

# Meteorcomm LLC.

## TEST REPORT FOR

**Wayside  
Model: 63010**

### Tested To The Following Standards:

**Spurious Emissions Only  
In accordance with  
FCC Part 80 and Part 90I**

**Report No.: 94195-15**

**Date of issue: March 29, 2013**



This test report bears the accreditation symbol indicating that the testing performed herein meets the test and reporting requirements of ISO/IEC 17025 under the applicable scope of EMC testing for CKC Laboratories, Inc.

We strive to create long-term, trust based relationships by providing sound, adaptive, customer first testing services. We embrace each of our customers' unique EMC challenges, not as an interruption to set processes, but rather as the reason we are in business.

## TABLE OF CONTENTS

Administrative Information .....	3
Test Report Information .....	3
Report Authorization .....	3
Test Facility Information .....	4
Software Versions .....	4
Site Registration & Accreditation Information .....	4
Summary of Results .....	5
Conditions During Testing.....	5
Equipment Under Test.....	6
Peripheral Devices .....	6
FCC Part 80 .....	7
Part 80 Radiated Spurious Emissions.....	7
FCC Part 90I .....	16
Part 90I Radiated Spurious Emissions.....	16
Supplemental Information .....	25
Measurement Uncertainty .....	25
Emissions Test Details.....	25

## ADMINISTRATIVE INFORMATION

### Test Report Information

**REPORT PREPARED FOR:**

Meteorcomm LLC.  
1201 SW 7th Street  
Renton, WA 98057

Representative: Fred Cleveland  
Customer Reference Number: 12399

**DATE OF EQUIPMENT RECEIPT:**

**DATE(S) OF TESTING:**

**REPORT PREPARED BY:**

Dianne Dudley  
CKC Laboratories, Inc.  
5046 Sierra Pines Drive  
Mariposa, CA 95338

Project Number: 94195

March 25, 2013

March 25, 2013

### Report Authorization

The test data contained in this report documents the observed testing parameters pertaining to and are relevant for only the sample equipment tested in the agreed upon operational mode(s) and configuration(s) as identified herein. Compliance assessment remains the client's responsibility. This report may not be used to claim product endorsement by A2LA or any government agencies. This test report has been authorized for release under quality control from CKC Laboratories, Inc.



**Steve Behm**  
*Director of Quality Assurance & Engineering Services*  
*CKC Laboratories, Inc.*

## Test Facility Information



Our laboratories are configured to effectively test a wide variety of product types. CKC utilizes first class test equipment, anechoic chambers, data acquisition and information services to create accurate, repeatable and affordable test results.

TEST LOCATION(S):  
CKC Laboratories, Inc.  
22116 23rd Drive S.E., Suite A  
Bothell, WA 98021-4413

## Software Versions

CKC Laboratories Proprietary Software	Version
EMITest Emissions	5.00.14
Immunity	5.00.07

## Site Registration & Accreditation Information

Location	CB #	TAIWAN	CANADA	FCC	JAPAN
Bothell	US0081	SL2-IN-E-1145R	3082C-1	318736	A-0148

## SUMMARY OF RESULTS

### Standard / Specification: FCC Part 80 & Part 90I

Description	Test Procedure/Method	Results
Radiated Spurious Emissions	FCC Part 80 / 47 CFR §80.211(f)	Pass
Radiated Spurious Emissions	FCC Part 90I / 47 CFR §90.210(b)	Pass

## Conditions During Testing

This list is a summary of the conditions noted for or modifications made to the equipment during testing.

Summary of Conditions
None

## EQUIPMENT UNDER TEST (EUT)

### EQUIPMENT UNDER TEST

#### Wayside

Manuf: Meteorcomm LLC.  
Model: 63010  
Serial: 63WR000102BK

#### GPS Antenna

Manuf: SYNERGY SYSTEMS, LLC  
Model: SMA-35  
Serial: NA

#### DC Power Supply

Manuf: Agilent Technologies  
Model: N5744A  
Serial: US10C4012L

### PERIPHERAL DEVICES

The EUT was tested with the following peripheral device(s):

#### Laptop

Manuf: DELL  
Model: Latitude E6410  
Serial: Meteorcomm AN2421

#### Laptop Power Supply

Manuf: DELL  
Model: FA90PE1-00  
Serial: NA

#### Mouse

Manuf: DELL  
Model: M-UAR DEL7  
Serial: NA

## FCC PART 80

This report contains EMC emissions test results under United States Federal Communications Commission (FCC) 47 CFR Part 80 for the filing of applications for licenses to operate radio facilities in the maritime services.

### Part 80 Radiated Spurious Emissions

#### Test Data Sheets

Test Location: CKC Laboratories, Inc. • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • (425) 402-1717

Customer: **Meteorcomm LLC.**

Specification: **47 CFR §80.211(f) Spurious Emissions**

Work Order #: **94195**

Date: 3/25/2013

Test Type: **Maximized Emissions**

Time: 12:30:37

Equipment: **Wayside**

Sequence#: 8

Manufacturer: Meteorcomm LLC.

Tested By: Steven Pittsford

Model: 63010

S/N: 63WR000102BK

#### Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN03227	Cable	32026-29080-29080-84	5/2/2011	5/2/2013
T2	AN02871	Spectrum Analyzer	E4440A	4/22/2011	4/22/2013
T3	AN01271	Preamp	83017A	8/18/2011	8/18/2013
T4	AN03123	Cable	32026-2-29801-12	10/14/2011	10/14/2013
	ANP05546	Cable	Heliac	9/7/2012	9/7/2014
T5	AN02308	Preamp	8447D	4/3/2012	4/3/2014
T6	AN01993	Biconilog Antenna	CBL6111C	3/2/2012	3/2/2014
T7	ANP05360	Cable	RG214	12/3/2012	12/3/2014
T8	ANP05366	Cable	RG-214	10/14/2011	10/14/2013
T9	AN00052	Loop Antenna	6502	5/16/2012	5/16/2014
T10	ANP05965	Cable	Various	8/26/2011	8/26/2013
T11	AN01467	Horn Antenna-ANSI C63.5 Calibration	3115	10/19/2011	10/19/2013

#### Equipment Under Test (\* = EUT):

Function	Manufacturer	Model #	S/N
Wayside*	Meteorcomm LLC.	63010	63WR000102BK
GPS Antenna	SYNERGY SYSTEMS, LLC	SMA-35	NA
DC Power Supply	Agilent Technologies	N5744A	US10C4012L

### Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	DELL	Latitude E6410	Meteorcomm AN2421
Laptop Power Supply	DELL	FA90PE1-00	NA
Mouse	DELL	M-UAR DEL7	NA

### Test Conditions / Notes:

Temperature: 21°C
Pressure: 103.4kPa
Humidity: 33%
Frequency: 9kHz-2.5GHz
Device is a transmitter/receiver operating at 217-220MHz. The transmitter is transmitting. Transmitter is tuned for Low and High Frequency (217.6125MHz & 219.9875MHz). Transmit and Receive ports terminated in characteristic load. EUT is powered by 13.6VDC via support power supply.
Ethernet traffic is established on maintenance port with support equipment located outside the test area. All EUT ports are filled.
Below 30MHz CISPR Bandwidths, 30MHz-1GHz, RBW=100kHz VBW=300kHz & 1-2.5GHz, RBW=1MHz VBW=3MHz

Ext Attn: 0 dB

### Measurement Data:

Reading listed by margin.

Test Distance: 3 Meters

#	Freq	Rdng	T1 T5 T9	T2 T6 T10	T3 T7 T11	T4 T8	Dist	Corr	Spec	Margin	Polar
	MHz	dBμV	dB	dB	dB	dB	Table	dBμV/m	dBμV/m	dB	Ant
1	95.455k	71.8	+0.0 +0.0 +9.6	+0.0 +0.0 +0.0	+0.0 +0.0 +0.0	+0.0 +0.0 +0.0	+0.0 12	81.4	82.2 High	-0.8	Perpe 99
2	95.455k	68.8	+0.0 +0.0 +9.6	+0.0 +0.0 +0.0	+0.0 +0.0 +0.0	+0.0 +0.0 +0.0	+0.0 360	78.4	82.2 High	-3.8	Paral 99
3	95.314k	68.4	+0.0 +0.0 +9.6	+0.0 +0.0 +0.0	+0.0 +0.0 +0.0	+0.0 +0.0 +0.0	+0.0 354	78.0	82.2 Low	-4.2	Perpe 99
4	95.314k	67.4	+0.0 +0.0 +9.6	+0.0 +0.0 +0.0	+0.0 +0.0 +0.0	+0.0 +0.0 +0.0	+0.0	77.0	82.2 Low	-5.2	Paral 99
5	180.000k	62.6	+0.0 +0.0 +9.5	+0.0 +0.0 +0.0	+0.0 +0.0 +0.0	+0.0 +0.0 +0.0	+0.0	72.1	82.2 High	-10.1	Paral 99
6	180.000k	61.7	+0.0 +0.0 +9.5	+0.0 +0.0 +0.0	+0.0 +0.0 +0.0	+0.0 +0.0 +0.0	+0.0 360	71.2	82.2 Low	-11.0	Paral 99
7	180.000k	58.8	+0.0 +0.0 +9.5	+0.0 +0.0 +0.0	+0.0 +0.0 +0.0	+0.0 +0.0 +0.0	+0.0	68.3	82.2 Low	-13.9	Perpe 99
8	180.000k	56.7	+0.0 +0.0 +9.5	+0.0 +0.0 +0.0	+0.0 +0.0 +0.0	+0.0 +0.0 +0.0	+0.0 357	66.2	82.2 High	-16.0	Perpe 99
9	137.329k	51.2	+0.0 +0.0 +9.5	+0.0 +0.0 +0.0	+0.0 +0.0 +0.0	+0.0 +0.0 +0.0	+0.0 360	60.7	82.2 High	-21.5	Paral 99

10	137.329k	50.4	+0.0 +0.0 +9.5	+0.0 +0.0 +0.0	+0.0 +0.0 +0.0	+0.0 +0.0 +0.0	+0.0 360	59.9	82.2 Low	-22.3	Perpe 99
11	137.329k	49.8	+0.0 +0.0 +9.5	+0.0 +0.0 +0.0	+0.0 +0.0 +0.0	+0.0 +0.0 +0.0	+0.0	59.3	82.2 High	-22.9	Perpe 99
12	137.329k	47.1	+0.0 +0.0 +9.5	+0.0 +0.0 +0.0	+0.0 +0.0 +0.0	+0.0 +0.0 +0.0	+0.0	56.6	82.2 Low	-25.6	Paral 99
13	54.350M	65.5	+0.2 -28.0 +0.0	+0.0 +7.7 +0.0	+0.0 +0.4 +0.0	+0.0 +0.3	+0.0	46.1	82.2 Low	-36.1	Vert 99
14	40.650M	59.0	+0.2 -28.1 +0.0	+0.0 +13.9 +0.0	+0.0 +0.4 +0.0	+0.0 +0.3	+0.0 360	45.7	82.2 High	-36.5	Vert 172
15	1099.936M	58.3	+0.9 +0.0 +0.0	+0.0 +0.0 +1.2	-36.3 +0.0 +19.8	+0.3 +0.0	+0.0	44.2	82.2 High	-38.0	Vert 99
16	879.952M	41.9	+0.9 -27.5 +0.0	+0.0 +22.9 +0.0	+0.0 +2.0 +0.0	+0.0 +2.2	+0.0	42.4	82.2 High	-39.8	Horiz 97
17	870.444M	41.7	+0.9 -27.5 +0.0	+0.0 +22.8 +0.0	+0.0 +2.0 +0.0	+0.0 +2.2	+0.0	42.1	82.2 Low	-40.1	Horiz 99
18	879.932M	41.5	+0.9 -27.5 +0.0	+0.0 +22.9 +0.0	+0.0 +2.0 +0.0	+0.0 +2.2	+0.0 360	42.0	82.2 High	-40.2	Vert 165
19	870.432M	41.6	+0.9 -27.5 +0.0	+0.0 +22.8 +0.0	+0.0 +2.0 +0.0	+0.0 +2.2	+0.0 360	42.0	82.2 Low	-40.2	Vert 164
20	53.700M	61.0	+0.2 -28.0 +0.0	+0.0 +7.9 +0.0	+0.0 +0.4 +0.0	+0.0 +0.3	+0.0 360	41.8	82.2 High	-40.4	Vert 172
21	66.340M	62.0	+0.2 -28.0 +0.0	+0.0 +6.6 +0.0	+0.0 +0.5 +0.0	+0.0 +0.4	+0.0	41.7	82.2 Low	-40.5	Vert 99
22	1319.921M	53.7	+1.1 +0.0 +0.0	+0.0 +0.0 +1.4	-35.5 +0.0 +20.7	+0.3 +0.0	+0.0 360	41.7	82.2 High	-40.5	Vert 101
23	440.001M	48.1	+0.6 -28.1 +0.0	+0.0 +17.1 +0.0	+0.0 +1.4 +0.0	+0.0 +1.4	+0.0	40.5	82.2 High	-41.7	Vert 154
24	66.450M	60.5	+0.2 -28.0 +0.0	+0.0 +6.6 +0.0	+0.0 +0.5 +0.0	+0.0 +0.4	+0.0 360	40.2	82.2 High	-42.0	Vert 172
25	1099.952M	53.8	+0.9 +0.0 +0.0	+0.0 +0.0 +1.2	-36.3 +0.0 +19.8	+0.3 +0.0	+0.0 360	39.7	82.2 High	-42.5	Horiz 99
26	1979.866M	44.2	+1.4 +0.0 +0.0	+0.0 +0.0 +1.7	-34.3 +0.0 +26.3	+0.4 +0.0	+0.0 360	39.7	82.2 High	-42.5	Vert 102

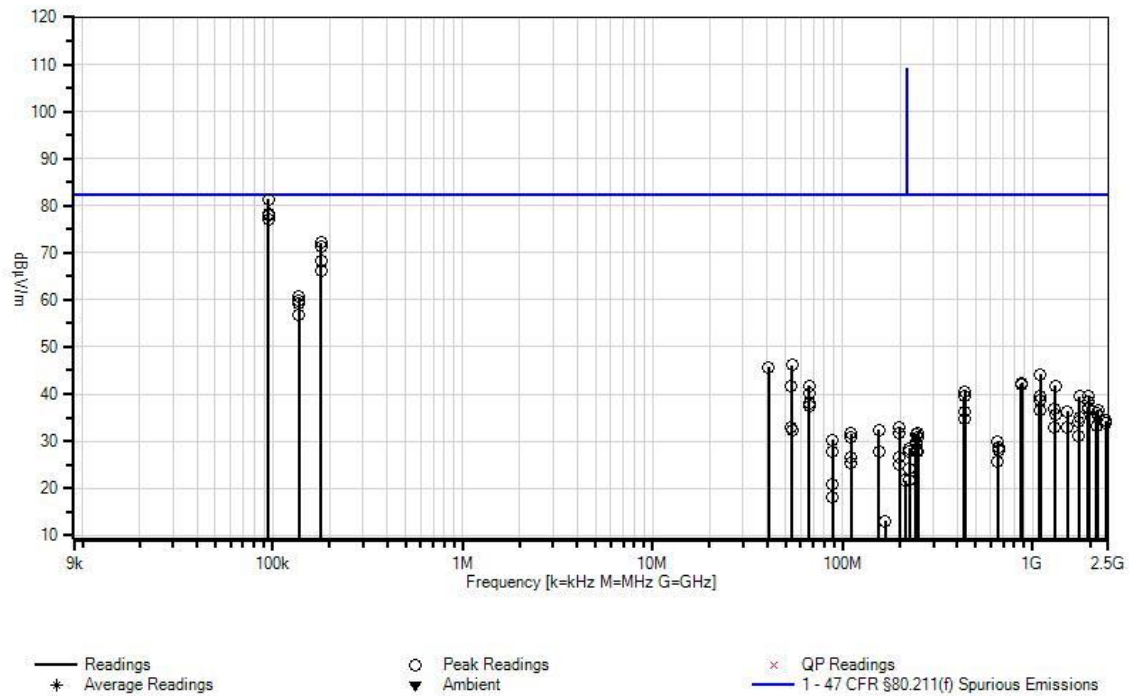
27	435.230M	47.1	+0.6 -28.0 +0.0	+0.0 +17.0 +0.0	+0.0 +1.4 +0.0	+0.0 +1.4 266	+0.0	39.5	82.2 Low	-42.7	Vert 114
28	1759.886M	46.7	+1.3 +0.0 +0.0	+0.0 +0.0 +1.6	-34.7 +0.0 +24.2	+0.3 +0.0	+0.0	39.4	82.2 High	-42.8	Vert 116
29	1088.062M	52.8	+0.9 +0.0 +0.0	+0.0 +0.0 +1.2	-36.4 +0.0 +19.7	+0.3 +0.0	+0.0	38.5	82.2 Low	-43.7	Vert 152
30	1979.896M	42.7	+1.4 +0.0 +0.0	+0.0 +0.0 +1.7	-34.3 +0.0 +26.3	+0.4 +0.0	+0.0	38.2	82.2 High	-44.0	Horiz 101
31	66.340M	58.2	+0.2 -28.0 +0.0	+0.0 +6.6 +0.0	+0.0 +0.5 +0.0	+0.0 +0.4	+0.0	37.9	82.2 Low	-44.3	Horiz 134
32	66.450M	57.8	+0.2 -28.0 +0.0	+0.0 +6.6 +0.0	+0.0 +0.5 +0.0	+0.0 +0.4	+0.0	37.5	82.2 High	-44.7	Horiz 99
33	1958.532M	42.1	+1.3 +0.0 +0.0	+0.0 +0.0 +1.7	-34.4 +0.0 +26.1	+0.3 +0.0	+0.0	37.1	82.2 Low	-45.1	Vert 99
34	1305.659M	49.2	+1.0 +0.0 +0.0	+0.0 +0.0 +1.3	-35.5 +0.0 +20.7	+0.3 +0.0	+0.0 360	37.0	82.2 Low	-45.2	Vert 99
35	1958.544M	41.9	+1.3 +0.0 +0.0	+0.0 +0.0 +1.7	-34.4 +0.0 +26.1	+0.3 +0.0	+0.0 360	36.9	82.2 Low	-45.3	Horiz 99
36	2199.891M	40.7	+1.4 +0.0 +0.0	+0.0 +0.0 +1.8	-34.2 +0.0 +26.5	+0.4 +0.0	+0.0	36.6	82.2 High	-45.6	Horiz 99
37	1088.058M	50.7	+0.9 +0.0 +0.0	+0.0 +0.0 +1.2	-36.4 +0.0 +19.7	+0.3 +0.0	+0.0 360	36.4	82.2 Low	-45.8	Horiz 99
38	1523.292M	46.7	+1.2 +0.0 +0.0	+0.0 +0.0 +1.5	-35.1 +0.0 +21.7	+0.3 +0.0	+0.0	36.3	82.2 Low	-45.9	Vert 103
39	439.983M	43.8	+0.6 -28.1 +0.0	+0.0 +17.1 +0.0	+0.0 +1.4 +0.0	+0.0 +1.4 360	+0.0	36.2	82.2 High	-46.0	Horiz 99
40	2176.091M	40.1	+1.4 +0.0 +0.0	+0.0 +0.0 +1.8	-34.2 +0.0 +26.5	+0.4 +0.0	+0.0	36.0	82.2 Low	-46.2	Horiz 99
41	1319.943M	47.5	+1.1 +0.0 +0.0	+0.0 +0.0 +1.4	-35.5 +0.0 +20.7	+0.3 +0.0	+0.0	35.5	82.2 High	-46.7	Horiz 99
42	2199.857M	39.4	+1.4 +0.0 +0.0	+0.0 +0.0 +1.8	-34.2 +0.0 +26.5	+0.4 +0.0	+0.0 360	35.3	82.2 High	-46.9	Vert 120
43	1759.858M	42.4	+1.3 +0.0 +0.0	+0.0 +0.0 +1.6	-34.7 +0.0 +24.2	+0.3 +0.0	+0.0 360	35.1	82.2 High	-47.1	Horiz 99

44	435.230M	42.3	+0.6 -28.0 +0.0	+0.0 +17.0 +0.0	+0.0 +1.4 +0.0	+0.0 +1.4	+0.0	34.7	82.2 Low	-47.5	Horiz 99
45	2419.876M	38.0	+1.5 +0.0 +0.0	+0.0 +0.0 +1.9	-34.0 +0.0 +26.4	+0.5 +0.0	+0.0 360	34.3	82.2 High	-47.9	Horiz 99
46	1740.930M	41.5	+1.3 +0.0 +0.0	+0.0 +0.0 +1.6	-34.7 +0.0 +24.0	+0.3 +0.0	+0.0 360	34.0	82.2 Low	-48.2	Vert 113
47	2419.840M	37.4	+1.5 +0.0 +0.0	+0.0 +0.0 +1.9	-34.0 +0.0 +26.4	+0.5 +0.0	+0.0 -13	33.7	82.2 High	-48.5	Vert 106
48	2176.035M	37.4	+1.4 +0.0 +0.0	+0.0 +0.0 +1.8	-34.2 +0.0 +26.5	+0.4 +0.0	+0.0 360	33.3	82.2 Low	-48.9	Horiz 132
49	53.850M	52.3	+0.2 -28.0 +0.0	+0.0 +7.8 +0.0	+0.0 +0.4 +0.0	+0.0 +0.3	+0.0	33.0	82.2 Low	-49.2	Horiz 134
50	1523.310M	43.4	+1.2 +0.0 +0.0	+0.0 +0.0 +1.5	-35.1 +0.0 +21.7	+0.3 +0.0	+0.0 360	33.0	82.2 Low	-49.2	Horiz 99
51	1305.673M	45.0	+1.0 +0.0 +0.0	+0.0 +0.0 +1.3	-35.5 +0.0 +20.7	+0.3 +0.0	+0.0	32.8	82.2 Low	-49.4	Horiz 99
52	199.110M	49.0	+0.4 -27.3 +0.0	+0.0 +8.9 +0.0	+0.0 +0.9 +0.0	+0.0 +0.9	+0.0 360	32.8	82.2 High	-49.4	Vert 138
53	154.800M	46.8	+0.4 -27.6 +0.0	+0.0 +11.2 +0.0	+0.0 +0.8 +0.0	+0.0 +0.8	+0.0	32.4	82.2 High	-49.8	Horiz 99
54	54.000M	51.5	+0.2 -28.0 +0.0	+0.0 +7.8 +0.0	+0.0 +0.4 +0.0	+0.0 +0.3	+0.0	32.2	82.2 High	-50.0	Horiz 99
55	199.080M	47.9	+0.4 -27.3 +0.0	+0.0 +8.9 +0.0	+0.0 +0.9 +0.0	+0.0 +0.9	+0.0 13	31.7	82.2 Low	-50.5	Vert 102
56	250.030M	43.8	+0.5 -27.1 +0.0	+0.0 +12.5 +0.0	+0.0 +1.0 +0.0	+0.0 +1.0	+0.0	31.7	82.2 Low	-50.5	Vert 102
57	110.700M	47.2	+0.3 -27.9 +0.0	+0.0 +10.8 +0.0	+0.0 +0.7 +0.0	+0.0 +0.6	+0.0 360	31.7	82.2 High	-50.5	Vert 172
58	243.360M	43.9	+0.5 -27.1 +0.0	+0.0 +12.1 +0.0	+0.0 +1.0 +0.0	+0.0 +1.0	+0.0 360	31.4	82.2 High	-50.8	Vert 138
59	1740.894M	38.7	+1.3 +0.0 +0.0	+0.0 +0.0 +1.6	-34.7 +0.0 +24.0	+0.3 +0.0	+0.0	31.2	82.2 Low	-51.0	Horiz 99
60	110.670M	46.1	+0.3 -27.9 +0.0	+0.0 +10.8 +0.0	+0.0 +0.7 +0.0	+0.0 +0.6	+0.0	30.6	82.2 Low	-51.6	Vert 99

61	249.990M	42.7	+0.5 -27.1 +0.0	+0.0 +12.5 +0.0	+0.0 +1.0 +0.0	+0.0 +1.0 +0.0	+0.0 360	30.6	82.2 High	-51.6	Vert 138
62	88.440M	48.0	+0.3 -28.0 +0.0	+0.0 +8.8 +0.0	+0.0 +0.6 +0.0	+0.0 +0.5	+0.0	30.2	82.2 Low	-52.0	Vert 99
63	652.840M	33.6	+0.8 -28.3 +0.0	+0.0 +20.3 +0.0	+0.0 +1.7 +0.0	+0.0 +1.8	+0.0	29.9	82.2 Low	-52.3	Vert 116
64	243.410M	42.3	+0.5 -27.1 +0.0	+0.0 +12.1 +0.0	+0.0 +1.0 +0.0	+0.0 +1.0	+0.0	29.8	82.2 Low	-52.4	Vert 102
65	243.360M	41.7	+0.5 -27.1 +0.0	+0.0 +12.1 +0.0	+0.0 +1.0 +0.0	+0.0 +1.0	+0.0	29.2	82.2 High	-53.0	Horiz 168
66	659.954M	32.1	+0.8 -28.3 +0.0	+0.0 +20.3 +0.0	+0.0 +1.7 +0.0	+0.0 +1.9	+0.0 360	28.5	82.2 High	-53.7	Vert 164
67	225.050M	42.5	+0.4 -27.2 +0.0	+0.0 +10.8 +0.0	+0.0 +0.9 +0.0	+0.0 +1.0	+0.0	28.4	82.2 Low	-53.8	Vert 102
68	659.952M	31.7	+0.8 -28.3 +0.0	+0.0 +20.3 +0.0	+0.0 +1.7 +0.0	+0.0 +1.9	+0.0	28.1	82.2 High	-54.1	Horiz 100
69	88.500M	45.7	+0.3 -28.0 +0.0	+0.0 +8.8 +0.0	+0.0 +0.6 +0.0	+0.0 +0.5	+0.0 360	27.9	82.2 High	-54.3	Vert 172
70	249.990M	40.0	+0.5 -27.1 +0.0	+0.0 +12.5 +0.0	+0.0 +1.0 +0.0	+0.0 +1.0	+0.0	27.9	82.2 High	-54.3	Horiz 168
71	154.950M	42.2	+0.4 -27.6 +0.0	+0.0 +11.2 +0.0	+0.0 +0.8 +0.0	+0.0 +0.8	+0.0 360	27.8	82.2 High	-54.4	Vert 172
72	224.980M	41.9	+0.4 -27.2 +0.0	+0.0 +10.8 +0.0	+0.0 +0.9 +0.0	+0.0 +1.0	+0.0 360	27.8	82.2 High	-54.4	Vert 138
73	243.410M	40.3	+0.5 -27.1 +0.0	+0.0 +12.1 +0.0	+0.0 +1.0 +0.0	+0.0 +1.0	+0.0 360	27.8	82.2 Low	-54.4	Horiz 100
74	243.410M	40.3	+0.5 -27.1 +0.0	+0.0 +12.1 +0.0	+0.0 +1.0 +0.0	+0.0 +1.0	+0.0 360	27.8	82.2 Low	-54.4	Horiz 100
75	199.110M	42.7	+0.4 -27.3 +0.0	+0.0 +8.9 +0.0	+0.0 +0.9 +0.0	+0.0 +0.9	+0.0	26.5	82.2 High	-55.7	Horiz 168
76	110.670M	42.0	+0.3 -27.9 +0.0	+0.0 +10.8 +0.0	+0.0 +0.7 +0.0	+0.0 +0.6	+0.0	26.5	82.2 Low	-55.7	Horiz 134
77	652.820M	29.3	+0.8 -28.3 +0.0	+0.0 +20.3 +0.0	+0.0 +1.7 +0.0	+0.0 +1.8	+0.0 360	25.6	82.2 Low	-56.6	Horiz 99

78	110.700M	40.9	+0.3 -27.9 +0.0	+0.0 +10.8 +0.0	+0.0 +0.7 +0.0	+0.0 +0.6	+0.0	25.4	82.2 High	-56.8	Horiz 99
79	199.080M	41.3	+0.4 -27.3 +0.0	+0.0 +8.9 +0.0	+0.0 +0.9 +0.0	+0.0 +0.9	+0.0 360	25.1	82.2 Low	-57.1	Horiz 100
80	224.980M	38.3	+0.4 -27.2 +0.0	+0.0 +10.8 +0.0	+0.0 +0.9 +0.0	+0.0 +1.0	+0.0	24.2	82.2 High	-58.0	Horiz 168
81	225.050M	35.8	+0.4 -27.2 +0.0	+0.0 +10.8 +0.0	+0.0 +0.9 +0.0	+0.0 +1.0	+0.0 360	21.7	82.2 Low	-60.5	Horiz 100
82	213.650M	36.6	+0.4 -27.2 +0.0	+0.0 +10.0 +0.0	+0.0 +0.9 +0.0	+0.0 +0.9	+0.0	21.6	82.2 High	-60.6	Horiz 168
83	88.500M	38.5	+0.3 -28.0 +0.0	+0.0 +8.8 +0.0	+0.0 +0.6 +0.0	+0.0 +0.5	+0.0	20.7	82.2 High	-61.5	Horiz 99
84	88.440M	35.9	+0.3 -28.0 +0.0	+0.0 +8.8 +0.0	+0.0 +0.6 +0.0	+0.0 +0.5	+0.0	18.1	82.2 Low	-64.1	Horiz 134
85	168.150M	28.4	+0.4 -27.5 +0.0	+0.0 +10.1 +0.0	+0.0 +0.8 +0.0	+0.0 +0.8	+0.0 307	13.0	82.2 High	-69.2	Horiz 99

CKC Laboratories, Inc. Date: 3/25/2013 Time: 12:30:37 Meteorcomm LLC. WO#: 94195  
 Test Distance: 3 Meters Sequence#: 8 Perpendicular  
 Meteorcomm LLC. Wayside P/N: 63010



**Test Setup Photos**



## FCC PART 90I

This report contains EMC emissions test results under United States Federal Communications Commission (FCC) 47 CFR Part 90I requirements for radio communications systems licensed and used in the Public Safety, Industrial/Business Radio Pool, and Radiolocation Radio Services.

### Part 90I Radiated Spurious Emissions

#### Test Data Sheets

Test Location: CKC Laboratories, Inc. • 22116 23rd Drive SE, Suite A • Bothell, WA 98021 • (425) 402-1717

Customer: **Meteorcomm LLC.**  
 Specification: **47 CFR §90.210(b) Spurious Emissions Base 24**  
 Work Order #: **94195** Date: 3/25/2013  
 Test Type: **Maximized Emissions** Time: 12:30:37  
 Equipment: **Wayside** Sequence#: 8  
 Manufacturer: Meteorcomm LLC. Tested By: Steven Pittsford  
 Model: 63010  
 S/N: 63WR000102BK

#### Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN03227	Cable	32026-29080-29080-84	5/2/2011	5/2/2013
T2	AN02871	Spectrum Analyzer	E4440A	4/22/2011	4/22/2013
T3	AN01271	Preamp	83017A	8/18/2011	8/18/2013
T4	AN03123	Cable	32026-2-29801-12	10/14/2011	10/14/2013
	ANP05546	Cable	Heliac	9/7/2012	9/7/2014
T5	AN02308	Preamp	8447D	4/3/2012	4/3/2014
T6	AN01993	Biconilog Antenna	CBL6111C	3/2/2012	3/2/2014
T7	ANP05360	Cable	RG214	12/3/2012	12/3/2014
T8	ANP05366	Cable	RG-214	10/14/2011	10/14/2013
T9	AN00052	Loop Antenna	6502	5/16/2012	5/16/2014
T10	ANP05965	Cable	Various	8/26/2011	8/26/2013
T11	AN01467	Horn Antenna-ANSI C63.5 Calibration	3115	10/19/2011	10/19/2013

#### Equipment Under Test (\* = EUT):

Function	Manufacturer	Model #	S/N
Wayside*	Meteorcomm LLC.	63010	63WR000102BK
GPS Antenna	SYNERGY SYSTEMS, LLC	SMA-35	NA
DC Power Supply	Agilent Technologies	N5744A	US10C4012L

### Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	DELL	Latitude E6410	Meteorcomm AN2421
Laptop Power Supply	DELL	FA90PE1-00	NA
Mouse	DELL	M-UAR DEL7	NA

### Test Conditions / Notes:

Temperature: 21°C
Pressure: 103.4kPa
Humidity: 33%
Frequency: 9kHz-2.5GHz
Device is a transmitter/receiver operating at 217-220MHz. The transmitter is transmitting. Transmitter is tuned for Low and High Frequency (217.6125MHz & 219.9875MHz). Transmit and Receive ports terminated in characteristic load. EUT is powered by 13.6VDC via support power supply.
Ethernet traffic is established on maintenance port with support equipment located outside the test area. All EUT ports are filled.
Below 30MHz CISPR Bandwidths, 30MHz-1GHz, RBW=100kHz VBW=300kHz & 1-2.5GHz, RBW=1MHz VBW=3MHz

Ext Attn: 0 dB

### Measurement Data:

Reading listed by margin.

Test Distance: 3 Meters

#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBμV	T5	T6	T7	T8					
			T9	T10	T11		Table	dBμV/m	dBμV/m	dB	Ant
1	95.455k	71.8	+0.0	+0.0	+0.0	+0.0	+0.0	81.4	82.2	-0.8	Perpe
			+0.0	+0.0	+0.0	+0.0	12		High		99
			+9.6	+0.0	+0.0						
2	95.455k	68.8	+0.0	+0.0	+0.0	+0.0	+0.0	78.4	82.2	-3.8	Paral
			+0.0	+0.0	+0.0	+0.0	360		High		99
			+9.6	+0.0	+0.0						
3	95.314k	68.4	+0.0	+0.0	+0.0	+0.0	+0.0	78.0	82.2	-4.2	Perpe
			+0.0	+0.0	+0.0	+0.0	354		Low		99
			+9.6	+0.0	+0.0						
4	95.314k	67.4	+0.0	+0.0	+0.0	+0.0	+0.0	77.0	82.2	-5.2	Paral
			+0.0	+0.0	+0.0	+0.0			Low		99
			+9.6	+0.0	+0.0						
5	180.000k	62.6	+0.0	+0.0	+0.0	+0.0	+0.0	72.1	82.2	-10.1	Paral
			+0.0	+0.0	+0.0	+0.0			High		99
			+9.5	+0.0	+0.0						
6	180.000k	61.7	+0.0	+0.0	+0.0	+0.0	+0.0	71.2	82.2	-11.0	Paral
			+0.0	+0.0	+0.0	+0.0	360		Low		99
			+9.5	+0.0	+0.0						
7	180.000k	58.8	+0.0	+0.0	+0.0	+0.0	+0.0	68.3	82.2	-13.9	Perpe
			+0.0	+0.0	+0.0	+0.0			Low		99
			+9.5	+0.0	+0.0						
8	180.000k	56.7	+0.0	+0.0	+0.0	+0.0	+0.0	66.2	82.2	-16.0	Perpe
			+0.0	+0.0	+0.0	+0.0	357		High		99
			+9.5	+0.0	+0.0						

9	137.329k	51.2	+0.0 +0.0 +9.5	+0.0 +0.0 +0.0	+0.0 +0.0 +0.0	+0.0 +0.0 +0.0	+0.0 +0.0 360	60.7	82.2 High	-21.5	Paral 99
10	137.329k	50.4	+0.0 +0.0 +9.5	+0.0 +0.0 +0.0	+0.0 +0.0 +0.0	+0.0 +0.0 +0.0	+0.0 +0.0 360	59.9	82.2 Low	-22.3	Perpe 99
11	137.329k	49.8	+0.0 +0.0 +9.5	+0.0 +0.0 +0.0	+0.0 +0.0 +0.0	+0.0 +0.0 +0.0	+0.0 +0.0 +0.0	59.3	82.2 High	-22.9	Perpe 99
12	137.329k	47.1	+0.0 +0.0 +9.5	+0.0 +0.0 +0.0	+0.0 +0.0 +0.0	+0.0 +0.0 +0.0	+0.0 +0.0 +0.0	56.6	82.2 Low	-25.6	Paral 99
13	54.350M	65.5	+0.2 -28.0 +0.0	+0.0 +7.7 +0.0	+0.0 +0.4 +0.0	+0.0 +0.3 +0.0	+0.0 +0.0 +0.0	46.1	82.2 Low	-36.1	Vert 99
14	40.650M	59.0	+0.2 -28.1 +0.0	+0.0 +13.9 +0.0	+0.0 +0.4 +0.0	+0.0 +0.3 +0.0	+0.0 +0.0 360	45.7	82.2 High	-36.5	Vert 172
15	1099.936M	58.3	+0.9 +0.0 +0.0	+0.0 +0.0 +1.2	-36.3 +0.0 +19.8	+0.3 +0.0 +0.0	+0.0 +0.0 +0.0	44.2	82.2 High	-38.0	Vert 99
16	879.952M	41.9	+0.9 -27.5 +0.0	+0.0 +22.9 +0.0	+0.0 +2.0 +0.0	+0.0 +2.2 +0.0	+0.0 +0.0 +0.0	42.4	82.2 High	-39.8	Horiz 97
17	870.444M	41.7	+0.9 -27.5 +0.0	+0.0 +22.8 +0.0	+0.0 +2.0 +0.0	+0.0 +2.2 +0.0	+0.0 +0.0 +0.0	42.1	82.2 Low	-40.1	Horiz 99
18	879.932M	41.5	+0.9 -27.5 +0.0	+0.0 +22.9 +0.0	+0.0 +2.0 +0.0	+0.0 +2.2 +0.0	+0.0 +0.0 360	42.0	82.2 High	-40.2	Vert 165
19	870.432M	41.6	+0.9 -27.5 +0.0	+0.0 +22.8 +0.0	+0.0 +2.0 +0.0	+0.0 +2.2 +0.0	+0.0 +0.0 360	42.0	82.2 Low	-40.2	Vert 164
20	53.700M	61.0	+0.2 -28.0 +0.0	+0.0 +7.9 +0.0	+0.0 +0.4 +0.0	+0.0 +0.3 +0.0	+0.0 +0.0 360	41.8	82.2 High	-40.4	Vert 172
21	66.340M	62.0	+0.2 -28.0 +0.0	+0.0 +6.6 +0.0	+0.0 +0.5 +0.0	+0.0 +0.4 +0.0	+0.0 +0.0 +0.0	41.7	82.2 Low	-40.5	Vert 99
22	1319.921M	53.7	+1.1 +0.0 +0.0	+0.0 +0.0 +1.4	-35.5 +0.0 +20.7	+0.3 +0.0 +0.0	+0.0 +0.0 360	41.7	82.2 High	-40.5	Vert 101
23	440.001M	48.1	+0.6 -28.1 +0.0	+0.0 +17.1 +0.0	+0.0 +1.4 +0.0	+0.0 +1.4 +0.0	+0.0 +0.0 +0.0	40.5	82.2 High	-41.7	Vert 154
24	66.450M	60.5	+0.2 -28.0 +0.0	+0.0 +6.6 +0.0	+0.0 +0.5 +0.0	+0.0 +0.4 +0.0	+0.0 +0.0 360	40.2	82.2 High	-42.0	Vert 172
25	1099.952M	53.8	+0.9 +0.0 +0.0	+0.0 +0.0 +1.2	-36.3 +0.0 +19.8	+0.3 +0.0 +0.0	+0.0 +0.0 360	39.7	82.2 High	-42.5	Horiz 99

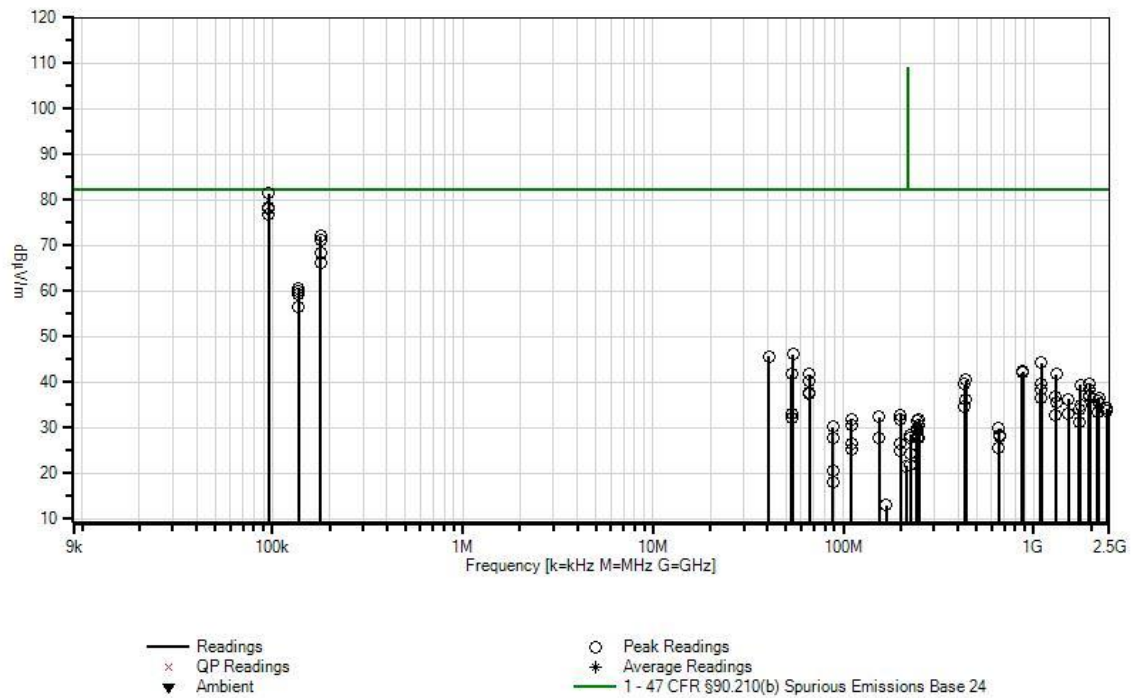
26	1979.866M	44.2	+1.4 +0.0 +0.0	+0.0 +0.0 +1.7	-34.3 +0.0 +26.3	+0.4 +0.0 360	+0.0	39.7	82.2 High	-42.5	Vert 102
27	435.230M	47.1	+0.6 -28.0 +0.0	+0.0 +17.0 +0.0	+0.0 +1.4 +0.0	+0.0 +1.4 266	+0.0	39.5	82.2 Low	-42.7	Vert 114
28	1759.886M	46.7	+1.3 +0.0 +0.0	+0.0 +0.0 +1.6	-34.7 +0.0 +24.2	+0.3 +0.0 360	+0.0	39.4	82.2 High	-42.8	Vert 116
29	1088.062M	52.8	+0.9 +0.0 +0.0	+0.0 +0.0 +1.2	-36.4 +0.0 +19.7	+0.3 +0.0 360	+0.0	38.5	82.2 Low	-43.7	Vert 152
30	1979.896M	42.7	+1.4 +0.0 +0.0	+0.0 +0.0 +1.7	-34.3 +0.0 +26.3	+0.4 +0.0 360	+0.0	38.2	82.2 High	-44.0	Horiz 101
31	66.340M	58.2	+0.2 -28.0 +0.0	+0.0 +6.6 +0.0	+0.0 +0.5 +0.0	+0.0 +0.4 360	+0.0	37.9	82.2 Low	-44.3	Horiz 134
32	66.450M	57.8	+0.2 -28.0 +0.0	+0.0 +6.6 +0.0	+0.0 +0.5 +0.0	+0.0 +0.4 360	+0.0	37.5	82.2 High	-44.7	Horiz 99
33	1958.532M	42.1	+1.3 +0.0 +0.0	+0.0 +0.0 +1.7	-34.4 +0.0 +26.1	+0.3 +0.0 360	+0.0	37.1	82.2 Low	-45.1	Vert 99
34	1305.659M	49.2	+1.0 +0.0 +0.0	+0.0 +0.0 +1.3	-35.5 +0.0 +20.7	+0.3 +0.0 360	+0.0	37.0	82.2 Low	-45.2	Vert 99
35	1958.544M	41.9	+1.3 +0.0 +0.0	+0.0 +0.0 +1.7	-34.4 +0.0 +26.1	+0.3 +0.0 360	+0.0	36.9	82.2 Low	-45.3	Horiz 99
36	2199.891M	40.7	+1.4 +0.0 +0.0	+0.0 +0.0 +1.8	-34.2 +0.0 +26.5	+0.4 +0.0 360	+0.0	36.6	82.2 High	-45.6	Horiz 99
37	1088.058M	50.7	+0.9 +0.0 +0.0	+0.0 +0.0 +1.2	-36.4 +0.0 +19.7	+0.3 +0.0 360	+0.0	36.4	82.2 Low	-45.8	Horiz 99
38	1523.292M	46.7	+1.2 +0.0 +0.0	+0.0 +0.0 +1.5	-35.1 +0.0 +21.7	+0.3 +0.0 360	+0.0	36.3	82.2 Low	-45.9	Vert 103
39	439.983M	43.8	+0.6 -28.1 +0.0	+0.0 +17.1 +0.0	+0.0 +1.4 +0.0	+0.0 +1.4 360	+0.0	36.2	82.2 High	-46.0	Horiz 99
40	2176.091M	40.1	+1.4 +0.0 +0.0	+0.0 +0.0 +1.8	-34.2 +0.0 +26.5	+0.4 +0.0 360	+0.0	36.0	82.2 Low	-46.2	Horiz 99
41	1319.943M	47.5	+1.1 +0.0 +0.0	+0.0 +0.0 +1.4	-35.5 +0.0 +20.7	+0.3 +0.0 360	+0.0	35.5	82.2 High	-46.7	Horiz 99
42	2199.857M	39.4	+1.4 +0.0 +0.0	+0.0 +0.0 +1.8	-34.2 +0.0 +26.5	+0.4 +0.0 360	+0.0	35.3	82.2 High	-46.9	Vert 120

43	1759.858M	42.4	+1.3 +0.0 +0.0	+0.0 +0.0 +1.6	-34.7 +0.0 +24.2	+0.3 +0.0 +0.0	+0.0 360	35.1	82.2 High	-47.1	Horiz 99
44	435.230M	42.3	+0.6 -28.0 +0.0	+0.0 +17.0 +0.0	+0.0 +1.4 +0.0	+0.0 +1.4	+0.0	34.7	82.2 Low	-47.5	Horiz 99
45	2419.876M	38.0	+1.5 +0.0 +0.0	+0.0 +0.0 +1.9	-34.0 +0.0 +26.4	+0.5 +0.0	+0.0 360	34.3	82.2 High	-47.9	Horiz 99
46	1740.930M	41.5	+1.3 +0.0 +0.0	+0.0 +0.0 +1.6	-34.7 +0.0 +24.0	+0.3 +0.0	+0.0 360	34.0	82.2 Low	-48.2	Vert 113
47	2419.840M	37.4	+1.5 +0.0 +0.0	+0.0 +0.0 +1.9	-34.0 +0.0 +26.4	+0.5 +0.0	+0.0 -13	33.7	82.2 High	-48.5	Vert 106
48	2176.035M	37.4	+1.4 +0.0 +0.0	+0.0 +0.0 +1.8	-34.2 +0.0 +26.5	+0.4 +0.0	+0.0 360	33.3	82.2 Low	-48.9	Horiz 132
49	1523.310M	43.4	+1.2 +0.0 +0.0	+0.0 +0.0 +1.5	-35.1 +0.0 +21.7	+0.3 +0.0	+0.0 360	33.0	82.2 Low	-49.2	Horiz 99
50	53.850M	52.3	+0.2 -28.0 +0.0	+0.0 +7.8 +0.0	+0.0 +0.4 +0.0	+0.0 +0.3	+0.0	33.0	82.2 Low	-49.2	Horiz 134
51	199.110M	49.0	+0.4 -27.3 +0.0	+0.0 +8.9 +0.0	+0.0 +0.9 +0.0	+0.0 +0.9	+0.0 360	32.8	82.2 High	-49.4	Vert 138
52	1305.673M	45.0	+1.0 +0.0 +0.0	+0.0 +0.0 +1.3	-35.5 +0.0 +20.7	+0.3 +0.0	+0.0	32.8	82.2 Low	-49.4	Horiz 99
53	154.800M	46.8	+0.4 -27.6 +0.0	+0.0 +11.2 +0.0	+0.0 +0.8 +0.0	+0.0 +0.8	+0.0	32.4	82.2 High	-49.8	Horiz 99
54	54.000M	51.5	+0.2 -28.0 +0.0	+0.0 +7.8 +0.0	+0.0 +0.4 +0.0	+0.0 +0.3	+0.0	32.2	82.2 High	-50.0	Horiz 99
55	110.700M	47.2	+0.3 -27.9 +0.0	+0.0 +10.8 +0.0	+0.0 +0.7 +0.0	+0.0 +0.6	+0.0 360	31.7	82.2 High	-50.5	Vert 172
56	199.080M	47.9	+0.4 -27.3 +0.0	+0.0 +8.9 +0.0	+0.0 +0.9 +0.0	+0.0 +0.9	+0.0 13	31.7	82.2 Low	-50.5	Vert 102
57	250.030M	43.8	+0.5 -27.1 +0.0	+0.0 +12.5 +0.0	+0.0 +1.0 +0.0	+0.0 +1.0	+0.0	31.7	82.2 Low	-50.5	Vert 102
58	243.360M	43.9	+0.5 -27.1 +0.0	+0.0 +12.1 +0.0	+0.0 +1.0 +0.0	+0.0 +1.0	+0.0 360	31.4	82.2 High	-50.8	Vert 138
59	1740.894M	38.7	+1.3 +0.0 +0.0	+0.0 +0.0 +1.6	-34.7 +0.0 +24.0	+0.3 +0.0	+0.0	31.2	82.2 Low	-51.0	Horiz 99

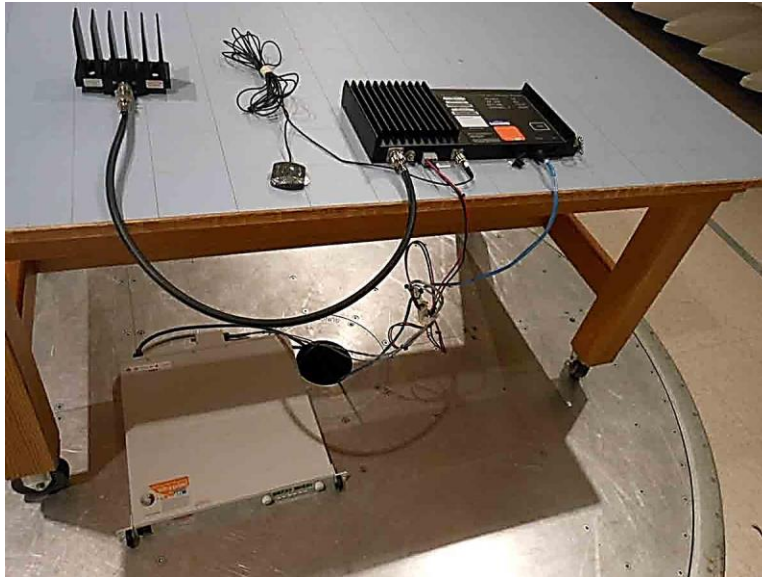
60	110.670M	46.1	+0.3 -27.9 +0.0	+0.0 +10.8 +0.0	+0.0 +0.7 +0.0	+0.0 +0.6 +0.0	+0.0	30.6	82.2 Low	-51.6	Vert 99
61	249.990M	42.7	+0.5 -27.1 +0.0	+0.0 +12.5 +0.0	+0.0 +1.0 +0.0	+0.0 +1.0 +0.0	+0.0 360	30.6	82.2 High	-51.6	Vert 138
62	88.440M	48.0	+0.3 -28.0 +0.0	+0.0 +8.8 +0.0	+0.0 +0.6 +0.0	+0.0 +0.5 +0.0	+0.0	30.2	82.2 Low	-52.0	Vert 99
63	652.840M	33.6	+0.8 -28.3 +0.0	+0.0 +20.3 +0.0	+0.0 +1.7 +0.0	+0.0 +1.8 +0.0	+0.0	29.9	82.2 Low	-52.3	Vert 116
64	243.410M	42.3	+0.5 -27.1 +0.0	+0.0 +12.1 +0.0	+0.0 +1.0 +0.0	+0.0 +1.0 +0.0	+0.0	29.8	82.2 Low	-52.4	Vert 102
65	243.360M	41.7	+0.5 -27.1 +0.0	+0.0 +12.1 +0.0	+0.0 +1.0 +0.0	+0.0 +1.0 +0.0	+0.0	29.2	82.2 High	-53.0	Horiz 168
66	659.954M	32.1	+0.8 -28.3 +0.0	+0.0 +20.3 +0.0	+0.0 +1.7 +0.0	+0.0 +1.9 +0.0	+0.0 360	28.5	82.2 High	-53.7	Vert 164
67	225.050M	42.5	+0.4 -27.2 +0.0	+0.0 +10.8 +0.0	+0.0 +0.9 +0.0	+0.0 +1.0 +0.0	+0.0	28.4	82.2 Low	-53.8	Vert 102
68	659.952M	31.7	+0.8 -28.3 +0.0	+0.0 +20.3 +0.0	+0.0 +1.7 +0.0	+0.0 +1.9 +0.0	+0.0	28.1	82.2 High	-54.1	Horiz 100
69	88.500M	45.7	+0.3 -28.0 +0.0	+0.0 +8.8 +0.0	+0.0 +0.6 +0.0	+0.0 +0.5 +0.0	+0.0 360	27.9	82.2 High	-54.3	Vert 172
70	249.990M	40.0	+0.5 -27.1 +0.0	+0.0 +12.5 +0.0	+0.0 +1.0 +0.0	+0.0 +1.0 +0.0	+0.0	27.9	82.2 High	-54.3	Horiz 168
71	243.410M	40.3	+0.5 -27.1 +0.0	+0.0 +12.1 +0.0	+0.0 +1.0 +0.0	+0.0 +1.0 +0.0	+0.0 360	27.8	82.2 Low	-54.4	Horiz 100
72	243.410M	40.3	+0.5 -27.1 +0.0	+0.0 +12.1 +0.0	+0.0 +1.0 +0.0	+0.0 +1.0 +0.0	+0.0 360	27.8	82.2 Low	-54.4	Horiz 100
73	224.980M	41.9	+0.4 -27.2 +0.0	+0.0 +10.8 +0.0	+0.0 +0.9 +0.0	+0.0 +1.0 +0.0	+0.0 360	27.8	82.2 High	-54.4	Vert 138
74	154.950M	42.2	+0.4 -27.6 +0.0	+0.0 +11.2 +0.0	+0.0 +0.8 +0.0	+0.0 +0.8 +0.0	+0.0 360	27.8	82.2 High	-54.4	Vert 172
75	110.670M	42.0	+0.3 -27.9 +0.0	+0.0 +10.8 +0.0	+0.0 +0.7 +0.0	+0.0 +0.6 +0.0	+0.0	26.5	82.2 Low	-55.7	Horiz 134
76	199.110M	42.7	+0.4 -27.3 +0.0	+0.0 +8.9 +0.0	+0.0 +0.9 +0.0	+0.0 +0.9 +0.0	+0.0	26.5	82.2 High	-55.7	Horiz 168

77	652.820M	29.3	+0.8 -28.3 +0.0	+0.0 +20.3 +0.0	+0.0 +1.7 +0.0	+0.0 +1.8 360	+0.0	25.6	82.2 Low	-56.6	Horiz 99
78	110.700M	40.9	+0.3 -27.9 +0.0	+0.0 +10.8 +0.0	+0.0 +0.7 +0.0	+0.0 +0.6	+0.0	25.4	82.2 High	-56.8	Horiz 99
79	199.080M	41.3	+0.4 -27.3 +0.0	+0.0 +8.9 +0.0	+0.0 +0.9 +0.0	+0.0 +0.9 360	+0.0	25.1	82.2 Low	-57.1	Horiz 100
80	224.980M	38.3	+0.4 -27.2 +0.0	+0.0 +10.8 +0.0	+0.0 +0.9 +0.0	+0.0 +1.0	+0.0	24.2	82.2 High	-58.0	Horiz 168
81	225.050M	35.8	+0.4 -27.2 +0.0	+0.0 +10.8 +0.0	+0.0 +0.9 +0.0	+0.0 +1.0 360	+0.0	21.7	82.2 Low	-60.5	Horiz 100
82	213.650M	36.6	+0.4 -27.2 +0.0	+0.0 +10.0 +0.0	+0.0 +0.9 +0.0	+0.0 +0.9	+0.0	21.6	82.2 High	-60.6	Horiz 168
83	88.500M	38.5	+0.3 -28.0 +0.0	+0.0 +8.8 +0.0	+0.0 +0.6 +0.0	+0.0 +0.5	+0.0	20.7	82.2 High	-61.5	Horiz 99
84	88.440M	35.9	+0.3 -28.0 +0.0	+0.0 +8.8 +0.0	+0.0 +0.6 +0.0	+0.0 +0.5	+0.0	18.1	82.2 Low	-64.1	Horiz 134
85	168.150M	28.4	+0.4 -27.5 +0.0	+0.0 +10.1 +0.0	+0.0 +0.8 +0.0	+0.0 +0.8 307	+0.0	13.0	82.2 High	-69.2	Horiz 99

CKC Laboratories, Inc. Date: 3/25/2013 Time: 12:30:37 Meteorcomm LLC. WO#: 94195  
 Test Distance: 3 Meters Sequence#: 8 Perpendicular  
 Meteorcomm LLC. Wayside P/N: 63010



**Test Setup Photos**



## SUPPLEMENTAL INFORMATION

### Measurement Uncertainty

Uncertainty Value	Parameter
4.73 dB	Radiated Emissions
3.34 dB	Mains Conducted Emissions
3.30 dB	Disturbance Power

The reported measurement uncertainties are calculated based on the worst case of all laboratory environments from CKC Laboratories, Inc. test sites. Only those parameters which require estimation of measurement uncertainty are reported. The reported worst case measurement uncertainty is less than the maximum values derived in CISPR 16-4-2. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of  $k=2$ . Compliance is deemed to occur provided measurements are below the specified limits.

### Emissions Test Details

#### TESTING PARAMETERS

Unless otherwise indicated, the following configuration parameters are used for equipment setup: The cables were routed consistent with the typical application by varying the configuration of the test sample. Interface cables were connected to the available ports of the test unit. The effect of varying the position of the cables was investigated to find the configuration that produced maximum emissions. Cables were of the type and length specified in the individual requirements. The length of cable that produced maximum emissions was selected.

The equipment under test (EUT) was set up in a manner that represented its normal use, as shown in the setup photographs. Any special conditions required for the EUT to operate normally are identified in the comments that accompany the emissions tables.

The emissions data was taken with a spectrum analyzer or receiver. Incorporating the applicable correction factors for distance, antenna, cable loss and amplifier gain, the data was reduced as shown in the table below. The corrected data was then compared to the applicable emission limits. Preliminary and final measurements were taken in order to ensure that all emissions from the EUT were found and maximized.

#### CORRECTION FACTORS

The basic spectrum analyzer reading was converted using correction factors as shown in the highest emissions readings in the tables. For radiated emissions in dB $\mu$ V/m, the spectrum analyzer reading in dB $\mu$ V was corrected by using the following formula. This reading was then compared to the applicable specification limit.

SAMPLE CALCULATIONS		
	Meter reading	(dBμV)
+	Antenna Factor	(dB)
+	Cable Loss	(dB)
-	Distance Correction	(dB)
-	Preamplifier Gain	(dB)
=	Corrected Reading	(dBμV/m)

#### TEST INSTRUMENTATION AND ANALYZER SETTINGS

The test instrumentation and equipment listed were used to collect the emissions data. A spectrum analyzer or receiver was used for all measurements. Unless otherwise specified, the following table shows the measuring equipment bandwidth settings that were used in designated frequency bands. For testing emissions, an appropriate reference level and a vertical scale size of 10 dB per division were used.

MEASURING EQUIPMENT BANDWIDTH SETTINGS PER FREQUENCY RANGE			
TEST	BEGINNING FREQUENCY	ENDING FREQUENCY	BANDWIDTH SETTING
CONDUCTED EMISSIONS	150 kHz	30 MHz	9 kHz
RADIATED EMISSIONS	9 kHz	150 kHz	200 Hz
RADIATED EMISSIONS	150 kHz	30 MHz	9 kHz
RADIATED EMISSIONS	30 MHz	1000 MHz	120 kHz
RADIATED EMISSIONS	1000 MHz	>1 GHz	1 MHz

#### SPECTRUM ANALYZER/RECEIVER DETECTOR FUNCTIONS

The notes that accompany the measurements contained in the emissions tables indicate the type of detector function used to obtain the given readings. Unless otherwise noted, all readings were made in the "positive peak" detector mode. Whenever a "quasi-peak" or "average" reading was recorded, the measurement was annotated with a "QP" or an "Ave" on the appropriate rows of the data sheets. In cases where quasi-peak or average limits were employed and data exists for multiple measurement types for the same frequency then the peak measurement was retained in the report for reference, however the numbering for the affected row was removed and an arrow or carrot ("^") was placed in the far left-hand column indicating that the row above takes precedence for comparison to the limit. The following paragraphs describe in more detail the detector functions and when they were used to obtain the emissions data.

##### **Peak**

In this mode, the spectrum analyzer or receiver recorded all emissions at their peak value as the frequency band selected was scanned. By combining this function with another feature called "peak hold," the measurement device had the ability to measure intermittent or low duty cycle transient emission peak levels. In this mode the measuring device made a slow scan across the frequency band selected and measured the peak emission value found at each frequency across the band.

##### **Quasi-Peak**

Quasi-peak measurements were taken using the quasi-peak detector when the true peak values exceeded or were within 2 dB of a quasi-peak specification limit. Additional QP measurements may have been taken at the discretion of the operator.

##### **Average**

Average measurements were taken using the average detector when the true peak values exceeded or were within 2 dB of an average specification limit. Additional average measurements may have been taken at the discretion of the operator. If the specification or test procedure requires trace averaging, then the averaging was performed using 100 samples or as required by the specification. All other average measurements are performed using video bandwidth averaging. To make these measurements, the test engineer reduces the video bandwidth on the measuring device until the modulation of the signal is filtered out. At this point the measuring device is set into the linear mode and the scan time is reduced.