# Flow Metrix, Inc.

## MLOG 02

**January 22, 2007**

**Report No. FLWM0006**

Report Prepared By

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



EMC Test Report

NORTHWEST EMC

22975 NW Evergreen Parkway
Suite 400
Hillsboro, Oregon 97124

# Certificate of Test

**Issue Date: January 22, 2007**
**Flow Metrix, Inc.**
**Model: MLOG 02**

| Emissions | | | | |
|---|---|---|---|---|
| **Test Description** | **Specification** | **Test Method** | **Pass** | **Fail** |
| Radiated Emissions | FCC 15.109:2006 | ANSI C63.4:2003 | ☒ | ☐ |
| Occupied Bandwidth | FCC 15.247:2006 DTS | ANSI C63.4:2003, KDB No. 558074 | ☒ | ☐ |
| Channel Spacing | FCC 15.247:2006 DTS | ANSI C63.4:2003, KDB No. 558074 | ☒ | ☐ |
| Dwell Time | FCC 15.247:2006 DTS | ANSI C63.4:2003, KDB No. 558074 | ☒ | ☐ |
| Number of Hopping Frequencies | FCC 15.247:2006 DTS | ANSI C63.4:2003, KDB No. 558074 | ☒ | ☐ |
| Output Power | FCC 15.247:2006 DTS | ANSI C63.4:2003, KDB No. 558074 | ☒ | ☐ |
| Band Edge Compliance | FCC 15.247:2006 DTS | ANSI C63.4:2003, KDB No. 558074 | ☒ | ☐ |
| Spurious Radiated Emissions | FCC 15.247:2006 DTS | ANSI C63.4:2003, KDB No. 558074 | ☒ | ☐ |
| Power Spectral Density | FCC 15.247:2006 DTS | ANSI C63.4:2003, KDB No. 558074 | ☒ | ☐ |

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

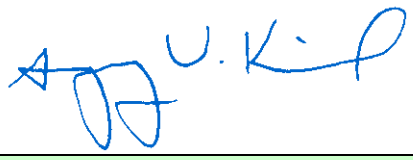
***Test Facility***

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

Northwest EMC, Inc.
41 Tesla Avenue; Irvine, CA 92618
Phone: (949) 861-8918
Fax: 861-8923

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 | | |

# 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 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.

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

**Industry Canada:** Accredited by NVLAP for performance of Industry Canada RSS and ICES testing. Our Open Area Test Sites and certification chambers comply with RSS 212, Issue 1 (Provisional) and have been filed with Industry Canada and accepted. Northwest EMC has been accredited by ANSI to ISO / IEC Guide 65 as a product certifier. We have been designated by NIST and recognized by Industry Canada as a Certification Body (CB) per the APEC Mutual Recognition Arrangement (MRA). This allows Northwest EMC to certify transmitters to Industry Canada technical requirements.

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

**TÜV Product Service:** Included in TUV Product Service Group's Listing of Recognized Laboratories. It qualifies in connection with the TUV Certification after Recognition of Agent's Testing Program for the product categories and/or standards shown in TUV's current Listing of CARAT Laboratories, available from TUV. A certificate was issued to represent that this laboratory continues to meet TUV'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).

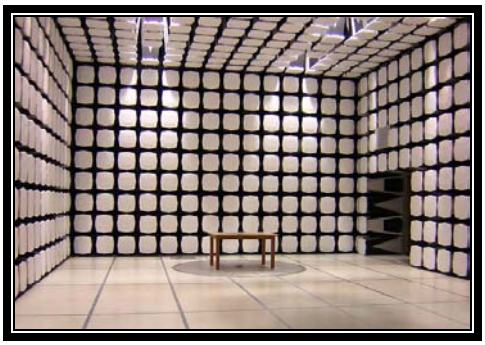
**VCCI:** Accepted as an Associate Member to the VCCI, Acceptance No. 564. Conducted and radiated measurement facilities have been registered in accordance with Regulations for Voluntary Control Measures, Article 8. *(Registration Numbers. - Hillsboro: C-1071, R-1025, C-2687, T-289, and R-2318, Irvine: 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

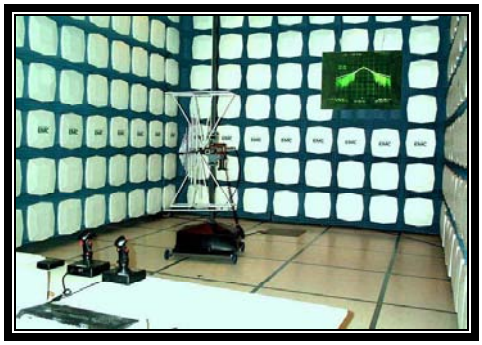
## SCOPE

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:** | Flow Metrix, Inc. |
| **Address:** | 2 Clock Tower Place |
| **City, State, Zip:** | Maynard, MA 01754 |
| **Test Requested By:** | Paul Lander |
| **Model:** | MLOG 02 |
| **First Date of Test:** | October 4, 2006 |
| **Last Date of Test:** | January 9, 2007 |
| **Receipt Date of Samples:** | October 4, 2006 |
| **Equipment Design Stage:** | Production |
| **Equipment Condition:** | No Damage |

## Information Provided by the Party Requesting the Test

**Functional Description of the EUT (Equipment Under Test):**

Leak Detecting Sensor Transmitter used in water meter pits to transmit a short leak detection signal to a drive-by collector.

**Testing Objective:**

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

## EUT Photo

## CONFIGURATION 1 FLWM0004

| EUT | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| Leak Detecting Sensor Transmitter | Flow Metrix, Inc. | MLOG 02 | 03011-9027 |

## CONFIGURATION 2 FLWM0004

| EUT | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| Leak Detecting Sensor Transmitter | Flow Metrix, Inc. | MLOG 02 | 03011-9029 |

## CONFIGURATION 3 FLWM0004

| EUT | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| Leak Detecting Sensor Transmitter | Flow Metrix, Inc. | MLOG 02 | 03011-9002 |

## CONFIGURATION 4 FLWM0004

| EUT | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| Leak Detecting Sensor Transmitter | Flow Metrix, Inc. | MLOG 02 | 03011-9025 |

## CONFIGURATION 5 FLWM0004

| EUT | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| Leak Detecting Sensor Transmitter | Flow Metrix, Inc. | MLOG 02 | Unknown |

| Equipment modifications | | | | | |
|---|---|---|---|---|---|
| Item | Date | Test | Modification | Note | Disposition of EUT |
| 1 | 10/4/2006 | Spurious Radiated Emissions | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | EUT remained at Northwest EMC following the test. |
| 2 | 10/10/2006 | Receiver 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 | 10/09/2006 | Output Power | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | EUT remained at Northwest EMC following the test. |
| 4 | 1/9/2007 | Band Edge Compliance | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | EUT remained at Northwest EMC following the test. |
| 5 | 1/9/2007 | Channel Spacing | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | EUT remained at Northwest EMC following the test. |
| 6 | 1/9/2007 | Dwell Time | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | EUT remained at Northwest EMC following the test. |
| 7 | 1/9/2007 | Occupied Bandwidth | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | EUT remained at Northwest EMC following the test. |
| 8 | 1/9/2007 | Number of Hopping Frequencies | 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. |
| 9 | 1/9/2007 | Power Spectral Density | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | Scheduled Testing Completed. |

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

**TEST EQUIPMENT**

| Description | Manufacturer | Model | ID | Last Cal. | Interval |
|---|---|---|---|---|---|
| Spectrum Analyzer | Hewlett-Packard | 8593E | AAP | 12/14/2006 | 13 |
| Near Field Probe | EMCO | 7405 | IPI | NCR | NA |

**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**

Per 47 CFR 15.247(a)(1), the hopping channel carrier frequencies must be separated by a minimum of 25kHz or the 20dB bandwidth of the hopping channel. The measurement is made with the spectrum analyzer's resolution bandwidth set to greater than or equal to 1% of the span, and the video bandwidth set to greater than or equal to the resolution bandwidth

The carrier frequency separation was measured between each of 5 hopping channels in the middle of the authorized band. The measurements were made using a spectrum analyzer and near field probe. The hopping function of the EUT was enabled.

NORTHWEST EMC

# Channel Spacing

XMit 2006.03.01

| | | | | | |
|---|---|---|---|---|---|
| EUT: | MLOG 02 | | | Work Order: | FLWM0004 |
| Serial Number: | See configs | | | Date: | 01/09/07 |
| Customer: | Flow Metrix, Inc. | | | Temperature: | 24 C |
| Attendees: | None | | | Humidity: | 22% |
| Project: | None | | | Barometric Pres.: | 30.02 |
| Tested by: | Jeremiah Darden | Power: | Battery | Job Site: | OC03 |

| TEST SPECIFICATIONS | Test Method |
|---|---|
| FCC 15.247:2006 DTS | ANSI C63.4:2003, KDB No. 558074 |
| | |

**COMMENTS**

Hopping Carrier

**DEVIATIONS FROM TEST STANDARD**

None

| Configuration # | 5 | Signature |
|---|---|---|

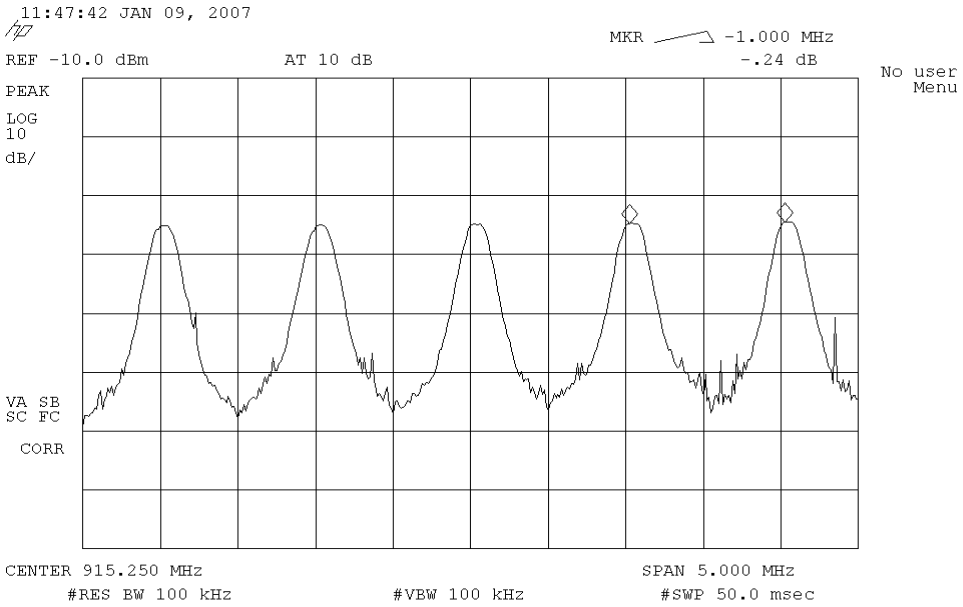
| Modes of Operation and Test Conditions | Value | Limit | Result |
|---|---|---|---|
| Hopping Mode | 1 MHz | ≥ 25 kHz | Pass |

| Hopping Mode | | |
|---|---|---|
| **Result:** Pass | **Value:** 1 MHz | **Limit:** ≥ 25 kHz |

NORTHWEST EMC

Channel Spacing

XMit 2006.03.01

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

## TEST EQUIPMENT

| Description | Manufacturer | Model | ID | Last Cal. | Interval |
|---|---|---|---|---|---|
| Spectrum Analyzer | Hewlett-Packard | 8593E | AAP | 12/14/2006 | 13 |
| Near Field Probe | EMCO | 7405 | IPI | NCR | NA |

## 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 average dwell time per hopping channel was measured at one hopping channel in the middle of the authorized band. The measurements were made using a near field probe between the RF output of the EUT and the spectrum analyzer. The hopping function of the EUT was enabled.

NORTHWEST EMC

# Dwell Time

XMit 2006.03.01

| | | | | | |
|---|---|---|---|---|---|
| EUT: | MLOG 02 | | | Work Order: | FLWM0004 |
| Serial Number: | See Configs | | | Date: | 01/09/07 |
| Customer: | Flow Metrix, Inc. | | | Temperature: | 24 |
| Attendees: | None | | | Humidity: | 22% |
| Project: | None | | | Barometric Pres.: | 30.02 |
| Tested by: | Jeremiah Darden | Power: | Battery | Job Site: | OC03 |

| TEST SPECIFICATIONS | Test Method |
|---|---|
| FCC 15.247:2006 DTS | ANSI C63.4:2003, KDB No. 558074 |
| | |

**COMMENTS**

Hopping Carrier, Total Dwell time = (Dwell Time during a single transmission) x (Number of transmissions during a 2 second period)
Average time of occupancy on any frequency shall not be greater than .4 seconds within a period in seconds equal to the number of hopping channels employed multiplied by .4 Total Dwell time = 42.375 x 9 = 381.4 mS

**DEVIATIONS FROM TEST STANDARD**

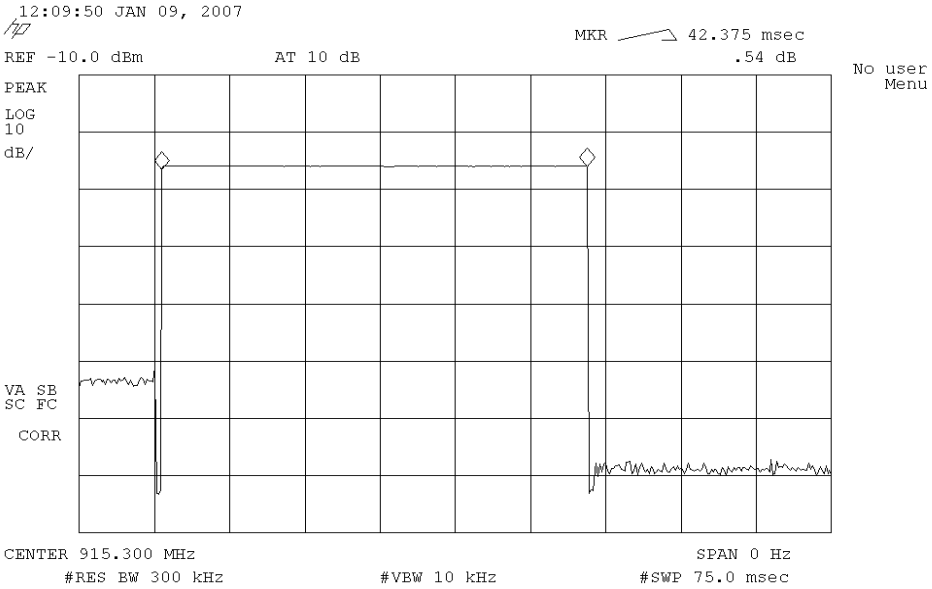
None

| Configuration # | 5 | Signature |
|---|---|---|

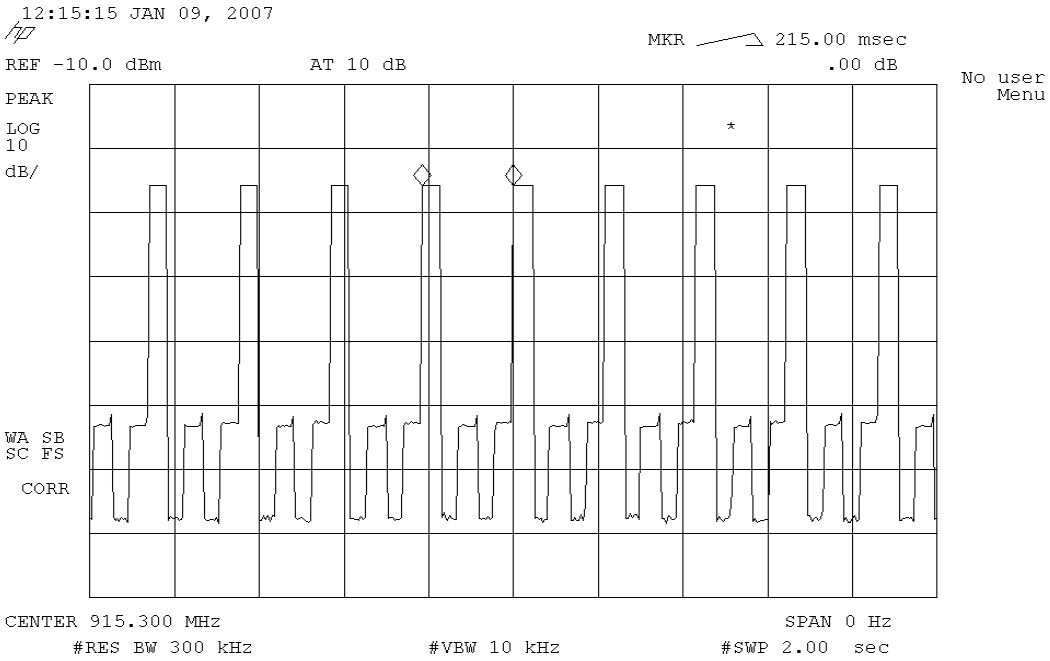
| Modes of Operation and Test Conditions | Value | Limit | Result |
|---|---|---|---|
| Hopping Mode | 42.375 mS | see comments | Pass |
| Hopping Mode | 9 Transmissions in 2 Sec | see comments | Pass |

# Dwell Time

| Hopping Mode | | |
|---|---|---|
| **Result:** | **Value:** 97.5 mS | **Limit:** |




| Hopping Mode | | |
|---|---|---|
| **Result:** | **Value:** 9 transmissions | **Limit:** |

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# SPURIOUS RADIATED EMISSIONS



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

| MODES OF OPERATION |
|---|
| No hop, High Channel 917.3MHz |
| No hop, Low Channel 913.3MHz |

| MODE USED FOR FINAL DATA |
|---|
| No hop, Low Channel 913.3MHz |
| No hop, High Channel 917.3MHz |

| POWER SETTINGS INVESTIGATED |
|---|
| Battery |

| POWER SETTINGS USED FOR FINAL DATA |
|---|
| Battery |

| FREQUENCY RANGE INVESTIGATED | | | |
|---|---|---|---|
| Start Frequency | 30MHz | Stop Frequency | 12GHz |

| 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 |
| Pre-Amplifier | Miteq | AMF-6F-08001200-30-10P | AOK | 2/8/2006 | 13 |
| Antenna, Horn | EMCO | 3160-07 | AHP | NCR | 0 |
| Pre-Amplifier 0.5-18 GHz | Miteq | AMF-4D-005180-24-10P | APP | 3/22/2006 | 13 |
| Antenna, Horn | EMCO | 3115 | AHB | 8/1/2005 | 24 |
| OC10 cables a,b,c,e,f Horn Cables | | | OCJ | 3/21/2006 | 13 |
| Antenna, Biconilog | EMCO | 3142 | AXJ | 3/14/2006 | 24 |
| OC10 cables a,b,c,d Bilog | | | OCH | 3/30/2006 | 13 |
| Pre-Amplifier | Miteq | AM-1616-1000 | AOM | 11/13/2005 | 13 |
| Spectrum Analyzer | Agilent | E4446A | AAQ | 7/15/2005 | 18 |

| 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

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

NORTHWEST EMC

# SPURIOUS RADIATED EMISSIONS DATA SHEET

PSA 2006.09.07
EMI 2006.4.26

| | | | | | |
|---|---|---|---|---|---|
| EUT: | MLOG 02 | | | Work Order: | FLWM0004 |
| Serial Number: | 03011-9002 | | | Date: | 10/04/06 |
| Customer: | Flow Metrix, Inc. | | | Temperature: | 21 |
| Attendees: | None | | | Humidity: | 48% |
| Project: | None | | | Barometric Pres.: | 29.98 |
| Tested by: | Jeremiah Darden | Power: | Battery | Job Site: | OC10 |

| TEST SPECIFICATIONS | Test Method |
|---|---|
| FCC 15.247:2006 DTS | ANSI C63.4:2003, KDB No. 558074 |

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

**COMMENTS**

None

**EUT OPERATING MODES**

No hop, Low Channel 913.3MHz

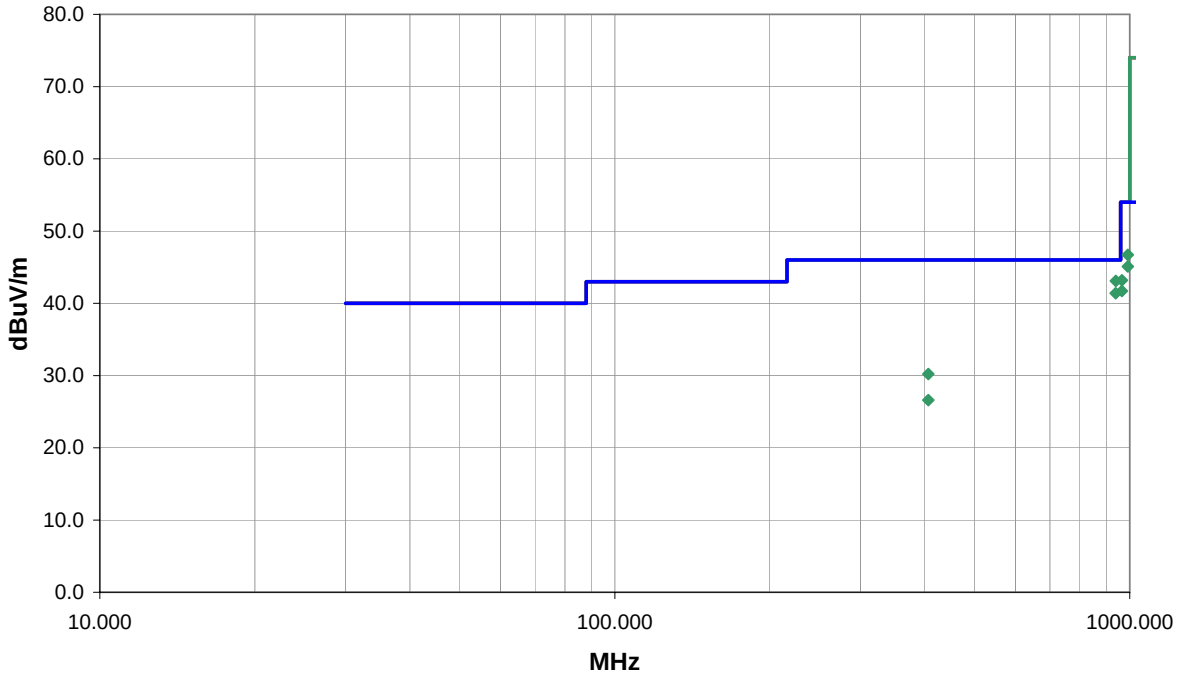
**DEVIATIONS FROM TEST STANDARD**

No deviations.

| | |
|---|---|
| Run # | 3 |
| Configuration # | 3 |
| Results | Pass |

NVLAP Lab Code 200629-0

*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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 939.339 | 32.9 | 10.2 | 190.0 | 1.5 | 3.0 | 0.0 | H-Bilog | PK | 0.0 | 43.1 | 46.0 | -2.9 |
| 939.311 | 31.2 | 10.2 | 190.0 | 1.5 | 3.0 | 0.0 | H-Bilog | QP | 0.0 | 41.4 | 46.0 | -4.6 |
| 991.289 | 35.7 | 11.0 | 183.0 | 1.4 | 3.0 | 0.0 | H-Bilog | PK | 0.0 | 46.7 | 54.0 | -7.3 |
| 991.317 | 34.1 | 11.0 | 183.0 | 1.4 | 3.0 | 0.0 | H-Bilog | QP | 0.0 | 45.1 | 54.0 | -8.9 |
| 965.305 | 32.6 | 10.6 | 360.0 | 2.3 | 3.0 | 0.0 | H-Bilog | PK | 0.0 | 43.2 | 54.0 | -10.8 |
| 965.315 | 31.1 | 10.6 | 360.0 | 2.3 | 3.0 | 0.0 | H-Bilog | QP | 0.0 | 41.7 | 54.0 | -12.3 |
| 406.264 | 27.7 | 2.5 | 1.0 | 2.7 | 3.0 | 0.0 | H-Bilog | PK | 0.0 | 30.2 | 46.0 | -15.8 |
| 406.317 | 24.1 | 2.5 | 1.0 | 2.7 | 3.0 | 0.0 | H-Bilog | QP | 0.0 | 26.6 | 46.0 | -19.4 |

NORTHWEST EMC

# SPURIOUS RADIATED EMISSIONS DATA SHEET

PSA 2006.12.21
EMI 2006.4.26

| | | | |
|---|---|---|---|
| EUT: | MLOG 02 | Work Order: | FLWM0004 |
| Serial Number: | 03011-9002 | Date: | 10/09/06 |
| Customer: | Flow Metrix, Inc. | Temperature: | 21 |
| Attendees: | None | Humidity: | 48% |
| Project: | None | Barometric Pres.: | 29.98 |
| Tested by: | Jeremiah Darden | Power: Battery | Job Site: OC10 |

| TEST SPECIFICATIONS | Test Method |
|---|---|
| FCC 15.247:2006 DTS | ANSI C63.4:2003, KDB No. 558074 |

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

**COMMENTS**

None

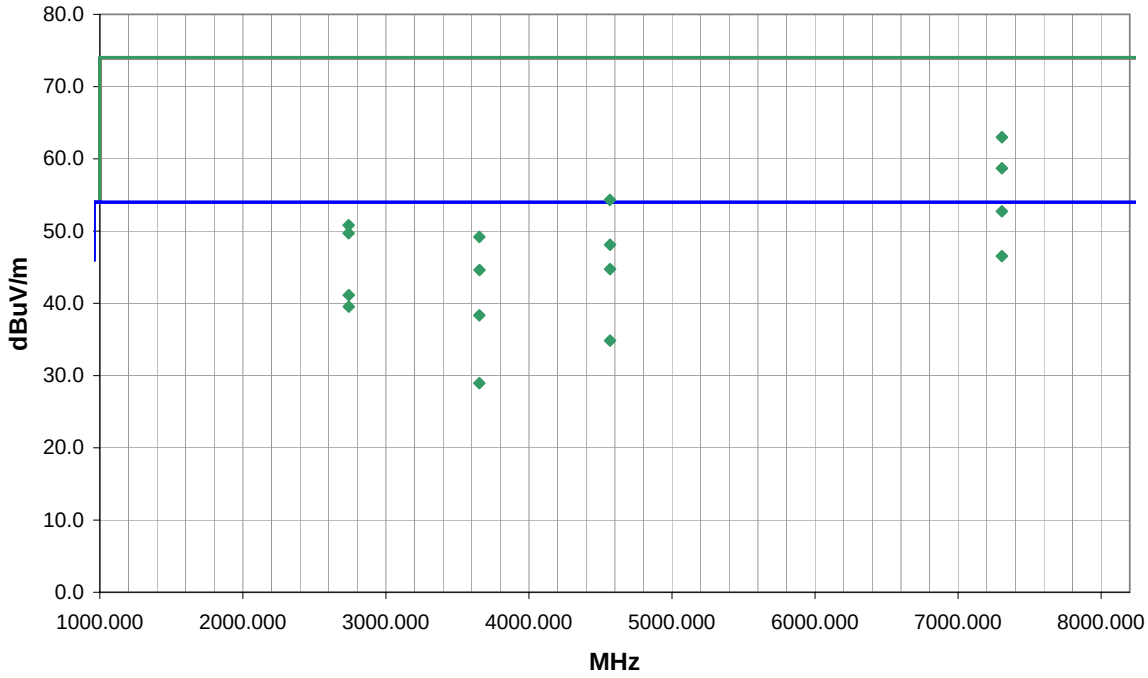
**EUT OPERATING MODES**

No hop, Low Channel 913.3MHz

**DEVIATIONS FROM TEST STANDARD**

No deviations.

| | | | |
|---|---|---|---|
| Run # | 4 | | |
| Configuration # | 1 | | |
| Results | Pass | NVLAP Lab Code 200629-0 | Signature |




| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Azimuth (degrees) | Height (meters) | Duty Cycle Correction Factor | External Attenuation (dB) | Polarity | Detector | Distance Adjustment (dB) | Adjusted dBuV/m | Spec. Limit dBuV/m | Compared to Spec. (dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7306.425 | 47.4 | 12.8 | 220.0 | 1.2 | 7.5 | 0.0 | H-Horn | AV | 0.0 | 52.7 | 54.0 | -1.3 |
| 7306.386 | 41.2 | 12.8 | 86.0 | 1.8 | 7.5 | 0.0 | V-Horn | AV | 0.0 | 46.5 | 54.0 | -7.5 |
| 4566.512 | 46.8 | 5.4 | 127.0 | 1.8 | 7.5 | 0.0 | V-Horn | AV | 0.0 | 44.7 | 54.0 | -9.3 |
| 7306.504 | 50.2 | 12.8 | 220.0 | 1.2 | 0.0 | 0.0 | H-Horn | PK | 0.0 | 63.0 | 74.0 | -11.0 |
| 2739.913 | 45.8 | 2.8 | 310.0 | 1.0 | 7.5 | 0.0 | V-Horn | AV | 0.0 | 41.1 | 54.0 | -12.9 |
| 2739.947 | 44.2 | 2.8 | 34.0 | 1.1 | 7.5 | 0.0 | H-Horn | AV | 0.0 | 39.5 | 54.0 | -14.5 |
| 7306.148 | 45.9 | 12.8 | 86.0 | 1.8 | 0.0 | 0.0 | V-Horn | PK | 0.0 | 58.7 | 74.0 | -15.3 |
| 3653.210 | 41.4 | 4.4 | 18.0 | 1.0 | 7.5 | 0.0 | H-Horn | AV | 0.0 | 38.3 | 54.0 | -15.7 |
| 4566.503 | 36.9 | 5.4 | 339.0 | 1.0 | 7.5 | 0.0 | H-Horn | AV | 0.0 | 34.8 | 54.0 | -19.2 |
| 4566.166 | 48.9 | 5.4 | 127.0 | 1.8 | 0.0 | 0.0 | V-Horn | PK | 0.0 | 54.3 | 74.0 | -19.7 |
| 2739.732 | 48.0 | 2.8 | 310.0 | 1.0 | 0.0 | 0.0 | V-Horn | PK | 0.0 | 50.8 | 74.0 | -23.2 |
| 2739.798 | 46.9 | 2.8 | 34.0 | 1.1 | 0.0 | 0.0 | H-Horn | PK | 0.0 | 49.7 | 74.0 | -24.3 |
| 3652.985 | 44.8 | 4.4 | 18.0 | 1.0 | 0.0 | 0.0 | H-Horn | PK | 0.0 | 49.2 | 74.0 | -24.8 |
| 3653.193 | 32.0 | 4.4 | 186.0 | 1.0 | 7.5 | 0.0 | V-Horn | AV | 0.0 | 28.9 | 54.0 | -25.1 |
| 4566.533 | 42.7 | 5.4 | 339.0 | 1.0 | 0.0 | 0.0 | H-Horn | PK | 0.0 | 48.1 | 74.0 | -25.9 |
| 3653.809 | 40.2 | 4.4 | 186.0 | 1.0 | 0.0 | 0.0 | V-Horn | PK | 0.0 | 44.6 | 74.0 | -29.4 |

NORTHWEST EMC

# SPURIOUS RADIATED EMISSIONS DATA SHEET

PSA 2006.12.21
EMI 2006.4.26

| | | | | | |
|---|---|---|---|---|---|
| EUT: | MLOG 02 | | | Work Order: | FLWM0004 |
| Serial Number: | 03011-9002 | | | Date: | 10/09/06 |
| Customer: | Flow Metrix, Inc. | | | Temperature: | 21 |
| Attendees: | None | | | Humidity: | 48% |
| Project: | None | | | Barometric Pres.: | 29.98 |
| Tested by: | Jeremiah Darden | Power: | Battery | Job Site: | OC10 |

| TEST SPECIFICATIONS | Test Method |
|---|---|
| FCC 15.247:2006 DTS | ANSI C63.4:2003, KDB No. 558074 |

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

**COMMENTS**

None

**EUT OPERATING MODES**

No hop, Low Channel 913.3MHz

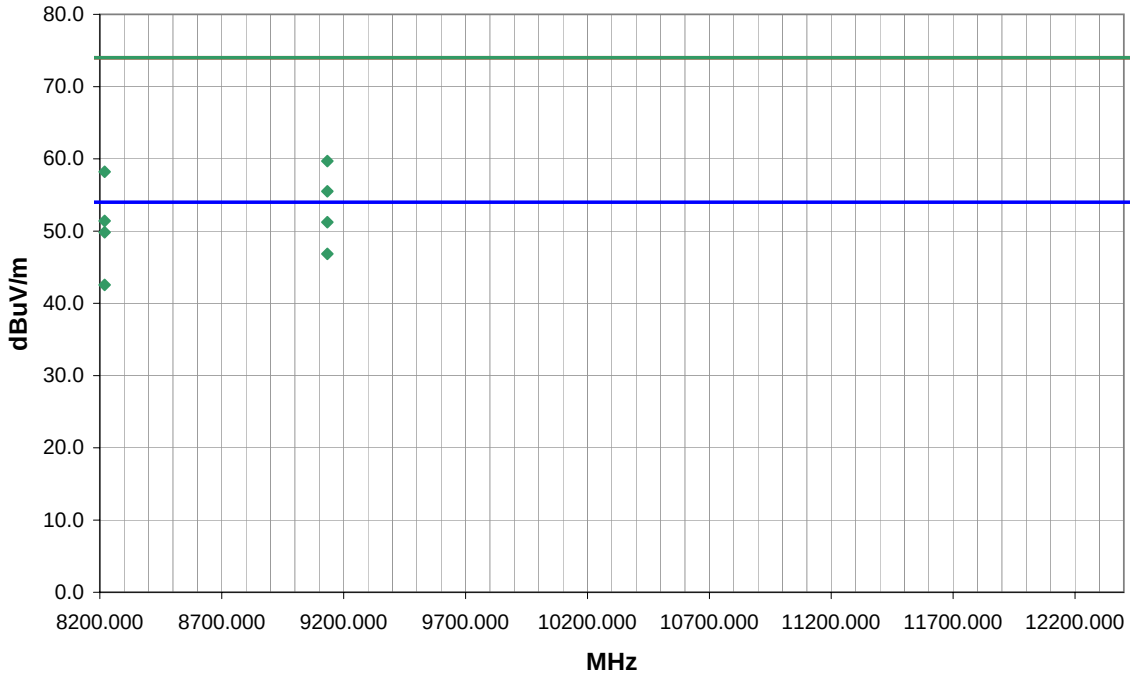
**DEVIATIONS FROM TEST STANDARD**

No deviations.

| | |
|---|---|
| Run # | 5 |
| Configuration # | 1 |
| Results | Pass |

NVLAP Lab Code 200629-0

*Signature*




| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Azimuth (degrees) | Height (meters) | Duty Cycle Correction Factor | External Attenuation (dB) | Polarity | Detector | Distance Adjustment (dB) | Adjusted dBuV/m | Spec. Limit dBuV/m | Compared to Spec. (dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9132.971 | 66.3 | -7.6 | 285.0 | 1.3 | 7.5 | 0.0 | V-Horn | AV | 0.0 | 51.2 | 54.0 | -2.8 |
| 8219.685 | 67.0 | -9.7 | 279.0 | 1.3 | 7.5 | 0.0 | V-Horn | AV | 0.0 | 49.8 | 54.0 | -4.2 |
| 9132.998 | 61.9 | -7.6 | 93.0 | 1.3 | 7.5 | 0.0 | H-Horn | AV | 0.0 | 46.8 | 54.0 | -7.2 |
| 8219.700 | 59.7 | -9.7 | 110.0 | 1.3 | 7.5 | 0.0 | H-Horn | AV | 0.0 | 42.5 | 54.0 | -11.5 |
| 9133.205 | 67.3 | -7.6 | 285.0 | 1.3 | 0.0 | 0.0 | V-Horn | PK | 0.0 | 59.7 | 74.0 | -14.3 |
| 8219.958 | 67.9 | -9.7 | 279.0 | 1.3 | 0.0 | 0.0 | V-Horn | PK | 0.0 | 58.2 | 74.0 | -15.8 |
| 9132.913 | 63.1 | -7.6 | 93.0 | 1.3 | 0.0 | 0.0 | H-Horn | PK | 0.0 | 55.5 | 74.0 | -18.5 |
| 8219.618 | 61.1 | -9.7 | 110.0 | 1.3 | 0.0 | 0.0 | H-Horn | PK | 0.0 | 51.4 | 74.0 | -22.6 |

NORTHWEST EMC

# SPURIOUS RADIATED EMISSIONS DATA SHEET

PSA 2006.09.07
EMI 2006.4.26

| | | | | | |
|---|---|---|---|---|---|
| EUT: | MLOG 02 | | | Work Order: | FLWM0004 |
| Serial Number: | 03011-9025 | | | Date: | 10/04/06 |
| Customer: | Flow Metrix, Inc. | | | Temperature: | 21 |
| Attendees: | None | | | Humidity: | 48% |
| Project: | None | | | Barometric Pres.: | 29.98 |
| Tested by: | Jeremiah Darden | Power: | Battery | Job Site: | OC10 |

| TEST SPECIFICATIONS | Test Method |
|---|---|
| FCC 15.247:2006 DTS | ANSI C63.4:2003, KDB No. 558074 |

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

**COMMENTS**

None

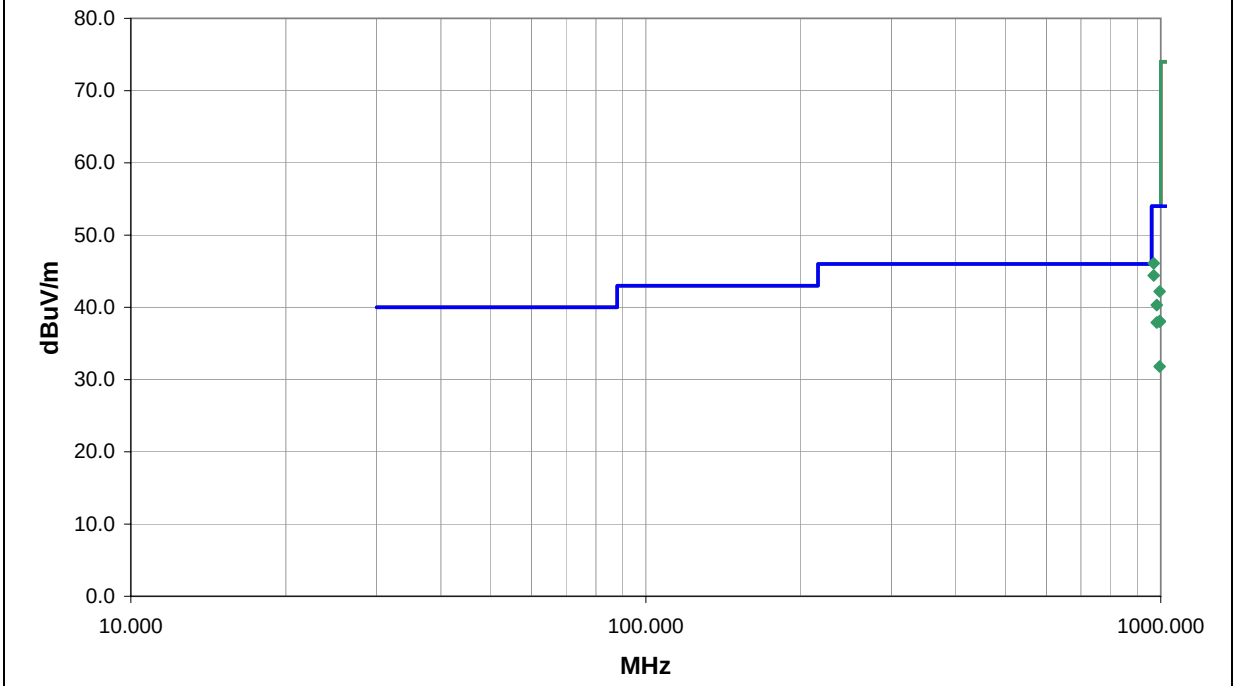
**EUT OPERATING MODES**

No hop, High Channel 917.3MHz

**DEVIATIONS FROM TEST STANDARD**

No deviations.

| | | | |
|---|---|---|---|
| Run # | 8 | | |
| Configuration # | 4 | | |
| Results | Pass | NVLAP Lab Code 200629-0 | 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 969.270 | 35.4 | 10.7 | 176.0 | 1.4 | 3.0 | 0.0 | H-Bilog | PK | 0.0 | 46.1 | 54.0 | -7.9 |
| 969.317 | 33.7 | 10.7 | 176.0 | 1.4 | 3.0 | 0.0 | H-Bilog | QP | 0.0 | 44.4 | 54.0 | -9.6 |
| 995.227 | 31.2 | 11.0 | 150.0 | 1.3 | 3.0 | 0.0 | H-Bilog | PK | 0.0 | 42.2 | 54.0 | -11.8 |
| 982.278 | 29.4 | 10.9 | 237.0 | 1.4 | 3.0 | 0.0 | H-Bilog | PK | 0.0 | 40.3 | 54.0 | -13.7 |
| 995.310 | 27.1 | 11.0 | 150.0 | 1.3 | 3.0 | 0.0 | H-Bilog | QP | 0.0 | 38.1 | 54.0 | -15.9 |
| 995.538 | 27.0 | 11.0 | 292.0 | 2.1 | 3.0 | 0.0 | H-Bilog | PK | 0.0 | 38.0 | 54.0 | -16.0 |
| 982.311 | 27.0 | 10.9 | 237.0 | 1.4 | 3.0 | 0.0 | H-Bilog | QP | 0.0 | 37.9 | 54.0 | -16.1 |
| 995.310 | 20.8 | 11.0 | 292.0 | 2.1 | 3.0 | 0.0 | H-Bilog | QP | 0.0 | 31.8 | 54.0 | -22.2 |

NORTHWEST EMC

# SPURIOUS RADIATED EMISSIONS DATA SHEET

PSA 2006.12.21
EMI 2006.4.26

| | | | | | |
|---|---|---|---|---|---|
| EUT: | MLOG 02 | | | Work Order: | FLWM0004 |
| Serial Number: | 03011-9025 | | | Date: | 10/09/06 |
| Customer: | Flow Metrix, Inc. | | | Temperature: | 21 |
| Attendees: | None | | | Humidity: | 48% |
| Project: | None | | | Barometric Pres.: | 29.98 |
| Tested by: | Jeremiah Darden | Power: | Battery | Job Site: | OC10 |

| TEST SPECIFICATIONS | Test Method |
|---|---|
| FCC 15.247:2006 DTS | ANSI C63.4:2003, KDB No. 558074 |

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

**COMMENTS**

None

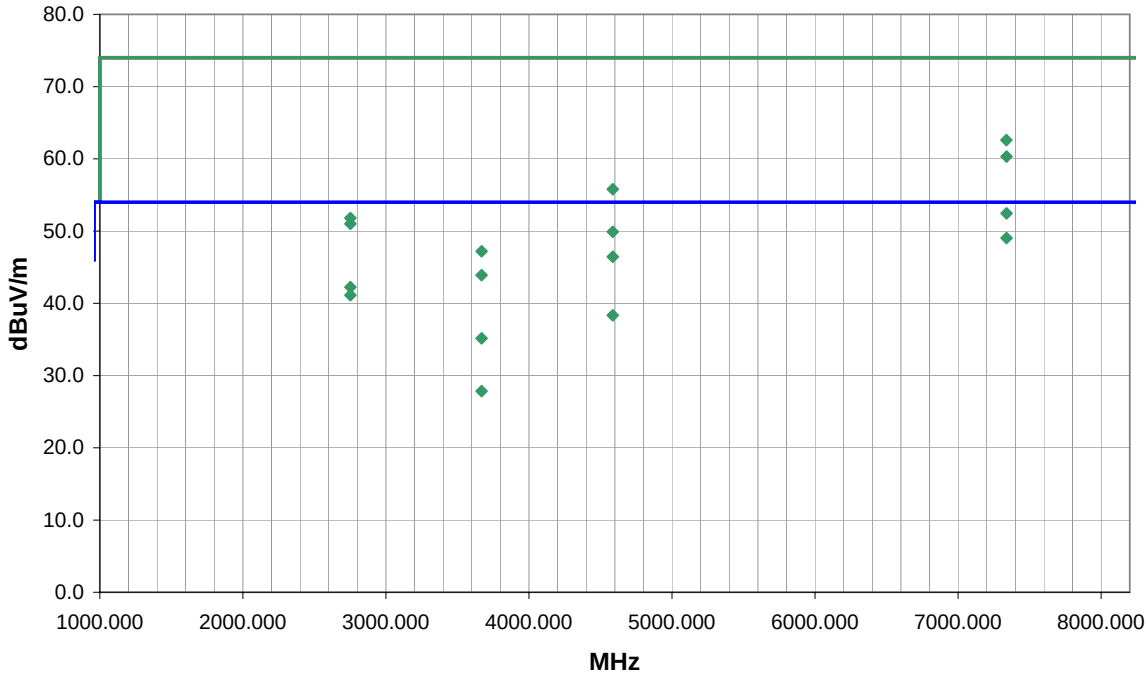
**EUT OPERATING MODES**

No hop, Low Channel 917.3MHz

**DEVIATIONS FROM TEST STANDARD**

No deviations.

| | | | |
|---|---|---|---|
| Run # | 7 | | |
| Configuration # | 1 | | |
| Results | Pass | NVLAP Lab Code 200629-0 | Signature |




| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Azimuth (degrees) | Height (meters) | Duty Cycle Correction Factor | External Attenuation (dB) | Polarity | Detector | Distance Adjustment (dB) | Adjusted dBuV/m | Spec. Limit dBuV/m | Compared to Spec. (dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7338.403 | 47.0 | 12.9 | 285.0 | 1.3 | 7.5 | 0.0 | H-Horn | AV | 0.0 | 52.4 | 54.0 | -1.6 |
| 7338.412 | 43.6 | 12.9 | 107.0 | 1.3 | 7.5 | 0.0 | V-Horn | AV | 0.0 | 49.0 | 54.0 | -5.0 |
| 4586.516 | 48.4 | 5.5 | 213.0 | 1.6 | 7.5 | 0.0 | V-Horn | AV | 0.0 | 46.4 | 54.0 | -7.6 |
| 7338.159 | 49.7 | 12.9 | 285.0 | 1.3 | 0.0 | 0.0 | H-Horn | PK | 0.0 | 62.6 | 74.0 | -11.4 |
| 2751.921 | 46.9 | 2.8 | 328.0 | 1.3 | 7.5 | 0.0 | H-Horn | AV | 0.0 | 42.2 | 54.0 | -11.8 |
| 2751.919 | 45.8 | 2.8 | 60.0 | 1.3 | 7.5 | 0.0 | V-Horn | AV | 0.0 | 41.1 | 54.0 | -12.9 |
| 7338.566 | 47.4 | 12.9 | 107.0 | 1.3 | 0.0 | 0.0 | V-Horn | PK | 0.0 | 60.3 | 74.0 | -13.7 |
| 4586.480 | 40.3 | 5.5 | 277.0 | 1.2 | 7.5 | 0.0 | H-Horn | AV | 0.0 | 38.3 | 54.0 | -15.7 |
| 4586.318 | 50.3 | 5.5 | 213.0 | 1.6 | 0.0 | 0.0 | V-Horn | PK | 0.0 | 55.8 | 74.0 | -18.2 |
| 3669.213 | 38.1 | 4.5 | 219.0 | 1.2 | 7.5 | 0.0 | V-Horn | AV | 0.0 | 35.1 | 54.0 | -18.9 |
| 2751.723 | 49.0 | 2.8 | 328.0 | 1.3 | 0.0 | 0.0 | H-Horn | PK | 0.0 | 51.8 | 74.0 | -22.2 |
| 2751.720 | 48.2 | 2.8 | 60.0 | 1.3 | 0.0 | 0.0 | V-Horn | PK | 0.0 | 51.0 | 74.0 | -23.0 |
| 4586.543 | 44.4 | 5.5 | 277.0 | 1.2 | 0.0 | 0.0 | H-Horn | PK | 0.0 | 49.9 | 74.0 | -24.1 |
| 3669.192 | 30.8 | 4.5 | -2.0 | 1.8 | 7.5 | 0.0 | H-Horn | AV | 0.0 | 27.8 | 54.0 | -26.2 |
| 3669.224 | 42.7 | 4.5 | 219.0 | 1.2 | 0.0 | 0.0 | V-Horn | PK | 0.0 | 47.2 | 74.0 | -26.8 |
| 3669.085 | 39.4 | 4.5 | -2.0 | 1.8 | 0.0 | 0.0 | H-Horn | PK | 0.0 | 43.9 | 74.0 | -30.1 |

NORTHWEST EMC

# SPURIOUS RADIATED EMISSIONS DATA SHEET

PSA 2006.12.21
EMI 2006.4.26

| | | | | | |
|---|---|---|---|---|---|
| EUT: | MLOG 02 | | | Work Order: | FLWM0004 |
| Serial Number: | 03011-9025 | | | Date: | 10/09/06 |
| Customer: | Flow Metrix, Inc. | | | Temperature: | 21 |
| Attendees: | None | | | Humidity: | 48% |
| Project: | None | | | Barometric Pres.: | 29.98 |
| Tested by: | Jeremiah Darden | Power: | Battery | Job Site: | OC10 |

| TEST SPECIFICATIONS | Test Method |
|---|---|
| FCC 15.247:2006 DTS | ANSI C63.4:2003, KDB No. 558074 |

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

**COMMENTS**

None

**EUT OPERATING MODES**

No hop, Low Channel 917.3MHz

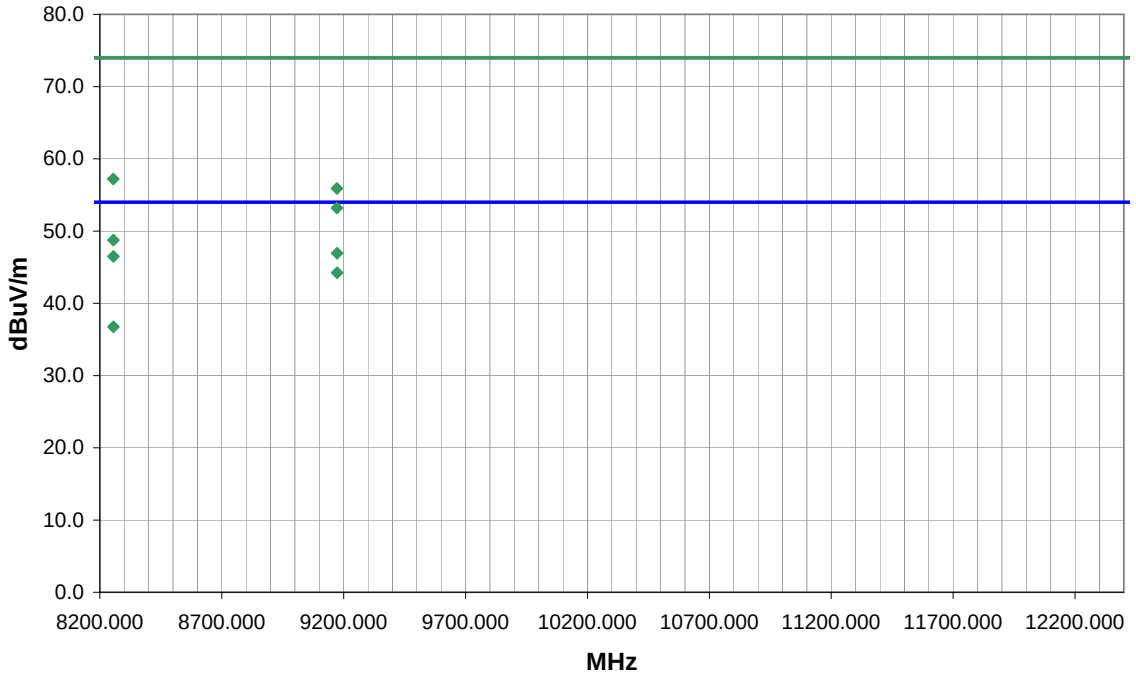
**DEVIATIONS FROM TEST STANDARD**

No deviations.

| | |
|---|---|
| Run # | 6 |
| Configuration # | 1 |
| Results | Pass |

NVLAP Lab Code 200629-0

*Signature*




| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Azimuth (degrees) | Height (meters) | Duty Cycle Correction Factor | External Attenuation (dB) | Polarity | Detector | Distance Adjustment (dB) | Adjusted dBuV/m | Spec. Limit dBuV/m | Compared to Spec. (dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8255.712 | 65.8 | -9.6 | 258.0 | 1.2 | 7.5 | 0.0 | V-Horn | AV | 0.0 | 48.7 | 54.0 | -5.3 |
| 9173.008 | 62.0 | -7.6 | 288.0 | 1.2 | 7.5 | 0.0 | V-Horn | AV | 0.0 | 46.9 | 54.0 | -7.1 |
| 9173.003 | 59.3 | -7.6 | 270.0 | 1.2 | 7.5 | 0.0 | H-Horn | AV | 0.0 | 44.2 | 54.0 | -9.8 |
| 8255.416 | 66.8 | -9.6 | 258.0 | 1.2 | 0.0 | 0.0 | V-Horn | PK | 0.0 | 57.2 | 74.0 | -16.8 |
| 8255.725 | 53.8 | -9.6 | 356.0 | 1.2 | 7.5 | 0.0 | H-Horn | AV | 0.0 | 36.7 | 54.0 | -17.3 |
| 9172.814 | 63.5 | -7.6 | 288.0 | 1.2 | 0.0 | 0.0 | V-Horn | PK | 0.0 | 55.9 | 74.0 | -18.1 |
| 9172.890 | 60.8 | -7.6 | 270.0 | 1.2 | 0.0 | 0.0 | H-Horn | PK | 0.0 | 53.2 | 74.0 | -20.8 |
| 8255.481 | 56.1 | -9.6 | 356.0 | 1.2 | 0.0 | 0.0 | H-Horn | PK | 0.0 | 46.5 | 74.0 | -27.5 |


R826

# OCCUPIED BANDWIDTH

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

## TEST EQUIPMENT

| Description | Manufacturer | Model | ID | Last Cal. | Interval |
|---|---|---|---|---|---|
| Spectrum Analyzer | Hewlett-Packard | 8593E | AAP | 12/14/2006 | 13 |
| Near Field Probe | EMCO | 7405 | IPI | NCR | NA |

## MEASUREMENT UNCERTAINTY

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

## TEST DESCRIPTION

The occupied bandwidth was measured with the EUT set to low and high transmit frequencies. The measurement was made using a near field probe and a spectrum analyzer. The EUT was transmitting at its maximum data rate in a no hop mode. The channels closest to the band edges were selected. The spectrum was scanned across each band edge from 5 MHz below the band edge to 5 MHz above the band edge.

NORTHWEST EMC

# OCCUPIED BANDWIDTH

XMit 2006.03.01

| | | | | | |
|---|---|---|---|---|---|
| EUT: | MLOG 02 | | | Work Order: | FLWM0004 |
| Serial Number: | See configs | | | Date: | 01/09/07 |
| Customer: | Flow Metrix, Inc. | | | Temperature: | 24 C |
| Attendees: | None | | | Humidity: | 22% |
| Project: | None | | | Barometric Pres.: | 30.02 |
| Tested by: | Jeremiah Darden | Power: | Battery | Job Site: | OC03 |

| TEST SPECIFICATIONS | Test Method |
|---|---|
| FCC 15.247:2006 DTS | ANSI C63.4:2003, KDB No. 558074 |
| | |

**COMMENTS**

No Hop

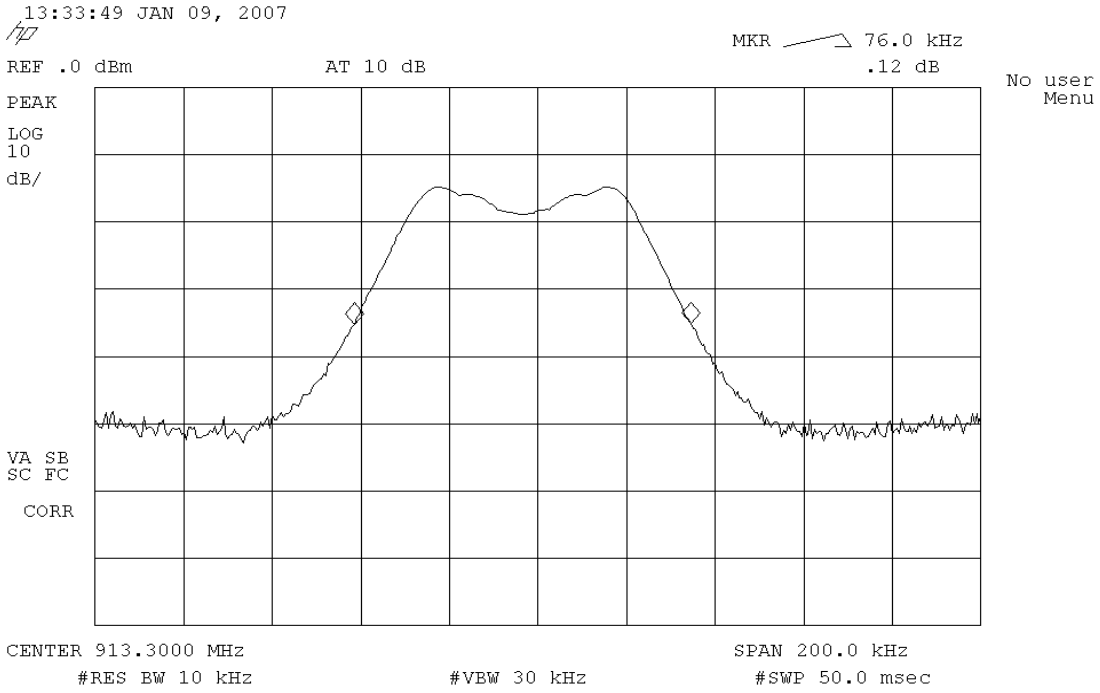
**DEVIATIONS FROM TEST STANDARD**

None

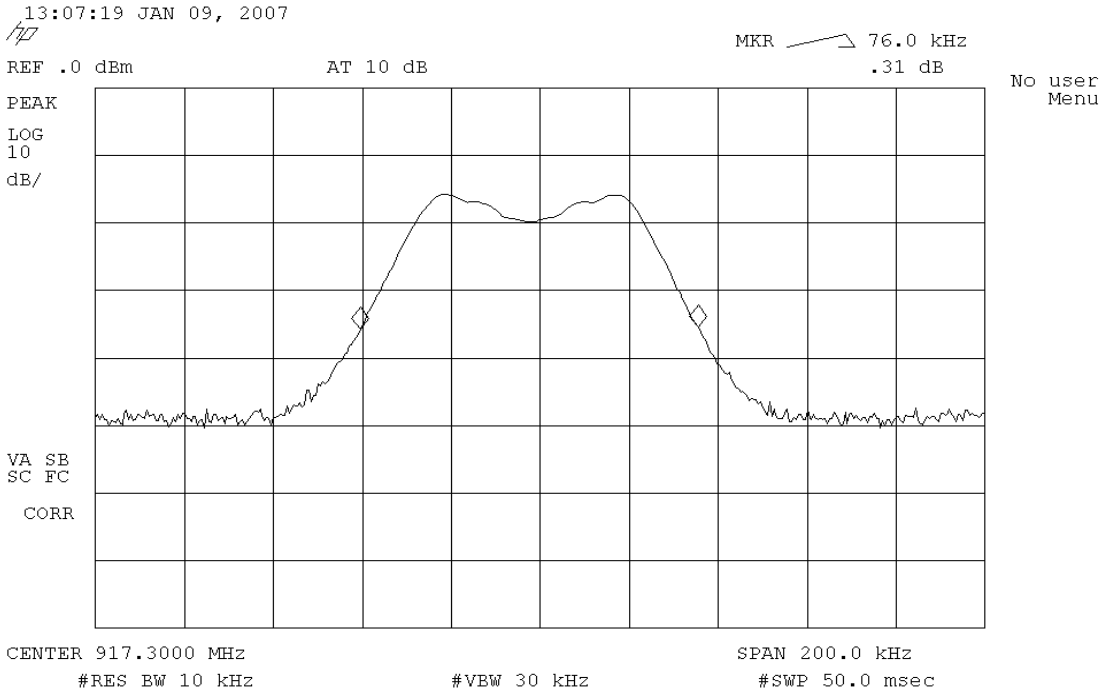
| Configuration # | 3, 4 | Signature |
|---|---|---|

| Modes of Operation and Test Conditions | Value | Limit | Result |
|---|---|---|---|
| Low Channel | 75 kHz | ≤ 1.5 MHz | Pass |
| High Channel | 75 KHz | ≤ 1.5 MHz | Pass |

| Low Channel | | |
|---|---|---|
| **Result:** Pass | **Value:** 76 kHz | **Limit:** ≤ 1.5 MHz |




| High Channel | | |
|---|---|---|
| **Result:** Pass | **Value:** 76 kHz | **Limit:** ≤ 1.5 MHz |




8593E

# EFFECTIVE RADIATED POWER (EIRP)



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 |
|---|
| No hop, High Channel 917.3MHz |
| No hop, Low Channel 913.3MHz |

| MODE USED FOR FINAL DATA |
|---|
| No hop, Low Channel 913.3MHz |
| No hop, High Channel 917.3MHz |

| POWER SETTINGS INVESTIGATED |
|---|
| Battery |

| POWER SETTINGS USED FOR FINAL DATA |
|---|
| Battery |

| FREQUENCY RANGE INVESTIGATED | | | |
|---|---|---|---|
| Start Frequency | 913.3MHz | Stop Frequency | 917.3MHz |

| 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 |
| Antenna, Biconilog | EMCO | 3142 | AXJ | 3/14/2006 | 24 |
| OC10 cables a,b,c,d Bilog | | | OCH | 3/30/2006 | 13 |
| Spectrum Analyzer | Agilent | E4446A | AAQ | 7/15/2005 | 18 |

| 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 peak output power was measured with the EUT set to low, medium, and high transmit frequencies. The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The EUT was transmitting at its maximum data rate in a no hop mode.

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

NORTHWEST EMC

# Effective Radiated Power (EIRP)

PSA 2006.09.07
EMI 2006.4.26

| | | | | | |
|---|---|---|---|---|---|
| EUT: | MLOG 02 | | | Work Order: | FLWM0004 |
| Serial Number: | 03011-9002 | | | Date: | 10/05/06 |
| Customer: | Flow Metrix, Inc. | | | Temperature: | 21 |
| Attendees: | None | | | Humidity: | 48% |
| Project: | None | | | Barometric Pres.: | 29.98 |
| Tested by: | Jeremiah Darden | Power: | Battery | Job Site: | OC10 |

| TEST SPECIFICATIONS | Test Method |
|---|---|
| FCC 15.247:2006 DTS | ANSI C63.4:2003, KDB No. 558074 |

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

**COMMENTS**

None

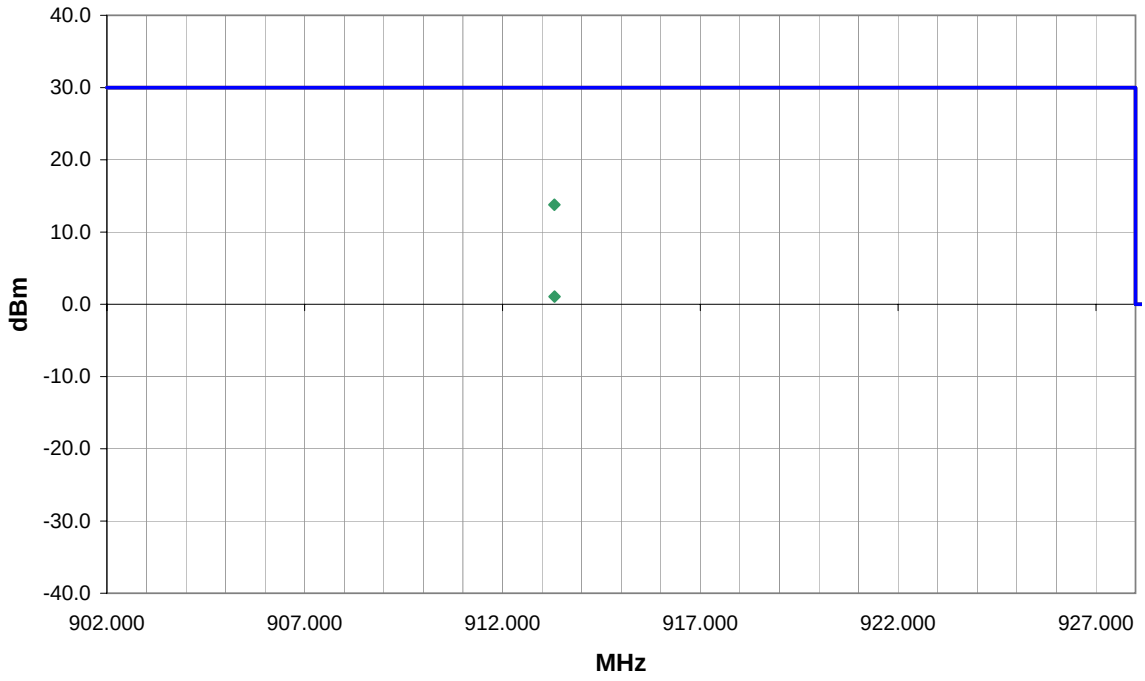
**EUT OPERATING MODES**

No hop, Low Channel 913.3MHz

**DEVIATIONS FROM TEST STANDARD**

No deviations.

| | | | |
|---|---|---|---|
| Run # | 1 | | |
| Configuration # | 1 | | |
| Results | Pass | NVLAP Lab Code 200629-0 | *Signature* |




| Freq (MHz) | | | Azimuth (degrees) | Height (meters) | | | Polarity | Detector | EIRP (Watts) | EIRP (dBm) | Spec. Limit (dBm) | Compared to Spec. (dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 913.312 | | | 357.0 | 1.0 | | | V-Bilog | PK | 2.38E-02 | 13.8 | 30.0 | -16.2 |
| 913.314 | | | 67.0 | 1.0 | | | H-Bilog | PK | 1.28E-03 | 1.1 | 30.0 | -28.9 |

NORTHWEST EMC

# Effective Radiated Power (EIRP)

PSA 2006.09.07
EMI 2006.4.26

| | | | | | |
|---|---|---|---|---|---|
| EUT: | MLOG 02 | | | Work Order: | FLWM0004 |
| Serial Number: | 03011-9025 | | | Date: | 10/09/06 |
| Customer: | Flow Metrix, Inc. | | | Temperature: | 21 |
| Attendees: | None | | | Humidity: | 48% |
| Project: | None | | | Barometric Pres.: | 29.98 |
| Tested by: | Jeremiah Darden | Power: | Battery | Job Site: | OC10 |

| TEST SPECIFICATIONS | Test Method |
|---|---|
| FCC 15.247:2006 DTS | ANSI C63.4:2003, KDB No. 558074 |

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

**COMMENTS**

None

**EUT OPERATING MODES**

No hop, High Channel 917.3MHz

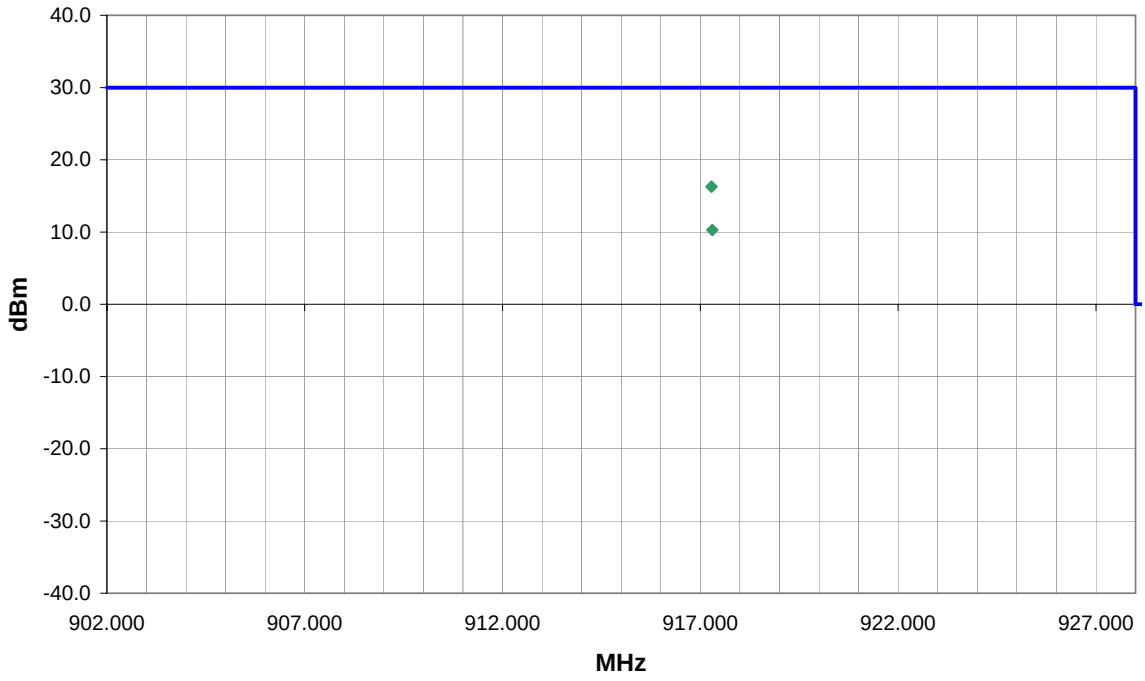
**DEVIATIONS FROM TEST STANDARD**

No deviations.

| | |
|---|---|
| Run # | 9 |
| Configuration # | 1 |
| Results | Pass |

NVLAP Lab Code 200629-0

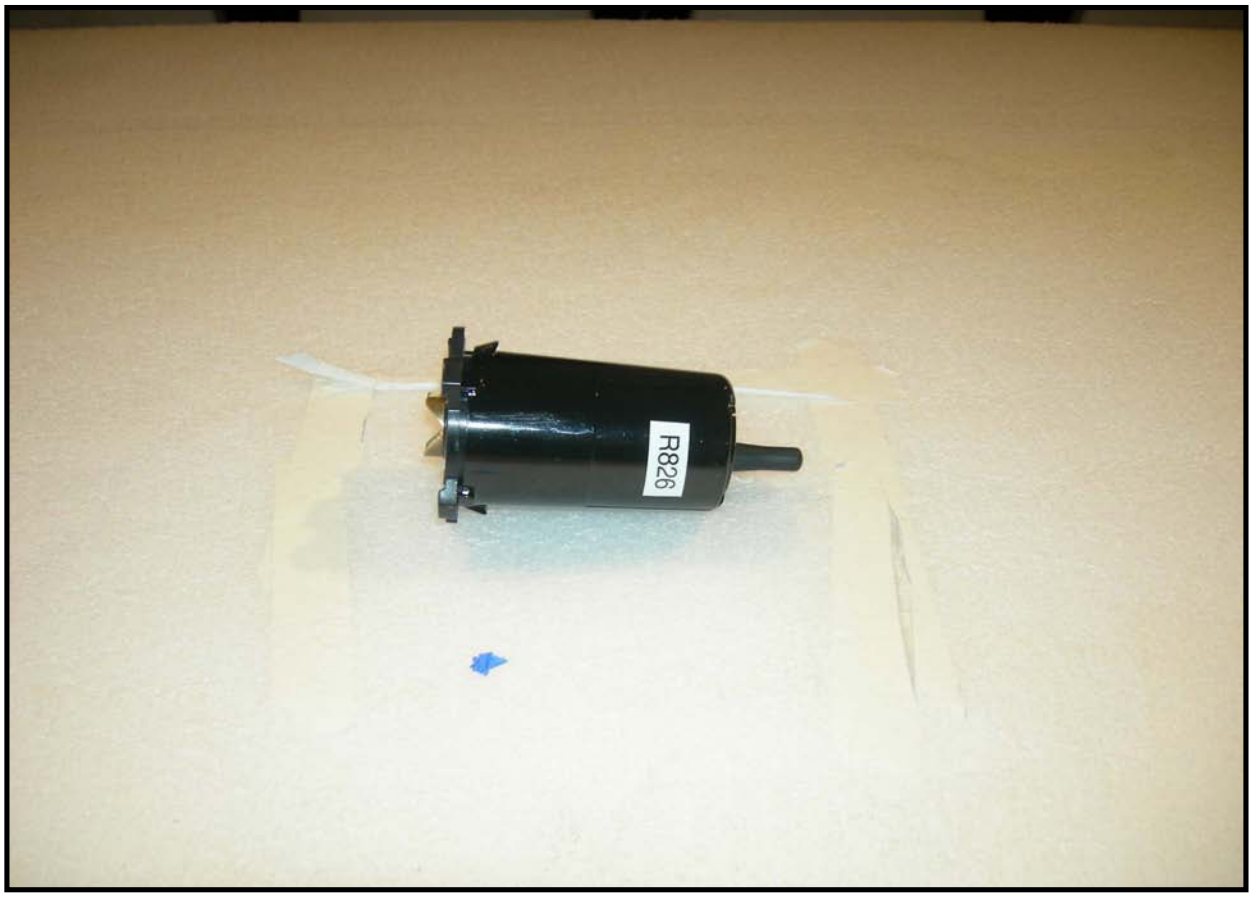
*Signature*




| Freq (MHz) | | | Azimuth (degrees) | Height (meters) | | | Polarity | Detector | EIRP (Watts) | EIRP (dBm) | Spec. Limit (dBm) | Compared to Spec. (dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 917.284 | | | 0.0 | 1.0 | | | H-Bilog | PK | 4.24E-02 | 16.3 | 30.0 | -13.7 |
| 917.303 | | | 104.0 | 1.6 | | | V-Bilog | PK | 1.06E-02 | 10.3 | 30.0 | -19.7 |

# Effective Radiated Power (EIRP)

# Effective Radiated Power (EIRP)



# BAND EDGE COMPLIANCE

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

## TEST EQUIPMENT

| Description | Manufacturer | Model | ID | Last Cal. | Interval |
|---|---|---|---|---|---|
| Spectrum Analyzer | Hewlett-Packard | 8593E | AAP | 12/14/2006 | 13 |
| Near Field Probe | EMCO | 7405 | IPI | NCR | NA |

## 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

Per 47 CFR 15.247(d), in any 100kHz bandwidth outside the authorized band, the maximum level of radio frequency power must be at least 20dB down from the highest emission level within the authorized band. The measurement is made with the spectrum analyzer's resolution bandwidth set to 100kHz, and the video bandwidth set to greater than or equal to the resolution bandwidth.

The spurious RF conducted emissions at the edges of the authorized band were measured with the EUT set to low and high transmit frequencies. The measurement was made using a near field probe and a spectrum analyzer. The EUT was transmitting at its maximum data rate in a no hop mode. The channels closest to the band edges were selected. The spectrum was scanned across each band edge from 5 MHz below the band edge to 5 MHz above the band edge.

NORTHWEST EMC

# BAND EDGE COMPLIANCE

XMit 2006.03.01

| | | | | | |
|---|---|---|---|---|---|
| EUT: | MLOG 02 | | | Work Order: | FLWM0004 |
| Serial Number: | See configs | | | Date: | 01/09/07 |
| Customer: | Flow Metrix, Inc. | | | Temperature: | 24 |
| Attendees: | None | | | Humidity: | 23% |
| Project: | None | | | Barometric Pres.: | 30.02 |
| Tested by: | Jeremiah Darden | Power: | Battery | Job Site: | OC03 |

| TEST SPECIFICATIONS | Test Method |
|---|---|
| FCC 15.247:2006 DTS | ANSI C63.4:2003, KDB No. 558074 |
| | |

**COMMENTS**

No Hop

**DEVIATIONS FROM TEST STANDARD**

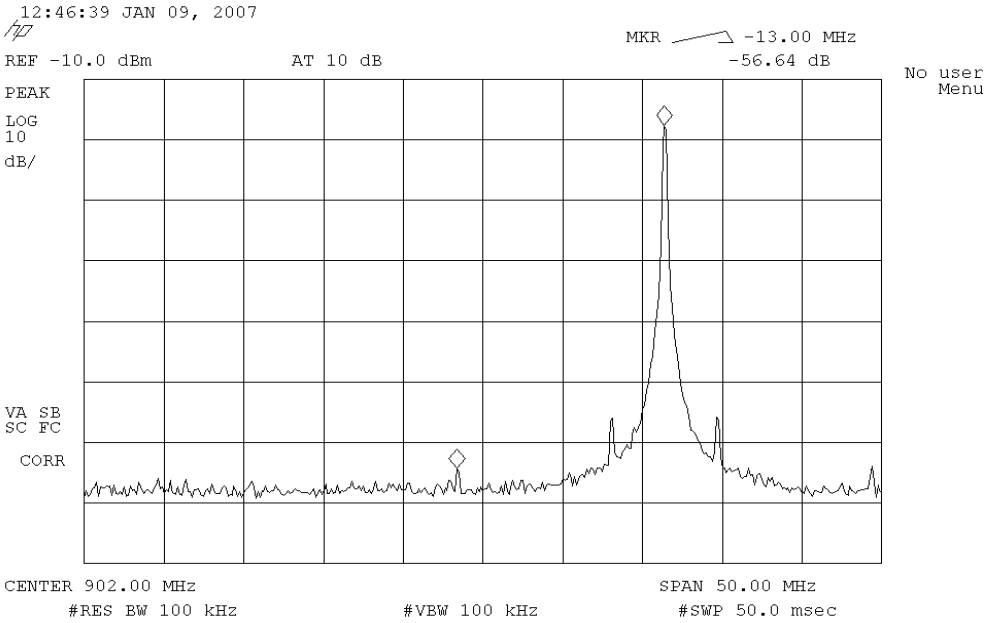
None

| Configuration # | 3, 4 | Signature |
|---|---|---|

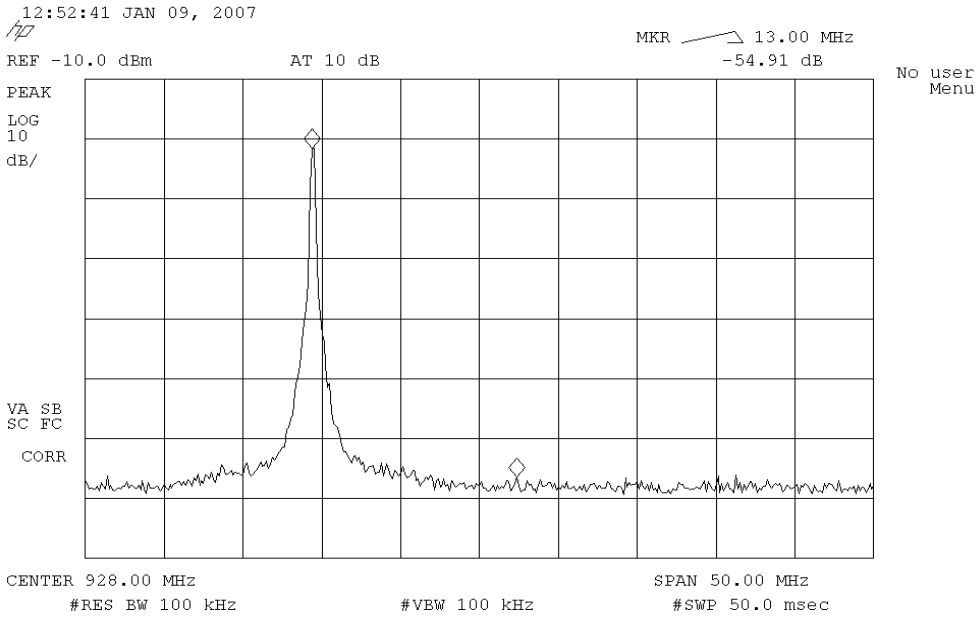
| Modes of Operation and Test Conditions | Value | Limit | Result |
|---|---|---|---|
| Low Channel | -56.64 | ≤ -20 dBc | Pass |
| High Channel | -54.91 | ≤ -20 dBc | Pass |

# BAND EDGE COMPLIANCE

| Low Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | -56.64 | **Limit:** | ≤ -20 dBc |




| High Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | -54.91 | **Limit:** | ≤ -20 dBc |




8593E

# POWER SPECTRAL DENSITY

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

## TEST EQUIPMENT

| Description | Manufacturer | Model | ID | Last Cal. | Interval |
|---|---|---|---|---|---|
| Antenna, Biconilog | EMCO | 3142 | AXJ | 3/14/2006 | 24 |
| OC10 cables a,b,c,d Bilog | | | OCH | 3/30/2006 | 13 |
| Spectrum Analyzer | Agilent | E4446A | AAQ | 7/15/2005 | 18 |

## MEASUREMENT UNCERTAINTY

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

## TEST DESCRIPTION

The peak power spectral density measurements were measured with the EUT set to low and high transmit frequencies. The measurement was made using a Biconilog antenna and a spectrum analyzer. The EUT was transmitting at its maximum data. Per the procedure outlined in FCC 97-114, the spectrum analyzer was used as follows:

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

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

NORTHWEST EMC

# POWER SPECTRAL DENSITY

XMit 2006.03.01

| | | | | | |
|---|---|---|---|---|---|
| EUT: | MLOG 02 | | | Work Order: | FLWM0004 |
| Serial Number: | See configs | | | Date: | 01/09/07 |
| Customer: | Flow Metrix, Inc. | | | Temperature: | 24 C |
| Attendees: | None | | | Humidity: | 24% |
| Project: | None | | | Barometric Pres.: | 30.1 |
| Tested by: | Jeremiah Darden | Power: | Battery | Job Site: | OC10 |

| TEST SPECIFICATIONS | Test Method |
|---|---|
| FCC 15.247:2006 DTS | ANSI C63.4:2003, KDB No. 558074 |
| | |

**COMMENTS**

No Hop, dBm /3kHz = Bcf + dBm (1Hz) . . . Bandwidth correction factor = 34.8 dB

**DEVIATIONS FROM TEST STANDARD**

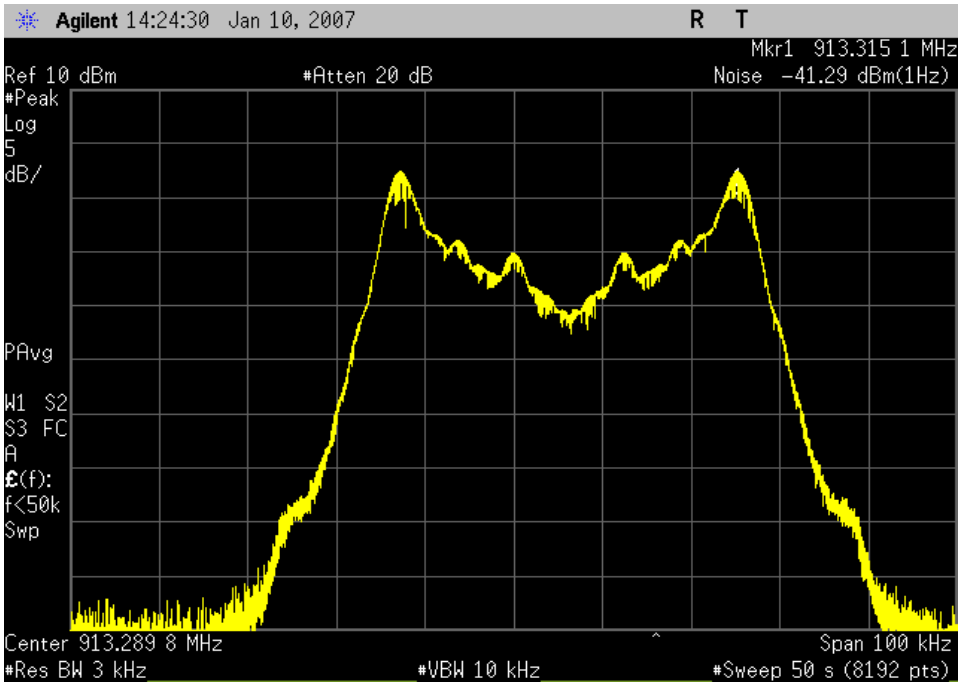
None

| Configuration # | 3, 4 | Signature |
|---|---|---|

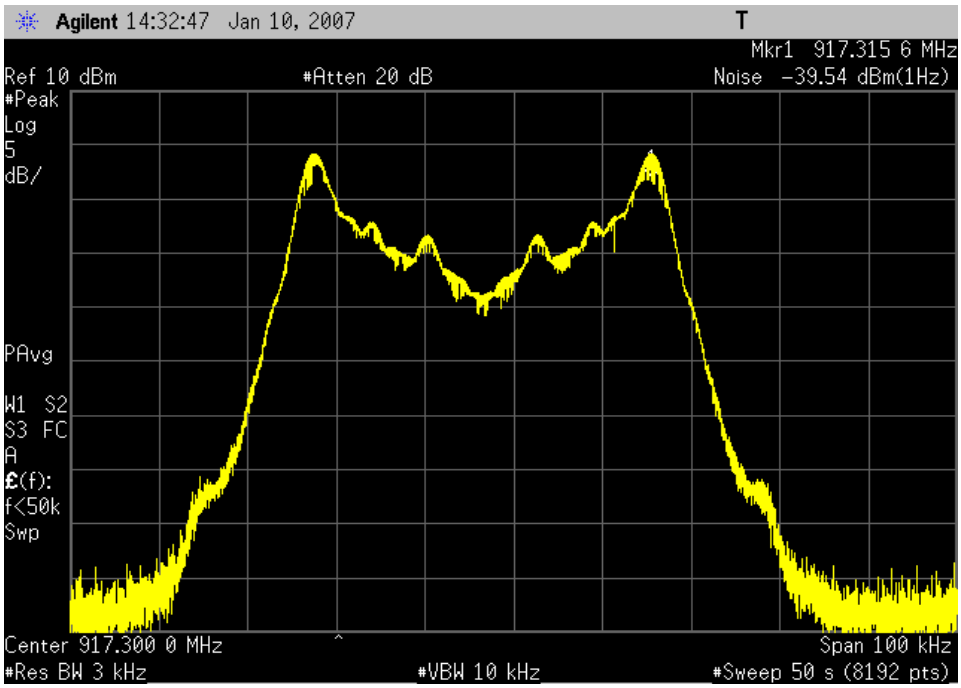
| Modes of Operation and Test Conditions | Value | Limit | Result |
|---|---|---|---|
| Low Channel | -6.49 dBm / 3 kHz | ≤ 8 dBm / 3 kHz | Pass |
| High Channel | -4.74 dBm / 3 kHz | ≤ 8 dBm / 3 kHz | Pass |

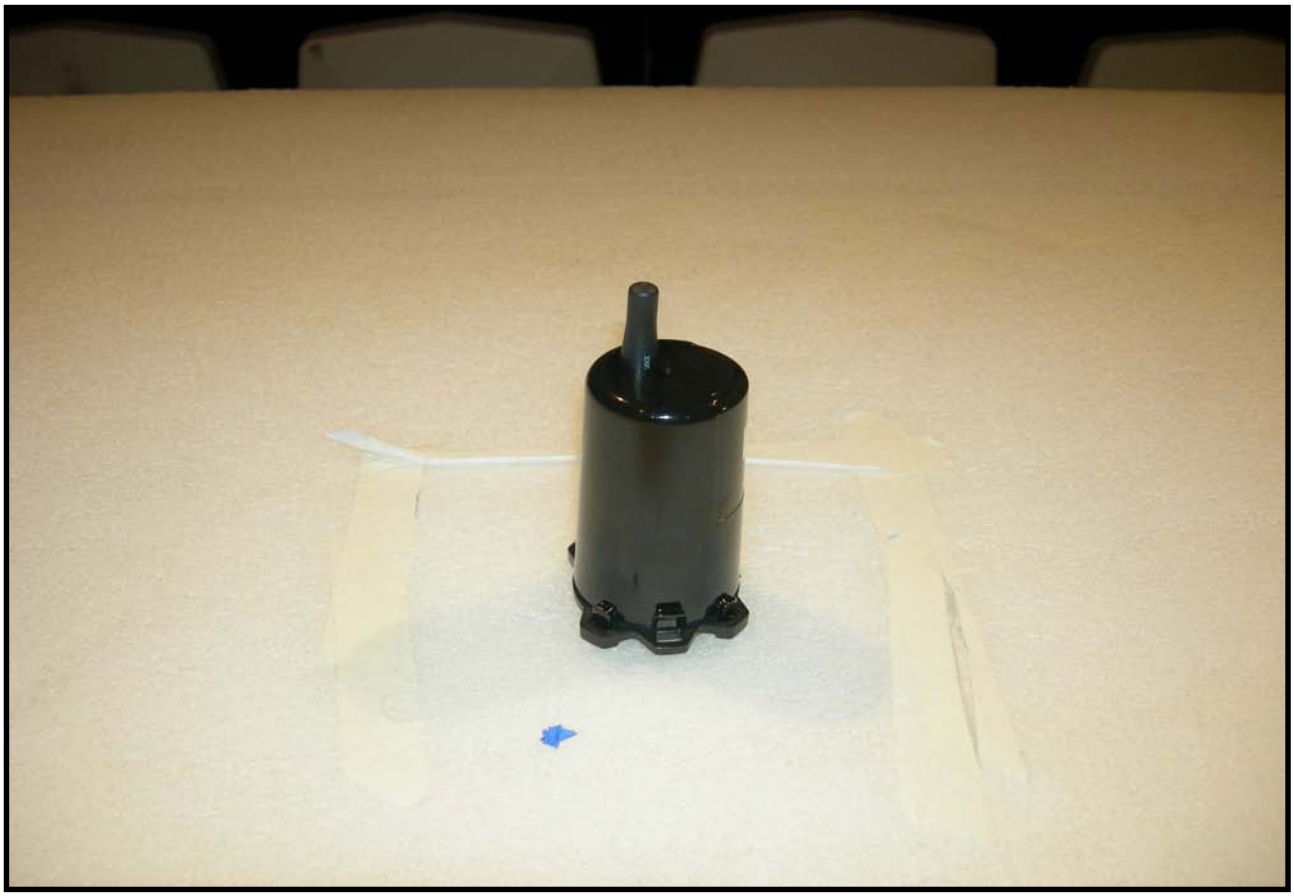
# POWER SPECTRAL DENSITY

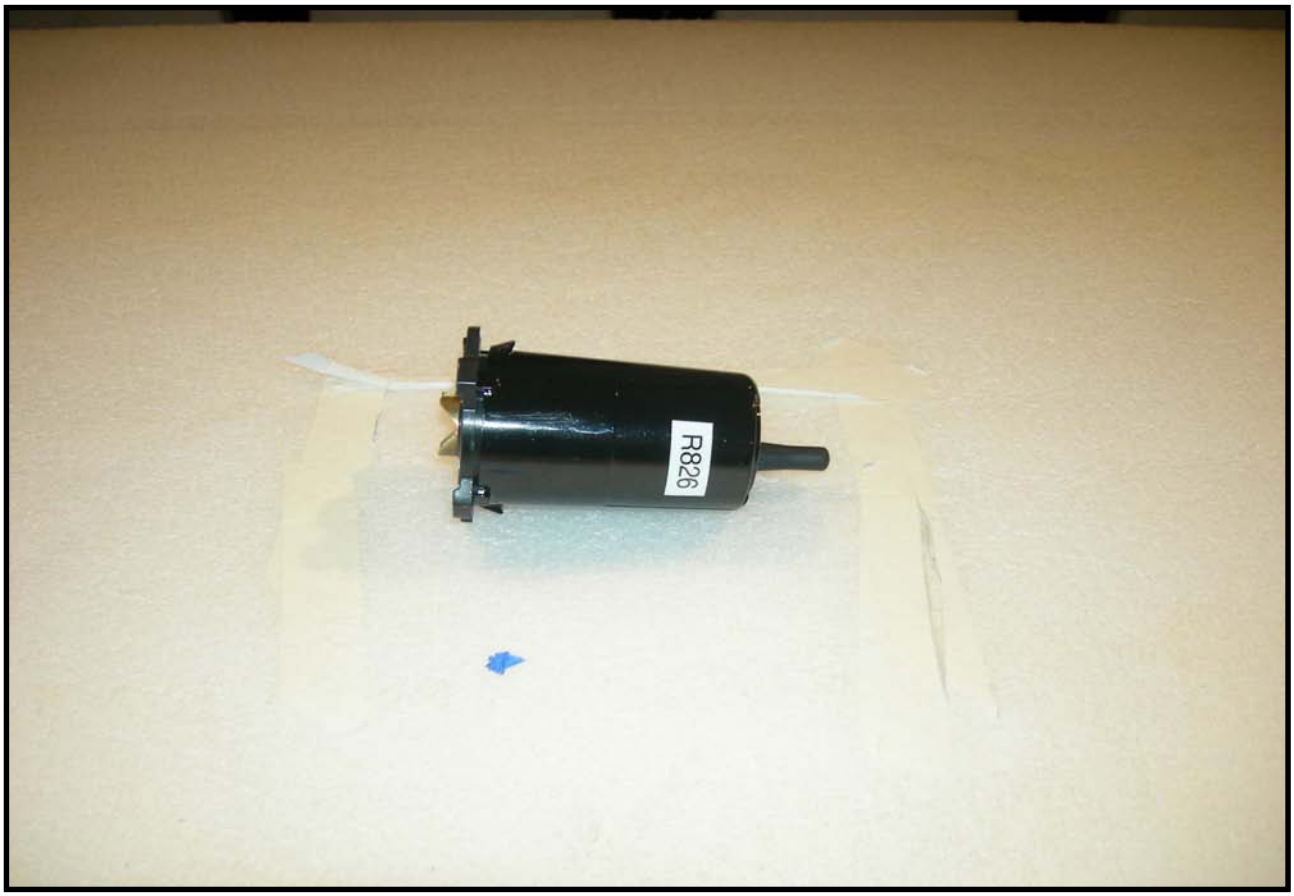
| Low Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | -6.49 dBm / 3 kHz | **Limit:** | ≤ 8 dBm / 3 kHz |




| High Channel | | | | | |
|---|---|---|---|---|---|
| **Result:** | Pass | **Value:** | -4.74 dBm / 3 kHz | **Limit:** | ≤ 8 dBm / 3 kHz |






R826

# RECEIVE MODE 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 |
|---|
| Receive, High Channel 917.3MHz |
| Receive, Low Channel 913.2MHz |

| MODE USED FOR FINAL DATA |
|---|
| Receive, Low Channel 913.2MHz |
| Receive, High Channel 917.3MHz |

| POWER SETTINGS INVESTIGATED |
|---|
| Battery |

| POWER SETTINGS USED FOR FINAL DATA |
|---|
| Battery |

| FREQUENCY RANGE INVESTIGATED | | | |
|---|---|---|---|
| Start Frequency | 30MHz | Stop Frequency | 12GHz |

| 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 |
|---|---|---|---|---|---|
| Pre-Amplifier | Miteq | AMF-6F-08001200-30-10P | AOK | 2/8/2006 | 13 |
| Antenna, Horn | EMCO | 3160-07 | AHP | NCR | 0 |
| Pre-Amplifier 0.5-18 GHz | Miteq | AMF-4D-005180-24-10P | APP | 3/22/2006 | 13 |
| OC10 cables a,b,c,e,f Horn Cables | | | OCJ | 3/21/2006 | 13 |
| Antenna, Horn | EMCO | 3115 | AHB | 8/1/2005 | 24 |
| OC10 cables a,b,c,e,f Horn Cables | | | OCJ | 3/21/2006 | 13 |
| Antenna, Biconilog | EMCO | 3142 | AXJ | 3/14/2006 | 24 |
| OC10 cables a,b,c,d Bilog | | | OCH | 3/30/2006 | 13 |
| Pre-Amplifier | Miteq | AM-1616-1000 | AOM | 11/13/2005 | 13 |
| Spectrum Analyzer | Agilent | E4446A | AAQ | 7/15/2005 | 18 |

**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

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.

NORTHWEST
**EMC**

# RECEIVE MODE EMISSIONS

PSA 2006.09.07
EMI 2006.4.26

| | | | | | |
|---|---|---|---|---|---|
| **EUT:** | MLOG 02 | | | **Work Order:** | FLWM0004 |
| **Serial Number:** | 03011-9027 | | | **Date:** | 10/10/06 |
| **Customer:** | Flow Metrix, Inc. | | | **Temperature:** | 21 |
| **Attendees:** | None | | | **Humidity:** | 51% |
| **Project:** | None | | | **Barometric Pres.:** | 30.02 |
| **Tested by:** | Jeremiah Darden | **Power:** | Battery | **Job Site:** | OC10 |

| TEST SPECIFICATIONS | Test Method |
|---|---|
| FCC 15.109:2006 | ANSI C63.4:2003 |

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

**COMMENTS**

No hop

**EUT OPERATING MODES**

Receive, Low Channel 913.2MHz

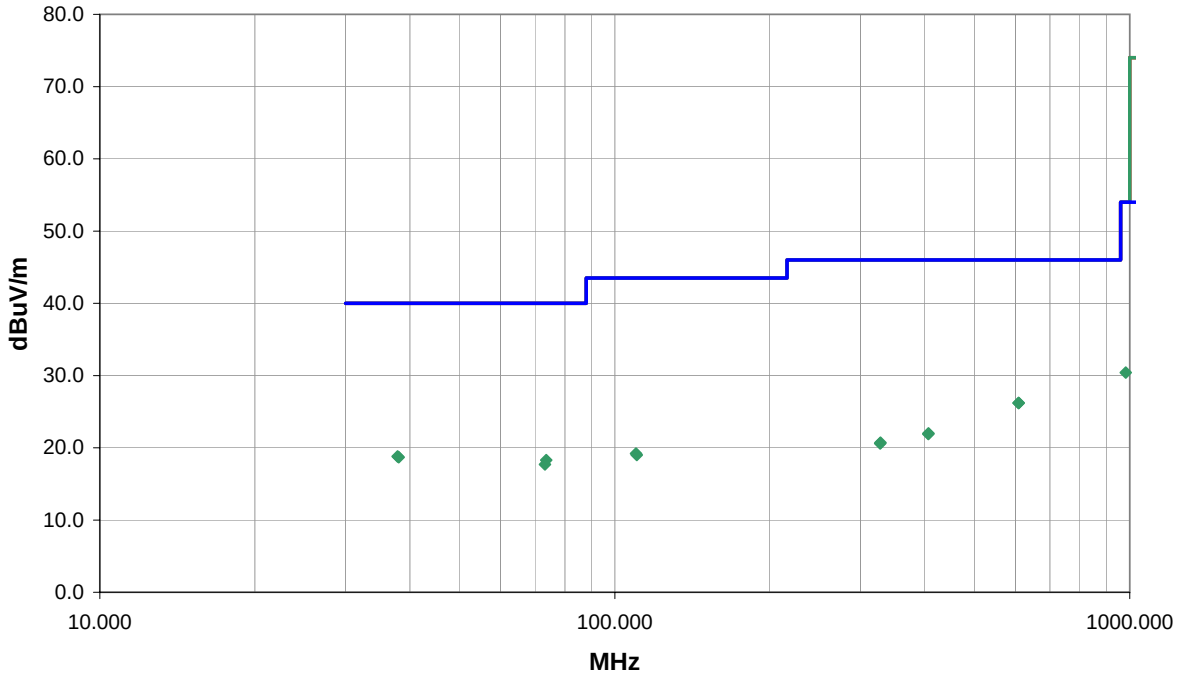
**DEVIATIONS FROM TEST STANDARD**

No deviations.

| | |
|---|---|
| **Run #** | **10** |
| **Configuration #** | **1** |
| **Results** | **Pass** |

NVLAP Lab Code 200629-0

*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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 608.335 | 19.5 | 6.7 | 112.0 | 1.2 | 3.0 | 0.0 | V-Bilog | QP | 0.0 | 26.2 | 46.0 | -19.8 |
| 608.548 | 19.5 | 6.7 | 171.0 | 1.0 | 3.0 | 0.0 | H-Bilog | QP | 0.0 | 26.2 | 46.0 | -19.8 |
| 37.855 | 19.2 | -0.4 | 1.0 | 1.0 | 3.0 | 0.0 | V-Bilog | QP | 0.0 | 18.8 | 40.0 | -21.2 |
| 38.040 | 19.2 | -0.5 | 211.0 | 1.0 | 3.0 | 0.0 | H-Bilog | QP | 0.0 | 18.7 | 40.0 | -21.3 |
| 73.605 | 25.6 | -7.3 | 357.0 | 3.5 | 3.0 | 0.0 | H-Bilog | PK | 0.0 | 18.3 | 40.0 | -21.7 |
| 73.157 | 25.0 | -7.3 | 1.0 | 2.8 | 3.0 | 0.0 | V-Bilog | PK | 0.0 | 17.7 | 40.0 | -22.3 |
| 982.326 | 19.5 | 10.9 | 26.0 | 2.0 | 3.0 | 0.0 | H-Bilog | QP | 0.0 | 30.4 | 54.0 | -23.6 |
| 406.546 | 19.5 | 2.5 | 347.0 | 1.0 | 3.0 | 0.0 | H-Bilog | QP | 0.0 | 22.0 | 46.0 | -24.0 |
| 406.299 | 19.4 | 2.5 | 51.0 | 2.3 | 3.0 | 0.0 | V-Bilog | QP | 0.0 | 21.9 | 46.0 | -24.1 |
| 109.976 | 25.2 | -6.0 | 205.0 | 1.0 | 3.0 | 0.0 | V-Bilog | PK | 0.0 | 19.2 | 43.5 | -24.3 |
| 110.347 | 25.0 | -6.0 | 183.0 | 3.2 | 3.0 | 0.0 | H-Bilog | PK | 0.0 | 19.0 | 43.5 | -24.5 |
| 327.947 | 19.4 | 1.3 | 360.0 | 2.8 | 3.0 | 0.0 | H-Bilog | QP | 0.0 | 20.7 | 46.0 | -25.3 |
| 327.621 | 19.3 | 1.3 | 96.0 | 2.8 | 3.0 | 0.0 | V-Bilog | QP | 0.0 | 20.6 | 46.0 | -25.4 |

NORTHWEST
**EMC**

# RECEIVE MODE EMISSIONS

PSA 2006.09.07
EMI 2006.4.26

| | | | | | |
|---|---|---|---|---|---|
| **EUT:** | MLOG 02 | | | **Work Order:** | FLWM0004 |
| **Serial Number:** | 03011-9029 | | | **Date:** | 10/10/06 |
| **Customer:** | Flow Metrix, Inc. | | | **Temperature:** | 21 |
| **Attendees:** | None | | | **Humidity:** | 51% |
| **Project:** | None | | | **Barometric Pres.:** | 30.02 |
| **Tested by:** | Jeremiah Darden | **Power:** | Battery | **Job Site:** | OC10 |

| TEST SPECIFICATIONS | Test Method |
|---|---|
| FCC 15.109:2006 | ANSI C63.4:2003 |

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

**COMMENTS**

No hop

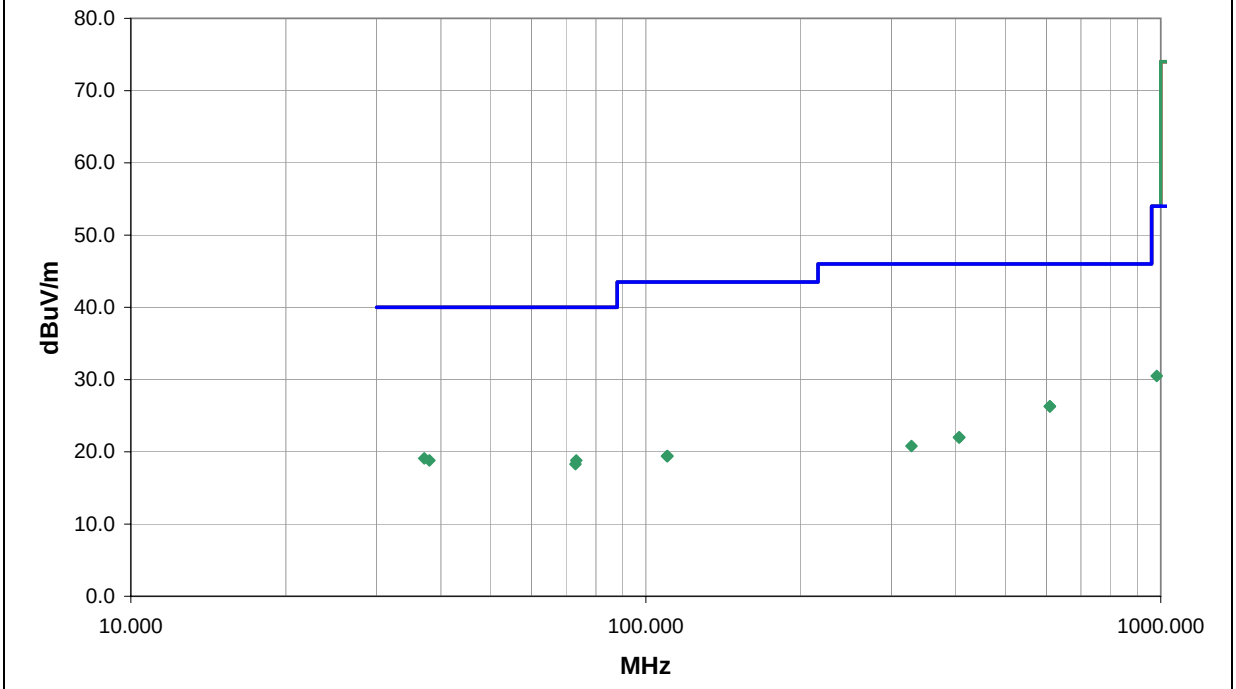
**EUT OPERATING MODES**

Receive, High Channel 917.3MHz

**DEVIATIONS FROM TEST STANDARD**

No deviations.

| | | | |
|---|---|---|---|
| **Run #** | 12 | | |
| **Configuration #** | 2 | | |
| **Results** | Pass | NVLAP Lab Code 200629-0 | *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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 608.917 | 19.6 | 6.7 | 356.0 | 1.0 | 3.0 | 0.0 | V-Bilog | QP | 0.0 | 26.3 | 46.0 | -19.7 |
| 609.009 | 19.6 | 6.7 | 53.0 | 1.0 | 3.0 | 0.0 | H-Bilog | QP | 0.0 | 26.3 | 46.0 | -19.7 |
| 37.145 | 19.2 | -0.1 | 262.0 | 1.0 | 3.0 | 0.0 | H-Bilog | QP | 0.0 | 19.1 | 40.0 | -20.9 |
| 37.987 | 19.3 | -0.5 | 236.0 | 1.4 | 3.0 | 0.0 | V-Bilog | QP | 0.0 | 18.8 | 40.0 | -21.2 |
| 73.258 | 26.1 | -7.3 | 177.0 | 1.0 | 3.0 | 0.0 | V-Bilog | PK | 0.0 | 18.8 | 40.0 | -21.2 |
| 73.008 | 25.6 | -7.3 | 280.0 | 1.3 | 3.0 | 0.0 | H-Bilog | PK | 0.0 | 18.3 | 40.0 | -21.7 |
| 982.067 | 19.6 | 10.9 | 318.0 | 2.0 | 3.0 | 0.0 | H-Bilog | QP | 0.0 | 30.5 | 54.0 | -23.5 |
| 405.606 | 19.5 | 2.5 | 27.0 | 1.0 | 3.0 | 0.0 | V-Bilog | QP | 0.0 | 22.0 | 46.0 | -24.0 |
| 406.387 | 19.5 | 2.5 | 216.0 | 1.0 | 3.0 | 0.0 | H-Bilog | QP | 0.0 | 22.0 | 46.0 | -24.0 |
| 109.946 | 25.4 | -6.0 | 1.0 | 2.8 | 3.0 | 0.0 | H-Bilog | PK | 0.0 | 19.4 | 43.5 | -24.1 |
| 110.184 | 25.4 | -6.0 | 14.0 | 2.9 | 3.0 | 0.0 | V-Bilog | PK | 0.0 | 19.4 | 43.5 | -24.1 |
| 328.042 | 19.5 | 1.3 | 225.0 | 1.0 | 3.0 | 0.0 | H-Bilog | QP | 0.0 | 20.8 | 46.0 | -25.2 |


R826

# Number of Channels

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

**TEST EQUIPMENT**

| Description | Manufacturer | Model | ID | Last Cal. | Interval |
|---|---|---|---|---|---|
| Spectrum Analyzer | Hewlett-Packard | 8593E | AAP | 12/14/2006 | 13 |
| Near Field Probe | EMCO | 7405 | IPI | NCR | NA |

**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 number of hopping frequencies was measured across the authorized band. The measurements were made using a near field probe between the RF output of the EUT and the spectrum analyzer. The hopping function of the EUT was enabled.

NORTHWEST EMC

# Number of Channels

XMit 2006.03.01

| | | | | | |
|---|---|---|---|---|---|
| EUT: | MLOG 02 | | | Work Order: | FLWM0004 |
| Serial Number: | See Configs | | | Date: | 01/09/07 |
| Customer: | Flow Metrix, Inc. | | | Temperature: | 24 C |
| Attendees: | None | | | Humidity: | 22% |
| Project: | None | | | Barometric Pres.: | 30.02 |
| Tested by: | Jeremiah Darden | Power: | Battery | Job Site: | OC03 |

| TEST SPECIFICATIONS | Test Method |
|---|---|
| FCC 15.247:2006 DTS | ANSI C63.4:2003, KDB No. 558074 |
| | |

**COMMENTS**

Hopping Carrier

**DEVIATIONS FROM TEST STANDARD**

None

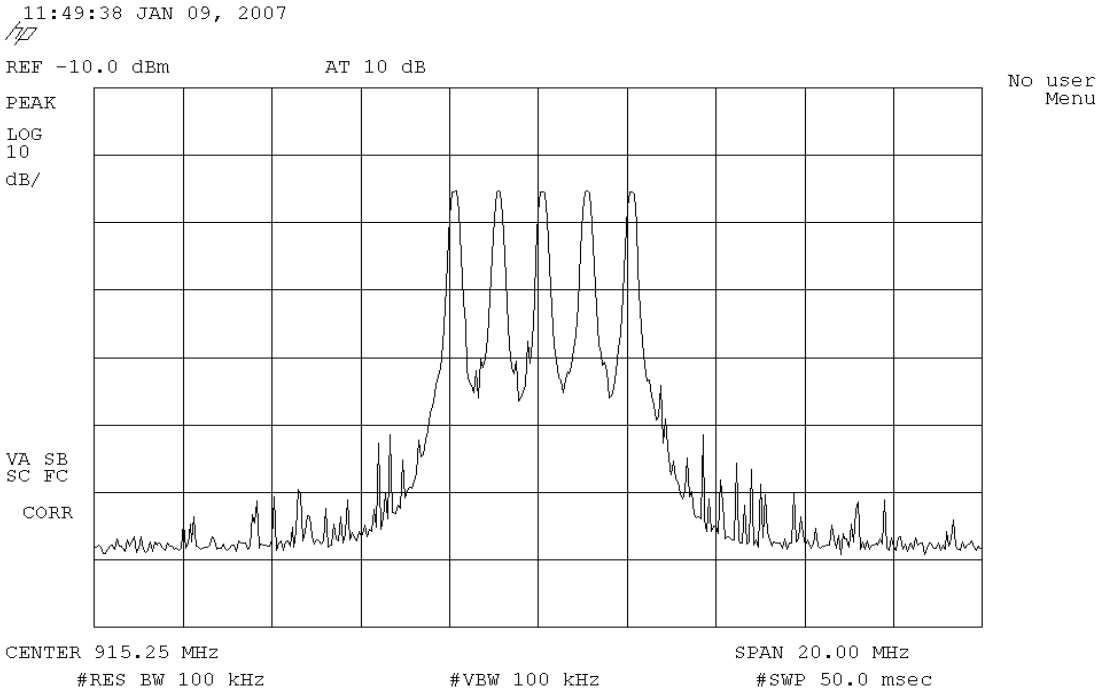
| Configuration # | 5 | Signature |
|---|---|---|

| Modes of Operation and Test Conditions | Value | Limit | Result |
|---|---|---|---|
| Hopping Mode | 5 | | |

# Number of Channels



| Hopping Mode | | | | |
|---|---|---|---|---|
| **Result:** | **Value:** | 5 | **Limit:** | |

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# 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.