## Justification

The individuals and/or the organization requesting the test provided the modes, configurations and settings available to evaluate. While scanning the radiated emissions, all of the EUT parameters listed below were investigated. This includes, but may not be limited to, antennas, tuned transmit frequency ranges, operating modes, and data rates.

| Channels in Specified Band Investigated: |
|---|
| Low |
| High |

| Operating Modes Investigated: |
|---|
| No hop |

| Data Rates Investigated: |
|---|
| Maximum |

| Output Power Setting(s) Investigated: |
|---|
| Maximum |

| Power Input Settings Investigated: |
|---|
| Battery |

| Software\Firmware Applied During Test | | | |
|---|---|---|---|
| **Exercise software** | MLOG Firmware | **Version** | 1.0 |
| Description | | | |
| The system was tested using standard production firmware developed to test all functions of the device during the test. | | | |

| EUT and Peripherals | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| EUT | FlowMetrix | MLOG | N/A |

| Cables | | | | | |
|---|---|---|---|---|---|
| **Cable Type** | **Shield** | **Length (m)** | **Ferrite** | **Connection 1** | **Connection 2** |
| N/A | N/A | N/A | N/A | N/A | N/A |

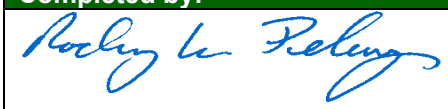
| Measurement Equipment | | | | | |
|---|---|---|---|---|---|
| **Description** | **Manufacturer** | **Model** | **Identifier** | **Last Cal** | **Interval** |
| Spectrum Analyzer | Tektronix | 2784 | AAO | 02/26/2003 | 24 mo |
| Near Field Probe | EMCO | 7405 | IPD | NCR | NA |

## Test Description

**Requirement**: Per 47 CFR 15.247(d), in any 100 kHz 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 100 kHz, and the video bandwidth set to greater than or equal to the resolution bandwidth.

**Configuration**: 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 spectrum analyzer and near field probe. 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 at least 5 MHz below the band edge to at least 5 MHz above the band edge.

**Completed by:**



NORTHWEST
**EMC**

# EMISSIONS DATA SHEET
## Band Edge Compliance

Transmitters
Rev df11/15/02

| | | | | | |
|---|---|---|---|---|---|
| EUT: | MLOG | | | Work Order: | FLWM0001 |
| Serial Number: | N/A | | | Date: | 04/30/04 |
| Customer: | Flow Metrix, Inc. | | | Temperature: | 23° C |
| Attendees: | None | | | Humidity: | 34% |
| Customer Ref. No.: | N/A | | | Bar. Pressure: | 30.15 |
| Tested by: | Rod Peloquin | Power: | Battery | Job Site: | EV06 |

**TEST SPECIFICATIONS**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Specification: | CFR 47 Part 15.247(d) | Year: | 2004 | Method: | DA 00-705, ANSI C63.4 | Year: | 2003 |

**SAMPLE CALCULATIONS**

**COMMENTS**

None

**EUT OPERATING MODES**

No hop mode

**DEVIATIONS FROM TEST STANDARD**

**REQUIREMENTS**

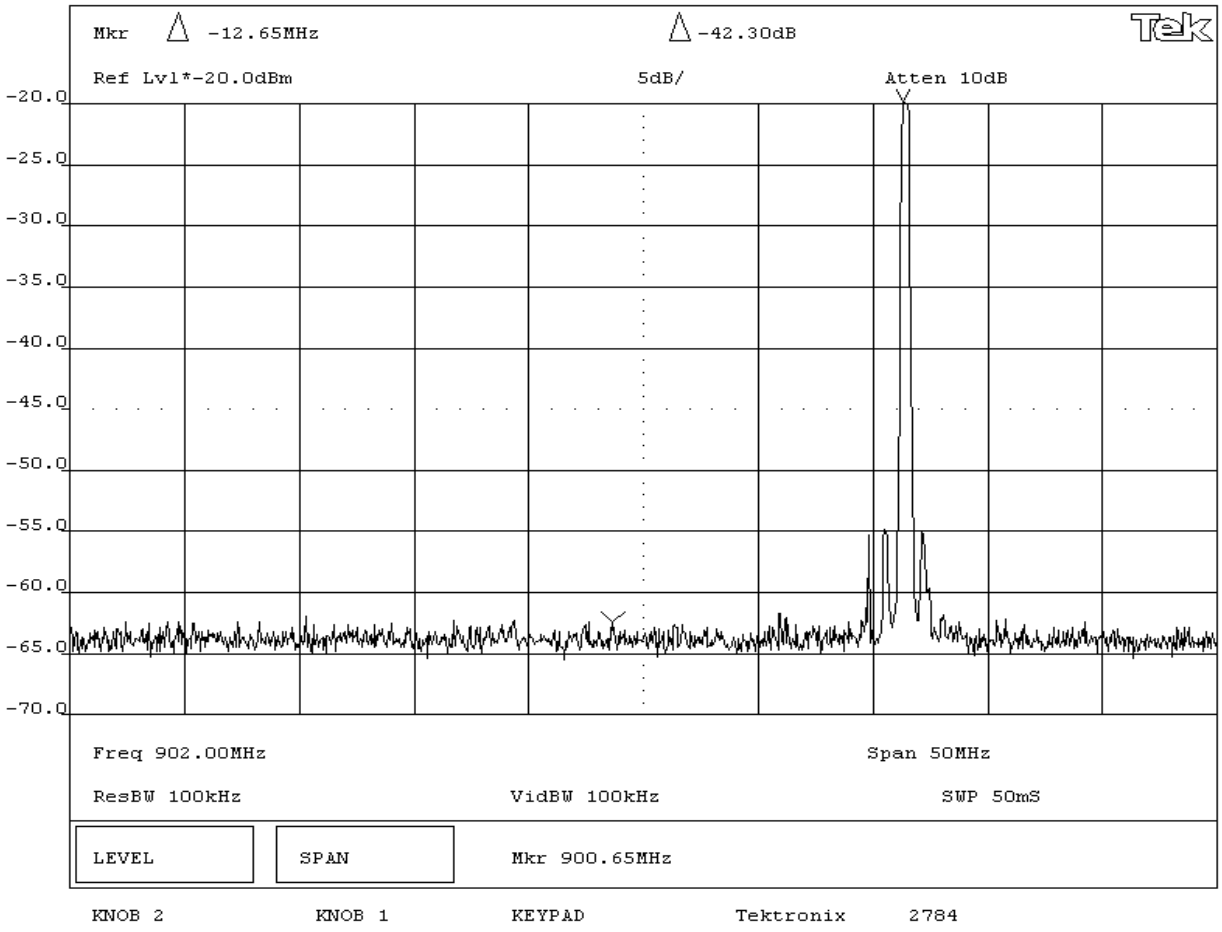
| RESULTS | AMPLITUDE |
|---|---|
| Pass | -42.3db |

**SIGNATURE**

Tested By: Rodney L. Peloquin

**DESCRIPTION OF TEST**

**Low Channel**



NORTHWEST
**EMC**

# EMISSIONS DATA SHEET
## Band Edge Compliance

Transmitters
Rev df11/15/02

| | | | | | |
|---|---|---|---|---|---|
| EUT: | MLOG | | | Work Order: | FLWM0001 |
| Serial Number: | N/A | | | Date: | 04/30/04 |
| Customer: | Flow Metrix, Inc. | | | Temperature: | 23° C |
| Attendees: | None | | | Humidity: | 34% |
| Customer Ref. No.: | N/A | | | Bar. Pressure: | 30.15 |
| Tested by: | Rod Peloquin | Power: | Battery | Job Site: | EV06 |

**TEST SPECIFICATIONS**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Specification: | CFR 47 Part 15.247(d) | Year: | 2004 | Method: | DA 00-705, ANSI C63.4 | Year: | 2003 |

**SAMPLE CALCULATIONS**

**COMMENTS**

None

**EUT OPERATING MODES**

No hop mode

**DEVIATIONS FROM TEST STANDARD**

**REQUIREMENTS**

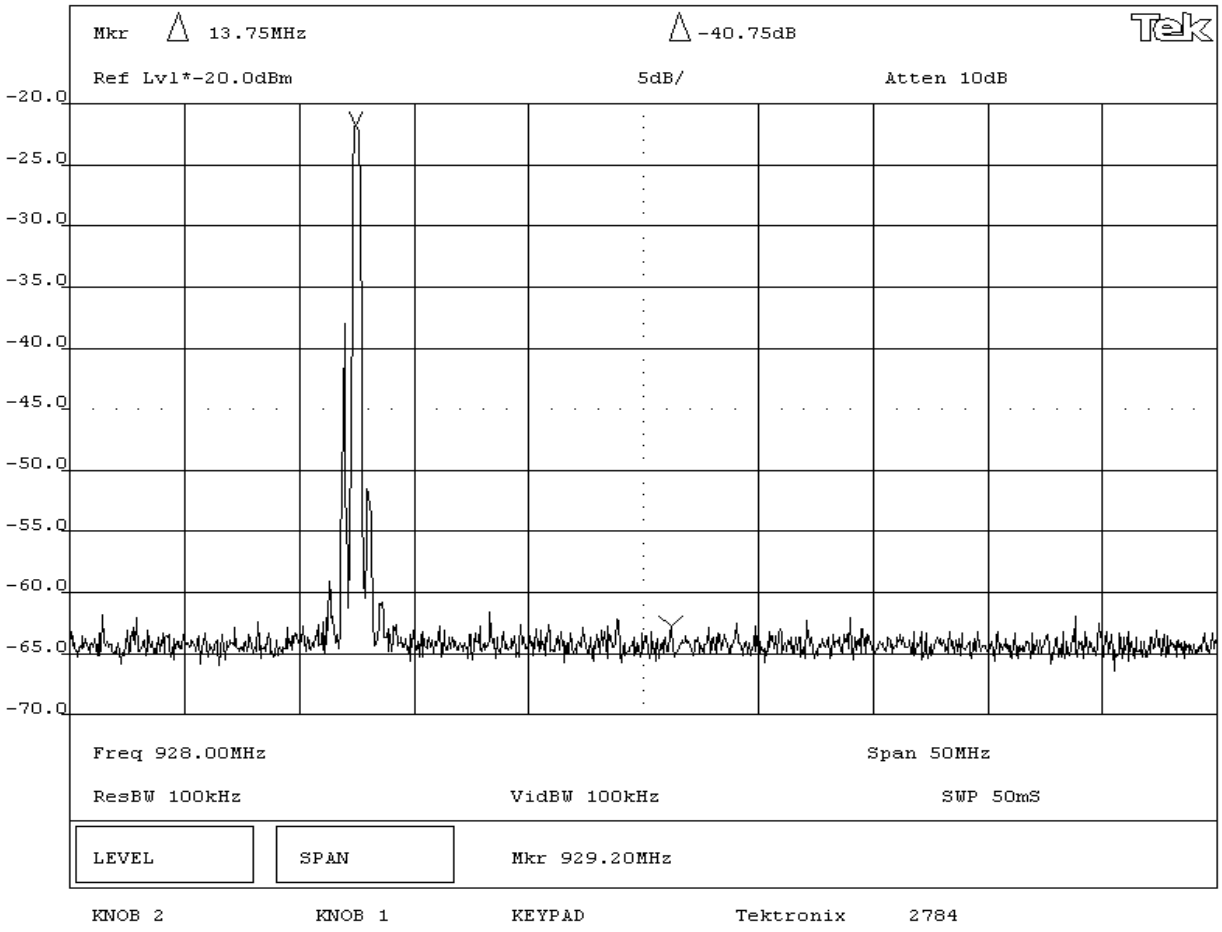
| RESULTS | AMPLITUDE |
|---|---|
| Pass | -40.75dB |

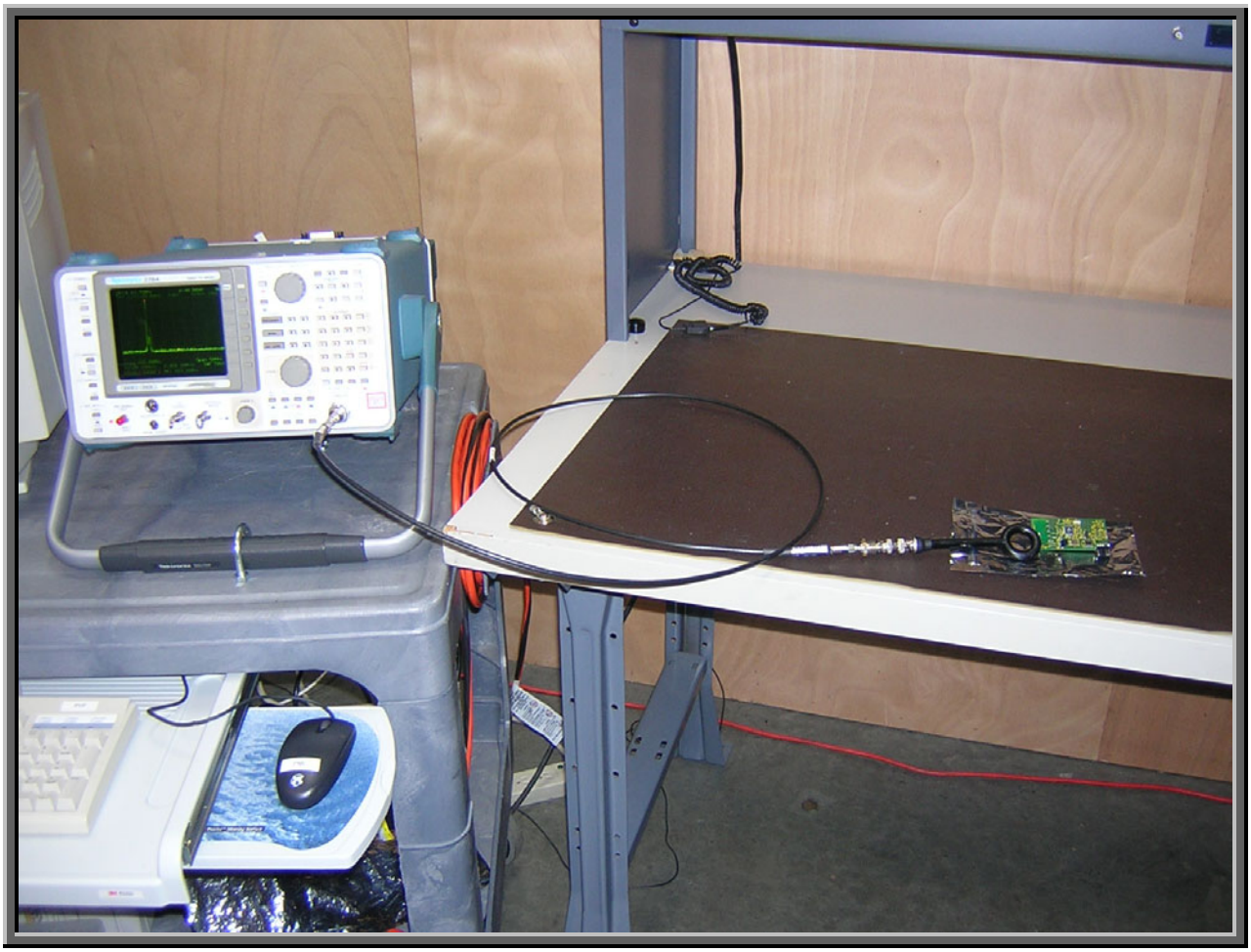
**SIGNATURE**

Tested By: Robert L. Peloquin

**DESCRIPTION OF TEST**

**High Channel**





## Justification

The individuals and/or the organization requesting the test provided the modes, configurations and settings available to evaluate. While scanning the radiated emissions, all of the EUT parameters listed below were investigated. This includes, but may not be limited to, antennas, tuned transmit frequency ranges, operating modes, and data rates.

| Channels in Specified Band Investigated: |
|---|
| Low |
| High |

| Operating Modes Investigated: |
|---|
| Receive Mode |

| Data Rates Investigated: |
|---|
| Maximum |

| Output Power Setting(s) Investigated: |
|---|
| Maximum |

| Power Input Settings Investigated: |
|---|
| Battery |

| Frequency Range Investigated | | | |
|---|---|---|---|
| **Start Frequency** | 30 MHz | **Stop Frequency** | 5 GHz |

| Software\Firmware Applied During Test | | | |
|---|---|---|---|
| **Exercise software** | MLOG Firmware | **Version** | 1.0 |
| Description | | | |
| The system was tested using standard production firmware developed to test all functions of the device during the test. | | | |

| EUT and Peripherals | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| EUT | Flow Metrix, Inc. | MLOG | N/A |

| Cables | | | | | |
|---|---|---|---|---|---|
| **Cable Type** | **Shield** | **Length (m)** | **Ferrite** | **Connection 1** | **Connection 2** |
| N/A | N/A | N/A | N/A | N/A | N/A |

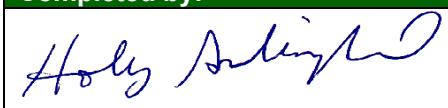
| Measurement Equipment | | | | | |
|---|---|---|---|---|---|
| **Description** | **Manufacturer** | **Model** | **Identifier** | **Last Cal** | **Interval** |
| Pre-Amplifier | Amplifier Research | LN1000A | APS | 02/05/2004 | 13 mo |
| Pre-Amplifier | Miteq | AMF-4D-005180-24-10P | APJ | 01/05/2004 | 13 mo |
| Antenna, Horn | EMCO | 3115 | AHC | 09/18/2003 | 12 mo |
| Antenna, Biconilog | EMCO | 3141 | AXE | 12/03/2003 | 24 mo |
| Quasi-Peak Adapter | Hewlett-Packard | 85650A | AQF | 12/23/2003 | 13 mo |
| Spectrum Analyzer | Hewlett-Packard | 8566B | AAL | 12/23/2003 | 13 mo |

## Test Description

**Requirement**: Per 47 CFR 15.109(f), the receiver portion of the transceiver is tested with the integral antenna connected. The radiated emissions limits of 15.109(a) apply.

**Configuration**: The EUT was configured for low and high receive frequencies. For each configuration, the spectrum was scanned throughout the specified range. While scanning, emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and EUT antenna in three orthogonal axis, and adjusting the measurement antenna height and polarization (per ANSI C63.4:2003). A preamp was used for this test in order to provide sufficient measurement sensitivity.

**Completed by:**



NORTHWEST EMC

# RADIATED EMISSIONS DATA SHEET

REV df4.12 04/08/2004

| | | | | | |
|---|---|---|---|---|---|
| EUT: | MLOG | | | Work Order: | FLWM0001 |
| Serial Number: | none | | | Date: | 04/30/04 |
| Customer: | Flow Metrix, Inc. | | | Temperature: | 75 |
| Attendees: | none | | | Humidity: | 31% |
| Cust. Ref. No.: | | | | Barometric Pressure | 30.12 |
| Tested by: | Holly Ashkannejhad | Power: | Battery | Job Site: | EV01 |

**TEST SPECIFICATIONS**

| | | | |
|---|---|---|---|
| Specification: | FCC 15.109, Class B | Year: | 2004 |
| Method: | ANSI C63.4 | Year: | 2003 |

**SAMPLE CALCULATIONS**

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

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

**COMMENTS**

**EUT OPERATING MODES**

Receiving low or high channel

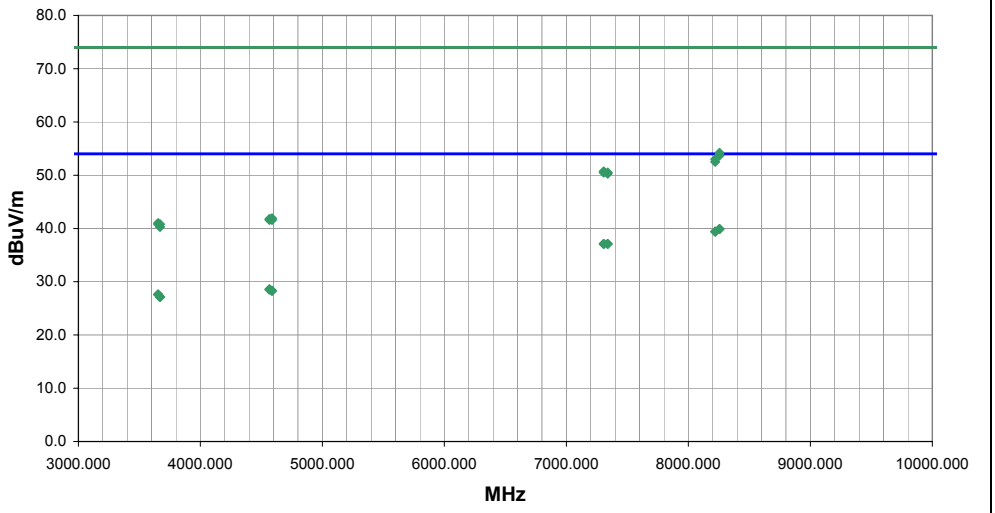
**DEVIATIONS FROM TEST STANDARD**

No deviations.

| RESULTS | Run # |
|---|---|
| Evaluation | 6 |

Other

Tested By:




| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8255.700 | 26.0 | 13.9 | 63.0 | 1.3 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 39.9 | 54.0 | -14.1 | Receiving high channel |
| 8255.700 | 26.0 | 13.9 | 291.0 | 1.3 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 39.9 | 54.0 | -14.1 | Receiving high channel |
| 8219.700 | 25.6 | 13.8 | 186.0 | 2.9 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 39.4 | 54.0 | -14.6 | Receiving low channel |
| 8219.700 | 25.6 | 13.8 | 87.0 | 1.2 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 39.4 | 54.0 | -14.6 | Receiving low channel |
| 7306.400 | 26.5 | 10.6 | 48.0 | 1.3 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 37.1 | 54.0 | -16.9 | Receiving low channel |
| 7306.400 | 26.5 | 10.6 | 154.0 | 1.2 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 37.1 | 54.0 | -16.9 | Receiving low channel |
| 7338.400 | 26.5 | 10.6 | 53.0 | 1.3 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 37.1 | 54.0 | -16.9 | Receiving high channel |
| 7338.400 | 26.5 | 10.6 | 47.0 | 3.8 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 37.1 | 54.0 | -16.9 | Receiving high channel |
| 4566.500 | 26.0 | 2.6 | 118.0 | 1.3 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 28.6 | 54.0 | -25.4 | Receiving low channel |
| 4566.500 | 25.9 | 2.6 | 286.0 | 1.2 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 28.5 | 54.0 | -25.5 | Receiving low channel |
| 4586.500 | 25.6 | 2.7 | 229.0 | 1.3 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 28.3 | 54.0 | -25.7 | Receiving high channel |
| 4586.500 | 25.6 | 2.7 | 324.0 | 3.3 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 28.3 | 54.0 | -25.7 | Receiving high channel |
| 3653.200 | 26.7 | 0.9 | 317.0 | 1.3 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 27.6 | 54.0 | -26.4 | Receiving low channel |
| 3653.200 | 26.7 | 0.9 | 232.0 | 2.2 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 27.6 | 54.0 | -26.4 | Receiving low channel |
| 3669.200 | 26.3 | 0.9 | 317.0 | 1.2 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 27.2 | 54.0 | -26.8 | Receiving high channel |
| 3669.124 | 26.2 | 0.9 | 307.0 | 1.3 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 27.1 | 54.0 | -26.9 | Receiving high channel |
| 8255.700 | 40.3 | 13.9 | 291.0 | 1.3 | 3.0 | 0.0 | V-Horn | PK | 0.0 | 54.2 | 74.0 | -19.8 | Receiving high channel |
| 8255.700 | 39.8 | 13.9 | 63.0 | 1.3 | 3.0 | 0.0 | H-Horn | PK | 0.0 | 53.7 | 74.0 | -20.3 | Receiving high channel |
| 8219.700 | 39.2 | 13.8 | 87.0 | 1.2 | 3.0 | 0.0 | V-Horn | PK | 0.0 | 53.0 | 74.0 | -21.0 | Receiving low channel |
| 8219.700 | 38.7 | 13.8 | 186.0 | 2.9 | 3.0 | 0.0 | H-Horn | PK | 0.0 | 52.5 | 74.0 | -21.5 | Receiving low channel |
| 7306.400 | 40.1 | 10.6 | 48.0 | 1.3 | 3.0 | 0.0 | H-Horn | PK | 0.0 | 50.7 | 74.0 | -23.3 | Receiving low channel |
| 7306.400 | 39.9 | 10.6 | 154.0 | 1.2 | 3.0 | 0.0 | V-Horn | PK | 0.0 | 50.5 | 74.0 | -23.5 | Receiving low channel |
| 7338.400 | 39.9 | 10.6 | 53.0 | 1.3 | 3.0 | 0.0 | H-Horn | PK | 0.0 | 50.5 | 74.0 | -23.5 | Receiving high channel |
| 7338.400 | 39.7 | 10.6 | 47.0 | 3.8 | 3.0 | 0.0 | V-Horn | PK | 0.0 | 50.3 | 74.0 | -23.7 | Receiving high channel |
| 4586.500 | 39.2 | 2.7 | 324.0 | 3.3 | 3.0 | 0.0 | V-Horn | PK | 0.0 | 41.9 | 74.0 | -32.1 | Receiving high channel |
| 4566.500 | 39.2 | 2.6 | 118.0 | 1.3 | 3.0 | 0.0 | H-Horn | PK | 0.0 | 41.8 | 74.0 | -32.2 | Receiving low channel |
| 4566.500 | 39.0 | 2.6 | 286.0 | 1.2 | 3.0 | 0.0 | V-Horn | PK | 0.0 | 41.6 | 74.0 | -32.4 | Receiving low channel |
| 4586.500 | 38.9 | 2.7 | 229.0 | 1.3 | 3.0 | 0.0 | H-Horn | PK | 0.0 | 41.6 | 74.0 | -32.4 | Receiving high channel |
| 3653.200 | 40.1 | 0.9 | 232.0 | 2.2 | 3.0 | 0.0 | V-Horn | PK | 0.0 | 41.0 | 74.0 | -33.0 | Receiving low channel |
| 3653.200 | 39.9 | 0.9 | 317.0 | 1.3 | 3.0 | 0.0 | H-Horn | PK | 0.0 | 40.8 | 74.0 | -33.2 | Receiving low channel |
| 3669.200 | 39.9 | 0.9 | 307.0 | 1.3 | 3.0 | 0.0 | H-Horn | PK | 0.0 | 40.8 | 74.0 | -33.2 | Receiving high channel |
| 3669.200 | 39.4 | 0.9 | 317.0 | 1.2 | 3.0 | 0.0 | V-Horn | PK | 0.0 | 40.3 | 74.0 | -33.7 | Receiving high channel |

NORTHWEST EMC

# RADIATED EMISSIONS DATA SHEET

REV df4.12 04/08/2004

| | | | | | |
|---|---|---|---|---|---|
| EUT: | MLOG | | | Work Order: | FLWM0001 |
| Serial Number: | none | | | Date: | 04/30/04 |
| Customer: | Flow Metrix, Inc. | | | Temperature: | 75 |
| Attendees: | none | | | Humidity: | 31% |
| Cust. Ref. No.: | | | | Barometric Pressure | 30.12 |
| Tested by: | Holly Ashkannejhad | Power: | Battery | Job Site: | EV01 |

**TEST SPECIFICATIONS**

| | | | |
|---|---|---|---|
| Specification: | FCC 15.109, Class B | Year: | 2004 |
| Method: | ANSI C63.4 | Year: | 2003 |

**SAMPLE CALCULATIONS**

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

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

**COMMENTS**

**EUT OPERATING MODES**

Receiving low or high channel

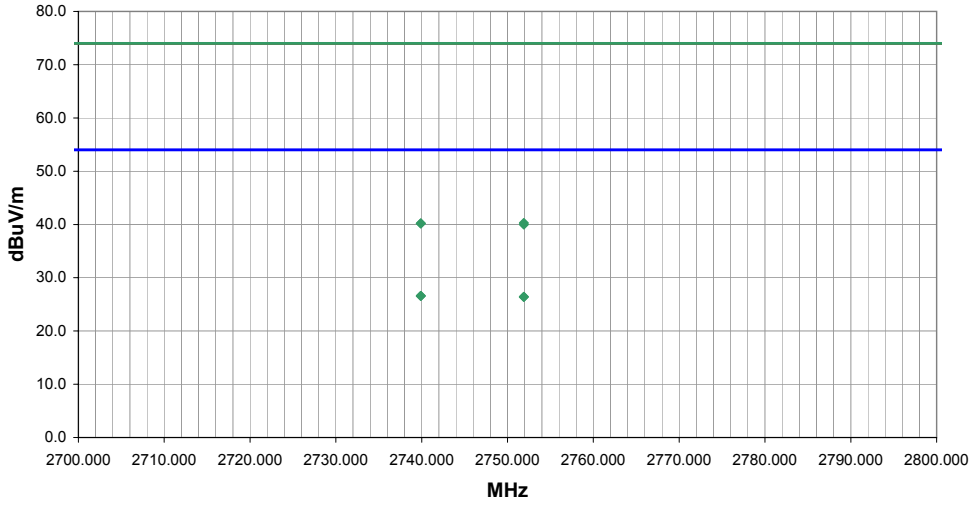
**DEVIATIONS FROM TEST STANDARD**

No deviations.

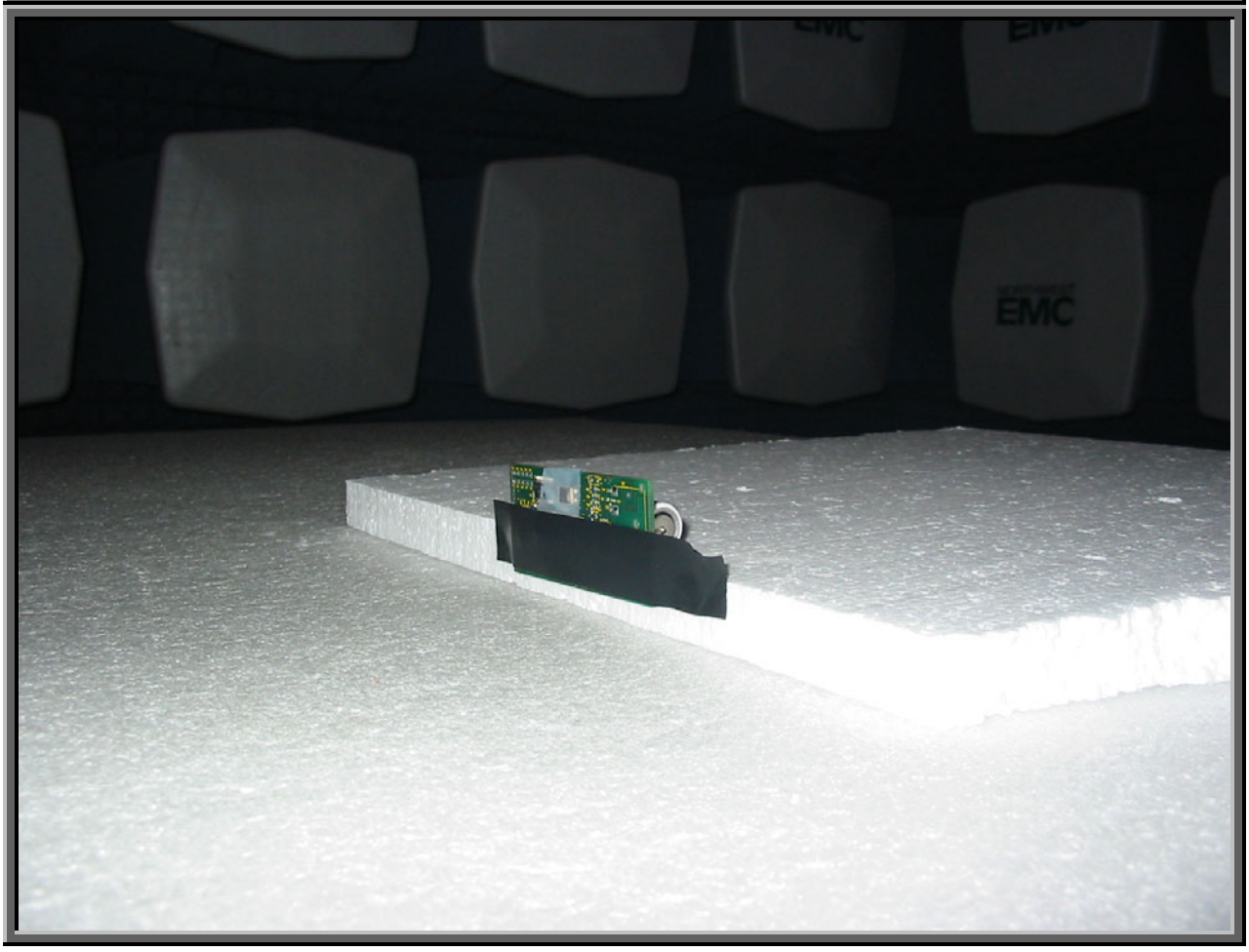
| RESULTS | Run # |
|---|---|
| Pass | 7 |

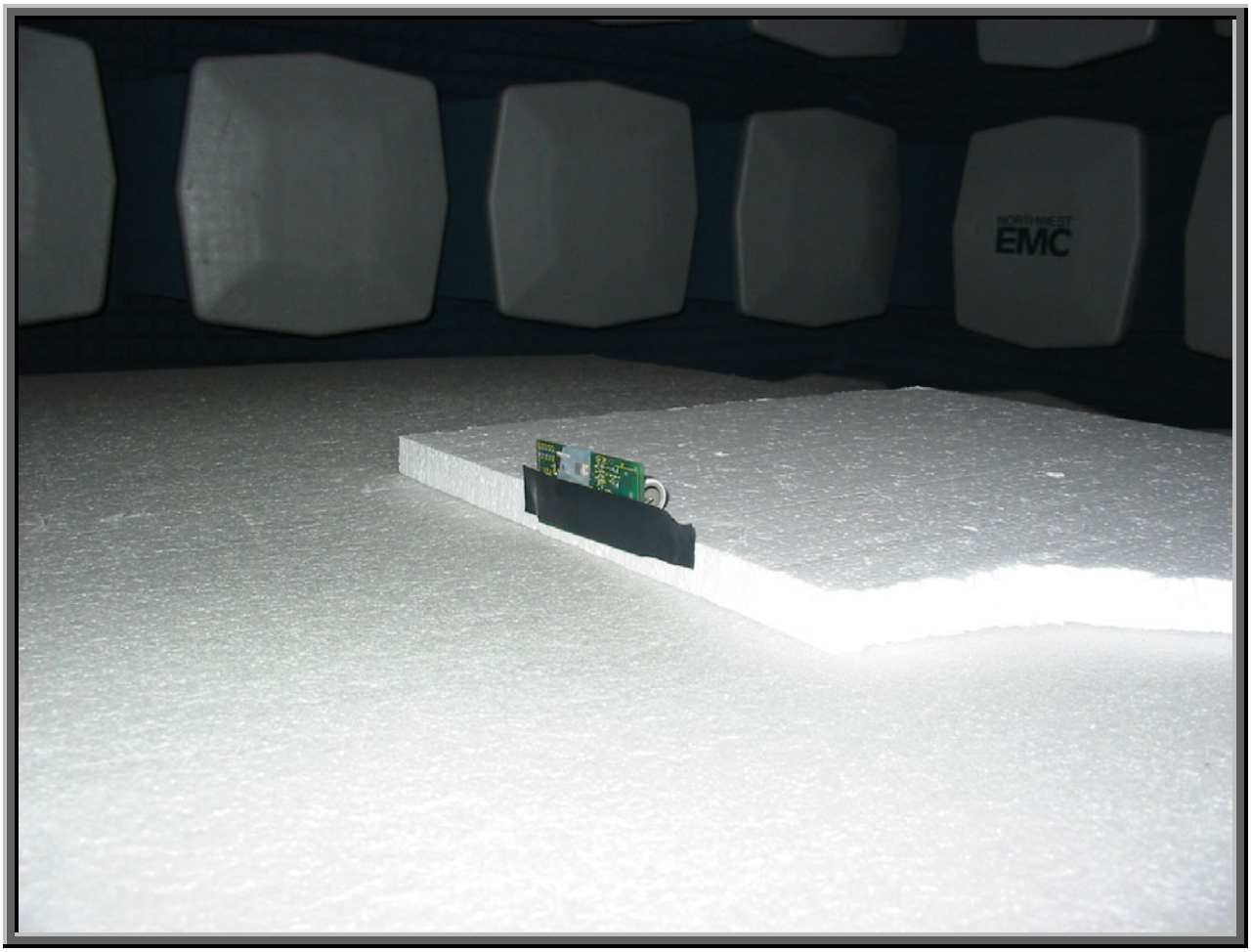
Other

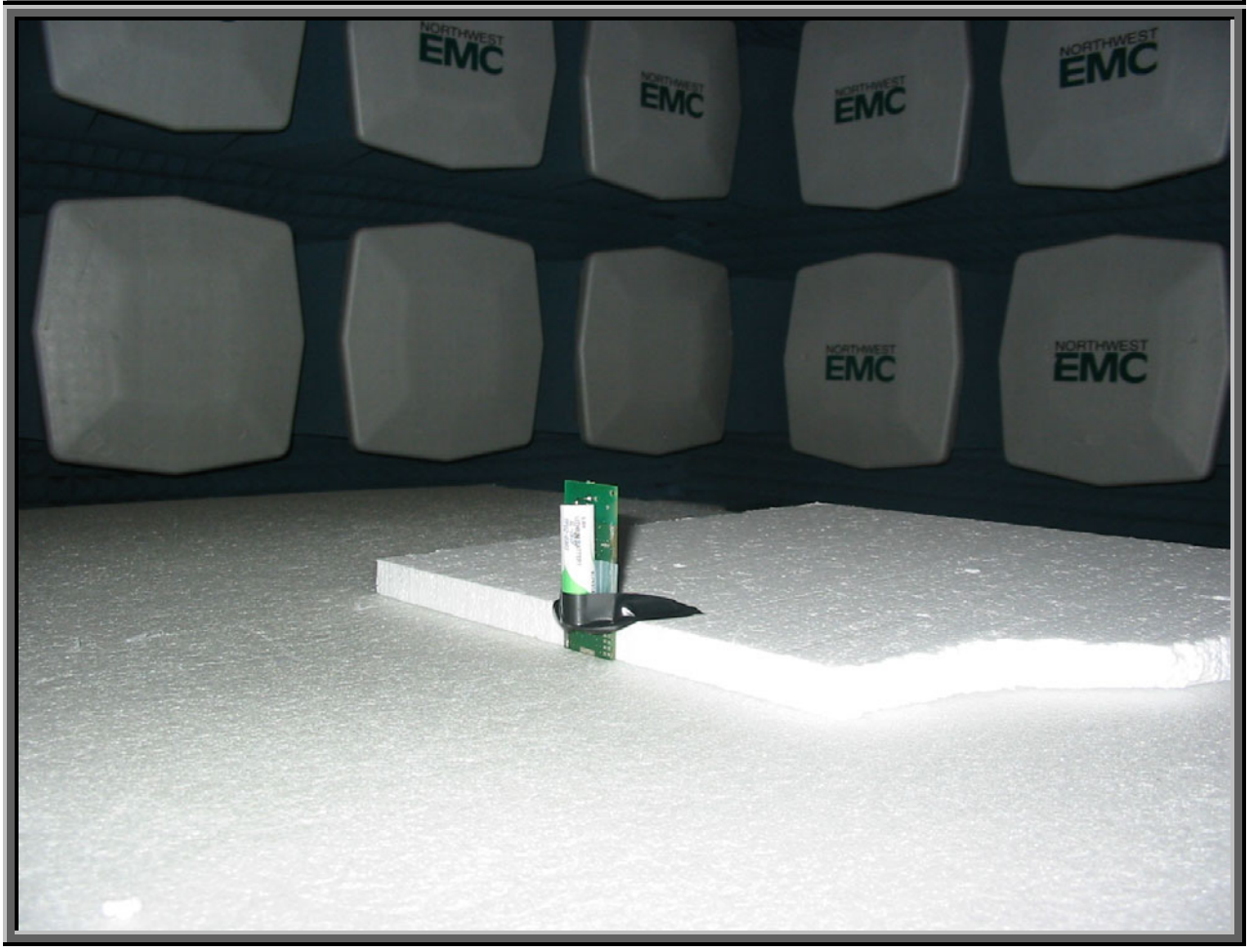
Tested By:




| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2739.900 | 27.8 | -1.2 | 206.0 | 3.1 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 26.6 | 54.0 | -27.4 | Receiving low channel |
| 2739.900 | 27.8 | -1.2 | 6.0 | 1.2 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 26.6 | 54.0 | -27.4 | Receiving low channel |
| 2751.900 | 27.5 | -1.1 | 201.0 | 1.2 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 26.4 | 54.0 | -27.6 | Receiving high channel |
| 2751.900 | 27.5 | -1.1 | 286.0 | 1.3 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 26.4 | 54.0 | -27.6 | Receiving high channel |
| 2751.900 | 41.4 | -1.1 | 286.0 | 1.3 | 3.0 | 0.0 | H-Horn | PK | 0.0 | 40.3 | 74.0 | -33.7 | Receiving high channel |
| 2739.900 | 41.4 | -1.2 | 206.0 | 3.1 | 3.0 | 0.0 | H-Horn | PK | 0.0 | 40.2 | 74.0 | -33.8 | Receiving low channel |
| 2739.900 | 41.4 | -1.2 | 6.0 | 1.2 | 3.0 | 0.0 | V-Horn | PK | 0.0 | 40.2 | 74.0 | -33.8 | Receiving low channel |
| 2751.900 | 41.1 | -1.1 | 201.0 | 1.2 | 3.0 | 0.0 | V-Horn | PK | 0.0 | 40.0 | 74.0 | -34.0 | Receiving high channel |


EMC


NORTHWEST
EMC


NORTHWEST
EMC

## Justification

The individuals and/or the organization requesting the test provided the modes, configurations and settings available to evaluate. While scanning the radiated emissions, all of the EUT parameters listed below were investigated. This includes, but may not be limited to, antennas, tuned transmit frequency ranges, operating modes, and data rates.

| Channels in Specified Band Investigated: |
|---|
| Low |
| High |

| Operating Modes Investigated: |
|---|
| No Hop |

| Data Rates Investigated: |
|---|
| Maximum |

| Output Power Setting(s) Investigated: |
|---|
| Maximum |

| Power Input Settings Investigated: |
|---|
| Battery |

| Software\Firmware Applied During Test | | | |
|---|---|---|---|
| **Exercise software** | MLOG Firmware | **Version** | 1.0 |
| Description | | | |
| The system was tested using standard production firmware developed to test all functions of the device during the test. | | | |

| EUT and Peripherals | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| EUT | Flow Metrix, Inc. | MLOG | N/A |

| Cables | | | | | |
|---|---|---|---|---|---|
| **Cable Type** | **Shield** | **Length (m)** | **Ferrite** | **Connection 1** | **Connection 2** |
| N/A | N/A | N/A | N/A | N/A | N/A |

| Measurement Equipment | | | | | |
|---|---|---|---|---|---|
| **Description** | **Manufacturer** | **Model** | **Identifier** | **Last Cal** | **Interval** |
| Antenna, Biconilog | EMCO | 3141 | AXE | 12/03/2003 | 24 mo |
| Quasi-Peak Adapter | Hewlett-Packard | 85650A | AQF | 12/23/2003 | 13 mo |
| Spectrum Analyzer | Hewlett-Packard | 8566B | AAL | 12/23/2003 | 13 mo |

## Test Description

**Requirement**: Per 47 CFR 15.247(b)(3), the maximum peak output power must not exceed 1 Watt.

**Configuration**: The peak output power was measured with the EUT set to low and high transmit frequencies. The EUT was transmitting at its maximum output power and data rate.

The measurement was made using the alternative test procedure described in FCC 97-114. The maximum field strength of the fundamental was measured at a 3 meter distance. The field strength was maximized by rotating the EUT on a turntable, adjusting the position of the EUT and EUT antenna in three orthogonal axis, and adjusting the measurement antenna height and polarization (per ANSI C63.4:2003).

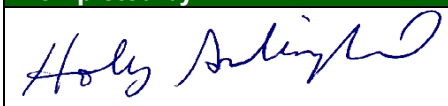
The peak EIRP was calculated using the equation:

$$EIRP = (Ed)^2 / 30$$

Where: E is the measured maximum field strength in V/m
d is the distance in meters from which the field strength was measured

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

**Completed by:**



NORTHWEST EMC

# Output Power - EIRP

REV df4.4 10/22/2004

| | | | | | |
|---|---|---|---|---|---|
| EUT: | MLOG | | | Work Order: | FLWM0003 |
| Serial Number: | none | | | Date: | 10/26/04 |
| Customer: | Flow Metrix, Inc. | | | Temperature: | 66 |
| Attendees: | none | | | Humidity: | 45% |
| Cust. Ref. No.: | | | | Barometric Pressure | 29.5 |
| Tested by: | Greg Kiemel | Power: | Battery | Job Site: | EV01 |

**TEST SPECIFICATIONS**

| | | | |
|---|---|---|---|
| Specification: | FCC 15.247(b) Output Power | Year: | 2004 |
| Method: | ANSI C63.4 | Year: | 2003 |

**SAMPLE CALCULATIONS**

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

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

**COMMENTS**

**EUT OPERATING MODES**

No hop, high channel, 917.3 MHz

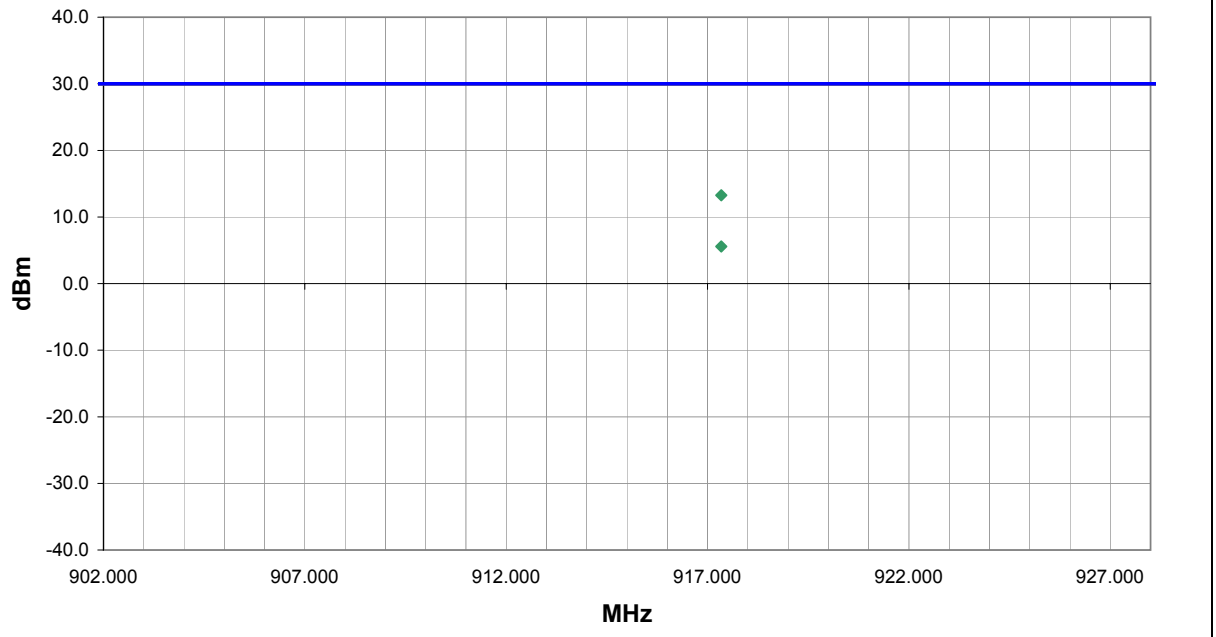
**DEVIATIONS FROM TEST STANDARD**

No deviations.

| RESULTS | Run # |
|---|---|
| Pass | 10 |

**Other**

Tested By:




| Freq (MHz) | | | Azimuth (degrees) | Height (meters) | | | Polarity | Detector | EIRP (Watts) | EIRP (dBm) | Spec. Limit (dBm) | Compared to Spec. (dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 917.340 | | | 18.0 | 1.0 | | | H-Bilog | PK | 0.0212 | 13.3 | 30.0 | -16.7 |
| 917.341 | | | 146.0 | 1.2 | | | V-Bilog | PK | 0.0036 | 5.6 | 30.0 | -24.4 |

NORTHWEST EMC

# Output Power - EIRP

REV df4.4 10/22/2004

| | | | | | |
|---|---|---|---|---|---|
| EUT: | MLOG | | | Work Order: | FLWM0003 |
| Serial Number: | none | | | Date: | 11/05/04 |
| Customer: | Flow Metrix, Inc. | | | Temperature: | 72 |
| Attendees: | none | | | Humidity: | 32% |
| Cust. Ref. No.: | | | | Barometric Pressure | 30.4 |
| Tested by: | Rod Peloquin | Power: | Battery | Job Site: | EV01 |

**TEST SPECIFICATIONS**

| | | | |
|---|---|---|---|
| Specification: | FCC 15.247(b) Output Power | Year: | 2004 |
| Method: | ANSI C63.4 | Year: | 2003 |

**SAMPLE CALCULATIONS**

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

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

**COMMENTS**

**EUT OPERATING MODES**

No hop, low channel, 913.294 kHz

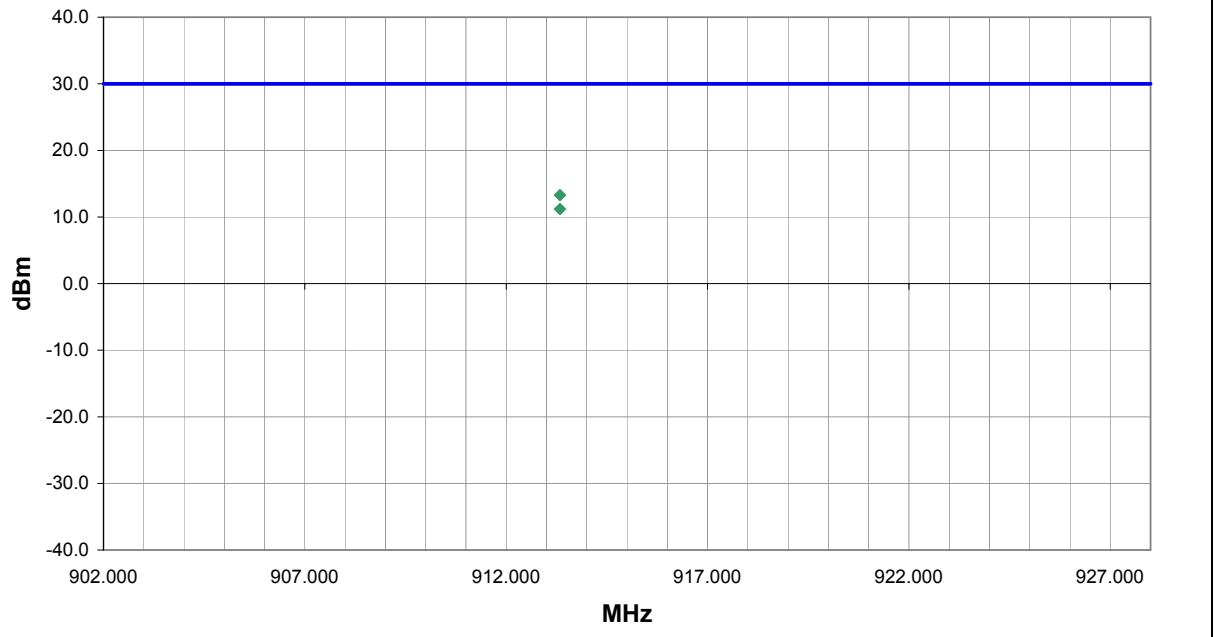
**DEVIATIONS FROM TEST STANDARD**

No deviations.

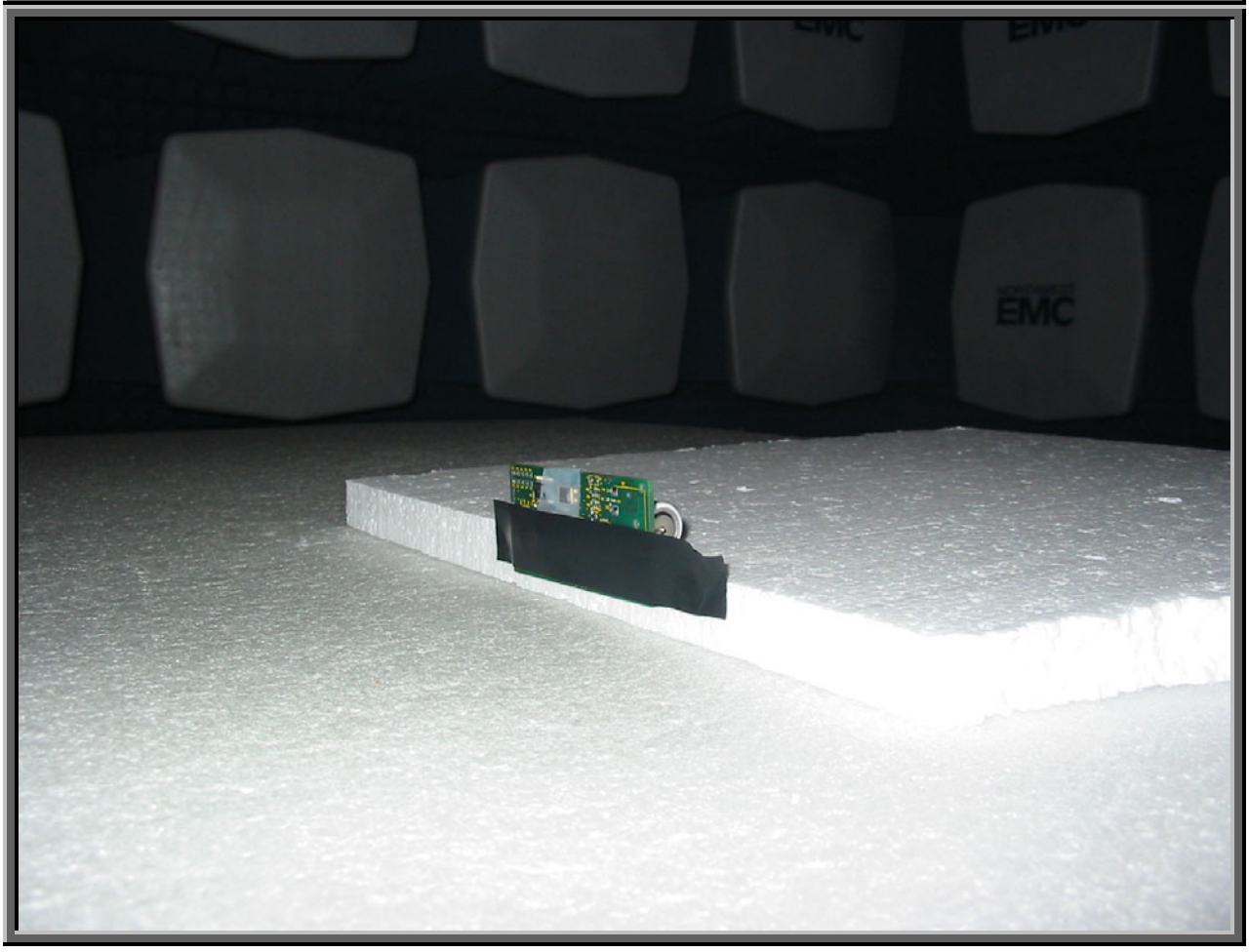
| RESULTS | Run # |
|---|---|
| Pass | 14 |

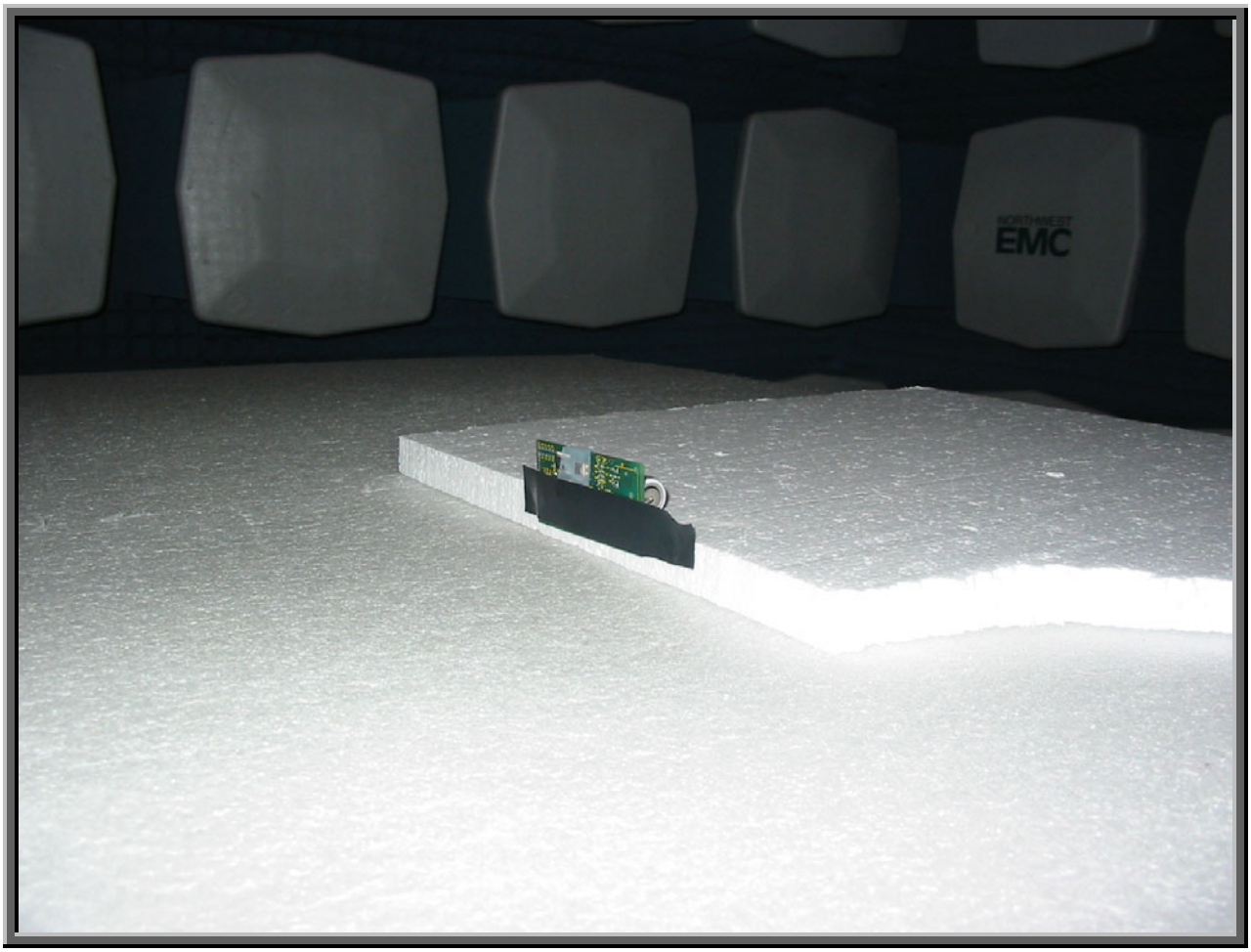
**Other**

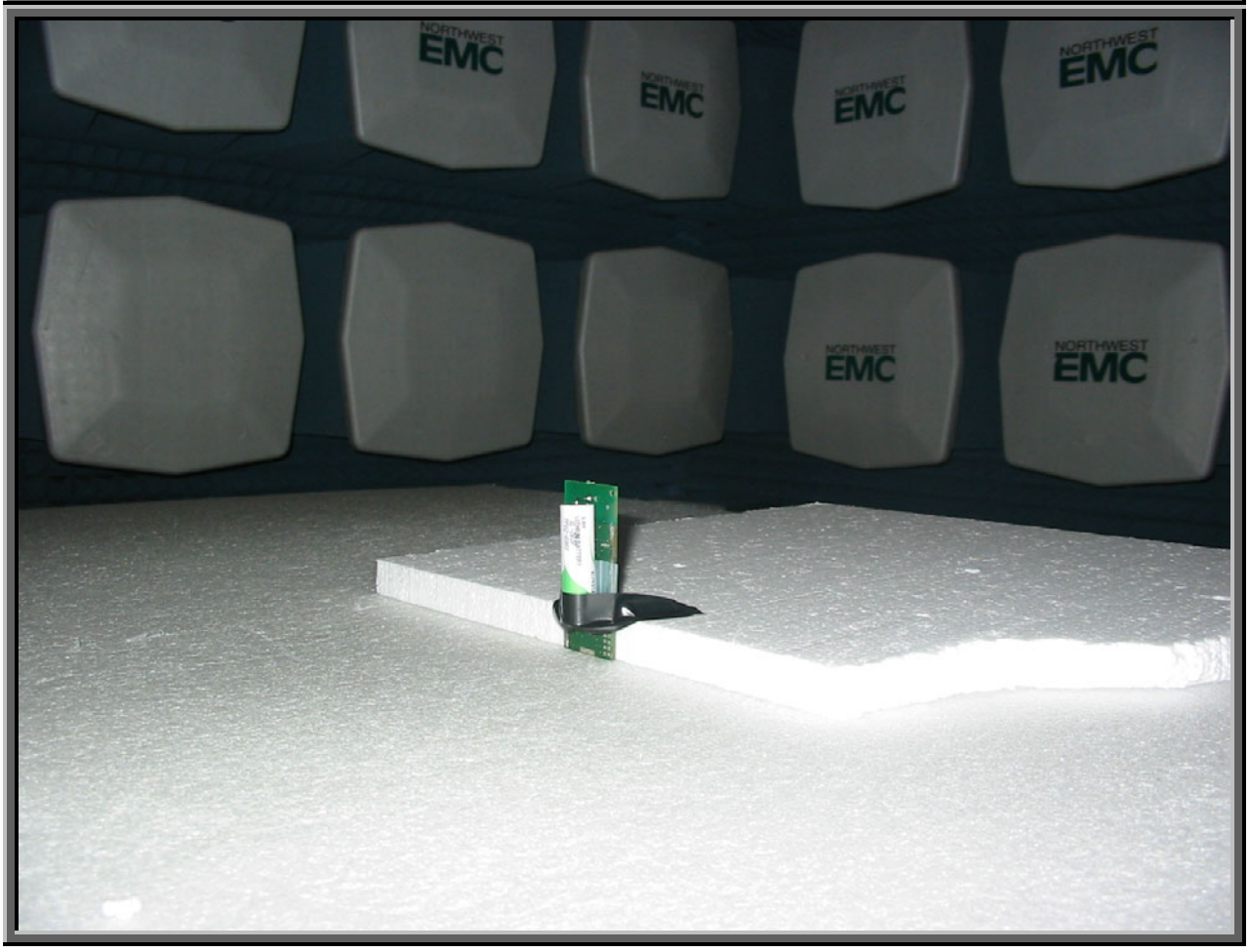
Tested By:




| Freq (MHz) | | | Azimuth (degrees) | Height (meters) | | | Polarity | Detector | EIRP (Watts) | EIRP (dBm) | Spec. Limit (dBm) | Compared to Spec. (dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 913.336 | | | 134.0 | 1.3 | | | V-Bilog | PK | 0.0214 | 13.3 | 30.0 | -16.7 |
| 913.335 | | | 253.0 | 1.0 | | | H-Bilog | PK | 0.0131 | 11.2 | 30.0 | -18.8 |


EMC


NORTHWEST
EMC


NORTHWEST
EMC

| Justification |
|---|

The individuals and/or the organization requesting the test provided the modes, configurations and settings available to evaluate. While scanning the radiated emissions, all of the EUT parameters listed below were investigated. This includes, but may not be limited to, antennas, tuned transmit frequency ranges, operating modes, and data rates.

| Channels in Specified Band Investigated: |
|---|
| Low |
| High |

| Operating Modes Investigated: |
|---|
| Typical |

| Data Rates Investigated: |
|---|
| Maximum |

| Output Power Setting(s) Investigated: |
|---|
| Maximum |

| Power Input Settings Investigated: |
|---|
| Battery |

| Frequency Range Investigated | | | |
|---|---|---|---|
| **Start Frequency** | 30 MHz | **Stop Frequency** | 10 GHz |

| Software\Firmware Applied During Test | | | |
|---|---|---|---|
| **Exercise software** | MLOG Firmware | **Version** | 1.0 |
| Description | | | |
| The system was tested using standard production firmware developed to test all functions of the device during the test. | | | |

| EUT and Peripherals | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| EUT | Flow Metrix, Inc. | MLOG | N/A |

| Cables | | | | | |
|---|---|---|---|---|---|
| **Cable Type** | **Shield** | **Length (m)** | **Ferrite** | **Connection 1** | **Connection 2** |
| N/A | N/A | N/A | N/A | N/A | N/A |

# Spurious Radiated Emissions in the Resticted Bands



| Measurement Equipment | | | | | |
|---|---|---|---|---|---|
| **Description** | **Manufacturer** | **Model** | **Identifier** | **Last Cal** | **Interval** |
| High Pass Filter | Micro-Tronics | HPM50111 | HFO | 04/13/2004 | 13 mo |
| High Pass Filter | Hewlett-Packard | 84300-80037 | HFE | 02/04/2004 | 13 mo |
| Pre-Amplifier | Amplifier Research | LN1000A | APS | 02/05/2004 | 13 mo |
| Pre-Amplifier | Miteq | AMF-4D-005180-24-10P | APJ | 01/05/2004 | 13 mo |
| Antenna, Horn | EMCO | 3115 | AHC | 09/18/2003 | 12 mo |
| Antenna, Biconilog | EMCO | 3141 | AXE | 12/03/2003 | 24 mo |
| Quasi-Peak Adapter | Hewlett-Packard | 85650A | AQF | 12/23/2003 | 13 mo |
| Spectrum Analyzer | Hewlett-Packard | 8566B | AAL | 12/23/2003 | 13 mo |
| Spectrum Analyzer Display | Hewlett Packard | 85662A | AALD | 12/23/2003 | 13 mo |

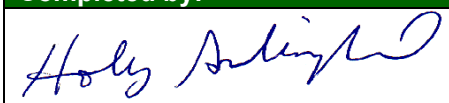
## Test Description

**Requirement:** The field strength of any spurious emissions or modulation products that fall in a restricted band, as defined in 47 CFR 15.205, is measured. The peak level must comply with the limits specified in 47 CFR 15.35(b). The average level (taken with a 10Hz VBW) must comply with the limits specified in 15.209.

**Configuration**: The single integral antenna to be used with the EUT was tested. The EUT was configured for low and high band transmit frequencies in receive and transmit mode. For each configuration, the spectrum was scanned throughout the specified range. In addition, measurements were made in the restricted bands to verify compliance. While scanning, emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and the EUT antenna in three orthogonal axis, and adjusting measurement antenna height and polarization, and manipulating the EUT antenna in 3 orthogonal planes (per ANSI C63.4:2003). A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

| Bandwidths Used for Measurements | | | |
|---|---|---|---|
| **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.*** | | | |

**Completed by:**



NORTHWEST EMC

# Spurious Radiated Emissions in the Restricted Bands

REV df4.4 10/22/2004

| | | | | | |
|---|---|---|---|---|---|
| EUT: | MLOG | | | Work Order: | FLWM0003 |
| Serial Number: | none | | | Date: | 10/26/04 |
| Customer: | Flow Metrix, Inc. | | | Temperature: | 68 |
| Attendees: | none | | | Humidity: | 43% |
| Cust. Ref. No.: | | | | Barometric Pressure | 29.5 |
| Tested by: | Greg Kiemel | Power: | Battery | Job Site: | EV01 |

**TEST SPECIFICATIONS**

| | | | |
|---|---|---|---|
| Specification: | FCC 15.247(d) Spurious Radiated Emissions | Year: | 2004 |
| Method: | ANSI C63.4 | Year: | 2003 |

**SAMPLE CALCULATIONS**

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

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

**COMMENTS**

The average data can be reduced by a factor (dB) = 20 * log (worst case transmit time on a single channel / 100ms). The worst case transmit time of 40 ms on a single channel in any 100 ms window = 7.95 dB duty cycle correction factor.

**EUT OPERATING MODES**

No hop, High channel 917.3 MHz

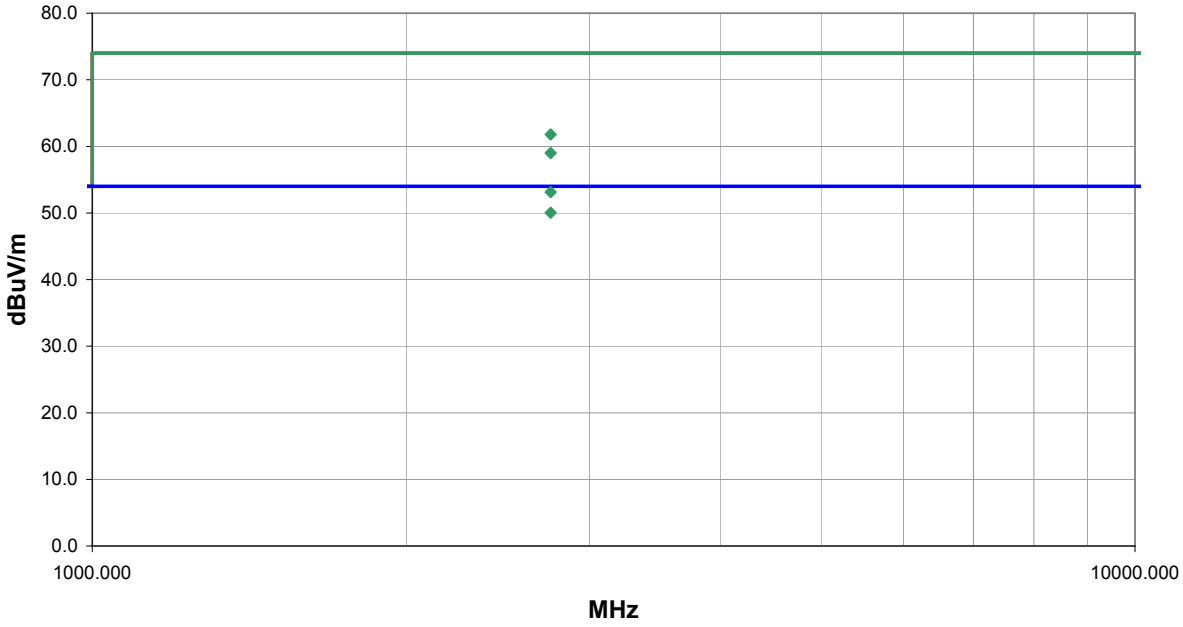
**DEVIATIONS FROM TEST STANDARD**

No deviations.

| RESULTS | Run # |
|---|---|
| Pass | 11 |

Other

Tested By:




| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Azimuth (degrees) | Height (meters) | Distance (meters) | Duty Cycle Correction (dB) | Polarity | Detector | Distance Adjustment (dB) | Adjusted dBuV/m | Spec. Limit dBuV/m | Compared to Spec. (dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2751.900 | 62.1 | -1.0 | 197.0 | 1.9 | 3.0 | 8.0 | H-Horn | AV | 0.0 | 53.1 | 54.0 | -0.9 |
| 2751.900 | 59.0 | -1.0 | 275.0 | 1.2 | 3.0 | 8.0 | V-Horn | AV | 0.0 | 50.1 | 54.0 | -3.9 |
| 2751.900 | 62.8 | -1.0 | 197.0 | 1.9 | 3.0 | 0.0 | H-Horn | PK | 0.0 | 61.8 | 74.0 | -12.2 |
| 2751.900 | 60.0 | -1.0 | 275.0 | 1.2 | 3.0 | 0.0 | V-Horn | PK | 0.0 | 59.0 | 74.0 | -15.0 |

NORTHWEST EMC

# Spurious Radiated Emissions in the Restricted Bands

REV df4.4 10/22/2004

| | | | | | |
|---|---|---|---|---|---|
| EUT: | MLOG | | | Work Order: | FLWM0003 |
| Serial Number: | none | | | Date: | 10/28/04 |
| Customer: | Flow Metrix, Inc. | | | Temperature: | 66 |
| Attendees: | none | | | Humidity: | 45% |
| Cust. Ref. No.: | | | | Barometric Pressure | 29.93 |
| Tested by: | Rod Peloquin | Power: | Battery | Job Site: | EV01 |

**TEST SPECIFICATIONS**

| | | | |
|---|---|---|---|
| Specification: | FCC 15.247(d) Spurious Radiated Emissions | Year: | 2004 |
| Method: | ANSI C63.4 | Year: | 2003 |

**SAMPLE CALCULATIONS**

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

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

**COMMENTS**

The average data can be reduced by a factor (dB) = 20 * log (worst case transmit time on a single channel / 100ms). The worst case transmit time of 40 ms on a single channel in any 100 ms window = 7.95 dB duty cycle correction factor.

**EUT OPERATING MODES**

No hop, High channel 917.3 MHz

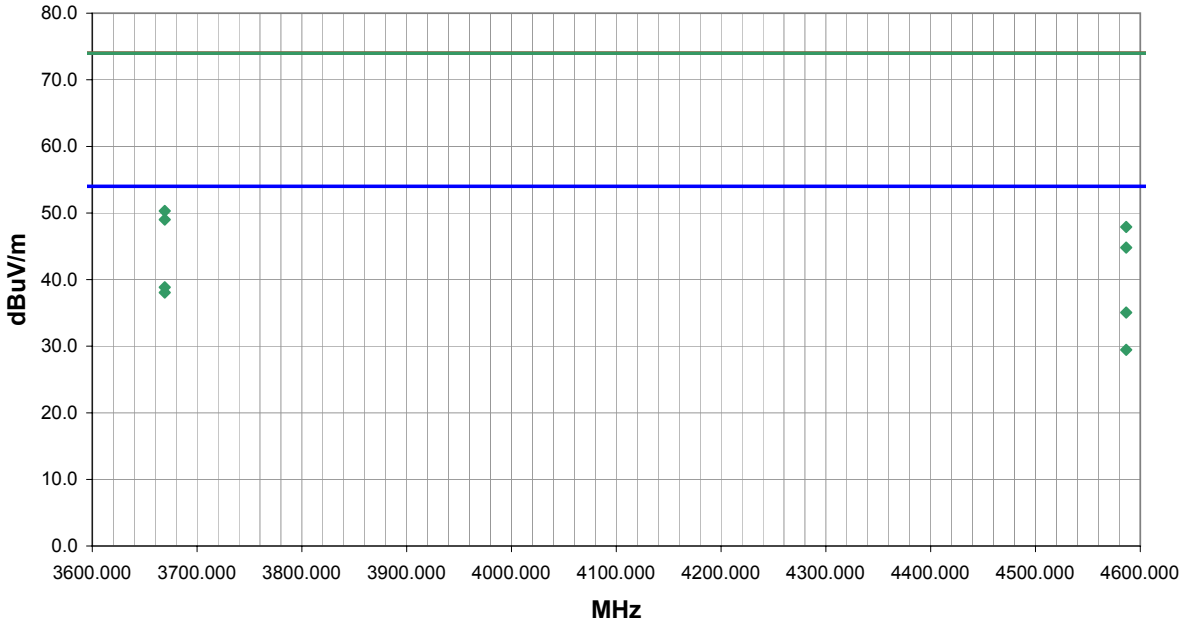
**DEVIATIONS FROM TEST STANDARD**

No deviations.

| RESULTS | Run # |
|---|---|
| Pass | 12 |

Other

Tested By:




| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Azimuth (degrees) | Height (meters) | Distance (meters) | Duty Cycle Correction (dB) | Polarity | Detector | Distance Adjustment (dB) | Adjusted dBuV/m | Spec. Limit dBuV/m | Compared to Spec. (dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3669.194 | 45.8 | 1.0 | 203.0 | 1.0 | 3.0 | 8.0 | V-Horn | AV | 0.0 | 38.8 | 54.0 | -15.2 |
| 3669.194 | 45.0 | 1.0 | 267.0 | 1.1 | 3.0 | 8.0 | H-Horn | AV | 0.0 | 38.0 | 54.0 | -16.0 |
| 4586.493 | 40.1 | 2.9 | 4.0 | 1.0 | 3.0 | 8.0 | V-Horn | AV | 0.0 | 35.0 | 54.0 | -19.0 |
| 4586.493 | 34.5 | 2.9 | 165.0 | 1.3 | 3.0 | 8.0 | H-Horn | AV | 0.0 | 29.5 | 54.0 | -24.5 |
| 3669.194 | 49.3 | 1.0 | 203.0 | 1.0 | 3.0 | 0.0 | V-Horn | PK | 0.0 | 50.3 | 74.0 | -23.7 |
| 3669.194 | 48.0 | 1.0 | 267.0 | 1.1 | 3.0 | 0.0 | H-Horn | PK | 0.0 | 49.0 | 74.0 | -25.0 |
| 4586.493 | 45.0 | 2.9 | 4.0 | 1.0 | 3.0 | 0.0 | V-Horn | PK | 0.0 | 47.9 | 74.0 | -26.1 |
| 4586.493 | 41.9 | 2.9 | 165.0 | 1.3 | 3.0 | 0.0 | H-Horn | PK | 0.0 | 44.8 | 74.0 | -29.2 |

NORTHWEST EMC

# Spurious Radiated Emissions in the Restricted Bands

REV df4.4 10/22/2004

| | | | |
|---|---|---|---|
| EUT: | MLOG | Work Order: | FLWM0003 |
| Serial Number: | none | Date: | 10/28/04 |
| Customer: | Flow Metrix, Inc. | Temperature: | 66 |
| Attendees: | none | Humidity: | 45% |
| Cust. Ref. No.: | | Barometric Pressure | 29.93 |
| Tested by: | Rod Peloquin Power: Battery | Job Site: | EV01 |

**TEST SPECIFICATIONS**

| | | | |
|---|---|---|---|
| Specification: | FCC 15.247(d) Spurious Radiated Emissions | Year: | 2004 |
| Method: | ANSI C63.4 | Year: | 2003 |

**SAMPLE CALCULATIONS**

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

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

**COMMENTS**

The average data can be reduced by a factor (dB) = 20 * log (worst case transmit time on a single channel / 100ms). The worst case transmit time of 40 ms on a single channel in any 100 ms window = 7.95 dB duty cycle correction factor.

**EUT OPERATING MODES**

No hop, High channel 917.3 MHz

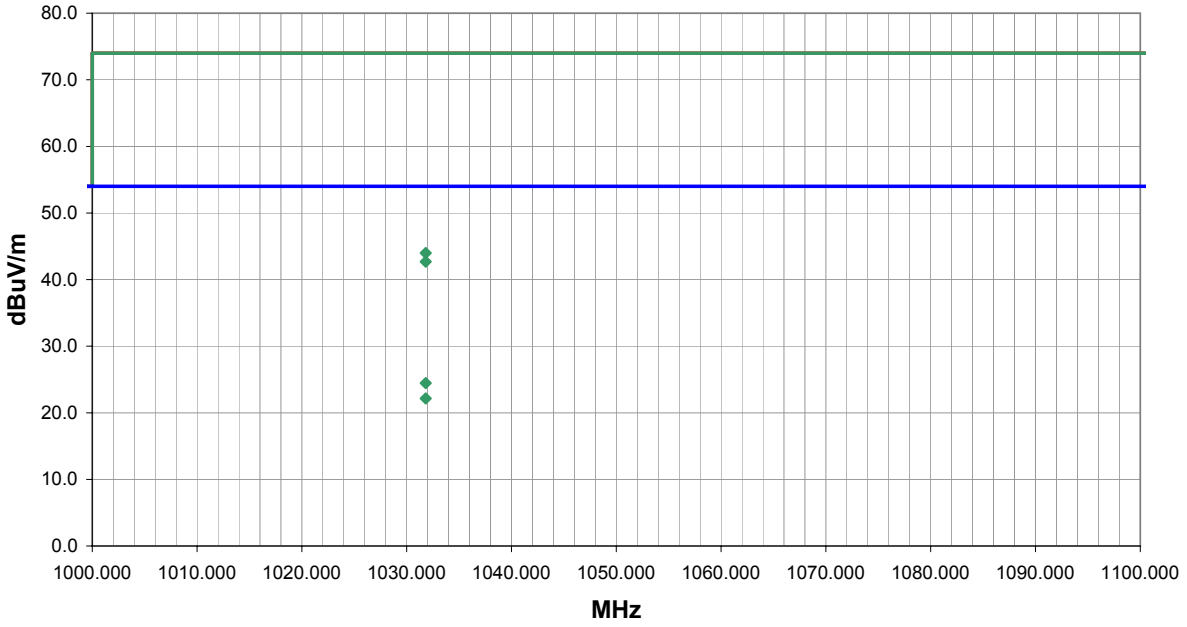
**DEVIATIONS FROM TEST STANDARD**

No deviations.

| RESULTS | Run # |
|---|---|
| Pass | 13 |

Other

Tested By:




| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Azimuth (degrees) | Height (meters) | Distance (meters) | External Attenuation (dB) | Polarity | Detector | Duty Cycle Correction (dB) | Adjusted dBuV/m | Spec. Limit dBuV/m | Compared to Spec. (dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1031.813 | 31.5 | -9.1 | 77.0 | 1.3 | 3.0 | 10.0 | H-Horn | AV | 8.0 | 24.5 | 54.0 | -29.5 |
| 1031.813 | 29.2 | -9.1 | 335.0 | 2.6 | 3.0 | 10.0 | V-Horn | AV | 8.0 | 22.2 | 54.0 | -31.8 |
| 1031.813 | 43.1 | -9.1 | 77.0 | 1.3 | 3.0 | 10.0 | H-Horn | PK | 0.0 | 44.0 | 74.0 | -30.0 |
| 1031.813 | 41.8 | -9.1 | 335.0 | 2.6 | 3.0 | 10.0 | V-Horn | PK | 0.0 | 42.7 | 74.0 | -31.3 |

NORTHWEST EMC

# Spurious Radiated Emissions in the Restricted Bands

REV df4.4 10/22/2004

| | | | | | |
|---|---|---|---|---|---|
| EUT: | MLOG | | | Work Order: | FLWM0003 |
| Serial Number: | none | | | Date: | 11/05/04 |
| Customer: | Flow Metrix, Inc. | | | Temperature: | 72 |
| Attendees: | none | | | Humidity: | 32% |
| Cust. Ref. No.: | | | | Barometric Pressure | 30.4 |
| Tested by: | Rod Peloquin | Power: | Battery | Job Site: | EV01 |

**TEST SPECIFICATIONS**

| | | | |
|---|---|---|---|
| Specification: | FCC 15.247(d) Spurious Radiated Emissions | Year: | 2004 |
| Method: | ANSI C63.4 | Year: | 2003 |

**SAMPLE CALCULATIONS**

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

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

**COMMENTS**

The average data can be reduced by a factor (dB) = 20 * log (worst case transmit time on a single channel / 100ms). The worst case transmit time of 40 ms on a single channel in any 100 ms window = 7.95 dB duty cycle correction factor.

**EUT OPERATING MODES**

No hop, Low channel 913.294 kHz

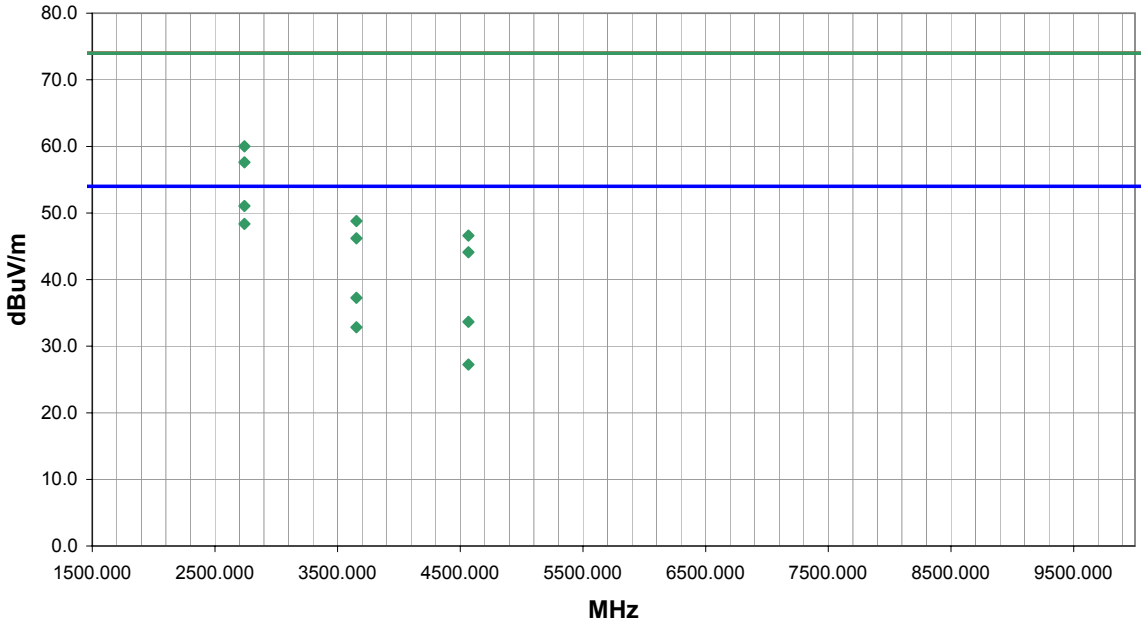
**DEVIATIONS FROM TEST STANDARD**

No deviations.

| RESULTS | Run # |
|---|---|
| Pass | 15 |

Other

Tested By:




| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Azimuth (degrees) | Height (meters) | Distance (meters) | External Attenuation (dB) | Polarity | Detector | Duty Cycle Correction (dB) | Adjusted dBuV/m | Spec. Limit dBuV/m | Compared to Spec. (dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2739.896 | 60.0 | -1.0 | 179.0 | 1.1 | 3.0 | 0.0 | V-Horn | AV | 8.0 | 51.1 | 54.0 | -2.9 |
| 2739.896 | 57.3 | -1.0 | 96.0 | 1.1 | 3.0 | 0.0 | H-Horn | AV | 8.0 | 48.3 | 54.0 | -5.7 |
| 3653.176 | 44.2 | 1.0 | 69.0 | 1.2 | 3.0 | 0.0 | H-Horn | AV | 8.0 | 37.3 | 54.0 | -16.7 |
| 4566.514 | 38.8 | 2.8 | 199.0 | 1.5 | 3.0 | 0.0 | H-Horn | AV | 8.0 | 33.7 | 54.0 | -20.3 |
| 3653.176 | 39.8 | 1.0 | 37.0 | 1.2 | 3.0 | 0.0 | V-Horn | AV | 8.0 | 32.8 | 54.0 | -21.2 |
| 4566.514 | 32.4 | 2.8 | 164.0 | 1.2 | 3.0 | 0.0 | V-Horn | AV | 8.0 | 27.3 | 54.0 | -26.7 |
| 2739.896 | 61.0 | -1.0 | 179.0 | 1.1 | 3.0 | 0.0 | V-Horn | PK | 0.0 | 60.0 | 74.0 | -14.0 |
| 2739.896 | 58.6 | -1.0 | 96.0 | 1.1 | 3.0 | 0.0 | H-Horn | PK | 0.0 | 57.6 | 74.0 | -16.4 |
| 3653.176 | 47.8 | 1.0 | 69.0 | 1.2 | 3.0 | 0.0 | H-Horn | PK | 0.0 | 48.8 | 74.0 | -25.2 |
| 4566.514 | 43.8 | 2.8 | 199.0 | 1.5 | 3.0 | 0.0 | H-Horn | PK | 0.0 | 46.6 | 74.0 | -27.4 |
| 3653.176 | 45.2 | 1.0 | 37.0 | 1.2 | 3.0 | 0.0 | V-Horn | PK | 0.0 | 46.2 | 74.0 | -27.8 |
| 4566.514 | 41.3 | 2.8 | 164.0 | 1.2 | 3.0 | 0.0 | V-Horn | PK | 0.0 | 44.1 | 74.0 | -29.9 |

NORTHWEST EMC

# Spurious Radiated Emissions in the Restricted Bands

REV df4.4 10/22/2004

| | | | | | |
|---|---|---|---|---|---|
| EUT: | MLOG | | | Work Order: | FLWM0003 |
| Serial Number: | none | | | Date: | 11/05/04 |
| Customer: | Flow Metrix, Inc. | | | Temperature: | 72 |
| Attendees: | none | | | Humidity: | 32% |
| Cust. Ref. No.: | | | | Barometric Pressure | 30.4 |
| Tested by: | Rod Peloquin | Power: | Battery | Job Site: | EV01 |

**TEST SPECIFICATIONS**

| | | | |
|---|---|---|---|
| Specification: | FCC 15.247(d) Spurious Radiated Emissions | Year: | 2004 |
| Method: | ANSI C63.4 | Year: | 2003 |

**SAMPLE CALCULATIONS**

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

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

**COMMENTS**

The average data can be reduced by a factor (dB) = 20 * log (worst case transmit time on a single channel / 100ms). The worst case transmit time of 40 ms on a single channel in any 100 ms window = 7.95 dB duty cycle correction factor.

**EUT OPERATING MODES**

No hop, Low channel 913.294 kHz

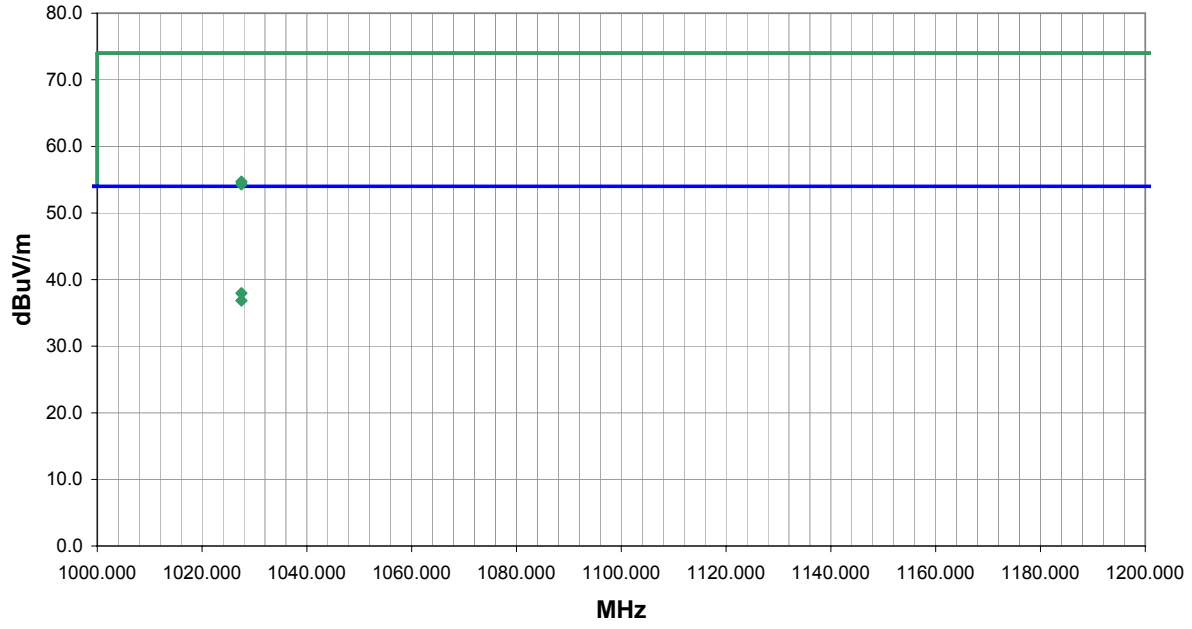
**DEVIATIONS FROM TEST STANDARD**

No deviations.

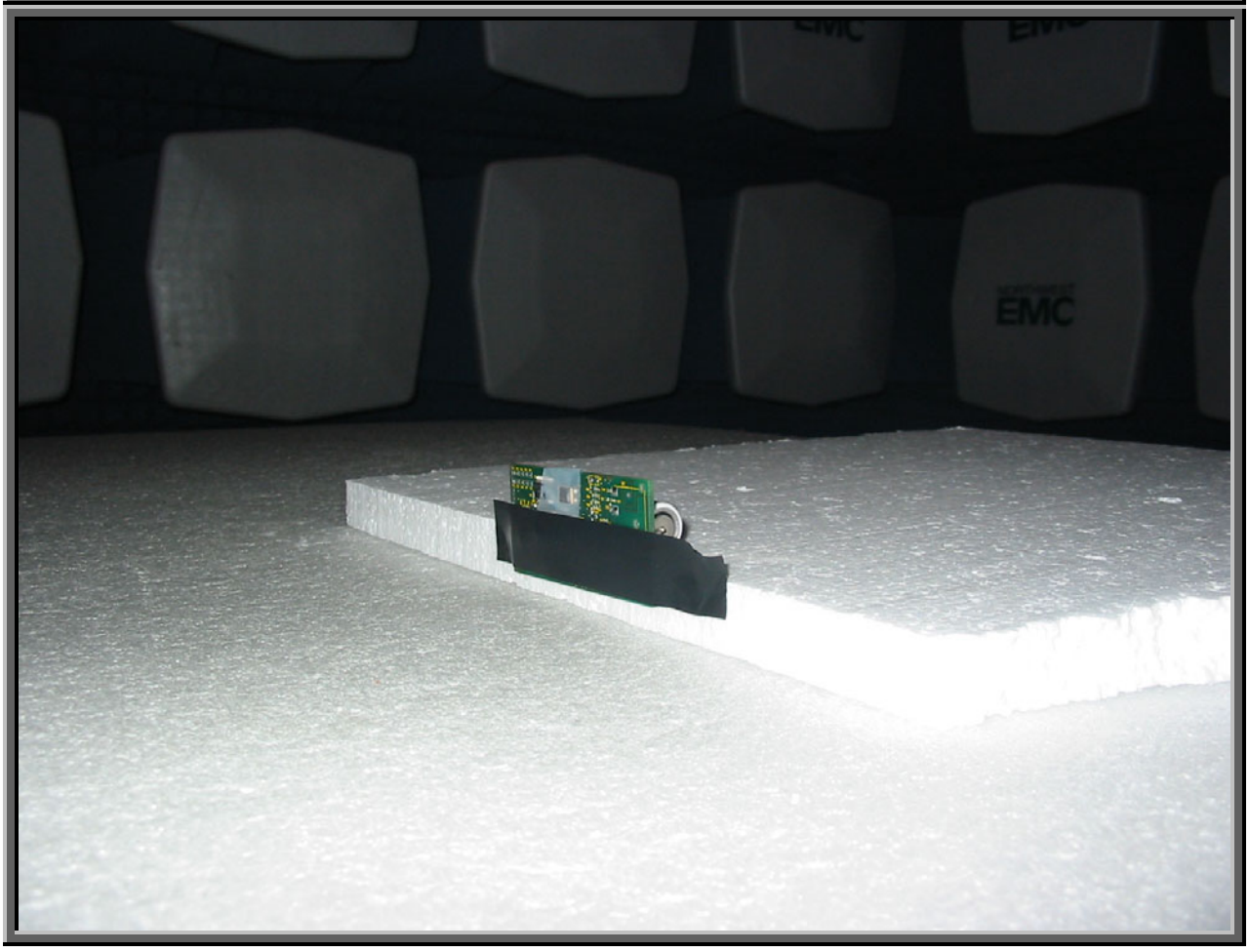
| RESULTS | Run # |
|---|---|
| Pass | 16 |

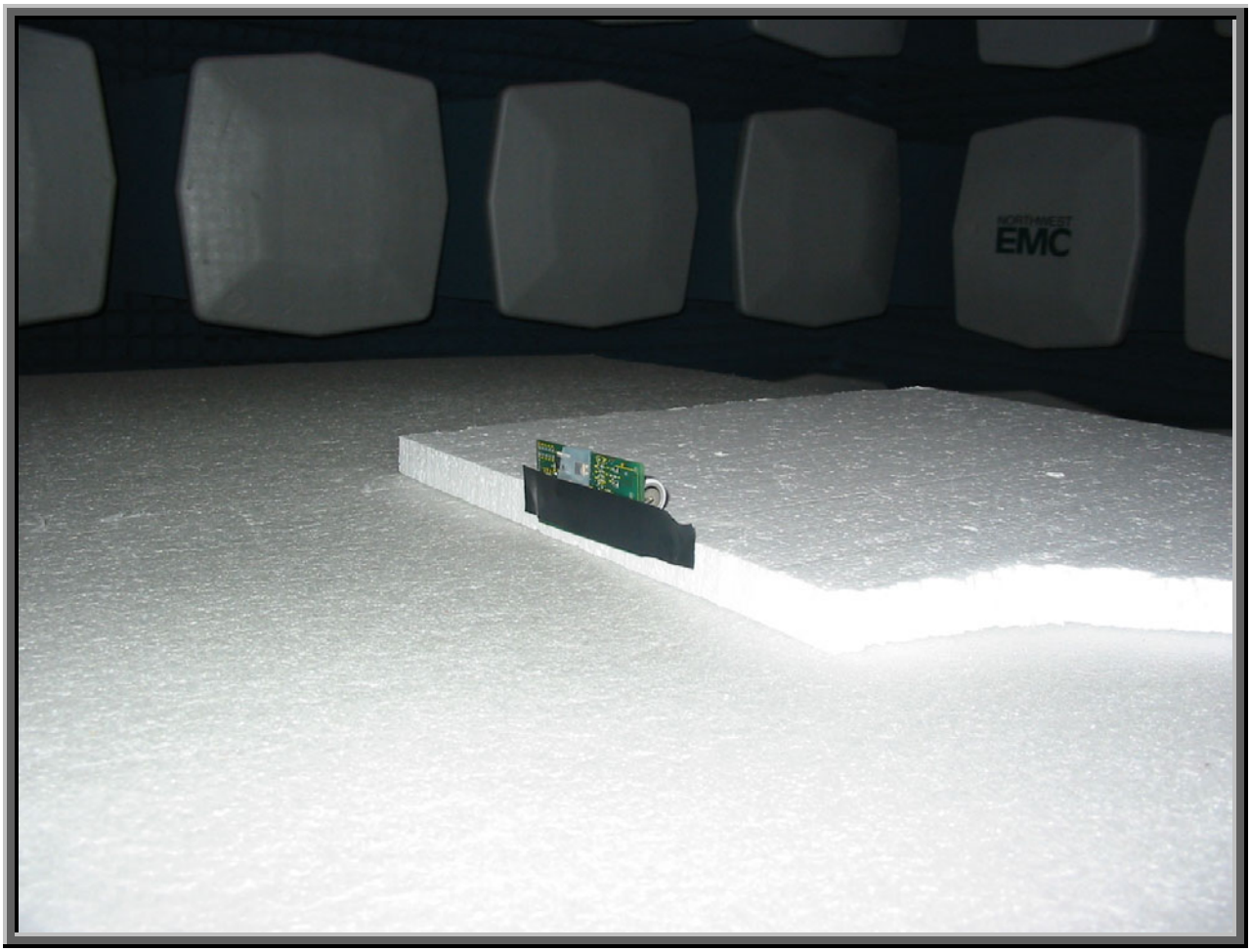
**Other**

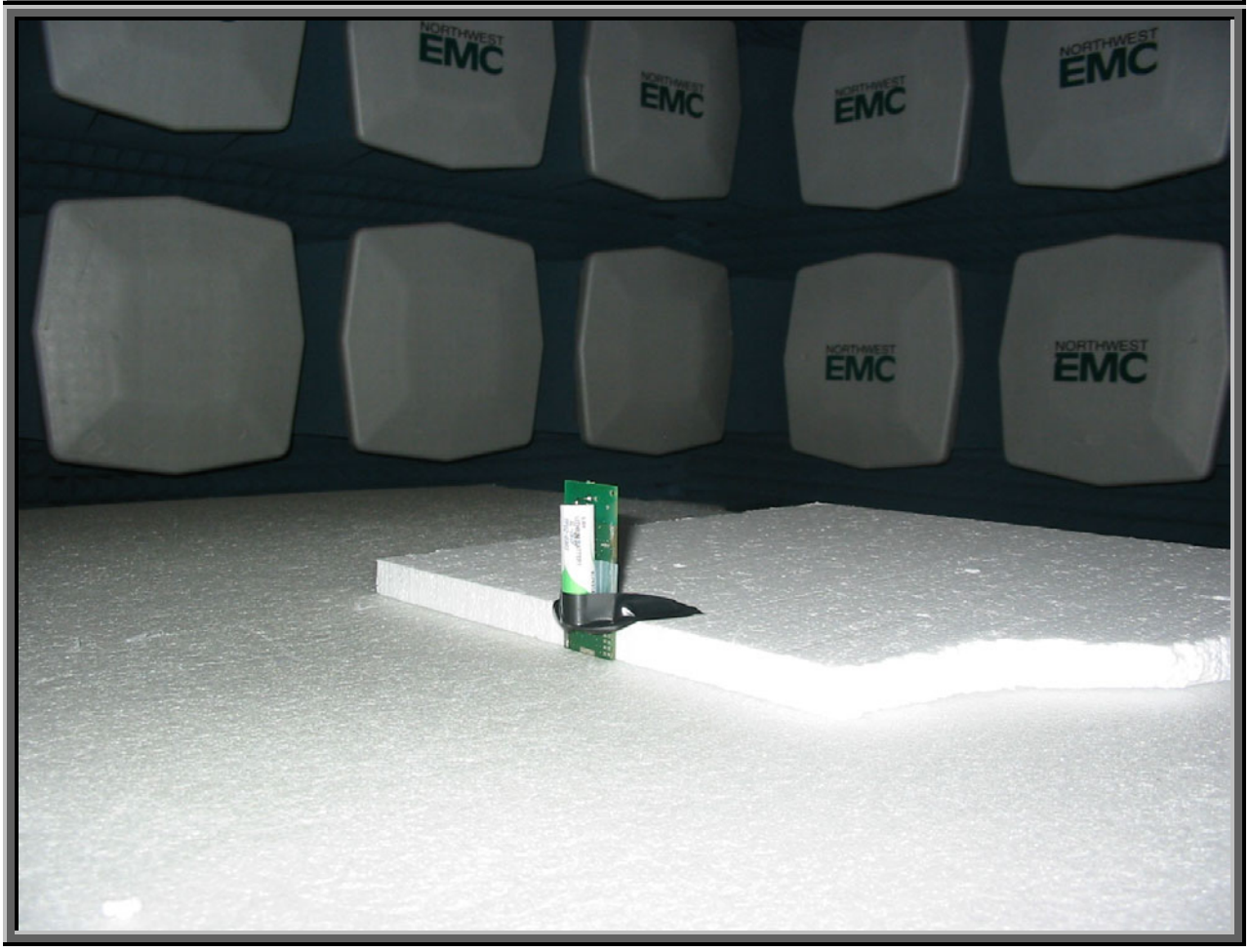
Tested By:




| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Azimuth (degrees) | Height (meters) | Distance (meters) | External Attenuation (dB) | Polarity | Detector | Duty Cycle Correction (dB) | Adjusted dBuV/m | Spec. Limit dBuV/m | Compared to Spec. (dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1027.503 | 35.0 | -9.1 | 228.0 | 1.1 | 3.0 | 20.0 | H-Horn | AV | 8.0 | 38.0 | 54.0 | -16.0 |
| 1027.503 | 33.9 | -9.1 | 174.0 | 1.2 | 3.0 | 20.0 | V-Horn | AV | 8.0 | 36.9 | 54.0 | -17.1 |
| 1027.503 | 43.8 | -9.1 | 228.0 | 1.1 | 3.0 | 20.0 | H-Horn | PK | 0.0 | 54.7 | 74.0 | -19.3 |
| 1027.503 | 43.4 | -9.1 | 174.0 | 1.2 | 3.0 | 20.0 | V-Horn | PK | 0.0 | 54.3 | 74.0 | -19.7 |


EMC


NORTHWEST
EMC


NORTHWEST
EMC

## Justification

The individuals and/or the organization requesting the test provided the modes, configurations and settings available to evaluate. While scanning the radiated emissions, all of the EUT parameters listed below were investigated. This includes, but may not be limited to, antennas, tuned transmit frequency ranges, operating modes, and data rates.

| Channels in Specified Band Investigated: |
|---|
| Mid |

| Operating Modes Investigated: |
|---|
| Hopping |

| Data Rates Investigated: |
|---|
| Maximum |

| Output Power Setting(s) Investigated: |
|---|
| Maximum |

| Power Input Settings Investigated: |
|---|
| Battery |

| Software\Firmware Applied During Test | | | |
|---|---|---|---|
| **Exercise software** | MLOG Firmware | **Version** | 1.0 |
| Description | | | |
| The system was tested using special firmware developed to test all functions of the device during the test. | | | |

| EUT and Peripherals | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| EUT | FlowMetrix | MLOG | N/A |

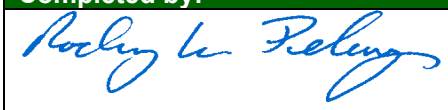
| Measurement Equipment | | | | | |
|---|---|---|---|---|---|
| **Description** | **Manufacturer** | **Model** | **Identifier** | **Last Cal** | **Interval** |
| Spectrum Analyzer | Tektronix | 2784 | AAO | 02/26/2003 | 24 mo |
| Near Field Probe | EMCO | 7405 | IPD | NCR | NA |

## Test Description

**Requirement**: Per 47 CFR 15.247(f)), the frequency hopping operation of the hybrid system shall have an average time of occupancy on any frequency not to exceed 0.4 seconds within a time period in seconds equal to the number of hopping frequencies employed multiplied by 0.4. The measurement is made with the spectrum analyzer's span set to zero. The measurement is made in two steps. First, the sweep speed is adjusted to capture the pulse width or dwell time of a single transmission. Then, the sweep speed is set to 2 seconds (5 hopping channels x 0.4 seconds) to count the number of transmissions during that period. The dwell time of a single transmission multiplied by the number of transmissions during a 2 second period equals the average time of occupancy during a 2 second period.

**Configuration**: 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 and spectrum analyzer to measure the RF output of the EUT. The hopping function of the EUT was enabled.

**Completed by:**



NORTHWEST EMC

# EMISSIONS DATA SHEET

Rev BETA 01/30/01

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| EUT: | MLOG | | | | | Work Order: | FLWM0003 |
| Serial Number: | N/A | | | | | Date: | 11/09/04 |
| Customer: | FlowMetrix | | | | | Temperature: | 23 °C |
| Attendees: | None | | | | | Humidity: | 34% |
| Customer Ref. No.: | N/A | | | | | Bar. Pressure: | 30.10 |
| Tested by: | Greg Kiemel | | | Power: | Battery | Job Site: | EV06 |
| Specification: | 47 CFR 15.247(f) | Year: | 2004 | Method: | DA 00-705, ANSI C63.4 | Year: | 2003 |

**SAMPLE CALCULATIONS**

Total Dwell time = (Dwell Time during a single transmission) X (Number of transmissions during a 2 second period)

**COMMENTS**

**EUT OPERATING MODES**

Modulated by PRBS at maximum data rate. Hopping carrier.

**DEVIATIONS FROM TEST STANDARD**

None

**REQUIREMENTS**

The average time of occupancy on any frequency shall not be greater than 0.4 seconds within a period in seconds equal to the number of hopping channels employed multiplied by 0.4.

**DWELL TIME DURING A SINGLE TRANSMISSION**

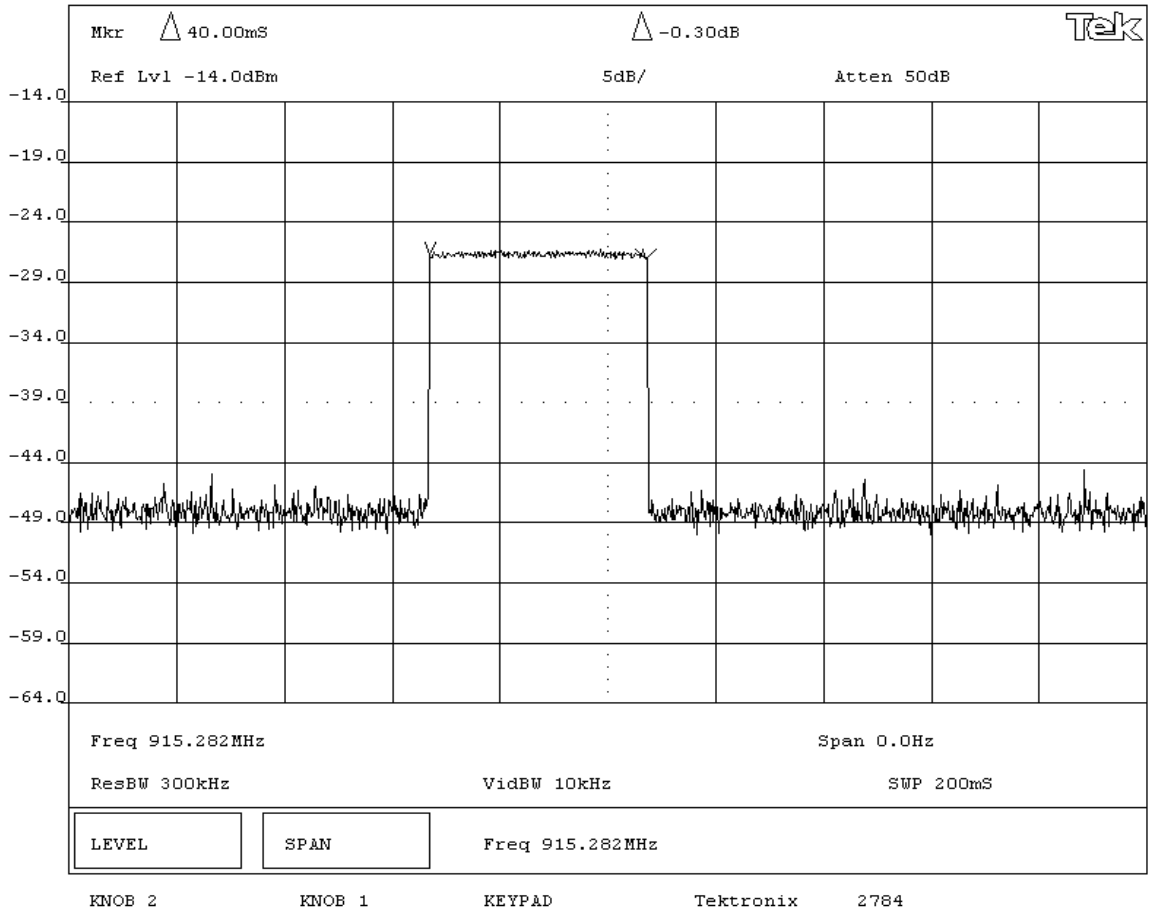
40mS

**SIGNATURE**

Tested By: _____

**DESCRIPTION OF TEST**

## Time of Occupancy (Dwell Time) - Single Transmission



NORTHWEST EMC

# EMISSIONS DATA SHEET

BETA 01/30/

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| EUT: | MLOG | | | | | Work Order: | FLWM0003 |
| Serial Number: | N/A | | | | | Date: | 11/09/04 |
| Customer: | FlowMetrix | | | | | Temperature: | 23 °C |
| Attendees: | None | | | | | Humidity: | 34% |
| Customer Ref. No.: | N/A | | | | | Bar. Pressure: | 30.10 |
| Tested by: | Greg Kiemel | | | Power: | Battery | Job Site: | EV06 |
| Specification: | 47 CFR 15.247(f) | Year: | 2004 | Method: | DA 00-705, ANSI C63.4 | Year: | 2003 |

**SAMPLE CALCULATIONS**

Total Dwell time = (Dwell Time during a single transmission) X (Number of transmissions during a 2 second period)

**COMMENTS**

5 hopping channels

**EUT OPERATING MODES**

Modulated by PRBS at maximum data rate. Hopping carrier.

**DEVIATIONS FROM TEST STANDARD**

None

**REQUIREMENTS**

The average time of occupancy on any frequency shall not be greater than 0.4 seconds within a period in seconds equal to the number of hopping channels employed multiplied by 0.4.

| RESULTS | TOTAL DWELL TIME IN 2 SECOND PERIOD | NUMBER OF TRANSMISSIONS DURING A 2 SECOND PERIOD |
|---|---|---|
| Pass | 400mS | 10 |

**SIGNATURE**

Tested By: _____

**DESCRIPTION OF TEST**

## Time of Occupancy (Dwell Time) - Number of transmissions during a 2 second period