## Nemko-CCL, Inc.

1940 West Alexander Street Salt Lake City, UT 84119 801-972-6146

#### **Test Report**

Declaration of Conformity

Test Of: MICRO-RM2.4-LB

Test Specification:

FCC PART 15, Subpart B ICES-003, Issue 5

Test Report Serial No: 270649-2.1

Applicant: MicroRidge Systems, Inc. 56888 Enterprise Drive Sunriver, OR 97707-0249 U.S.A

Date of Test: October 1 - 2, 2014

Report Issue Date: October 15, 2014

Accredited Testing Laboratory By:

QAIVN

NVLAP Lab Code 100272-0

#### **CERTIFICATION OF ENGINEERING REPORT**

This report has been prepared by Nemko-CCL, Inc. to document compliance of the device described below with the Class B requirements of Federal Communications Commission (FCC) Part 15, Subpart B and Industry Canada (IC) ICES-003, Issue 5. This report may be reproduced in full. Partial reproduction may only be made with the written consent of the laboratory. The results in this report apply only to the sample tested.

- Applicant: MicroRidge Systems, Inc.
- Manufacturer: MicroRidge Systems, Inc.
- Brand Name: MicroRidge
- Model Number: MICRO-RM2.4-LB
- FCC ID: 2ACNQRM2

On this 15<sup>th</sup> day of October 2014, I, individually and for Nemko-CCL, Inc., certify that the statements made in this engineering report are true, complete, and correct to the best of my knowledge, and are made in good faith.

Although NVLAP has accredited the Nemko-CCL, Inc. EMC testing facilities, this report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

Nemko-CCL, Inc.

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Tested by: Norman P. Hansen Test Technician

The

Reviewed by: Thomas C. Jackson Certification Manager

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#### SECTION 1.0 CLIENT INFORMATION

#### **<u>1.1 Applicant:</u>**

Company Name:	MicroRidge Systems, Inc. 56888 Enterprise Drive Sunriver, OR 97707-0249 U.S.A
Contact Name:	John Schuldt

# Contact Name:John SchuldtTitle:President

#### **<u>1.2 Manufacturer:</u>**

Company Name:	MicroRidge Systems, Inc. 56888 Enterprise Drive Sunriver, OR 97707-0249 U.S.A
Contact Name:	John Schuldt
Title:	President

#### **1.3 Party Responsible for Declaration of Conformity:**

Company Name:	MicroRidge Systems, Inc. 56888 Enterprise Drive Sunriver, OR 97707-0249 U S A
	U.S.A

Contact Name:	John Schuldt
Title:	President

#### SECTION 2.0 EQUIPMENT UNDER TEST (EUT)

#### **2.1 Identification of EUT:**

Brand Name:	MicroRidge	
Model Number:	MICRO-RM2.4-LB	
Serial Number:	None	
Dimensions:	2.1 cm x 1.2 cm	

#### **2.2 Description of EUT:**

The MICRO-RM2.4-LB is a compact and low-power 2.4 GHz wireless module designed for industrial and consumer applications. The wireless module is built around an Atmel ATmega2564RFR2 AVR microcontroller that has an integrated radio transceiver. The wireless module also contains a chip antenna, crystals and de-coupling capacitors. This wireless module is designed to be integrated into products that require low-power short range wireless connectivity.

The MICRO-RM2.4-LB is an 802.15.4 compliant transceiver module. Testing was performed using a host PCB to provide the necessary connections for exercising the EUT. The host PCB received power from a computer USB port.

#### **2.3 EUT and Support Equipment:**

The FCC ID numbers for all the EUT and support equipment used during the test are listed below:

Brand Name Model Number Serial No.	FCC ID Number	Description	Name of Interface Ports / Interface Cables
BN: MicroRidge MN: MICRO-RM2.4-LE (Note 1) SN: None	2ACNQRM2	Transceiver Module	See Section 2.4
BN: Dell MN: Vostro SN: 2878353565	DoC	Computer	USB/USB cable
BN: MicroRidge MN: Host PCB SN: #1	None	Host PCB	USB/USB cable Power/Serial communication lines/Directly soldered to host PCB (Note 2)

Brand Name Model Number	FCC ID Number	Description	Name of Interface Ports / Interface Cables
Serial No.			
BN: MicroRidge MN: USB Base	None	USB Base	USB/USB cable
SN: None			

Note: (1) EUT

(2) Interface port connected to EUT (See Section 2.4)

The support equipment listed above was not modified in order to achieve compliance with this standard.

#### **2.4 Interface Ports on EUT:**

Name of Ports	No. of Ports Fitted to EUT	Cable Descriptions/Length
System Interface	1	Soldered directly to host PCB providing power source and communication interface

#### **2.5 Modification Incorporated/Special Accessories on EUT:**

There were no modifications or special accessories required to comply with the specification.

#### **SECTION 3.0 TEST SPECIFICATION, METHODS & PROCEDURES**

#### 3.1 Test Specification:

 Title:
 FCC PART 15, Subpart B (47 CFR 15)

 Limits and methods of measurement of radio interfere

Limits and methods of measurement of radio interference characteristics of radio frequency devices

Purpose of Test: The tests were performed to demonstrate initial compliance

#### 3.2 Methods & Procedures:

#### 3.2.1 §15.107 Conducted Limits

(a) Except for Class A digital devices, for equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHZ to 30 MHz shall not exceed the limits in the following table, as measured using a 50  $\mu$ H/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the band edges.

Frequency of Emission (MHz)	Conduct (dB	ed Limit μV)
$0.15 - 0.5^{*}$ 0.5 - 5	Quasi-peak 66 to 56 <sup>*</sup> 56	$     Average     56 to 46^*     46 $
5 - 30	60	50

<sup>\*</sup>Decreases with the logarithm of the frequency.

(b) For a Class A digital device that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHZ to 30 MHz shall not exceed the limits in the following table, as measured using a 50  $\mu$ H/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the band edges.

Frequency of Emission (MHz)	Conduct (dB	ed Limit μV)
	Quasi-peak	Average
0.15 - 0.5	79	66
0.5 - 30	73	60

#### 3.2.2 §15.109 Radiated Limits

(a) Except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency of emission (MHz)	Field Strength (microvolts/meter)
30 - 88	100
88 - 216	150
216 - 960	200
Above 960	500

(b) The field strength of radiated emission from a Class A digital device, as determined at a distance of 10 meters, shall not exceed the following:

Frequency of emission	Field Strength		
(MHz)	(microvolts/meter)		
30 - 88	90		
88 - 216	150		
216 - 960	210		
Above 960	300		

(c) In the emission tables above, the tighter limit applies at the band edges. §15.33 and §15.35 which specify the frequency range over which radiated emissions are to be measured and the detector functions and other measurement standards apply.

(g) As an alternative to the radiated emission limits shown in paragraphs (a) and (b) of this section, digital devices may be shown to comply with the standards contained in Third Edition of the International Special Committee on Radio Interference (CISPR), Pub. 22, "Information Technology Equipment—Radio Disturbance Characteristics—Limits and Methods of Measurement" (incorporated by reference, see § 15.38). In addition:

(1) The test procedure and other requirements specified in this part shall continue to apply to digital devices.

(2) If, in accordance with §15.33 of this part, measurements must be performed above 1000 MHz, compliance above 1000 MHz shall be demonstrated with the emission limit in paragraph (a) or (b) of this section, as appropriate. Measurements above 1000 MHz may be performed at the distance specified in the CISPR 22 publications for measurements below 1000 MHz provided the limits in paragraphs (a) and (b) of this section are extrapolated to the new measurement distance using an inverse linear distance extrapolation factor (20 dB/decade), e.g., the radiated limit above 1000 MHz for a Class B digital device is 150 uV/m, as measured at a

distance of 10 meters.

(3) The measurement distances shown in CISPR Pub. 22, including measurements made in accordance with this paragraph above 1000 MHz, are considered, for the purpose of 15.31(f)(4) of this part, to be the measurement distances specified in this part.

(4) If the radiated emissions are measured to demonstrate compliance with the alternative standards in this paragraph, compliance must also be demonstrated with the conducted limits shown in § 15.107(e).

The conducted limits shown in the tables above were applied. The radiated limits for the frequency range of 30 MHz – 1000 MHz that were applied are shown below in Table 6 of CISPR 22. For measurements above 1000 MHz, a measurement distance of 3 meters was used and the limit of 54.0 dB $\mu$ V/m applied (150  $\mu$ V/m = 43.5 dB $\mu$ V/m at 10 m, adjusted limit to 3 meters = 10.5 dB extrapolation factor + 43.5 dB $\mu$ V/m 10 meter limit = 54.0 dB $\mu$ V/m limit at 3 meter distance).

Table 6 - Limits for radiated disturbance of Class B ITE at a test distance of 10 m.

Frequency range	Quasi-peak limits				
(MHz)	$(dB\mu V/m)$				
30 to 230 230 to 1000	30 37				
NOTE 1 - The lower limit shall apply at the transition frequency.					
NOTE 2 – Additional provisions may be required for	cases where interference occurs.				

#### **<u>3.3 Test Procedure</u>**

The line conducted and radiated emission testing was performed according to the procedures in ANSI C63.4:2003. The limits of CISPR 22 were applied at a measurement distance of 10 meters as allowed by §15.109(g). Testing was performed at the Nemko-CCL, Inc. Wanship open area test site #2, located at 29145 Old Lincoln Highway, Wanship, UT. This site has been registered with the FCC, and was renewed February 15, 2012 (90504). This registration is valid for three years. This site has also been registered with Industry Canada, and was accepted under Industry Canada Assigned Code 2041A-2 effective until February 14, 2015.

Nemko-CCL, Inc. is accredited by National Voluntary Laboratory Accreditation Program (NVLAP); NVLAP Lab Code: 100272-0, which is effective until September 30, 2015.

#### **SECTION 4.0 OPERATION OF EUT DURING TESTING**

#### **4.1 Operating Environment:**

Power Supply: 120 VAC/60 Hz to computer/5 VDC from USB port to EUT Host PCB

#### 4.2 Operating Modes:

Each mode of operation was exercised to produce worst-case emissions and the EUT was tested on 3 orthogonal axes. The worst-case emissions were with the MICRO-RM2.4-LB placed flat on the table and connected to the support equipment. The EUT was set to transmit data and the received data was shown on a computer display to verify the EUT was functioning.

#### **4.3 EUT Exercise Software:**

MicroRidge test software was used to exercise the EUT.

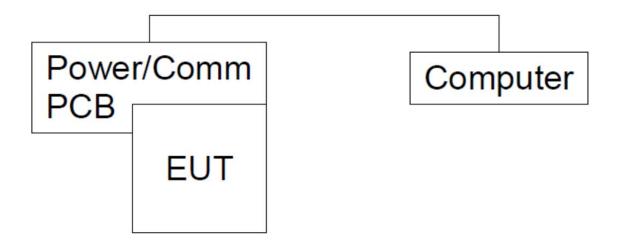
#### 4.4 Configuration & Peripherals:

The MICRO-RM2.4-LB was placed on the table and connected to the support equipment listed in Section 2.3 via each port listed in Section 2.4. Shown in Section 4.5 is a block diagram of the test configuration.

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#### **4.5 Block Diagram of Test Configuration:**



#### SECTION 5.0 SUMMARY OF TEST RESULTS

#### 5.1 Class B of FCC Part 15, Subpart B

#### 5.1.1 Summary of Tests:

Port	Environmental Phenomena	Frequency Range (MHz)	Result
AC Power	Conducted Disturbance at Mains Ports (Hot Lead to Ground)	0.15 to 30	Complied
AC Power	Conducted Disturbance at Mains Ports (Neutral Lead to Ground)	0.15 to 30	Complied
Enclosure	Radiated Disturbance (Vertical Polarity)	30 to 1000	Complied
Enclosure	Radiated Disturbance (Horizontal Polarity)	30 to 1000	Complied

#### 5.2 Result

In the configuration tested, the EUT complied with the requirements of the specification.

#### SECTION 6.0 MEASUREMENTS, EXAMINATIONS AND DERIVED RESULTS

#### **6.1 General Comments:**

This section contains the test results only. Details of the test methods used and a list of the test equipment used during the measurements can be found in Appendix 1 of this report.

#### 6.2 Test Results:

Frequency (MHz)	Detector	Measured Level (dBµV)	Class B Limit (dBµV)	Margin (dB)
0.18	Quasi-Peak (Note 1)	46.9	54.5	-7.6
0.26	Peak (Note 1)	46.1	51.5	-5.4
0.31	Peak (Note 1)	41.0	50.1	-9.1
0.37	Peak (Note 1)	34.9	48.4	-13.5
0.65	Peak (Note 1)	30.5	46.0	-15.5
2.59	Peak (Note 1)	31.7	46.0	-14.3
	etector used for the measurements v it; therefore, the EUT was deemed t			

#### 6.2.1 Conducted Disturbance at Mains Ports Data (Hot Lead)

#### Measurement Uncertainty

The measurement uncertainty (with a 95% confidence level) for this test was  $\pm$  3.3 dB.

#### RESULT

The EUT complied with the specification limit by a margin of 5.4 dB.

Detector	Measured Level (dBµV)	Class B Limit (dBµV)	Margin (dB)
Peak (Note 1)	44.4	53.6	-9.2
Peak (Note 1)	37.7	52.5	-14.8
Peak (Note 1)	36.5	51.5	-15.0
Peak (Note 1)	32.2	49.6	-17.4
Peak (Note 1)	30.0	48.2	-18.2
Peak (Note 1)	33.1	46.0	-12.9
	Peak (Note 1) Peak (Note 1) Peak (Note 1) Peak (Note 1) Peak (Note 1)	(dBµV)       Peak (Note 1)     44.4       Peak (Note 1)     37.7       Peak (Note 1)     36.5       Peak (Note 1)     32.2       Peak (Note 1)     30.0       Peak (Note 1)     33.1	Image: constraint of the state of

#### 6.2.2 Conducted Disturbance at Mains Ports Data (Neutral Lead)

Note 1: The reference detector used for the measurements was Quasi-Peak or Peak and the data was compared to the average limit; therefore, the EUT was deemed to meet both the average and quasi-peak limits.

#### Measurement Uncertainty

The measurement uncertainty (with a 95% confidence level) for this test was  $\pm$  3.3 dB.

#### **RESULT**

The EUT complied with the specification limit by a margin of 9.2 dB.

Detector	Receiver Reading (dBµV)	Correction Factor (dB/m)	Field Strength (dBµV/m)	Class B 10 m Limit (dBµV/m)	Margin (dB)
Peak (Note 1)	8.0	13.5	21.5	30.0	-8.5
Peak (Note 1)	16.3	7.5	23.8	30.0	-6.2
Peak (Note 1)	7.0	8.2	15.2	30.0	-14.8
Peak (Note 1)	6.9	8.0	14.9	30.0	-15.1
Peak (Note 1)	6.2	8.0	14.2	30.0	-15.8
Peak (Note 1)	4.4	12.0	16.4	30.0	-13.6
Peak (Note 1)	3.1	18.1	21.2	37.0	-15.8
	Peak (Note 1) Peak (Note 1) Peak (Note 1) Peak (Note 1) Peak (Note 1) Peak (Note 1)	Reading (dBμV)           Peak (Note 1)         8.0           Peak (Note 1)         16.3           Peak (Note 1)         7.0           Peak (Note 1)         6.9           Peak (Note 1)         6.2           Peak (Note 1)         4.4	Reading (dBµV)         Factor (dB/m)           Peak (Note 1)         8.0         13.5           Peak (Note 1)         16.3         7.5           Peak (Note 1)         7.0         8.2           Peak (Note 1)         6.9         8.0           Peak (Note 1)         6.2         8.0           Peak (Note 1)         4.4         12.0	Reading (dBµV)         Factor (dB/m)         Strength (dBµV/m)           Peak (Note 1)         8.0         13.5         21.5           Peak (Note 1)         16.3         7.5         23.8           Peak (Note 1)         7.0         8.2         15.2           Peak (Note 1)         6.9         8.0         14.9           Peak (Note 1)         6.2         8.0         14.2           Peak (Note 1)         4.4         12.0         16.4	Reading (dB $\mu$ V)Factor (dB/m)Strength (dB $\mu$ V/m)10 m Limit (dB $\mu$ V/m)Peak (Note 1)8.013.521.530.0Peak (Note 1)16.37.523.830.0Peak (Note 1)7.08.215.230.0Peak (Note 1)6.98.014.930.0Peak (Note 1)6.28.014.230.0Peak (Note 1)4.412.016.430.0

#### 6.2.3 Radiated Disturbance Data (Vertical Polarity)

#### Measurement Uncertainty

quasi-peak limit.

The measurement uncertainty (with a 95% confidence level) for this test was  $\pm$  4.3 dB from 30 MHz to 200 MHz and  $\pm$  2.7 dB from 200 MHz to 1 GHz at a 10 meter measurement distance.

#### **RESULT**

The EUT complied with the specification limit by a margin of 6.2 dB.

Frequency (MHz)	Detector	Receiver Reading (dBµV)	Correction Factor (dB/m)	Field Strength (dBµV/m)	Class B 10 m Limit (dBµV/m)	Margin (dB)
65.2	Peak (Note 1)	7.6	7.2	14.8	30.0	-15.2
132.7	Peak (Note 1)	4.8	8.0	12.8	30.0	-17.2
175.0	Peak (Note 1)	3.6	10.4	14.0	30.0	-16.0
192.9	Peak (Note 1)	0.0	11.6	11.6	30.0	-18.4
444.8	Peak (Note 1)	-1.9	19.2	17.3	37.0	-19.7
738.4	Peak (Note 1)	-1.7	26.0	24.3	37.0	-12.7
Note 1: The reference detector used for the measurements was peak or quasi-peak and the data was compared to the quasi-peak limit.						

#### 6.2.4 Radiated Disturbance Data (Horizontal Polarity)

#### Measurement Uncertainty

The measurement uncertainty (with a 95% confidence level) for this test was  $\pm$  4.3 dB from 30 MHz to 200 MHz and  $\pm$  2.7 dB from 200 MHz to 1 GHz at a 10 meter measurement distance.

#### **RESULT**

The EUT complied with the specification limit by a margin of 12.7 dB.

#### **6.3 Sample Field Strength Calculation:**

The field strength is calculated by adding the Correction Factor (Antenna Factor + Cable Factor), to the measured level from the receiver. The receiver amplitude reading is compensated for any amplifier gain. The basic equation with a sample calculation is shown below:

FS = RA + CF

FS = Field Strength RA = Receiver Amplitude Reading (Receiver Reading - Amplifier Gain) CF = Correction Factor (Antenna Factor + Cable Factor)

Assume a receiver reading of 42.5 dB $\mu$ V is obtained from the receiver, an amplifier gain of 26.5 dB and a correction factor of 8.5 dB/m. The field strength is calculated by subtracting the amplifier gain and adding the correction factor, giving a field strength of 24.5 dB $\mu$ V/m, FS = (42.5 - 26.5) + 8.5 = 24.5 dB $\mu$ V/m.

#### APPENDIX 1 TEST PROCEDURES AND TEST EQUIPMENT

#### A1.1 Conducted Disturbance at Mains Ports:

The conducted disturbance at mains ports from the EUT was measured using a spectrum analyzer with a quasi-peak adapter for peak, quasi-peak and average readings. The quasi-peak adapter uses a bandwidth of 9 kHz, with the spectrum analyzer's resolution bandwidth set at 100 kHz, for readings in the 150 kHz to 30 MHz frequency ranges.

The conducted disturbance at mains ports measurements are performed in a screen room using a (50  $\Omega$ /50  $\mu$ H) Line Impedance Stabilization Network (LISN).

Where mains flexible power cords are longer than 1 m, the excess cable is folded back and forth as far as possible so as to form a bundle not exceeding 0.4 m in length.

Where the EUT is a collection of devices with each device having its own power cord, the point of connection for the LISN is determined from the following rules:

- (a) Each power cord, which is terminated in a mains supply plug, shall be tested separately.
- (b) Power cords, which are not specified by the manufacturer to be connected via a host unit, shall be tested separately.
- (c) Power cords which are specified by the manufacturer to be connected via a host unit or other power supplying equipment shall be connected to that host unit and the power cords of that host unit connected to the LISN and tested.
- (d) Where a special connection is specified, the necessary hardware to effect the connection is supplied by the manufacturer for the testing purpose.
- (e) When testing equipment with multiple mains cords, those cords not under test are connected to an artificial mains network (AMN) different than the AMN used for the mains cord under test.

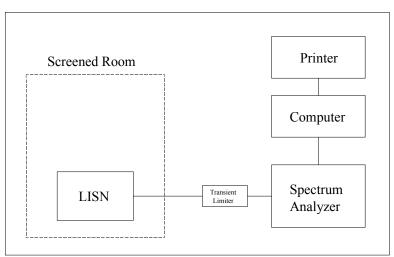
For AC mains port testing, desktop EUT are placed on a non-conducting table at least 0.8 meters from the metallic floor and placed 40 cm from the vertical coupling plane (copper plating in the wall behind EUT table). Floor standing equipment is placed directly on the earth grounded floor.

Type of Equipment	Manufacturer	Model Number	Barcode Number	Date of Last Calibration	Due Date of Calibration
Wanship Open Area Test Site #2	Nemko	N/A	830	12/10/2013	12/10/2014
Test Software	Nemko	Conducted Emissions	Revision 1.2	N/A	N/A
Spectrum Analyzer	Hewlett Packard	8566B	644	02/25/2014	02/25/2015
Quasi-Peak Detector	Hewlett Packard	85650A	572	03/10/2014	03/10/2015
LISN	Nemko	LISN-COMM-50	1424	03/04/2014	03/04/2015
Conductance Cable Wanship Site #2	Nemko	Cable J	840	12/19/2013	12/19/2014

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Type of Equipment	Manufacturer	Model Number	Barcode Number	Date of Last Calibration	Due Date of Calibration
Transient Limiter	Hewlett Packard	11947A	641	12/18/2013	12/18/2014

An independent calibration laboratory or Nemko-CCL, Inc. personnel calibrates all the equipment listed above at intervals defined in ANSI C63.4:2003 Section 4.4 following outlined calibration procedures. All measurement instrumentation is traceable to the National Institute of Standards and Technology (NIST). Supporting documentation relative to tractability is on file and is available for examination upon request.



#### Conducted Emissions Test Setup

#### A1.2 Radiated Disturbance:

The radiated disturbance from the EUT was measured using a spectrum analyzer with a quasi-peak adapter for peak and quasi-peak readings.

A preamplifier with a fixed gain of 26 dB and a power amplifier with a fixed gain of 22 dB were used to increase the sensitivity of the measuring instrumentation. The quasi-peak adapter uses a bandwidth of 120 kHz, with the spectrum analyzer's resolution bandwidth set at 1 MHz, for readings in the 30 to 1000 MHz frequency ranges.

A biconilog antenna was used to measure the frequency range of 30 to 1000 MHz, at a distance of 10 meters from the EUT. The readings obtained by these antennas are correlated to the levels obtained with a tuned dipole antenna by adding antenna factors.

The configuration of the EUT was varied to find the maximum radiated emission. The EUT was connected to the peripherals listed in Section 2.3 via the interconnecting cables listed in Section 2.4. A technician manually manipulated these interconnecting cables to obtain worst-case radiated disturbance. The EUT was rotated 360 degrees, and the antenna height was varied from 1 to 4 meters to find the maximum radiated emission. Where there were multiple interface ports all of the same type, cables are either placed on all of the ports or cables added to these ports until the emissions do not increase by more than 2 dB.

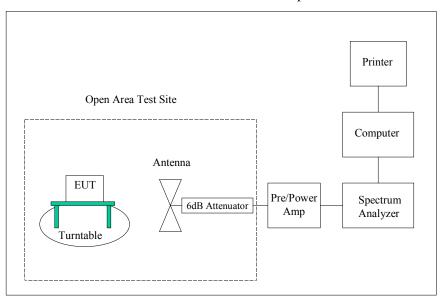
Desktop EUT are measured on a non-conducting table 0.8 meters above the ground plane. The table is placed on a turntable, which is level with the ground plane. For equipment normally placed on floors, the equipment shall be placed directly on the turntable.

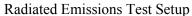
For radiated emission testing at 30 MHz or above that is performed at distances closer than the specified distance, an inverse proportionality factor of 20 dB per decade is used to normalize the measured data for determining compliance.

Type of Equipment	Manufacturer	Model Number	Barcode Number	Date of Last Calibration	Due Date of Calibration
Wanship Open Area Test Site #2	Nemko	N/A	830	12/10/2013	12/10/2014
Test Software	Nemko	Radiated Emissions	Revision 1.3	N/A	N/A
Spectrum Analyzer	Hewlett Packard	8566B	644	02/25/2014	02/25/2015
Quasi-Peak Detector	Hewlett Packard	85650A	572	03/10/2014	03/10/2015
Biconilog Antenna	EMCO	3142	713	10/10/2012	10/10/2014
10 Meter Radiated Emissions Cable Wanship Site #2	Nemko	Cable L	842	12/19/2013	12/19/2014
Pre/Power-Amplifier	Hewlett Packard	8447F	762	09/05/2014	09/05/2015
6 dB Attenuator	Hewlett Packard	8491A	1103	12/23/2013	12/23/2014

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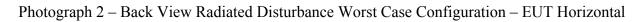


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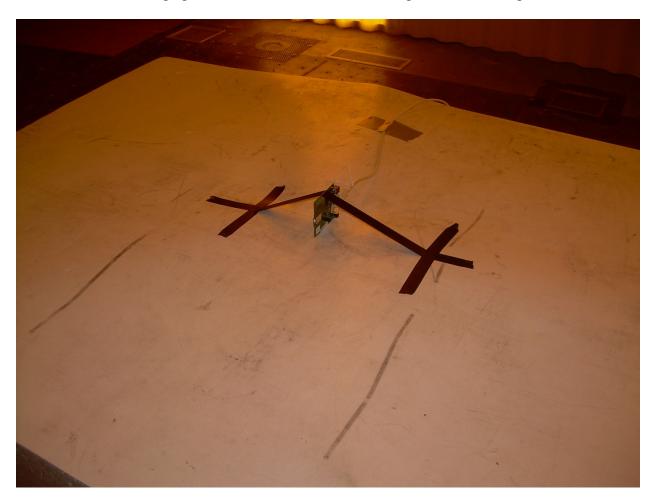
#### **APPENDIX 2 PHOTOGRAPHS**

Photograph 1 – Front View Radiated Disturbance Worst Case Configuration – EUT Horizontal









#### Photograph 3 - Radiated Disturbance Configuration - On Edge



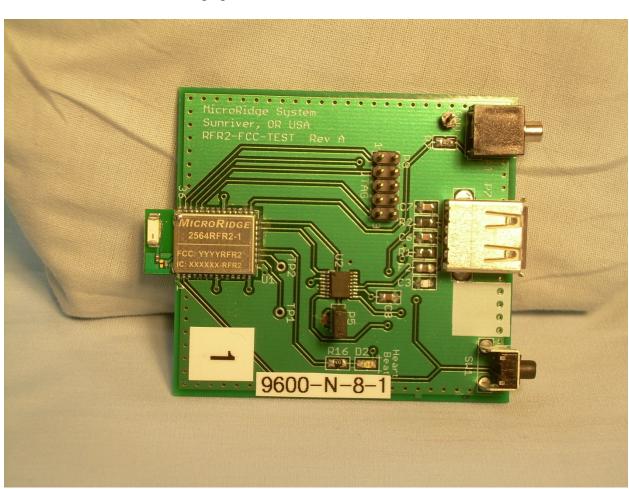
Photograph 4 - Radiated Disturbance Configuration - Vertical



Photograph 5 – Front View Conducted Disturbance Worst Case Configuration



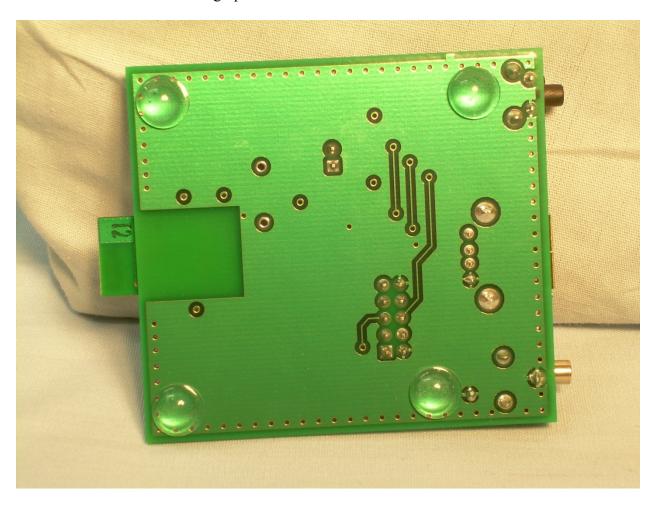
Photograph 6 – Back View Conducted Disturbance Worst Case Configuration



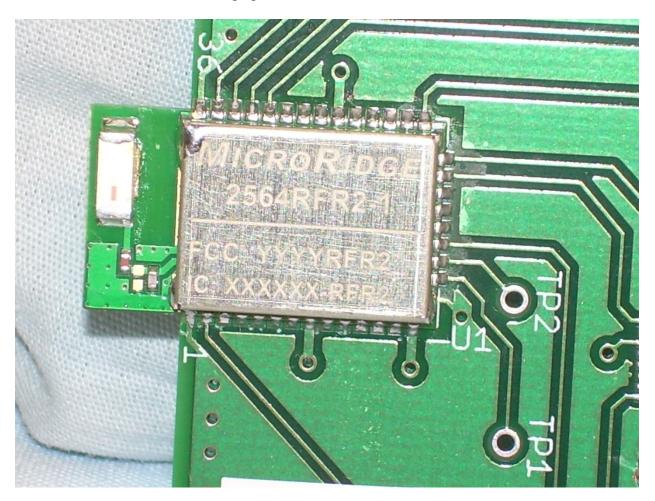
#### Photograph 7 – Front View of the EUT on Host

Nemko-CCL, Inc.

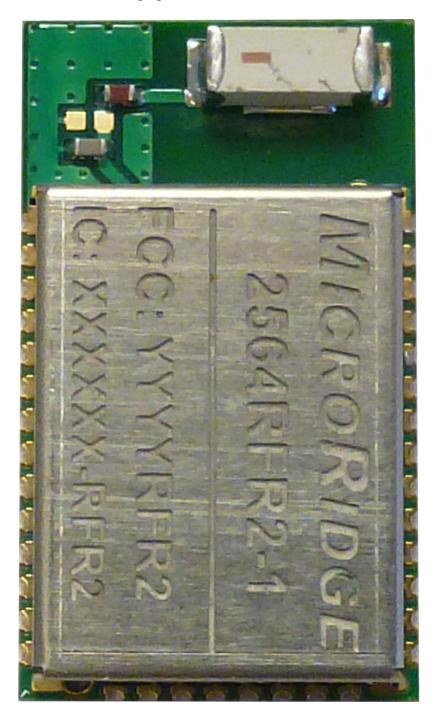
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#### Photograph 8 – Back View of the EUT on Host



### Photograph 9 – Internal View of the EUT



Photograph 10 – View of the Module



Photograph 11 – View of the EUT with Shield Removed

#### APPENDIX 3 FCC Part 15/ICES-003 COMPLIANCE INFORMATION

#### A3.1 LABEL AND COMPLIANCE STATEMENT

The label of the MicroRidge Systems, Inc. MICRO-RM2.4-LB is shown in documents filed for certification.

#### A3.2 BLOCK DIAGRAM

A block diagram showing the clock frequencies and signal paths of the MicroRidge Systems, Inc. MICRO-RM2.4-LB is shown in documents filed for certification.

#### A3.3 USER'S MANUAL

A copy of the User's manual containing the FCC warning statement is shown in documents filed for certification.