | | | |

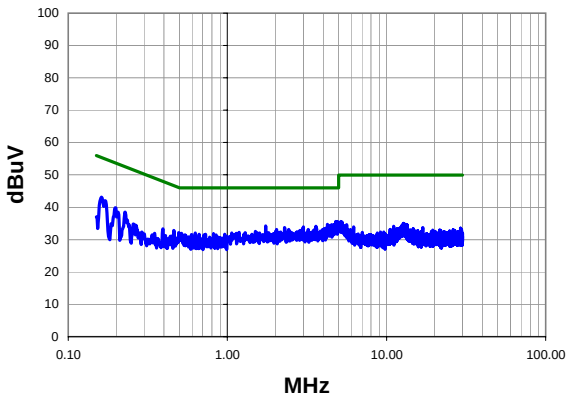
| **Test Specifications** | **Test Method** |
|---|---|
| FCC 15.207:2010 | ANSI C63.10:2009 |

| **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

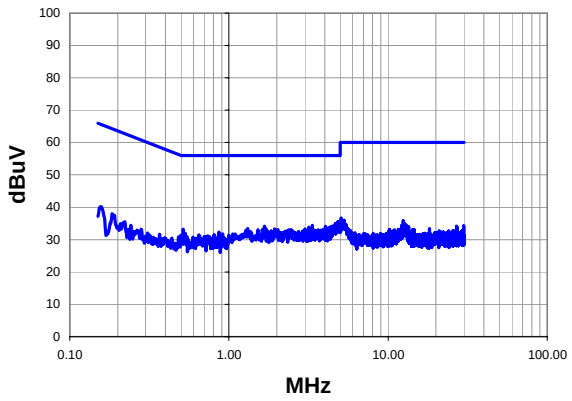
PSA-ESCI 2010.04.06
Version 2010.3.17

| | | | | |
|---|---|---|---|---|
| **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 | | | |

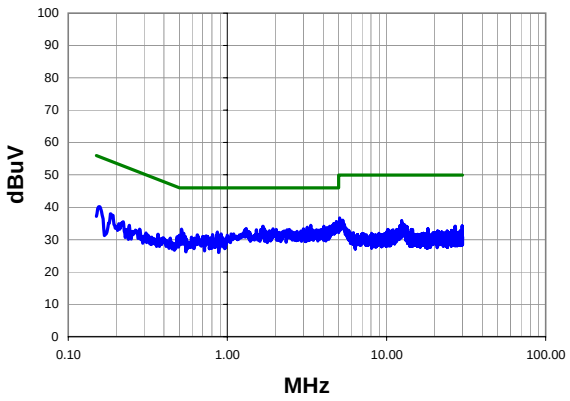
| **Test Specifications** | **Test Method** |
|---|---|
| FCC 15.207:2010 | ANSI C63.10:2009 |

| **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

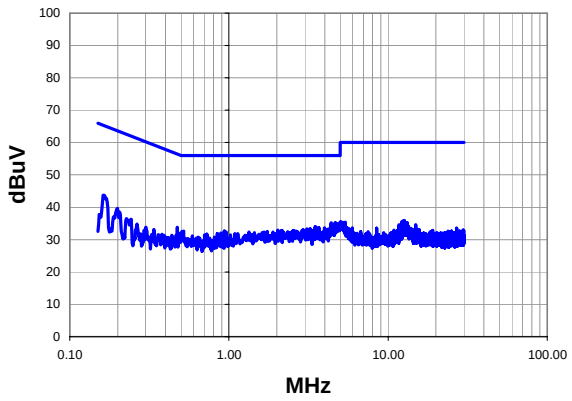
PSA-ESCI 2010.04.06
Version 2010.3.17

| | | | | |
|---|---|---|---|---|
| **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 | | | |

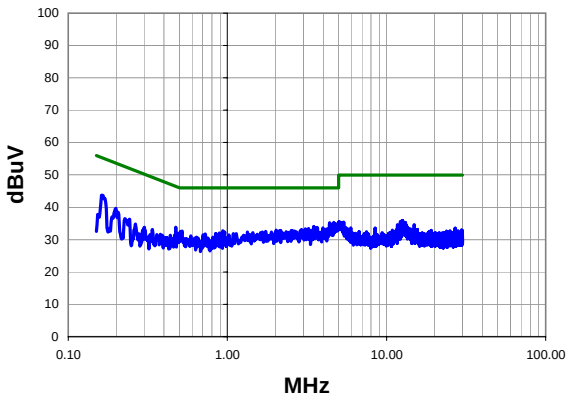
| **Test Specifications** | **Test Method** |
|---|---|
| FCC 15.207:2010 | ANSI C63.10:2009 |

| **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 |