

Welch Allyn Protocol, Inc.

Welch Allyn 802.11a Wireless PC Card

FCC 15.247 Test Report

Testing Conducted According to
Test Plan: EMC, Lamarr Product Implementations
Part No.: 830-1412-00 Rev A

September 12, 2007

Report No. PROT0295.2

Report Prepared By



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

© 2007 Northwest EMC, Inc

EMC Test Report



22975 NW Evergreen Parkway
Suite 400
Hillsboro, Oregon 97124

Certificate of Test

Issue Date: September 12, 2007

Welch Allyn Protocol, Inc.

Model: Welch Allyn 802.11a Wireless PC Card

Emissions			
Test Description	Specification	Test Method	Pass/Fail
Spurious Radiated Emissions	FCC 15.247 (DTS):2006	ANSI C63.4:2003 KDB No. 558074	Pass
Spurious Conducted Emissions	FCC 15.247 (DTS):2006	ANSI C63.4:2003 KDB No. 558074	Pass
AC Power line Conducted Emissions	FCC 15.207:2006	ANSI C63.4:2003	Pass
Band Edge Compliance	FCC 15.247 (DTS):2006	ANSI C63.4:2003 KDB No. 558074	Pass
Occupied Bandwidth	FCC 15.247 (DTS):2006	ANSI C63.4:2003 KDB No. 558074	Pass
Output Power	FCC 15.247 (DTS):2006	ANSI C63.4:2003 KDB No. 558074	Pass
Power Spectral Density	FCC 15.247 (DTS):2006	ANSI C63.4:2003 KDB No. 558074	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.

Approved By:

Ethan Schoonover, Sultan Lab 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 Number	Description	Date	Page Number
00	None		

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

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 212, Issue 1 (Provisional) 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.



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.



TÜV Product Service: Included in TÜV Product Service Group's Listing of Recognized Laboratories. It qualifies in connection with the TÜV Certification after Recognition of Agent's Testing Program for the product categories and/or standards shown in TÜV's current Listing of CARAT Laboratories, available from TÜV. A certificate was issued to represent that this laboratory continues to meet TÜV's CARAT Program requirements. Certificate No. USA0604C.



TÜV Rheinland: Authorized to carryout EMC tests by order and under supervision of TÜV Rheinland. This authorization is based on "Conditions for EMC-Subcontractors" of November 1992.



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).



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, C-2687, T-289, and R-2318, Irvine: R-1943, C-2766, and T-298, Sultan: R-871, C-1784, and T-294*).



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. License No.SL2-IN-E-1017.



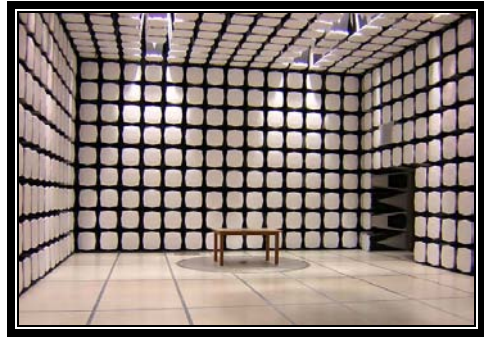
GOST: Northwest EMC, Inc. has been assessed and accredited by the Russian Certification bodies Certinform VNIINMASH, CERTINFO, SAMTES, and Federal CHEC, to perform EMC and Hygienic testing for Information Technology Products. As a result of their laboratory assessment, they will accept test results from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



SCOPE

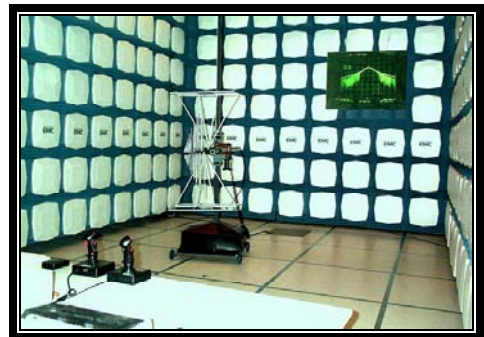
For details on the Scopes of our Accreditations, please visit:

<http://www.nwemc.com/scope.asp>



**California – Orange County Facility
Labs OC01 – OC13**

41 Tesla Ave. Irvine, CA 92618
(888) 364-2378 Fax: (503) 844-3826



**Oregon – Evergreen Facility
Labs EV01 – EV11**

22975 NW Evergreen Pkwy. Suite 400 Hillsboro, OR 97124
(503) 844-4066 Fax: (503) 844-3826



**Washington – Sultan Facility
Labs SU01 – SU07**

14128 339th Ave. SE Sultan, WA 98294
(888) 364-2378

Party Requesting the Test

Company Name:	Welch Allyn Protocol, Inc.
Address:	8500 SW Creekside Place
City, State, Zip:	Beaverton, OR 97008-7107
Test Requested By:	Bob Jenkins
Model:	Welch Allyn 802.11a Wireless PC Card
First Date of Test:	August 13, 2007
Last Date of Test:	August 22, 2007
Receipt Date of Samples:	August 13, 2007
Equipment Design Stage:	Production
Equipment Condition:	No Damage

Information Provided by the Party Requesting the Test

Functional Description of the EUT (Equipment Under Test):

802.11a radio

Testing Objective:

These tests were selected to satisfy the EMC requirements for FCC 15.247.

EUT Photo



CONFIGURATION 1 PROT0295**Software/Firmware Running during test**

Description	Version
Prism Engineering Tool	2:5:14:0

EUT

Description	Manufacturer	Model/Part Number	Serial Number
EUT - 802.11a radio	Welch Allyn Protocol Inc.	Welch Allyn 802.11a Wireless PC Card	001AFA0000CE

Peripherals in test setup boundary

Description	Manufacturer	Model/Part Number	Serial Number
TCC Test Fixture	Welch Allyn Protocol Inc.	851-0034-01 Rev. 02	20
AC Adapter 1	CUI Inc.	EPAS-101W-05	None

Remote Equipment Outside of Test Setup Boundary

Description	Manufacturer	Model/Part Number	Serial Number
AC Adapter 2	IBM	08K8212	11S08K8212Z1Z7UB4172NK
Laptop	IBM	2366-83U	KP-ZMDVL

Cables

Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
Ethernet/Serial	No	1.2m	No	TCC Test Fixture	Laptop
DC	No	1.6m	No	TCC Test Fixture	AC Adapter 1
DC	No	1.3m	Yes	Laptop	AC Adapter 2
AC	No	1.8m	No	AC Adapter 2	AC Mains

PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.

CONFIGURATION 2 PROT0295**Software/Firmware Running during test**

Description	Version
Prism Engineering Tool	2:5:14:0

EUT

Description	Manufacturer	Model/Part Number	Serial Number
EUT - 802.11a radio	Welch Allyn Protocol Inc.	Welch Allyn 802.11a Wireless PC Card	001AFA0000CE

Peripherals in test setup boundary

Description	Manufacturer	Model/Part Number	Serial Number
TCC Test Fixture	Welch Allyn Protocol Inc.	851-0034-01 Rev. 02	20
AC Adapter 1	CUI Inc.	EPAS-101W-05	None

Remote Equipment Outside of Test Setup Boundary

Description	Manufacturer	Model/Part Number	Serial Number
AC Adapter 2	IBM	08K8212	11S08K8212Z1Z7UB4172NK
Laptop	IBM	2366-83U	KP-ZMDVL

Cables

Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
Ethernet/Serial	No	1.2m	No	TCC Test Fixture	Laptop
DC	No	1.6m	No	TCC Test Fixture	AC Adapter 1
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

CONFIGURATION 3 PROT0295**Software/Firmware Running during test**

Description	Version
Prism Engineering Tool	2:5:14:0

EUT

Description	Manufacturer	Model/Part Number	Serial Number
EUT - 802.11a radio	Welch Allyn Protocol Inc.	Welch Allyn 802.11a Wireless PC Card	001AFA0000CE

Peripherals in test setup boundary

Description	Manufacturer	Model/Part Number	Serial Number
TCC Test Fixture	Welch Allyn Protocol Inc.	851-0034-01 Rev. 02	20
Linear Power Supply	CUI Inc.	DTR050100-P1	None

Remote Equipment Outside of Test Setup Boundary

Description	Manufacturer	Model/Part Number	Serial Number
AC Adapter 2	IBM	08K8212	11S08K8212Z1Z7UB4172NK
Laptop	IBM	2366-83U	KP-ZMDVL

Cables

Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
Ethernet/Serial	No	1.2m	No	TCC Test Fixture	Laptop
DC	No	1.6m	No	TCC Test Fixture	AC Adapter 1
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	8/13/2007	Occupied Bandwidth	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
2	8/14/2007	Output Power	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
3	8/14/2007	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	8/14/2007	Band Edge Compliance	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
5	8/21/2007	Spurious Radiated Emissions	Modified from delivered configuration. Initial or No Modification	Copper tape was added in two pieces around the antenna cable end of the card covering the rubber end cap. Modification done by Steve Baker.	EUT remained at Northwest EMC following the test.
6	8/21/2007	AC Powerline Conducted Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
7	8/22/2007	Spurious Conducted Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Spectrum Analyzer	Agilent	E4407B	AAU	12/8/2006	13

MEASUREMENT UNCERTAINTY

Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is available upon request.

TEST DESCRIPTION

The occupied bandwidth was measured with the EUT set to low, medium, and high transmit frequencies. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at its maximum data rate.

EMC

Occupied Bandwidth

EUT:	Welch Allyn 802.11a Wireless PC Card	Work Order:	PROT0295
Serial Number:	001AFA0000CE	Date:	08/13/07
Customer:	Welch Allyn Protocol, Inc.	Temperature:	24°C
Attendees:	None	Humidity:	35%
Project:	None	Barometric Pres.:	1020.4mb
Tested by:	Holly Ashkannejhad	Power:	5.0VDC nominal
		Job Site:	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247 (DTS):2006	ANSI C63.4:2003 KDB No. 558074

COMMENTS

DEVIATIONS FROM TEST STANDARD

Configuration #	1	Signature <i>Holly Ashkannejhad</i>
-----------------	---	-------------------------------------

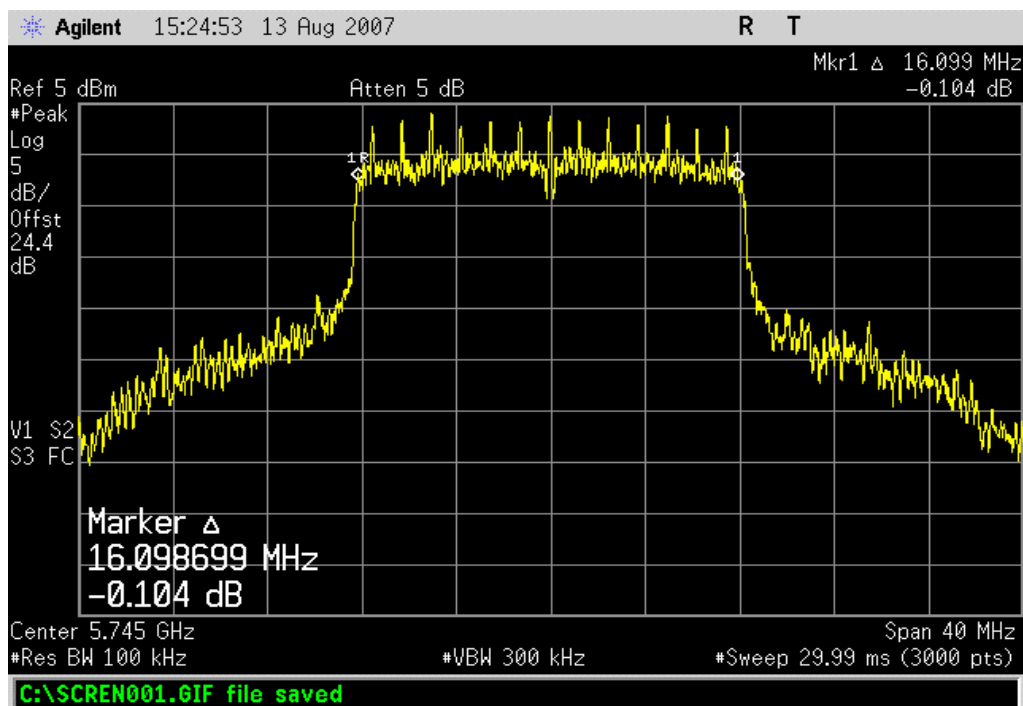
		Value	Limit	Results
802.11(a), 6Mbps	5725 - 5850 MHz band			
	Low channel, 5745 MHz	16.0987 MHz	≥ 500kHz	Pass
	Mid channel, 5785 MHz	15.8053 MHz	≥ 500kHz	Pass
	High channel, 5825 MHz	15.8586 MHz	≥ 500kHz	Pass

Occupied Bandwidth

802.11(a), 6Mbps, 5725 - 5850 MHz band, Low channel, 5745 MHz

Result: Pass

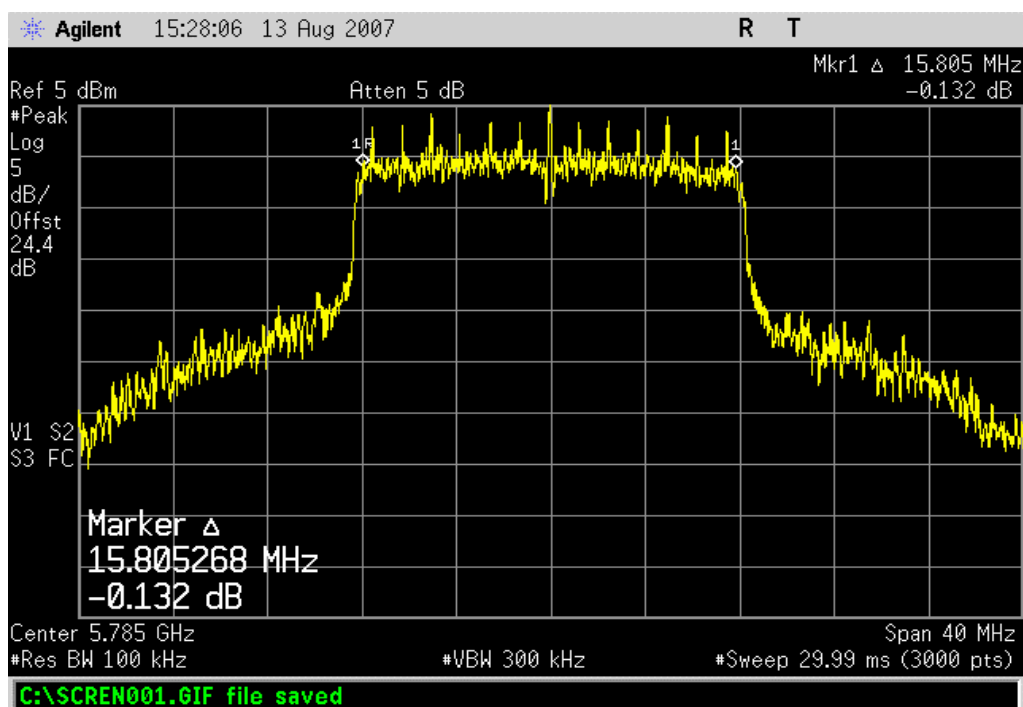
Value: 16.0987 MHz

Limit: $\geq 500\text{kHz}$ 

802.11(a), 6Mbps, 5725 - 5850 MHz band, Mid channel, 5785 MHz

Result: Pass

Value: 15.8053 MHz

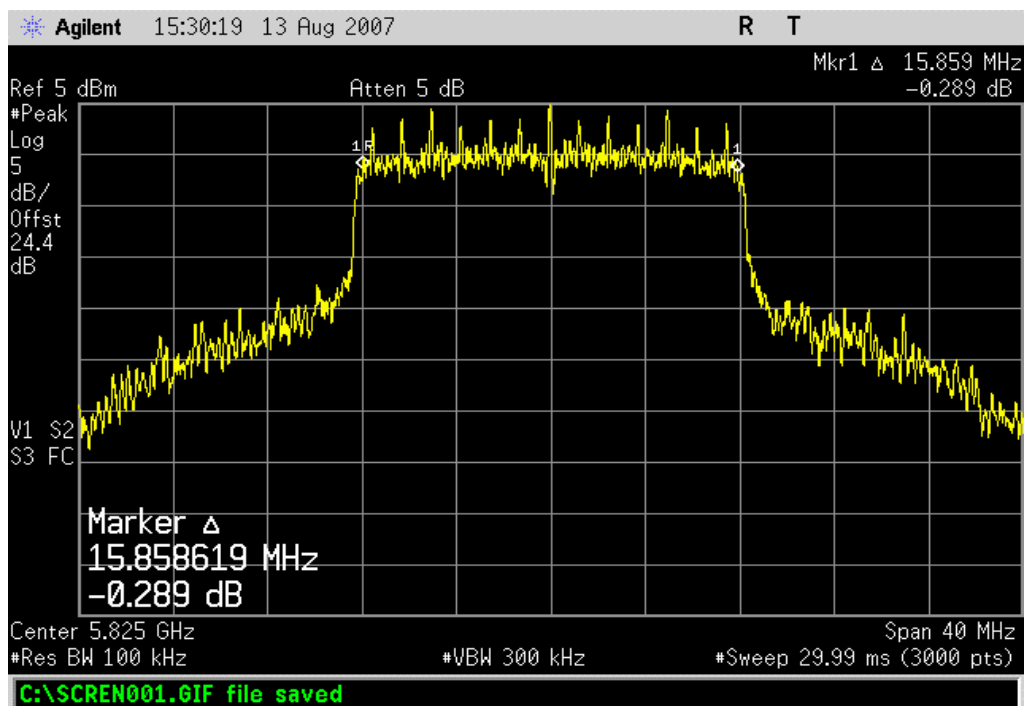
Limit: $\geq 500\text{kHz}$ 

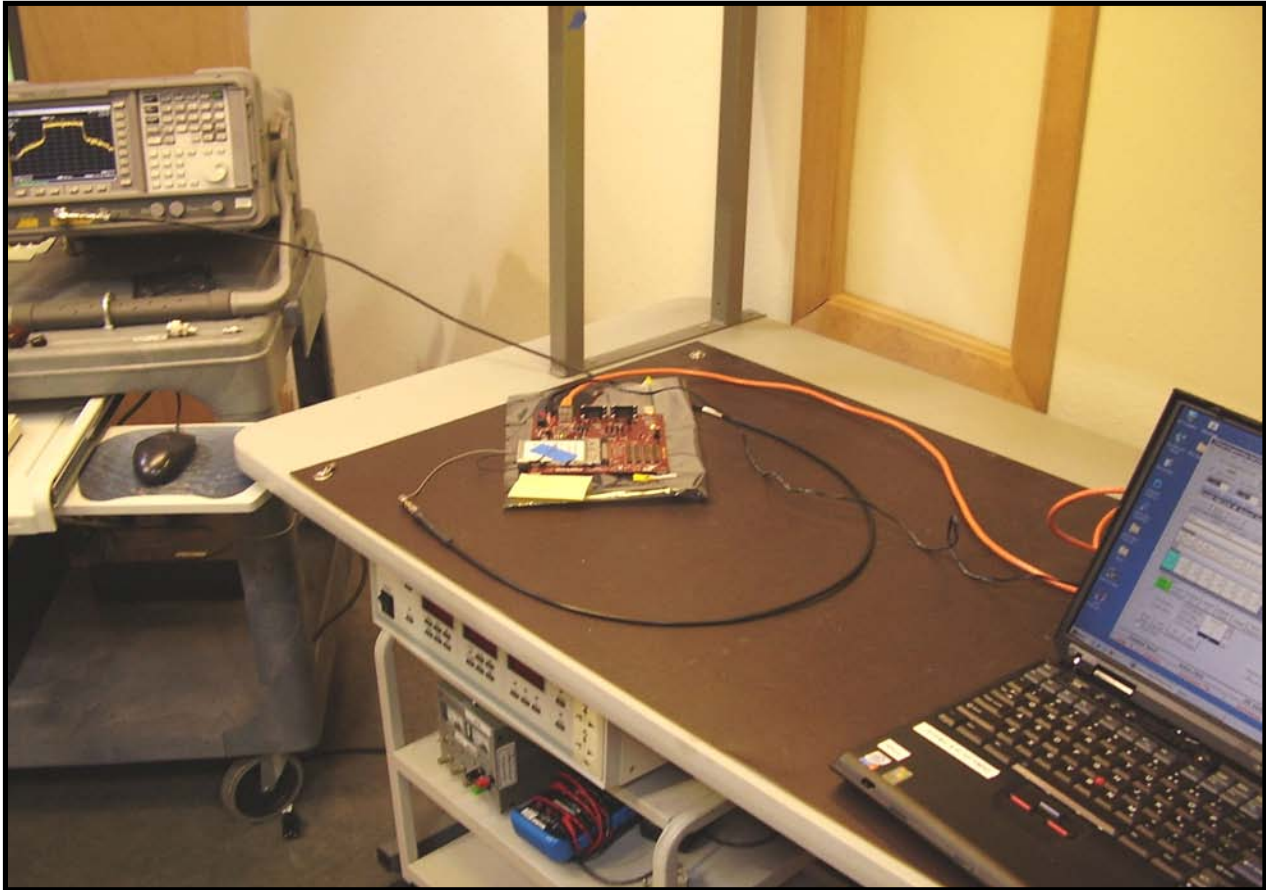
Occupied Bandwidth

802.11(a), 6Mbps, 5725 - 5850 MHz band, High channel, 5825 MHz

Result: Pass

Value: 15.8586 MHz

Limit: $\geq 500\text{kHz}$ 



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

TEST EQUIPMENT					
Description	Manufacturer	Model	ID	Last Cal.	Interval
Oscilloscope	Agilent	DS06052A	TOK	3/9/2007	13
Power Sensor	Gigatronics	80701A	SPL	9/19/2006	12
Power Meter	Gigatronics	8651A	SPM	9/19/2006	12
Signal Generator	Agilent	E8257D	TGX	1/25/2007	13
Attenuator		93459 3330A-6	AUF	1/22/2007	13
Attenuator 20 dB, SMA M/F 26GHz	S.M. Electronics	SA26B-20	AUY	6/8/2007	13
RF Detector	RLC Electronics	CR-133-R	ZZA	NCR	0

MEASUREMENT UNCERTAINTY

Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is available upon request.

TEST DESCRIPTION

The peak output power was measured with the EUT set to low, medium, and high transmit frequencies. The EUT was transmitting at its maximum output power. The data rate of the radio was varied to determine the level that produced the highest output power.

The measurement was made using a direct connection between the RF output of the EUT and a RF detector diode. The DC output of the diode was measured with the oscilloscope. The signal generator, tuned to the transmit frequency, was then substituted for the EUT. The CW output of the signal generator was adjusted until the DC output of the RF detector diode match the peak level produced when connected to the EUT. To further reduce measurement error, the power meter and sensor were then used to measure the output power level of the signal generator.

De Facto EIRP Limit: Per 47 CFR 15.247 (b)(1-3), the EUT meets the de facto EIRP limit of +36dBm.

NORTHWEST

EMC

Output Power

XMIT 2007.06.13

EUT: Welch Allyn 802.11a Wireless PC Card		Work Order: PROTO295
Serial Number: 001AFA0000CE		Date: 08/14/07
Customer: Welch Allyn Protocol, Inc.		Temperature: 24°C
Attendees: None		Humidity: 35%
Project: None		Barometric Pres.: 1020.4mb
Tested by: Holly Ashkannejhad	Power: 5.0VDC nominal	Job Site: EV06

TEST SPECIFICATIONS

Test Method

FCC 15.247 (DTS):2006ANSI C63.4:2003 KDB No. 558074

COMMENTS

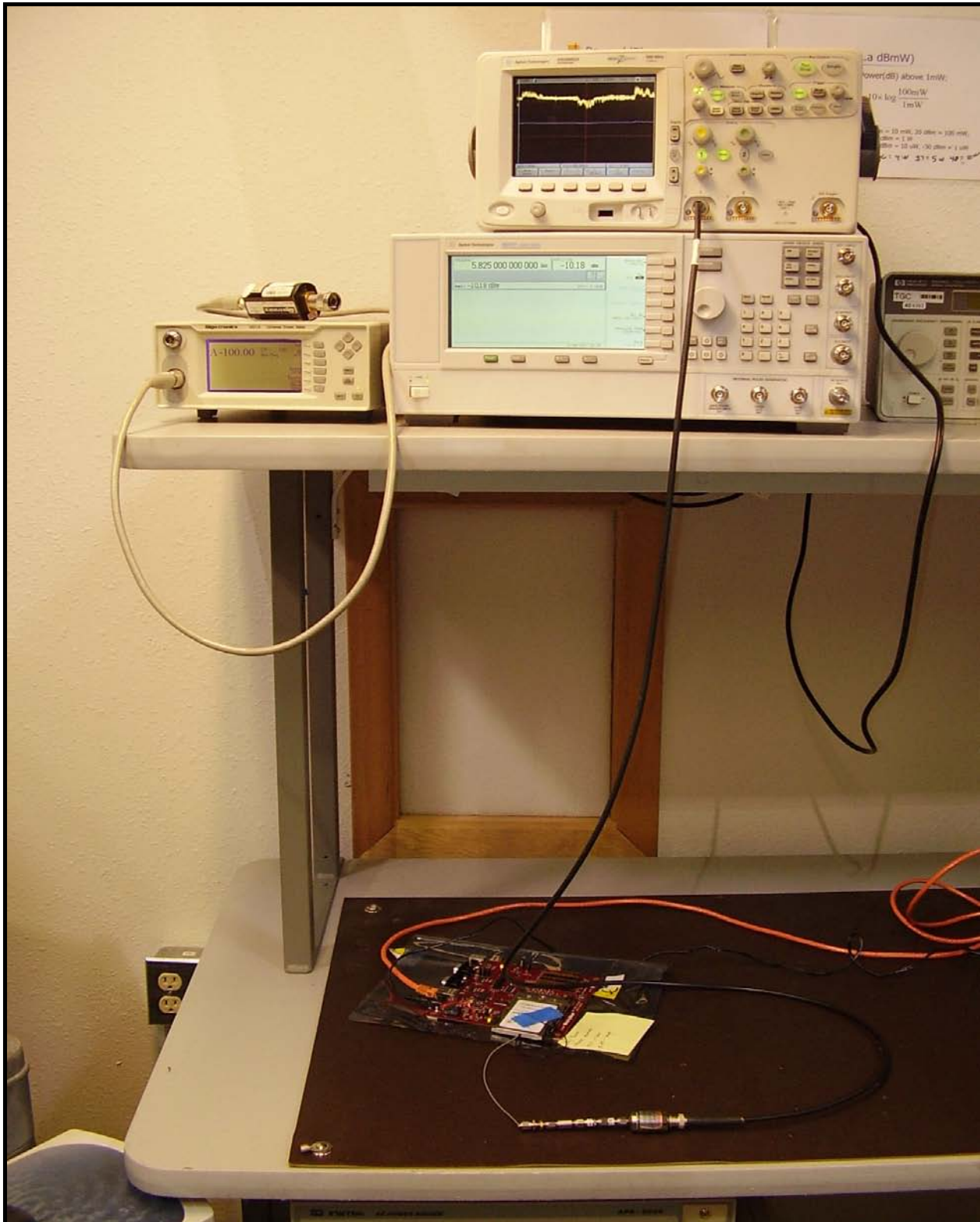
DEVIATIONS FROM TEST STANDARD

Configuration #	1	Signature <i>Holly Ashkannejhad</i>
-----------------	---	-------------------------------------

802.11(a), 6Mbps

5725-5850 MHz band

Xmit Frequency (MHz)	Channel	DC on Scope (mV)	Attenuator Specific Ref.Offset (dB)	Sig Gen Output (dBm)	Power Meter (dBm)	Value		Limit (mW)	
						Power Meter (mW)			
5745	149	-38.5	26.3	-10.35	15.89	38.82		1000	Pass
5785	157	-39.5	26.29	-10.18	16.04	40.18		1000	Pass
5825	165	-39.5	26.29	-10.18	16.04	40.18		1000	Pass



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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Spectrum Analyzer	Agilent	E4407B	AAU	12/8/2006	13

MEASUREMENT UNCERTAINTY

Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is available upon request.

TEST DESCRIPTION

The requirements of FCC 15.247(d) for emissions at least 20dB below the carrier in any 100kHz bandwidth outside the allowable band was measured with the EUT set to low and high transmit frequencies. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at its maximum data rate using direct sequence modulation. The channels closest to the band edges were selected. The spectrum was scanned across each band edge from 10 MHz below the band edge to 10 MHz above the band edge.

EMC

Band Edge Compliance

EUT:	Welch Allyn 802.11a Wireless PC Card	Work Order:	PROT0295
Serial Number:	001AFA0000CE	Date:	08/14/07
Customer:	Welch Allyn Protocol, Inc.	Temperature:	24°C
Attendees:	None	Humidity:	35%
Project:	None	Barometric Pres.:	1020.4mb
Tested by:	Holly Ashkannejhad	Power:	5.0VDC nominal
		Job Site:	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247 (DTS):2006	ANSI C63.4:2003 KDB No. 558074

COMMENTS

DEVIATIONS FROM TEST STANDARD

None

Configuration #	1	Signature <i>Holly Ashkannejhad</i>
-----------------	---	-------------------------------------

	Value	Limit	Results
--	-------	-------	---------

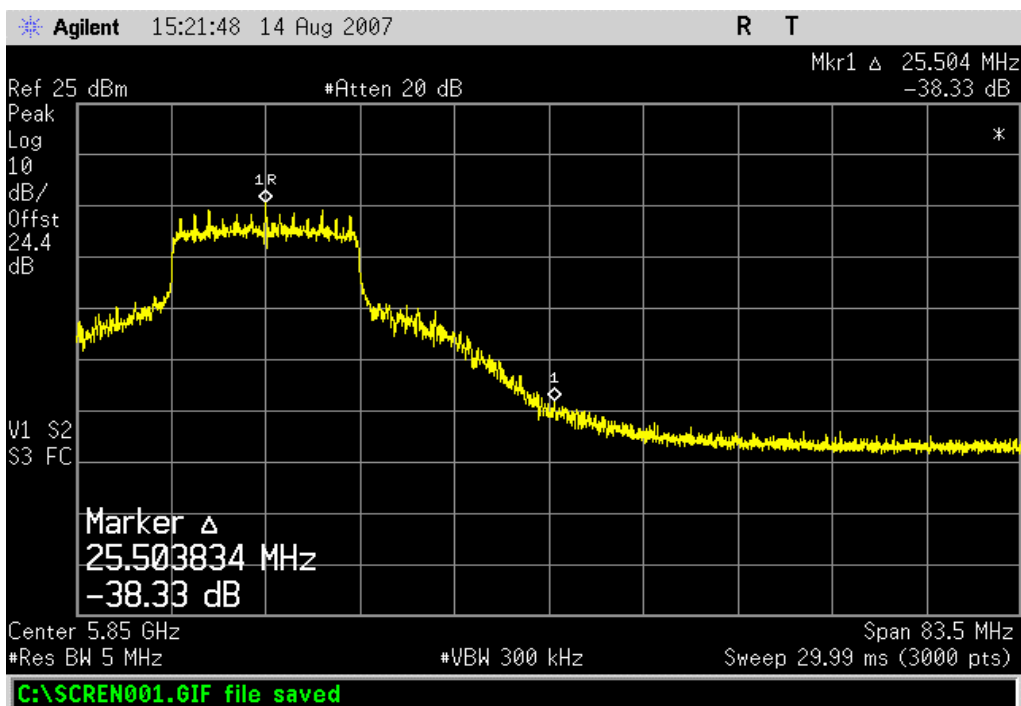
802.11(a), 6Mbps	5725 MHz - 5850 MHz		
	Low channel, 5745 MHz	-38.33 dBc	≤ -20 dBc
	High channel, 5825 MHz	-29.07 dBc	≤ -20 dBc
			Pass
			Pass

Band Edge Compliance

802.11(a), 6Mbps, 5725 MHz - 5850 MHz, Low channel, 5745 MHz

Result: Pass

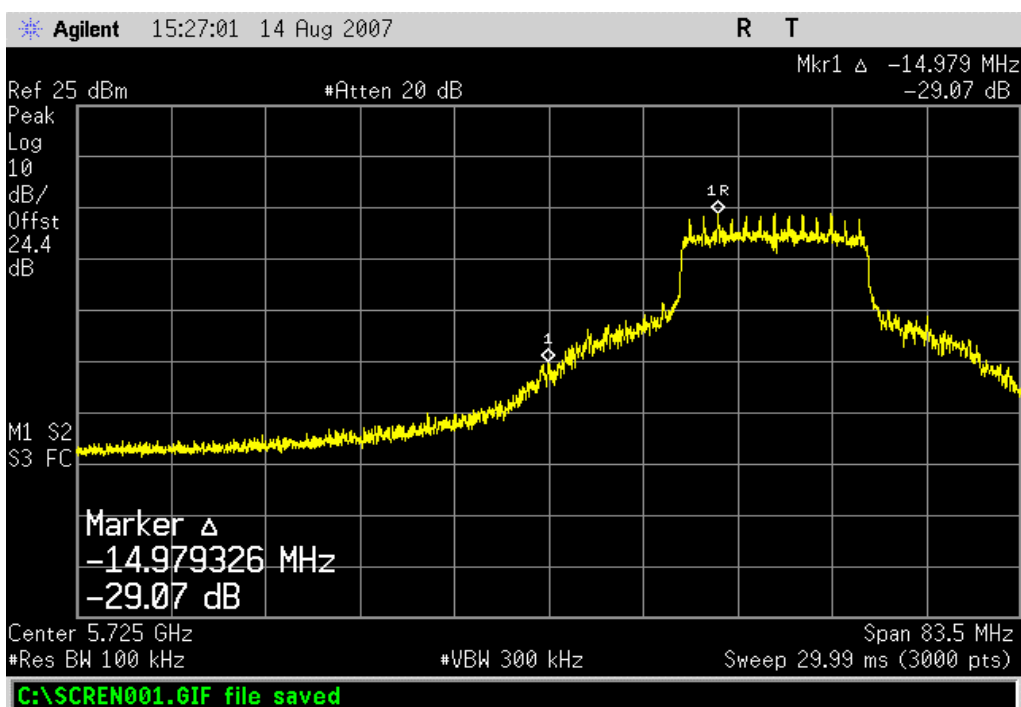
Value: -38.33 dBc

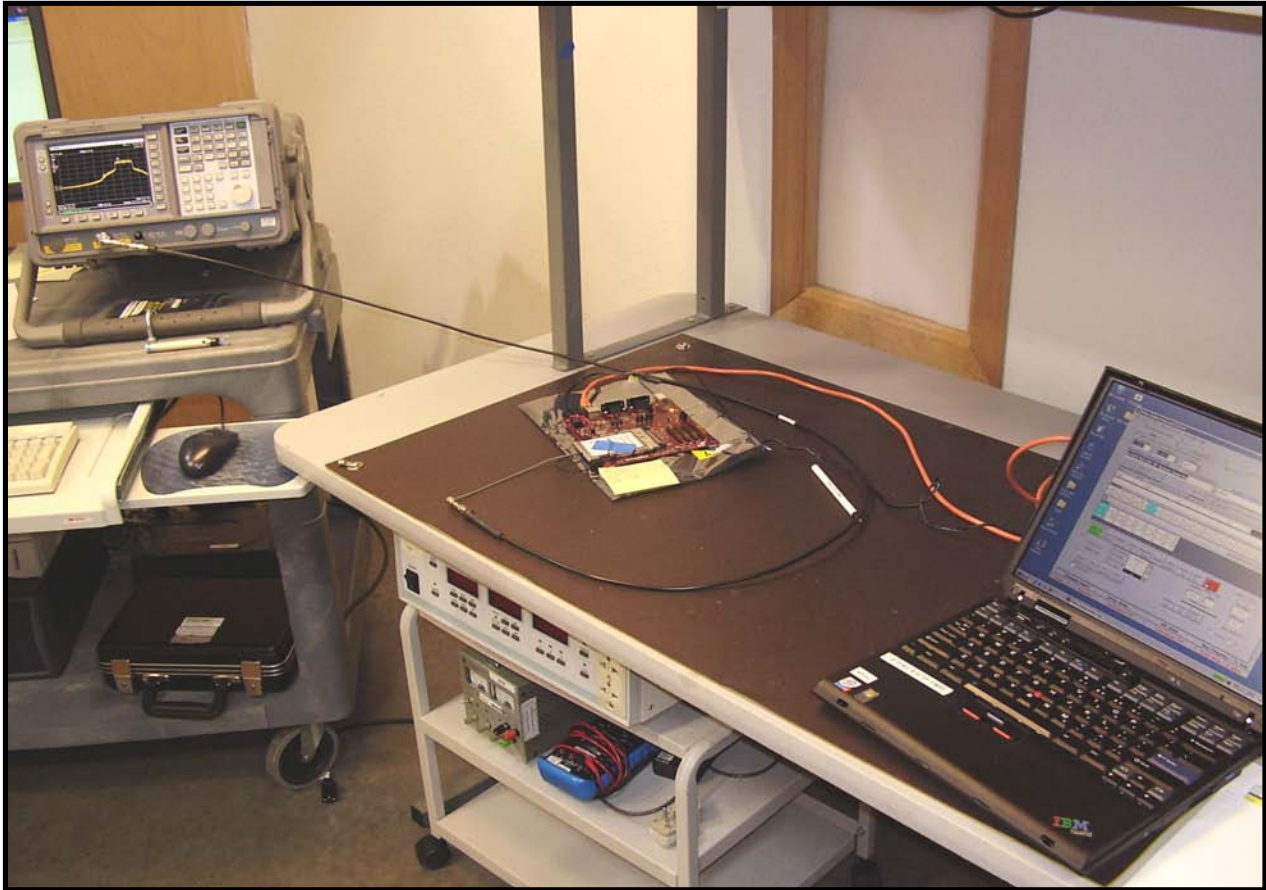
Limit: ≤ -20 dBc

802.11(a), 6Mbps, 5725 MHz - 5850 MHz, High channel, 5825 MHz

Result: Pass

Value: -29.07 dBc

Limit: ≤ -20 dBc



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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Spectrum Analyzer	Agilent	E4446A	AAT	12/7/2006	13

MEASUREMENT UNCERTAINTY

Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is available upon request.

TEST DESCRIPTION

The spurious RF conducted emissions were measured with the EUT set to low, medium, and high transmit frequencies. The measurements were made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at its maximum data rate using direct sequence modulation. For each transmit frequency, the spectrum was scanned throughout the specified frequency range.

EMC

SPURIOUS CONDUCTED EMISSIONS

EUT:	Welch Allyn 802.11a Wireless PC Card	Work Order:	PROT0295
Serial Number:	001AFA0000CE	Date:	08/22/07
Customer:	Welch Allyn Protocol, Inc.	Temperature:	22°C
Attendees:	None	Humidity:	43%
Project:	None	Barometric Pres.:	30.05
Tested by:	Rod Peloquin	Power:	120VAC/60Hz
		Job Site:	EV01

TEST SPECIFICATIONS	Test Method
FCC 15.247 (DTS):2006	ANSI C63.4:2003 KDB No. 558074

COMMENTS

DEVIATIONS FROM TEST STANDARD

None

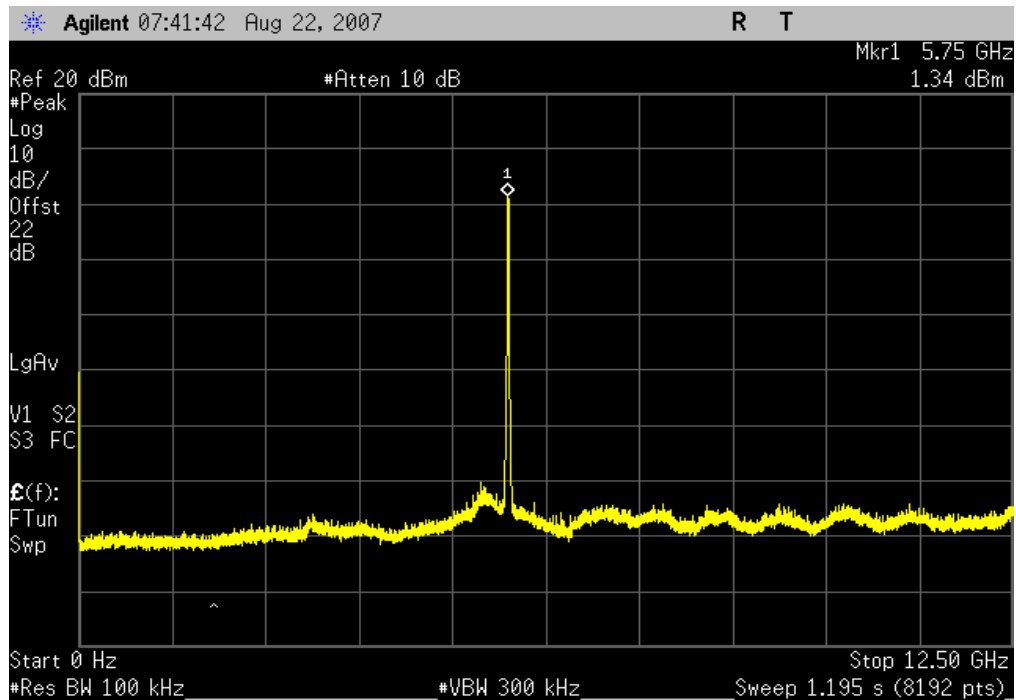
Configuration #	1	Signature 
-----------------	---	---

		Value	Limit	Results
Low Channel, 149				
	0MHz - 12.5GHz	< -40 dBc	≤ - 20 dBc	Pass
	12.4 GHz - 24 GHz	< -40 dBc	≤ - 20 dBc	Pass
	23.5 GHz - 31 GHz	< -40 dBc	≤ - 20 dBc	Pass
	30.5 GHz - 40 GHz	< -40 dBc	≤ - 20 dBc	Pass
Mid Channel, 157				
	0MHz - 12.5GHz	< -40 dBc	≤ - 20 dBc	Pass
	12.4 GHz - 24 GHz	< -40 dBc	≤ - 20 dBc	Pass
	23.5 GHz - 31 GHz	< -40 dBc	≤ - 20 dBc	Pass
	30.5 GHz - 40 GHz	< -40 dBc	≤ - 20 dBc	Pass
High Channel, 165				
	0MHz - 12.5GHz	< -40 dBc	≤ - 20 dBc	Pass
	12.4 GHz - 24 GHz	< -40 dBc	≤ - 20 dBc	Pass
	23.5 GHz - 31 GHz	< -40 dBc	≤ - 20 dBc	Pass
	30.5 GHz - 40 GHz	< -40 dBc	≤ - 20 dBc	Pass

Low Channel 149, 0MHz - 12.5 GHz

Result: Pass

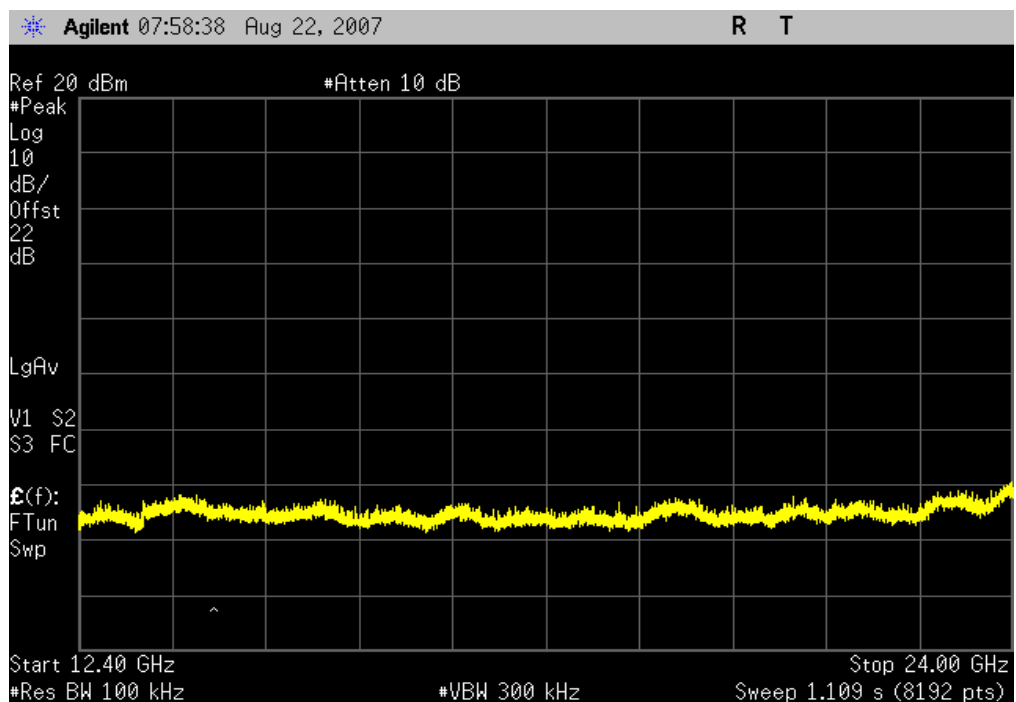
Value: < -40 dBc

Limit: ≤ -20 dBc

Low Channel 149, 12.4 GHz - 24 GHz

Result: Pass

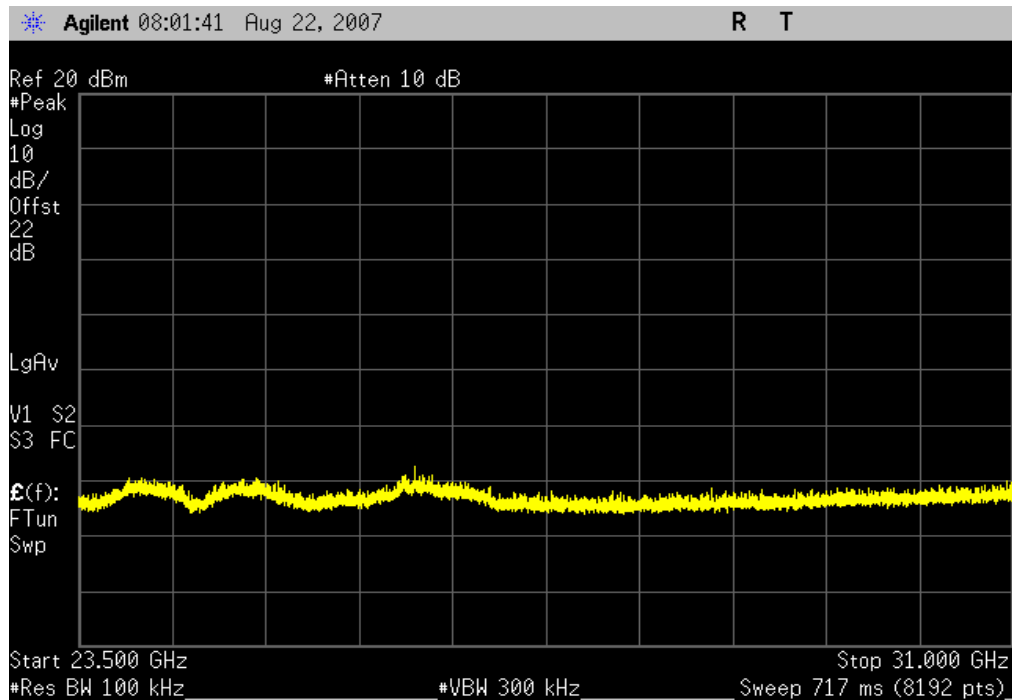
Value: < -40 dBc

Limit: ≤ -20 dBc

Low Channel 149, 23.5 GHz - 31 GHz

Result: Pass

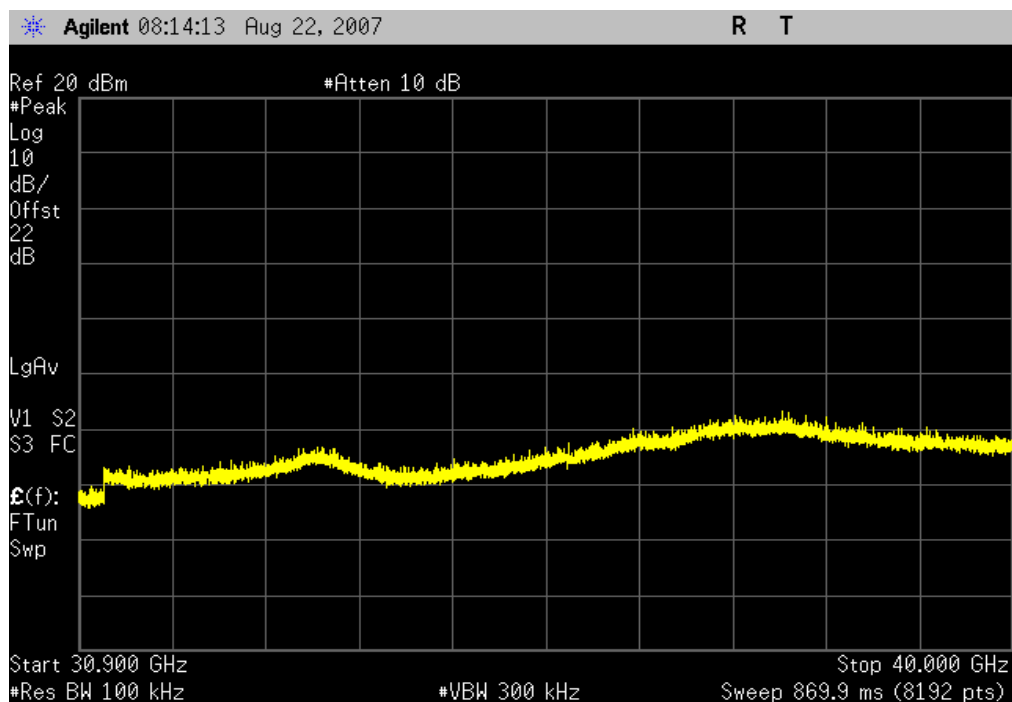
Value: < -40 dBc

Limit: ≤ -20 dBc

Low Channel 149, 30.5 GHz - 40 GHz

Result: Pass

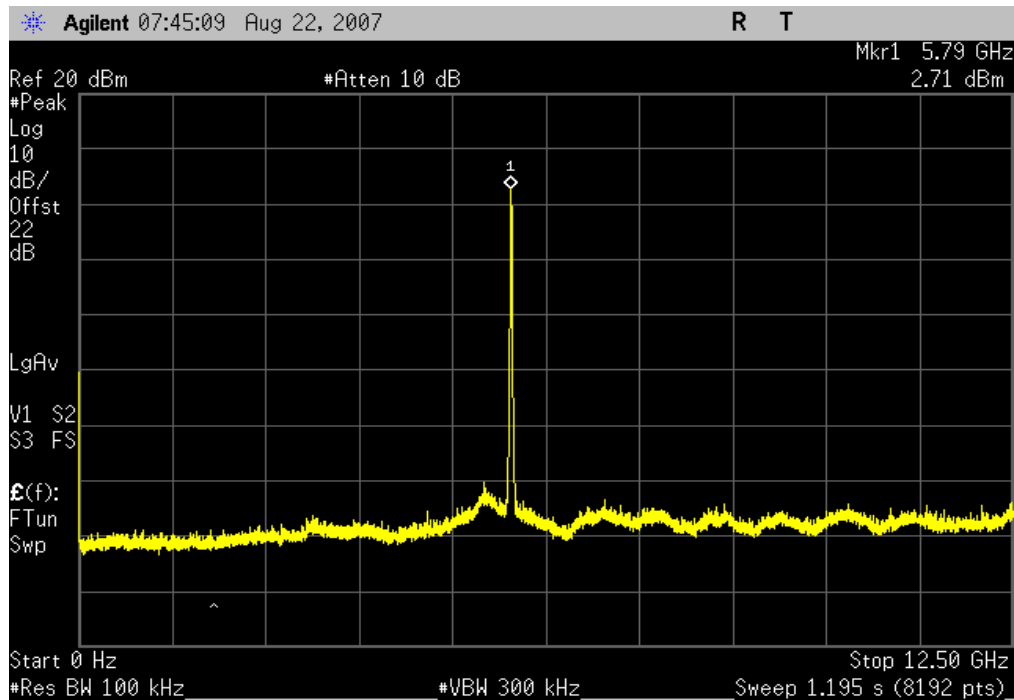
Value: < -40 dBc

Limit: ≤ -20 dBc

Mid Channel 157, 0MHz - 12.5GHz

Result: Pass

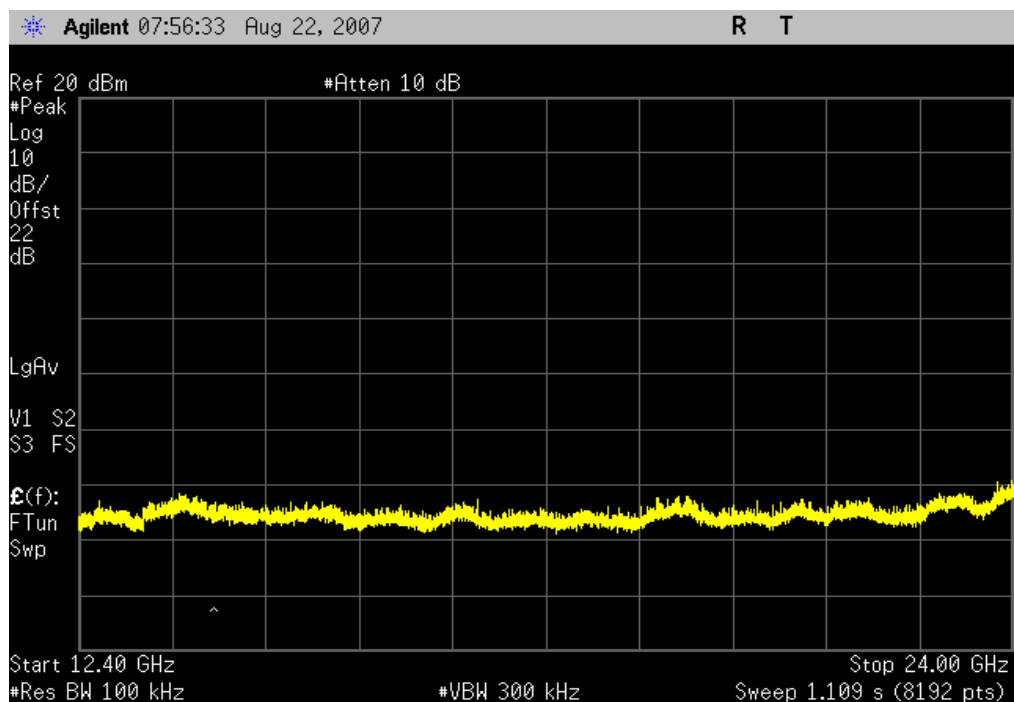
Value: < -40 dBc

Limit: ≤ -20 dBc

Mid Channel 157, 12.4 GHz - 24 GHz

Result: Pass

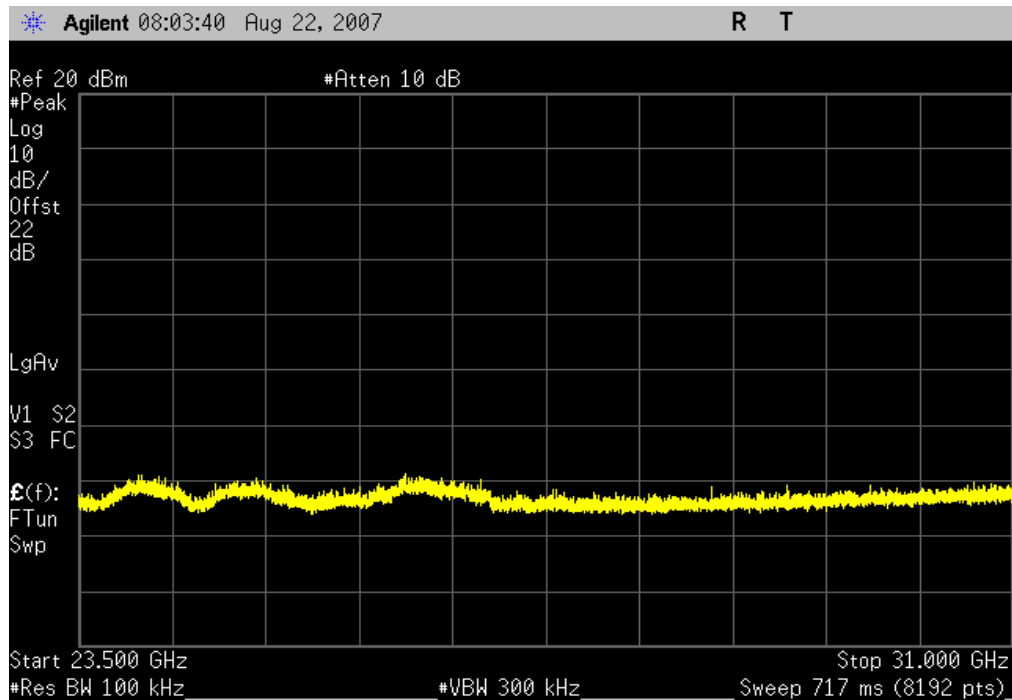
Value: < -40 dBc

Limit: ≤ -20 dBc

Mid Channel 157, 23.5 GHz - 31 GHz

Result: Pass

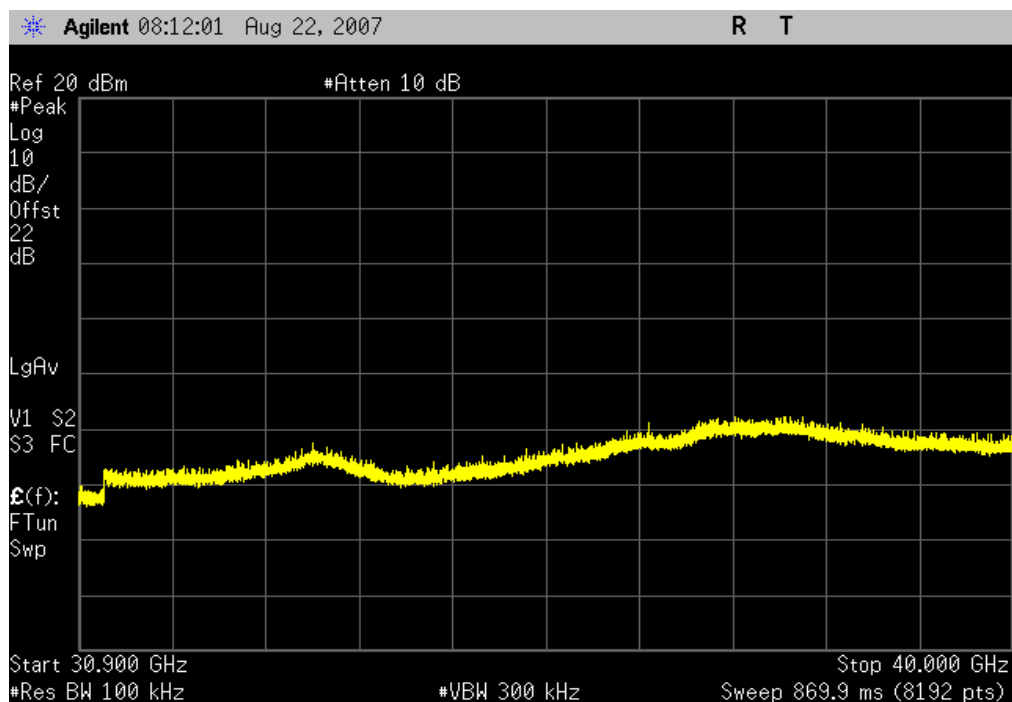
Value: < -40 dBc

Limit: ≤ -20 dBc

Mid Channel 157, 30.5 GHz - 40 GHz

Result: Pass

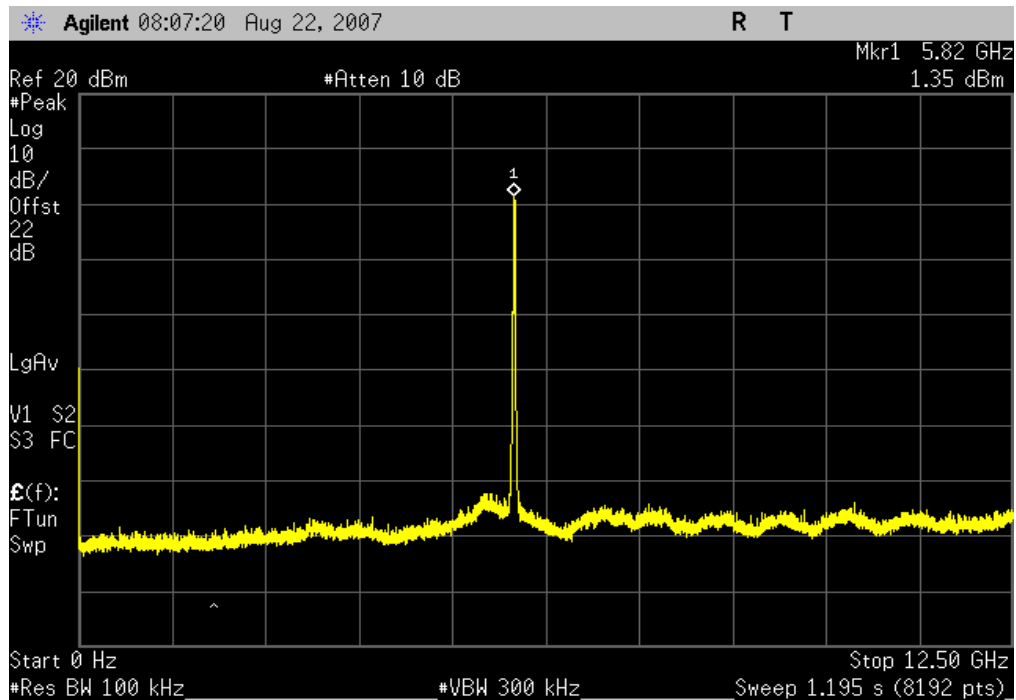
Value: < -40 dBc

Limit: ≤ -20 dBc

High Channel 165, 0MHz - 12.5GHz

Result: Pass

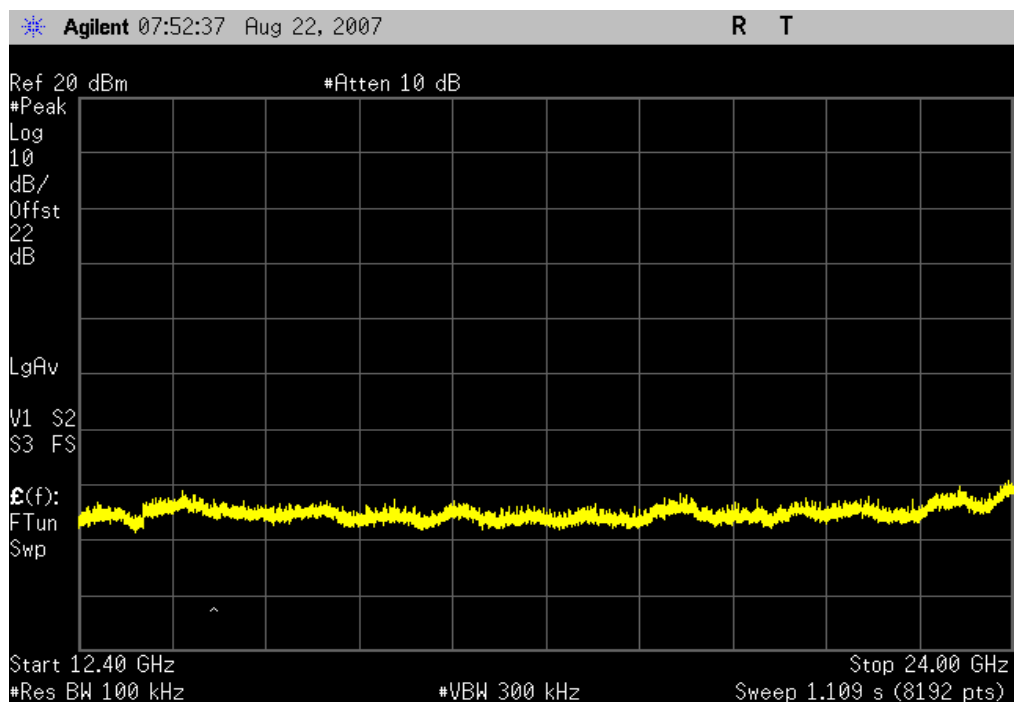
Value: < -40 dBc

Limit: ≤ -20 dBc

High Channel 165, 12.4 GHz - 24 GHz

Result: Pass

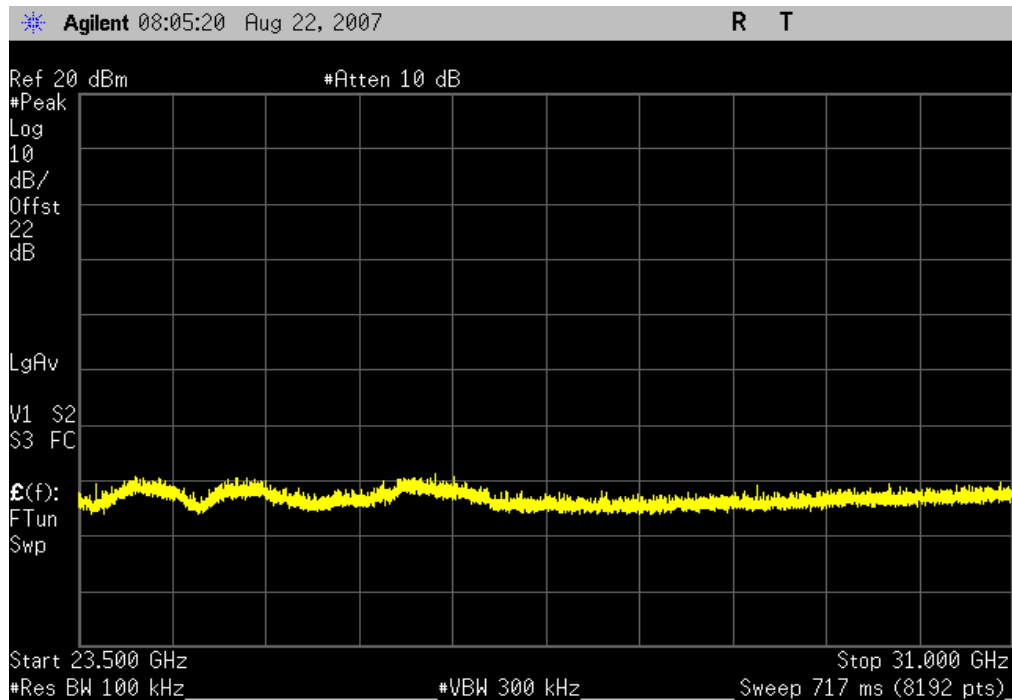
Value: < -40 dBc

Limit: ≤ -20 dBc

High Channel 165, 23.5 GHz - 31 GHz

Result: Pass

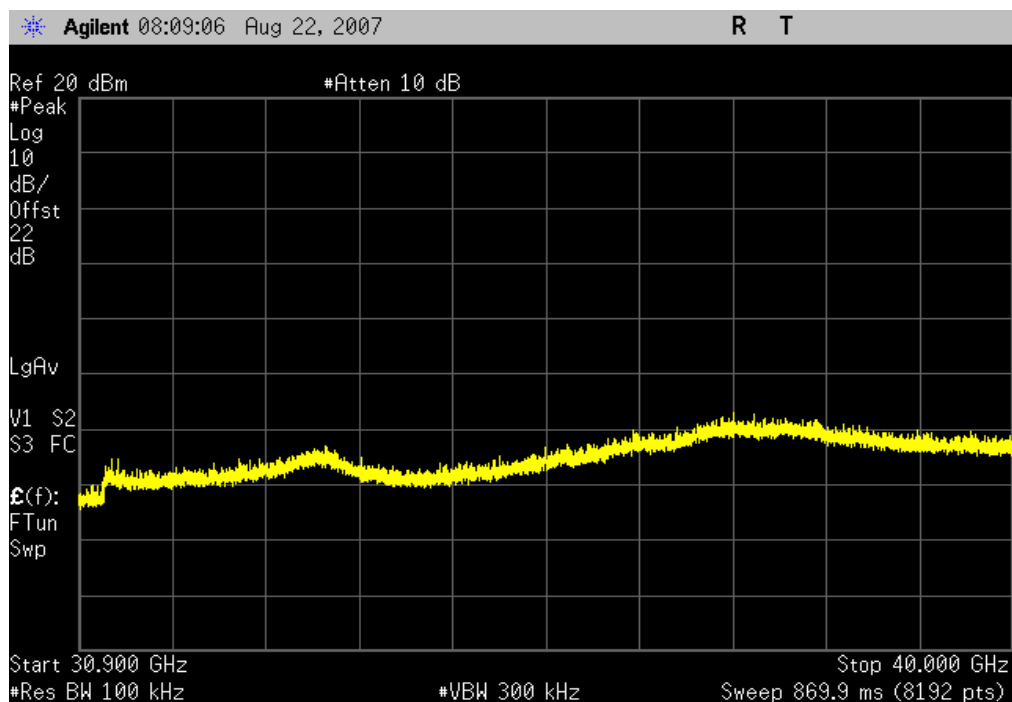
Value: < -40 dBc

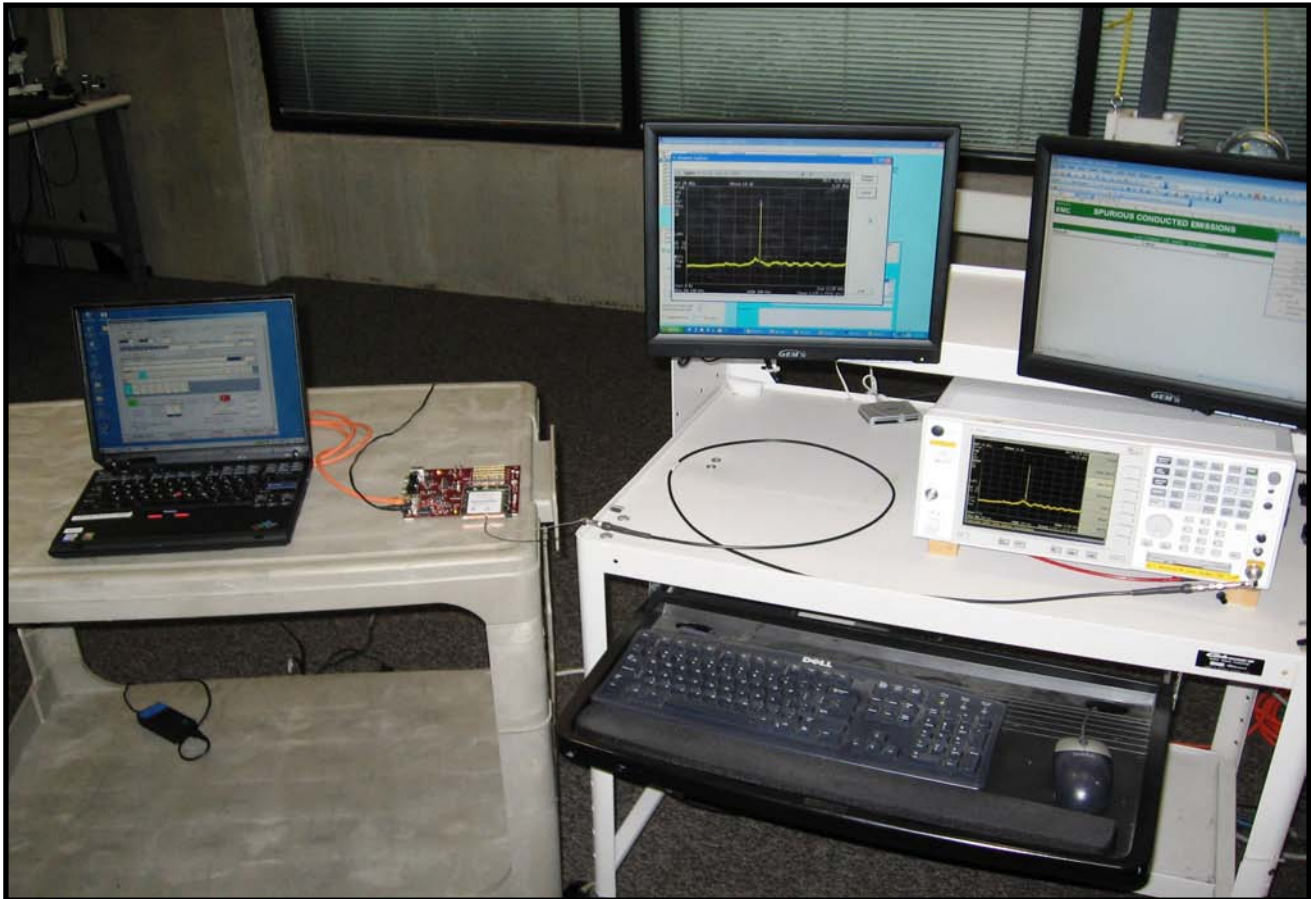
Limit: \leq -20 dBc

High Channel 165, 30.5 GHz - 40 GHz

Result: Pass

Value: < -40 dBc

Limit: \leq -20 dBc



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

MODES OF OPERATION

Transmitting 802.11(a), 6 Mbps

CHANNELS TESTED

Channel 149

Channel 157

Channel 165

POWER SETTINGS INVESTIGATED

120VAC/60Hz

FREQUENCY RANGE INVESTIGATED

Start Frequency	30 MHz	Stop Frequency	40 GHz
-----------------	--------	----------------	--------

CLOCKS AND OSCILLATORS

None Provided

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	AAT	12/7/2006	13
Pre-Amplifier	Miteq	AM-1616-1000	AOL	12/29/2006	13
Antenna, Biconilog	EMCO	3141	AXE	12/28/2005	24
Pre-Amplifier	Miteq	AMF-4D-010100-24-10P	APW	5/10/2007	13
Antenna, Horn	EMCO	3115	AHC	8/24/2006	24
EV01 cables g,h,j			EVB	5/10/2007	13
Antenna, Horn	ETS	3160-08	AHV	NCR	0
Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	AVD	6/22/2007	13
Antenna, Horn	EMCO	3160-09	AHG	NCR	0
Pre-Amplifier	Miteq	JSD4-18002600-26-8P	APU	7/25/2007	13
EV01 cables g,h,i			EVF	5/10/2007	13
EV01 Cable D			EVD	7/25/2007	13
Antenna, Horn	ETS	3160-08	AHV	NCR	0
Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	AVD	6/22/2007	13
Pre-Amplifier	Miteq	JS4-26004000-50-5A	AON	7/25/2007	13
Pre-Amplifier	Miteq	JS4-26004000-40-8P	APV	7/25/2007	13
Antenna, Horn	EMCO	3160-10	AHI	NCR	0
EV01 cable B			EVE	7/25/2007	13
Antenna, Horn	EMCO	3160-08	AHK	NCR	0
Pre-Amplifier	Hewlett-Packard	8447-F Option 10	APM	NCR	0
Pre-Amplifier	Hewlett-Packard	83017A	APL	10/24/2006	13
Signal Generator	Agilent	E8257D	TGX	1/25/2007	13
6.4 GHz High Pass Filter	Micro-Tronics	HPM50112	HGA		
5.8 GHz Notch Filter	Micro-Tronics	BRC50704	HGB		
5.8 GHz Notch Filter	Micro-Tronics	BRC50705	HFQ	1/12/2007	13
5.25 GHz Notch Filter	K&L Microwave	8N50-5250/X200-0/0	HFk	4/3/2006	24

MEASUREMENT BANDWIDTHS

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

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

MEASUREMENT UNCERTAINTY

Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is available upon request.

TEST DESCRIPTION

The only antenna to be used with the EUT was 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. In addition, measurements were made in the restricted bands to verify compliance. While scanning, emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and EUT antenna in three orthogonal axis, and adjusting the measurement antenna height and polarization (per ANSI C63.4:2003). A preamp and high pass filter (and notch filter) were used for this test in order to provide sufficient measurement sensitivity.

EUT: Welch Allyn 802.11a Wireless PC Card	Work Order: PROT0295
Serial Number: 001AFA0000CE	Date: 08/20/07
Customer: Welch Allyn Protocol, Inc.	Temperature: 24
Attendees: None	Humidity: 39%
Project: None	Barometric Pres.: 29.95
Tested by: Rod Peloquin	Power: 120VAC/60Hz
	Job Site: EV01

TEST SPECIFICATIONS

FCC 15.247 (DTS):2006

Test Method

ANSI C63.4:2003 KDB No. 558074

TEST PARAMETERS

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

COMMENTS

EUT OPERATING MODES

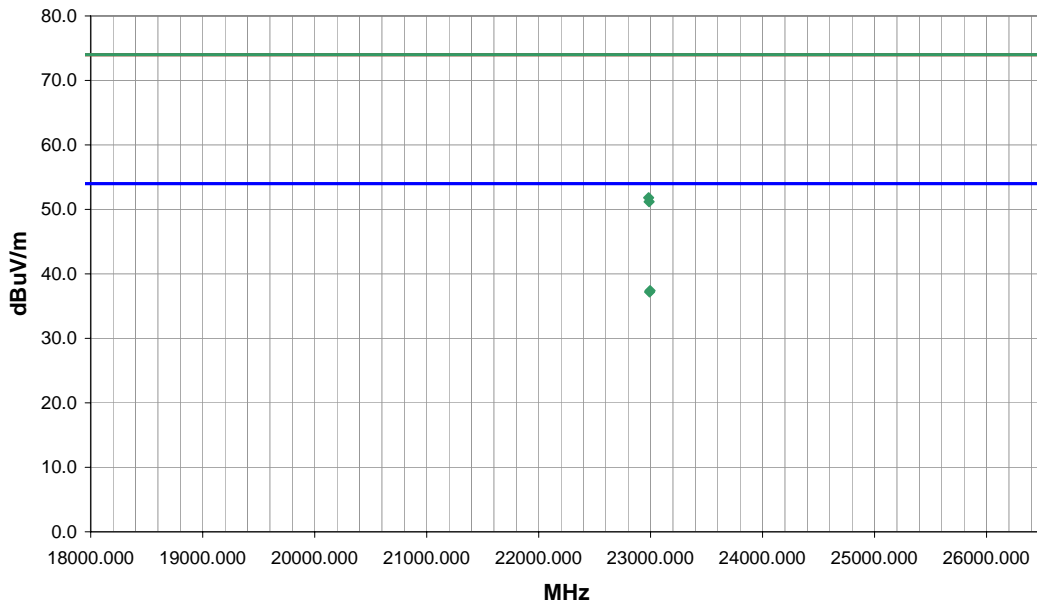
Transmitting 802.11(a), 6 Mbps

DEVIATIONS FROM TEST STANDARD


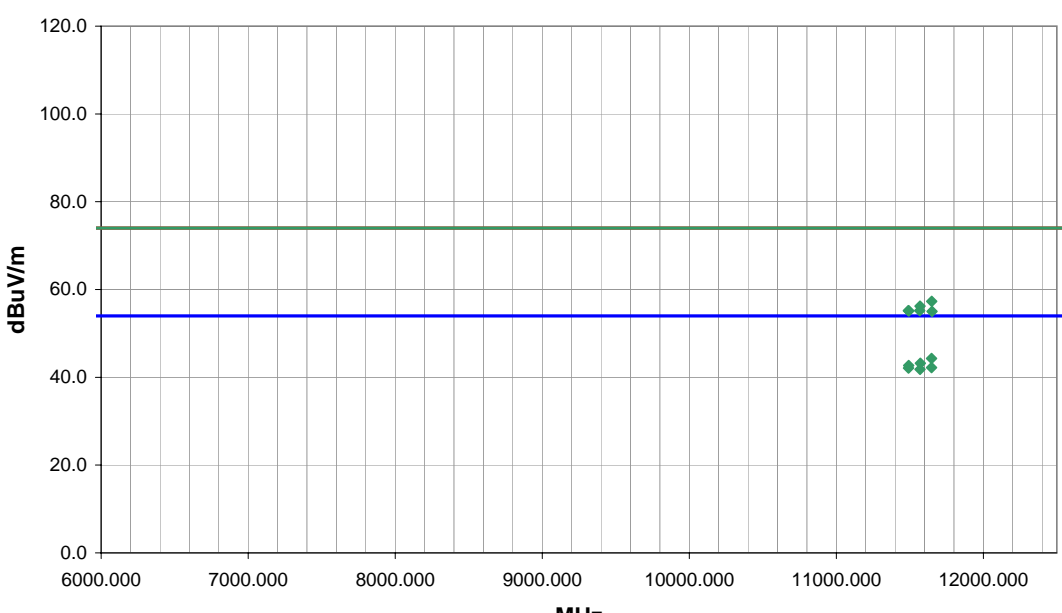
No deviations.

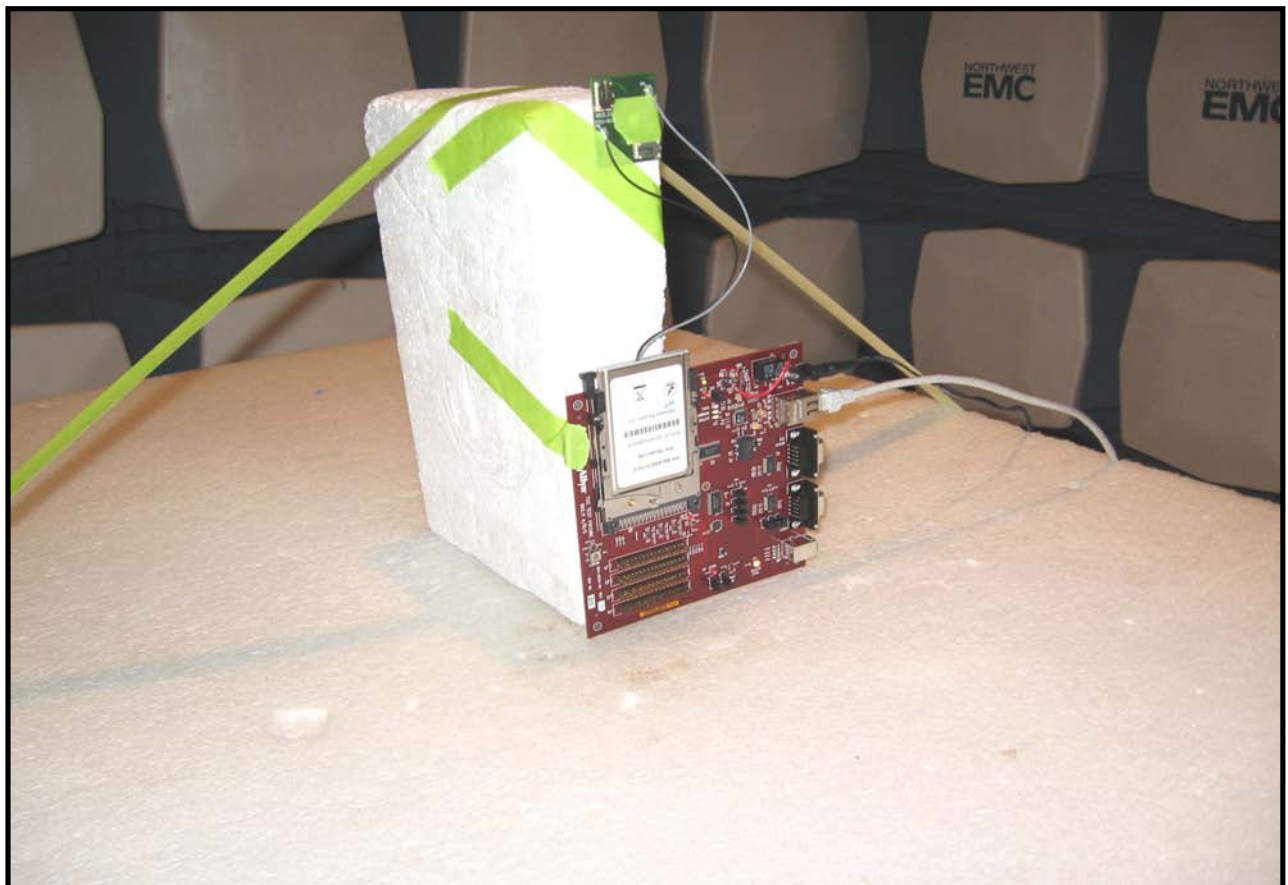
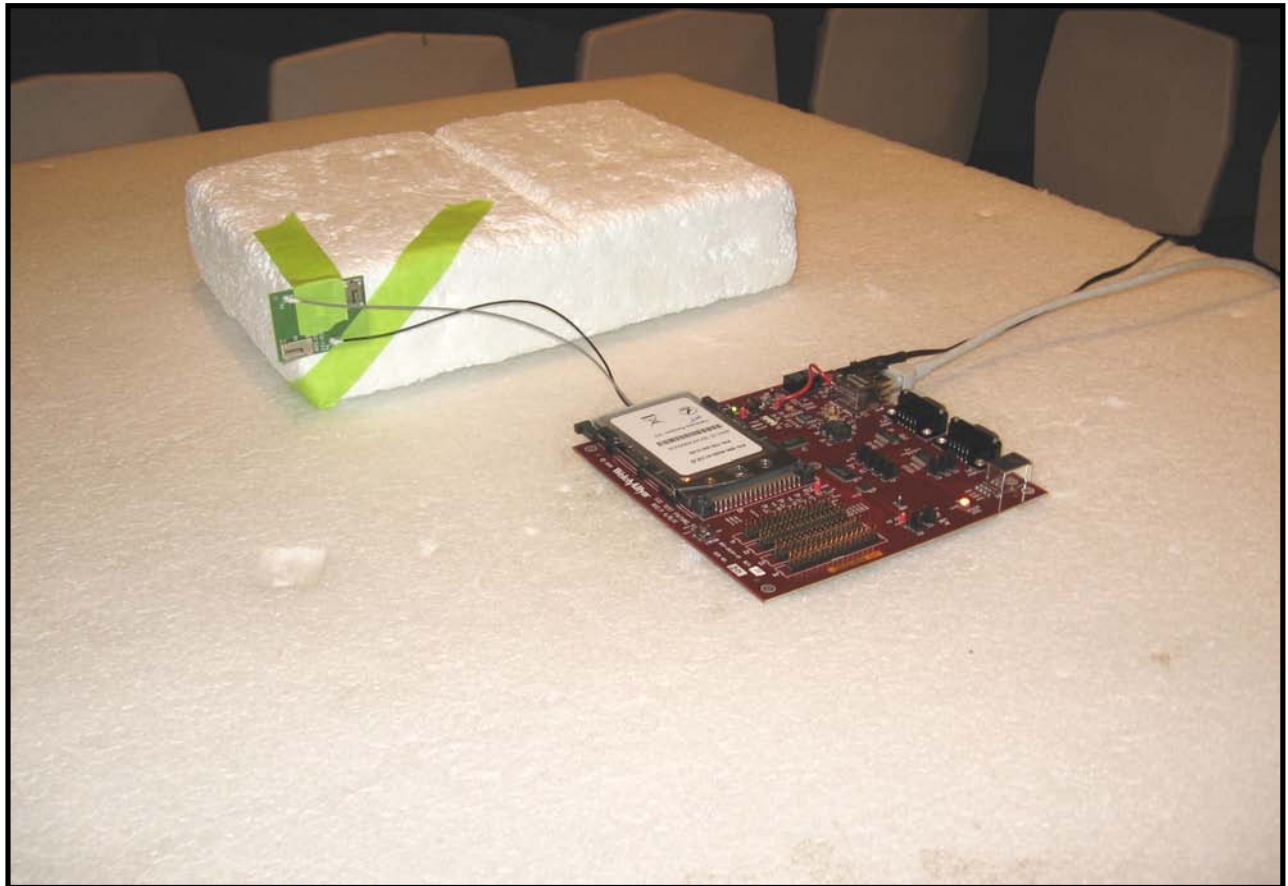
Run #	5
Configuration #	2
Results	Pass

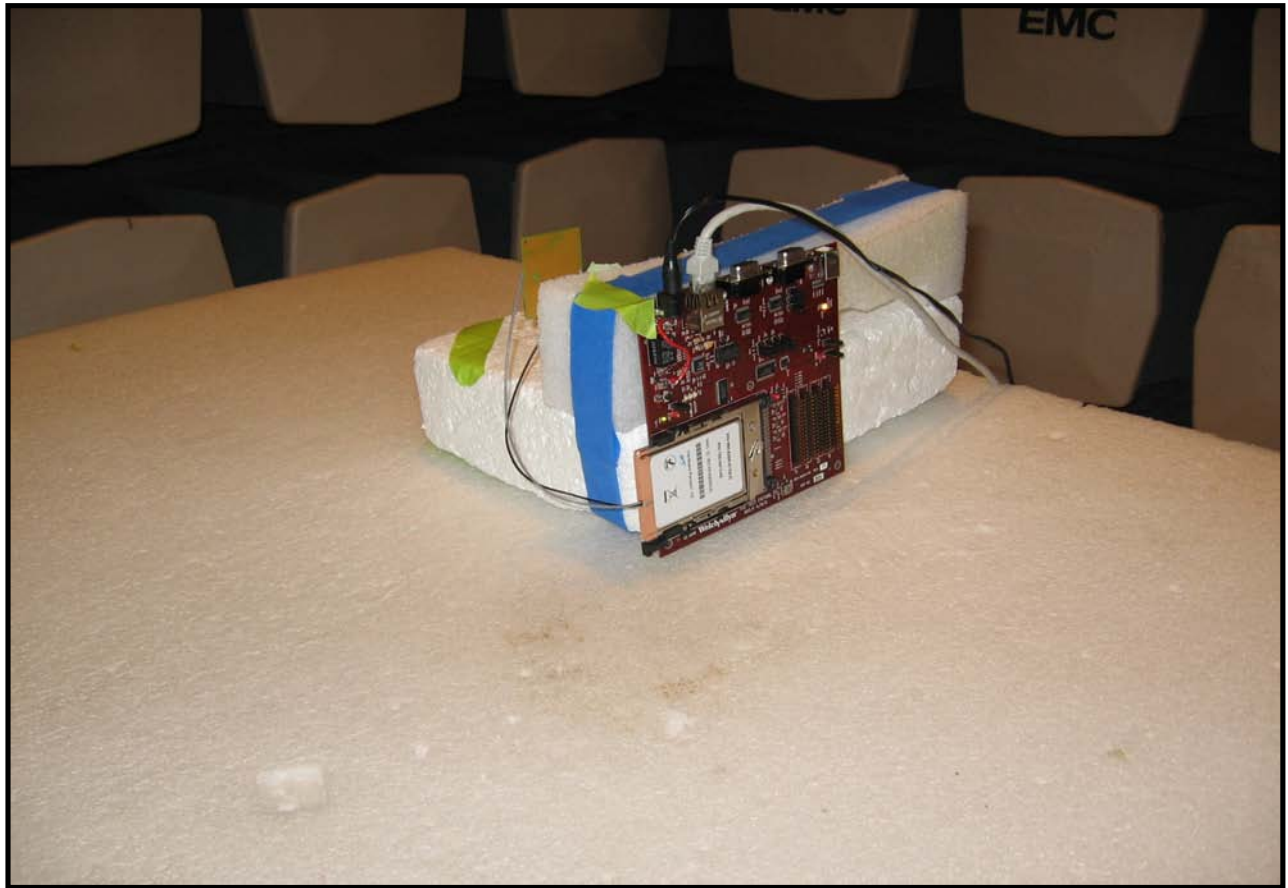
Signature

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)	Comments
22994.470	27.7	9.7	-1.0	1.0	3.0	0.0	+-High Horr	AV	0.0	37.4	54.0	-16.6	Channel 149
22990.700	27.5	9.7	-1.0	1.0	3.0	0.0	√-High Horr	AV	0.0	37.2	54.0	-16.8	Channel 149
22982.230	42.1	9.7	-1.0	1.0	3.0	0.0	√-High Horr	PK	0.0	51.8	74.0	-22.2	Channel 149
22986.430	41.5	9.7	-1.0	1.0	3.0	0.0	+-High Horr	PK	0.0	51.2	74.0	-22.8	Channel 149

NORTHWEST		SPURIOUS RADIATED EMISSIONS		PSA 2007.05.07									
EMC				EMI 2006.11.29									
EUT: Welch Allyn 802.11a Wireless PC Card			Work Order: PROT0295										
Serial Number: 001AFA0000CE			Date: 08/21/07										
Customer: Welch Allyn Protocol, Inc.			Temperature: 23										
Attendees: None			Humidity: 46%										
Project: None			Barometric Pres.: 29.95										
Tested by: Rod Peloquin		Power: 120VAC/60Hz		Job Site: EV01									
TEST SPECIFICATIONS			Test Method										
FCC 15.247 (DTS):2006			ANSI C63.4:2003 KDB No. 558074										
TEST PARAMETERS													
Antenna Height(s) (m)		1 - 4		Test Distance (m) 3									
COMMENTS													
EUT OPERATING MODES													
Transmitting 802.11(a), 6 Mbps													
DEVIATIONS FROM TEST STANDARD													
No deviations.													
Run #		9											
Configuration #		2											
Results		Pass											
													
													
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)	Comments
11647.670	28.2	16.1	96.0	1.1	3.0	0.0	V-Horn	AV	0.0	44.3	54.0	-9.7	Ch. 165
11571.670	27.2	16.0	280.0	1.5	3.0	0.0	H-Horn	AV	0.0	43.2	54.0	-10.8	Ch. 157
11491.870	26.6	16.1	324.0	1.4	3.0	0.0	V-Horn	AV	0.0	42.7	54.0	-11.3	Ch. 149
11648.100	26.2	16.0	351.0	1.3	3.0	0.0	H-Horn	AV	0.0	42.2	54.0	-11.8	Ch. 165
11491.230	26.0	16.1	32.0	1.3	3.0	0.0	H-Horn	AV	0.0	42.1	54.0	-11.9	Ch. 149
11569.630	25.8	16.0	86.0	1.1	3.0	0.0	V-Horn	AV	0.0	41.8	54.0	-12.2	Ch. 157
11648.530	41.3	16.0	96.0	1.1	3.0	0.0	V-Horn	PK	0.0	57.3	74.0	-16.7	Ch. 165
11569.100	40.2	16.0	280.0	1.5	3.0	0.0	H-Horn	PK	0.0	56.2	74.0	-17.8	Ch. 157
11567.400	39.2	16.0	86.0	1.1	3.0	0.0	V-Horn	PK	0.0	55.2	74.0	-18.8	Ch. 157
11490.400	39.1	16.1	32.0	1.3	3.0	0.0	H-Horn	PK	0.0	55.2	74.0	-18.8	Ch. 149
11493.870	39.0	16.1	324.0	1.4	3.0	0.0	V-Horn	PK	0.0	55.1	74.0	-18.9	Ch. 149
11651.170	39.0	16.0	351.0	1.3	3.0	0.0	H-Horn	PK	0.0	55.0	74.0	-19.0	Ch. 165







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	E4407B	AAU	12/8/2006	13

MEASUREMENT UNCERTAINTY

Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is available upon request.

TEST DESCRIPTION

The peak power spectral density measurements were measured with the EUT set to low, mid, and high transmit frequencies. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at its maximum data rate using direct sequence modulation. Per the procedure outlined in FCC 97-114, the spectrum analyzer was used as follows:

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

"If the spectrum line spacing cannot be resolved on the available spectrum analyzer, the noise density function on most modern conventional spectrum analyzers will directly measure the noise power density normalized to a 1 Hz noise power bandwidth. Add 34.8 dB for correction to 3 kHz."

EMC

Power Spectral Density

EUT:	Welch Allyn 802.11a Wireless PC Card	Work Order:	PROT0295
Serial Number:	001AFA0000CE	Date:	08/14/07
Customer:	Welch Allyn Protocol, Inc.	Temperature:	24°C
Attendees:	None	Humidity:	35%
Project:	None	Barometric Pres.:	1020.4mb
Tested by:	Holly Ashkannejhad	Power:	5.0VDC nominal
		Job Site:	EV06

TEST SPECIFICATIONS	Test Method
FCC 15.247 (DTS):2006	ANSI C63.4:2003 KDB No. 558074

COMMENTS

DEVIATIONS FROM TEST STANDARD

Configuration #	1	Signature <i>Holly Ashkannejhad</i>
-----------------	---	-------------------------------------

	Value	Limit	Results
--	-------	-------	---------

802.11(a), 6Mbps

5725MHz - 5850MHz

Low channel, 5745MHz

-5.1 dBm / 3 kHz

8 dBm / 3 kHz

Pass

Mid channel, 5785MHz

-4.94 dBm / 3 kHz

8 dBm / 3 kHz

Pass

High channel, 5825MHz

-5.39 dBm / 3 kHz

8 dBm / 3 kHz

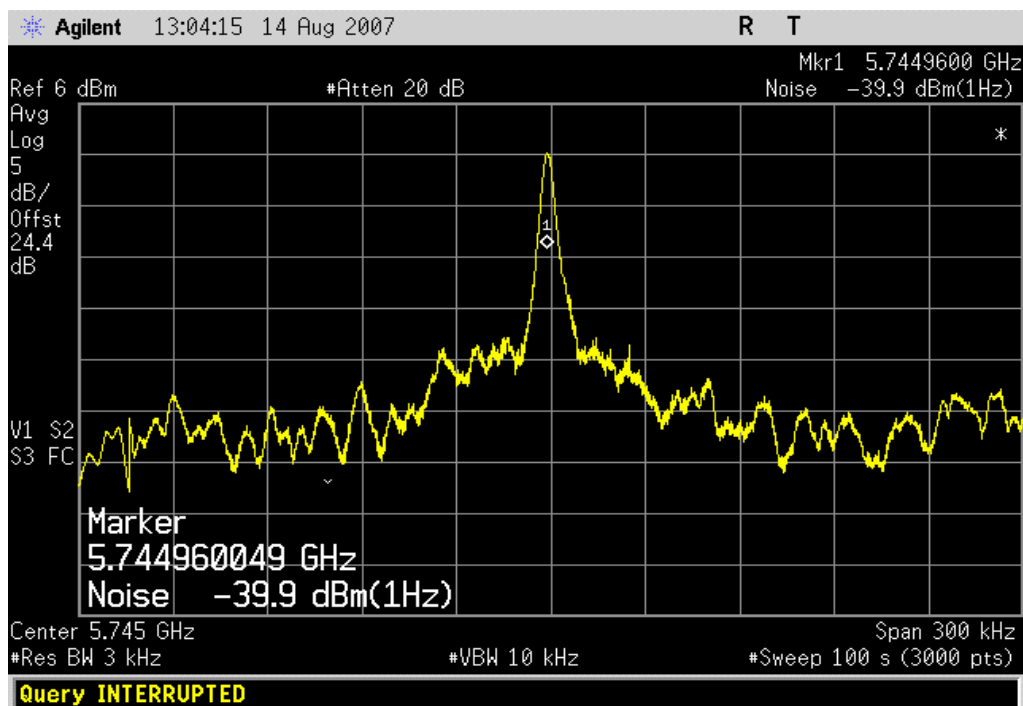
Pass

802.11(a), 6Mbps, 5725MHz - 5850MHz, Low channel, 5745MHz

Result: Pass

Value: -5.1 dBm / 3 kHz

Limit: 8 dBm / 3 kHz

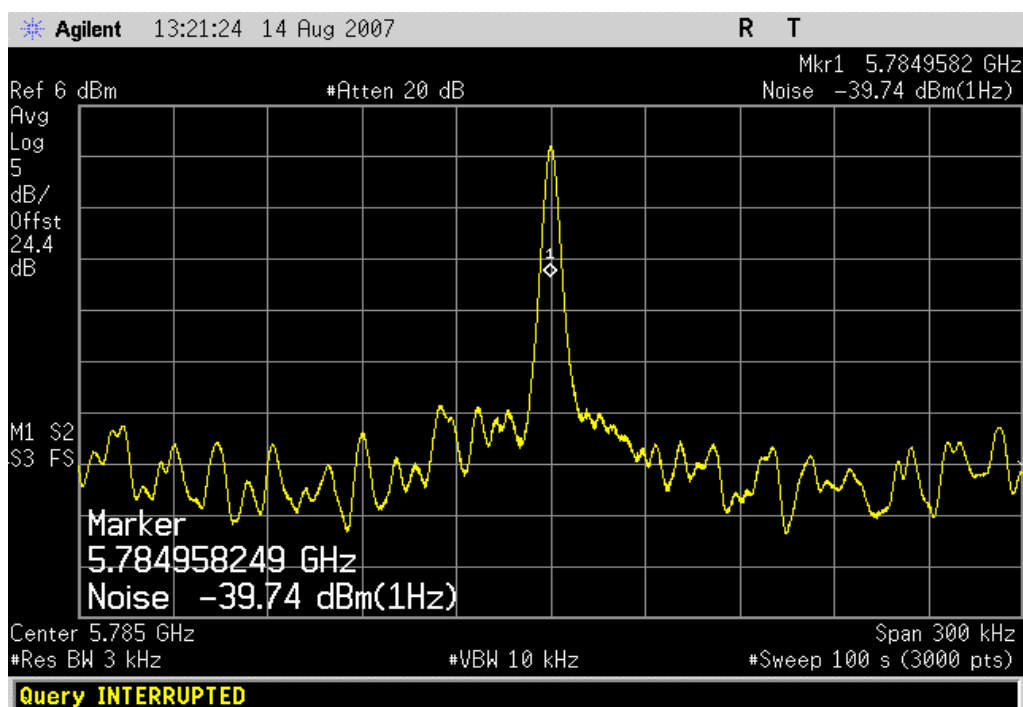


802.11(a), 6Mbps, 5725MHz - 5850MHz, Mid channel, 5785MHz

Result: Pass

Value: -4.94 dBm / 3 kHz

Limit: 8 dBm / 3 kHz

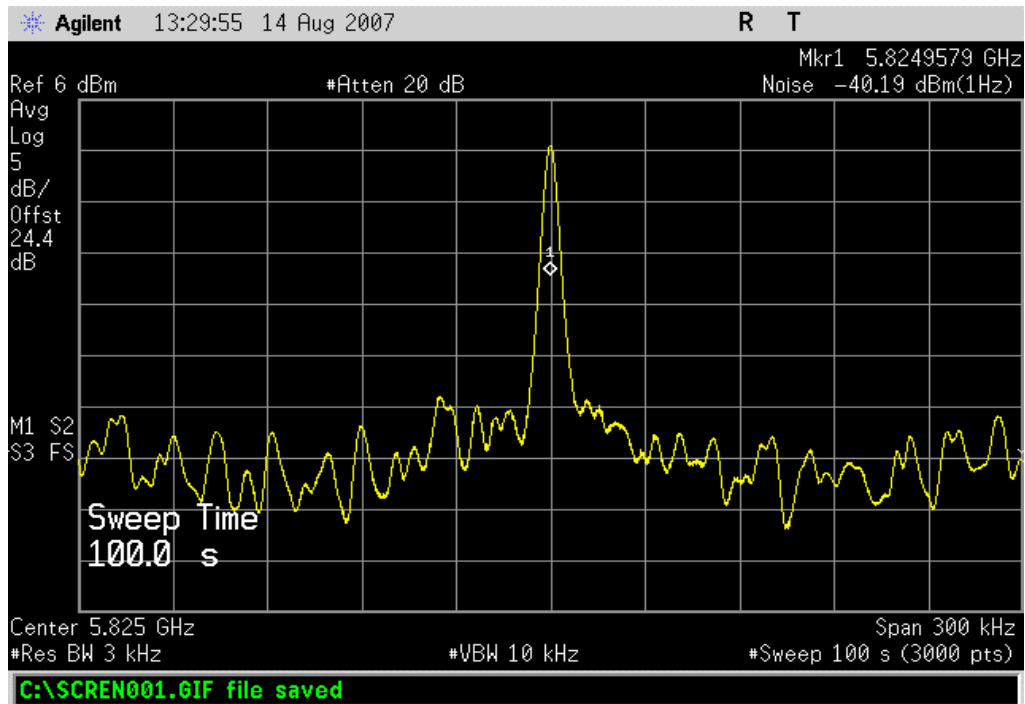


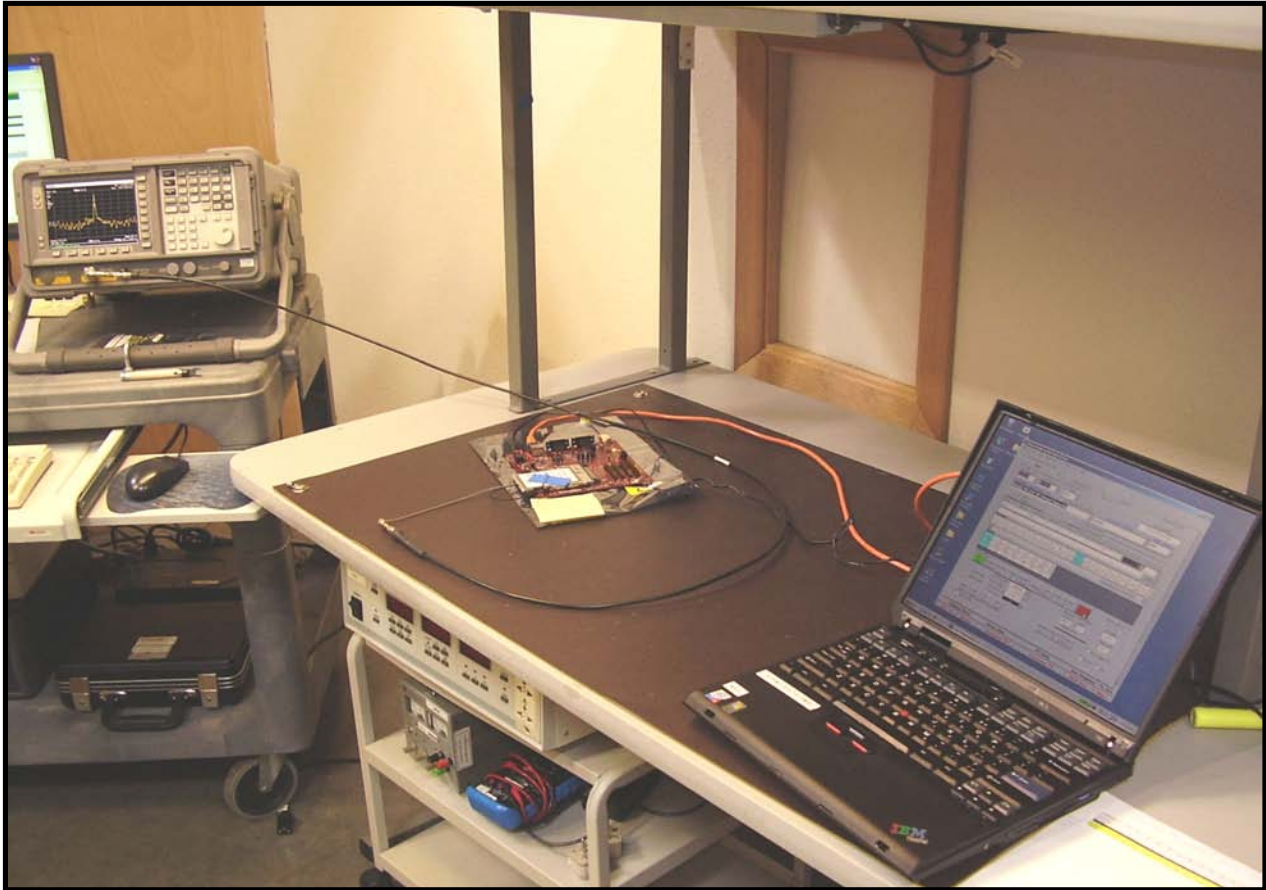
802.11(a), 6Mbps, 5725MHz - 5850MHz, High channel, 5825MHz

Result: Pass

Value: -5.39 dBm / 3 kHz

Limit: 8 dBm / 3 kHz





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

MODES OF OPERATION

Transmitting 802.11(a), 6 Mbps, Channel 149

Transmitting 802.11(a), 6 Mbps, Channel 157

Transmitting 802.11(a), 6 Mbps, Channel 165

POWER SETTINGS INVESTIGATED

120VAC/60Hz

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 & Schwartz	ESCI	ARG	12/7/2006	13
LISN	Solar	9252-50-R-24-BNC	LIR	11/20/2007	13
LISN	Solar	9252-50-R-24-BNC	LIP	12/20/2006	13
Attenuator	Tektronix	011-0059-02	ATC	12/27/2006	13
High Pass Filter	TTE	H97-100K-50-720B	HFX	8/22/2006	24
EV07 cable d			EVG	4/17/2007	13

MEASUREMENT BANDWIDTHS

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

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

MEASUREMENT UNCERTAINTY

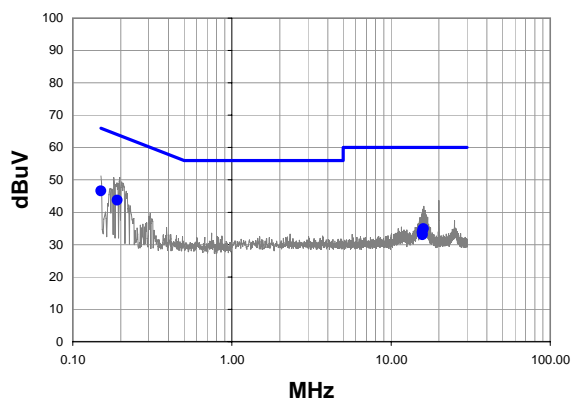
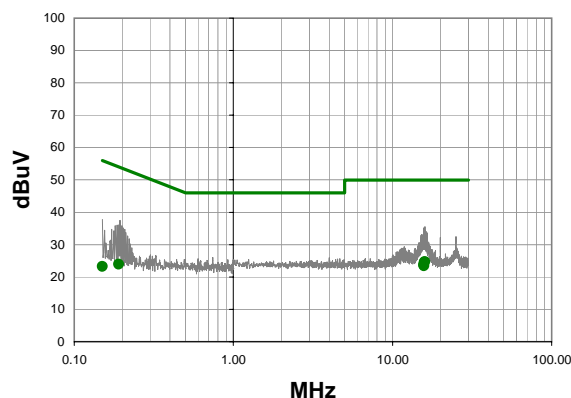
Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is available upon request.

TEST DESCRIPTION

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

EMC**AC POWERLINE CONDUCTED EMISSIONS**

Work Order:	PROT0295	Date:	08/21/07	<i>Rod Peloquin</i>			
Project:	None	Temperature:	23				
Job Site:	EV07	Humidity:	46				
Serial Number:	001AFA0000CE	Barometric Pres.:	29.95				
Tested by: Rod Peloquin							
EUT:	Welch Allyn 802.11a Wireless PC Card						
Configuration:	3 - AC Powerline Conducted Emissions						
Customer:	Welch Allyn Protocol, Inc.						
Attendees:	None						
EUT Power:	120VAC/60Hz						
Operating Mode:	Transmitting 802.11(a), 6 Mbps, Channel 157						
Deviations:	No deviations.						
Comments:							
Test Specifications FCC 15.207:2006			Test Method ANSI C63.4:2003				
Run #	15	Line:	High Line	Ext. Attenuation:	20	Results	Pass

Quasi Peak Data - vs - Quasi Peak Limit**Average Data - vs - Average Limit****Quasi Peak Data - vs - Quasi Peak Limit**

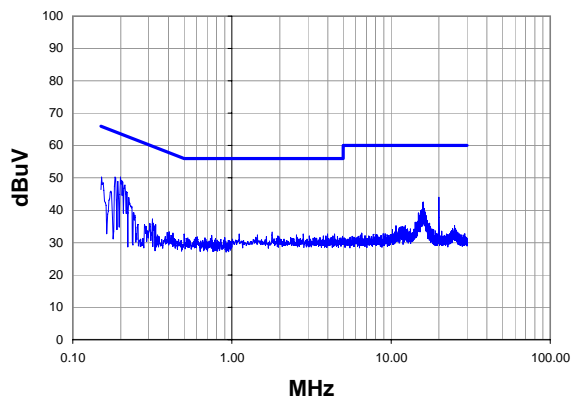
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted dBuV	Spec. Limit dBuV	Compared to Spec. (dB)
0.150	24.6	2.0	46.6	66.0	-19.4
0.190	22.5	1.2	43.7	64.0	-20.3
15.982	14.4	0.5	34.9	60.0	-25.1
15.844	14.1	0.5	34.6	60.0	-25.4
15.712	13.3	0.5	33.8	60.0	-26.2
15.772	12.6	0.5	33.1	60.0	-26.9

Average Data - vs - Average Limit

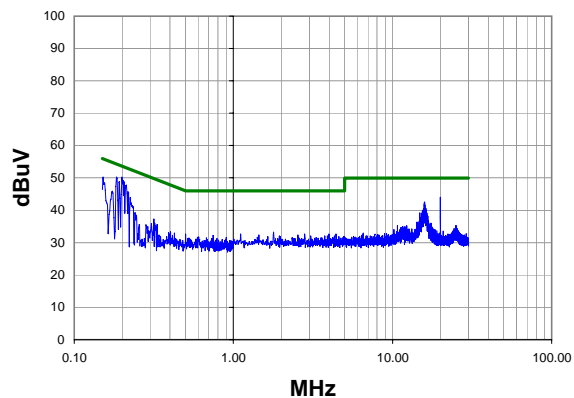
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted dBuV	Spec. Limit dBuV	Compared to Spec. (dB)
15.982	4.3	0.5	24.8	50.0	-25.2
15.844	4.1	0.5	24.6	50.0	-25.4
15.712	3.3	0.5	23.8	50.0	-26.2
15.772	3.0	0.5	23.5	50.0	-26.5
0.190	2.7	1.2	23.9	54.0	-30.1
0.150	1.2	2.0	23.2	56.0	-32.8

Work Order:	PROT0295	Date:	08/21/07	<i>Rod Peloquin</i>			
Project:	None	Temperature:	23				
Job Site:	EV07	Humidity:	46				
Serial Number:	001AFA0000CE	Barometric Pres.:	29.95	Tested by: Rod Peloquin			
EUT:	Welch Allyn 802.11a Wireless PC Card						
Configuration:	3 - AC Powerline Conducted Emissions						
Customer:	Welch Allyn Protocol, Inc.						
Attendees:	None						
EUT Power:	120VAC/60Hz						
Operating Mode:	Transmitting 802.11(a), 6 Mbps, Channel 157						
Deviations:	No deviations.						
Comments:							
Test Specifications FCC 15.207:2006			Test Method ANSI C63.4:2003				
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

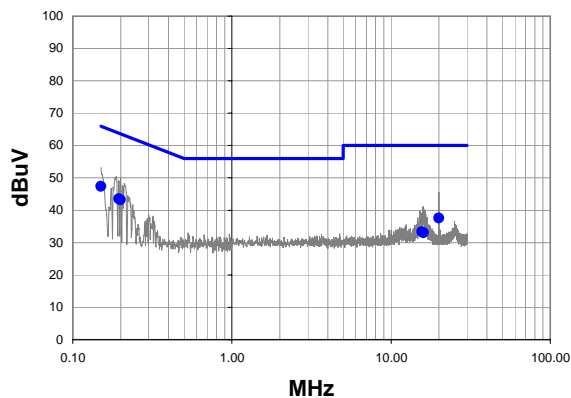
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted dBuV	Spec. Limit dBuV	Compared to Spec. (dB)
0.199	29.2	1.0	50.2	63.6	-13.4
0.184	28.9	1.3	50.2	64.3	-14.1
0.206	27.8	1.0	48.8	63.4	-14.6
0.193	27.7	1.2	48.9	63.9	-15.1
0.213	26.8	1.0	47.8	63.1	-15.3
0.152	28.3	2.0	50.3	65.9	-15.6
20.000	23.6	0.5	44.1	60.0	-15.9
0.218	24.7	1.0	45.7	62.9	-17.2
15.920	22.1	0.5	42.6	60.0	-17.4
15.850	21.9	0.5	42.4	60.0	-17.6
15.870	21.4	0.5	41.9	60.0	-18.1
15.980	21.2	0.5	41.7	60.0	-18.3
0.225	22.9	1.0	43.9	62.6	-18.8
0.174	24.4	1.5	45.9	64.8	-18.9
15.790	20.1	0.5	40.6	60.0	-19.4
16.190	20.1	0.5	40.6	60.0	-19.4
15.650	19.7	0.5	40.2	60.0	-19.8
15.400	19.5	0.5	40.0	60.0	-20.0
16.150	19.5	0.5	40.0	60.0	-20.0
16.010	19.4	0.5	39.9	60.0	-20.1

Peak Data - vs - Average Limit

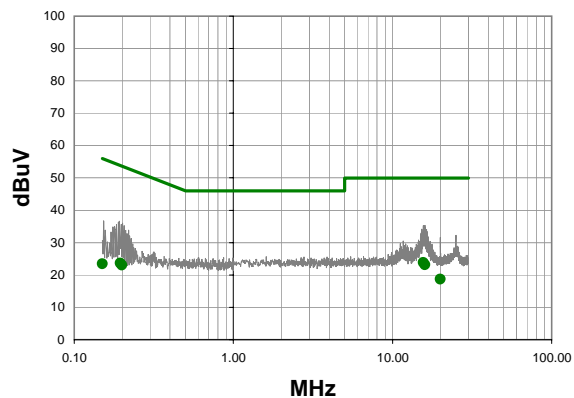
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted dBuV	Spec. Limit dBuV	Compared to Spec. (dB)
0.199	29.2	1.0	50.2	53.6	-3.4
0.184	28.9	1.3	50.2	54.3	-4.1
0.206	27.8	1.0	48.8	53.4	-4.6
0.193	27.7	1.2	48.9	53.9	-5.1
0.213	26.8	1.0	47.8	53.1	-5.3
0.152	28.3	2.0	50.3	55.9	-5.6
20.000	23.6	0.5	44.1	50.0	-5.9
0.218	24.7	1.0	45.7	52.9	-7.2
15.920	22.1	0.5	42.6	50.0	-7.4
15.850	21.9	0.5	42.4	50.0	-7.6
15.870	21.4	0.5	41.9	50.0	-8.1
15.980	21.2	0.5	41.7	50.0	-8.3
0.225	22.9	1.0	43.9	52.6	-8.8
0.174	24.4	1.5	45.9	54.8	-8.9
15.790	20.1	0.5	40.6	50.0	-9.4
16.190	20.1	0.5	40.6	50.0	-9.4
15.650	19.7	0.5	40.2	50.0	-9.8
15.400	19.5	0.5	40.0	50.0	-10.0
16.150	19.5	0.5	40.0	50.0	-10.0
16.010	19.4	0.5	39.9	50.0	-10.1

Work Order:	PROT0295	Date:	08/21/07	<i>Rod Peloquin</i>			
Project:	None	Temperature:	23				
Job Site:	EV07	Humidity:	46				
Serial Number:	001AFA0000CE	Barometric Pres.:	29.95				
Tested by: Rod Peloquin							
EUT:	Welch Allyn 802.11a Wireless PC Card						
Configuration:	3 - AC Powerline Conducted Emissions						
Customer:	Welch Allyn Protocol, Inc.						
Attendees:	None						
EUT Power:	120VAC/60Hz						
Operating Mode:	Transmitting 802.11(a), 6 Mbps, Channel 165						
Deviations:	No deviations.						
Comments:							
Test Specifications FCC 15.207:2006			Test Method ANSI C63.4:2003				
Run #	17	Line:	High Line	Ext. Attenuation:	20	Results	Pass

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit



Quasi Peak Data - vs - Quasi Peak Limit

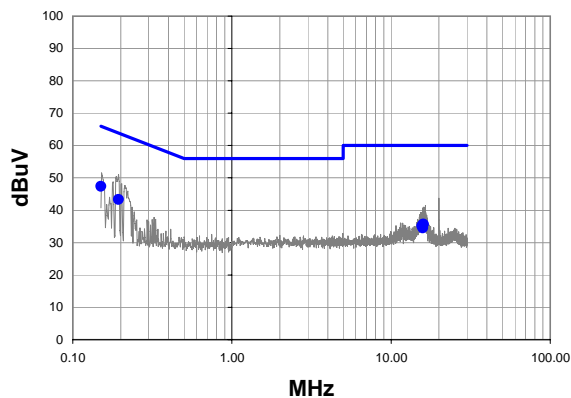
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted dBuV	Spec. Limit dBuV	Compared to Spec. (dB)
0.150	25.4	2.0	47.4	66.0	-18.6
0.195	22.4	1.1	43.5	63.8	-20.3
0.199	22.2	1.0	43.2	63.7	-20.4
20.000	17.1	0.5	37.6	60.0	-22.4
15.586	12.9	0.5	33.4	60.0	-26.6
15.962	12.6	0.5	33.1	60.0	-26.9

Average Data - vs - Average Limit

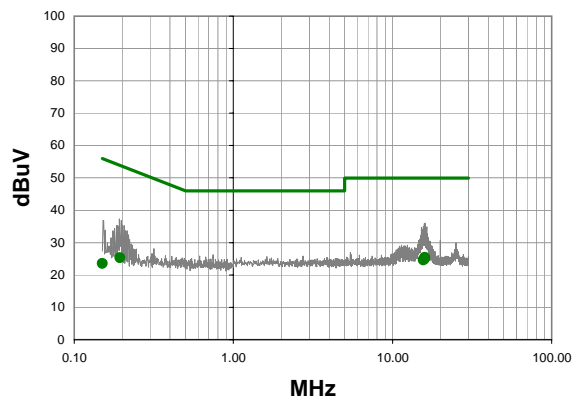
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted dBuV	Spec. Limit dBuV	Compared to Spec. (dB)
15.586	3.4	0.5	23.9	50.0	-26.1
15.962	2.7	0.5	23.2	50.0	-26.8
0.195	2.5	1.1	23.6	53.8	-30.2
0.199	2.0	1.0	23.0	53.7	-30.6
20.000	-1.8	0.5	18.7	50.0	-31.3
0.150	1.4	2.0	23.4	56.0	-32.6

Work Order:	PROT0295	Date:	08/21/07	<i>Rod Peloquin</i>			
Project:	None	Temperature:	23				
Job Site:	EV07	Humidity:	46				
Serial Number:	001AFA0000CE	Barometric Pres.:	29.95				
Tested by: Rod Peloquin							
EUT:	Welch Allyn 802.11a Wireless PC Card						
Configuration:	3 - AC Powerline Conducted Emissions						
Customer:	Welch Allyn Protocol, Inc.						
Attendees:	None						
EUT Power:	120VAC/60Hz						
Operating Mode:	Transmitting 802.11(a), 6 Mbps, Channel 165						
Deviations:	No deviations.						
Comments:							
Test Specifications FCC 15.207:2006			Test Method ANSI C63.4:2003				
Run #	18	Line:	Neutral	Ext. Attenuation:	20	Results	Pass

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit



Quasi Peak Data - vs - Quasi Peak Limit

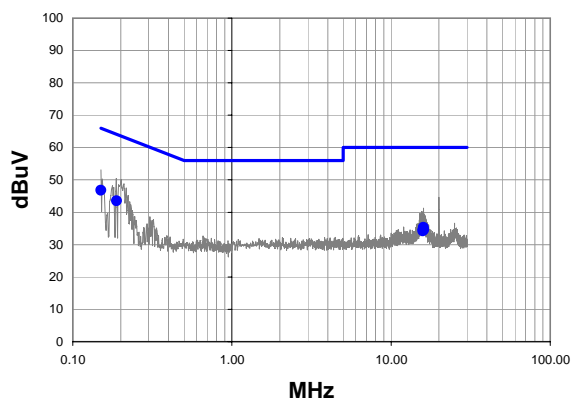
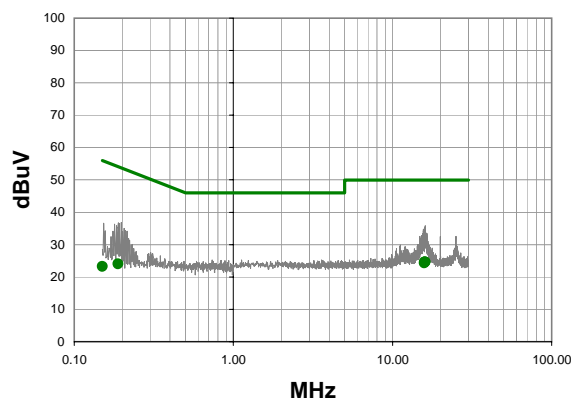
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted dBuV	Spec. Limit dBuV	Compared to Spec. (dB)
0.150	25.4	2.0	47.4	66.0	-18.6
0.194	22.2	1.1	43.3	63.9	-20.5
15.984	15.2	0.5	35.7	60.0	-24.3
15.912	15.0	0.5	35.5	60.0	-24.5
15.648	14.6	0.5	35.1	60.0	-24.9
15.848	14.0	0.5	34.5	60.0	-25.5

Average Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted dBuV	Spec. Limit dBuV	Compared to Spec. (dB)
15.984	4.9	0.5	25.4	50.0	-24.6
15.912	4.6	0.5	25.1	50.0	-24.9
15.848	4.4	0.5	24.9	50.0	-25.1
15.648	4.2	0.5	24.7	50.0	-25.3
0.194	4.2	1.1	25.3	53.9	-28.5
0.150	1.5	2.0	23.5	56.0	-32.5

EMC**AC POWERLINE CONDUCTED EMISSIONS**

Work Order:	PROT0295	Date:	08/21/07	<i>Rod Peloquin</i>			
Project:	None	Temperature:	23				
Job Site:	EV07	Humidity:	46				
Serial Number:	001AFA0000CE	Barometric Pres.:	29.95				
Tested by: Rod Peloquin							
EUT:	Welch Allyn 802.11a Wireless PC Card						
Configuration:	3 - AC Powerline Conducted Emissions						
Customer:	Welch Allyn Protocol, Inc.						
Attendees:	None						
EUT Power:	120VAC/60Hz						
Operating Mode:	Transmitting 802.11(a), 6 Mbps, Channel 149						
Deviations:	No deviations.						
Comments:							
Test Specifications FCC 15.207:2006			Test Method ANSI C63.4:2003				
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**

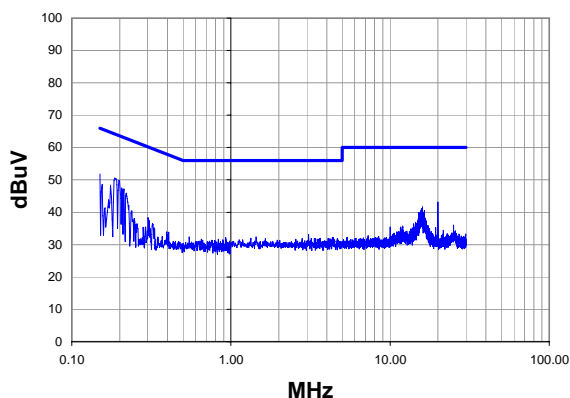
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted dBuV	Spec. Limit dBuV	Compared to Spec. (dB)
0.150	24.8	2.0	46.8	66.0	-19.2
0.189	22.3	1.2	43.5	64.1	-20.6
15.982	14.8	0.5	35.3	60.0	-24.7
15.914	14.2	0.5	34.7	60.0	-25.3
16.046	14.0	0.5	34.5	60.0	-25.5
15.852	13.8	0.5	34.3	60.0	-25.7

Average Data - vs - Average Limit

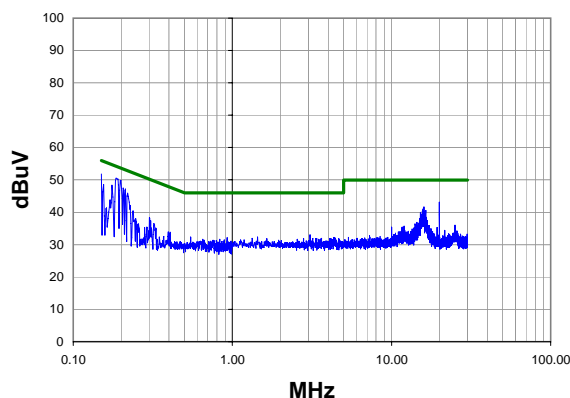
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted dBuV	Spec. Limit dBuV	Compared to Spec. (dB)
15.982	4.2	0.5	24.7	50.0	-25.3
16.046	4.2	0.5	24.7	50.0	-25.3
15.914	4.1	0.5	24.6	50.0	-25.4
15.852	3.9	0.5	24.4	50.0	-25.6
0.189	2.8	1.2	24.0	54.1	-30.1
0.150	1.2	2.0	23.2	56.0	-32.8

Work Order:	PROT0295	Date:	08/21/07	<i>Rod Peloquin</i>			
Project:	None	Temperature:	23				
Job Site:	EV07	Humidity:	46				
Serial Number:	001AFA0000CE	Barometric Pres.:	29.95	Tested by: Rod Peloquin			
EUT:	Welch Allyn 802.11a Wireless PC Card						
Configuration:	3 - AC Powerline Conducted Emissions						
Customer:	Welch Allyn Protocol, Inc.						
Attendees:	None						
EUT Power:	120VAC/60Hz						
Operating Mode:	Transmitting 802.11(a), 6 Mbps, Channel 149						
Deviations:	No deviations.						
Comments:							
Test Specifications FCC 15.207:2006			Test Method ANSI C63.4:2003				
Run #	20	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)
0.186	29.3	1.3	50.6	64.2	-13.6
0.199	28.8	1.0	49.8	63.6	-13.8
0.150	29.8	2.0	51.8	66.0	-14.2
0.206	26.5	1.0	47.5	63.4	-15.9
0.213	26.2	1.0	47.2	63.1	-15.9
0.176	26.9	1.5	48.4	64.7	-16.3
20.000	22.7	0.5	43.2	60.0	-16.8
0.220	24.9	1.0	45.9	62.8	-16.9
0.155	26.7	1.9	48.6	65.7	-17.1
15.970	21.2	0.5	41.7	60.0	-18.3
15.820	20.7	0.5	41.2	60.0	-18.8
15.710	20.3	0.5	40.8	60.0	-19.2
16.400	20.1	0.5	40.6	60.0	-19.4
15.650	19.9	0.5	40.4	60.0	-19.6
15.170	19.5	0.5	40.0	60.0	-20.0
15.790	19.4	0.5	39.9	60.0	-20.1
16.040	19.3	0.5	39.8	60.0	-20.2
16.260	19.3	0.5	39.8	60.0	-20.2
16.100	19.2	0.5	39.7	60.0	-20.3
15.480	18.9	0.5	39.4	60.0	-20.6

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted dBuV	Spec. Limit dBuV	Compared to Spec. (dB)
0.186	29.3	1.3	50.6	54.2	-3.6
0.199	28.8	1.0	49.8	53.6	-3.8
0.150	29.8	2.0	51.8	56.0	-4.2
0.206	26.5	1.0	47.5	53.4	-5.9
0.213	26.2	1.0	47.2	53.1	-5.9
0.176	26.9	1.5	48.4	54.7	-6.3
20.000	22.7	0.5	43.2	50.0	-6.8
0.220	24.9	1.0	45.9	52.8	-6.9
0.155	26.7	1.9	48.6	55.7	-7.1
15.970	21.2	0.5	41.7	50.0	-8.3
15.820	20.7	0.5	41.2	50.0	-8.8
15.710	20.3	0.5	40.8	50.0	-9.2
16.400	20.1	0.5	40.6	50.0	-9.4
15.650	19.9	0.5	40.4	50.0	-9.6
15.170	19.5	0.5	40.0	50.0	-10.0
15.790	19.4	0.5	39.9	50.0	-10.1
16.040	19.3	0.5	39.8	50.0	-10.2
16.260	19.3	0.5	39.8	50.0	-10.2
16.100	19.2	0.5	39.7	50.0	-10.3
15.480	18.9	0.5	39.4	50.0	-10.6



