Intermec Technologies Corporation

Model: RC12

Tested to the following Specifications:

FCC 15.407:2010
FCC 15.207:2010

Report No. INMC0575.3

Report Prepared By

NORTHWEST EMC

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

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EMC Test Report

22975 NW Evergreen Parkway
Suite 400
Hillsboro, Oregon 97124

Certificate of Test

Last Date of Test: August 11, 2010
Intermec Technologies Corporation
Model: RC12

Emissions			
Test Description	**Specification**	**Test Method**	**Pass/Fail**
Spurious Radiated Emissions	FCC 15.407:2010	ANSI C63.10:2009	**Pass**
Spurious Radiated Emissions	FCC 15.209:2010	ANSI C63.4:2003	**Pass**
Peak Power Spectral Density	FCC 15.407:2010	ANSI C63.10:2009	**Pass**
Peak Transmit Power	FCC 15.407:2010	ANSI C63.10:2009	**Pass**
Emission Bandwidth	FCC 15.407:2010	ANSI C63.10:2009	**Pass**
Peak Excursion	FCC 15.407:2010	ANSI C63.10:2009	**Pass**
AC Powerline Conducted Emissions	FCC 15.207:2010	ANSI C63.10:2009	**Pass**
Frequency Stability	FCC 15.407:2010	ANSI C63.10:2009	**Pass**

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

Test Facility

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

Northwest EMC, Inc.
22975 NW Evergreen Parkway, Suite 400
Hillsboro, OR 97124

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 #2834D-2).

Approved By:

Don Facteau, IS Manager

NVLAP Lab Code: 200630-0

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

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

Revision History

Revision Number	Description	Date	Page Number
00	None		

Barometric Pressure

The recorded barometric pressure has been normalized to sea level.

Accreditations and Authorizations

FCC

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

NVLAP

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

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

Industry Canada

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

CAB

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

NEMKO

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

Accreditations and Authorizations

Australia/New Zealand

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

VCCI

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

BSMI

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

GOST

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

KCC

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

VIETNAM

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

SCOPE

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

Northwest EMC Locations

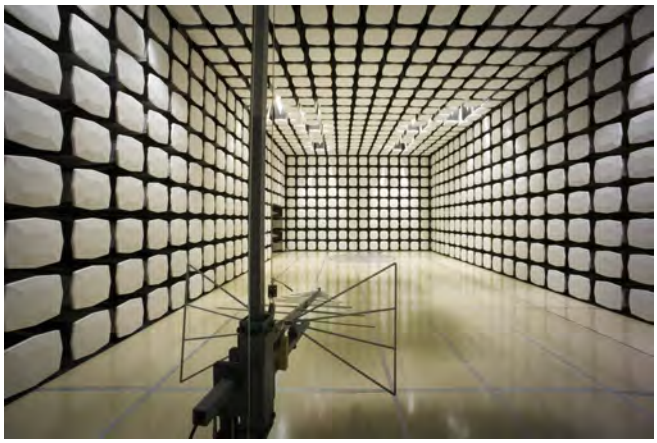
Oregon
Labs EV01-EV12
22975 NW Evergreen Pkwy
Suite 400
Hillsboro, OR 97124
(503) 844-4066

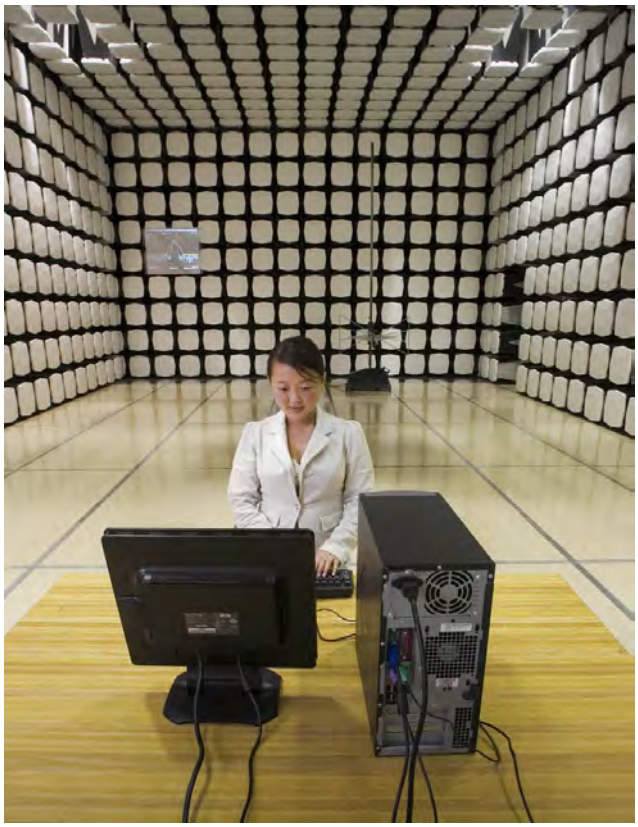
California
Labs OC01-OC13
41 Tesla
Irvine, CA 92618
(949) 861-8918

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

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

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





Party Requesting the Test

Company Name:	Intermec Technologies Corporation
Address:	6001 36th Avenue West
City, State, Zip:	Everett, WA 98203-1264
Test Requested By:	Wayne Rieger
Model:	RC12
First Date of Test:	August 11, 2010
Last Date of Test:	August 11, 2010
Receipt Date of Samples:	July 27, 2010
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/b/g/n - Bluetooth radio seeking modular approval.

Testing Objective:
Seeking to demonstrate compliance of the 802.11a/b/g/n portion of the radio module to FCC 15.407 specifications in the 5.2, 5.3, and 5.6 bands.

CONFIGURATION 1 INMC0575

Software/Firmware Running during test	
Description	**Version**
Regulatory Test Tool	RTT_1.01.00.0007

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Galileo 802.11abgn and Bluetooth radio module	Intermec Technologies Corporation	ES5	R14

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Shuttle Board	Intermec Technologies Corporation	145-375-001	None
AC Adapter	Intermec Technologies Corporation	074749	None
Laird PIFA Antenna	Laird	CAF94400	None
Modular Antenna PCB Assembly	Centurion Wireless Technologies, Inc.	CAF94337	None
Power Supply	Topward Electric Instruments Co., LTD.	TPS-2000	946425

Remote Equipment Outside of Test Setup Boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Remote PC	Dell	Latitude D600	3XJ3H51

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
DC power	PA	1.85m	PA	AC Adapter	Shuttle Board
USB	Yes	5.0m	No	Shuttle Board	Remote PC
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

CONFIGURATION 2 INMC0575

Software/Firmware Running during test	
Description	**Version**
Regulatory Test Tool	RTT_1.01.00.0007

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Galileo 802.11abgn and Bluetooth radio module	Intermec Technologies Corporation	ES5	R11

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Shuttle Board	Intermec Technologies Corporation	145-375-001	None
AC Adapter	Intermec Technologies Corporation	074749	None
Laird PIFA Antenna	Laird	CAF94400	None
Modular Antenna PCB Assembly	Centurion Wireless Technologies, Inc.	CAF94337	None
Power Supply	Topward Electric Instruments Co., LTD.	TPS-2000	946425

Remote Equipment Outside of Test Setup Boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Remote PC	Dell	Inspiron 6000	NW EMC IS386

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
DC power	PA	1.85m	PA	AC Adapter	Shuttle Board
USB	Yes	3.0m	No	Shuttle Board	Remote PC
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

CONFIGURATION 3 INMC0575

Software/Firmware Running during test	
Description	**Version**
Regulatory Test Tool	RTT_1.01.00.0007

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Galileo 802.11abgn and Bluetooth radio module	Intermec Technologies Corporation	ES5	R11

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Shuttle Board	Intermec Technologies Corporation	145-375-001	None
Laird PIFA Antenna	Laird	CAF94400	None
Modular Antenna PCB Assembly	Centurion Wireless Technologies, Inc.	CAF94337	None
Power Supply	Topward Electric Instruments Co., LTD.	TPS-2000	946425

Remote Equipment Outside of Test Setup Boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Remote PC	Dell	Inspiron 6000	NW EMC IS386

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
DC power	PA	0.55m	PA	Power Supply	Shuttle Board
AC power	No	1.0m	No	Power Supply	AC Mains
USB	Yes	3.0m	No	Shuttle Board	Remote PC
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	8/3/2010	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	8/3/2010	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.
3	8/4/2010	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.
4	8/5/2010	Peak Excursion	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	8/5/2010	Spurious Radiated Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
6	8/9/2010	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.
7	8/11/2010	AC Powerline Conducted Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

EMISSION BANDWIDTH

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Spectrum Analyzer	Agilent	E4440A	AFD	6/1/2009	24
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/21/2009	13
26 GHz DC Block, SMA	Pasternack	PE8210	AME	10/19/2009	13
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0

MEASUREMENT UNCERTAINTY

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

TEST DESCRIPTION

The transmit frequency was set to the 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 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 PSA occupied bandwidth measurement function was used to measure the -26 dB emission bandwidth.

NORTHWEST EMC

EMISSION BANDWIDTH

XMit 2010.07.29

EUT:	RC12	Work Order:	INMC0575
Serial Number:	R11	Date:	08/03/10
Customer:	Intermec Technologies Corporation	Temperature:	22°C
Attendees:	None	Humidity:	36%
Project:	None	Barometric Pres.:	1013.0 mb
Tested by:	Rod Peloquin	Power: 5VDC	Job Site: EV06

TEST SPECIFICATIONS	Test Method
FCC 15.407:2010	ANSI C63.10:2009

COMMENTS

None

DEVIATIONS FROM TEST STANDARD

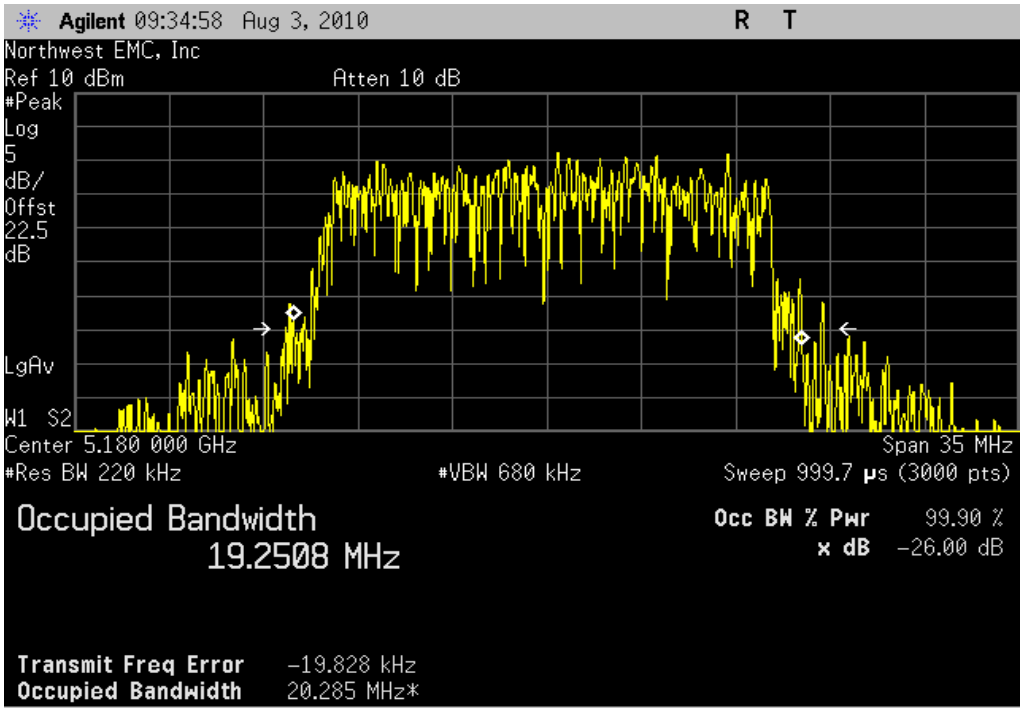
No Deviations

Configuration #	2	Signature

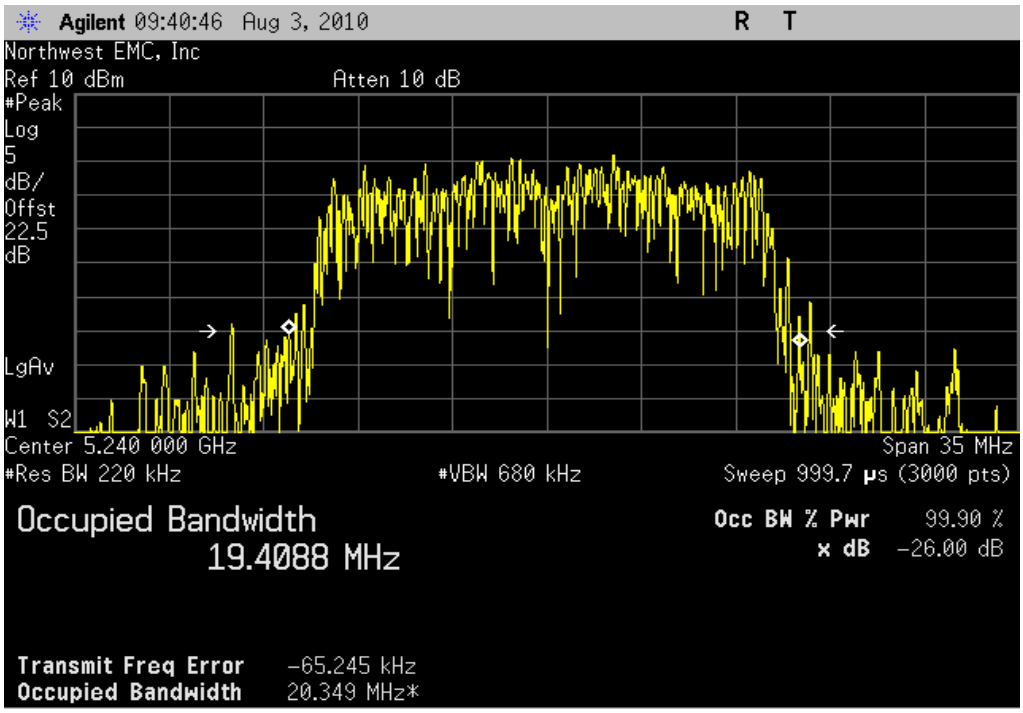
		Value	Limit	Results
802.11(a) 6 Mbps				
	5150 - 5250 MHz Band			
	Channel 36, Low Channel	20.285 MHz	N/A	N/A
	Channel 48, High Channel	20.349 MHz	N/A	N/A
	5250 - 5350 MHz Band			
	Channel 52, Low Channel	20.280 MHz	N/A	N/A
	Channel 64, High Channel	20.253 MHz	N/A	N/A
	5470 - 5725 MHz Band			
	Channel 100, Low Channel	20.271 MHz	N/A	N/A
	Channel 116, Mid Channel	20.384 MHz	N/A	N/A
	Channel 140, High Channel	20.306 MHz	N/A	N/A
802.11(a) 36 Mbps				
	5150 - 5250 MHz Band			
	Channel 36, Low Channel	19.753 MHz	N/A	N/A
	Channel 48, High Channel	19.838 MHz	N/A	N/A
	5250 - 5350 MHz Band			
	Channel 52, Low Channel	19.848 MHz	N/A	N/A
	Channel 64, High Channel	19.928 MHz	N/A	N/A
	5470 - 5725 MHz Band			
	Channel 100, Low Channel	19.945 MHz	N/A	N/A
	Channel 116, Mid Channel	19.599 MHz	N/A	N/A
	Channel 140, High Channel	19.583 MHz	N/A	N/A
802.11(a) 54 Mbps				
	5150 - 5250 MHz Band			
	Channel 36, Low Channel	19.732 MHz	N/A	N/A
	Channel 48, High Channel	19.467 MHz	N/A	N/A
	5250 - 5350 MHz Band			
	Channel 52, Low Channel	19.922 MHz	N/A	N/A
	Channel 64, High Channel	19.564 MHz	N/A	N/A
	5470 - 5725 MHz Band			
	Channel 100, Low Channel	19.513 MHz	N/A	N/A
	Channel 116, Mid Channel	19.627 MHz	N/A	N/A
	Channel 140, High Channel	19.631 MHz	N/A	N/A
802.11(n) MCS0				
	5150 - 5250 MHz Band			
	Channel 36, Low Channel	21.154 MHz	N/A	N/A
	Channel 48, High Channel	21.314 MHz	N/A	N/A
	5250 - 5350 MHz Band			
	Channel 52, Low Channel	21.327 MHz	N/A	N/A
	Channel 64, High Channel	21.221 MHz	N/A	N/A
	5470 - 5725 MHz Band			
	Channel 100, Low Channel	21.045 MHz	N/A	N/A
	Channel 116, Mid Channel	20.971 MHz	N/A	N/A
	Channel 140, High Channel	21.039 MHz	N/A	N/A
802.11(n) MCS7				
	5150 - 5250 MHz Band			
	Channel 36, Low Channel	20.423 MHz	N/A	N/A
	Channel 48, High Channel	20.704 MHz	N/A	N/A
	5250 - 5350 MHz Band			
	Channel 52, Low Channel	20.324 MHz	N/A	N/A
	Channel 64, High Channel	20.369 MHz	N/A	N/A
	5470 - 5725 MHz Band			
	Channel 100, Low Channel	20.458 MHz	N/A	N/A
	Channel 116, Mid Channel	20.254 MHz	N/A	N/A
	Channel 140, High Channel	20.459 MHz	N/A	N/A

EMISSION BANDWIDTH

802.11(a) 6 Mbps, 5150 - 5250 MHz Band, Channel 36, Low Channel					
Result:	N/A	**Value:**	20.285 MHz	**Limit:**	N/A

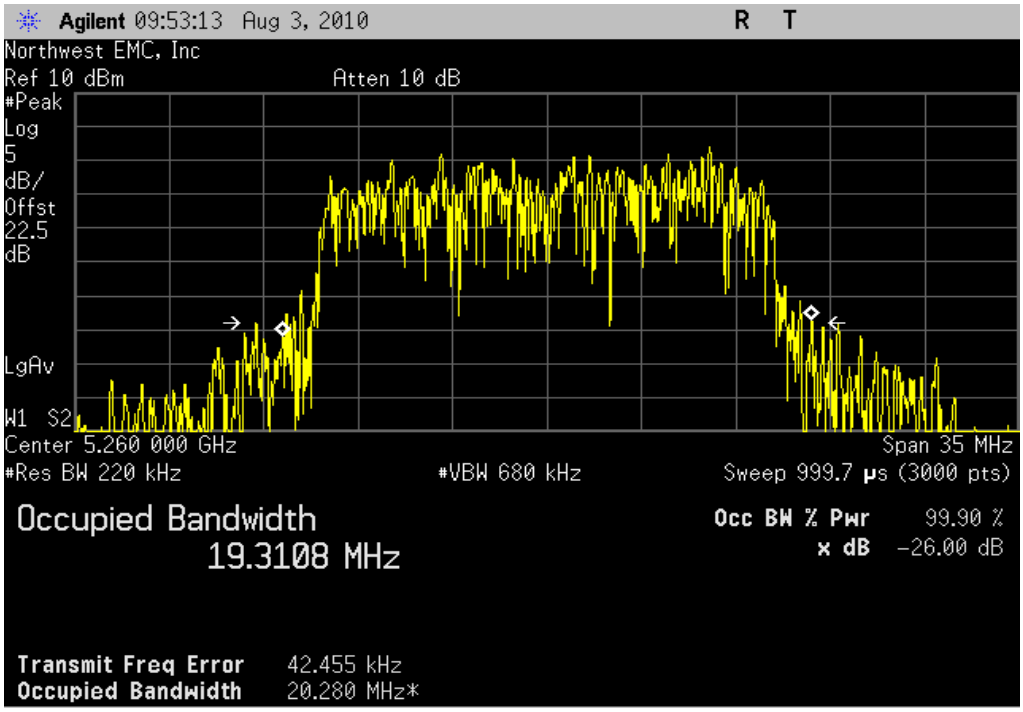


802.11(a) 6 Mbps, 5150 - 5250 MHz Band, Channel 48, High Channel					
Result:	N/A	**Value:**	20.349 MHz	**Limit:**	N/A

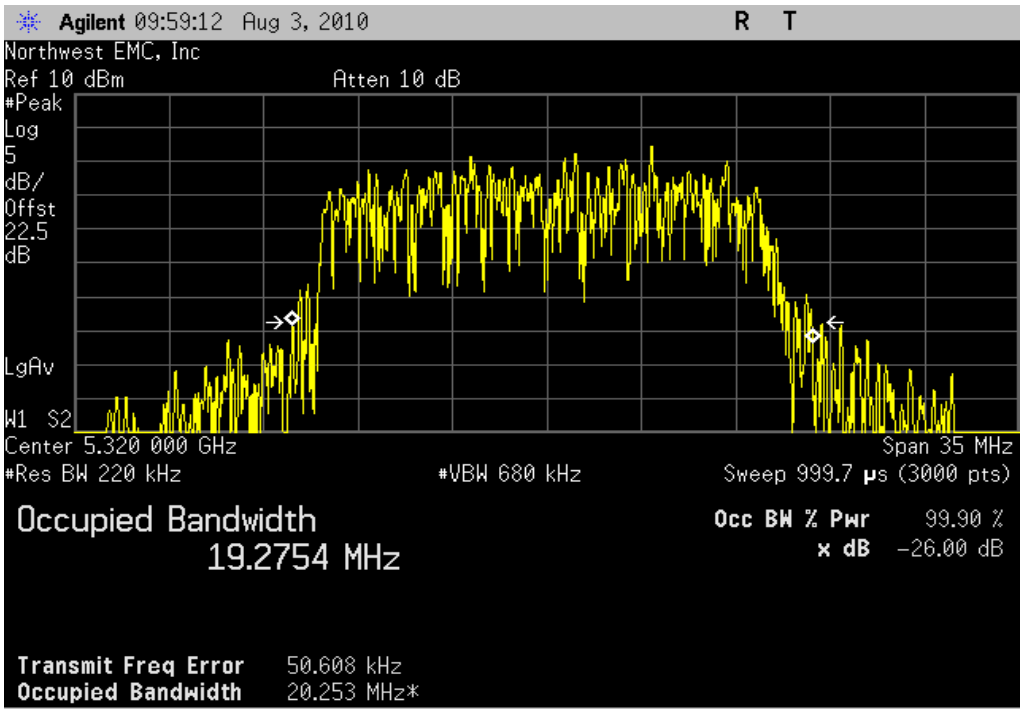


EMISSION BANDWIDTH

802.11(a) 6 Mbps, 5250 - 5350 MHz Band, Channel 52, Low Channel					
Result:	N/A	**Value:**	20.280 MHz	**Limit:**	N/A

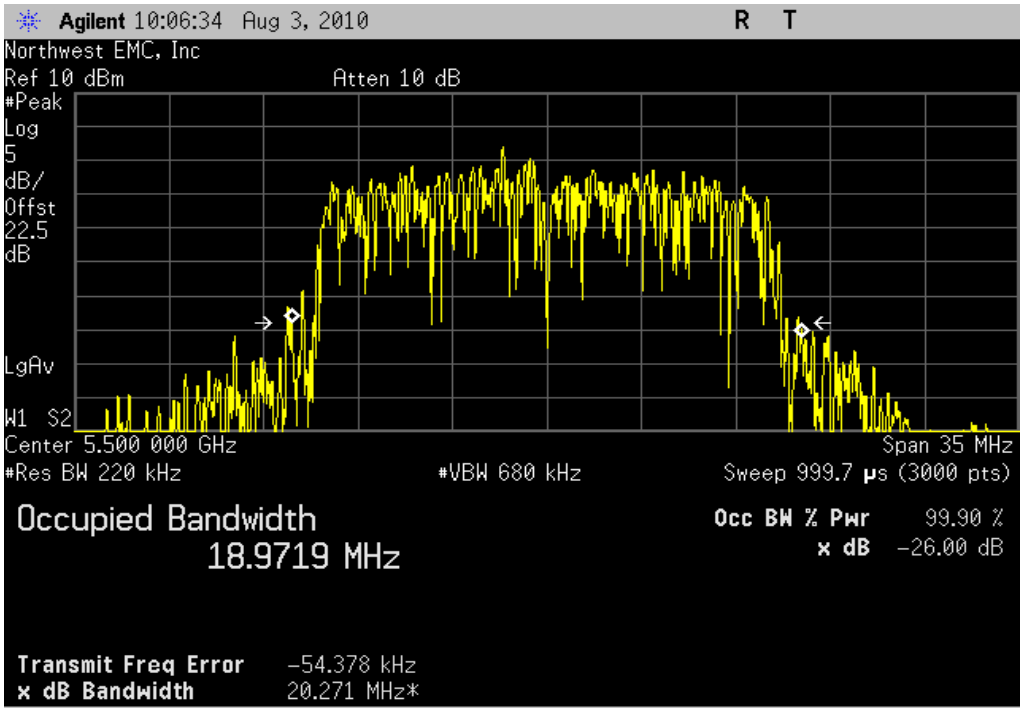


802.11(a) 6 Mbps, 5250 - 5350 MHz Band, Channel 64, High Channel					
Result:	N/A	**Value:**	20.253 MHz	**Limit:**	N/A

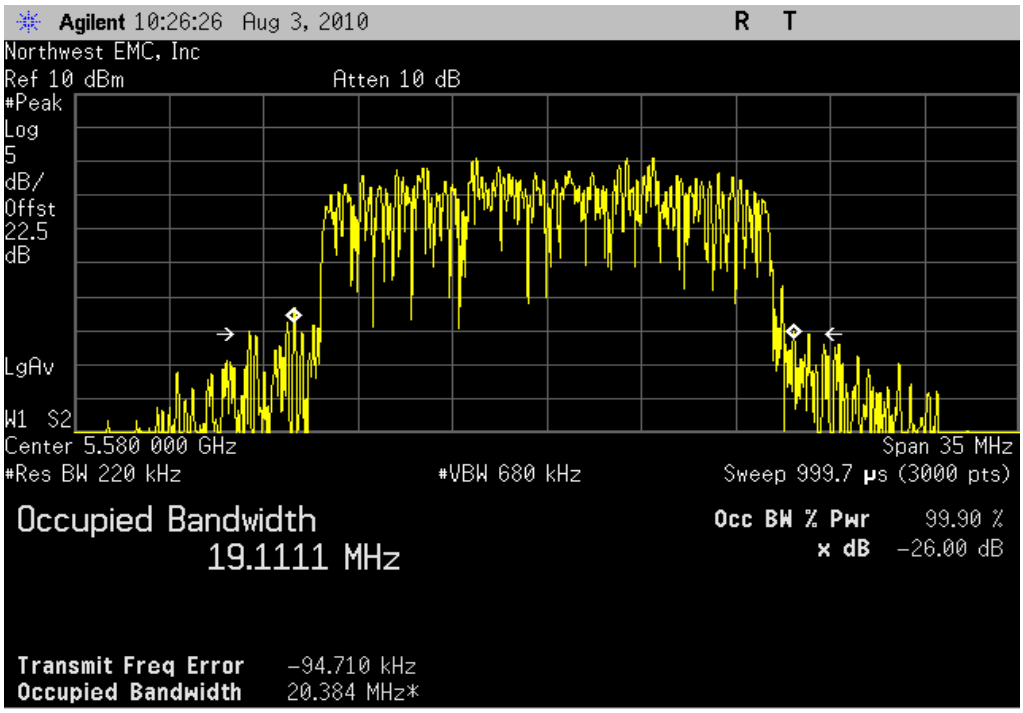


EMISSION BANDWIDTH

802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 100, Low Channel					
Result:	N/A	**Value:**	20.271 MHz	**Limit:**	N/A

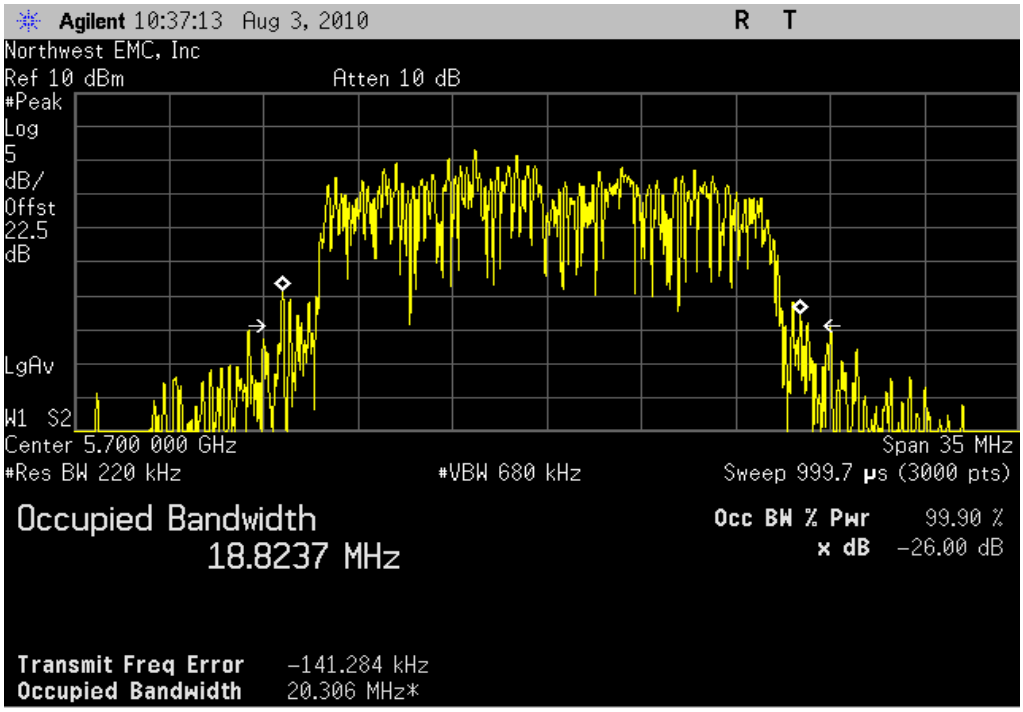


802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 116, Mid Channel					
Result:	N/A	**Value:**	20.384 MHz	**Limit:**	N/A

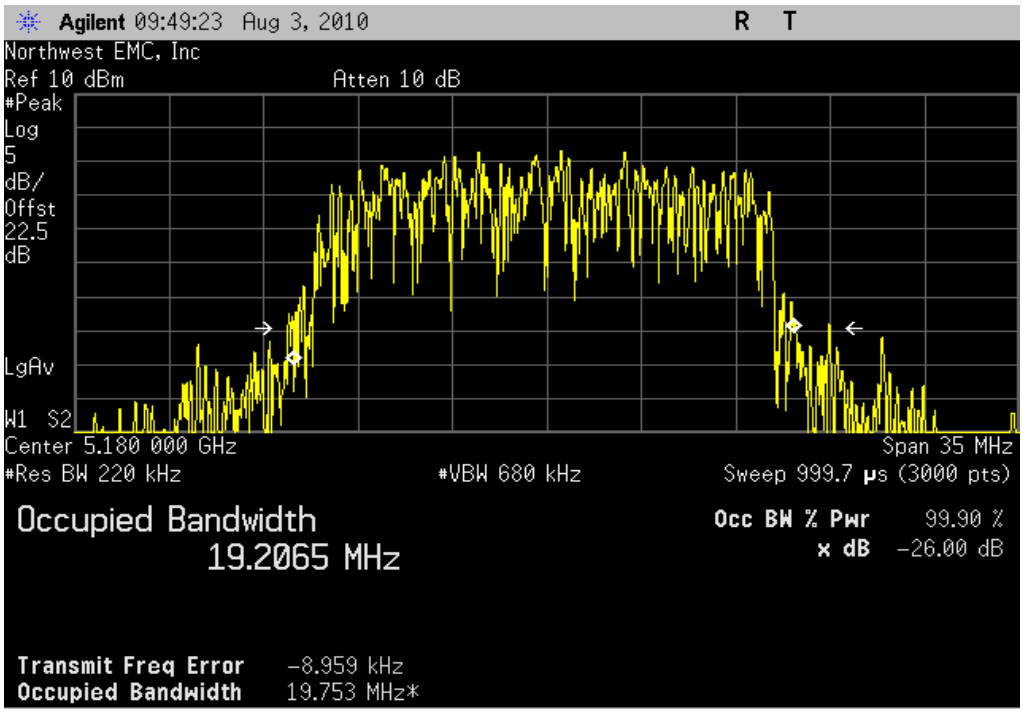


EMISSION BANDWIDTH

802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 140, High Channel					
Result:	N/A	**Value:**	20.306 MHz	**Limit:**	N/A

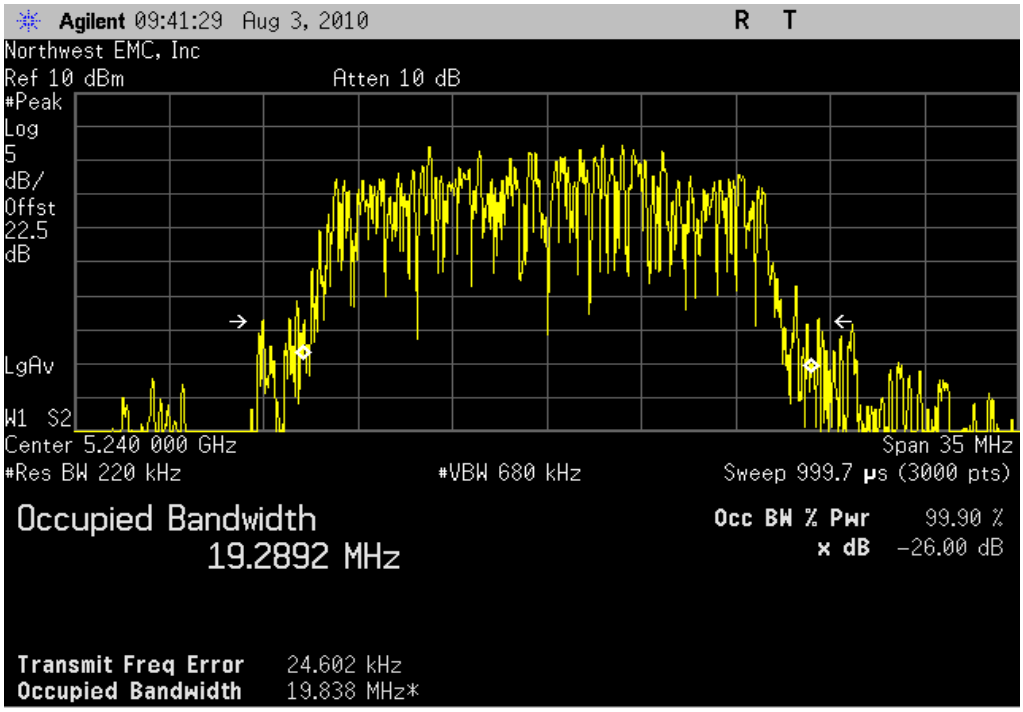


802.11(a) 36 Mbps, 5150 - 5250 MHz Band, Channel 36, Low Channel					
Result:	N/A	**Value:**	19.753 MHz	**Limit:**	N/A

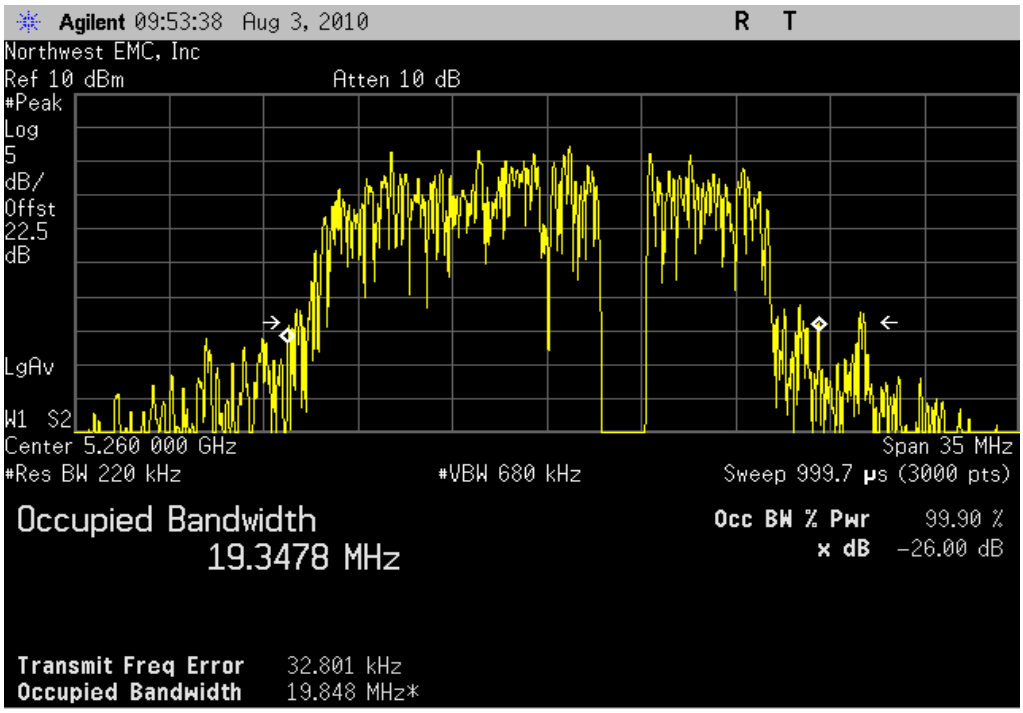


EMISSION BANDWIDTH

802.11(a) 36 Mbps, 5150 - 5250 MHz Band, Channel 48, High Channel		
Result: N/A	**Value:** 19.838 MHz	**Limit:** N/A

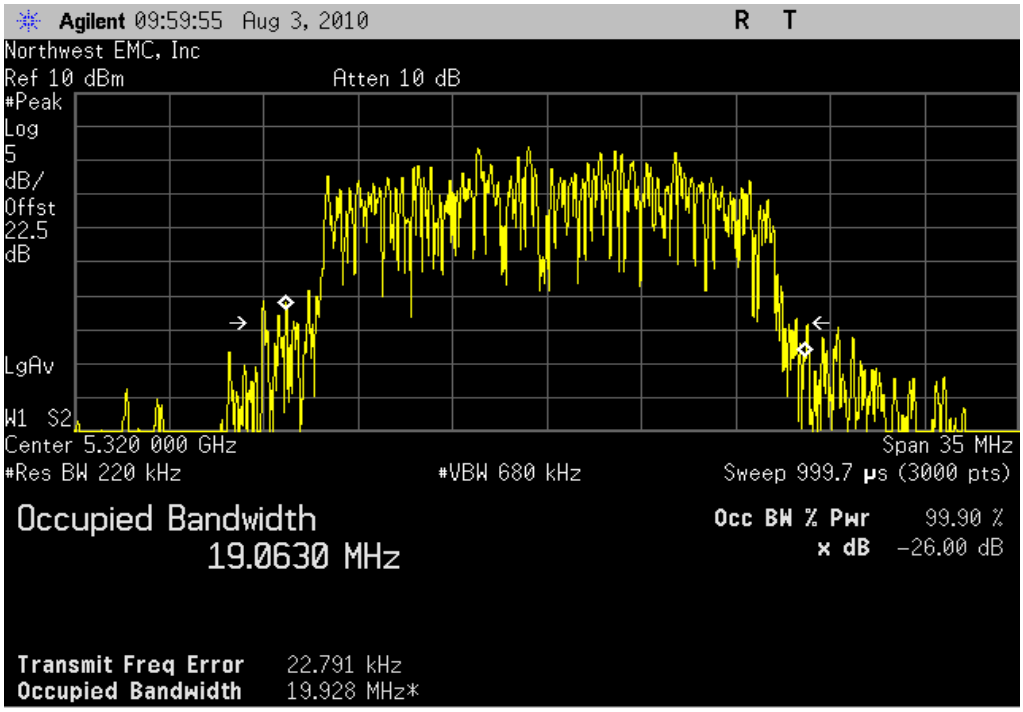


802.11(a) 36 Mbps, 5250 - 5350 MHz Band, Channel 52, Low Channel		
Result: N/A	**Value:** 19.848 MHz	**Limit:** N/A

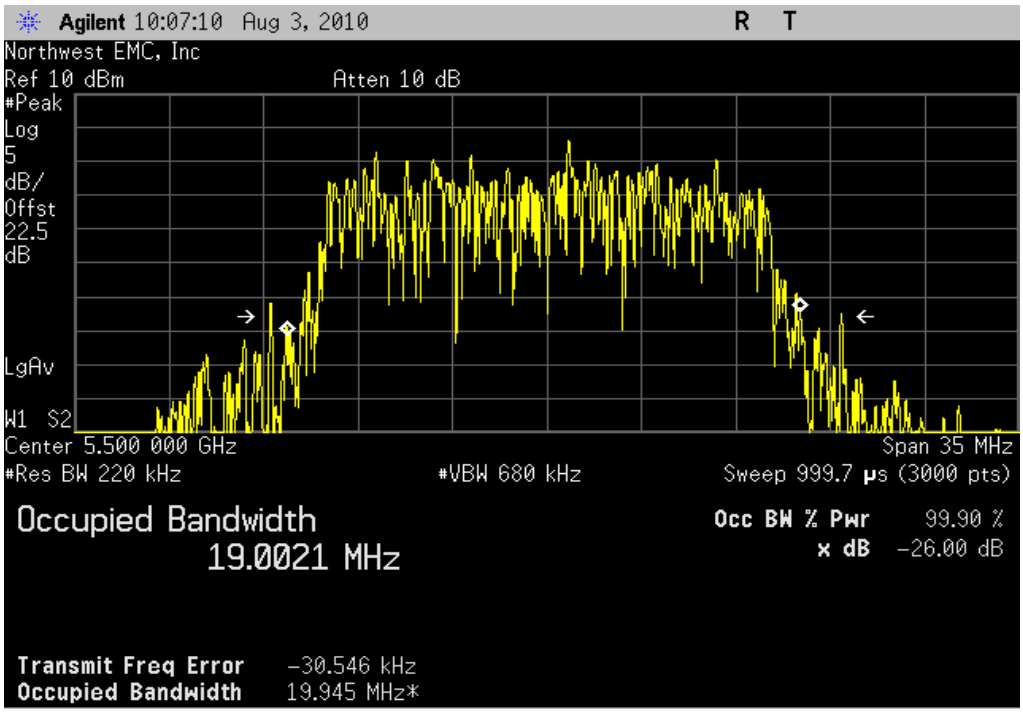


EMISSION BANDWIDTH

802.11(a) 36 Mbps, 5250 - 5350 MHz Band, Channel 64, High Channel					
Result:	N/A	**Value:**	19.928 MHz	**Limit:**	N/A

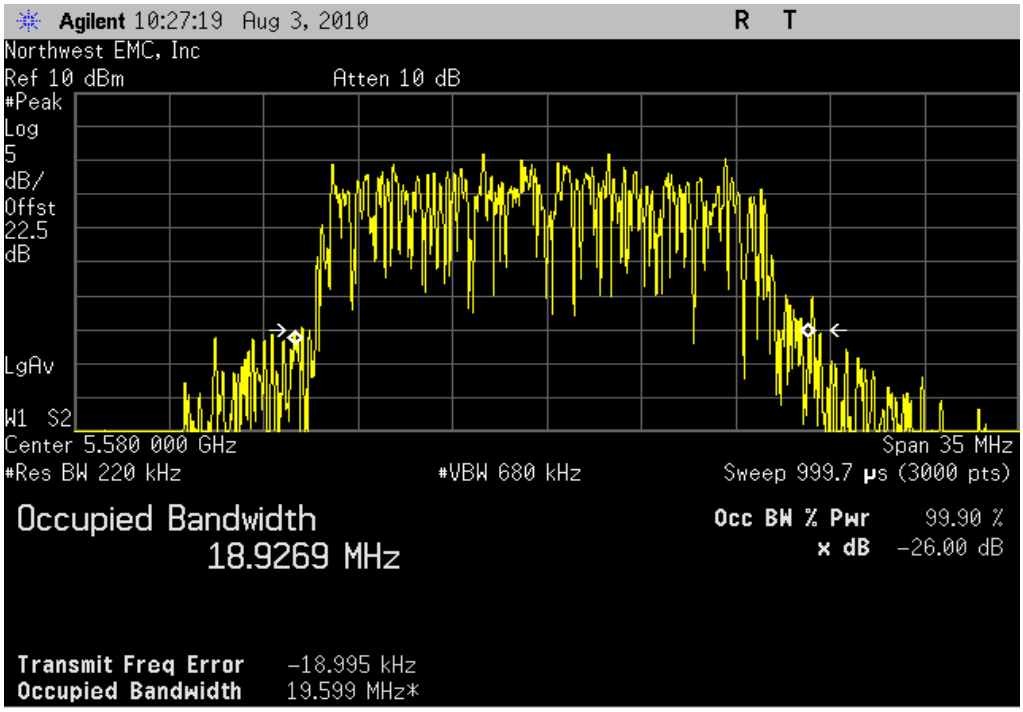


802.11(a) 36 Mbps, 5470 - 5725 MHz Band, Channel 100, Low Channel					
Result:	N/A	**Value:**	19.945 MHz	**Limit:**	N/A

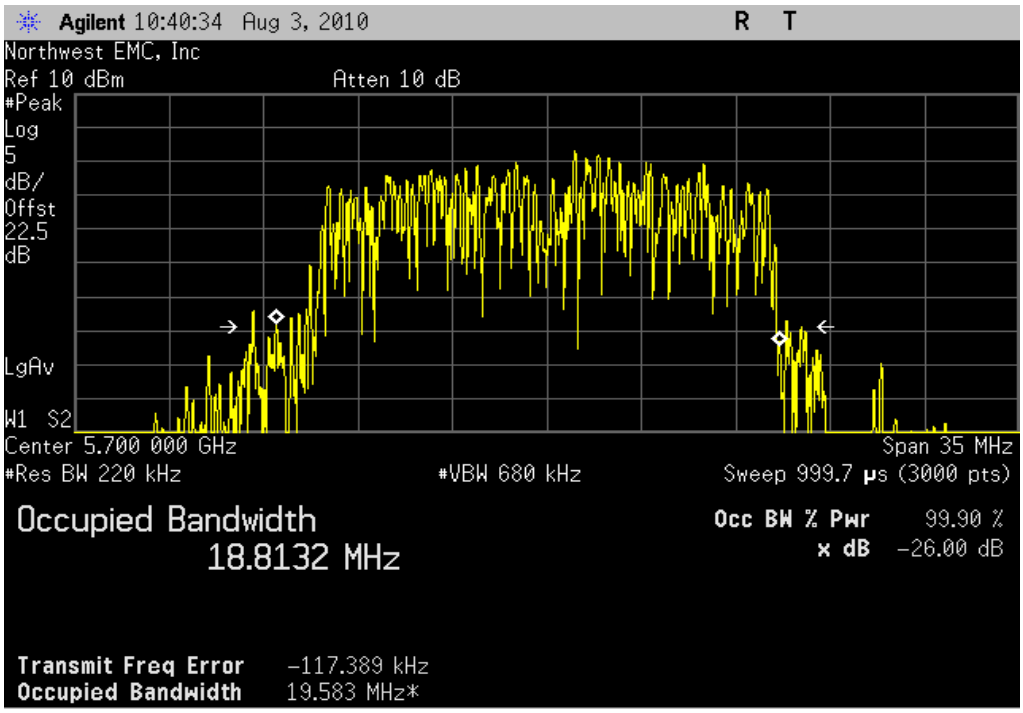


EMISSION BANDWIDTH

802.11(a) 36 Mbps, 5470 - 5725 MHz Band, Channel 116, Mid Channel					
Result:	N/A	**Value:**	19.599 MHz	**Limit:**	N/A

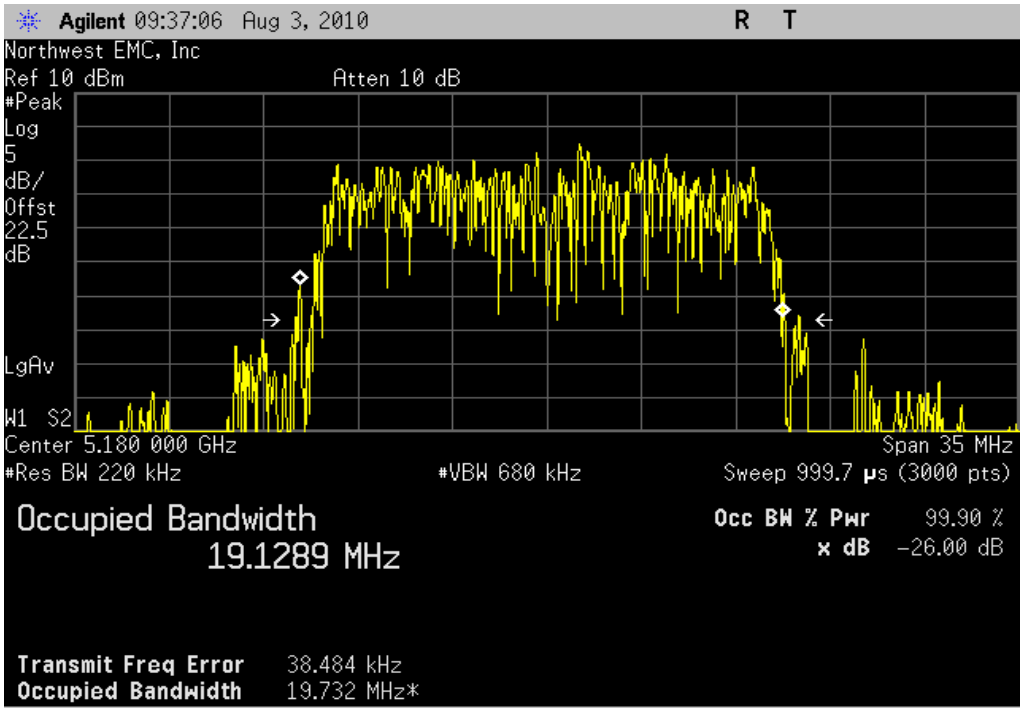


802.11(a) 36 Mbps, 5470 - 5725 MHz Band, Channel 140, High Channel					
Result:	N/A	**Value:**	19.583 MHz	**Limit:**	N/A

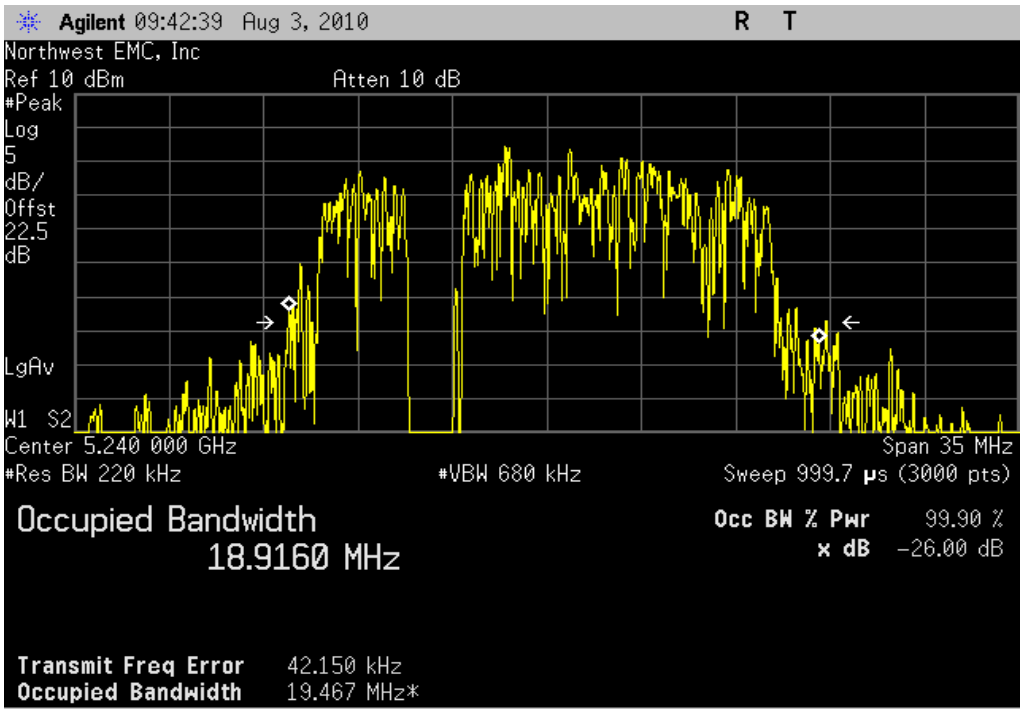


EMISSION BANDWIDTH

802.11(a) 54 Mbps, 5150 - 5250 MHz Band, Channel 36, Low Channel					
Result:	N/A	**Value:**	19.732 MHz	**Limit:**	N/A

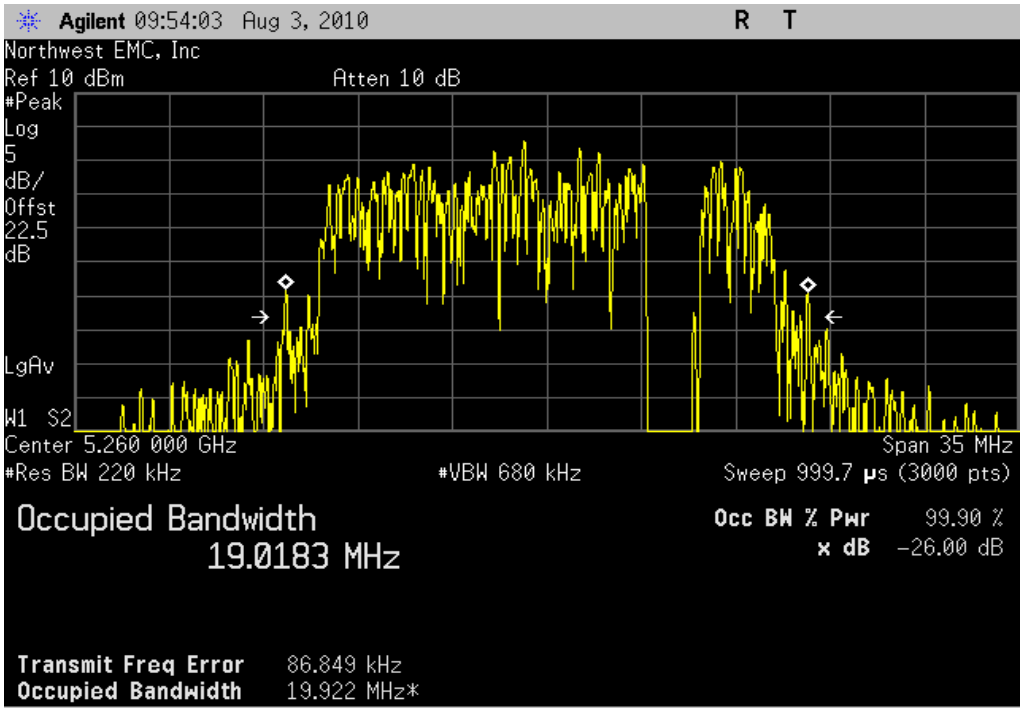


802.11(a) 54 Mbps, 5150 - 5250 MHz Band, Channel 48, High Channel					
Result:	N/A	**Value:**	19.467 MHz	**Limit:**	N/A

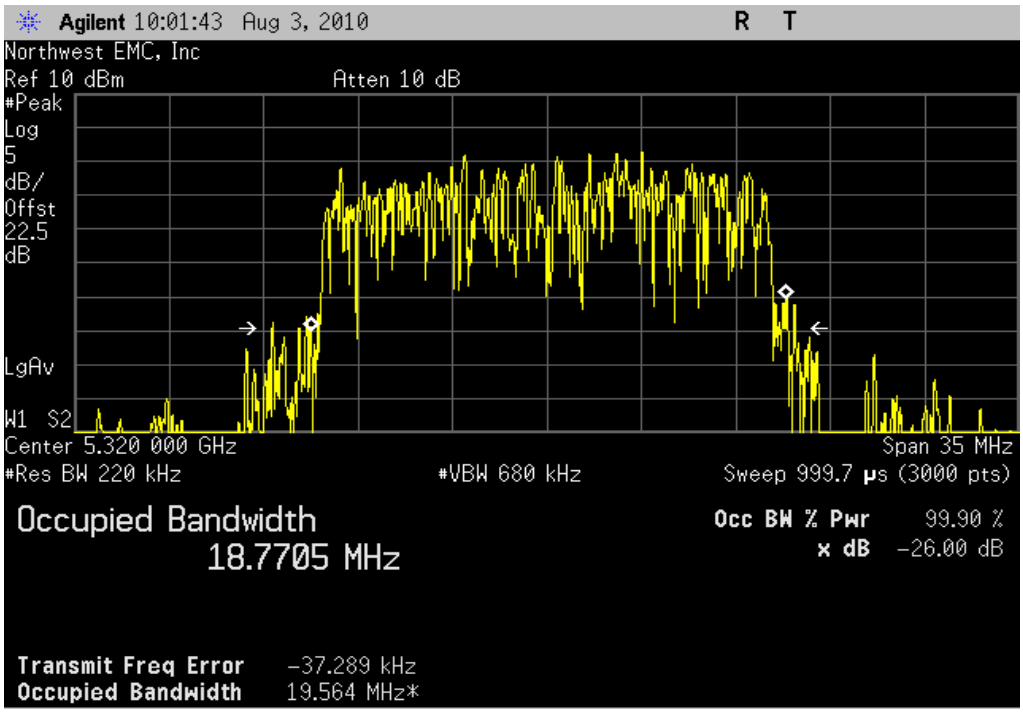


EMISSION BANDWIDTH

802.11(a) 54 Mbps, 5250 - 5350 MHz Band, Channel 52, Low Channel					
Result:	N/A	**Value:**	19.922 MHz	**Limit:**	N/A

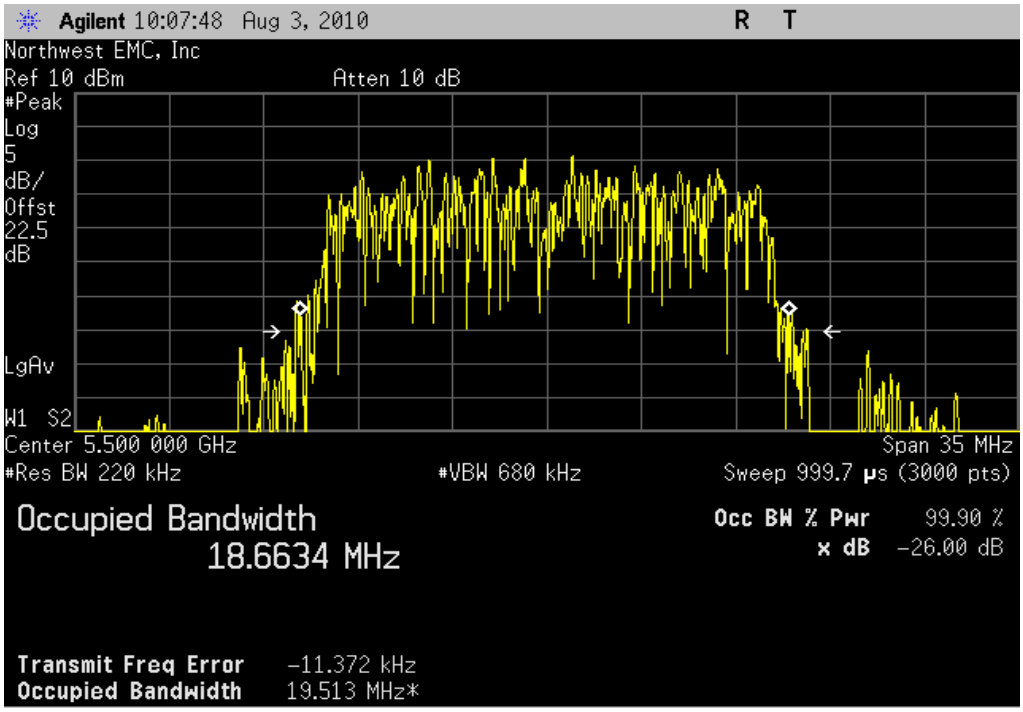


802.11(a) 54 Mbps, 5250 - 5350 MHz Band, Channel 64, High Channel					
Result:	N/A	**Value:**	19.564 MHz	**Limit:**	N/A

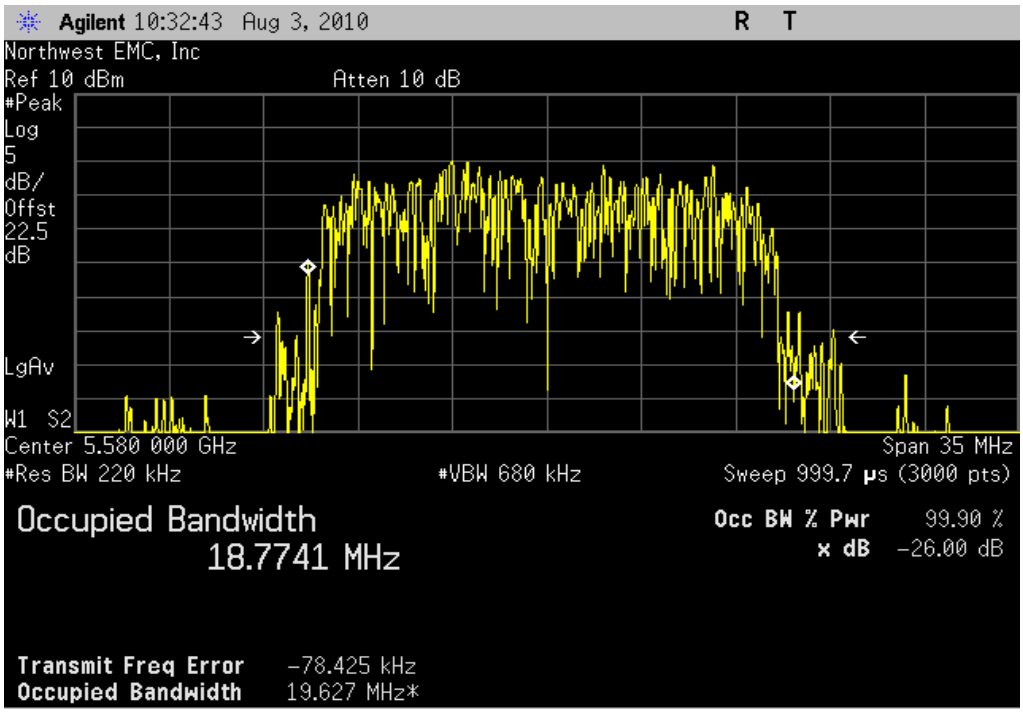


EMISSION BANDWIDTH

802.11(a) 54 Mbps, 5470 - 5725 MHz Band, Channel 100, Low Channel					
Result:	N/A	**Value:**	19.513 MHz	**Limit:**	N/A

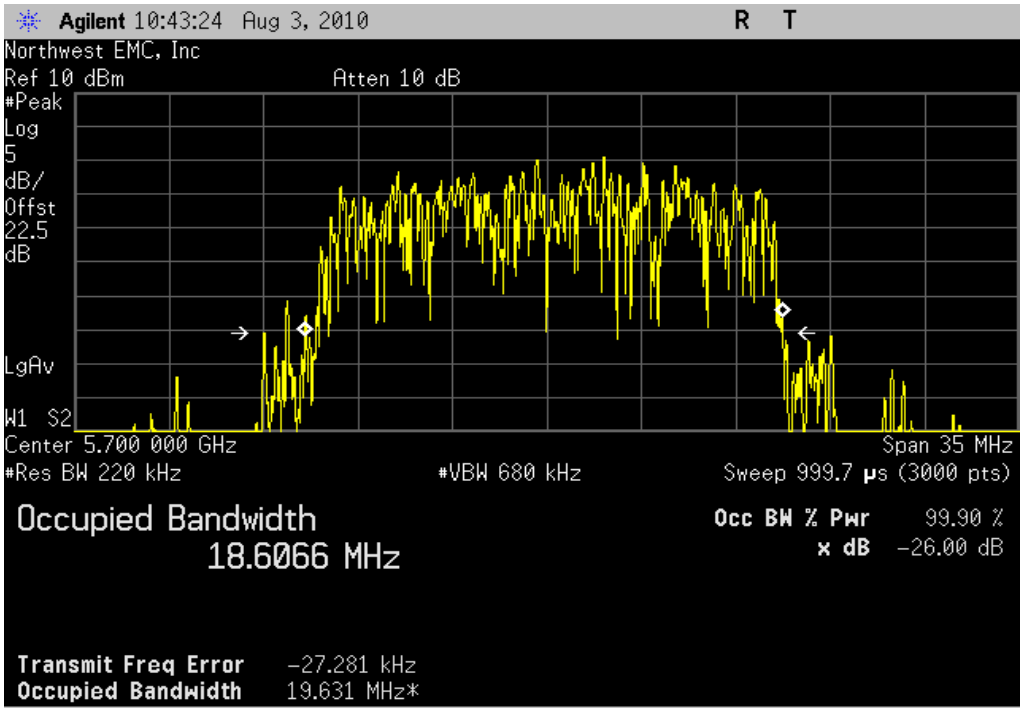


802.11(a) 54 Mbps, 5470 - 5725 MHz Band, Channel 116, Mid Channel					
Result:	N/A	**Value:**	19.627 MHz	**Limit:**	N/A

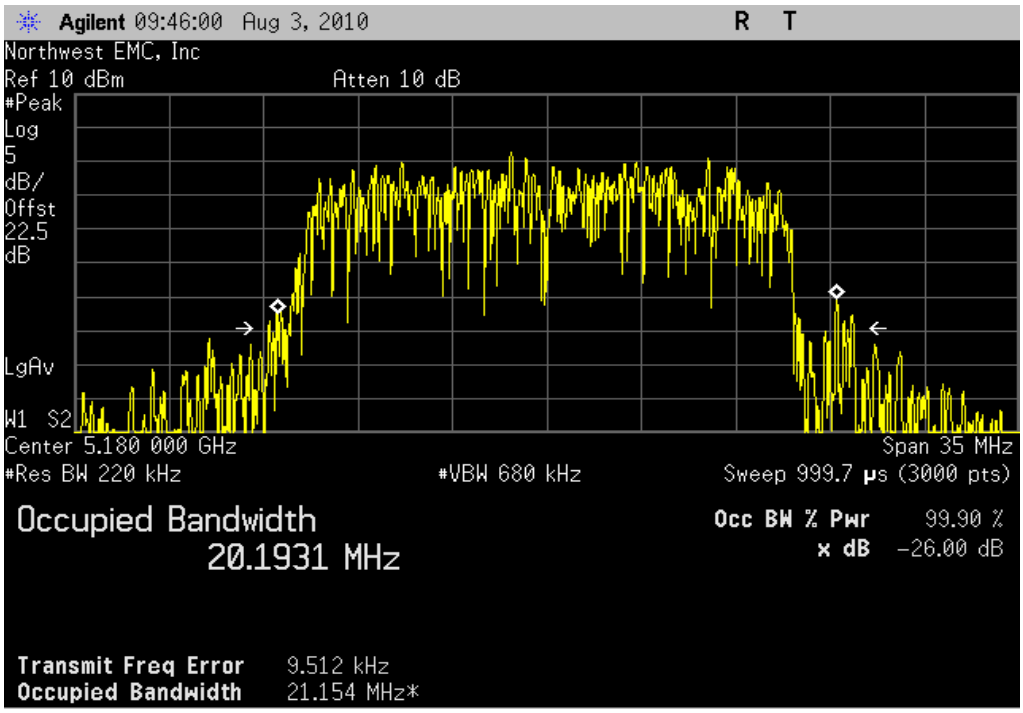


EMISSION BANDWIDTH

802.11(a) 54 Mbps, 5470 - 5725 MHz Band, Channel 140, High Channel					
Result:	N/A	**Value:**	19.631 MHz	**Limit:**	N/A

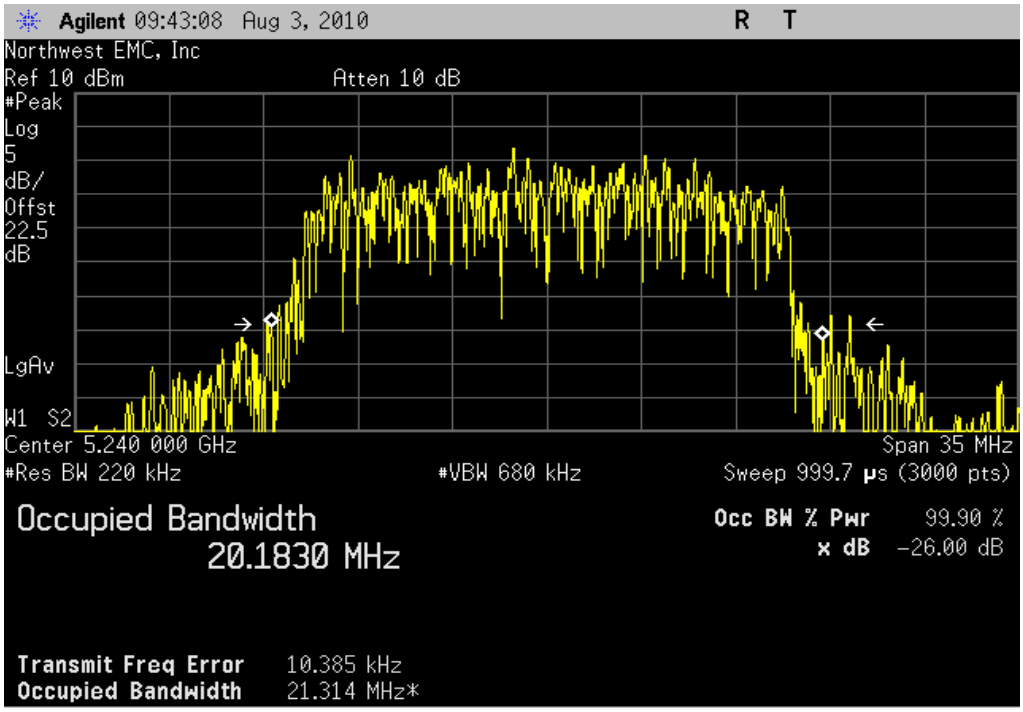


802.11(n) MCS0, 5150 - 5250 MHz Band, Channel 36, Low Channel					
Result:	N/A	**Value:**	21.154 MHz	**Limit:**	N/A

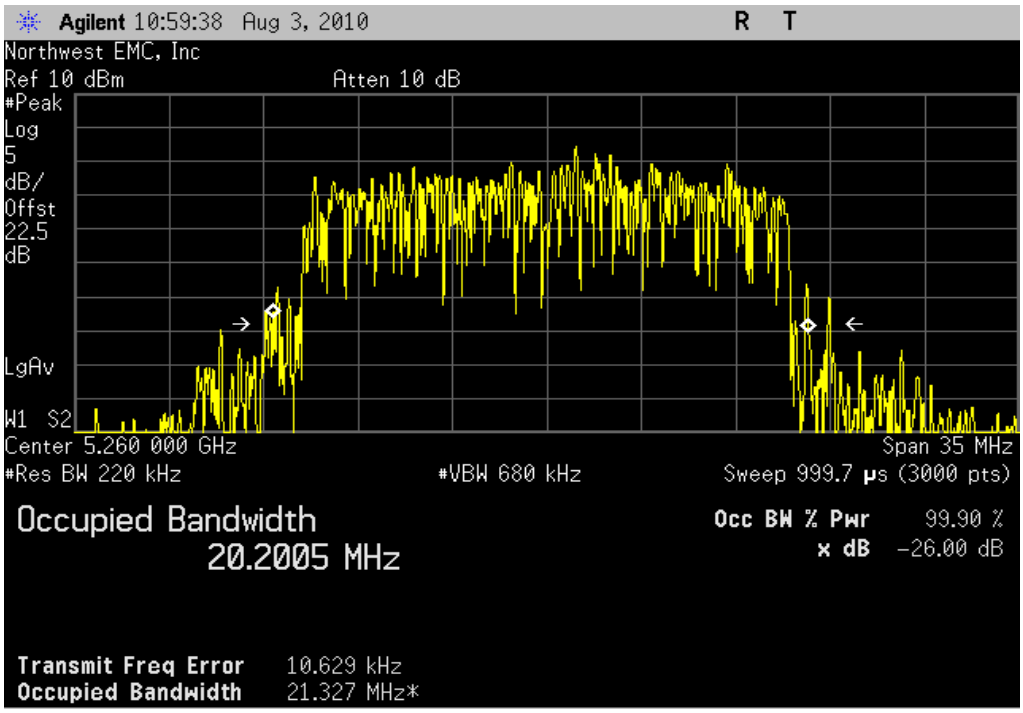


EMISSION BANDWIDTH

802.11(n) MCS0, 5150 - 5250 MHz Band, Channel 48, High Channel					
Result:	N/A	**Value:**	21.314 MHz	**Limit:**	N/A

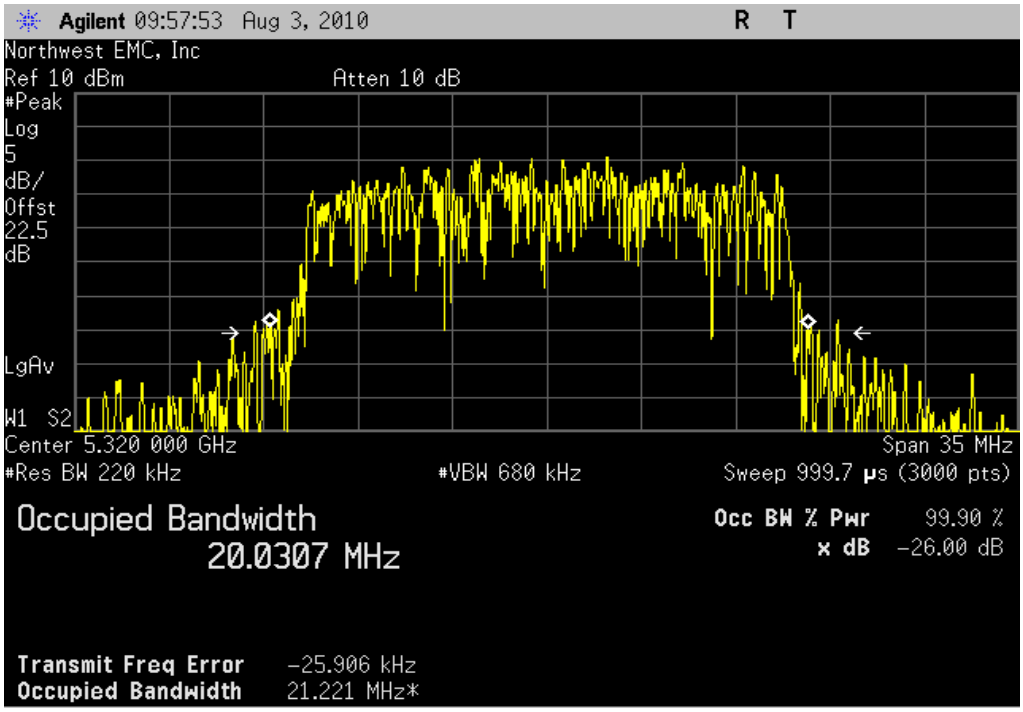


802.11(n) MCS0, 5250 - 5350 MHz Band, Channel 52, Low Channel					
Result:	N/A	**Value:**	21.327 MHz	**Limit:**	N/A

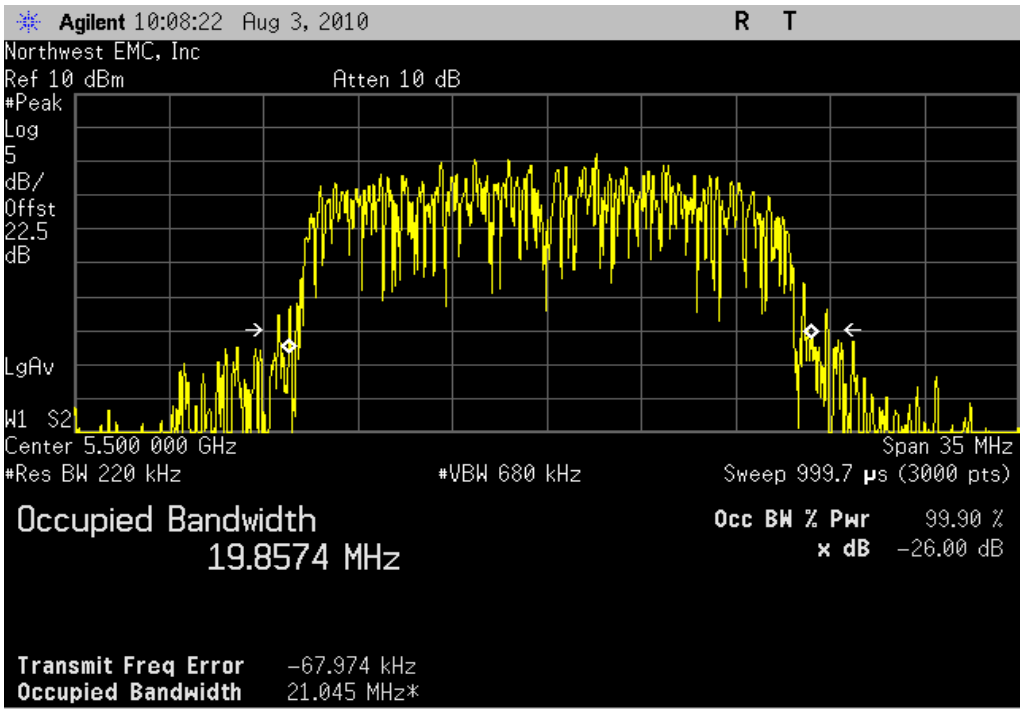


EMISSION BANDWIDTH

802.11(n) MCS0, 5250 - 5350 MHz Band, Channel 64, High Channel					
Result:	N/A	**Value:**	21.221 MHz	**Limit:**	N/A

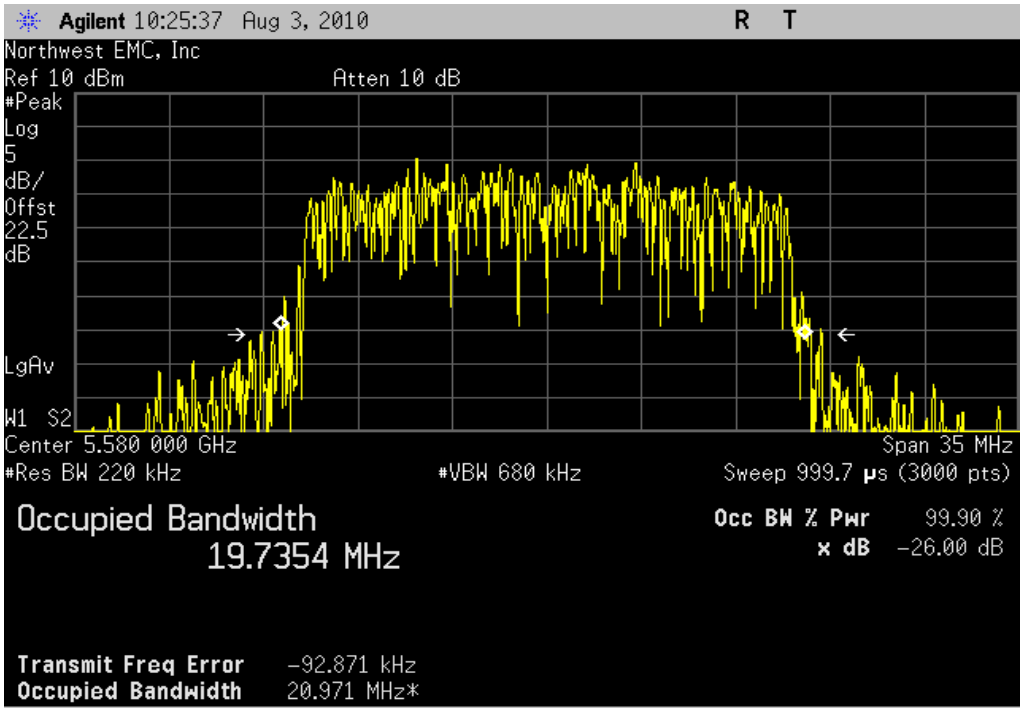


802.11(n) MCS0, 5470 - 5725 MHz Band, Channel 100, Low Channel					
Result:	N/A	**Value:**	21.045 MHz	**Limit:**	N/A

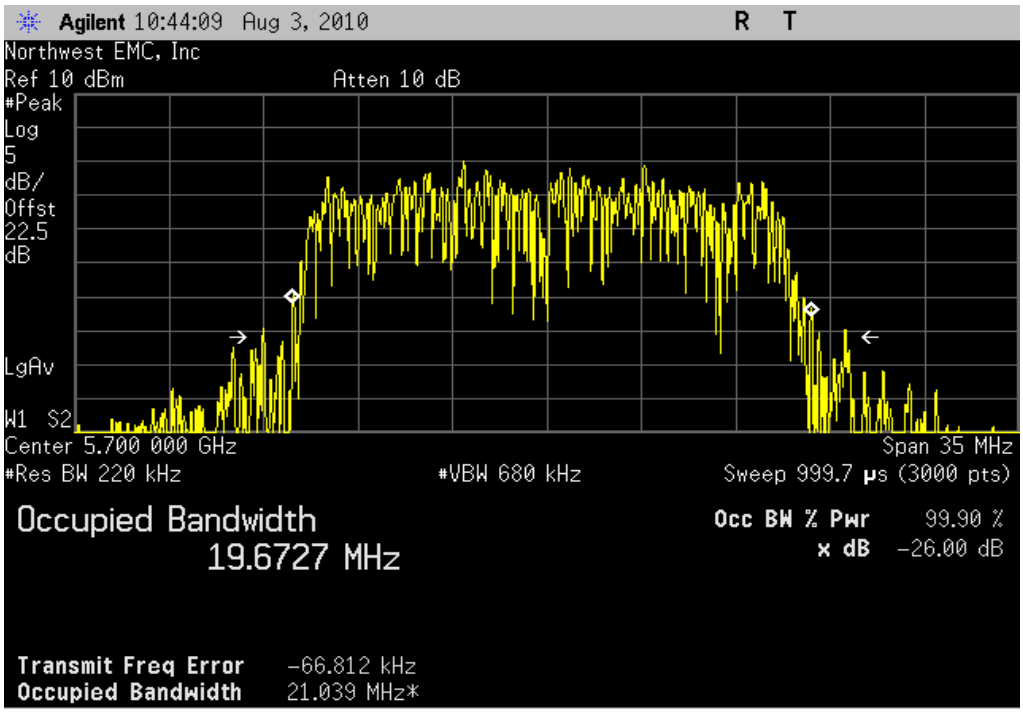


EMISSION BANDWIDTH

802.11(n) MCS0, 5470 - 5725 MHz Band, Channel 116, Mid Channel					
Result:	N/A	**Value:**	20.971 MHz	**Limit:**	N/A

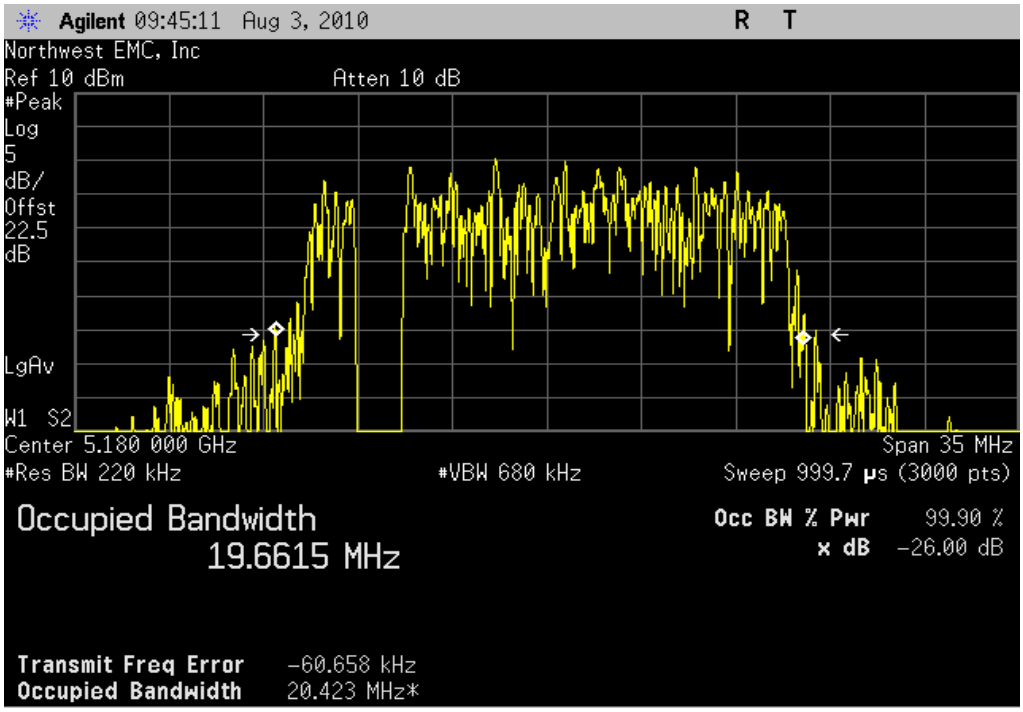


802.11(n) MCS0, 5470 - 5725 MHz Band, Channel 140, High Channel					
Result:	N/A	**Value:**	21.039 MHz	**Limit:**	N/A

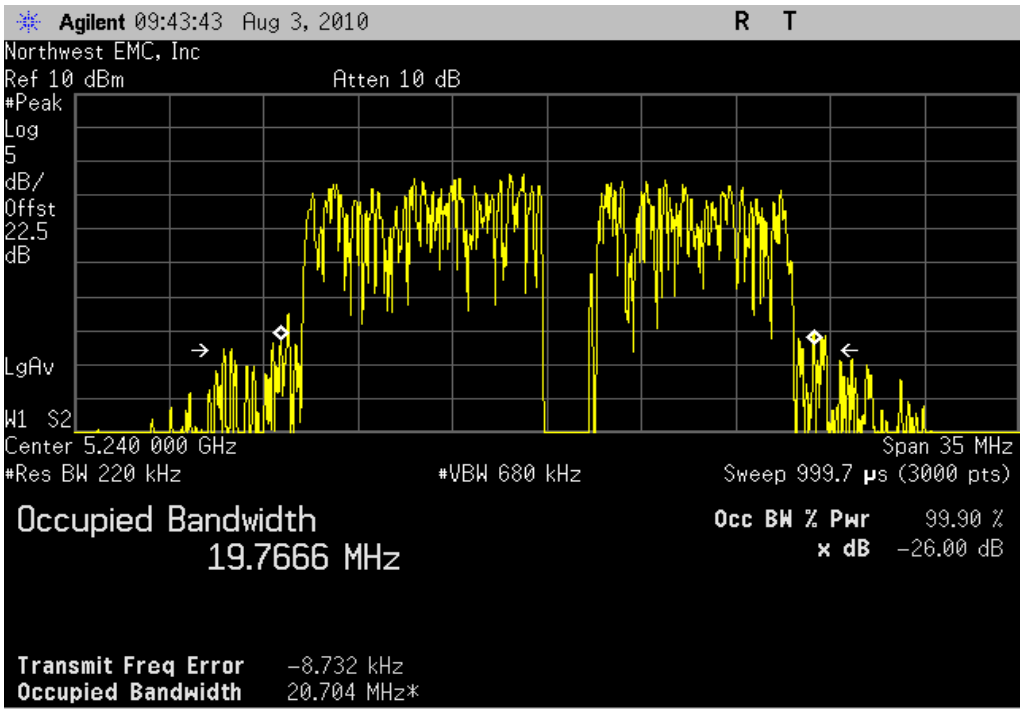


EMISSION BANDWIDTH

802.11(n) MCS7, 5150 - 5250 MHz Band, Channel 36, Low Channel					
Result:	N/A	**Value:**	20.423 MHz	**Limit:**	N/A

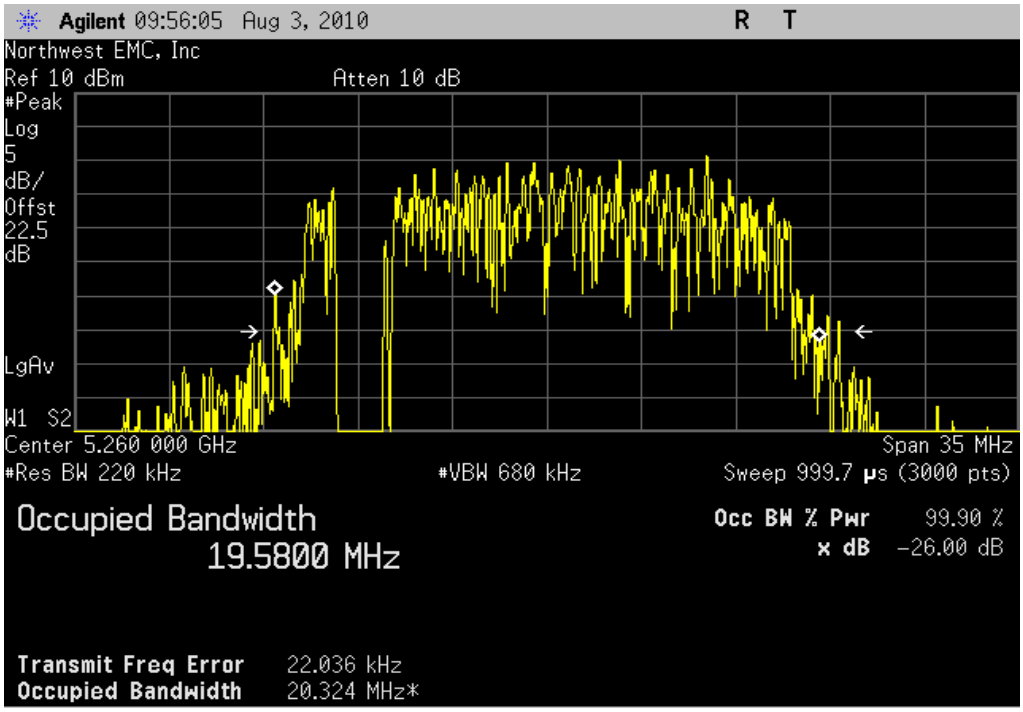


802.11(n) MCS7, 5150 - 5250 MHz Band, Channel 48, High Channel					
Result:	N/A	**Value:**	20.704 MHz	**Limit:**	N/A

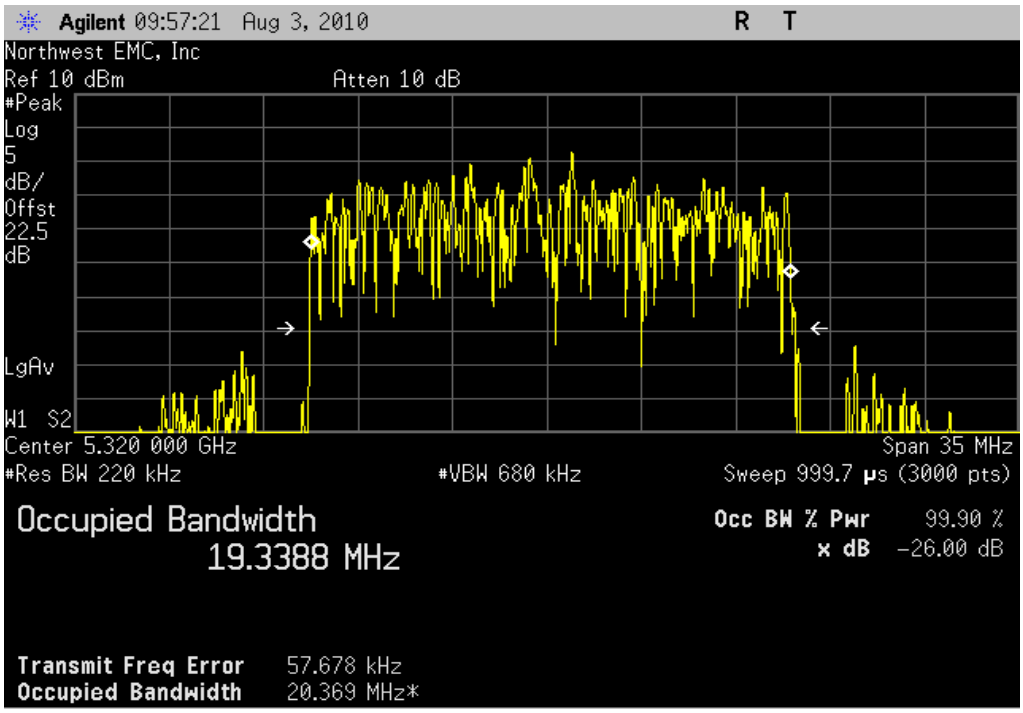


EMISSION BANDWIDTH

802.11(n) MCS7, 5250 - 5350 MHz Band, Channel 52, Low Channel					
Result:	N/A	**Value:**	20.324 MHz	**Limit:**	N/A

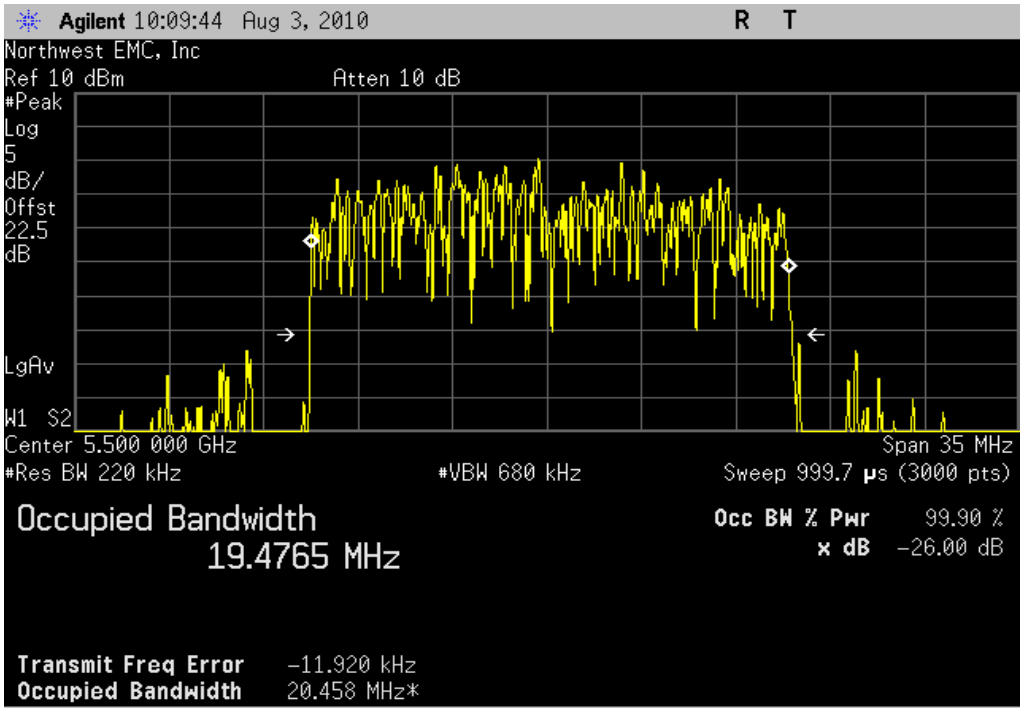


802.11(n) MCS7, 5250 - 5350 MHz Band, Channel 64, High Channel					
Result:	N/A	**Value:**	20.369 MHz	**Limit:**	N/A

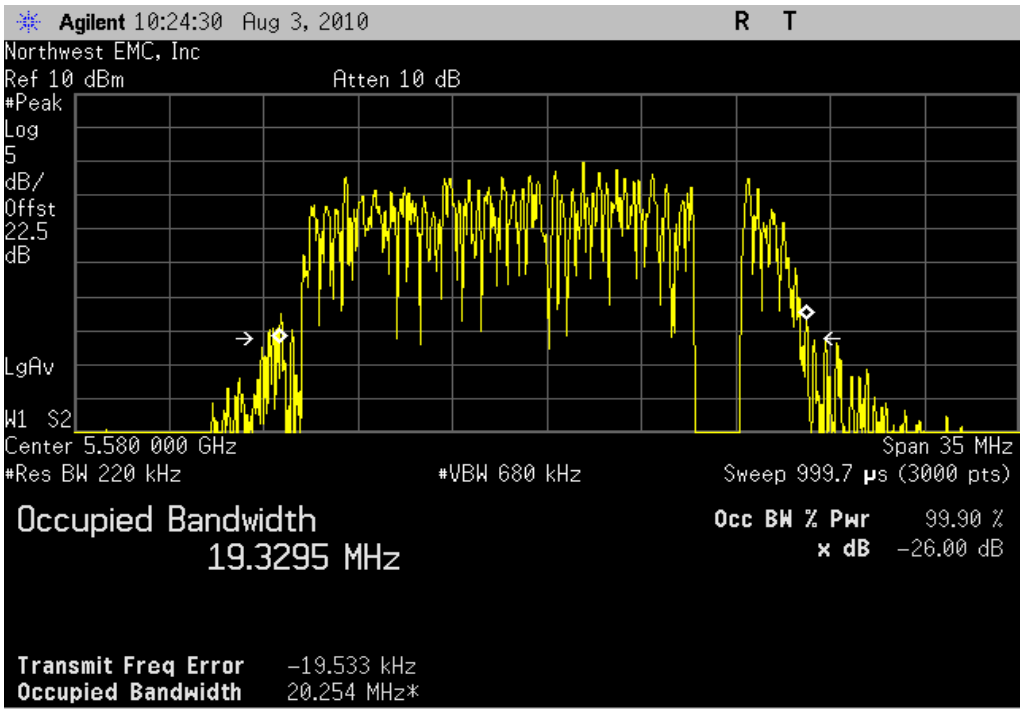


EMISSION BANDWIDTH

802.11(n) MCS7, 5470 - 5725 MHz Band, Channel 100, Low Channel					
Result:	N/A	**Value:**	20.458 MHz	**Limit:**	N/A

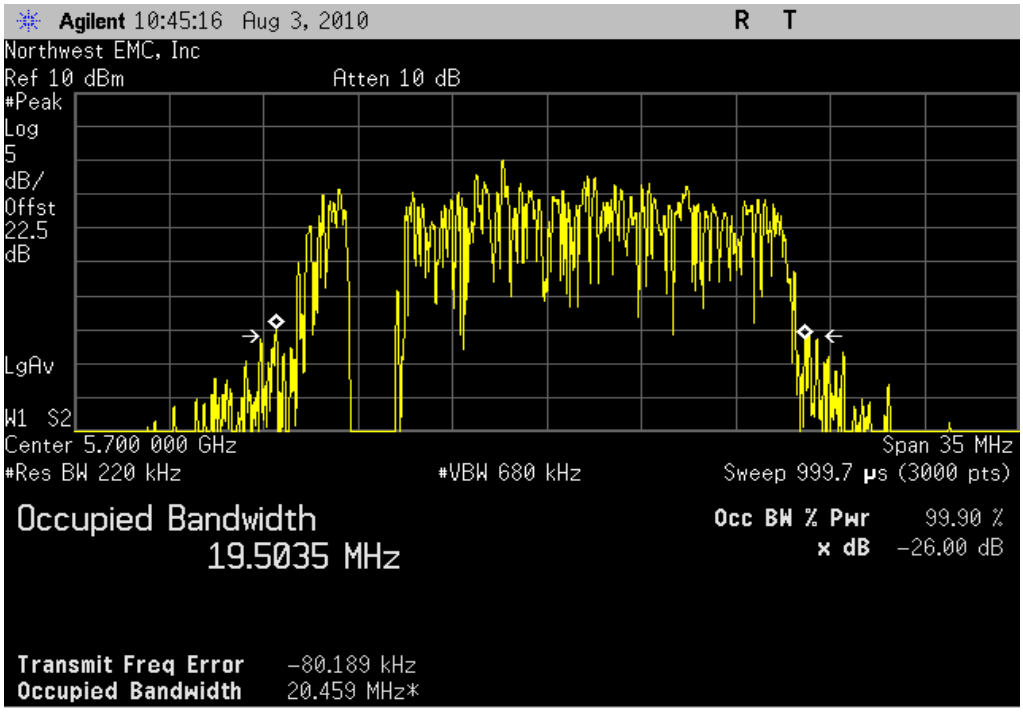


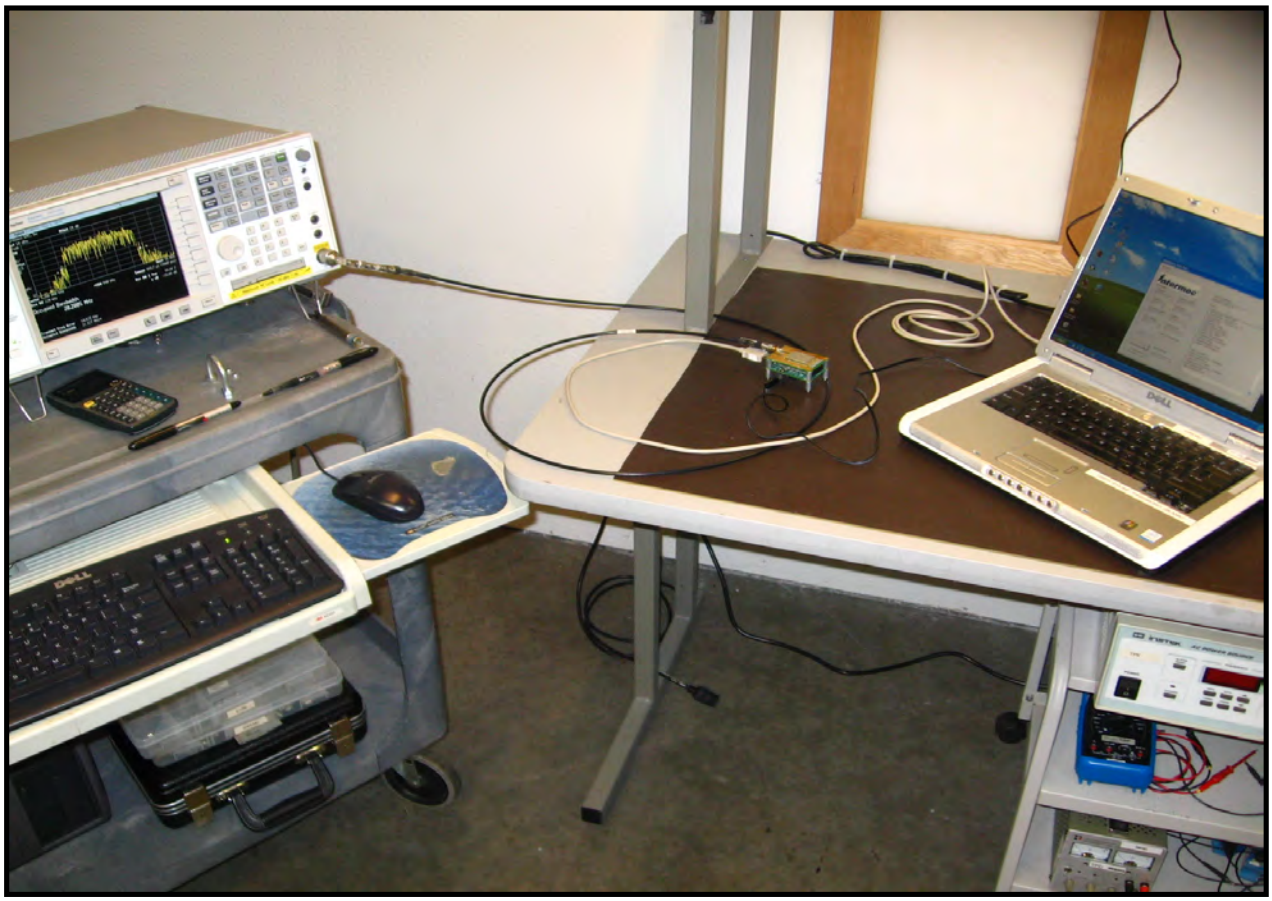
802.11(n) MCS7, 5470 - 5725 MHz Band, Channel 116, Mid Channel					
Result:	N/A	**Value:**	20.254 MHz	**Limit:**	N/A

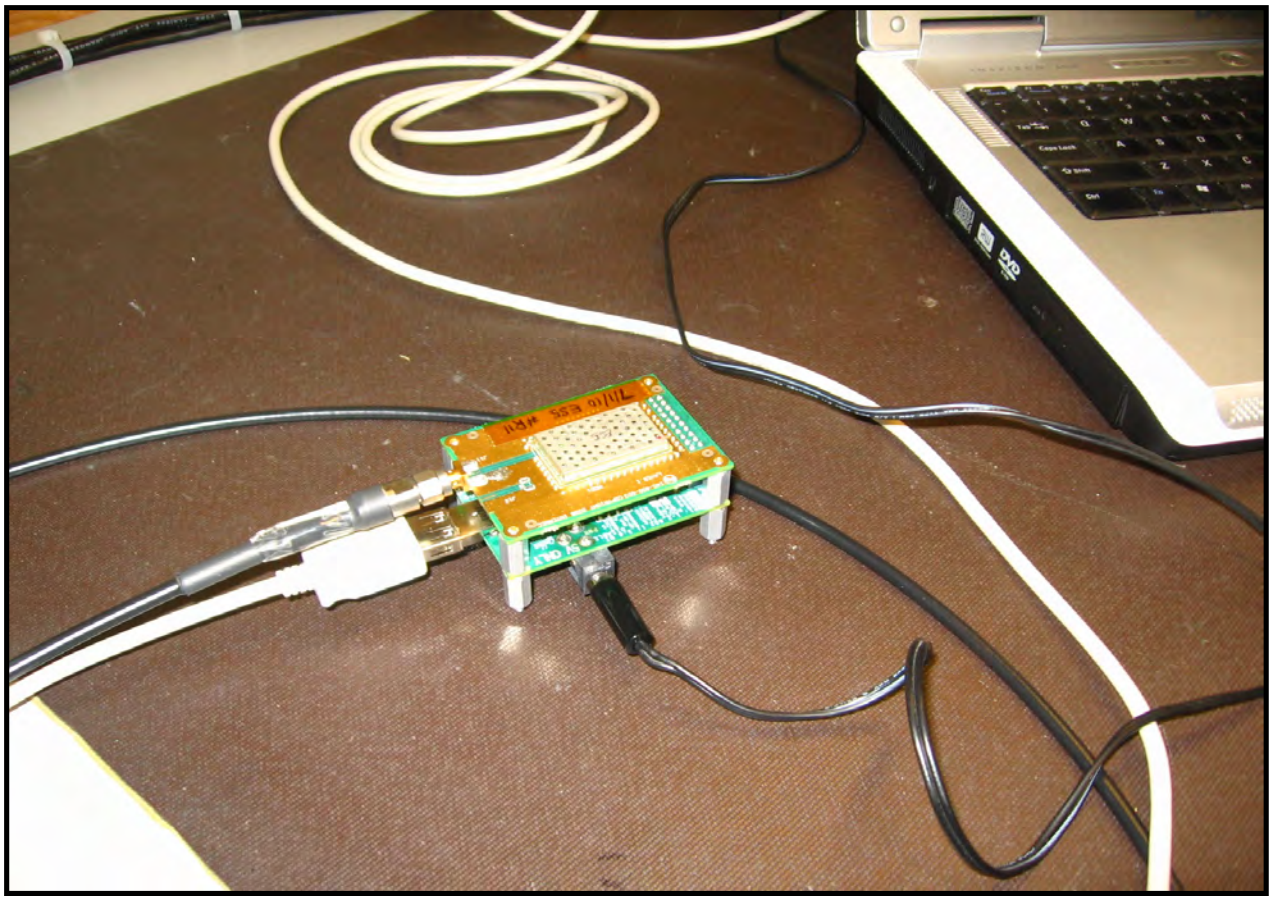


EMISSION BANDWIDTH

802.11(n) MCS7, 5470 - 5725 MHz Band, Channel 140, High Channel					
Result:	N/A	**Value:**	20.459 MHz	**Limit:**	N/A







PEAK POWER SPECTRAL DENSITY

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Spectrum Analyzer	Agilent	E4440A	AFD	6/1/2009	24
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/21/2009	13
26 GHz DC Block, SMA	Pasternack	PE8210	AME	10/19/2009	13
Attenuator, 6 dB, 'SMA'	N/A	93459 3330A-6	AUF	4/1/2010	13
Power Meter	Gigatronics	8651A	SPM	1/7/2010	13
Power Sensor	Gigatronics	80701A	SPL	1/7/2010	13
Signal Generator	Agilent	E8257D	TGX	12/10/2008	24

MEASUREMENT UNCERTAINTY

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

TEST DESCRIPTION

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 #2 was used. RF gating on the spectrum analyzer was used on those data rates with short pulse durations to ensure sweeps only occurred during the pulse duration.

The spectrum analyzer settings were as follows:

- The span was set to encompass entire emission bandwidth (B), centered on the transmit channel.
- RBW = 1 MHz, VBW >= 3 MHz because the emission bandwidth (B) is greater than 1 MHz
- Sample detector mode because the bin width (span / number of spectral points) < 0.5 RBW.
- Trace average 100 traces in power averaging mode (not video averaging).

The peak power spectral density (PPSD) was determined to be the highest level found across the emission in any 1 MHz band after 100 sweeps of power averaging (not video averaging).

NORTHWEST EMC

PEAK POWER SPECTRAL DENSITY

XMit 2010.07.29

EUT:	RC12	Work Order:	INMC0575
Serial Number:	R11	Date:	08/04/10
Customer:	Intermec Technologies Corporation	Temperature:	21°C
Attendees:	None	Humidity:	39%
Project:	None	Barometric Pres.:	1012.5 mb
Tested by:	Rod Peloquin	Power: 5VDC	Job Site: EV06

TEST SPECIFICATIONS	Test Method
FCC 15.407:2010	ANSI C63.10:2009

COMMENTS

None

DEVIATIONS FROM TEST STANDARD

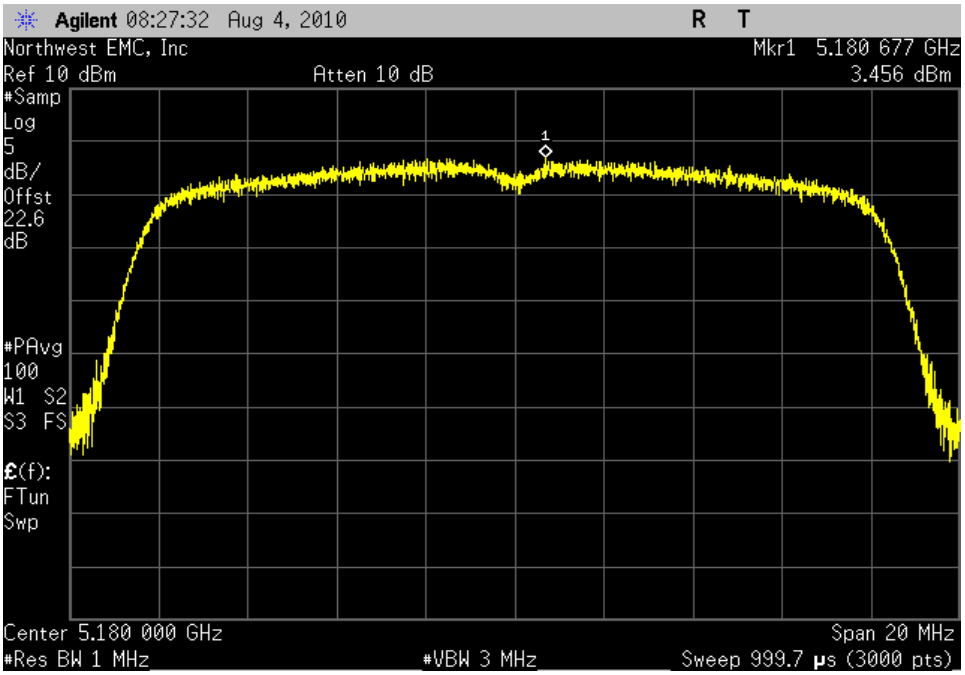
No Deviations

Configuration #	2	Signature

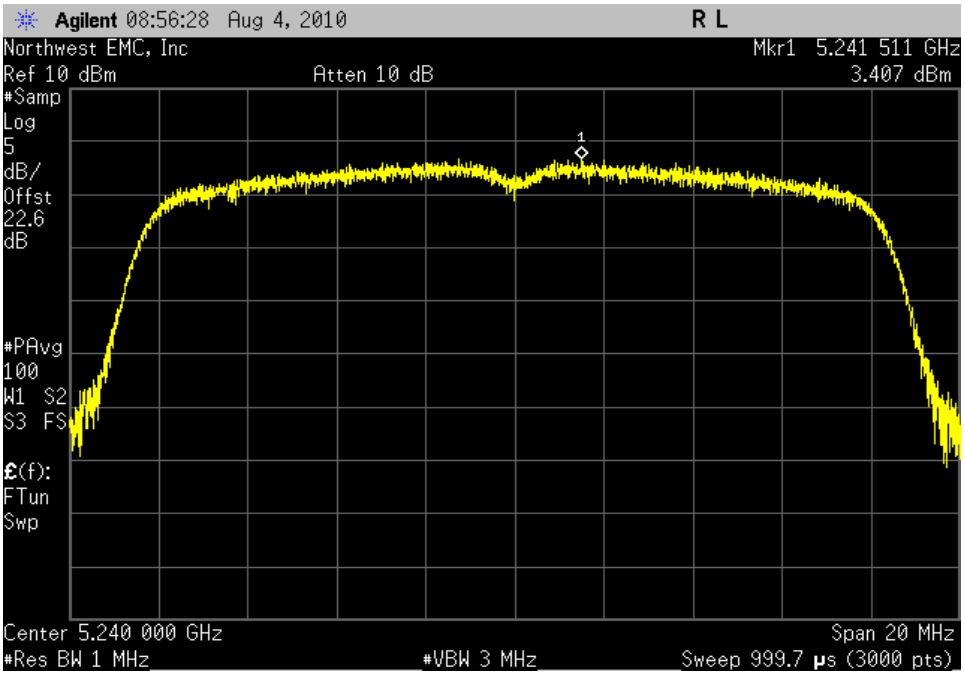
		Value	Limit	Results
802.11(a) 6 Mbps				
	5150 - 5250 MHz Band			
	Channel 36, Low Channel	3.5 dbm / MHz	4 dBm / MHz	Pass
	Channel 48, High Channel	3.4 dbm / MHz	4 dBm / MHz	Pass
	5250 - 5350 MHz Band			
	Channel 52, Low Channel	3.6 dbm / MHz	4 dBm / MHz	Pass
	Channel 64, High Channel	3.2 dbm / MHz	4 dBm / MHz	Pass
	5470 - 5725 MHz Band			
	Channel 100, Low Channel	2.9 dbm / MHz	4 dBm / MHz	Pass
	Channel 116, Mid Channel	3.0 dbm / MHz	4 dBm / MHz	Pass
	Channel 140, High Channel	2.6 dbm / MHz	4 dBm / MHz	Pass
802.11(a) 36 Mbps				
	5150 - 5250 MHz Band			
	Channel 36, Low Channel	3.6 dbm / MHz	4 dBm / MHz	Pass
	Channel 48, High Channel	3.7 dbm / MHz	4 dBm / MHz	Pass
	5250 - 5350 MHz Band			
	Channel 52, Low Channel	3.4 dbm / MHz	4 dBm / MHz	Pass
	Channel 64, High Channel	3.4 dbm / MHz	4 dBm / MHz	Pass
	5470 - 5725 MHz Band			
	Channel 100, Low Channel	3.0 dbm / MHz	4 dBm / MHz	Pass
	Channel 116, Mid Channel	3.6 dbm / MHz	4 dBm / MHz	Pass
	Channel 140, High Channel	3.1 dbm / MHz	4 dBm / MHz	Pass
802.11(a) 54 Mbps				
	5150 - 5250 MHz Band			
	Channel 36, Low Channel	3.8 dbm / MHz	4 dBm / MHz	Pass
	Channel 48, High Channel	3.7 dbm / MHz	4 dBm / MHz	Pass
	5250 - 5350 MHz Band			
	Channel 52, Low Channel	3.9 dbm / MHz	4 dBm / MHz	Pass
	Channel 64, High Channel	4.0 dbm / MHz	4 dBm / MHz	Pass
	5470 - 5725 MHz Band			
	Channel 100, Low Channel	3.4 dbm / MHz	4 dBm / MHz	Pass
	Channel 116, Mid Channel	3.3 dbm / MHz	4 dBm / MHz	Pass
	Channel 140, High Channel	3.9 dbm / MHz	4 dBm / MHz	Pass
802.11(n) MCS0				
	5150 - 5250 MHz Band			
	Channel 36, Low Channel	3.2 dbm / MHz	4 dBm / MHz	Pass
	Channel 48, High Channel	3.1 dbm / MHz	4 dBm / MHz	Pass
	5250 - 5350 MHz Band			
	Channel 52, Low Channel	3.4 dbm / MHz	4 dBm / MHz	Pass
	Channel 64, High Channel	2.8 dbm / MHz	4 dBm / MHz	Pass
	5470 - 5725 MHz Band			
	Channel 100, Low Channel	2.1 dbm / MHz	4 dBm / MHz	Pass
	Channel 116, Mid Channel	2.0 dbm / MHz	4 dBm / MHz	Pass
	Channel 140, High Channel	2.1 dbm / MHz	4 dBm / MHz	Pass
802.11(n) MCS7				
	5150 - 5250 MHz Band			
	Channel 36, Low Channel	2.2 dbm / MHz	4 dBm / MHz	Pass
	Channel 48, High Channel	3.2 dbm / MHz	4 dBm / MHz	Pass
	5250 - 5350 MHz Band			
	Channel 52, Low Channel	2.9 dbm / MHz	4 dBm / MHz	Pass
	Channel 64, High Channel	2.2 dbm / MHz	4 dBm / MHz	Pass
	5470 - 5725 MHz Band			
	Channel 100, Low Channel	0.8 dbm / MHz	4 dBm / MHz	Pass
	Channel 116, Mid Channel	1.0 dbm / MHz	4 dBm / MHz	Pass
	Channel 140, High Channel	1.2 dbm / MHz	4 dBm / MHz	Pass

PEAK POWER SPECTRAL DENSITY

802.11(a) 6 Mbps, 5150 - 5250 MHz Band, Channel 36, Low Channel					
Result:	Pass	**Value:**	3.5 dbm / MHz	**Limit:**	4 dBm / MHz

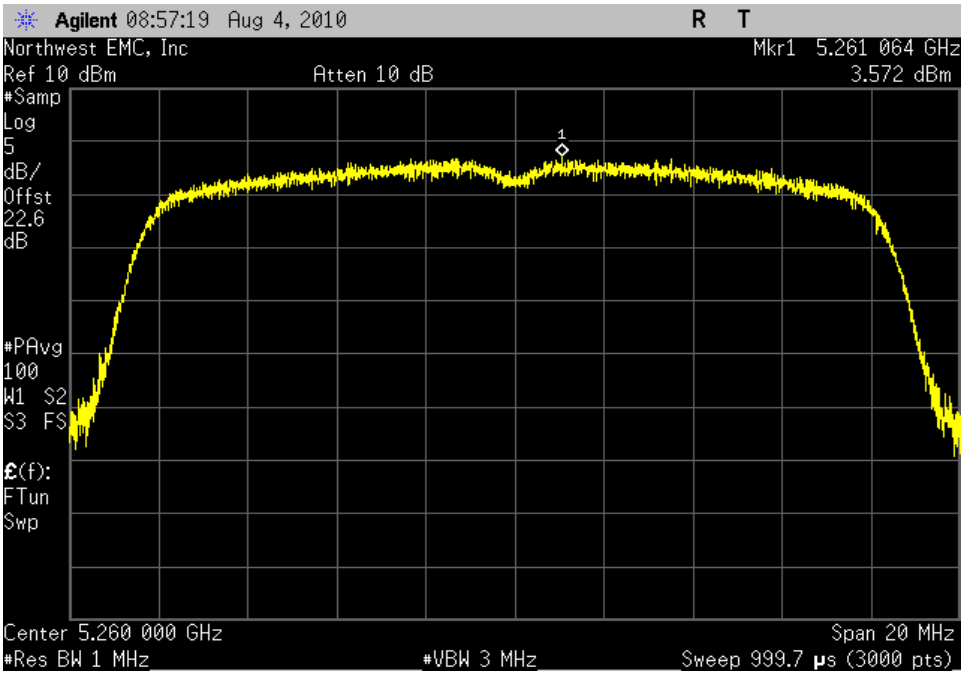


802.11(a) 6 Mbps, 5150 - 5250 MHz Band, Channel 48, High Channel					
Result:	Pass	**Value:**	3.4 dbm / MHz	**Limit:**	4 dBm / MHz

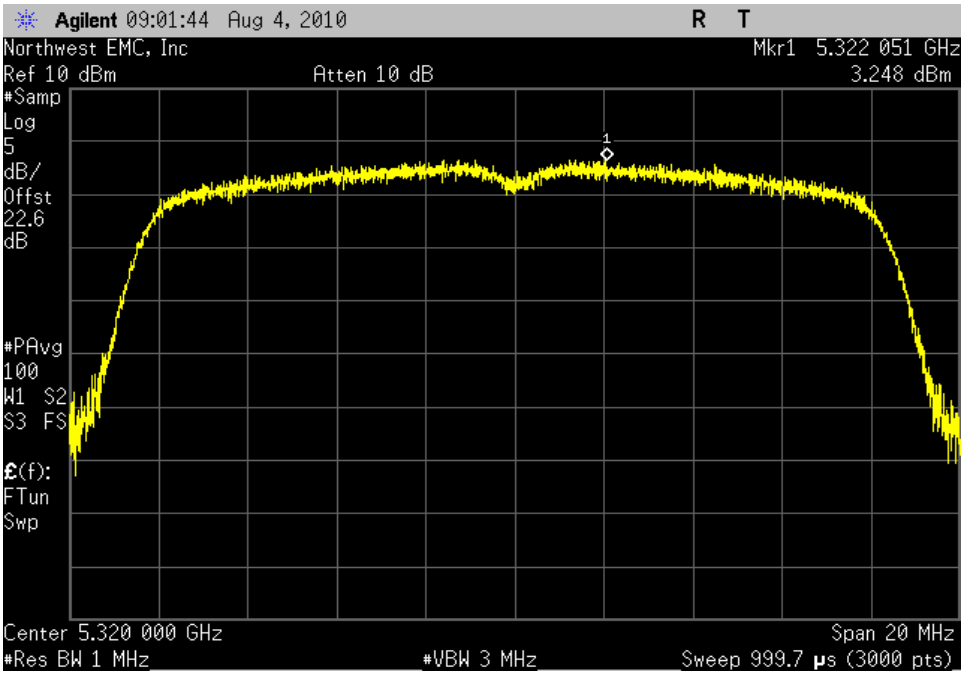


PEAK POWER SPECTRAL DENSITY

802.11(a) 6 Mbps, 5250 - 5350 MHz Band, Channel 52, Low Channel					
Result:	Pass	**Value:**	3.6 dbm / MHz	**Limit:**	4 dBm / MHz

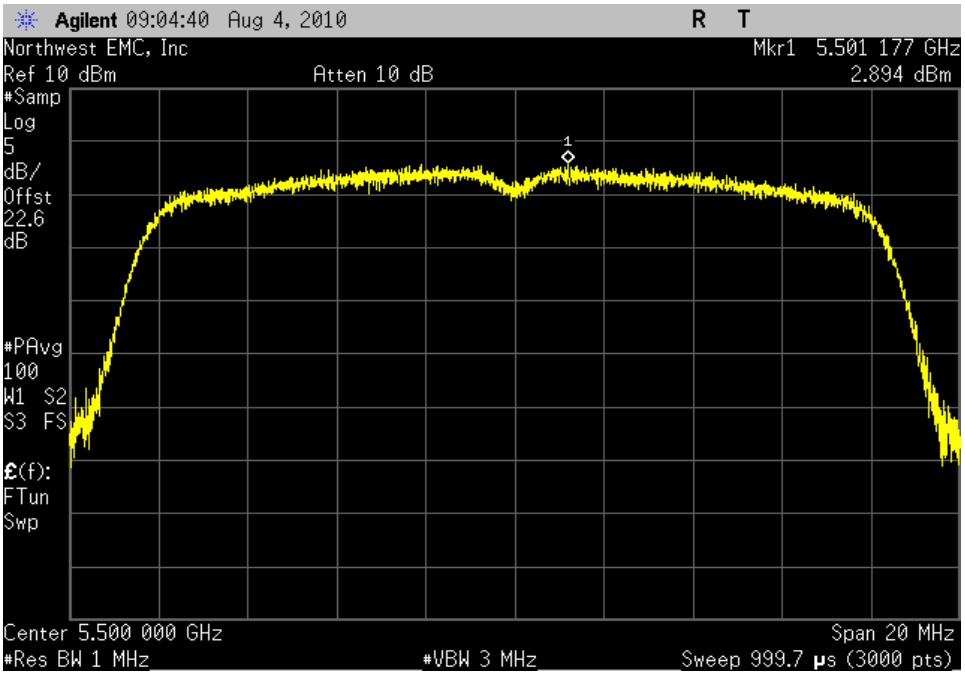


802.11(a) 6 Mbps, 5250 - 5350 MHz Band, Channel 64, High Channel					
Result:	Pass	**Value:**	3.2 dbm / MHz	**Limit:**	4 dBm / MHz

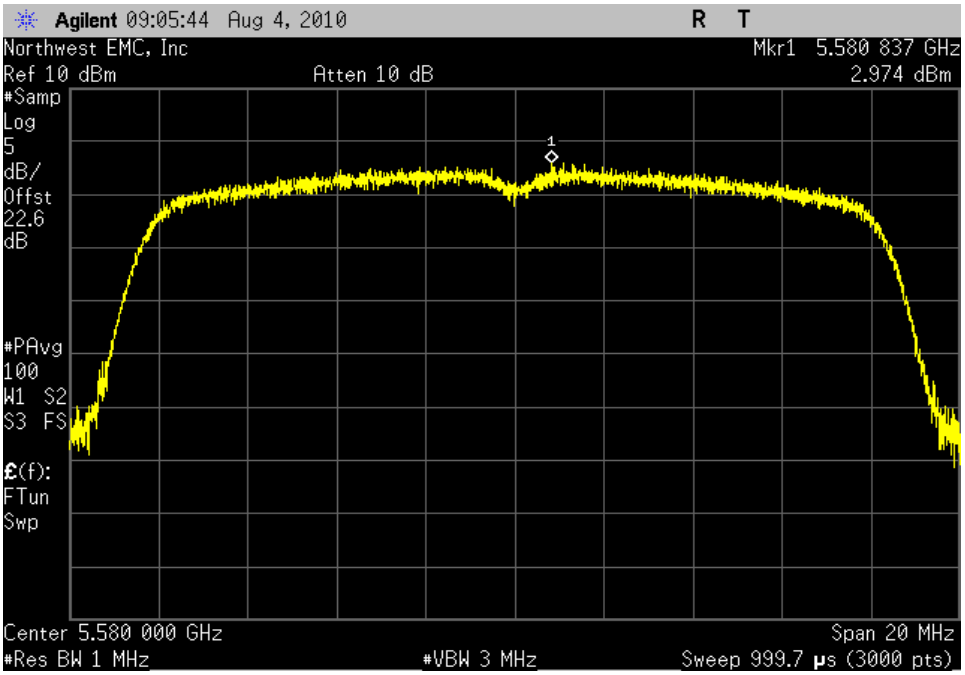


PEAK POWER SPECTRAL DENSITY

802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 100, Low Channel					
Result:	Pass	**Value:**	2.9 dbm / MHz	**Limit:**	4 dBm / MHz

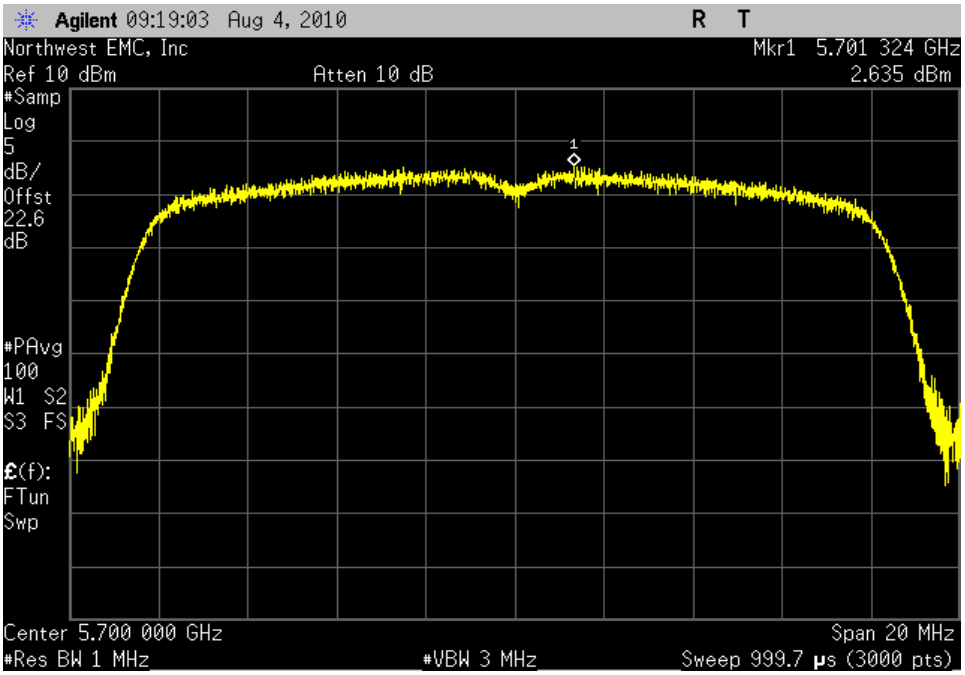


802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 116, Mid Channel					
Result:	Pass	**Value:**	3.0 dbm / MHz	**Limit:**	4 dBm / MHz

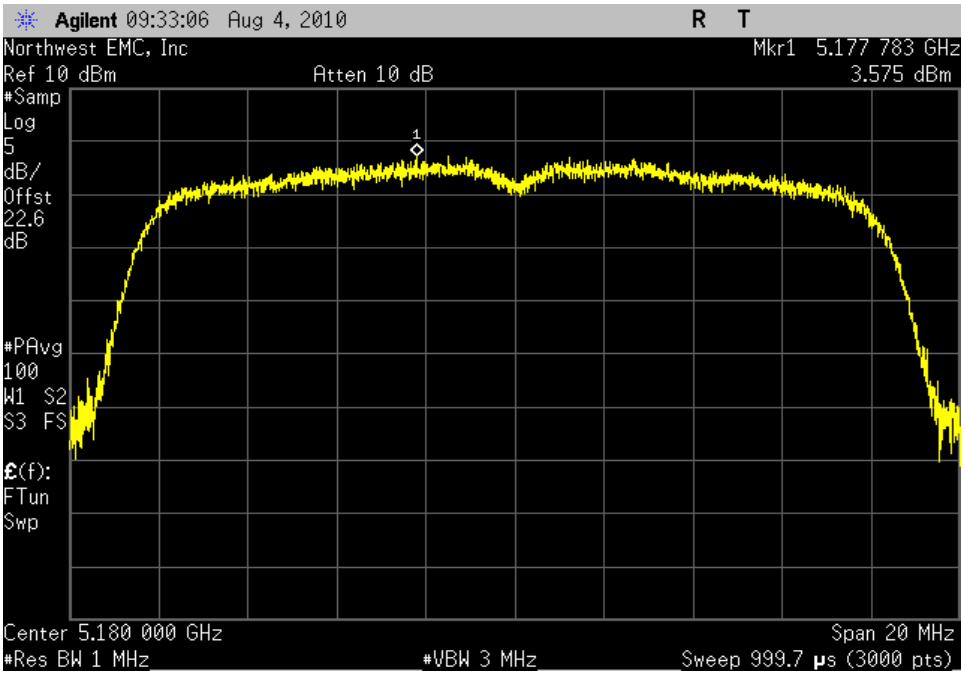


PEAK POWER SPECTRAL DENSITY

802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 140, High Channel					
Result:	Pass	**Value:**	2.6 dbm / MHz	**Limit:**	4 dBm / MHz

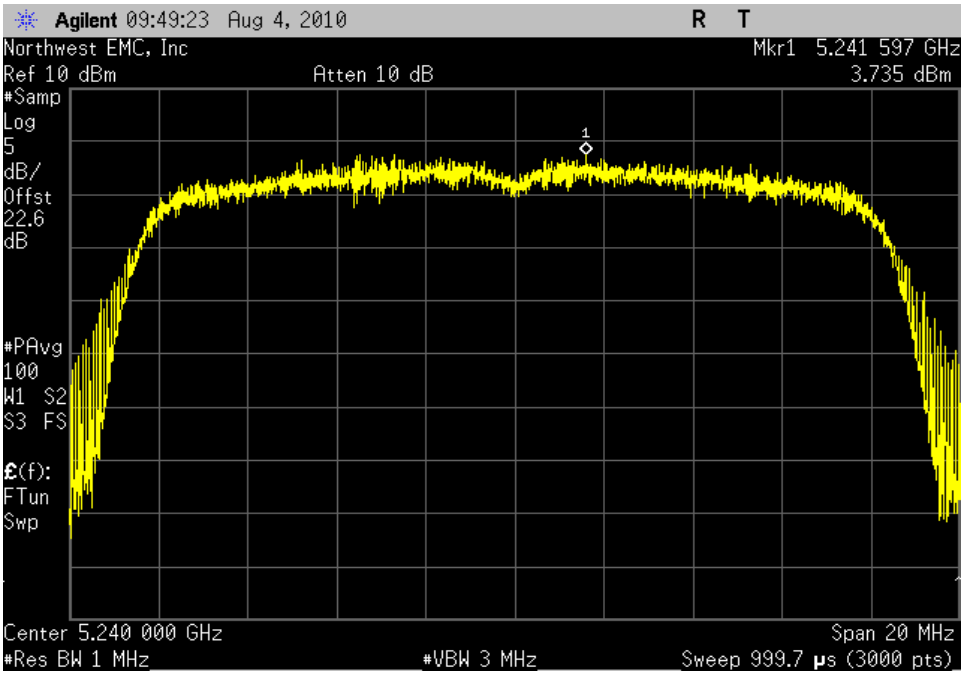


802.11(a) 36 Mbps, 5150 - 5250 MHz Band, Channel 36, Low Channel					
Result:	Pass	**Value:**	3.6 dbm / MHz	**Limit:**	4 dBm / MHz

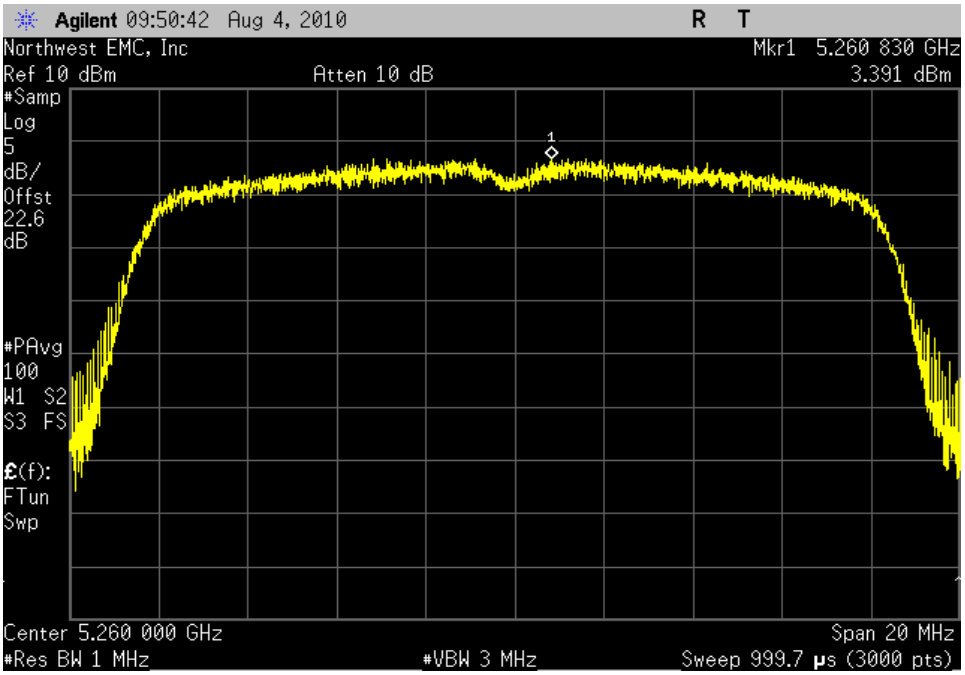


PEAK POWER SPECTRAL DENSITY

802.11(a) 36 Mbps, 5150 - 5250 MHz Band, Channel 48, High Channel					
Result:	Pass	**Value:**	3.7 dbm / MHz	**Limit:**	4 dBm / MHz

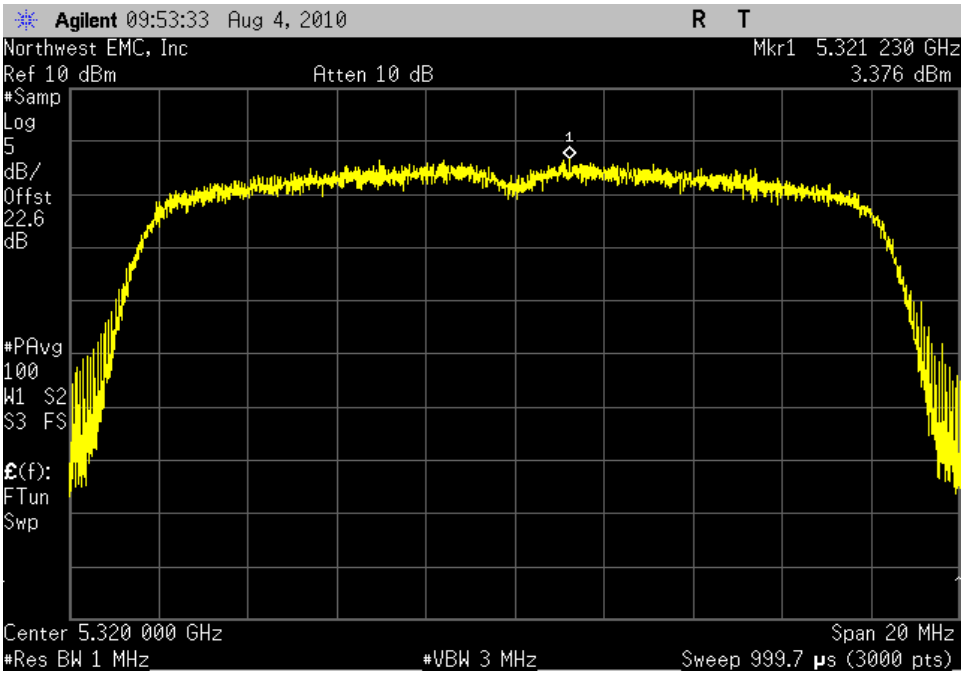


802.11(a) 36 Mbps, 5250 - 5350 MHz Band, Channel 52, Low Channel					
Result:	Pass	**Value:**	3.4 dbm / MHz	**Limit:**	4 dBm / MHz

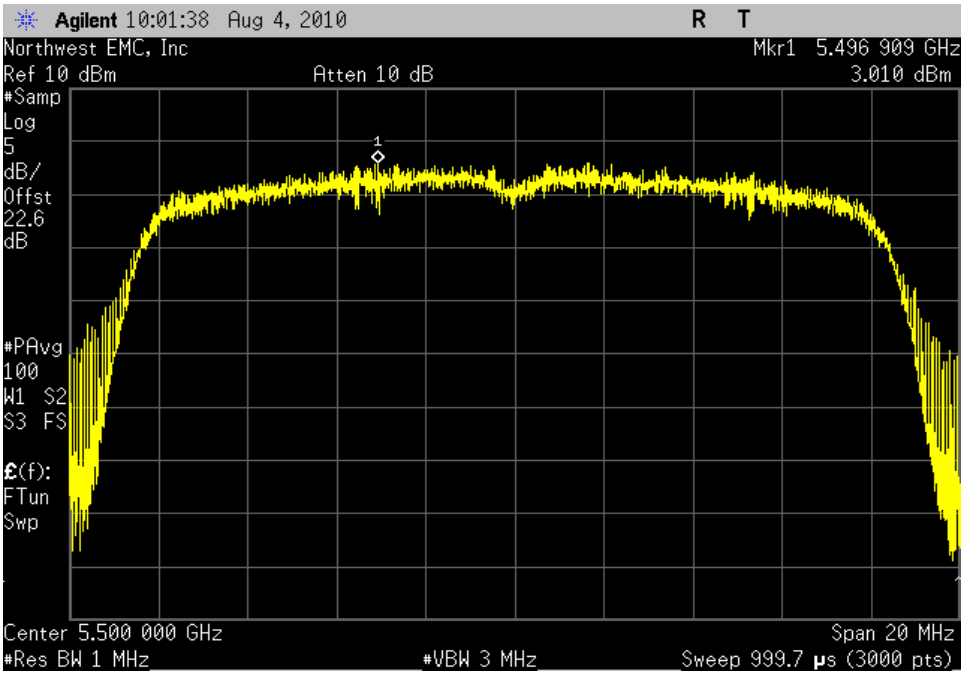


PEAK POWER SPECTRAL DENSITY

802.11(a) 36 Mbps, 5250 - 5350 MHz Band, Channel 64, High Channel					
Result:	Pass	**Value:**	3.4 dbm / MHz	**Limit:**	4 dBm / MHz

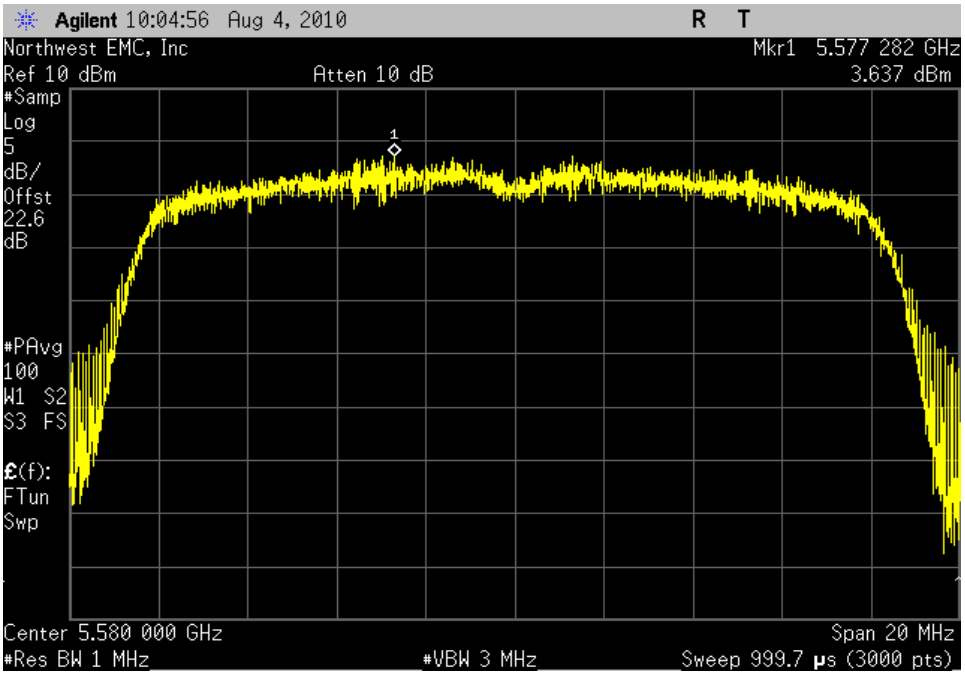


802.11(a) 36 Mbps, 5470 - 5725 MHz Band, Channel 100, Low Channel					
Result:	Pass	**Value:**	3.0 dbm / MHz	**Limit:**	4 dBm / MHz

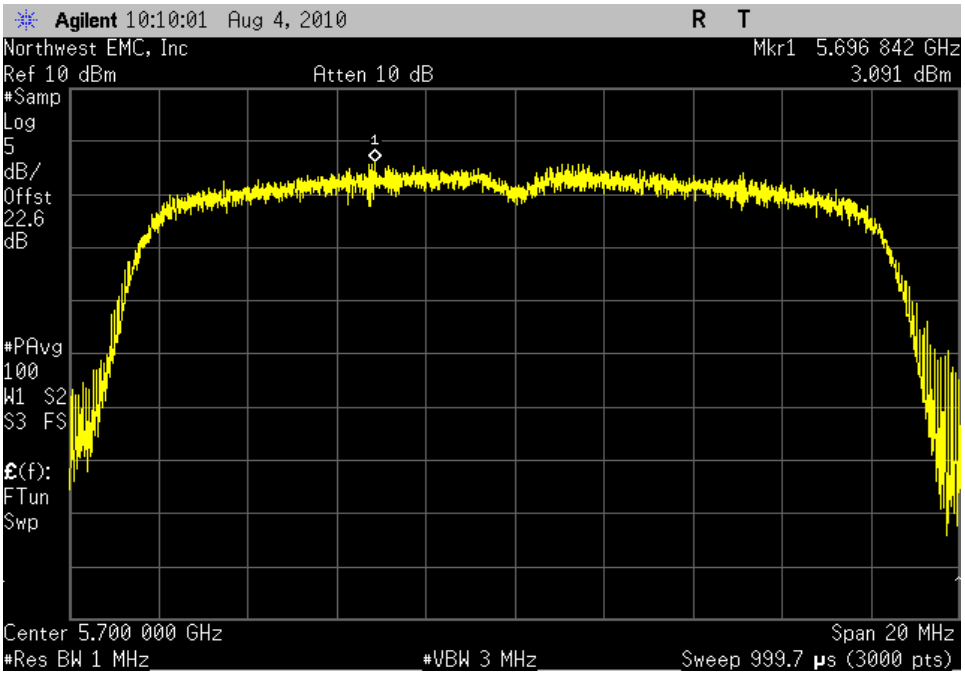


PEAK POWER SPECTRAL DENSITY

802.11(a) 36 Mbps, 5470 - 5725 MHz Band, Channel 116, Mid Channel					
Result:	Pass	**Value:**	3.6 dbm / MHz	**Limit:**	4 dBm / MHz

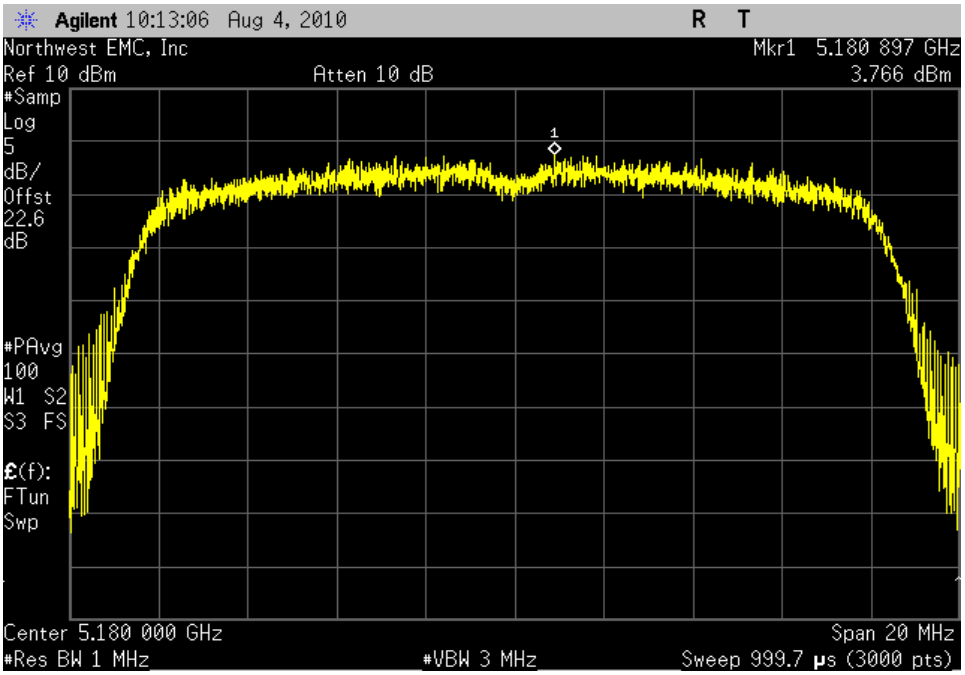


802.11(a) 36 Mbps, 5470 - 5725 MHz Band, Channel 140, High Channel					
Result:	Pass	**Value:**	3.1 dbm / MHz	**Limit:**	4 dBm / MHz

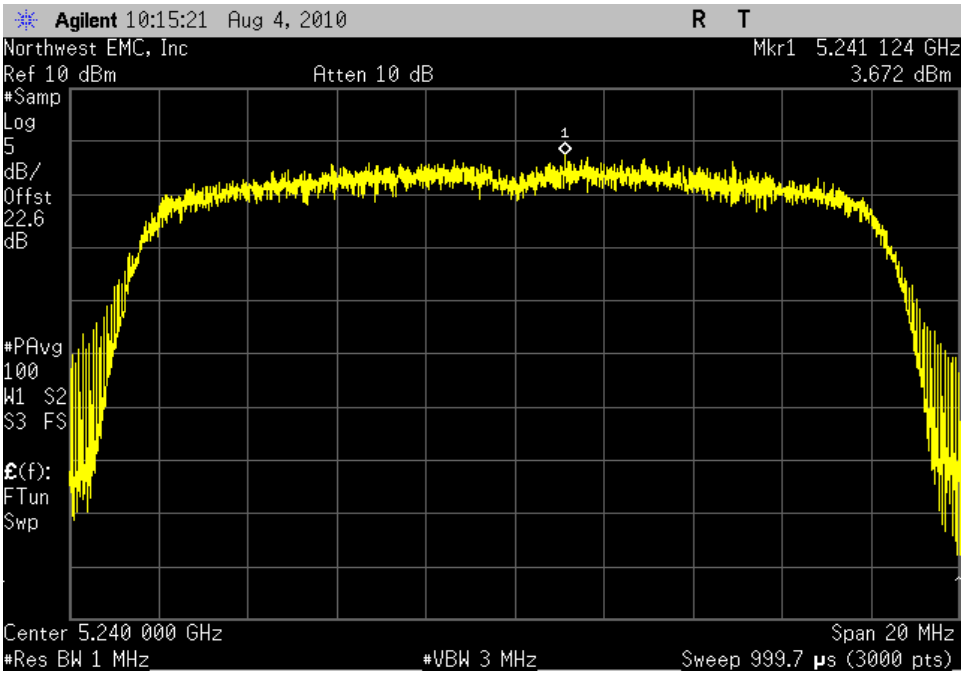


PEAK POWER SPECTRAL DENSITY

802.11(a) 54 Mbps, 5150 - 5250 MHz Band, Channel 36, Low Channel					
Result:	Pass	**Value:**	3.8 dbm / MHz	**Limit:**	4 dBm / MHz

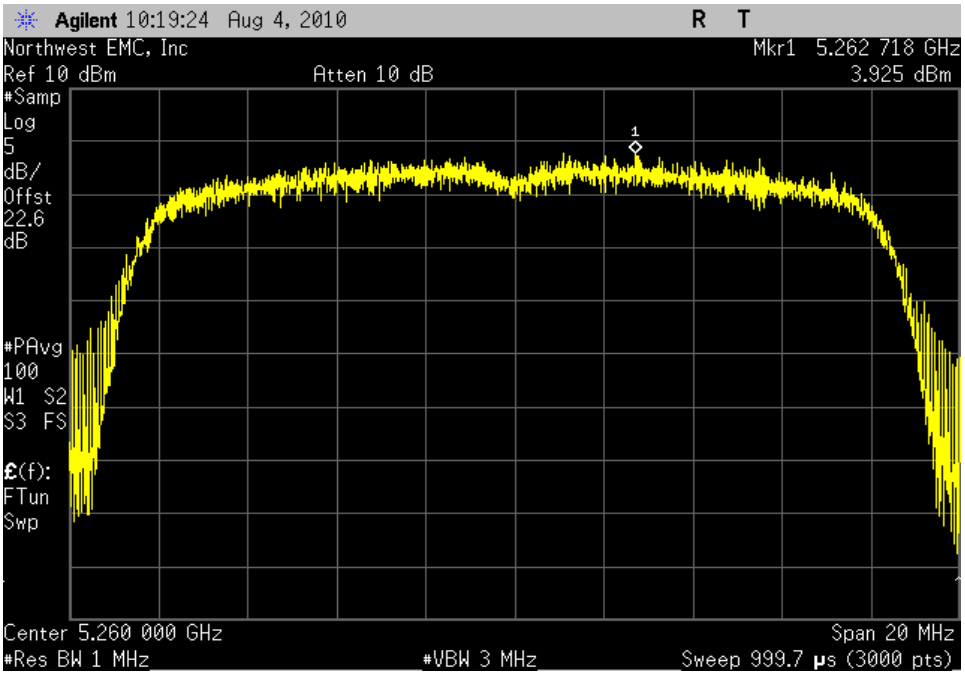


802.11(a) 54 Mbps, 5150 - 5250 MHz Band, Channel 48, High Channel					
Result:	Pass	**Value:**	3.7 dbm / MHz	**Limit:**	4 dBm / MHz

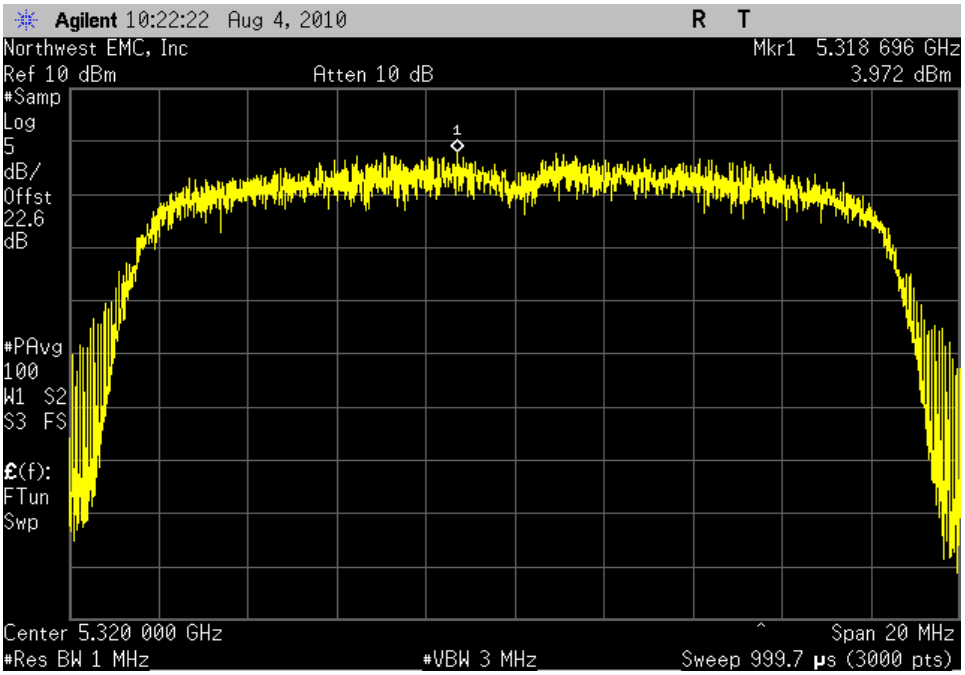


PEAK POWER SPECTRAL DENSITY

802.11(a) 54 Mbps, 5250 - 5350 MHz Band, Channel 52, Low Channel					
Result:	Pass	**Value:**	3.9 dbm / MHz	**Limit:**	4 dBm / MHz

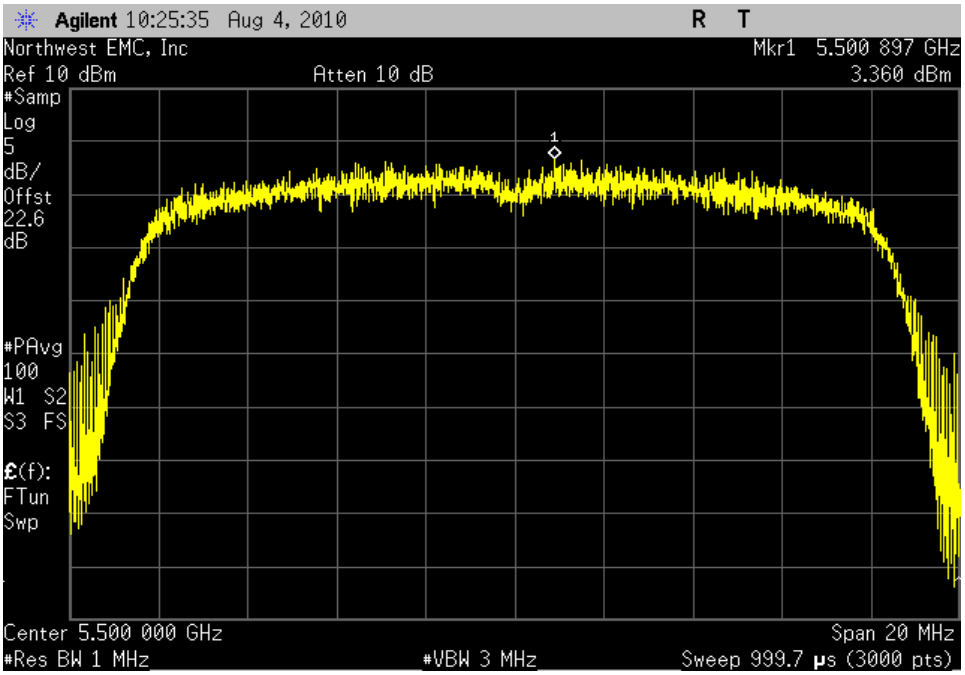


802.11(a) 54 Mbps, 5250 - 5350 MHz Band, Channel 64, High Channel					
Result:	Pass	**Value:**	4.0 dbm / MHz	**Limit:**	4 dBm / MHz

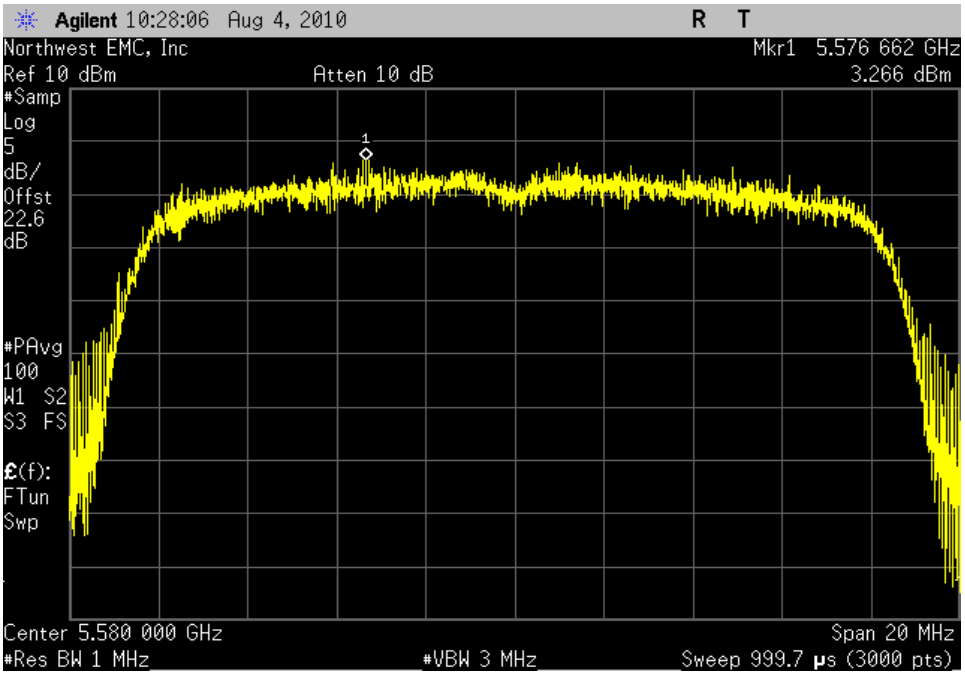


PEAK POWER SPECTRAL DENSITY

802.11(a) 54 Mbps, 5470 - 5725 MHz Band, Channel 100, Low Channel					
Result:	Pass	**Value:**	3.4 dbm / MHz	**Limit:**	4 dBm / MHz

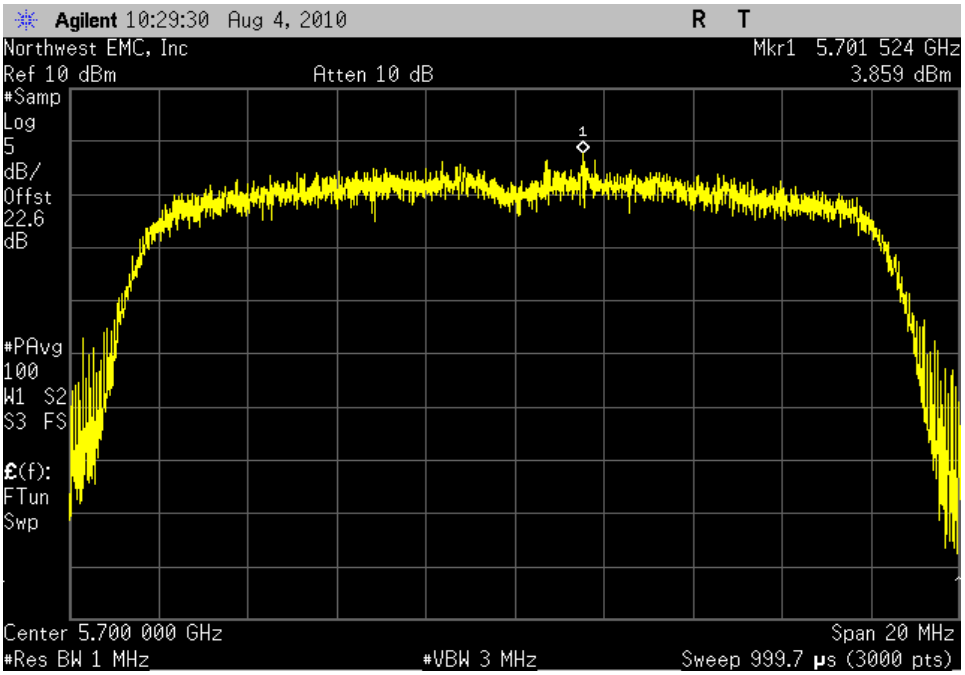


802.11(a) 54 Mbps, 5470 - 5725 MHz Band, Channel 116, Mid Channel					
Result:	Pass	**Value:**	3.3 dbm / MHz	**Limit:**	4 dBm / MHz

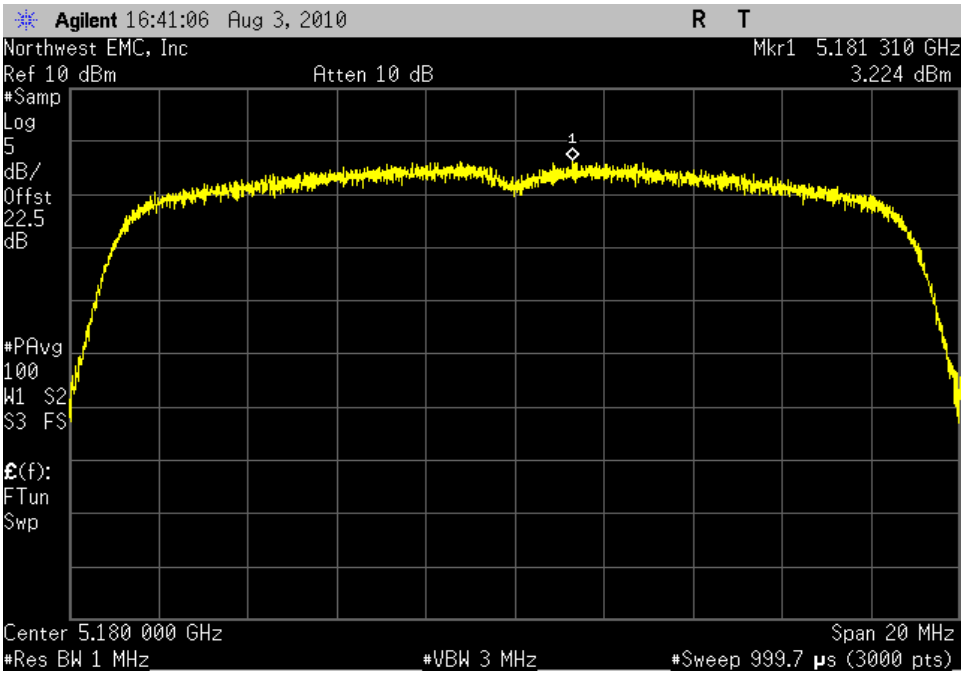


PEAK POWER SPECTRAL DENSITY

802.11(a) 54 Mbps, 5470 - 5725 MHz Band, Channel 140, High Channel					
Result:	Pass	**Value:**	3.9 dbm / MHz	**Limit:**	4 dBm / MHz

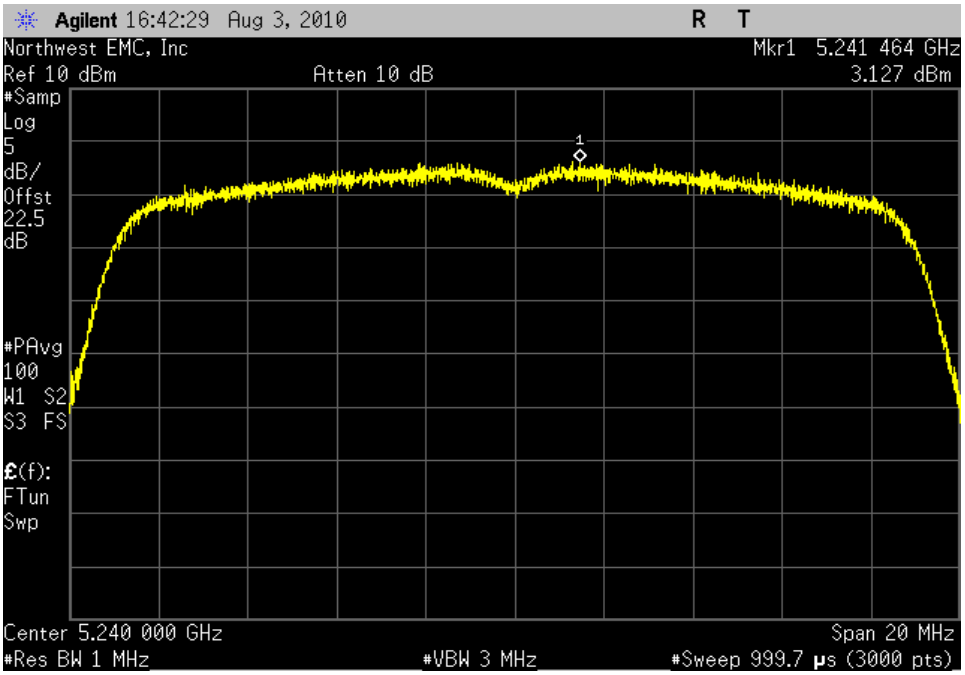


802.11(n) MCS0, 5150 - 5250 MHz Band, Channel 36, Low Channel					
Result:	Pass	**Value:**	3.2 dbm / MHz	**Limit:**	4 dBm / MHz

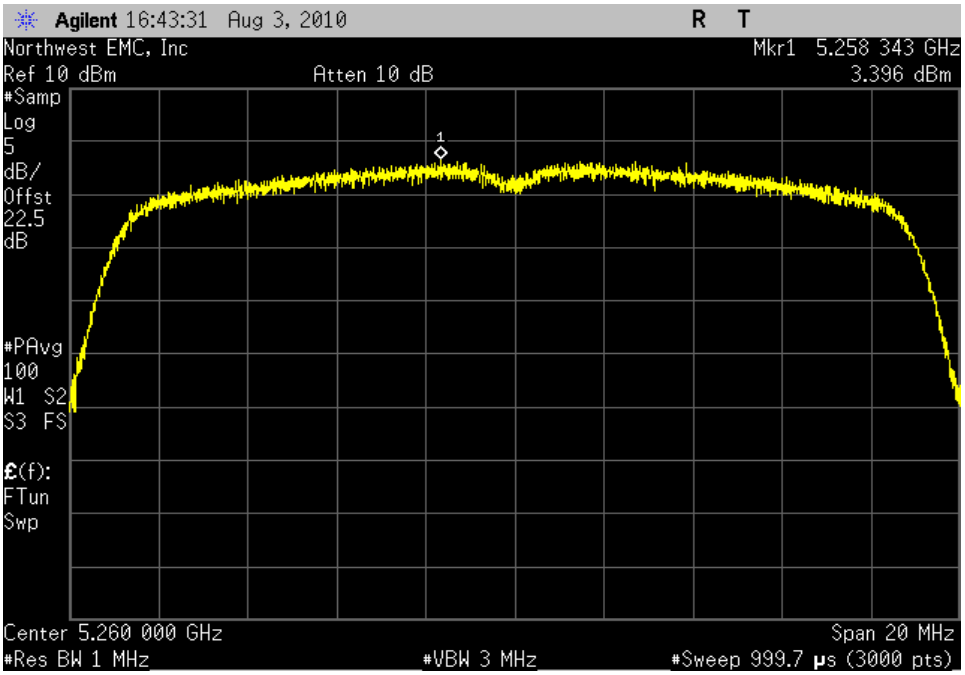


PEAK POWER SPECTRAL DENSITY

802.11(n) MCS0, 5150 - 5250 MHz Band, Channel 48, High Channel					
Result:	Pass	**Value:**	3.1 dbm / MHz	**Limit:**	4 dBm / MHz

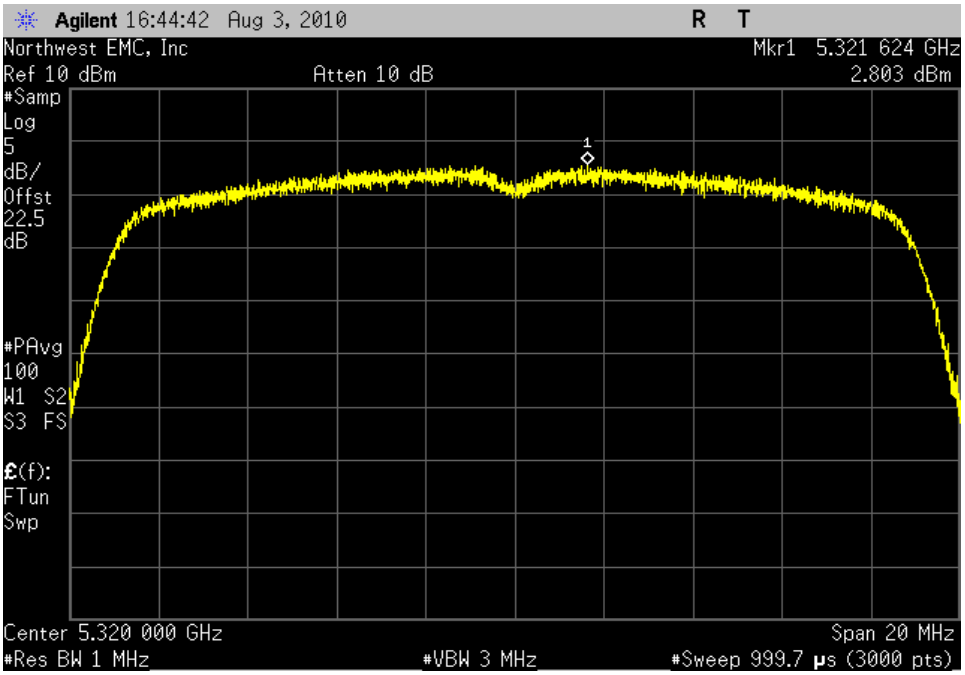


802.11(n) MCS0, 5250 - 5350 MHz Band, Channel 52, Low Channel					
Result:	Pass	**Value:**	3.4 dbm / MHz	**Limit:**	4 dBm / MHz

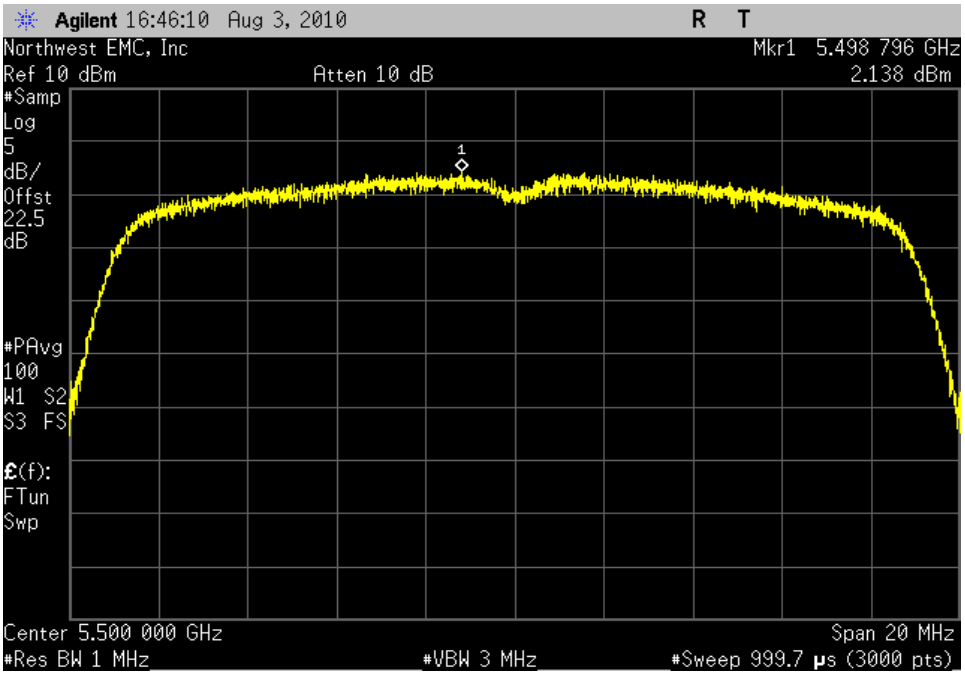


PEAK POWER SPECTRAL DENSITY

802.11(n) MCS0, 5250 - 5350 MHz Band, Channel 64, High Channel					
Result:	Pass	**Value:**	2.8 dbm / MHz	**Limit:**	4 dBm / MHz

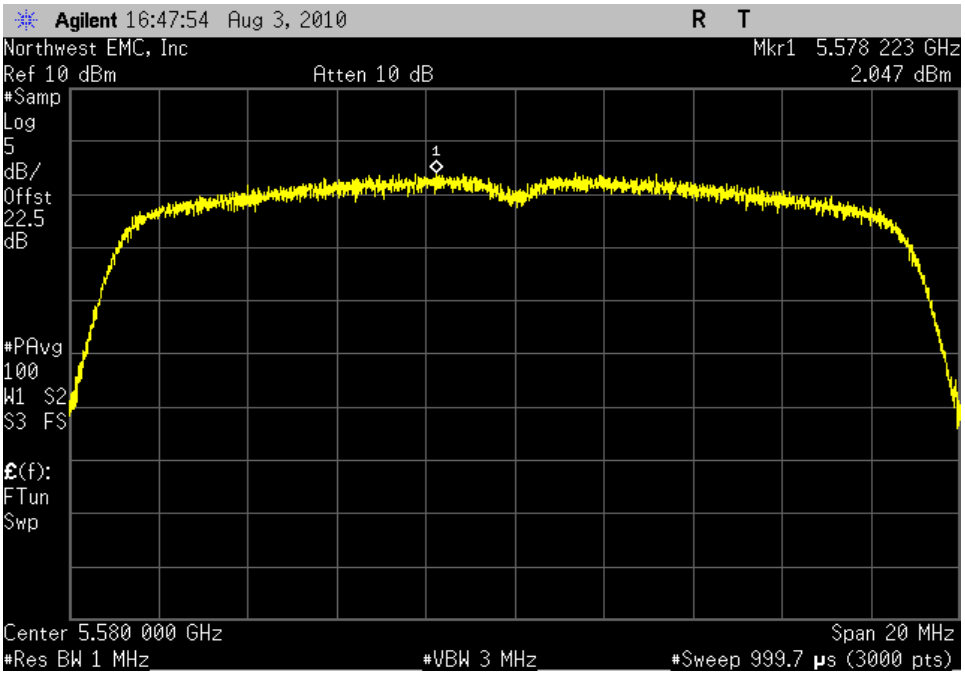


802.11(n) MCS0, 5470 - 5725 MHz Band, Channel 100, Low Channel					
Result:	Pass	**Value:**	2.1 dbm / MHz	**Limit:**	4 dBm / MHz

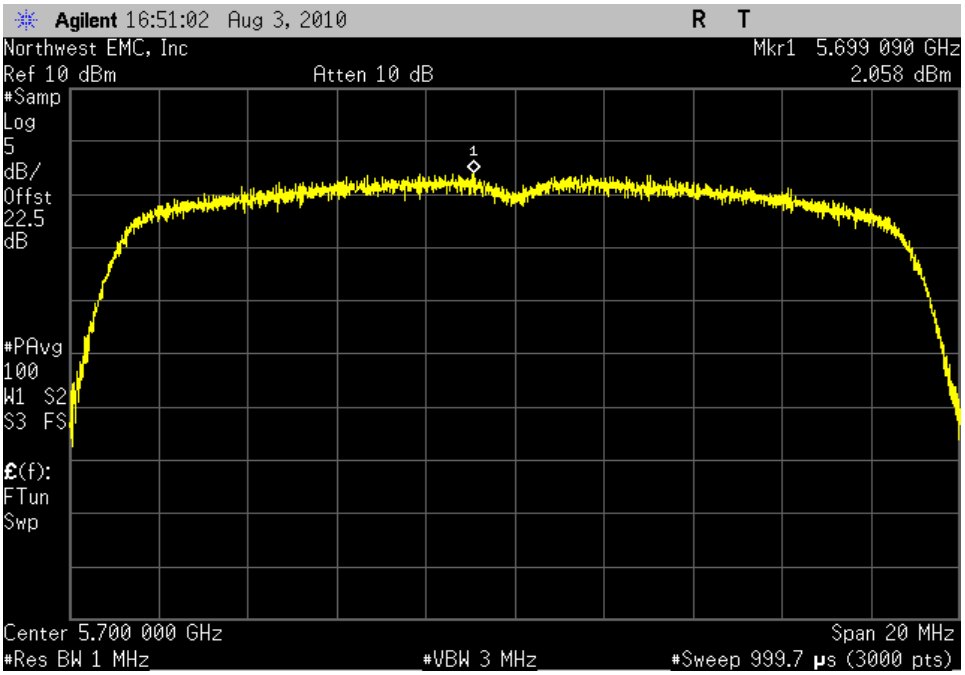


PEAK POWER SPECTRAL DENSITY

802.11(n) MCS0, 5470 - 5725 MHz Band, Channel 116, Mid Channel					
Result:	Pass	**Value:**	2.0 dbm / MHz	**Limit:**	4 dBm / MHz

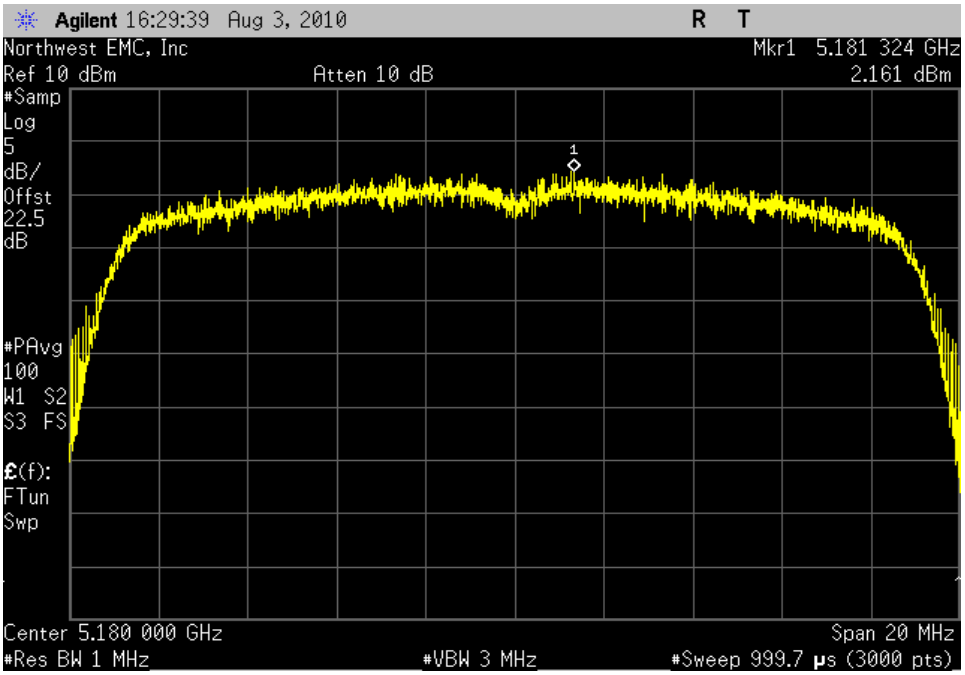


802.11(n) MCS0, 5470 - 5725 MHz Band, Channel 140, High Channel					
Result:	Pass	**Value:**	2.1 dbm / MHz	**Limit:**	4 dBm / MHz

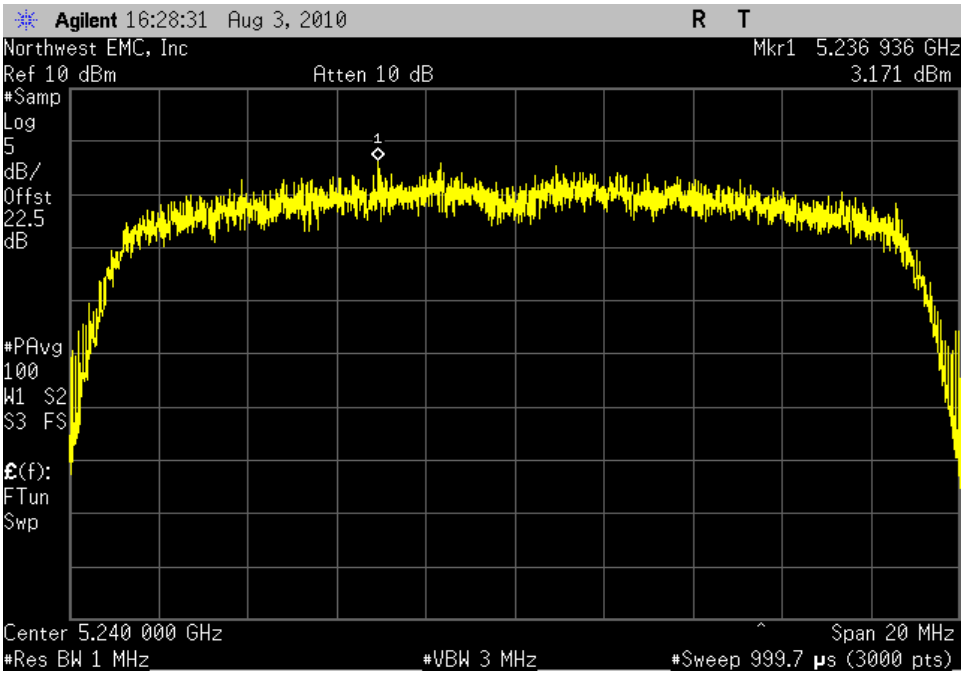


PEAK POWER SPECTRAL DENSITY

802.11(n) MCS7, 5150 - 5250 MHz Band, Channel 36, Low Channel					
Result:	Pass	**Value:**	2.2 dbm / MHz	**Limit:**	4 dBm / MHz

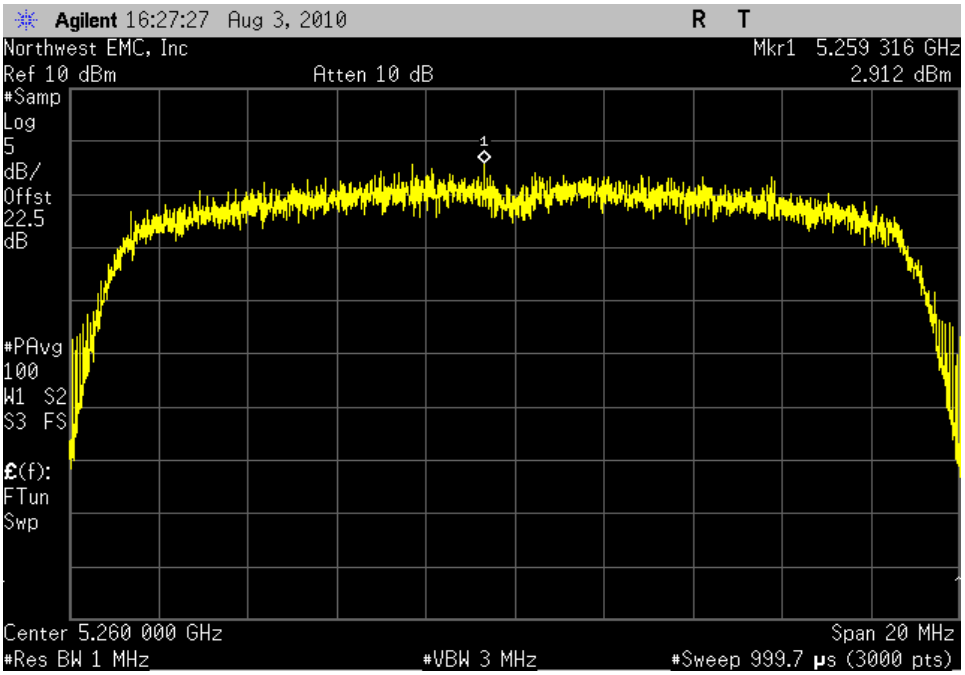


802.11(n) MCS7, 5150 - 5250 MHz Band, Channel 48, High Channel					
Result:	Pass	**Value:**	3.2 dbm / MHz	**Limit:**	4 dBm / MHz

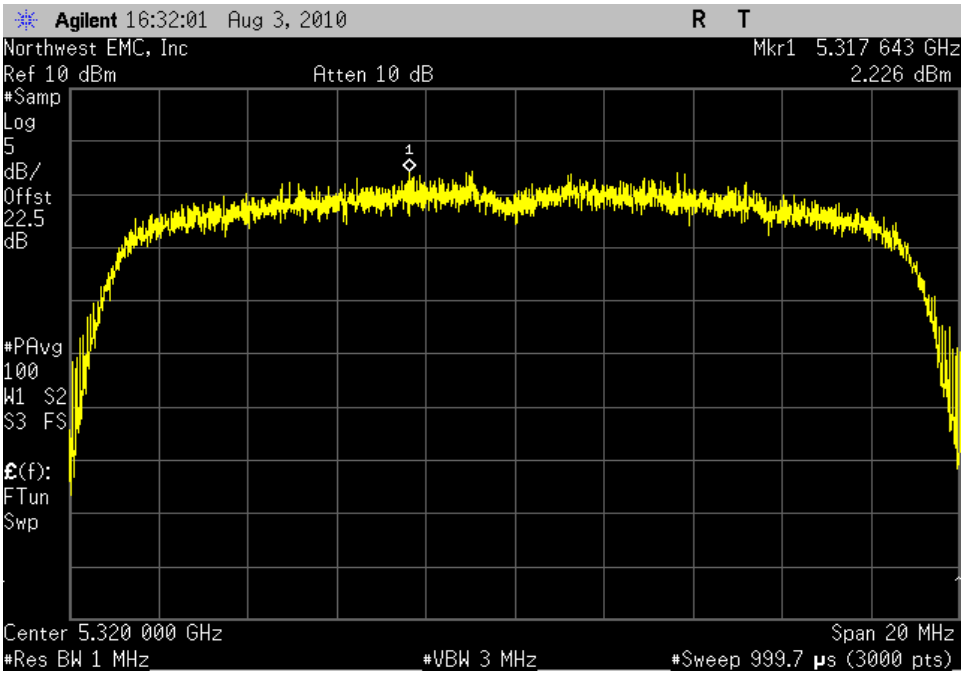


PEAK POWER SPECTRAL DENSITY

802.11(n) MCS7, 5250 - 5350 MHz Band, Channel 52, Low Channel					
Result:	Pass	**Value:**	2.9 dbm / MHz	**Limit:**	4 dBm / MHz

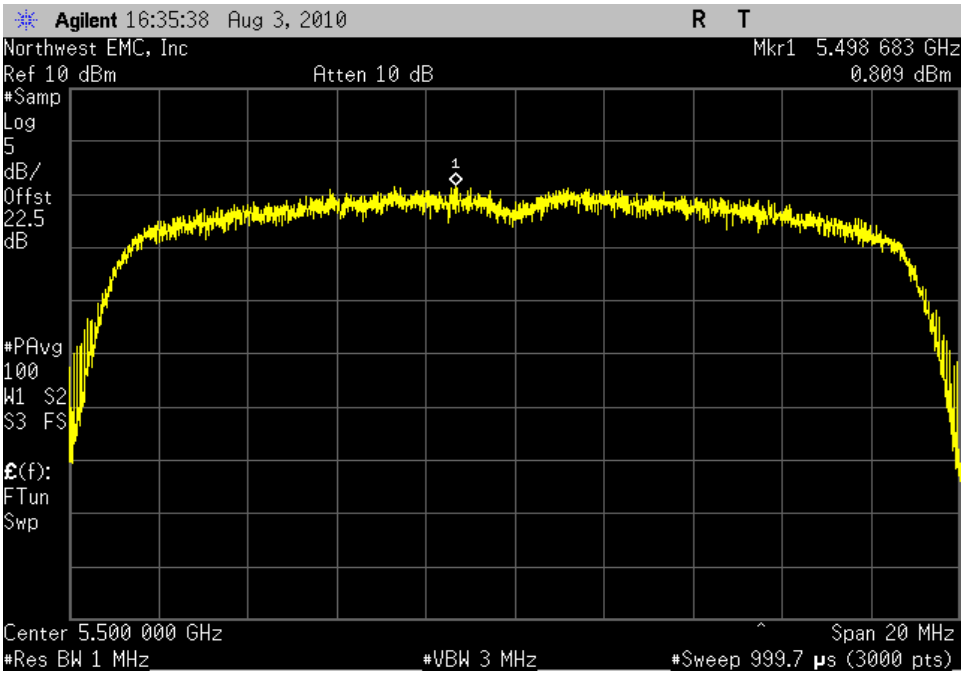


802.11(n) MCS7, 5250 - 5350 MHz Band, Channel 64, High Channel					
Result:	Pass	**Value:**	2.2 dbm / MHz	**Limit:**	4 dBm / MHz

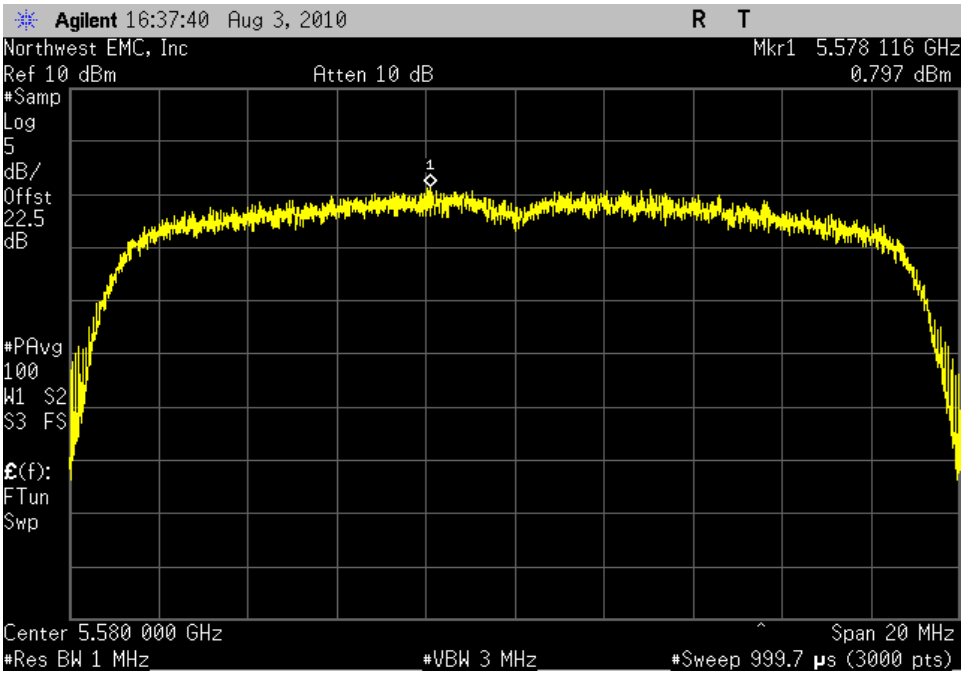


PEAK POWER SPECTRAL DENSITY

802.11(n) MCS7, 5470 - 5725 MHz Band, Channel 100, Low Channel					
Result:	Pass	**Value:**	0.8 dbm / MHz	**Limit:**	4 dBm / MHz

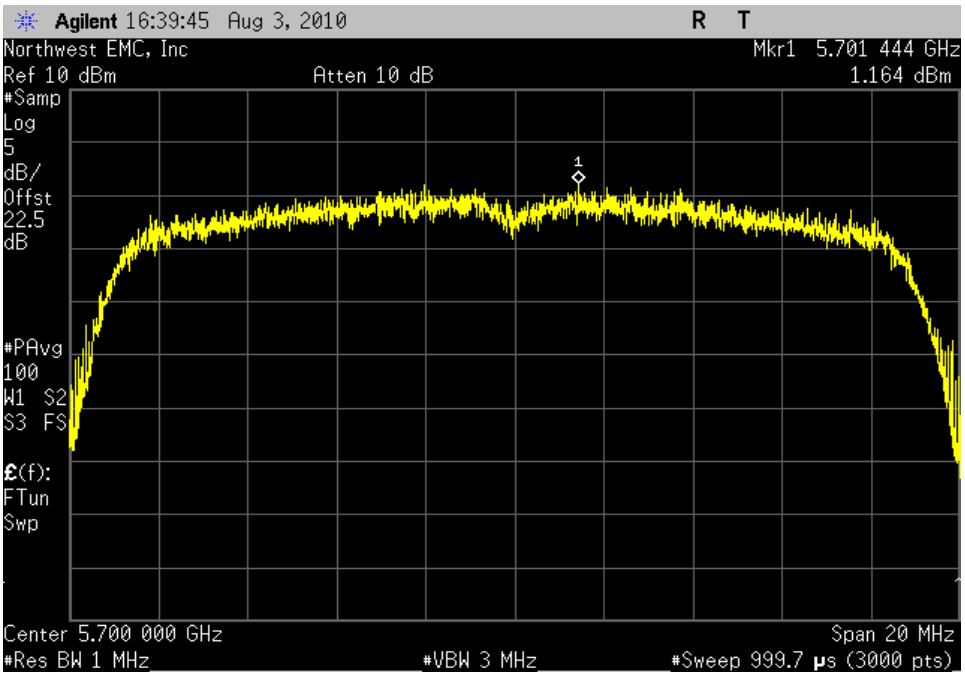


802.11(n) MCS7, 5470 - 5725 MHz Band, Channel 116, Mid Channel					
Result:	Pass	**Value:**	1.0 dbm / MHz	**Limit:**	4 dBm / MHz

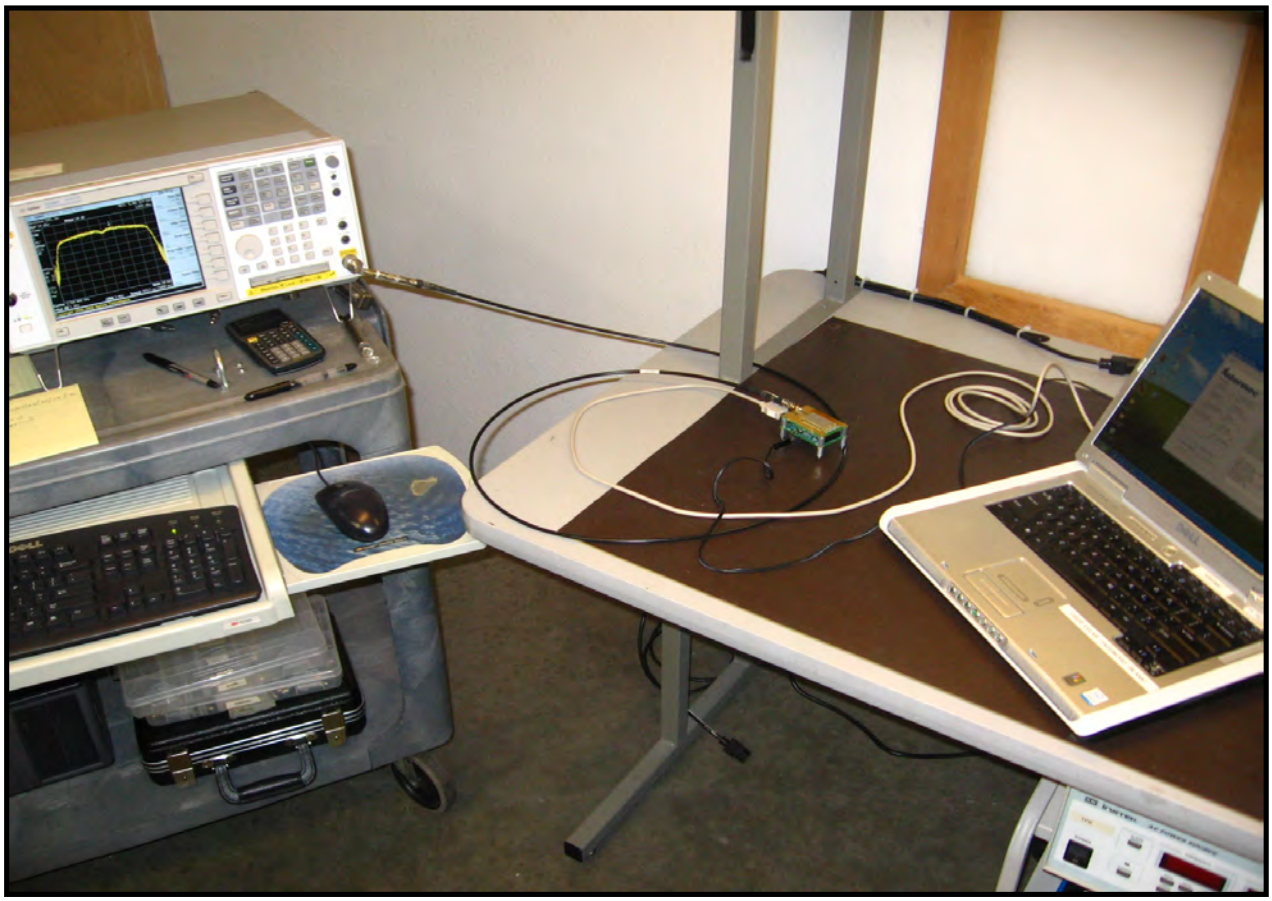


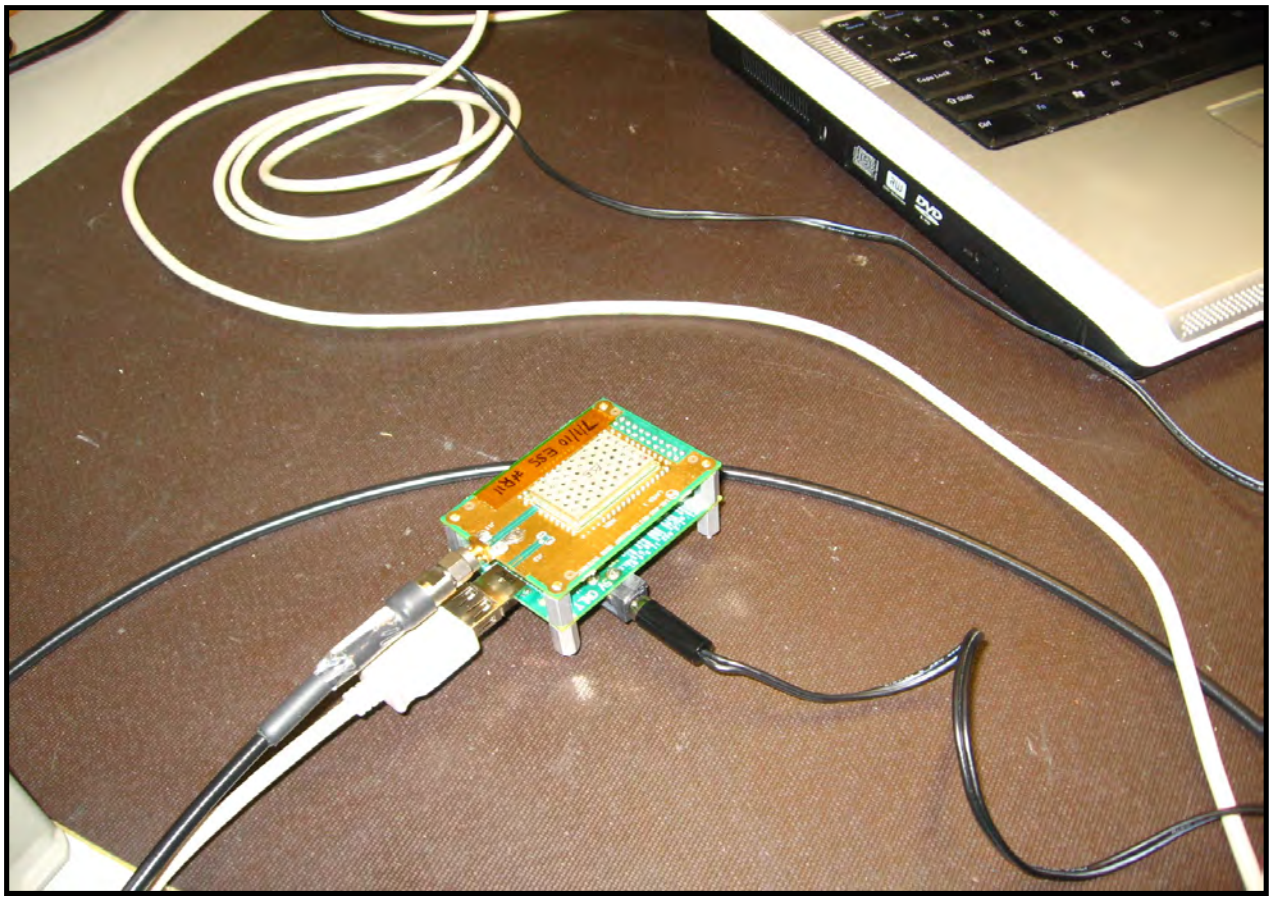
PEAK POWER SPECTRAL DENSITY

802.11(n) MCS7, 5470 - 5725 MHz Band, Channel 140, High Channel					
Result:	Pass	**Value:**	1.2 dbm / MHz	**Limit:**	4 dBm / MHz



PEAK POWER SPECTRAL DENSITY





PEAK EXCURSION

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Spectrum Analyzer	Agilent	E4440A	AFD	6/1/2009	24
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
26 GHz DC Block, SMA	Pasternack	PE8210	AME	10/19/2009	13
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/21/2009	13
Attenuator, 6 dB, 'SMA'	N/A	93459 3330A-6	AUF	4/1/2010	13
Power Meter	Gigatronics	8651A	SPM	1/7/2010	13
Power Sensor	Gigatronics	80701A	SPL	1/7/2010	13
Signal Generator	Agilent	E8257D	TGX	12/10/2008	24

MEASUREMENT UNCERTAINTY

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

TEST DESCRIPTION

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

XMit 2010.07.29

EUT:	RC12	Work Order:	INMC0575
Serial Number:	R11	Date:	08/04/10
Customer:	Intermec Technologies Corporation	Temperature:	21°C
Attendees:	None	Humidity:	38%
Project:	None	Barometric Pres.:	1012.5 mb
Tested by:	Rod Peloquin	Power: 5VDC	Job Site: EV06

TEST SPECIFICATIONS	Test Method
FCC 15.407:2010	ANSI C63.10:2009

COMMENTS

None

DEVIATIONS FROM TEST STANDARD

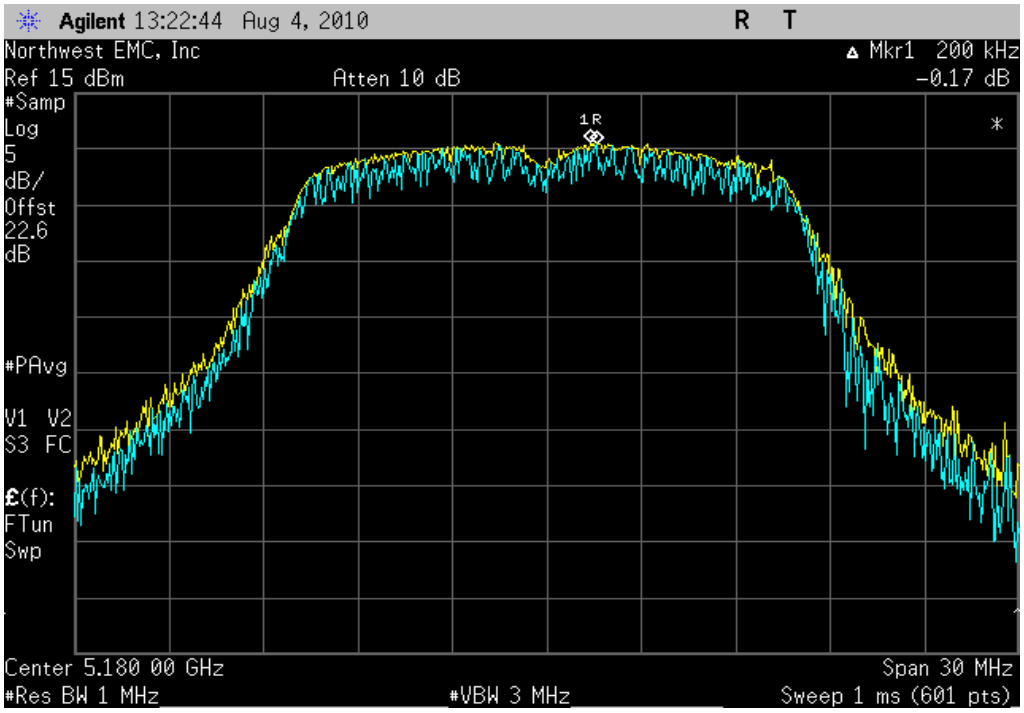
No deviations

Configuration #	2	Signature

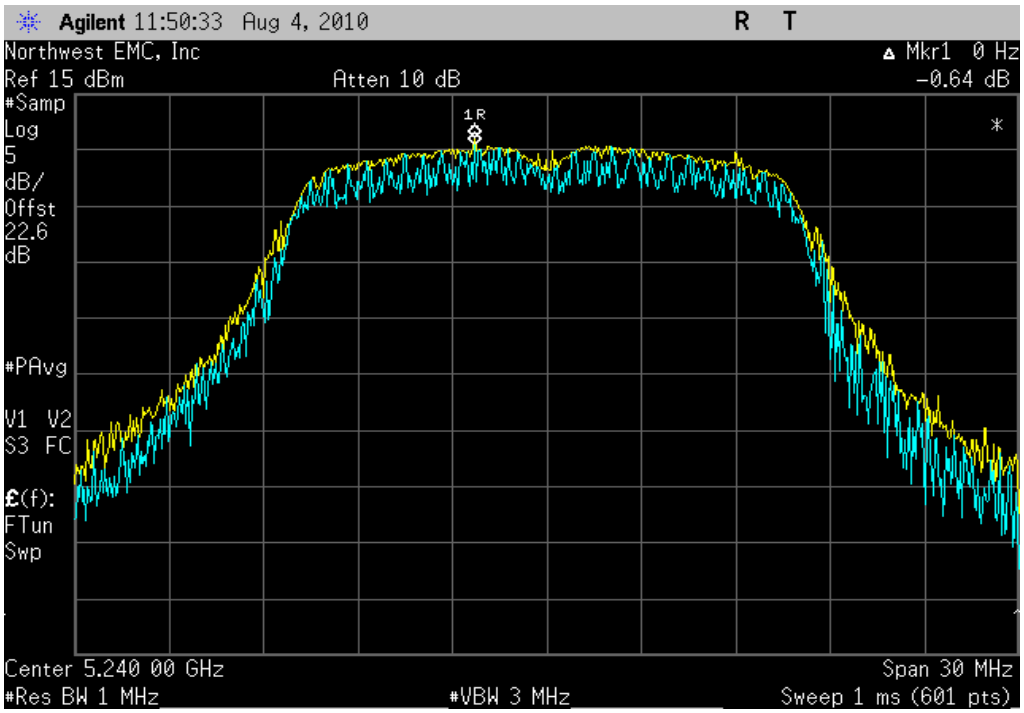
		Value	Limit	Results
802.11(a) 6 Mbps				
	5150 - 5250 MHz Band			
	Channel 36, Low Channel	0.2 dB	≤ 13 db	Pass
	Channel 48, High Channel	0.6 dB	≤ 13 db	Pass
	5250 - 5350 MHz Band			
	Channel 52, Low Channel	0.8 dB	≤ 13 db	Pass
	Channel 64, High Channel	0.9 dB	≤ 13 db	Pass
	5470 - 5725 MHz Band			
	Channel 100, Low Channel	1.2 dB	≤ 13 db	Pass
	Channel 116, Mid Channel	0.5 dB	≤ 13 db	Pass
	Channel 140, High Channel	0.6 dB	≤ 13 db	Pass
802.11(a) 36 Mbps				
	5150 - 5250 MHz Band			
	Channel 36, Low Channel	0.6 dB	≤ 13 db	Pass
	Channel 48, High Channel	0.4 dB	≤ 13 db	Pass
	5250 - 5350 MHz Band			
	Channel 52, Low Channel	1.1 dB	≤ 13 db	Pass
	Channel 64, High Channel	1.3 dB	≤ 13 db	Pass
	5470 - 5725 MHz Band			
	Channel 100, Low Channel	0.5 dB	≤ 13 db	Pass
	Channel 116, Mid Channel	1.5 dB	≤ 13 db	Pass
	Channel 140, High Channel	1.1 dB	≤ 13 db	Pass
802.11(a) 54 Mbps				
	5150 - 5250 MHz Band			
	Channel 36, Low Channel	0.5 dB	≤ 13 db	Pass
	Channel 48, High Channel	1.0 dB	≤ 13 db	Pass
	5250 - 5350 MHz Band			
	Channel 52, Low Channel	0.8 dB	≤ 13 db	Pass
	Channel 64, High Channel	0.8 dB	≤ 13 db	Pass
	5470 - 5725 MHz Band			
	Channel 100, Low Channel	0.4 dB	≤ 13 db	Pass
	Channel 116, Mid Channel	0.3 dB	≤ 13 db	Pass
	Channel 140, High Channel	0.9 dB	≤ 13 db	Pass
802.11(n) MCS0				
	5150 - 5250 MHz Band			
	Channel 36, Low Channel	0.2 dB	≤ 13 db	Pass
	Channel 48, High Channel	0.8 dB	≤ 13 db	Pass
	5250 - 5350 MHz Band			
	Channel 52, Low Channel	0.8 dB	≤ 13 db	Pass
	Channel 64, High Channel	0.7 dB	≤ 13 db	Pass
	5470 - 5725 MHz Band			
	Channel 100, Low Channel	0.1 dB	≤ 13 db	Pass
	Channel 116, Mid Channel	0.3 dB	≤ 13 db	Pass
	Channel 140, High Channel	1.2 dB	≤ 13 db	Pass
802.11(n) MCS7				
	5150 - 5250 MHz Band			
	Channel 36, Low Channel	0.0 dB	≤ 13 db	Pass
	Channel 48, High Channel	0.0 dB	≤ 13 db	Pass
	5250 - 5350 MHz Band			
	Channel 52, Low Channel	0.8 dB	≤ 13 db	Pass
	Channel 64, High Channel	0.6 dB	≤ 13 db	Pass
	5470 - 5725 MHz Band			
	Channel 100, Low Channel	0.9 dB	≤ 13 db	Pass
	Channel 116, Mid Channel	0.2 dB	≤ 13 db	Pass
	Channel 140, High Channel	1.5 dB	≤ 13 db	Pass

PEAK EXCURSION

802.11(a) 6 Mbps, 5150 - 5250 MHz Band, Channel 36, Low Channel					
Result:	Pass	**Value:**	0.2 dB	**Limit:**	≤ 13 db

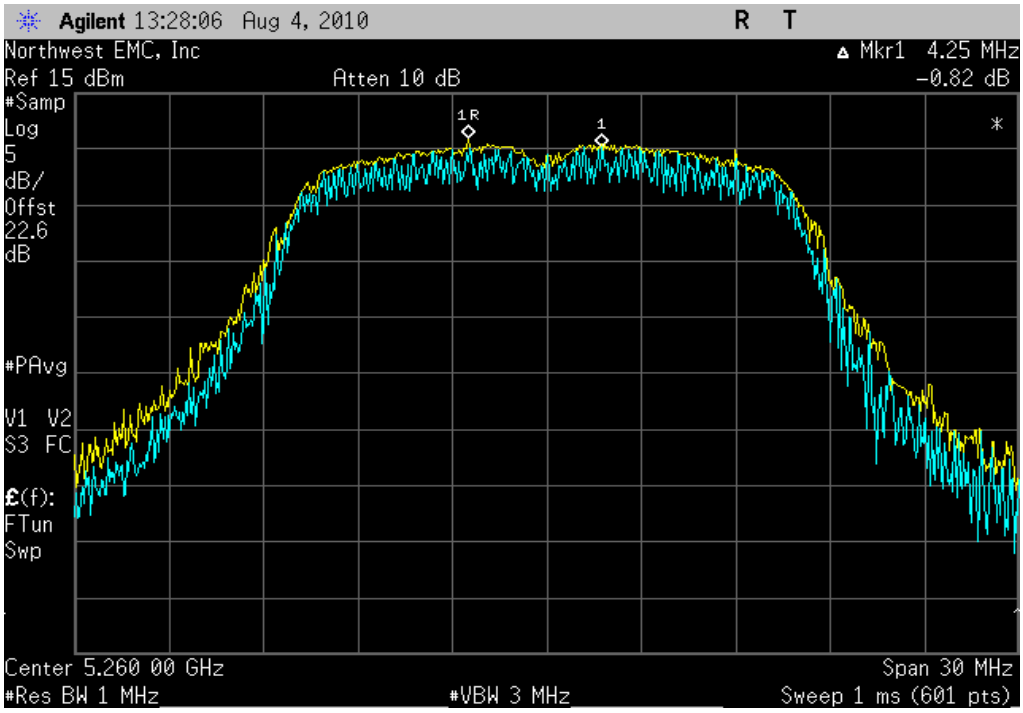


802.11(a) 6 Mbps, 5150 - 5250 MHz Band, Channel 48, High Channel					
Result:	Pass	**Value:**	0.6 dB	**Limit:**	≤ 13 db

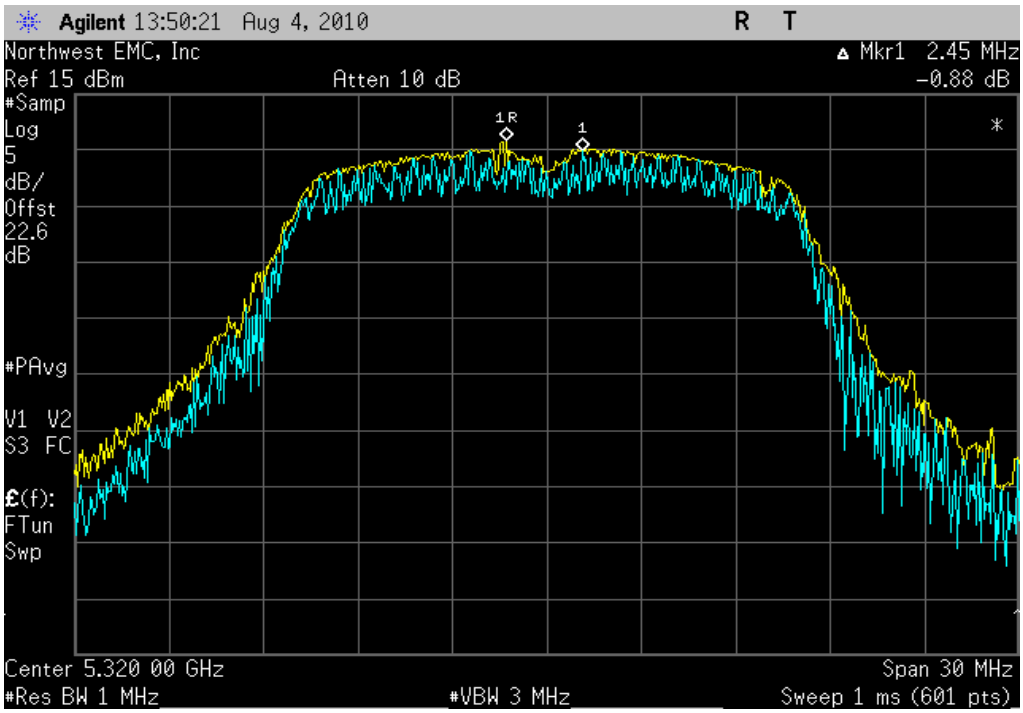


PEAK EXCURSION

802.11(a) 6 Mbps, 5250 - 5350 MHz Band, Channel 52, Low Channel					
Result:	Pass	**Value:**	0.8 dB	**Limit:**	≤ 13 db

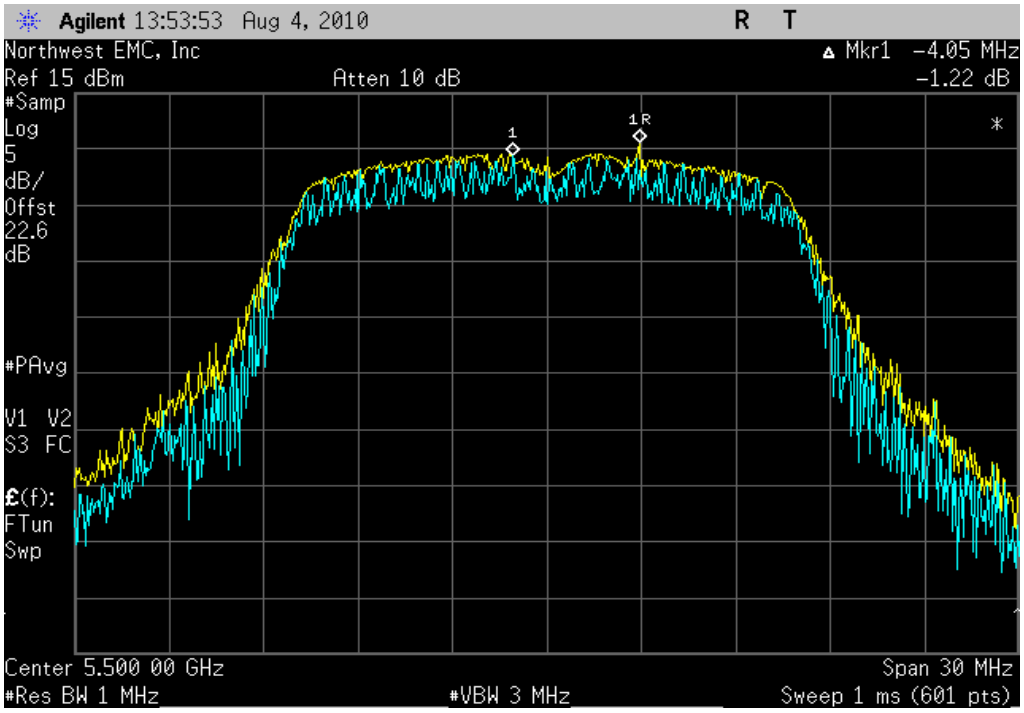


802.11(a) 6 Mbps, 5250 - 5350 MHz Band, Channel 64, High Channel					
Result:	Pass	**Value:**	0.9 dB	**Limit:**	≤ 13 db

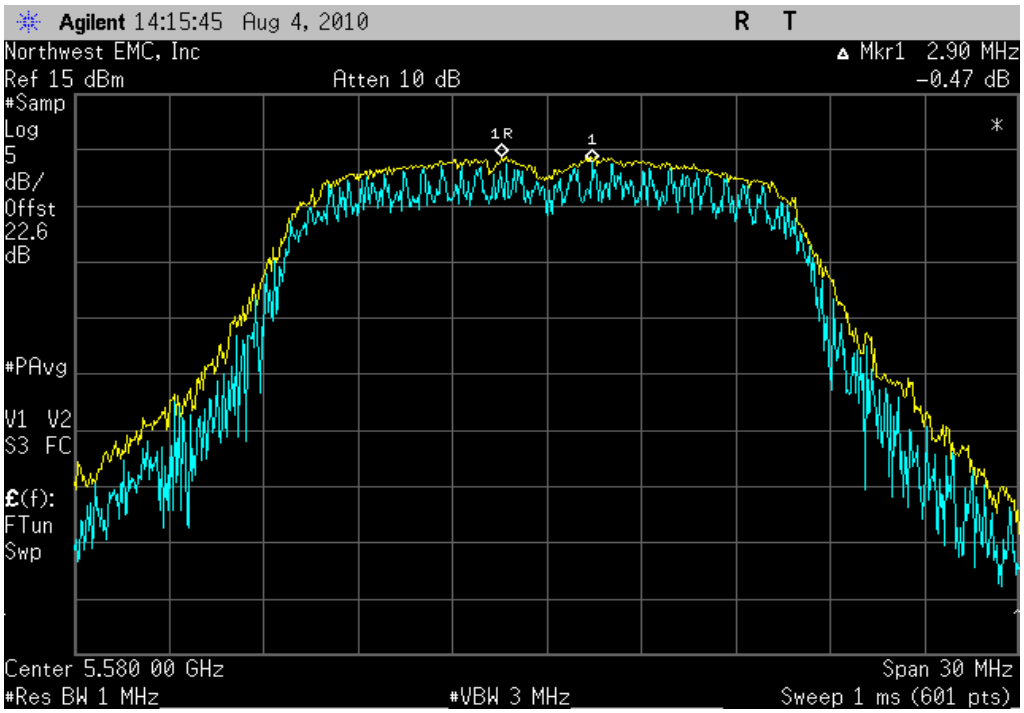


PEAK EXCURSION

802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 100, Low Channel					
Result:	Pass	**Value:**	1.2 dB	**Limit:**	≤ 13 db

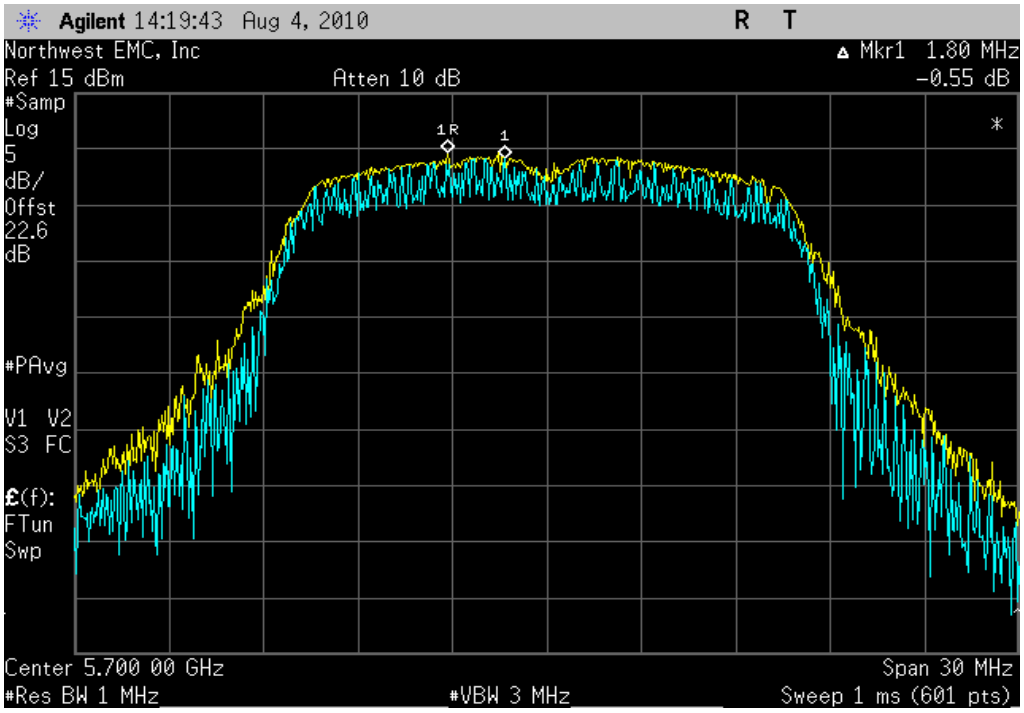


802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 116, Mid Channel					
Result:	Pass	**Value:**	0.5 dB	**Limit:**	≤ 13 db

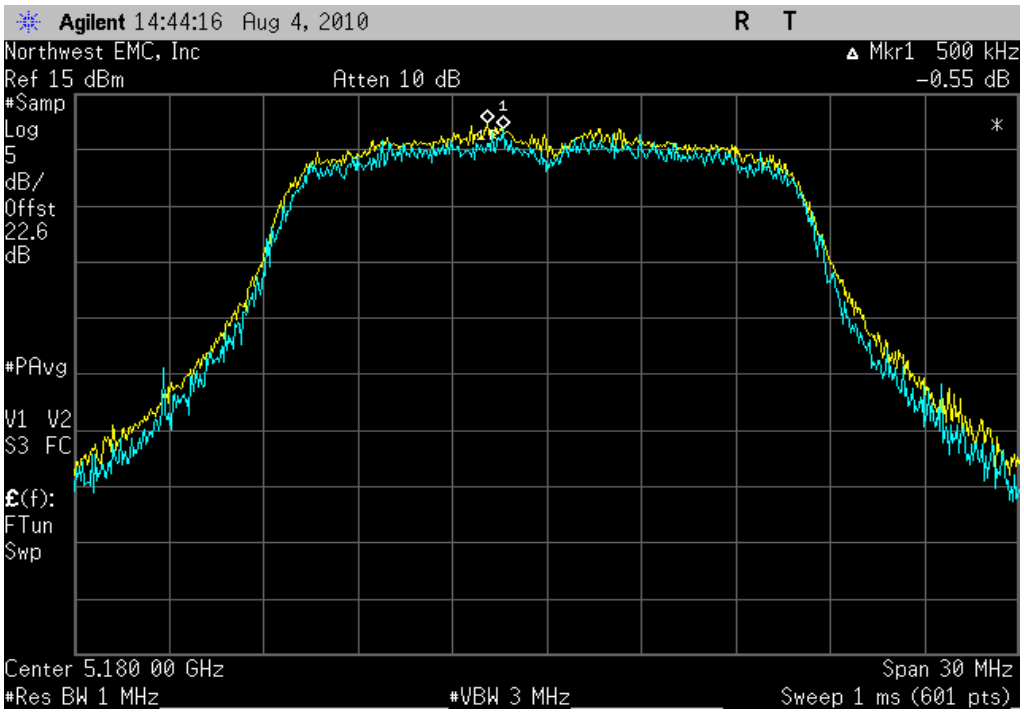


PEAK EXCURSION

802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 140, High Channel					
Result:	Pass	**Value:**	0.6 dB	**Limit:**	≤ 13 db

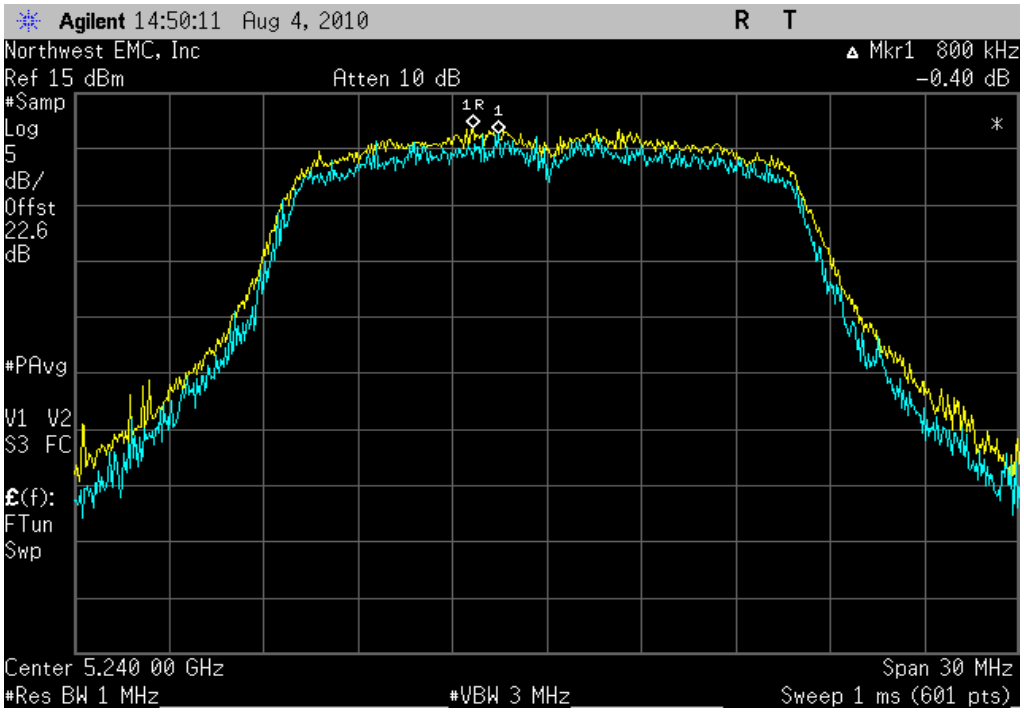


802.11(a) 36 Mbps, 5150 - 5250 MHz Band, Channel 36, Low Channel					
Result:	Pass	**Value:**	0.6 dB	**Limit:**	≤ 13 db

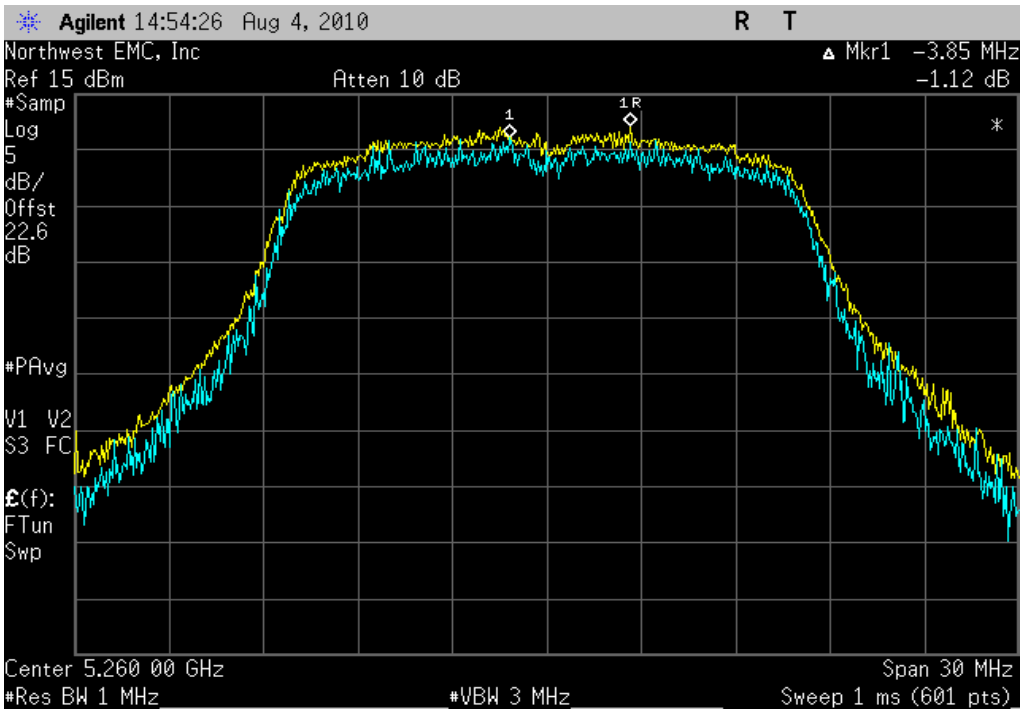


PEAK EXCURSION

802.11(a) 36 Mbps, 5150 - 5250 MHz Band, Channel 48, High Channel					
Result:	Pass	**Value:**	0.4 dB	**Limit:**	≤ 13 db

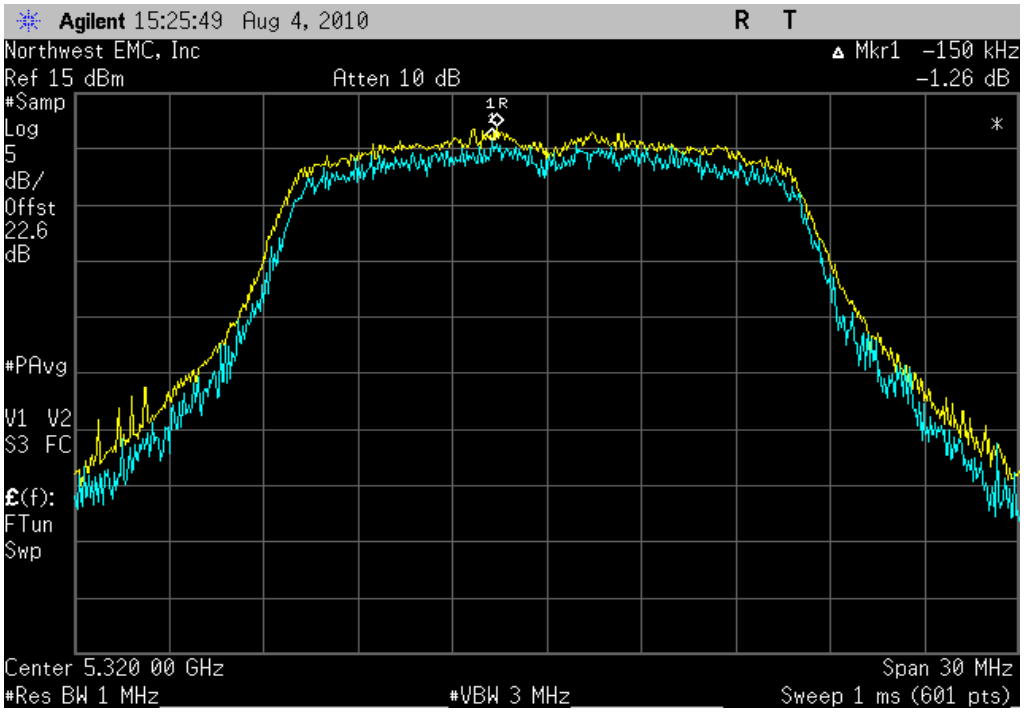


802.11(a) 36 Mbps, 5250 - 5350 MHz Band, Channel 52, Low Channel					
Result:	Pass	**Value:**	1.1 dB	**Limit:**	≤ 13 db

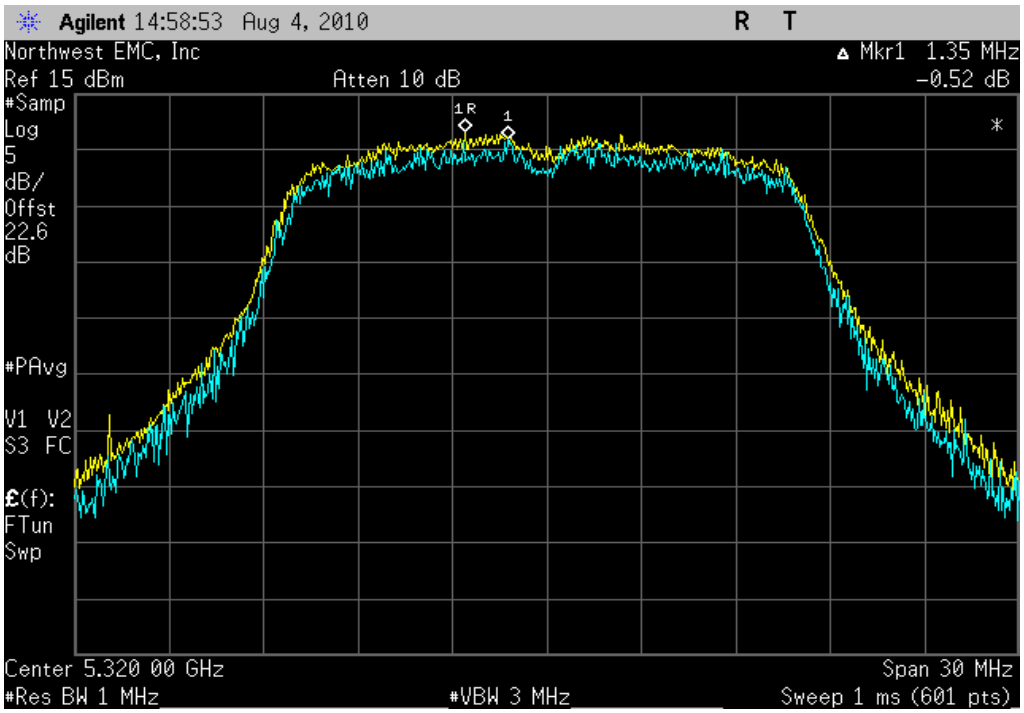


PEAK EXCURSION

802.11(a) 36 Mbps, 5250 - 5350 MHz Band, Channel 64, High Channel					
Result:	Pass	**Value:**	1.3 dB	**Limit:**	≤ 13 db

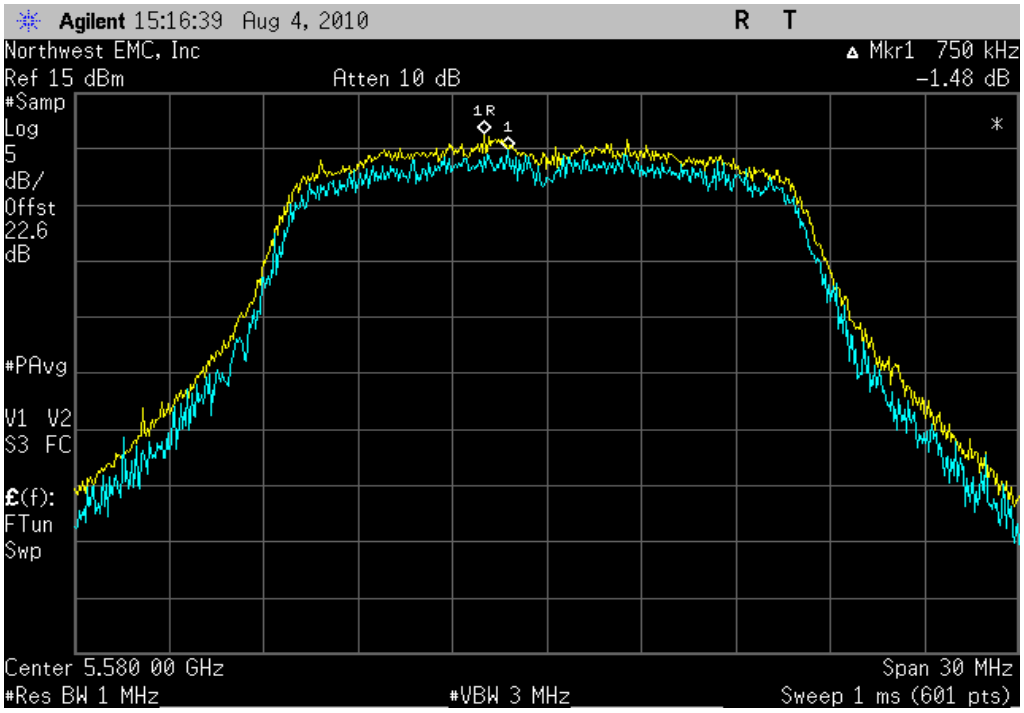


802.11(a) 36 Mbps, 5470 - 5725 MHz Band, Channel 100, Low Channel					
Result:	Pass	**Value:**	0.5 dB	**Limit:**	≤ 13 db

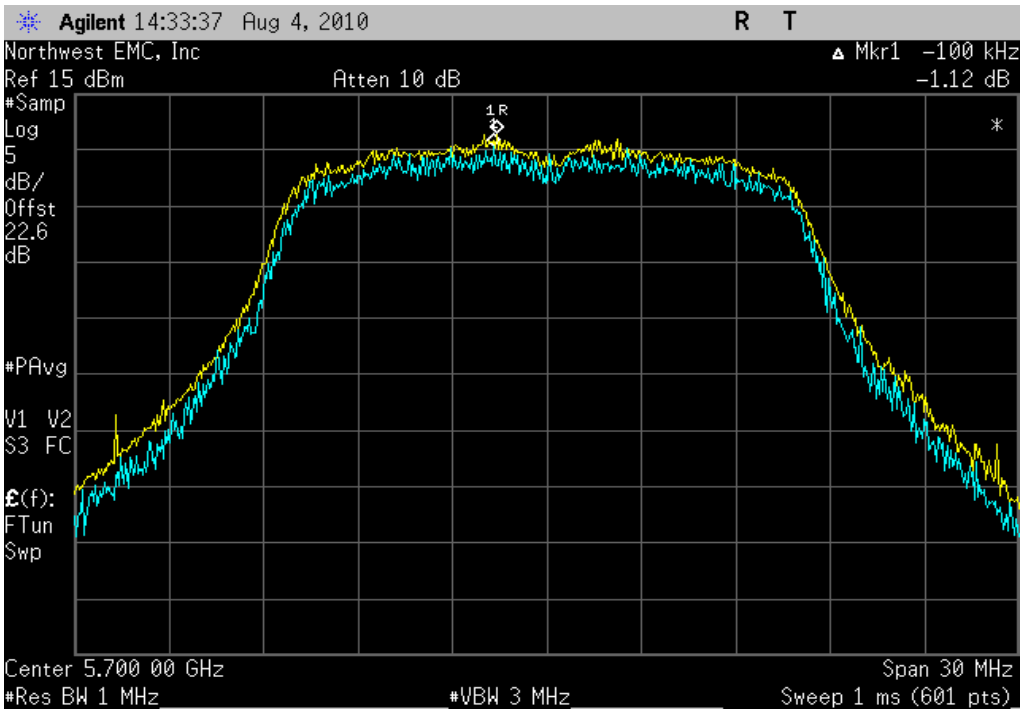


PEAK EXCURSION

802.11(a) 36 Mbps, 5470 - 5725 MHz Band, Channel 116, Mid Channel					
Result:	Pass	**Value:**	1.5 dB	**Limit:**	≤ 13 db

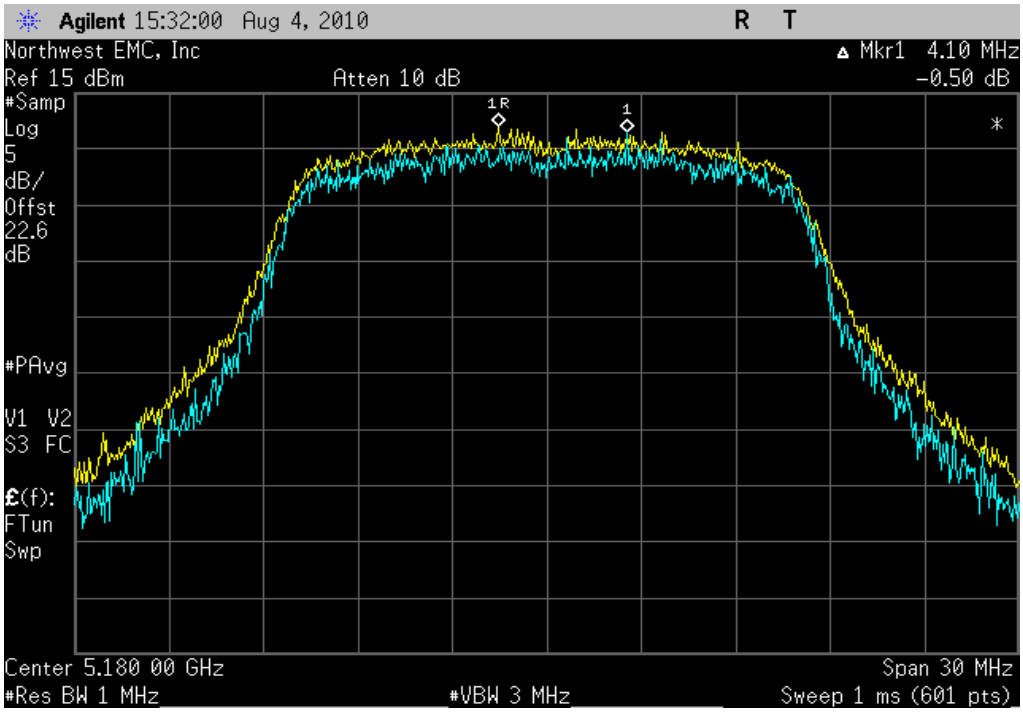


802.11(a) 36 Mbps, 5470 - 5725 MHz Band, Channel 140, High Channel					
Result:	Pass	**Value:**	1.1 dB	**Limit:**	≤ 13 db

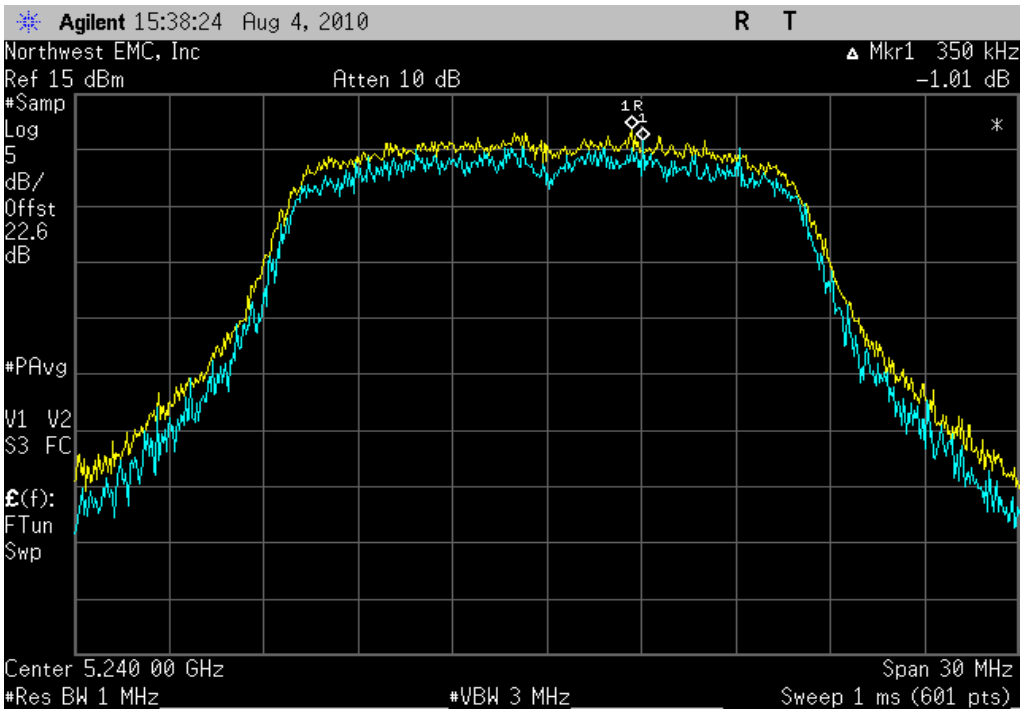


PEAK EXCURSION

802.11(a) 54 Mbps, 5150 - 5250 MHz Band, Channel 36, Low Channel					
Result:	Pass	**Value:**	0.5 dB	**Limit:**	≤ 13 db

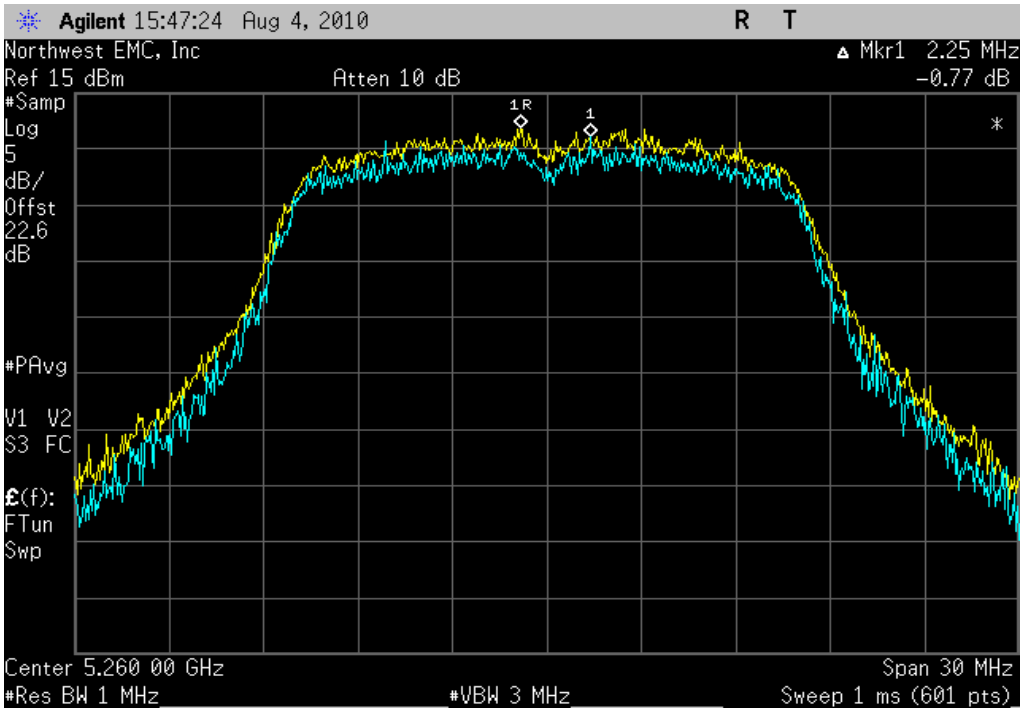


802.11(a) 54 Mbps, 5150 - 5250 MHz Band, Channel 48, High Channel					
Result:	Pass	**Value:**	1.0 dB	**Limit:**	≤ 13 db

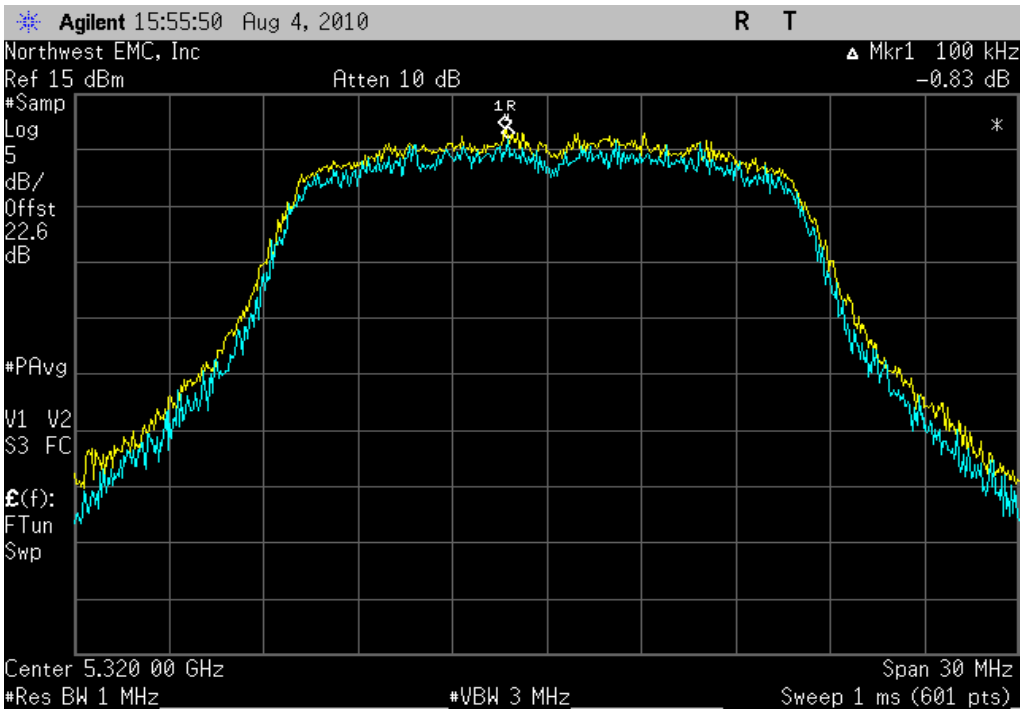


PEAK EXCURSION

802.11(a) 54 Mbps, 5250 - 5350 MHz Band, Channel 52, Low Channel					
Result:	Pass	**Value:**	0.8 dB	**Limit:**	≤ 13 db

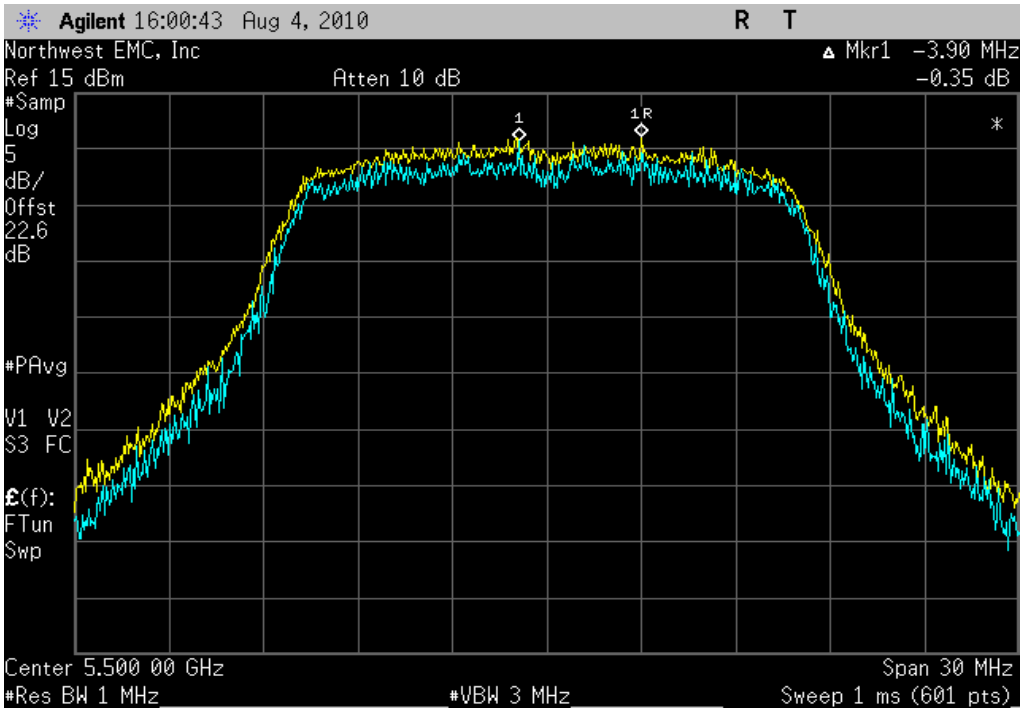


802.11(a) 54 Mbps, 5250 - 5350 MHz Band, Channel 64, High Channel					
Result:	Pass	**Value:**	0.8 dB	**Limit:**	≤ 13 db

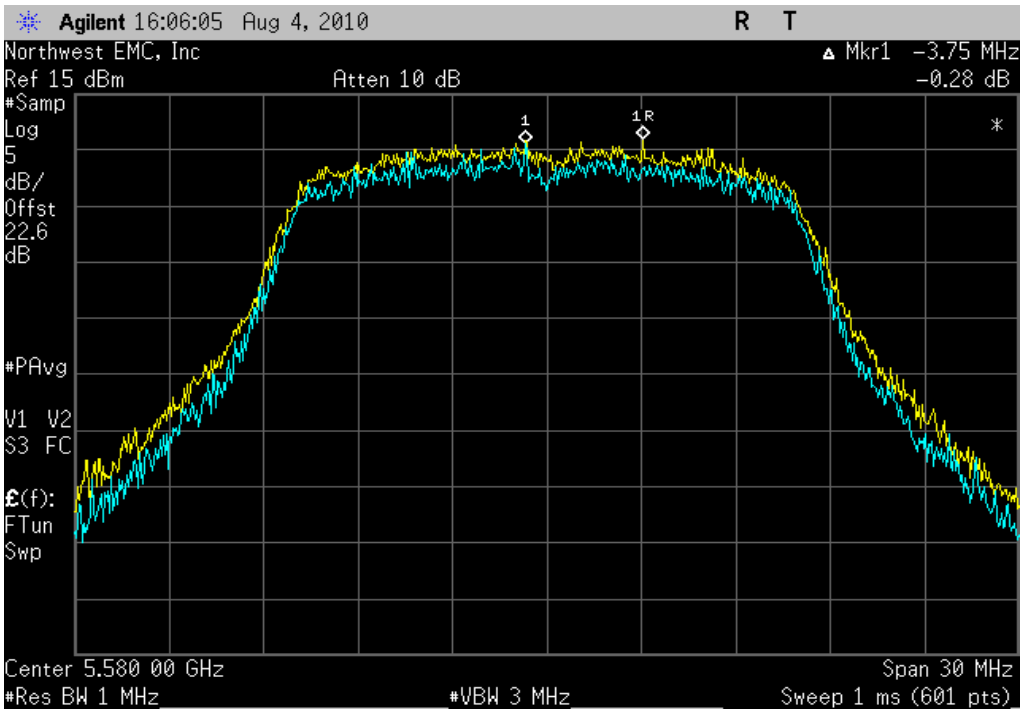


PEAK EXCURSION

802.11(a) 54 Mbps, 5470 - 5725 MHz Band, Channel 100, Low Channel					
Result:	Pass	**Value:**	0.4 dB	**Limit:**	≤ 13 db

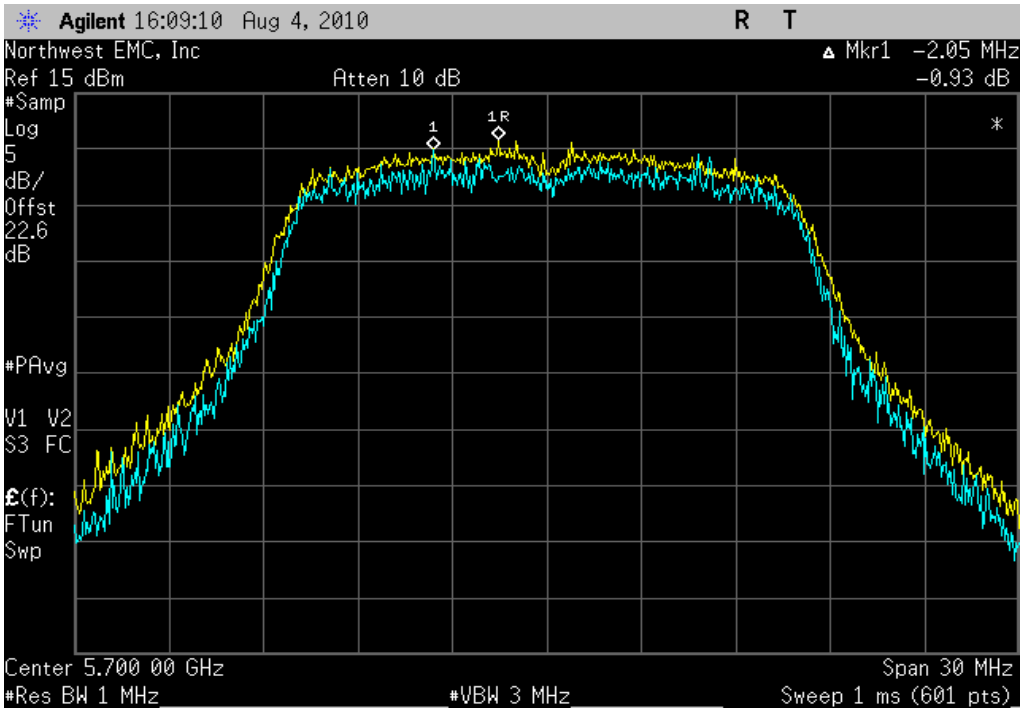


802.11(a) 54 Mbps, 5470 - 5725 MHz Band, Channel 116, Mid Channel					
Result:	Pass	**Value:**	0.3 dB	**Limit:**	≤ 13 db

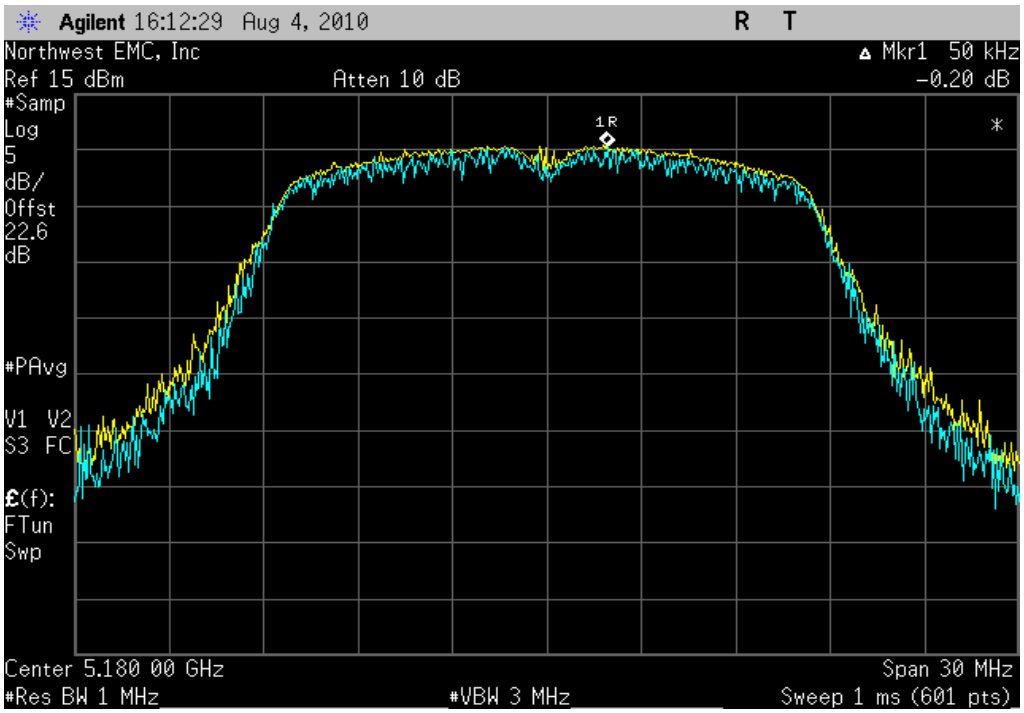


PEAK EXCURSION

802.11(a) 54 Mbps, 5470 - 5725 MHz Band, Channel 140, High Channel					
Result:	Pass	**Value:**	0.9 dB	**Limit:**	≤ 13 db

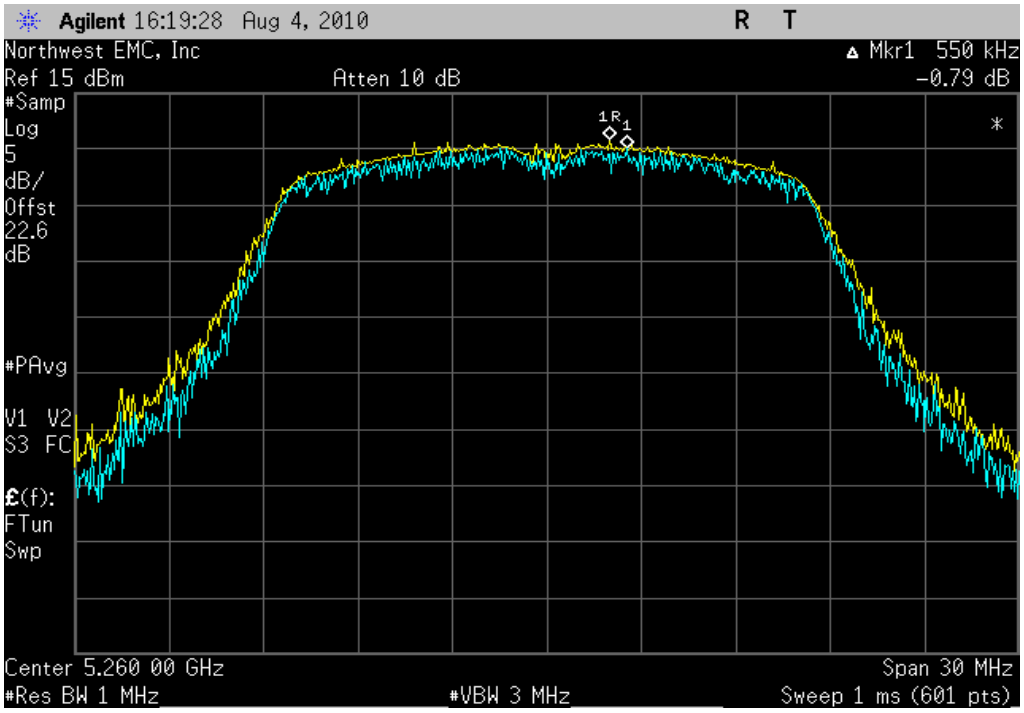


802.11(n) MCS0, 5150 - 5250 MHz Band, Channel 36, Low Channel					
Result:	Pass	**Value:**	0.2 dB	**Limit:**	≤ 13 db

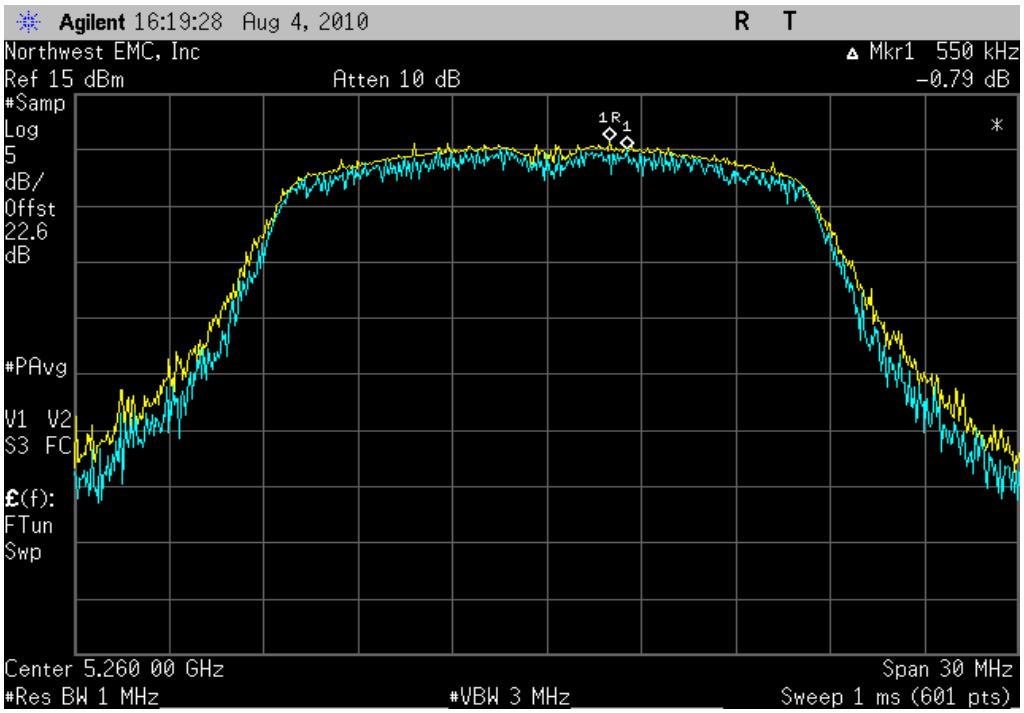


PEAK EXCURSION

802.11(n) MCS0, 5150 - 5250 MHz Band, Channel 48, High Channel					
Result:	Pass	**Value:**	0.8 dB	**Limit:**	≤ 13 db

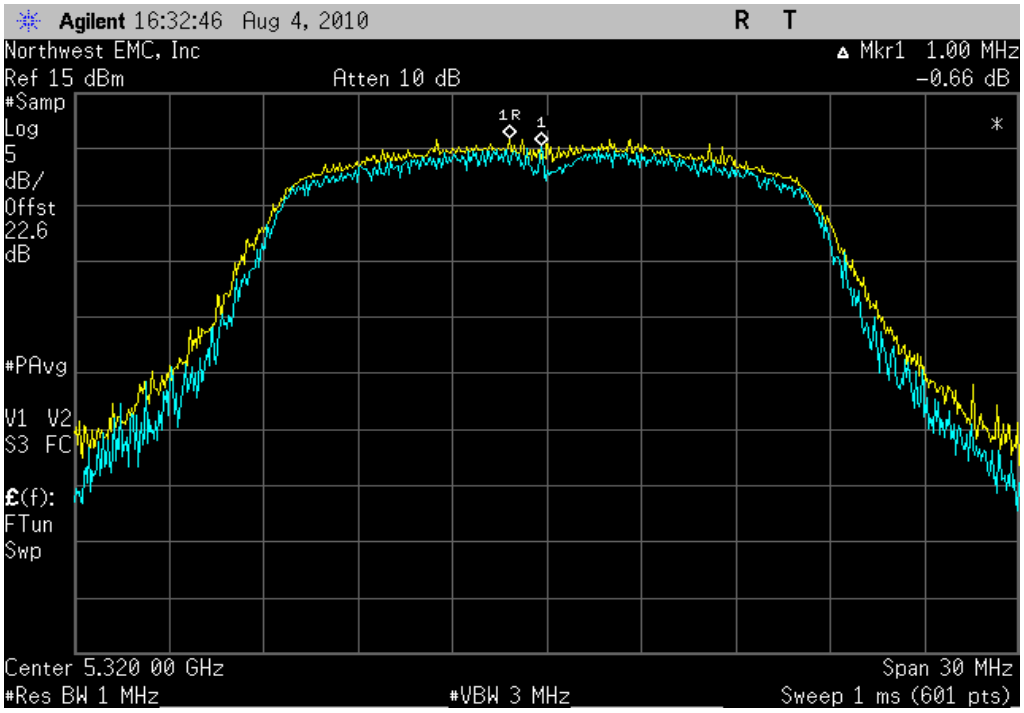


802.11(n) MCS0, 5250 - 5350 MHz Band, Channel 52, Low Channel					
Result:	Pass	**Value:**	0.8 dB	**Limit:**	≤ 13 db

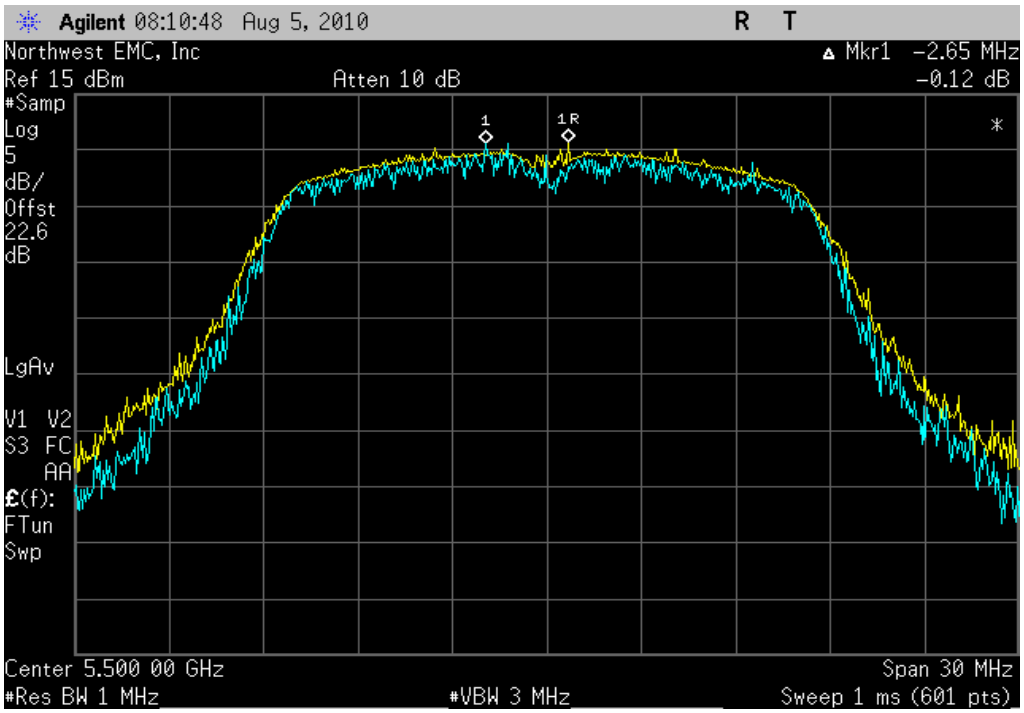


PEAK EXCURSION

802.11(n) MCS0, 5250 - 5350 MHz Band, Channel 64, High Channel					
Result:	Pass	**Value:**	0.7 dB	**Limit:**	≤ 13 db

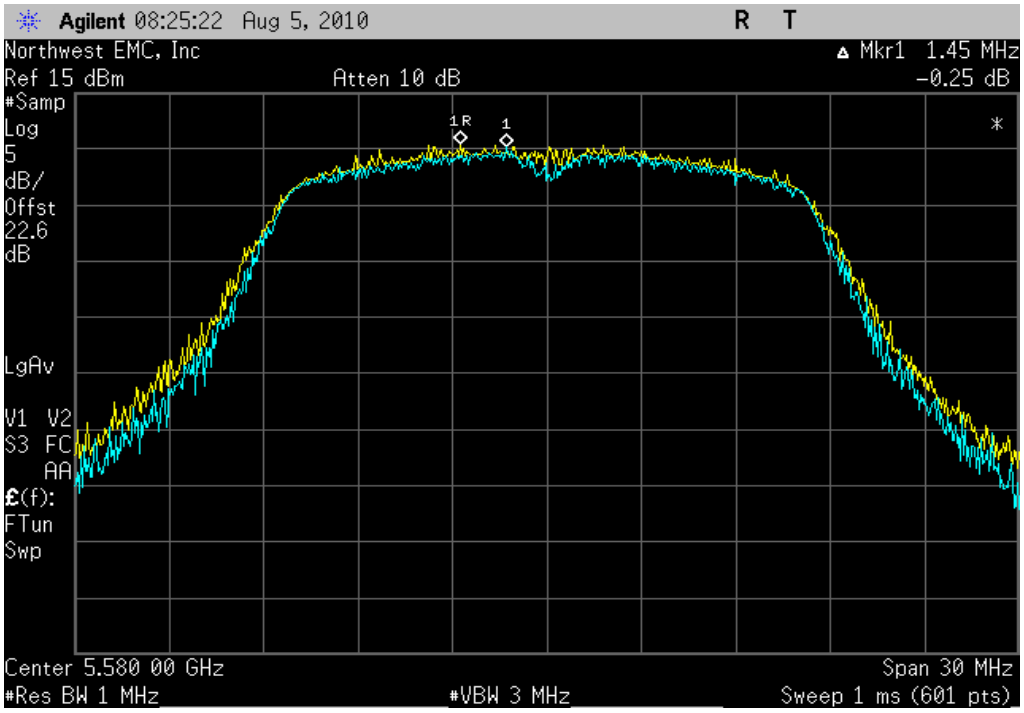


802.11(n) MCS0, 5470 - 5725 MHz Band, Channel 100, Low Channel					
Result:	Pass	**Value:**	0.1 dB	**Limit:**	≤ 13 db

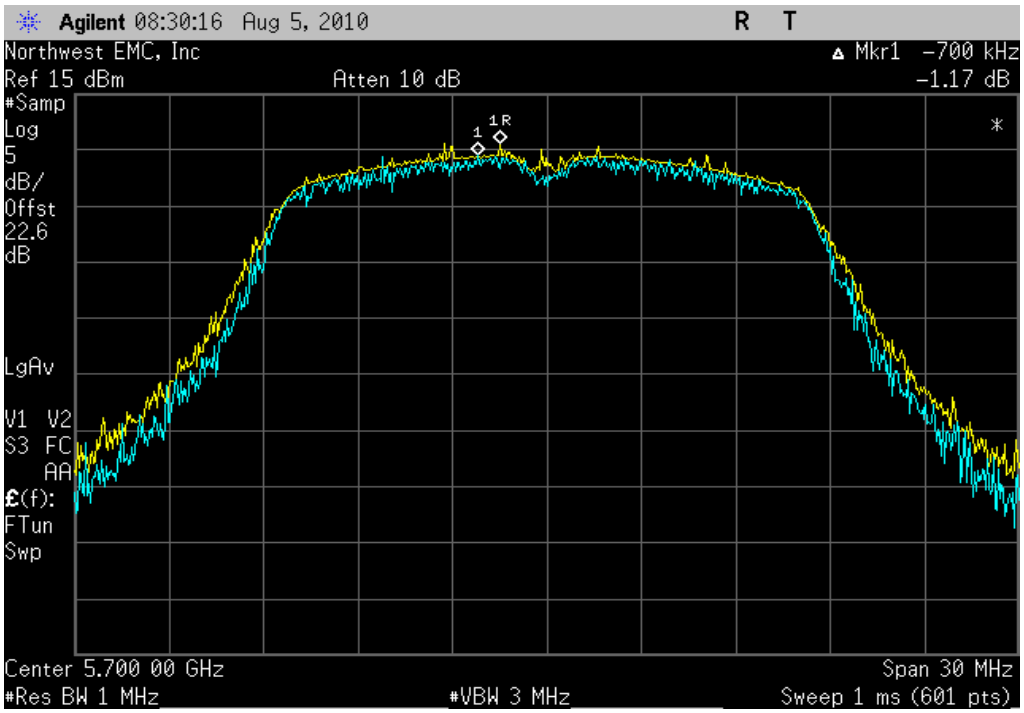


PEAK EXCURSION

802.11(n) MCS0, 5470 - 5725 MHz Band, Channel 116, Mid Channel					
Result:	Pass	**Value:**	0.3 dB	**Limit:**	≤ 13 db

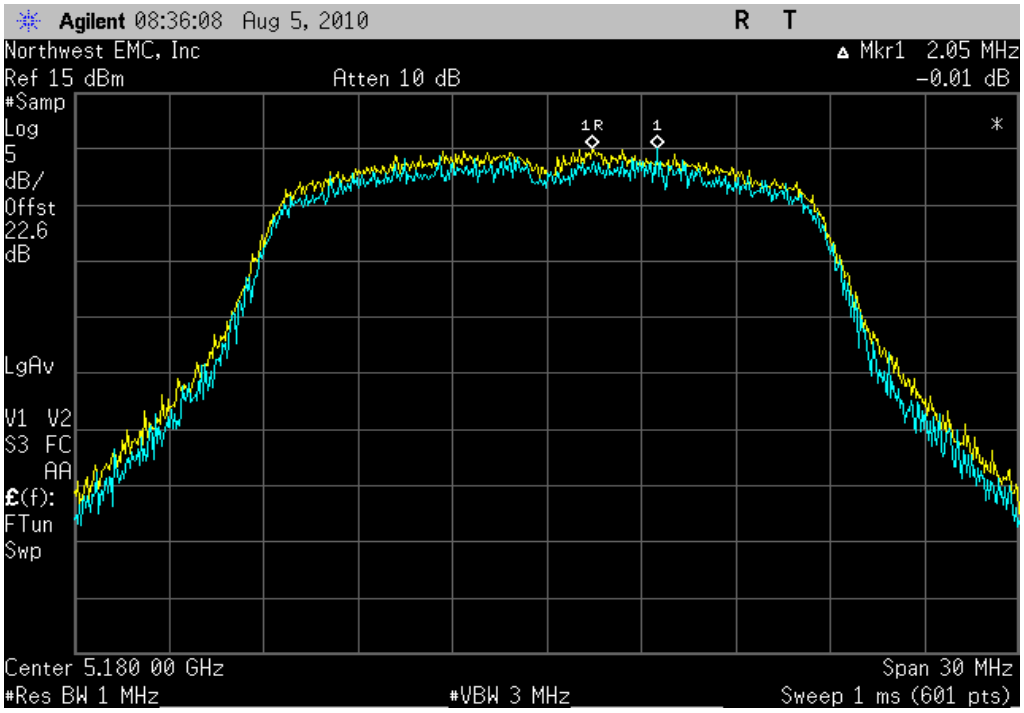


802.11(n) MCS0, 5470 - 5725 MHz Band, Channel 140, High Channel					
Result:	Pass	**Value:**	1.2 dB	**Limit:**	≤ 13 db

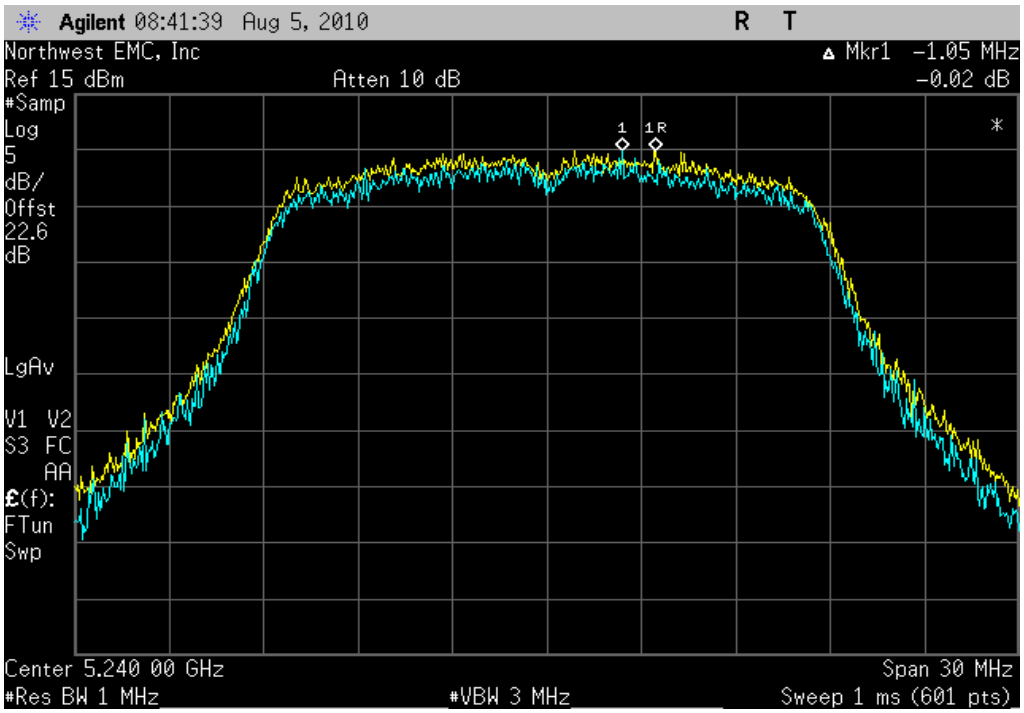


PEAK EXCURSION

802.11(n) MCS7, 5150 - 5250 MHz Band, Channel 36, Low Channel					
Result:	Pass	**Value:**	0.0 dB	**Limit:**	≤ 13 db

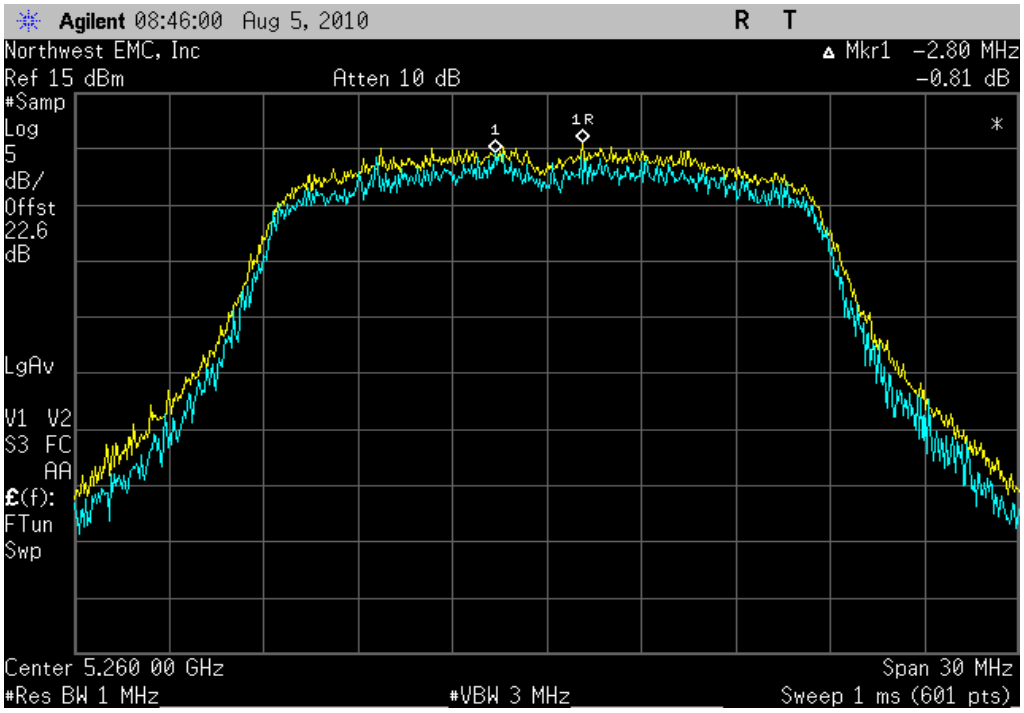


802.11(n) MCS7, 5150 - 5250 MHz Band, Channel 48, High Channel					
Result:	Pass	**Value:**	0.0 dB	**Limit:**	≤ 13 db

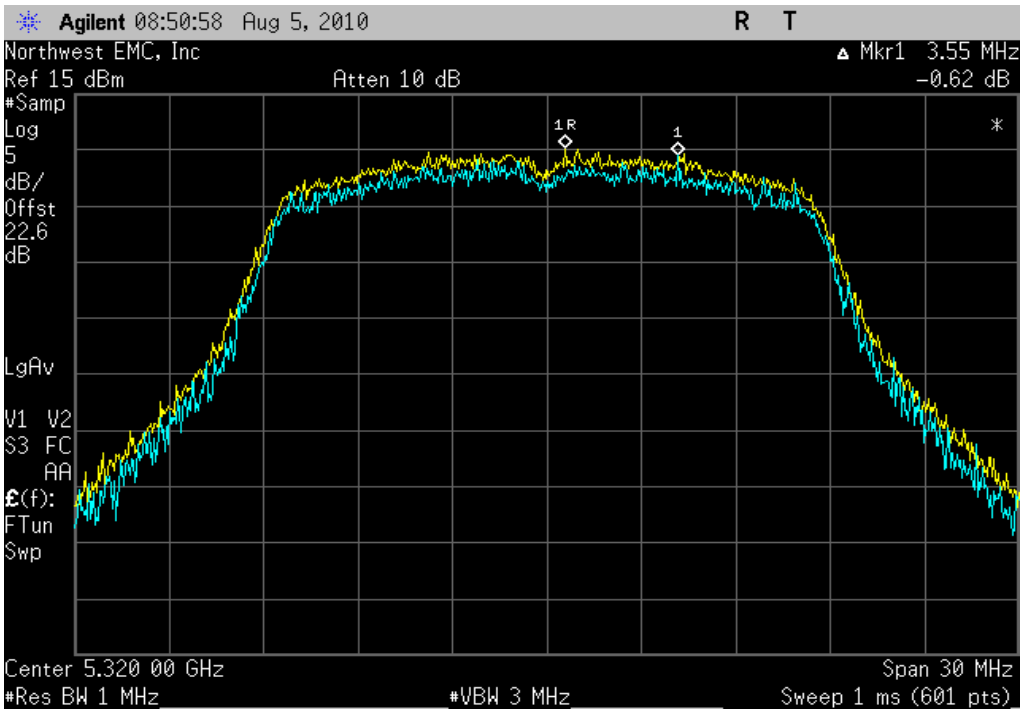


PEAK EXCURSION

802.11(n) MCS7, 5250 - 5350 MHz Band, Channel 52, Low Channel					
Result:	Pass	**Value:**	0.8 dB	**Limit:**	≤ 13 db

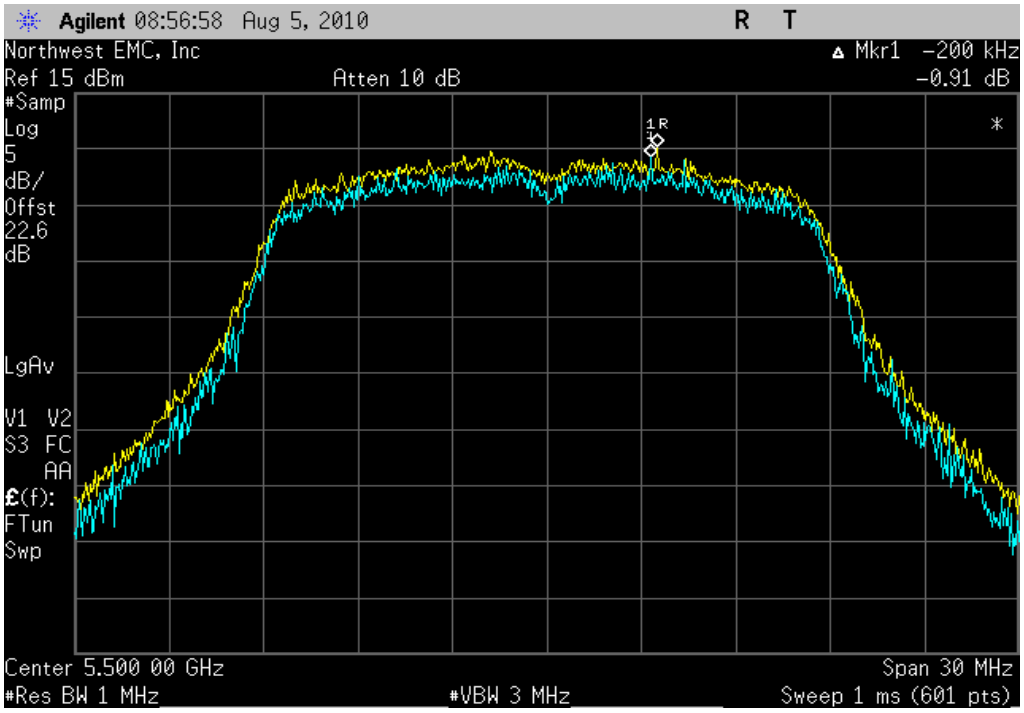


802.11(n) MCS7, 5250 - 5350 MHz Band, Channel 64, High Channel					
Result:	Pass	**Value:**	0.6 dB	**Limit:**	≤ 13 db

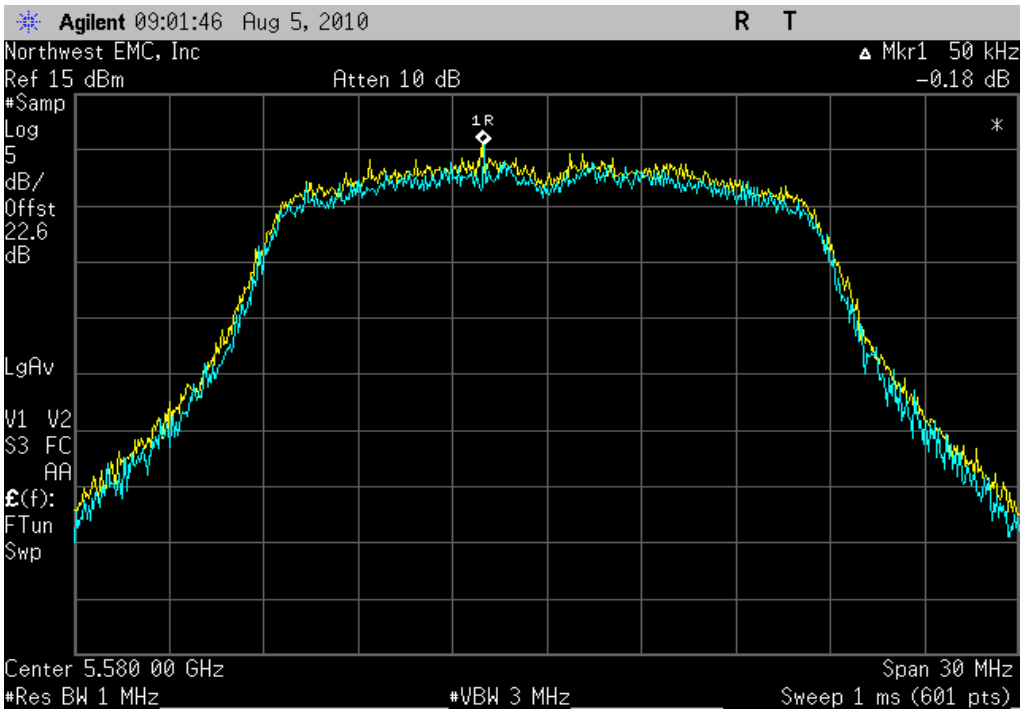


PEAK EXCURSION

802.11(n) MCS7, 5470 - 5725 MHz Band, Channel 100, Low Channel					
Result:	Pass	**Value:**	0.9 dB	**Limit:**	≤ 13 db

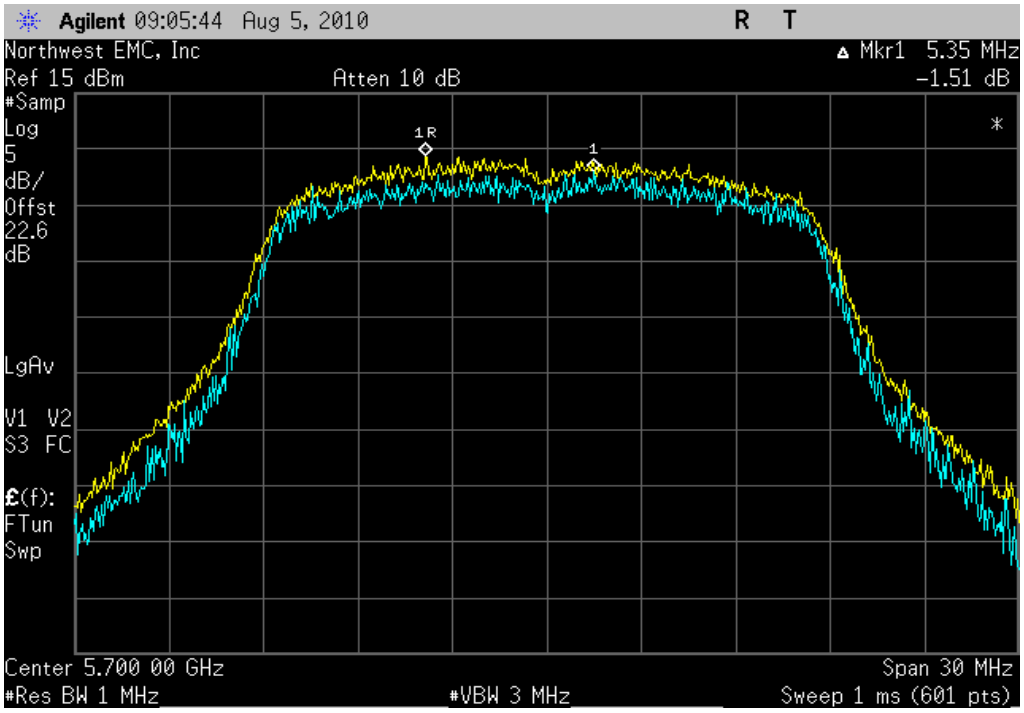


802.11(n) MCS7, 5470 - 5725 MHz Band, Channel 116, Mid Channel					
Result:	Pass	**Value:**	0.2 dB	**Limit:**	≤ 13 db

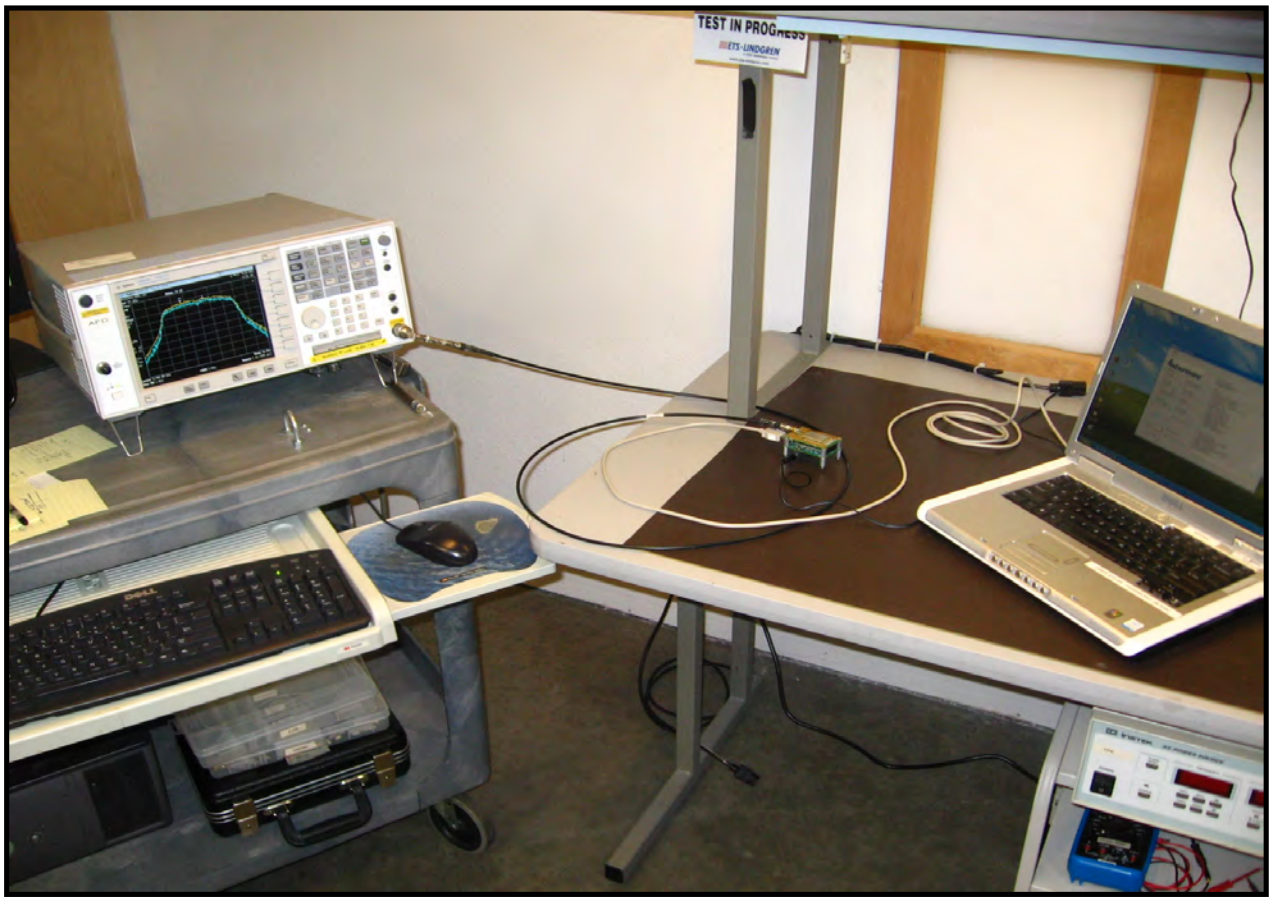


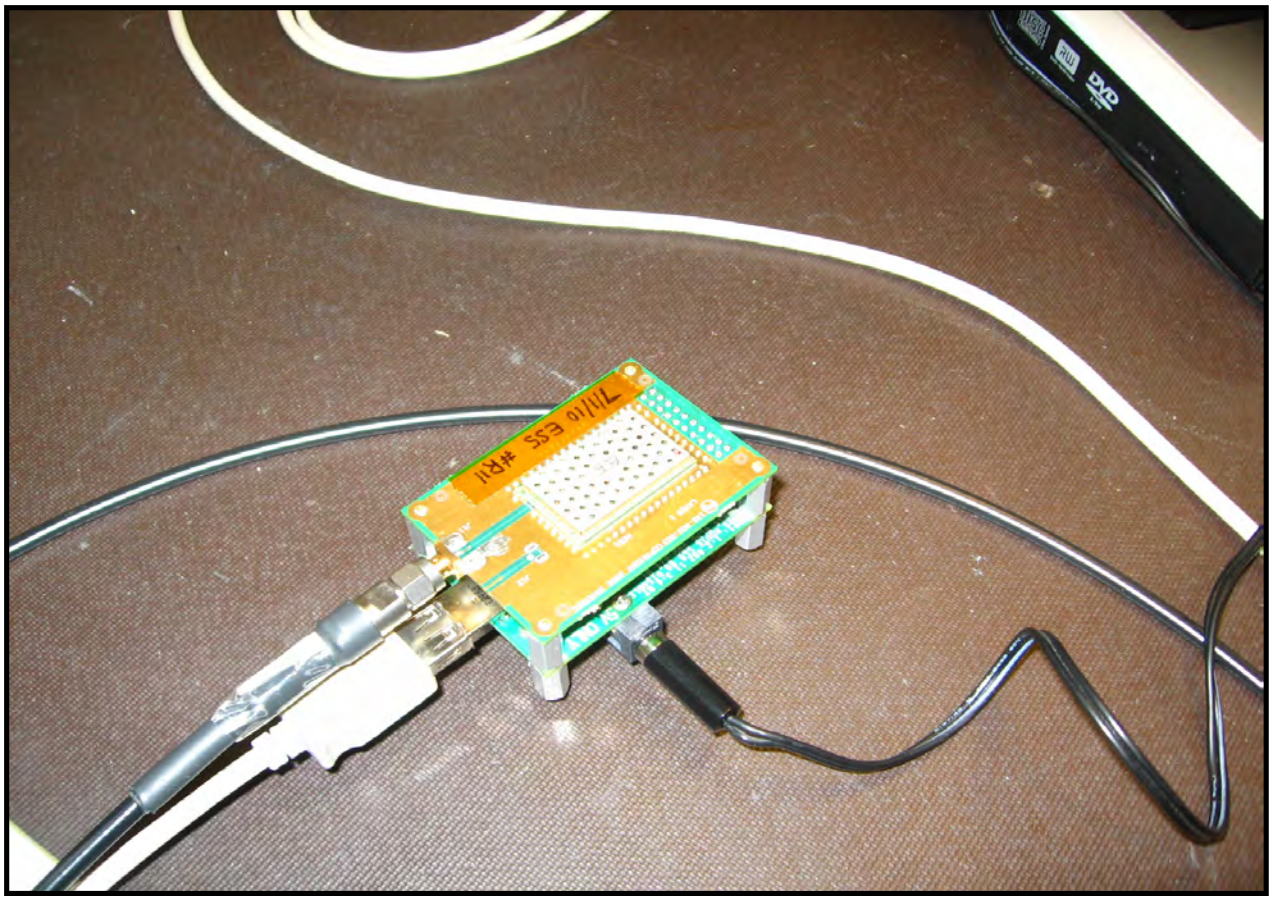
PEAK EXCURSION

802.11(n) MCS7, 5470 - 5725 MHz Band, Channel 140, High Channel					
Result:	Pass	**Value:**	1.5 dB	**Limit:**	≤ 13 db



PEAK EXCURSION





FREQUENCY STABILITY

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Spectrum Analyzer	Agilent	E4440A	AFD	6/1/2009	24
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/21/2009	13
26 GHz DC Block, SMA	Pasternack	PE8210	AME	10/19/2009	13
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
Multimeter	Tektronix	DMM912	MMH	12/10/2008	24
DC Power Supply	Topward	TPS-2000	TPD	NCR	0
Chamber Temp. & Humidity Controller	ESZ / Eurotherm	Dimension II	TBC	NCR	0
Chamber, Temp./Humidity Chamber	Cincinnati Sub Zero (CSZ)	ZH-32-2-2-H/AC	TBA	7/23/2008	25

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:	RC12	Work Order:	INMC0575
Serial Number:	R11	Date:	08/09/10
Customer:	Intermec Technologies Corporation	Temperature:	20°C
Attendees:	None	Humidity:	38%
Project:	None	Barometric Pres.:	1019.3 mb
Tested by:	Rod Peloquin	Power: 3.3 VDC Nominal	Job Site: EV06 & EV09

TEST SPECIFICATIONS	Test Method
FCC 15.407:2010	ANSI C63.10:2009

COMMENTS

Transmitting CW mode

DEVIATIONS FROM TEST STANDARD

No Deviations

Configuration #	2	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	n/a
3.3 (100%)	5180.000000	5180.000223	0.04	n/a
2.8 (85%)	5180.000000	5180.000195	0.04	n/a

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	n/a
40	5180.000000	5180.000309	0.06	n/a
30	5180.000000	5180.000342	0.07	n/a
20	5180.000000	5179.999833	0.03	n/a
10	5180.000000	5179.999437	0.11	n/a
0	5180.000000	5180.000089	0.02	n/a
-10	5180.000000	5180.000634	0.12	n/a
-20	5180.000000	5180.000326	0.06	n/a
-30	5180.000000	5180.000444	0.09	n/a

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	n/a
3.3 (100%)	5320.000000	5320.000221	0.04	n/a
2.8 (85%)	5320.000000	5320.000186	0.03	n/a

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	n/a
40	5320.000000	5320.000308	0.06	n/a
30	5320.000000	5320.000350	0.07	n/a
20	5320.000000	5319.999800	0.04	n/a
10	5320.000000	5319.999446	0.10	n/a
0	5320.000000	5320.000096	0.02	n/a
-10	5320.000000	5320.000652	0.12	n/a
-20	5320.000000	5320.000321	0.06	n/a
-30	5320.000000	5320.000560	0.11	n/a

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	n/a
3.3 (100%)	5500.000000	5500.000219	0.04	n/a
2.8 (85%)	5500.000000	5500.000189	0.03	n/a

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	n/a
40	5500.000000	5500.000317	0.06	n/a
30	5500.000000	5500.000360	0.07	n/a
20	5500.000000	5499.999766	0.04	n/a
10	5500.000000	5499.999420	0.11	n/a
0	5500.000000	5500.000064	0.01	n/a
-10	5500.000000	5500.000666	0.12	n/a
-20	5500.000000	5500.000318	0.06	n/a
-30	5500.000000	5500.000563	0.10	n/a

High Channel, 5470 MHz - 5725 MHz Band

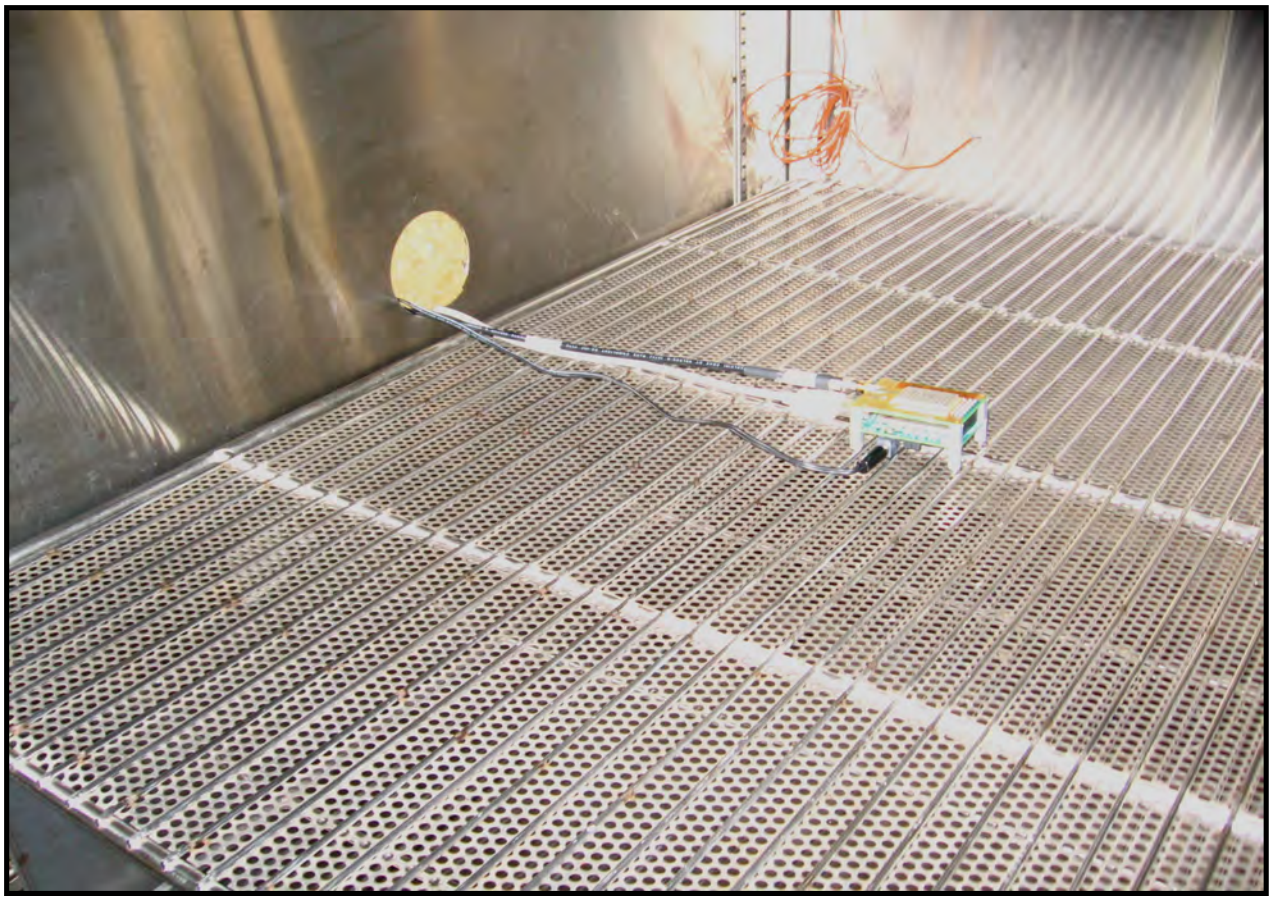
Frequency Stability with Variation of DC Voltage (Ambient Temperature = 20°C)

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

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	n/a
40	5700.000000	5700.000329	0.06	n/a
30	5700.000000	5700.000384	0.07	n/a
20	5700.000000	5699.999760	0.04	n/a
10	5700.000000	5699.999400	0.11	n/a
0	5700.000000	5700.000310	0.05	n/a
-10	5700.000000	5700.000699	0.12	n/a
-20	5700.000000	5700.000497	0.09	n/a
-30	5700.000000	5700.000584	0.10	n/a

FREQUENCY STABILITY



FREQUENCY STABILITY

PEAK TRANSMIT POWER

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Spectrum Analyzer	Agilent	E4440A	AFD	6/1/2009	24
EV06 Direct Connect Cable	ESM Cable Corp.	TT	ECA	NCR	0
26 GHz DC Block, SMA	Pasternack	PE8210	AME	10/19/2009	13
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	7/21/2009	13
Attenuator, 6 dB, 'SMA'	N/A	93459 3330A-6	AUF	4/1/2010	13
Power Meter	Gigatronics	8651A	SPM	1/7/2010	13
Power Sensor	Gigatronics	80701A	SPL	1/7/2010	13
Signal Generator	Agilent	E8257D	TGX	12/10/2008	24

MEASUREMENT UNCERTAINTY

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

TEST DESCRIPTION

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.

Sweep gating triggered by the RF burst was used on the analyzer to ensure power integration was only done during the pulse duration.

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 = 3 MHz
- 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.

NORTHWEST EMC

PEAK TRANSMIT POWER

XMit 2010.07.29

EUT:	RC12	Work Order:	INMC0575
Serial Number:	R11	Date:	08/03/10
Customer:	Intermec Technologies Corporation	Temperature:	22°C
Attendees:	None	Humidity:	38%
Project:	None	Barometric Pres.:	1013.5 mb
Tested by:	Rod Peloquin	Power: 5VDC	Job Site: EV06

TEST SPECIFICATIONS	Test Method
FCC 15.407:2010	ANSI C63.10:2009

COMMENTS

None

DEVIATIONS FROM TEST STANDARD

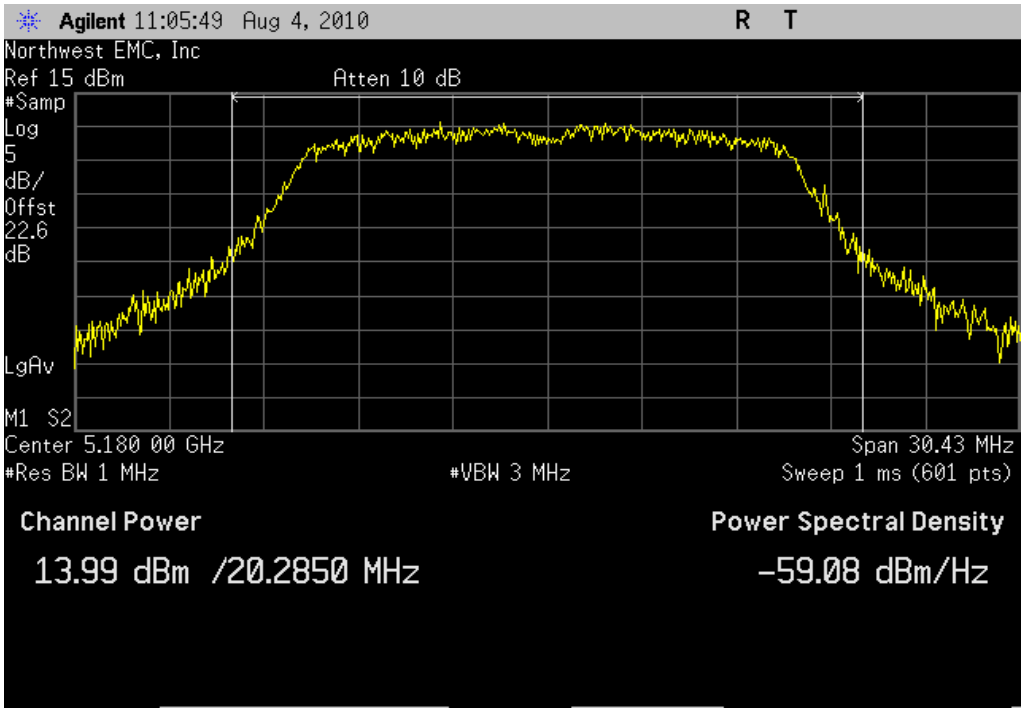
No Deviations

Configuration #	2	Signature

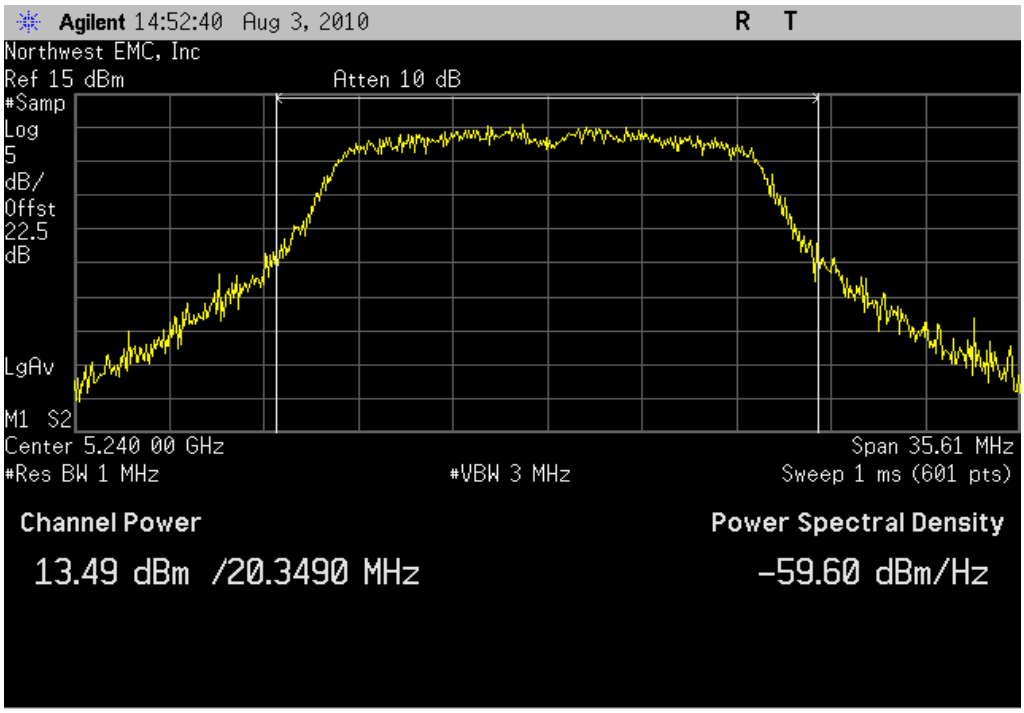
		Value	Limit	Results
802.11(a) 6 Mbps				
	5150 - 5250 MHz Band			
	Channel 36, Low Channel	14.0 dBm	17 dBm	Pass
	Channel 48, High Channel	13.5 dBm	17 dBm	Pass
	5250 - 5350 MHz Band			
	Channel 52, Low Channel	13.7 dBm	24 dBm	Pass
	Channel 64, High Channel	13.5 dBm	24 dBm	Pass
	5470 - 5725 MHz Band			
	Channel 100, Low Channel	12.9 dBm	24 dBm	Pass
	Channel 116, Mid Channel	12.7 dBm	24 dBm	Pass
	Channel 140, High Channel	12.6 dBm	24 dBm	Pass
802.11(a) 36 Mbps				
	5150 - 5250 MHz Band			
	Channel 36, Low Channel	13.8 dBm	17 dBm	Pass
	Channel 48, High Channel	13.6 dBm	17 dBm	Pass
	5250 - 5350 MHz Band			
	Channel 52, Low Channel	13.9 dBm	24 dBm	Pass
	Channel 64, High Channel	13.6 dBm	24 dBm	Pass
	5470 - 5725 MHz Band			
	Channel 100, Low Channel	12.9 dBm	24 dBm	Pass
	Channel 116, Mid Channel	12.9 dBm	24 dBm	Pass
	Channel 140, High Channel	12.5 dBm	24 dBm	Pass
802.11(a) 54 Mbps				
	5150 - 5250 MHz Band			
	Channel 36, Low Channel	13.3 dBm	17 dBm	Pass
	Channel 48, High Channel	13.2 dBm	17 dBm	Pass
	5250 - 5350 MHz Band			
	Channel 52, Low Channel	13.2 dBm	24 dBm	Pass
	Channel 64, High Channel	13.1 dBm	24 dBm	Pass
	5470 - 5725 MHz Band			
	Channel 100, Low Channel	12.3 dBm	24 dBm	Pass
	Channel 116, Mid Channel	12.1 dBm	24 dBm	Pass
	Channel 140, High Channel	12.1 dBm	24 dBm	Pass
802.11(n) MCS0				
	5150 - 5250 MHz Band			
	Channel 36, Low Channel	13.8 dBm	17 dBm	Pass
	Channel 48, High Channel	13.6 dBm	17 dBm	Pass
	5250 - 5350 MHz Band			
	Channel 52, Low Channel	13.7 dBm	24 dBm	Pass
	Channel 64, High Channel	13.3 dBm	24 dBm	Pass
	5470 - 5725 MHz Band			
	Channel 100, Low Channel	12.8 dBm	24 dBm	Pass
	Channel 116, Mid Channel	12.7 dBm	24 dBm	Pass
	Channel 140, High Channel	12.6 dBm	24 dBm	Pass
802.11(n) MCS7				
	5150 - 5250 MHz Band			
	Channel 36, Low Channel	11.8 dBm	17 dBm	Pass
	Channel 48, High Channel	11.7 dBm	17 dBm	Pass
	5250 - 5350 MHz Band			
	Channel 52, Low Channel	12.1 dBm	24 dBm	Pass
	Channel 64, High Channel	11.8 dBm	24 dBm	Pass
	5470 - 5725 MHz Band			
	Channel 100, Low Channel	10.7 dBm	24 dBm	Pass
	Channel 116, Mid Channel	10.7 dBm	24 dBm	Pass
	Channel 140, High Channel	10.8 dBm	24 dBm	Pass

PEAK TRANSMIT POWER

802.11(a) 6 Mbps, 5150 - 5250 MHz Band, Channel 36, Low Channel					
Result:	Pass	**Value:**	14.0 dBm	**Limit:**	17 dBm

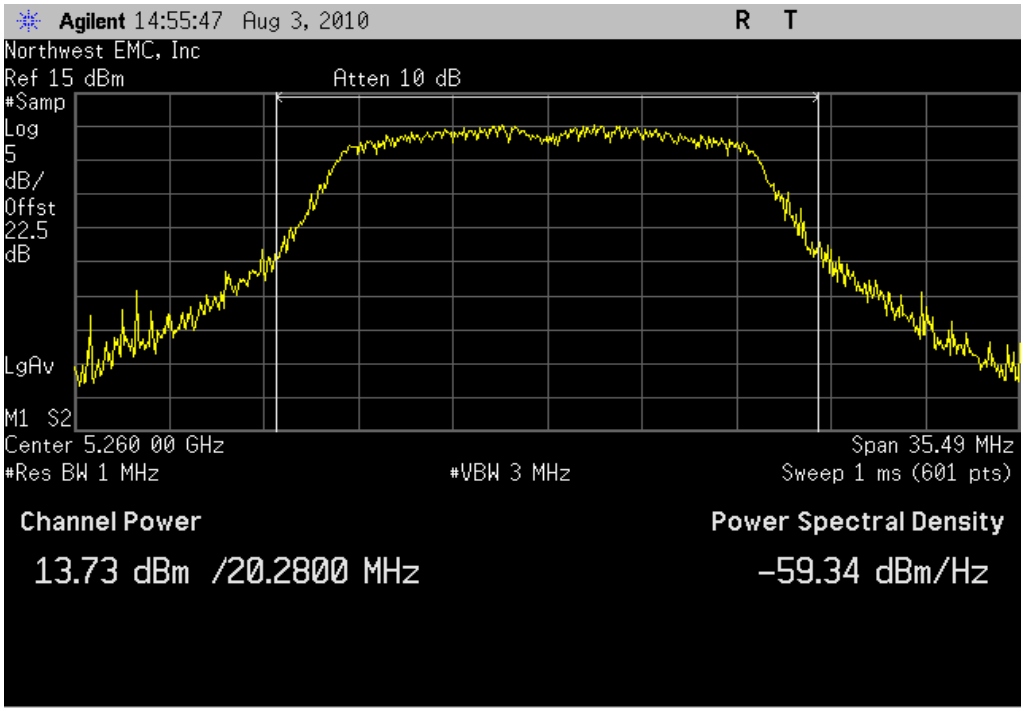


802.11(a) 6 Mbps, 5150 - 5250 MHz Band, Channel 48, High Channel					
Result:	Pass	**Value:**	13.5 dBm	**Limit:**	17 dBm

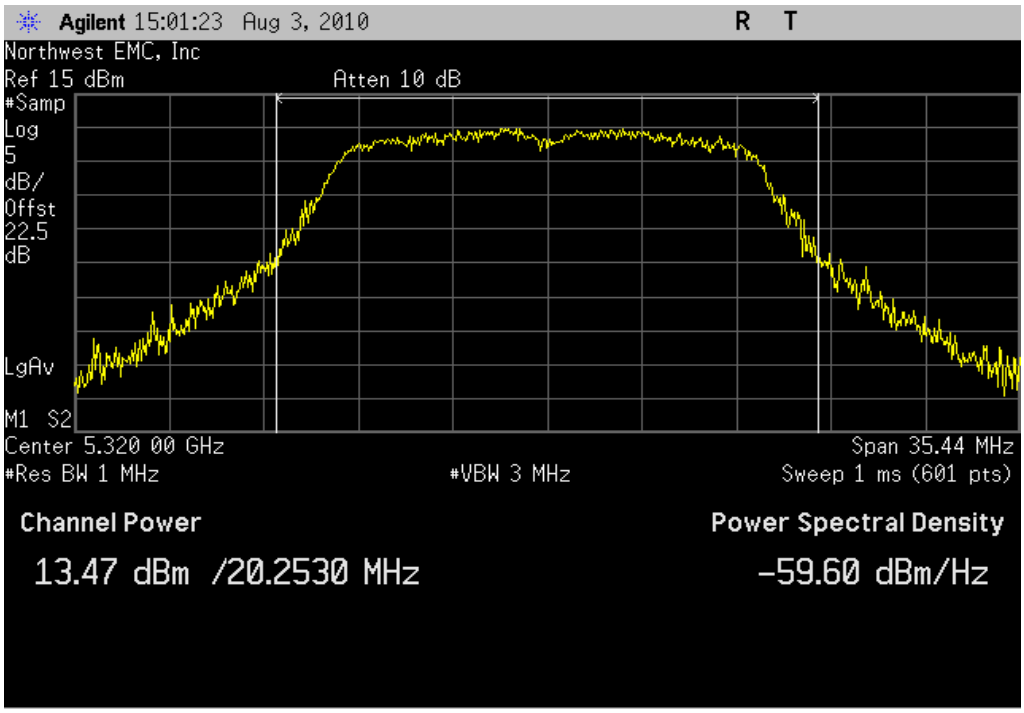


PEAK TRANSMIT POWER

802.11(a) 6 Mbps, 5250 - 5350 MHz Band, Channel 52, Low Channel					
Result:	Pass	**Value:**	13.7 dBm	**Limit:**	24 dBm

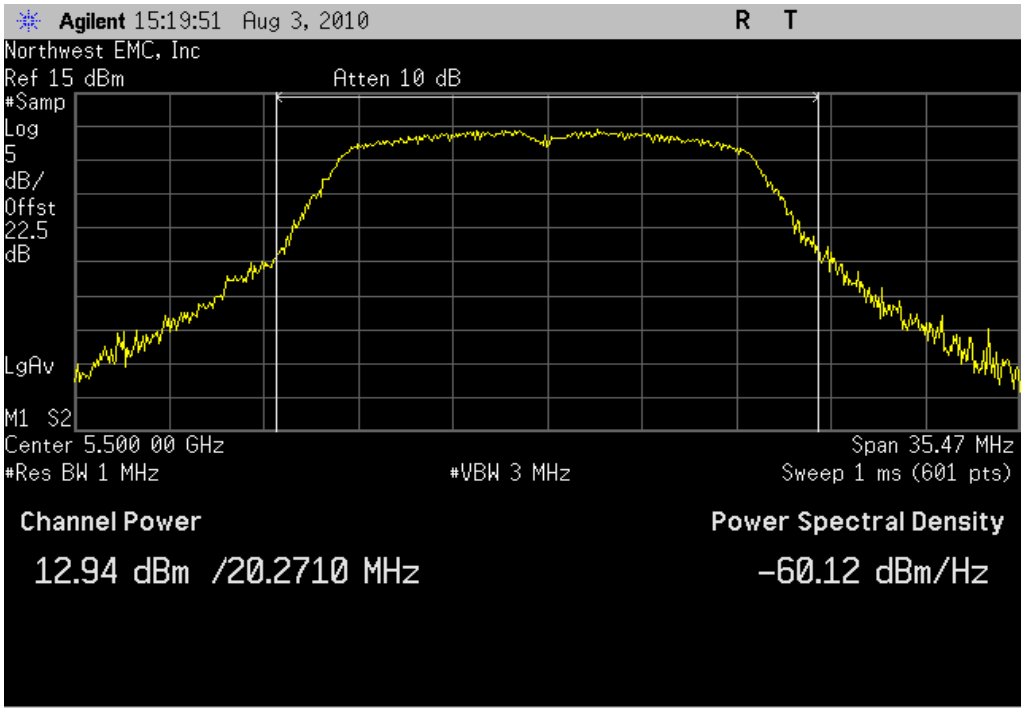


802.11(a) 6 Mbps, 5250 - 5350 MHz Band, Channel 64, High Channel					
Result:	Pass	**Value:**	13.5 dBm	**Limit:**	24 dBm

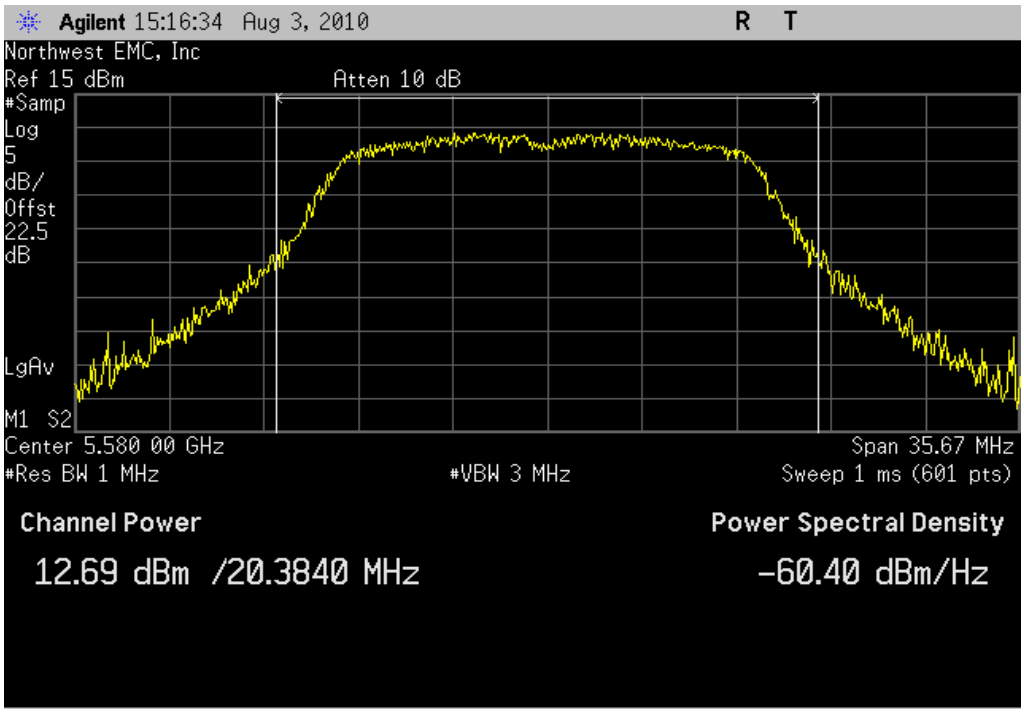


PEAK TRANSMIT POWER

802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 100, Low Channel					
Result:	Pass	**Value:**	12.9 dBm	**Limit:**	24 dBm

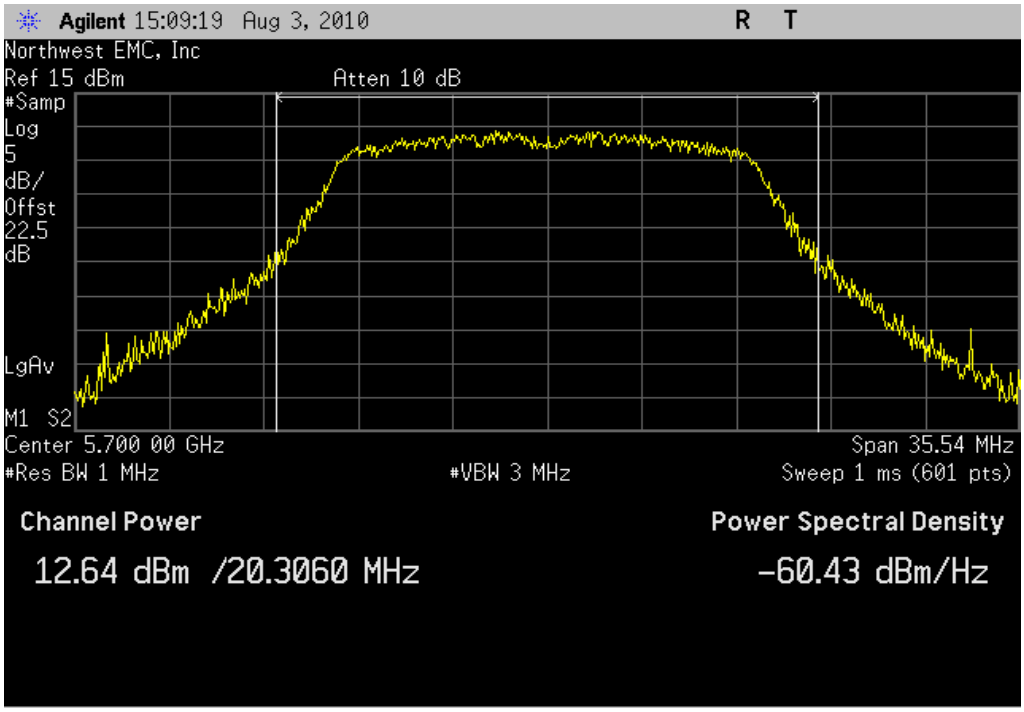


802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 116, Mid Channel					
Result:	Pass	**Value:**	12.7 dBm	**Limit:**	24 dBm

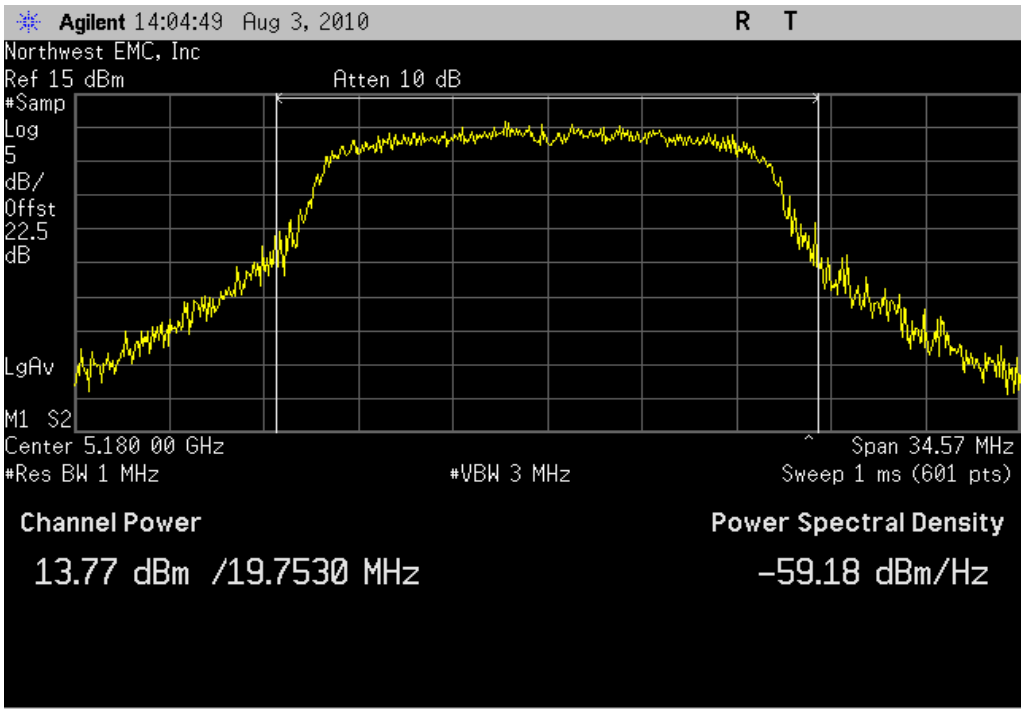


PEAK TRANSMIT POWER

802.11(a) 6 Mbps, 5470 - 5725 MHz Band, Channel 140, High Channel					
Result:	Pass	**Value:**	12.6 dBm	**Limit:**	24 dBm

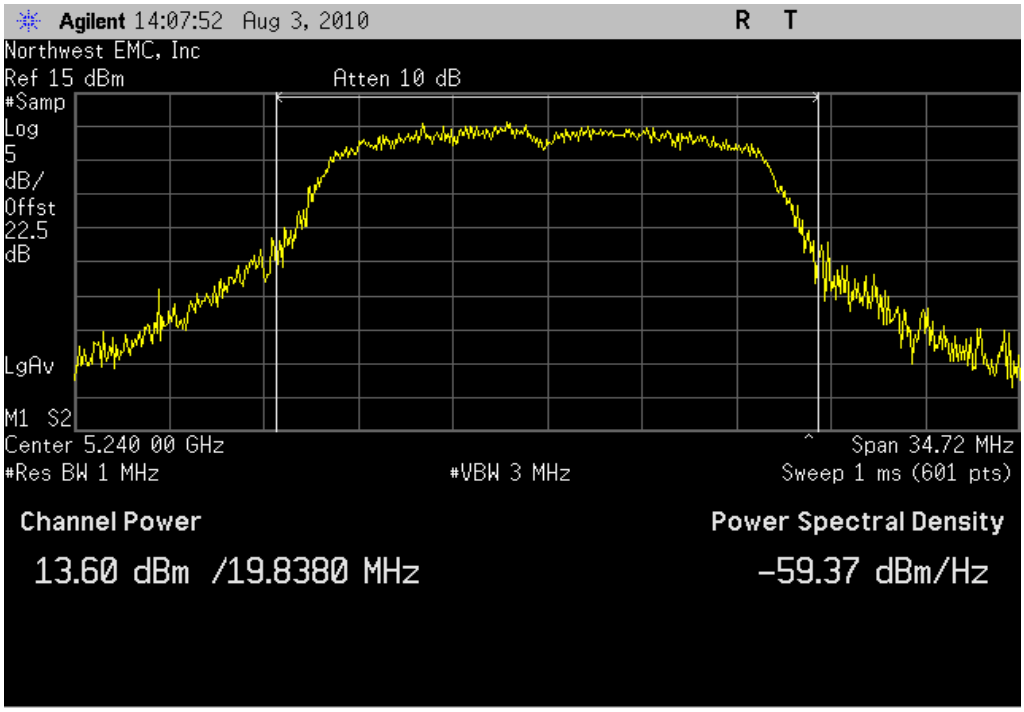


802.11(a) 36 Mbps, 5150 - 5250 MHz Band, Channel 36, Low Channel					
Result:	Pass	**Value:**	13.8 dBm	**Limit:**	17 dBm

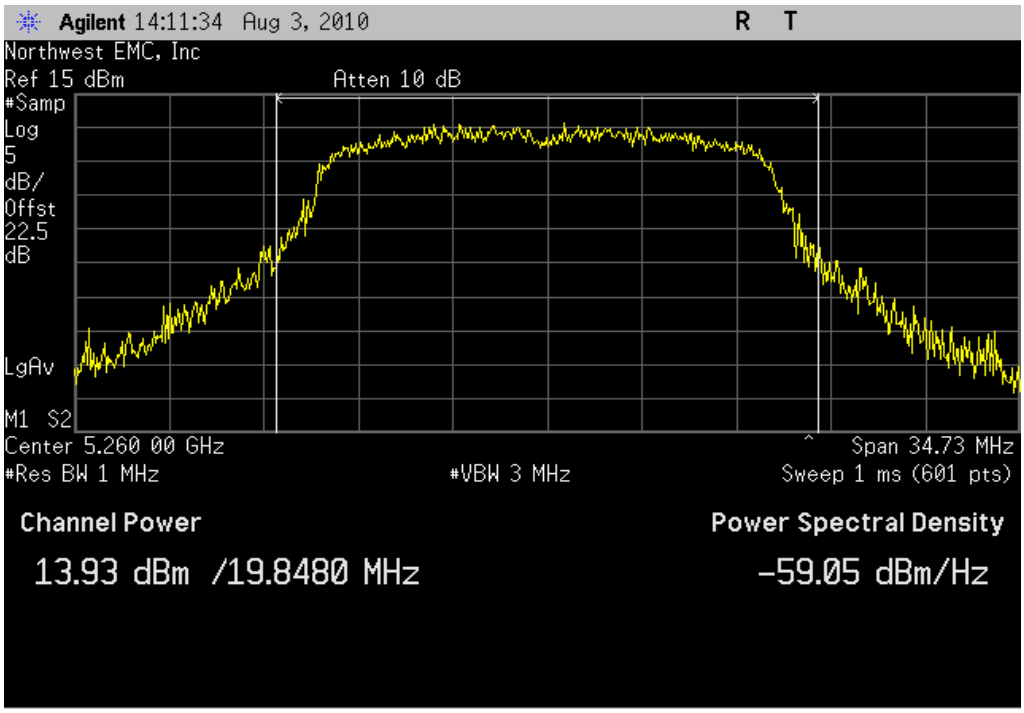


PEAK TRANSMIT POWER

802.11(a) 36 Mbps, 5150 - 5250 MHz Band, Channel 48, High Channel					
Result:	Pass	**Value:**	13.6 dBm	**Limit:**	17 dBm

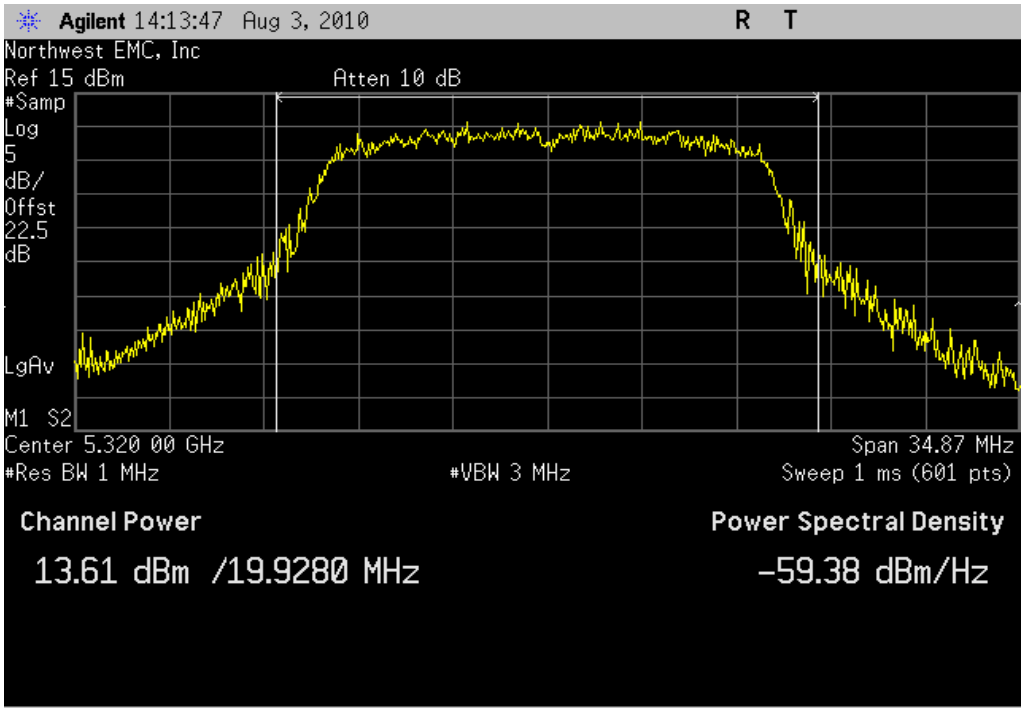


802.11(a) 36 Mbps, 5250 - 5350 MHz Band, Channel 52, Low Channel					
Result:	Pass	**Value:**	13.9 dBm	**Limit:**	24 dBm

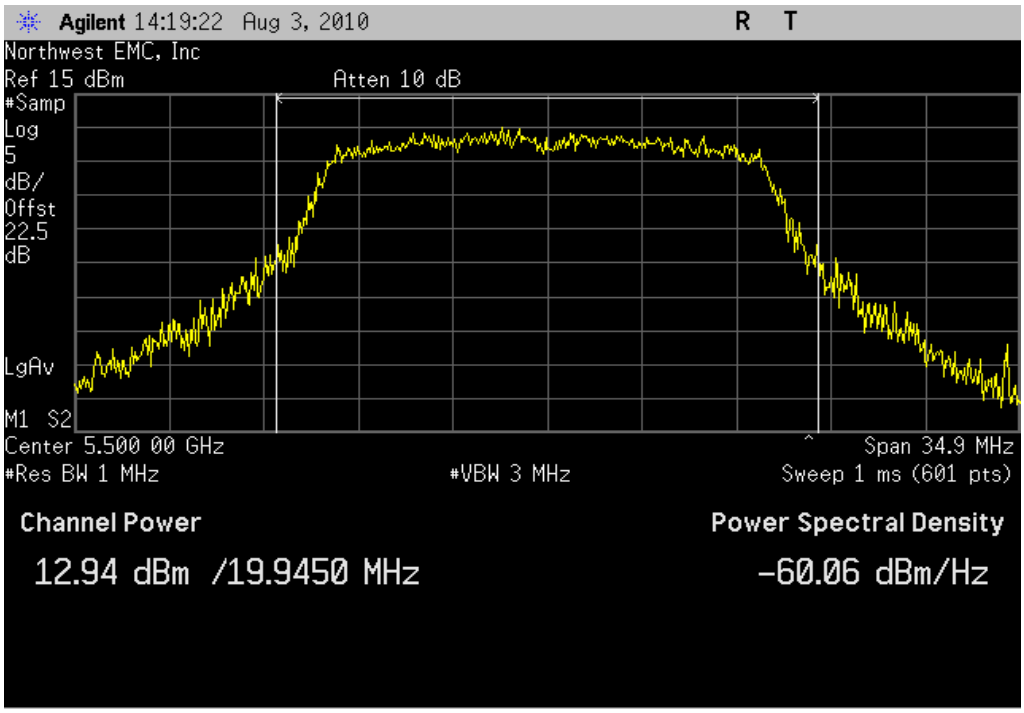


PEAK TRANSMIT POWER

802.11(a) 36 Mbps, 5250 - 5350 MHz Band, Channel 64, High Channel					
Result:	Pass	**Value:**	13.6 dBm	**Limit:**	24 dBm

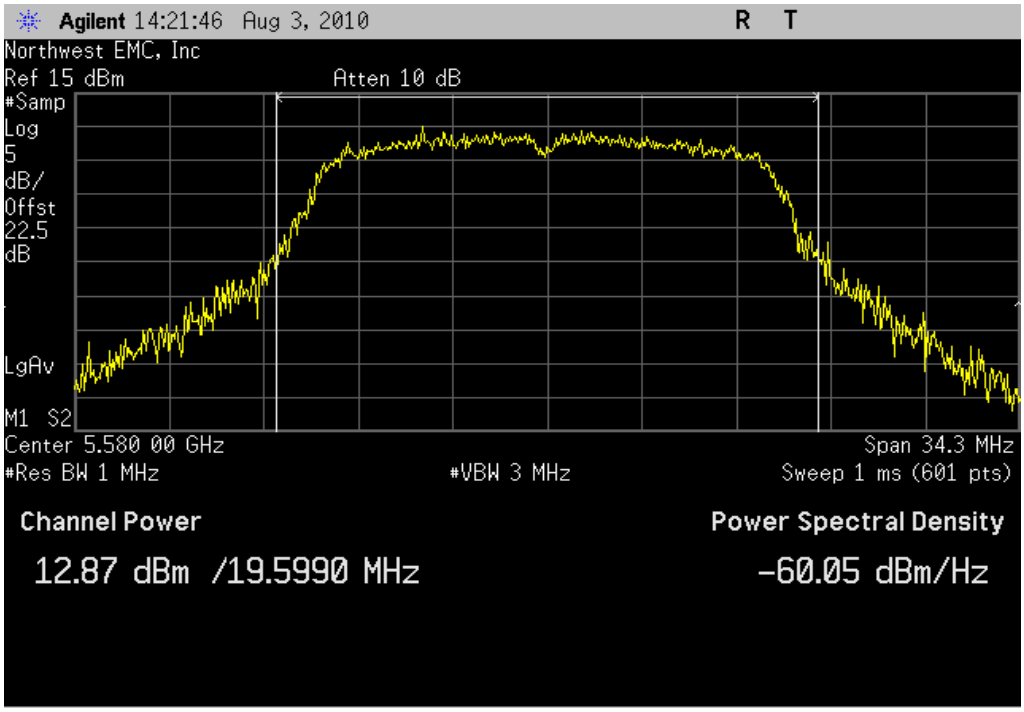


802.11(a) 36 Mbps, 5470 - 5725 MHz Band, Channel 100, Low Channel					
Result:	Pass	**Value:**	12.9 dBm	**Limit:**	24 dBm

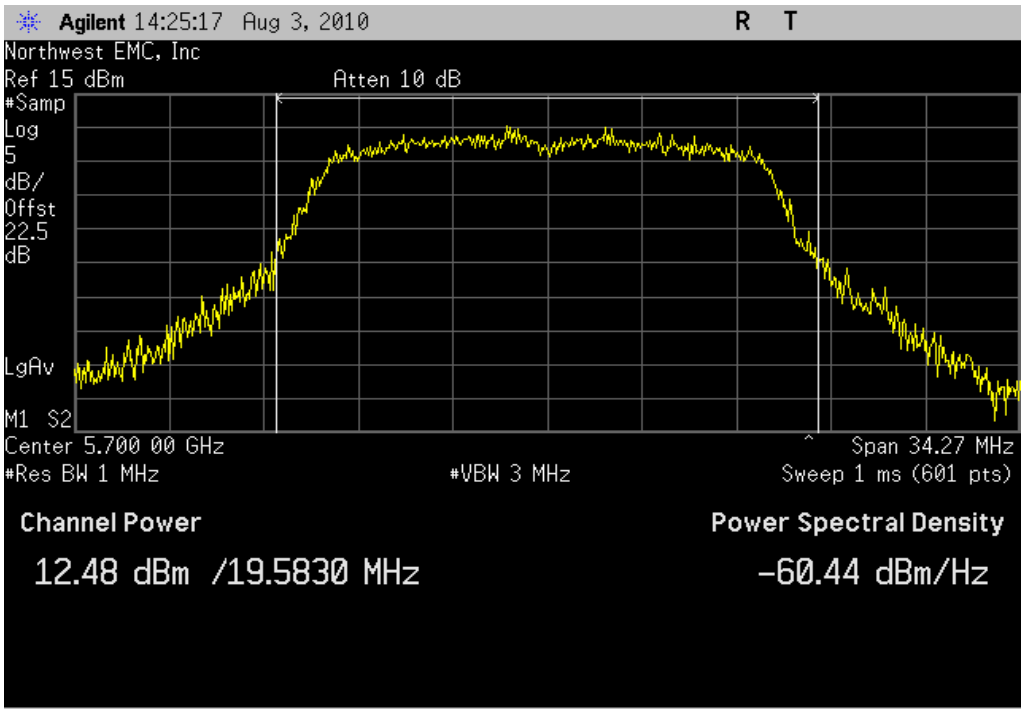


PEAK TRANSMIT POWER

802.11(a) 36 Mbps, 5470 - 5725 MHz Band, Channel 116, Mid Channel					
Result:	Pass	**Value:**	12.9 dBm	**Limit:**	24 dBm

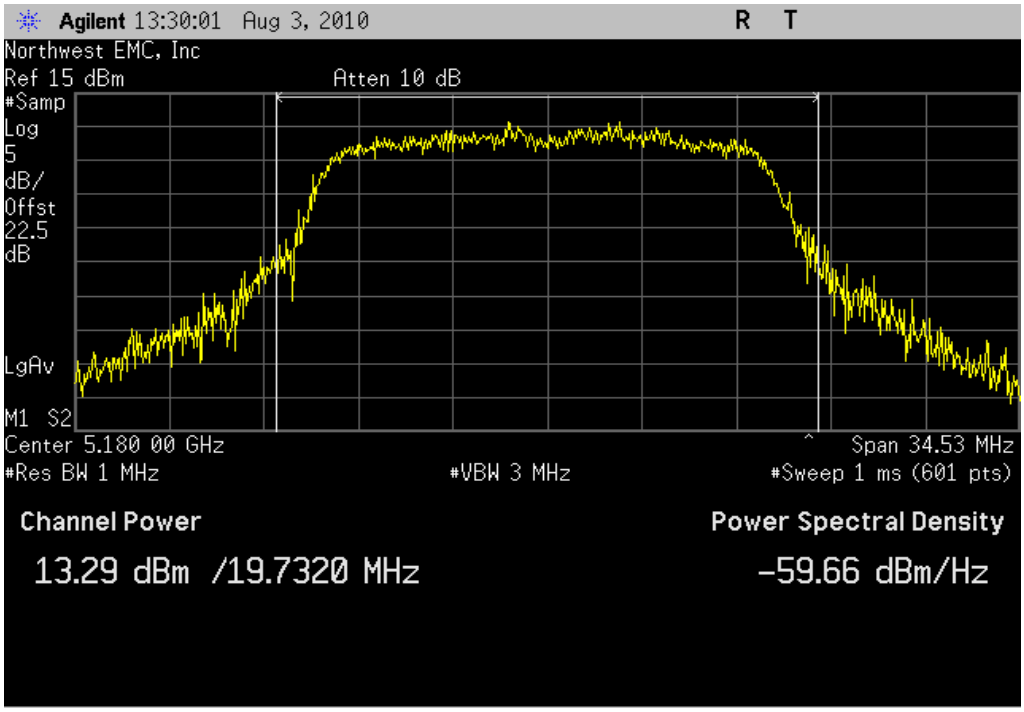


802.11(a) 36 Mbps, 5470 - 5725 MHz Band, Channel 140, High Channel					
Result:	Pass	**Value:**	12.5 dBm	**Limit:**	24 dBm

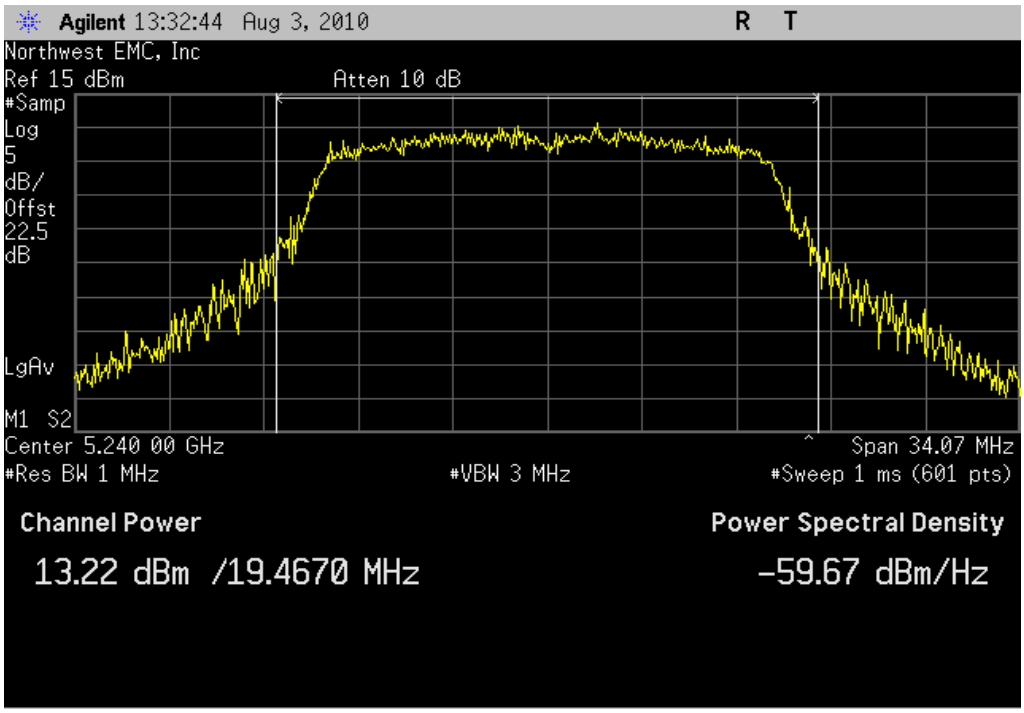


PEAK TRANSMIT POWER

802.11(a) 54 Mbps, 5150 - 5250 MHz Band, Channel 36, Low Channel					
Result:	Pass	**Value:**	13.3 dBm	**Limit:**	17 dBm

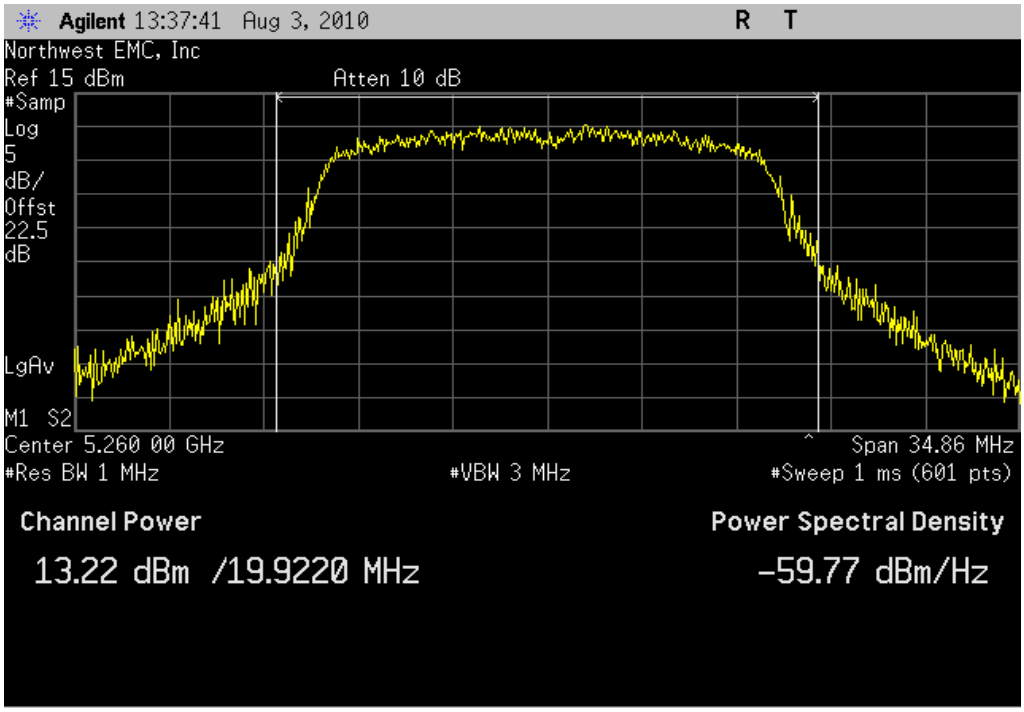


802.11(a) 54 Mbps, 5150 - 5250 MHz Band, Channel 48, High Channel					
Result:	Pass	**Value:**	13.2 dBm	**Limit:**	17 dBm

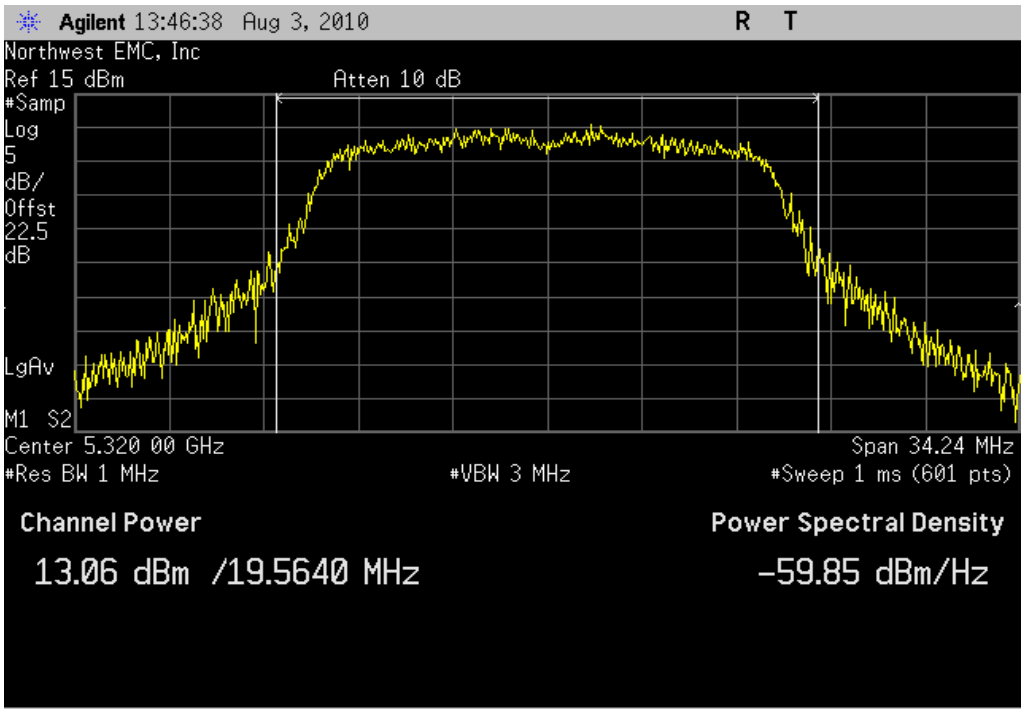


PEAK TRANSMIT POWER

802.11(a) 54 Mbps, 5250 - 5350 MHz Band, Channel 52, Low Channel					
Result:	Pass	**Value:**	13.2 dBm	**Limit:**	24 dBm

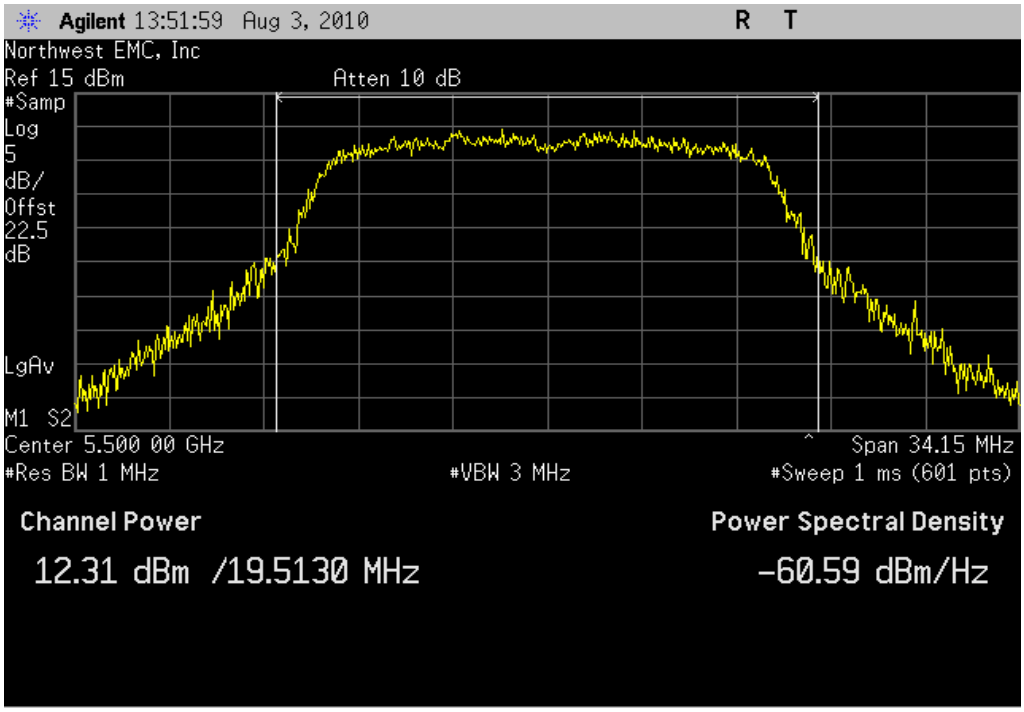


802.11(a) 54 Mbps, 5250 - 5350 MHz Band, Channel 64, High Channel					
Result:	Pass	**Value:**	13.1 dBm	**Limit:**	24 dBm

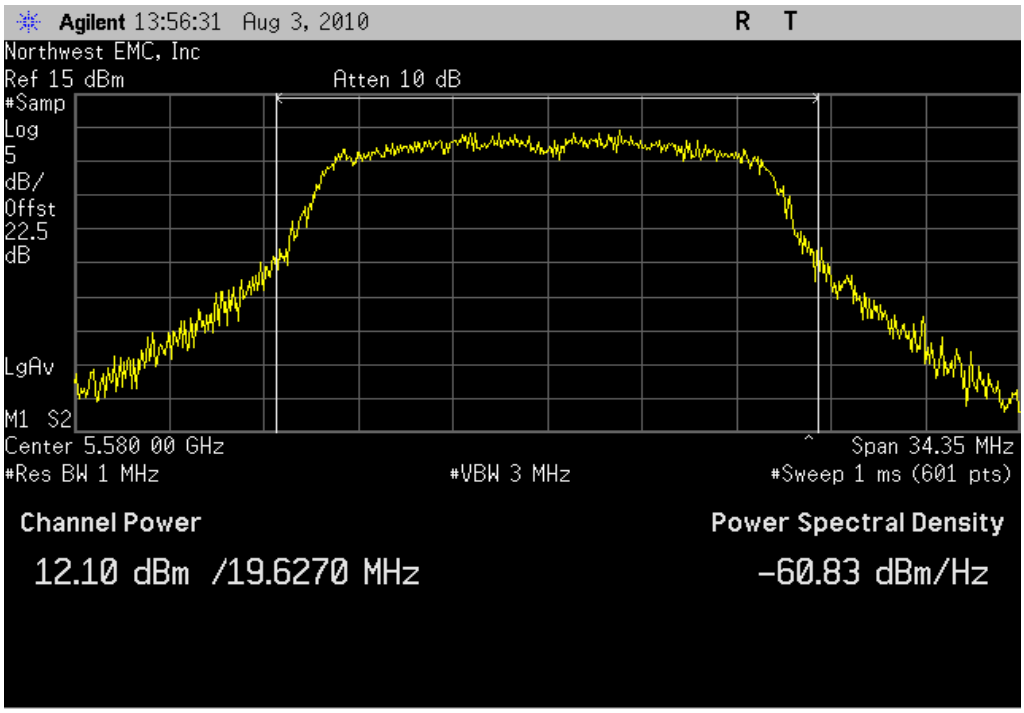


PEAK TRANSMIT POWER

802.11(a) 54 Mbps, 5470 - 5725 MHz Band, Channel 100, Low Channel					
Result:	Pass	**Value:**	12.3 dBm	**Limit:**	24 dBm

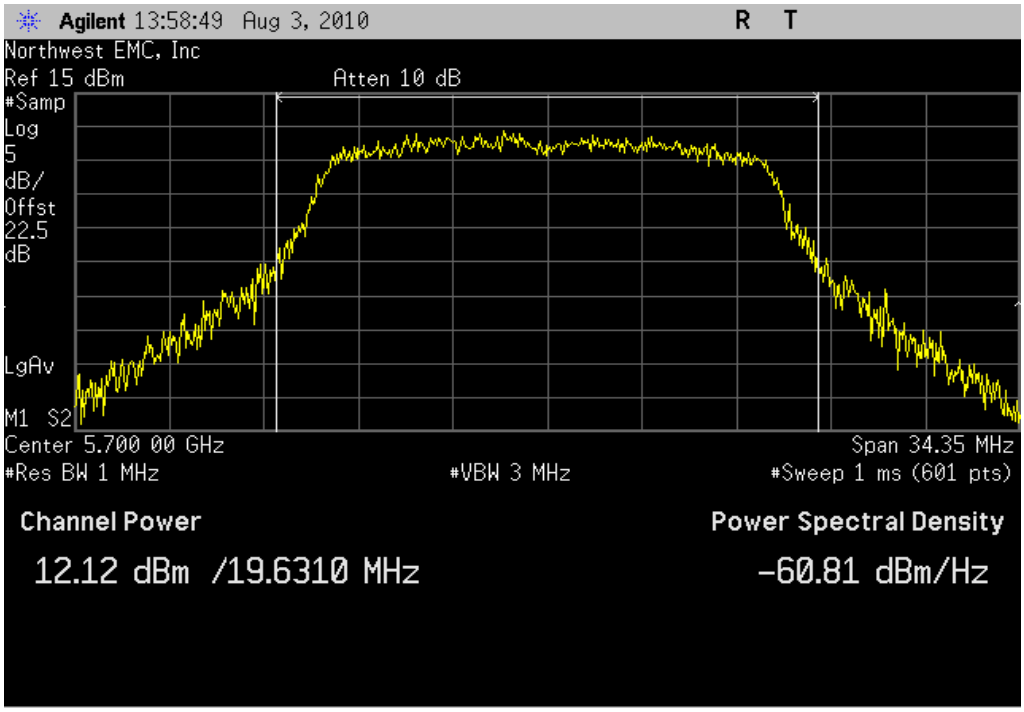


802.11(a) 54 Mbps, 5470 - 5725 MHz Band, Channel 116, Mid Channel					
Result:	Pass	**Value:**	12.1 dBm	**Limit:**	24 dBm

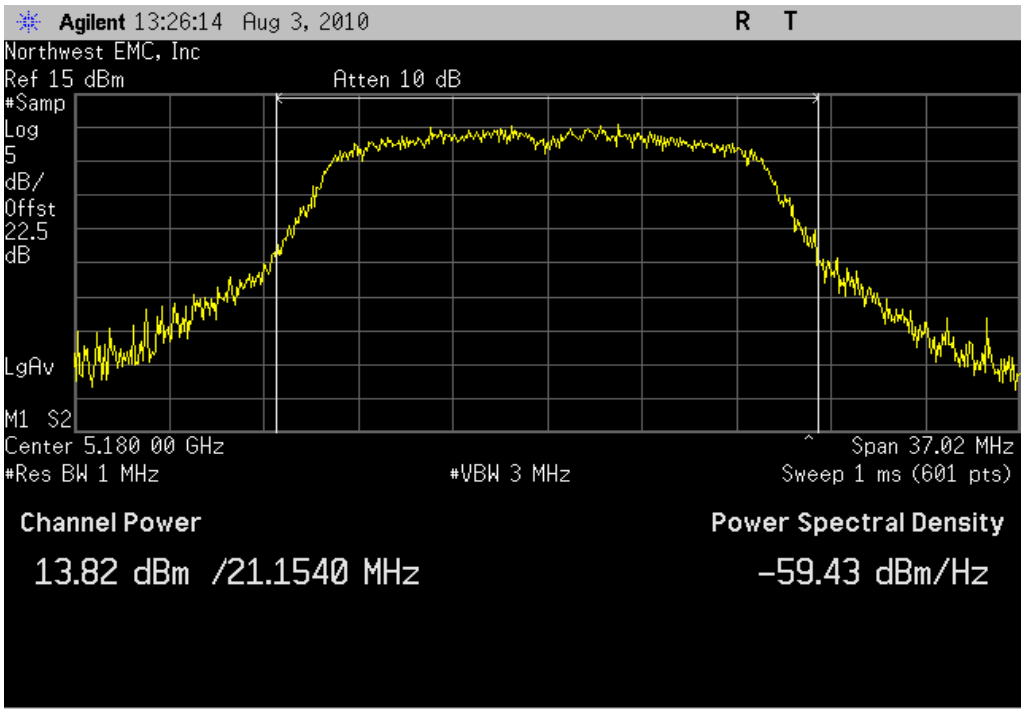


PEAK TRANSMIT POWER

802.11(a) 54 Mbps, 5470 - 5725 MHz Band, Channel 140, High Channel					
Result:	Pass	**Value:**	12.1 dBm	**Limit:**	24 dBm

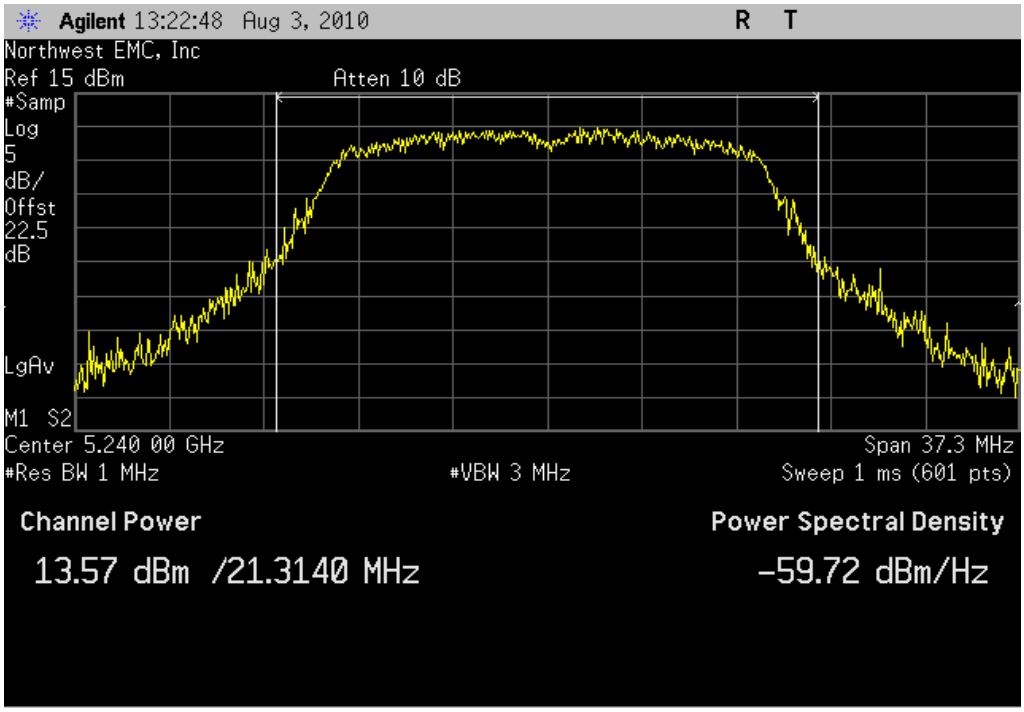


802.11(n) MCS0, 5150 - 5250 MHz Band, Channel 36, Low Channel					
Result:	Pass	**Value:**	13.8 dBm	**Limit:**	17 dBm

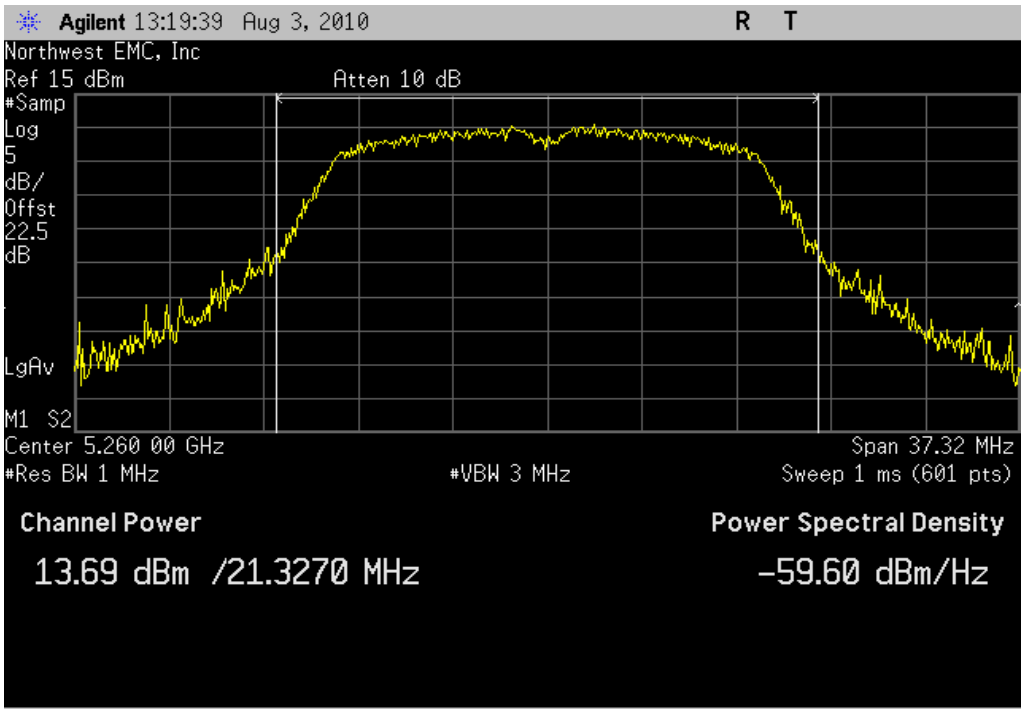


PEAK TRANSMIT POWER

802.11(n) MCS0, 5150 - 5250 MHz Band, Channel 48, High Channel					
Result:	Pass	**Value:**	13.6 dBm	**Limit:**	17 dBm

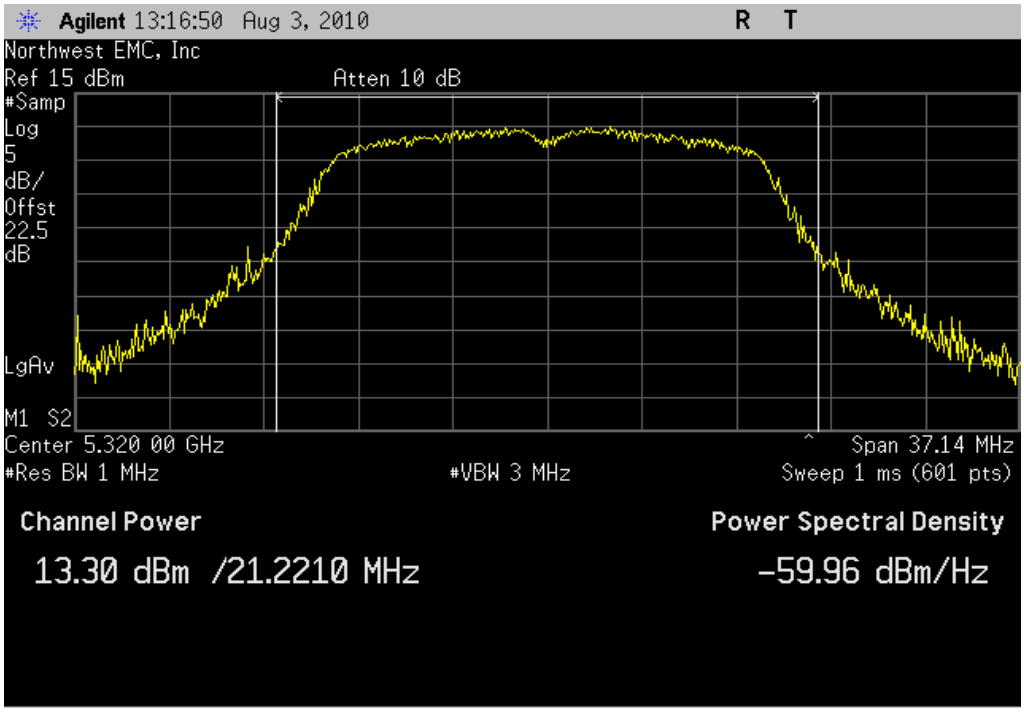


802.11(n) MCS0, 5250 - 5350 MHz Band, Channel 52, Low Channel					
Result:	Pass	**Value:**	13.7 dBm	**Limit:**	24 dBm

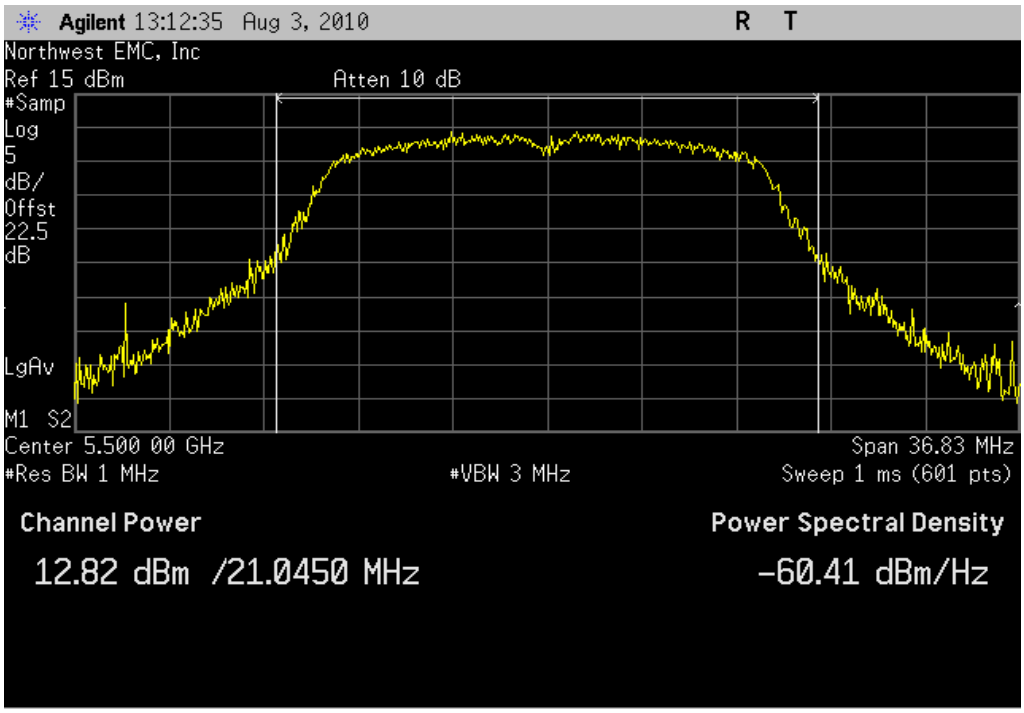


PEAK TRANSMIT POWER

802.11(n) MCS0, 5250 - 5350 MHz Band, Channel 64, High Channel					
Result:	Pass	**Value:**	13.3 dBm	**Limit:**	24 dBm

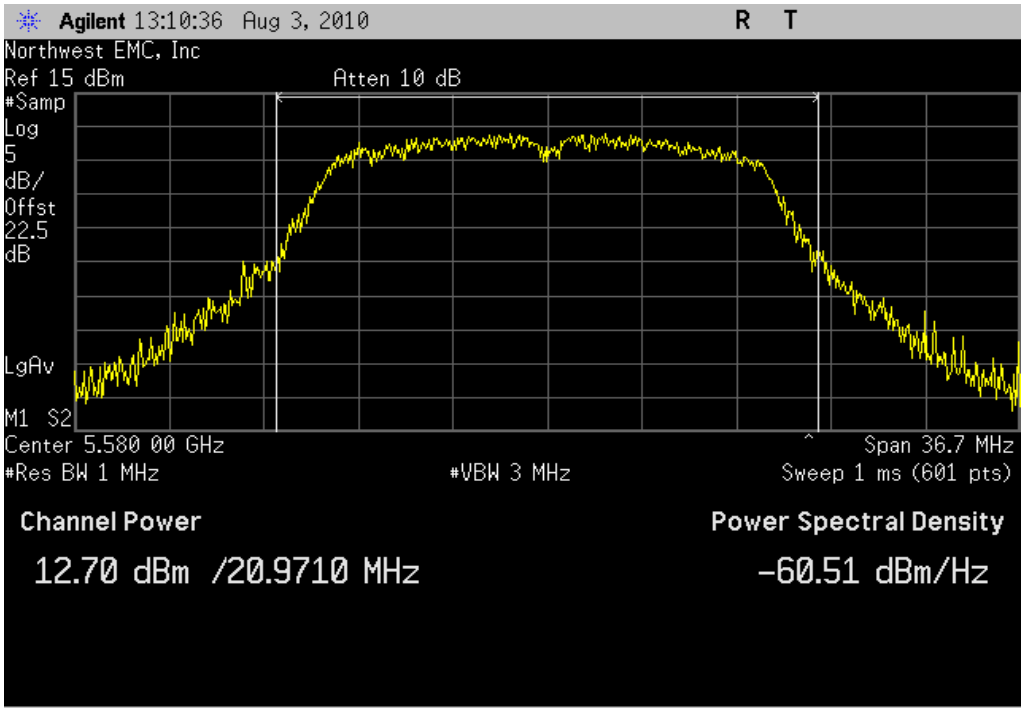


802.11(n) MCS0, 5470 - 5725 MHz Band, Channel 100, Low Channel					
Result:	Pass	**Value:**	12.8 dBm	**Limit:**	24 dBm

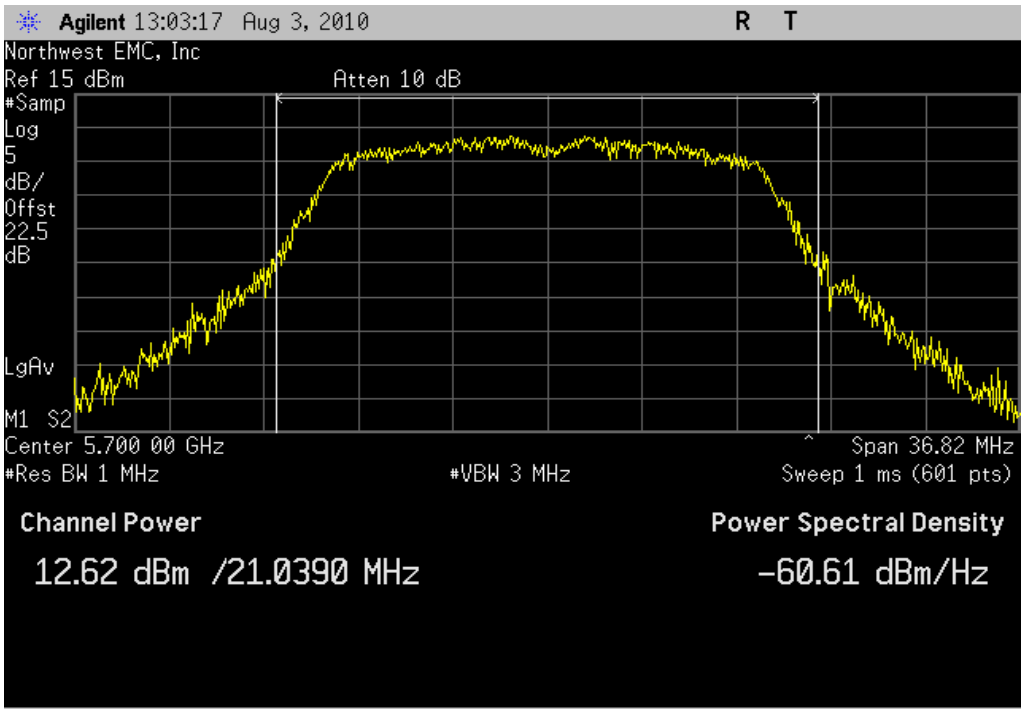


PEAK TRANSMIT POWER

802.11(n) MCS0, 5470 - 5725 MHz Band, Channel 116, Mid Channel					
Result:	Pass	**Value:**	12.7 dBm	**Limit:**	24 dBm

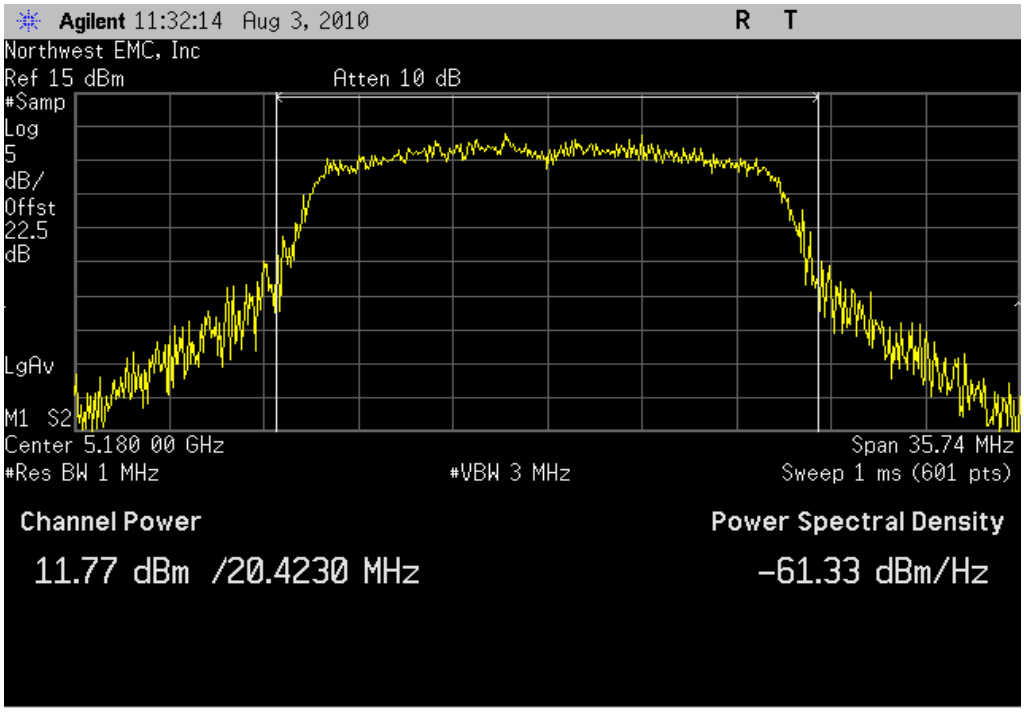


802.11(n) MCS0, 5470 - 5725 MHz Band, Channel 140, High Channel					
Result:	Pass	**Value:**	12.6 dBm	**Limit:**	24 dBm

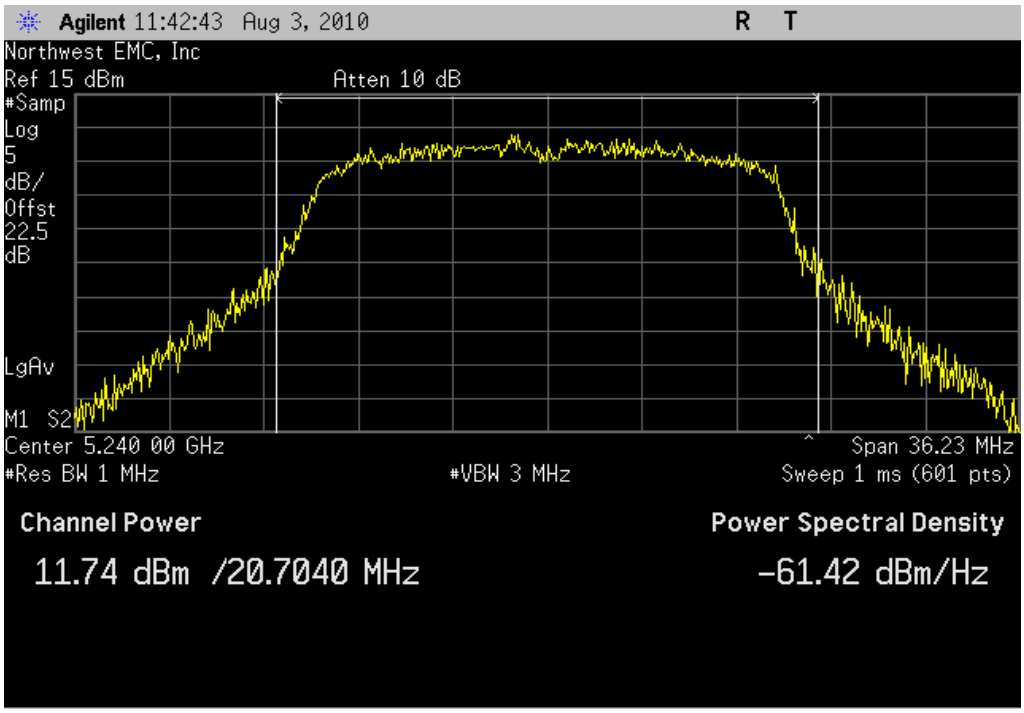


PEAK TRANSMIT POWER

802.11(n) MCS7, 5150 - 5250 MHz Band, Channel 36, Low Channel					
Result:	Pass	**Value:**	11.8 dBm	**Limit:**	17 dBm

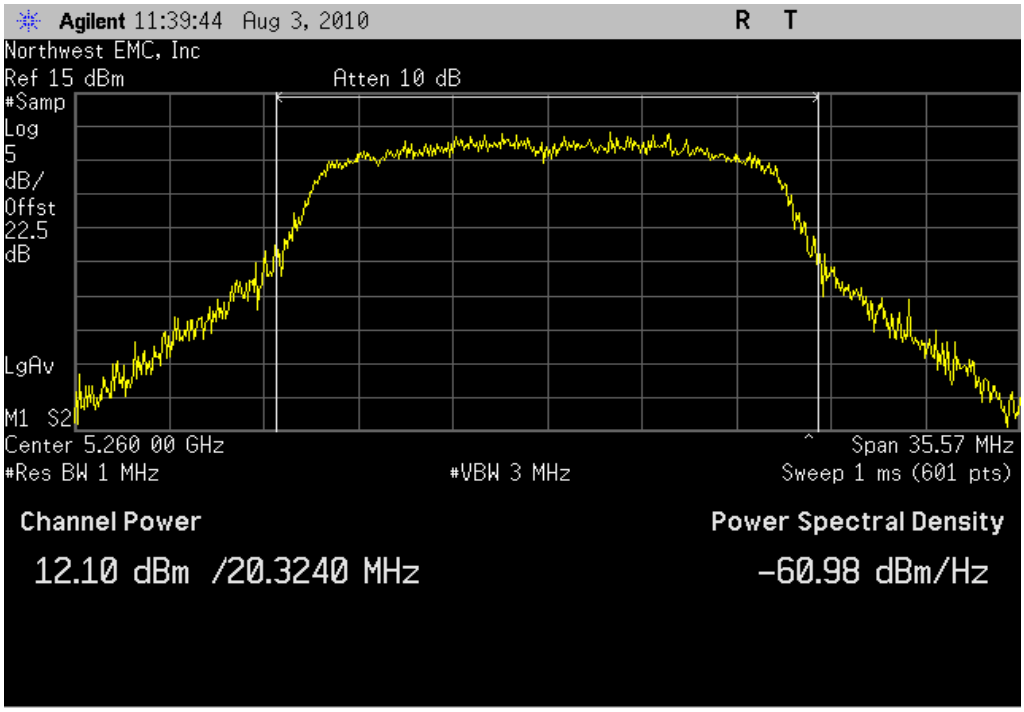


802.11(n) MCS7, 5150 - 5250 MHz Band, Channel 48, High Channel					
Result:	Pass	**Value:**	11.7 dBm	**Limit:**	17 dBm

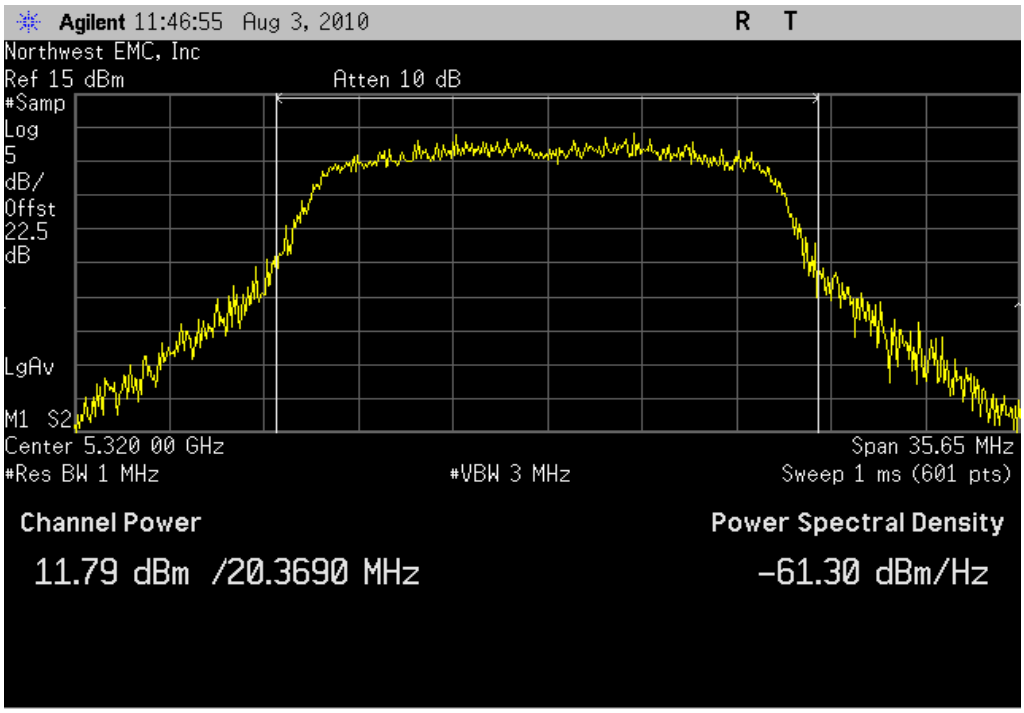


PEAK TRANSMIT POWER

802.11(n) MCS7, 5250 - 5350 MHz Band, Channel 52, Low Channel					
Result:	Pass	**Value:**	12.1 dBm	**Limit:**	24 dBm

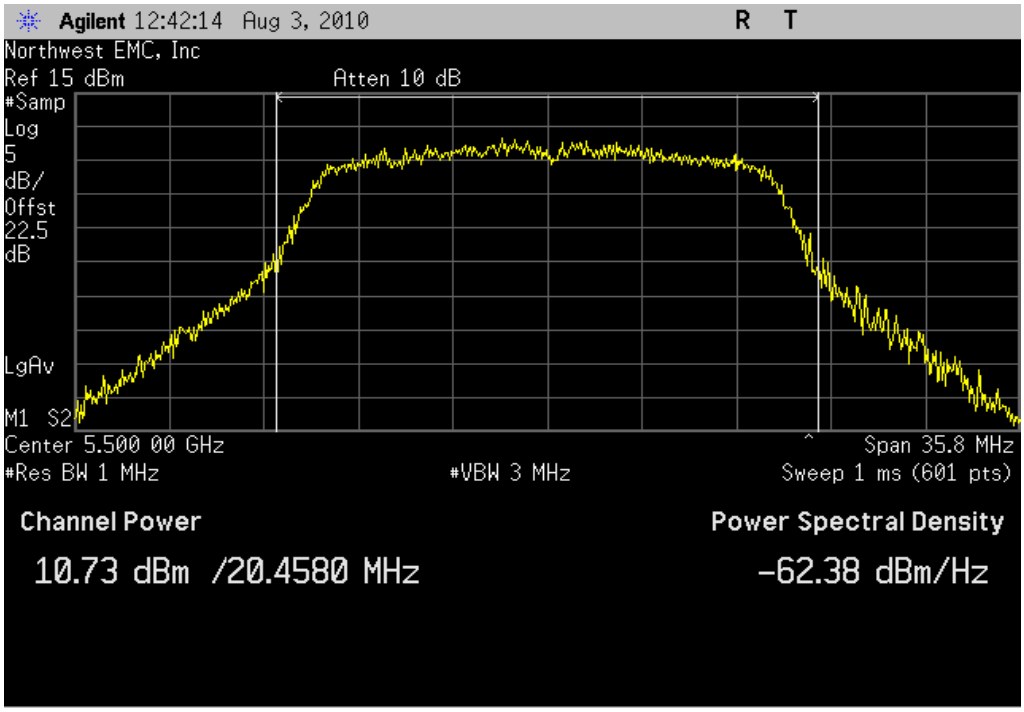


802.11(n) MCS7, 5250 - 5350 MHz Band, Channel 64, High Channel					
Result:	Pass	**Value:**	11.8 dBm	**Limit:**	24 dBm

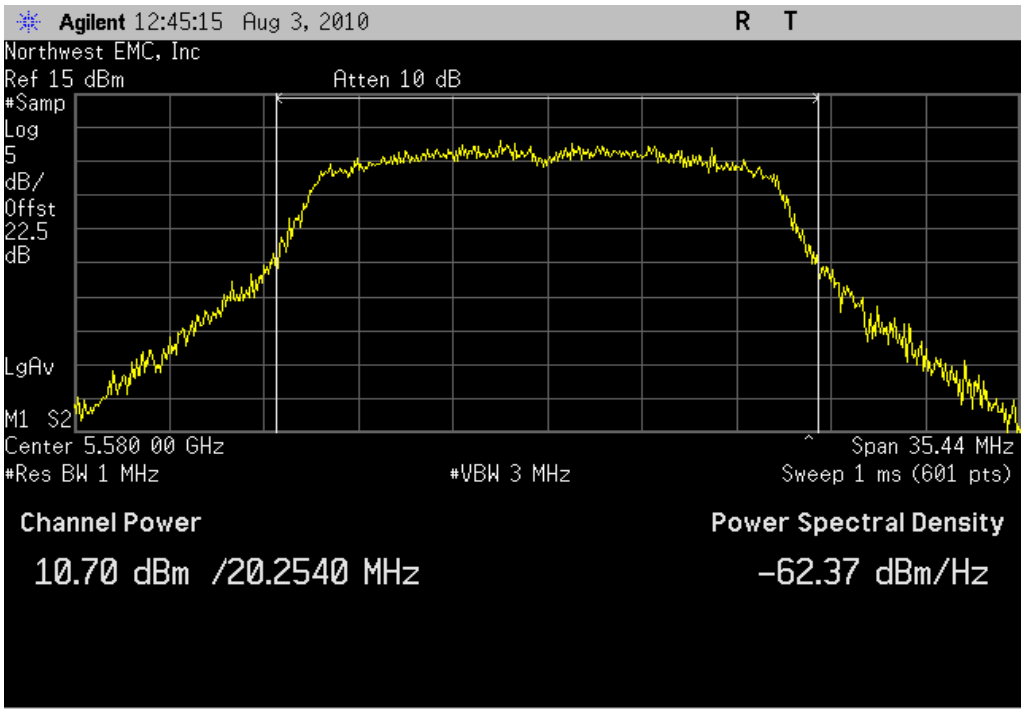


PEAK TRANSMIT POWER

802.11(n) MCS7, 5470 - 5725 MHz Band, Channel 100, Low Channel					
Result:	Pass	**Value:**	10.7 dBm	**Limit:**	24 dBm

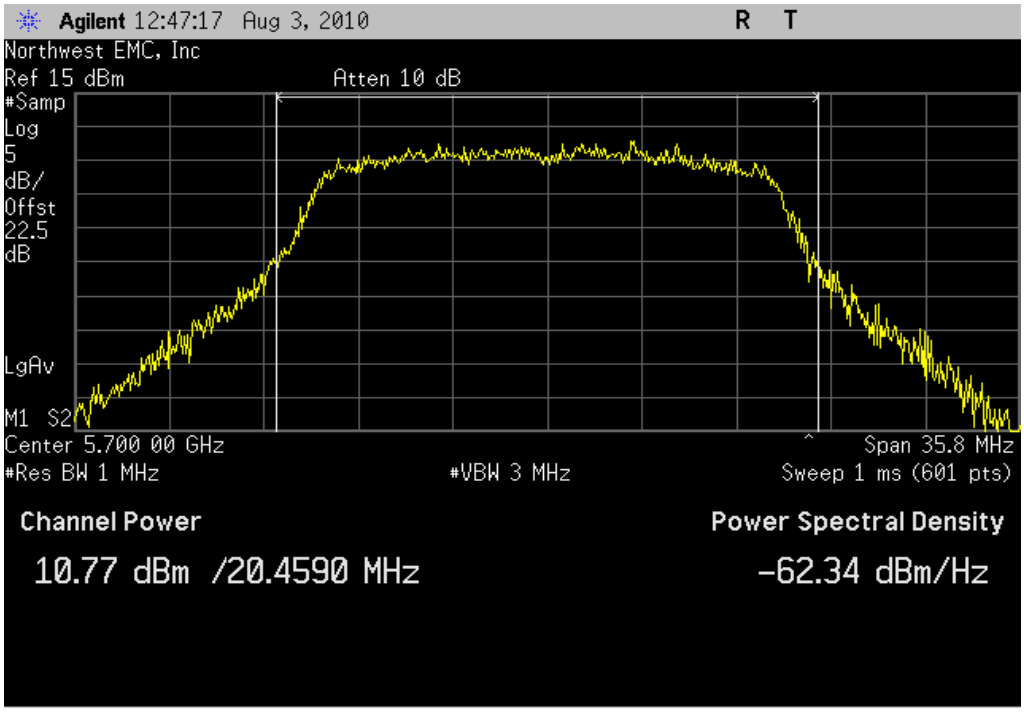


802.11(n) MCS7, 5470 - 5725 MHz Band, Channel 116, Mid Channel					
Result:	Pass	**Value:**	10.7 dBm	**Limit:**	24 dBm

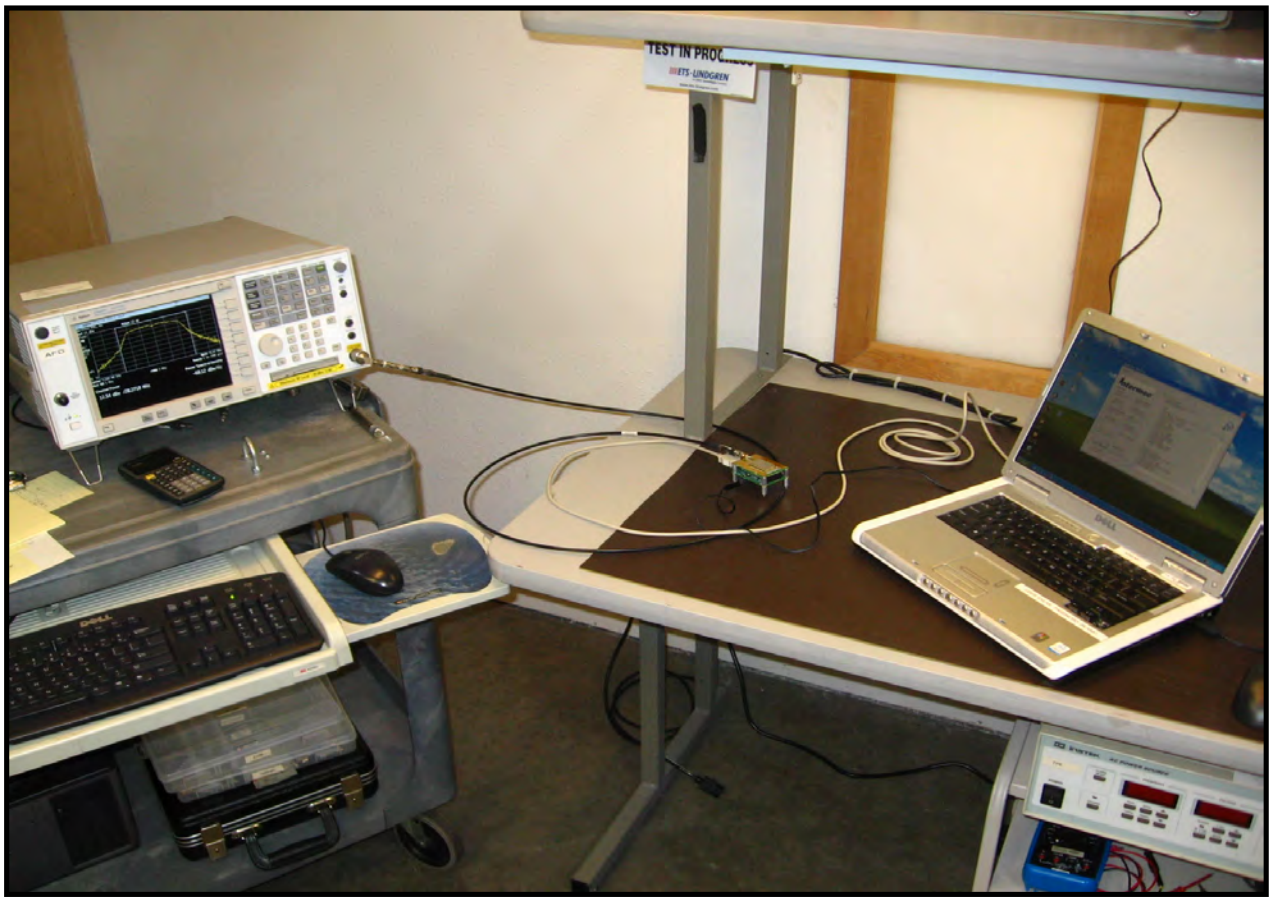


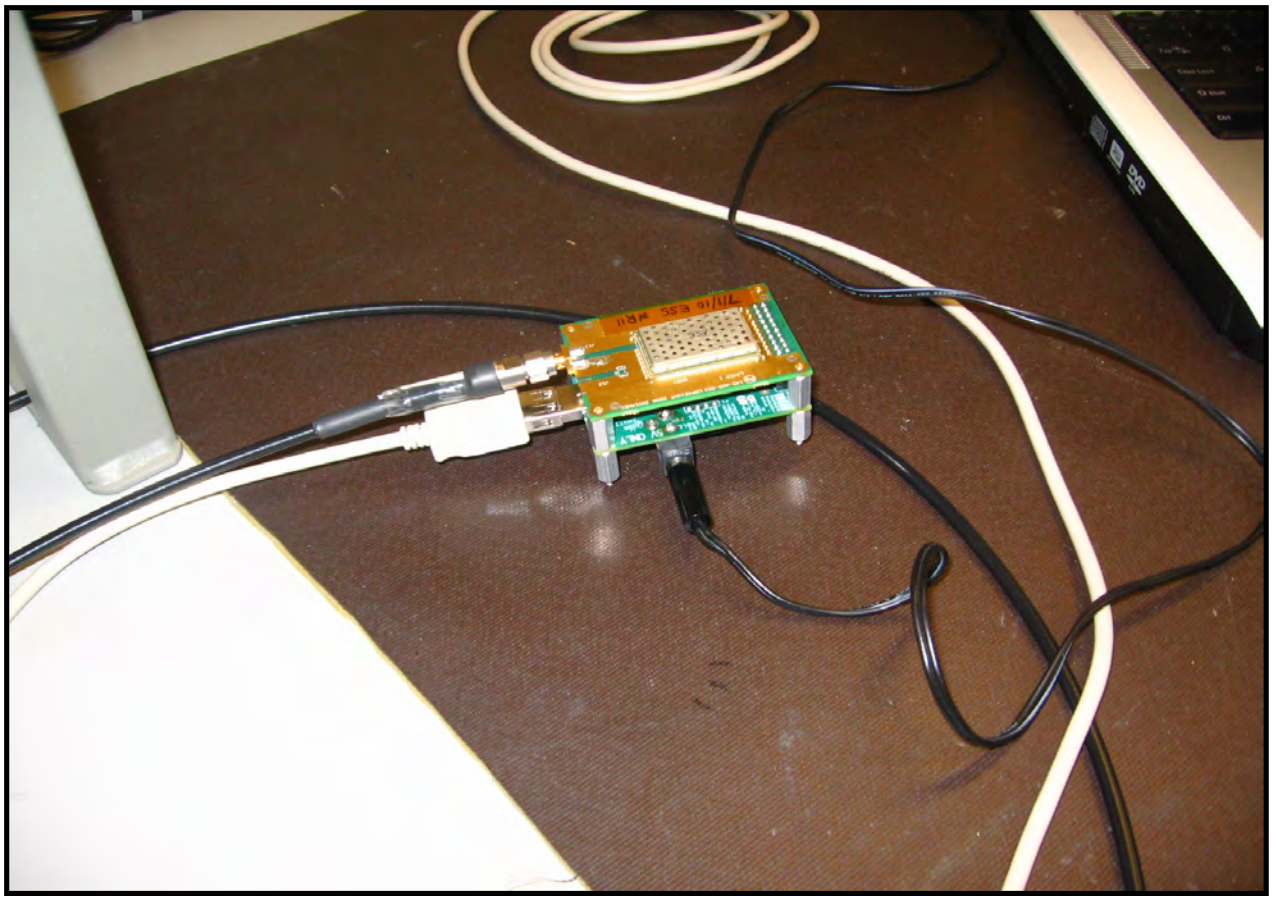
PEAK TRANSMIT POWER

802.11(n) MCS7, 5470 - 5725 MHz Band, Channel 140, High Channel					
Result:	Pass	**Value:**	10.8 dBm	**Limit:**	24 dBm



PEAK TRANSMIT POWER





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

Continuous Tx. 802.11
Continuous Tx. 802.11a, 6Mbps
Continuous Tx. 802.11a
Continuous Tx. 802.11 5GHz

MODE USED FOR FINAL DATA

Continuous Tx. 802.11

POWER SETTINGS INVESTIGATED

5VDC

FREQUENCY RANGE INVESTIGATED

Start Frequency	30 MHz	Stop Frequency	40 GHz

SAMPLE CALCULATIONS

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Spectrum Analyzer	Agilent	E4446A	AAQ	1/6/2010	12
Int. Analyzer	Electro Metrics	EMC-10	AAZ	NCR	12
High Pass Filter	Micro-Tronics	HPM50112	HGA	10/1/2009	13
5.725-5.875 Notch Filter	Micro-Tronics	BRC50705	HGJ	7/31/2009	13
5.47-5.725 Notch Filter	Micro-Tronics	BRC50704	HGI	10/1/2009	13
5.25 GHz Notch Filter	K&L Microwave	8N50-5250/X200-0/0	HFK	4/2/2010	13
OC Cable	ESM Cable Corp.	KMKM-72	OCV	11/3/2009	13
Cable	ESM Cable Corp.	KMKM-72	EVY	11/3/2009	13
EV12 Cables	N/A	Standard Gain Horn Cables	EVU	7/14/2010	13
EV12 Cables	N/A	Double Ridge Horn Cables	EVT	10/23/2009	13
EV12 Cables	N/A	Bilog Cables	EVS	7/14/2010	13
Pre-Amplifier	Miteq	JSW45-26004000-40-5P	AVR	6/22/2010	13
Pre-Amplifier	Miteq	AMF-6F-18002650-25-10P	AVU	5/19/2009	16
Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	AVI	7/14/2010	13
Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AVH	7/14/2010	13
Pre-Amplifier	Miteq	AMF-3D00100800-32-13P	AVF	7/14/2010	13
Pre-Amplifier	Miteq	AM-1616-1000	AVM	7/14/2010	13
Antenna, Horn	ETS Lindgren	3160-10	AIW	NCR	0
Antenna, Horn	ETS Lindgren	3160-09	AIV	NCR	0
Antenna, Horn	ETS	3160-08	AIA	NCR	0
Antenna, Horn	ETS	3160.07	AHZ	10/14/2008	24
Antenna, Horn	ETS	3115	AIB	8/25/2008	24
Antenna, Biconilog	EMCO	3141	AXG	2/15/2010	13

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.

NORTHWEST EMC

SPURIOUS RADIATED EMISSIONS DATA SHEET

PSA 2008.07.21
EMI 2008.1.9

EUT:	RC12	Work Order:	INMC0575
Serial Number:	R14	Date:	08/03/10
Customer:	Intermec Technologies Corporation	Temperature:	21.4 °C
Attendees:	none	Humidity:	56%
Project:	None	Barometric Pres.:	1019.1 mb
Tested by:	Dan Haas	Job Site:	EV12
Power:	5VDC		

TEST SPECIFICATIONS	Test Method
FCC 15.407:2010	ANSI C63.10:2009

TEST PARAMETERS

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

COMMENTS

See notes for channel and EUTorientation.

EUT OPERATING MODES

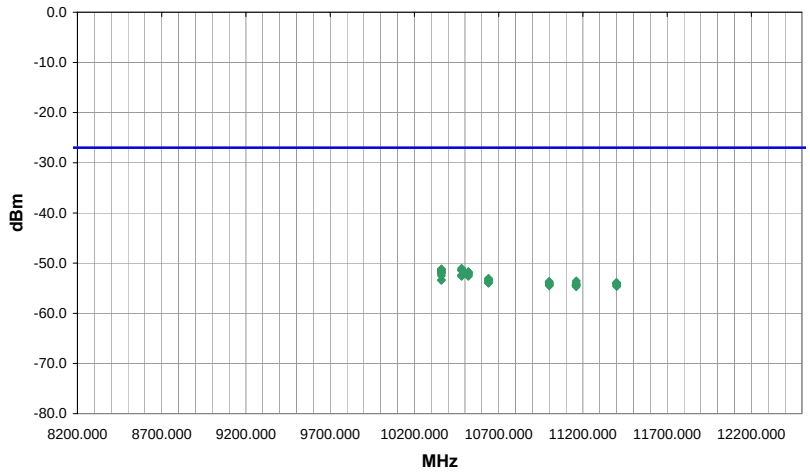
Continuous Tx. 802.11 5GHz

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	7
Configuration #	1
Results	Pass

Signature



Freq (MHz)			Azimuth (degrees)	Height (meters)			Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
10479.960			239.0	1.2			V-Horn	PK	7.89E-09	-51.0	-27.0	-24.0	802.11a 6Mbps, Ch:48, EUT horizontal, antenna vertical.
10360.180			240.0	1.1			V-Horn	PK	7.71E-09	-51.1	-27.0	-24.1	802.11a 6Mbps, Ch:36, EUT horizontal, antenna vertical.
10359.970			240.0	1.1			V-Horn	PK	7.54E-09	-51.2	-27.0	-24.2	802.11a 36Mbps, Ch:36, EUT horizontal, antenna vertical.
10360.020			240.0	1.1			V-Horn	PK	7.36E-09	-51.3	-27.0	-24.3	802.11n MCS0, Ch:36, EUT horizontal, antenna vertical.
10360.050			240.0	1.1			V-Horn	PK	7.36E-09	-51.3	-27.0	-24.3	802.11n MCS7, Ch:36, EUT horizontal, antenna vertical.
10480.520			239.0	1.2			V-Horn	PK	7.36E-09	-51.3	-27.0	-24.3	802.11a 36Mbps, Ch:48, EUT horizontal, antenna vertical.
10479.360			239.0	1.2			V-Horn	PK	7.20E-09	-51.4	-27.0	-24.4	802.11n MCS0, Ch:48, EUT horizontal, antenna vertical.
10479.880			239.0	1.2			V-Horn	PK	7.20E-09	-51.4	-27.0	-24.4	802.11a 54Mbps, Ch:48, EUT horizontal, antenna vertical.
10479.900			239.0	1.2			V-Horn	PK	7.20E-09	-51.4	-27.0	-24.4	802.11n MCS7, Ch:48, EUT horizontal, antenna vertical.
10359.690			240.0	1.1			V-Horn	PK	6.87E-09	-51.6	-27.0	-24.6	802.11a 54Mbps, Ch:36, EUT horizontal, antenna vertical.
10359.990			72.0	1.1			V-Horn	PK	6.87E-09	-51.6	-27.0	-24.6	802.11a 6Mbps, Ch:36, EUT on side, antenna vertical.
10359.790			47.0	1.2			H-Horn	PK	6.72E-09	-51.7	-27.0	-24.7	802.11a 6Mbps, Ch:36, EUT vertical, antenna horizontal.
10519.640			241.0	1.1			V-Horn	PK	6.72E-09	-51.7	-27.0	-24.7	802.11a 6Mbps, Ch:52, EUT horizontal, antenna vertical.
10519.980			241.0	1.1			V-Horn	PK	6.72E-09	-51.7	-27.0	-24.7	802.11n MCS0, Ch:52, EUT horizontal, antenna vertical.
10359.960			47.0	1.2			H-Horn	PK	6.56E-09	-51.8	-27.0	-24.8	802.11n MCS0, Ch:36, EUT vertical, antenna horizontal.
10360.280			47.0	1.2			H-Horn	PK	6.41E-09	-51.9	-27.0	-24.9	802.11n MCS7, Ch:36, EUT vertical, antenna horizontal.
10519.970			55.0	1.1			H-Horn	PK	6.41E-09	-51.9	-27.0	-24.9	802.11a 6Mbps, Ch:52, EUT vertical, antenna horizontal.
10519.980			241.0	1.1			V-Horn	PK	6.41E-09	-51.9	-27.0	-24.9	802.11a 54Mbps, Ch:52, EUT horizontal, antenna vertical.
10360.220			47.0	1.2			H-Horn	PK	6.27E-09	-52.0	-27.0	-25.0	802.11a 54Mbps, Ch:36, EUT vertical, antenna horizontal.
10519.840			241.0	1.1			V-Horn	PK	6.27E-09	-52.0	-27.0	-25.0	802.11n MCS7, Ch:52, EUT horizontal, antenna vertical.

NORTHWEST EMC

SPURIOUS RADIATED EMISSIONS DATA SHEET

PSA 2008.07.21
EMI 2008.1.9

EUT:	RC12	Work Order:	INMC0575
Serial Number:	R14	Date:	08/03/10
Customer:	Intermec Technologies Corporation	Temperature:	21.4 °C
Attendees:	none	Humidity:	56%
Project:	None	Barometric Pres.:	1019.1 mb
Tested by:	Dan Haas	Job Site:	EV12
Power:	5VDC		

TEST SPECIFICATIONS	Test Method
FCC 15.209:2010	ANSI C63.10:2009

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

COMMENTS

See notes for channel and EUTorientation.

EUT OPERATING MODES

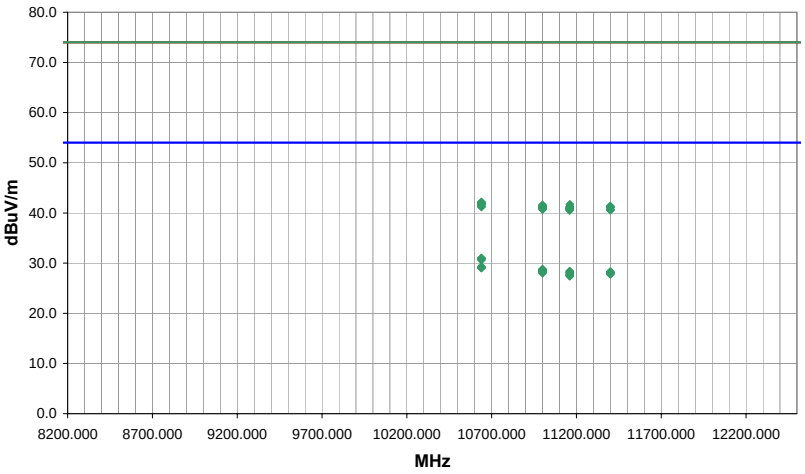
Continuous Tx. 802.11 5GHz

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	7
Configuration #	1
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
10640.000	39.8	-8.8	239.0	1.1	0.0	0.0	V-Horn	AV	0.0	31.0	54.0	-23.0	802.11n MCS7, Ch:64, EUT horizontal, antenna vertical.
10640.030	39.8	-8.8	239.0	1.1	0.0	0.0	V-Horn	AV	0.0	31.0	54.0	-23.0	802.11n MCS0, Ch:64, EUT horizontal, antenna vertical.
10640.030	39.7	-8.8	239.0	1.1	0.0	0.0	V-Horn	AV	0.0	30.9	54.0	-23.1	802.11a 54Mbps, Ch:64, EUT horizontal, antenna vertical.
10640.040	39.6	-8.8	239.0	1.1	0.0	0.0	V-Horn	AV	0.0	30.8	54.0	-23.2	802.11a 36Mbps, Ch:64, EUT horizontal, antenna vertical.
10640.020	39.4	-8.8	239.0	1.1	0.0	0.0	V-Horn	AV	0.0	30.6	54.0	-23.4	802.11a 6Mbps, Ch:64, EUT horizontal, antenna vertical.
10640.010	38.1	-8.8	61.0	1.1	0.0	0.0	H-Horn	AV	0.0	29.3	54.0	-24.7	802.11n MCS0, Ch:64, EUT vertical, antenna horizontal.
10640.040	38.0	-8.8	61.0	1.1	0.0	0.0	H-Horn	AV	0.0	29.2	54.0	-24.8	802.11n MCS7, Ch:64, EUT vertical, antenna horizontal.
10640.050	38.0	-8.8	61.0	1.1	0.0	0.0	H-Horn	AV	0.0	29.2	54.0	-24.8	802.11a 6Mbps, Ch:64, EUT vertical, antenna horizontal.
10640.010	37.9	-8.8	61.0	1.1	0.0	0.0	H-Horn	AV	0.0	29.1	54.0	-24.9	802.11a 54Mbps, Ch:64, EUT vertical, antenna horizontal.
10640.030	37.8	-8.8	61.0	1.1	0.0	0.0	H-Horn	AV	0.0	29.0	54.0	-25.0	802.11a 36Mbps, Ch:64, EUT vertical, antenna horizontal.
10999.990	38.1	-9.3	3.0	1.1	0.0	0.0	H-Horn	AV	0.0	28.8	54.0	-25.2	802.11n MCS7, Ch:100, EUT vertical, antenna horizontal.
11000.000	38.0	-9.3	3.0	1.1	0.0	0.0	H-Horn	AV	0.0	28.7	54.0	-25.3	802.11n MCS0, Ch:100, EUT vertical, antenna horizontal.
11000.030	38.0	-9.3	3.0	1.1	0.0	0.0	H-Horn	AV	0.0	28.7	54.0	-25.3	802.11a 6Mbps, Ch:100, EUT vertical, antenna horizontal.
10999.950	37.8	-9.3	3.0	1.1	0.0	0.0	H-Horn	AV	0.0	28.5	54.0	-25.5	802.11a 36Mbps, Ch:100, EUT vertical, antenna horizontal.
11000.070	37.8	-9.3	3.0	1.1	0.0	0.0	H-Horn	AV	0.0	28.5	54.0	-25.5	802.11a 54Mbps, Ch:100, EUT vertical, antenna horizontal.
11000.030	37.7	-9.3	68.0	1.1	0.0	0.0	V-Horn	AV	0.0	28.4	54.0	-25.6	802.11n MCS7, Ch:100, EUT horizontal, antenna vertical.
11160.010	37.8	-9.4	357.0	1.2	0.0	0.0	H-Horn	AV	0.0	28.4	54.0	-25.6	802.11n MCS7, Ch:116, EUT vertical, antenna horizontal.
11400.010	38.0	-9.7	357.0	1.1	0.0	0.0	H-Horn	AV	0.0	28.3	54.0	-25.7	802.11n MCS7, Ch:140, EUT vertical, antenna horizontal.
11000.020	37.6	-9.3	68.0	1.1	0.0	0.0	V-Horn	AV	0.0	28.3	54.0	-25.7	802.11a 54Mbps, Ch:100, EUT horizontal, antenna vertical.
11000.110	37.6	-9.3	68.0	1.1	0.0	0.0	V-Horn	AV	0.0	28.3	54.0	-25.7	802.11n MCS0, Ch:100, EUT horizontal, antenna vertical.

NORTHWEST EMC

SPURIOUS RADIATED EMISSIONS DATA SHEET

PSA 2008.07.21
EMI 2008.1.9

EUT:	RC12	Work Order:	INMC0575
Serial Number:	R14	Date:	08/03/10
Customer:	Intermec Technologies Corporation	Temperature:	21.4 °C
Attendees:	none	Humidity:	56%
Project:	None	Barometric Pres.:	1019.1 mb
Tested by:	Dan Haas	Job Site:	EV12
Power:	5VDC		

TEST SPECIFICATIONS	Test Method
FCC 15.209:2010	ANSI C63.10:2009

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

COMMENTS

See notes for channel and EUTorientation.

EUT OPERATING MODES

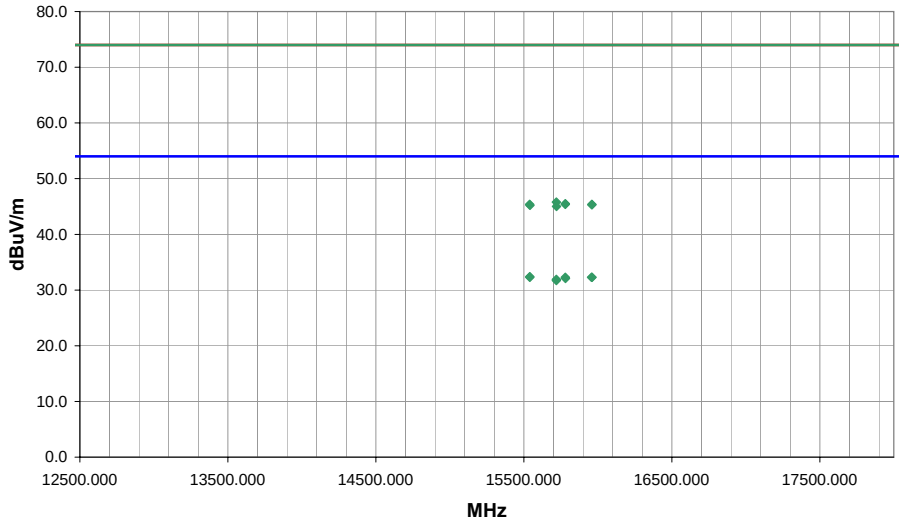
Continuous Tx. 802.11a

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	8
Configuration #	1
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
15540.320	29.1	3.3	81.0	1.1	3.0	0.0	V-Horn	AV	0.0	32.4	54.0	-21.6	Ch:36, EUT horizontal, antenna vertical.
15780.340	29.0	3.3	16.0	1.1	3.0	0.0	V-Horn	AV	0.0	32.3	54.0	-21.7	Ch:52, EUT horizontal, antenna vertical.
15958.050	29.0	3.3	149.0	1.1	3.0	0.0	V-Horn	AV	0.0	32.3	54.0	-21.7	Ch:64, EUT horizontal, antenna vertical.
15960.520	29.0	3.3	310.0	1.1	3.0	0.0	H-Horn	AV	0.0	32.3	54.0	-21.7	Ch:64, EUT vertical, antenna horizontal.
15539.900	29.0	3.3	89.0	1.1	3.0	0.0	H-Horn	AV	0.0	32.3	54.0	-21.7	Ch:36, EUT vertical, antenna horizontal.
15781.240	28.8	3.3	315.0	1.1	3.0	0.0	H-Horn	AV	0.0	32.1	54.0	-21.9	Ch:52, EUT vertical, antenna horizontal.
15720.060	28.6	3.3	259.0	1.1	3.0	0.0	V-Horn	AV	0.0	31.9	54.0	-22.1	Ch:48, EUT horizontal, antenna vertical.
15720.220	28.4	3.3	48.0	1.1	3.0	0.0	H-Horn	AV	0.0	31.7	54.0	-22.3	Ch:48, EUT vertical, antenna horizontal.
15719.750	42.5	3.3	48.0	1.1	3.0	0.0	H-Horn	PK	0.0	45.8	74.0	-28.2	Ch:48, EUT vertical, antenna horizontal.
15780.180	42.2	3.3	315.0	1.1	3.0	0.0	H-Horn	PK	0.0	45.5	74.0	-28.5	Ch:52, EUT vertical, antenna horizontal.
15780.140	42.1	3.3	16.0	1.1	3.0	0.0	V-Horn	PK	0.0	45.4	74.0	-28.6	Ch:52, EUT horizontal, antenna vertical.
15959.830	42.1	3.3	149.0	1.1	3.0	0.0	V-Horn	PK	0.0	45.4	74.0	-28.6	Ch:64, EUT horizontal, antenna vertical.
15539.480	42.1	3.3	81.0	1.1	3.0	0.0	V-Horn	PK	0.0	45.4	74.0	-28.6	Ch:36, EUT horizontal, antenna vertical.
15959.270	42.0	3.3	310.0	1.1	3.0	0.0	H-Horn	PK	0.0	45.3	74.0	-28.7	Ch:64, EUT vertical, antenna horizontal.
15540.960	41.9	3.3	89.0	1.1	3.0	0.0	H-Horn	PK	0.0	45.2	74.0	-28.8	Ch:36, EUT vertical, antenna horizontal.
15720.790	41.7	3.3	259.0	1.1	3.0	0.0	V-Horn	PK	0.0	45.0	74.0	-29.0	Ch:48, EUT horizontal, antenna vertical.

NORTHWEST EMC

SPURIOUS RADIATED EMISSIONS DATA SHEET

PSA 2008.07.21
EMI 2008.1.9

EUT:	RC12	Work Order:	INMC0575
Serial Number:	R14	Date:	08/03/10
Customer:	Intermec Technologies Corporation	Temperature:	21.4 °C
Attendees:	none	Humidity:	56%
Project:	None	Barometric Pres.:	1019.1 mb
Tested by:	Dan Haas	Job Site:	EV12
Power:	5VDC		

TEST SPECIFICATIONS	Test Method
FCC 15.407:2010	ANSI C63.10:2009

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

COMMENTS

See notes for channel and EUTorientation.

EUT OPERATING MODES

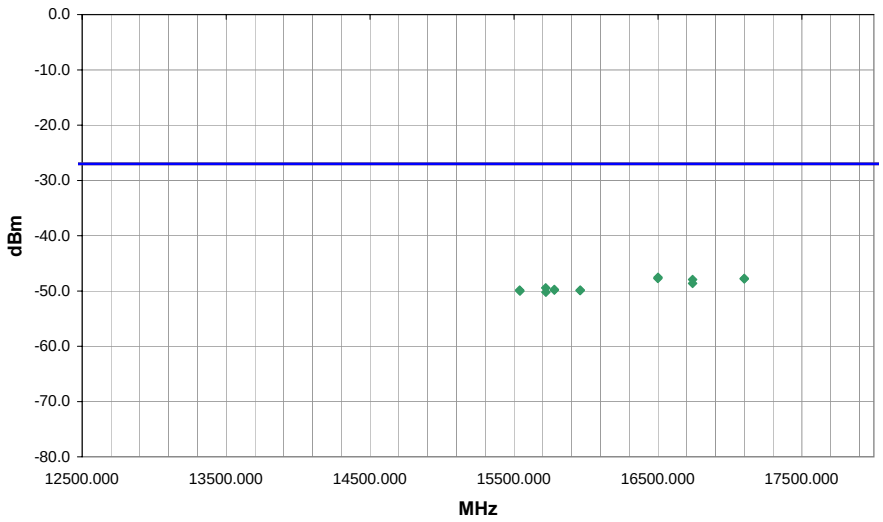
Continuous Tx. 802.11a, 6Mbps

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	8
Configuration #	1
Results	Pass

Signature



Freq (MHz)			Azimuth (degrees)	Height (meters)			Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
16500.040			97.0	1.1			V-Horn	PK	1.77E-08	-47.5	-27.0	-20.5	Ch:100, EUT horizontal, antenna vertical.
17100.010			0.0	1.4			H-Horn	PK	1.69E-08	-47.7	-27.0	-20.7	Ch:140, EUT vertical, antenna horizontal.
16499.720			49.0	1.1			H-Horn	PK	1.69E-08	-47.7	-27.0	-20.7	Ch:100, EUT vertical, antenna horizontal.
17099.680			124.0	1.1			V-Horn	PK	1.65E-08	-47.8	-27.0	-20.8	Ch:140, EUT horizontal, antenna vertical.
16740.130			294.0	1.1			H-Horn	PK	1.61E-08	-47.9	-27.0	-20.9	Ch:116, EUT vertical, antenna horizontal.
16740.290			42.0	1.1			V-Horn	PK	1.37E-08	-48.6	-27.0	-21.6	Ch:116, EUT horizontal, antenna vertical.
15719.750			48.0	1.1			H-Horn	PK	1.14E-08	-49.4	-27.0	-22.4	Ch:48, EUT vertical, antenna horizontal.
15780.180			315.0	1.1			H-Horn	PK	1.06E-08	-49.7	-27.0	-22.7	Ch:52, EUT vertical, antenna horizontal.
15780.140			16.0	1.1			V-Horn	PK	1.04E-08	-49.8	-27.0	-22.8	Ch:52, EUT horizontal, antenna vertical.
15959.830			149.0	1.1			V-Horn	PK	1.04E-08	-49.8	-27.0	-22.8	Ch:64, EUT horizontal, antenna vertical.
15539.480			81.0	1.1			V-Horn	PK	1.04E-08	-49.8	-27.0	-22.8	Ch:36, EUT horizontal, antenna vertical.
15959.270			310.0	1.1			H-Horn	PK	1.02E-08	-49.9	-27.0	-22.9	Ch:64, EUT vertical, antenna horizontal.
15540.960			89.0	1.1			H-Horn	PK	9.93E-09	-50.0	-27.0	-23.0	Ch:36, EUT vertical, antenna horizontal.
15720.790			259.0	1.1			V-Horn	PK	9.49E-09	-50.2	-27.0	-23.2	Ch:48, EUT horizontal, antenna vertical.

NORTHWEST EMC

SPURIOUS RADIATED EMISSIONS DATA SHEET

PSA 2008.07.21
EMI 2008.1.9

EUT:	RC12	Work Order:	INMC0575
Serial Number:	R14	Date:	08/03/10
Customer:	Intermec Technologies Corporation	Temperature:	23.2 °C
Attendees:	none	Humidity:	50%
Project:	None	Barometric Pres.:	1017.5 mb
Tested by:	Dan Haas	Job Site:	EV12
Power:	5VDC		

TEST SPECIFICATIONS	Test Method
FCC 15.407:2010	ANSI C63.10:2009

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

COMMENTS

See notes for channel and EUTorientation.

EUT OPERATING MODES

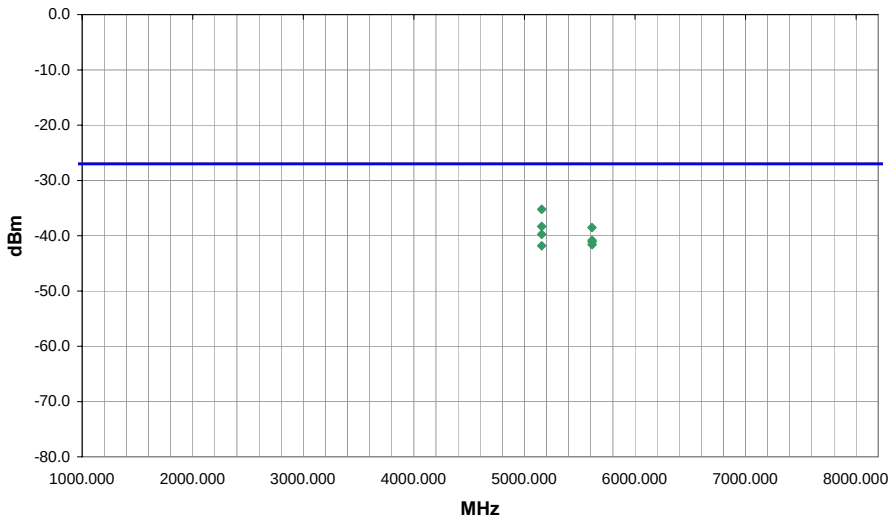
Continuous Tx. 802.11a, 6Mbps

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	9
Configuration #	1
Results	Pass

Signature



Freq (MHz)			Azimuth (degrees)	Height (meters)			Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
5155.960			238.0	1.6			H-Horn	PK	3.00E-07	-35.2	-27.0	-8.2	Ch:100, EUT horizontal, antenna vertical.
5156.280			285.0	1.7			V-Horn	PK	1.47E-07	-38.3	-27.0	-11.3	Ch:100, EUT vertical, antenna horizontal.
5611.577			232.0	1.5			H-Horn	PK	1.40E-07	-38.5	-27.0	-11.5	Ch:36, EUT horizontal, antenna vertical.
5156.160			198.0	2.4			V-Horn	PK	1.06E-07	-39.7	-27.0	-12.7	Ch:100, EUT horizontal, antenna vertical.
5611.640			269.0	1.0			V-Horn	PK	8.26E-08	-40.8	-27.0	-13.8	Ch:36, EUT vertical, antenna horizontal.
5611.667			173.0	2.3			V-Horn	PK	7.71E-08	-41.1	-27.0	-14.1	Ch:36, EUT horizontal, antenna vertical.
5611.760			170.0	1.2			H-Horn	PK	6.87E-08	-41.6	-27.0	-14.6	Ch:36, EUT vertical, antenna horizontal.
5156.270			175.0	1.2			H-Horn	PK	6.56E-08	-41.8	-27.0	-14.8	Ch:100, EUT vertical, antenna horizontal.

NORTHWEST EMC

SPURIOUS RADIATED EMISSIONS DATA SHEET

PSA 2008.07.21
EMI 2008.1.9

EUT:	RC12	Work Order:	INMC0575
Serial Number:	R14	Date:	08/05/10
Customer:	Intermec Technologies Corporation	Temperature:	23.2 °C
Attendees:	none	Humidity:	50%
Project:	None	Barometric Pres.:	1017.5 mb
Tested by:	Dan Haas	Job Site:	EV12
Power:	5VDC		

TEST SPECIFICATIONS	Test Method
FCC 15.209:2010	ANSI C63.10:2009

TEST PARAMETERS			
Antenna Height(s) (m)	1 - 2	Test Distance (m)	3

COMMENTS

See comments for channel and EUT orientation.

EUT OPERATING MODES

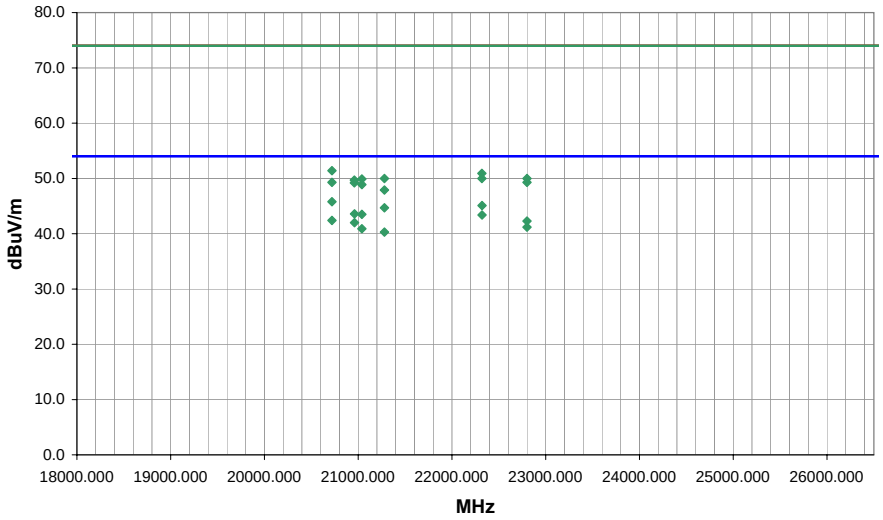
Continuous Tx. 802.11a, 6Mbps

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	12
Configuration #	1
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
20720.040	54.7	-8.9	35.0	1.1	3.0	0.0	+High Horr	AV	0.0	45.8	54.0	-8.2	Ch:36, EUT vertical, antenna horizontal.
22320.040	54.3	-9.2	32.0	1.2	3.0	0.0	√-High Horr	AV	0.0	45.1	54.0	-8.9	Ch:116, EUT on side, antenna vertical.
21280.050	53.8	-9.1	28.0	1.2	3.0	0.0	+High Horr	AV	0.0	44.7	54.0	-9.3	Ch:64, EUT vertical, antenna horizontal.
20960.030	52.6	-9.0	29.0	1.1	3.0	0.0	+High Horr	AV	0.0	43.6	54.0	-10.4	Ch:48, EUT vertical, antenna horizontal.
21040.030	52.5	-9.0	25.0	1.1	3.0	0.0	+High Horr	AV	0.0	43.5	54.0	-10.5	Ch:52, EUT vertical, antenna horizontal.
22320.030	52.6	-9.2	15.0	1.1	3.0	0.0	+High Horr	AV	0.0	43.4	54.0	-10.6	Ch:116, EUT vertical, antenna horizontal.
20720.030	51.3	-8.9	49.0	1.0	3.0	0.0	√-High Horr	AV	0.0	42.4	54.0	-11.6	Ch:36, EUT on side, antenna vertical.
22800.050	51.3	-9.0	21.0	1.1	3.0	0.0	+High Horr	AV	0.0	42.3	54.0	-11.7	Ch:140, EUT vertical, antenna horizontal.
20960.050	51.0	-9.0	47.0	1.0	3.0	0.0	√-High Horr	AV	0.0	42.0	54.0	-12.0	Ch:48, EUT on side, antenna vertical.
22800.030	50.2	-9.0	38.0	1.2	3.0	0.0	√-High Horr	AV	0.0	41.2	54.0	-12.8	Ch:140, EUT on side, antenna vertical.
21040.020	49.9	-9.0	40.0	1.0	3.0	0.0	√-High Horr	AV	0.0	40.9	54.0	-13.1	Ch:52, EUT on side, antenna vertical.
21280.010	49.4	-9.1	319.0	1.2	3.0	0.0	√-High Horr	AV	0.0	40.3	54.0	-13.7	Ch:64, EUT on side, antenna vertical.
20719.970	60.3	-8.9	35.0	1.1	3.0	0.0	+High Horr	PK	0.0	51.4	74.0	-22.6	Ch:36, EUT vertical, antenna horizontal.
22319.820	60.1	-9.2	32.0	1.2	3.0	0.0	√-High Horr	PK	0.0	50.9	74.0	-23.1	Ch:116, EUT on side, antenna vertical.
22319.960	59.2	-9.2	15.0	1.1	3.0	0.0	+High Horr	PK	0.0	50.0	74.0	-24.0	Ch:116, EUT vertical, antenna horizontal.
22800.020	59.0	-9.0	21.0	1.1	3.0	0.0	+High Horr	PK	0.0	50.0	74.0	-24.0	Ch:140, EUT vertical, antenna horizontal.
21280.100	59.1	-9.1	28.0	1.2	3.0	0.0	+High Horr	PK	0.0	50.0	74.0	-24.0	Ch:64, EUT vertical, antenna horizontal.
21040.050	58.9	-9.0	25.0	1.1	3.0	0.0	+High Horr	PK	0.0	49.9	74.0	-24.1	Ch:52, EUT vertical, antenna horizontal.
20959.880	58.7	-9.0	29.0	1.1	3.0	0.0	+High Horr	PK	0.0	49.7	74.0	-24.3	Ch:48, EUT vertical, antenna horizontal.
20719.880	58.2	-8.9	49.0	1.0	3.0	0.0	√-High Horr	PK	0.0	49.3	74.0	-24.7	Ch:36, EUT on side, antenna vertical.

NORTHWEST EMC

SPURIOUS RADIATED EMISSIONS DATA SHEET

PSA 2008.07.21
EMI 2008.1.9

EUT:	RC12	Work Order:	INMC0575
Serial Number:	R14	Date:	08/05/10
Customer:	Intermec Technologies Corporation	Temperature:	23.2 °C
Attendees:	none	Humidity:	50%
Project:	None	Barometric Pres.:	1017.5 mb
Tested by:	Dan Haas	Job Site:	EV12
Power:	5VDC		

TEST SPECIFICATIONS	Test Method
FCC 15.407:2010	ANSI C63.10:2009

TEST PARAMETERS			
Antenna Height(s) (m)	1 - 2	Test Distance (m)	3

COMMENTS

See comments for channel and EUT orientation.

EUT OPERATING MODES

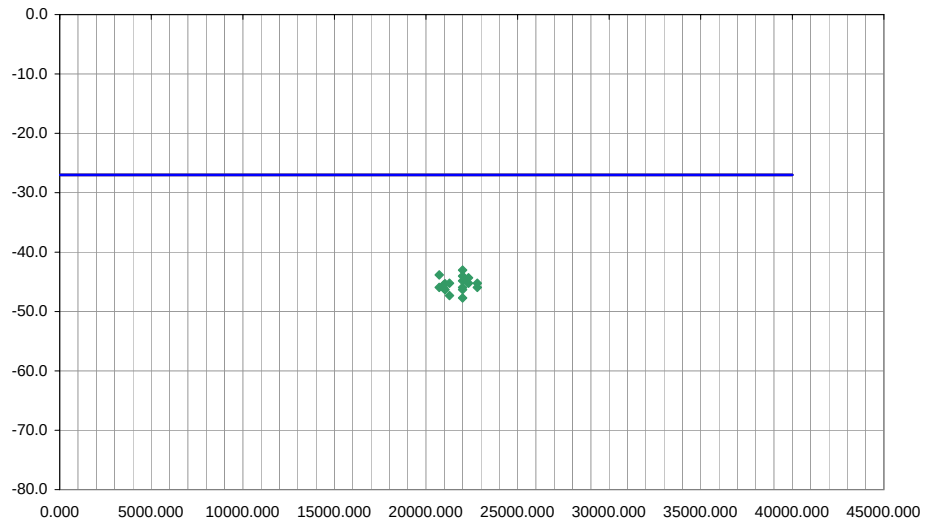
Continuous Tx. 802.11a, 6Mbps

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	12
Configuration #	1
Results	Pass

Signature



Freq (MHz)			Azimuth (degrees)	Height (meters)			Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
22000.000			41.0	1.2			H-High Horr	PK	4.98E-08	-43.0	-27.0	-16.0	Ch:100, EUT vertical, antenna horizontal.
20719.970			35.0	1.1			H-High Horr	PK	4.14E-08	-43.8	-27.0	-16.8	Ch:36, EUT vertical, antenna horizontal.
22000.050			30.0	1.2			V-High Horr	PK	3.95E-08	-44.0	-27.0	-17.0	Ch:100, EUT on side, antenna vertical.
22319.820			32.0	1.2			V-High Horr	PK	3.69E-08	-44.3	-27.0	-17.3	Ch:116, EUT on side, antenna vertical.
21999.830			133.0	1.1			V-High Horr	PK	3.29E-08	-44.8	-27.0	-17.8	Ch:100, EUT horizontal, antenna vertical.
22319.960			15.0	1.1			H-High Horr	PK	3.00E-08	-45.2	-27.0	-18.2	Ch:116, EUT vertical, antenna horizontal.
22800.020			21.0	1.1			H-High Horr	PK	3.00E-08	-45.2	-27.0	-18.2	Ch:140, EUT vertical, antenna horizontal.
21280.100			28.0	1.2			H-High Horr	PK	3.00E-08	-45.2	-27.0	-18.2	Ch:64, EUT vertical, antenna horizontal.
21040.050			25.0	1.1			H-High Horr	PK	2.93E-08	-45.3	-27.0	-18.3	Ch:52, EUT vertical, antenna horizontal.
20959.880			29.0	1.1			H-High Horr	PK	2.80E-08	-45.5	-27.0	-18.5	Ch:48, EUT vertical, antenna horizontal.
20719.880			49.0	1.0			V-High Horr	PK	2.55E-08	-45.9	-27.0	-18.9	Ch:36, EUT on side, antenna vertical.
22800.050			38.0	1.2			V-High Horr	PK	2.55E-08	-45.9	-27.0	-18.9	Ch:140, EUT on side, antenna vertical.
22000.130			52.0	1.3			H-High Horr	PK	2.55E-08	-45.9	-27.0	-18.9	Ch:100, EUT on side, antenna vertical.
20959.810			47.0	1.0			V-High Horr	PK	2.50E-08	-46.0	-27.0	-19.0	Ch:48, EUT on side, antenna vertical.
21039.850			40.0	1.0			V-High Horr	PK	2.33E-08	-46.3	-27.0	-19.3	Ch:52, EUT on side, antenna vertical.
22000.060			15.0	1.3			H-High Horr	PK	2.33E-08	-46.3	-27.0	-19.3	Ch:100, EUT horizontal, antenna vertical.
21280.230			319.0	1.2			V-High Horr	PK	1.85E-08	-47.3	-27.0	-20.3	Ch:64, EUT on side, antenna vertical.
22000.080			309.0	1.0			V-High Horr	PK	1.69E-08	-47.7	-27.0	-20.7	Ch:100, EUT vertical, antenna horizontal.

NORTHWEST EMC

SPURIOUS RADIATED EMISSIONS DATA SHEET

PSA 2008.07.21
EMI 2008.1.9

EUT:	RC12	Work Order:	INMC0575
Serial Number:	R14	Date:	08/05/10
Customer:	Intermec Technologies Corporation	Temperature:	22.3 °C
Attendees:	none	Humidity:	47%
Project:	None	Barometric Pres.:	1015.8 mb
Tested by:	Dan Haas	Job Site:	EV12
Power:	5VDC		

TEST SPECIFICATIONS	Test Method
FCC 15.407:2010	ANSI C63.10:2009

TEST PARAMETERS			
Antenna Height(s) (m)	1 - 2	Test Distance (m)	1

COMMENTS

See comments for channel and EUT orientation.

EUT OPERATING MODES

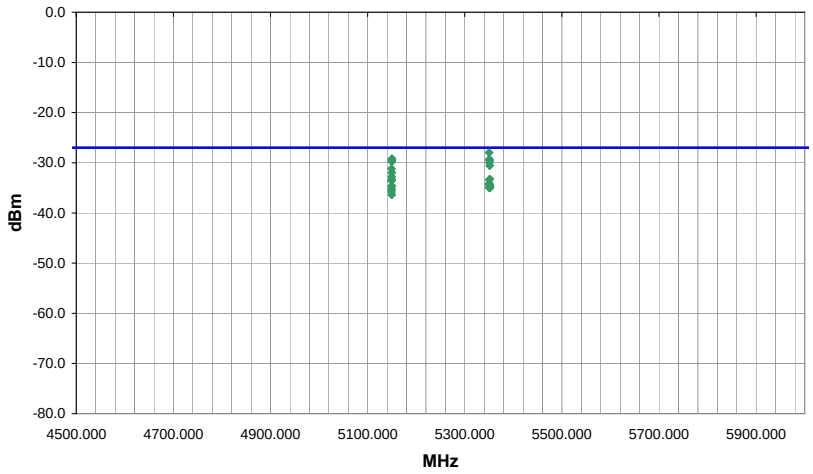
Continuous Tx. 802.11

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	13
Configuration #	1
Results	Pass

Signature



Freq (MHz)			Azimuth (degrees)	Height (meters)			Polarity	Detector	EIRP (Watts)	EIRP (dBm)	Spec. Limit (dBm)	Compared to Spec. (dB)	Comments
5350.047			229.0	1.0			H-Horn	PK	1.60E-06	-28.0	-27.0	-1.0	802.11a 6Mbps, Ch:64, EUT horizontal, antenna vertical.
5149.993			316.0	1.0			H-Horn	PK	1.21E-06	-29.2	-27.0	-2.2	802.11a 6Mbps, Ch:36, EUT on side, antenna vertical.
5350.577			229.0	1.0			H-Horn	PK	1.18E-06	-29.3	-27.0	-2.3	802.11n MCS0, Ch:64, EUT horizontal, antenna vertical.
5149.627			238.0	1.0			H-Horn	PK	1.13E-06	-29.5	-27.0	-2.5	802.11a 6Mbps, Ch:36, EUT horizontal, antenna vertical.
5350.840			229.0	1.0			H-Horn	PK	1.10E-06	-29.6	-27.0	-2.6	802.11a 36Mbps, Ch:64, EUT horizontal, antenna vertical.
5351.407			298.0	1.0			H-Horn	PK	1.10E-06	-29.6	-27.0	-2.6	802.11a 6Mbps, Ch:64, EUT on side, antenna vertical.
5149.613			316.0	1.0			H-Horn	PK	1.05E-06	-29.8	-27.0	-2.8	802.11n MCS0, Ch:36, EUT on side, antenna vertical.
5350.700			284.0	1.2			V-Horn	PK	1.01E-06	-30.0	-27.0	-3.0	802.11a 6Mbps, Ch:64, EUT vertical, antenna horizontal.
5351.147			284.0	1.2			V-Horn	PK	8.77E-07	-30.6	-27.0	-3.6	802.11n MCS0, Ch:64, EUT vertical, antenna horizontal.
5149.000			190.0	1.4			V-Horn	PK	7.64E-07	-31.2	-27.0	-4.2	802.11a 6Mbps, Ch:36, EUT horizontal, antenna vertical.
5149.803			82.0	1.0			V-Horn	PK	6.35E-07	-32.0	-27.0	-5.0	802.11a 6Mbps, Ch:36, EUT vertical, antenna horizontal.
5149.207			190.0	1.4			V-Horn	PK	5.28E-07	-32.8	-27.0	-5.8	802.11n MCS0, Ch:36, EUT horizontal, antenna vertical.
5351.543			284.0	1.2			V-Horn	PK	4.71E-07	-33.3	-27.0	-6.3	802.11a 36Mbps, Ch:64, EUT vertical, antenna horizontal.
5149.263			316.0	1.0			H-Horn	PK	4.60E-07	-33.4	-27.0	-6.4	802.11a 36Mbps, Ch:36, EUT on side, antenna vertical.
5350.297			229.0	1.0			H-Horn	PK	4.60E-07	-33.4	-27.0	-6.4	802.11a 54Mbps, Ch:64, EUT horizontal, antenna vertical.
5149.283			316.0	1.0			H-Horn	PK	4.50E-07	-33.5	-27.0	-6.5	802.11a 54Mbps, Ch:36, EUT on side, antenna vertical.
5148.983			253.0	1.2			V-Horn	PK	4.39E-07	-33.6	-27.0	-6.6	802.11a 6Mbps, Ch:36, EUT on side, antenna vertical.
5350.310			229.0	1.0			H-Horn	PK	3.92E-07	-34.1	-27.0	-7.1	802.11n MCS7, Ch:64, EUT horizontal, antenna vertical.
5350.253			284.0	1.2			V-Horn	PK	3.65E-07	-34.4	-27.0	-7.4	802.11n MCS7, Ch:64, EUT vertical, antenna horizontal.
5351.247			284.0	1.2			V-Horn	PK	3.57E-07	-34.5	-27.0	-7.5	802.11a 54Mbps, Ch:64, EUT vertical, antenna horizontal.

NORTHWEST EMC

SPURIOUS RADIATED EMISSIONS DATA SHEET

PSA 2008.07.21
EMI 2008.1.9

EUT:	RC12	Work Order:	INMC0575
Serial Number:	R14	Date:	08/05/10
Customer:	Intermec Technologies Corporation	Temperature:	22.3 °C
Attendees:	none	Humidity:	47%
Project:	None	Barometric Pres.:	1015.8 mb
Tested by:	Dan Haas	Job Site:	EV12
Power:	5VDC		

TEST SPECIFICATIONS	Test Method
FCC 15.209:2010	ANSI C63.10:2009

TEST PARAMETERS

Antenna Height(s) (m)	1 - 2	Test Distance (m)	1

COMMENTS

See comments for channel and EUT orientation.

EUT OPERATING MODES

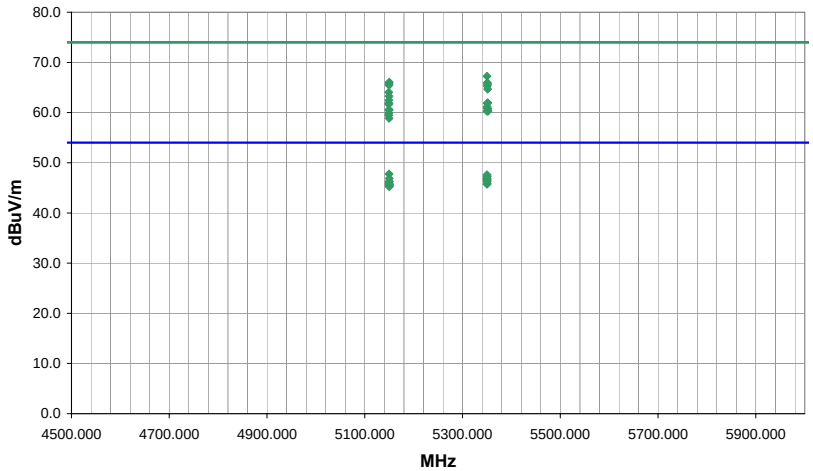
Continuous Tx. 802.11

DEVIATIONS FROM TEST STANDARD

No deviations.

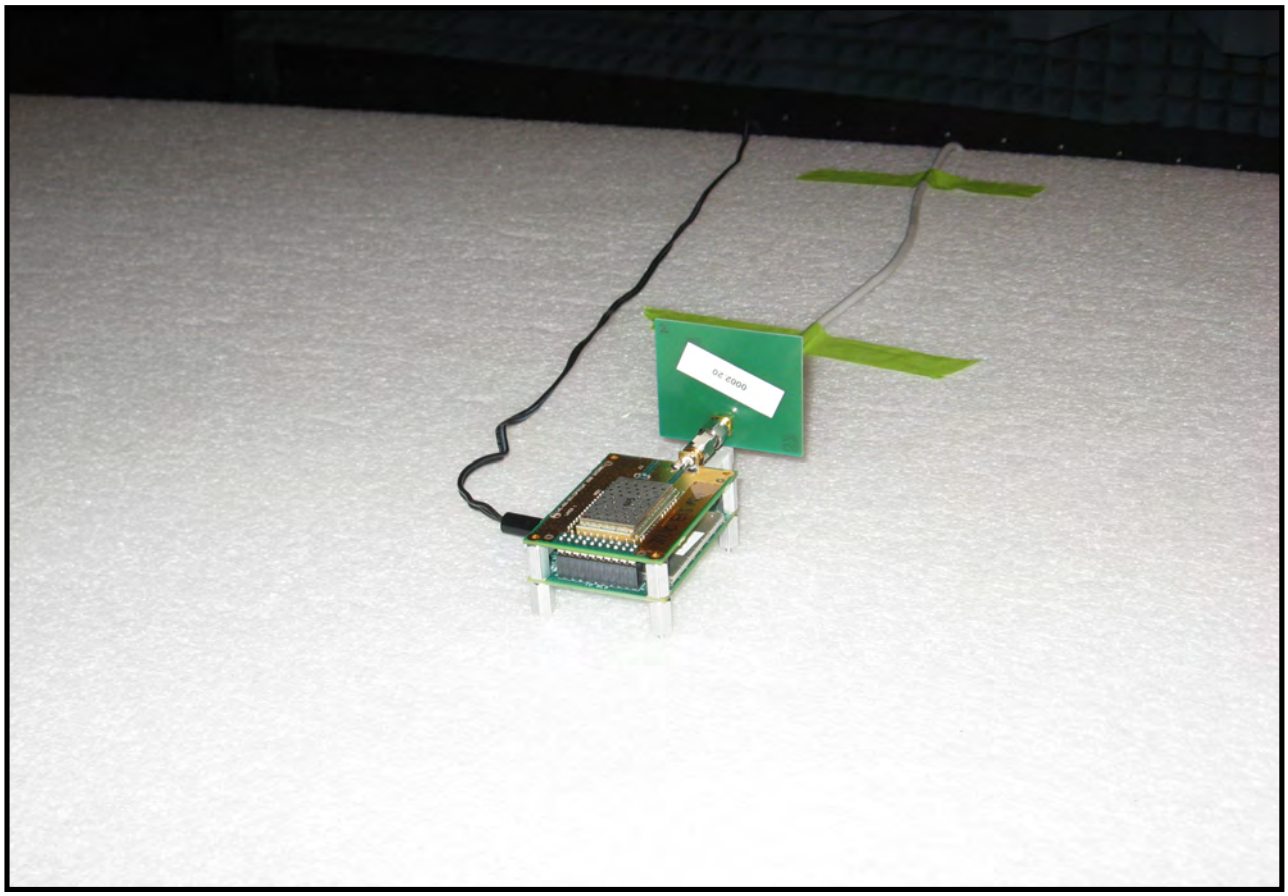
Run #	13
Configuration #	1
Results	Pass

Signature

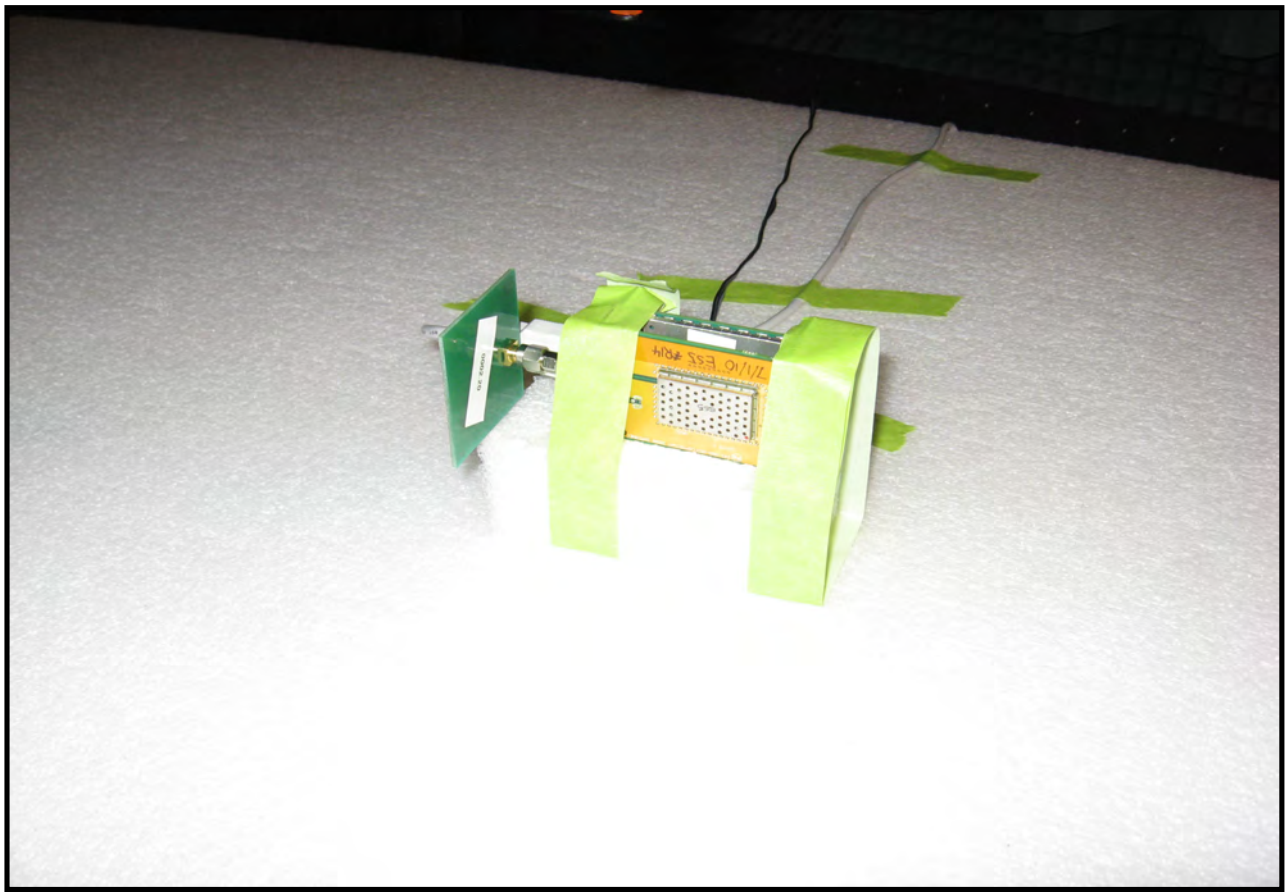


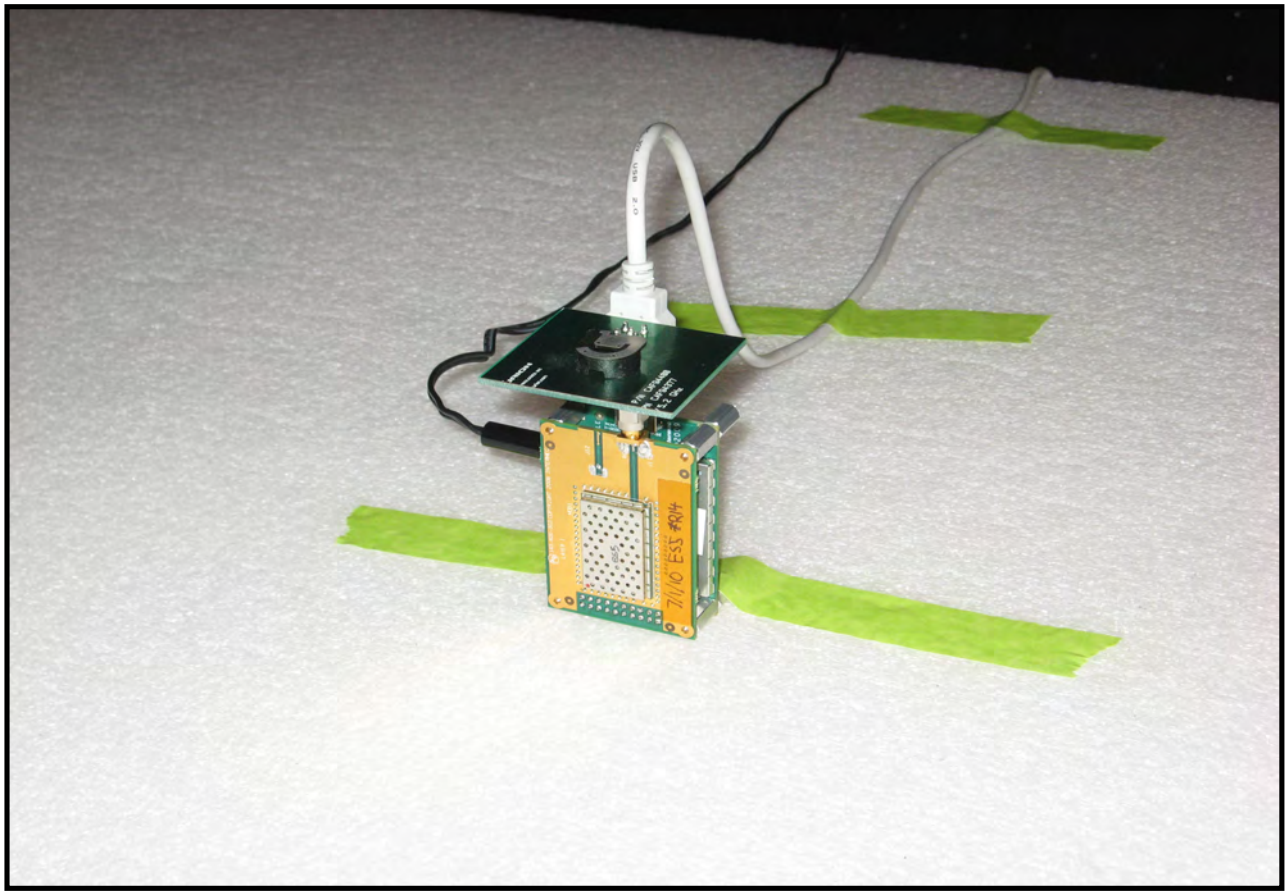
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)	Comments
5149.790	21.0	36.3	316.0	1.0	1.0	0.0	H-Horn	AV	-9.5	47.8	54.0	-6.2	802.11n MCS0, Ch:36, EUT on side, antenna vertical.
5350.023	20.4	36.7	229.0	1.0	1.0	0.0	H-Horn	AV	-9.5	47.6	54.0	-6.4	802.11n MCS0, Ch:64, EUT horizontal, antenna vertical.
5350.137	20.4	36.7	229.0	1.0	1.0	0.0	H-Horn	AV	-9.5	47.6	54.0	-6.4	802.11a 6Mbps, Ch:64, EUT horizontal, antenna vertical.
5350.043	20.1	36.7	229.0	1.0	1.0	0.0	H-Horn	AV	-9.5	47.3	54.0	-6.7	802.11a 36Mbps, Ch:64, EUT horizontal, antenna vertical.
5350.323	20.1	36.7	229.0	1.0	1.0	0.0	H-Horn	AV	-9.5	47.3	54.0	-6.7	802.11a 54Mbps, Ch:64, EUT horizontal, antenna vertical.
5350.047	40.1	36.7	229.0	1.0	1.0	0.0	H-Horn	PK	-9.5	67.3	74.0	-6.7	802.11a 6Mbps, Ch:64, EUT horizontal, antenna vertical.
5149.987	20.1	36.3	238.0	1.0	1.0	0.0	H-Horn	AV	-9.5	46.9	54.0	-7.1	802.11a 6Mbps, Ch:36, EUT horizontal, antenna vertical.
5350.093	19.7	36.7	298.0	1.0	1.0	0.0	H-Horn	AV	-9.5	46.9	54.0	-7.1	802.11a 6Mbps, Ch:64, EUT on side, antenna vertical.
5350.150	19.7	36.7	229.0	1.0	1.0	0.0	H-Horn	AV	-9.5	46.9	54.0	-7.1	802.11n MCS7, Ch:64, EUT horizontal, antenna vertical.
5350.007	19.6	36.7	284.0	1.2	1.0	0.0	V-Horn	AV	-9.5	46.8	54.0	-7.2	802.11n MCS0, Ch:64, EUT vertical, antenna horizontal.
5350.057	19.5	36.7	284.0	1.2	1.0	0.0	V-Horn	AV	-9.5	46.7	54.0	-7.3	802.11a 6Mbps, Ch:64, EUT vertical, antenna horizontal.
5350.373	19.3	36.7	284.0	1.2	1.0	0.0	V-Horn	AV	-9.5	46.5	54.0	-7.5	802.11a 36Mbps, Ch:64, EUT vertical, antenna horizontal.
5350.017	19.2	36.7	284.0	1.2	1.0	0.0	V-Horn	AV	-9.5	46.4	54.0	-7.6	802.11a 54Mbps, Ch:64, EUT vertical, antenna horizontal.
5149.923	19.5	36.3	316.0	1.0	1.0	0.0	H-Horn	AV	-9.5	46.3	54.0	-7.7	802.11a 36Mbps, Ch:36, EUT on side, antenna vertical.
5149.997	19.5	36.3	316.0	1.0	1.0	0.0	H-Horn	AV	-9.5	46.3	54.0	-7.7	802.11a 6Mbps, Ch:36, EUT on side, antenna vertical.
5350.103	19.1	36.7	284.0	1.2	1.0	0.0	V-Horn	AV	-9.5	46.3	54.0	-7.7	802.11n MCS7, Ch:64, EUT vertical, antenna horizontal.
5149.800	19.4	36.3	316.0	1.0	1.0	0.0	H-Horn	AV	-9.5	46.2	54.0	-7.8	802.11a 54Mbps, Ch:36, EUT on side, antenna vertical.
5149.993	39.3	36.3	316.0	1.0	1.0	0.0	H-Horn	PK	-9.5	66.1	74.0	-7.9	802.11a 6Mbps, Ch:36, EUT on side, antenna vertical.
5350.577	38.8	36.7	229.0	1.0	1.0	0.0	H-Horn	PK	-9.5	66.0	74.0	-8.0	802.11n MCS0, Ch:64, EUT horizontal, antenna vertical.
5149.757	19.1	36.3	316.0	1.0	1.0	0.0	H-Horn	AV	-9.5	45.9	54.0	-8.1	802.11n MCS7, Ch:36, EUT on side, antenna vertical.

Spurious Radiated Emissions



Spurious Radiated Emissions





AC POWERLINE CONDUCTED EMISSIONS

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

MODES OF OPERATION
Transmitting. 802.11(a), 6 Mbps, High Channel 140
Transmitting. 802.11(a), 6 Mbps, Mid Channel 116
Transmitting. 802.11(a), 6 Mbps, Low Channel 100
Transmitting. 802.11(a), 6 Mbps, High Channel 64
Transmitting. 802.11(a), 6 Mbps, Low Channel 52
Transmitting. 802.11(a), 6 Mbps, High Channel 48
Transmitting. 802.11(a), 6 Mbps, Low Channel 36

POWER SETTINGS INVESTIGATED
3.3 VDC from 120VAC

CONFIGURATIONS INVESTIGATED
INMC0575 - 3

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Receiver	Rohde & Schwarz	ESCI	ARE	4/29/2010	12 mo
High Pass Filter	TTE	H97-100K-50-720B	HFX	2/16/2010	13 mo
Attenuator	Coaxicom	66702 2910-20	ATO	7/21/2009	13 mo
EV07 Cables	N/A	Conducted Cables	EVG	6/21/2010	13 mo
LISN	Solar	9252-50-R-24-BNC	LIN	5/27/2010	12 mo
LISN	Solar	9252-50-R-24-BNC	LIR	3/2/2010	12 mo

MEASUREMENT BANDWIDTHS

	Frequency Range (MHz)	Peak Data (kHz)	Quasi-Peak Data (kHz)	Average Data (kHz)
	0.01 - 0.15	1.0	0.2	0.2
	0.15 - 30.0	10.0	9.0	9.0
	30.0 - 1000	100.0	120.0	120.0
	Above 1000	1000.0	N/A	1000.0
Measurements were made using the bandwidths and detectors specified. No video filter was used.				

MEASUREMENT UNCERTAINTY

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

TEST DESCRIPTION

The EUT will be powered indirectly from the AC power line while operating in a host device. Therefore, conducted emissions measurements were made on the DC input of the EUT, or on the DC input of the device used to power the EUT. The AC power line conducted emissions were measured on a linear power supply providing DC power to the module while providing no filtering of the power inputs to the module.

The AC power line conducted emissions were measured with the EUT operating at the lowest, the highest, and a middle channel in the operational band or bands. The EUT was transmitting in the mode which has the highest output power for the band. For each mode, the spectrum was scanned from 150 kHz to 30 MHz. The test setup and procedures were in accordance with ANSI C63.10-2009.

NORTHWEST
EMC

AC POWERLINE CONDUCTED EMISSIONS

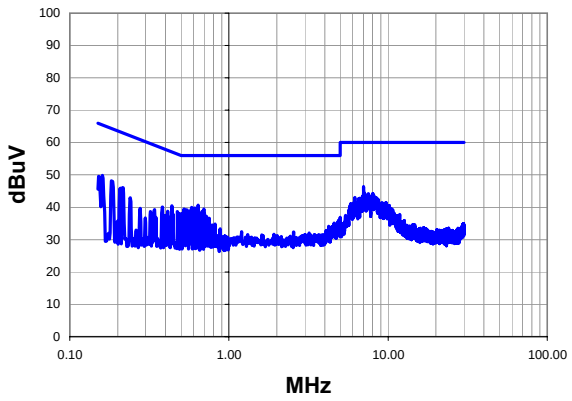
PSA-ESCI 2010.04.06
Version 2010.3.17

Work Order:	INMC0575	**Date:**	08/11/10		
Project:	None	**Temperature:**	22 °C		
Job Site:	EV07	**Humidity:**	53		
Serial Number:	R11	**Barometric Pres.:**	1014.8 mb	**Tested by:**	Rod Peloquin
EUT:	RC12				
Configuration:	3 - AC Power Conducted Emissions				
Customer:	Intermec Technologies Corporation				
Attendees:	none				
EUT Power:	3.3 VDC from 120VAC				
Operating Mode:	Transmitting. 802.11(a), 6 Mbps, 5150 - 5250 MHz Band, Low Channel 36				
Deviations:	No deviations.				
Comments:	Linear lab power supply				

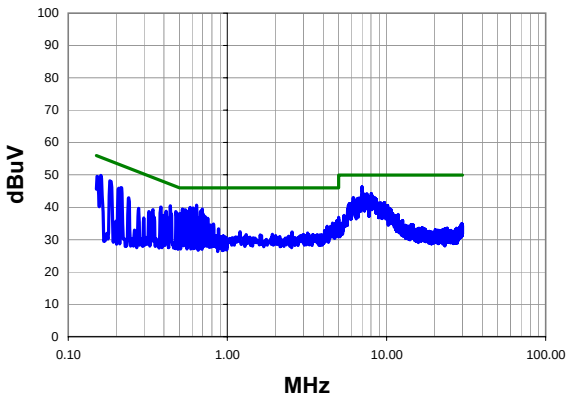
Test Specifications	**Test Method**
FCC 15.207:2010	ANSI C63.10:2009

Run #	13	**Line:**	High Line	**Ext. Attenuation:**	20	**Results**	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
7.010	25.9	20.4	46.3	60.0	-13.7
0.641	20.5	20.2	40.7	56.0	-15.3
0.160	29.7	20.2	49.9	65.5	-15.6
8.020	23.8	20.4	44.2	60.0	-15.8
7.500	23.8	20.4	44.2	60.0	-15.8
0.584	19.8	20.2	40.0	56.0	-16.0
0.609	19.6	20.2	39.8	56.0	-16.2
0.182	28.0	20.2	48.2	64.4	-16.2
0.152	29.4	20.2	49.6	65.9	-16.3
8.160	23.1	20.4	43.5	60.0	-16.5
0.522	19.3	20.2	39.5	56.0	-16.5
0.696	19.3	20.2	39.5	56.0	-16.5
0.437	20.3	20.2	40.5	57.1	-16.6
7.850	22.9	20.4	43.3	60.0	-16.7
0.538	19.0	20.2	39.2	56.0	-16.8
0.546	19.0	20.2	39.2	56.0	-16.8
0.575	18.9	20.2	39.1	56.0	-16.9
0.215	25.9	20.2	46.1	63.0	-17.0
8.340	22.6	20.4	43.0	60.0	-17.0
6.180	22.7	20.3	43.0	60.0	-17.0

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
7.010	25.9	20.4	46.3	50.0	-3.7
0.641	20.5	20.2	40.7	46.0	-5.3
0.160	29.7	20.2	49.9	55.5	-5.6
8.020	23.8	20.4	44.2	50.0	-5.8
7.500	23.8	20.4	44.2	50.0	-5.8
0.584	19.8	20.2	40.0	46.0	-6.0
0.609	19.6	20.2	39.8	46.0	-6.2
0.182	28.0	20.2	48.2	54.4	-6.2
0.152	29.4	20.2	49.6	55.9	-6.3
8.160	23.1	20.4	43.5	50.0	-6.5
0.522	19.3	20.2	39.5	46.0	-6.5
0.696	19.3	20.2	39.5	46.0	-6.5
0.437	20.3	20.2	40.5	47.1	-6.6
7.850	22.9	20.4	43.3	50.0	-6.7
0.538	19.0	20.2	39.2	46.0	-6.8
0.546	19.0	20.2	39.2	46.0	-6.8
0.575	18.9	20.2	39.1	46.0	-6.9
0.215	25.9	20.2	46.1	53.0	-7.0
8.340	22.6	20.4	43.0	50.0	-7.0
6.180	22.7	20.3	43.0	50.0	-7.0

NORTHWEST
EMC

AC POWERLINE CONDUCTED EMISSIONS

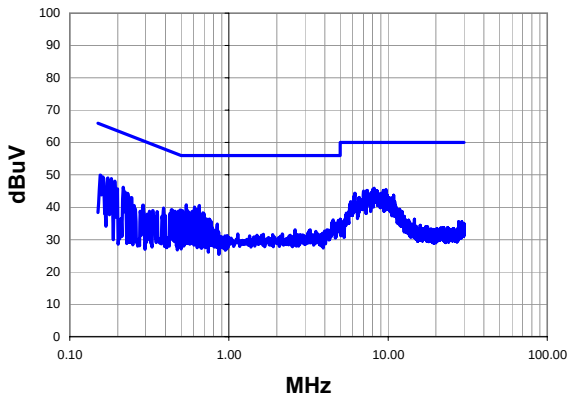
PSA-ESCI 2010.04.06
Version 2010.3.17

Work Order:	INMC0575	**Date:**	08/11/10		
Project:	None	**Temperature:**	22 °C		
Job Site:	EV07	**Humidity:**	53		
Serial Number:	R11	**Barometric Pres.:**	1014.8 mb	**Tested by:**	Rod Peloquin
EUT:	RC12				
Configuration:	3 - AC Power Conducted Emissions				
Customer:	Intermec Technologies Corporation				
Attendees:	none				
EUT Power:	3.3 VDC from 120VAC				
Operating Mode:	Transmitting. 802.11(a), 6 Mbps, 5150 - 5250 MHz Band, Low Channel 36				
Deviations:	No deviations.				
Comments:	Linear lab power supply				

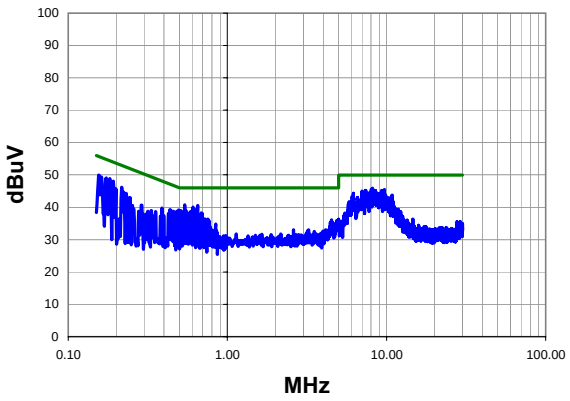
Test Specifications	**Test Method**
FCC 15.207:2010	ANSI C63.10:2009

Run #	14	**Line:**	Neutral	**Ext. Attenuation:**	20	**Results**	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
8.180	25.5	20.4	45.9	60.0	-14.1
8.030	25.2	20.4	45.6	60.0	-14.4
9.680	25.1	20.4	45.5	60.0	-14.5
9.340	24.8	20.4	45.2	60.0	-14.8
7.400	24.8	20.4	45.2	60.0	-14.8
7.360	24.8	20.4	45.2	60.0	-14.8
8.480	24.7	20.4	45.1	60.0	-14.9
7.000	24.6	20.4	45.0	60.0	-15.0
0.539	20.6	20.2	40.8	56.0	-15.2
7.820	24.2	20.4	44.6	60.0	-15.4
0.652	20.4	20.2	40.6	56.0	-15.4
7.150	24.1	20.4	44.5	60.0	-15.5
0.182	28.7	20.2	48.9	64.4	-15.5
9.050	23.9	20.4	44.3	60.0	-15.7
8.690	23.9	20.4	44.3	60.0	-15.7
0.174	28.9	20.2	49.1	64.8	-15.7
6.190	24.0	20.3	44.3	60.0	-15.7
0.155	29.8	20.2	50.0	65.7	-15.8
0.193	27.9	20.2	48.1	63.9	-15.9
0.607	19.9	20.2	40.1	56.0	-15.9

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
8.180	25.5	20.4	45.9	50.0	-4.1
8.030	25.2	20.4	45.6	50.0	-4.4
9.680	25.1	20.4	45.5	50.0	-4.5
9.340	24.8	20.4	45.2	50.0	-4.8
7.400	24.8	20.4	45.2	50.0	-4.8
7.360	24.8	20.4	45.2	50.0	-4.8
8.480	24.7	20.4	45.1	50.0	-4.9
7.000	24.6	20.4	45.0	50.0	-5.0
0.539	20.6	20.2	40.8	46.0	-5.2
7.820	24.2	20.4	44.6	50.0	-5.4
0.652	20.4	20.2	40.6	46.0	-5.4
7.150	24.1	20.4	44.5	50.0	-5.5
0.182	28.7	20.2	48.9	54.4	-5.5
9.050	23.9	20.4	44.3	50.0	-5.7
8.690	23.9	20.4	44.3	50.0	-5.7
0.174	28.9	20.2	49.1	54.8	-5.7
6.190	24.0	20.3	44.3	50.0	-5.7
0.155	29.8	20.2	50.0	55.7	-5.8
0.193	27.9	20.2	48.1	53.9	-5.9
0.607	19.9	20.2	40.1	46.0	-5.9

NORTHWEST
EMC

AC POWERLINE CONDUCTED EMISSIONS

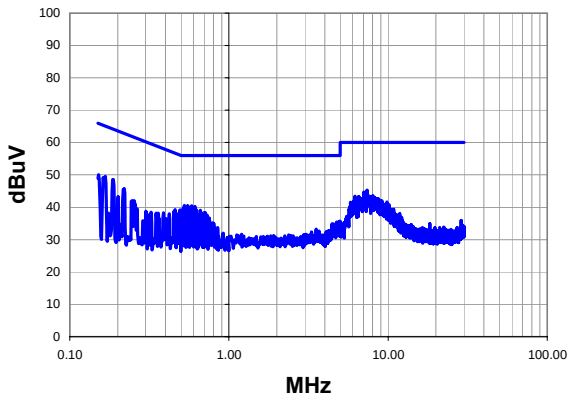
PSA-ESCI 2010.04.06
Version 2010.3.17

Work Order:	INMC0575	**Date:**	08/11/10		
Project:	None	**Temperature:**	22 °C		
Job Site:	EV07	**Humidity:**	53		
Serial Number:	R11	**Barometric Pres.:**	1014.8 mb	**Tested by:**	Rod Peloquin
EUT:	RC12				
Configuration:	3 - AC Power Conducted Emissions				
Customer:	Intermec Technologies Corporation				
Attendees:	none				
EUT Power:	3.3 VDC from 120VAC				
Operating Mode:	Transmitting. 802.11(a), 6 Mbps, 5150 - 5250 MHz Band, High Channel 48				
Deviations:	No deviations.				
Comments:	Linear lab power supply				

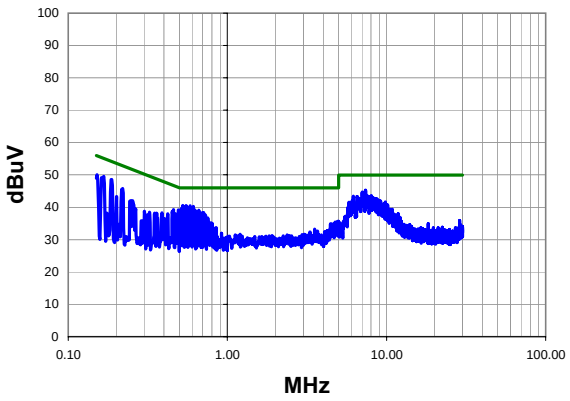
Test Specifications	**Test Method**
FCC 15.207:2010	ANSI C63.10:2009

Run #	15	**Line:**	High Line	**Ext. Attenuation:**	20	**Results**	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
7.370	24.9	20.4	45.3	60.0	-14.7
7.040	24.3	20.4	44.7	60.0	-15.3
0.526	20.4	20.2	40.6	56.0	-15.4
0.551	20.3	20.2	40.5	56.0	-15.5
0.584	20.3	20.2	40.5	56.0	-15.5
0.167	29.4	20.2	49.6	65.1	-15.5
0.186	28.4	20.2	48.6	64.2	-15.7
0.611	20.1	20.2	40.3	56.0	-15.7
0.152	29.9	20.2	50.1	65.9	-15.8
0.561	19.8	20.2	40.0	56.0	-16.0
0.517	19.6	20.2	39.8	56.0	-16.2
0.590	19.5	20.2	39.7	56.0	-16.3
8.030	23.2	20.4	43.6	60.0	-16.4
6.180	23.1	20.3	43.4	60.0	-16.6
6.520	23.0	20.3	43.3	60.0	-16.7
0.626	19.0	20.2	39.2	56.0	-16.8
7.890	22.7	20.4	43.1	60.0	-16.9
0.662	18.9	20.2	39.1	56.0	-16.9
0.493	19.0	20.2	39.2	56.1	-16.9
8.210	22.6	20.4	43.0	60.0	-17.0

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
7.370	24.9	20.4	45.3	50.0	-4.7
7.040	24.3	20.4	44.7	50.0	-5.3
0.526	20.4	20.2	40.6	46.0	-5.4
0.551	20.3	20.2	40.5	46.0	-5.5
0.584	20.3	20.2	40.5	46.0	-5.5
0.167	29.4	20.2	49.6	55.1	-5.5
0.186	28.4	20.2	48.6	54.2	-5.7
0.611	20.1	20.2	40.3	46.0	-5.7
0.152	29.9	20.2	50.1	55.9	-5.8
0.561	19.8	20.2	40.0	46.0	-6.0
0.517	19.6	20.2	39.8	46.0	-6.2
0.590	19.5	20.2	39.7	46.0	-6.3
8.030	23.2	20.4	43.6	50.0	-6.4
6.180	23.1	20.3	43.4	50.0	-6.6
6.520	23.0	20.3	43.3	50.0	-6.7
0.626	19.0	20.2	39.2	46.0	-6.8
7.890	22.7	20.4	43.1	50.0	-6.9
0.662	18.9	20.2	39.1	46.0	-6.9
0.493	19.0	20.2	39.2	46.1	-6.9
8.210	22.6	20.4	43.0	50.0	-7.0

NORTHWEST
EMC

AC POWERLINE CONDUCTED EMISSIONS

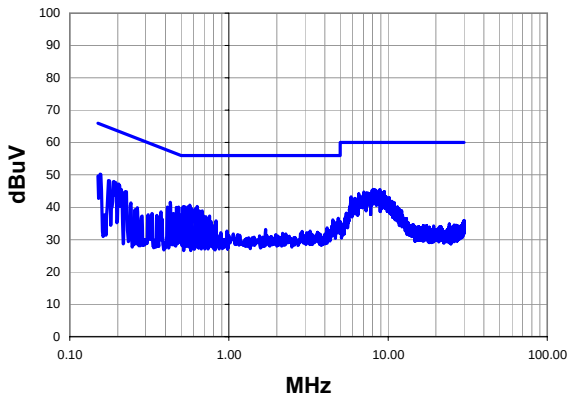
PSA-ESCI 2010.04.06
Version 2010.3.17

Work Order:	INMC0575	**Date:**	08/11/10		
Project:	None	**Temperature:**	22 °C		
Job Site:	EV07	**Humidity:**	53		
Serial Number:	R11	**Barometric Pres.:**	1014.8 mb	**Tested by:**	Rod Peloquin
EUT:	RC12				
Configuration:	3 - AC Power Conducted Emissions				
Customer:	Intermec Technologies Corporation				
Attendees:	none				
EUT Power:	3.3 VDC from 120VAC				
Operating Mode:	Transmitting. 802.11(a), 6 Mbps, 5150 - 5250 MHz Band, High Channel 48				
Deviations:	No deviations.				
Comments:	Linear lab power supply				

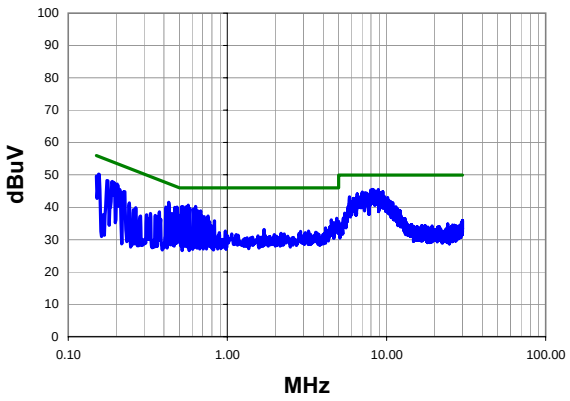
Test Specifications	**Test Method**
FCC 15.207:2010	ANSI C63.10:2009

Run #	16	**Line:**	Neutral	**Ext. Attenuation:**	20	**Results**	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
8.860	25.1	20.4	45.5	60.0	-14.5
8.140	25.1	20.4	45.5	60.0	-14.5
8.270	25.0	20.4	45.4	60.0	-14.6
7.930	24.9	20.4	45.3	60.0	-14.7
8.490	24.6	20.4	45.0	60.0	-15.0
9.470	24.4	20.4	44.8	60.0	-15.2
7.030	24.3	20.4	44.7	60.0	-15.3
0.568	20.5	20.2	40.7	56.0	-15.3
0.155	30.1	20.2	50.3	65.7	-15.5
8.980	24.1	20.4	44.5	60.0	-15.5
8.670	24.1	20.4	44.5	60.0	-15.5
7.360	24.1	20.4	44.5	60.0	-15.5
9.320	24.0	20.4	44.4	60.0	-15.6
9.210	24.0	20.4	44.4	60.0	-15.6
7.510	23.9	20.4	44.3	60.0	-15.7
0.429	21.4	20.2	41.6	57.3	-15.7
0.633	20.1	20.2	40.3	56.0	-15.7
0.526	20.0	20.2	40.2	56.0	-15.8
0.553	20.0	20.2	40.2	56.0	-15.8
0.516	20.0	20.2	40.2	56.0	-15.8

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
8.860	25.1	20.4	45.5	50.0	-4.5
8.140	25.1	20.4	45.5	50.0	-4.5
8.270	25.0	20.4	45.4	50.0	-4.6
7.930	24.9	20.4	45.3	50.0	-4.7
8.490	24.6	20.4	45.0	50.0	-5.0
9.470	24.4	20.4	44.8	50.0	-5.2
7.030	24.3	20.4	44.7	50.0	-5.3
0.568	20.5	20.2	40.7	46.0	-5.3
0.155	30.1	20.2	50.3	55.7	-5.5
8.980	24.1	20.4	44.5	50.0	-5.5
8.670	24.1	20.4	44.5	50.0	-5.5
7.360	24.1	20.4	44.5	50.0	-5.5
9.320	24.0	20.4	44.4	50.0	-5.6
9.210	24.0	20.4	44.4	50.0	-5.6
7.510	23.9	20.4	44.3	50.0	-5.7
0.429	21.4	20.2	41.6	47.3	-5.7
0.633	20.1	20.2	40.3	46.0	-5.7
0.526	20.0	20.2	40.2	46.0	-5.8
0.553	20.0	20.2	40.2	46.0	-5.8
0.516	20.0	20.2	40.2	46.0	-5.8

NORTHWEST
EMC

AC POWERLINE CONDUCTED EMISSIONS

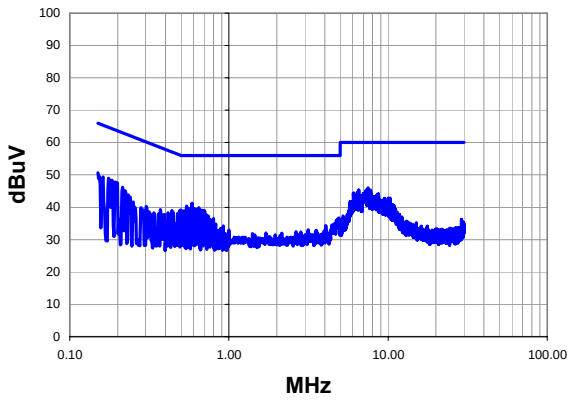
PSA-ESCI 2010.04.06
Version 2010.3.17

Work Order:	INMC0575	**Date:**	08/11/10		
Project:	None	**Temperature:**	22 °C		
Job Site:	EV07	**Humidity:**	53		
Serial Number:	R11	**Barometric Pres.:**	1014.8 mb	**Tested by:**	Rod Peloquin
EUT:	RC12				
Configuration:	3 - AC Power Conducted Emissions				
Customer:	Intermec Technologies Corporation				
Attendees:	none				
EUT Power:	3.3 VDC from 120VAC				
Operating Mode:	Transmitting. 802.11(a), 6 Mbps, 5250 - 5350 MHz Band, Low Channel 52				
Deviations:	No deviations.				
Comments:	Linear lab power supply				

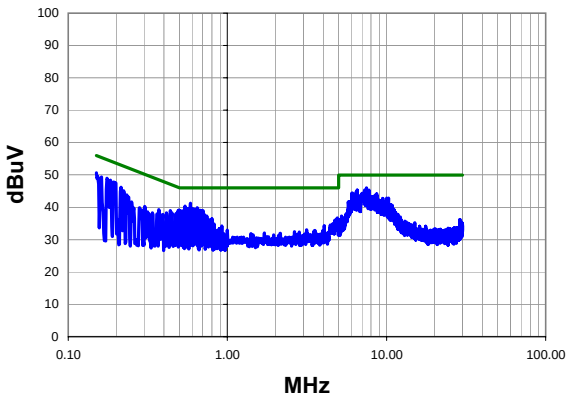
Test Specifications	**Test Method**
FCC 15.207:2010	ANSI C63.10:2009

Run #	17	**Line:**	High Line	**Ext. Attenuation:**	20	**Results**	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
7.490	25.6	20.4	46.0	60.0	-14.0
6.540	25.0	20.3	45.3	60.0	-14.7
7.780	24.9	20.4	45.3	60.0	-14.7
7.270	24.9	20.4	45.3	60.0	-14.7
0.585	21.1	20.2	41.3	56.0	-14.7
6.440	24.5	20.3	44.8	60.0	-15.2
0.150	30.5	20.2	50.7	66.0	-15.3
7.160	24.0	20.4	44.4	60.0	-15.6
0.541	20.2	20.2	40.4	56.0	-15.6
6.110	24.1	20.3	44.4	60.0	-15.6
0.176	28.8	20.2	49.0	64.7	-15.7
8.680	23.7	20.4	44.1	60.0	-15.9
0.184	28.2	20.2	48.4	64.3	-15.9
0.162	29.2	20.2	49.4	65.4	-16.0
0.646	19.7	20.2	39.9	56.0	-16.1
0.198	27.4	20.2	47.6	63.7	-16.2
0.193	27.6	20.2	47.8	63.9	-16.2
0.553	19.5	20.2	39.7	56.0	-16.3
0.599	19.5	20.2	39.7	56.0	-16.3
0.565	19.4	20.2	39.6	56.0	-16.4

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
7.490	25.6	20.4	46.0	50.0	-4.0
6.540	25.0	20.3	45.3	50.0	-4.7
7.780	24.9	20.4	45.3	50.0	-4.7
7.270	24.9	20.4	45.3	50.0	-4.7
0.585	21.1	20.2	41.3	46.0	-4.7
6.440	24.5	20.3	44.8	50.0	-5.2
0.150	30.5	20.2	50.7	56.0	-5.3
7.160	24.0	20.4	44.4	50.0	-5.6
0.541	20.2	20.2	40.4	46.0	-5.6
6.110	24.1	20.3	44.4	50.0	-5.6
0.176	28.8	20.2	49.0	54.7	-5.7
8.680	23.7	20.4	44.1	50.0	-5.9
0.184	28.2	20.2	48.4	54.3	-5.9
0.162	29.2	20.2	49.4	55.4	-6.0
0.646	19.7	20.2	39.9	46.0	-6.1
0.198	27.4	20.2	47.6	53.7	-6.2
0.193	27.6	20.2	47.8	53.9	-6.2
0.553	19.5	20.2	39.7	46.0	-6.3
0.599	19.5	20.2	39.7	46.0	-6.3
0.565	19.4	20.2	39.6	46.0	-6.4

NORTHWEST
EMC

AC POWERLINE CONDUCTED EMISSIONS

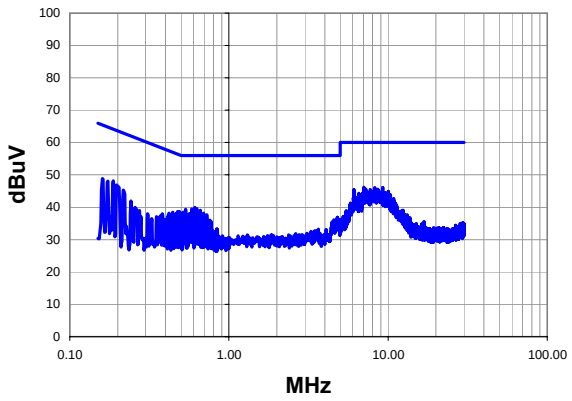
PSA-ESCI 2010.04.06
Version 2010.3.17

Work Order:	INMC0575	**Date:**	08/11/10		
Project:	None	**Temperature:**	22 °C		
Job Site:	EV07	**Humidity:**	53		
Serial Number:	R11	**Barometric Pres.:**	1014.8 mb	**Tested by:**	Rod Peloquin
EUT:	RC12				
Configuration:	3 - AC Power Conducted Emissions				
Customer:	Intermec Technologies Corporation				
Attendees:	none				
EUT Power:	3.3 VDC from 120VAC				
Operating Mode:	Transmitting. 802.11(a), 6 Mbps, 5250 - 5350 MHz Band, Low Channel 52				
Deviations:	No deviations.				
Comments:	Linear lab power supply				

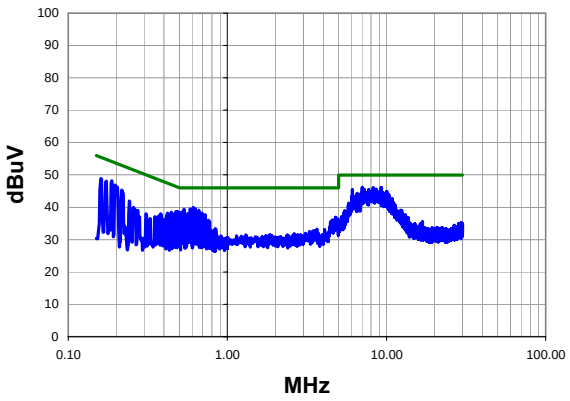
Test Specifications	**Test Method**
FCC 15.207:2010	ANSI C63.10:2009

Run #	18	**Line:**	Neutral	**Ext. Attenuation:**	20	**Results**	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
7.030	25.8	20.4	46.2	60.0	-13.8
9.250	25.7	20.4	46.1	60.0	-13.9
8.230	25.7	20.4	46.1	60.0	-13.9
8.610	25.2	20.4	45.6	60.0	-14.4
7.250	25.2	20.4	45.6	60.0	-14.4
7.730	25.0	20.4	45.4	60.0	-14.6
6.100	25.1	20.3	45.4	60.0	-14.6
7.180	24.7	20.4	45.1	60.0	-14.9
10.040	24.5	20.4	44.9	60.0	-15.1
8.010	24.5	20.4	44.9	60.0	-15.1
8.950	24.2	20.4	44.6	60.0	-15.4
9.500	24.1	20.4	44.5	60.0	-15.5
7.110	24.1	20.4	44.5	60.0	-15.5
6.530	24.0	20.3	44.3	60.0	-15.7
9.870	23.7	20.4	44.1	60.0	-15.9
9.740	23.7	20.4	44.1	60.0	-15.9
0.187	28.0	20.2	48.2	64.2	-16.0
0.611	19.8	20.2	40.0	56.0	-16.0
10.350	23.4	20.4	43.8	60.0	-16.2
0.628	19.4	20.2	39.6	56.0	-16.4

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
7.030	25.8	20.4	46.2	50.0	-3.8
9.250	25.7	20.4	46.1	50.0	-3.9
8.230	25.7	20.4	46.1	50.0	-3.9
8.610	25.2	20.4	45.6	50.0	-4.4
7.250	25.2	20.4	45.6	50.0	-4.4
7.730	25.0	20.4	45.4	50.0	-4.6
6.100	25.1	20.3	45.4	50.0	-4.6
7.180	24.7	20.4	45.1	50.0	-4.9
10.040	24.5	20.4	44.9	50.0	-5.1
8.010	24.5	20.4	44.9	50.0	-5.1
8.950	24.2	20.4	44.6	50.0	-5.4
9.500	24.1	20.4	44.5	50.0	-5.5
7.110	24.1	20.4	44.5	50.0	-5.5
6.530	24.0	20.3	44.3	50.0	-5.7
9.870	23.7	20.4	44.1	50.0	-5.9
9.740	23.7	20.4	44.1	50.0	-5.9
0.187	28.0	20.2	48.2	54.2	-6.0
0.611	19.8	20.2	40.0	46.0	-6.0
10.350	23.4	20.4	43.8	50.0	-6.2
0.628	19.4	20.2	39.6	46.0	-6.4

NORTHWEST
EMC

AC POWERLINE CONDUCTED EMISSIONS

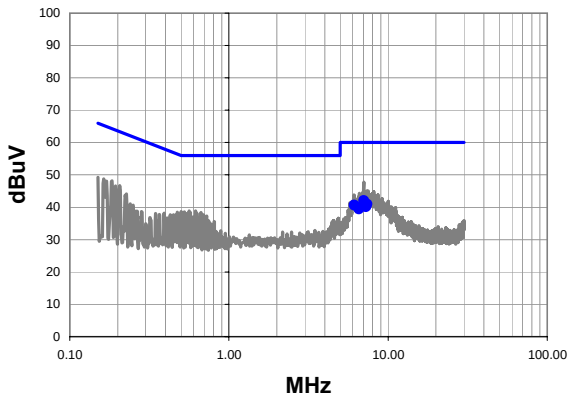
PSA-ESCI 2010.04.06
Version 2010.3.17

Work Order:	INMC0575	**Date:**	08/11/10		
Project:	None	**Temperature:**	22 °C		
Job Site:	EV07	**Humidity:**	53		
Serial Number:	R11	**Barometric Pres.:**	1014.8 mb	**Tested by:**	Rod Peloquin
EUT:	RC12				
Configuration:	3 - AC Power Conducted Emissions				
Customer:	Intermec Technologies Corporation				
Attendees:	none				
EUT Power:	3.3 VDC from 120VAC				
Operating Mode:	Transmitting. 802.11(a), 6 Mbps, 5250 - 5350 MHz Band, High Channel 64				
Deviations:	No deviations.				
Comments:	Linear lab power supply				

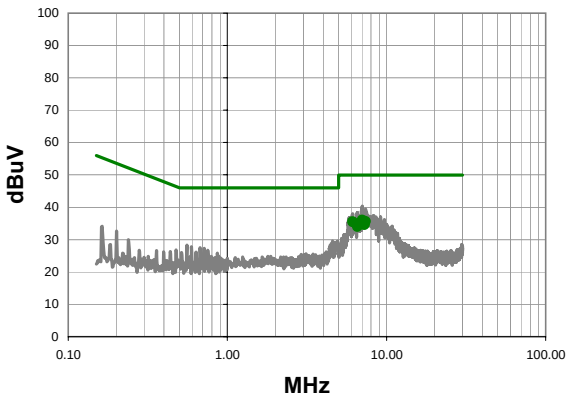
Test Specifications	**Test Method**
FCC 15.207:2010	ANSI C63.10:2009

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)
7.034	21.6	20.4	42.0	60.0	-18.0
7.386	20.5	20.4	40.9	60.0	-19.1
6.120	20.4	20.3	40.7	60.0	-19.3
6.952	20.1	20.4	40.5	60.0	-19.5
7.278	19.8	20.4	40.2	60.0	-19.8
6.574	19.1	20.3	39.4	60.0	-20.6

Average Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
7.034	15.6	20.4	36.0	50.0	-14.0
7.386	15.2	20.4	35.6	50.0	-14.4
6.120	15.2	20.3	35.5	50.0	-14.5
6.952	14.7	20.4	35.1	50.0	-14.9
7.278	14.2	20.4	34.6	50.0	-15.4
6.574	13.7	20.3	34.0	50.0	-16.0

NORTHWEST
EMC

AC POWERLINE CONDUCTED EMISSIONS

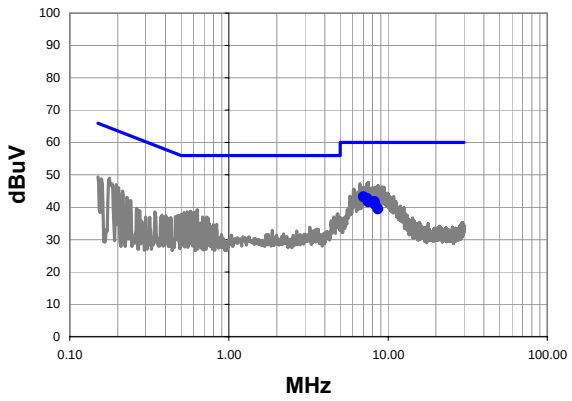
PSA-ESCI 2010.04.06
Version 2010.3.17

Work Order:	INMC0575	**Date:**	08/11/10		
Project:	None	**Temperature:**	22 °C		
Job Site:	EV07	**Humidity:**	53		
Serial Number:	R11	**Barometric Pres.:**	1014.8 mb	**Tested by:**	Rod Peloquin
EUT:	RC12				
Configuration:	3 - AC Power Conducted Emissions				
Customer:	Intermec Technologies Corporation				
Attendees:	none				
EUT Power:	3.3 VDC from 120VAC				
Operating Mode:	Transmitting. 802.11(a), 6 Mbps, 5250 - 5350 MHz Band, High Channel 64				
Deviations:	No deviations.				
Comments:	Linear lab power supply				

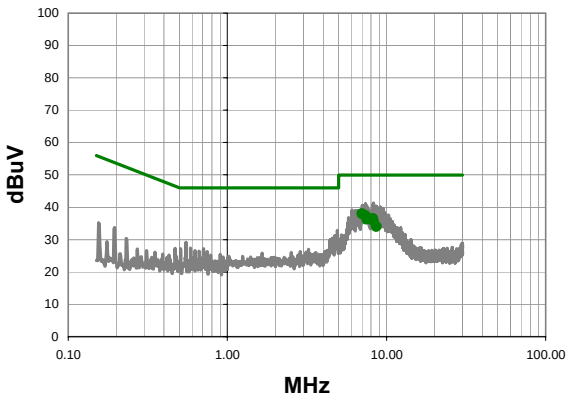
Test Specifications	**Test Method**
FCC 15.207:2010	ANSI C63.10:2009

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)
7.028	22.8	20.4	43.2	60.0	-16.8
7.392	22.3	20.4	42.7	60.0	-17.3
8.202	21.3	20.4	41.7	60.0	-18.3
7.518	21.2	20.4	41.6	60.0	-18.4
8.288	20.4	20.4	40.8	60.0	-19.2
8.622	19.1	20.4	39.5	60.0	-20.5

Average Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
7.028	17.6	20.4	38.0	50.0	-12.0
7.392	17.0	20.4	37.4	50.0	-12.6
8.202	16.1	20.4	36.5	50.0	-13.5
7.518	15.9	20.4	36.3	50.0	-13.7
8.288	15.4	20.4	35.8	50.0	-14.2
8.622	13.6	20.4	34.0	50.0	-16.0

NORTHWEST
EMC

AC POWERLINE CONDUCTED EMISSIONS

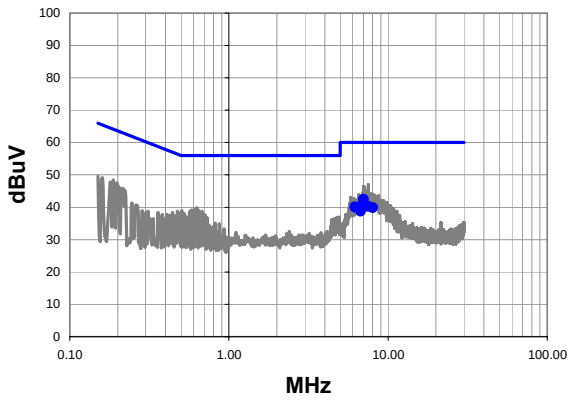
PSA-ESCI 2010.04.06
Version 2010.3.17

Work Order:	INMC0575	**Date:**	08/11/10		
Project:	None	**Temperature:**	22 °C		
Job Site:	EV07	**Humidity:**	53		
Serial Number:	R11	**Barometric Pres.:**	1014.8 mb	**Tested by:**	Rod Peloquin
EUT:	RC12				
Configuration:	3 - AC Power Conducted Emissions				
Customer:	Intermec Technologies Corporation				
Attendees:	none				
EUT Power:	3.3 VDC from 120VAC				
Operating Mode:	Transmitting. 802.11(a), 6 Mbps, 5470 - 5725 MHz Band, Low Channel 100				
Deviations:	No deviations.				
Comments:	Linear lab power supply				

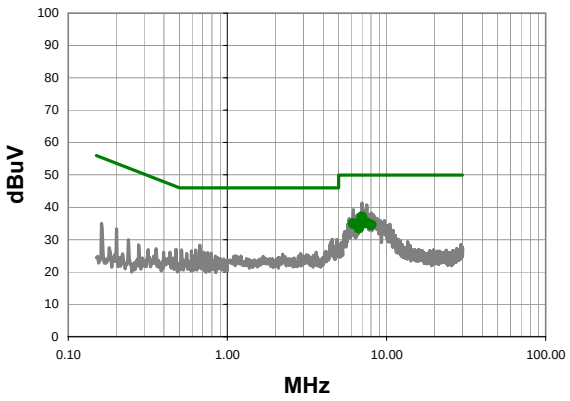
Test Specifications	**Test Method**
FCC 15.207:2010	ANSI C63.10:2009

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)
7.018	22.0	20.4	42.4	60.0	-17.6
7.512	19.9	20.4	40.3	60.0	-19.7
6.184	19.8	20.3	40.1	60.0	-19.9
6.532	19.7	20.3	40.0	60.0	-20.0
8.018	19.5	20.4	39.9	60.0	-20.1
6.738	18.4	20.4	38.8	60.0	-21.2

Average Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
7.018	16.6	20.4	37.0	50.0	-13.0
7.512	14.7	20.4	35.1	50.0	-14.9
6.184	14.6	20.3	34.9	50.0	-15.1
6.532	14.5	20.3	34.8	50.0	-15.2
8.018	14.1	20.4	34.5	50.0	-15.5
6.738	13.2	20.4	33.6	50.0	-16.4

NORTHWEST
EMC

AC POWERLINE CONDUCTED EMISSIONS

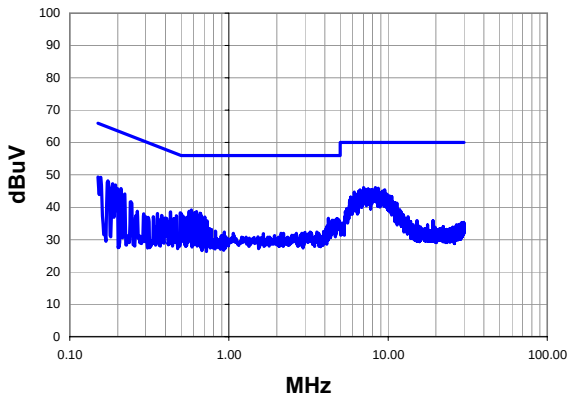
PSA-ESCI 2010.04.06
Version 2010.3.17

Work Order:	INMC0575	**Date:**	08/11/10		
Project:	None	**Temperature:**	22 °C		
Job Site:	EV07	**Humidity:**	53		
Serial Number:	R11	**Barometric Pres.:**	1014.8 mb	**Tested by:**	Rod Peloquin
EUT:	RC12				
Configuration:	3 - AC Power Conducted Emissions				
Customer:	Intermec Technologies Corporation				
Attendees:	none				
EUT Power:	3.3 VDC from 120VAC				
Operating Mode:	Transmitting. 802.11(a), 6 Mbps, 5470 - 5725 MHz Band, Low Channel 100				
Deviations:	No deviations.				
Comments:	Linear lab power supply				

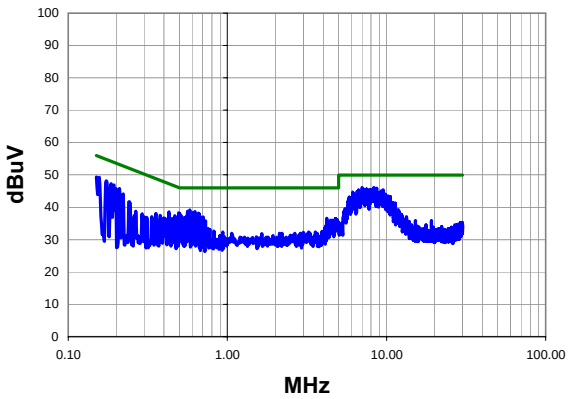
Test Specifications	**Test Method**
FCC 15.207:2010	ANSI C63.10:2009

Run #	22	**Line:**	Neutral	**Ext. Attenuation:**	20	**Results**	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
8.340	25.7	20.4	46.1	60.0	-13.9
7.020	25.7	20.4	46.1	60.0	-13.9
8.660	25.5	20.4	45.9	60.0	-14.1
7.520	25.2	20.4	45.6	60.0	-14.4
7.430	25.2	20.4	45.6	60.0	-14.4
7.850	25.1	20.4	45.5	60.0	-14.5
8.540	25.1	20.4	45.5	60.0	-14.5
9.540	25.0	20.4	45.4	60.0	-14.6
6.660	25.0	20.3	45.3	60.0	-14.7
7.990	24.9	20.4	45.3	60.0	-14.7
8.190	24.8	20.4	45.2	60.0	-14.8
9.200	24.6	20.4	45.0	60.0	-15.0
9.330	24.5	20.4	44.9	60.0	-15.1
6.540	24.6	20.3	44.9	60.0	-15.1
6.140	24.4	20.3	44.7	60.0	-15.3
8.990	24.1	20.4	44.5	60.0	-15.5
6.210	23.9	20.3	44.2	60.0	-15.8
9.830	23.6	20.4	44.0	60.0	-16.0
6.750	23.4	20.4	43.8	60.0	-16.2
0.157	29.1	20.2	49.3	65.6	-16.4

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
8.340	25.7	20.4	46.1	50.0	-3.9
7.020	25.7	20.4	46.1	50.0	-3.9
8.660	25.5	20.4	45.9	50.0	-4.1
7.520	25.2	20.4	45.6	50.0	-4.4
7.430	25.2	20.4	45.6	50.0	-4.4
7.850	25.1	20.4	45.5	50.0	-4.5
8.540	25.1	20.4	45.5	50.0	-4.5
9.540	25.0	20.4	45.4	50.0	-4.6
6.660	25.0	20.3	45.3	50.0	-4.7
7.990	24.9	20.4	45.3	50.0	-4.7
8.190	24.8	20.4	45.2	50.0	-4.8
9.200	24.6	20.4	45.0	50.0	-5.0
9.330	24.5	20.4	44.9	50.0	-5.1
6.540	24.6	20.3	44.9	50.0	-5.1
6.140	24.4	20.3	44.7	50.0	-5.3
8.990	24.1	20.4	44.5	50.0	-5.5
6.210	23.9	20.3	44.2	50.0	-5.8
9.830	23.6	20.4	44.0	50.0	-6.0
6.750	23.4	20.4	43.8	50.0	-6.2
0.157	29.1	20.2	49.3	55.6	-6.4

NORTHWEST
EMC

AC POWERLINE CONDUCTED EMISSIONS

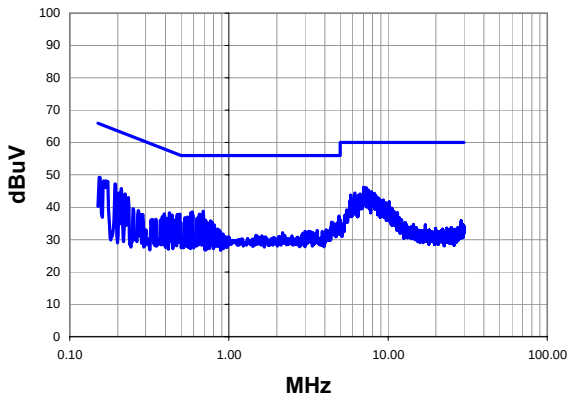
PSA-ESCI 2010.04.06
Version 2010.3.17

Work Order:	INMC0575	**Date:**	08/11/10		
Project:	None	**Temperature:**	22 °C		
Job Site:	EV07	**Humidity:**	53		
Serial Number:	R11	**Barometric Pres.:**	1014.8 mb	**Tested by:**	Rod Peloquin
EUT:	RC12				
Configuration:	3 - AC Power Conducted Emissions				
Customer:	Intermec Technologies Corporation				
Attendees:	none				
EUT Power:	3.3 VDC from 120VAC				
Operating Mode:	Transmitting. 802.11(a), 6 Mbps, 5470 - 5725 MHz Band, Mid Channel 116				
Deviations:	No deviations.				
Comments:	Linear lab power supply				

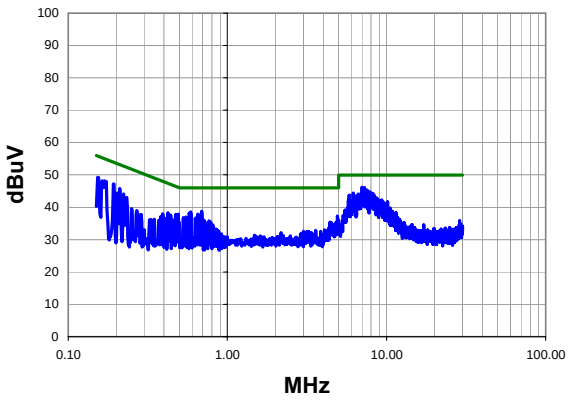
Test Specifications	**Test Method**
FCC 15.207:2010	ANSI C63.10:2009

Run #	23	**Line:**	High Line	**Ext. Attenuation:**	20	**Results**	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
7.020	25.8	20.4	46.2	60.0	-13.8
7.260	25.7	20.4	46.1	60.0	-13.9
7.540	24.9	20.4	45.3	60.0	-14.7
7.370	24.8	20.4	45.2	60.0	-14.8
7.880	24.3	20.4	44.7	60.0	-15.3
6.180	24.1	20.3	44.4	60.0	-15.6
8.000	23.9	20.4	44.3	60.0	-15.7
8.220	23.9	20.4	44.3	60.0	-15.7
6.670	23.8	20.3	44.1	60.0	-15.9
6.520	23.4	20.3	43.7	60.0	-16.3
7.670	23.3	20.4	43.7	60.0	-16.3
5.830	23.4	20.3	43.7	60.0	-16.3
8.360	23.2	20.4	43.6	60.0	-16.4
0.153	29.1	20.2	49.3	65.8	-16.6
0.193	27.0	20.2	47.2	63.9	-16.8
8.690	22.5	20.4	42.9	60.0	-17.1
0.164	28.0	20.2	48.2	65.3	-17.1
0.691	18.6	20.2	38.8	56.0	-17.2
0.211	25.6	20.2	45.8	63.2	-17.4
0.589	18.4	20.2	38.6	56.0	-17.4

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
7.020	25.8	20.4	46.2	50.0	-3.8
7.260	25.7	20.4	46.1	50.0	-3.9
7.540	24.9	20.4	45.3	50.0	-4.7
7.370	24.8	20.4	45.2	50.0	-4.8
7.880	24.3	20.4	44.7	50.0	-5.3
6.180	24.1	20.3	44.4	50.0	-5.6
8.000	23.9	20.4	44.3	50.0	-5.7
8.220	23.9	20.4	44.3	50.0	-5.7
6.670	23.8	20.3	44.1	50.0	-5.9
6.520	23.4	20.3	43.7	50.0	-6.3
7.670	23.3	20.4	43.7	50.0	-6.3
5.830	23.4	20.3	43.7	50.0	-6.3
8.360	23.2	20.4	43.6	50.0	-6.4
0.153	29.1	20.2	49.3	55.8	-6.6
0.193	27.0	20.2	47.2	53.9	-6.8
8.690	22.5	20.4	42.9	50.0	-7.1
0.164	28.0	20.2	48.2	55.3	-7.1
0.691	18.6	20.2	38.8	46.0	-7.2
0.211	25.6	20.2	45.8	53.2	-7.4
0.589	18.4	20.2	38.6	46.0	-7.4

NORTHWEST
EMC

AC POWERLINE CONDUCTED EMISSIONS

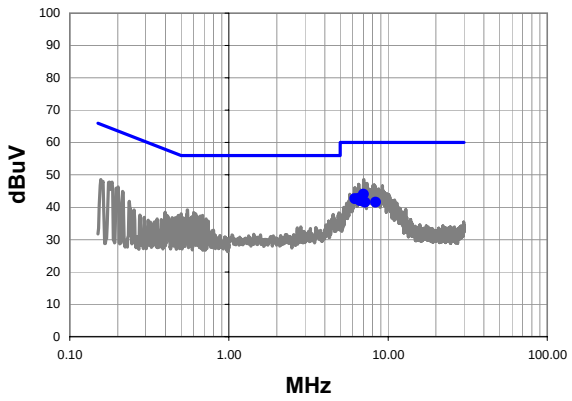
PSA-ESCI 2010.04.06
Version 2010.3.17

Work Order:	INMC0575	**Date:**	08/11/10		
Project:	None	**Temperature:**	22 °C		
Job Site:	EV07	**Humidity:**	53		
Serial Number:	R11	**Barometric Pres.:**	1014.8 mb	**Tested by:**	Rod Peloquin
EUT:	RC12				
Configuration:	3 - AC Power Conducted Emissions				
Customer:	Intermec Technologies Corporation				
Attendees:	none				
EUT Power:	3.3 VDC from 120VAC				
Operating Mode:	Transmitting. 802.11(a), 6 Mbps, 5470 - 5725 MHz Band, Mid Channel 116				
Deviations:	No deviations.				
Comments:	Linear lab power supply				

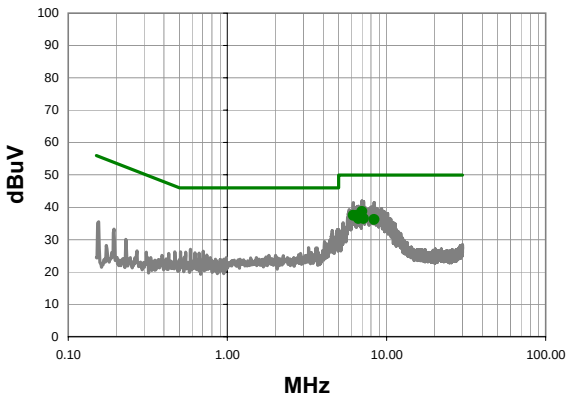
Test Specifications	**Test Method**
FCC 15.207:2010	ANSI C63.10:2009

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)
7.018	23.6	20.4	44.0	60.0	-16.0
6.540	22.4	20.3	42.7	60.0	-17.3
6.184	22.4	20.3	42.7	60.0	-17.3
6.666	21.7	20.3	42.0	60.0	-18.0
8.352	21.1	20.4	41.5	60.0	-18.5
7.168	21.1	20.4	41.5	60.0	-18.5

Average Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
7.018	18.3	20.4	38.7	50.0	-11.3
6.540	17.2	20.3	37.5	50.0	-12.5
6.184	17.2	20.3	37.5	50.0	-12.5
6.666	16.2	20.3	36.5	50.0	-13.5
7.168	16.1	20.4	36.5	50.0	-13.5
8.352	15.8	20.4	36.2	50.0	-13.8

NORTHWEST
EMC

AC POWERLINE CONDUCTED EMISSIONS

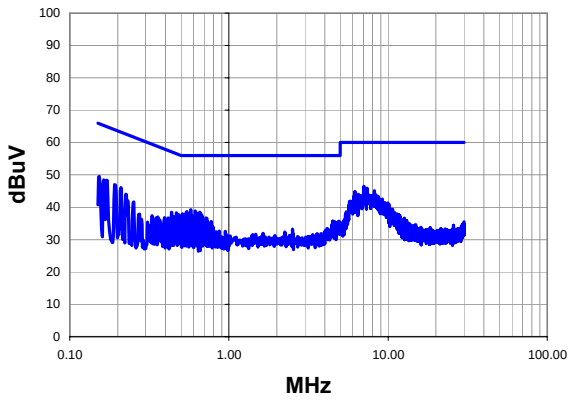
PSA-ESCI 2010.04.06
Version 2010.3.17

Work Order:	INMC0575	**Date:**	08/11/10		
Project:	None	**Temperature:**	22 °C		
Job Site:	EV07	**Humidity:**	53		
Serial Number:	R11	**Barometric Pres.:**	1014.8 mb	**Tested by:**	Rod Peloquin
EUT:	RC12				
Configuration:	3 - AC Power Conducted Emissions				
Customer:	Intermec Technologies Corporation				
Attendees:	none				
EUT Power:	3.3 VDC from 120VAC				
Operating Mode:	Transmitting. 802.11(a), 6 Mbps, 5470 - 5725 MHz Band, High Channel 140				
Deviations:	No deviations.				
Comments:	Linear lab power supply				

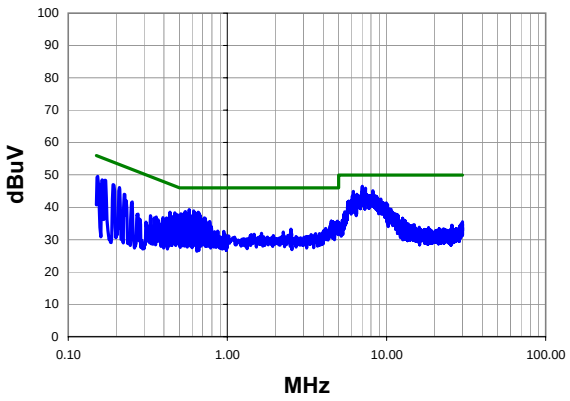
Test Specifications	**Test Method**
FCC 15.207:2010	ANSI C63.10:2009

Run #	25	**Line:**	High Line	**Ext. Attenuation:**	20	**Results**	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
7.030	26.1	20.4	46.5	60.0	-13.5
7.370	25.5	20.4	45.9	60.0	-14.1
8.190	24.7	20.4	45.1	60.0	-14.9
6.200	24.6	20.3	44.9	60.0	-15.1
6.520	23.7	20.3	44.0	60.0	-16.0
0.153	29.4	20.2	49.6	65.8	-16.3
6.660	23.2	20.3	43.5	60.0	-16.5
7.990	23.1	20.4	43.5	60.0	-16.5
8.500	23.1	20.4	43.5	60.0	-16.5
6.090	23.2	20.3	43.5	60.0	-16.5
0.170	28.2	20.2	48.4	64.9	-16.6
8.690	22.9	20.4	43.3	60.0	-16.7
0.577	19.1	20.2	39.3	56.0	-16.7
0.164	28.3	20.2	48.5	65.3	-16.8
0.191	26.8	20.2	47.0	64.0	-17.0
0.614	18.7	20.2	38.9	56.0	-17.1
0.210	25.9	20.2	46.1	63.2	-17.2
0.544	18.5	20.2	38.7	56.0	-17.3
9.200	22.1	20.4	42.5	60.0	-17.5
8.840	22.1	20.4	42.5	60.0	-17.5

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
7.030	26.1	20.4	46.5	50.0	-3.5
7.370	25.5	20.4	45.9	50.0	-4.1
8.190	24.7	20.4	45.1	50.0	-4.9
6.200	24.6	20.3	44.9	50.0	-5.1
6.520	23.7	20.3	44.0	50.0	-6.0
0.153	29.4	20.2	49.6	55.8	-6.3
6.660	23.2	20.3	43.5	50.0	-6.5
7.990	23.1	20.4	43.5	50.0	-6.5
8.500	23.1	20.4	43.5	50.0	-6.5
6.090	23.2	20.3	43.5	50.0	-6.5
0.170	28.2	20.2	48.4	54.9	-6.6
8.690	22.9	20.4	43.3	50.0	-6.7
0.577	19.1	20.2	39.3	46.0	-6.7
0.164	28.3	20.2	48.5	55.3	-6.8
0.191	26.8	20.2	47.0	54.0	-7.0
0.614	18.7	20.2	38.9	46.0	-7.1
0.210	25.9	20.2	46.1	53.2	-7.2
0.544	18.5	20.2	38.7	46.0	-7.3
9.200	22.1	20.4	42.5	50.0	-7.5
8.840	22.1	20.4	42.5	50.0	-7.5

NORTHWEST
EMC

AC POWERLINE CONDUCTED EMISSIONS

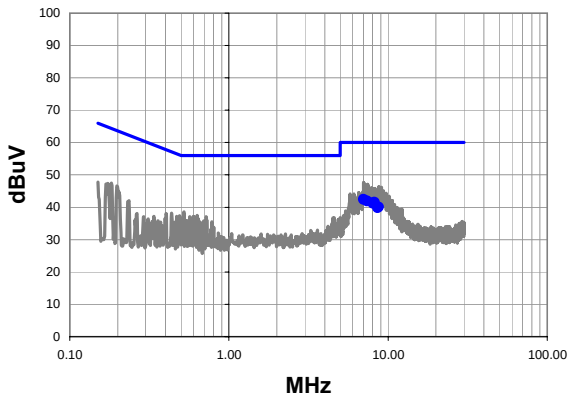
PSA-ESCI 2010.04.06
Version 2010.3.17

Work Order:	INMC0575	**Date:**	08/11/10		
Project:	None	**Temperature:**	22 °C		
Job Site:	EV07	**Humidity:**	53		
Serial Number:	R11	**Barometric Pres.:**	1014.8 mb	**Tested by:**	Rod Peloquin
EUT:	RC12				
Configuration:	3 - AC Power Conducted Emissions				
Customer:	Intermec Technologies Corporation				
Attendees:	none				
EUT Power:	3.3 VDC from 120VAC				
Operating Mode:	Transmitting. 802.11(a), 6 Mbps, 5470 - 5725 MHz Band, High Channel 140				
Deviations:	No deviations.				
Comments:	Linear lab power supply				

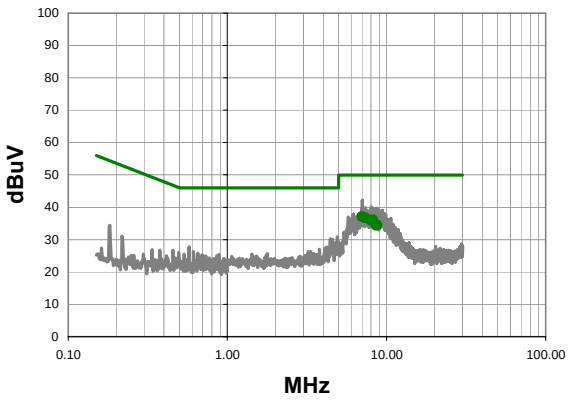
Test Specifications	**Test Method**
FCC 15.207:2010	ANSI C63.10:2009

Run #	26	**Line:**	Neutral	**Ext. Attenuation:**	20	**Results**	Pass

Quasi Peak Data - vs - Quasi Peak Limit

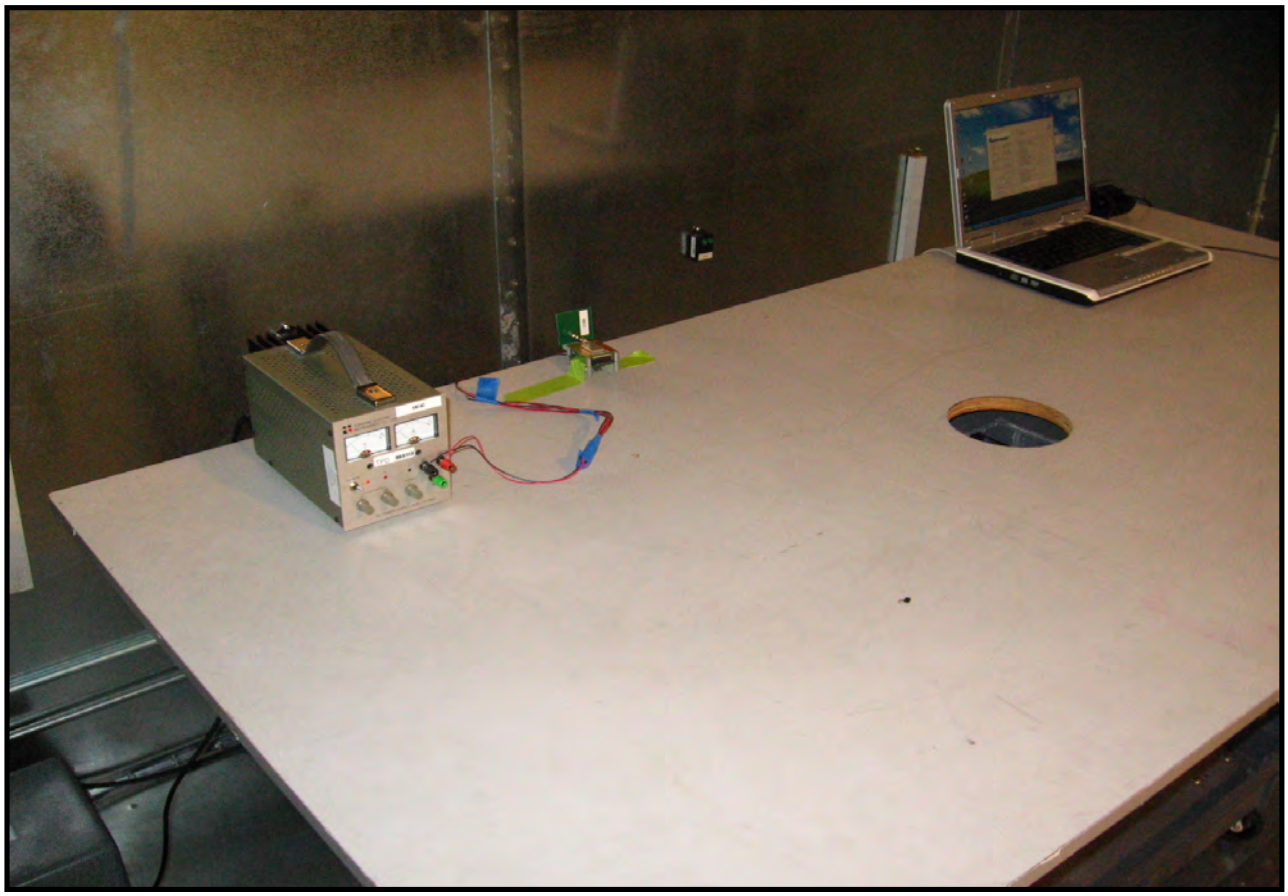
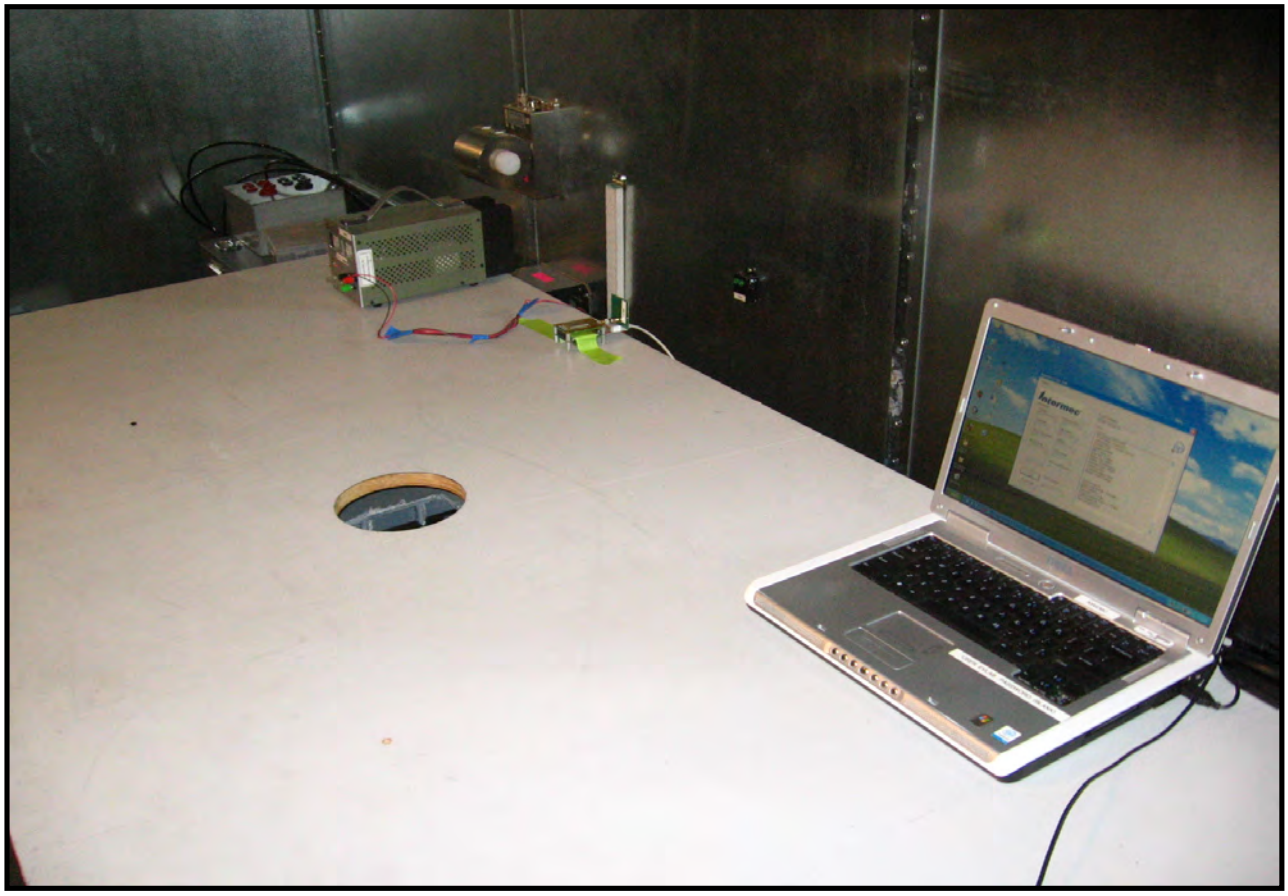
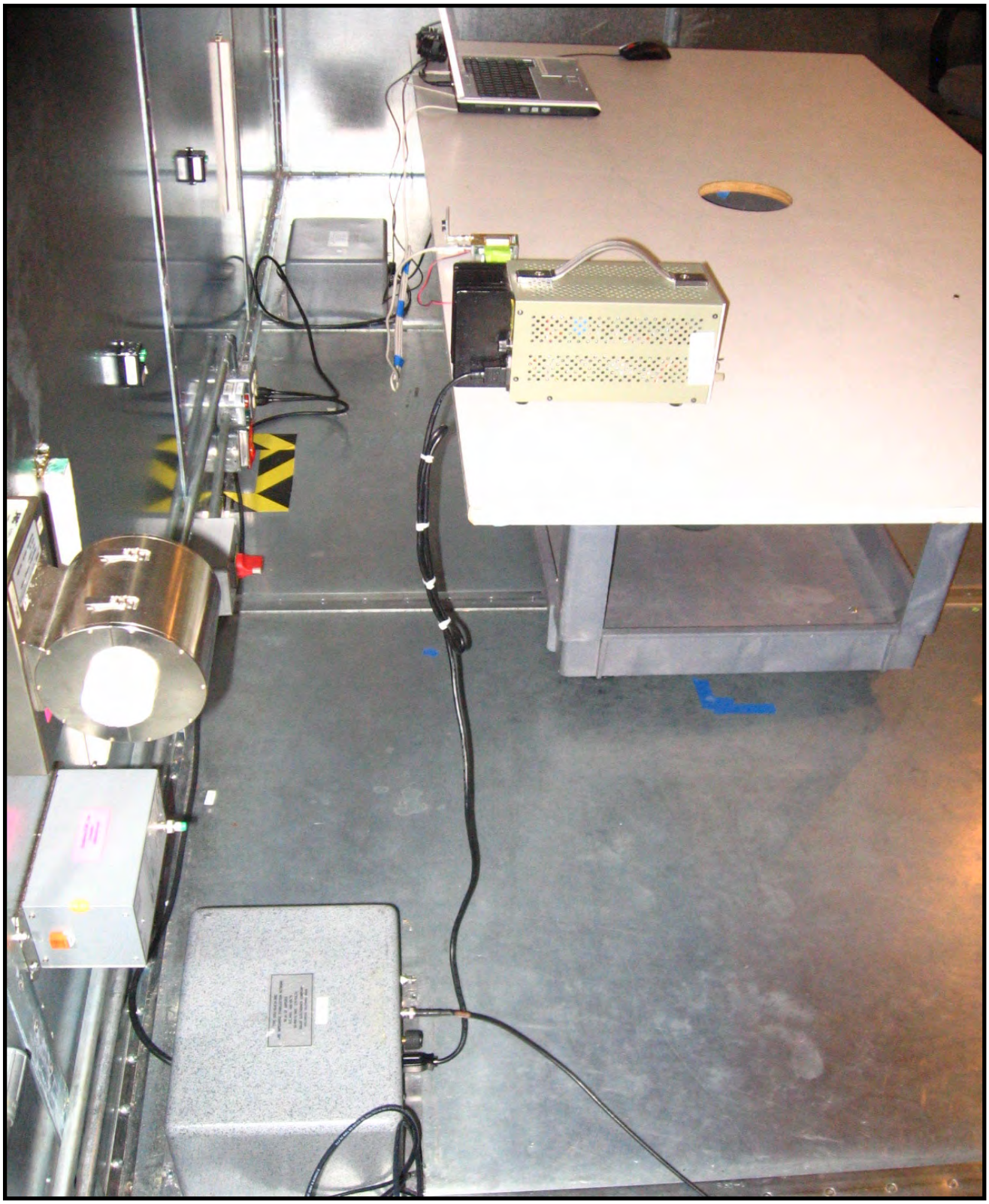


Average Data - vs - Average Limit



Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
7.028	22.0	20.4	42.4	60.0	-17.6
7.388	21.5	20.4	41.9	60.0	-18.1
8.202	21.1	20.4	41.5	60.0	-18.5
8.012	20.8	20.4	41.2	60.0	-18.8
8.728	19.6	20.4	40.0	60.0	-20.0
8.596	19.5	20.4	39.9	60.0	-20.1

Average Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
7.028	16.7	20.4	37.1	50.0	-12.9
7.388	16.3	20.4	36.7	50.0	-13.3
8.202	15.7	20.4	36.1	50.0	-13.9
8.012	15.5	20.4	35.9	50.0	-14.1
8.728	14.1	20.4	34.5	50.0	-15.5
8.596	14.0	20.4	34.4	50.0	-15.6