Veriwave, Inc.

WaveDeploy WiFi 1 port 1x1 SISO

Report #: VERW0031

Report Prepared By Northwest EMC Inc.

NORTHWEST EMC - (888) 364-2378 - www.NWEMC.com

California - Minnesota - Oregon - New York - Washington

Certificate of Test

Issue Date: Thursday, March 11, 2010

NVLAP LAB CODE 200630-0

Veriwave, Inc.
WaveDeploy WiFi 1 port 1x1 SISO, Model #WF1101

Emissions

Test Description	Specification	Test Method	Pass / Fail
Radiated Emissions	AS/NZS CISPR 22:2009 Class A	AS/NZS CISPR 22:2009	Pass
Radiated Emissions	EN 55022: 2006 (Amended by A1:2007) Class A	CISPR 22:2005 (Amended by A1:2005 and A2:2006)	Pass
Radiated Emissions	EN 61326-1:2006 Class A	CISPR 11:2009	Pass
Radiated Emissions	FCC 15.109(g) (CISPR 22:1997):2010 Class A	ANSI C63.4:2009	Pass
Radiated Emissions	FCC 15.109:2010 Class A	ANSI C63.4:2009	Pass
Radiated Emissions	ICES-003:2004 Class A	CISPR 22:2005 (Amended by A1:2005 and A2:2006)	Pass
Radiated Emissions	VCCI:2009-04 Class A	VCCI:2009-04	Pass
Conducted Emissions	FCC 15.107:2010 Class A	ANSI C63.4:2009	Pass
Conducted Emissions	ICES-003:2004 Class A	CISPR 22:2005 (Amended by A1:2005 and A2:2006)	Pass
Conducted Emissions	VCCI:2009-04 Class A	VCCI:2009-04	Pass
Conducted Emissions	AS/NZS CISPR 22:2009 Class A	AS/NZS CISPR 22:2009	Pass
Conducted Emissions	EN 61326-1:2006 Class A	CISPR 11:2009	Pass
Flicker	EN 61000-3-3:1995 (Amended by A1:2001 and A2:2005)	IEC 61000-3-3:2005	Pass
Harmonics	EN 61000-3-2:2006	IEC 61000-3-2:2009	Pass

Immunity

Test Description	Specification	Test Method	Performance Criterion
ESD	EN 61326-1:2006	IEC 61000-4-2:2008	1
Radiated Immunity	EN 61326-1:2006	IEC 61000-4-3:2008	1
EFT	EN 61326-1:2006	IEC 61000-4-4:2004	1
Surge	EN 61326-1:2006	IEC 61000-4-5:2005	1
Conducted Immunity	EN 61326-1:2006	IEC 61000-4-6:2008	1
Magnetic Field Immunity	EN 61326-1:2006	IEC 61000-4-8:2009	1
Voltage Dips	EN 61326-1:2006	IEC 61000-4-11:2004	3
Voltage Interruptions	EN 61326-1:2006	IEC 61000-4-11:2004	3
For an explanation of performance criteria, see details on data sheets, and the detailed performance section of the test report.			

Deviations From Test Standards

None

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.

Approved By:

Dave Tolman, Manager

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.

General

Test Scope

These tests were selected to satisfy the EMC requirements requested by the client.

Client Responsibility

Product compliance is the responsibility of the client. The client, prior to testing, specified all the modes, settings, and configurations. Furthermore the client requested the specifications to be applied during the test.

Proper labeling of the product and its packaging is the responsibility of the client. Additional information may be needed in the User Manual. In some cases, a Declaration of Conformity is required. Information to be supplied with the product is an essential part of regulatory compliance.

The client is also responsible for the continuing compliance of the product. Variations in the product due to mass production, alternate parts, or changes to the design must be evaluated by the client. In some cases, this may require a partial or complete retest. At a minimum, any changes to the product must be documented with some discussion or review of product compliance.

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 (K=2) 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.

Barometric Pressure

The recorded barometric pressure has been normalized to sea level.

Revision History

Revision Number	Description	Date	Page Number
0	Initial Report	3/11/2010	n/a

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: G-84, C-1071, R-1025, C-2687, T-289, and R-2318, Irvine: G-85, R-1943, C-2766, and T-298, Sultan: G-83, R-871, C-1784, and T-294, Brooklyn Park: G-86, G-141, R-3125, 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. 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.

Explanation of Northwest EMC Performance Criteria

Understanding Performance Criteria and Conformity Decisions

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

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

Performance Criteria 1:

The EUT exhibited no change in performance when operating as specified by the manufacturer. In this case no changes were observed during the test.

In most cases this would be equivalent to Performance Criteria A. When operating the equipment in the modes or configurations specified by the responsible party, monitoring the parameters specified, no changes were observed. Basically nothing happened.

Performance Criteria 2:

The EUT exhibited a change in performance when operating as specified by the manufacturer. In this case the equipment recovered without any operator intervention, once the test signal was removed. The data sheets will detail the exact phenomena observed.

In most cases this would be equivalent to Performance Criteria B. When operating the equipment in the modes or configurations specified by the responsible party, monitoring the parameters specified, changes were observed. The EUT was able to recover from those changes without any operator intervention, once the test signal was removed.

Performance Criteria 3:

The EUT exhibited a change in performance when operating as specified by the manufacturer. In this case the equipment required some operator intervention in order to recover. This intervention may be in the form of changing EUT settings, or even resetting the system. The data sheets will detail the exact phenomena observed.

In most cases this would be equivalent to Performance Criteria C. When operating the equipment in the modes or configurations specified by the responsible party, monitoring the parameters specified, changes were observed. The EUT required some sort of operator intervention to recover. There was no permanent damage and the EUT appeared to function normally after completion of test.

Performance Criteria 4:

The EUT exhibited a change in performance when operating as specified by the manufacturer. In this case the equipment was damaged and would not recover. The data sheets will detail the exact phenomena observed.

In most cases there is no specific criterion to compare this to; it typically ends the test. When operating the equipment in the modes or configurations specified by the responsible party, monitoring the parameters specified, changes were observed. There was no recovery; the equipment would no longer function as intended.

Immunity Test Descriptions

Conducted Immunity

Using the mode of operation and configuration noted within this report, a Conducted RF Immunity test was performed. The source of disturbance covered by the standard is basically an electromagnetic field, coming from intended RF transmitters, that may act on the whole length of cables connected to an installed equipment. The dimensions of the disturbed equipment, mostly a sub-part of a larger system, are assumed to be small compared with the wavelengths involved. The ingoing and outgoing leads: e.g. mains, communication lines, and interface cables, behave as passive receiving antenna networks because they can be several wavelengths long. The use of coupling and decoupling devices to apply the disturbing signal to one cable at a time, while keeping all other cables non-excited, can only approximate the real situation where disturbing sources act on all cables simultaneously, with a range of different amplitudes and phases. Coupling and decoupling devices are defined by their characteristics. Any coupling and decoupling device fulfilling these characteristics can be used.

Radiated Immunity

Using the mode of operation and configuration noted within this report, a Radiated RF Immunity test was performed according to EN61000-4-3. The field was first established with no EUT present then maintained at the specified level. If an error is detected, the field strength may have been reduced to a level in which the error disappeared. This would be determined as the threshold of susceptibility. The test was conducted using horizontal and vertical antenna orientations.

EFT

Using the mode of operation and configuration noted within this report, an EFT/Burst Immunity test was performed. The test is intended to demonstrate the immunity of electrical and electronic equipment when subjected to types of transient disturbances such as those originating from switching transients (interruption of inductive loads, relay contact bounce, etc.). The repetitive fast transient test is a test with bursts consisting of a number of fast transients, coupled into power supply, control and signal ports of electrical and electronic equipment. Significant for the test is short rise time, the repetition rate and the low energy of the transients.

ESD

Using the mode of operation and configuration noted within this report, an ESD Immunity test was performed. The EUT was tested using air and contact discharges. The specified number of air discharges was applied to each of the non-conductive surfaces of the EUT as listed in the data sheet. The specified number of contact discharges was applied to each of the conductive surfaces, seams, and control surfaces of the EUT as listed in the data sheet. If a response is detected after discharge, the type of response, discharge level and location are noted. Testing was conducted with the EUT fully cabled. Discharges were made to the connector shells, not to the individual conductors.

Voltage Dips and Interrupts

Using the mode of operation and configuration noted within this report, a Voltage interruption and dip Immunity test was performed. The standard applies to electrical and electronic equipment having a rated input current not exceeding 16 A per phase. It does not apply to electrical and electronic equipment for connection to D.C. networks or 400 Hz A.C. networks. Electrical and electronic equipment may be affected by voltage dips, short interruptions or voltage variations of power supply. Voltage dips and short interruptions are caused by faults in the network, in installations or by a sudden large change of load. In certain cases, two or more consecutive dips or interruptions may occur. The continuously varying loads connected to the network cause voltage variations.

Surge

Using the mode of operation and configuration noted within this report, a Surge Immunity test was performed. The task of the defined laboratory test is to find the reaction of the EUT under specified operational conditions caused by surge voltages from switching and lightning effects at certain threat levels. The major mechanisms by which lightning produces surge voltages are the following: a) A direct lightning stroke to an external circuit (outdoor) injecting high currents producing voltages by either flowing through earth resistance or flowing through the impedance of the external circuit; b) An indirect lightning stroke (i.e. a stroke between or within clouds or to nearby objects which produces electromagnetic fields) that induces voltages/currents on the conductors outside and/or inside a building; Lightning earth current flow resulting from nearby direct-to-earth discharges coupling into the common earth paths of the earthing system of the installation.

Northwest EMC Locations

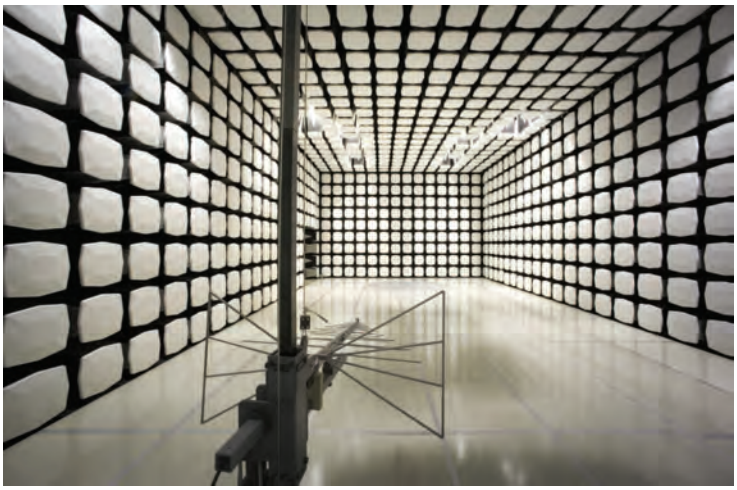
Oregon
Labs EV01- EV12
22975 NW Evergreen Pkwy
Suite 400
Hillsboro, OR 97124
(503) 844-4066

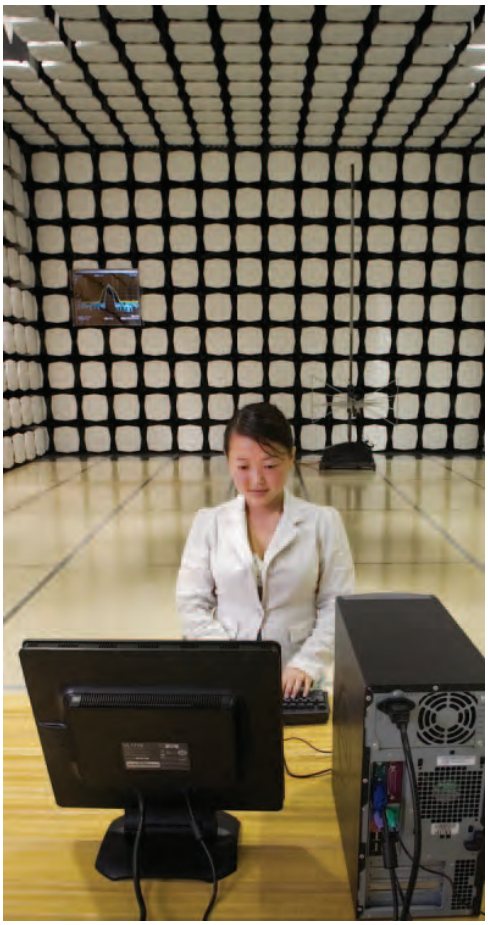
California
Labs OC01 - OC13
41 Tesla
Irvine, CA 92618
(949) 861-8918

Minnesota
Labs
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





Product Description

Client and Equipment Under Test (EUT) Information

Company Name:	Veriwave, Inc.
Address:	8770 SW Nimbus Avenue
City, State, Zip:	Beaverton, OR 97008
Test Requested By:	Chris Gantenbein
Model:	WaveDeploy WiFi 1 port 1x1 SISO, Model #WF1101
First Date of Test:	Thursday, March 04, 2010
Last Date of Test:	Monday, March 08, 2010
Receipt Date of Samples:	Thursday, March 04, 2010
Equipment Design Stage:	Preproduction
Equipment Condition:	No Damage

Functional Description of the Equipment Under Test (EUT)

WaveDeploy WiFi and Power Adapter.

EUT Photo(s)

Configurations

Configuration 1 - VERW0031

EUT			
Description	Model/Part Number	Serial Number	Manufacturer
WaveDeploy WiFi 1 port 1x1 SISO	WF1101	M32046-002-0037 Rev 2.1	Veriwave, Inc.
Power Adapter	DPS53-M	C345CL03800AJH	Astec

Remote Equipment Outside of Test Setup Boundary			
Description	Model/Part Number	Serial Number	Manufacturer
Ethernet Switch with DHCP	EG005W ver.3	RDU20G101141	Linksys
Computer	Thinkpad	6A-18342	IBM

Cables					
Cable Type	Shield	Ferrite	Length (m)	Connection 1	Connection 2
WiFi	Yes	No	0m	WaveDeploy WiFi 1 port 1x1 SISO	Terminated
Ethernet	Yes	No	10.0mm	WaveDeploy WiFi 1 port 1x1 SISO	Ethernet Switch with DHCP
USB	Yes	No	4.5m	WaveDeploy WiFi 1 port 1x1 SISO	Computer
Power	PA	PA	1.8m	WaveDeploy WiFi 1 port 1x1 SISO	Power Adapter
AC Power	No	No	1.8m	Power Adapter	AC Mains
Ethernet	No	No	1.8m	Ethernet Switch with DHCP	Computer
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

Software	
Title	Version
wbrick_emi script	None

Configuration 2 - VERW0031

EUT			
Description	Model/Part Number	Serial Number	Manufacturer
WaveDeploy WiFi 1 port 1x1 SISO	WF1101	M32046-002-0037 Rev 2.1	Veriwave, Inc.
Power Adapter	DPS53-M	C345CL03800AJH	Astec

Remote Equipment Outside of Test Setup Boundary			
Description	Model/Part Number	Serial Number	Manufacturer
Ethernet Switch with DHCP	EG005W ver.3	RDU20G101141	Linksys
Computer	Thinkpad	6A-18342	IBM

Cables					
Cable Type	Shield	Ferrite	Length (m)	Connection 1	Connection 2
WiFi	Yes	No	0m	WaveDeploy WiFi 1 port 1x1 SISO	Terminated
Power	PA	PA	1.8m	WaveDeploy WiFi 1 port 1x1 SISO	Power Adapter
AC Power	No	No	0.3m	Power Adapter	AC Mains
Ethernet	No	No	1.8m	Ethernet Switch with DHCP	Computer
USB	Yes	No	1.8m	WaveDeploy WiFi 1 port 1x1 SISO	Computer
Ethernet	Yes	No	4.5m	WaveDeploy WiFi 1 port 1x1 SISO	Ethernet Switch with DHCP
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

Software	
Title	Version
wbrick_emi script	None

Modifications

Equipment Modifications

Date	Work Order	Test	Modification	Note	Disposition of EUT
3/4/2010	VERW0031	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.
3/4/2010	VERW0031	Radiated Emissions High Frequency	Tested as delivered to Test Station. Prior to delivery to the test station, Copper fingers were added to improve contact between the chassis and the ethernet port shield.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
3/4/2010	VERW0031	Conducted Emis-sions	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.
3/5/2010	VERW0031	Radiated RF Immunity	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.
3/5/2010	VERW0031	Conducted RF Immunity	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.
3/5/2010	VERW0031	Surge	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.
3/5/2010	VERW0031	VDI	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.
3/8/2010	VERW0031	EFT	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.
3/8/2010	VERW0031	Flicker	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.
3/8/2010	VERW0031	Harmonics	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.
3/8/2010	VERW0031	ESD	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

Radiated Emissions

Modes of Operation Investigated

Running a special routine for testing (wbrick_emi script)

Power Setting Investigated

100V/50Hz

230V/50Hz

Configurations Investigated

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Frequency Range Investigated

Start Frequency	1 GHz	End Frequency	5 GHz

Sample Calculations

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

Test Equipment

ID	Description	Manufacturer	Model	Last Calibration	Interval
AAQ	Spectrum Analyzer	Agilent	E4446A	1/6/2010	13 mo
EVB	EV01 Cables		Double Ridge Horn Cables	7/10/2009	13 mo
APW	Pre-Amplifier	Miteq	AMF-4D-010100-24-10P	7/10/2009	13 mo
AHC	Antenna, Horn	EMCO	3115	8/12/2008	24 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	N/A	1000

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

Test Description

Using the mode of operation and configuration noted within this report, a final radiated emissions test was performed. The frequency range investigated (scanned), is also noted in this report. Radiated emissions measurements were made at the EUT azimuth and antenna height such that the maximum radiated emissions level will be detected. This requires the use of a turntable and an antenna positioner. The preferred method of a continuous azimuth search is utilized for frequency scans of the EUT field strength with both polarities of the measuring antenna. A calibrated, linearly polarized antenna was positioned at the specified distance from the periphery of the EUT.

Tests were made with the antenna positioned in both the horizontal and vertical planes of polarization. The antenna was varied in height above the conducting ground plane to obtain the maximum signal strength. Though specified in the report, the measurement distance shall be 3 meters or 10 meters. At any measurement distance, the antenna height was varied from 1 meter to 4 meters.

If measurements above 1 GHz were required, the test setup was modified to meet the regulatory requirements for higher frequency measurements. RF absorber was placed on the floor between the measurement antenna and EUT. Measurements were made at a 3 meter test distance with the EUT placed on a 0.8 meter high table. The level of emissions was maximized by varying the measurement antenna height from 1 to 4 meters, and rotating the turntable from 0 to 359 degrees. Both CISPR peak and average measurement detectors were used for comparison of the emissions to the peak and average specification limits.

Radiated Emissions Data

EUT:	WaveDeploy WiFi 1 port 1x1 SISO	Work Order:	VERW0031
Serial Number:	M32046-002-0037 Rev 2.1	Date:	3/4/2010
Customer:	Veriwave, Inc.	Temperature:	20°C
Attendees:	Chris Gantenbein	Humidity:	37%
Project:	None	Barometric Pressure:	1017.5mb
Tester:	Jennifer Herrett	Power:	100VAC/50Hz
Configuration #	1	Job Site:	EV01

Test Specifications	Test Method
EN 55022: 2006 (Amended by A1:2007) Class A	CISPR 22:2005 (Amended by A1:2005 and A2:2006)

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

Comments

None

EUT Operating Modes

Running a special routine for testing (wbrick_emi script)

Deviations from Test Standard

None

Test Data

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (-meters)	Azimuth (degrees)	Test Dist-ance (me-ters)	External Attenuation (dB)	Polarity/ Trans-ducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
2400.020	53.2	2.1	1.5	179.0	3.0	0.0	Vert	AV	0.0	55.3	56.0	-0.7	
2399.986	45.8	2.1	1.2	216.0	3.0	0.0	Horz	AV	0.0	47.9	56.0	-8.1	
2799.980	35.9	3.5	1.0	4.0	3.0	0.0	Vert	AV	0.0	39.4	56.0	-16.6	
1999.967	38.3	0.3	2.0	156.0	3.0	0.0	Vert	AV	0.0	38.6	56.0	-17.4	
1999.947	37.9	0.3	1.0	135.0	3.0	0.0	Horz	AV	0.0	38.2	56.0	-17.8	
2799.980	34.3	3.5	1.6	150.0	3.0	0.0	Horz	AV	0.0	37.8	56.0	-18.2	
1599.984	38.8	-2.0	2.2	32.0	3.0	0.0	Vert	AV	0.0	36.8	56.0	-19.2	
2400.033	54.4	2.1	1.5	179.0	3.0	0.0	Vert	PK	0.0	56.5	76.0	-19.5	
1875.000	36.5	0.0	1.0	146.0	3.0	0.0	Horz	AV	0.0	36.5	56.0	-19.5	
1599.998	38.0	-2.0	1.1	252.0	3.0	0.0	Horz	AV	0.0	36.0	56.0	-20.0	
1874.974	34.2	0.0	1.0	347.0	3.0	0.0	Vert	AV	0.0	34.2	56.0	-21.8	
3599.993	29.1	6.7	1.7	152.0	3.0	0.0	Horz	AV	0.0	35.8	60.0	-24.2	
3599.993	28.6	6.7	1.4	188.0	3.0	0.0	Vert	AV	0.0	35.3	60.0	-24.7	
2399.993	48.1	2.1	1.2	216.0	3.0	0.0	Horz	PK	0.0	50.2	76.0	-25.8	
2000.107	45.9	0.3	1.0	135.0	3.0	0.0	Horz	PK	0.0	46.2	76.0	-29.8	
2000.053	45.9	0.3	2.0	156.0	3.0	0.0	Vert	PK	0.0	46.2	76.0	-29.8	
2799.840	42.2	3.5	1.0	4.0	3.0	0.0	Vert	PK	0.0	45.7	76.0	-30.3	
1599.864	45.9	-2.0	2.2	32.0	3.0	0.0	Vert	PK	0.0	43.9	76.0	-32.1	
2799.967	40.3	3.5	1.6	150.0	3.0	0.0	Horz	PK	0.0	43.8	76.0	-32.2	
1599.724	45.2	-2.0	1.1	252.0	3.0	0.0	Horz	PK	0.0	43.2	76.0	-32.8	
1875.194	42.9	0.0	1.0	146.0	3.0	0.0	Horz	PK	0.0	42.9	76.0	-33.1	
1874.860	42.4	0.0	1.0	347.0	3.0	0.0	Vert	PK	0.0	42.4	76.0	-33.6	
3600.113	38.6	6.7	1.4	188.0	3.0	0.0	Vert	PK	0.0	45.3	80.0	-34.7	
3599.760	38.5	6.7	1.7	152.0	3.0	0.0	Horz	PK	0.0	45.2	80.0	-34.8	

Results: Pass

Radiated Emissions Photos

Radiated Emissions Photos

Radiated Emissions

Modes of Operation Investigated

Running a special routine for testing (wbrick_emi script)

Power Setting Investigated

120V/60Hz

Configurations Investigated

VERW0031 - 1

Frequency Range Investigated

Start Frequency	1 GHz	End Frequency	5 GHz

Sample Calculations

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

Test Equipment

ID	Description	Manufacturer	Model	Last Calibration	Interval
AAQ	Spectrum Analyzer	Agilent	E4446A	1/6/2010	13 mo
EVB	EV01 Cables		Double Ridge Horn Cables	7/10/2009	13 mo
APW	Pre-Amplifier	Miteq	AMF-4D-010100-24-10P	7/10/2009	13 mo
AHC	Antenna, Horn	EMCO	3115	8/12/2008	24 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	N/A	1000

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

Test Description

Using the mode of operation and configuration noted within this report, a final radiated emissions test was performed. The frequency range investigated (scanned), is also noted in this report. Radiated emissions measurements were made at the EUT azimuth and antenna height such that the maximum radiated emissions level will be detected. This requires the use of a turntable and an antenna positioner. The preferred method of a continuous azimuth search is utilized for frequency scans of the EUT field strength with both polarities of the measuring antenna. A calibrated, linearly polarized antenna was positioned at the specified distance from the periphery of the EUT.

Tests were made with the antenna positioned in both the horizontal and vertical planes of polarization. The antenna was varied in height above the conducting ground plane to obtain the maximum signal strength. Though specified in the report, the measurement distance shall be 3 meters or 10 meters. At any measurement distance, the antenna height was varied from 1 meter to 4 meters. These height scans apply for both horizontal and vertical polarization, except that for vertical polarization the minimum height of the center of the antenna shall be increased so that the lowest point of the bottom of the antenna clears the ground surface by at least 25 cm.

Radiated Emissions Data

EUT:	WaveDeploy WiFi 1 port 1x1 SISO	Work Order:	VERW0031
Serial Number:	M32046-002-0037 Rev 2.1	Date:	3/4/2010
Customer:	Veriwave, Inc.	Temperature:	20°C
Attendees:	Chris Gantenbein	Humidity:	37%
Project:	None	Barometric Pressure:	1017.5mb
Tester:	Jennifer Herrett	Power:	120VAC/60Hz
Configuration #	1	Job Site:	EV01

Test Specifications	Test Method
FCC 15.109:2010 Class A	ANSI C63.4:2009

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

Comments

None

EUT Operating Modes

Running a special routine for testing (wbrick_emi script)

Deviations from Test Standard

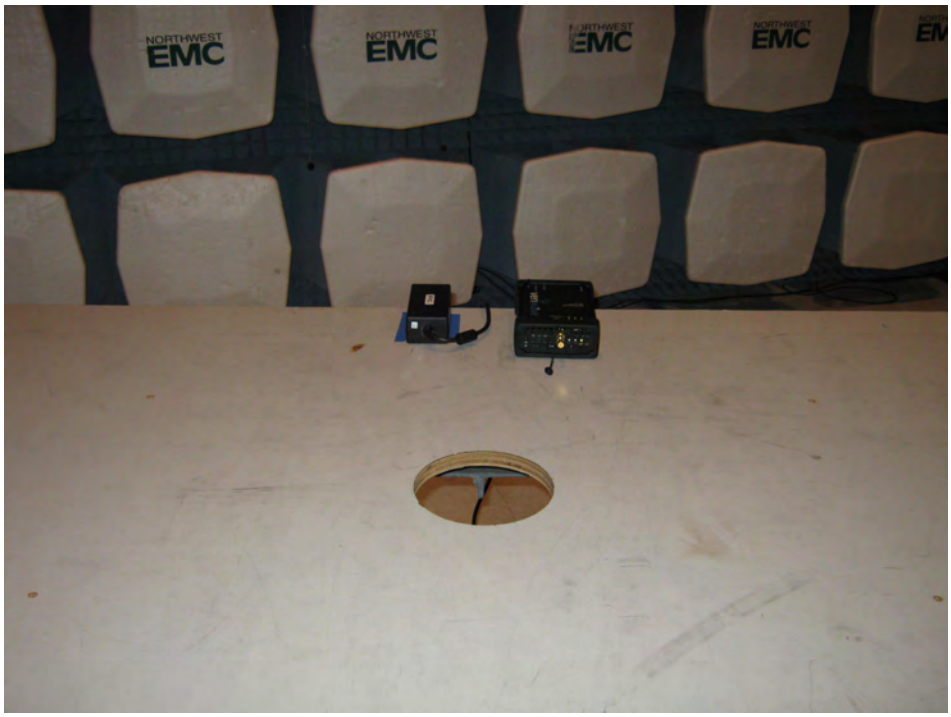
None

Test Data

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (-meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
2400.013	56.7	2.1	1.2	176.0	3.0	0.0	Vert	AV	0.0	58.8	60.0	-1.2	
2400.026	47.9	2.1	1.2	143.0	3.0	0.0	Horz	AV	0.0	50.0	60.0	-10.0	
2399.980	57.5	2.1	1.2	176.0	3.0	0.0	Vert	PK	0.0	59.6	80.0	-20.4	
2400.080	50.4	2.1	1.2	143.0	3.0	0.0	Horz	PK	0.0	52.5	80.0	-27.5	

Results: Pass

Radiated Emissions Photos



Radiated Emissions Photos

Radiated Emissions

Modes of Operation Investigated

Running a special routine for testing (wbrick_emi script)

Power Setting Investigated

100V/50Hz
110V/60Hz
220V/60Hz
230V/50Hz

Configurations Investigated

VERW0031 - 1

Frequency Range Investigated

Start Frequency	30 MHz	End Frequency	1000 MHz

Sample Calculations

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

Test Equipment

ID	Description	Manufacturer	Model	Last Calibration	Interval
AFB	Spectrum Analyzer	Agilent	E4443A	2/1/2010	13 mo
AOY	Pre-Amplifier	Miteq	AM-1551	7/13/2009	13 mo
EVL	EV11 Cables		10m Test Distance Cables	7/13/2009	13 mo
AXB	Antenna, Biconilog	EMCO	3142	1/14/2010	13 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	N/A	1000

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

Test Description

Using the mode of operation and configuration noted within this report, a final radiated emissions test was performed. The frequency range investigated (scanned), is also noted in this report. Radiated emissions measurements were made at the EUT azimuth and antenna height such that the maximum radiated emissions level will be detected. This requires the use of a turntable and an antenna positioner. The preferred method of a continuous azimuth search is utilized for frequency scans of the EUT field strength with both polarities of the measuring antenna. A calibrated, linearly polarized antenna was positioned at the specified distance from the periphery of the EUT.

Tests were made with the antenna positioned in both the horizontal and vertical planes of polarization. The antenna was varied in height above the conducting ground plane to obtain the maximum signal strength. Though specified in the report, the measurement distance shall be 3 meters or 10 meters. At any measurement distance, the antenna height was varied from 1 meter to 4 meters. These height scans apply for both horizontal and vertical polarization, except that for vertical polarization the minimum height of the center of the antenna shall be increased so that the lowest point of the bottom of the antenna clears the ground surface by at least 25 cm.

Radiated Emissions Data

EUT:	WaveDeploy WiFi 1 port 1x1 SISO	Work Order:	VERW0031
Serial Number:	M32046-002-0037 Rev 2.1	Date:	3/4/2010
Customer:	Veriwave, Inc.	Temperature:	20°C
Attendees:	Chris Gantenbein	Humidity:	37%
Project:	None	Barometric Pressure:	1017.5mb
Tester:	Jennifer Herrett	Power:	100VAC/50Hz
Configuration #	1	Job Site:	EV11

Test Specifications	Test Method
EN 61326-1:2006 Class A	CISPR 11:2009
AS/NZS CISPR 22:2009 Class A	AS/NZS CISPR 22:2009
FCC 15.109(g) (CISPR 22:1997):2010 Class A	ANSI C63.4:2009
VCCI:2009-04 Class A	VCCI:2009-04
ICES-003:2004 Class A	CISPR 22:2005 (Amended by A1:2005 and A2:2006)

Test Parameters			
Antenna Height(s) (m)	1-4m	Test Distance	10

Comments

None

EUT Operating Modes

Running a special routine for testing (wbrick_emi script)

Deviations from Test Standard

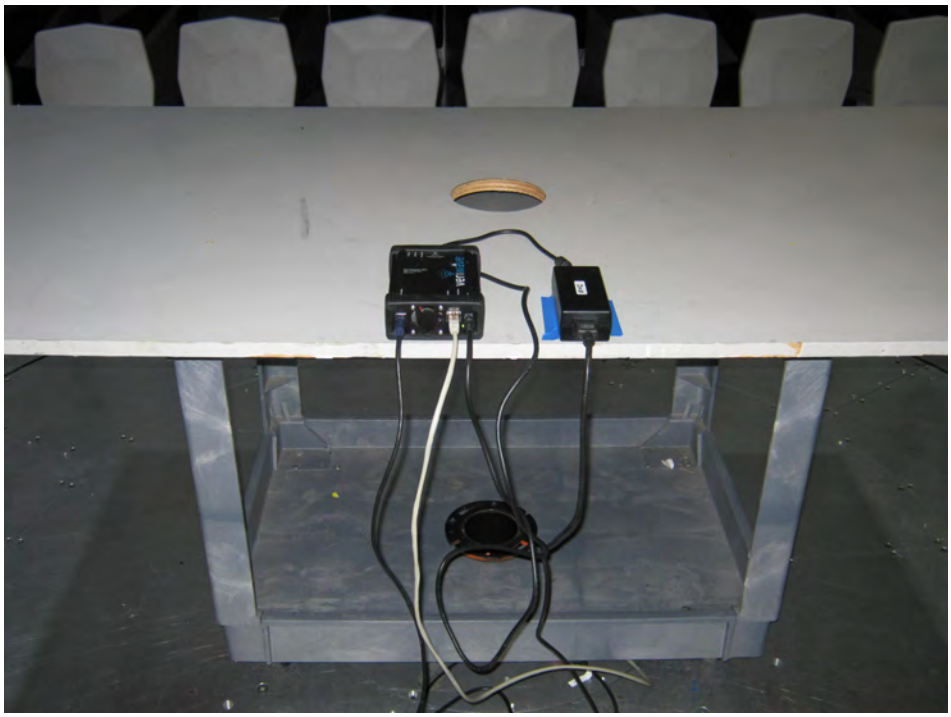
None

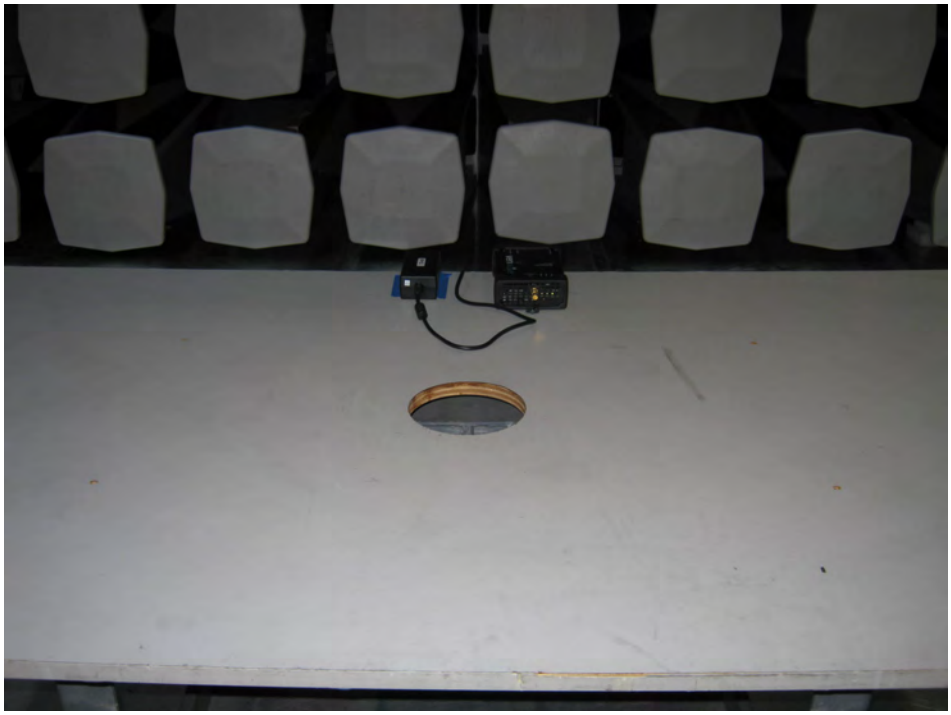
Test Data

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (-meters)	Azimuth (degrees)	Test Dist-ance (me-ters)	External Attenuation (dB)	Polarity/ Trans-ducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
640.007	52.9	-12.7	1.9	64.0	10.0	0.0	Horz	QP	0.0	40.2	47.0	-6.8	
200.005	53.3	-23.7	1.1	131.0	10.0	0.0	Vert	QP	0.0	29.6	40.0	-10.4	
640.005	48.0	-12.7	1.0	50.0	10.0	0.0	Vert	QP	0.0	35.3	47.0	-11.7	
166.670	51.6	-24.7	1.0	65.0	10.0	0.0	Vert	QP	0.0	26.9	40.0	-13.1	
800.003	44.3	-11.0	3.6	229.0	10.0	0.0	Horz	QP	0.0	33.3	47.0	-13.7	
186.237	49.9	-24.1	1.1	142.0	10.0	0.0	Vert	QP	0.0	25.8	40.0	-14.2	
200.003	48.8	-23.7	3.3	109.0	10.0	0.0	Horz	QP	0.0	25.1	40.0	-14.9	
720.005	43.3	-11.2	1.0	227.0	10.0	0.0	Horz	QP	0.0	32.1	47.0	-14.9	
166.670	48.9	-24.7	3.5	103.0	10.0	0.0	Horz	QP	0.0	24.2	40.0	-15.8	
800.009	41.9	-11.0	3.7	131.0	10.0	0.0	Vert	QP	0.0	30.9	47.0	-16.1	
678.745	42.3	-11.9	1.0	79.0	10.0	0.0	Horz	QP	0.0	30.4	47.0	-16.6	
500.000	44.5	-15.0	2.0	158.0	10.0	0.0	Horz	QP	0.0	29.5	47.0	-17.5	
720.003	39.1	-11.2	1.0	86.0	10.0	0.0	Vert	QP	0.0	27.9	47.0	-19.1	
125.005	47.8	-27.2	1.0	182.0	10.0	0.0	Vert	QP	0.0	20.7	40.0	-19.4	
679.988	37.2	-11.9	1.0	51.0	10.0	0.0	Vert	QP	0.0	25.3	47.0	-21.7	
187.504	42.3	-24.0	2.8	127.0	10.0	0.0	Horz	QP	0.0	18.3	40.0	-21.7	
500.001	38.6	-15.0	1.0	242.0	10.0	0.0	Vert	QP	0.0	23.6	47.0	-23.4	
66.625	43.5	-27.6	3.4	194.0	10.0	0.0	Vert	QP	0.0	15.9	40.0	-24.1	
125.008	38.8	-27.1	4.0	104.0	10.0	0.0	Horz	QP	0.0	11.7	40.0	-28.3	
67.821	31.6	-27.7	1.0	-5.0	10.0	0.0	Horz	QP	0.0	3.9	40.0	-36.1	

Results: Pass

Radiated Emissions Photos





Radiated Emissions Photos

Conducted Emissions

Modes of Operation Investigated

Running a special routine for testing (wbrick_emi script)

Power Setting Investigated

100V/50Hz
110V/60Hz
220V/60Hz
230V/50Hz

Configurations Investigated

VERW0031 - 1

Sample Calculations

Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator

Test Equipment

ID	Description	Manufacturer	Model	Last Calibration	Interval
ARH	Receiver	Rohde & Schwarz	ESCI	9/25/2009	13 mo
EVL	EV11 Cables		10m Test Distance Cables	7/13/2009	13 mo
ATO	Attenuator	Coaxicom	66702 2910-20	7/21/2009	13 mo
HFX	High Pass Filter	TTE	H97-100K-50-720B	2/16/2010	13 mo
LIP	LISN	Solar	9252-50-R-24-BNC	3/2/2010	13 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	N/A	1000

Test Description

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

Conducted Emissions Data

EUT:	WaveDeploy WiFi 1 port 1x1 SISO	Work Order:	VERW0031
Serial Number:	M32046-002-0037 Rev 2.1	Date:	3/4/2010
Customer:	Veriwave, Inc.	Temperature:	20°C
Attendees:	Chris Gantenbein	Humidity:	37%
Project:	None	Barometric Pressure:	1017.5mb
Tester:	Jennifer Herrett	Power:	230VAC/50Hz
Configuration #	1	Job Site:	EV07

Test Specifications	Test Method
EN 61326-1:2006 Class A	CISPR 11:2009
AS/NZS CISPR 22:2009 Class A	AS/NZS CISPR 22:2009

Test Parameters					
Run #	1	Line:	Neutral	Ext. Attenuation:	20

Comments

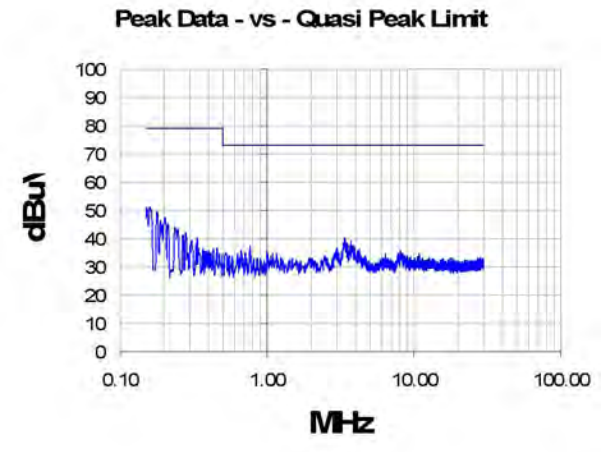
None

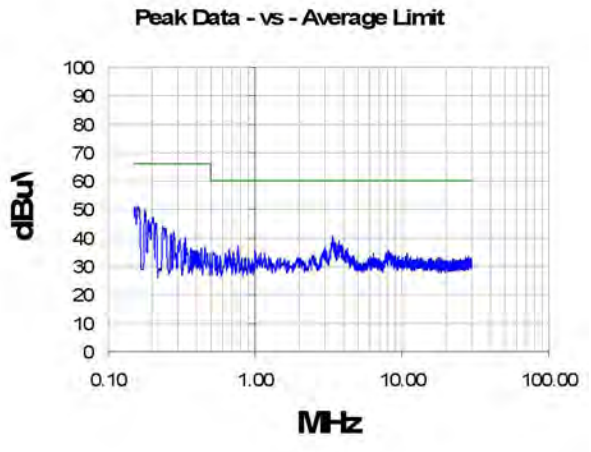
EUT Operating Modes

Running a special routine for testing (wbrick_emi script)

Deviations from Test Standard

None





Test Data

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.160	31.0	20.2	51.2	79.0	-27.8
0.152	30.7	20.2	50.9	79.0	-28.1
0.177	29.4	20.2	49.6	79.0	-29.4
0.203	27.3	20.2	47.5	79.0	-31.5
3.368	20.2	20.3	40.5	73.0	-32.5
0.189	26.2	20.2	46.4	79.0	-32.6
3.408	19.9	20.3	40.2	73.0	-32.8
0.213	25.0	20.2	45.2	79.0	-33.8

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.160	31.0	20.2	51.2	66.0	-14.8
0.152	30.7	20.2	50.9	66.0	-15.1
0.177	29.4	20.2	49.6	66.0	-16.4
0.203	27.3	20.2	47.5	66.0	-18.5
3.368	20.2	20.3	40.5	60.0	-19.5
0.189	26.2	20.2	46.4	66.0	-19.6
3.408	19.9	20.3	40.2	60.0	-19.8
0.213	25.0	20.2	45.2	66.0	-20.8

Results	Pass

Conducted Emissions Data

EUT:	WaveDeploy WiFi 1 port 1x1 SISO	Work Order:	VERW0031
Serial Number:	M32046-002-0037 Rev 2.1	Date:	3/4/2010
Customer:	Veriwave, Inc.	Temperature:	20°C
Attendees:	Chris Gantenbein	Humidity:	37%
Project:	None	Barometric Pressure:	1017.5mb
Tester:	Jennifer Herrett	Power:	230VAC/50Hz
Configuration #	1	Job Site:	EV07

Test Specifications	Test Method
EN 61326-1:2006 Class A	CISPR 11:2009
AS/NZS CISPR 22:2009 Class A	AS/NZS CISPR 22:2009

Test Parameters					
Run #	2	Line:	High Line	Ext. Attenuation:	20

Comments

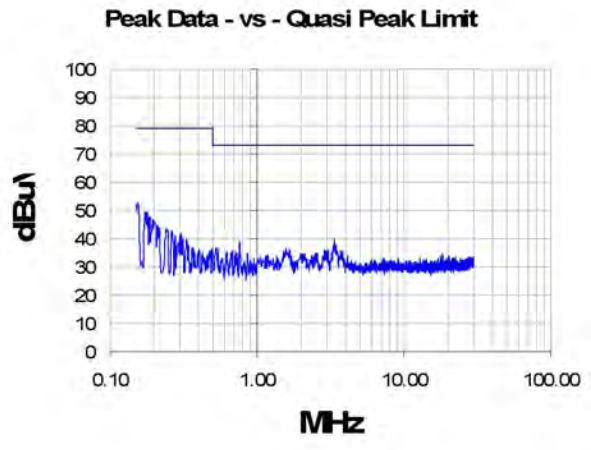
None

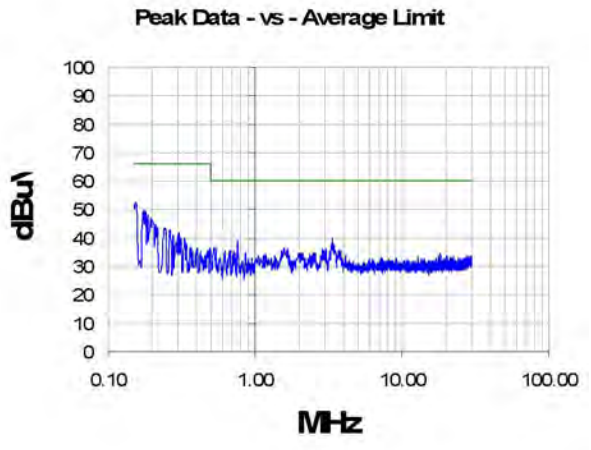
EUT Operating Modes

Running a special routine for testing (wbrick_emi script)

Deviations from Test Standard

None





Test Data

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.155	32.2	20.2	52.4	79.0	-26.6
0.174	29.5	20.2	49.7	79.0	-29.3
0.177	29.3	20.2	49.5	79.0	-29.5
0.186	27.8	20.2	48.0	79.0	-31.0
0.196	26.7	20.2	46.9	79.0	-32.1
3.368	19.7	20.3	40.0	73.0	-33.0
0.764	18.8	20.2	39.0	73.0	-34.0
0.211	24.5	20.2	44.7	79.0	-34.3

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.155	32.2	20.2	52.4	66.0	-13.6
0.174	29.5	20.2	49.7	66.0	-16.3
0.177	29.3	20.2	49.5	66.0	-16.5
0.186	27.8	20.2	48.0	66.0	-18.0
0.196	26.7	20.2	46.9	66.0	-19.1
3.368	19.7	20.3	40.0	60.0	-20.0
0.764	18.8	20.2	39.0	60.0	-21.0
0.211	24.5	20.2	44.7	66.0	-21.3

Results	Pass

Conducted Emissions Data

EUT:	WaveDeploy WiFi 1 port 1x1 SISO	Work Order:	VERW0031
Serial Number:	M32046-002-0037 Rev 2.1	Date:	3/4/2010
Customer:	Veriwave, Inc.	Temperature:	20°C
Attendees:	Chris Gantenbein	Humidity:	37%
Project:	None	Barometric Pressure:	1017.5mb
Tester:	Jennifer Herrett	Power:	220VAC/60Hz
Configuration #	1	Job Site:	EV07

Test Specifications	Test Method
EN 61326-1:2006 Class A	CISPR 11:2009

Test Parameters					
Run #	3	Line:	High Line	Ext. Attenuation:	20

Comments

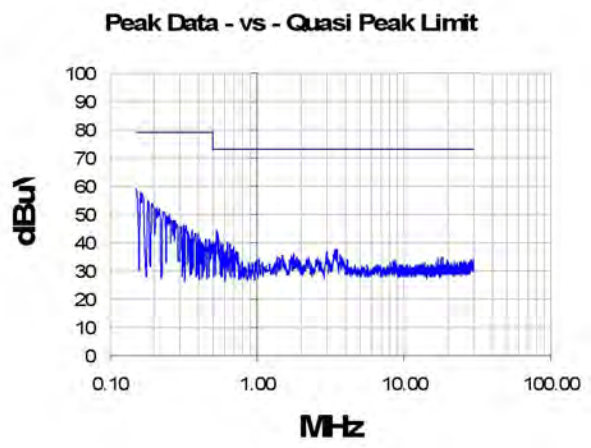
None

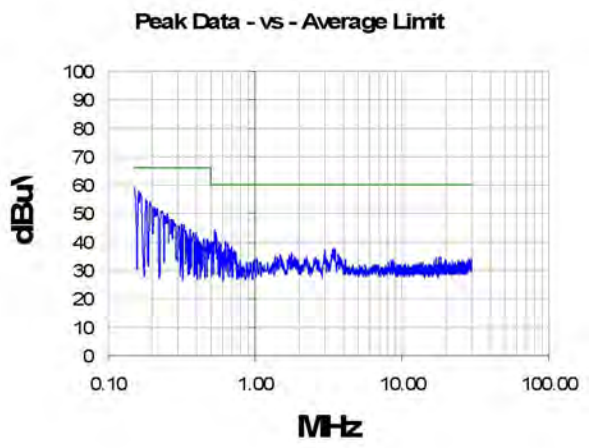
EUT Operating Modes

Running a special routine for testing (wbrick_emi script)

Deviations from Test Standard

None





Test Data

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.150	39.0	20.2	59.2	79.0	-19.8
0.162	37.8	20.2	58.0	79.0	-21.0
0.165	37.0	20.2	57.2	79.0	-21.8
0.181	34.8	20.2	55.0	79.0	-24.0
0.194	33.9	20.2	54.1	79.0	-24.9
0.206	32.1	20.2	52.3	79.0	-26.7
0.216	31.7	20.2	51.9	79.0	-27.1
0.230	30.6	20.2	50.8	79.0	-28.2

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.150	39.0	20.2	59.2	66.0	-6.8
0.162	37.8	20.2	58.0	66.0	-8.0
0.165	37.0	20.2	57.2	66.0	-8.8
0.181	34.8	20.2	55.0	66.0	-11.0
0.194	33.9	20.2	54.1	66.0	-11.9
0.206	32.1	20.2	52.3	66.0	-13.7
0.216	31.7	20.2	51.9	66.0	-14.1
0.230	30.6	20.2	50.8	66.0	-15.2

Results	Pass

Conducted Emissions Data

EUT:	WaveDeploy WiFi 1 port 1x1 SISO	Work Order:	VERW0031
Serial Number:	M32046-002-0037 Rev 2.1	Date:	3/4/2010
Customer:	Veriwave, Inc.	Temperature:	20°C
Attendees:	Chris Gantenbein	Humidity:	37%
Project:	None	Barometric Pressure:	1017.5mb
Tester:	Jennifer Herrett	Power:	220VAC/60Hz
Configuration #	1	Job Site:	EV07

Test Specifications	Test Method
EN 61326-1:2006 Class A	CISPR 11:2009

Test Parameters					
Run #	4	Line:	Neutral	Ext. Attenuation:	20

Comments

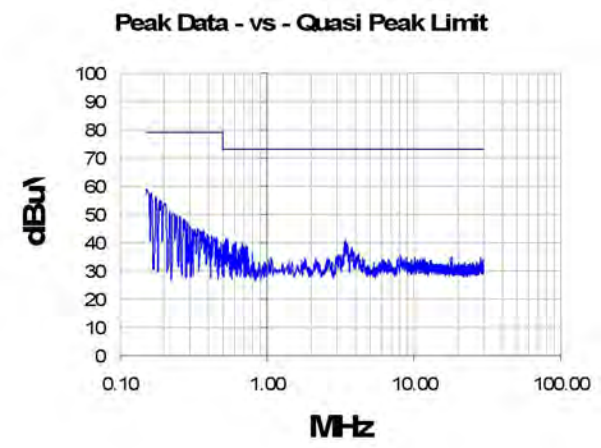
None

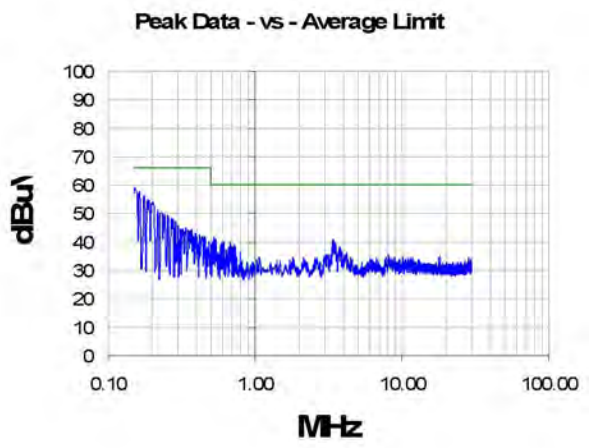
EUT Operating Modes

Running a special routine for testing (wbrick_emi script)

Deviations from Test Standard

None





Test Data

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.152	38.8	20.2	59.0	79.0	-20.0
0.164	37.5	20.2	57.7	79.0	-21.3
0.176	36.1	20.2	56.3	79.0	-22.7
0.186	34.9	20.2	55.1	79.0	-23.9
0.191	34.5	20.2	54.7	79.0	-24.3
0.201	33.7	20.2	53.9	79.0	-25.1
0.218	31.3	20.2	51.5	79.0	-27.5
0.228	30.1	20.2	50.3	79.0	-28.7

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.152	38.8	20.2	59.0	66.0	-7.0
0.164	37.5	20.2	57.7	66.0	-8.3
0.176	36.1	20.2	56.3	66.0	-9.7
0.186	34.9	20.2	55.1	66.0	-10.9
0.191	34.5	20.2	54.7	66.0	-11.3
0.201	33.7	20.2	53.9	66.0	-12.1
0.218	31.3	20.2	51.5	66.0	-14.5
0.228	30.1	20.2	50.3	66.0	-15.7

Results	Pass

Conducted Emissions Data

EUT:	WaveDeploy WiFi 1 port 1x1 SISO	Work Order:	VERW0031
Serial Number:	M32046-002-0037 Rev 2.1	Date:	3/4/2010
Customer:	Veriwave, Inc.	Temperature:	20°C
Attendees:	Chris Gantenbein	Humidity:	37%
Project:	None	Barometric Pressure:	1017.5mb
Tester:	Jennifer Herrett	Power:	110VAC/60Hz
Configuration #	1	Job Site:	EV07

Test Specifications	Test Method
EN 61326-1:2006 Class A	CISPR 11:2009
FCC 15.107:2010 Class A	ANSI C63.4:2009
ICES-003:2004 Class A	CISPR 22:2005 (Amended by A1:2005 and A2:2006)

Test Parameters					
Run #	5	Line:	Neutral	Ext. Attenuation:	20

Comments

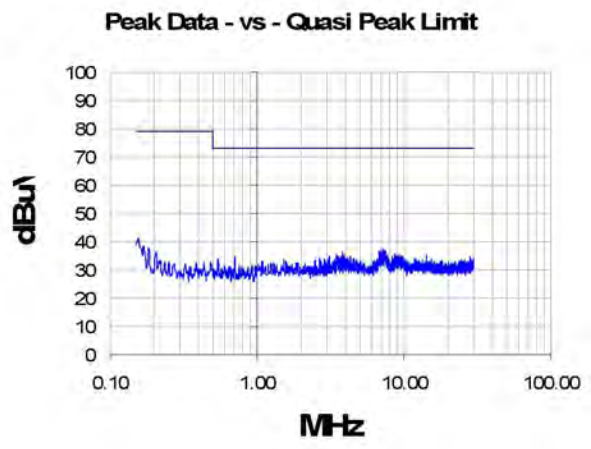
None

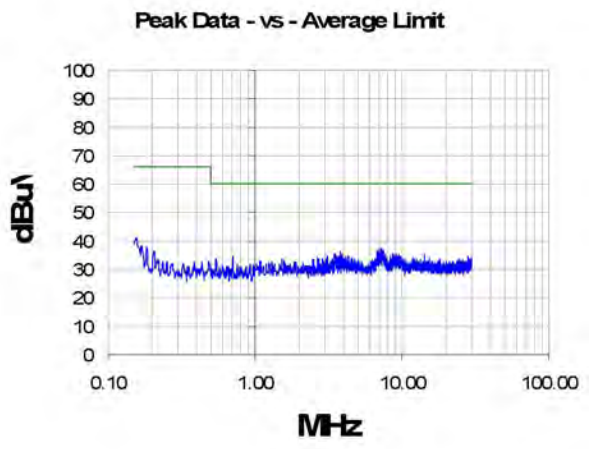
EUT Operating Modes

Running a special routine for testing (wbrick_emi script)

Deviations from Test Standard

None





Test Data

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
7.320	16.8	20.5	37.3	73.0	-35.7
7.180	16.8	20.5	37.3	73.0	-35.7
6.960	16.5	20.5	37.0	73.0	-36.0
6.810	16.4	20.5	36.9	73.0	-36.1
7.530	16.2	20.5	36.7	73.0	-36.3
3.816	16.1	20.3	36.4	73.0	-36.6
6.770	15.6	20.5	36.1	73.0	-36.9
7.280	15.5	20.5	36.0	73.0	-37.0

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
7.320	16.8	20.5	37.3	60.0	-22.7
7.180	16.8	20.5	37.3	60.0	-22.7
6.960	16.5	20.5	37.0	60.0	-23.0
6.810	16.4	20.5	36.9	60.0	-23.1
7.530	16.2	20.5	36.7	60.0	-23.3
3.816	16.1	20.3	36.4	60.0	-23.6
6.770	15.6	20.5	36.1	60.0	-23.9
7.280	15.5	20.5	36.0	60.0	-24.0

Results	Pass

Jennifer Herrett

Conducted Emissions Data

EUT:	WaveDeploy WiFi 1 port 1x1 SISO	Work Order:	VERW0031
Serial Number:	M32046-002-0037 Rev 2.1	Date:	3/4/2010
Customer:	Veriwave, Inc.	Temperature:	20°C
Attendees:	Chris Gantenbein	Humidity:	37%
Project:	None	Barometric Pressure:	1017.5mb
Tester:	Jennifer Herrett	Power:	110VAC/60Hz
Configuration #	1	Job Site:	EV07

Test Specifications	Test Method
EN 61326-1:2006 Class A	CISPR 11:2009
FCC 15.107:2010 Class A	ANSI C63.4:2009
ICES-003:2004 Class A	CISPR 22:2005 (Amended by A1:2005 and A2:2006)

Test Parameters					
Run #	6	Line:	High Line	Ext. Attenuation:	20

Comments

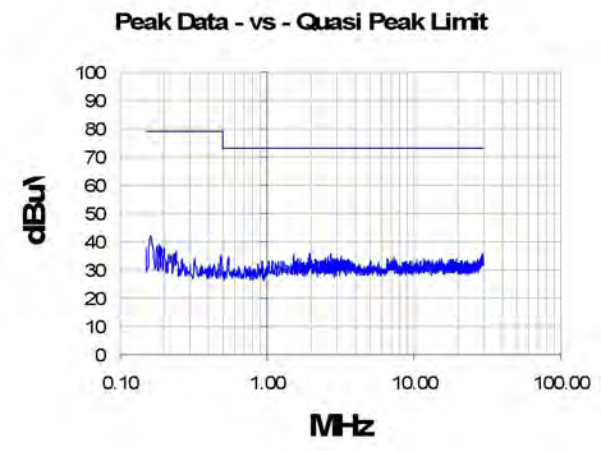
None

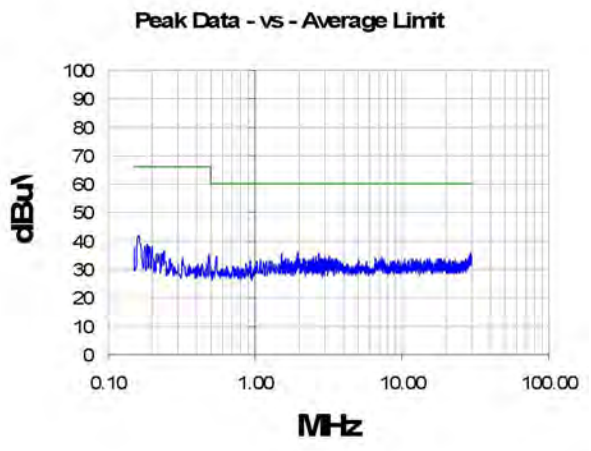
EUT Operating Modes

Running a special routine for testing (wbrick_emi script)

Deviations from Test Standard

None





Test Data

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.162	21.9	20.2	42.1	79.0	-36.9
1.960	15.7	20.3	36.0	73.0	-37.0
29.320	14.4	21.5	35.9	73.0	-37.1
2.728	15.5	20.3	35.8	73.0	-37.2
1.528	15.4	20.2	35.6	73.0	-37.4
29.610	13.8	21.5	35.3	73.0	-37.7
3.216	14.6	20.3	34.9	73.0	-38.1
29.000	13.4	21.4	34.8	73.0	-38.2

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.162	21.9	20.2	42.1	66.0	-23.9
1.960	15.7	20.3	36.0	60.0	-24.0
29.320	14.4	21.5	35.9	60.0	-24.1
2.728	15.5	20.3	35.8	60.0	-24.2
1.528	15.4	20.2	35.6	60.0	-24.4
29.610	13.8	21.5	35.3	60.0	-24.7
3.216	14.6	20.3	34.9	60.0	-25.1
29.000	13.4	21.4	34.8	60.0	-25.2

Results	Pass

Jennifer Herrett

Conducted Emissions Data

EUT:	WaveDeploy WiFi 1 port 1x1 SISO	Work Order:	VERW0031
Serial Number:	M32046-002-0037 Rev 2.1	Date:	3/4/2010
Customer:	Veriwave, Inc.	Temperature:	20°C
Attendees:	Chris Gantenbein	Humidity:	37%
Project:	None	Barometric Pressure:	1017.5mb
Tester:	Jennifer Herrett	Power:	100VAC/50Hz
Configuration #	1	Job Site:	EV07

Test Specifications	Test Method
EN 61326-1:2006 Class A	CISPR 11:2009
VCCI:2009-04 Class A	VCCI:2009-04

Test Parameters					
Run #	7	Line:	High Line	Ext. Attenuation:	20

Comments

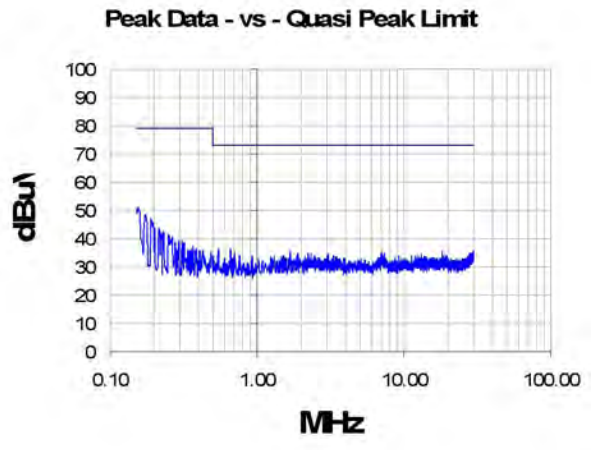
None

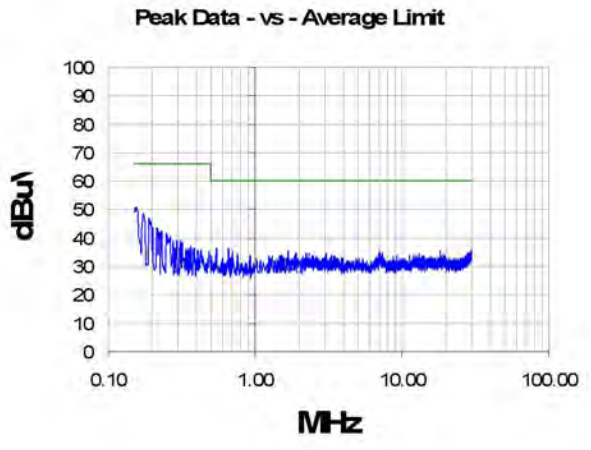
EUT Operating Modes

Running a special routine for testing (wbrick_emi script)

Deviations from Test Standard

None





Test Data

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.155	30.8	20.2	51.0	79.0	-28.0
0.172	28.3	20.2	48.5	79.0	-30.5
0.191	26.8	20.2	47.0	79.0	-32.0
0.201	23.7	20.2	43.9	79.0	-35.1
0.215	23.4	20.2	43.6	79.0	-35.4
0.232	22.3	20.2	42.5	79.0	-36.5
0.546	16.2	20.2	36.4	73.0	-36.6
0.662	16.1	20.2	36.3	73.0	-36.7

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.155	30.8	20.2	51.0	66.0	-15.0
0.172	28.3	20.2	48.5	66.0	-17.5
0.191	26.8	20.2	47.0	66.0	-19.0
0.201	23.7	20.2	43.9	66.0	-22.1
0.215	23.4	20.2	43.6	66.0	-22.4
0.232	22.3	20.2	42.5	66.0	-23.5
0.546	16.2	20.2	36.4	60.0	-23.6
0.662	16.1	20.2	36.3	60.0	-23.7

Results	Pass

Conducted Emissions Data

EUT:	WaveDeploy WiFi 1 port 1x1 SISO	Work Order:	VERW0031
Serial Number:	M32046-002-0037 Rev 2.1	Date:	3/4/2010
Customer:	Veriwave, Inc.	Temperature:	20°C
Attendees:	Chris Gantenbein	Humidity:	37%
Project:	None	Barometric Pressure:	1017.5mb
Tester:	Jennifer Herrett	Power:	100VAC/50Hz
Configuration #	1	Job Site:	EV07

Test Specifications	Test Method
EN 61326-1:2006 Class A	CISPR 11:2009
VCCI:2009-04 Class A	VCCI:2009-04

Test Parameters					
Run #	8	Line:	Neutral	Ext. Attenuation:	20

Comments

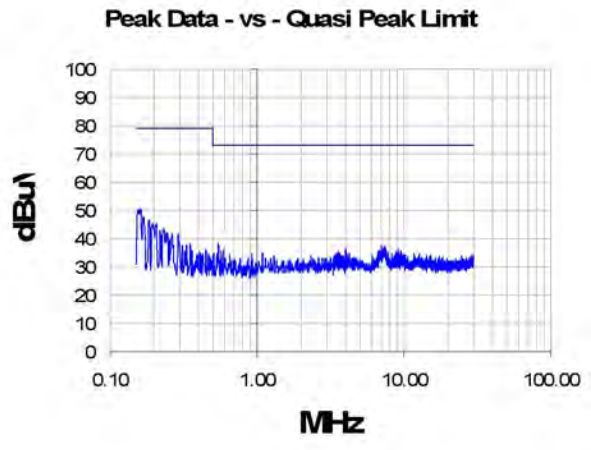
None

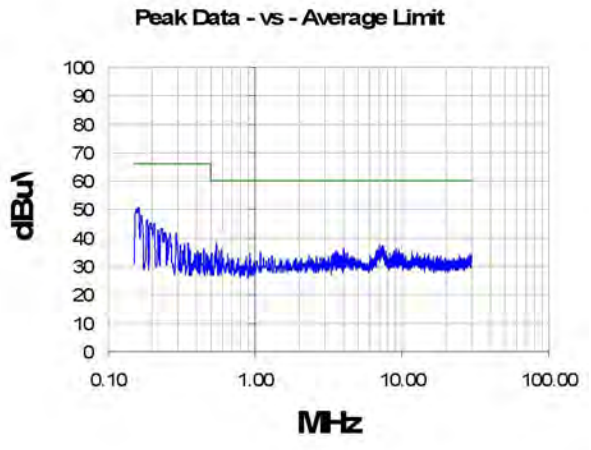
EUT Operating Modes

Running a special routine for testing (wbrick_emi script)

Deviations from Test Standard

None





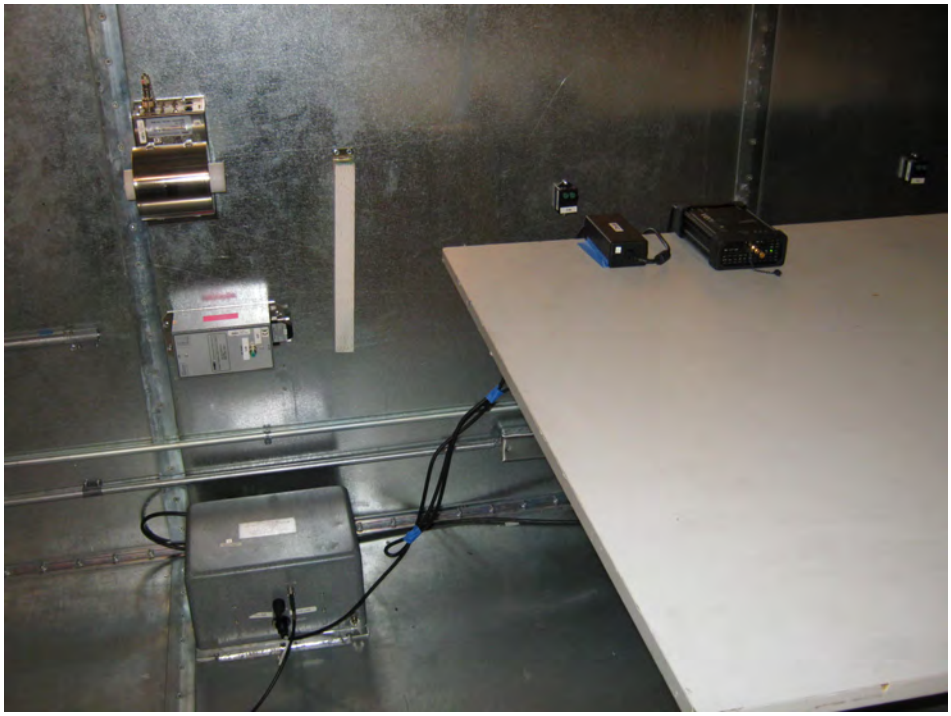
Test Data

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.162	30.5	20.2	50.7	79.0	-28.3
0.169	27.8	20.2	48.0	79.0	-31.0
0.184	26.4	20.2	46.6	79.0	-32.4
0.196	25.1	20.2	45.3	79.0	-33.7
0.208	25.0	20.2	45.2	79.0	-33.8
0.546	18.3	20.2	38.5	73.0	-34.5
7.060	17.2	20.5	37.7	73.0	-35.3
0.230	23.2	20.2	43.4	79.0	-35.6

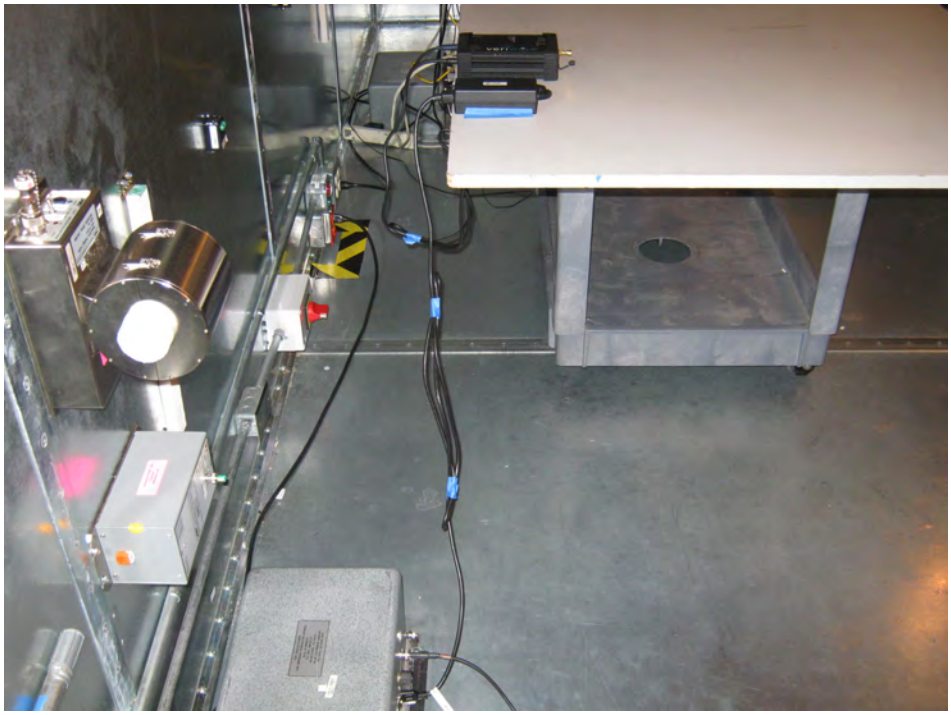
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.162	30.5	20.2	50.7	66.0	-15.3
0.169	27.8	20.2	48.0	66.0	-18.0
0.184	26.4	20.2	46.6	66.0	-19.4
0.196	25.1	20.2	45.3	66.0	-20.7
0.208	25.0	20.2	45.2	66.0	-20.8
0.546	18.3	20.2	38.5	60.0	-21.5
7.060	17.2	20.5	37.7	60.0	-22.3
0.230	23.2	20.2	43.4	66.0	-22.6

Results	Pass

Conducted Emissions Photos



Conducted Emissions Photos



Flicker Data

Modes of Operation Investigated

Running a special routine for testing (wbrick_emi script)

Power Setting Investigated

230VAC/50Hz

Configurations Investigated

VERW0031 - 1

Test Equipment

ID	Description	Manufacturer	Model	Last Calibration	Interval
THA	Programmable Power Supply	Hewlett-Packard	6843A	11/23/2009	13 mo
THI	Reference Impedence Network	Voltech	IEC 61000-3 Reference Impedence Network	12/10/2008	24 mo
THR	Universal Power Analyzer	Voltech	PM6000	12/10/2008	24 mo

Test Description

This test measures the voltage fluctuations and flicker impressed on the AC mains by the EUT. It is applicable to electrical and electronic equipment having an input current up to and including 16A per phase, and intended to be connected to public low-voltage distribution systems of between 220 V and 250 V at 50 Hz line to neutral.

The test is conducted using frequency domain instrumentation as described in EN 61000-3-3 Section 4. All types of voltage fluctuations are assessed at the supply terminals of the EUT by direct measurement using a flickermeter, which complies with the specification given in IEC 868.

The percentage total harmonic distortion of the supply voltage shall be less than 3%.

Flicker Data

EUT:	WaveDeploy WiFi 1 port 1x1 SISO	Work Order:	VERW0031
Serial Number:	M32046-002-0037 Rev 2.1	Date:	3/8/2010
Customer:	Veriwave, Inc.	Temperature:	19 °C
Attendees:	None	Humidity:	37%
Project:	None	Barometric Pressure:	1018.40mb
Tester:	Ethan Schoonover	Power:	230VAC/50Hz
Configuration #	1	Job Site:	EV05

Test Specifications	Test Method
EN 61000-3-3:1995 (Amended by A1:2001 and A2:2005)	IEC 61000-3-3:2005

Comments
None
EUT Operating Modes
Running a special routine for testing (wbrick_emi script)
Deviations from Test Standard
None

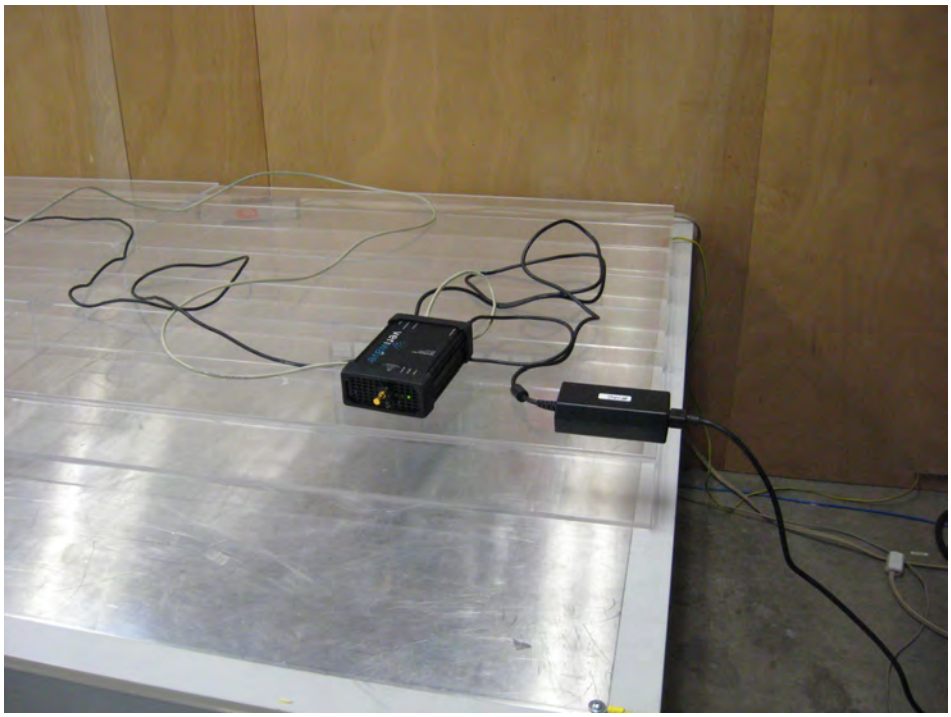
Test Data

Parameter	Limit	Reading	Result
dc - the relative steady-state voltage change	3.3%	0	Pass
dmax - the maximum relative voltage change	4% (without additional conditions)	0	Pass
d(t) - the relative voltage change **	shall not exceed 3.3 % for more than 500 ms	0	Pass
Pst - short-term flicker	1.0	0.071	Pass
Plt - long-term flicker	0.65		N/A

**The time function of the r.m.s. voltage change evaluated as a single value for each successive half period between zero-crossings of the source voltage between time intervals in which the voltage is in a stead-state condition for at least 1 s.

Results	Pass

Flicker Photos



Quasi-Stationary Current Harmonics Data

Modes of Operation Investigated

Running a special routine for testing (wbrick_emi script)

Power Setting Investigated

230VAC/50Hz

Configurations Investigated

VERW0031 - 1

Test Equipment

ID	Description	Manufacturer	Model	Last Calibration	Interval
THA	Programmable Power Supply	Hewlett-Packard	6843A	11/23/2009	13 mo
THI	Reference Impedence Network	Voltech	IEC 61000-3 Reference Impedence Network	12/10/2008	24 mo
THR	Universal Power Analyzer	Voltech	PM6000	12/10/2008	24 mo

Test Description

This test measures the harmonic currents injected into the AC mains by the EUT. It is applicable to electrical and electronic equipment having an input current up to and including 16A per phase, and intended to be connected to public low-voltage distribution systems of between 220 V and 250 V at 50 Hz line to neutral.

The test is conducted using frequency domain instrumentation as described in EN 61000-3-2 Annex B. The amplitude of each specific harmonic is measured.

Equipment Classification

Class A: Balanced three-phase equipment and all other equipment, except that stated in one of the following classes.
Class B: Portable tools
Class C: Lighting equipment, including dimming devices.
Class D: Equipment having specified power according to EN 61000-3-2 of P <= 600 W, of the following equipment types:
- Personal Computers
- Personal Computer Monitors
- Television Receivers

Quasi-Stationary Current Harmonics Data

EUT:	WaveDeploy WiFi 1 port 1x1 SISO	Work Order:	VERW0031
Serial Number:	M32046-002-0037 Rev 2.1	Date:	3/8/2010
Customer:	Veriwave, Inc.	Temperature:	19 °C
Attendees:	None	Humidity:	37%
Project:	None	Barometric Pressure:	1018.40mb
Tester:	Ethan Schoonover	Power:	230VAC/50Hz
Configuration #	1	Job Site:	EV05

Test Specifications	Test Method
EN 61000-3-2:2006	IEC 61000-3-2:2009

Test Parameters

Equipment Class	A	Fund. Current (A)	0.1155	Power Factor	0.4287	Ave. Input Curr. (A)	0.2644
Max. THC	0.2381	Measured Power	26.1815	Test Duration	00:02:30		

Comments

None

EUT Operating Modes

Running a special routine for testing (wbrick_emi script)

Deviations from Test Standard

None

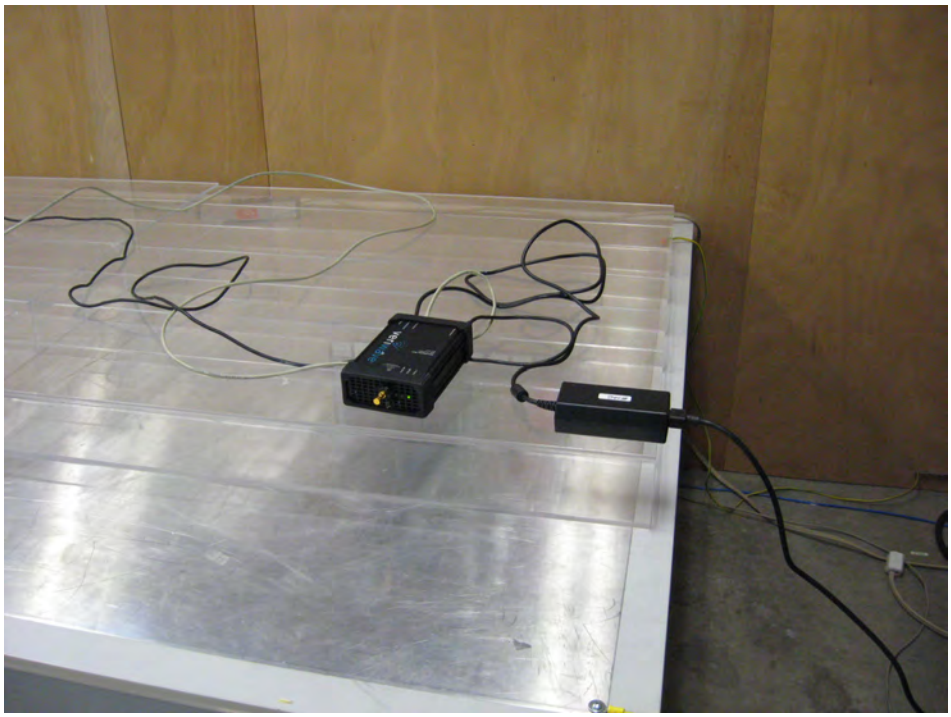
Test Data

Harmonic	Limit 1	Limit 2	Avg Reading	Max Reading	Pass/Fail
2	1.08A	1.62A	.84mA	1.15mA	N/A
3	2.3A	3.45A	109.69mA	109.75mA	Pass
4	430mA	645mA	.86mA	1.14mA	N/A
5	1.14A	1.71A	104.34mA	104.4mA	Pass
6	300mA	450mA	1.08mA	1.33mA	N/A
7	770mA	1.16A	96.97mA	97.02mA	Pass
8	230mA	345mA	1.2mA	1.42mA	N/A
9	400mA	600mA	87.53mA	87.58mA	Pass
10	184mA	276mA	1.3mA	1.49mA	N/A
11	330mA	495mA	76.84mA	76.88mA	Pass
12	153.33mA	230mA	1.34mA	1.51mA	N/A
13	210mA	315mA	65.41mA	65.46mA	Pass
14	131.43mA	197.14mA	1.3mA	1.45mA	N/A
15	150mA	225mA	53.63mA	53.69mA	Pass
16	115mA	172.5mA	1.21mA	1.35mA	N/A
17	132.35mA	198.53mA	42.23mA	42.29mA	Pass
18	102.22mA	153.33mA	1.09mA	1.21mA	N/A
19	118.42mA	177.63mA	31.6mA	31.66mA	Pass
20	92mA	138mA	.92mA	1.01mA	N/A
21	107.14mA	160.71mA	22.05mA	22.11mA	Pass

Harmonic	Limit 1	Limit 2	Avg Reading	Max Reading	Pass/Fail
22	83.64mA	125.45mA	.75mA	.81mA	N/A
23	97.83mA	146.74mA	13.98mA	14.04mA	Pass
24	76.67mA	115mA	.6mA	.66mA	N/A
25	90mA	135mA	7.45mA	7.51mA	Pass
26	70.77mA	106.15mA	.43mA	.5mA	N/A
27	83.33mA	125mA	2.51mA	2.56mA	N/A
28	65.71mA	98.57mA	.34mA	.4mA	N/A
29	77.59mA	116.38mA	.93mA	.98mA	N/A
30	61.33mA	92mA	.28mA	.32mA	N/A
31	72.58mA	108.87mA	2.95mA	2.98mA	N/A
32	57.5mA	86.25mA	.25mA	.29mA	N/A
33	68.18mA	102.27mA	3.85mA	3.88mA	N/A
34	54.12mA	81.18mA	.25mA	.28mA	N/A
35	64.29mA	96.43mA	3.87mA	3.89mA	N/A
36	51.11mA	76.67mA	.23mA	.27mA	N/A
37	60.81mA	91.22mA	3.32mA	3.34mA	N/A
38	48.42mA	72.63mA	.21mA	.24mA	N/A
39	57.69mA	86.54mA	2.47mA	2.5mA	N/A
40	46mA	69mA	.19mA	.21mA	N/A

Results	Pass

Harmonics Photos



Electrostatic Discharge Data

EUT:	WaveDeploy WiFi 1 port 1x1 SISO	Work Order:	VERW0031
Serial Number:	M32046-002-0037 Rev 2.1	Date:	3/8/2010
Customer:	Veriwave, Inc.	Temperature:	19 °C
Attendees:	None	Humidity:	37%
Project:	None	Barometric Pressure:	1018.40mb
Tester:	Ethan Schoonover	Power:	230VAC/50Hz
Configuration #	1	Job Site:	EV03

Test Specifications	Test Method
EN 61326-1:2006	IEC 61000-4-2:2008

Test Parameters			
Energy Storage Capacitor	150pf	Discharge Resistance	330 ohms
Polarity of Output Voltage	Positive and Negative	Time Between Successive Discharges	>= 1 sec

Comments

None

EUT Operating Modes

Running a special routine for testing (wbrick_emi script)

Deviations from Test Standard

None

EUT Functions Monitored

Monitoring front LED and script counter for error.

Air Discharge

NUMBER OF DISCHARGES	10	10	10	10	10	10	10	10	10	10
ESD TEST LEVEL (kV)	2	-2	4	-4	6	-6	8	-8	15	-15
All Green Arrows - No Observations	o	o	o	o	-	-	o	o	-	-

* Indicates Red Arrows

Contact Discharge

NUMBER OF DISCHARGES	10	10	10	10	10	10	10	10	10	10
ESD TEST LEVEL (kV)	2	-2	4	-4	6	-6	8	-8	15	-15
All Blue Arrows - No Observations	o	o	o	o	-	-	-	-	-	-
Horizontal Coupling Plane	o	o	o	o	-	-	-	-	-	-
Vertical Coupling Plane	o	o	o	o	-	-	-	-	-	-

** Indicates Yellow Arrows

Test Data

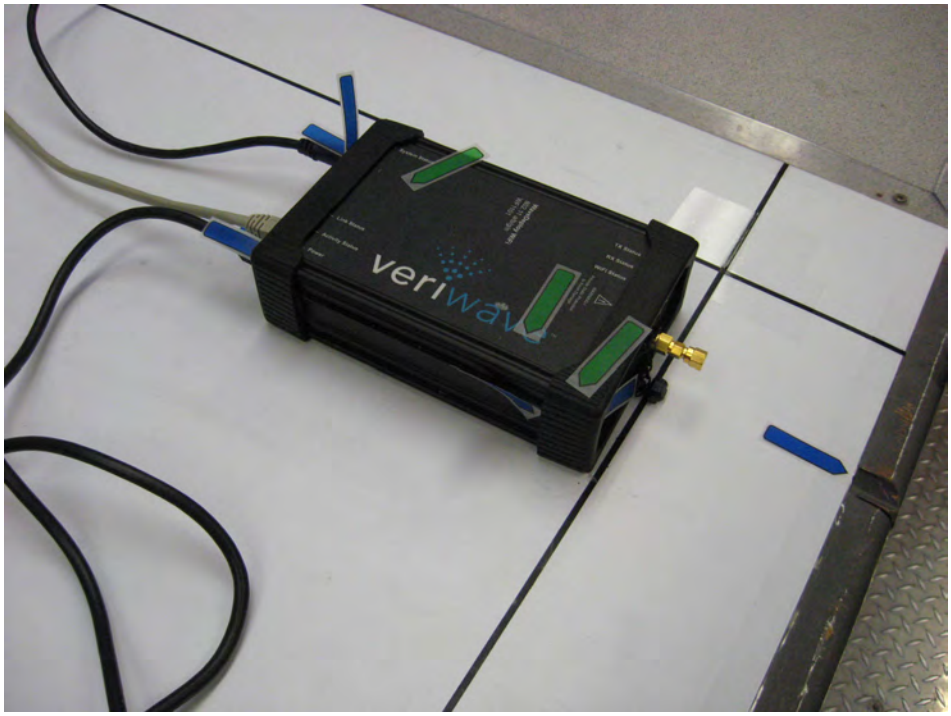
Item Number	Phenomena Observed	
Key:	o=No EUT Response Observed	- = Not Tested

Test Equipment

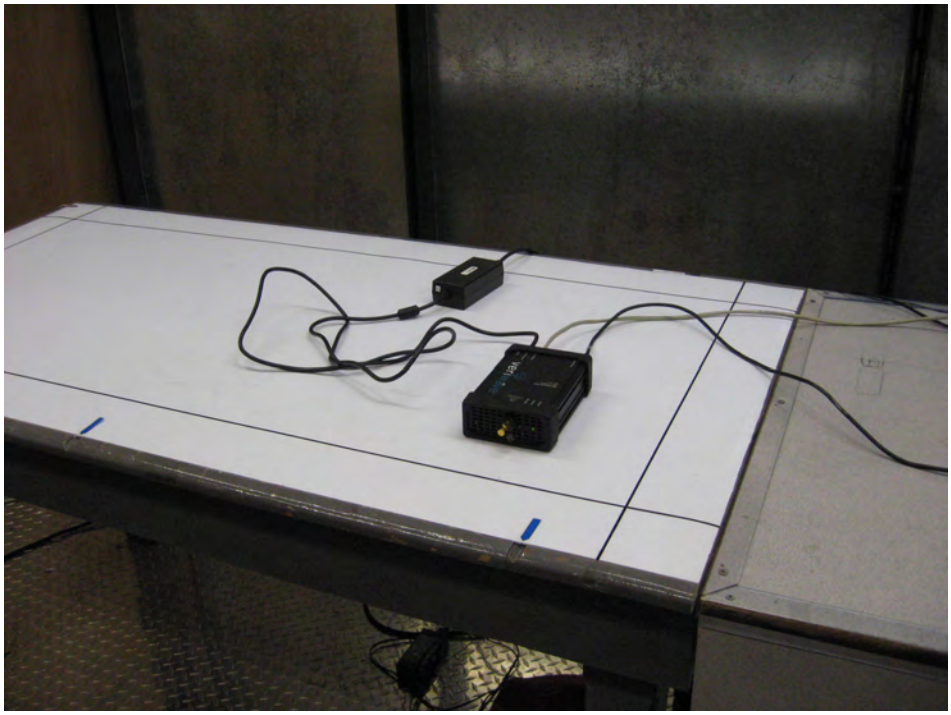
ID	Description	Manufacturer	Model	Last Calibration	Interval
IGM	ESD Gun	Teseq	NSG 437	9/1/2009	13 mo

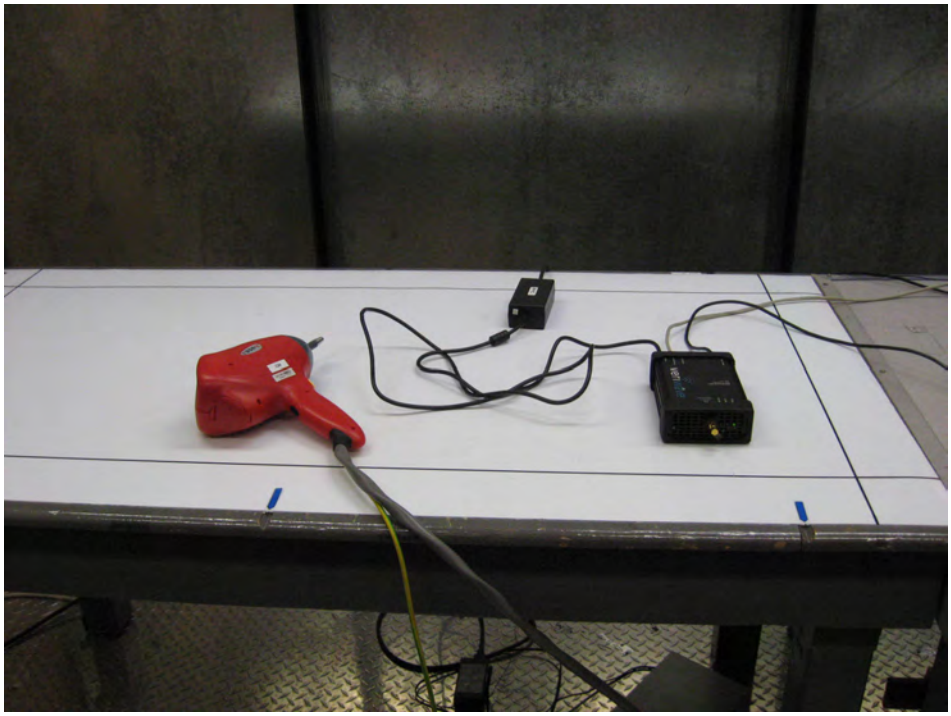
Results	Meets NWEMC Performance Criteria 1
Criteria - The EUT exhibited no change in performance when operating as specified by the manufacturer.	

Electrostatic Discharge Photos



Electrostatic Discharge Photos





Electrostatic Discharge Photos

Radiated Immunity Data

EUT:	WaveDeploy WiFi 1 port 1x1 SISO	Work Order:	VERW0031
Serial Number:	M32046-002-0037 Rev 2.1	Date:	3/5/2010
Customer:	Veriwave, Inc.	Temperature:	19 °C
Attendees:	Chris Gantenbein	Humidity:	37%
Project:	None	Barometric Pressure:	1018.40mb
Tester:	Jennifer Herrett	Power:	230VAC/50Hz
Configuration #	1	Job Site:	EV10

Test Specifications	Test Method
EN 61326-1:2006	IEC 61000-4-3:2008

Test Parameters					
Test Level	>= 3 V/m	Spec. Level	3 / 1 V/m	Modulation Freq	1kHz
Start Frequency	1400MHz	Stop Frequency	2700MHz	Modulation Type	AM
Step Size	1%	Dwell Time	1 Sec.	Modulation Depth	80%
Test Distance	3m				

Comments

None

EUT Operating Modes

Running a special routine for testing (wbrick_emi script)

Deviations from Test Standard

None

EUT Functions Monitored

Monitoring front LED and script counter for error.

Clock and Oscillators

The following clock/oscillator frequencies were inspected:

Test Data

Frequency (MHz)	Field Strength (volts/meter)	Antenna Polarity	Side Tested	Phenomena Observed / Comments
1400MHz - 2700MHz	Test Level	Horz	Front	No Anomalies Observed
1400MHz - 2700MHz	Test Level	Vert	Front	No Anomalies Observed
1400MHz - 2700MHz	Test Level	Horz	Back	No Anomalies Observed
1400MHz - 2700MHz	Test Level	Vert	Back	No Anomalies Observed
1400MHz - 2700MHz	Test Level	Horz	Left	No Anomalies Observed
1400MHz - 2700MHz	Test Level	Vert	Left	No Anomalies Observed
1400MHz - 2700MHz	Test Level	Horz	Right	No Anomalies Observed
1400MHz - 2700MHz	Test Level	Vert	Right	No Anomalies Observed
1400MHz - 2700MHz	Test Level	Horz	Top	No Anomalies Observed
1400MHz - 2700MHz	Test Level	Vert	Top	No Anomalies Observed
1400MHz - 2700MHz	Test Level	Horz	Bottom	No Anomalies Observed
1400MHz - 2700MHz	Test Level	Vert	Bottom	No Anomalies Observed

Test Equipment

ID	Description	Manufacturer	Model	Last Calibration	Interval
IED	E-Field Probe	Amplifier Research	FP2080	2/9/2010	24 mo
IEE	E-Field Probe	Amplifier Research	FP2000	1/7/2009	24 mo
AHW	Antenna, Horn	ETS	3115	7/21/2008	24 mo
ALJ	Antenna, Log Periodic	EMCO	3144	NCR	0 mo
IRD	Dual Directional Coupler	Amplifier Research	DC7154	2/16/2010	13 mo
IRO	Dual Directional Coupler	Amplifier Research	DC6180A	2/16/2010	13 mo
SPE	Power Head	Amplifier Research	PH2000	1/11/2010	13 mo
SQI	Power Meter	Amplifier Research	PM2002	10/3/2009	13 mo
TRO	RF Amplifier	Amplifier Research	25S1G4A	NCR	0 mo
TRT	RF Amplifier	Amplifier Research	500W1000A	NCR	0 mo
TGS	Signal Generator	Agilent	E4422B	12/9/2008	24 mo

Results	Meets NWEMC Performance Criteria 1

Criteria - The EUT exhibited no change in performance when operating as specified by the manufacturer.

Radiated Immunity Data

EUT:	WaveDeploy WiFi 1 port 1x1 SISO	Work Order:	VERW0031
Serial Number:	M32046-002-0037 Rev 2.1	Date:	3/5/2010
Customer:	Veriwave, Inc.	Temperature:	19 °C
Attendees:	Chris Gantenbein	Humidity:	37%
Project:	None	Barometric Pressure:	1018.40mb
Tester:	Jennifer Herrett	Power:	230VAC/50Hz
Configuration #	1	Job Site:	EV10

Test Specifications	Test Method
EN 61326-1:2006	IEC 61000-4-3:2008

Test Parameters					
Test Level	>= 3 V/m	Spec. Level	3 V/m	Modulation Freq	1kHz
Start Frequency	80MHz	Stop Frequency	1000MHz	Modulation Type	AM
Step Size	1%	Dwell Time	1 Sec.	Modulation Depth	80%
Test Distance	3m				

Comments

None

EUT Operating Modes

Running a special routine for testing (wbrick_emi script)

Deviations from Test Standard

None

EUT Functions Monitored

Monitoring front LED and script counter for error.

Clock and Oscillators

The following clock/oscillator frequencies were inspected:

Test Data

Frequency (MHz)	Field Strength (volts/meter)	Antenna Polarity	Side Tested	Phenomena Observed / Comments
80MHz - 1000MHz	Test Level	Horz	Front	No Anomalies Observed
80MHz - 1000MHz	Test Level	Vert	Front	No Anomalies Observed
80MHz - 1000MHz	Test Level	Horz	Back	No Anomalies Observed
80MHz - 1000MHz	Test Level	Vert	Back	No Anomalies Observed
80MHz - 1000MHz	Test Level	Horz	Left	No Anomalies Observed
80MHz - 1000MHz	Test Level	Vert	Left	No Anomalies Observed
80MHz - 1000MHz	Test Level	Horz	Right	No Anomalies Observed
80MHz - 1000MHz	Test Level	Vert	Right	No Anomalies Observed
80MHz - 1000MHz	Test Level	Horz	Top	No Anomalies Observed
80MHz - 1000MHz	Test Level	Vert	Top	No Anomalies Observed
80MHz - 1000MHz	Test Level	Horz	Bottom	No Anomalies Observed
80MHz - 1000MHz	Test Level	Vert	Bottom	No Anomalies Observed

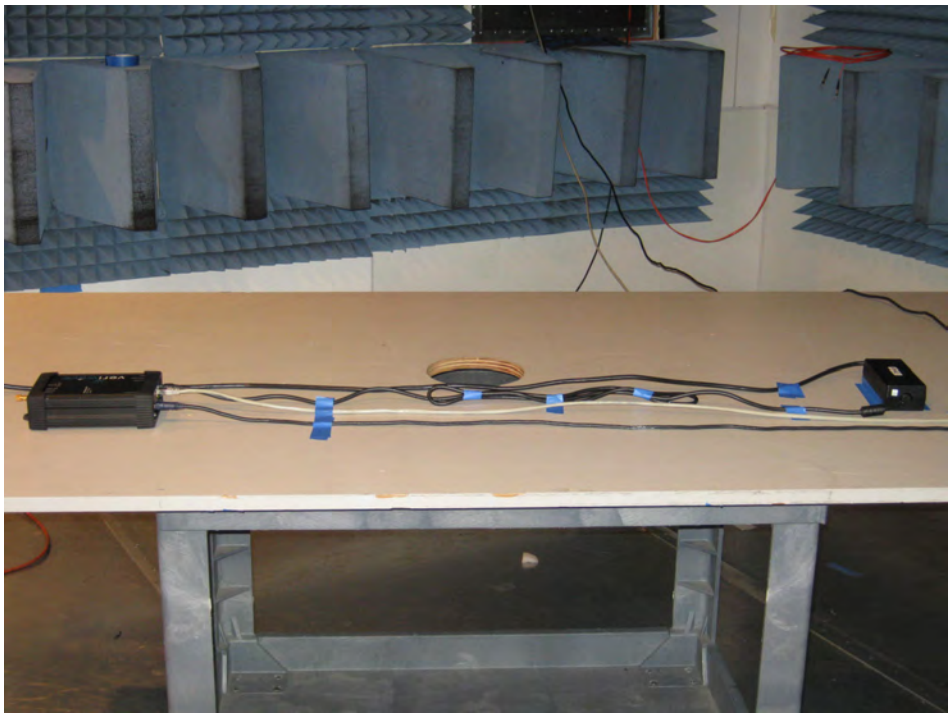
Test Equipment

ID	Description	Manufacturer	Model	Last Calibration	Interval
IED	E-Field Probe	Amplifier Research	FP2080	2/9/2010	24 mo
IEE	E-Field Probe	Amplifier Research	FP2000	1/7/2009	24 mo
AHW	Antenna, Horn	ETS	3115	7/21/2008	24 mo
ALJ	Antenna, Log Periodic	EMCO	3144	NCR	0 mo
IRD	Dual Directional Coupler	Amplifier Research	DC7154	2/16/2010	13 mo
IRO	Dual Directional Coupler	Amplifier Research	DC6180A	2/16/2010	13 mo
SPE	Power Head	Amplifier Research	PH2000	1/11/2010	13 mo
SQI	Power Meter	Amplifier Research	PM2002	10/3/2009	13 mo
TRO	RF Amplifier	Amplifier Research	25S1G4A	NCR	0 mo
TRT	RF Amplifier	Amplifier Research	500W1000A	NCR	0 mo
TGS	Signal Generator	Agilent	E4422B	12/9/2008	24 mo

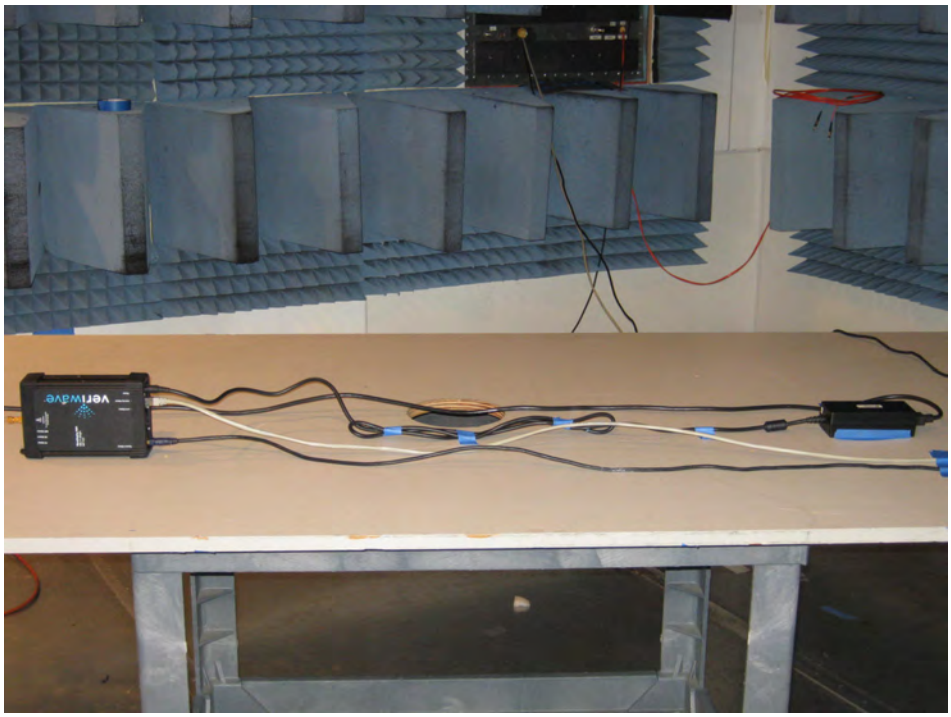
Results	Meets NWEMC Performance Criteria 1

Criteria - The EUT exhibited no change in performance when operating as specified by the manufacturer.

Radiated Immunity Photos



Radiated Immunity Photos



Electrical Fast Transient Burst Data

EUT:	WaveDeploy WiFi 1 port 1x1 SISO	Work Order:	VERW0031
Serial Number:	M32046-002-0037 Rev 2.1	Date:	3/8/2010
Customer:	Veriwave, Inc.	Temperature:	19 °C
Attendees:	None	Humidity:	37%
Project:	None	Barometric Pressure:	1018.40mb
Tester:	Ethan Schoonover	Power:	230VAC/50Hz
Configuration #	2	Job Site:	EV05

Test Specifications	Test Method
EN 61326-1:2006	IEC 61000-4-4:2004

Test Parameters					
Period Time	300mS ± 20%	Impulse Duration	50nS ± 30%	Frequency of Burst	5kHz
Rise Time of One Pulse	5nS ± 30%	Duration of Burst	15mS ±20%	Relation of Power Supply	Asynchronous

Comments

None

EUT Operating Modes

Running a special routine for testing (wbrick_emi script)

Deviations from Test Standard

None

EUT Functions Monitored

Monitoring front LED and script counter for error.

AC/DC

LINE 1	LINE 1	LINE 2	LINE 2	LINE 3	LINE 3	NEUTRAL	NEUTRAL	GROUND	GROUND	ALL LINES	ALL LINES
2 kV	-2 kV	2 kV	-2 kV	2 kV	-2 kV	2 kV	-2 kV	2 kV	-2 kV	2 kV	-2 kV
o	o	-	-	-	-	o	o	o	o	o	o

Signal/Control

USB	USB	Ethernet	Ethernet	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1 kV	-1 kV	1 kV	-1 kV	1 kV	-1 kV	1 kV	-1 kV	1 kV	-1 kV	1 kV	-1 kV
o	o	o	o	-	-	-	-	-	-	-	-

Test Data

Item#	Phenomena Observed	
Key:	o=No EUT Response Observed	- = Not Tested

Test Equipment

ID	Description	Manufacturer	Model	Last Calibration	Interval
IBJ	EFT Surge VDI Test System	Haefely	ECOMPACT 4	8/3/2009	13 mo

Results	Meets NWEMC Performance Criteria 1

Criteria - The EUT exhibited no change in performance when operating as specified by the manufacturer.

Electrical Fast Transient Burst Data

EUT:	WaveDeploy WiFi 1 port 1x1 SISO	Work Order:	VERW0031
Serial Number:	M32046-002-0037 Rev 2.1	Date:	3/8/2010
Customer:	Veriwave, Inc.	Temperature:	19 °C
Attendees:	None	Humidity:	37%
Project:	None	Barometric Pressure:	1018.40mb
Tester:	Ethan Schoonover	Power:	230VAC/50Hz
Configuration #	2	Job Site:	EV05

Test Specifications	Test Method
EN 61326-1:2006	IEC 61000-4-4:2004

Test Parameters					
Period Time	300mS ± 20%	Impulse Duration	50nS ± 30%	Frequency of Burst	100kHz
Rise Time of One Pulse	5nS ± 30%	Duration of Burst	0.75mS ±20%	Relation of Power Supply	Asynchronous

Comments

None

EUT Operating Modes

Running a special routine for testing (wbrick_emi script)

Deviations from Test Standard

None

EUT Functions Monitored

Monitoring front LED and script counter for error.

AC/DC

LINE 1	LINE 1	LINE 2	LINE 2	LINE 3	LINE 3	NEUTRAL	NEUTRAL	GROUND	GROUND	ALL LINES	ALL LINES
2 kV	-2 kV	2 kV	-2 kV	2 kV	-2 kV	2 kV	-2 kV	2 kV	-2 kV	2 kV	-2 kV
o	o	-	-	-	-	o	o	o	o	o	o

Signal/Control

n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1 kV	-1 kV	1 kV	-1 kV	1 kV	-1 kV	1 kV	-1 kV	1 kV	-1 kV	1 kV	-1 kV
o	o	o	o	-	-	-	-	-	-	-	-

Test Data

Item#	Phenomena Observed	
Key:	o=No EUT Response Observed	- = Not Tested

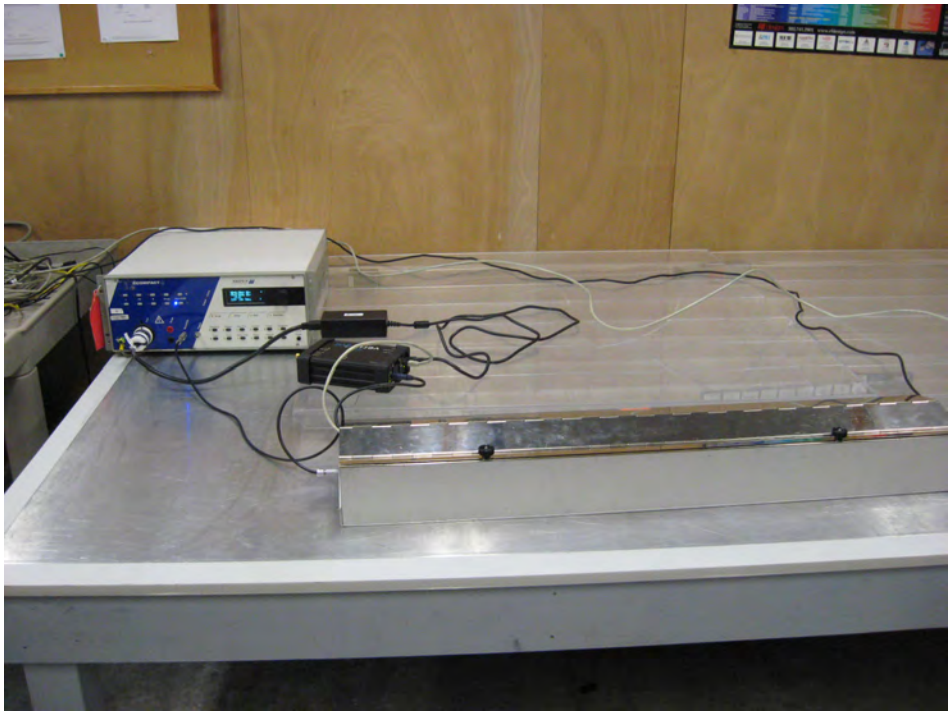
Test Equipment

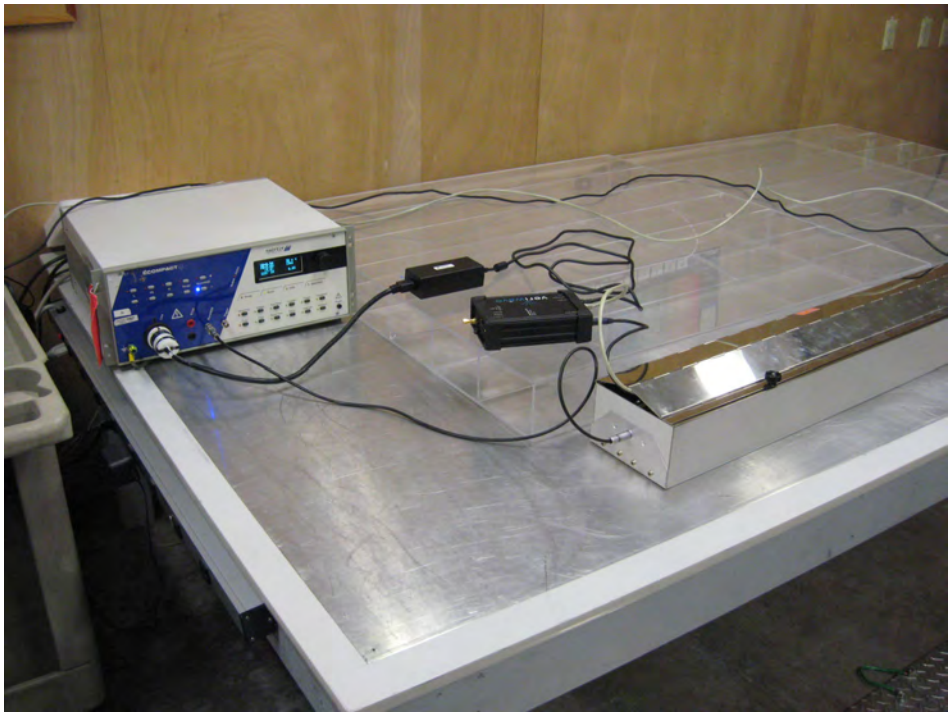
ID	Description	Manufacturer	Model	Last Calibration	Interval
IBJ	EFT Surge VDI Test System	Haefely	ECOMPACT 4	8/3/2009	13 mo

Results	Meets NWEMC Performance Criteria 1

Criteria - The EUT exhibited no change in performance when operating as specified by the manufacturer.

Electrical Fast Transient Burst Photos





Surge Immunity Data

EUT:	WaveDeploy WiFi 1 port 1x1 SISO	Work Order:	VERW0031
Serial Number:	M32046-002-0037 Rev 2.1	Date:	3/5/2010
Customer:	Veriwave, Inc.	Temperature:	19 °C
Attendees:	None	Humidity:	37%
Project:	None	Barometric Pressure:	1018.40mb
Tester:	Jennifer Herrett	Power:	230VAC/50Hz
Configuration #	1	Job Site:	EV05

Test Specifications	Test Method
EN 61326-1:2006	IEC 61000-4-5:2005

Test Parameters			
Open Circuit Voltage, Risetime	1.2 us ± 30%	Short-Circuit Current Risetime	8 us ± 20%
Open Circuit Voltage, Time to 1/2 Value	50 us ± 20%	Time Between Successive Discharges	20 sec.
Short-Circut Current Time to 1/2 Value	20 us ± 20%		

Comments

None

EUT Operating Modes

Running a special routine for testing (wbrick_emi script)

Deviations from Test Standard

None

EUT Functions Monitored

Monitoring front LED and script counter for error.

Test Data

	COMMON MODE HIGH LINE TO GROUND (12 Impedance)					COMMON MODE LOW LINE TO GROUND (12 Impedance)					DIFFERENTIAL MODE HIGH LINE TO LOW LINE (2 Impedance)				
	0 Phase	90 Phase	180 Phase	270 Phase		0 Phase	90 Phase	180 Phase	270 Phase		0 Phase	90 Phase	180 Phase	270 Phase	
+0.5	o	o	o	o		o	o	o	o		o	o	o	o	
-0.5	o	o	o	o		o	o	o	o		o	o	o	o	
+1.0	o	o	o	o		o	o	o	o		-	-	-	-	
-1.0	o	o	o	o		o	o	o	o		-	-	-	-	
+2.0	-	-	-	-		-	-	-	-		-	-	-	-	
-2.0	-	-	-	-		-	-	-	-		-	-	-	-	
+4.0	-	-	-	-		-	-	-	-		-	-	-	-	
-4.0	-	-	-	-		-	-	-	-		-	-	-	-	

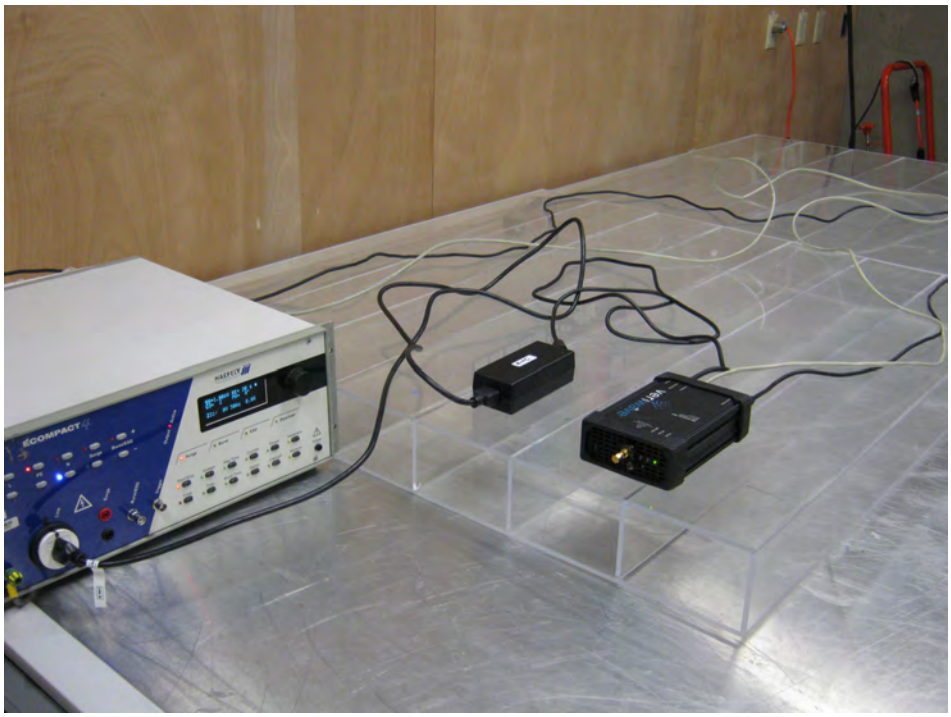
Item#	Phenomena Observed	
Key:	o=No EUT Response Observed	- = Not Tested

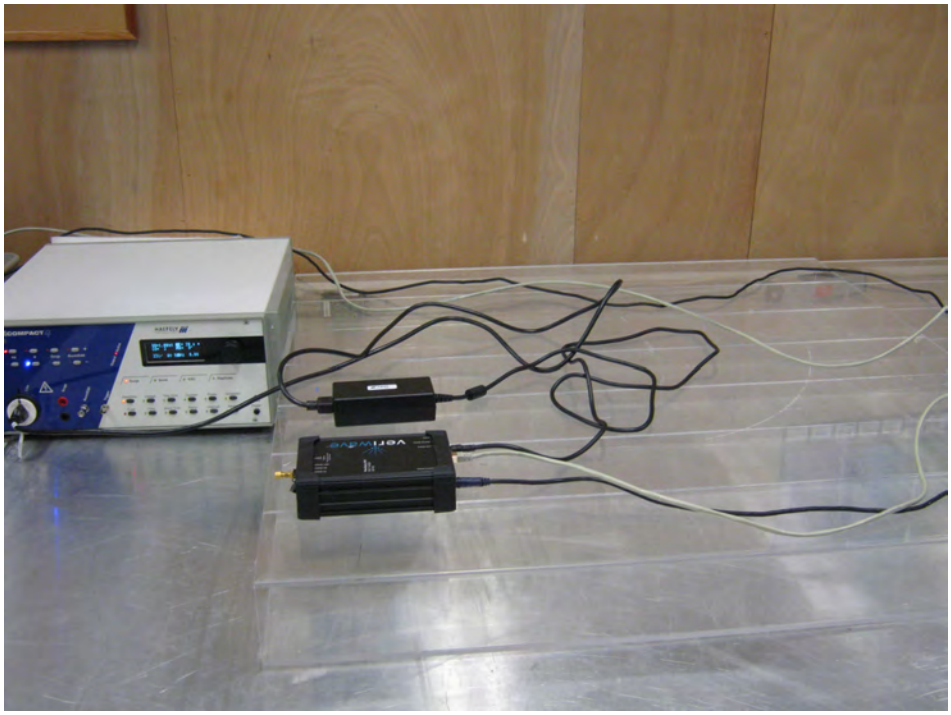
Test Equipment

ID	Description	Manufacturer	Model	Last Calibration	Interval
IBJ	EFT Surge VDI Test System	Haefely	ECOMPACT 4	8/3/2009	13 mo

Results	Meets NWEMC Performance Criteria 1
Criteria - The EUT exhibited no change in performance when operating as specified by the manufacturer.	

Surge Immunity Photos





Conducted Immunity Data

EUT:	WaveDeploy WiFi 1 port 1x1 SISO	Work Order:	VERW0031
Serial Number:	M32046-002-0037 Rev 2.1	Date:	3/5/2010
Customer:	Veriwave, Inc.	Temperature:	19 °C
Attendees:	None	Humidity:	37%
Project:	None	Barometric Pressure:	1018.40mb
Tester:	Jennifer Herrett	Power:	230VAC/50Hz
Configuration #	2	Job Site:	EV02

Test Specifications	Test Method
EN 61326-1:2006	IEC 61000-4-6:2008

Test Parameters					
Test Level	>= 3 VRMS	Spec. Level	3 VRMS	Mod. Freq.	1kHz
Start Freq	150kHz	Stop Freq.	80MHz	Mod. Type	AM
Step Size	1%	Dwell Time	1sec.	Mod. Depth	80%

Comments

None

EUT Operating Modes

Running a special routine for testing (wbrick_emi script)

Clock and Oscillators

The following clock/oscillator frequencies were inspected:,

Deviations from Test Standard

None

EUT Functions Monitored

Monitoring front LED and script counter for error.

Test Data

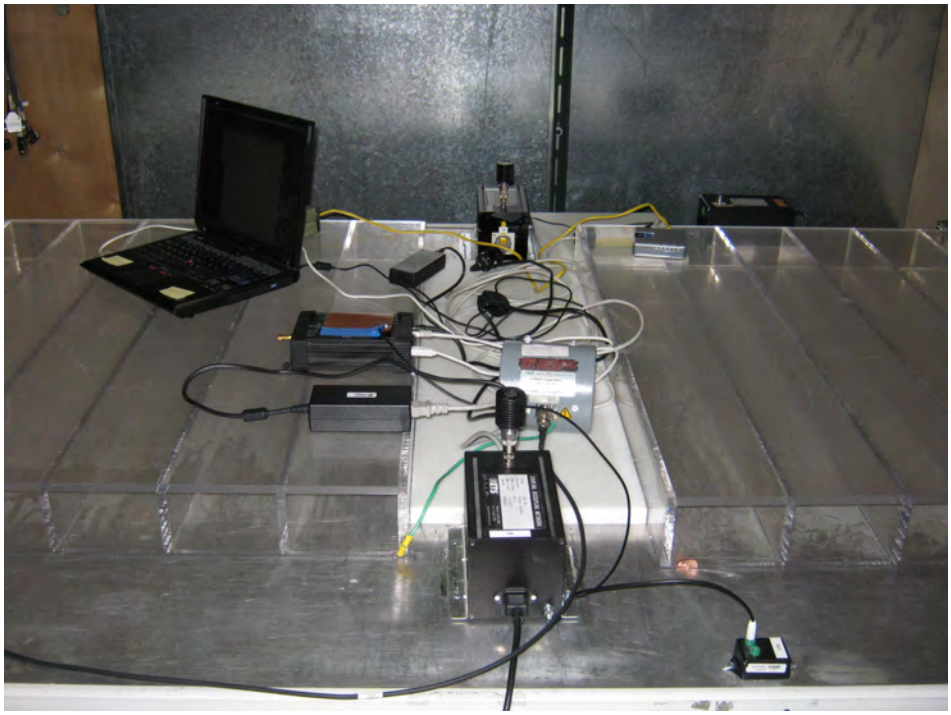
Frequency	Test Level (Volts RMS)	Cable Tested	Phenomena Observed / Comments
150kHz - 80MHz	Test Level	AC Power	No Anomalies Observed
150kHz - 80MHz	Test Level	USB	No Anomalies Observed
150kHz - 80MHz	Test Level	Ethernet	No Anomalies Observed

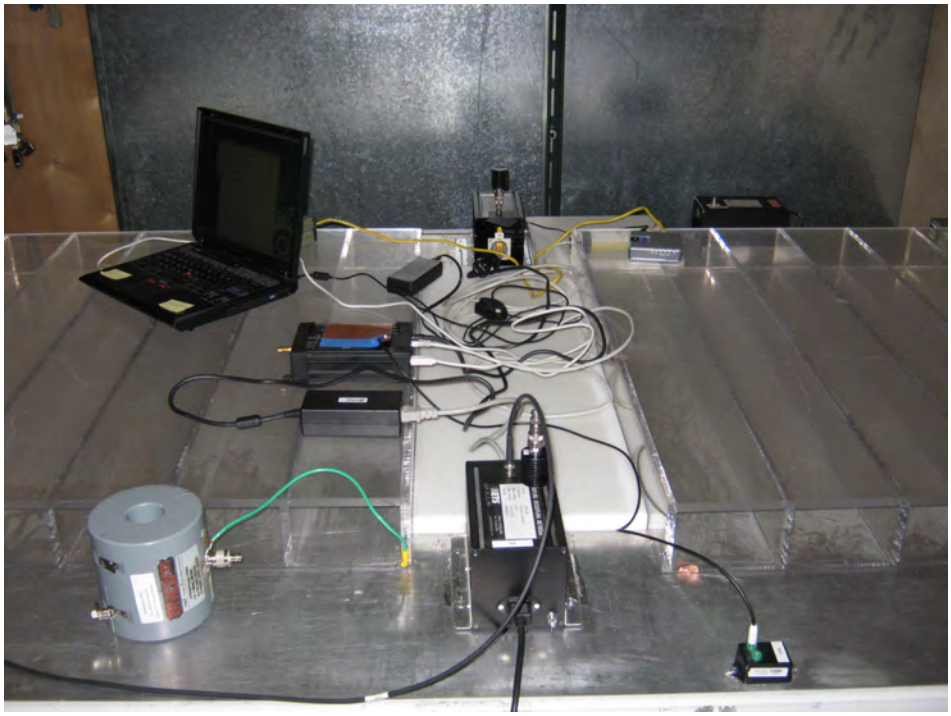
Test Equipment

ID	Description	Manufacturer	Model	Last Calibration	Interval
TME	Terminator	S.M. Electronics	ST6N-20	7/21/2009	13 mo
TMF	Terminator	S.M. Electronics	ST6N-20	7/21/2009	13 mo
IHN	Artifical Hand	NWEMC		10/10/2008	24 mo
IOA	CDN	EM Test	M1/32A	3/2/2010	13 mo
III	Injection Probe	Fischer Custom Communications	F-120-9A	NCR	0 mo
INH	CDN	Dressler	CDN-M2	3/2/2010	13 mo
INN	CDN	Dressler	CDN-M3	2/19/2009	13 mo
REQ	Attenuator, 6dB, 100W	SM Electronics	SA3N100-06F	10/28/2009	13 mo
IRT	Directional Coupler	Amplifier Research	DC2600A	4/17/2009	13 mo
TAC	RF Amplifier	Amplifier Research	150A100A	NCR	0 mo
SQJ	Power Meter	Amplifier Research	PM2002	3/26/2009	12 mo
SQK	Power Head	Amplifier Research	PH2000	4/17/2009	13 mo
SQM	Power Head	Amplifier Research	PH2000	4/17/2009	13 mo
TIB	Signal Generator	Rohde & Schwarz	SMC100A	6/30/2009	24 mo

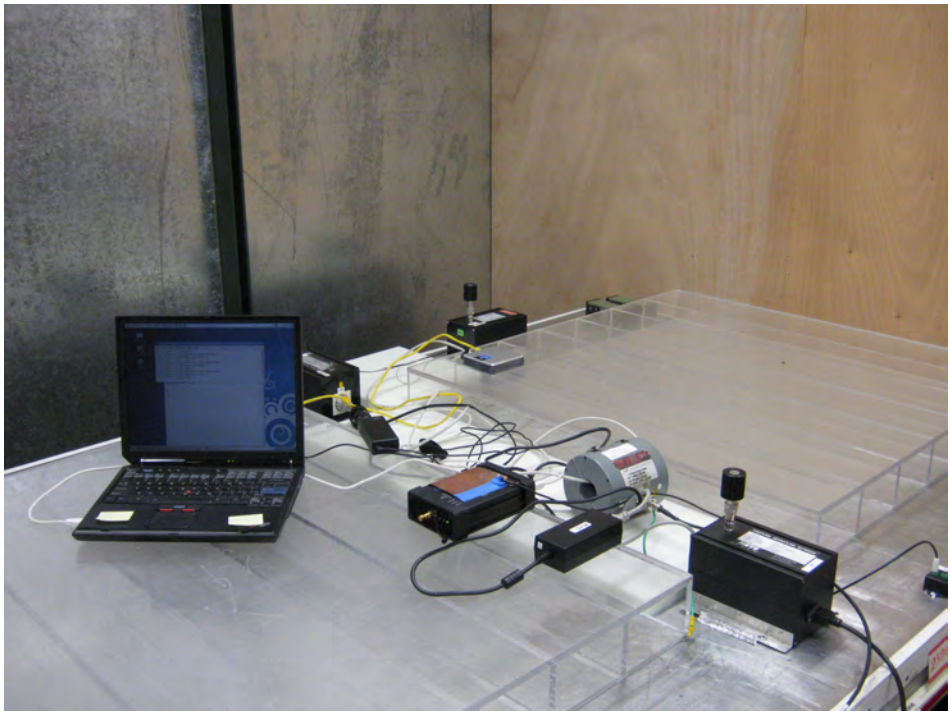
Results	Meets NWEMC Performance Criteria 1
Criteria - The EUT exhibited no change in performance when operating as specified by the manufacturer.	

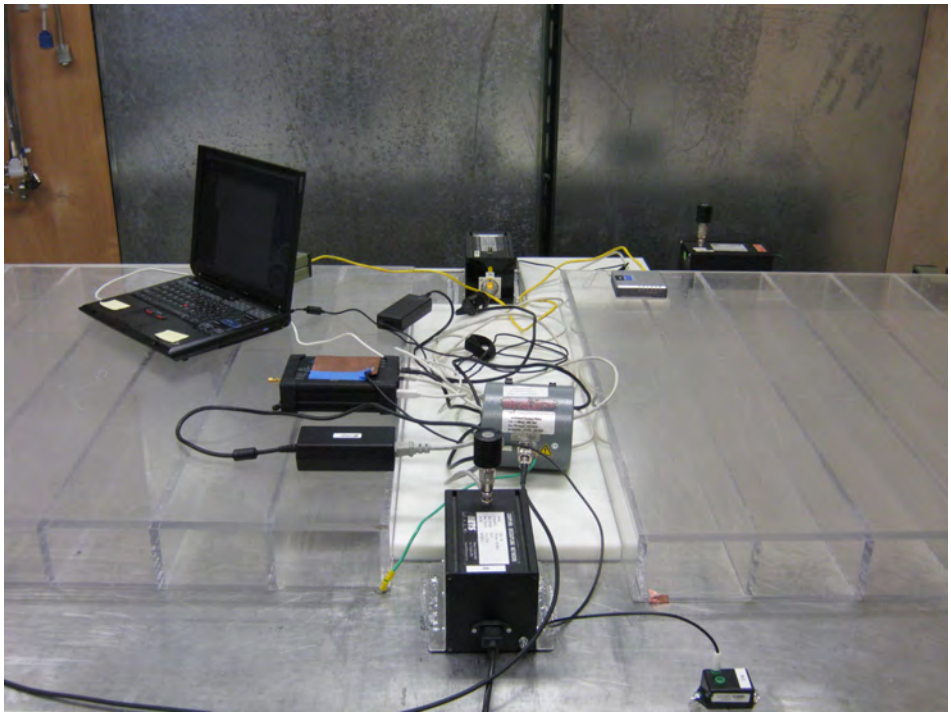
Conducted Immunity Photos





Conducted Immunity Photos





Voltage Dips and Interrupts Data

EUT:	WaveDeploy WiFi 1 port 1x1 SISO	Work Order:	VERW0031
Serial Number:	M32046-002-0037 Rev 2.1	Date:	3/5/2010
Customer:	Veriwave, Inc.	Temperature:	19 °C
Attendees:	None	Humidity:	37%
Project:	None	Barometric Pressure:	1018.40mb
Tester:	Jennifer Herrett	Power:	230VAC/60Hz
Configuration	1	Job Site:	EV05

Test Specifications	Test Method
EN 61326-1:2006	IEC 61000-4-11:2004

Comments
None
EUT Operating Modes
Running a special routine for testing (wbrick_emi script)
Deviations from Test Standard
None
EUT Functions Monitored
Monitoring front LED and script counter for error.

Results - Environmental Phenomena - Dip

Number of Events	Percent Reduction	Durations (mS)	Phase Angles Tested	Phenomena Observed (See Key Below)	Meets NWEMC Performance Criteria
1	100%	0.5 cycle	0°, 90°, 180°, 270°	o	1
1	100%	1 cycle	0°, 90°, 180°, 270°	o	1
1	30%	25/30 cycles	0°, 90°, 180°, 270°	A	3
1	100%	250/300 cycles	0°	-	N/A
Criteria - The EUT exhibited no change in performance when operating as specified by the manufacturer					

Test Data

Item#	Phase	Voltage	Phenomena Observed
A	All	230VAC	The EUT error during the voltage dips. The EUT came back in error after each dip.
Key:	o=No EUT Response Observed		

Test Equipment

ID	Description	Manufacturer	Model	Last Calibration	Interval
IBJ	EFT Surge VDI Test System	Haefely	ECOMPACT 4	8/3/2009	13 mo
THA	Programmable Power Supply	Hewlett-Packard	6843A	11/23/2009	13 mo

Results	Meets NWEMC Performance Criteria 3
Criteria - The EUT exhibited a change in performance when operating as specified by the manufacturer; intervention was required to recover.	

Voltage Dips and Interrupts Data

EUT:	WaveDeploy WiFi 1 port 1x1 SISO	Work Order:	VERW0031
Serial Number:	M32046-002-0037 Rev 2.1	Date:	3/5/2010
Customer:	Veriwave, Inc.	Temperature:	19 °C
Attendees:	None	Humidity:	37%
Project:	None	Barometric Pressure:	1018.40mb
Tester:	Jennifer Herrett	Power:	100VAC/60Hz
Configuration	1	Job Site:	EV05

Test Specifications	Test Method
EN 61326-1:2006	IEC 61000-4-11:2004

Comments
None
EUT Operating Modes
Running a special routine for testing (wbrick_emi script)
Deviations from Test Standard
None
EUT Functions Monitored
Monitoring front LED and script counter for error.

Results - Environmental Phenomena - Dip

Number of Events	Percent Reduction	Durations (mS)	Phase Angles Tested	Phenomena Observed (See Key Below)	Meets NWEMC Performance Criteria
1	100%	0.5 cycle	0°, 90°, 180°, 270°	o	1
1	100%	1 cycle	0°, 90°, 180°, 270°	o	1
1	30%	25/30 cycles	0°, 90°, 180°, 270°		3
1	100%	250/300 cycles	0°	-	N/A
Criteria - The EUT exhibited no change in performance when operating as specified by the manufacturer					

Test Data

Item#	Phase	Voltage	Phenomena Observed
A	All	100VAC	The EUT error during the voltage dips. The EUT reset after each dip.
Key:	o=No EUT Response Observed		

Test Equipment

ID	Description	Manufacturer	Model	Last Calibration	Interval
IBJ	EFT Surge VDI Test System	Haefely	ECOMPACT 4	8/3/2009	13 mo
THA	Programmable Power Supply	Hewlett-Packard	6843A	11/23/2009	13 mo

Results	Meets NWEMC Performance Criteria 3
Criteria - The EUT exhibited a change in performance when operating as specified by the manufacturer; intervention was required to recover.	

Voltage Dips and Interrupts Data

EUT:	WaveDeploy WiFi 1 port 1x1 SISO	Work Order:	VERW0031
Serial Number:	M32046-002-0037 Rev 2.1	Date:	3/5/2010
Customer:	Veriwave, Inc.	Temperature:	19 °C
Attendees:	Chris Gantenbein	Humidity:	37%
Project:	None	Barometric Pressure:	1018.40mb
Tester:	Jennifer Herrett	Power:	100VAC/50Hz
Configuration	1	Job Site:	EV05

Test Specifications	Test Method
EN 61326-1:2006	IEC 61000-4-11:2004

Comments
None
EUT Operating Modes
Running a special routine for testing (wbrick_emi script)
Deviations from Test Standard
None
EUT Functions Monitored
Monitoring front LED and script counter for error.

Results - Environmental Phenomena - Dip

Number of Events	Percent Reduction	Durations (mS)	Phase Angles Tested	Phenomena Observed (See Key Below)	Meets NWEMC Performance Criteria
1	100%	0.5 cycle	0°, 90°, 180°, 270°	o	1
1	100%	1 cycle	0°, 90°, 180°, 270°	o	1
1	30%	25/30 cycles	0°, 90°, 180°, 270°	A	3
1	100%	250/300 cycles	0°	-	N/A
Criteria - The EUT exhibited no change in performance when operating as specified by the manufacturer					

Test Data

Item#	Phase	Voltage	Phenomena Observed
A	0, 90	100VAC	The EUT error during the voltage dips. The EUT came back in error after every other dip.
Key:	o=No EUT Response Observed		

Test Equipment

ID	Description	Manufacturer	Model	Last Calibration	Interval
IBJ	EFT Surge VDI Test System	Haefely	ECOMPACT 4	8/3/2009	13 mo
THA	Programmable Power Supply	Hewlett-Packard	6843A	11/23/2009	13 mo

Results	Meets NWEMC Performance Criteria 3
Criteria - The EUT exhibited a change in performance when operating as specified by the manufacturer; intervention was required to recover.	

Voltage Dips and Interrupts Data

EUT:	WaveDeploy WiFi 1 port 1x1 SISO	Work Order:	VERW0031
Serial Number:	M32046-002-0037 Rev 2.1	Date:	3/5/2010
Customer:	Veriwave, Inc.	Temperature:	19 °C
Attendees:	None	Humidity:	37%
Project:	None	Barometric Pressure:	1018.40mb
Tester:	Jennifer Herrett	Power:	230VAC/50Hz
Configuration	1	Job Site:	EV05

Test Specifications	Test Method
EN 61326-1:2006	IEC 61000-4-11:2004

Comments
None
EUT Operating Modes
Running a special routine for testing (wbrick_emi script)
Deviations from Test Standard
None
EUT Functions Monitored
Monitoring front LED and script counter for error.

Results - Environmental Phenomena - Dip

Number of Events	Percent Reduction	Durations (mS)	Phase Angles Tested	Phenomena Observed (See Key Below)	Meets NWEMC Performance Criteria
1	100%	0.5 cycle	0°, 90°, 180°, 270°	o	1
1	100%	1 cycle	0°, 90°, 180°, 270°	o	1
1	30%	25/30 cycles	0°, 90°, 180°, 270°	A	3
1	100%	250/300 cycles	0°	B	3
Criteria - The EUT exhibited no change in performance when operating as specified by the manufacturer					

Test Data

Item#	Phase	Voltage	Phenomena Observed
A	All	230VAC	The EUT error during the voltage dips. The EUT came back in error after each dip and user intervention was
B	0	230VAC	The EUT powered off during the voltage interruption.
Key:	o=No EUT Response Observed		

Test Equipment

ID	Description	Manufacturer	Model	Last Calibration	Interval
IBJ	EFT Surge VDI Test System	Haefely	ECOMPACT 4	8/3/2009	13 mo
THA	Programmable Power Supply	Hewlett-Packard	6843A	11/23/2009	13 mo

Results	Meets NWEMC Performance Criteria 3	
Criteria - The EUT exhibited a change in performance when operating as specified by the manufacturer; intervention was required to recover.		

Voltage Dips and Interrupts Photos