Archinoetics, LLC

SBV2

EMC Test Report

Report No. ARCH0001

Report Prepared By

NORTHWEST EMC

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

NORTHWEST EMC

22975 NW Evergreen Parkway
Suite 400
Hillsboro, Oregon 97124

Certificate of Test

Last Date of Test: February 5, 2010
Archinoetics, LLC
Model: SBV2

Emissions			
Test Description	**Specification**	**Test Method**	**Pass/Fail**
Field Strength of Fundamental	FCC 15.249:2010	ANSI C63.10:2009	**Pass**
Field Strength of Spurious Emissions	FCC 15.249:2010	ANSI C63.10:2009	**Pass**
AC Powerline Conducted Emissions	FCC 15.249:2010	ANSI C63.10:2009	**Pass**

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

Test Facility

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

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

Phone: (503) 844-4066 Fax: 844-3826

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

Approved By:

Don Facteau, IS Manager

NVLAP Lab Code: 200630-0

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

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

Revision Number	Description	Date	Page Number
00	None		

Barometric Pressure

The recorded barometric pressure has been normalized to sea level.

Accreditations and Authorizations

FCC

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

NVLAP

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

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

Industry Canada

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

CAB

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

NEMKO

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

Accreditations and Authorizations

Australia/New Zealand

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

VCCI

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

BSMI

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

GOST

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

KCC

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

VIETNAM

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

SCOPE

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

Northwest EMC Locations

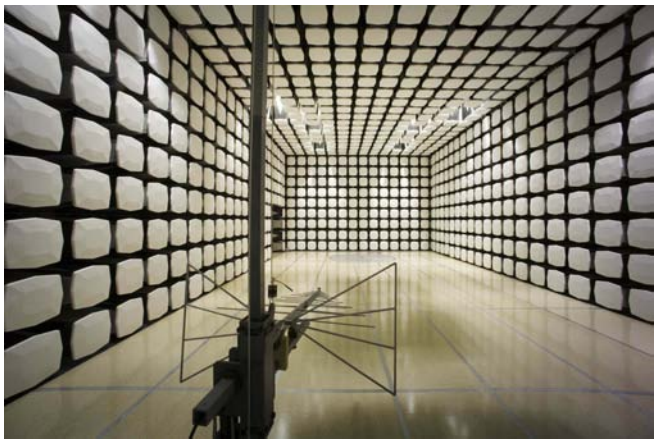
Oregon
Labs EV01-EV12
22975 NW Evergreen Pkwy
Suite 400
Hillsboro, OR 97124
(503) 844-4066

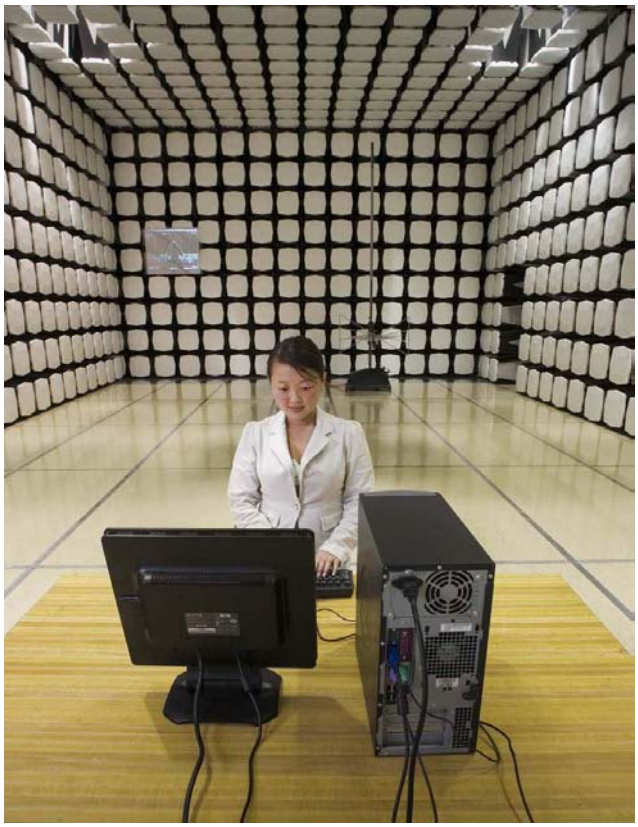
California
Labs OC01-OC13
41 Tesla
Irvine, CA 92618
(949) 861-8918

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

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

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





Party Requesting the Test

Company Name:	Archinoetics, LLC
Address:	Topa Financial Center, 700 Bishop Street
City, State, Zip:	Honolulu, HI 98613
Test Requested By:	Eric Taketatsu
Model:	SBV2
First Date of Test:	February 3, 2010
Last Date of Test:	February 5, 2010
Receipt Date of Samples:	January 27, 2010
Equipment Design Stage:	Prototype
Equipment Condition:	No Damage

Information Provided by the Party Requesting the Test

Functional Description of the EUT (Equipment Under Test):
2.4 GHz transceiver

Testing Objective:
To demonstrate compliance of the radio to FCC 15.249 requirements.

EUT Photo

CONFIGURATION 1 ARCH0001

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Sleep Monitor Wrist Band	Fatigue Science	SBV2	FM1

CONFIGURATION 2 ARCH0001

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Sleep Monitor Wrist Band	Fatigue Science	SBV2	FM1

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
AC Adapter	PhiHong	PSAC05R-50	09
Snakebite Charger Clip	Fatigue Science	Ver 1.0	N/A

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
DC Power	PA	1.5m	PA	Sleep Monitor Wrist Band	AC Mains
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

Equipment modifications					
Item	Date	Test	Modification	Note	Disposition of EUT
1	2/3/2010	Field Strength of Fundamental	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
2	2/4/2010	AC Powerline Conducted Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
3	2/5/2010	Field Strength of Fundamental	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

FIELD STRENGTH OF FUNDAMENTAL

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

MODES OF OPERATION

Transmitting with default duty cycle

CHANNELS TESTED

Low Channel, 2405 MHz
Mid Channel, 2442 MHz
High Channel, 2480 MHz

POWER SETTINGS INVESTIGATED

120VAC/60Hz
Battery

FREQUENCY RANGE INVESTIGATED

Start Frequency	2400 MHz	Stop Frequency	2483.5 MHz

SAMPLE CALCULATIONS

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Spectrum Analyzer	Agilent	E4446A	AAQ	1/6/2010	13
EV01 Cables		Double Ridge Horn Cables	EVB	7/10/2009	13
Antenna, Horn	EMCO	3115	AHC	8/12/2008	24

MEASUREMENT BANDWIDTHS

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

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

MEASUREMENT UNCERTAINTY

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. The measurement uncertainty estimation is available upon request.

TEST DESCRIPTION

The antennas to be used with the EUT were tested. The EUT was transmitting and 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 and EUT antenna in 3 orthogonal planes (per ANSI C63.10:2009).

NORTHWEST EMC

FIELD STRENGTH OF FUNDAMENTAL

PSA 2008.07.21
EMI 2009.8.29

EUT:	SBV2			Work Order:	ARCH0001
Serial Number:	FM1			Date:	02/03/10
Customer:	Archinoetics, LLC			Temperature:	22
Attendees:	None			Humidity:	38%
Project:	None			Barometric Pres.:	30.15 in
Tested by:	Rod Peloquin	Power:	Battery	Job Site:	EV01

TEST SPECIFICATIONS	Test Method
FCC 15.249:2010	ANSI C63.10:2009

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

COMMENTS

None

EUT OPERATING MODES

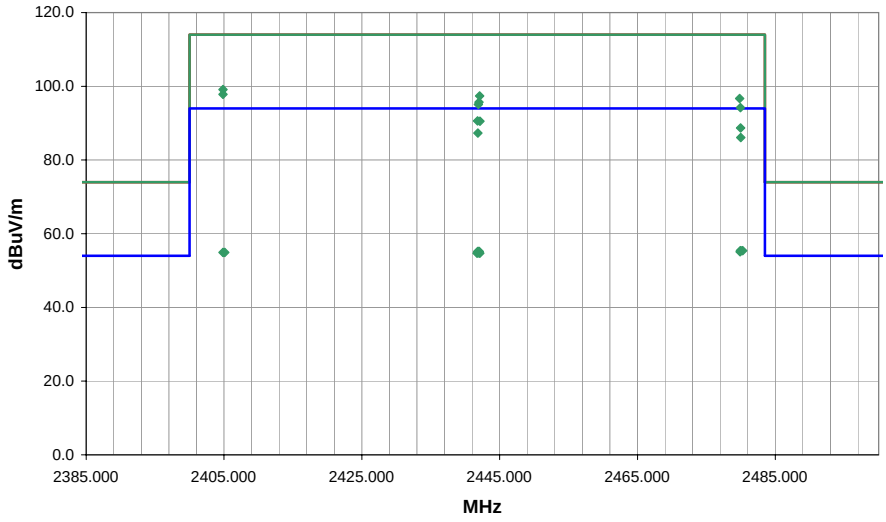
Transmitting with default duty cycle

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	4
Configuration #	1
Results	Pass

Signature



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)	Comments
2404.843	64.6	34.5	361.0	1.4	3.0	0.0	H-Horn	PK	0.0	99.1	114.0	-14.9	Low channel, 2405 MHz, EUT horizontal
2404.860	63.3	34.5	207.0	1.0	3.0	0.0	V-Horn	PK	0.0	97.8	114.0	-16.2	Low channel, 2405 MHz, EUT on side
2442.100	62.5	34.9	197.0	1.4	3.0	0.0	H-Horn	PK	0.0	97.4	114.0	-16.6	Mid channel, 2442 MHz, EUT horizontal
2479.813	61.3	35.4	175.0	1.4	3.0	0.0	H-Horn	PK	0.0	96.7	114.0	-17.3	High channel, 2480 MHz, EUT horizontal
2441.997	60.8	34.9	337.0	1.2	3.0	0.0	H-Horn	PK	0.0	95.7	114.0	-18.3	Mid channel, 2442 MHz, EUT on side
2441.913	60.2	34.9	263.0	1.0	3.0	0.0	V-Horn	PK	0.0	95.1	114.0	-18.9	Mid channel, 2442 MHz, EUT vertical
2479.940	58.8	35.4	222.0	1.2	3.0	0.0	V-Horn	PK	0.0	94.2	114.0	-19.8	High channel, 2480 MHz, EUT vertical
2441.803	55.7	34.9	84.0	1.0	3.0	0.0	V-Horn	PK	0.0	90.6	114.0	-23.4	Mid channel, 2442 MHz, EUT on side
2442.133	55.6	34.9	147.0	1.2	3.0	0.0	H-Horn	PK	0.0	90.5	114.0	-23.5	Mid channel, 2442 MHz, EUT vertical
2479.953	53.3	35.4	231.0	1.0	3.0	0.0	V-Horn	PK	0.0	88.7	114.0	-25.3	High channel, 2480 MHz, EUT on side
2441.830	52.4	34.9	265.0	1.1	3.0	0.0	V-Horn	PK	0.0	87.3	114.0	-26.7	Mid channel, 2442 MHz, EUT horizontal
2479.990	50.7	35.4	267.0	1.0	3.0	0.0	V-Horn	PK	0.0	86.1	114.0	-27.9	High channel, 2480 MHz, EUT horizontal
2479.943	20.0	35.4	222.0	1.2	3.0	0.0	V-Horn	AV	0.0	55.4	94.0	-38.6	High channel, 2480 MHz, EUT vertical
2479.997	20.0	35.4	231.0	1.0	3.0	0.0	V-Horn	AV	0.0	55.4	94.0	-38.6	High channel, 2480 MHz, EUT on side
2480.253	20.0	35.4	175.0	1.4	3.0	0.0	H-Horn	AV	0.0	55.4	94.0	-38.6	High channel, 2480 MHz, EUT horizontal
2441.823	20.3	34.9	337.0	1.2	3.0	0.0	H-Horn	AV	0.0	55.2	94.0	-38.8	Mid channel, 2442 MHz, EUT on side
2441.967	20.3	34.9	263.0	1.0	3.0	0.0	V-Horn	AV	0.0	55.2	94.0	-38.8	Mid channel, 2442 MHz, EUT vertical
2442.020	20.3	34.9	197.0	1.4	3.0	0.0	H-Horn	AV	0.0	55.2	94.0	-38.8	Mid channel, 2442 MHz, EUT horizontal
2479.893	19.7	35.4	267.0	1.0	3.0	0.0	V-Horn	AV	0.0	55.1	94.0	-38.9	High channel, 2480 MHz, EUT horizontal
2404.857	20.4	34.5	361.0	1.4	3.0	0.0	H-Horn	AV	0.0	54.9	94.0	-39.1	Low channel, 2405 MHz, EUT horizontal

NORTHWEST EMC

FIELD STRENGTH OF FUNDAMENTAL

PSA 2008.07.21
EMI 2009.8.29

EUT:	SBV2	Work Order:	ARCH0001
Serial Number:	FM1	Date:	02/04/10
Customer:	Archinoetics, LLC	Temperature:	22
Attendees:	None	Humidity:	38%
Project:	None	Barometric Pres.:	30.15 in
Tested by:	Rod Peloquin	Power: 120VAC/60Hz	Job Site: EV01

TEST SPECIFICATIONS	Test Method
FCC 15.249:2010	ANSI C63.10:2009

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

COMMENTS

AC power adapter

EUT OPERATING MODES

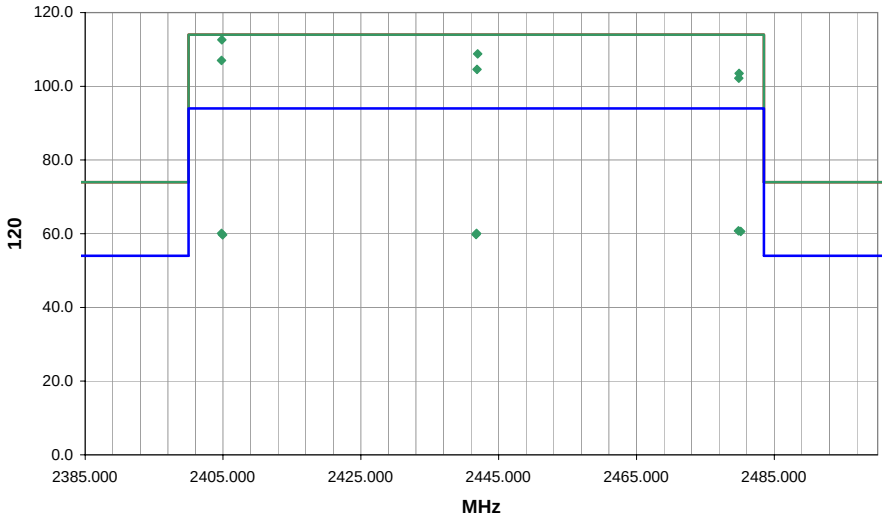
Transmitting with default duty cycle

DEVIATIONS FROM TEST STANDARD

No deviations.

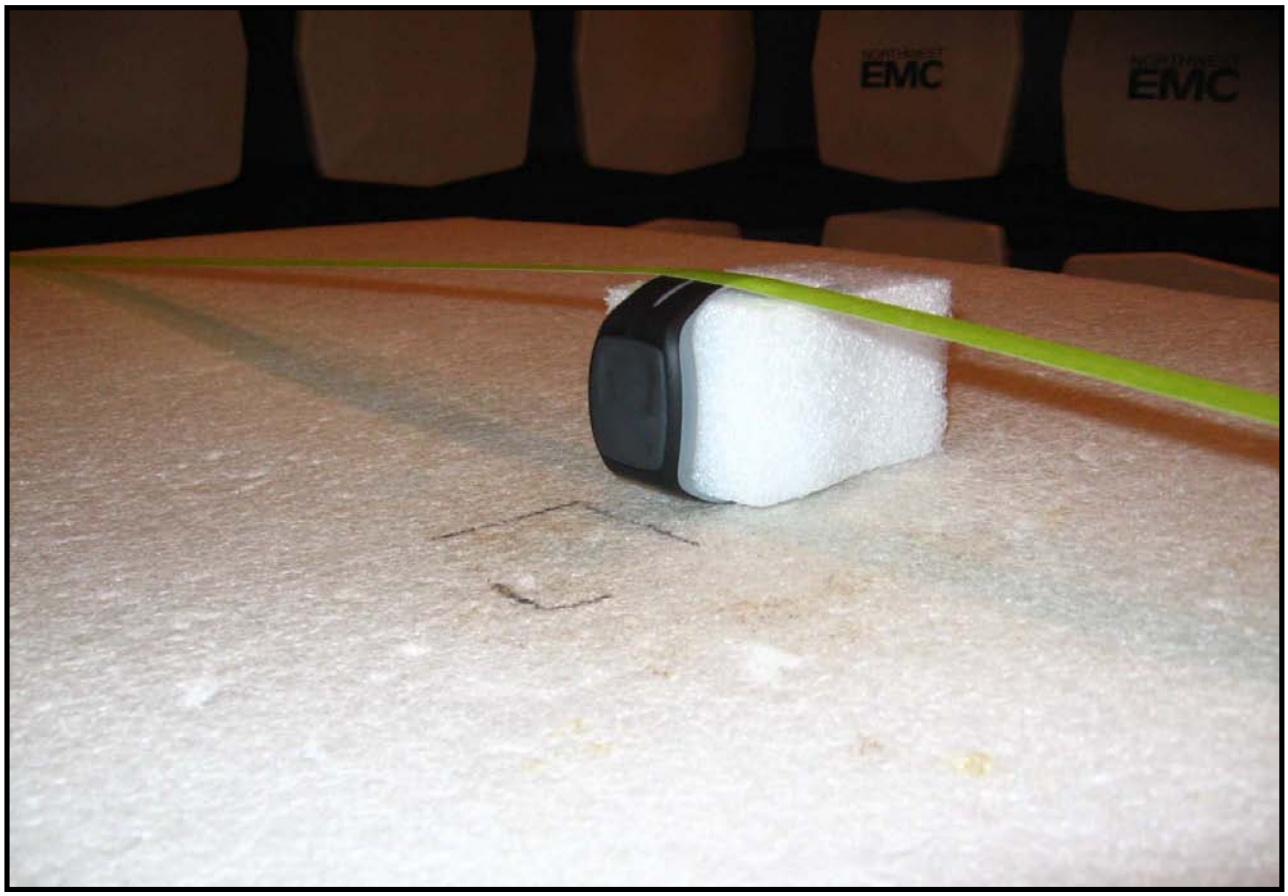
Run #	5
Configuration #	2
Results	Pass

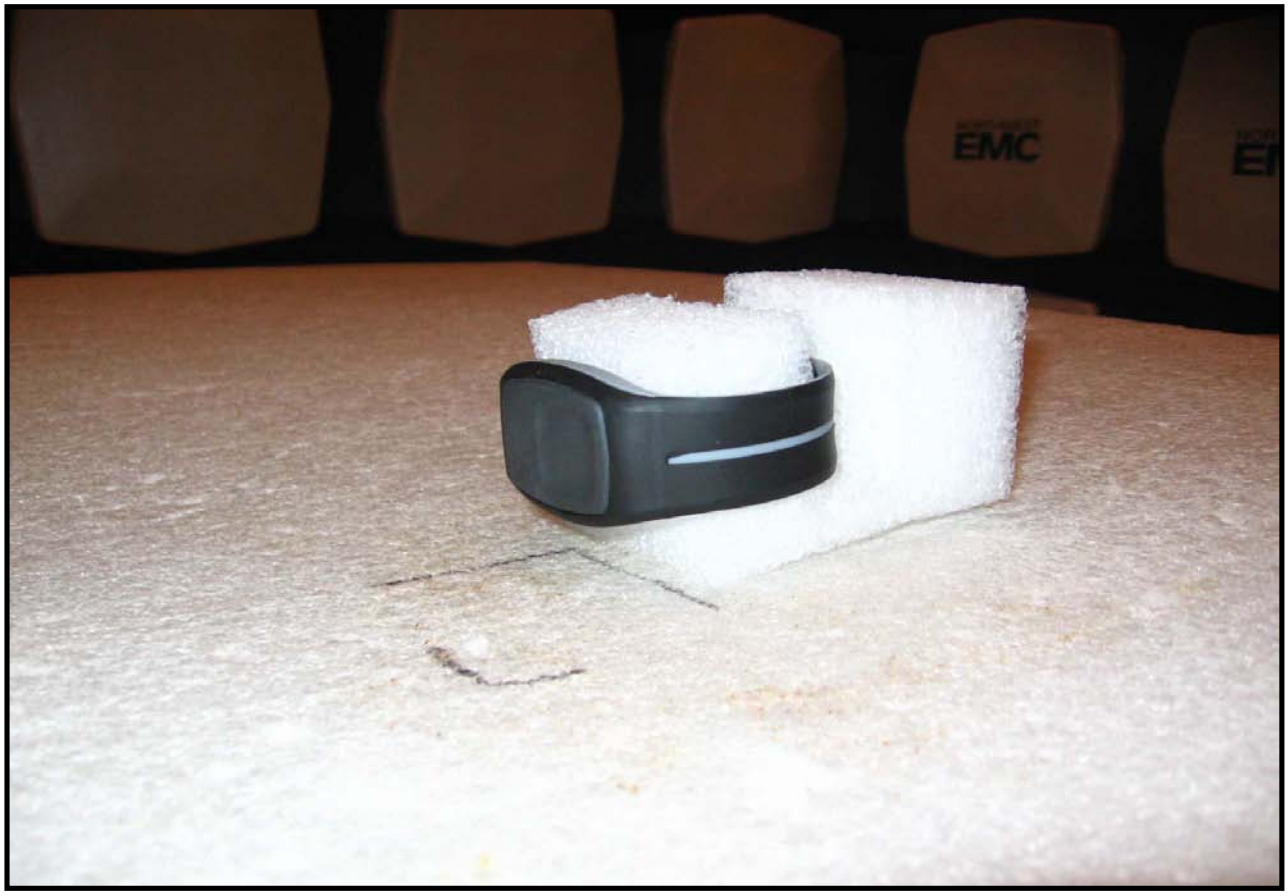
Signature



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted 120.00	Spec. Limit 120.00	Compared to Spec. (dB)	Comments
2404.825	78.1	34.5	188.0	1.2	3.0	0.0	H-Horn	PK	0.0	112.6	114.0	-1.4	Low channel, 2405 MHz, EUT horizontal
2441.960	73.9	34.9	166.0	1.2	3.0	0.0	H-Horn	PK	0.0	108.8	114.0	-5.2	Mid channel, 2442 MHz, EUT horizontal
2404.790	72.5	34.5	168.0	1.0	3.0	0.0	V-Horn	PK	0.0	107.0	114.0	-7.0	Low channel, 2405 MHz, EUT on side
2441.850	69.7	34.9	133.0	1.0	3.0	0.0	V-Horn	PK	0.0	104.6	114.0	-9.4	Mid channel, 2442 MHz, EUT on side
2479.890	68.1	35.4	163.0	1.2	3.0	0.0	H-Horn	PK	0.0	103.5	114.0	-10.5	High channel, 2480 MHz, EUT horizontal
2479.840	66.8	35.4	127.0	1.0	3.0	0.0	V-Horn	PK	0.0	102.2	114.0	-11.8	High channel, 2480 MHz, EUT on side
2479.805	25.4	35.4	127.0	1.0	3.0	0.0	V-Horn	AV	0.0	60.8	94.0	-33.2	High channel, 2480 MHz, EUT on side
2480.125	25.2	35.4	163.0	1.2	3.0	0.0	H-Horn	AV	0.0	60.6	94.0	-33.4	High channel, 2480 MHz, EUT horizontal
2404.790	25.6	34.5	168.0	1.0	3.0	0.0	V-Horn	AV	0.0	60.1	94.0	-33.9	Low channel, 2405 MHz, EUT on side
2441.795	25.2	34.9	166.0	1.2	3.0	0.0	H-Horn	AV	0.0	60.1	94.0	-33.9	Mid channel, 2442 MHz, EUT horizontal
2441.725	24.9	34.9	133.0	1.0	3.0	0.0	V-Horn	AV	0.0	59.8	94.0	-34.2	Mid channel, 2442 MHz, EUT on side
2404.935	25.2	34.5	188.0	1.2	3.0	0.0	H-Horn	AV	0.0	59.7	94.0	-34.3	Low channel, 2405 MHz, EUT horizontal

FIELD STRENGTH OF FUNDAMENTAL





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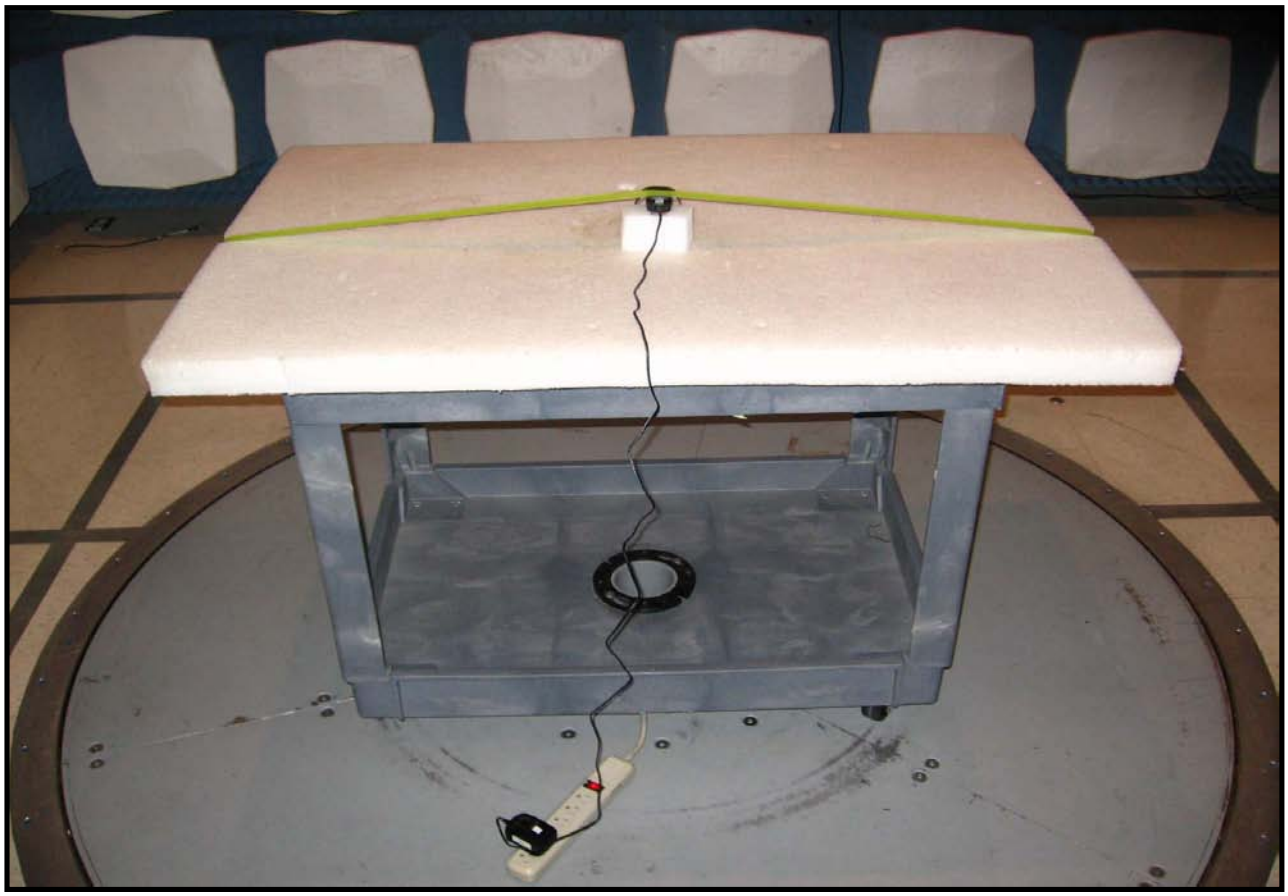

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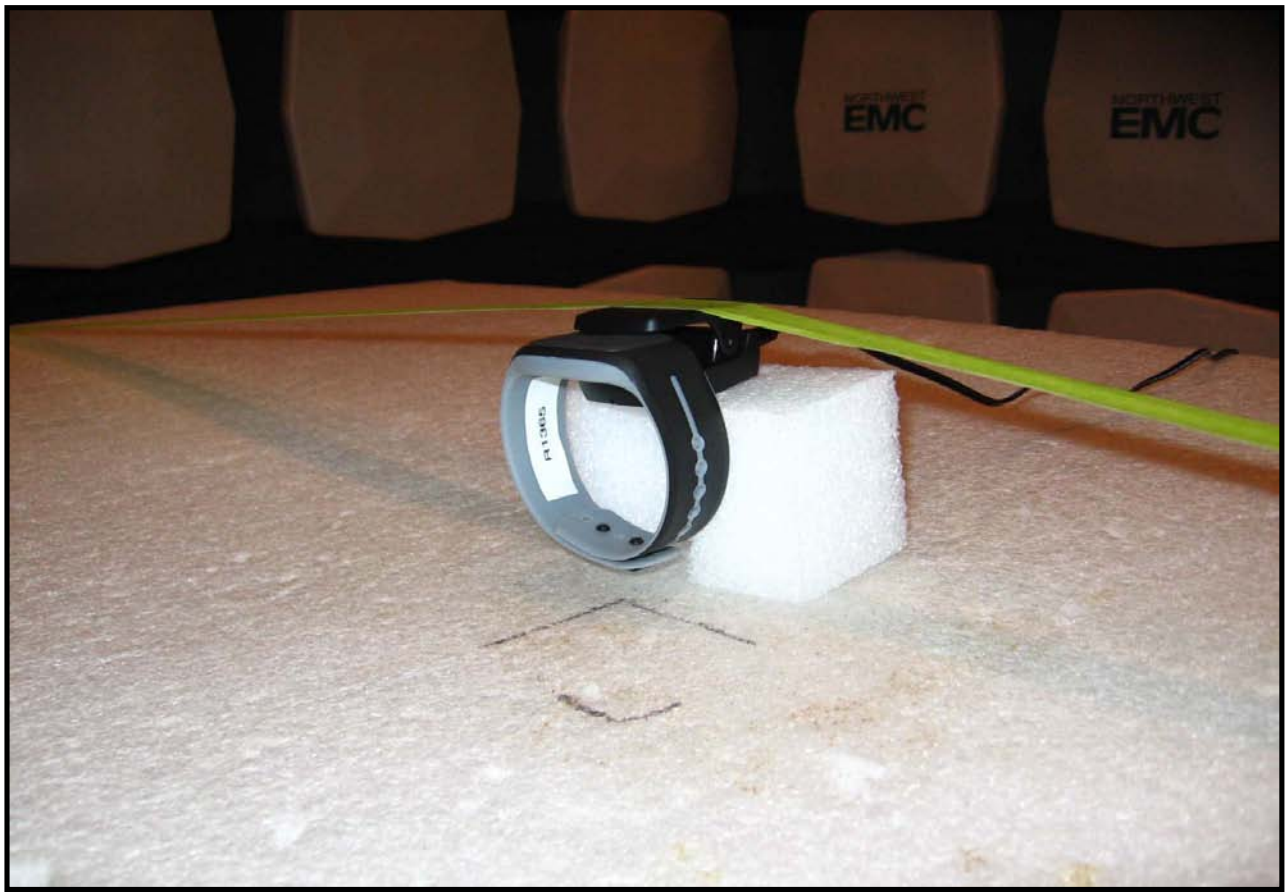
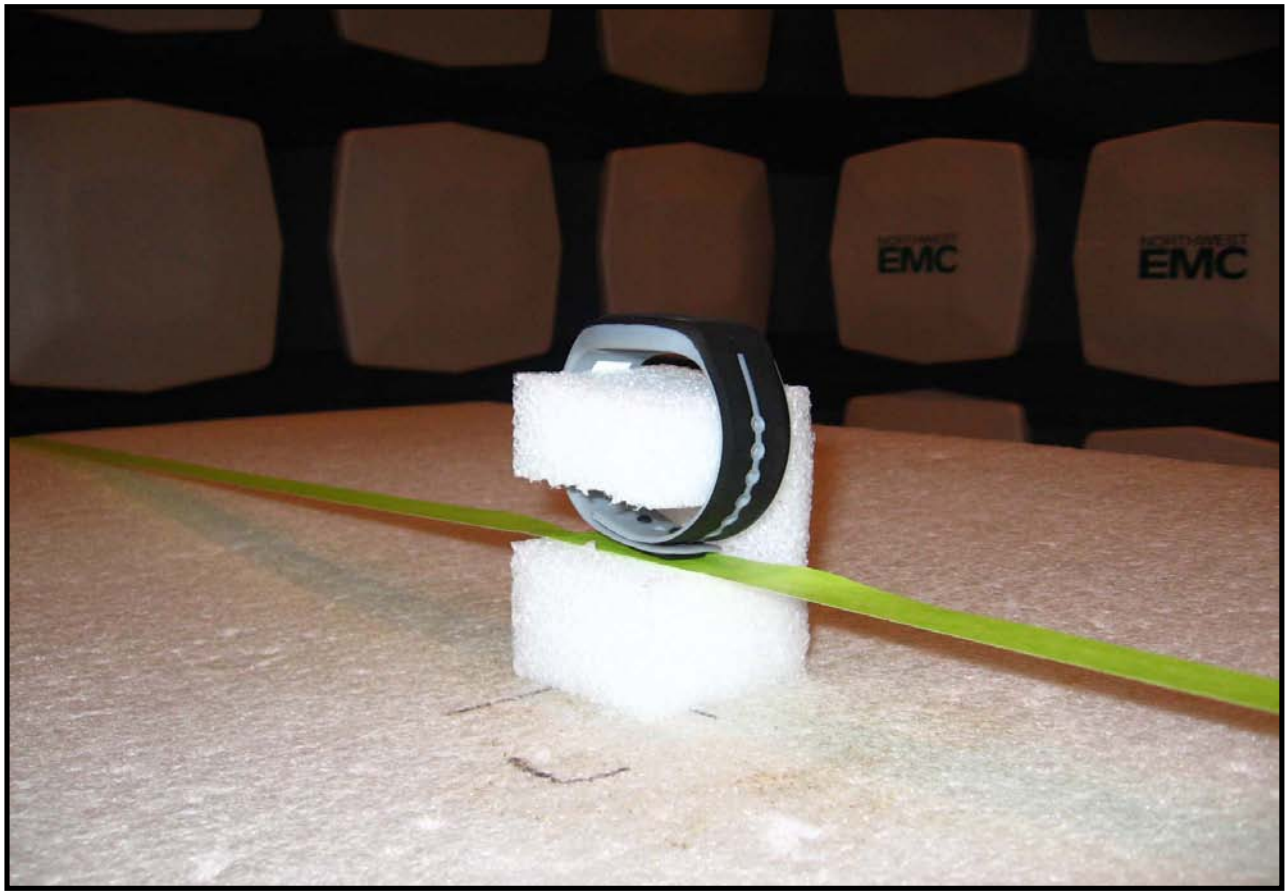
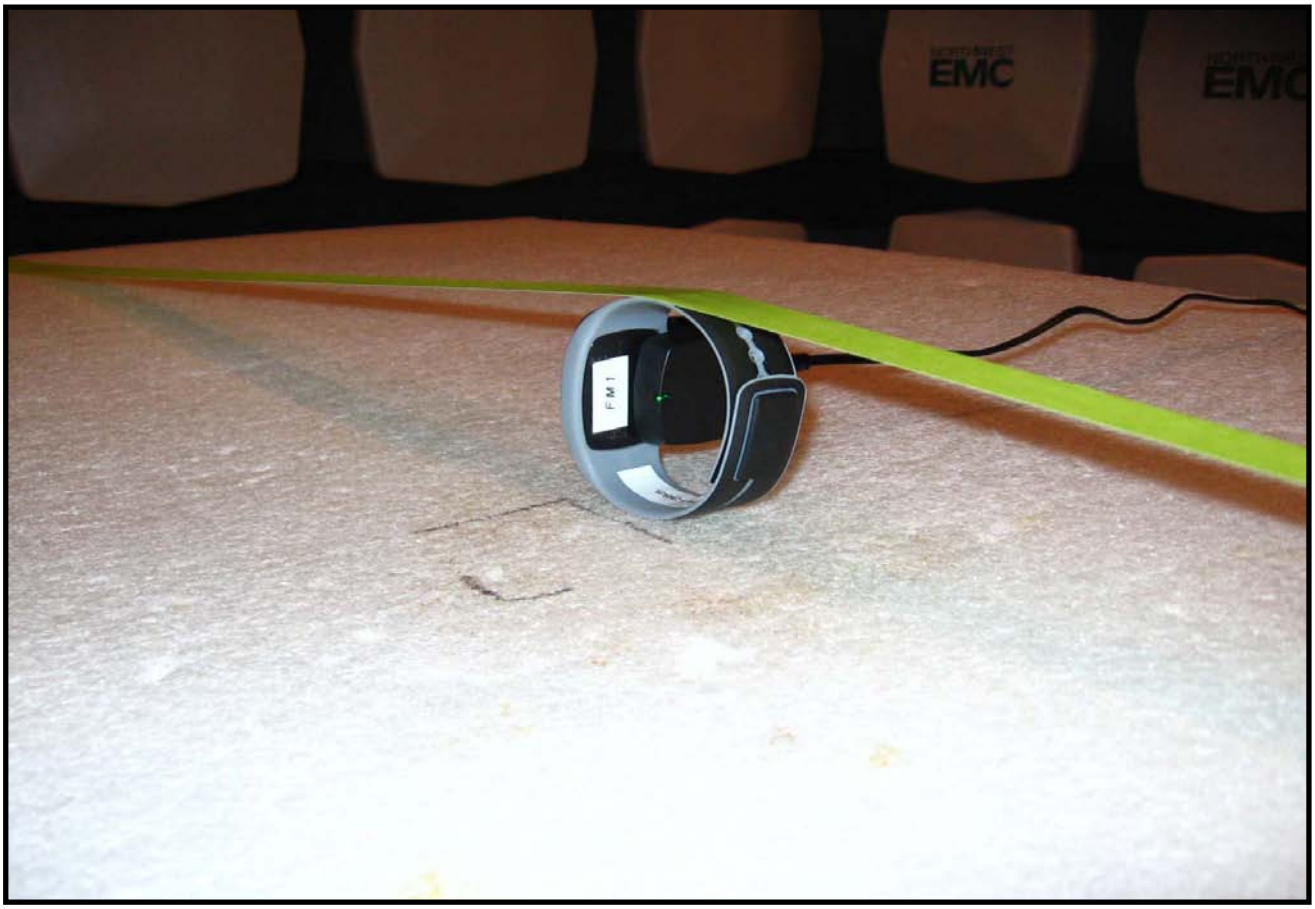




FIELD STRENGTH OF FUNDAMENTAL



FIELD STRENGTH OF RADIATED SPURIOUS EMISSIONS

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

MODES OF OPERATION

Transmitting with default duty cycle and power

CHANNELS TESTED

Low Channel, 2405 MHz
Mid Channel, 2442 MHz
High Channel, 2480 MHz

POWER SETTINGS INVESTIGATED

Battery
120VAC/60Hz

FREQUENCY RANGE INVESTIGATED

Start Frequency	30 MHz	Stop Frequency	25 GHz

SAMPLE CALCULATIONS

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Spectrum Analyzer	Agilent	E4446A	AAQ	1/6/2010	13
Pre-Amplifier	Miteq	AM-1616-1000	AOL	7/10/2009	13
Antenna, Biconilog	EMCO	3141	AXE	1/14/2010	24
EV01 Cables		Bilog Cables	EVA	7/10/2009	13
Pre-Amplifier	Miteq	AMF-4D-010100-24-10P	APW	7/10/2009	13
Antenna, Horn	EMCO	3115	AHC	8/12/2008	24
EV01 Cables		Double Ridge Horn Cables	EVB	7/10/2009	13
Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AVC	7/10/2009	13
Antenna, Horn	ETS	3160-07	AHU	NCR	0
Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	AVD	7/10/2009	13
Antenna, Horn	ETS	3160-08	AHV	NCR	0
EV01 Cables		Standard Gain Horns Cables	EVF	11/13/2008	16
Pre-Amplifier	Miteq	AMF-6F-18002650-25-10P	AVU	5/19/2009	13
Antenna, Horn	ETS Lindgren	3160-09	AIV	NCR	0
Pre-Amplifier	Miteq	AM-1616-1000	AVY	7/1/2009	13
Low Pass Filter 0-1000 MHz	Micro-Tronics	LPM50004	LFD	7/10/2009	13
High Pass Filter	Micro-Tronics	HPM50111	HFO	7/10/2009	13

MEASUREMENT BANDWIDTHS

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

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

MEASUREMENT UNCERTAINTY

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. The measurement uncertainty estimation is available upon request.

TEST DESCRIPTION

The 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 C63.10:2009). A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

NORTHWEST EMC

FIELD STRENGTH OF RADIATED SPURIOUS EMISSIONS

PSA 2008.07.21
EMI 2009.8.29

EUT:	SBV2			Work Order:	ARCH0001
Serial Number:	FM1			Date:	02/03/10
Customer:	Archinoetics, LLC			Temperature:	22
Attendees:	None			Humidity:	38%
Project:	None			Barometric Pres.:	30.15 in
Tested by:	Rod Peloquin	Power:	Battery	Job Site:	EV01

TEST SPECIFICATIONS	Test Method
FCC 15.249:2010	ANSI C63.10:2009

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

COMMENTS

None

EUT OPERATING MODES

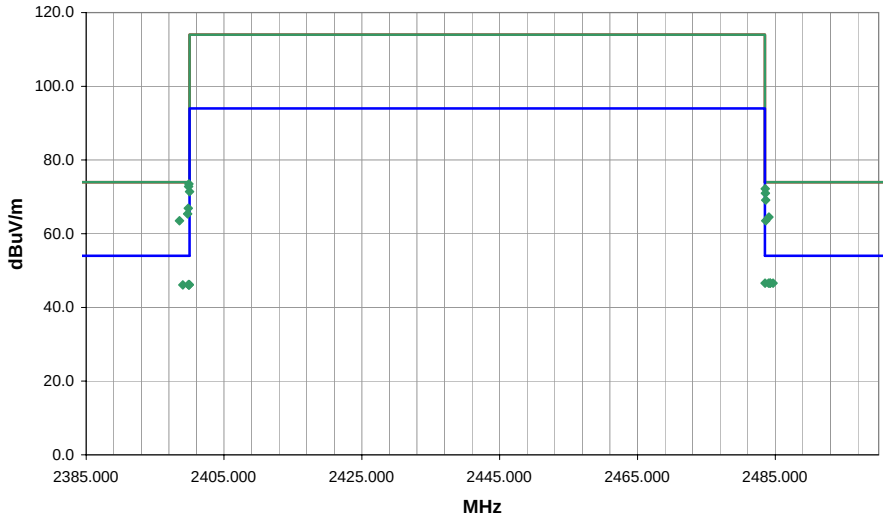
Transmitting with default duty cycle, Channel 05, 2405 MHz

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	3
Configuration #	1
Results	Pass

Signature



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)	Comments
2399.897	51.4	2.1	193.0	1.1	3.0	20.0	H-Horn	PK	0.0	73.5	74.0	-0.5	Low Channel, 2405 MHz, EUT horizontal
2399.857	50.7	2.1	175.0	1.2	3.0	20.0	H-Horn	PK	0.0	72.8	74.0	-1.2	Low Channel, 2405 MHz, EUT on side
2483.538	49.5	2.7	222.0	1.1	3.0	20.0	H-Horn	PK	0.0	72.2	74.0	-1.8	High channel, 2480 MHz, EUT horizontal
2399.993	49.3	2.1	148.0	1.0	3.0	20.0	V-Horn	PK	0.0	71.4	74.0	-2.6	Low Channel, 2405 MHz, EUT vertical
2483.550	48.3	2.7	202.0	1.2	3.0	20.0	H-Horn	PK	0.0	71.0	74.0	-3.0	High channel, 2480 MHz, EUT on side
2483.602	46.4	2.7	162.0	1.2	3.0	20.0	V-Horn	PK	0.0	69.1	74.0	-4.9	High channel, 2480 MHz, EUT vertical
2399.823	44.8	2.1	164.0	1.3	3.0	20.0	H-Horn	PK	0.0	66.9	74.0	-7.1	Low Channel, 2405 MHz, EUT vertical
2483.523	23.9	2.7	212.0	1.0	3.0	20.0	V-Horn	AV	0.0	46.6	54.0	-7.4	High channel, 2480 MHz, EUT on side
2484.255	23.9	2.7	266.0	1.0	3.0	20.0	V-Horn	AV	0.0	46.6	54.0	-7.4	High channel, 2480 MHz, EUT horizontal
2484.024	23.9	2.7	222.0	1.1	3.0	20.0	H-Horn	AV	0.0	46.6	54.0	-7.4	High channel, 2480 MHz, EUT horizontal
2484.253	23.9	2.7	162.0	1.2	3.0	20.0	V-Horn	AV	0.0	46.6	54.0	-7.4	High channel, 2480 MHz, EUT vertical
2484.683	23.9	2.7	202.0	1.2	3.0	20.0	H-Horn	AV	0.0	46.6	54.0	-7.4	High channel, 2480 MHz, EUT on side
2399.873	24.1	2.1	175.0	1.2	3.0	20.0	H-Horn	AV	0.0	46.2	54.0	-7.8	Low Channel, 2405 MHz, EUT on side
2399.920	24.1	2.1	144.0	1.0	3.0	20.0	V-Horn	AV	0.0	46.2	54.0	-7.8	Low Channel, 2405 MHz, EUT horizontal
2399.920	24.1	2.1	148.0	1.0	3.0	20.0	V-Horn	AV	0.0	46.2	54.0	-7.8	Low Channel, 2405 MHz, EUT vertical
2399.013	24.0	2.1	193.0	1.1	3.0	20.0	H-Horn	AV	0.0	46.1	54.0	-7.9	Low Channel, 2405 MHz, EUT horizontal
2399.870	24.0	2.1	19.0	1.0	3.0	20.0	V-Horn	AV	0.0	46.1	54.0	-7.9	Low Channel, 2405 MHz, EUT on side
2399.920	24.0	2.1	164.0	1.3	3.0	20.0	H-Horn	AV	0.0	46.1	54.0	-7.9	Low Channel, 2405 MHz, EUT vertical
2399.727	43.3	2.1	19.0	1.0	3.0	20.0	V-Horn	PK	0.0	65.4	74.0	-8.6	Low Channel, 2405 MHz, EUT on side
2484.072	41.8	2.7	212.0	1.0	3.0	20.0	V-Horn	PK	0.0	64.5	74.0	-9.5	High channel, 2480 MHz, EUT on side

NORTHWEST EMC

FIELD STRENGTH OF RADIATED SPURIOUS EMISSIONS

PSA 2008.07.21
EMI 2009.4.13

EUT:	SBV2	**Work Order:**	ARCH0001
Serial Number:	FM1	**Date:**	02/05/10
Customer:	Archinoetics, LLC	**Temperature:**	22
Attendees:	None	**Humidity:**	38%
Project:	None	**Barometric Pres.:**	30.15 in
Tested by:	Rod Peloquin	**Power:** 120VAC/60Hz	**Job Site:** EV01

TEST SPECIFICATIONS	Test Method
FCC 15.249:2010	ANSI C63.10:2009

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

COMMENTS

AC Adapter

EUT OPERATING MODES

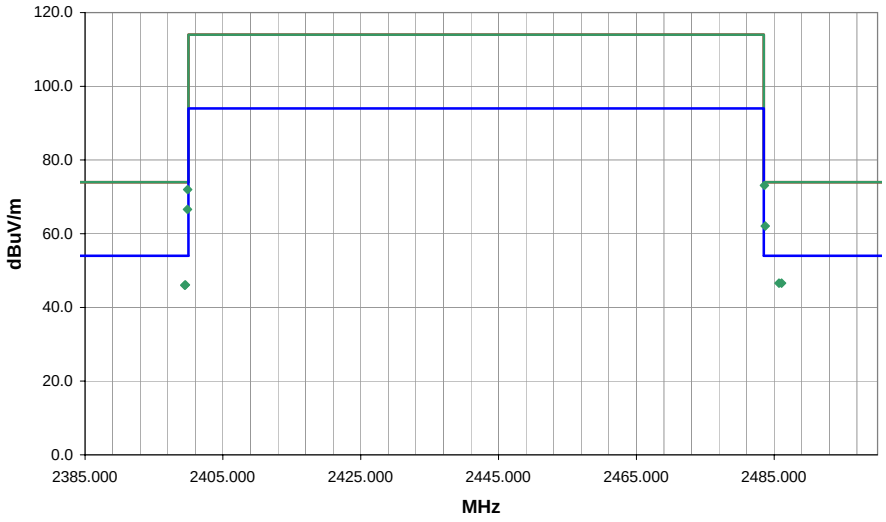
Transmitting with default duty cycle

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	11
Configuration #	2
Results	Pass

Signature



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)	Comments
2483.580	50.4	2.7	197.0	1.0	3.0	20.0	H-Horn	PK	0.0	73.1	74.0	-0.9	High Channel, 2480 MHz, EUT horizontal
2399.873	49.9	2.1	163.0	1.0	3.0	20.0	H-Horn	PK	0.0	72.0	74.0	-2.0	Low Channel, 2405 MHz, EUT horizontal
2485.700	23.9	2.7	299.0	1.0	3.0	20.0	V-Horn	AV	0.0	46.6	54.0	-7.4	High Channel, 2480 MHz, EUT on side
2486.080	23.9	2.7	197.0	1.0	3.0	20.0	H-Horn	AV	0.0	46.6	54.0	-7.4	High Channel, 2480 MHz, EUT horizontal
2399.850	44.5	2.1	146.0	1.2	3.0	20.0	V-Horn	PK	0.0	66.6	74.0	-7.4	Low Channel, 2405 MHz, EUT on side
2399.557	24.0	2.1	146.0	1.2	3.0	20.0	V-Horn	AV	0.0	46.1	54.0	-7.9	Low Channel, 2405 MHz, EUT on side
2399.457	23.9	2.1	163.0	1.0	3.0	20.0	H-Horn	AV	0.0	46.0	54.0	-8.0	Low Channel, 2405 MHz, EUT horizontal
2483.710	39.4	2.7	299.0	1.0	3.0	20.0	V-Horn	PK	0.0	62.1	74.0	-11.9	High Channel, 2480 MHz, EUT on side

NORTHWEST EMC

FIELD STRENGTH OF RADIATED SPURIOUS EMISSIONS

PSA 2008.07.21
EMI 2009.8.29

EUT:	SBV2	Work Order:	ARCH0001
Serial Number:	FM1	Date:	02/04/10
Customer:	Archinoetics, LLC	Temperature:	22
Attendees:	None	Humidity:	38%
Project:	None	Barometric Pres.:	30.15 in
Tested by:	Rod Peloquin	Power: 120VAC/60Hz	Job Site: EV01

TEST SPECIFICATIONS	Test Method
FCC 15.249:2010	ANSI C63.10:2009

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

COMMENTS

None

EUT OPERATING MODES

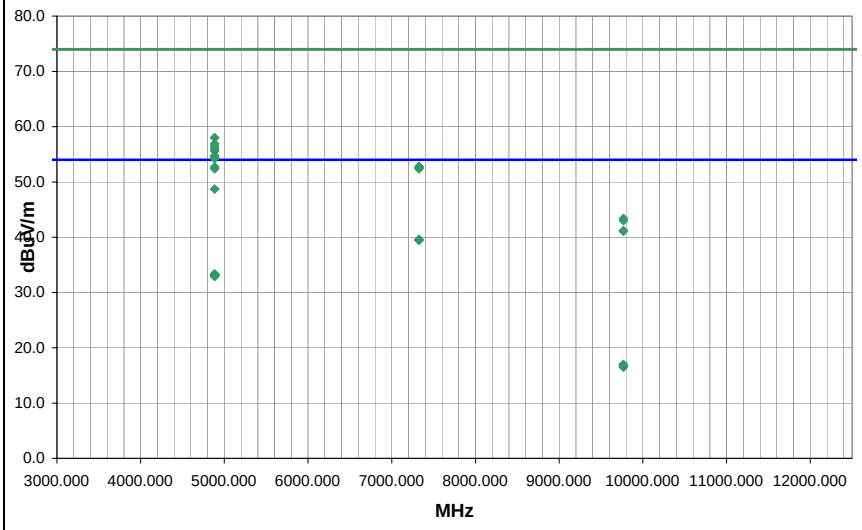
Transmitting with default duty cycle

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	6
Configuration #	1 & 2
Results	Pass

Signature



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)	Comments
7325.317	23.3	16.3	152.0	1.5	3.0	0.0	H-Horn	AV	0.0	39.6	54.0	-14.4	Mid Channel, AC powered, EUT horizontal
7324.708	23.2	16.3	204.0	1.0	3.0	0.0	V-Horn	AV	0.0	39.5	54.0	-14.5	Mid Channel, Battery, EUT vertical
7325.992	23.2	16.3	11.0	1.0	3.0	0.0	V-Horn	AV	0.0	39.5	54.0	-14.5	Mid Channel, AC powered, EUT on side
7326.025	23.2	16.3	0.0	1.5	3.0	0.0	H-Horn	AV	0.0	39.5	54.0	-14.5	Mid Channel, Battery, EUT horizontal
4883.825	48.3	9.7	47.0	1.1	3.0	0.0	V-Horn	PK	0.0	58.0	74.0	-16.0	Mid Channel, Battery, EUT vertical
4884.067	47.2	9.7	16.0	1.0	3.0	0.0	V-Horn	PK	0.0	56.9	74.0	-17.1	Mid Channel, AC powered, EUT on side
4883.612	46.7	9.7	21.0	1.0	3.0	0.0	V-Horn	PK	0.0	56.4	74.0	-17.6	Mid Channel, Battery, EUT on side
4884.304	46.3	9.7	30.0	1.0	3.0	0.0	V-Horn	PK	0.0	56.0	74.0	-18.0	Mid Channel, AC powered, EUT vertical
4884.033	45.9	9.7	22.0	1.0	3.0	0.0	V-Horn	PK	0.0	55.6	74.0	-18.4	Mid Channel, AC powered, EUT horizontal
4884.004	45.0	9.7	309.0	1.0	3.0	0.0	H-Horn	PK	0.0	54.7	74.0	-19.3	Mid Channel, AC powered, EUT vertical
4883.650	44.9	9.7	188.0	1.0	3.0	0.0	H-Horn	PK	0.0	54.6	74.0	-19.4	Mid Channel, AC powered, EUT horizontal
4883.892	44.9	9.7	299.0	1.6	3.0	0.0	H-Horn	PK	0.0	54.6	74.0	-19.4	Mid Channel, Battery, EUT horizontal
4884.092	44.5	9.7	186.0	1.0	3.0	0.0	H-Horn	PK	0.0	54.2	74.0	-19.8	Mid Channel, Battery, EUT on side
4883.746	23.6	9.7	21.0	1.0	3.0	0.0	V-Horn	AV	0.0	33.3	54.0	-20.7	Mid Channel, Battery, EUT on side
4883.796	23.6	9.7	309.0	1.0	3.0	0.0	H-Horn	AV	0.0	33.3	54.0	-20.7	Mid Channel, AC powered, EUT vertical
4883.829	23.6	9.7	188.0	1.0	3.0	0.0	H-Horn	AV	0.0	33.3	54.0	-20.7	Mid Channel, AC powered, EUT horizontal
4883.825	23.5	9.7	16.0	1.0	3.0	0.0	V-Horn	AV	0.0	33.2	54.0	-20.8	Mid Channel, AC powered, EUT on side
4883.838	23.5	9.7	186.0	1.0	3.0	0.0	H-Horn	AV	0.0	33.2	54.0	-20.8	Mid Channel, Battery, EUT on side
4883.921	23.5	9.7	47.0	1.1	3.0	0.0	V-Horn	AV	0.0	33.2	54.0	-20.8	Mid Channel, Battery, EUT vertical
4884.000	23.5	9.7	30.0	1.0	3.0	0.0	V-Horn	AV	0.0	33.2	54.0	-20.8	Mid Channel, AC powered, EUT vertical

NORTHWEST **EMC**

FIELD STRENGTH OF RADIATED SPURIOUS EMISSIONS

PSA 2008.07.21
EMI 2009.8.29

EUT:	SBV2	**Work Order:**	ARCH0001
Serial Number:	FM1	**Date:**	02/05/10
Customer:	Archinoetics, LLC	**Temperature:**	22
Attendees:	None	**Humidity:**	38%
Project:	None	**Barometric Pres.:**	30.15
Tested by:	Rod Peloquin	**Power:** See comments	**Job Site:** EV01

TEST SPECIFICATIONS	Test Method
FCC 15.249:2010	ANSI C63.10:2009

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

COMMENTS

None

EUT OPERATING MODES

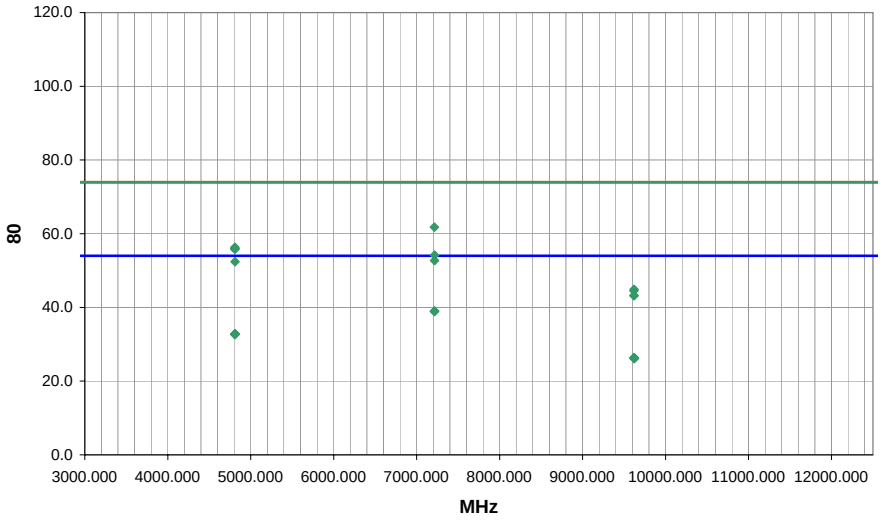
Transmitting with default duty cycle, Low Channel, 2405 MHz

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	7
Configuration #	1 & 2
Results	Pass

Signature



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted 80.00	Spec. Limit 80.00	Compared to Spec. (dB)	Comments
7214.480	46.2	15.6	166.0	1.0	3.0	0.0	V-Horn	PK	0.0	61.8	74.0	-12.2	Low Channel, AC Powered, EUT vertical
7215.173	23.4	15.6	96.0	1.0	3.0	0.0	H-Horn	AV	0.0	39.0	54.0	-15.0	Low Channel, AC Powered, EUT horizontal
7215.363	23.4	15.6	40.0	1.0	3.0	0.0	V-Horn	AV	0.0	39.0	54.0	-15.0	Low Channel, Battery, EUT vertical
7214.527	23.3	15.6	166.0	1.0	3.0	0.0	V-Horn	AV	0.0	38.9	54.0	-15.1	Low Channel, AC Powered, EUT vertical
4809.923	46.8	9.5	4.0	1.0	3.0	0.0	V-Horn	PK	0.0	56.3	74.0	-17.7	Low Channel, AC Powered, EUT vertical
4810.023	46.5	9.5	19.0	1.0	3.0	0.0	H-Horn	PK	0.0	56.0	74.0	-18.0	Low Channel, Battery, EUT horizontal
4809.823	46.4	9.5	21.0	1.2	3.0	0.0	H-Horn	PK	0.0	55.9	74.0	-18.1	Low Channel, AC Powered, EUT horizontal
4809.823	46.3	9.5	152.0	1.2	3.0	0.0	V-Horn	PK	0.0	55.8	74.0	-18.2	Low Channel, Battery, EUT vertical
7214.933	38.6	15.6	40.0	1.0	3.0	0.0	V-Horn	PK	0.0	54.2	74.0	-19.8	Low Channel, Battery, EUT vertical
4809.847	23.3	9.5	4.0	1.0	3.0	0.0	V-Horn	AV	0.0	32.8	54.0	-21.2	Low Channel, AC Powered, EUT vertical
4809.960	23.3	9.5	21.0	1.2	3.0	0.0	H-Horn	AV	0.0	32.8	54.0	-21.2	Low Channel, AC Powered, EUT horizontal
4809.977	23.3	9.5	19.0	1.0	3.0	0.0	H-Horn	AV	0.0	32.8	54.0	-21.2	Low Channel, Battery, EUT horizontal
4810.113	23.3	9.5	152.0	1.2	3.0	0.0	V-Horn	AV	0.0	32.8	54.0	-21.2	Low Channel, Battery, EUT vertical
7215.770	37.1	15.6	96.0	1.0	3.0	0.0	H-Horn	PK	0.0	52.7	74.0	-21.3	Low Channel, AC Powered, EUT horizontal
4809.847	23.1	9.5	188.0	1.0	3.0	0.0	H-Horn	AV	0.0	32.6	54.0	-21.4	Low Channel, Battery, EUT on side
4810.027	42.9	9.5	188.0	1.0	3.0	0.0	H-Horn	PK	0.0	52.4	74.0	-21.6	Low Channel, Battery, EUT on side
9619.737	38.9	-12.5	76.0	1.0	3.0	0.0	V-Horn	AV	0.0	26.4	54.0	-27.6	Low Channel, AC Powered, EUT on side
9619.875	38.8	-12.5	47.0	1.3	3.0	0.0	H-Horn	AV	0.0	26.3	54.0	-27.7	Low Channel, Battery, EUT horizontal
9619.925	38.7	-12.5	227.0	1.3	3.0	0.0	H-Horn	AV	0.0	26.2	54.0	-27.8	Low Channel, AC Powered, EUT horizontal
9622.192	38.6	-12.5	6.0	1.0	3.0	0.0	V-Horn	AV	0.0	26.1	54.0	-27.9	Low Channel, Battery, EUT vertical

NORTHWEST EMC

FIELD STRENGTH OF RADIATED SPURIOUS EMISSIONS

PSA 2008.07.21
EMI 2009.8.29

EUT:	SBV2			Work Order:	ARCH0001
Serial Number:	FM1			Date:	02/05/10
Customer:	Archinoetics, LLC			Temperature:	22
Attendees:	None			Humidity:	38%
Project:	None			Barometric Pres.:	30.15 in
Tested by:	Rod Peloquin	Power:	120VAC/60Hz	Job Site:	EV01

TEST SPECIFICATIONS	Test Method
FCC 15.249:2010	ANSI C63.10:2009

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

COMMENTS

None

EUT OPERATING MODES

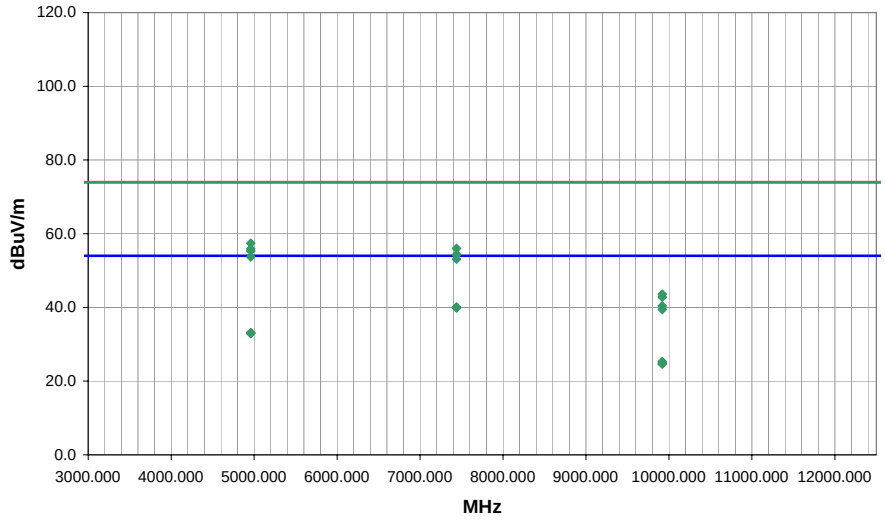
Transmitting with default duty cycle

DEVIATIONS FROM TEST STANDARD

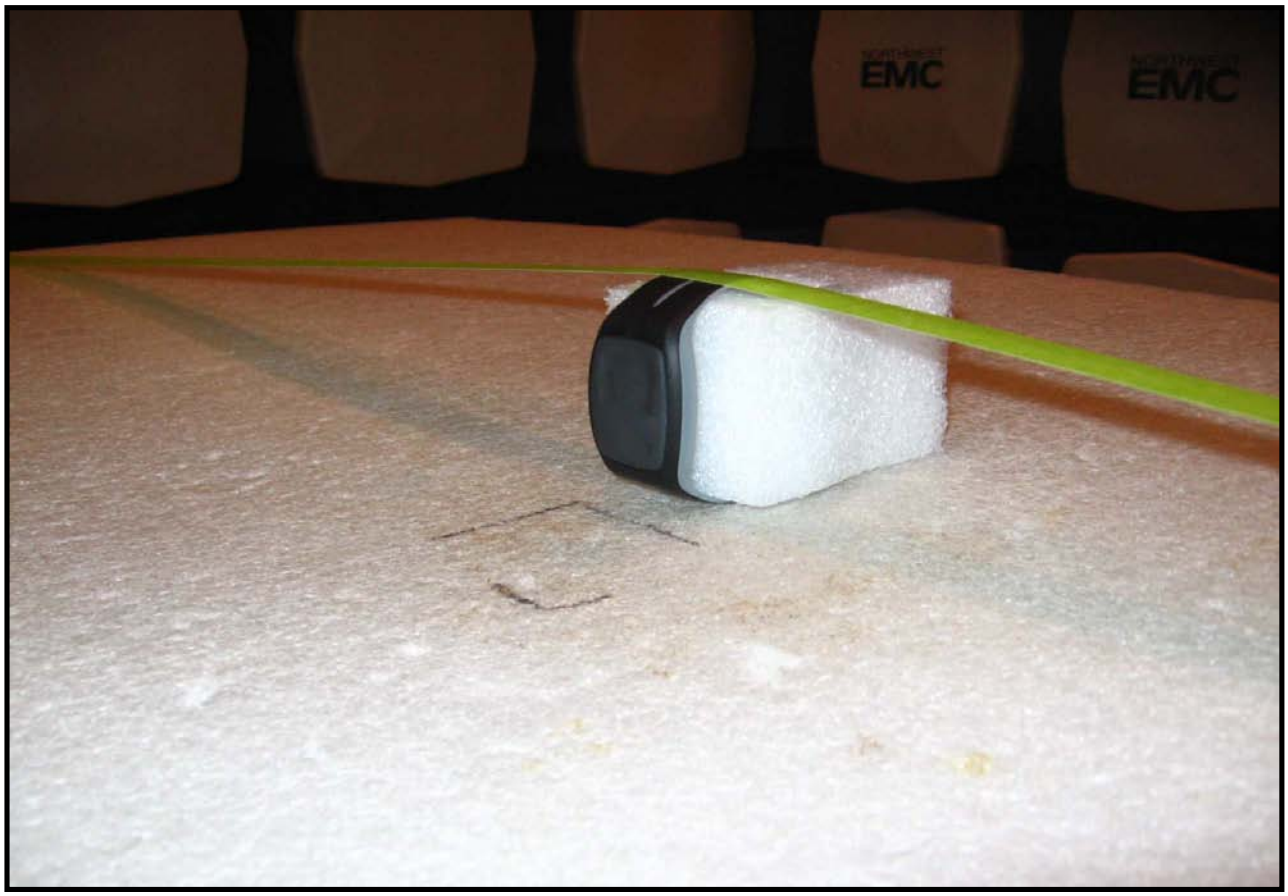
No deviations.

Run #	8
Configuration #	1 & 2
Results	Pass

Signature



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)	Comments
7439.542	23.2	16.9	32.0	1.0	3.0	0.0	V-Horn	AV	0.0	40.1	54.0	-13.9	High Channel, AC Powered, EUT on side
7438.771	23.1	16.9	21.0	1.0	3.0	0.0	H-Horn	AV	0.0	40.0	54.0	-14.0	High Channel, AC Powered, EUT horizontal
7440.200	23.0	16.9	72.0	1.0	3.0	0.0	V-Horn	AV	0.0	39.9	54.0	-14.1	High Channel, Battery, EUT vertical
7440.525	23.0	16.9	301.0	2.2	3.0	0.0	H-Horn	AV	0.0	39.9	54.0	-14.1	High Channel, Battery, EUT horizontal
4959.971	47.4	10.0	24.0	1.1	3.0	0.0	V-Horn	PK	0.0	57.4	74.0	-16.6	High Channel, AC Powered, EUT on side
7440.183	39.1	16.9	32.0	1.0	3.0	0.0	V-Horn	PK	0.0	56.0	74.0	-18.0	High Channel, AC Powered, EUT on side
4959.788	45.9	10.0	7.0	1.1	3.0	0.0	H-Horn	PK	0.0	55.9	74.0	-18.1	High Channel, AC Powered, EUT horizontal
4960.254	45.3	10.0	276.0	1.1	3.0	0.0	H-Horn	PK	0.0	55.3	74.0	-18.7	High Channel, Battery, EUT horizontal
7439.417	37.4	16.9	301.0	2.2	3.0	0.0	H-Horn	PK	0.0	54.3	74.0	-19.7	High Channel, Battery, EUT horizontal
7440.788	37.4	16.9	72.0	1.0	3.0	0.0	V-Horn	PK	0.0	54.3	74.0	-19.7	High Channel, Battery, EUT vertical
4960.083	43.7	10.0	144.0	1.1	3.0	0.0	V-Horn	PK	0.0	53.7	74.0	-20.3	High Channel, Battery, EUT vertical
4959.704	23.1	10.0	276.0	1.1	3.0	0.0	H-Horn	AV	0.0	33.1	54.0	-20.9	High Channel, Battery, EUT horizontal
4959.817	23.1	10.0	7.0	1.1	3.0	0.0	H-Horn	AV	0.0	33.1	54.0	-20.9	High Channel, AC Powered, EUT horizontal
4959.925	23.1	10.0	24.0	1.1	3.0	0.0	V-Horn	AV	0.0	33.1	54.0	-20.9	High Channel, AC Powered, EUT on side
7439.408	36.2	16.9	21.0	1.0	3.0	0.0	H-Horn	PK	0.0	53.1	74.0	-20.9	High Channel, AC Powered, EUT horizontal
4960.038	22.9	10.0	144.0	1.1	3.0	0.0	V-Horn	AV	0.0	32.9	54.0	-21.1	High Channel, Battery, EUT vertical
9919.625	38.2	-12.9	100.0	1.0	3.0	0.0	V-Horn	AV	0.0	25.3	54.0	-28.7	High Channel, AC Powered, EUT on side
9919.504	37.8	-12.9	343.0	1.0	3.0	0.0	V-Horn	AV	0.0	24.9	54.0	-29.1	High Channel, Battery, EUT vertical
9919.517	37.8	-12.9	360.0	1.0	3.0	0.0	H-Horn	AV	0.0	24.9	54.0	-29.1	High Channel, Battery, EUT horizontal
9919.667	37.5	-12.9	211.0	1.0	3.0	0.0	H-Horn	AV	0.0	24.6	54.0	-29.4	High Channel, AC Powered, EUT horizontal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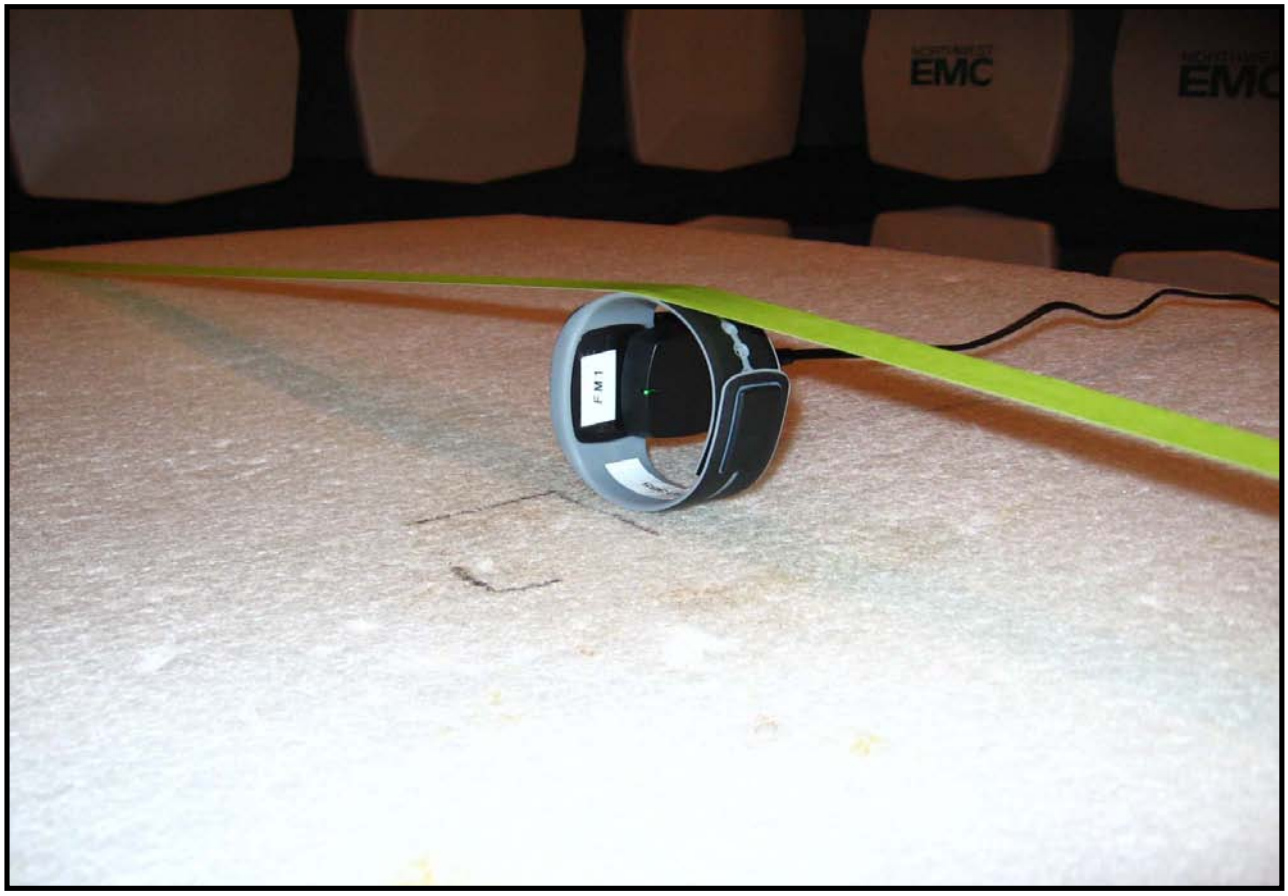
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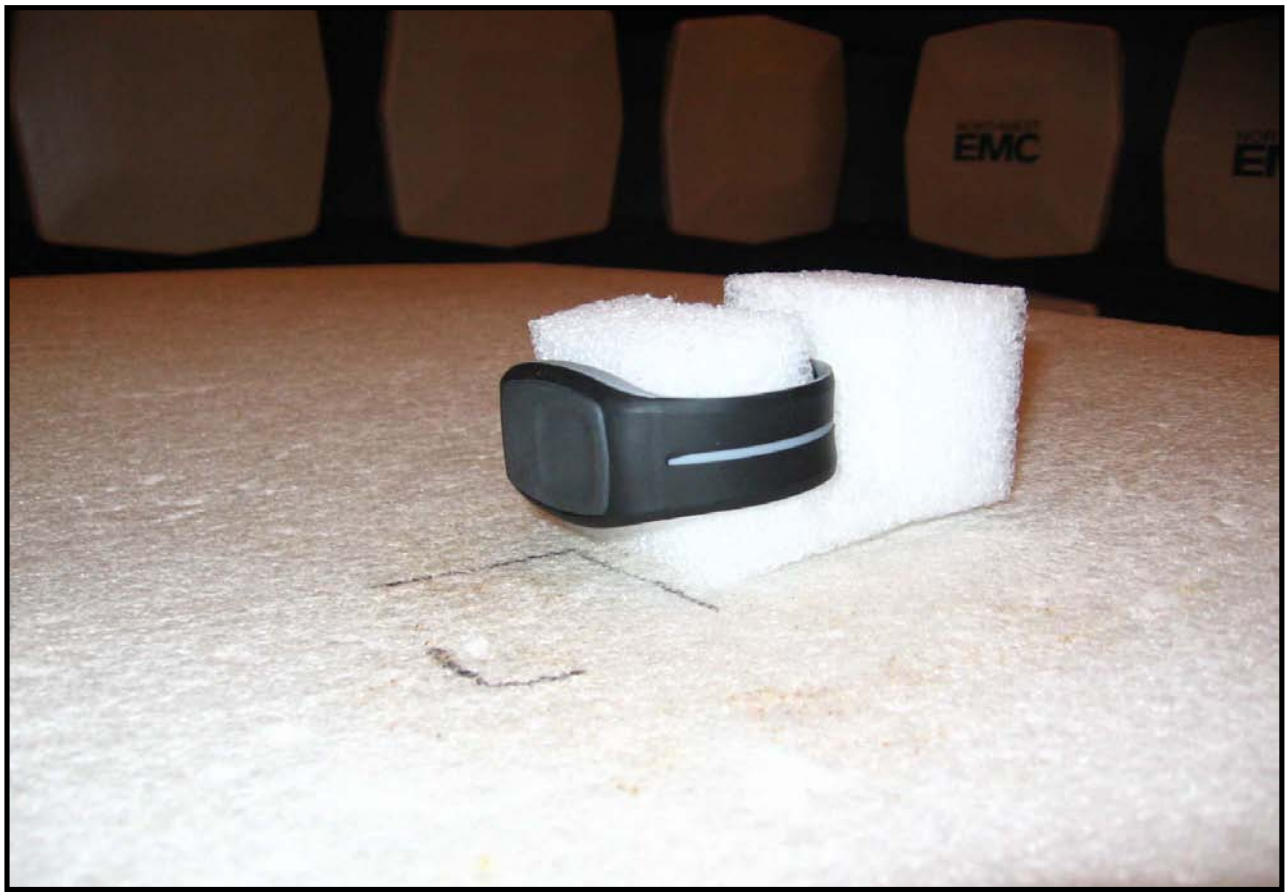
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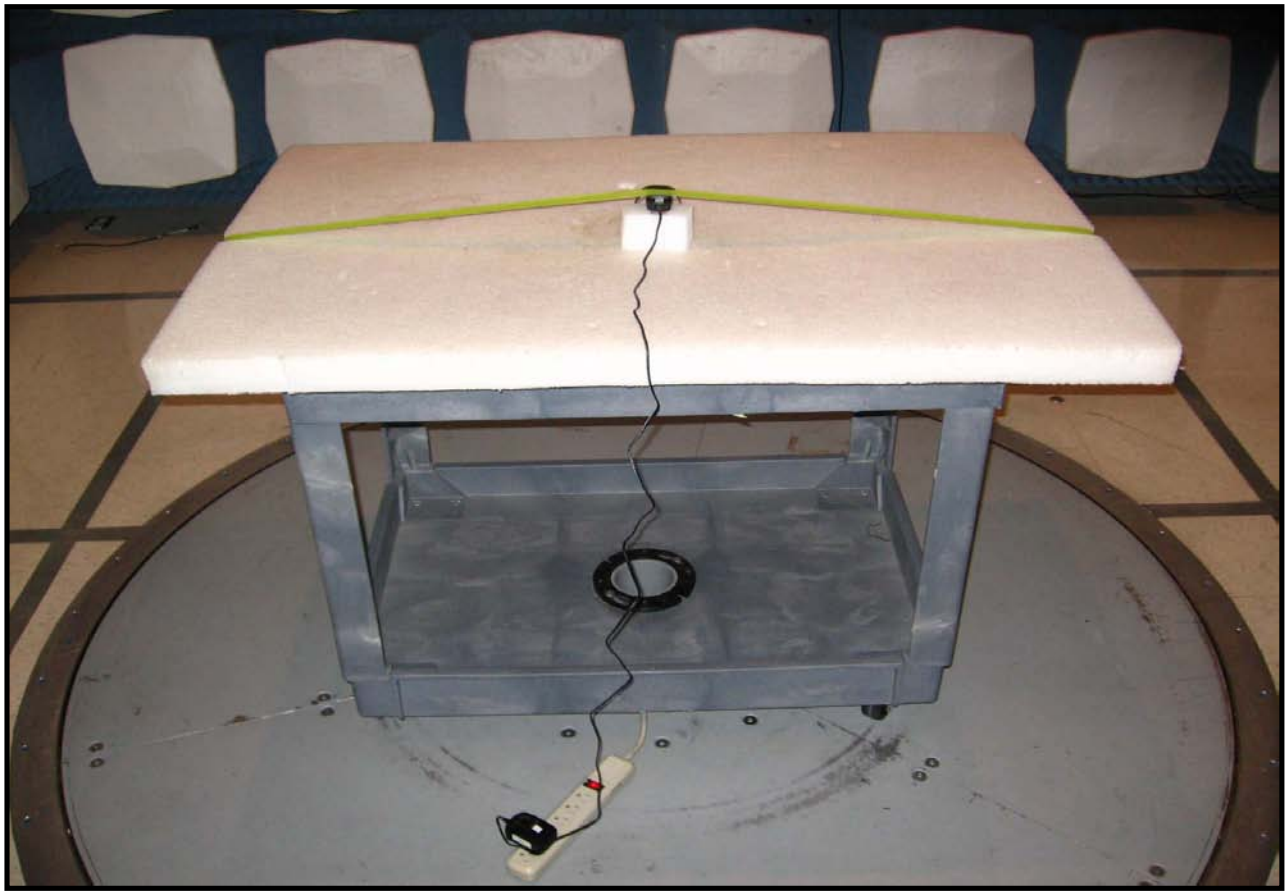


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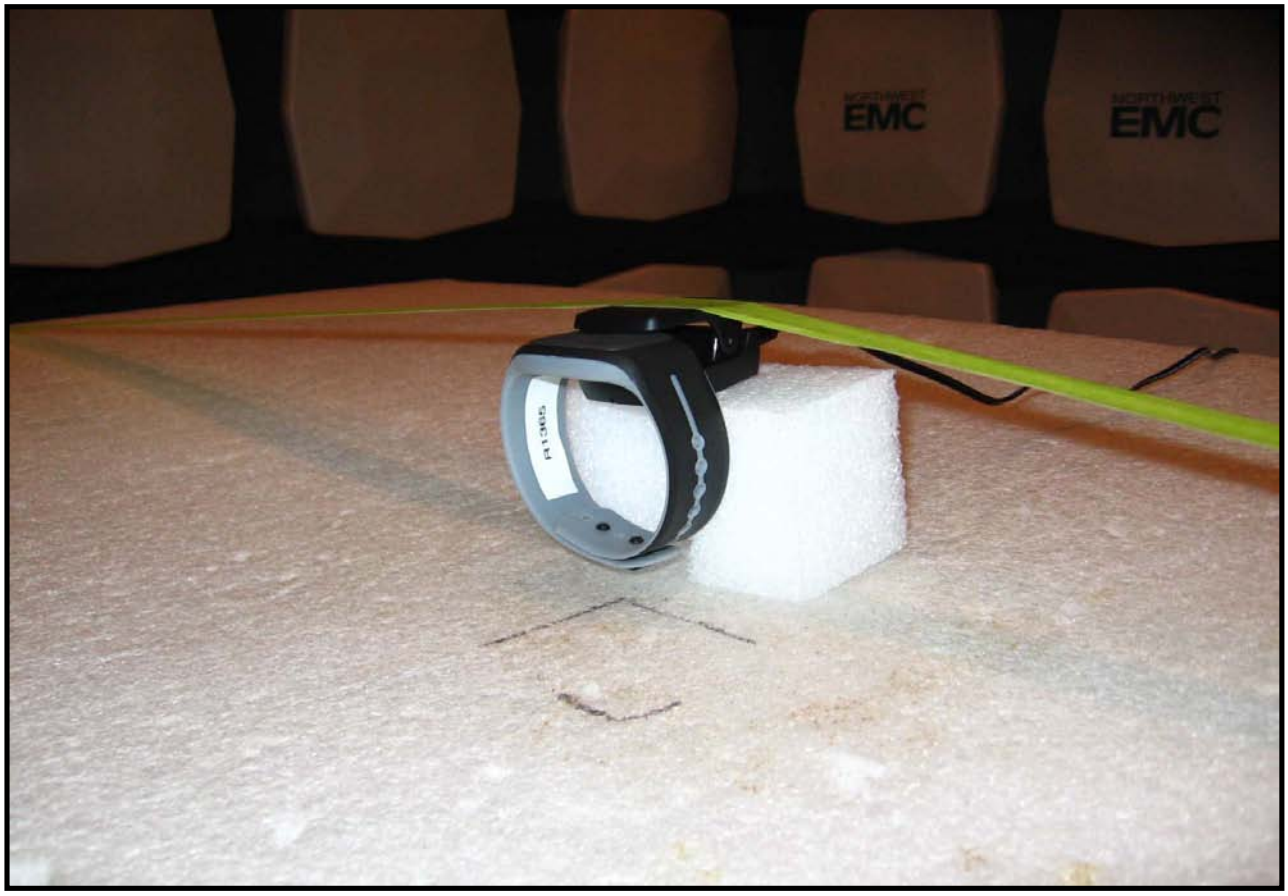
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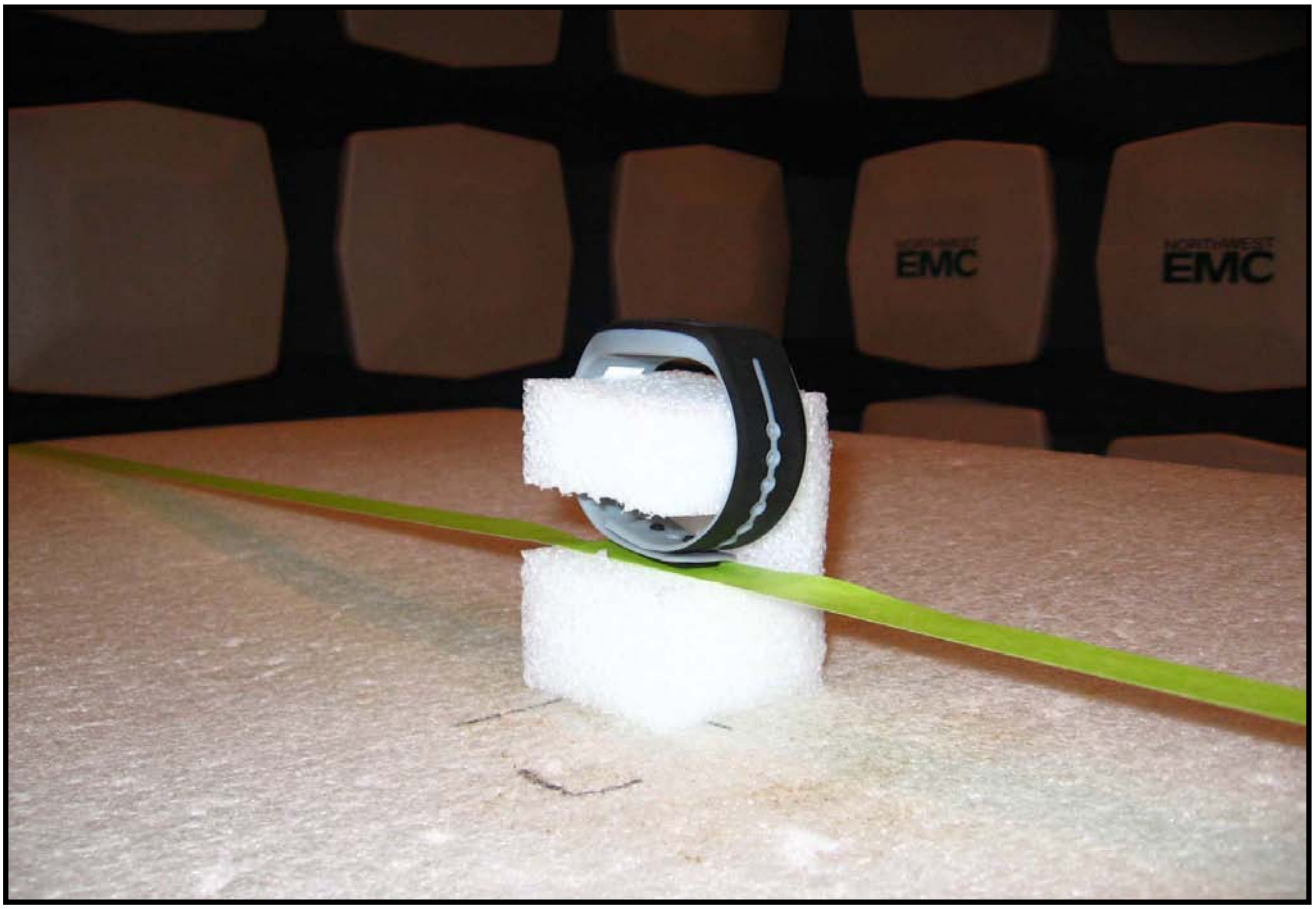
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EMC AC POWERLINE CONDUCTED EMISSIONS

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

MODES OF OPERATION

Transmitting with default duty cycle, high channel, 2480 MHz
Transmitting with default duty cycle, low channel, 2405 MHz
Transmitting with default duty cycle, mid channel, 2442 MHz

POWER SETTINGS INVESTIGATED

120VAC/60Hz

CONFIGURATIONS INVESTIGATED

ARCH0001 - 2

SAMPLE CALCULATIONS

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

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Receiver	Rohde & Schwarz	ESCI	ARH	9/25/2009	13 mo
Attenuator	Coaxicom	66702 2910-20	ATO	7/21/2009	13 mo
High Pass Filter	TTE	H97-100K-50-720B	HFX	5/27/2009	13 mo
LISN	Solar	9252-50-R-24-BNC	LIR	2/4/2009	13 mo
EV07 Cables		Conducted Cables	EVG	6/1/2009	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	1000.0	N/A	1000.0

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

MEASUREMENT UNCERTAINTY

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

TEST DESCRIPTION

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

NORTHWEST

EMC

AC POWERLINE CONDUCTED EMISSIONS

PSA-ESCI 2009.06.09
Version 2009.12.28

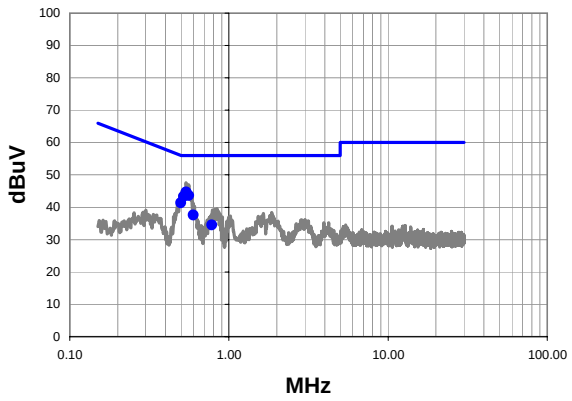
Work Order:	ARCH0001	**Date:**	02/04/10		
Project:	None	**Temperature:**	22		
Job Site:	EV07	**Humidity:**	38		
Serial Number:	FM1	**Barometric Pres.:**	30.15 in	**Tested by:**	Rod Peloquin

EUT:	SBV2
Configuration:	2 - AC Powered
Customer:	Archinoetics, LLC
Attendees:	None
EUT Power:	120VAC/60Hz
Operating Mode:	Transmitting with default duty cycle, mid channel, 2442 MHz
Deviations:	No deviations.
Comments:	AC Power adapter

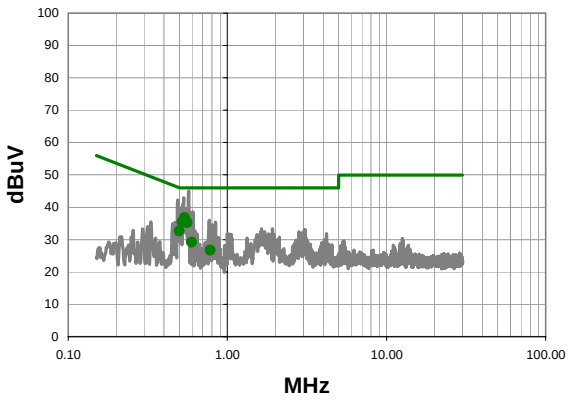
Test Specifications	**Test Method**
FCC 15.209:2010	ANSI C63.10:2009

Run #	1	**Line:**	High Line	**Ext. Attenuation:**	20	**Results**	Pass

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit



Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.539	24.2	20.5	44.7	56.0	-11.3
0.539	23.8	20.5	44.3	56.0	-11.7
0.560	23.1	20.5	43.6	56.0	-12.4
0.519	22.8	20.5	43.3	56.0	-12.7
0.499	20.9	20.5	41.4	56.0	-14.6
0.597	17.1	20.5	37.6	56.0	-18.4
0.781	14.1	20.4	34.5	56.0	-21.5

Average Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.539	16.3	20.5	36.8	46.0	-9.2
0.539	15.7	20.5	36.2	46.0	-9.8
0.519	14.9	20.5	35.4	46.0	-10.6
0.560	14.7	20.5	35.2	46.0	-10.8
0.499	12.2	20.5	32.7	46.0	-13.3
0.597	8.7	20.5	29.2	46.0	-16.8
0.781	6.3	20.4	26.7	46.0	-19.3

NORTHWEST

EMC

AC POWERLINE CONDUCTED EMISSIONS

PSA-ESCI 2009.06.09
Version 2009.12.28

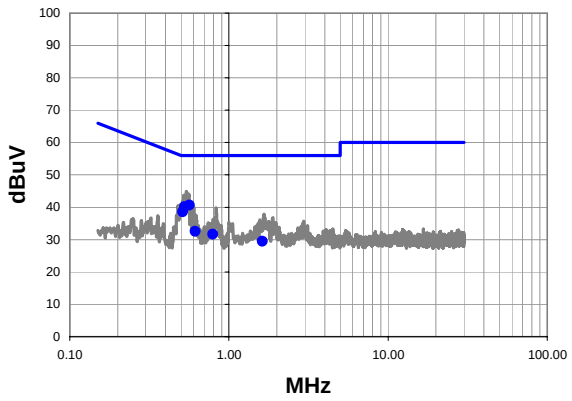
Work Order:	ARCH0001	**Date:**	02/04/10		
Project:	None	**Temperature:**	22		
Job Site:	EV07	**Humidity:**	38		
Serial Number:	FM1	**Barometric Pres.:**	30.15 in	**Tested by:**	Rod Peloquin

EUT:	SBV2
Configuration:	2 - AC Powered
Customer:	Archinoetics, LLC
Attendees:	None
EUT Power:	120VAC/60Hz
Operating Mode:	Transmitting with default duty cycle, mid channel, 2442 MHz
Deviations:	No deviations.
Comments:	AC Power adapter

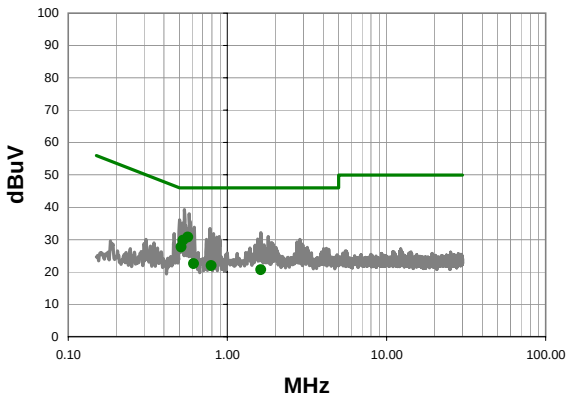
Test Specifications	**Test Method**
FCC 15.209:2010	ANSI C63.10:2009

Run #	2	**Line:**	Neutral	**Ext. Attenuation:**	20	**Results**	Pass

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit



Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.565	20.2	20.5	40.7	56.0	-15.3
0.526	19.7	20.5	40.2	56.0	-15.8
0.512	18.1	20.5	38.6	56.0	-17.4
0.613	12.1	20.5	32.6	56.0	-23.4
0.791	11.3	20.4	31.7	56.0	-24.3
1.620	9.1	20.4	29.5	56.0	-26.5

Average Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.565	10.3	20.5	30.8	46.0	-15.2
0.526	9.3	20.5	29.8	46.0	-16.2
0.512	7.2	20.5	27.7	46.0	-18.3
0.613	2.1	20.5	22.6	46.0	-23.4
0.791	1.6	20.4	22.0	46.0	-24.0
1.620	0.3	20.4	20.7	46.0	-25.3

NORTHWEST

EMC

AC POWERLINE CONDUCTED EMISSIONS

PSA-ESCI 2009.06.09
Version 2009.12.28

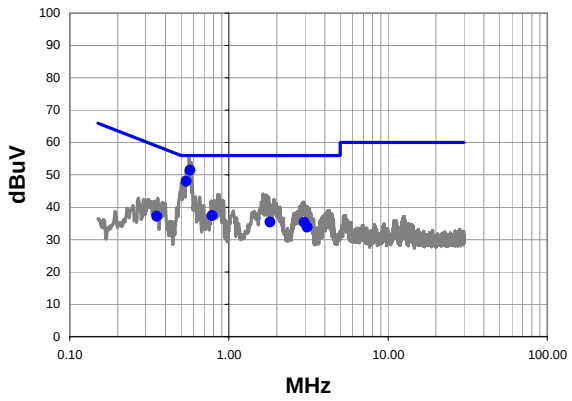
Work Order:	ARCH0001	**Date:**	02/04/10		
Project:	None	**Temperature:**	22		
Job Site:	EV07	**Humidity:**	38		
Serial Number:	FM1	**Barometric Pres.:**	30.15 in	**Tested by:**	Rod Peloquin

EUT:	SBV2
Configuration:	2 - AC Powered
Customer:	Archinoetics, LLC
Attendees:	None
EUT Power:	120VAC/60Hz
Operating Mode:	Transmitting with default duty cycle, low channel, 2405 MHz
Deviations:	No deviations.
Comments:	AC Power adapter

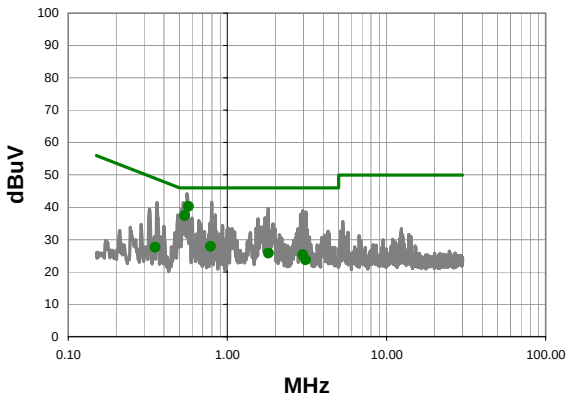
Test Specifications	**Test Method**
FCC 15.209:2010	ANSI C63.10:2009

Run #	3	**Line:**	High Line	**Ext. Attenuation:**	20	**Results**	Pass

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit



Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.571	31.0	20.5	51.5	56.0	-4.5
0.539	27.5	20.5	48.0	56.0	-8.0
0.784	17.0	20.4	37.4	56.0	-18.6
1.812	15.0	20.4	35.4	56.0	-20.6
2.984	14.9	20.4	35.3	56.0	-20.7
0.353	16.5	20.7	37.2	58.9	-21.7
3.104	13.4	20.4	33.8	56.0	-22.2

Average Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.571	19.8	20.5	40.3	46.0	-5.7
0.539	16.9	20.5	37.4	46.0	-8.6
0.784	7.5	20.4	27.9	46.0	-18.1
1.812	5.4	20.4	25.8	46.0	-20.2
2.984	4.9	20.4	25.3	46.0	-20.7
0.353	6.9	20.7	27.6	48.9	-21.3
3.104	3.3	20.4	23.7	46.0	-22.3

NORTHWEST

EMC

AC POWERLINE CONDUCTED EMISSIONS

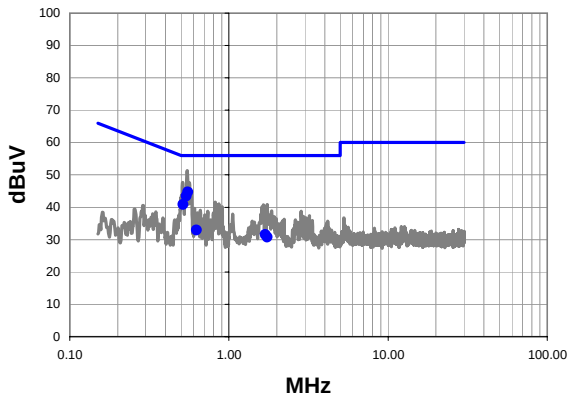
PSA-ESCI 2009.06.09
Version 2009.12.28

Work Order:	ARCH0001	**Date:**	02/04/10		
Project:	None	**Temperature:**	22		
Job Site:	EV07	**Humidity:**	38		
Serial Number:	FM1	**Barometric Pres.:**	30.15 in	**Tested by:**	Rod Peloquin
EUT:	SBV2				
Configuration:	2 - AC Powered				
Customer:	Archinoetics, LLC				
Attendees:	None				
EUT Power:	120VAC/60Hz				
Operating Mode:	Transmitting with default duty cycle, low channel, 2405 MHz				
Deviations:	No deviations.				
Comments:	AC Power adapter				

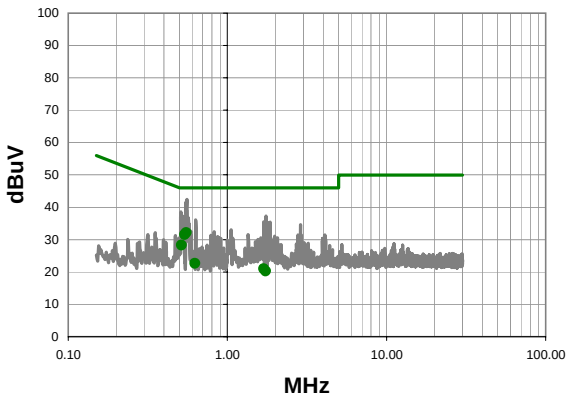
Test Specifications	**Test Method**
FCC 15.209:2010	ANSI C63.10:2009

Run #	4	**Line:**	Neutral	**Ext. Attenuation:**	20	**Results**	Pass

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit



Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.552	24.2	20.5	44.7	56.0	-11.3
0.539	22.9	20.5	43.4	56.0	-12.6
0.514	20.4	20.5	40.9	56.0	-15.1
0.625	12.5	20.5	33.0	56.0	-23.0
1.692	11.2	20.4	31.6	56.0	-24.4
1.740	10.4	20.4	30.8	56.0	-25.2

Average Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.552	11.7	20.5	32.2	46.0	-13.8
0.539	11.1	20.5	31.6	46.0	-14.4
0.514	7.8	20.5	28.3	46.0	-17.7
0.625	2.2	20.5	22.7	46.0	-23.3
1.692	0.6	20.4	21.0	46.0	-25.0
1.740	-0.1	20.4	20.3	46.0	-25.7

NORTHWEST

EMC

AC POWERLINE CONDUCTED EMISSIONS

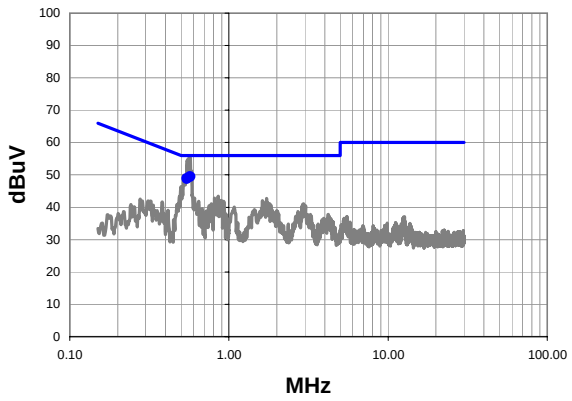
PSA-ESCI 2009.06.09
Version 2009.12.28

Work Order:	ARCH0001	**Date:**	02/04/10		
Project:	None	**Temperature:**	22		
Job Site:	EV07	**Humidity:**	38		
Serial Number:	FM1	**Barometric Pres.:**	30.15 in	**Tested by:**	Rod Peloquin
EUT:	SBV2				
Configuration:	2 - AC Powered				
Customer:	Archinoetics, LLC				
Attendees:	None				
EUT Power:	120VAC/60Hz				
Operating Mode:	Transmitting with default duty cycle, high channel, 2480 MHz				
Deviations:	No deviations.				
Comments:	AC Power adapter				

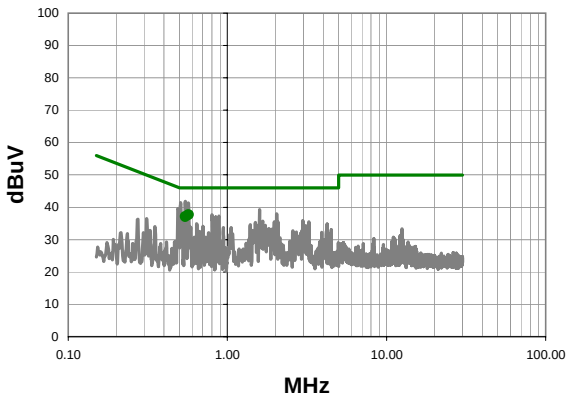
Test Specifications	**Test Method**
FCC 15.209:2010	ANSI C63.10:2009

Run #	5	**Line:**	High Line	**Ext. Attenuation:**	20	**Results**	Pass

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit



Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.570	29.0	20.5	49.5	56.0	-6.5
0.544	28.4	20.5	48.9	56.0	-7.1

Average Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.570	17.2	20.5	37.7	46.0	-8.3
0.544	16.6	20.5	37.1	46.0	-8.9

NORTHWEST

EMC

AC POWERLINE CONDUCTED EMISSIONS

PSA-ESCI 2009.06.09
Version 2009.12.28

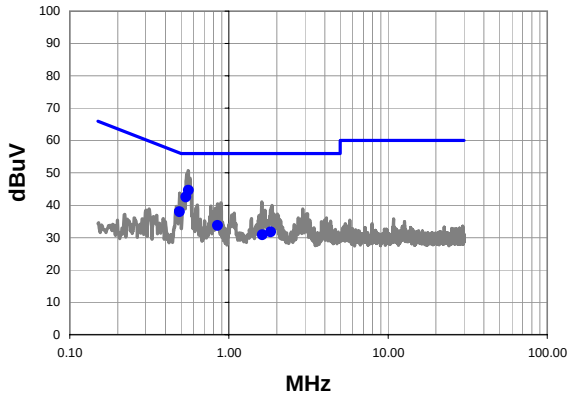
Work Order:	ARCH0001	**Date:**	02/04/10		
Project:	None	**Temperature:**	22		
Job Site:	EV07	**Humidity:**	38		
Serial Number:	FM1	**Barometric Pres.:**	30.15 in	**Tested by:**	Rod Peloquin

EUT:	SBV2
Configuration:	2 - AC Powered
Customer:	Archinoetics, LLC
Attendees:	None
EUT Power:	120VAC/60Hz
Operating Mode:	Transmitting with default duty cycle, high channel, 2480 MHz
Deviations:	No deviations.
Comments:	AC Power adapter

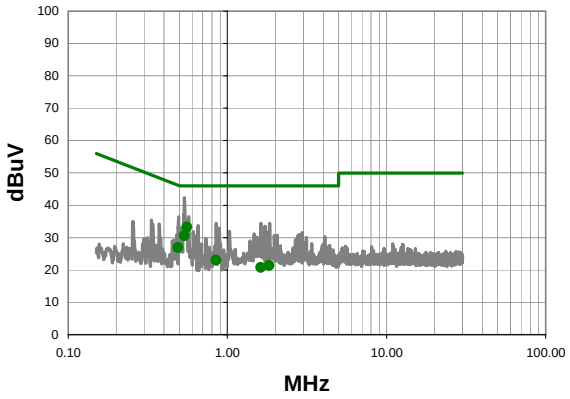
Test Specifications	**Test Method**
FCC 15.209:2010	ANSI C63.10:2009

Run #	6	**Line:**	Neutral	**Ext. Attenuation:**	20	**Results**	Pass

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit



Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.558	24.1	20.5	44.6	56.0	-11.4
0.536	22.1	20.5	42.6	56.0	-13.4
0.489	17.5	20.5	38.0	56.2	-18.2
0.850	13.3	20.4	33.7	56.0	-22.3
1.832	11.4	20.4	31.8	56.0	-24.2
1.620	10.5	20.4	30.9	56.0	-25.1

Average Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.558	12.8	20.5	33.3	46.0	-12.7
0.536	10.1	20.5	30.6	46.0	-15.4
0.489	6.4	20.5	26.9	46.2	-19.3
0.850	2.7	20.4	23.1	46.0	-22.9
1.832	1.0	20.4	21.4	46.0	-24.6
1.620	0.4	20.4	20.8	46.0	-25.2