

Andrews Cooper Technology

vLink

January 10, 2007

Report No. ANCT0001.2

Report Prepared By



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

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EMC Test Report



22975 NW Evergreen Parkway
Suite 400
Hillsboro, Oregon 97124

Certificate of Test
Issue Date: January 10, 2007
Andrews Cooper Technology
Model: vLink

Emissions				
Test Description	Specification	Test Method	Pass	Fail
Field Strength of Spurious Emissions	FCC 15.249:2006	ANSI C63.4:2003	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Field Strength of Fundamental	FCC 15.249:2006	ANSI C63.4:2003	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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:

Greg Kiemel, Director of Engineering

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.

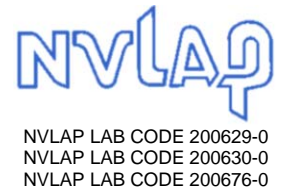
Product compliance is the responsibility of the client, therefore the tests and equipment modes of operation represented in this report were agreed upon by the client, prior to testing. This Report may only be duplicated in its entirety. The results of this test pertain only to the sample(s) tested, 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 89/336/EEC, ANSI C63.4, MIL-STD 461E, DO-160D and SAE J1113. Additionally, Northwest EMC is accredited by NVLAP to perform radio testing in accordance with the European Union R&TTE Directive 1999/5/EEC, the requirements of FCC, and the RSS radio standards for Industry Canada.



Industry Canada: Accredited by NVLAP for performance of Industry Canada RSS and ICES testing. Our Open Area Test Sites and certification chambers comply with RSS 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: C-2094 and R-1943, Sultan: R-871, C-1784 and R-1761*).



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.



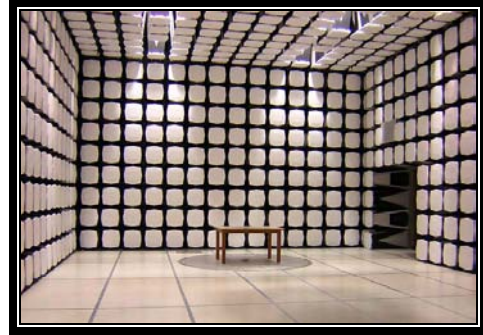
GOST: Northwest EMC, Inc. has been assessed and accredited by the Russian Certification bodies Certinform VNIINMASH, CERTINFO, SAMTES, and Federal CHEC, to perform EMC and Hygienic testing for Information Technology Products. As a result of their laboratory assessment, they will accept test results from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



SCOPE

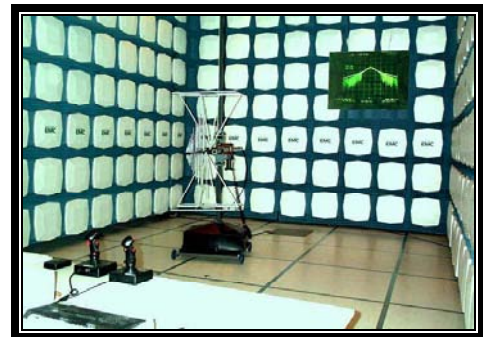
For details on the Scopes of our Accreditations, please visit:

<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:	Andrews Cooper Technology
Address:	2300 SW 2nd Street, Suite A
City, State, Zip:	McMinnville, OR 97128
Test Requested By:	Richard Kirby
Model:	vLink
First Date of Test:	December 28, 2006
Last Date of Test:	January 3, 2007
Receipt Date of Samples:	December 27, 2006
Equipment Design Stage:	Prototype
Equipment Condition:	No Damage

Information Provided by the Party Requesting the Test

Functional Description of the EUT (Equipment Under Test):

A 2.4 GHz MHz radio transmitter used in Skier speed measurement device. One piece mounts to ski and the other is worn by skier. There are three circuit boards with identical radio transceivers. There are only very small differences in the layout of the PCB trace antenna and almost no difference in the layout of the radio circuit. The radio schematics are identical.

Testing Objective:

Seeking TCB authorization under 15.249.

CONFIGURATION 1 ANCT0001

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
EUT - Left Shuttle	Andrews-Cooper Technology	vLink	FCC (LP) 2L

CONFIGURATION 2 ANCT0001

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
EUT - Right Shuttle	Andrews-Cooper Technology	vLink	FCC (LP) 2R

CONFIGURATION 3 ANCT0001

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
EUT - Remote	Andrews-Cooper Technology	vLink	7

Equipment modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	12/28/2006	Field Strength of Fundamental	Modified from delivered configuration. Supercedes all Previous Modifications.	Reduced power of radios to a firmware setting of 1. Modification done by Customer.	EUT remained at Northwest EMC following the test.
2	1/3/2007	Field Strength of Spurious Radiated 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.

MODES OF OPERATION

Remote unit transmitting with typical modulation, power setting = 1, low, mid, and high channels
 Right shuttle unit transmitting with typical modulation, power setting = 1, low, mid, and high channels
 Left shuttle unit transmitting with typical modulation, power setting = 1, low, mid, and high channels

POWER SETTINGS INVESTIGATED

Internal Battery

FREQUENCY RANGE INVESTIGATED

Start Frequency	2405 MHz	Stop Frequency	2470 MHz
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SAMPLE CALCULATIONS

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Spectrum Analyzer	Agilent	E4446A	AAT	12/7/2006	13
EV01 cables g,h,j			EVB	7/6/2006	13

MEASUREMENT BANDWIDTHS

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

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

MEASUREMENT UNCERTAINTY

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 antennas to be used with the EUT were tested. The EUT was transmitting and/or receiving while set at the lowest channel, a middle channel, and the highest channel available. While scanning, emissions from the EUT were maximized by rotating the EUT, adjusting the measurement antenna height and polarization, and manipulating the EUT antenna in 3 orthogonal planes (per ANSI C63.4:2003).

EUT:	vLink	Work Order:	ANCT0001
Serial Number:	FCC (LP) 2L	Date:	12/28/06
Customer:	Andrews Cooper Technology	Temperature:	22
Attendees:	None	Humidity:	33%
Project:	None	Barometric Pres.:	29.93
Tested by:	Rod Peloquin	Power:	Battery
		Job Site:	EV01

TEST SPECIFICATIONS	Test Method
FCC 15.249:2006	ANSI C63.4:2003

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

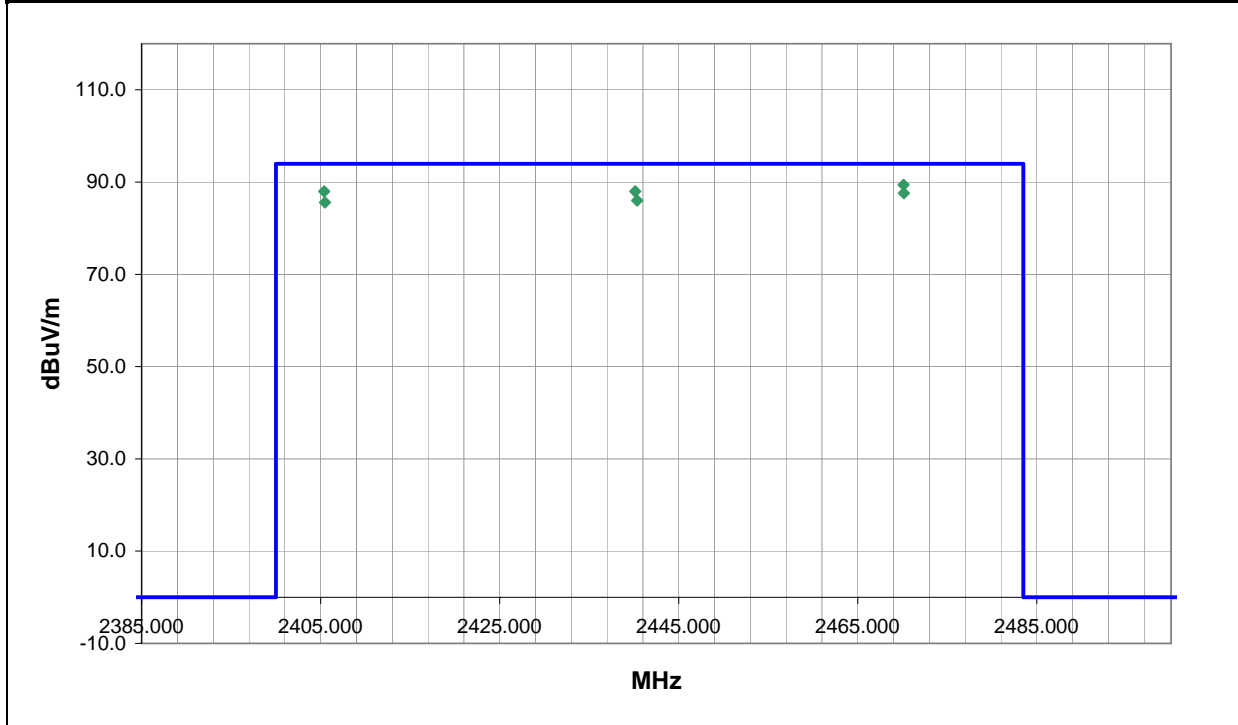
COMMENTS
Left Shuttle

EUT OPERATING MODES
Transmitting with typical modulation, power setting = 1

DEVIATIONS FROM TEST STANDARD
No deviations.

Run #	12	 Signature
Configuration #	1	
Results	Pass	

NVLAP Lab Code 200630-0



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)
2470.121	56.5	32.9	243.0	1.2	0.0	0.0	H-Horn	PK	0.0	89.4	94.0	-4.6
2405.388	55.5	32.5	239.0	1.2	0.0	0.0	H-Horn	PK	0.0	88.0	94.0	-6.0
2440.148	55.4	32.6	231.0	1.2	0.0	0.0	H-Horn	PK	0.0	88.0	94.0	-6.0
2470.155	54.7	32.9	202.0	1.7	0.0	0.0	V-Horn	PK	0.0	87.6	94.0	-6.4
2440.362	53.4	32.6	190.0	1.1	0.0	0.0	V-Horn	PK	0.0	86.0	94.0	-8.0
2405.488	53.1	32.5	334.0	1.0	0.0	0.0	V-Horn	PK	0.0	85.6	94.0	-8.4

EUT:	vLink	Work Order:	ANCT0001
Serial Number:	FCC (LP) 2R	Date:	12/28/06
Customer:	Andrews Cooper Technology	Temperature:	22
Attendees:	None	Humidity:	33%
Project:	None	Barometric Pres.:	29.93
Tested by:	Rod Peloquin	Power:	Battery
		Job Site:	EV01

TEST SPECIFICATIONS	Test Method
FCC 15.249:2006	ANSI C63.4:2003

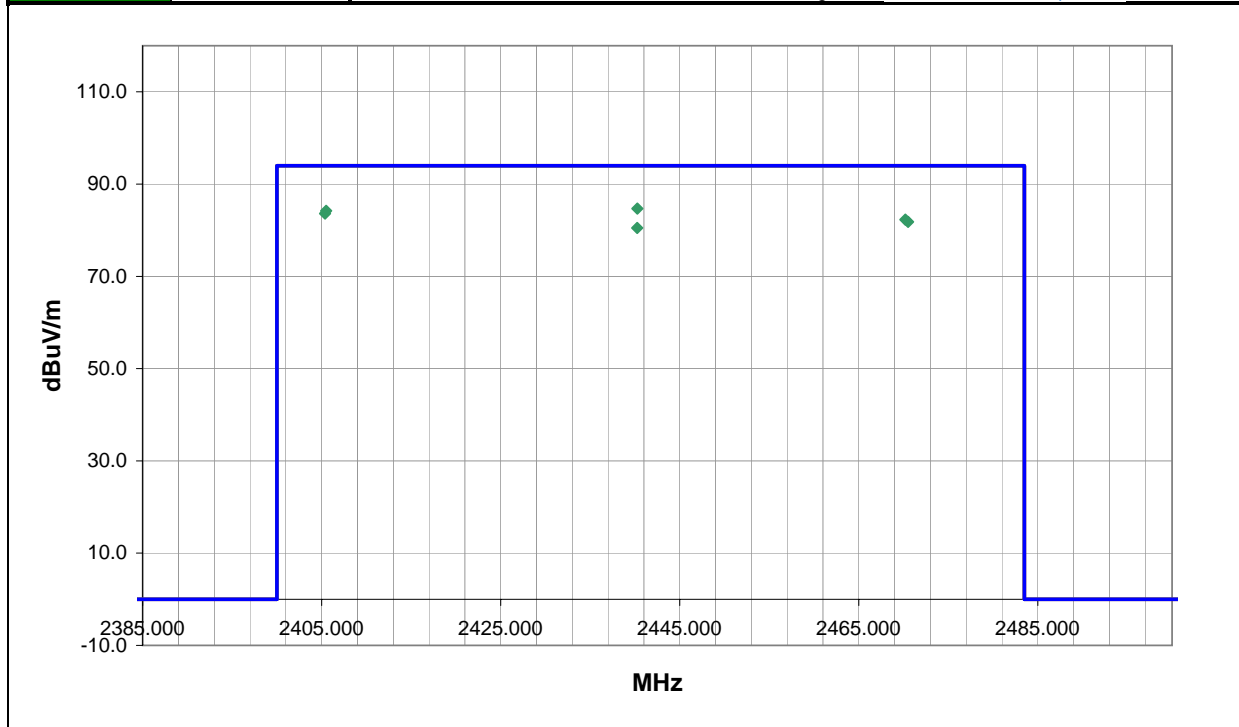
TEST PARAMETERS			
Antenna Height(s) (m)	1 - 4	Test Distance (m)	0

COMMENTS
Right shuttle

EUT OPERATING MODES
Transmitting with typical modulation, power setting = 1

DEVIATIONS FROM TEST STANDARD
No deviations.

Run #	13	NVLAP Lab Code 200630-0	Signature <i>Rodry L. Peloquin</i>
Configuration #	1		
Results	Pass		



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)
2440.262	52.1	32.6	107.0	1.2	0.0	0.0	H-Horn	PK	0.0	84.7	94.0	-9.3
2405.502	51.7	32.5	108.0	1.2	0.0	0.0	H-Horn	PK	0.0	84.2	94.0	-9.8
2405.372	51.1	32.5	317.0	1.1	0.0	0.0	V-Horn	PK	0.0	83.6	94.0	-10.4
2470.208	49.4	32.9	124.0	1.1	0.0	0.0	H-Horn	PK	0.0	82.3	94.0	-11.7
2470.515	48.9	32.9	107.0	1.1	0.0	0.0	H-Horn	PK	0.0	81.8	94.0	-12.2
2440.242	47.9	32.6	331.0	1.1	0.0	0.0	V-Horn	PK	0.0	80.5	94.0	-13.5

EUT: vLink	Work Order: ANCT0001
Serial Number: 7	Date: 12/28/06
Customer: Andrews Cooper Technology	Temperature: 22
Attendees: Richard Kirby	Humidity: 33%
Project: None	Barometric Pres.: 29.93
Tested by: Rod Peloquin	Power: Battery
	Job Site: EV01

TEST SPECIFICATIONS	Test Method
FCC 15.249:2006	ANSI C63.4:2003

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

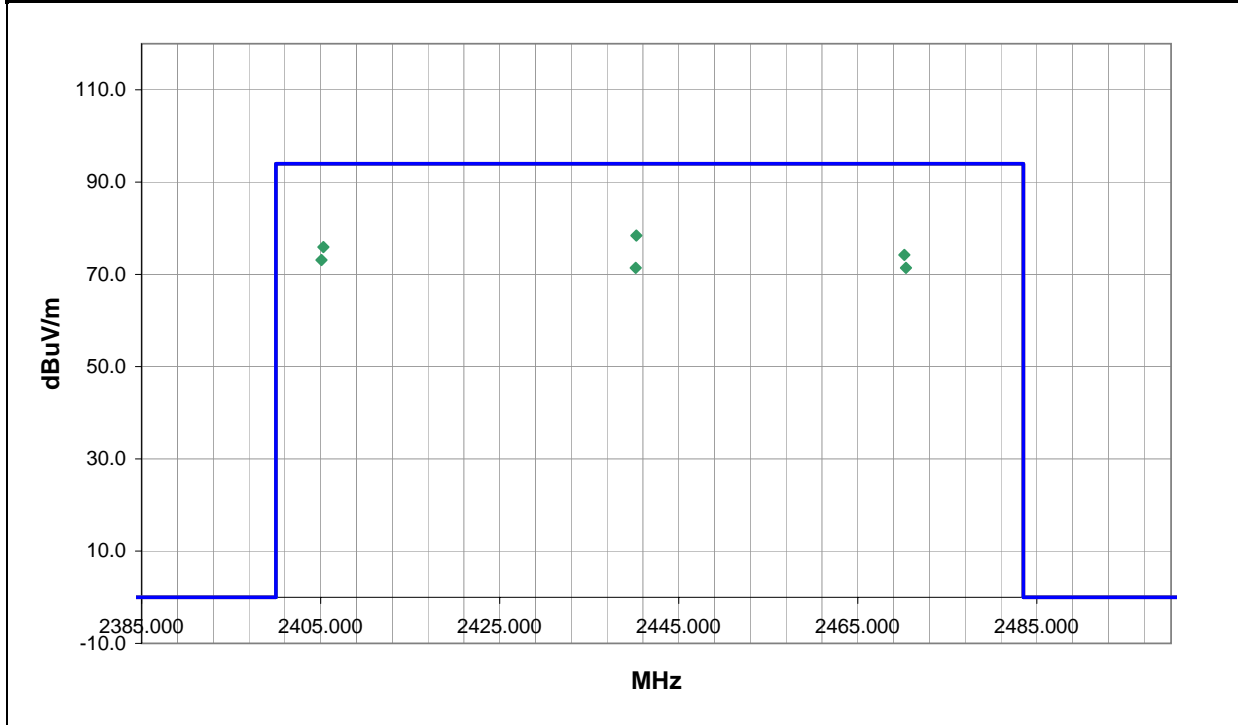
COMMENTS
Remote

EUT OPERATING MODES
Transmitting with typical modulation, power setting = 1

DEVIATIONS FROM TEST STANDARD
No deviations.

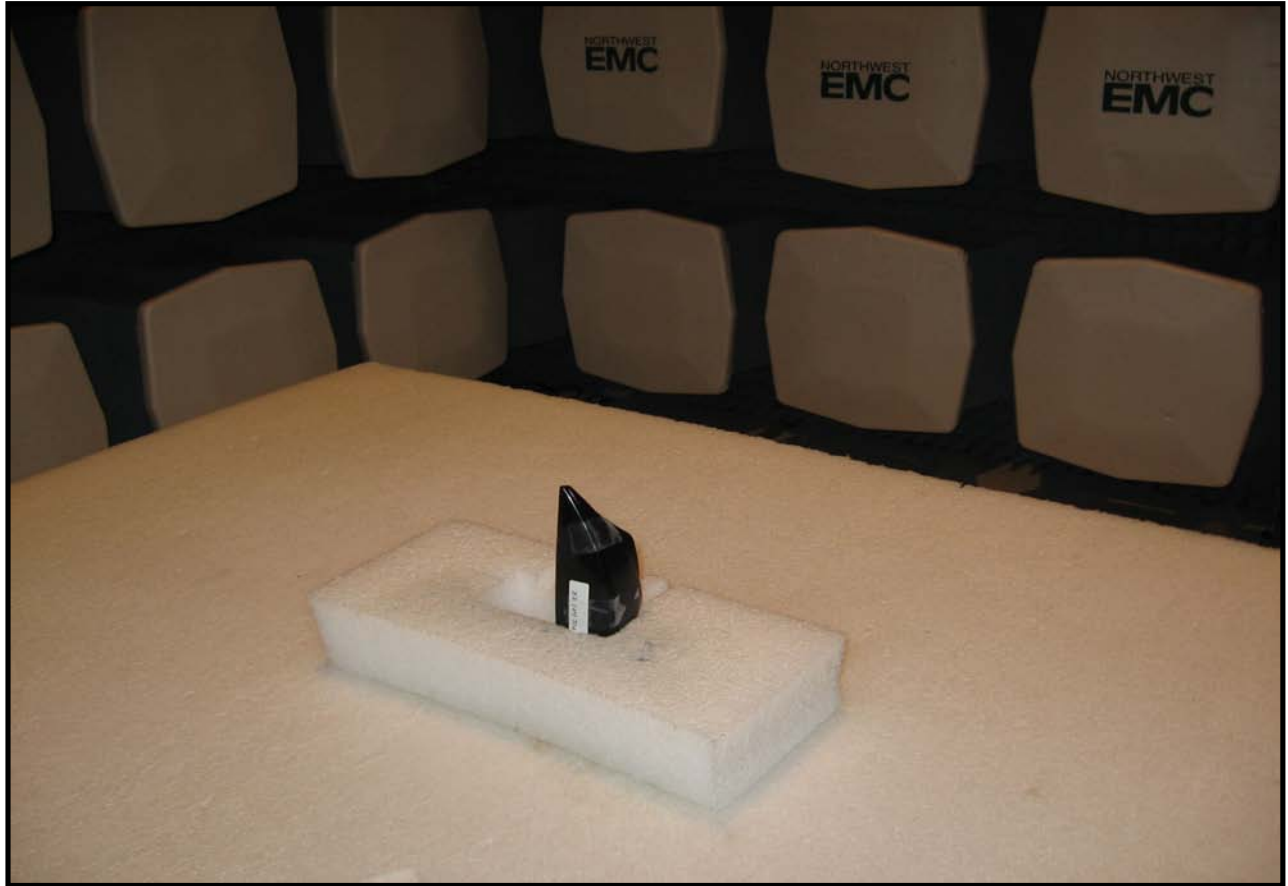
Run #	14	<i>Rod Peloquin</i> Signature
Configuration #	1	
Results	Pass	

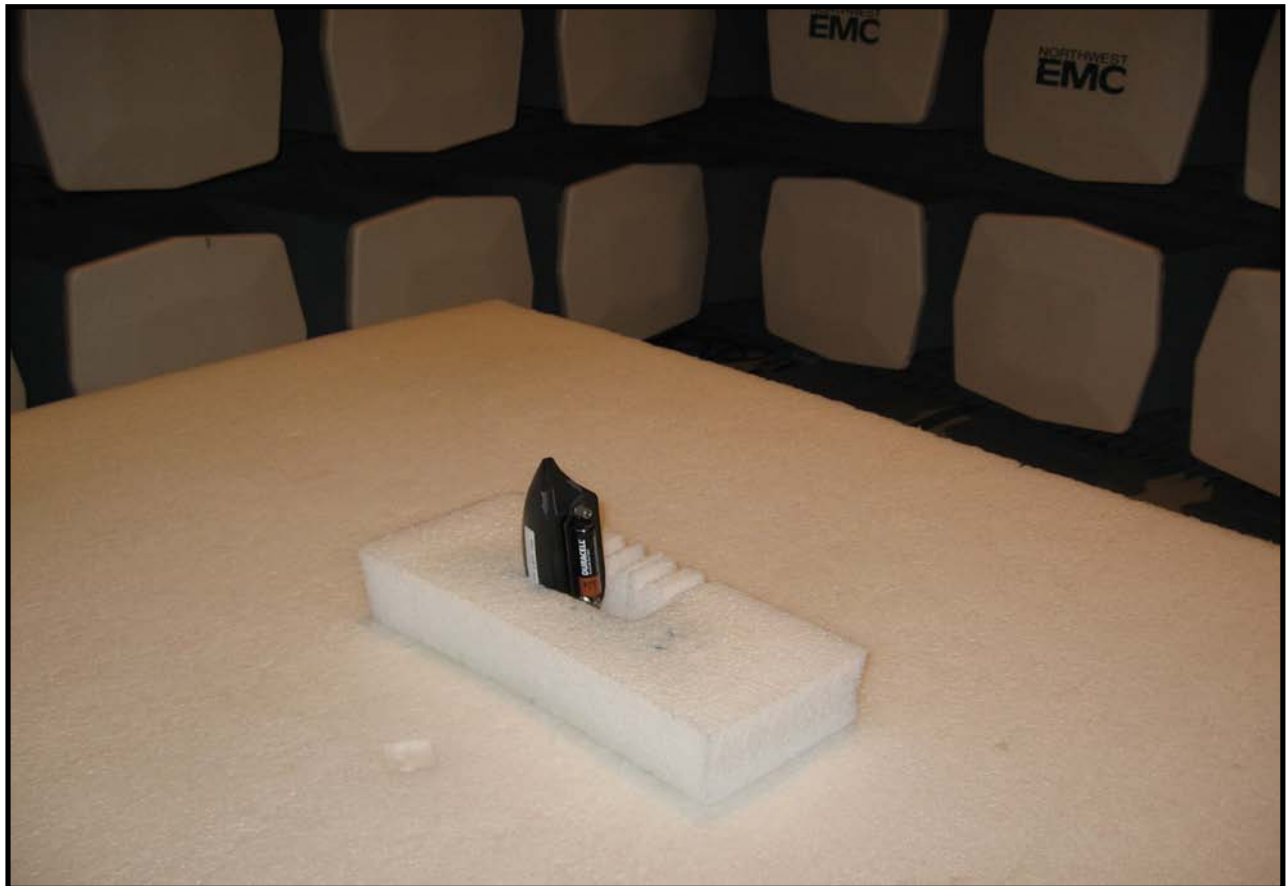
NVLAP Lab Code 200630-0



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)
2440.265	45.8	32.6	70.0	1.3	3.0	0.0	H-Horn	PK	0.0	78.4	94.0	-15.6
2405.302	43.4	32.5	32.0	1.2	3.0	0.0	H-Horn	PK	0.0	75.9	94.0	-18.1
2470.205	41.3	32.9	32.0	1.2	3.0	0.0	H-Horn	PK	0.0	74.2	94.0	-19.8
2405.085	40.6	32.5	322.0	1.2	3.0	0.0	V-Horn	PK	0.0	73.1	94.0	-20.9
2440.195	38.8	32.6	337.0	1.9	3.0	0.0	V-Horn	PK	0.0	71.4	94.0	-22.6
2470.375	38.5	32.9	319.0	1.1	3.0	0.0	V-Horn	PK	0.0	71.4	94.0	-22.6











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

Remote unit transmitting with typical modulation, power setting = 1, low, mid, and high channels
 Right shuttle unit transmitting with typical modulation, power setting = 1, low, mid, and high channels
 Left shuttle unit transmitting with typical modulation, power setting = 1, low, mid, and high channels

POWER SETTINGS INVESTIGATED

Battery

FREQUENCY RANGE INVESTIGATED

Start Frequency	30 MHz	Stop Frequency	25 GHz
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SAMPLE CALCULATIONS

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Spectrum Analyzer	Agilent	E4446A	AAT	12/7/2006	13
Antenna, Biconilog	EMCO	3141	AXE	12/28/2005	24
Pre-Amplifier	Miteq	AM-1616-1000	AOL	12/29/2006	13
Pre-Amplifier	Miteq	AMF-4D-010100-24-10P	APW	12/29/2006	13
Antenna, Horn	EMCO	3115	AHC	8/24/2006	12
Antenna, Horn	EMCO	3160-08	AHK	NCR	0
Pre-Amplifier	Miteq	AMF-4D-005180-24-10P	APC	5/12/2006	13
Antenna, Horn	EMCO	3160-09	AHG	NCR	0
Pre-Amplifier	Miteq	JSD4-18002600-26-8P	APU	3/23/2006	13
EV01 cables c,g, h			EVA	12/29/2006	13
EV01 cables g,h,j			EVB	12/29/2006	13
EV01 Cable D			EVD	3/30/2006	13
EV01 cables g,h,l			EVF	4/17/2006	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

The antennas to be used with the EUT were tested. The EUT was transmitting and receiving while set at the lowest channel, a middle channel, and the highest channel available. While scanning, emissions from the EUT were maximized by rotating the EUT, adjusting the measurement antenna height and polarization, and manipulating the EUT antenna in 3 orthogonal planes (per ANSI C63.4:2003). A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

EUT: vLink	Work Order: ANCT0001
Serial Number: FCC (lp) R2	Date: 12/28/06
Customer: Andrews Cooper Technology	Temperature: 20
Attendees: None	Humidity: 29%
Project: None	Barometric Pres.: 30.51
Tested by: Rod Peloquin	Power: Battery
	Job Site: EV01

TEST SPECIFICATIONS		Test Method
FCC 15.249:2006:		ANSI C63.4:2003:

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

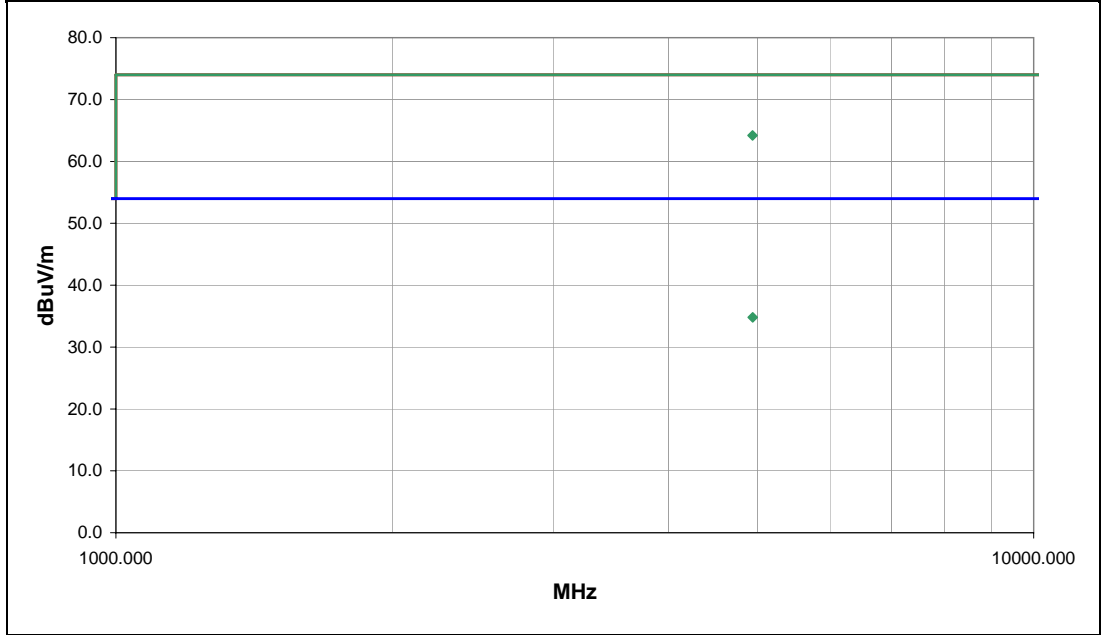
COMMENTS
Left shuttle

EUT OPERATING MODES
Transmitting with typical modulation, High channel, power setting = 1

DEVIATIONS FROM TEST STANDARD
No deviations.

Run #	7	 Signature
Configuration #	1	
Results	Pass	

NVLAP Lab Code 200630-0



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
4940.286	55.3	8.9	190.0	1.2	3.0	0.0	H-Horn	PK	0.0	64.2	74.0	-9.8	Power setting = 1
4940.582	25.9	8.9	190.0	1.2	3.0	0.0	H-Horn	AV	0.0	34.8	54.0	-19.2	Power setting = 1

EUT: vLink	Work Order: ANCT0001
Serial Number: FCC (ip) 2L	Date: 12/28/06
Customer: Andrews Cooper Technology	Temperature: 22
Attendees: None	Humidity: 33%
Project: None	Barometric Pres.: 29.93
Tested by: Rod Peloquin	Power: Battery
	Job Site: EV01

TEST SPECIFICATIONS	Test Method
FCC 15.249:2006:	ANSI C63.4:2003:

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

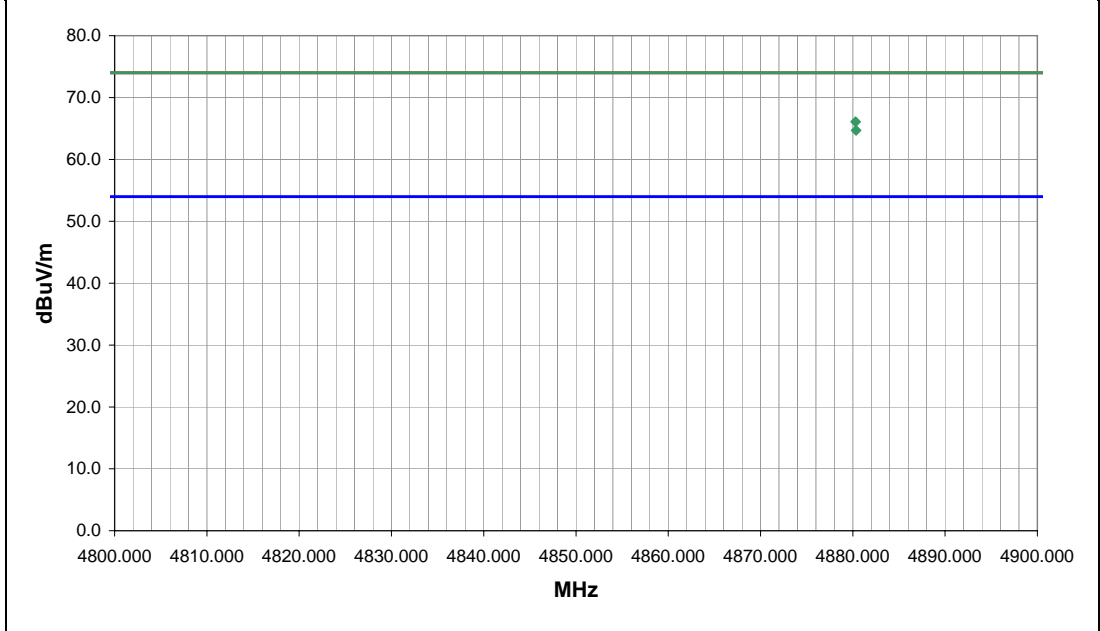
COMMENTS
Left shuttle

EUT OPERATING MODES
Transmitting with typical modulation, channel 4 (mid channel), , power setting = 1

DEVIATIONS FROM TEST STANDARD
No deviations.

Run #	11	 Signature
Configuration #	1	
Results	Pass	

NVLAP Lab Code 200630-0



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
4880.296	57.5	8.6	181.0	1.2	3.0	0.0	H-Horn	PK	0.0	66.1	74.0	-7.9	Power Setting = 1
4880.347	56.1	8.6	169.0	1.2	3.0	0.0	V-Horn	PK	0.0	64.7	74.0	-9.3	Power Setting = 1

EUT: vLink	Work Order: ANCT0001
Serial Number: 7	Date: 01/03/07
Customer: Andrews Cooper Technology	Temperature: 22
Attendees: None	Humidity: 33%
Project: None	Barometric Pres.: 29.93
Tested by: Rod Peloquin	Power: Battery
	Job Site: EV01

TEST SPECIFICATIONS	Test Method
FCC 15.249:2006:	ANSI C63.4:2003:

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

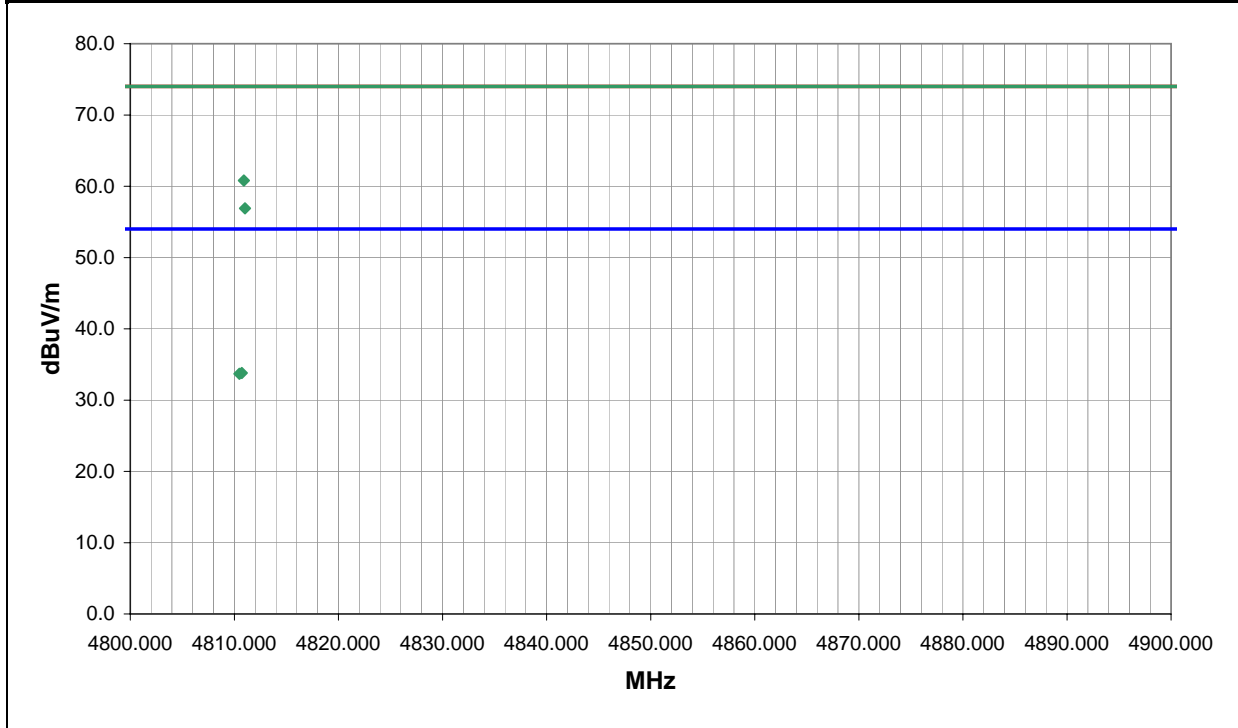
COMMENTS
Remote. Audio earbud installed in audio jack

EUT OPERATING MODES
Transmitting with typical modulation, Low channel, power setting = 1

DEVIATIONS FROM TEST STANDARD
No deviations.

Run #	15	 Signature
Configuration #	3	
Results	Pass	

NVLAP Lab Code 200630-0



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)
4810.911	51.5	9.3	331.0	1.7	3.0	0.0	H-Horn	PK	0.0	60.8	74.0	-13.2
4811.028	47.6	9.3	113.0	2.6	3.0	0.0	V-Horn	PK	0.0	56.9	74.0	-17.1
4810.721	24.5	9.3	331.0	1.7	3.0	0.0	H-Horn	AV	0.0	33.8	54.0	-20.2
4810.483	24.4	9.3	113.0	2.6	3.0	0.0	V-Horn	AV	0.0	33.7	54.0	-20.3

EUT:	vLink	Work Order:	ANCT0001
Serial Number:	FCC (lp) 2L	Date:	01/03/07
Customer:	Andrews Cooper Technology	Temperature:	22
Attendees:	None	Humidity:	33%
Project:	None	Barometric Pres.:	29.93
Tested by:	Rod Peloquin	Power:	Battery
		Job Site:	EV01

TEST SPECIFICATIONS	Test Method
FCC 15.249:2006:	ANSI C63.4:2003:

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

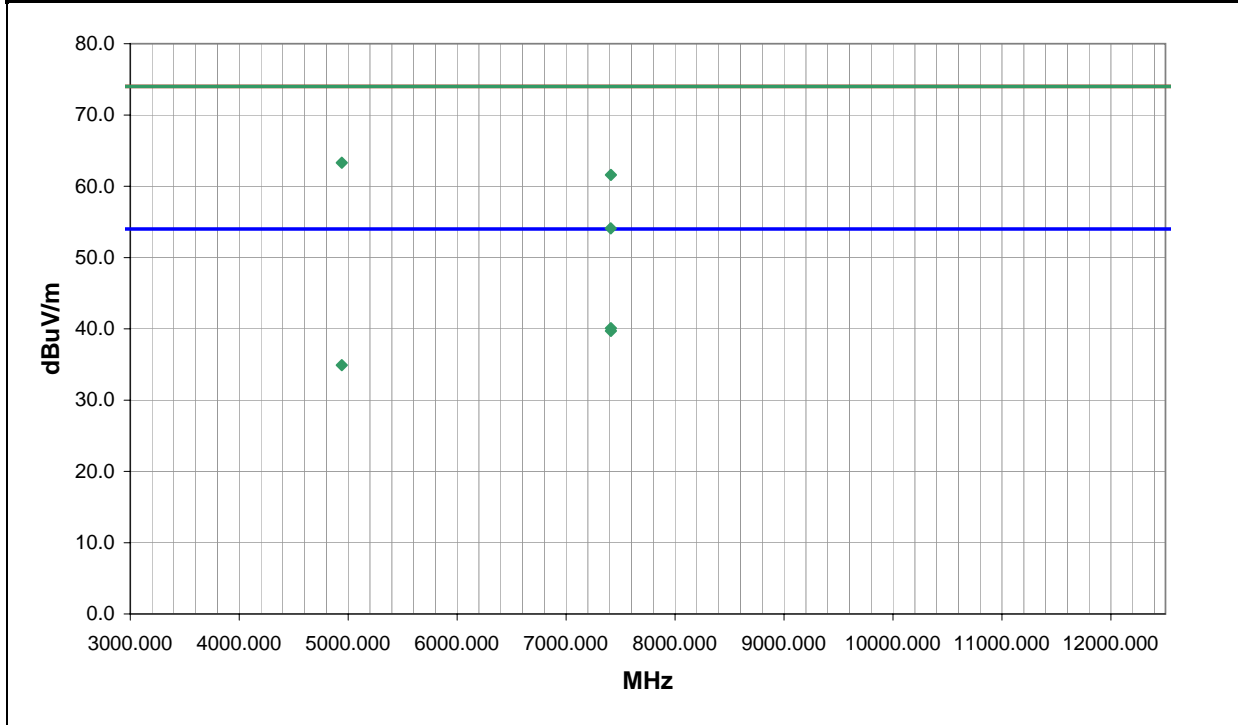
COMMENTS
Left shuttle

EUT OPERATING MODES
Transmitting with typical modulation, high channel, power setting = 1

DEVIATIONS FROM TEST STANDARD
No deviations.

Run #	16	 Signature
Configuration #	1	
Results	Pass	

NVLAP Lab Code 200630-0



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)
4940.385	53.3	10.0	192.0	1.1	3.0	0.0	V-Horn	PK	0.0	63.3	74.0	-10.7
7410.765	46.2	15.4	1.0	1.1	3.0	0.0	V-Horn	PK	0.0	61.6	74.0	-12.4
7410.785	24.7	15.4	1.0	1.1	3.0	0.0	V-Horn	AV	0.0	40.1	54.0	-13.9
7411.215	24.3	15.4	235.0	1.2	3.0	0.0	H-Horn	AV	0.0	39.7	54.0	-14.3
4940.600	24.9	10.0	192.0	1.1	3.0	0.0	V-Horn	AV	0.0	34.9	54.0	-19.1
7409.990	38.7	15.4	235.0	1.2	3.0	0.0	H-Horn	PK	0.0	54.1	74.0	-19.9

EUT: vLink	Work Order: ANCT0001
Serial Number: FCC (lp) L2	Date: 01/03/07
Customer: Andrews Cooper Technology	Temperature: 22
Attendees: None	Humidity: 33%
Project: None	Barometric Pres.: 29.93
Tested by: Rod Peloquin	Power: Battery
	Job Site: EV01

TEST SPECIFICATIONS	Test Method
FCC 15.249:2006:	ANSI C63.4:2003:

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

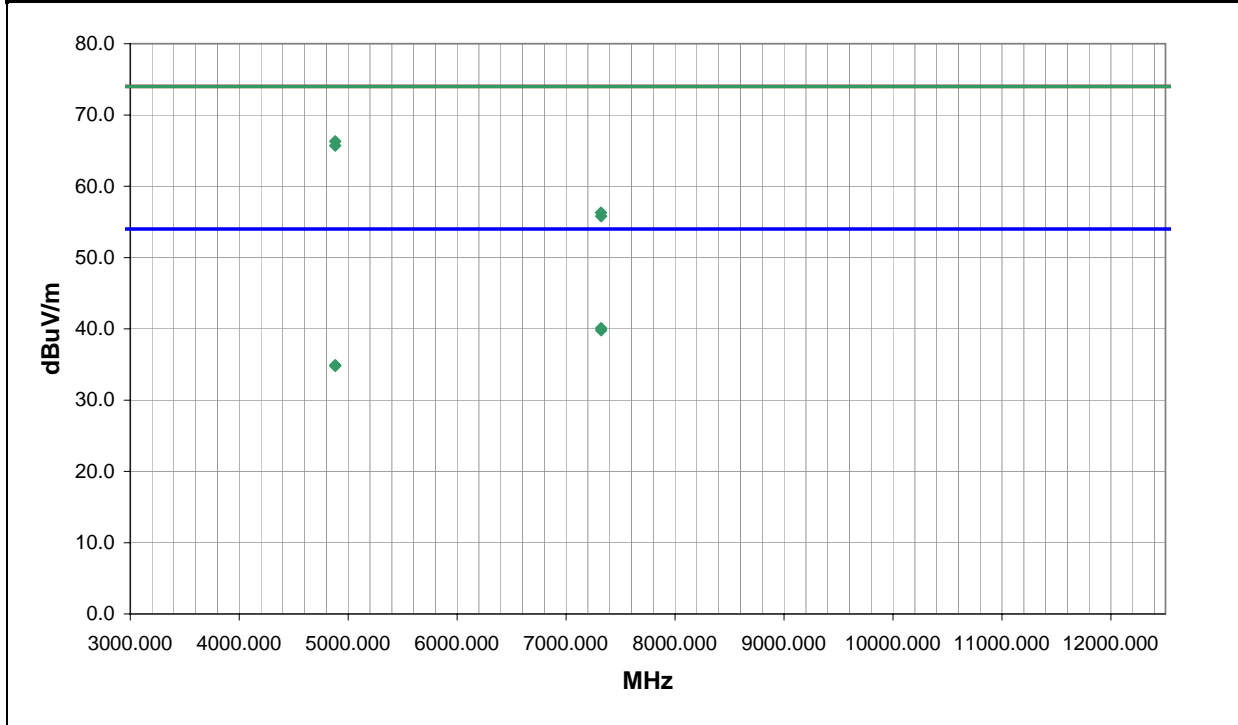
COMMENTS
Left shuttle

EUT OPERATING MODES
Transmitting typical modulation, mid channel, power setting = 1

DEVIATIONS FROM TEST STANDARD
No deviations.

Run #	17	 Signature
Configuration #	1	
Results	Pass	

NVLAP Lab Code 200630-0



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)
4880.360	56.8	9.5	164.0	1.1	3.0	0.0	H-Horn	PK	0.0	66.3	74.0	-7.7
4880.310	56.2	9.5	15.0	1.0	3.0	0.0	V-Horn	PK	0.0	65.7	74.0	-8.3
7320.895	24.9	15.2	340.0	1.2	3.0	0.0	V-Horn	AV	0.0	40.1	54.0	-13.9
7320.715	24.6	15.2	247.0	1.0	3.0	0.0	H-Horn	AV	0.0	39.8	54.0	-14.2
7320.495	41.1	15.2	340.0	1.2	3.0	0.0	V-Horn	PK	0.0	56.3	74.0	-17.7
7321.450	40.6	15.2	247.0	1.0	3.0	0.0	H-Horn	PK	0.0	55.8	74.0	-18.2
4880.790	25.4	9.5	164.0	1.1	3.0	0.0	H-Horn	AV	0.0	34.9	54.0	-19.1
4880.560	25.3	9.5	15.0	1.0	3.0	0.0	V-Horn	AV	0.0	34.8	54.0	-19.2

EUT:	vLink	Work Order:	ANCT0001
Serial Number:	FCC (lp) L2	Date:	01/03/07
Customer:	Andrews Cooper Technology	Temperature:	22
Attendees:	None	Humidity:	33%
Project:	None	Barometric Pres.:	29.93
Tested by:	Rod Peloquin	Power:	Battery
		Job Site:	EV01

TEST SPECIFICATIONS	Test Method
FCC 15.249:2006:	ANSI C63.4:2003:

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

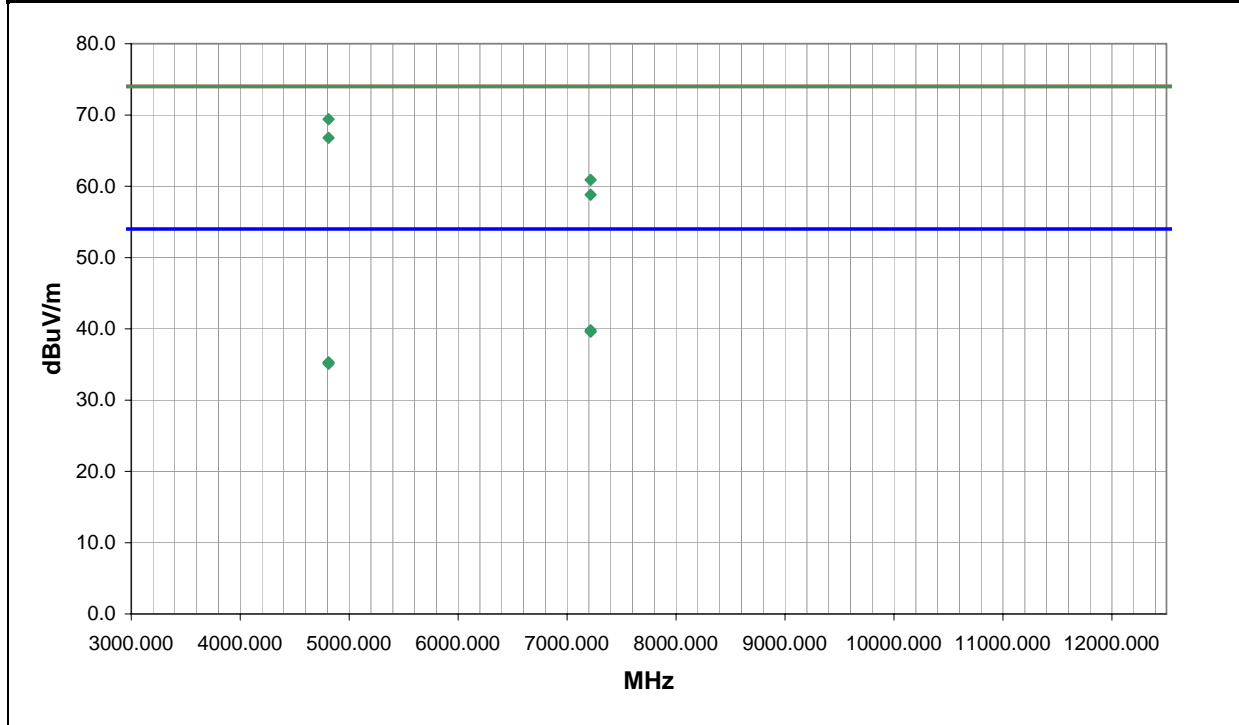
COMMENTS
Left shuttle

EUT OPERATING MODES
Transmitting typical modulation, low channel, power setting = 1

DEVIATIONS FROM TEST STANDARD
No deviations.

Run #	18	 Signature
Configuration #	1	
Results	Pass	

NVLAP Lab Code 200630-0



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)
4810.275	60.1	9.3	185.0	1.1	3.0	0.0	H-Horn	PK	0.0	69.4	74.0	-4.6
4810.800	57.5	9.3	12.0	1.0	3.0	0.0	V-Horn	PK	0.0	66.8	74.0	-7.2
7215.580	46.3	14.6	258.0	1.2	3.0	0.0	H-Horn	PK	0.0	60.9	74.0	-13.1
7216.000	25.2	14.6	335.0	1.0	3.0	0.0	V-Horn	AV	0.0	39.8	54.0	-14.2
7216.070	25.0	14.6	258.0	1.2	3.0	0.0	H-Horn	AV	0.0	39.6	54.0	-14.4
7215.640	44.2	14.6	335.0	1.0	3.0	0.0	V-Horn	PK	0.0	58.8	74.0	-15.2
4810.425	26.0	9.3	12.0	1.0	3.0	0.0	V-Horn	AV	0.0	35.3	54.0	-18.7
4810.395	25.8	9.3	185.0	1.1	3.0	0.0	H-Horn	AV	0.0	35.1	54.0	-18.9

EUT: vLink	Work Order: ANCT0001
Serial Number: FCC (lp) R2	Date: 01/03/07
Customer: Andrews Cooper Technology	Temperature: 22
Attendees: None	Humidity: 33%
Project: None	Barometric Pres.: 29.93
Tested by: Rod Peloquin	Power: Battery
	Job Site: EV01

TEST SPECIFICATIONS	Test Method
FCC 15.249:2006:	ANSI C63.4:2003:

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

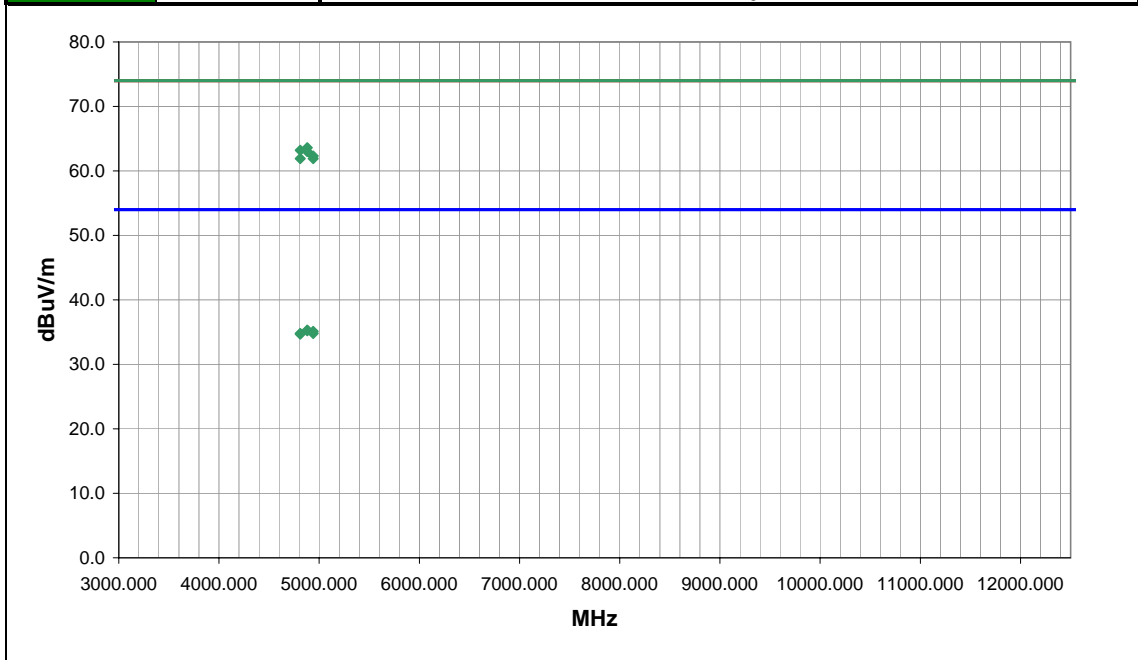
COMMENTS
Right shuttle

EUT OPERATING MODES
Transmitting typical modulation, power setting = 1

DEVIATIONS FROM TEST STANDARD
No deviations.

Run #	19	 Signature
Configuration #	2	
Results	Pass	

NVLAP Lab Code 200630-0



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
4881.084	54.1	9.5	156.0	1.1	3.0	0.0	V-Horn	PK	0.0	63.6	74.0	-10.4	Mid channel
4810.530	53.9	9.3	139.0	1.0	3.0	0.0	V-Horn	PK	0.0	63.2	74.0	-10.8	Low channel
4880.726	53.5	9.5	154.0	1.1	3.0	0.0	H-Horn	PK	0.0	63.0	74.0	-11.0	Mid channel
4941.013	52.3	10.0	150.0	1.1	3.0	0.0	V-Horn	PK	0.0	62.3	74.0	-11.7	High channel
4940.388	51.9	10.0	166.0	1.1	3.0	0.0	H-Horn	PK	0.0	61.9	74.0	-12.1	High channel
4811.042	52.6	9.3	136.0	1.1	3.0	0.0	H-Horn	PK	0.0	61.9	74.0	-12.1	Low channel
4880.838	25.8	9.5	154.0	1.1	3.0	0.0	H-Horn	AV	0.0	35.3	54.0	-18.7	Mid channel
4880.547	25.7	9.5	156.0	1.1	3.0	0.0	V-Horn	AV	0.0	35.2	54.0	-18.8	Mid channel
4940.580	25.1	10.0	150.0	1.1	3.0	0.0	V-Horn	AV	0.0	35.1	54.0	-18.9	High channel
4810.613	25.5	9.3	136.0	1.1	3.0	0.0	H-Horn	AV	0.0	34.8	54.0	-19.2	Low channel
4940.763	24.8	10.0	166.0	1.1	3.0	0.0	H-Horn	AV	0.0	34.8	54.0	-19.2	High channel
4810.730	25.4	9.3	139.0	1.0	3.0	0.0	V-Horn	AV	0.0	34.7	54.0	-19.3	Low channel

EUT: vLink		Work Order: ANCT0001
Serial Number: FCC (lp) L2		Date: 01/03/07
Customer: Andrews Cooper Technology		Temperature: 22
Attendees: None		Humidity: 33%
Project: None		Barometric Pres.: 29.93
Tested by: Rod Peloquin	Power: Battery	Job Site: EV01

TEST SPECIFICATIONS	Test Method
FCC 15.249:2006:	ANSI C63.4:2003

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

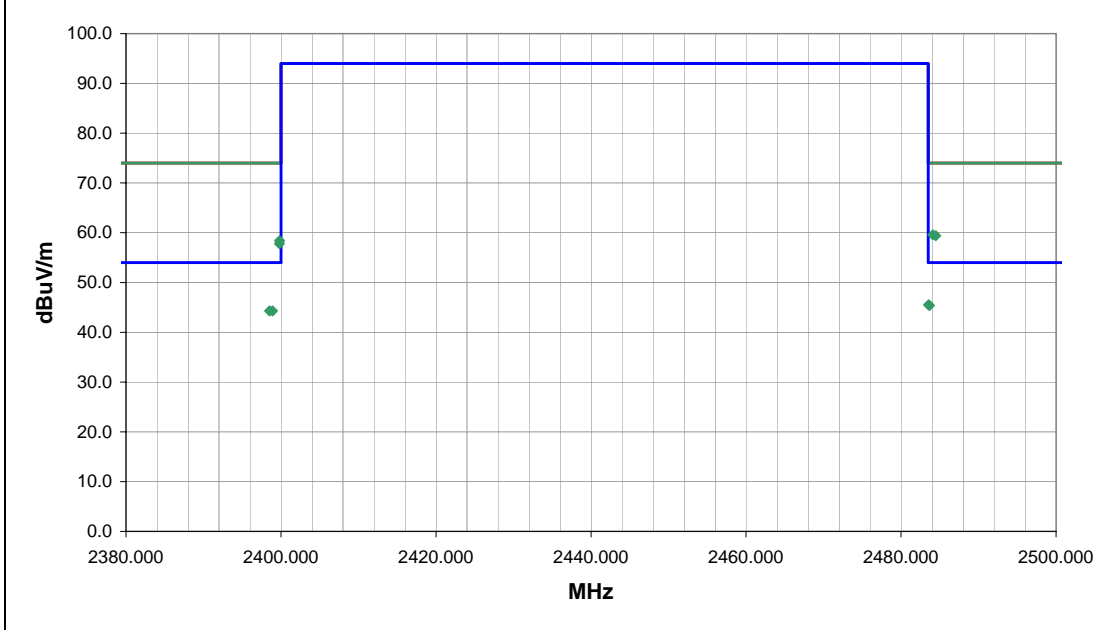
COMMENTS
Left shuttle

EUT OPERATING MODES
Transmitting typical modulation, power setting = 1

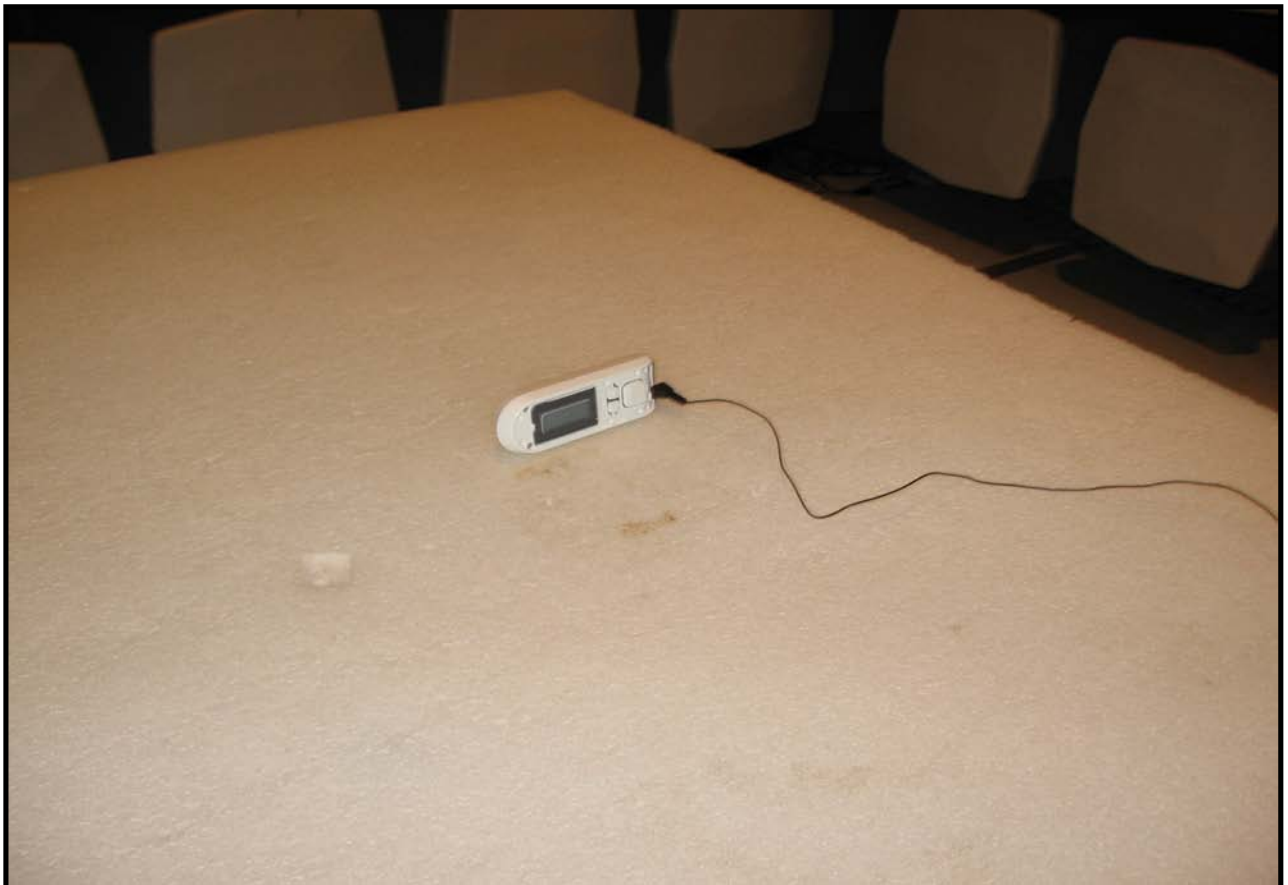
DEVIATIONS FROM TEST STANDARD
No deviations.

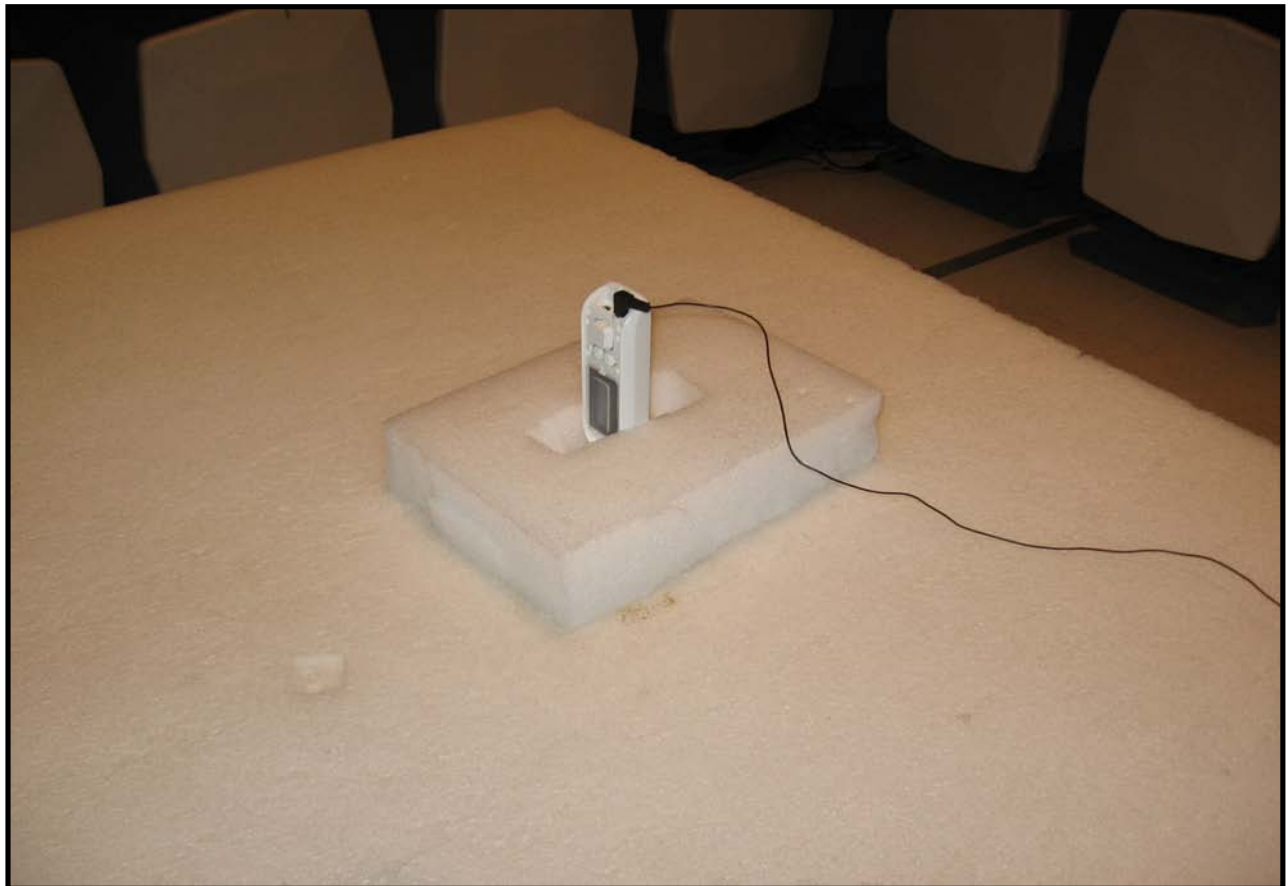
Run #	21	Signature <i>Rod Peloquin</i>
Configuration #	1	
Results	Pass	

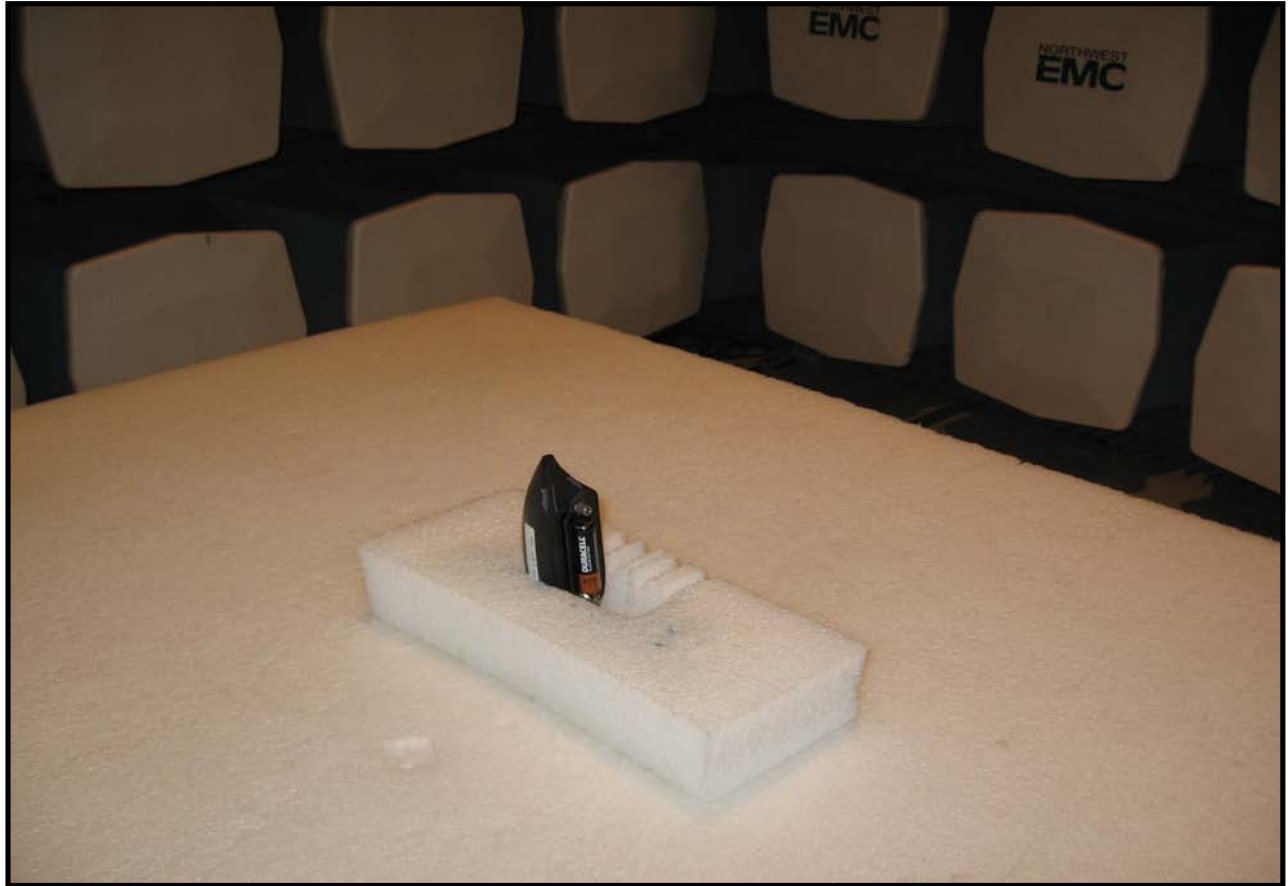
NVLAP Lab Code 200630-0

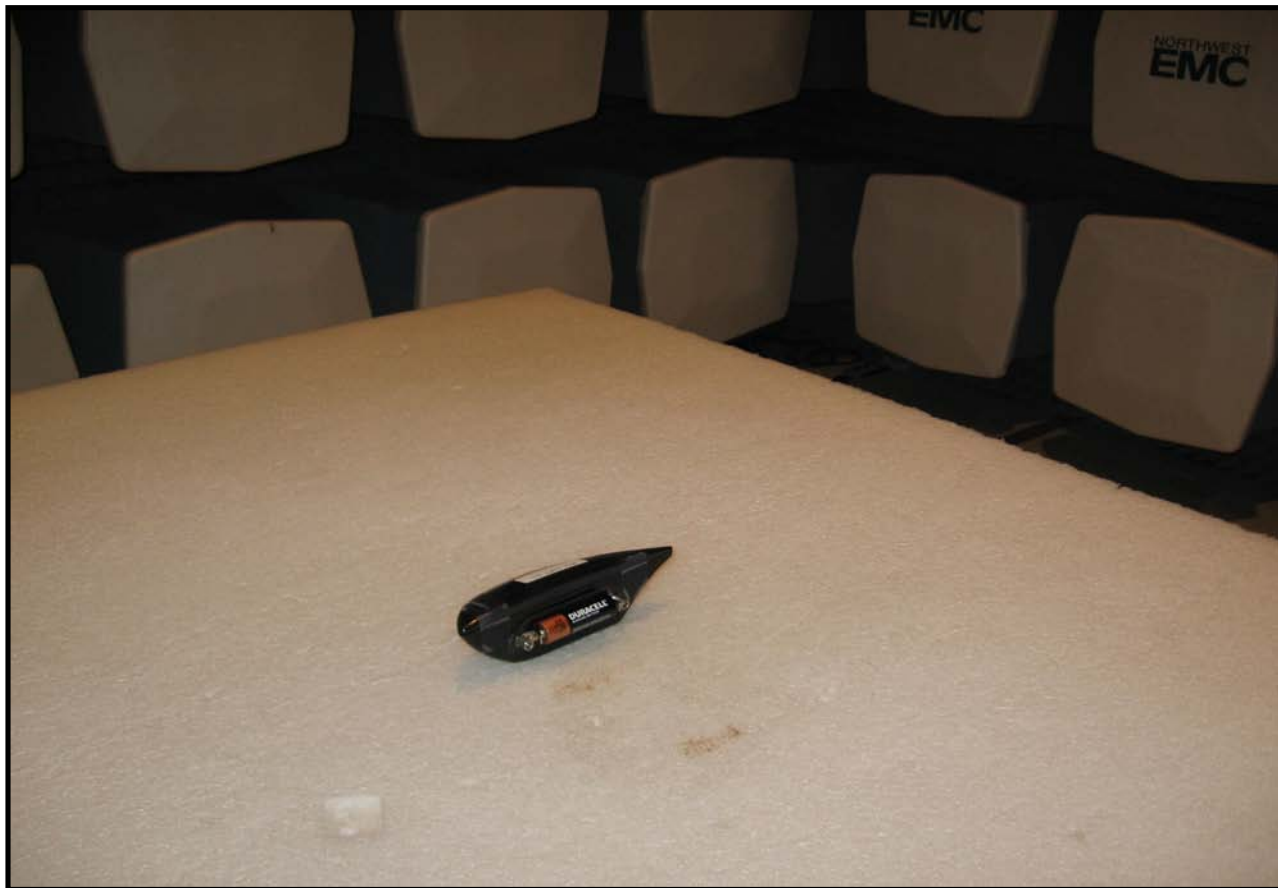


Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)	Comments
2483.557	23.4	2.1	143.0	1.5	0.0	20.0	H-Horn	AV	0.0	45.5	54.0	-8.5	High channel
2483.668	23.3	2.1	69.0	2.4	0.0	20.0	V-Horn	AV	0.0	45.4	54.0	-8.6	High channel
2398.513	22.8	1.5	240.0	1.0	0.0	20.0	H-Horn	AV	0.0	44.3	54.0	-9.7	Low channel
2398.907	22.8	1.5	221.0	1.0	0.0	20.0	V-Horn	AV	0.0	44.3	54.0	-9.7	Low channel
2484.098	37.5	2.1	143.0	1.5	0.0	20.0	H-Horn	PK	0.0	59.6	74.0	-14.4	High channel
2484.478	37.3	2.1	69.0	2.4	0.0	20.0	V-Horn	PK	0.0	59.4	74.0	-14.6	High channel
2399.827	36.9	1.5	221.0	1.0	0.0	20.0	V-Horn	PK	0.0	58.4	74.0	-15.6	Low channel
2399.787	36.3	1.5	240.0	1.0	0.0	20.0	H-Horn	PK	0.0	57.8	74.0	-16.2	Low channel











Attestation by the Responsible Party

Regulatory authorities require the "Responsible Party" to retain the test report. The test report must include the name and signature of an official of the Responsible Party.

To satisfy this requirement, the Responsible Party should complete the following attestation and maintain a copy with the test report:

Test Report #: _____ Test Date(s): _____

Model(s): _____ Responsible Party: _____

As an official of the Responsible Party, I attest that the product tested is representative of all production units bearing the same Model number(s)

Name: _____ Position: _____

Signature: _____ Date: _____

Additional information regarding product labeling and user manual information can be found at www.nwemc.com.