

ProSoft Technology, Inc.

WMIA-199NI

Report No. PROS0109.1

Report Prepared By



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

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EMC Test Report



22975 NW Evergreen Parkway
Suite 400
Hillsboro, Oregon 97124

Certificate of Test
Last Date of Test: July 6, 2011
ProSoft Technology, Inc.
Model: WMIA-199NI

Emissions			
Test Description	Specification	Test Method	Pass/Fail
Spurious Radiated Emissions	FCC 15.407:2011	ANSI C63.10:2009	Pass
Peak Transmit Power	FCC 15.407:2011	ANSI C63.10:2009	Pass
Peak Power Spectral Density	FCC 15.407:2011	ANSI C63.10:2009	Pass
Emission Bandwidth	FCC 15.407:2011	ANSI C63.10:2009	Pass
Peak Excursion of the Modulation Envelope	FCC 15.407:2011	ANSI C63.10:2009	Pass
AC Power Line Conducted Emissions	FCC 15.407:2011	ANSI C63.10:2009	Pass
Frequency Stability	FCC 15.407:2011	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.; 41 Tesla Ave.,
Irvine, CA 92618
Phone: (503) 844-4066 Fax: 844-3826

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

Approved By:

Dean Ghizzone, President



NVLAP Lab Code: 200676-0

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 National Voluntary Laboratory Accreditation Program (NVLAP) for satisfactory compliance with the requirements of ISO/IEC 17025 for Testing Laboratories. NVLAP is administered by the National Institute of Standards and Technology (NIST), an agency of the U.S. Commerce Department. 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.

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.

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).



Accreditations and Authorizations

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-3265, 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).

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, Brooklyn Park: US0175*)

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/>

How important is it to understand performance criteria?

It is the responsibility of the test laboratory to observe the results of the tests that are performed and to accurately report those results. As the responsible party (manufacturer, importer, etc) it is your responsibility to take those results, compare them against the specifications and standards, then, if appropriate make a declaration of conformity. As the responsible party it makes sense that you are fully aware of the requirements, how your device performs when tested to those requirements, and what information is being used to declare conformity.

To better assist you in making those conformity decisions, Northwest EMC has adopted a very simple, yet very clear performance assessment procedure. The following criteria is used when performing immunity or susceptibility tests:

Performance Criteria 1:

- ❑ The EUT exhibited no change in performance when operating as specified by the manufacturer. In this case no changes were observed during the test.
- ❑ In most cases this would be equivalent to Performance Criteria A. When operating the equipment in the modes or configurations specified by the responsible party, monitoring the parameters specified, no changes were observed. Basically nothing happened.

Performance Criteria 2:

- ❑ The EUT exhibited a change in performance when operating as specified by the manufacturer. In this case the equipment recovered without any operator intervention, once the test signal was removed. The data sheets will detail the exact phenomena observed.
- ❑ In most cases this would be equivalent to Performance Criteria B. When operating the equipment in the modes or configurations specified by the responsible party, monitoring the parameters specified, changes were observed. The EUT was able to recover from those changes without any operator intervention, once the test signal was removed.

Performance Criteria 3:

- ❑ The EUT exhibited a change in performance when operating as specified by the manufacturer. In this case the equipment required some operator intervention in order to recover. This intervention may be in the form of changing EUT settings, or even resetting the system. The data sheets will detail the exact phenomena observed.
- ❑ In most cases this would be equivalent to Performance Criteria C. When operating the equipment in the modes or configurations specified by the responsible party, monitoring the parameters specified, changes were observed. The EUT required some sort of operator intervention to recover. There was no permanent damage and the EUT appeared to function normally after completion of test.

Performance Criteria 4:

- ❑ The EUT exhibited a change in performance when operating as specified by the manufacturer. In this case the equipment was damaged and would not recover. The data sheets will detail the exact phenomena observed.
- ❑ In most cases there is no specific criterion to compare this to; it typically ends the test. When operating the equipment in the modes or configurations specified by the responsible party, monitoring the parameters specified, changes were observed. There was no recovery; the equipment would no longer function as intended.



Northwest EMC Locations



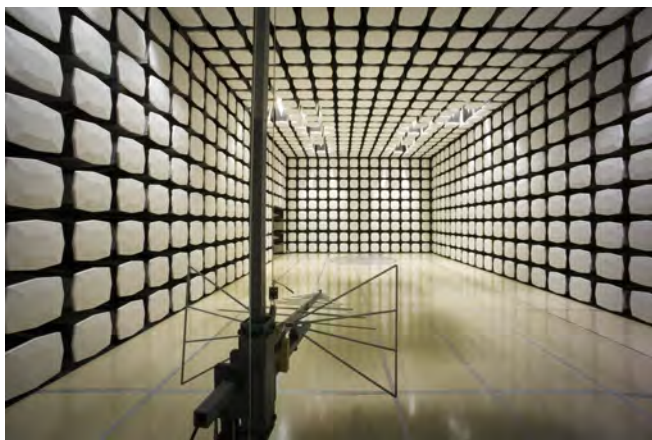
Oregon
Labs EV01-EV12
22975 NW Evergreen Pkwy
Suite 400
Hillsboro, OR 97124
(503) 844-4066

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:	ProSoft Technology, Inc.
Address:	5201 Truxtun Ave., 3 rd Floor
City, State, Zip:	Bakersfield, CA 93309
Test Requested By:	Frank Hardy
Model:	WMIA-199NI
First Date of Test:	6/23/2011
Last Date of Test:	7/6/2011
Receipt Date of Samples:	6/23/2011
Equipment Design Stage:	Production
Equipment Condition:	No Damage

Information Provided by the Party Requesting the Test

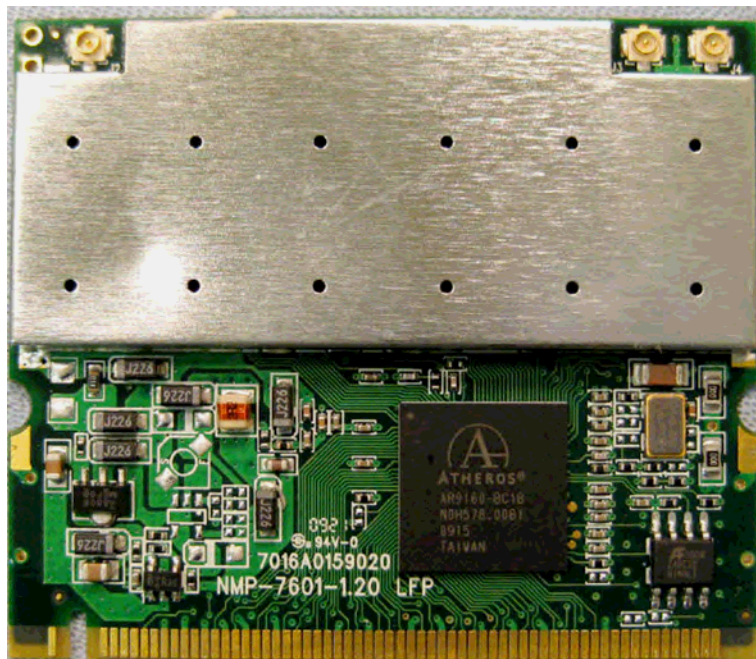
Functional Description of the EUT (Equipment Under Test):

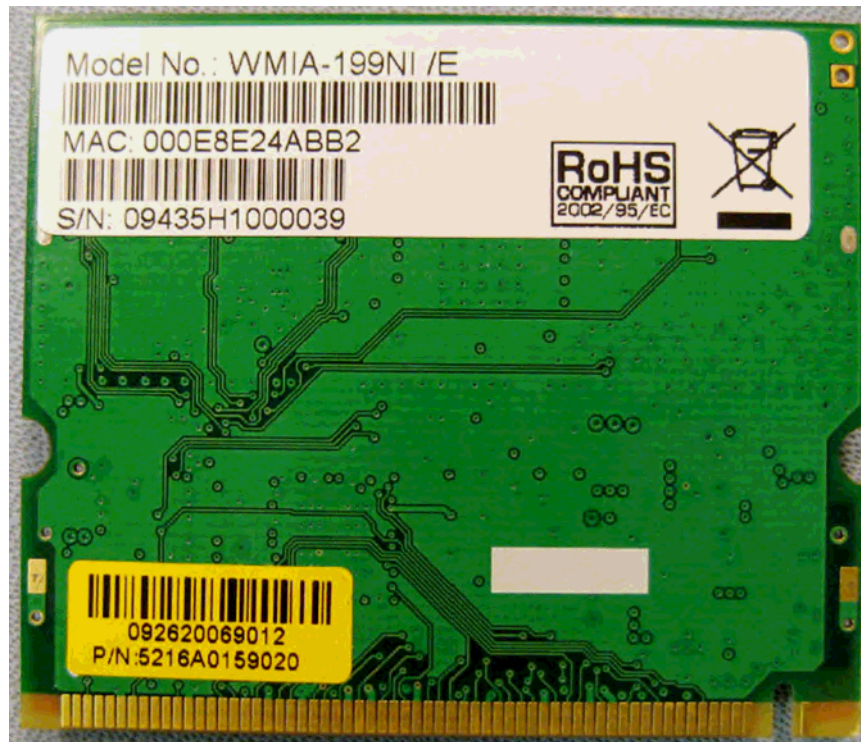
One combination 802.11a/g/n radio module.

Testing Objective:

Seeking to demonstrate compliance under FCC 15.407.

EUT Photo





CONFIGURATION 1 PROS0109

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
802.11 a/g/n radio module	Prosoft Technology	WMIA-199NI	09435H1000039
DC Power Supply	Phihong	PSA15R-120P	P65000748A1

Remote Equipment Outside of Test Setup Boundary			
Description	Manufacturer	Model/Part Number	Serial Number
Remote Laptop	Dell Corp.	Dell Vostro 1100	14TBYG1

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
Lan	No	1.8m	No	802.11 a/g/n radio module	Remote Laptop
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

CONFIGURATION 2 PROS0109

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
802.11 a/g/n radio module	Prosoft Technology	WMIA-199NI	09435H1000039
DC Power Supply	Phihong	PSA15R-120P	P65000748A1
5dB Blade Antenna (#1)	Prosoft Technology	None	None
5dB Blade Antenna (#2)	Prosoft Technology	None	None
5dB Blade Antenna (#3)	Prosoft Technology	None	None

Remote Equipment Outside of Test Setup Boundary			
Description	Manufacturer	Model/Part Number	Serial Number
Remote Laptop	Dell Corp.	Dell Vostro 1100	14TBYG1

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
Lan	No	1.8m	No	802.11 a/g/n radio module	Remote Laptop
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	6/23/2011	Emission 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	6/23/2011	Frequency Stability	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	6/23/2011	Peak Excursion of the Modulation Envelope	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	6/23/2011	Peak Power Spectral Density	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	6/24/2011	Peak Transmit 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.
6	6/23/2011	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.
7	7/6/2011	AC Power Line Conducted Emissions	Modified from delivered configuration.	Added ferrite (0443164151) on power supply on EUT end with 2 loops. Modification authorized by Frank Hardy.	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
Power Sensor	Agilent	E4412A	SQE	4/21/2010	24
Power Meter	Hewlett Packard	E4418A	SPA	4/21/2010	24
Signal Generator	Agilent	E8257D	TGU	1/26/2011	12
Spectrum Analyzer	Agilent	E4440A	AFG	4/28/2011	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

Prior to testing, Output power measurement was taken at all data rates in its appropriate band. This test represents the worst case data rate for each band which is the result of the highest measured output power.

FCC Public Notice DA 02-2138 was followed. The transmit frequency was set to the lowest, a medium, and the highest channels in each band. The transmit power was set to its default maximum. The lowest, a medium, and the highest data rates were measured if available. 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.


The spectrum analyzer settings were as follows:

Span = approximately 1.5 to 2 times the emission bandwidth, centered on the transmit channel.

RBW = Approx. 1% of the emission bandwidth (B). This was an iterative process where an exact match of 1% may not be achieved. The largest value of RBW that came close to 1% of the emission bandwidth was used.

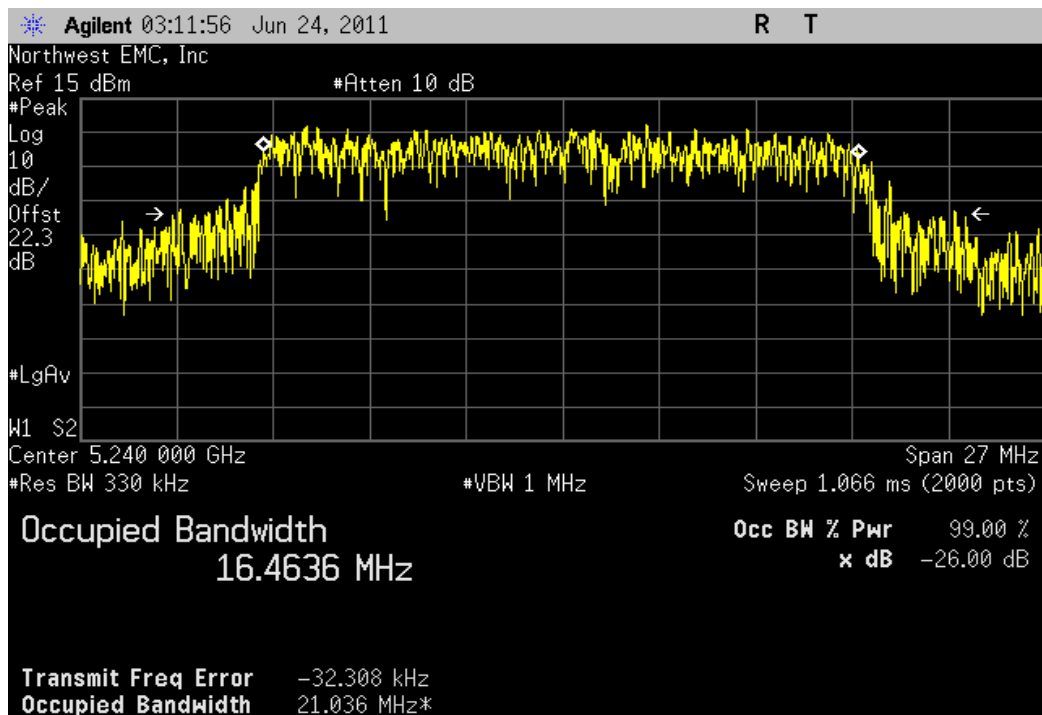
A peak detector was used.

The marker-delta function was then used to measure 26 dB emission bandwidth

NORTHWEST		Emission Bandwidth		XMit 2011.04.20 PsaTx 2011.06.20	
EMC					
EUT: WMIA-199NI		Work Order: PROS0109			
Serial Number: 09435H1000039		Date: 06/23/11			
Customer: ProSoft Technology, Inc.		Temperature: 22.06°C			
Attendees: None		Humidity: 48%			
Project: None		Barometric Pres.: 1011			
Tested by: Jaemi Suh		Power: 120V/60Hz		Job Site: OC11	
TEST SPECIFICATIONS		TEST METHOD			
FCC 15.407:2011		ANSI C63.10:2009			
COMMENTS					
Operating at 802.11a/n. Chain 1.					
DEVIATIONS FROM TEST STANDARD					
Configuration #	1	 Signature			
		Value	Limit	Result	
802.11(a) 6 Mbps					
Low Channel 36 (5180 MHz)		21.242 MHz	> 500 kHz	Pass	
High Channel 48 (5240 MHz)		21.036 MHz	> 500 kHz	Pass	
Low Channel 100 (5500 MHz)		27.157 MHz	> 500 kHz	Pass	
Mid Channel 116 (5580 MHz)		38.026 MHz	> 500 kHz	Pass	
High Channel 140 (5700 MHz)		40.663 MHz	> 500 kHz	Pass	
802.11(a) 54 Mbps					
Low Channel 52 (5260 MHz)		22.701 MHz	> 500 kHz	Pass	
High Channel 64 (5320 MHz)		22.387 MHz	> 500 kHz	Pass	
802.11(n) MCS0					
Low Channel 52 (5260 MHz)		25.46 MHz	> 500 kHz	Pass	
High Channel 64 (5320 MHz)		26.61 MHz	> 500 kHz	Pass	
802.11(n) MCS8					
Low Channel 36 (5180 MHz)		24.369 MHz	> 500 kHz	Pass	
High Channel 48 (5240 MHz)		23.367 MHz	> 500 kHz	Pass	
802.11(n) MCS15					
Low Channel 100 (5500 MHz)		28.407 MHz	> 500 kHz	Pass	
Mid Channel 116 (5580 MHz)		37.953 MHz	> 500 kHz	Pass	
High Channel 140 (5700 MHz)		42.125 MHz	> 500 kHz	Pass	
802.11(n)(40MHz) MCS0					
Low Channel 37 (5190 MHz)		58.953 MHz	> 500 kHz	Pass	
High Channel 47 (5230 MHz)		55.567 MHz	> 500 kHz	Pass	
802.11(n)(40MHz) MCS7					
Low Channel 101 (5510 MHz)		52.029 MHz	> 500 kHz	Pass	
High Channel 130 (5670 MHz)		99.292 MHz	> 500 kHz	Pass	
802.11(n)(40MHz) MCS15					
Low Channel 53 (5270 MHz)		48.123 MHz	> 500 kHz	Pass	
High Channel 63 (5310 MHz)		44.051 MHz	> 500 kHz	Pass	

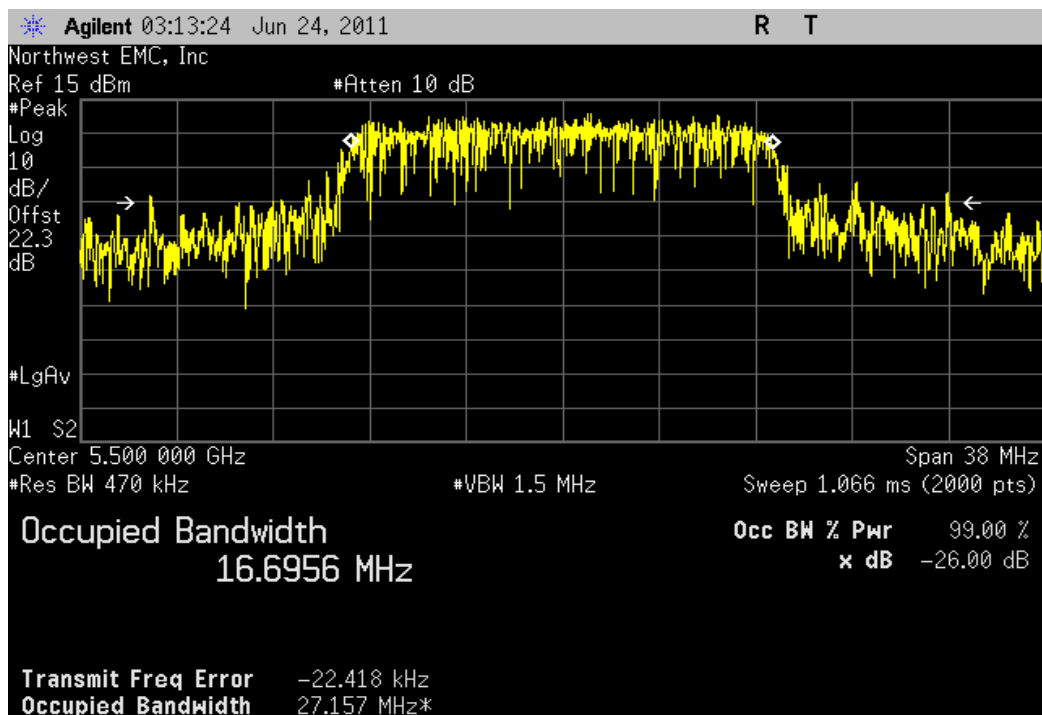
802.11(a) 6 Mbps, High Channel 48 (5240 MHz)

				Value	Limit	Result
				21.036 MHz	> 500 kHz	Pass



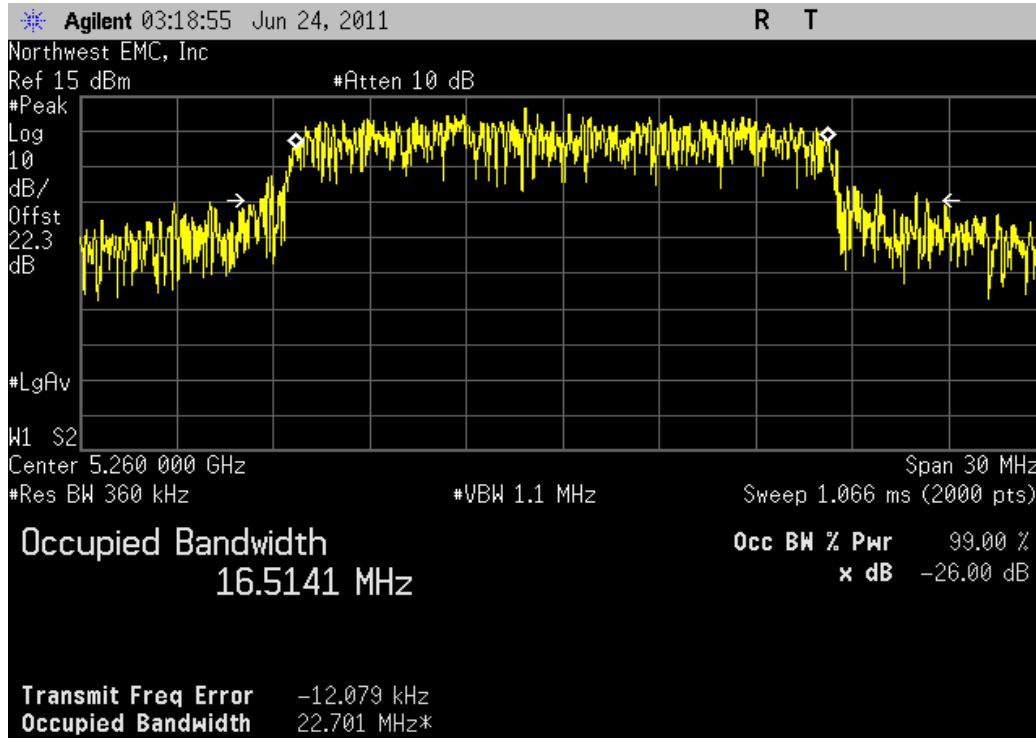
802.11(a) 6 Mbps, Low Channel 100 (5500 MHz)


				Value	Limit	Result
				27.157 MHz	> 500 kHz	Pass



802.11(a) 54 Mbps, Low Channel 52 (5260 MHz)

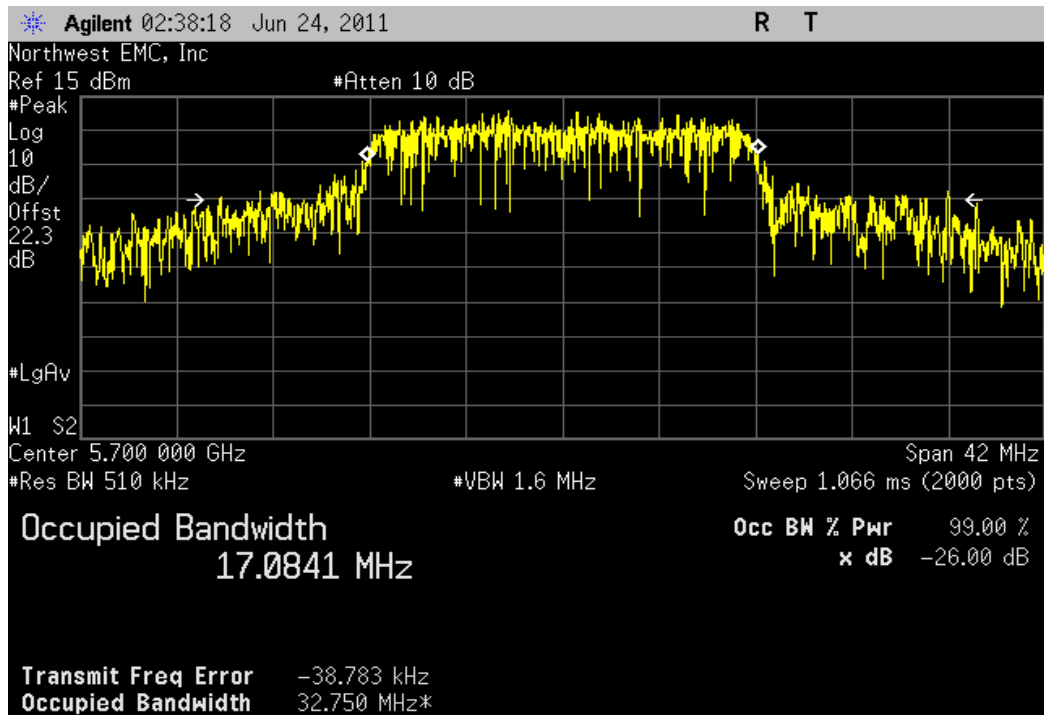
				Value	Limit	Result
				22.701 MHz	> 500 kHz	Pass



NORTHWEST		Emission Bandwidth		XMit 2011.04.20 PsaTx 2011.06.20	
EMC					
EUT: WMIA-199NI		Work Order: PROS0109			
Serial Number: 09435H1000039		Date: 06/23/11			
Customer: ProSoft Technology, Inc.		Temperature: 22.06°C			
Attendees: None		Humidity: 48%			
Project: None		Barometric Pres.: 1011			
Tested by: Jaemi Suh		Power: 120V/60Hz		Job Site: OC11	
TEST SPECIFICATIONS		TEST METHOD			
FCC 15.407:2011		ANSI C63.10:2009			
COMMENTS					
Operating at 802.11a/n. Chain 2.					
DEVIATIONS FROM TEST STANDARD					
Configuration #	1	 Signature			
		Value	Limit	Result	
802.11(a) 6 Mbps					
Low Channel 52 (5260 MHz)		21.672 MHz	> 500 kHz	Pass	
High Channel 64 (5320 MHz)		21.519 MHz	> 500 kHz	Pass	
Low Channel 100 (5500 MHz)		48.774 MHz	> 500 kHz	Pass	
Mid Channel 116 (5580 MHz)		39.577 MHz	> 500 kHz	Pass	
High Channel 140 (5700 MHz)		32.75 MHz	> 500 kHz	Pass	
802.11(a) 54 Mbps					
Low Channel 36 (5180 MHz)		20.894 MHz	> 500 kHz	Pass	
High Channel 48 (5240 MHz)		21.267 MHz	> 500 kHz	Pass	
802.11(n) MCS7					
Low Channel 52 (5260 MHz)		25.585 MHz	> 500 kHz	Pass	
High Channel 64 (5320 MHz)		25.665 MHz	> 500 kHz	Pass	
802.11(n) MCS15					
Low Channel 100 (5500 MHz)		23.167 MHz	> 500 kHz	Pass	
Mid Channel 116 (5580 MHz)		24.067 MHz	> 500 kHz	Pass	
High Channel 140 (5700 MHz)		51.405 MHz	> 500 kHz	Pass	
Low Channel 36 (5180 MHz)		51.424 MHz	> 500 kHz	Pass	
High Channel 48 (5240 MHz)		21.565 MHz	> 500 kHz	Pass	
802.11(n)(40MHz) MCS0					
Low Channel 37 (5190 MHz)		43.923 MHz	> 500 kHz	Pass	
High Channel 47 (5230 MHz)		43.866 MHz	> 500 kHz	Pass	
802.11(n)(40MHz) MCS7					
Low Channel 101 (5510 MHz)		43.392 MHz	> 500 kHz	Pass	
High Channel 130 (5670 MHz)		43.576 MHz	> 500 kHz	Pass	
802.11(n)(40MHz) MCS15					
Low Channel 53 (5270 MHz)		45.906 MHz	> 500 kHz	Pass	
High Channel 63 (5310 MHz)		54.665 MHz	> 500 kHz	Pass	

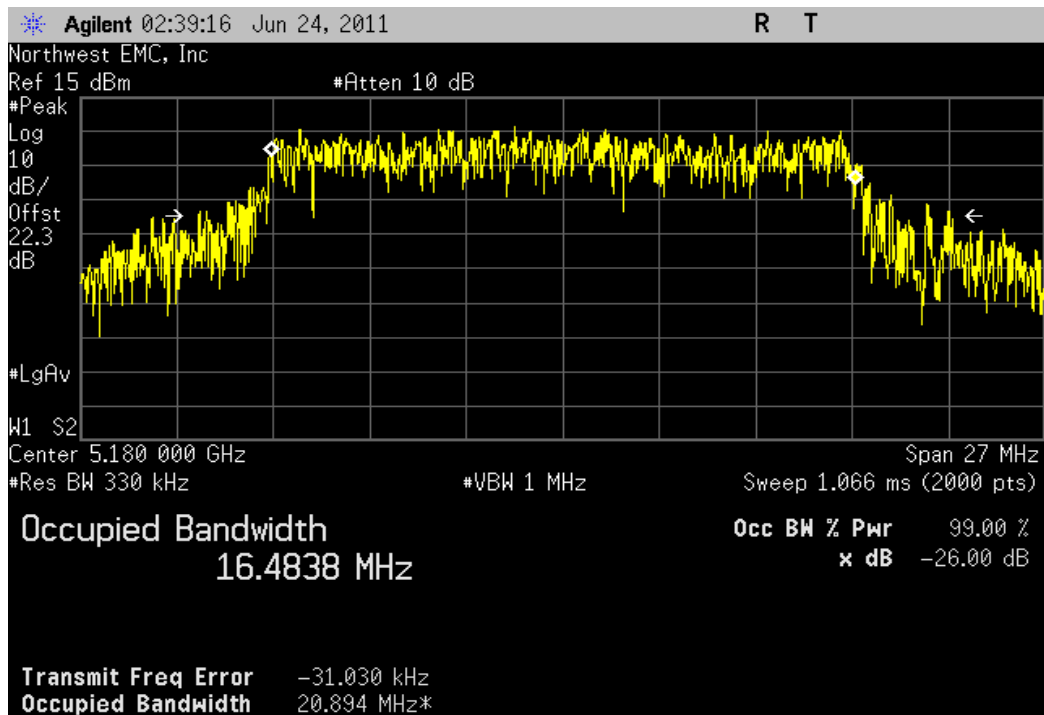
802.11(a) 6 Mbps, High Channel 140 (5700 MHz)

				Value	Limit	Result
				32.75 MHz	> 500 kHz	Pass



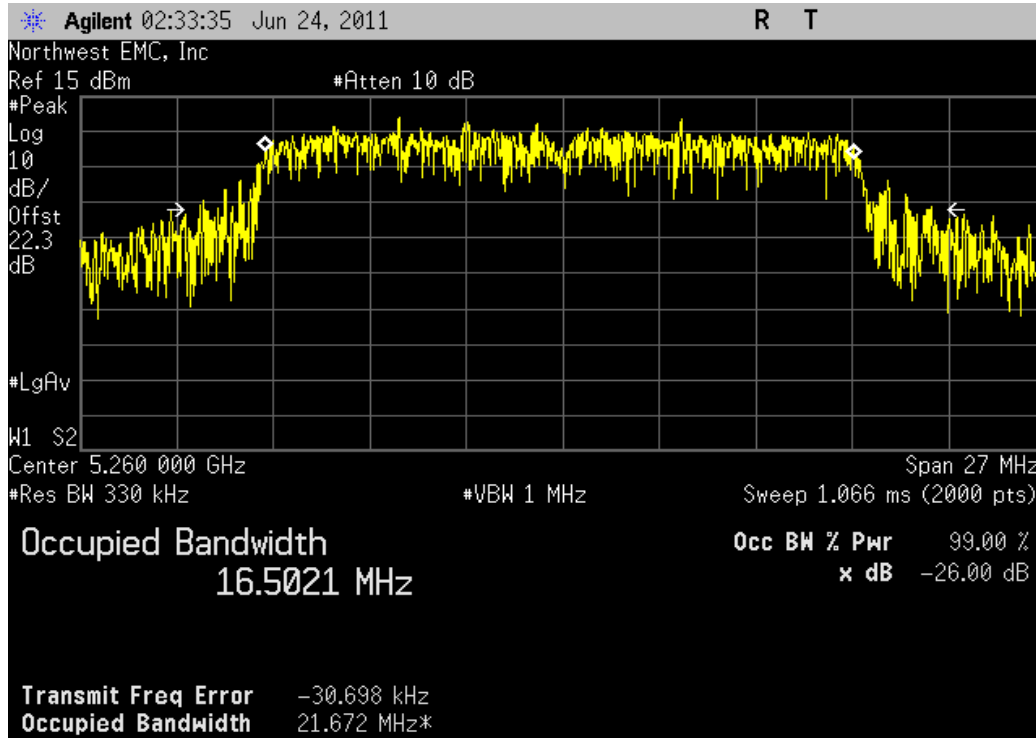
802.11(a) 54 Mbps, Low Channel 36 (5180 MHz)


				Value	Limit	Result
				20.894 MHz	> 500 kHz	Pass



802.11(a) 6 Mbps, Low Channel 52 (5260 MHz)

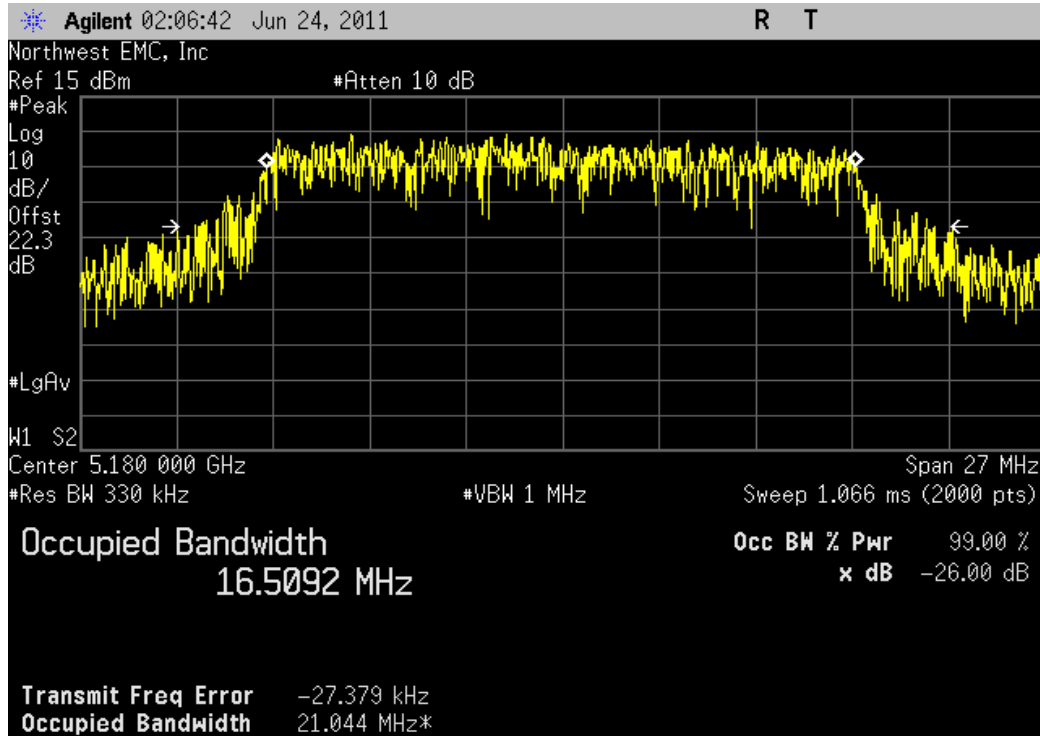
	Value	Limit	Result
	21.672 MHz	> 500 kHz	Pass



NORTHWEST		Emission Bandwidth		XMit 2011.04.20 PsaTx 2011.06.20	
EMC					
EUT: WMIA-199NI		Work Order: PROS0109			
Serial Number: 09435H1000039		Date: 06/23/11			
Customer: ProSoft Technology, Inc.		Temperature: 22.06°C			
Attendees: None		Humidity: 48%			
Project: None		Barometric Pres.: 1011			
Tested by: Jaemi Suh		Power: 120V/60Hz		Job Site: OC11	
TEST SPECIFICATIONS		TEST METHOD			
FCC 15.407:2011		ANSI C63.10:2009			
COMMENTS					
Operating at 802.11a/n. Chain 3.					
DEVIATIONS FROM TEST STANDARD					
Configuration #	1	 Signature			
		Value	Limit	Result	
802.11(a) 6 Mbps					
Low Channel 100 (5500 MHz)		51.226 MHz	> 500 kHz	Pass	
Mid Channel 116 (5580 MHz)		39.809 MHz	> 500 kHz	Pass	
High Channel 140 (5700 MHz)		33.891 MHz	> 500 kHz	Pass	
802.11(a) 36 Mbps					
Low Channel 52 (5260 MHz)		21.184 MHz	> 500 kHz	Pass	
High Channel 64 (5320 MHz)		21.711 MHz	> 500 kHz	Pass	
802.11(a) 54 Mbps					
Low Channel 36 (5180 MHz)		21.044 MHz	> 500 kHz	Pass	
High Channel 48 (5240 MHz)		21.081 MHz	> 500 kHz	Pass	
802.11(n) MCS7					
Low Channel 52 (5260 MHz)		21.881 MHz	> 500 kHz	Pass	
High Channel 64 (5320 MHz)		22.173 MHz	> 500 kHz	Pass	
802.11(n) MCS8					
Low Channel 100 (5500 MHz)		49.024 MHz	> 500 kHz	Pass	
Mid Channel 116 (5580 MHz)		41.164 MHz	> 500 kHz	Pass	
High Channel 140 (5700 MHz)		34.789 MHz	> 500 kHz	Pass	
802.11(n) MCS15					
Low Channel 36 (5180 MHz)		21.61 MHz	> 500 kHz	Pass	
High Channel 48 (5240 MHz)		21.656 MHz	> 500 kHz	Pass	
802.11(n)(40MHz) MCS0					
Low Channel 53 (5270 MHz)		44.123 MHz	> 500 kHz	Pass	
High Channel 63 (5310 MHz)		44.201 MHz	> 500 kHz	Pass	
802.11(n)(40MHz) MCS7					
Low Channel 37 (5190 MHz)		43.682 MHz	> 500 kHz	Pass	
High Channel 47 (5230 MHz)		43.641 MHz	> 500 kHz	Pass	
Low Channel 101 (5510 MHz)		44.717 MHz	> 500 kHz	Pass	
High Channel 130 (5670 MHz)		44.474 MHz	> 500 kHz	Pass	

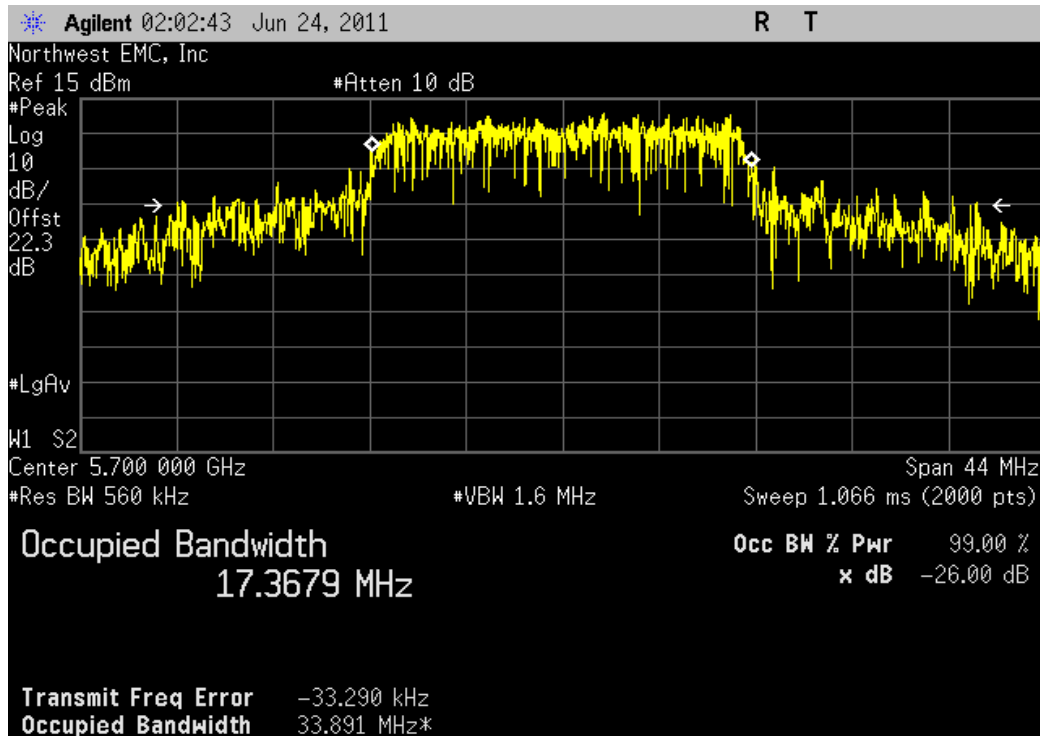
802.11(a) 54 Mbps, Low Channel 36 (5180 MHz)

				Value	Limit	Result
				21.044 MHz	> 500 kHz	Pass



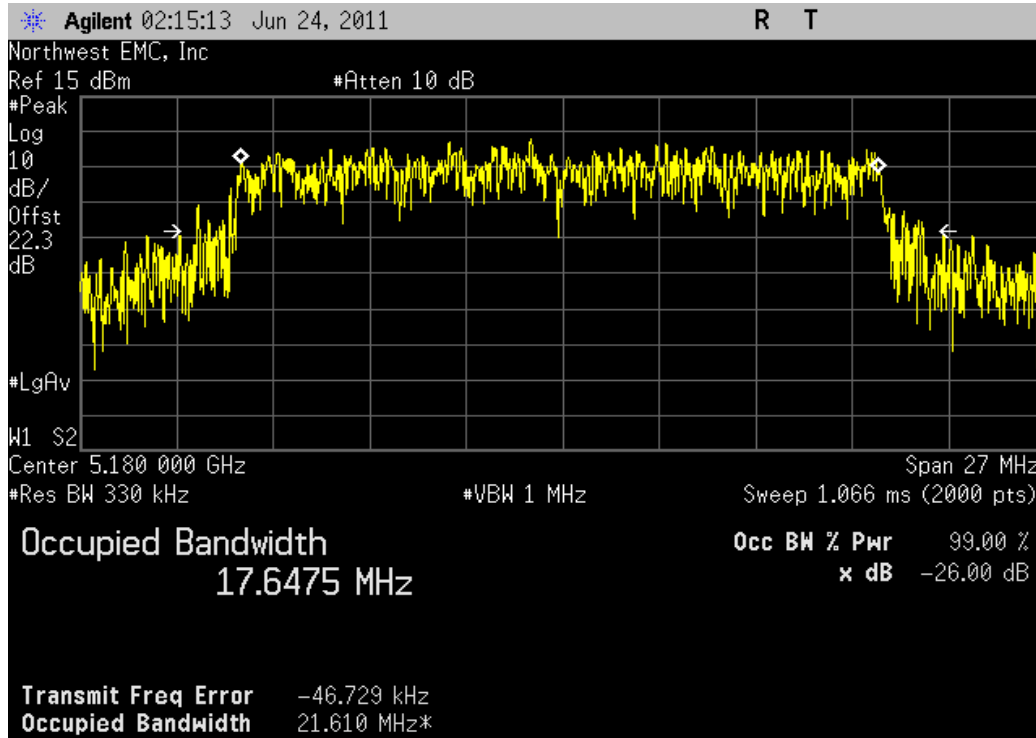
802.11(a) 6 Mbps, High Channel 140 (5700 MHz)

				Value	Limit	Result
				33.891 MHz	> 500 kHz	Pass



802.11(n) MCS15, Low Channel 36 (5180 MHz)

Value	Limit	Result
21.61 MHz	> 500 kHz	Pass



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
Power Sensor	Agilent	E4412A	SQE	4/21/2010	24
Power Meter	Hewlett Packard	E4418A	SPA	4/21/2010	24
Signal Generator	Agilent	E8257D	TGU	1/26/2011	12
Spectrum Analyzer	Agilent	E4440A	AFG	4/28/2011	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

Prior to testing, Output power measurement was taken at all data rates in its appropriate band. This test represents the worst case data rate for each band which is the result of the highest measured output power.

FCC Public Notice DA 02-2138 was followed. The transmit frequency was set to the lowest, a medium, and the highest channels in each band. The transmit power was set to its default maximum. The lowest, a medium, and the highest data rates were measured if available. 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.

The spectrum analyzer settings were as follows:

Span = approximately 1.5 to 2 times the emission bandwidth, centered on the transmit channel.

RBW = Approx. 1% of the emission bandwidth (B). This was an iterative process where an exact match of 1% may not be achieved. The largest value of RBW that came close to 1% of the emission bandwidth was used.

A peak detector was used.

The marker-delta function was then used to measure 26 dB emission bandwidth


ANSI C63.10 was followed. The transmit frequency was set to the required channels in each band. The transmit power was set to its default maximum. The lowest data rate was measured as it provided the highest output power. 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. The amplitude accuracy of the spectrum analyzer was further enhanced by calibrating the setup using the power meter and synthesized signal generator.

Prior to measuring peak power spectral density, the transmission pulse duration (T) were measured. The transmission pulse duration and the associated data are found elsewhere in this test report.

Method #1 was used because the analyzer sweep time was greater than the transmission pulse duration.

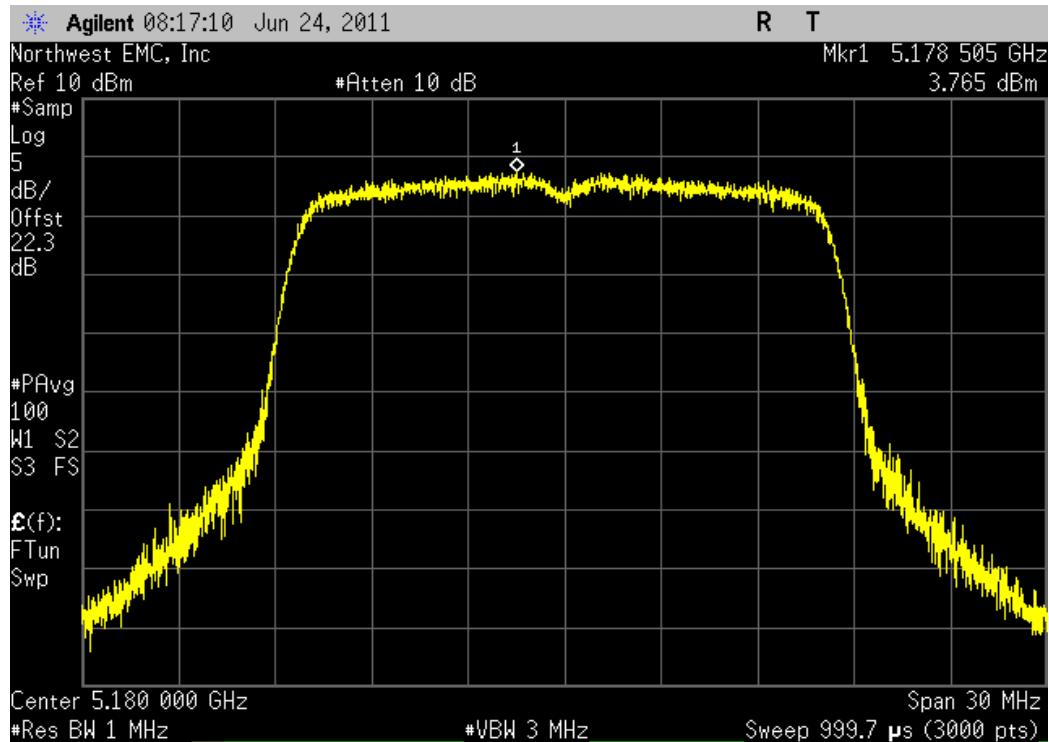
The spectrum analyzer settings were as follows:

The span was set to encompass entire emission bandwidth (B), centered on the transmit channel.

NORTHWEST		EMC		Peak Power Spectral Density		XMit 2011.04.20 PsaTx 2011.06.20	
EUT: WMIA-199NI				Work Order: PROS0109			
Serial Number: 09435H1000039				Date: 06/23/11			
Customer: ProSoft Technology, Inc.				Temperature: 22.06°C			
Attendees: None				Humidity: 48%			
Project: None				Barometric Pres.: 1011			
Tested by: Jaemi Suh		Power: 120V/60Hz		Job Site: OC11			
TEST SPECIFICATIONS				TEST METHOD			
FCC 15.407:2011				ANSI C63.10:2009			
COMMENTS							
Operating at 802.11a/n. Chain 1							
DEVIATIONS FROM TEST STANDARD							
Configuration #	1	<div>Signature </div>					
		Value (dBm / MHz)		Limit (dBm / MHz)		Result	
802.11(a) 6 Mbps							
Low Channel 36 (5180 MHz)		3.765		4		Pass	
High Channel 48 (5240 MHz)		2.924		4		Pass	
Low Channel 100 (5500 MHz)		6.093		11		Pass	
Mid Channel 116 (5580 MHz)		6.69		11		Pass	
High Channel 140 (5700 MHz)		6.433		11		Pass	
802.11(a) 54 Mbps							
Low Channel 52 (5260 MHz)		6.749		11		Pass	
High Channel 64 (5320 MHz)		6.508		11		Pass	
802.11(n) MCS0							
Low Channel 52 (5260 MHz)		6.613		11		Pass	
High Channel 64 (5320 MHz)		7.483		11		Pass	
802.11(n) MCS8							
Low Channel 36 (5180 MHz)		3.207		4		Pass	
High Channel 48 (5240 MHz)		3.022		4		Pass	
802.11(n) MCS15							
Low Channel 100 (5500 MHz)		5.574		11		Pass	
Mid Channel 116 (5580 MHz)		6.166		11		Pass	
High Channel 140 (5700 MHz)		5.9		11		Pass	
802.11(n)(40MHz) MCS0							
Low Channel 37 (5190 MHz)		-0.035		4		Pass	
High Channel 47 (5230 MHz)		0.134		4		Pass	
802.11(n)(40MHz) MCS7							
Low Channel 101 (5510 MHz)		2.143		11		Pass	
High Channel 130 (5670 MHz)		2.81		11		Pass	
802.11(n)(40MHz) MCS15							
Low Channel 53 (5270 MHz)		2.673		11		Pass	
High Channel 63 (5310 MHz)		2.839		11		Pass	

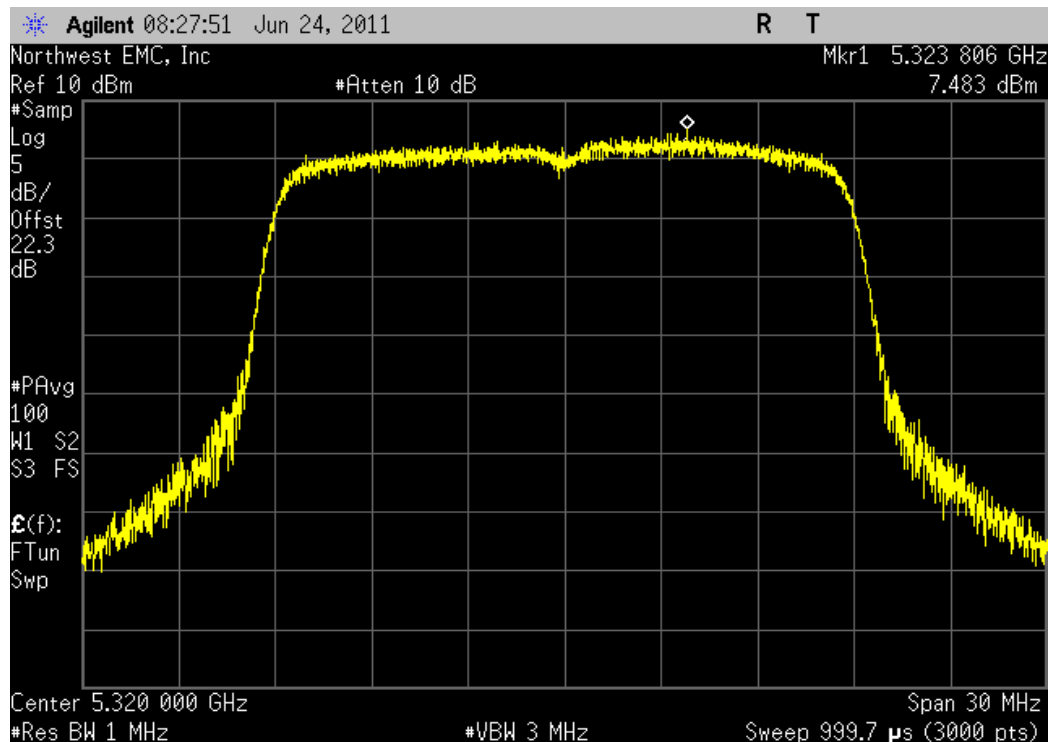
802.11(a) 6 Mbps, Low Channel 36 (5180 MHz)

				Value	Limit	Result
				(dBm / MHz)	(dBm / MHz)	
				3.765	4	Pass



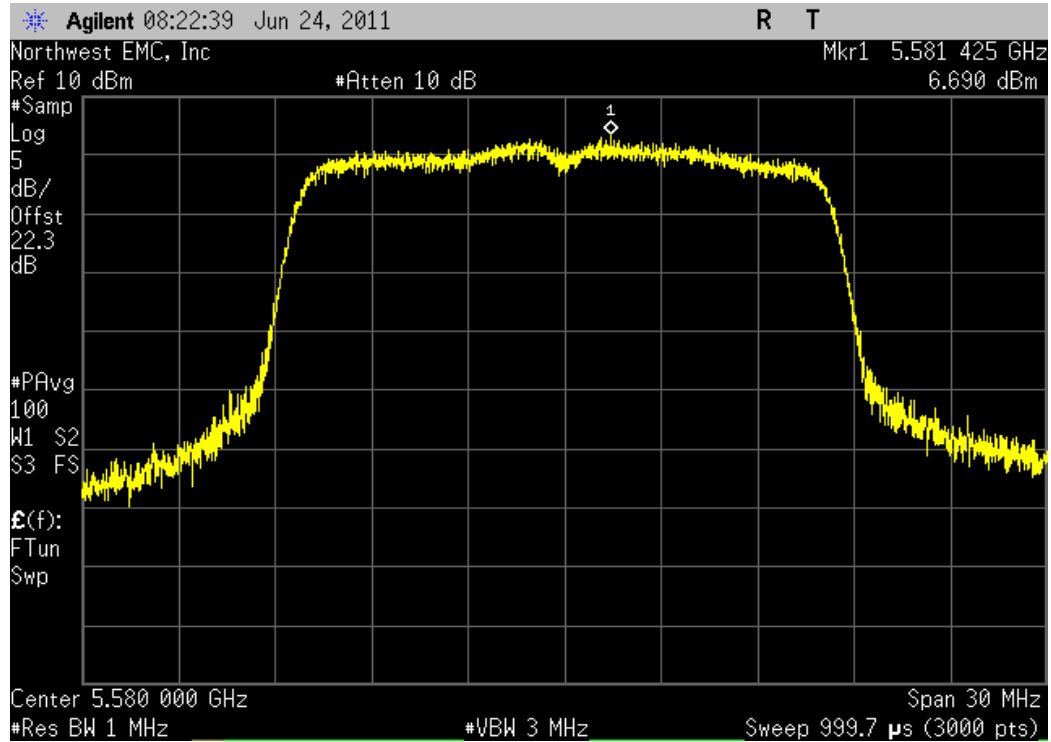
802.11(n) MCS0, High Channel 64 (5320 MHz)


				Value	Limit	Result
				(dBm / MHz)	(dBm / MHz)	
				7.483	11	Pass



802.11(a) 6 Mbps, Mid Channel 110 (5580 MHz)

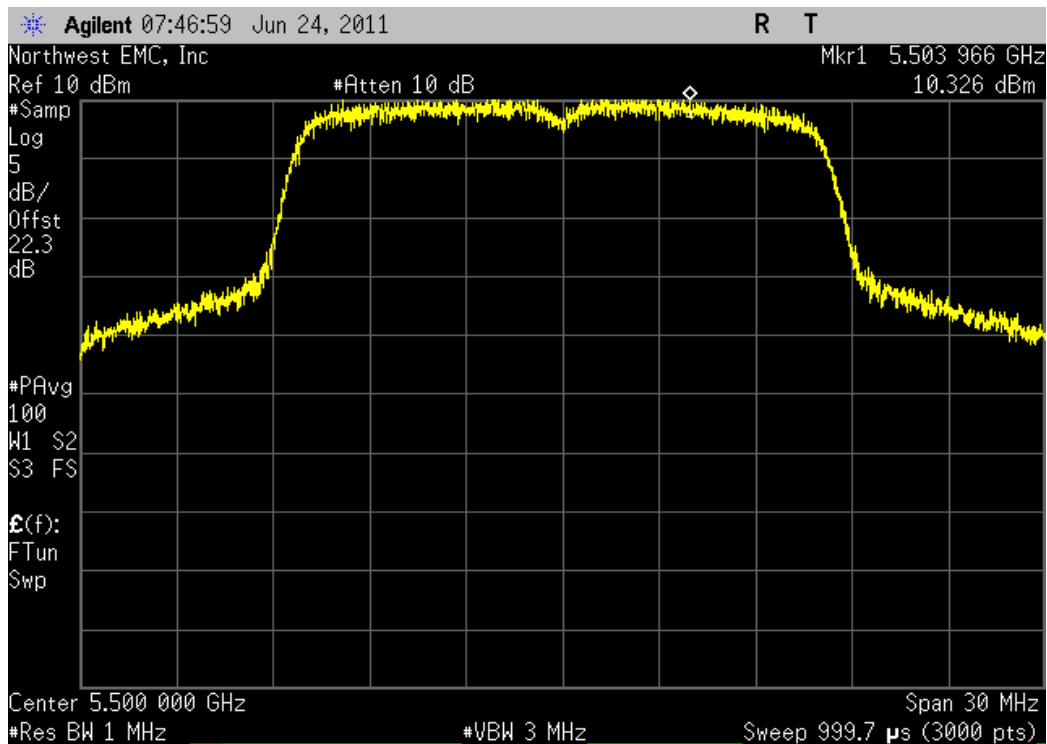
				Value	Limit	Result
				(dBm / MHz)	(dBm / MHz)	
				6.69	11	Fail



NORTHWEST		Peak Power Spectral Density		XMit 2011.04.20 PsaTx 2011.06.20	
EMC		EUT: WMIA-199NI		Work Order: PROS0109	
Serial Number: 09435H1000039		Date: 06/23/11			
Customer: ProSoft Technology, Inc.		Temperature: 22.06°C			
Attendees: None		Humidity: 48%			
Project: None		Barometric Pres.: 1011			
Tested by: Jaemi Suh		Power: 120V/60Hz		Job Site: OC11	
TEST SPECIFICATIONS		TEST METHOD			
FCC 15.407:2011		ANSI C63.10:2009			
COMMENTS					
Operating at 802.11a/n. Chain 2					
DEVIATIONS FROM TEST STANDARD					
Configuration #	1	Signature 			
			Value (dBm / MHz)	Limit (dBm / MHz)	Result
802.11(a) 6 Mbps					
	Low Channel 52 (5260 MHz)		7.602	11	Pass
	High Channel 64 (5320 MHz)		8.845	11	Pass
	Low Channel 100 (5500 MHz)		10.326	11	Pass
	Mid Channel 116 (5580 MHz)		9.894	11	Pass
	High Channel 140 (5700 MHz)		8.131	11	Pass
802.11(a) 54 Mbps					
	Low Channel 36 (5180 MHz)		2.03	4	Pass
	High Channel 48 (5240 MHz)		3.713	4	Pass
802.11(n) MCS7					
	Low Channel 52 (5260 MHz)		7.673	11	Pass
	High Channel 64 (5320 MHz)		8.162	11	Pass
802.11(n) MCS15					
	Low Channel 100 (5500 MHz)		2.017	4	Pass
	Mid Channel 116 (5580 MHz)		3.103	4	Pass
	High Channel 140 (5700 MHz)		10.055	11	Pass
	Low Channel 36 (5180 MHz)		9.78	11	Pass
	High Channel 48 (5240 MHz)		8.219	11	Pass
802.11(n)(40MHz) MCS0					
	Low Channel 37 (5190 MHz)		-0.66	4	Pass
	High Channel 47 (5230 MHz)		0.238	4	Pass
802.11(n)(40MHz) MCS7					
	Low Channel 101 (5510 MHz)		7.439	11	Pass
	High Channel 130 (5670 MHz)		5.24	11	Pass
802.11(n)(40MHz) MCS15					
	Low Channel 53 (5270 MHz)		3.924	11	Pass
	High Channel 63 (5310 MHz)		3.581	11	Pass

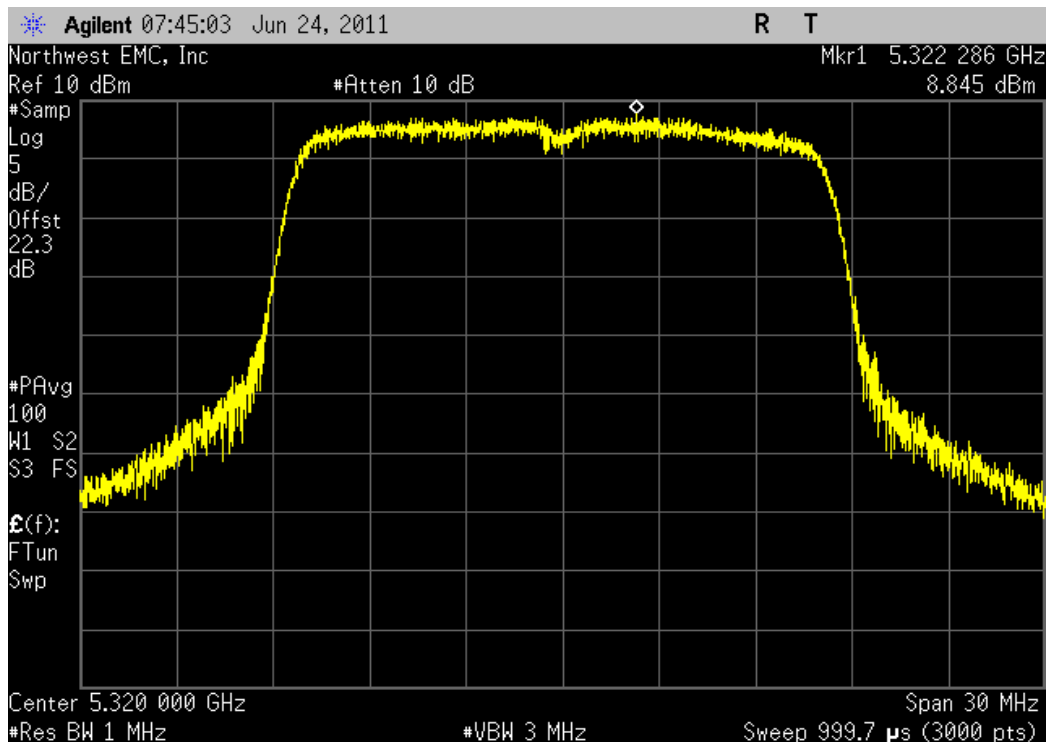
802.11(a) 6 Mbps, Low Channel 100 (5500 MHz)

				Value	Limit	Result
				(dBm / MHz)	(dBm / MHz)	
				10.326	11	Pass



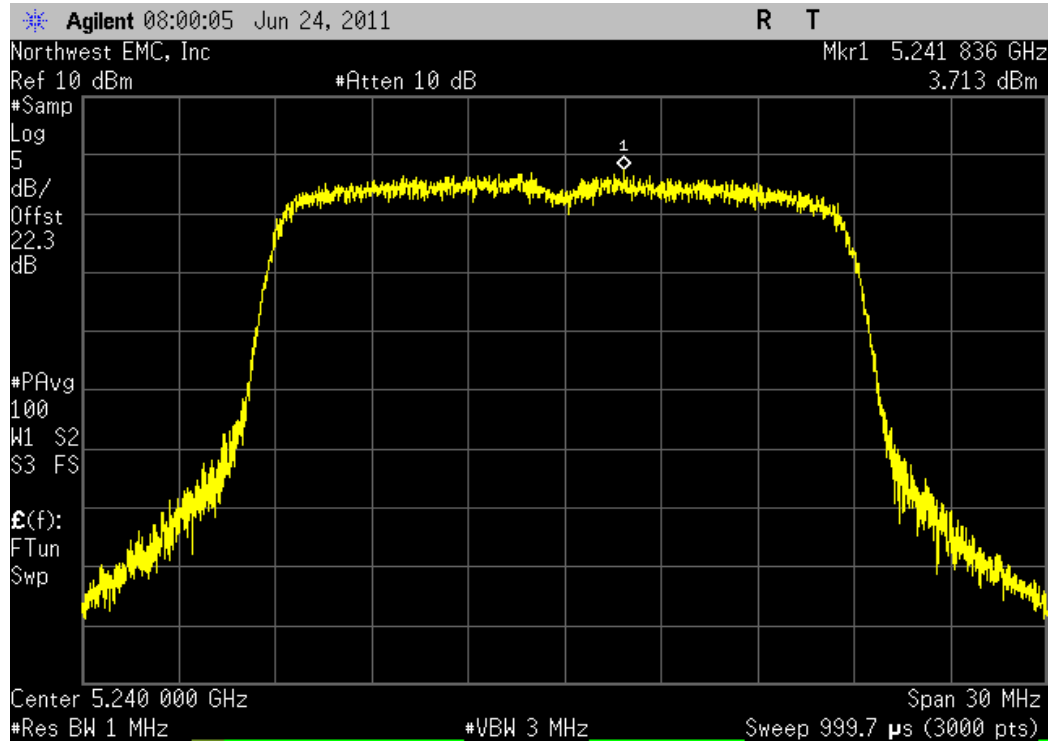
802.11(a) 6 Mbps, High Channel 64 (5320 MHz)


				Value	Limit	Result
				(dBm / MHz)	(dBm / MHz)	
				8.845	11	Pass



802.11(a) 54 Mbps, High Channel 48 (5240 MHz)

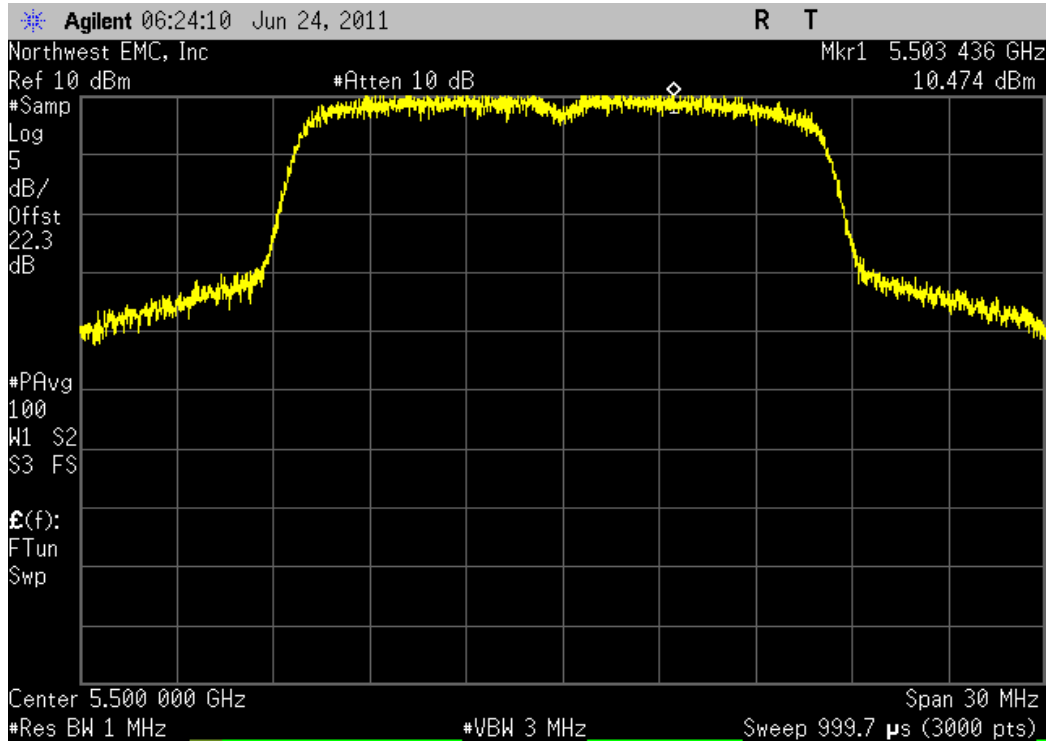
				Value	Limit	Result
				(dBm / MHz)	(dBm / MHz)	
				3.713	4	Pass



NORTHWEST		EMC		Peak Power Spectral Density		XMit 2011.04.20 PsaTx 2011.06.20	
EUT: WMIA-199NI				Work Order: PROS0109			
Serial Number: 09435H1000039				Date: 06/23/11			
Customer: ProSoft Technology, Inc.				Temperature: 22.06°C			
Attendees: None				Humidity: 48%			
Project: None				Barometric Pres.: 1011			
Tested by: Jaemi Suh		Power: 120V/60Hz		Job Site: OC11			
TEST SPECIFICATIONS				TEST METHOD			
FCC 15.407:2011				ANSI C63.10:2009			
COMMENTS							
Operating at 802.11a/n. Chain 3							
DEVIATIONS FROM TEST STANDARD							
Configuration #	1	<div>Signature </div>					
				Value (dBm / MHz)	Limit (dBm / MHz)	Result	
802.11(a) 6 Mbps							
	Low Channel 100 (5500 MHz)			10.474	11	Pass	
	Mid Channel 116 (5580 MHz)			9.643	11	Pass	
	High Channel 140 (5700 MHz)			8.516	11	Pass	
802.11(a) 36 Mbps							
	Low Channel 52 (5260 MHz)			8.368	11	Pass	
	High Channel 64 (5320 MHz)			8.435	11	Pass	
802.11(a) 54 Mbps							
	Low Channel 36 (5180 MHz)			2.991	4	Pass	
	High Channel 48 (5240 MHz)			3.64	4	Pass	
802.11(n) MCS7							
	Low Channel 52 (5260 MHz)			6.818	11	Pass	
	High Channel 64 (5320 MHz)			7.709	11	Pass	
802.11(n) MCS8							
	Low Channel 100 (5500 MHz)			10.049	11	Pass	
	Mid Channel 116 (5580 MHz)			9.611	11	Pass	
	High Channel 140 (5700 MHz)			8.05	11	Pass	
802.11(n) MCS15							
	Low Channel 36 (5180 MHz)			1.803	4	Pass	
	High Channel 48 (5240 MHz)			3.46	4	Pass	
802.11(n)(40MHz) MCS0							
	Low Channel 53 (5270 MHz)			3.527	11	Pass	
	High Channel 63 (5310 MHz)			3.496	11	Pass	
802.11(n)(40MHz) MCS7							
	Low Channel 37 (5190 MHz)			-1.547	4	Pass	
	High Channel 47 (5230 MHz)			-0.251	4	Pass	
	Low Channel 101 (5510 MHz)			7.375	11	Pass	
	High Channel 130 (5670 MHz)			5.485	11	Pass	

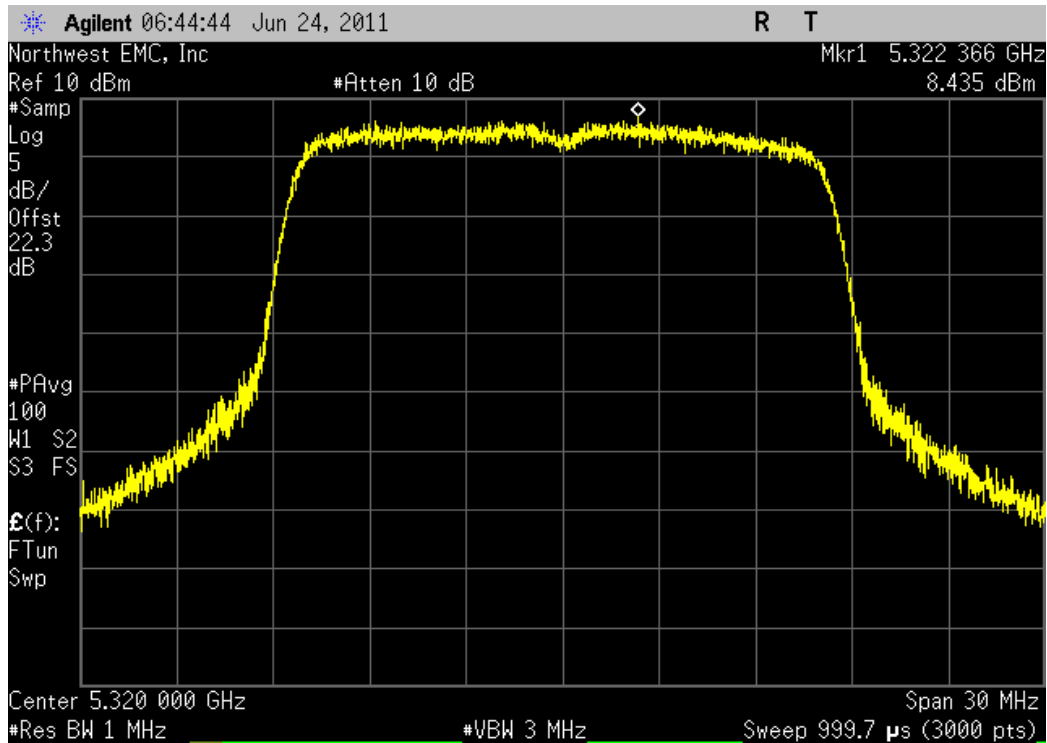
802.11(a) 6 Mbps, Low Channel 100 (5500 MHz)

				Value	Limit	Result
				(dBm / MHz)	(dBm / MHz)	
				10.474	11	Pass



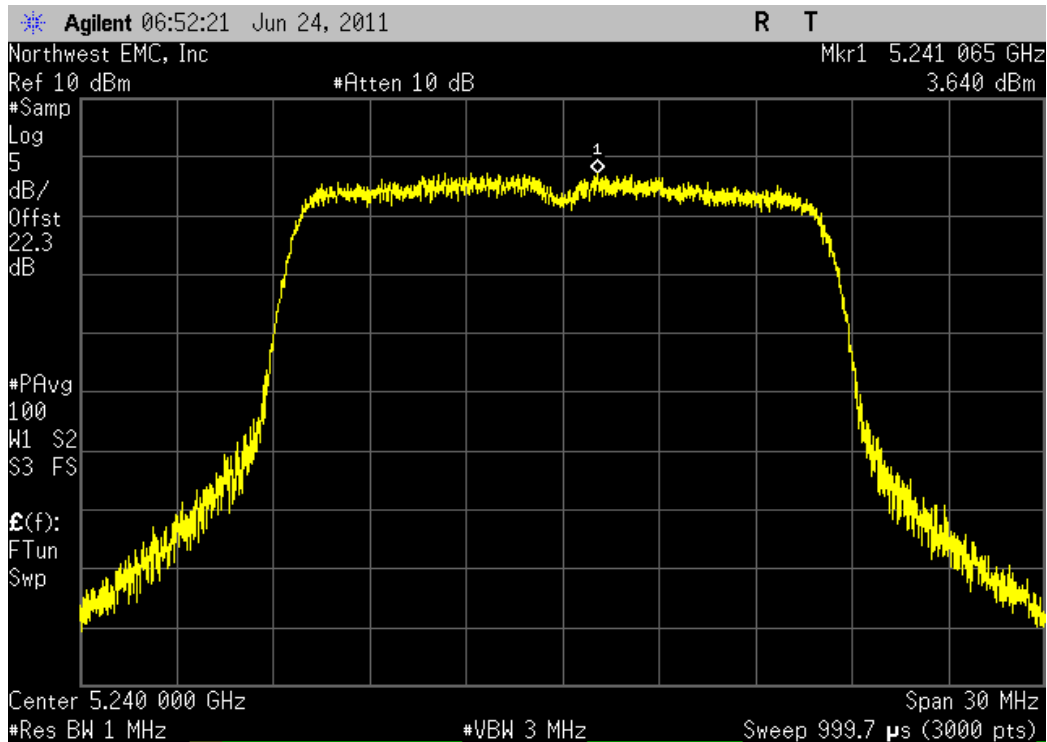
802.11(a) 36 Mbps, High Channel 64 (5320 MHz)

				Value	Limit	Result
				(dBm / MHz)	(dBm / MHz)	
				8.435	11	Pass



802.11(a) 54 Mbps, High Channel 48 (5240 MHz)

				Value	Limit	Result
				(dBm / MHz)	(dBm / MHz)	
				3.64	4	Pass



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
Power Sensor	Agilent	E4412A	SQE	4/21/2010	24
Power Meter	Hewlett Packard	E4418A	SPA	4/21/2010	24
Signal Generator	Agilent	E8257D	TGU	1/26/2011	12
Spectrum Analyzer	Agilent	E4440A	AFG	4/28/2011	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

Prior to testing, Output power measurement was taken at all data rates in its appropriate band. This test represents the worst case data rate for each band which is the result of the highest measured output power.

FCC Public Notice DA 02-2138 was followed. The transmit frequency was set to the lowest, a medium, and the highest channels in each band. The transmit power was set to its default maximum. The lowest, a medium, and the highest data rates were measured if available. 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.

The spectrum analyzer settings were as follows:

Span = approximately 1.5 to 2 times the emission bandwidth, centered on the transmit channel.

RBW = Approx. 1% of the emission bandwidth (B). This was an iterative process where an exact match of 1% may not be achieved. The largest value of RBW that came close to 1% of the emission bandwidth was used.

A peak detector was used.

The marker-delta function was then used to measure 26 dB emission bandwidth

FCC Public Notice DA 02-2138 was followed. The transmit frequency was set to the required channels in each band. The transmit power was set to its default maximum. The lowest, a medium, and the highest data rates were measured. 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.


The spectrum analyzer settings were as follows:

➤ Span set to encompass the entire emission bandwidth (B), centered on the transmit channel.

➤ Using the marker delta function, the largest difference between the following two traces was measured:

o 1st Trace: RBW = 1 MHz, VBW \geq 3 MHz with peak detector and max-hold settings.

o 2nd Trace: Use same settings as were used for peak conducted transmit power. The sample detector was used as well as the VBW being matched to that used on the peak conducted transmit power.

NORTHWEST		EMC		Peak Excursion of the Modulation Envelope		XMit 2011.04.20 PsaTx 2011.06.20	
EUT: WMIA-199NI				Work Order: PROS0109			
Serial Number: 09435H1000039				Date: 06/23/11			
Customer: ProSoft Technology, Inc.				Temperature: 22.06°C			
Attendees: None				Humidity: 48%			
Project: None				Barometric Pres.: 1011			
Tested by: Jaemi Suh		Power: 120V/60Hz		Job Site: OC11			
TEST SPECIFICATIONS				TEST METHOD			
FCC 15.407:2011				ANSI C63.10:2009			
COMMENTS							
Operating at 802.11a/n. Chain 1							
DEVIATIONS FROM TEST STANDARD							
Configuration #	1	 Signature					
				Value	Limit	Result	
802.11(a) 6 Mbps							
Low Channel 36 (5180 MHz)				0.583 dBm	≤ 13 dB	Pass	
High Channel 48 (5240 MHz)				0.529 dBm	≤ 13 dB	Pass	
Low Channel 100 (5500 MHz)				0.45 dBm	≤ 13 dB	Pass	
Mid Channel 116 (5580 MHz)				0.464 dBm	≤ 13 dB	Pass	
High Channel 140 (5700 MHz)				0.397 dBm	≤ 13 dB	Pass	
802.11(a) 54 Mbps							
Low Channel 52 (5260 MHz)				0.008 dBm	≤ 13 dB	Pass	
High Channel 64 (5320 MHz)				0.398 dBm	≤ 13 dB	Pass	
802.11(n) MCS0							
Low Channel 52 (5260 MHz)				0.2 dBm	≤ 13 dB	Pass	
High Channel 64 (5320 MHz)				0.048 dBm	≤ 13 dB	Pass	
802.11(n) MCS8							
Low Channel 36 (5180 MHz)				0.331 dBm	≤ 13 dB	Pass	
High Channel 48 (5240 MHz)				0.579 dBm	≤ 13 dB	Pass	
802.11(n) MCS15							
Low Channel 100 (5500 MHz)				0.148 dBm	≤ 13 dB	Pass	
Mid Channel 116 (5580 MHz)				0.252 dBm	≤ 13 dB	Pass	
High Channel 140 (5700 MHz)				0.859 dBm	≤ 13 dB	Pass	
802.11(n)(40MHz) MCS0							
Low Channel 37 (5190 MHz)				0.316 dBm	≤ 13 dB	Pass	
High Channel 47 (5230 MHz)				0.375 dBm	≤ 13 dB	Pass	
802.11(n)(40MHz) MCS7							
Low Channel 101 (5510 MHz)				0.647 dBm	≤ 13 dB	Pass	
High Channel 130 (5670 MHz)				0.578 dBm	≤ 13 dB	Pass	
802.11(n)(40MHz) MCS15							
Low Channel 53 (5270 MHz)				0.915 dBm	≤ 13 dB	Pass	
High Channel 63 (5310 MHz)				0.667 dBm	≤ 13 dB	Pass	

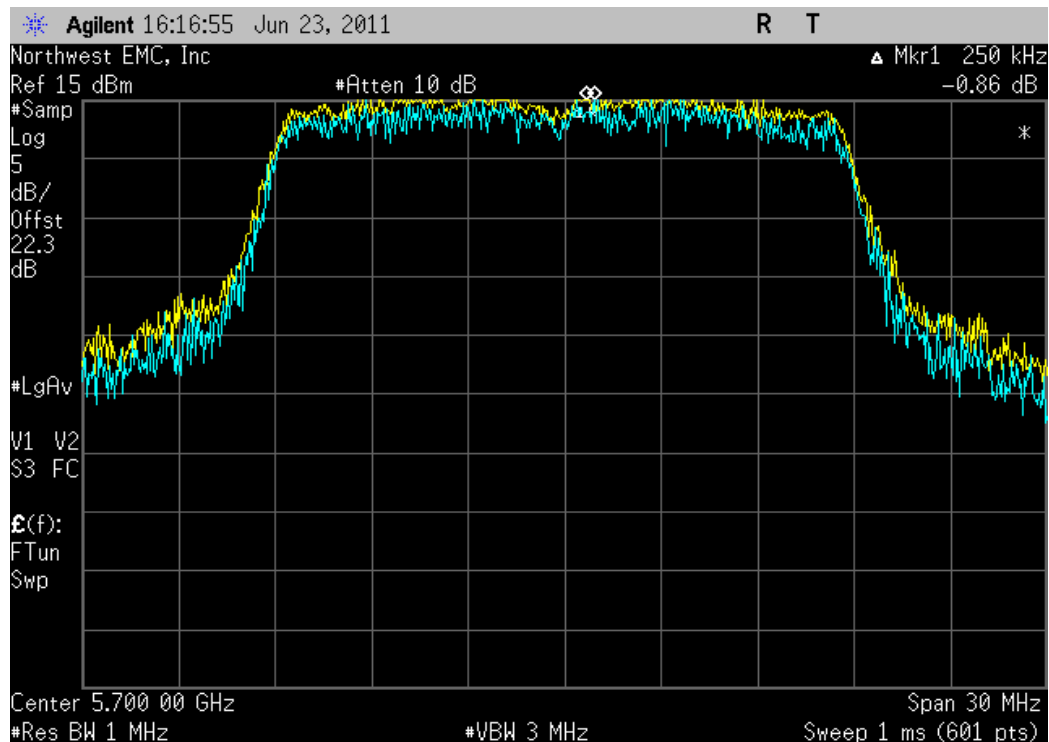
802.11(a) 6 Mbps, Low Channel 36 (5180 MHz)

				Value	Limit	Result
				0.583 dBm	≤ 13 dB	Pass



802.11(n) MCS15, High Channel 140 (5700 MHz)

				Value	Limit	Result
				0.859 dBm	≤ 13 dB	Pass




Peak Excursion of the Modulation Envelope

802.11(n)(40MHz) MCS15, Low Channel 53 (5270 MHz)

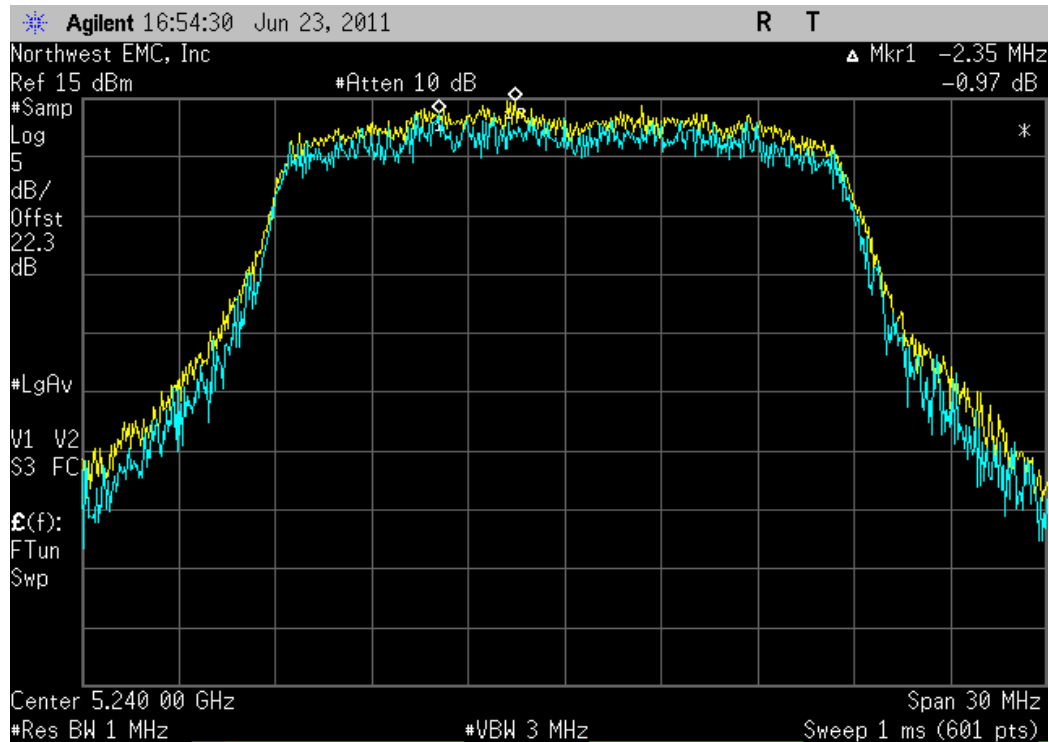
Value	Limit	Result
0.915 dBm	≤ 13 dB	Pass



NORTHWEST		Peak Excursion of the Modulation Envelope		XMit 2011.04.20 PsaTx 2011.06.20	
EMC		EUT: WMIA-199NI		Work Order: PROS0109	
Serial Number: 09435H1000039		Date: 06/23/11			
Customer: ProSoft Technology, Inc.		Temperature: 22.06°C			
Attendees: None		Humidity: 48%			
Project: None		Barometric Pres.: 1011			
Tested by: Jaemi Suh		Power: 120V/60Hz		Job Site: OC11	
TEST SPECIFICATIONS		TEST METHOD			
FCC 15.407:2011		ANSI C63.10:2009			
COMMENTS					
Operating at 802.11a/n. Chain 2					
DEVIATIONS FROM TEST STANDARD					
Configuration #	1	 <i>Signature</i>			
		Value	Limit	Result	
802.11(a) 6 Mbps					
Low Channel 52 (5260 MHz)		0.237 dBm	≤ 13 dB	Pass	
High Channel 64 (5320 MHz)		0.006 dBm	≤ 13 dB	Pass	
Low Channel 100 (5500 MHz)		0.472 dBm	≤ 13 dB	Pass	
Mid Channel 116 (5580 MHz)		0.003 dBm	≤ 13 dB	Pass	
High Channel 140 (5700 MHz)		0.247 dBm	≤ 13 dB	Pass	
802.11(a) 54 Mbps					
Low Channel 36 (5180 MHz)		0.231 dBm	≤ 13 dB	Pass	
High Channel 48 (5240 MHz)		0.329 dBm	≤ 13 dB	Pass	
802.11(n) MCS7					
Low Channel 52 (5260 MHz)		0.416 dBm	≤ 13 dB	Pass	
High Channel 64 (5320 MHz)		0.314 dBm	≤ 13 dB	Pass	
802.11(n) MCS15					
Low Channel 100 (5500 MHz)		0.923 dBm	≤ 13 dB	Pass	
Mid Channel 116 (5580 MHz)		0.966 dBm	≤ 13 dB	Pass	
High Channel 140 (5700 MHz)		0.17 dBm	≤ 13 dB	Pass	
Low Channel 36 (5180 MHz)		0.189 dBm	≤ 13 dB	Pass	
High Channel 48 (5240 MHz)		0.121 dBm	≤ 13 dB	Pass	
802.11(n)(40MHz) MCS0					
Low Channel 37 (5190 MHz)		0.178 dBm	≤ 13 dB	Pass	
High Channel 47 (5230 MHz)		0.58 dBm	≤ 13 dB	Pass	
802.11(n)(40MHz) MCS7					
Low Channel 101 (5510 MHz)		0.367 dBm	≤ 13 dB	Pass	
High Channel 130 (5670 MHz)		0.649 dBm	≤ 13 dB	Pass	
802.11(n)(40MHz) MCS15					
Low Channel 53 (5270 MHz)		0.521 dBm	≤ 13 dB	Pass	
High Channel 63 (5310 MHz)		0.437 dBm	≤ 13 dB	Pass	

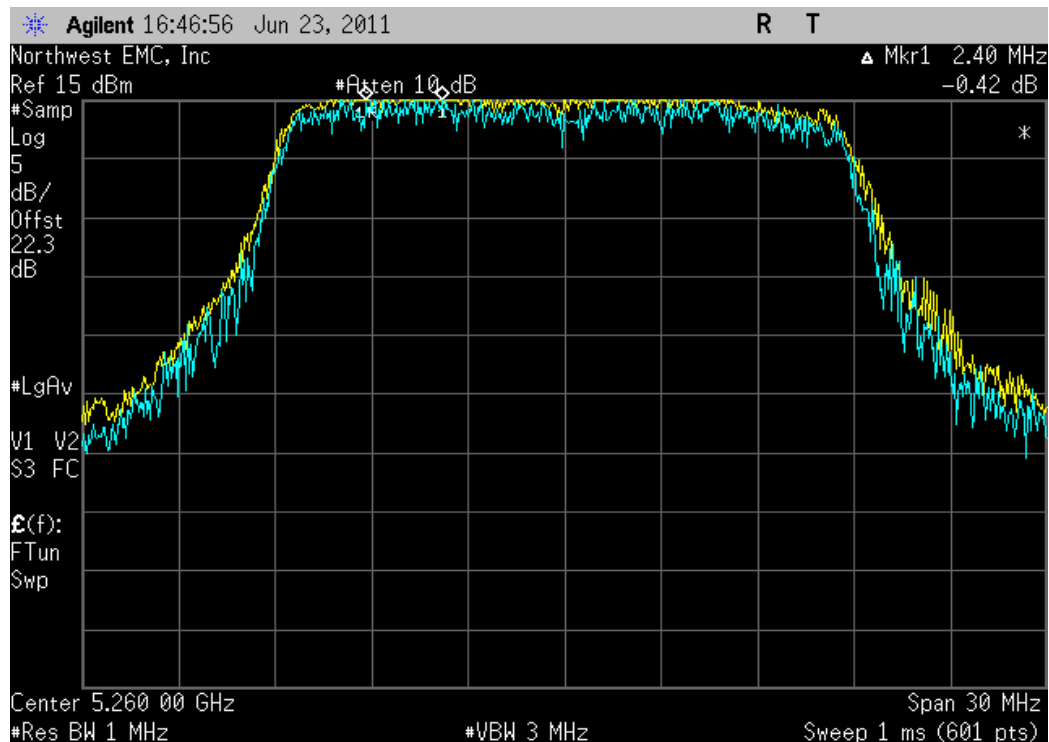
802.11(n) MCS15, Mid Channel 110 (5580 MHz)

	Value	Limit	Result
	0.966 dBm	≤ 13 dB	Pass



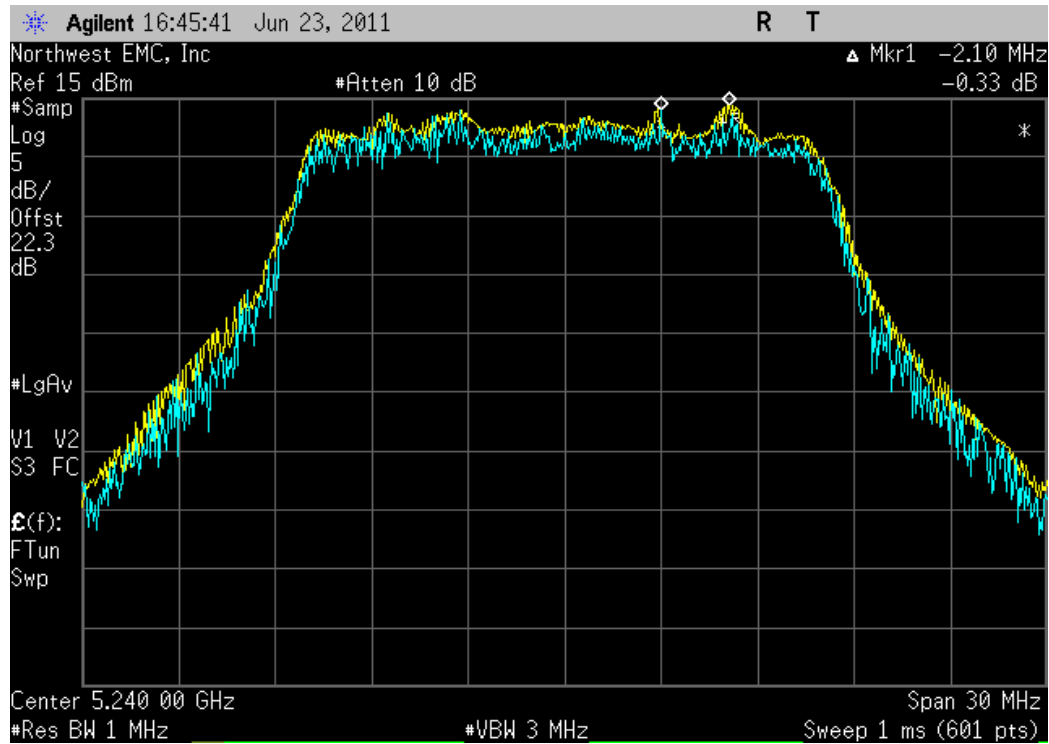
802.11(n) MCS7, Low Channel 52 (5260 MHz)


	Value	Limit	Result
	0.416 dBm	≤ 13 dB	Pass



802.11(a) 54 Mbps, High Channel 48 (5240 MHz)

				Value	Limit	Result
				0.329 dBm	≤ 13 dB	Pass

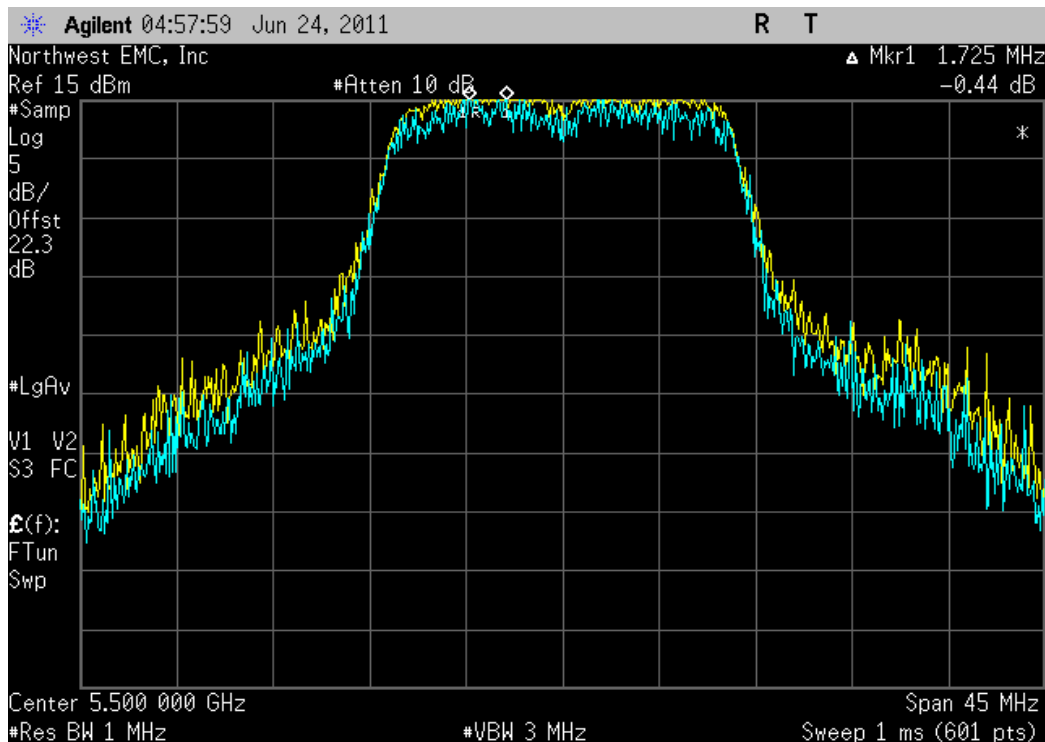


NORTHWEST		EMC		Peak Excursion of the Modulation Envelope		XMit 2011.04.20 PsaTx 2011.06.20	
EUT: WMIA-199NI				Work Order: PROS0109			
Serial Number: 09435H1000039				Date: 06/23/11			
Customer: ProSoft Technology, Inc.				Temperature: 22.06°C			
Attendees: None				Humidity: 48%			
Project: None				Barometric Pres.: 1011			
Tested by: Jaemi Suh		Power: 120V/60Hz		Job Site: OC11			
TEST SPECIFICATIONS				TEST METHOD			
FCC 15.407:2011				ANSI C63.10:2009			
COMMENTS							
Operating at 802.11a/n. Chain 3							
DEVIATIONS FROM TEST STANDARD							
Configuration # 1 							
				Value	Limit	Result	
802.11(a) 6 Mbps							
Low Channel 100 (5500 MHz)				- 0.437 dBm	≤ 13 dB	Pass	
Mid Channel 116 (5580 MHz)				-1.03 dBm	≤ 13 dB	Pass	
High Channel 140 (5700 MHz)				-0.804 dBm	≤ 13 dB	Pass	
802.11(a) 36 Mbps							
Low Channel 52 (5260 MHz)				-2.033 dBm	≤ 13 dB	Pass	
High Channel 64 (5320 MHz)				-0.441 dBm	≤ 13 dB	Pass	
802.11(a) 54 Mbps							
Low Channel 36 (5180 MHz)				-0.188 dBm	≤ 13 dB	Pass	
High Channel 48 (5240 MHz)				-0.645 dBm	≤ 13 dB	Pass	
802.11(n) MCS7							
Low Channel 52 (5260 MHz)				-0.797 dBm	≤ 13 dB	Pass	
High Channel 64 (5320 MHz)				-1.251 dBm	≤ 13 dB	Pass	
802.11(n) MCS8							
Low Channel 100 (5500 MHz)				-0.789 dBm	≤ 13 dB	Pass	
Mid Channel 116 (5580 MHz)				-0.854 dBm	≤ 13 dB	Pass	
High Channel 140 (5700 MHz)				-0.993 dBm	≤ 13 dB	Pass	
802.11(n) MCS15							
Low Channel 36 (5180 MHz)				-0.013 dBm	≤ 13 dB	Pass	
High Channel 48 (5240 MHz)				-0.119 dBm	≤ 13 dB	Pass	
802.11(n)(40MHz) MCS0							
Low Channel 53 (5270 MHz)				-0.97 dBm	≤ 13 dB	Pass	
High Channel 63 (5310 MHz)				-0.636 dBm	≤ 13 dB	Pass	
802.11(n)(40MHz) MCS7							
Low Channel 37 (5190 MHz)				-1.898 dBm	≤ 13 dB	Pass	
High Channel 47 (5230 MHz)				-0.649 dBm	≤ 13 dB	Pass	
Low Channel 101 (5510 MHz)				-1.091 dBm	≤ 13 dB	Pass	
High Channel 130 (5670 MHz)				-0.561 dBm	≤ 13 dB	Pass	

Peak Excursion of the Modulation Envelope

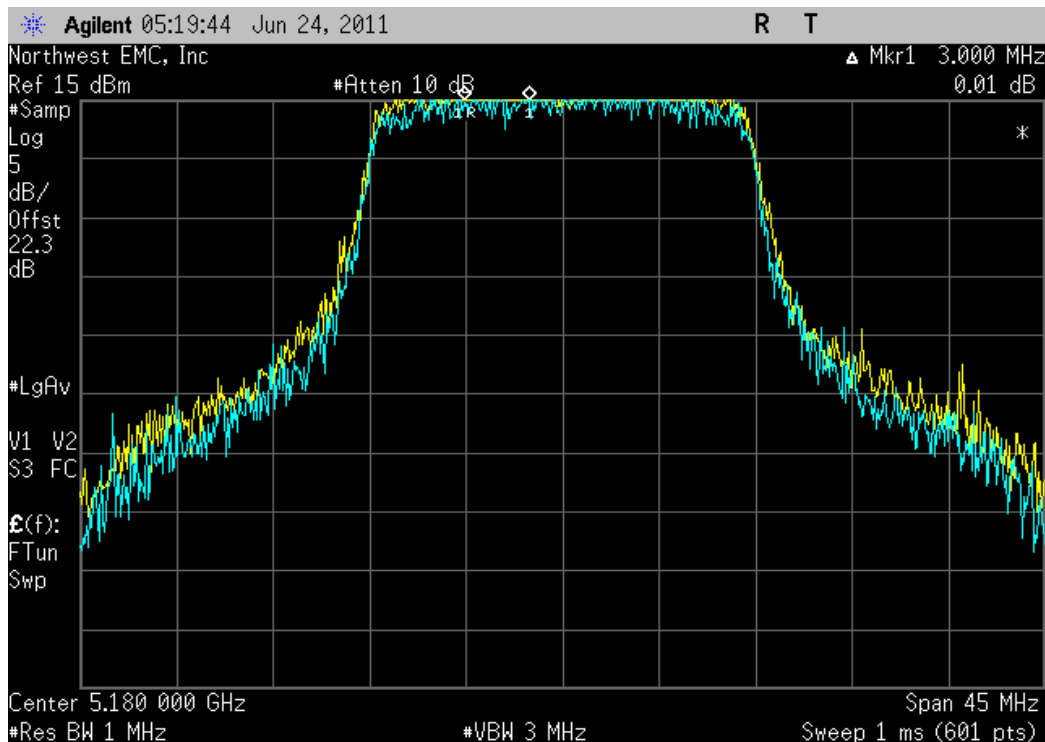
802.11(a) 6 Mbps, Low Channel 100 (5500 MHz)

	Value	Limit	Result
	-0.437 dBm	≤ 13 dB	Pass



802.11(n) MCS15, Low Channel 36 (5180 MHz)

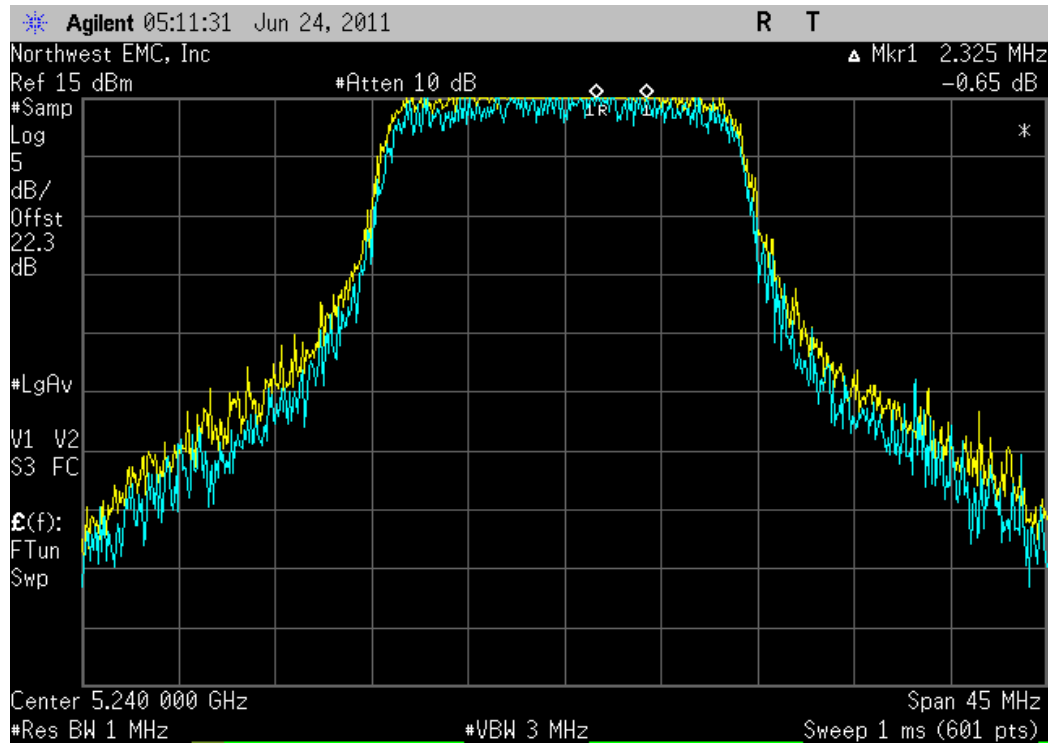
	Value	Limit	Result
	-0.013 dBm	≤ 13 dB	Pass



Peak Excursion of the Modulation Envelope

802.11(a) 54 Mbps, High Channel 48 (5240 MHz)

Value	Limit	Result
-0.645 dBm	≤ 13 dB	Pass



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.

MODES OF OPERATION

Transmitting at 802.11a/n Channels 52, 64
Transmitting at 802.11a/n Channels 36, 48
Transmitting at 802.11a/n Channels 64, 116, 140, 100

MODES INVESTIGATED

36Mbps, MCS0, MCS8, MCS15, MCS7(HT40), MCS8(HT40)

POWER SETTINGS INVESTIGATED

120VAC/60Hz

AXIS INVESTIGATED

X-Axis
Y-Axis
Z-Axis

FREQUENCY RANGE INVESTIGATED

Start Frequency	30 MHz	Stop Frequency	18000 MHz
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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	AMF-6F-12001800-30-10P	AVP	2/13/2011	12
Antenna, Horn	EMCO	3160-08	AHK	NCR	0
Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AVL	4/8/2011	12
Antenna, Horn	ETS	3160-07	AHX	NCR	0
OC11 Cables	N/A	12-18GHz RE Cables	OCS	4/8/2011	12
Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	AVJ	10/28/2010	12
Antenna, Horn	EMCO	3115	AHB	3/8/2011	24
OC11 Cables	N/A	1-8GHz RE Cables	OCR	4/8/2011	12
Spectrum Analyzer	Agilent	E4440A	AFG	4/28/2011	12

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. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. The measurement uncertainty estimation is available upon request.

TEST DESCRIPTION

The highest gain antenna of each type to be used with the EUT were tested. The EUT was configured for the lowest, a middle, and the highest transmit frequency in each operational band. For each configuration, the spectrum was scanned throughout the specified range. Measurements were made to satisfy the three requirements of 47 CFR 15.407: Field strength under 1GHz, Restricted Bands of 47 CFR 15.205, and EIRP of 47 CFR 15.407. While scanning, emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and EUT antenna in three orthogonal axis, and adjusting the measurement antenna height and polarization (per ANSI C63.10:2009). A preamp and high pass filter (and notch filter) were used for this test in order to provide sufficient measurement sensitivity.

The amplitude and frequency of the highest emissions were noted. The EUT was then replaced with a ½ wave dipole that was successively tuned to each of the highest spurious emissions. A signal generator was connected to the dipole (horn antenna for frequencies above 1GHz), and its output was adjusted to match the level previously noted for each frequency. The output of the signal generator was recorded, and by factoring in the cable loss to the dipole antenna (or horn) and its gain (dBi); the effective radiated power for each radiated spurious emission was determined.

Spurious Radiated Emissions

EUT:	WMIA-199NI	Work Order:	PROS0109
Serial Number:	09435H1000039	Date:	06/30/11
Customer:	ProSoft Technology, Inc.	Temperature:	22.41
Attendees:	None	Humidity:	41%
Project:	None	Barometric Pres.:	1019.2
Tested by:	Jaemi Suh	Power:	120VAC/60Hz
		Job Site:	OC11

TEST SPECIFICATIONS

FCC 15.407:2011

TEST METHOD

ANSI C63.10:2009

TEST PARAMETERS

Antenna Height(s) (m) 1 - 4 Test Distance (m) 0

COMMENTS

Power Level set to 14. Z-Axis

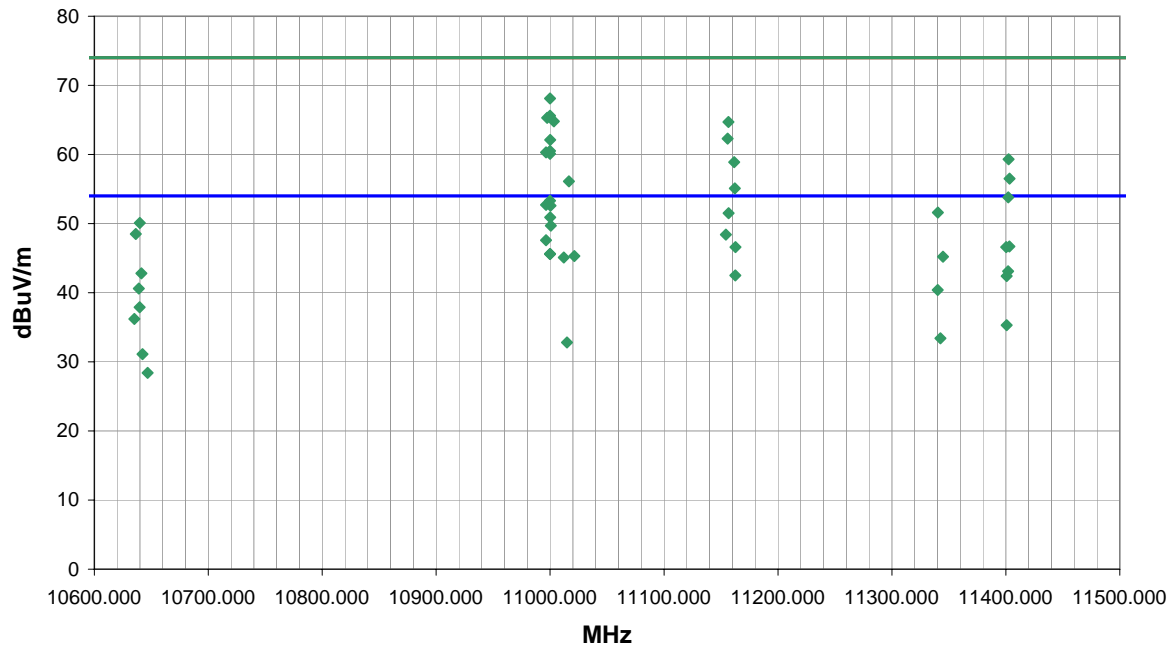
EUT OPERATING MODES

Transmitting at 802.11a/n Channels 64, 100, 116, 140

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	29
Configuration #	2
Results	Pass

Signature 

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)	Comments
10999.910	62.7	-9.4	360.0	1.0	0.0	0.0	H-Horn	AV	0.0	53.3	54.0	-0.7	36 Mbps Z
10996.470	62.1	-9.4	230.0	1.1	0.0	0.0	V-Horn	AV	0.0	52.7	54.0	-1.3	36 Mbps X
11000.320	62.0	-9.4	233.0	1.1	0.0	0.0	V-Horn	AV	0.0	52.6	54.0	-1.4	MCS0
11156.680	60.4	-8.9	229.0	1.0	0.0	0.0	V-Horn	AV	0.0	51.5	54.0	-2.5	36 Mbps
11000.070	60.3	-9.4	1.0	1.0	0.0	0.0	V-Horn	AV	0.0	50.9	54.0	-3.1	36 Mbps Z
11000.700	59.1	-9.4	321.0	1.2	0.0	0.0	H-Horn	AV	0.0	49.7	54.0	-4.3	MCS0
11154.320	57.4	-9.0	237.0	1.0	0.0	0.0	V-Horn	AV	0.0	48.4	54.0	-5.6	MCS0
11000.000	77.5	-9.4	360.0	1.0	0.0	0.0	H-Horn	PK	0.0	68.1	74.0	-5.9	36 Mbps Z
10996.370	57.0	-9.4	328.0	1.2	0.0	0.0	H-Horn	AV	0.0	47.6	54.0	-6.4	36 Mbps X
11400.320	55.0	-8.4	167.0	1.0	0.0	0.0	H-Horn	AV	0.0	46.6	54.0	-7.4	MCS0
11162.700	55.5	-8.9	322.0	1.3	0.0	0.0	H-Horn	AV	0.0	46.6	54.0	-7.4	MCS0
10999.950	55.0	-9.4	66.0	1.0	0.0	0.0	H-Horn	AV	0.0	45.6	54.0	-8.4	36 Mbps Y
10999.990	55.0	-9.4	0.0	1.0	0.0	0.0	V-Horn	AV	0.0	45.6	54.0	-8.4	36 Mbps Y
11000.000	75.0	-9.4	1.0	1.0	0.0	0.0	V-Horn	PK	0.0	65.6	74.0	-8.4	36 Mbps Z
10997.370	74.7	-9.4	230.0	1.1	0.0	0.0	V-Horn	PK	0.0	65.3	74.0	-8.7	36 Mbps X
11011.970	54.5	-9.4	226.0	1.0	0.0	0.0	V-Horn	AV	0.0	45.1	54.0	-8.9	MCS7 (HT40)
11003.280	74.2	-9.4	233.0	1.1	0.0	0.0	V-Horn	PK	0.0	64.8	74.0	-9.2	MCS0
11156.480	73.6	-8.9	229.0	1.0	0.0	0.0	V-Horn	PK	0.0	64.7	74.0	-9.3	36 Mbps
11401.950	51.5	-8.4	100.0	1.5	0.0	0.0	V-Horn	AV	0.0	43.1	54.0	-10.9	MCS0
11162.550	51.4	-8.9	0.0	1.4	0.0	0.0	H-Horn	AV	0.0	42.5	54.0	-11.5	36 Mbps

EUT:	WMIA-199NI	Work Order:	PROS0109
Serial Number:	09435H1000039	Date:	06/30/11
Customer:	ProSoft Technology, Inc.	Temperature:	22.41
Attendees:	None	Humidity:	41%
Project:	None	Barometric Pres.:	1019.2
Tested by:	Jaemi Suh	Power:	120VAC/60Hz
		Job Site:	OC11

TEST SPECIFICATIONS

FCC 15.407:2011

TEST METHOD

ANSI C63.10:2009

TEST PARAMETERS

Antenna Height(s) (m)	1 - 4	Test Distance (m)	3
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COMMENTS

Power Level set to 14. Z-Axis

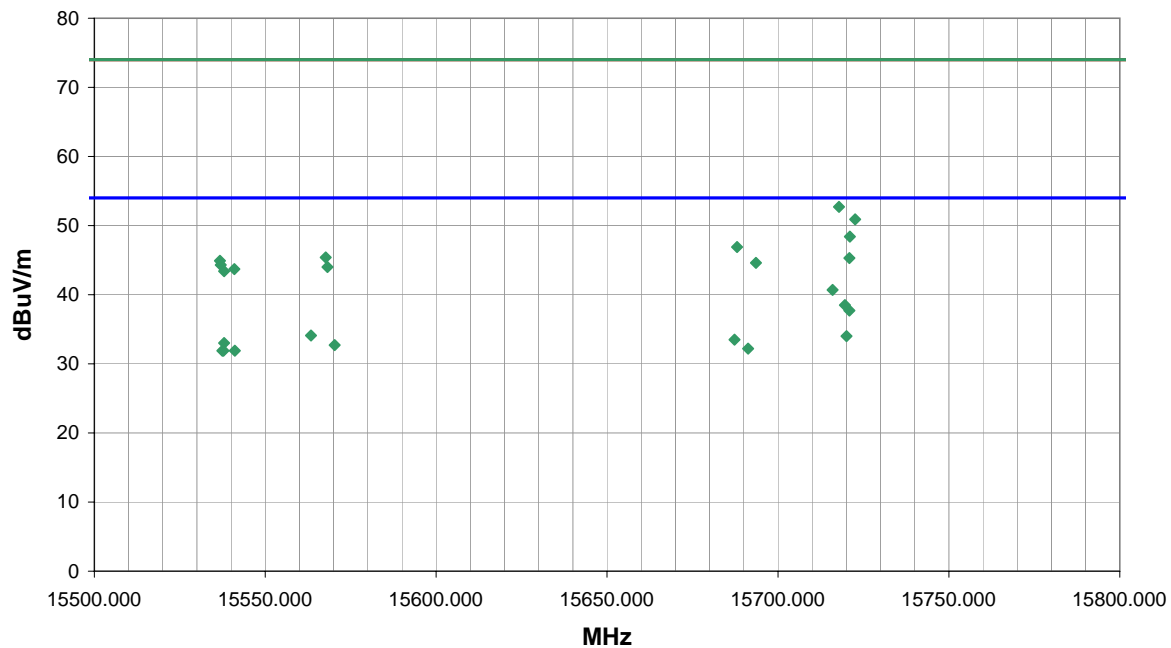
EUT OPERATING MODES

Transmitting at 802.11a/n Channels 36, 48

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	21	Signature 
Configuration #	2	
Results	Pass	



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)	Comments
15715.960	37.3	3.4	330.0	1.6	0.0	0.0	V-Horn	AV	0.0	40.7	54.0	-13.3	MCS15
15719.570	35.1	3.4	336.0	1.5	0.0	0.0	H-Horn	AV	0.0	38.5	54.0	-15.5	MCS15
15720.880	34.3	3.4	0.0	1.6	0.0	0.0	V-Horn	AV	0.0	37.7	54.0	-16.3	36 Mbps
15563.360	31.1	3.0	257.0	1.9	0.0	0.0	V-Horn	AV	0.0	34.1	54.0	-19.9	MCS8
15720.070	30.6	3.4	212.0	1.0	0.0	0.0	H-Horn	AV	0.0	34.0	54.0	-20.0	36 Mbps
15687.280	30.2	3.3	359.0	1.7	0.0	0.0	V-Horn	AV	0.0	33.5	54.0	-20.5	MCS8
15537.960	30.2	2.8	96.0	1.0	0.0	0.0	V-Horn	AV	0.0	33.0	54.0	-21.0	36 Mbps
15570.320	29.7	3.0	340.0	1.4	0.0	0.0	H-Horn	AV	0.0	32.7	54.0	-21.3	MCS8
15717.830	49.3	3.4	330.0	1.6	0.0	0.0	V-Horn	PK	0.0	52.7	74.0	-21.3	MCS15
15691.280	28.9	3.3	172.0	1.0	0.0	0.0	H-Horn	AV	0.0	32.2	54.0	-21.8	MCS8
15537.430	29.0	2.9	147.0	1.0	0.0	0.0	H-Horn	AV	0.0	31.9	54.0	-22.1	36 Mbps
15537.760	29.0	2.9	256.0	1.0	0.0	0.0	V-Horn	AV	0.0	31.9	54.0	-22.1	MCS15
15541.080	29.1	2.8	80.0	1.4	0.0	0.0	H-Horn	AV	0.0	31.9	54.0	-22.1	MCS15
15722.570	47.5	3.4	336.0	1.5	0.0	0.0	H-Horn	PK	0.0	50.9	74.0	-23.1	MCS15
15721.040	45.0	3.4	0.0	1.6	0.0	0.0	V-Horn	PK	0.0	48.4	74.0	-25.6	36 Mbps
15688.010	43.6	3.3	359.0	1.7	0.0	0.0	V-Horn	PK	0.0	46.9	74.0	-27.1	MCS8
15567.680	42.4	3.0	257.0	1.9	0.0	0.0	V-Horn	PK	0.0	45.4	74.0	-28.6	MCS8
15720.890	41.9	3.4	212.0	1.0	0.0	0.0	H-Horn	PK	0.0	45.3	74.0	-28.7	36 Mbps
15536.730	42.0	2.9	96.0	1.0	0.0	0.0	V-Horn	PK	0.0	44.9	74.0	-29.1	36 Mbps
15693.570	41.3	3.3	172.0	1.0	0.0	0.0	H-Horn	PK	0.0	44.6	74.0	-29.4	MCS8

Spurious Radiated Emissions

EUT:	WMIA-199NI	Work Order:	PROS0109
Serial Number:	09435H1000039	Date:	06/30/11
Customer:	ProSoft Technology, Inc.	Temperature:	22.41
Attendees:	None	Humidity:	41%
Project:	None	Barometric Pres.:	1019.2
Tested by:	Jaemi Suh	Power:	120VAC/60Hz
		Job Site:	OC11

TEST SPECIFICATIONS

FCC 15.407:2011

TEST METHOD

ANSI C63.10:2009

TEST PARAMETERS

Antenna Height(s) (m)	1 - 4	Test Distance (m)	3
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COMMENTS

Power Level set to 14. Z-Axis

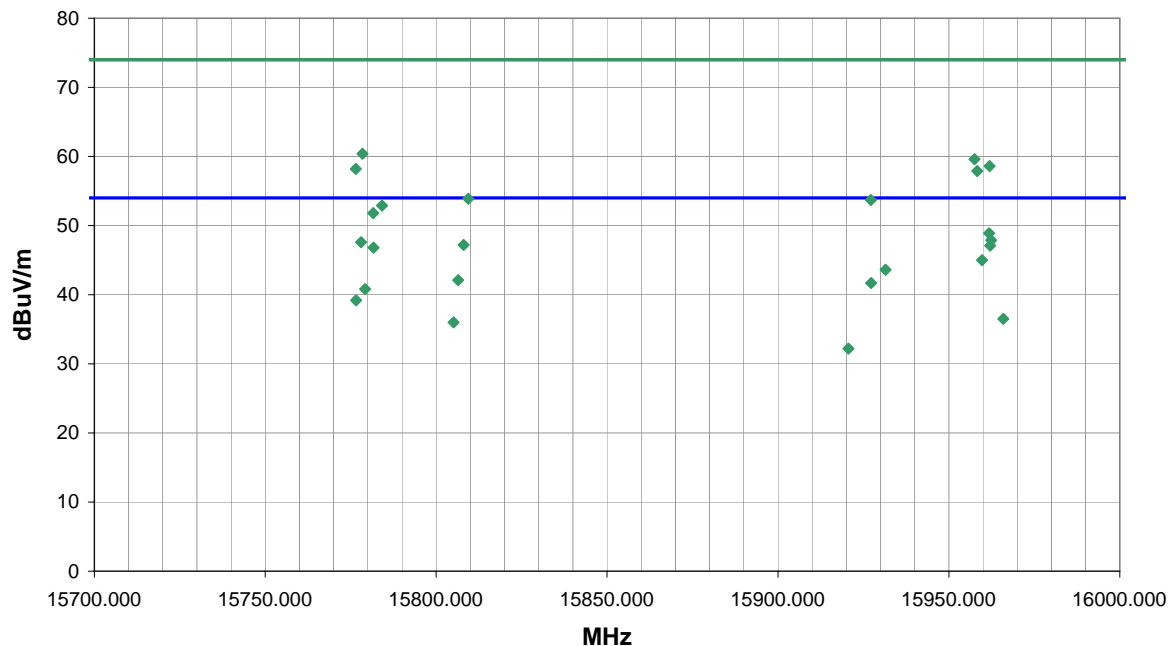
EUT OPERATING MODES

Transmitting at 802.11a/n Channels 52, 64

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	22	Signature 
Configuration #	2	
Results	Pass	



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)	Comments
15962.380	43.7	4.2	25.0	1.9	0.0	0.0	V-Horn	AV	0.0	47.9	54.0	-6.1	36 Mbps
15778.050	44.0	3.6	328.0	1.6	0.0	0.0	V-Horn	AV	0.0	47.6	54.0	-6.4	MCS8
15962.100	42.8	4.3	359.0	2.0	0.0	0.0	H-Horn	AV	0.0	47.1	54.0	-6.9	36 Mbps
15781.670	43.2	3.6	331.0	1.6	0.0	0.0	V-Horn	AV	0.0	46.8	54.0	-7.2	36 Mbps
15959.700	40.7	4.3	1.0	1.9	0.0	0.0	V-Horn	AV	0.0	45.0	54.0	-9.0	MCS8
15806.450	38.4	3.7	327.0	1.6	0.0	0.0	V-Horn	AV	0.0	42.1	54.0	-11.9	MCS8 (HT40)
15927.250	37.6	4.1	323.0	1.5	0.0	0.0	V-Horn	AV	0.0	41.7	54.0	-12.3	MCS8 (HT40)
15779.200	37.1	3.7	359.0	2.2	0.0	0.0	H-Horn	AV	0.0	40.8	54.0	-13.2	MCS8
15778.450	56.7	3.7	328.0	1.6	0.0	0.0	V-Horn	PK	0.0	60.4	74.0	-13.6	MCS8
15957.500	55.3	4.3	25.0	1.9	0.0	0.0	V-Horn	PK	0.0	59.6	74.0	-14.4	36 Mbps
15776.580	35.5	3.7	191.0	2.2	0.0	0.0	H-Horn	AV	0.0	39.2	54.0	-14.8	36 Mbps
15961.920	54.3	4.3	359.0	2.0	0.0	0.0	H-Horn	PK	0.0	58.6	74.0	-15.4	36 Mbps
15776.470	54.5	3.7	331.0	1.6	0.0	0.0	V-Horn	PK	0.0	58.2	74.0	-15.8	36 Mbps
15958.270	53.6	4.3	1.0	1.9	0.0	0.0	V-Horn	PK	0.0	57.9	74.0	-16.1	MCS8
15965.930	32.2	4.3	0.0	1.6	0.0	0.0	H-Horn	AV	0.0	36.5	54.0	-17.5	MCS8
15805.100	32.3	3.7	202.0	2.0	0.0	0.0	H-Horn	AV	0.0	36.0	54.0	-18.0	MCS8 (HT40)
15809.380	50.2	3.7	327.0	1.6	0.0	0.0	V-Horn	PK	0.0	53.9	74.0	-20.1	MCS8 (HT40)
15927.180	49.6	4.1	323.0	1.5	0.0	0.0	V-Horn	PK	0.0	53.7	74.0	-20.3	MCS8 (HT40)
15784.150	49.2	3.7	359.0	2.2	0.0	0.0	H-Horn	PK	0.0	52.9	74.0	-21.1	MCS8
15920.630	28.1	4.1	290.0	1.0	0.0	0.0	H-Horn	AV	0.0	32.2	54.0	-21.8	MCS8 (HT40)

Spurious Radiated Emissions

EUT:	WMIA-199NI	Work Order:	PROS0109
Serial Number:	09435H1000039	Date:	06/30/11
Customer:	ProSoft Technology, Inc.	Temperature:	22.41
Attendees:	None	Humidity:	41%
Project:	None	Barometric Pres.:	1019.2
Tested by:	Jaemi Suh	Power:	120VAC/60Hz
		Job Site:	OC11

TEST SPECIFICATIONS

FCC 15.407:2011

TEST METHOD

ANSI C63.10:2009

TEST PARAMETERS

Antenna Height(s) (m)	1 - 4	Test Distance (m)	3
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COMMENTS

Power Level set to 14. Z-Axis

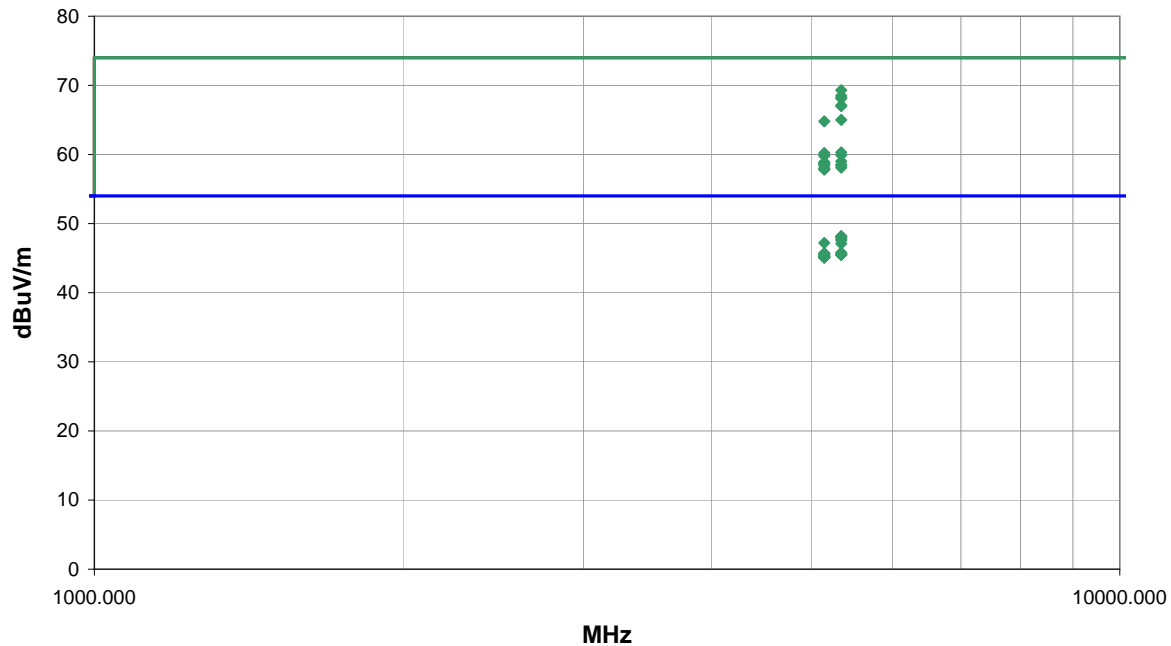
EUT OPERATING MODES

Transmitting at 802.11a/n

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	32	Signature 
Configuration #	1	
Results	Pass	



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)	Comments
5350.000	52.0	7.3	322.0	1.0	0.0	10.0	V-Horn	PK	0.0	69.3	74.0	-4.7	MCS7
5350.000	51.2	7.3	309.0	1.0	0.0	10.0	V-Horn	PK	0.0	68.5	74.0	-5.5	MCS0
5350.000	50.9	7.3	304.0	1.0	0.0	10.0	V-Horn	PK	0.0	68.2	74.0	-5.8	54 Mbps
5350.000	30.9	7.3	304.0	1.0	0.0	10.0	V-Horn	AV	0.0	48.2	54.0	-5.8	54 Mbps
5350.000	30.8	7.3	309.0	1.0	0.0	10.0	V-Horn	AV	0.0	48.1	54.0	-5.9	MCS0
5350.000	50.8	7.3	298.0	1.0	0.0	10.0	V-Horn	PK	0.0	68.1	74.0	-5.9	36 Mbps
5350.000	30.7	7.3	298.0	1.0	0.0	10.0	V-Horn	AV	0.0	48.0	54.0	-6.0	36 Mbps
5350.000	30.7	7.3	322.0	1.0	0.0	10.0	V-Horn	AV	0.0	48.0	54.0	-6.0	MCS7
5349.999	30.4	7.3	295.0	1.0	0.0	10.0	V-Horn	AV	0.0	47.7	54.0	-6.3	6 Mbps
5350.000	30.3	7.3	0.0	1.0	0.0	10.0	V-Horn	AV	0.0	47.6	54.0	-6.4	6 Mbps
5150.000	30.7	6.5	1.0	1.7	0.0	10.0	V-Horn	AV	0.0	47.2	54.0	-6.8	36 Mbps
5350.000	29.8	7.3	328.0	1.5	0.0	10.0	H-Horn	AV	0.0	47.1	54.0	-6.9	MCS15
5350.000	49.8	7.3	295.0	1.0	0.0	10.0	V-Horn	PK	0.0	67.1	74.0	-6.9	6 Mbps
5350.000	49.7	7.3	0.0	1.0	0.0	10.0	V-Horn	PK	0.0	67.0	74.0	-7.0	6 Mbps
5350.000	28.5	7.3	120.0	1.5	0.0	10.0	H-Horn	AV	0.0	45.8	54.0	-8.2	54 Mbps
5150.000	29.2	6.5	26.0	1.6	0.0	10.0	V-Horn	AV	0.0	45.7	54.0	-8.3	54 Mbps
5150.000	29.2	6.5	191.0	1.7	0.0	10.0	V-Horn	AV	0.0	45.7	54.0	-8.3	MCS7
5350.000	28.3	7.3	0.0	1.0	0.0	10.0	H-Horn	AV	0.0	45.6	54.0	-8.4	6 Mbps
5150.000	29.1	6.5	142.0	1.6	0.0	10.0	V-Horn	AV	0.0	45.6	54.0	-8.4	MCS7
5350.000	28.2	7.3	116.0	1.0	0.0	10.0	H-Horn	AV	0.0	45.5	54.0	-8.5	36 Mbps

EMC**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

Transmitting at 802.11a/n

MODES INVESTIGATED

36Mbps, MCS0, MCS8, MCS15, MCS8(HT40)

POWER SETTINGS INVESTIGATED

120VAC/60Hz

AXIS INVESTIGATED

X-Axis

Y-Axis

Z-Axis

FREQUENCY RANGE INVESTIGATED

Start Frequency	18 GHz	Stop Frequency	40 GHz
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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	JSW45-26004000-40-5P	AVQ	9/7/2010	12 mo
Antenna, Horn	ETS	3160-10	AIX	NCR	0 mo
Cable	ESM Cable Corp.	KMKM-72	EVZ	10/20/2010	12 mo
Pre-Amplifier	Miteq	AMF-6F-18002650-25-10P	AOI	4/29/2011	12 mo
Antenna, Horn	EMCO	3160-09	AHN	NCR	0 mo
OC floating Cable	N/A	18-26GHz RE Cables	OCK	4/29/2011	12 mo
Spectrum Analyzer	Agilent	E4446A	AAY	1/11/2011	12 mo

MEASUREMENT BANDWIDTHS

	Frequency Range	Peak Data	Quasi-Peak Data	Average Data
	(MHz)	(kHz)	(kHz)	(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. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. The measurement uncertainty estimation is available upon request.


TEST DESCRIPTION

The highest gain antenna of each type to be used with the EUT were tested. The EUT was configured for the lowest, a middle, and the highest transmit frequency in each operational band. For each configuration, the spectrum was scanned throughout the specified range. Measurements were made to satisfy the three requirements of 47 CFR 15.407: Field strength under 1GHz, Restricted Bands of 47 CFR 15.205, and EIRP of 47 CFR 15.407. While scanning, emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and EUT antenna in three orthogonal axis, and adjusting the measurement antenna height and polarization (per ANSI C63.10:2009). A preamp and high pass filter (and notch filter) were used for this test in order to provide sufficient measurement sensitivity.

The amplitude and frequency of the highest emissions were noted. The EUT was then replaced with a ½ wave dipole that was successively tuned to each of the highest spurious emissions. A signal generator was connected to the dipole (horn antenna for frequencies above 1GHz), and its output was adjusted to match the level previously noted for each frequency. The output of the signal generator was recorded, and by factoring in the cable loss to the dipole antenna (or horn) and its gain (dBi); the effective radiated power for each radiated spurious emission was determined.

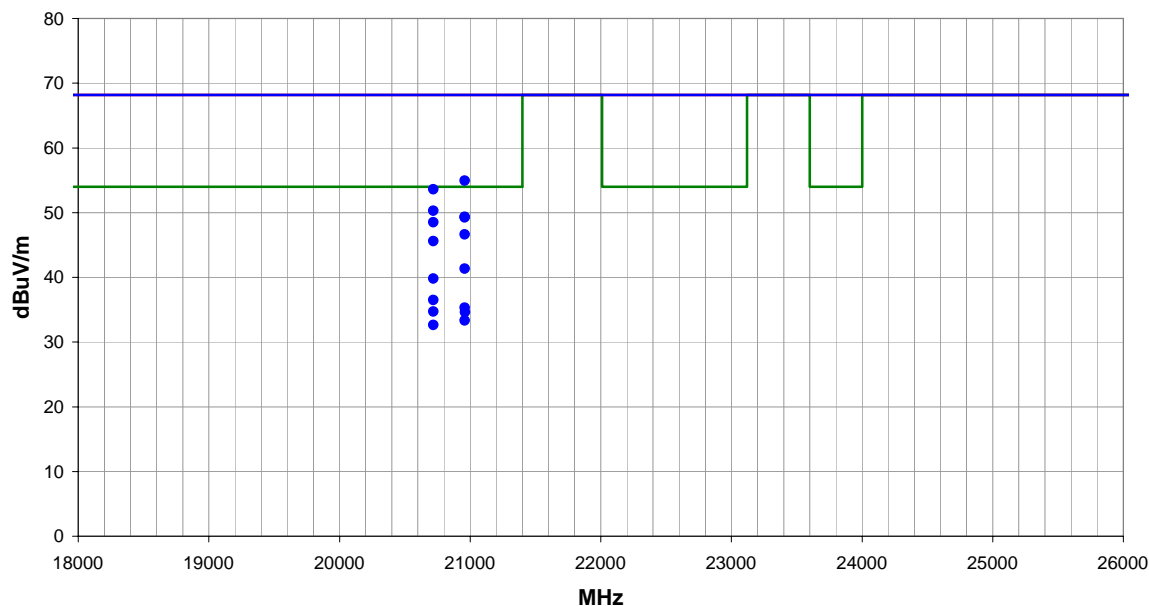
EMC

Spurious Radiated Emissions

Work Order:	PROS0109	Date:	06/30/11		
Project:	None	Temperature:	22.41		
Job Site:	OC10	Humidity:	41.1		
Serial Number:	09435H1000039	Barometric Pres.:	1019.2		
				Tested by:	Mark Baytan
EUT:	WMIA-199NI				
Configuration:	2				
Customer:	ProSoft Technology, Inc.				
Attendees:	None				
EUT Power:	120VAC/60Hz				
Operating Mode:	Transmitting at 802.11a/n				
Deviations:	No deviations.				
Comments:	Power Level set to 14. Z-Axis				

Test Specifications	Class B	Test Method
FCC 15.407:2011		ANSI C63.10:2009


Run #	6	Test Distance (m)	3	Antenna Height(s)	1-4m	Results	Pass
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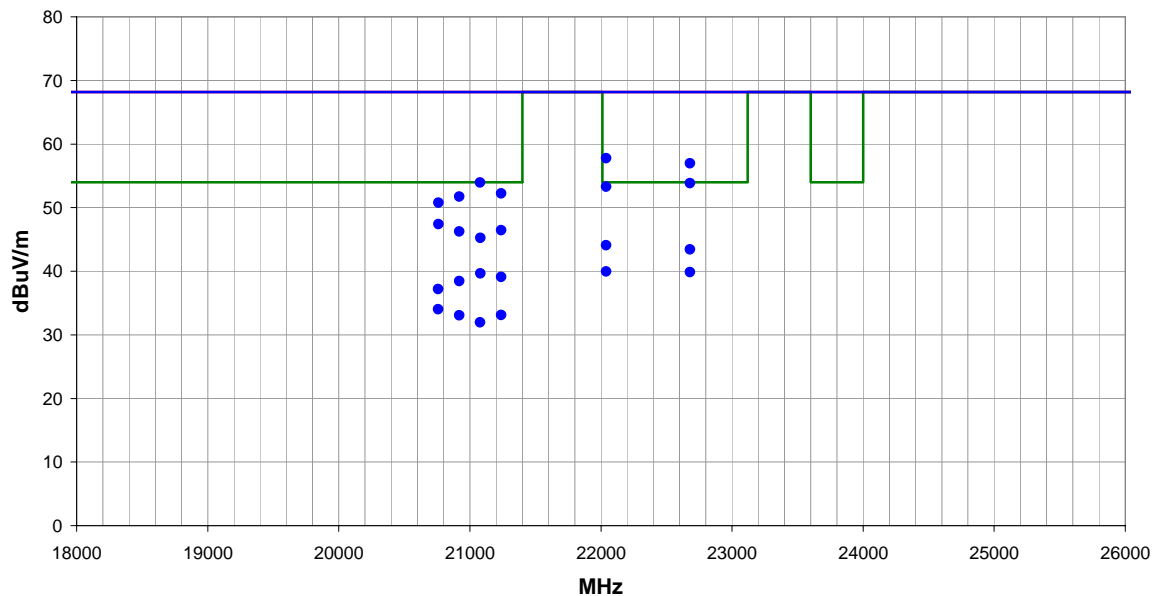
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
20959.610	43.1	-1.8	1.0	0.0	3.0	0.0	Horz	AV	0.0	41.3	54.0	-12.7	Channel 48, MCS15
20959.730	56.7	-1.8	1.0	0.0	3.0	0.0	Horz	PK	0.0	54.9	68.2	-13.3	Channel 48, MCS15
20719.640	39.7	0.1	1.0	0.0	3.0	0.0	Horz	AV	0.0	39.8	54.0	-14.2	Channel 36, MCS15
20719.880	53.5	0.1	1.0	0.0	3.0	0.0	Horz	PK	0.0	53.6	68.2	-14.6	Channel 36, MCS15
20719.610	36.4	0.1	1.0	0.0	3.0	0.0	Vert	AV	0.0	36.5	54.0	-17.5	Channel 36, MCS15
20720.090	50.2	0.1	1.0	0.0	3.0	0.0	Vert	PK	0.0	50.3	68.2	-17.9	Channel 36, MCS15
20960.060	37.1	-1.8	1.0	0.0	3.0	0.0	Vert	AV	0.0	35.3	54.0	-18.7	Channel 48, MCS15
20959.520	51.1	-1.8	1.0	0.0	3.0	0.0	Vert	PK	0.0	49.3	68.2	-18.9	Channel 48, MCS15
20959.820	51.0	-1.8	1.0	0.0	3.0	0.0	Horz	PK	0.0	49.2	68.2	-19.0	Channel 48, 36 Mbps
20719.790	34.6	0.1	1.0	0.0	3.0	0.0	Horz	AV	0.0	34.7	54.0	-19.3	Channel 36, 36 Mbps
20960.290	36.4	-1.8	1.0	0.0	3.0	0.0	Horz	AV	0.0	34.6	54.0	-19.4	Channel 48, 36 Mbps
20720.120	48.4	0.1	1.0	0.0	3.0	0.0	Horz	PK	0.0	48.5	68.2	-19.7	Channel 36, 36 Mbps
20959.500	35.1	-1.8	1.0	0.0	3.0	0.0	Vert	AV	0.0	33.3	54.0	-20.7	Channel 48, 36 Mbps
20719.520	32.5	0.1	1.0	0.0	3.0	0.0	Vert	AV	0.0	32.6	54.0	-21.4	Channel 36, 36 Mbps
20959.540	48.4	-1.8	1.0	0.0	3.0	0.0	Vert	PK	0.0	46.6	68.2	-21.6	Channel 48, 36 Mbps
20719.930	45.5	0.1	1.0	0.0	3.0	0.0	Vert	PK	0.0	45.6	68.2	-22.6	Channel 36, 36 Mbps

EMC

Spurious Radiated Emissions

Work Order:	PROS0109	Date:	06/30/11	
Project:	None	Temperature:	22.41	
Job Site:	OC10	Humidity:	41.1	
Serial Number:	09435H1000039	Barometric Pres.:	1019.2	
				Tested by: Mark Baytan
EUT:	WMIA-199NI			
Configuration:	2			
Customer:	ProSoft Technology, Inc.			
Attendees:	None			
EUT Power:	120VAC/60Hz			
Operating Mode:	Transmitting at 802.11a/n			
Deviations:	No deviations.			
Comments:	Power Level set to 14. Z-Axis			


Test Specifications	Class B	Test Method
FCC 15.407:2011		ANSI C63.10:2009



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
22039.640	41.7	2.4	1.0	0.0	3.0	0.0	Horz	AV	0.0	44.1	54.0	-9.9	Channel 100, MCS8
22039.680	55.4	2.4	1.0	0.0	3.0	0.0	Horz	PK	0.0	57.8	68.2	-10.4	Channel 100, MCS8
22680.420	40.9	2.5	1.0	0.0	3.0	0.0	Horz	AV	0.0	43.4	54.0	-10.6	Channel 140, MCS8
22679.840	54.4	2.5	1.0	0.0	3.0	0.0	Horz	PK	0.0	56.9	68.2	-11.3	Channel 140, MCS8
22039.540	37.6	2.4	1.0	0.0	3.0	0.0	Vert	AV	0.0	40.0	54.0	-14.0	Channel 100, MCS8
22680.460	37.3	2.5	1.0	0.0	3.0	0.0	Vert	AV	0.0	39.8	54.0	-14.2	Channel 140, MCS8
21079.520	55.9	-2.0	1.0	0.0	3.0	0.0	Horz	PK	0.0	53.9	68.2	-14.3	Channel 52, MCS8
21079.810	41.6	-2.0	1.0	0.0	3.0	0.0	Horz	AV	0.0	39.6	54.0	-14.4	Channel 52, MCS8
22679.870	51.3	2.5	1.0	0.0	3.0	0.0	Vert	PK	0.0	53.8	68.2	-14.4	Channel 140, MCS8
21240.370	40.8	-1.7	1.0	0.0	3.0	0.0	Horz	AV	0.0	39.1	54.0	-14.9	Channel 64, MCS8
22040.160	50.9	2.4	1.0	0.0	3.0	0.0	Vert	PK	0.0	53.3	68.2	-14.9	Channel 100, MCS8
20920.180	39.9	-1.5	1.0	0.0	3.0	0.0	Horz	AV	0.0	38.4	54.0	-15.6	Channel 48, MCS8
21239.730	53.9	-1.7	1.0	0.0	3.0	0.0	Horz	PK	0.0	52.2	68.2	-16.0	Channel 64, MCS8
20920.370	53.2	-1.5	1.0	0.0	3.0	0.0	Horz	PK	0.0	51.7	68.2	-16.5	Channel 48, MCS8
20759.680	37.4	-0.2	1.0	0.0	3.0	0.0	Horz	AV	0.0	37.2	54.0	-16.8	Channel 36, MCS8
20760.220	51.0	-0.2	1.0	0.0	3.0	0.0	Horz	PK	0.0	50.8	68.2	-17.4	Channel 36, MCS8
20759.610	34.2	-0.2	1.0	0.0	3.0	0.0	Vert	AV	0.0	34.0	54.0	-20.0	Channel 36, MCS8
20760.110	47.6	-0.2	1.0	0.0	3.0	0.0	Vert	PK	0.0	47.4	68.2	-20.8	Channel 36, MCS8
21240.300	34.8	-1.7	1.0	0.0	3.0	0.0	Vert	AV	0.0	33.1	54.0	-20.9	Channel 64, MCS8
20919.870	34.5	-1.5	1.0	0.0	3.0	0.0	Vert	AV	0.0	33.0	54.0	-21.0	Channel 48, MCS8
21239.780	48.1	-1.7	1.0	0.0	3.0	0.0	Vert	PK	0.0	46.4	68.2	-21.8	Channel 64, MCS8
20919.930	47.7	-1.5	1.0	0.0	3.0	0.0	Vert	PK	0.0	46.2	68.2	-22.0	Channel 48, MCS8
21079.510	33.9	-2.0	1.0	0.0	3.0	0.0	Vert	AV	0.0	31.9	54.0	-22.1	Channel 52, MCS8
21080.080	47.2	-2.0	1.0	0.0	3.0	0.0	Vert	PK	0.0	45.2	68.2	-23.0	Channel 52, MCS8

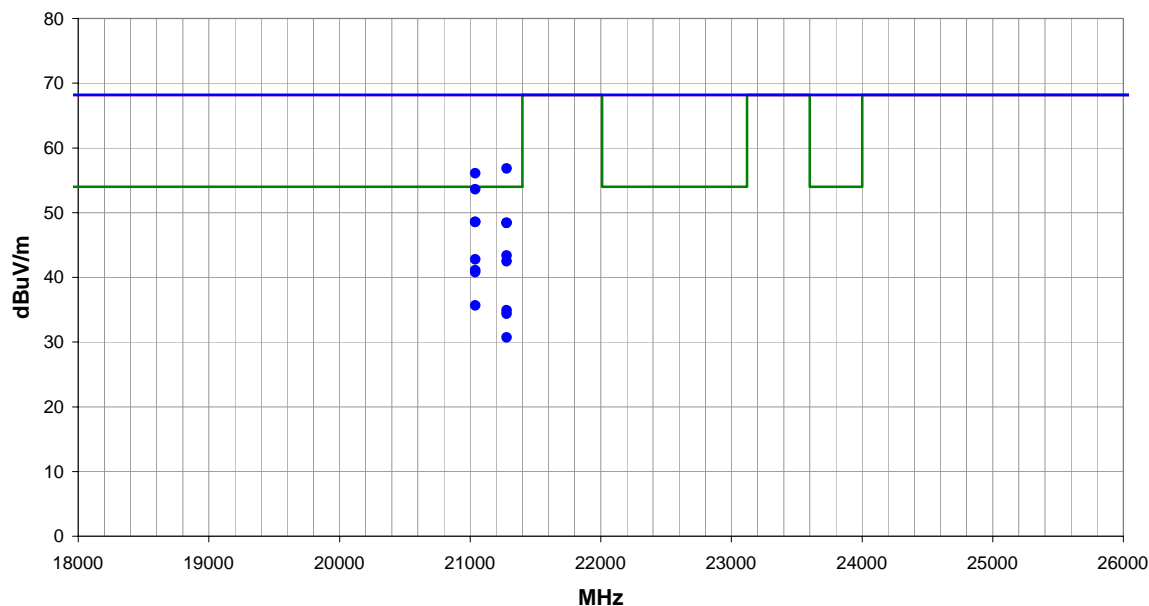
EMC

Spurious Radiated Emissions

Work Order:	PROS0109	Date:	06/30/11	
Project:	None	Temperature:	22.41	
Job Site:	OC10	Humidity:	41.1	
Serial Number:	09435H1000039	Barometric Pres.:	1019.2	
				Tested by: Mark Baytan
EUT:	WMIA-199NI			
Configuration:	2			
Customer:	ProSoft Technology, Inc.			
Attendees:	None			
EUT Power:	120VAC/60Hz			
Operating Mode:	Transmitting at 802.11a/n			
Deviations:	No deviations.			
Comments:	Power Level set to 14. Z-Axis			

Test Specifications	Class B	Test Method
FCC 15.407:2011		ANSI C63.10:2009


Run #	8	Test Distance (m)	3	Antenna Height(s)	1-4m	Results	Pass
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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
21040.080	44.8	-2.0	1.0	0.0	3.0	0.0	Horz	AV	0.0	42.8	54.0	-11.2	Channel 52, 36 Mbps
21279.980	58.4	-1.6	1.0	0.0	3.0	0.0	Horz	PK	0.0	56.8	68.2	-11.4	Channel 64, MCS8
21280.040	44.1	-1.6	1.0	0.0	3.0	0.0	Horz	AV	0.0	42.5	54.0	-11.5	Channel 64, MCS8
21039.940	58.1	-2.0	1.0	0.0	3.0	0.0	Horz	PK	0.0	56.1	68.2	-12.1	Channel 52, 36 Mbps
21039.500	43.1	-2.0	1.0	0.0	3.0	0.0	Horz	AV	0.0	41.1	54.0	-12.9	Channel 52, MCS8
21039.500	42.8	-2.0	1.0	0.0	3.0	0.0	Vert	AV	0.0	40.8	54.0	-13.2	Channel 52, 36 Mbps
21039.590	55.6	-2.0	1.0	0.0	3.0	0.0	Horz	PK	0.0	53.6	68.2	-14.6	Channel 52, MCS8
21039.500	37.7	-2.0	1.0	0.0	3.0	0.0	Vert	AV	0.0	35.7	54.0	-18.3	Channel 52, MCS8
21280.500	36.5	-1.6	1.0	0.0	3.0	0.0	Horz	AV	0.0	34.9	54.0	-19.1	Channel 64, 36Mbps
21279.520	36.0	-1.6	1.0	0.0	3.0	0.0	Vert	AV	0.0	34.4	54.0	-19.6	Channel 64, MCS8
21039.800	50.6	-2.0	1.0	0.0	3.0	0.0	Vert	PK	0.0	48.6	68.2	-19.6	Channel 52, 36 Mbps
21039.570	50.6	-2.0	1.0	0.0	3.0	0.0	Vert	PK	0.0	48.6	68.2	-19.6	Channel 52, MCS8
21280.450	50.0	-1.6	1.0	0.0	3.0	0.0	Horz	PK	0.0	48.4	68.2	-19.8	Channel 64, 36Mbps
21280.120	50.0	-1.6	1.0	0.0	3.0	0.0	Vert	PK	0.0	48.4	68.2	-19.8	Channel 64, MCS8
21280.480	32.3	-1.6	1.0	0.0	3.0	0.0	Vert	AV	0.0	30.7	54.0	-23.3	Channel 64, 36Mbps
21279.500	45.0	-1.6	1.0	0.0	3.0	0.0	Vert	PK	0.0	43.4	68.2	-24.8	Channel 64, 36Mbps

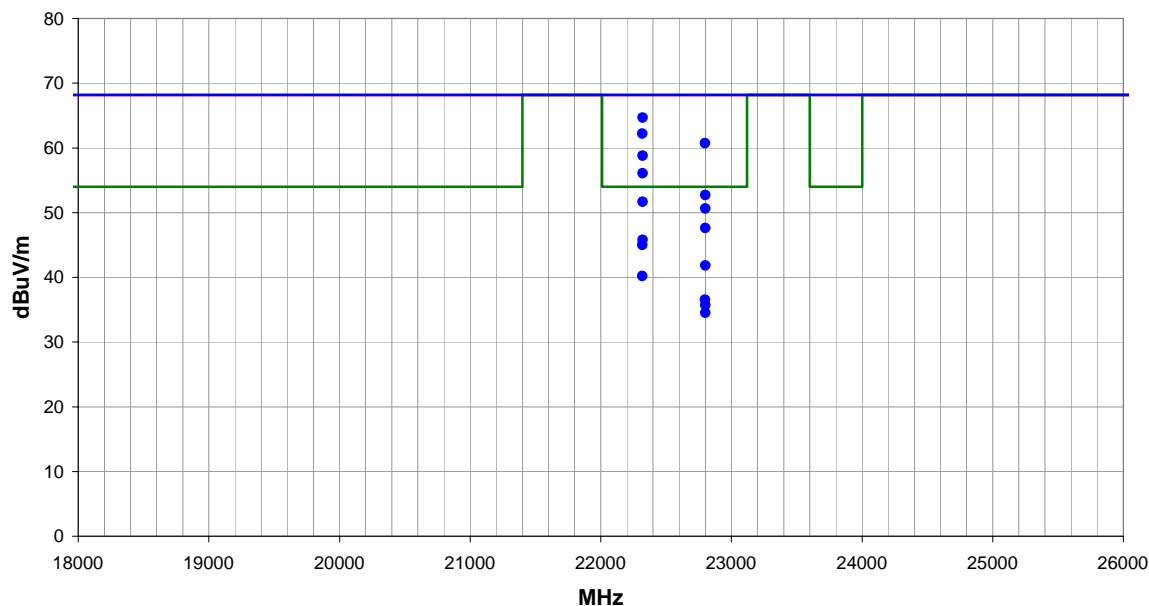
EMC

Spurious Radiated Emissions

Work Order:	PROS0109	Date:	06/30/11	
Project:	None	Temperature:	22.41	
Job Site:	OC10	Humidity:	41.1	
Serial Number:	09435H1000039	Barometric Pres.:	1019.2	
		Tested by: Mark Baytan		
EUT:	WMIA-199NI			
Configuration:	2			
Customer:	ProSoft Technology, Inc.			
Attendees:	None			
EUT Power:	120VAC/60Hz			
Operating Mode:	Transmitting at 802.11a/n			
Deviations:	No deviations.			
Comments:	Power Level set to 14. Z-Axis			

Test Specifications	Class B	Test Method
FCC 15.407:2011		ANSI C63.10:2009


Run #	9	Test Distance (m)	3	Antenna Height(s)	1-4m	Results	Pass
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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
22319.990	49.2	2.5	1.0	0.0	3.0	0.0	Horz	AV	0.0	51.7	54.0	-2.3	Channel 116, 36 Mbps
22319.890	62.2	2.5	1.0	0.0	3.0	0.0	Horz	PK	0.0	64.7	68.2	-3.5	Channel 116, 36 Mbps
22319.570	59.7	2.5	1.0	0.0	3.0	0.0	Horz	PK	0.0	62.2	68.2	-6.0	Channel 116, MCS0
22799.580	58.2	2.5	1.0	0.0	3.0	0.0	Horz	PK	0.0	60.7	68.2	-7.5	Channel 140, MCS0
22319.680	43.3	2.5	1.0	0.0	3.0	0.0	Horz	AV	0.0	45.8	54.0	-8.2	Channel 116, MCS0
22319.600	42.5	2.5	1.0	0.0	3.0	0.0	Vert	AV	0.0	45.0	54.0	-9.0	Channel 116, 36 Mbps
22319.690	56.3	2.5	1.0	0.0	3.0	0.0	Vert	PK	0.0	58.8	68.2	-9.4	Channel 116, 36 Mbps
22320.140	53.6	2.5	1.0	0.0	3.0	0.0	Vert	PK	0.0	56.1	68.2	-12.1	Channel 116, MCS0
22800.320	39.3	2.5	1.0	0.0	3.0	0.0	Horz	AV	0.0	41.8	54.0	-12.2	Channel 140, MCS0
22319.640	37.7	2.5	1.0	0.0	3.0	0.0	Vert	AV	0.0	40.2	54.0	-13.8	Channel 116, MCS0
22800.200	50.2	2.5	1.0	0.0	3.0	0.0	Horz	PK	0.0	52.7	68.2	-15.5	Channel 140, 36 Mbps
22799.510	34.0	2.5	1.0	0.0	3.0	0.0	Horz	AV	0.0	36.5	54.0	-17.5	Channel 140, 36 Mbps
22800.090	48.1	2.5	1.0	0.0	3.0	0.0	Vert	PK	0.0	50.6	68.2	-17.6	Channel 140, MCS0
22800.090	33.2	2.5	1.0	0.0	3.0	0.0	Vert	AV	0.0	35.7	54.0	-18.3	Channel 140, MCS0
22799.790	32.0	2.5	1.0	0.0	3.0	0.0	Vert	AV	0.0	34.5	54.0	-19.5	Channel 140, 36 Mbps
22800.150	45.1	2.5	1.0	0.0	3.0	0.0	Vert	PK	0.0	47.6	68.2	-20.6	Channel 140, 36 Mbps

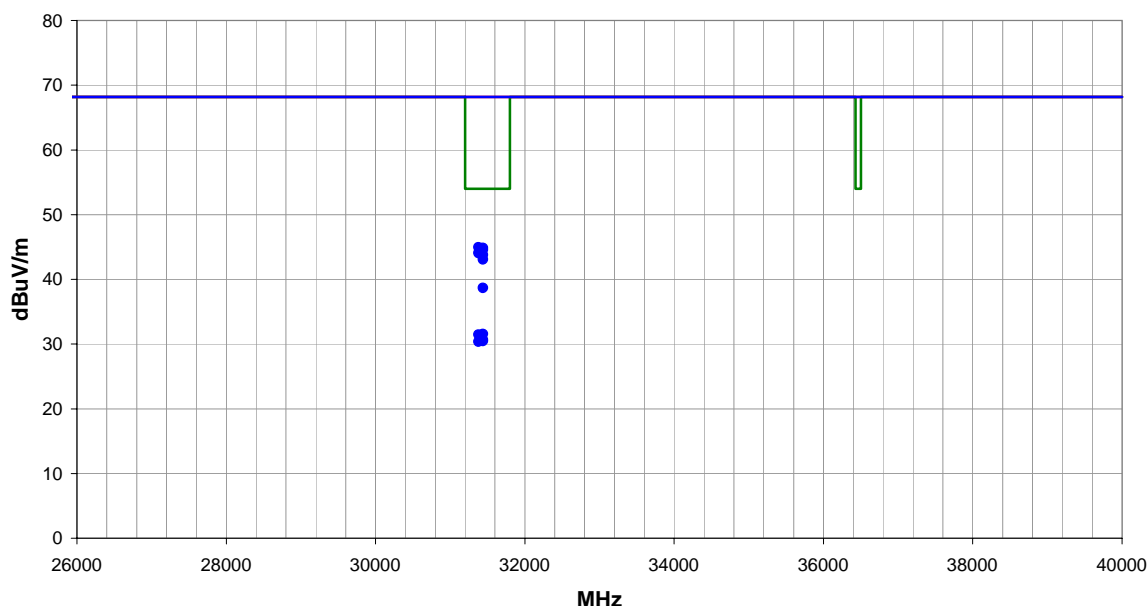
EMC

Spurious Radiated Emissions

Work Order:	PROS0109	Date:	06/30/11	
Project:	None	Temperature:	22.41	
Job Site:	OC10	Humidity:	41.1	
Serial Number:	09435H1000039	Barometric Pres.:	1019.2	
		Tested by: Mark Baytan		
EUT:	WMIA-199NI			
Configuration:	2			
Customer:	ProSoft Technology, Inc.			
Attendees:	None			
EUT Power:	120VAC/60Hz			
Operating Mode:	Transmitting at 802.11a/n			
Deviations:	No deviations.			
Comments:	Power Level set to 14. Z-Axis			

Test Specifications	Class B	Test Method
FCC 15.407:2011		ANSI C63.10:2009


Run #	10	Test Distance (m)	3	Antenna Height(s)	1-4m	Results	Pass
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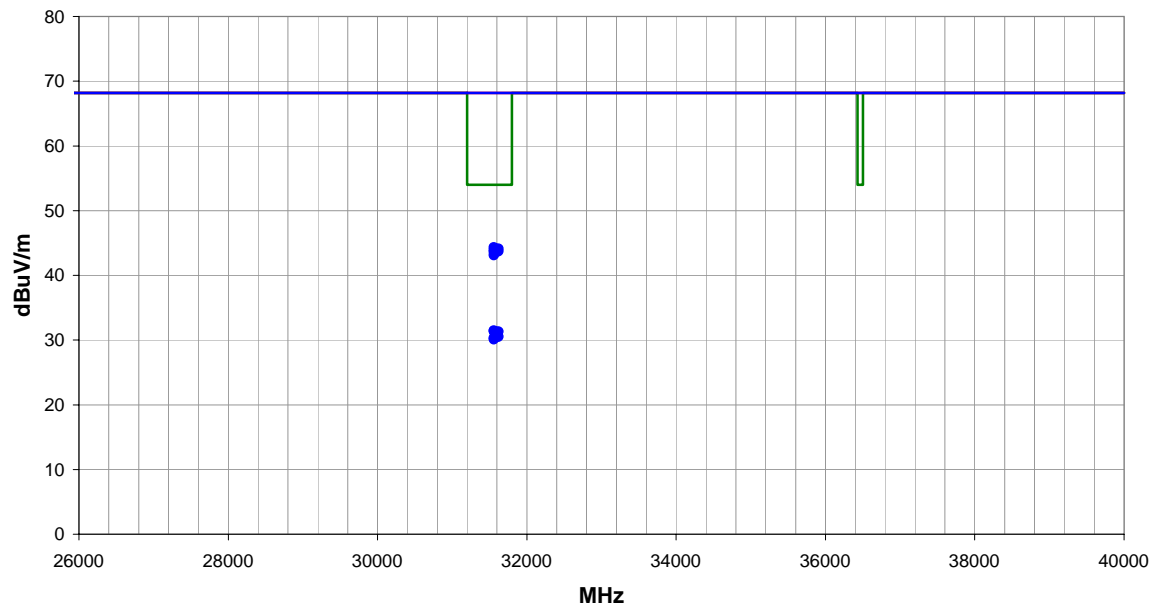
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
31440.140	53.1	-14.4	0.0	0.0	3.0	0.0	Vert	AV	0.0	38.7	54.0	-15.3	Channel 48, 36 Mbps
31440.320	46.0	-14.4	1.0	0.0	3.0	0.0	Vert	AV	0.0	31.6	54.0	-22.4	Channel 48, MCS15
31380.490	45.9	-14.4	1.0	0.0	3.0	0.0	Vert	AV	0.0	31.5	54.0	-22.5	Channel 48, MCS8, 40MHz
31379.700	59.4	-14.4	1.0	0.0	3.0	0.0	Vert	PK	0.0	45.0	68.2	-23.2	Channel 48, MCS8, 40MHz
31440.200	59.3	-14.4	1.0	0.0	3.0	0.0	Vert	PK	0.0	44.9	68.2	-23.3	Channel 48, MCS15
31440.450	45.1	-14.4	1.0	0.0	3.0	0.0	Horz	AV	0.0	30.7	54.0	-23.3	Channel 48, MCS15
31440.050	44.9	-14.4	1.0	0.0	3.0	0.0	Horz	AV	0.0	30.5	54.0	-23.5	Channel 48, 36 Mbps
31380.430	44.8	-14.4	1.0	0.0	3.0	0.0	Horz	AV	0.0	30.4	54.0	-23.6	Channel 48, MCS8, 40MHz
31440.290	59.0	-14.4	1.0	0.0	3.0	0.0	Vert	PK	0.0	44.6	68.2	-23.6	Channel 48, 36 Mbps
31380.220	58.5	-14.4	1.0	0.0	3.0	0.0	Horz	PK	0.0	44.1	68.2	-24.1	Channel 48, MCS8, 40MHz
31440.220	58.2	-14.4	1.0	0.0	3.0	0.0	Horz	PK	0.0	43.8	68.2	-24.4	Channel 48, 36 Mbps
31440.390	57.5	-14.4	1.0	0.0	3.0	0.0	Horz	PK	0.0	43.1	68.2	-25.1	Channel 48, MCS15

EMC

Spurious Radiated Emissions

Work Order:	PROS0109	Date:	06/30/11	
Project:	None	Temperature:	22.41	
Job Site:	OC10	Humidity:	41.1	
Serial Number:	09435H1000039	Barometric Pres.:	1019.2	
				Tested by: Mark Baytan
EUT:	WMIA-199NI			
Configuration:	2			
Customer:	ProSoft Technology, Inc.			
Attendees:	None			
EUT Power:	120VAC/60Hz			
Operating Mode:	Transmitting at 802.11a/n			
Deviations:	No deviations.			
Comments:	Power Level set to 14. Z-Axis			

Test Specifications			Class B		Test Method	
FCC 15.407:2011					ANSI C63.10:2009	
Run #	11	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
31560.150	45.9	-14.5	1.0	0.0	3.0	0.0	Vert	AV	0.0	31.4	54.0	-22.6	Channel 52, 36 Mbps
31559.860	45.8	-14.5	1.0	0.0	3.0	0.0	Vert	AV	0.0	31.3	54.0	-22.7	Channel 52, MCS8
31621.810	45.8	-14.5	1.0	0.0	3.0	0.0	Vert	AV	0.0	31.3	54.0	-22.7	Channel 52, MCS8, 40MHz
31621.110	45.0	-14.5	1.0	0.0	3.0	0.0	Horz	AV	0.0	30.5	54.0	-23.5	Channel 52, MCS8, 40MHz
31560.500	44.8	-14.5	1.0	0.0	3.0	0.0	Horz	AV	0.0	30.3	54.0	-23.7	Channel 52, MCS8
31560.260	44.6	-14.5	1.0	0.0	3.0	0.0	Horz	AV	0.0	30.1	54.0	-23.9	Channel 52, 36 Mbps
31559.960	58.8	-14.5	1.0	0.0	3.0	0.0	Vert	PK	0.0	44.3	68.2	-23.9	Channel 52, MCS8
31620.350	58.6	-14.5	1.0	0.0	3.0	0.0	Vert	PK	0.0	44.1	68.2	-24.1	Channel 52, MCS8, 40MHz
31559.630	58.4	-14.5	1.0	0.0	3.0	0.0	Vert	PK	0.0	43.9	68.2	-24.3	Channel 52, 36 Mbps
31621.040	58.2	-14.5	1.0	0.0	3.0	0.0	Horz	PK	0.0	43.7	68.2	-24.5	Channel 52, MCS8, 40MHz
31560.080	58.1	-14.5	1.0	0.0	3.0	0.0	Horz	PK	0.0	43.6	68.2	-24.6	Channel 52, 36 Mbps
31560.290	57.6	-14.5	1.0	0.0	3.0	0.0	Horz	PK	0.0	43.1	68.2	-25.1	Channel 52, MCS8

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
Power Sensor	Agilent	E4412A	SQE	4/21/2010	24
Power Meter	Hewlett Packard	E4418A	SPA	4/21/2010	24
Signal Generator	Agilent	E8257D	TGU	1/26/2011	12
Spectrum Analyzer	Agilent	E4440A	AFG	4/28/2011	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

ANSI C63.10 was followed. The transmit frequency was set to the required channels in each band. 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. The amplitude accuracy of the spectrum analyzer was further enhanced by calibrating the setup using the power meter and synthesized signal generator.

Prior to measuring peak transmit power; the emission bandwidth (B) and the transmission pulse duration (T) were measured. Both are required to determine the method of measuring Peak Transmit Power. The method of measuring the emission bandwidth and the associated data are found elsewhere in this test report. The transmission pulse duration (T) was measured using a zero span on the spectrum analyzer to see the pulses in the time domain.

Method #3 was used because the analyzer sweep time was greater than T for the operating mode which has the shortest transmission pulse duration and the Emission Bandwidth was greater than the largest RBW on the analyzer.

The spectrum analyzer settings were as follows:

- The span was set to encompass entire emission bandwidth (B), centered on the transmit channel.
- The RBW = 1 MHz, VBW \geq 1/T
- Sample detector mode because the bin width (span / number of spectral points) $<$ 0.5 RBW.
- Power was integrated across "B", by using the channel power function of the analyzer.


The power limits are based on the following formulas:

5.15 MHz – 5.25 MHz band - The lesser of 50 mW or 4 dBm + 10 log B, where B is the -26dB emission bandwidth in MHz.

5.25 MHz – 5.35 MHz band - The lesser of 250 mW or 11 dBm + 10 log B, where B is the -26dB emission bandwidth in MHz.

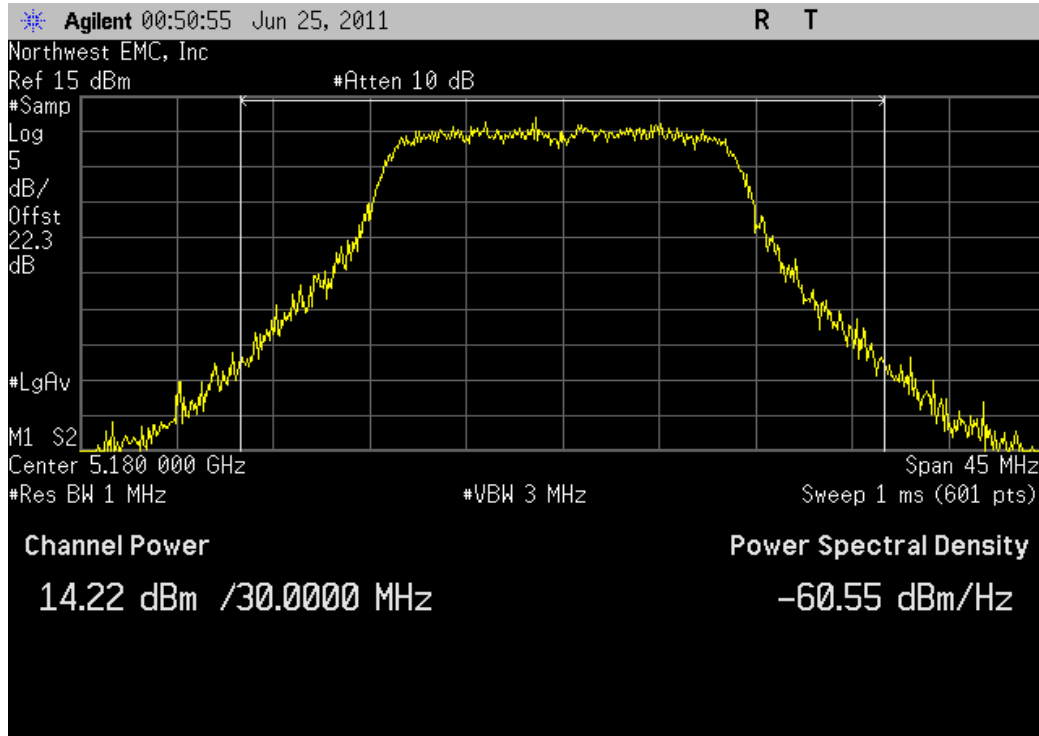
5.47 MHz – 5.725 MHz band - The lesser of 250 mW or 11 dBm + 10 log B, where B is the -26dB emission bandwidth in MHz.

In each case the output power is lower if the -26dB emission bandwidth is less than 20 MHz.

NORTHWEST		Peak Transmit Power		XMit 2011.04.20 PsaTx 2011.06.20	
EMC					
EUT: WMIA-199NI		Work Order: PROS0109			
Serial Number: 09435H1000039		Date: 06/24/11			
Customer: ProSoft Technology, Inc.		Temperature: 22.06°C			
Attendees: None		Humidity: 48%			
Project: None		Barometric Pres.: 1011			
Tested by: Jaemi Suh		Power: 120V/60Hz		Job Site: OC11	
TEST SPECIFICATIONS		TEST METHOD			
FCC 15.407:2011		ANSI C63.10:2009			
COMMENTS					
Chain 1. Operating at 802.11a/n. Power level set to 14 for < 5.25 GHz. Power level set to 18 for > 5.25 GHz					
DEVIATIONS FROM TEST STANDARD					
Configuration #	1	Signature 			
		Value	Limit	Result	
802.11(a) 6 Mbps					
Low Channel 36 (5180 MHz)		13.551 dBm	< 17 dBm	Pass	
High Channel 48 (5240 MHz)		13.646 dBm	< 17 dBm	Pass	
Low Channel 52 (5260 MHz)		17.85 dBm	< 24 dBm	Pass	
High Channel 64 (5320 MHz)		16.494 dBm	< 24 dBm	Pass	
Low Channel 100 (5500 MHz)		16.606 dBm	< 24 dBm	Pass	
Mid Channel 116 (5580 MHz)		15.943 dBm	< 24 dBm	Pass	
High Channel 140 (5700 MHz)		16.887 dBm	< 24 dBm	Pass	
802.11(a) 36 Mbps					
Low Channel 36 (5180 MHz)		13.718 dBm	< 17 dBm	Pass	
High Channel 48 (5240 MHz)		13.333 dBm	< 17 dBm	Pass	
Low Channel 52 (5260 MHz)		17.434 dBm	< 24 dBm	Pass	
High Channel 64 (5320 MHz)		18.038 dBm	< 24 dBm	Pass	
Low Channel 100 (5500 MHz)		16.577 dBm	< 24 dBm	Pass	
Mid Channel 116 (5580 MHz)		16.48 dBm	< 24 dBm	Pass	
High Channel 140 (5700 MHz)		16.277 dBm	< 24 dBm	Pass	
802.11(a) 54 Mbps					
Low Channel 36 (5180 MHz)		14.223 dBm	< 17 dBm	Pass	
High Channel 48 (5240 MHz)		13.532 dBm	< 17 dBm	Pass	
Low Channel 52 (5260 MHz)		17.314 dBm	< 24 dBm	Pass	
High Channel 64 (5320 MHz)		16.67 dBm	< 24 dBm	Pass	
Low Channel 100 (5500 MHz)		16.981 dBm	< 24 dBm	Pass	
Mid Channel 116 (5580 MHz)		16.568 dBm	< 24 dBm	Pass	
High Channel 140 (5700 MHz)		16.9 dBm	< 24 dBm	Pass	
802.11(n) MCS0					
Low Channel 36 (5180 MHz)		13.672 dBm	< 17 dBm	Pass	
High Channel 48 (5240 MHz)		13.498 dBm	< 17 dBm	Pass	
Low Channel 52 (5260 MHz)		17.737 dBm	< 24 dBm	Pass	
High Channel 64 (5320 MHz)		17.983 dBm	< 24 dBm	Pass	
Low Channel 100 (5500 MHz)		16.424 dBm	< 24 dBm	Pass	
Mid Channel 116 (5580 MHz)		16.511 dBm	< 24 dBm	Pass	
High Channel 140 (5700 MHz)		16.4 dBm	< 24 dBm	Pass	
802.11(n) MCS7					
Low Channel 36 (5180 MHz)		14.035 dBm	< 17 dBm	Pass	
High Channel 48 (5240 MHz)		13.351 dBm	< 17 dBm	Pass	
Low Channel 52 (5260 MHz)		17.729 dBm	< 24 dBm	Pass	
High Channel 64 (5320 MHz)		17.83 dBm	< 24 dBm	Pass	
Low Channel 100 (5500 MHz)		17.084 dBm	< 24 dBm	Pass	
Mid Channel 116 (5580 MHz)		16.123 dBm	< 24 dBm	Pass	
High Channel 140 (5700 MHz)		16.206 dBm	< 24 dBm	Pass	
802.11(n) MCS8					
Low Channel 36 (5180 MHz)		14.077 dBm	< 17 dBm	Pass	
High Channel 48 (5240 MHz)		13.502 dBm	< 17 dBm	Pass	
Low Channel 52 (5260 MHz)		17.7 dBm	< 24 dBm	Pass	
High Channel 64 (5320 MHz)		17.01 dBm	< 24 dBm	Pass	
Low Channel 100 (5500 MHz)		17.071 dBm	< 24 dBm	Pass	
Mid Channel 116 (5580 MHz)		16.31 dBm	< 24 dBm	Pass	
High Channel 140 (5700 MHz)		16.837 dBm	< 24 dBm	Pass	
802.11(n) MCS15					
Low Channel 36 (5180 MHz)		14.113 dBm	< 17 dBm	Pass	
High Channel 48 (5240 MHz)		13.069 dBm	< 17 dBm	Pass	
Low Channel 52 (5260 MHz)		17.712 dBm	< 24 dBm	Pass	
High Channel 64 (5320 MHz)		16.538 dBm	< 24 dBm	Pass	
Low Channel 100 (5500 MHz)		17.04 dBm	< 24 dBm	Pass	
Mid Channel 116 (5580 MHz)		16.034 dBm	< 24 dBm	Pass	
High Channel 140 (5700 MHz)		16.237 dBm	< 24 dBm	Pass	
802.11(n)(40MHz) MCS0					
Low Channel 37 (5190 MHz)		13.848 dBm	< 17 dBm	Pass	
High Channel 47 (5230 MHz)		13.543 dBm	< 17 dBm	Pass	
Low Channel 53 (5270 MHz)		17.397 dBm	< 24 dBm	Pass	
High Channel 63 (5310 MHz)		16.311 dBm	< 24 dBm	Pass	
Low Channel 101 (5510 MHz)		17.299 dBm	< 24 dBm	Pass	
High Channel 130 (5670 MHz)		16.593 dBm	< 24 dBm	Pass	
802.11(n)(40MHz) MCS7					
Low Channel 37 (5190 MHz)		13.864 dBm	< 17 dBm	Pass	
High Channel 47 (5230 MHz)		13.089 dBm	< 17 dBm	Pass	
Low Channel 53 (5270 MHz)		18.609 dBm	< 24 dBm	Pass	
High Channel 63 (5310 MHz)		16.846 dBm	< 24 dBm	Pass	
Low Channel 101 (5510 MHz)		16.231 dBm	< 24 dBm	Pass	
High Channel 130 (5670 MHz)		16.614 dBm	< 24 dBm	Pass	
802.11(n)(40MHz) MCS8					
Low Channel 37 (5190 MHz)		14.031 dBm	< 17 dBm	Pass	
High Channel 47 (5230 MHz)		13.596 dBm	< 17 dBm	Pass	
Low Channel 53 (5270 MHz)		16.826 dBm	< 24 dBm	Pass	
High Channel 63 (5310 MHz)		18.211 dBm	< 24 dBm	Pass	
Low Channel 101 (5510 MHz)		16.225 dBm	< 24 dBm	Pass	
High Channel 130 (5670 MHz)		16.542 dBm	< 24 dBm	Pass	
802.11(n)(40MHz) MCS15					
Low Channel 37 (5190 MHz)		13.549 dBm	< 17 dBm	Pass	
High Channel 47 (5230 MHz)		14.121 dBm	< 17 dBm	Pass	
Low Channel 53 (5270 MHz)		16.94 dBm	< 24 dBm	Pass	
High Channel 63 (5310 MHz)		18.179 dBm	< 24 dBm	Pass	
Low Channel 101 (5510 MHz)		16.195 dBm	< 24 dBm	Pass	
High Channel 130 (5670 MHz)		16.394 dBm	< 24 dBm	Pass	

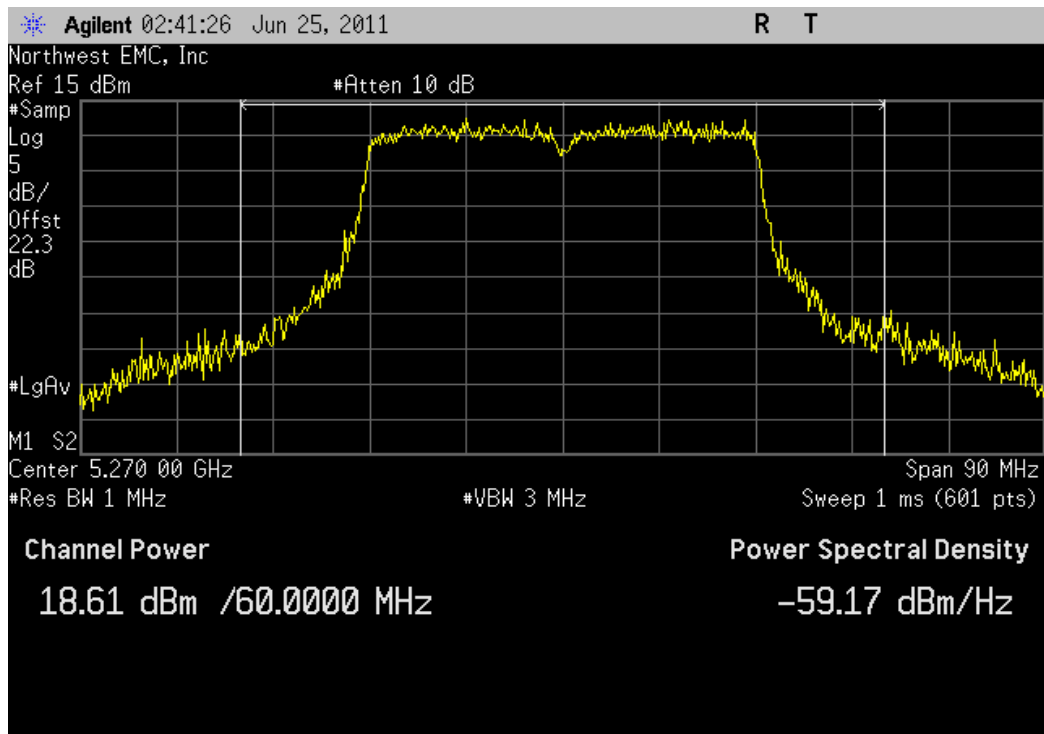
802.11(a) 54 Mbps, Low Channel 36 (5180 MHz)

				Value	Limit	Result
				14.223 dBm	< 17 dBm	Pass



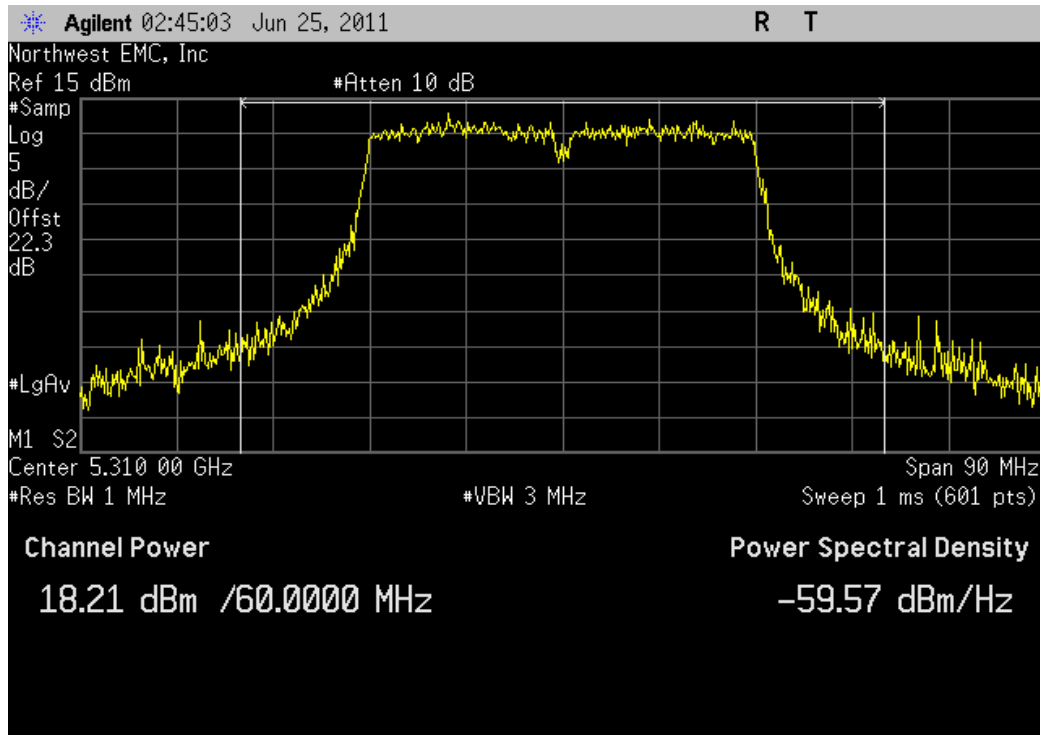
802.11(n)(40MHz) MCS7, Low Channel 53 (5270 MHz)


				Value	Limit	Result
				18.609 dBm	< 24 dBm	Pass



802.11(n)(40MHz) MCS8, High Channel 63 (5310 MHz)

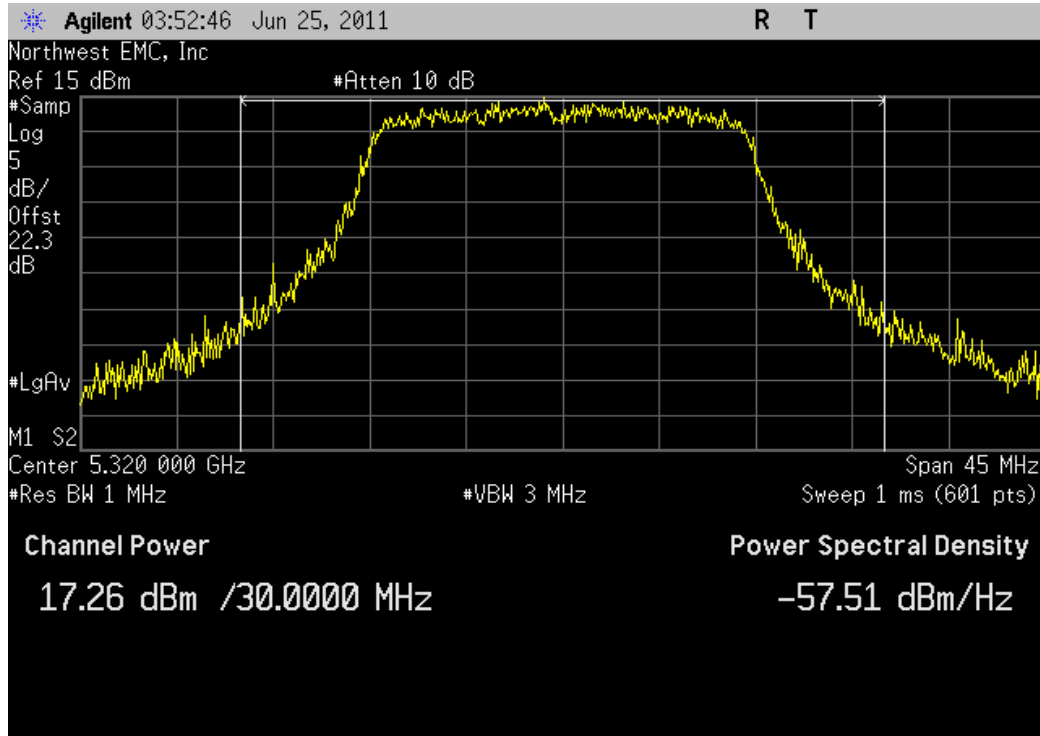
	Value	Limit	Result
	18.211 dBm	< 24 dBm	Pass



NORTHWEST		Peak Transmit Power		XMit 2011.04.20 PsaTx 2011.06.20	
EMC					
EUT: WMIA-199NI		Work Order: PROS0109			
Serial Number: 09435H1000039		Date: 06/24/11			
Customer: ProSoft Technology, Inc.		Temperature: 22.06°C			
Attendees: None		Humidity: 48%			
Project: None		Barometric Pres.: 1011			
Tested by: Jaemi Suh		Power: 120V/60Hz		Job Site: OC11	
TEST SPECIFICATIONS		TEST METHOD			
FCC 15.407:2011		ANSI C63.10:2009			
COMMENTS					
Chain 2. Operating at 802.11a/n. Power level set to 14 for < 5.25 GHz. Power level set to 18 for > 5.25 GHz					
DEVIATIONS FROM TEST STANDARD					
Configuration #	1	Signature 			
		Value	Limit	Result	
802.11(a) 6 Mbps					
Low Channel 36 (5180 MHz)		11.105 dBm	< 17 dBm	Pass	
High Channel 48 (5240 MHz)		11.622 dBm	< 17 dBm	Pass	
Low Channel 52 (5260 MHz)		16.606 dBm	< 24 dBm	Pass	
High Channel 64 (5320 MHz)		16.801 dBm	< 24 dBm	Pass	
Low Channel 100 (5500 MHz)		17.271 dBm	< 24 dBm	Pass	
Mid Channel 110 (5580 MHz)		17.057 dBm	< 24 dBm	Pass	
High Channel 140 (5700 MHz)		17.941 dBm	< 24 dBm	Pass	
802.11(a) 36 Mbps					
Low Channel 36 (5180 MHz)		11.323 dBm	< 17 dBm	Pass	
High Channel 48 (5240 MHz)		11.555 dBm	< 17 dBm	Pass	
Low Channel 52 (5260 MHz)		16.582 dBm	< 24 dBm	Pass	
High Channel 64 (5320 MHz)		16.835 dBm	< 24 dBm	Pass	
Low Channel 100 (5500 MHz)		17.355 dBm	< 24 dBm	Pass	
Mid Channel 110 (5580 MHz)		17.47 dBm	< 24 dBm	Pass	
High Channel 140 (5700 MHz)		17.393 dBm	< 24 dBm	Pass	
802.11(a) 54 Mbps					
Low Channel 36 (5180 MHz)		11.243 dBm	< 17 dBm	Pass	
High Channel 48 (5240 MHz)		11.997 dBm	< 17 dBm	Pass	
Low Channel 52 (5260 MHz)		16.721 dBm	< 24 dBm	Pass	
High Channel 64 (5320 MHz)		16.819 dBm	< 24 dBm	Pass	
Low Channel 100 (5500 MHz)		16.715 dBm	< 24 dBm	Pass	
Mid Channel 110 (5580 MHz)		16.901 dBm	< 24 dBm	Pass	
High Channel 140 (5700 MHz)		18.217 dBm	< 24 dBm	Pass	
802.11(n) MCS0					
Low Channel 36 (5180 MHz)		11.551 dBm	< 17 dBm	Pass	
High Channel 48 (5240 MHz)		12.219 dBm	< 17 dBm	Pass	
Low Channel 52 (5260 MHz)		16.708 dBm	< 24 dBm	Pass	
High Channel 64 (5320 MHz)		17.167 dBm	< 24 dBm	Pass	
Low Channel 100 (5500 MHz)		17.45 dBm	< 24 dBm	Pass	
Mid Channel 110 (5580 MHz)		17.657 dBm	< 24 dBm	Pass	
High Channel 140 (5700 MHz)		18.09 dBm	< 24 dBm	Pass	
802.11(n) MCS7					
Low Channel 36 (5180 MHz)		11.273 dBm	< 17 dBm	Pass	
High Channel 48 (5240 MHz)		11.686 dBm	< 17 dBm	Pass	
Low Channel 52 (5260 MHz)		16.027 dBm	< 24 dBm	Pass	
High Channel 64 (5320 MHz)		16.786 dBm	< 24 dBm	Pass	
Low Channel 100 (5500 MHz)		16.933 dBm	< 24 dBm	Pass	
Mid Channel 110 (5580 MHz)		17.18 dBm	< 24 dBm	Pass	
High Channel 140 (5700 MHz)		17.75 dBm	< 24 dBm	Pass	
802.11(n) MCS8					
Low Channel 36 (5180 MHz)		11.589 dBm	< 17 dBm	Pass	
High Channel 48 (5240 MHz)		11.781 dBm	< 17 dBm	Pass	
Low Channel 52 (5260 MHz)		16.638 dBm	< 24 dBm	Pass	
High Channel 64 (5320 MHz)		17.257 dBm	< 24 dBm	Pass	
Low Channel 100 (5500 MHz)		17.326 dBm	< 24 dBm	Pass	
Mid Channel 110 (5580 MHz)		17.23 dBm	< 24 dBm	Pass	
High Channel 140 (5700 MHz)		17.799 dBm	< 24 dBm	Pass	
802.11(n) MCS15					
Low Channel 36 (5180 MHz)		11.637 dBm	< 17 dBm	Pass	
High Channel 48 (5240 MHz)		11.861 dBm	< 17 dBm	Pass	
Low Channel 52 (5260 MHz)		16.573 dBm	< 24 dBm	Pass	
High Channel 64 (5320 MHz)		16.537 dBm	< 24 dBm	Pass	
Low Channel 100 (5500 MHz)		17.264 dBm	< 24 dBm	Pass	
Mid Channel 110 (5580 MHz)		17.022 dBm	< 24 dBm	Pass	
High Channel 140 (5700 MHz)		17.632 dBm	< 24 dBm	Pass	
802.11(n)(40MHz) MCS0					
Low Channel 37 (5190 MHz)		12.041 dBm	< 17 dBm	Pass	
High Channel 47 (5230 MHz)		11.269 dBm	< 24 dBm	Pass	
Low Channel 53 (5270 MHz)		16.324 dBm	< 24 dBm	Pass	
High Channel 63 (5310 MHz)		16.32 dBm	< 24 dBm	Pass	
Low Channel 101 (5510 MHz)		17.734 dBm	< 24 dBm	Pass	
High Channel 130 (5670 MHz)		18.502 dBm	< 24 dBm	Pass	
802.11(n)(40MHz) MCS7					
Low Channel 37 (5190 MHz)		12.256 dBm	< 17 dBm	Pass	
High Channel 47 (5230 MHz)		12.765 dBm	< 17 dBm	Pass	
Low Channel 53 (5270 MHz)		16.982 dBm	< 24 dBm	Pass	
High Channel 63 (5310 MHz)		17.134 dBm	< 24 dBm	Pass	
Low Channel 101 (5510 MHz)		17.662 dBm	< 24 dBm	Pass	
High Channel 130 (5670 MHz)		17.783 dBm	< 24 dBm	Pass	
802.11(n)(40MHz) MCS8					
Low Channel 37 (5190 MHz)		11.739 dBm	< 17 dBm	Pass	
High Channel 47 (5230 MHz)		12.343 dBm	< 17 dBm	Pass	
Low Channel 53 (5270 MHz)		16.902 dBm	< 24 dBm	Pass	
High Channel 63 (5310 MHz)		17.033 dBm	< 24 dBm	Pass	
Low Channel 101 (5510 MHz)		17.621 dBm	< 24 dBm	Pass	
High Channel 130 (5670 MHz)		18.71 dBm	< 24 dBm	Pass	
802.11(n)(40MHz) MCS15					
Low Channel 37 (5190 MHz)		11.506 dBm	< 17 dBm	Pass	
High Channel 47 (5230 MHz)		12.352 dBm	< 17 dBm	Pass	
Low Channel 53 (5270 MHz)		16.849 dBm	< 24 dBm	Pass	
High Channel 63 (5310 MHz)		17.07 dBm	< 24 dBm	Pass	
Low Channel 101 (5510 MHz)		17.997 dBm	< 24 dBm	Pass	
High Channel 130 (5670 MHz)		18.241 dBm	< 24 dBm	Pass	

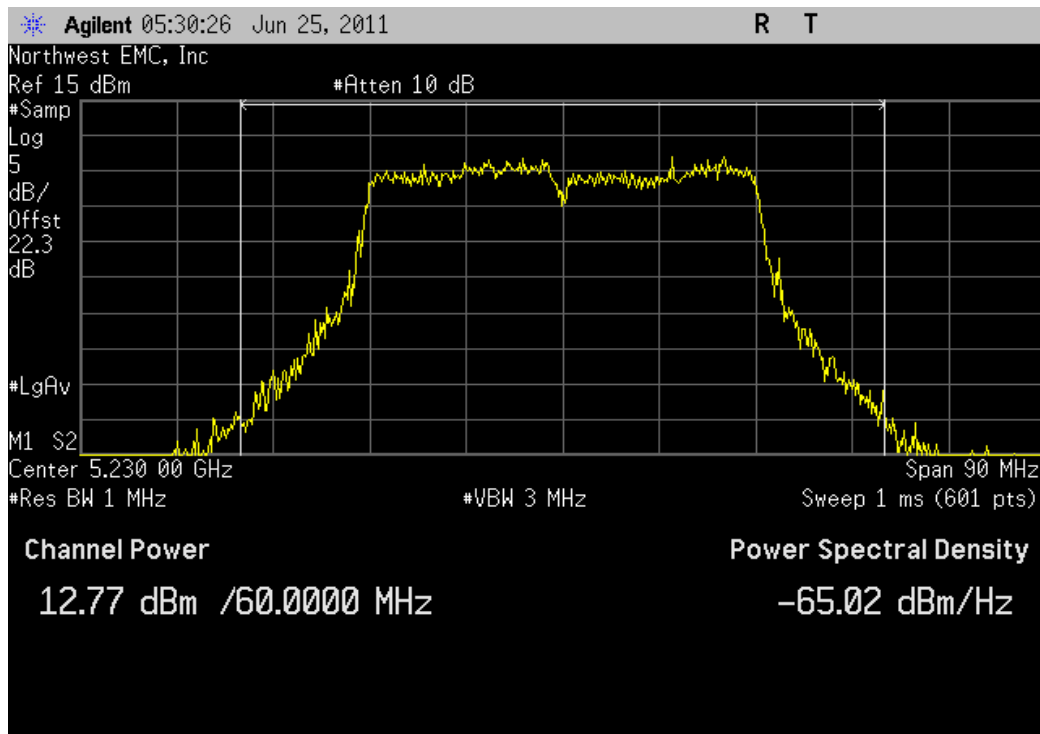
802.11(n) MCS8, High Channel 64 (5320 MHz)

				Value	Limit	Result
				17.257 dBm	< 24 dBm	Pass



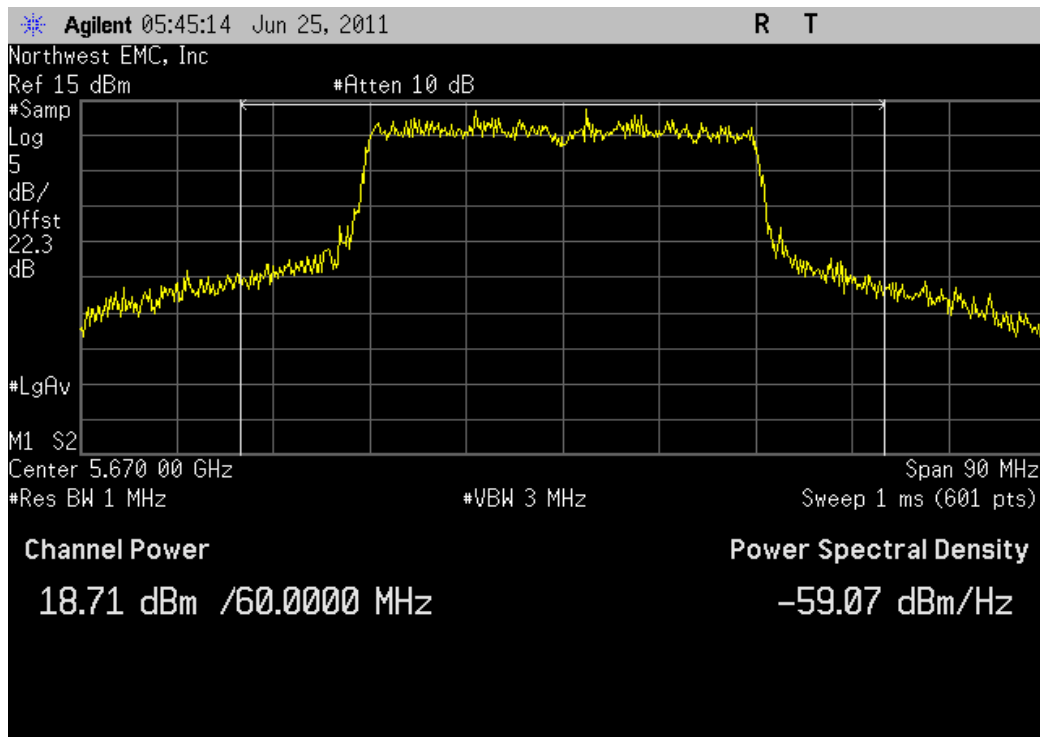
802.11(n)(40MHz) MCS7, High Channel 47 (5230 MHz)


				Value	Limit	Result
				12.765 dBm	< 17 dBm	Pass



802.11(n)(40MHz) MCS8, High Channel 130 (5670 MHz)

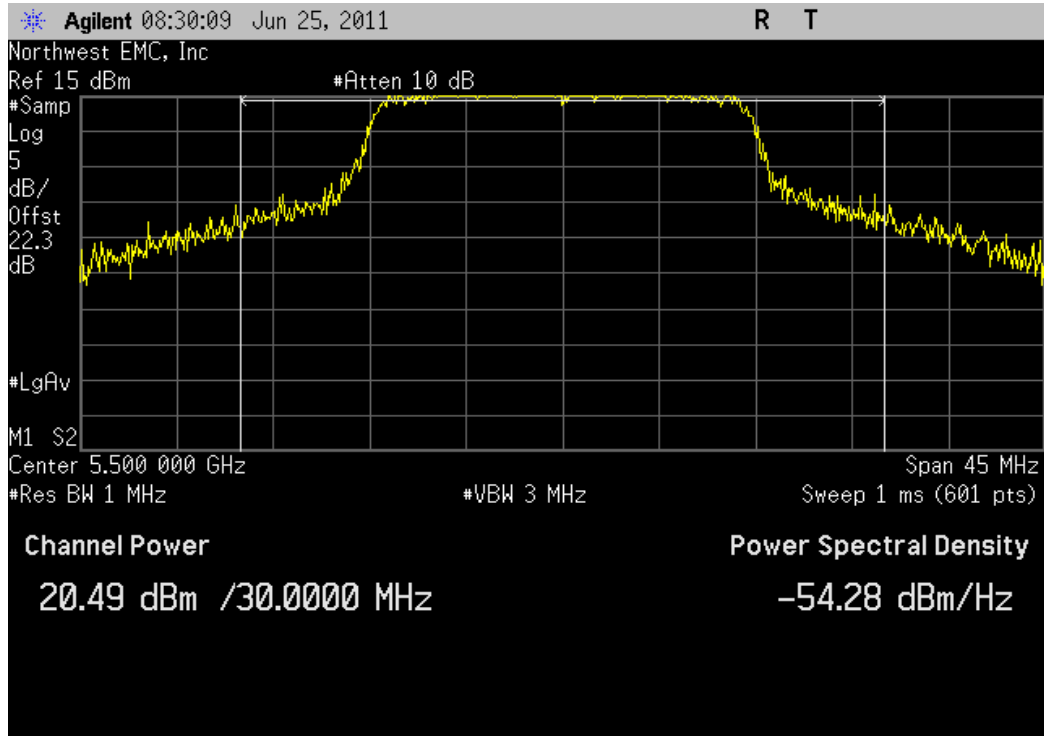
	Value	Limit	Result
	18.71 dBm	< 24 dBm	Pass



NORTHWEST		Peak Transmit Power		XMit 2011.04.20 PsaTx 2011.06.20	
EMC					
EUT: WMIA-199NI		Work Order: PROS0109			
Serial Number: 09435H1000039		Date: 06/27/11			
Customer: ProSoft Technology, Inc.		Temperature: 22.06°C			
Attendees: None		Humidity: 48%			
Project: None		Barometric Pres.: 1011			
Tested by: Jaemi Suh		Power: 120V/60Hz		Job Site: OC11	
TEST SPECIFICATIONS		TEST METHOD			
FCC 15.407:2011		ANSI C63.10:2009			
COMMENTS					
Chain 3. Operating at 802.11a/n. Power level set to 14 for < 5.25 GHz. Power level set to 18 for > 5.25 GHz					
DEVIATIONS FROM TEST STANDARD					
Configuration #	1	Signature 			
		Value	Limit	Result	
802.11(a) 6 Mbps					
Low Channel 36 (5180 MHz)		12.977 dBm	< 17 dBm	Pass	
High Channel 48 (5240 MHz)		13.868 dBm	< 17 dBm	Pass	
Low Channel 52 (5260 MHz)		17.812 dBm	< 24 dBm	Pass	
High Channel 64 (5320 MHz)		18.014 dBm	< 24 dBm	Pass	
Low Channel 100 (5500 MHz)		20.794 dBm	< 24 dBm	Pass	
Mid Channel 110 (5580 MHz)		20.342 dBm	< 24 dBm	Pass	
High Channel 140 (5700 MHz)		18.878 dBm	< 24 dBm	Pass	
802.11(a) 36 Mbps					
Low Channel 36 (5180 MHz)		12.924 dBm	< 17 dBm	Pass	
High Channel 48 (5240 MHz)		14.398 dBm	< 17 dBm	Pass	
Low Channel 52 (5260 MHz)		17.751 dBm	< 24 dBm	Pass	
High Channel 64 (5320 MHz)		19.296 dBm	< 24 dBm	Pass	
Low Channel 100 (5500 MHz)		20.79 dBm	< 24 dBm	Pass	
Mid Channel 110 (5580 MHz)		20.638 dBm	< 24 dBm	Pass	
High Channel 140 (5700 MHz)		18.974 dBm	< 24 dBm	Pass	
802.11(a) 54 Mbps					
Low Channel 36 (5180 MHz)		13.053 dBm	< 17 dBm	Pass	
High Channel 48 (5240 MHz)		13.319 dBm	< 17 dBm	Pass	
Low Channel 52 (5260 MHz)		17.266 dBm	< 24 dBm	Pass	
High Channel 64 (5320 MHz)		18.973 dBm	< 24 dBm	Pass	
Low Channel 100 (5500 MHz)		20.731 dBm	< 24 dBm	Pass	
Mid Channel 110 (5580 MHz)		20.637 dBm	< 24 dBm	Pass	
High Channel 140 (5700 MHz)		18.762 dBm	< 24 dBm	Pass	
802.11(n) MCS0					
Low Channel 36 (5180 MHz)		12.598 dBm	< 17 dBm	Pass	
High Channel 48 (5240 MHz)		13.304 dBm	< 17 dBm	Pass	
Low Channel 52 (5260 MHz)		18.389 dBm	< 24 dBm	Pass	
High Channel 64 (5320 MHz)		19.014 dBm	< 24 dBm	Pass	
Low Channel 100 (5500 MHz)		20.959 dBm	< 24 dBm	Pass	
Mid Channel 110 (5580 MHz)		20.627 dBm	< 24 dBm	Pass	
High Channel 140 (5700 MHz)		19.304 dBm	< 24 dBm	Pass	
802.11(n) MCS7					
Low Channel 36 (5180 MHz)		12.687 dBm	< 17 dBm	Pass	
High Channel 48 (5240 MHz)		13.303 dBm	< 17 dBm	Pass	
Low Channel 52 (5260 MHz)		17.539 dBm	< 24 dBm	Pass	
High Channel 64 (5320 MHz)		19.005 dBm	< 24 dBm	Pass	
Low Channel 100 (5500 MHz)		20.866 dBm	< 24 dBm	Pass	
Mid Channel 110 (5580 MHz)		20.777 dBm	< 24 dBm	Pass	
High Channel 140 (5700 MHz)		18.807 dBm	< 24 dBm	Pass	
802.11(n) MCS8					
Low Channel 36 (5180 MHz)		12.737 dBm	< 17 dBm	Pass	
High Channel 48 (5240 MHz)		13.264 dBm	< 17 dBm	Pass	
Low Channel 52 (5260 MHz)		17.451 dBm	< 24 dBm	Pass	
High Channel 64 (5320 MHz)		19.409 dBm	< 24 dBm	Pass	
Low Channel 100 (5500 MHz)		20.491 dBm	< 24 dBm	Pass	
Mid Channel 110 (5580 MHz)		20.666 dBm	< 24 dBm	Pass	
High Channel 140 (5700 MHz)		18.868 dBm	< 24 dBm	Pass	
802.11(n) MCS15					
Low Channel 36 (5180 MHz)		12.313 dBm	< 17 dBm	Pass	
High Channel 48 (5240 MHz)		13.919 dBm	< 17 dBm	Pass	
Low Channel 52 (5260 MHz)		17.379 dBm	< 24 dBm	Pass	
High Channel 64 (5320 MHz)		18.38 dBm	< 24 dBm	Pass	
Low Channel 100 (5500 MHz)		20.712 dBm	< 24 dBm	Pass	
Mid Channel 110 (5580 MHz)		20.332 dBm	< 24 dBm	Pass	
High Channel 140 (5700 MHz)		19.037 dBm	< 24 dBm	Pass	
802.11(n)(40MHz) MCS0					
Low Channel 37 (5190 MHz)		12.161 dBm	< 17 dBm	Pass	
High Channel 47 (5230 MHz)		14.393 dBm	< 24 dBm	Pass	
Low Channel 53 (5270 MHz)		16.85 dBm	< 24 dBm	Pass	
High Channel 63 (5310 MHz)		18.061 dBm	< 24 dBm	Pass	
Low Channel 101 (5510 MHz)		21.386 dBm	< 24 dBm	Pass	
High Channel 130 (5670 MHz)		19.288 dBm	< 24 dBm	Pass	
802.11(n)(40MHz) MCS7					
Low Channel 37 (5190 MHz)		12.35 dBm	< 17 dBm	Pass	
High Channel 47 (5230 MHz)		13.688 dBm	< 17 dBm	Pass	
Low Channel 53 (5270 MHz)		17.398 dBm	< 24 dBm	Pass	
High Channel 63 (5310 MHz)		17.752 dBm	< 24 dBm	Pass	
Low Channel 101 (5510 MHz)		21.259 dBm	< 24 dBm	Pass	
High Channel 130 (5670 MHz)		19.137 dBm	< 24 dBm	Pass	
802.11(n)(40MHz) MCS8					
Low Channel 37 (5190 MHz)		12.94 dBm	< 17 dBm	Pass	
High Channel 47 (5230 MHz)		14.534 dBm	< 17 dBm	Pass	
Low Channel 53 (5270 MHz)		18.904 dBm	< 24 dBm	Pass	
High Channel 63 (5310 MHz)		17.856 dBm	< 24 dBm	Pass	
Low Channel 101 (5510 MHz)		21.227 dBm	< 24 dBm	Pass	
High Channel 130 (5670 MHz)		19.202 dBm	< 24 dBm	Pass	
802.11(n)(40MHz) MCS15					
Low Channel 37 (5190 MHz)		12.455 dBm	< 17 dBm	Pass	
High Channel 47 (5230 MHz)		13.654 dBm	< 17 dBm	Pass	
Low Channel 53 (5270 MHz)		16.836 dBm	< 24 dBm	Pass	
High Channel 63 (5310 MHz)		18.178 dBm	< 24 dBm	Pass	
Low Channel 101 (5510 MHz)		21.237 dBm	< 24 dBm	Pass	
High Channel 130 (5670 MHz)		19.036 dBm	< 24 dBm	Pass	

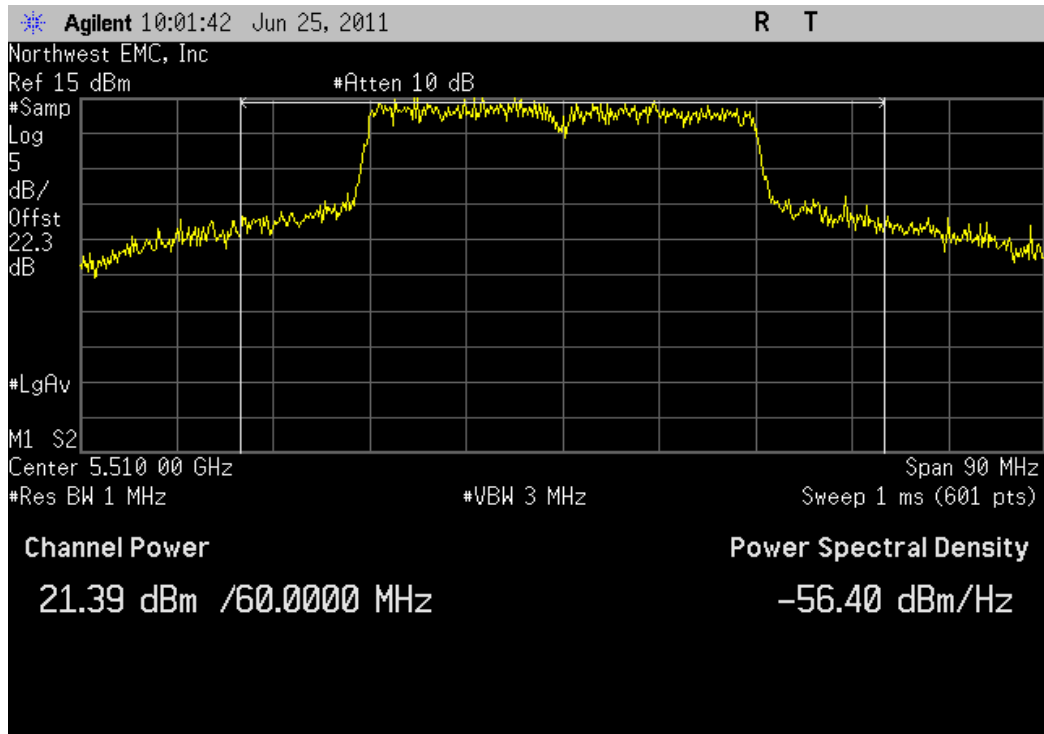
802.11(n) MCS8, Low Channel 100 (5500 MHz)

				Value	Limit	Result
				20.491 dBm	< 24 dBm	Pass



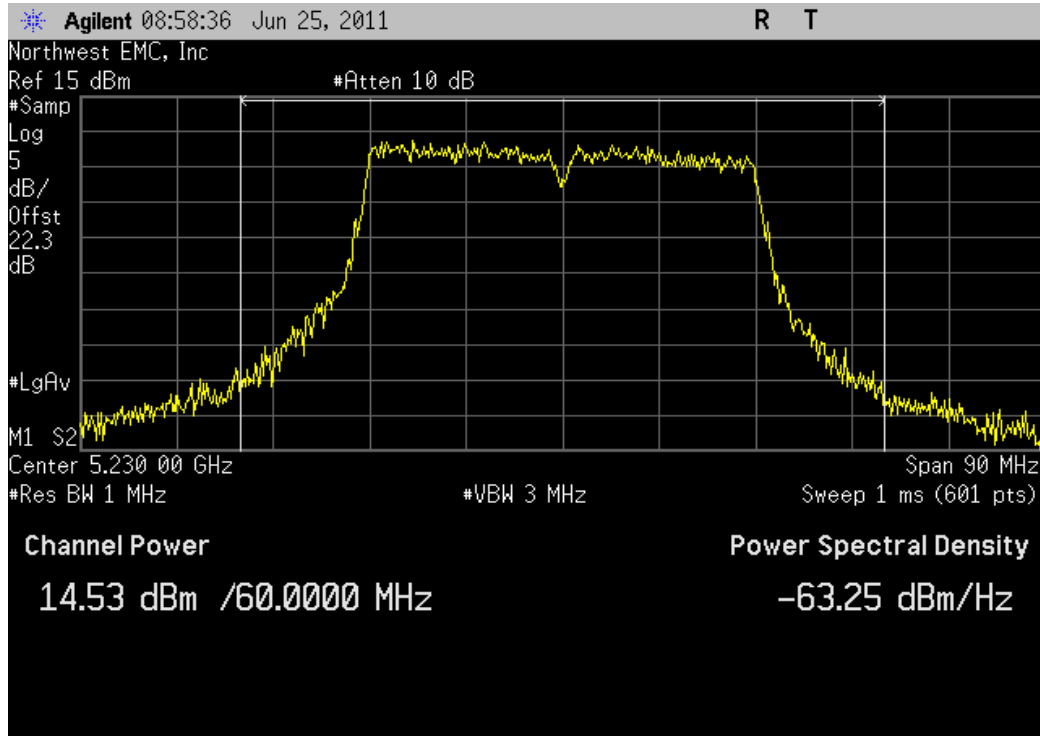
802.11(n)(40MHz) MCS0, Low Channel 101 (5510 MHz)

				Value	Limit	Result
				21.386 dBm	< 24 dBm	Pass



802.11(n)(40MHz) MCS8, High Channel 47 (5230 MHz)

				Value	Limit	Result
				14.534 dBm	< 17 dBm	Pass



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
Power Sensor	Agilent	E4412A	SQE	4/21/2010	24
Power Sensor	Hewlett Packard	8481	SQP	6/7/2010	24
Power Meter	Hewlett Packard	E4418A	SPA	4/21/2010	24
Chamber, Temperature/Humidity	Cincinnati Sub Zero (CSZ)	ZPHS-32-3.5-SCT/AC	TBE	6/8/2010	24
Spectrum Analyzer	Agilent	E4446A	AAY	1/11/2011	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


Variation of Supply Voltage

The primary supply voltage was varied from 85% to 115% of nominal

Variation of Ambient Temperature

Using a temperature chamber, the transmit frequency was recorded at the extremes of the specified temperature range (-30 ° to +50° C) and at 10°C intervals.

A direct connect measurement was made between the EUT's antenna cable and a spectrum analyzer. The spectrum analyzer is equipped with a precision frequency reference that exceeds the stability requirement of the EUT. Measurements were made at the mid channel of each band to determine frequency stability. If the frequency variation is less than 100 ppm, the EUT will meet the requirement of 15.407(g), that the emissions are maintained within the band of operation.

NORTHWEST EMC		Frequency Stability		XMit 2010.07.29	
EUT: WMIA-199NI			Work Order: PROS0109		
Serial Number: 09435H1000039			Date: 06/23/11		
Customer: ProSoft Technology, Inc.			Temperature: 22.06°C		
Attendees: None			Humidity: 48%		
Project: None			Barometric Pres.: 1011		
Tested by: Jaemi Suh			Power: 120V/60Hz		Job Site: OC11
TEST SPECIFICATIONS			TEST METHOD		
FCC 15.407:2010			ANSI C63.10:2009		
COMMENTS					
Operating at 802.11a/n					
DEVIATIONS FROM TEST STANDARD					
Configuration #	1	Signature 			

Low Channel, 5150 MHz - 5250 MHz Band

Frequency Stability with Variation of DC Voltage (Ambient Temperature = 20°C)

Voltage (VDC)	Assigned Frequency (MHz)	Measured Frequency (MHz)	Tolerance (ppm)	Specification (ppm)
3.8 (115%)	5180.000000	5180.000209	0.04	10
3.3 (100%)	5180.000000	5180.000223	0.04	10
2.8 (85%)	5180.000000	5180.000195	0.04	10

Frequency Stability with Variation of Ambient Temperature (Primary Supply = 3.3 VDC & 5.0 VDC)

Temp (°C)	Assigned Frequency (MHz)	Measured Frequency (MHz)	Tolerance (ppm)	Specification (ppm)
50	5180.000000	5179.999849	0.03	10
40	5180.000000	5180.000309	0.06	10
30	5180.000000	5180.000342	0.07	10
20	5180.000000	5179.999833	0.03	10
10	5180.000000	5179.999437	0.11	10
0	5180.000000	5180.000089	0.02	10
-10	5180.000000	5180.000634	0.12	10
-20	5180.000000	5180.000326	0.06	10
-30	5180.000000	5180.000444	0.09	10

High Channel, 5250 MHz - 5350 MHz Band

Frequency Stability with Variation of DC Voltage (Ambient Temperature = 20°C)

Voltage (VDC)	Assigned Frequency (MHz)	Measured Frequency (MHz)	Tolerance (ppm)	Specification (ppm)
3.8 (115%)	5320.000000	5320.000215	0.04	10
3.3 (100%)	5320.000000	5320.000221	0.04	10
2.8 (85%)	5320.000000	5320.000186	0.03	10

Frequency Stability with Variation of Ambient Temperature (Primary Supply = 3.3 VDC)

Temp (°C)	Assigned Frequency (MHz)	Measured Frequency (MHz)	Tolerance (ppm)	Specification (ppm)
50	5320.000000	5319.999845	0.03	10
40	5320.000000	5320.000308	0.06	10
30	5320.000000	5320.000350	0.07	10
20	5320.000000	5319.999800	0.04	10
10	5320.000000	5319.999446	0.10	10
0	5320.000000	5320.000096	0.02	10
-10	5320.000000	5320.000652	0.12	10
-20	5320.000000	5320.000321	0.06	10
-30	5320.000000	5320.000560	0.11	10

Low Channel, 5470 MHz - 5725 MHz Band

Frequency Stability with Variation of DC Voltage (Ambient Temperature = 20°C)

Voltage (VDC)	Assigned Frequency (MHz)	Measured Frequency (MHz)	Tolerance (ppm)	Specification (ppm)
3.8 (115%)	5500.000000	5500.000228	0.04	10
3.3 (100%)	5500.000000	5500.000219	0.04	10
2.8 (85%)	5500.000000	5500.000189	0.03	10

Frequency Stability with Variation of Ambient Temperature (Primary Supply = 3.3 VDC)

Temp (°C)	Assigned Frequency (MHz)	Measured Frequency (MHz)	Tolerance (ppm)	Specification (ppm)
50	5500.000000	5499.999845	0.03	10
40	5500.000000	5500.000317	0.06	10
30	5500.000000	5500.000360	0.07	10
20	5500.000000	5499.999766	0.04	10
10	5500.000000	5499.999420	0.11	10
0	5500.000000	5500.000064	0.01	10
-10	5500.000000	5500.000666	0.12	10
-20	5500.000000	5500.000318	0.06	10
-30	5500.000000	5500.000563	0.10	10

High Channel, 5470 MHz - 5725 MHz Band

Frequency Stability with Variation of DC Voltage (Ambient Temperature = 20°C)

Voltage (VDC)	Assigned Frequency (MHz)	Measured Frequency (MHz)	Tolerance (ppm)	Specification (ppm)
3.8 (115%)	5700.000000	5700.000257	0.05	10
3.3 (100%)	5700.000000	5700.000236	0.04	10
2.8 (85%)	5700.000000	5700.000197	0.03	10

Frequency Stability with Variation of Ambient Temperature (Primary Supply = 3.3 VDC)

Temp (°C)	Assigned Frequency (MHz)	Measured Frequency (MHz)	Tolerance (ppm)	Specification (ppm)
50	5700.000000	5699.999854	0.03	10
40	5700.000000	5700.000329	0.06	10
30	5700.000000	5700.000384	0.07	10
20	5700.000000	5699.999760	0.04	10
10	5700.000000	5699.999400	0.11	10
0	5700.000000	5700.000310	0.05	10
-10	5700.000000	5700.000699	0.12	10
-20	5700.000000	5700.000497	0.09	10
-30	5700.000000	5700.000584	0.10	10

AC Power Line 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

Continuous Transmit

POWER SETTINGS INVESTIGATED

120VAC/60Hz

CONFIGURATIONS INVESTIGATED

PROS0109 - 2

SAMPLE CALCULATIONS

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
LISN	Solar	9252-50-R-24-BNC	LIC	4/26/2011	12 mo
LISN	Solar	9252-50-24-BNC	LIA	6/13/2011	12 mo
Attenuator	Pasternack	6N10W-20	AWC	3/2/2011	12 mo
High Pass Filter	TTE	H97-100K-50-720B	HFP	3/8/2010	24 mo
OC06 Cables	N/A	CE Cables	OCM	4/7/2011	12 mo
Receiver	Rohde & Schwarz	ESCI	ARF	4/1/2011	12 mo

MEASUREMENT BANDWIDTHS

Frequency Range	Peak Data	Quasi-Peak Data	Average Data
(MHz)	(kHz)	(kHz)	(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

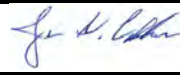
Measurements were made using the bandwidths and detectors specified. No video filter was used.

MEASUREMENT UNCERTAINTY

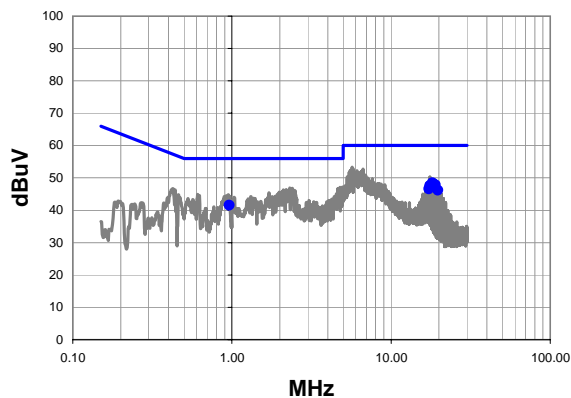
A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty for radiated emissions measurements is less than +/- 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

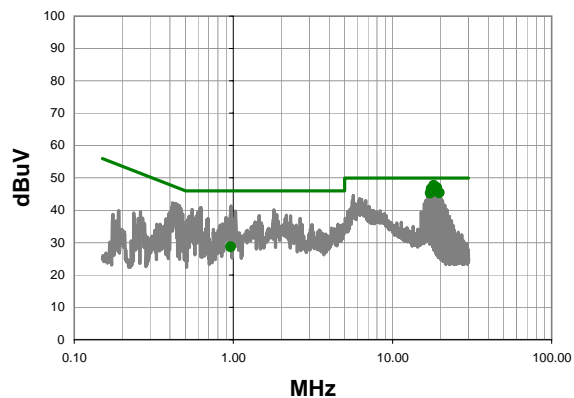
Using the mode of operation and configuration noted within this report, conducted emissions tests were performed. The frequency range investigated (scanned), is also noted in this report. Conducted power line measurements are made, unless otherwise specified, over the frequency range from 150 kHz to 30 MHz to determine the line-to-ground radio-noise voltage that is conducted from the EUT power-input terminals that are directly (or indirectly via separate transformer or power supplies) connected to a public power network. Equipment is tested with power cords that are normally used or that have electrical or shielding characteristics that are the same as those cords normally used. Typically those measurements are made using a LISN (Line Impedance Stabilization Network), the 50ohm measuring port is terminated by a 50ohm EMI meter or a 50ohm resistive load. All 50ohm measuring ports of the LISN are terminated by 50ohm.

Work Order:	PROS0109	Date:	07/06/11	
Project:	None	Temperature:	22.41	
Job Site:	OC06	Humidity:	41.1	
Serial Number:	09435H1000039	Barometric Pres.:	1019.2	Tested by: Johnny Candelas
EUT:	WMIA-199NI			
Configuration:	2			
Customer:	ProSoft Technology, Inc.			
Attendees:	None			
EUT Power:	120VAC/60Hz			
Operating Mode:	Continuous Transmit			
Deviations:	No deviations.			
Comments:	802.11a, Ch 36 - 5180 MHz, 6Mbps. Phihong PSC20R-120 power supply, ferrite (0443164151) 2 loops on power cable by EUT			
Test Specifications FCC 15.407:2011		Class B		Test Method ANSI C63.10:2009
Run #	1	Line:	High Line	Ext. Attenuation: 20
Results				Pass

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit

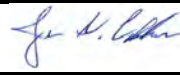


Quasi Peak Data - vs - Quasi Peak Limit

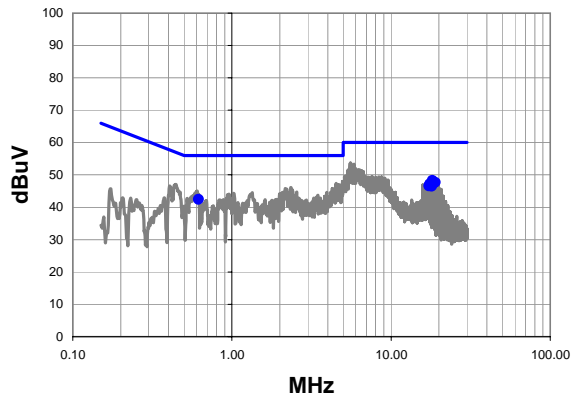
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
18.240	27.6	20.9	48.5	60.0	-11.5
18.950	26.9	20.9	47.8	60.0	-12.2
17.530	26.7	20.9	47.6	60.0	-12.4
17.290	25.7	20.9	46.6	60.0	-13.4
19.660	25.2	21.0	46.2	60.0	-13.8
0.964	21.4	20.1	41.5	56.0	-14.5

Average Data - vs - Average Limit

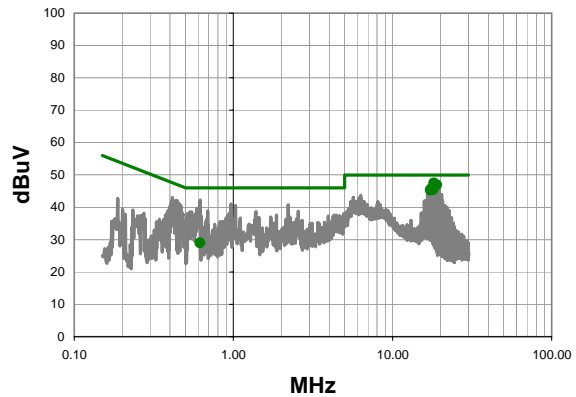
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
18.240	26.8	20.9	47.7	50.0	-2.3
18.950	26.1	20.9	47.0	50.0	-3.0
17.530	25.7	20.9	46.6	50.0	-3.4
19.660	24.4	21.0	45.4	50.0	-4.6
17.290	24.4	20.9	45.3	50.0	-4.7
0.964	8.6	20.1	28.7	46.0	-17.3

Work Order:	PROS0109	Date:	07/06/11	
Project:	None	Temperature:	22.41	
Job Site:	OC06	Humidity:	41.1	
Serial Number:	09435H1000039	Barometric Pres.:	1019.2	Tested by: Johnny Candelas
EUT:	WMIA-199NI			
Configuration:	2			
Customer:	ProSoft Technology, Inc.			
Attendees:	None			
EUT Power:	120VAC/60Hz			
Operating Mode:	Continuous Transmit			
Deviations:	No deviations.			
Comments:	802.11a, Ch 36 - 5180 MHz, 6Mbps. Phihong PSC20R-120 power supply, ferrite (0443164151) 2 loops on power cable by EUT			
Test Specifications FCC 15.407:2011		Class B		Test Method ANSI C63.10:2009
Run #	2	Line:	Neutral	Ext. Attenuation: 20
Results				Pass

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit

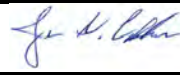


Quasi Peak Data - vs - Quasi Peak Limit

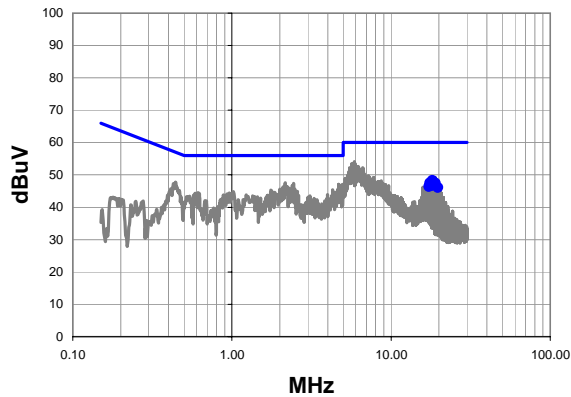
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
18.240	27.4	20.9	48.3	60.0	-11.7
18.950	26.7	20.9	47.6	60.0	-12.4
17.526	26.3	20.9	47.2	60.0	-12.8
17.292	25.7	20.9	46.6	60.0	-13.4
18.004	25.6	20.9	46.5	60.0	-13.5
0.617	22.3	20.1	42.4	56.0	-13.6

Average Data - vs - Average Limit

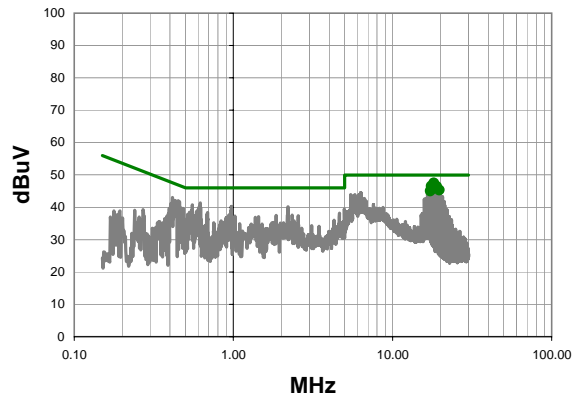
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
18.240	26.6	20.9	47.5	50.0	-2.5
18.950	26.0	20.9	46.9	50.0	-3.1
17.526	24.8	20.9	45.7	50.0	-4.3
18.004	24.5	20.9	45.4	50.0	-4.6
17.292	24.4	20.9	45.3	50.0	-4.7
0.617	8.9	20.1	29.0	46.0	-17.0

Work Order:	PROS0109	Date:	07/06/11	
Project:	None	Temperature:	22.41	
Job Site:	OC06	Humidity:	41.1	
Serial Number:	09435H1000039	Barometric Pres.:	1019.2	Tested by: Johnny Candelas
EUT:	WMIA-199NI			
Configuration:	2			
Customer:	ProSoft Technology, Inc.			
Attendees:	None			
EUT Power:	120VAC/60Hz			
Operating Mode:	Continuous Transmit			
Deviations:	No deviations.			
Comments:	802.11a, Ch 48 - 5240 MHz, 6Mbps. Phihong PSC20R-120 power supply, ferrite (0443164151) 2 loops on power cable by EUT			
Test Specifications FCC 15.407:2011		Class B		Test Method ANSI C63.10:2009
Run #	3	Line:	High Line	Ext. Attenuation: 20
Results				Pass

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit

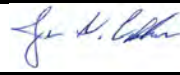


Quasi Peak Data - vs - Quasi Peak Limit

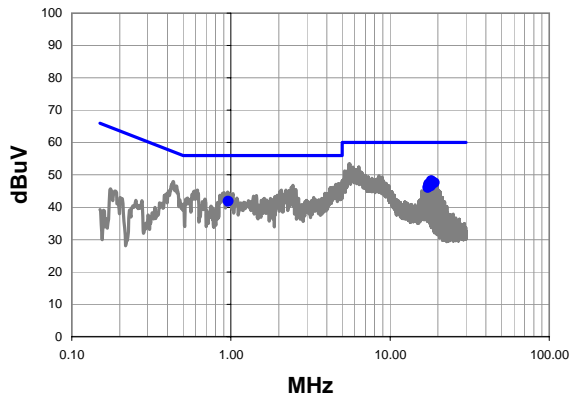
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
18.240	27.4	20.9	48.3	60.0	-11.7
17.530	26.6	20.9	47.5	60.0	-12.5
18.950	26.5	20.9	47.4	60.0	-12.6
18.000	25.8	20.9	46.7	60.0	-13.3
17.290	25.5	20.9	46.4	60.0	-13.6
19.660	25.1	21.0	46.1	60.0	-13.9

Average Data - vs - Average Limit

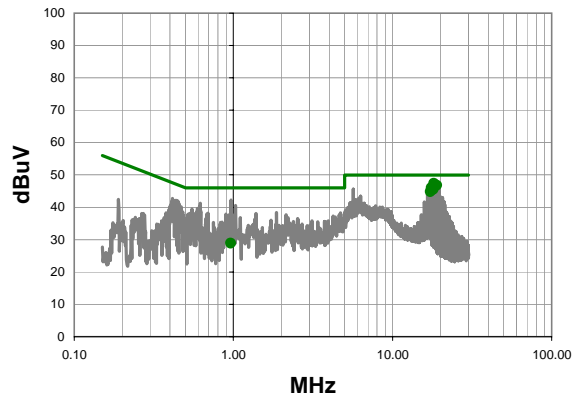
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
18.240	26.6	20.9	47.5	50.0	-2.5
17.530	25.6	20.9	46.5	50.0	-3.5
18.950	25.5	20.9	46.4	50.0	-3.6
18.000	24.9	20.9	45.8	50.0	-4.2
19.660	24.3	21.0	45.3	50.0	-4.7
17.290	24.1	20.9	45.0	50.0	-5.0

Work Order:	PROS0109	Date:	07/06/11	
Project:	None	Temperature:	22.41	
Job Site:	OC06	Humidity:	41.1	
Serial Number:	09435H1000039	Barometric Pres.:	1019.2	Tested by: Johnny Candelas
EUT:	WMIA-199NI			
Configuration:	2			
Customer:	ProSoft Technology, Inc.			
Attendees:	None			
EUT Power:	120VAC/60Hz			
Operating Mode:	Continuous Transmit			
Deviations:	No deviations.			
Comments:	802.11a, Ch 48 - 5240 MHz, 6Mbps. Phihong PSC20R-120 power supply, ferrite (0443164151) 2 loops on power cable by EUT			
Test Specifications FCC 15.407:2011		Class B		Test Method ANSI C63.10:2009
Run #	4	Line:	Neutral	Ext. Attenuation: 20
Results				Pass

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit

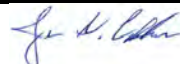


Quasi Peak Data - vs - Quasi Peak Limit

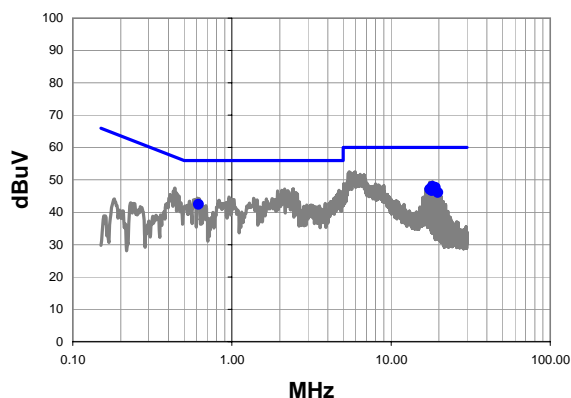
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
18.240	27.3	20.9	48.2	60.0	-11.8
18.950	26.6	20.9	47.5	60.0	-12.5
17.530	26.3	20.9	47.2	60.0	-12.8
18.004	25.7	20.9	46.6	60.0	-13.4
17.290	25.2	20.9	46.1	60.0	-13.9
0.964	21.7	20.1	41.8	56.0	-14.2

Average Data - vs - Average Limit

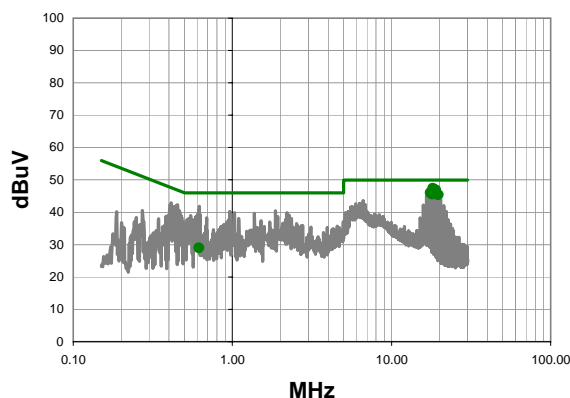
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
18.240	26.5	20.9	47.4	50.0	-2.6
18.950	25.9	20.9	46.8	50.0	-3.2
17.530	25.1	20.9	46.0	50.0	-4.0
18.004	24.6	20.9	45.5	50.0	-4.5
17.290	23.9	20.9	44.8	50.0	-5.2
0.964	8.8	20.1	28.9	46.0	-17.1

Work Order:	PROS0109	Date:	07/06/11	
Project:	None	Temperature:	22.41	
Job Site:	OC06	Humidity:	41.1	
Serial Number:	09435H1000039	Barometric Pres.:	1019.2	Tested by: Johnny Candelas
EUT:	WMIA-199NI			
Configuration:	2			
Customer:	ProSoft Technology, Inc.			
Attendees:	None			
EUT Power:	120VAC/60Hz			
Operating Mode:	Continuous Transmit			
Deviations:	No deviations.			
Comments:	802.11a, Ch 52 - 5260 MHz, 6Mbps. Phihong PSC20R-120 power supply, ferrite (0443164151) 2 loops on power cable by EUT			
Test Specifications FCC 15.407:2011		Class B		Test Method ANSI C63.10:2009
Run #	5	Line:	High Line	Ext. Attenuation: 20
Results				Pass

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit

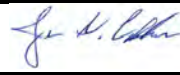


Quasi Peak Data - vs - Quasi Peak Limit

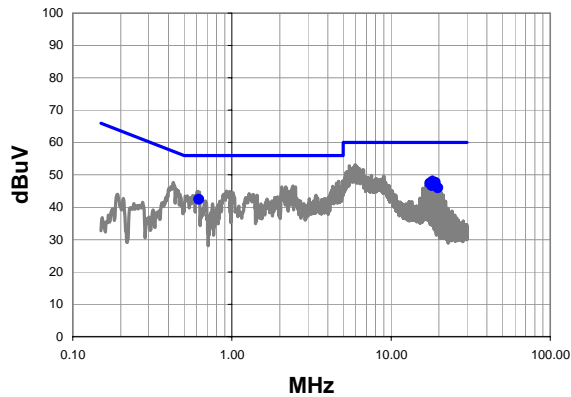
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
18.236	27.1	20.9	48.0	60.0	-12.0
18.950	26.7	20.9	47.6	60.0	-12.4
17.526	26.2	20.9	47.1	60.0	-12.9
18.004	25.8	20.9	46.7	60.0	-13.3
0.617	22.3	20.1	42.4	56.0	-13.6
19.660	25.1	21.0	46.1	60.0	-13.9

Average Data - vs - Average Limit

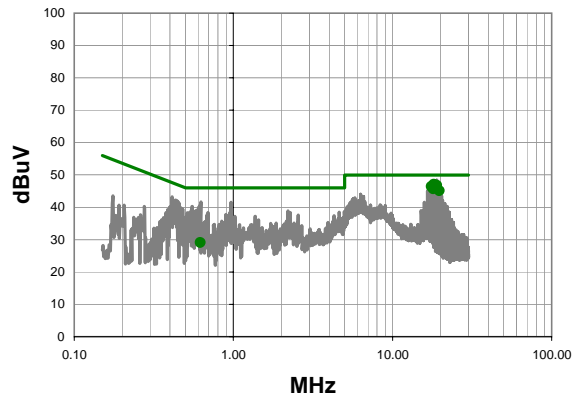
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
18.236	26.5	20.9	47.4	50.0	-2.6
18.950	26.0	20.9	46.9	50.0	-3.1
17.526	25.1	20.9	46.0	50.0	-4.0
18.004	24.7	20.9	45.6	50.0	-4.4
19.660	24.4	21.0	45.4	50.0	-4.6
0.617	8.9	20.1	29.0	46.0	-17.0

Work Order:	PROS0109	Date:	07/06/11	
Project:	None	Temperature:	22.41	
Job Site:	OC06	Humidity:	41.1	
Serial Number:	09435H1000039	Barometric Pres.:	1019.2	Tested by: Johnny Candelas
EUT:	WMIA-199NI			
Configuration:	2			
Customer:	ProSoft Technology, Inc.			
Attendees:	None			
EUT Power:	120VAC/60Hz			
Operating Mode:	Continuous Transmit			
Deviations:	No deviations.			
Comments:	802.11a, Ch 52 - 5260 MHz, 6Mbps. Phihong PSC20R-120 power supply, ferrite (0443164151) 2 loops on power cable by EUT			
Test Specifications FCC 15.407:2011		Class B		Test Method ANSI C63.10:2009
Run #	6	Line:	Neutral	Ext. Attenuation: 20
Results				Pass

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit

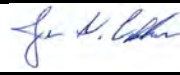


Quasi Peak Data - vs - Quasi Peak Limit

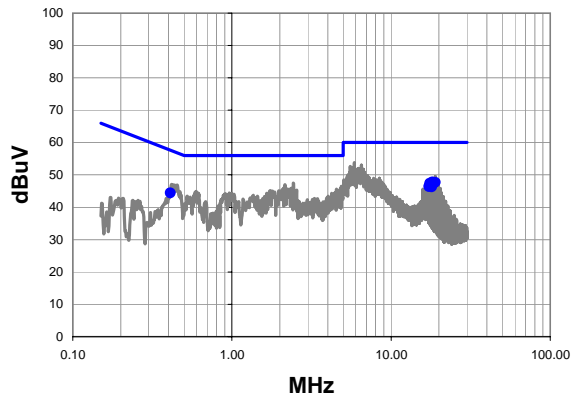
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
18.240	27.1	20.9	48.0	60.0	-12.0
18.950	26.7	20.9	47.6	60.0	-12.4
17.530	26.5	20.9	47.4	60.0	-12.6
18.004	25.8	20.9	46.7	60.0	-13.3
0.620	22.3	20.1	42.4	56.0	-13.6
19.660	25.0	21.0	46.0	60.0	-14.0

Average Data - vs - Average Limit

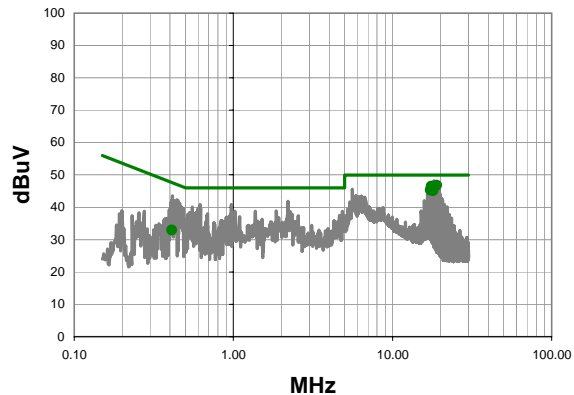
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
18.240	26.2	20.9	47.1	50.0	-2.9
18.950	25.9	20.9	46.8	50.0	-3.2
17.530	25.5	20.9	46.4	50.0	-3.6
18.004	24.8	20.9	45.7	50.0	-4.3
19.660	24.1	21.0	45.1	50.0	-4.9
0.620	9.0	20.1	29.1	46.0	-16.9

Work Order:	PROS0109	Date:	07/06/11	
Project:	None	Temperature:	22.41	
Job Site:	OC06	Humidity:	41.1	
Serial Number:	09435H1000039	Barometric Pres.:	1019.2	Tested by: Johnny Candelas
EUT:	WMIA-199NI			
Configuration:	2			
Customer:	ProSoft Technology, Inc.			
Attendees:	None			
EUT Power:	120VAC/60Hz			
Operating Mode:	Continuous Transmit			
Deviations:	No deviations.			
Comments:	802.11a, Ch 64 - 5320 MHz, 6Mbps. Phihong PSC20R-120 power supply, ferrite (0443164151) 2 loops on power cable by EUT			
Test Specifications FCC 15.407:2011		Class B		Test Method ANSI C63.10:2009
Run #	7	Line:	High Line	Ext. Attenuation: 20
Results				Pass

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit

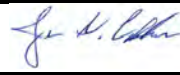


Quasi Peak Data - vs - Quasi Peak Limit

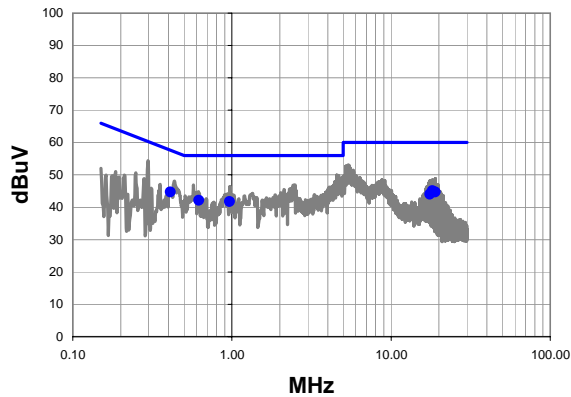
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
18.240	26.9	20.9	47.8	60.0	-12.2
18.950	26.7	20.9	47.6	60.0	-12.4
17.530	26.5	20.9	47.4	60.0	-12.6
0.410	24.3	20.1	44.4	57.6	-13.2
17.290	25.5	20.9	46.4	60.0	-13.6
18.000	25.4	20.9	46.3	60.0	-13.7

Average Data - vs - Average Limit

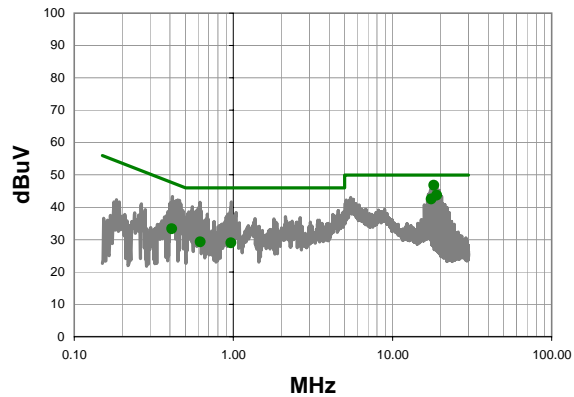
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
18.950	25.9	20.9	46.8	50.0	-3.2
18.240	25.6	20.9	46.5	50.0	-3.5
17.530	25.6	20.9	46.5	50.0	-3.5
17.290	24.4	20.9	45.3	50.0	-4.7
18.000	24.2	20.9	45.1	50.0	-4.9
0.410	12.8	20.1	32.9	47.6	-14.7

Work Order:	PROS0109	Date:	07/06/11	
Project:	None	Temperature:	22.41	
Job Site:	OC06	Humidity:	41.1	
Serial Number:	09435H1000039	Barometric Pres.:	1019.2	Tested by: Johnny Candelas
EUT:	WMIA-199NI			
Configuration:	2			
Customer:	ProSoft Technology, Inc.			
Attendees:	None			
EUT Power:	120VAC/60Hz			
Operating Mode:	Continuous Transmit			
Deviations:	No deviations.			
Comments:	802.11a, Ch 64 - 5320 MHz, 6Mbps. Phihong PSC20R-120 power supply, ferrite (0443164151) 2 loops on power cable by EUT			
Test Specifications FCC 15.407:2011		Class B		Test Method ANSI C63.10:2009
Run #	8	Line:	Neutral	Ext. Attenuation: 20
Results				Pass

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit

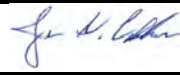


Quasi Peak Data - vs - Quasi Peak Limit

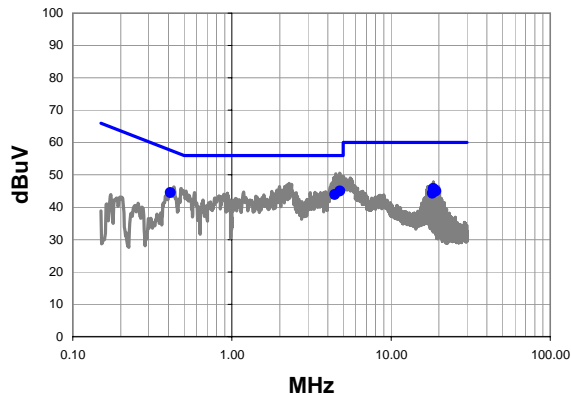
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.410	24.6	20.1	44.7	57.6	-12.9
0.620	22.0	20.1	42.1	56.0	-13.9
0.965	21.6	20.1	41.7	56.0	-14.3
18.240	24.2	20.9	45.1	60.0	-14.9
18.950	23.8	20.9	44.7	60.0	-15.3
17.530	23.1	20.9	44.0	60.0	-16.0

Average Data - vs - Average Limit

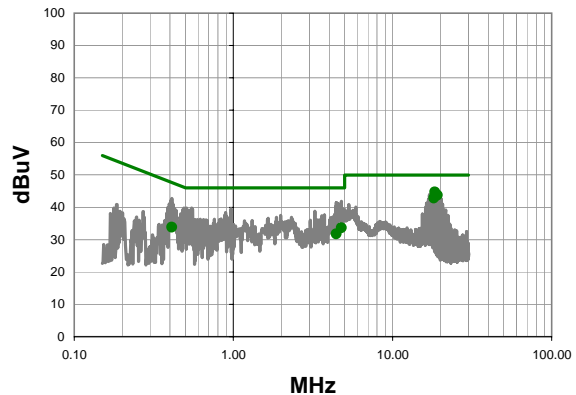
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
18.240	25.9	20.9	46.8	50.0	-3.2
18.950	22.8	20.9	43.7	50.0	-6.3
17.530	21.6	20.9	42.5	50.0	-7.5
0.410	13.2	20.1	33.3	47.6	-14.3
0.620	9.2	20.1	29.3	46.0	-16.7
0.965	8.9	20.1	29.0	46.0	-17.0

Work Order:	PROS0109	Date:	07/06/11	
Project:	None	Temperature:	22.41	
Job Site:	OC06	Humidity:	41.1	
Serial Number:	09435H1000039	Barometric Pres.:	1019.2	Tested by: Johnny Candelas
EUT:	WMIA-199NI			
Configuration:	2			
Customer:	ProSoft Technology, Inc.			
Attendees:	None			
EUT Power:	120VAC/60Hz			
Operating Mode:	Continuous Transmit			
Deviations:	No deviations.			
Comments:	802.11a, Ch 100 - 5500 MHz, 6Mbps. Phihong PSC20R-120 power supply, ferrite (0443164151) 2 loops on power cable by EUT			
Test Specifications FCC 15.407:2011		Class B		Test Method ANSI C63.10:2009
Run #	9	Line:	High Line	Ext. Attenuation: 20
Results				Pass

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit

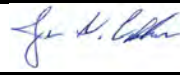


Quasi Peak Data - vs - Quasi Peak Limit

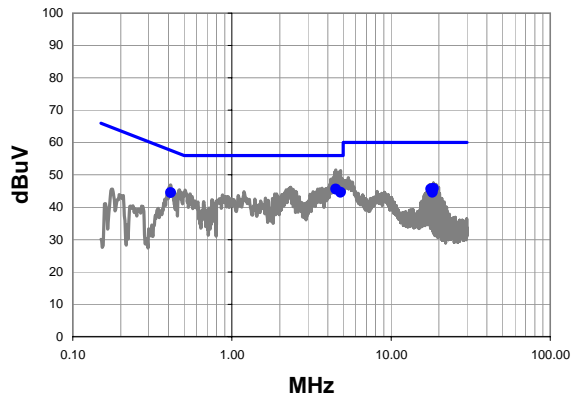
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
4.768	24.9	20.1	45.0	56.0	-11.0
4.424	23.8	20.1	43.9	56.0	-12.1
0.410	24.4	20.1	44.5	57.6	-13.1
18.474	24.9	20.9	45.8	60.0	-14.2
19.182	24.0	21.0	45.0	60.0	-15.0
18.232	23.4	20.9	44.3	60.0	-15.7

Average Data - vs - Average Limit

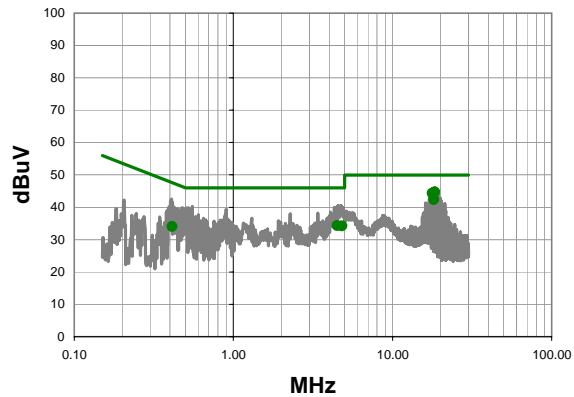
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
18.474	23.8	20.9	44.7	50.0	-5.3
19.182	22.8	21.0	43.8	50.0	-6.2
18.232	21.9	20.9	42.8	50.0	-7.2
4.768	13.5	20.1	33.6	46.0	-12.4
0.410	13.7	20.1	33.8	47.6	-13.8
4.424	11.7	20.1	31.8	46.0	-14.2

Work Order:	PROS0109	Date:	07/06/11		
Project:	None	Temperature:	22.41		
Job Site:	OC06	Humidity:	41.1		
Serial Number:	09435H1000039	Barometric Pres.:	1019.2	Tested by: Johnny Candelas	
EUT:	WMIA-199NI				
Configuration:	2				
Customer:	ProSoft Technology, Inc.				
Attendees:	None				
EUT Power:	120VAC/60Hz				
Operating Mode:	Continuous Transmit				
Deviations:	No deviations.				
Comments:	802.11a, Ch 100 - 5500 MHz, 6Mbps. Phihong PSC20R-120 power supply, ferrite (0443164151) 2 loops on power cable by EUT				
Test Specifications FCC 15.407:2011		Class B		Test Method ANSI C63.10:2009	
Run #	10	Line:	Neutral	Ext. Attenuation: 20	Results Pass

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit

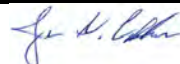


Quasi Peak Data - vs - Quasi Peak Limit

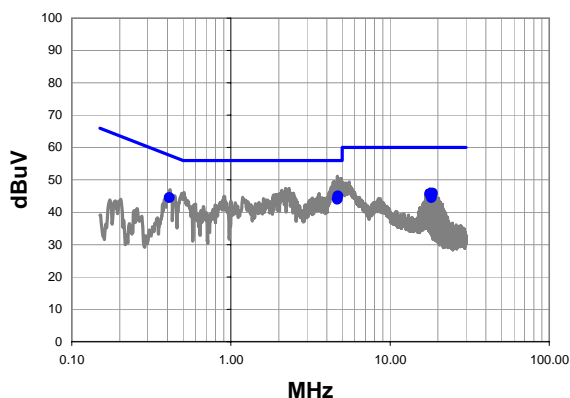
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
4.496	25.5	20.1	45.6	56.0	-10.4
4.828	24.5	20.1	44.6	56.0	-11.4
0.412	24.4	20.1	44.5	57.6	-13.1
18.470	24.9	20.9	45.8	60.0	-14.2
17.760	24.7	20.9	45.6	60.0	-14.4
18.236	23.7	20.9	44.6	60.0	-15.4

Average Data - vs - Average Limit

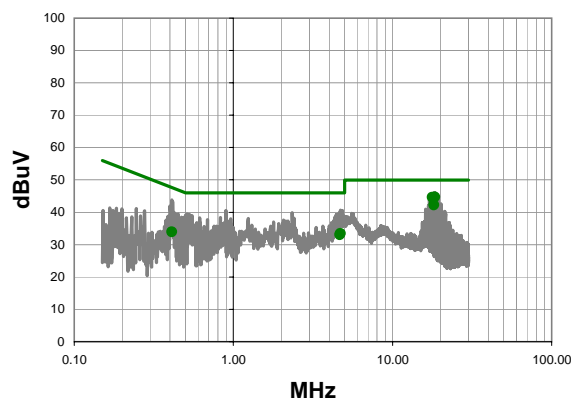
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
18.470	23.8	20.9	44.7	50.0	-5.3
17.760	23.4	20.9	44.3	50.0	-5.7
18.236	21.4	20.9	42.3	50.0	-7.7
4.496	14.2	20.1	34.3	46.0	-11.7
4.828	14.1	20.1	34.2	46.0	-11.8
0.412	13.9	20.1	34.0	47.6	-13.6

Work Order:	PROS0109	Date:	07/06/11	
Project:	None	Temperature:	22.41	
Job Site:	OC06	Humidity:	41.1	
Serial Number:	09435H1000039	Barometric Pres.:	1019.2	Tested by: Johnny Candelas
EUT:	WMIA-199NI			
Configuration:	2			
Customer:	ProSoft Technology, Inc.			
Attendees:	None			
EUT Power:	120VAC/60Hz			
Operating Mode:	Continuous Transmit			
Deviations:	No deviations.			
Comments:	802.11a, Ch 116 - 5580 MHz, 6Mbps. Pihong PSC20R-120 power supply, ferrite (0443164151) 2 loops on power cable by EUT			
Test Specifications FCC 15.407:2011		Class B		Test Method ANSI C63.10:2009
Run #	11	Line:	High Line	Ext. Attenuation: 20
Results				Pass

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit

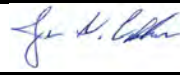


Quasi Peak Data - vs - Quasi Peak Limit

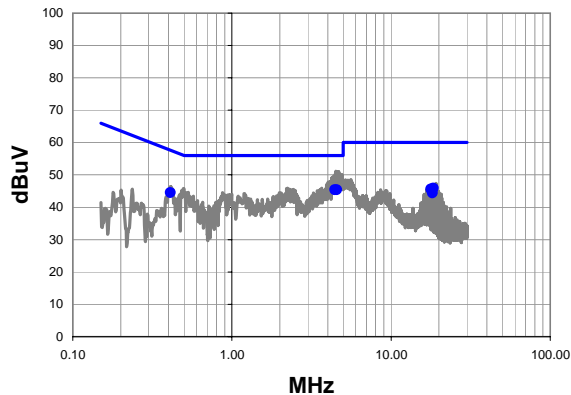
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
4.700	24.9	20.1	45.0	56.0	-11.0
4.672	23.9	20.1	44.0	56.0	-12.0
0.410	24.4	20.1	44.5	57.6	-13.1
18.470	25.0	20.9	45.9	60.0	-14.1
17.760	24.8	20.9	45.7	60.0	-14.3
18.236	23.6	20.9	44.5	60.0	-15.5

Average Data - vs - Average Limit

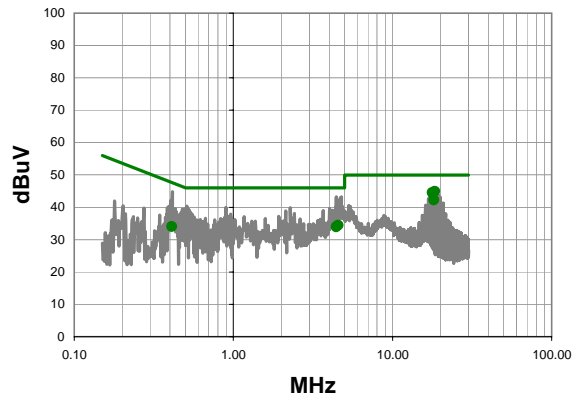
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
18.470	23.8	20.9	44.7	50.0	-5.3
17.760	23.7	20.9	44.6	50.0	-5.4
18.236	21.3	20.9	42.2	50.0	-7.8
4.700	13.3	20.1	33.4	46.0	-12.6
4.672	12.9	20.1	33.0	46.0	-13.0
0.410	13.8	20.1	33.9	47.6	-13.7

Work Order:	PROS0109	Date:	07/06/11	
Project:	None	Temperature:	22.41	
Job Site:	OC06	Humidity:	41.1	
Serial Number:	09435H1000039	Barometric Pres.:	1019.2	Tested by: Johnny Candelas
EUT:	WMIA-199NI			
Configuration:	2			
Customer:	ProSoft Technology, Inc.			
Attendees:	None			
EUT Power:	120VAC/60Hz			
Operating Mode:	Continuous Transmit			
Deviations:	No deviations.			
Comments:	802.11a, Ch 116 - 5580 MHz, 6Mbps. Phihong PSC20R-120 power supply, ferrite (0443164151) 2 loops on power cable by EUT			
Test Specifications FCC 15.407:2011		Class B		Test Method ANSI C63.10:2009
Run #	12	Line:	Neutral	Ext. Attenuation: 20
Results				Pass

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit

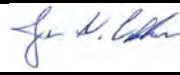


Quasi Peak Data - vs - Quasi Peak Limit

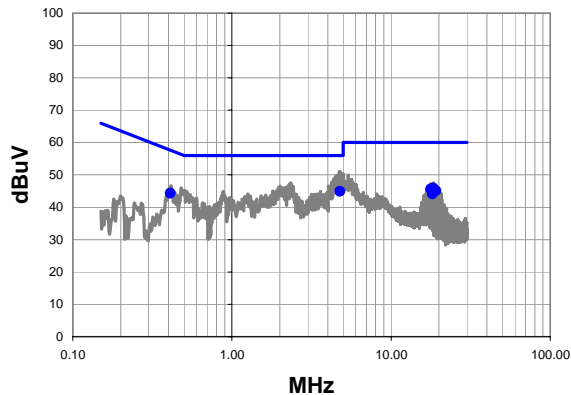
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
4.424	25.3	20.1	45.4	56.0	-10.6
4.556	25.3	20.1	45.4	56.0	-10.6
0.410	24.4	20.1	44.5	57.6	-13.1
18.470	25.0	20.9	45.9	60.0	-14.1
17.760	24.7	20.9	45.6	60.0	-14.4
18.236	23.5	20.9	44.4	60.0	-15.6

Average Data - vs - Average Limit

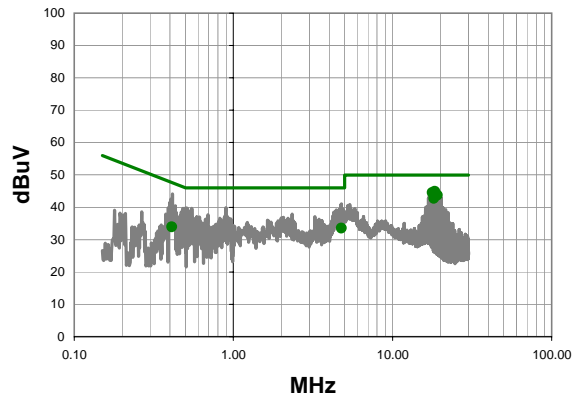
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
18.470	24.0	20.9	44.9	50.0	-5.1
17.760	23.6	20.9	44.5	50.0	-5.5
18.236	21.3	20.9	42.2	50.0	-7.8
4.556	14.3	20.1	34.4	46.0	-11.6
4.424	13.8	20.1	33.9	46.0	-12.1
0.410	13.9	20.1	34.0	47.6	-13.6

Work Order:	PROS0109	Date:	07/06/11	
Project:	None	Temperature:	22.41	
Job Site:	OC06	Humidity:	41.1	
Serial Number:	09435H1000039	Barometric Pres.:	1019.2	Tested by: Johnny Candelas
EUT:	WMIA-199NI			
Configuration:	2			
Customer:	ProSoft Technology, Inc.			
Attendees:	None			
EUT Power:	120VAC/60Hz			
Operating Mode:	Continuous Transmit			
Deviations:	No deviations.			
Comments:	802.11a, Ch 140 - 5700 MHz, 6Mbps. Phihong PSC20R-120 power supply, ferrite (0443164151) 2 loops on power cable by EUT			
Test Specifications FCC 15.407:2011		Class B		Test Method ANSI C63.10:2009
Run #	13	Line:	High Line	Ext. Attenuation: 20
Results				Pass

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit

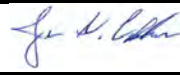


Quasi Peak Data - vs - Quasi Peak Limit

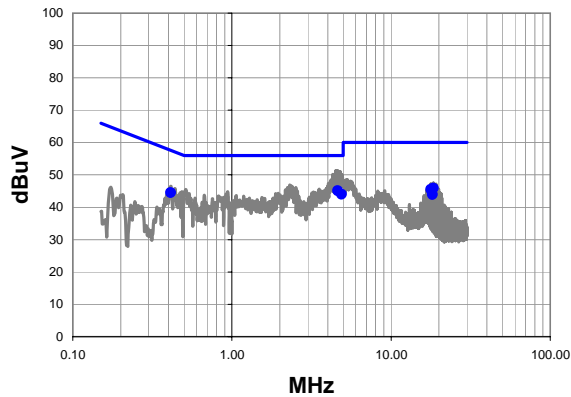
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
4.764	24.8	20.1	44.9	56.0	-11.1
0.411	24.2	20.1	44.3	57.6	-13.3
18.470	25.0	20.9	45.9	60.0	-14.1
17.760	24.7	20.9	45.6	60.0	-14.4
19.180	24.1	21.0	45.1	60.0	-14.9
18.232	23.2	20.9	44.1	60.0	-15.9

Average Data - vs - Average Limit

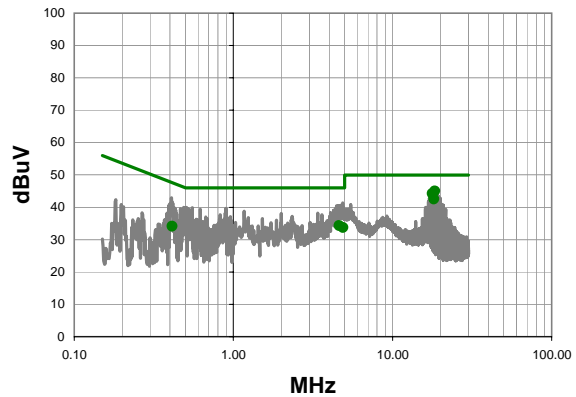
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
18.470	24.0	20.9	44.9	50.0	-5.1
17.760	23.6	20.9	44.5	50.0	-5.5
19.180	22.8	21.0	43.8	50.0	-6.2
18.232	21.8	20.9	42.7	50.0	-7.3
4.764	13.4	20.1	33.5	46.0	-12.5
0.411	13.8	20.1	33.9	47.6	-13.7

Work Order:	PROS0109	Date:	07/06/11	
Project:	None	Temperature:	22.41	
Job Site:	OC06	Humidity:	41.1	
Serial Number:	09435H1000039	Barometric Pres.:	1019.2	Tested by: Johnny Candelas
EUT:	WMIA-199NI			
Configuration:	2			
Customer:	ProSoft Technology, Inc.			
Attendees:	None			
EUT Power:	120VAC/60Hz			
Operating Mode:	Continuous Transmit			
Deviations:	No deviations.			
Comments:	802.11a, Ch 140 - 5700 MHz, 6Mbps. Phihong PSC20R-120 power supply, ferrite (0443164151) 2 loops on power cable by EUT			
Test Specifications FCC 15.407:2011		Class B		Test Method ANSI C63.10:2009
Run #	14	Line:	Neutral	Ext. Attenuation: 20
Results				Pass

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit



Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
4.628	25.0	20.1	45.1	56.0	-10.9
4.876	23.9	20.1	44.0	56.0	-12.0
0.412	24.4	20.1	44.5	57.6	-13.1
18.470	25.0	20.9	45.9	60.0	-14.1
17.760	24.6	20.9	45.5	60.0	-14.5
18.232	23.0	20.9	43.9	60.0	-16.1

Average Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
18.470	24.1	20.9	45.0	50.0	-5.0
17.760	23.3	20.9	44.2	50.0	-5.8
18.232	21.6	20.9	42.5	50.0	-7.5
4.628	14.2	20.1	34.3	46.0	-11.7
4.876	13.6	20.1	33.7	46.0	-12.3
0.412	14.0	20.1	34.1	47.6	-13.5

AC Power Line 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

Continuous Transmit

POWER SETTINGS INVESTIGATED

120VAC/60Hz

CONFIGURATIONS INVESTIGATED

PROS0109 - 2

SAMPLE CALCULATIONS

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
LISN	Solar	9252-50-R-24-BNC	LIC	4/26/2011	12 mo
LISN	Solar	9252-50-24-BNC	LIB	5/31/2011	12 mo
Attenuator	Pasternack	6N10W-20	AWC	3/2/2011	12 mo
High Pass Filter	TTE	H97-100K-50-720B	HFP	3/8/2010	24 mo
OC06 Cables	N/A	CE Cables	OCM	4/7/2011	12 mo
Receiver	Rohde & Schwarz	ESCI	ARF	4/1/2011	12 mo

MEASUREMENT BANDWIDTHS

Frequency Range	Peak Data	Quasi-Peak Data	Average Data
(MHz)	(kHz)	(kHz)	(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

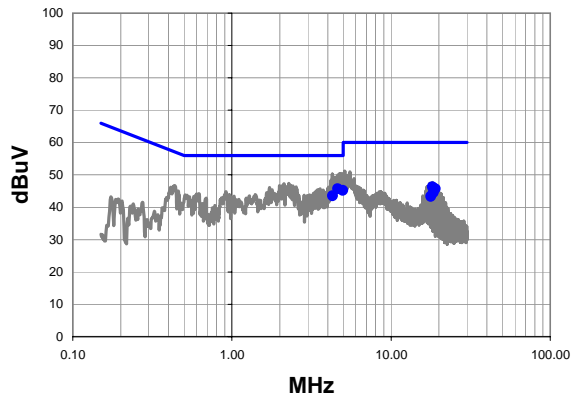
A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty for radiated emissions measurements is less than +/- 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

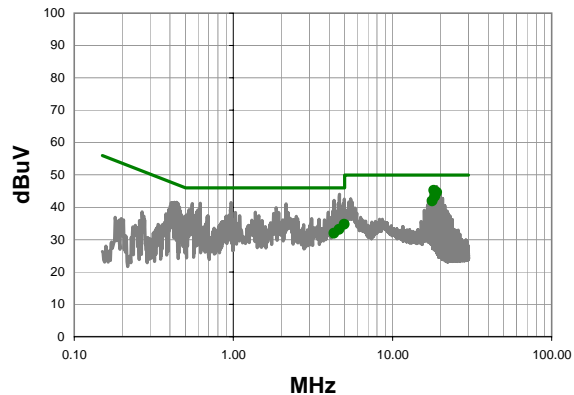
Using the mode of operation and configuration noted within this report, conducted emissions tests were performed. The frequency range investigated (scanned), is also noted in this report. Conducted power line measurements are made, unless otherwise specified, over the frequency range from 150 kHz to 30 MHz to determine the line-to-ground radio-noise voltage that is conducted from the EUT power-input terminals that are directly (or indirectly via separate transformer or power supplies) connected to a public power network. Equipment is tested with power cords that are normally used or that have electrical or shielding characteristics that are the same as those cords normally used. Typically those measurements are made using a LISN (Line Impedance Stabilization Network), the 50ohm measuring port is terminated by a 50ohm EMI meter or a 50ohm resistive load. All 50ohm measuring ports of the LISN are terminated by 50ohm.

Work Order:	PROS0109	Date:	07/06/11	
Project:	None	Temperature:	22.41	
Job Site:	OC06	Humidity:	41.1	
Serial Number:	09435H1000039	Barometric Pres.:	1019.2	Tested by: Johnny Candelas
EUT:	WMIA-199NI			
Configuration:	2			
Customer:	ProSoft Technology, Inc.			
Attendees:	None			
EUT Power:	120VAC/60Hz			
Operating Mode:	Continuous Transmit			
Deviations:	No deviations.			
Comments:	802.11n (40MHz), Ch 37 - 5190 MHz, MCS0. Phihong PSC20R-120 power supply, ferrite (0443164151) 2 loops on power cable by EUT			
Test Specifications FCC 15.407:2011		Class B		Test Method ANSI C63.10:2009
Run #	1	Line:	High Line	Ext. Attenuation: 20
Results				Pass

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit




Quasi Peak Data - vs - Quasi Peak Limit

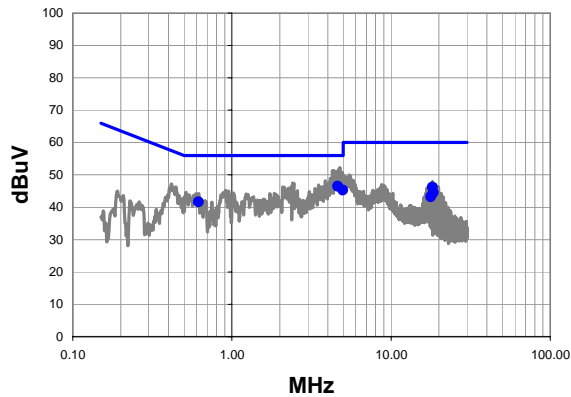
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
4.632	25.6	20.1	45.7	56.0	-10.3
4.972	25.1	20.1	45.2	56.0	-10.8
4.300	23.4	20.1	43.5	56.0	-12.5
18.240	25.4	20.9	46.3	60.0	-13.7
18.946	24.8	20.9	45.7	60.0	-14.3
18.474	23.6	20.9	44.5	60.0	-15.5
17.764	22.4	20.9	43.3	60.0	-16.7

Average Data - vs - Average Limit

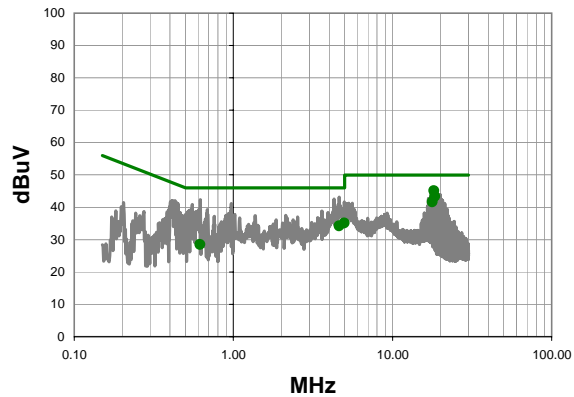
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
18.240	24.3	20.9	45.2	50.0	-4.8
18.946	23.7	20.9	44.6	50.0	-5.4
18.474	22.4	20.9	43.3	50.0	-6.7
17.764	21.0	20.9	41.9	50.0	-8.1
4.972	14.6	20.1	34.7	46.0	-11.3
4.632	13.0	20.1	33.1	46.0	-12.9
4.300	11.8	20.1	31.9	46.0	-14.1

Work Order:	PROS0109	Date:	07/06/11	
Project:	None	Temperature:	22.41	
Job Site:	OC06	Humidity:	41.1	
Serial Number:	09435H1000039	Barometric Pres.:	1019.2	Tested by: Johnny Candelas
EUT:	WMIA-199NI			
Configuration:	2			
Customer:	ProSoft Technology, Inc.			
Attendees:	None			
EUT Power:	120VAC/60Hz			
Operating Mode:	Continuous Transmit			
Deviations:	No deviations.			
Comments:	802.11n (40MHz), Ch 37 - 5190 MHz, MCS0. Phihong PSC20R-120 power supply, ferrite (0443164151) 2 loops on power cable by EUT			
Test Specifications FCC 15.407:2011		Class B		Test Method ANSI C63.10:2009
Run #	2	Line:	Neutral	Ext. Attenuation: 20
Results				Pass

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit




Quasi Peak Data - vs - Quasi Peak Limit

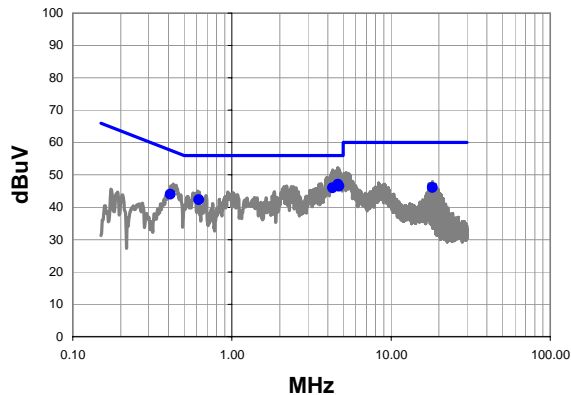
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
4.632	26.4	20.1	46.5	56.0	-9.5
4.976	25.2	20.1	45.3	56.0	-10.7
18.240	25.3	20.9	46.2	60.0	-13.8
0.617	21.5	20.1	41.6	56.0	-14.4
18.474	23.6	20.9	44.5	60.0	-15.5
17.764	22.3	20.9	43.2	60.0	-16.8

Average Data - vs - Average Limit

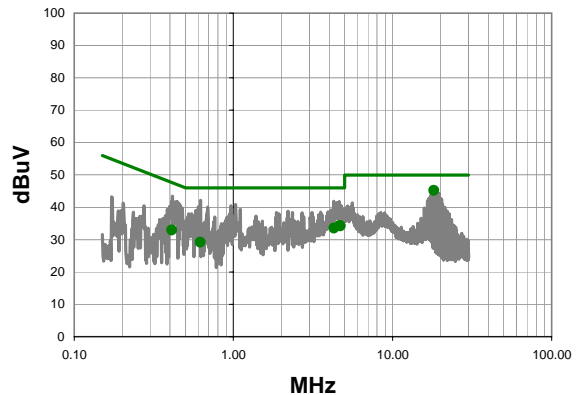
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
18.240	24.2	20.9	45.1	50.0	-4.9
18.474	22.4	20.9	43.3	50.0	-6.7
17.764	20.7	20.9	41.6	50.0	-8.4
4.976	15.0	20.1	35.1	46.0	-10.9
4.632	14.1	20.1	34.2	46.0	-11.8
0.617	8.4	20.1	28.5	46.0	-17.5

Work Order:	PROS0109	Date:	07/06/11	
Project:	None	Temperature:	22.41	
Job Site:	OC06	Humidity:	41.1	
Serial Number:	09435H1000039	Barometric Pres.:	1019.2	Tested by: Mark Baytan
EUT:	WMIA-199NI			
Configuration:	2			
Customer:	ProSoft Technology, Inc.			
Attendees:	None			
EUT Power:	120VAC/60Hz			
Operating Mode:	Continuous Transmit			
Deviations:	No deviations.			
Comments:	802.11n (40MHz), Ch 47 - 5230 MHz, MCS0. Phihong PSC20R-120 power supply, ferrite (0443164151) 2 loops on power cable by EUT			
Test Specifications FCC 15.407:2011		Class B		Test Method ANSI C63.10:2009
Run #	15	Line:	High Line	Ext. Attenuation: 20
Results				Pass

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit




Quasi Peak Data - vs - Quasi Peak Limit

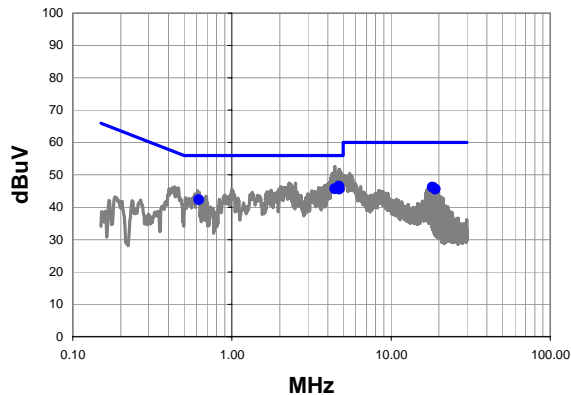
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
4.636	27.0	20.1	47.1	56.0	-8.9
4.704	26.4	20.1	46.5	56.0	-9.5
4.288	25.9	20.1	46.0	56.0	-10.0
0.410	23.9	20.1	44.0	57.6	-13.6
0.619	22.2	20.1	42.3	56.0	-13.7
18.240	25.2	20.9	46.1	60.0	-13.9

Average Data - vs - Average Limit

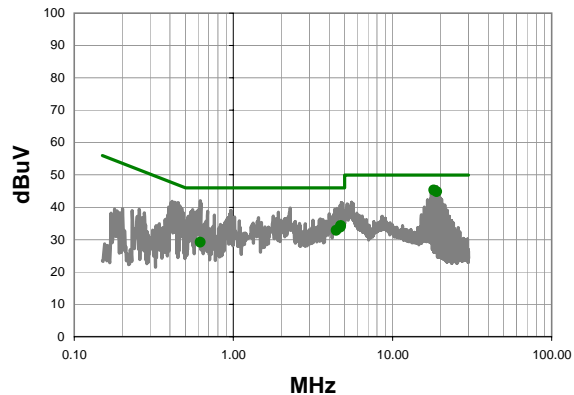
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
18.240	24.3	20.9	45.2	50.0	-4.8
4.636	14.2	20.1	34.3	46.0	-11.7
4.704	14.1	20.1	34.2	46.0	-11.8
4.288	13.4	20.1	33.5	46.0	-12.5
0.410	12.8	20.1	32.9	47.6	-14.7
0.619	9.1	20.1	29.2	46.0	-16.8

Work Order:	PROS0109	Date:	07/06/11	
Project:	None	Temperature:	22.41	
Job Site:	OC06	Humidity:	41.1	
Serial Number:	09435H1000039	Barometric Pres.:	1019.2	Tested by: Mark Baytan
EUT:	WMIA-199NI			
Configuration:	2			
Customer:	ProSoft Technology, Inc.			
Attendees:	None			
EUT Power:	120VAC/60Hz			
Operating Mode:	Continuous Transmit			
Deviations:	No deviations.			
Comments:	802.11n (40MHz), Ch 47 - 5230 MHz, MCS0. Phihong PSC20R-120 power supply, ferrite (0443164151) 2 loops on power cable by EUT			
Test Specifications FCC 15.407:2011		Class B		Test Method ANSI C63.10:2009
Run #	16	Line:	Neutral	Ext. Attenuation: 20
Results				Pass

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit




Quasi Peak Data - vs - Quasi Peak Limit

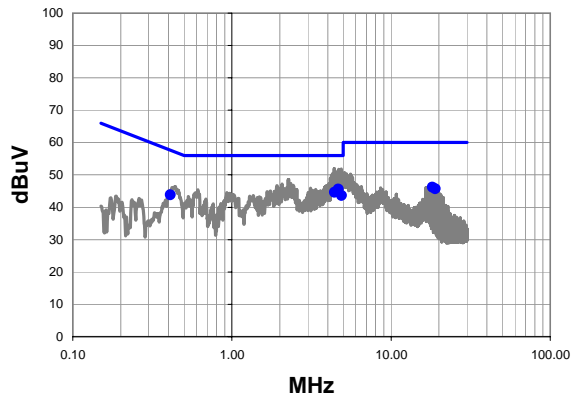
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
4.704	26.4	20.1	46.5	56.0	-9.5
4.428	25.6	20.1	45.7	56.0	-10.3
4.740	25.5	20.1	45.6	56.0	-10.4
0.619	22.2	20.1	42.3	56.0	-13.7
18.240	25.3	20.9	46.2	60.0	-13.8
18.950	24.7	20.9	45.6	60.0	-14.4

Average Data - vs - Average Limit

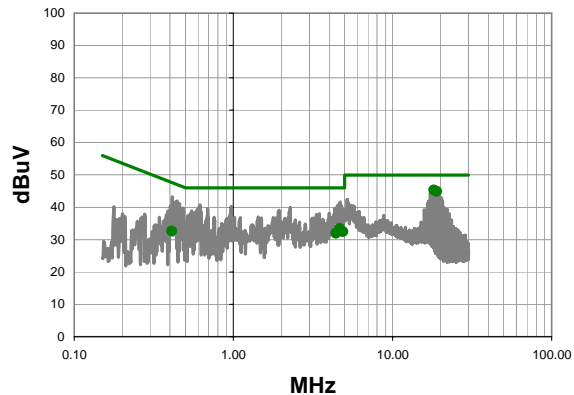
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
18.240	24.4	20.9	45.3	50.0	-4.7
18.950	23.9	20.9	44.8	50.0	-5.2
4.740	14.2	20.1	34.3	46.0	-11.7
4.704	13.7	20.1	33.8	46.0	-12.2
4.428	12.7	20.1	32.8	46.0	-13.2
0.619	9.1	20.1	29.2	46.0	-16.8

Work Order:	PROS0109	Date:	07/06/11	
Project:	None	Temperature:	22.41	
Job Site:	OC06	Humidity:	41.1	
Serial Number:	09435H1000039	Barometric Pres.:	1019.2	Tested by: Mark Baytan
EUT:	WMIA-199NI			
Configuration:	2			
Customer:	ProSoft Technology, Inc.			
Attendees:	None			
EUT Power:	120VAC/60Hz			
Operating Mode:	Continuous Transmit			
Deviations:	No deviations.			
Comments:	802.11n (40MHz), Ch 53 - 5270 MHz, MCS0. Phihong PSC20R-120 power supply, ferrite (0443164151) 2 loops on power cable by EUT			
Test Specifications FCC 15.407:2011		Class B		Test Method ANSI C63.10:2009
Run #	17	Line:	High Line	Ext. Attenuation: 20
Results				Pass

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit




Quasi Peak Data - vs - Quasi Peak Limit

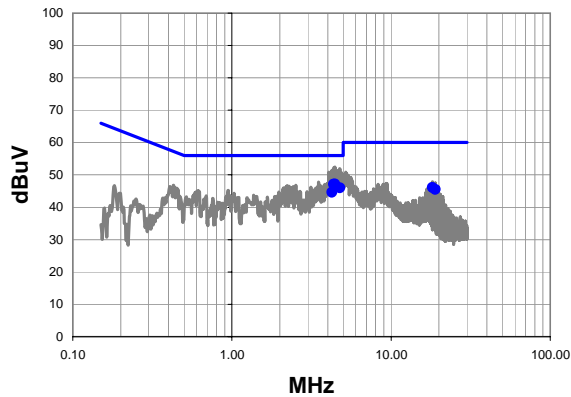
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
4.672	25.5	20.1	45.6	56.0	-10.4
4.404	24.5	20.1	44.6	56.0	-11.4
4.880	23.5	20.1	43.6	56.0	-12.4
18.240	25.3	20.9	46.2	60.0	-13.8
0.410	23.7	20.1	43.8	57.6	-13.8
18.948	24.8	20.9	45.7	60.0	-14.3

Average Data - vs - Average Limit

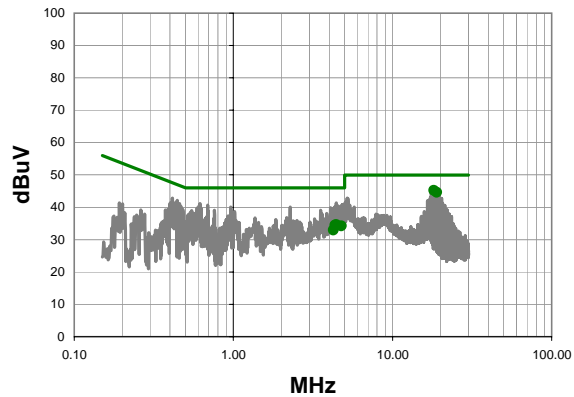
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
18.240	24.4	20.9	45.3	50.0	-4.7
18.948	24.0	20.9	44.9	50.0	-5.1
4.672	13.3	20.1	33.4	46.0	-12.6
4.880	12.3	20.1	32.4	46.0	-13.6
4.404	11.8	20.1	31.9	46.0	-14.1
0.410	12.5	20.1	32.6	47.6	-15.0

Work Order:	PROS0109	Date:	07/06/11		
Project:	None	Temperature:	22.41		
Job Site:	OC06	Humidity:	41.1		
Serial Number:	09435H1000039	Barometric Pres.:	1019.2	Tested by: Mark Baytan	
EUT:	WMIA-199NI				
Configuration:	2				
Customer:	ProSoft Technology, Inc.				
Attendees:	None				
EUT Power:	120VAC/60Hz				
Operating Mode:	Continuous Transmit				
Deviations:	No deviations.				
Comments:	802.11n (40MHz), Ch 53 - 5270 MHz, MCS0. Phihong PSC20R-120 power supply, ferrite (0443164151) 2 loops on power cable by EUT				
Test Specifications FCC 15.407:2011		Class B		Test Method ANSI C63.10:2009	
Run #	18	Line:	Neutral	Ext. Attenuation: 20	Results Pass

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit




Quasi Peak Data - vs - Quasi Peak Limit

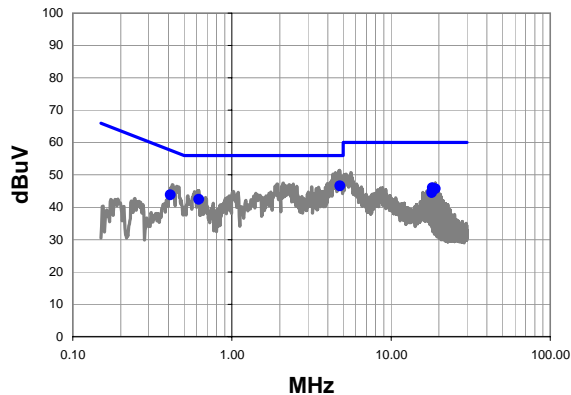
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
4.428	27.1	20.1	47.2	56.0	-8.8
4.360	27.0	20.1	47.1	56.0	-8.9
4.772	25.9	20.1	46.0	56.0	-10.0
4.260	24.5	20.1	44.6	56.0	-11.4
18.240	25.2	20.9	46.1	60.0	-13.9
18.950	24.6	20.9	45.5	60.0	-14.5

Average Data - vs - Average Limit

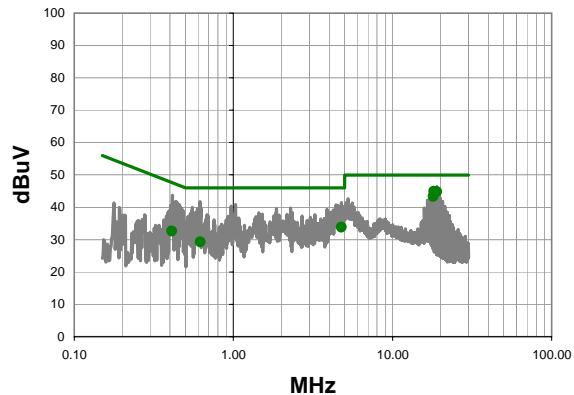
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
18.240	24.3	20.9	45.2	50.0	-4.8
18.950	23.7	20.9	44.6	50.0	-5.4
4.428	14.5	20.1	34.6	46.0	-11.4
4.360	14.3	20.1	34.4	46.0	-11.6
4.772	14.1	20.1	34.2	46.0	-11.8
4.260	12.8	20.1	32.9	46.0	-13.1

Work Order:	PROS0109	Date:	07/06/11	
Project:	None	Temperature:	22.41	
Job Site:	OC06	Humidity:	41.1	
Serial Number:	09435H1000039	Barometric Pres.:	1019.2	Tested by: Mark Baytan
EUT:	WMIA-199NI			
Configuration:	2			
Customer:	ProSoft Technology, Inc.			
Attendees:	None			
EUT Power:	120VAC/60Hz			
Operating Mode:	Continuous Transmit			
Deviations:	No deviations.			
Comments:	802.11n (40MHz), Ch 63 - 5310 MHz, MCS0. Phihong PSC20R-120 power supply, ferrite (0443164151) 2 loops on power cable by EUT			
Test Specifications FCC 15.407:2011		Class B		Test Method ANSI C63.10:2009
Run #	19	Line:	High Line	Ext. Attenuation: 20
Results				Pass

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit




Quasi Peak Data - vs - Quasi Peak Limit

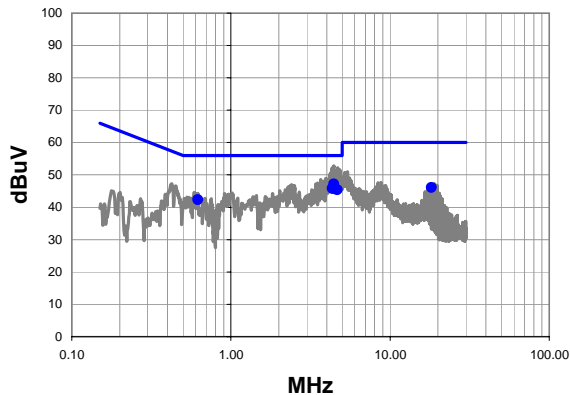
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
4.772	26.5	20.1	46.6	56.0	-9.4
0.620	22.3	20.1	42.4	56.0	-13.6
0.410	23.7	20.1	43.8	57.6	-13.8
18.240	25.1	20.9	46.0	60.0	-14.0
18.950	24.8	20.9	45.7	60.0	-14.3
18.000	23.6	20.9	44.5	60.0	-15.5

Average Data - vs - Average Limit

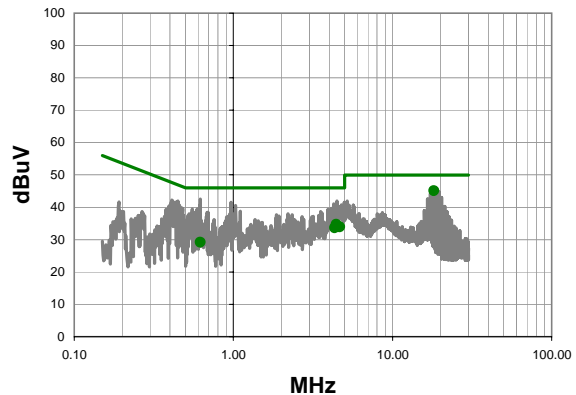
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
18.240	24.0	20.9	44.9	50.0	-5.1
18.950	23.9	20.9	44.8	50.0	-5.2
18.000	22.4	20.9	43.3	50.0	-6.7
4.772	13.7	20.1	33.8	46.0	-12.2
0.410	12.5	20.1	32.6	47.6	-15.0
0.620	9.2	20.1	29.3	46.0	-16.7

Work Order:	PROS0109	Date:	07/06/11	
Project:	None	Temperature:	22.41	
Job Site:	OC06	Humidity:	41.1	
Serial Number:	09435H1000039	Barometric Pres.:	1019.2	Tested by: Mark Baytan
EUT:	WMIA-199NI			
Configuration:	2			
Customer:	ProSoft Technology, Inc.			
Attendees:	None			
EUT Power:	120VAC/60Hz			
Operating Mode:	Continuous Transmit			
Deviations:	No deviations.			
Comments:	802.11n (40MHz), Ch 63 - 5310 MHz, MCS0. Phihong PSC20R-120 power supply, ferrite (0443164151) 2 loops on power cable by EUT			
Test Specifications FCC 15.407:2011		Class B		Test Method ANSI C63.10:2009
Run #	20	Line:	Neutral	Ext. Attenuation: 20
Results				Pass

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit




Quasi Peak Data - vs - Quasi Peak Limit

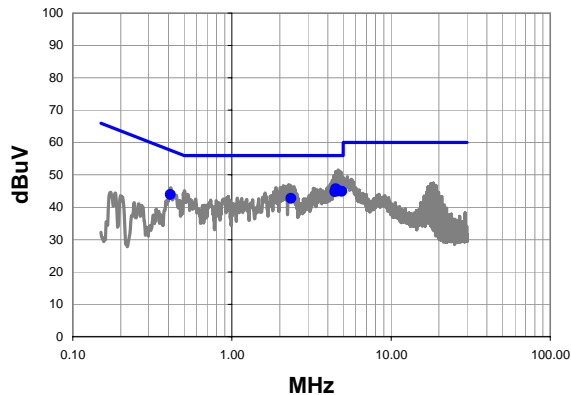
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
4.428	27.1	20.1	47.2	56.0	-8.8
4.340	25.7	20.1	45.8	56.0	-10.2
4.484	25.6	20.1	45.7	56.0	-10.3
4.672	25.3	20.1	45.4	56.0	-10.6
0.619	22.2	20.1	42.3	56.0	-13.7
18.240	25.2	20.9	46.1	60.0	-13.9

Average Data - vs - Average Limit

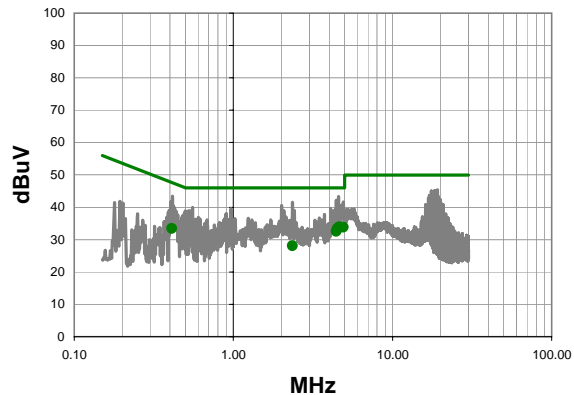
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
18.240	24.2	20.9	45.1	50.0	-4.9
4.428	14.6	20.1	34.7	46.0	-11.3
4.484	14.1	20.1	34.2	46.0	-11.8
4.672	13.8	20.1	33.9	46.0	-12.1
4.340	13.5	20.1	33.6	46.0	-12.4
0.619	9.1	20.1	29.2	46.0	-16.8

Work Order:	PROS0109	Date:	07/06/11	
Project:	None	Temperature:	22.41	
Job Site:	OC06	Humidity:	41.1	
Serial Number:	09435H1000039	Barometric Pres.:	1019.2	Tested by: Mark Baytan
EUT:	WMIA-199NI			
Configuration:	2			
Customer:	ProSoft Technology, Inc.			
Attendees:	None			
EUT Power:	120VAC/60Hz			
Operating Mode:	Continuous Transmit			
Deviations:	No deviations.			
Comments:	802.11n (40MHz), Ch 101 - 5510 MHz, MCS0. Phihong PSC20R-120 power supply, ferrite (0443164151) 2 loops on power cable by EUT.			
Test Specifications FCC 15.407:2011		Class B		Test Method ANSI C63.10:2009
Run #	21	Line:	High Line	Ext. Attenuation: 20
Results				Pass

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit




Quasi Peak Data - vs - Quasi Peak Limit

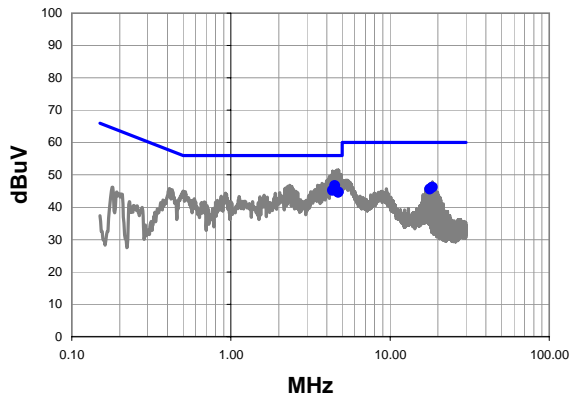
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
4.500	25.6	20.1	45.7	56.0	-10.3
4.572	25.3	20.1	45.4	56.0	-10.6
4.640	24.9	20.1	45.0	56.0	-11.0
4.916	24.8	20.1	44.9	56.0	-11.1
4.432	24.7	20.1	44.8	56.0	-11.2
2.352	22.6	20.1	42.7	56.0	-13.3
0.411	23.8	20.1	43.9	57.6	-13.7

Average Data - vs - Average Limit

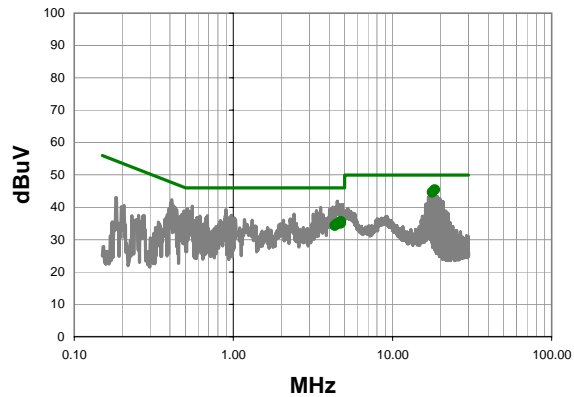
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
4.640	13.8	20.1	33.9	46.0	-12.1
4.916	13.7	20.1	33.8	46.0	-12.2
4.572	13.6	20.1	33.7	46.0	-12.3
4.500	13.2	20.1	33.3	46.0	-12.7
4.432	12.4	20.1	32.5	46.0	-13.5
0.411	13.3	20.1	33.4	47.6	-14.2
2.352	8.0	20.1	28.1	46.0	-17.9

Work Order:	PROS0109	Date:	07/06/11	
Project:	None	Temperature:	22.41	
Job Site:	OC06	Humidity:	41.1	
Serial Number:	09435H1000039	Barometric Pres.:	1019.2	Tested by: Mark Baytan
EUT:	WMIA-199NI			
Configuration:	2			
Customer:	ProSoft Technology, Inc.			
Attendees:	None			
EUT Power:	120VAC/60Hz			
Operating Mode:	Continuous Transmit			
Deviations:	No deviations.			
Comments:	802.11n (40MHz), Ch 101 - 5510 MHz, MCS0. Phihong PSC20R-120 power supply, ferrite (0443164151) 2 loops on power cable by EUT.			
Test Specifications FCC 15.407:2011		Class B		Test Method ANSI C63.10:2009
Run #	22	Line:	Neutral	Ext. Attenuation: 20
Results				Pass

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit




Quasi Peak Data - vs - Quasi Peak Limit

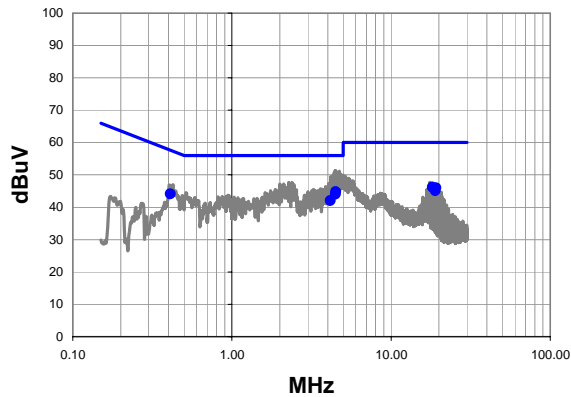
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
4.496	26.6	20.1	46.7	56.0	-9.3
4.356	25.1	20.1	45.2	56.0	-10.8
4.736	24.6	20.1	44.7	56.0	-11.3
4.740	24.5	20.1	44.6	56.0	-11.4
18.474	25.3	20.9	46.2	60.0	-13.8
17.764	24.7	20.9	45.6	60.0	-14.4

Average Data - vs - Average Limit

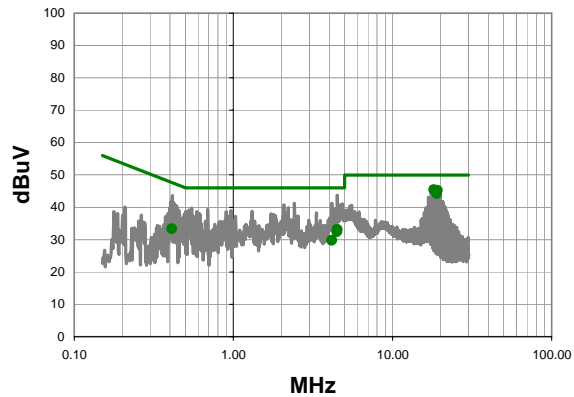
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
18.474	24.5	20.9	45.4	50.0	-4.6
17.764	23.7	20.9	44.6	50.0	-5.4
4.736	15.5	20.1	35.6	46.0	-10.4
4.740	14.9	20.1	35.0	46.0	-11.0
4.496	14.8	20.1	34.9	46.0	-11.1
4.356	14.2	20.1	34.3	46.0	-11.7

Work Order:	PROS0109	Date:	07/06/11		
Project:	None	Temperature:	22.41		
Job Site:	OC06	Humidity:	41.1		
Serial Number:	09435H1000039	Barometric Pres.:	1019.2	Tested by: Mark Baytan	
EUT:	WMIA-199NI				
Configuration:	2				
Customer:	ProSoft Technology, Inc.				
Attendees:	None				
EUT Power:	120VAC/60Hz				
Operating Mode:	Continuous Transmit				
Deviations:	No deviations.				
Comments:	802.11n (40MHz), Ch 130 - 5760 MHz, MCS0. Phihong PSC20R-120 power supply, ferrite (0443164151) 2 loops on power cable by EUT.				
Test Specifications FCC 15.407:2011		Class B		Test Method ANSI C63.10:2009	
Run #	23	Line:	High Line	Ext. Attenuation: 20	Results Pass

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit




Quasi Peak Data - vs - Quasi Peak Limit

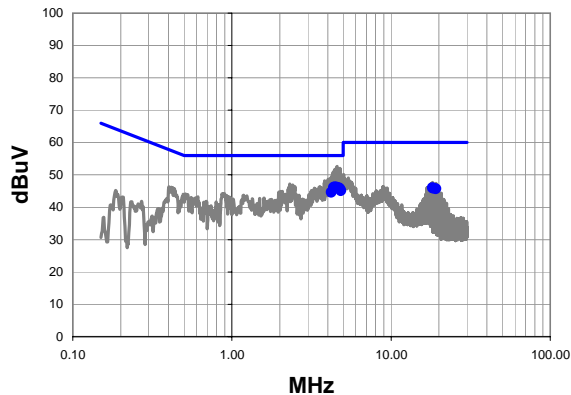
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
4.492	24.7	20.1	44.8	56.0	-11.2
4.468	23.9	20.1	44.0	56.0	-12.0
0.410	24.0	20.1	44.1	57.6	-13.5
18.236	25.3	20.9	46.2	60.0	-13.8
4.148	21.9	20.1	42.0	56.0	-14.0
19.186	25.0	21.0	46.0	60.0	-14.0
18.946	24.2	20.9	45.1	60.0	-14.9

Average Data - vs - Average Limit

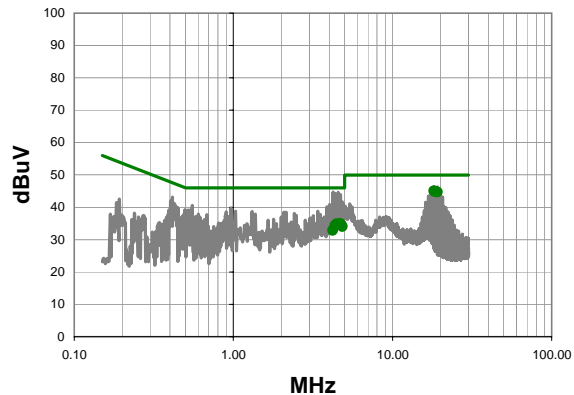
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
18.236	24.5	20.9	45.4	50.0	-4.6
19.186	24.2	21.0	45.2	50.0	-4.8
18.946	23.3	20.9	44.2	50.0	-5.8
4.492	13.0	20.1	33.1	46.0	-12.9
4.468	12.3	20.1	32.4	46.0	-13.6
0.410	13.2	20.1	33.3	47.6	-14.3
4.148	9.7	20.1	29.8	46.0	-16.2

Work Order:	PROS0109	Date:	07/06/11	
Project:	None	Temperature:	22.41	
Job Site:	OC06	Humidity:	41.1	
Serial Number:	09435H1000039	Barometric Pres.:	1019.2	Tested by: Mark Baytan
EUT:	WMIA-199NI			
Configuration:	2			
Customer:	ProSoft Technology, Inc.			
Attendees:	None			
EUT Power:	120VAC/60Hz			
Operating Mode:	Continuous Transmit			
Deviations:	No deviations.			
Comments:	802.11n (40MHz), Ch 130 - 5760 MHz, MCS0. Phihong PSC20R-120 power supply, ferrite (0443164151) 2 loops on power cable by EUT.			
Test Specifications FCC 15.407:2011		Class B		Test Method ANSI C63.10:2009
Run #	24	Line:	Neutral	Ext. Attenuation: 20
Results				Pass

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit



Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
4.428	26.2	20.1	46.3	56.0	-9.7
4.564	26.1	20.1	46.2	56.0	-9.8
4.360	26.0	20.1	46.1	56.0	-9.9
4.704	25.9	20.1	46.0	56.0	-10.0
4.496	25.9	20.1	46.0	56.0	-10.0
4.772	25.6	20.1	45.7	56.0	-10.3
4.840	25.0	20.1	45.1	56.0	-10.9
4.220	24.5	20.1	44.6	56.0	-11.4
18.236	25.1	20.9	46.0	60.0	-14.0
18.472	25.0	20.9	45.9	60.0	-14.1
19.182	24.7	21.0	45.7	60.0	-14.3

Average Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
18.236	24.1	20.9	45.0	50.0	-5.0
18.472	24.0	20.9	44.9	50.0	-5.1
19.182	23.7	21.0	44.7	50.0	-5.3
4.704	14.8	20.1	34.9	46.0	-11.1
4.496	14.8	20.1	34.9	46.0	-11.1
4.564	14.6	20.1	34.7	46.0	-11.3
4.428	14.6	20.1	34.7	46.0	-11.3
4.772	14.5	20.1	34.6	46.0	-11.4
4.360	14.2	20.1	34.3	46.0	-11.7
4.840	13.9	20.1	34.0	46.0	-12.0
4.220	12.7	20.1	32.8	46.0	-13.2