

# 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

**REPORT PREPARED BY:**

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

Project Number: 94195

**DATE OF EQUIPMENT RECEIPT:**  
**DATE(S) OF TESTING:**

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	Heliax	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	3115 C63.5 Calibration	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

#	Freq	Rdng	Reading listed by margin.				Test Distance: 3 Meters				
			T1	T2	T3	T4	Dist	Corr	Spec	Margin	
			T5	T6	T7	T8					
			MHz	dB $\mu$ V	dB	dB	dB	Table	dB $\mu$ V/m	dB $\mu$ V/m	
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	+0.0	+0.0	+0.0	60.7	82.2	-21.5	Paral
			+0.0	+0.0	+0.0	+0.0	360		High		99
			+9.5	+0.0	+0.0						

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

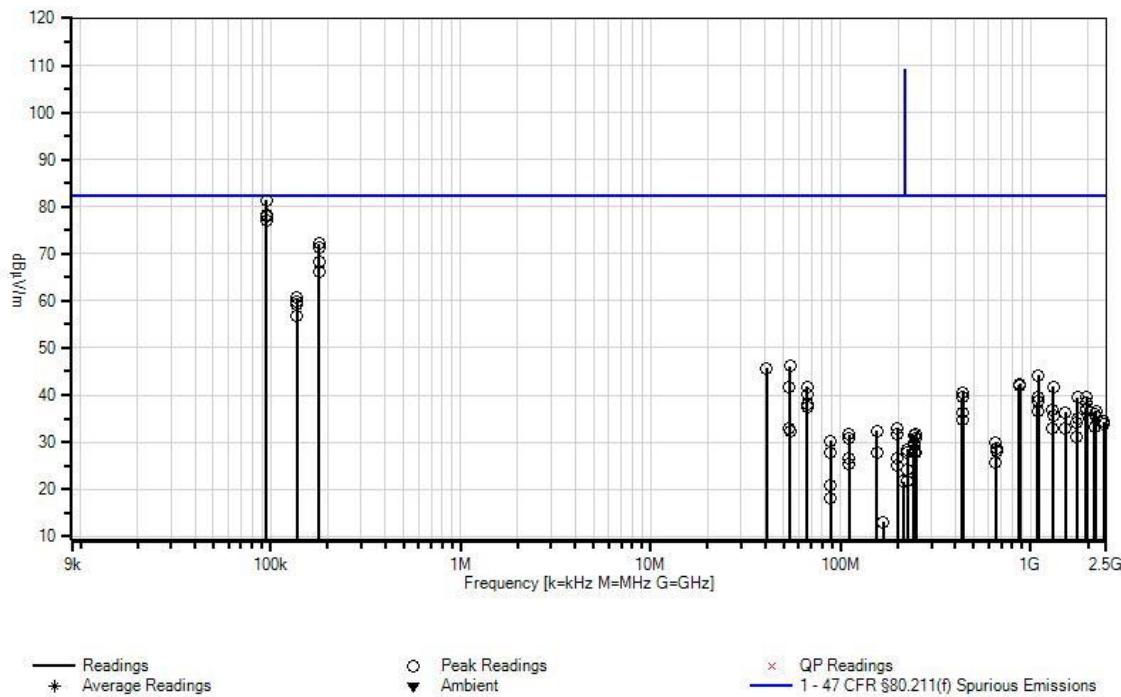
27	435.230M	47.1	+0.6	+0.0	+0.0	+0.0	+0.0	39.5	82.2	-42.7	Vert
			-28.0	+17.0	+1.4	+1.4	266		Low		114
			+0.0	+0.0	+0.0						
28	1759.886M	46.7	+1.3	+0.0	-34.7	+0.3	+0.0	39.4	82.2	-42.8	Vert
			+0.0	+0.0	+0.0	+0.0			High		116
			+0.0	+1.6	+24.2						
29	1088.062M	52.8	+0.9	+0.0	-36.4	+0.3	+0.0	38.5	82.2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

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

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

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

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	Heliax	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 3115 C63.5 Calibration		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

#	Freq	Rdng	Reading listed by margin.				Test Distance: 3 Meters				
			T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
			T5	T6	T7	T8					
	MHz	dB $\mu$ V	dB	dB	dB	dB	Table	dB $\mu$ V/m	dB $\mu$ V/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	+0.0	+0.0	+0.0	60.7	82.2	-21.5	Paral
			+0.0	+0.0	+0.0	+0.0	360		High		99
			+9.5	+0.0	+0.0						
10	137.329k	50.4	+0.0	+0.0	+0.0	+0.0	+0.0	59.9	82.2	-22.3	Perpe
			+0.0	+0.0	+0.0	+0.0	360		Low		99
			+9.5	+0.0	+0.0						
11	137.329k	49.8	+0.0	+0.0	+0.0	+0.0	+0.0	59.3	82.2	-22.9	Perpe
			+0.0	+0.0	+0.0	+0.0			High		99
			+9.5	+0.0	+0.0						
12	137.329k	47.1	+0.0	+0.0	+0.0	+0.0	+0.0	56.6	82.2	-25.6	Paral
			+0.0	+0.0	+0.0	+0.0			Low		99
			+9.5	+0.0	+0.0						
13	54.350M	65.5	+0.2	+0.0	+0.0	+0.0	+0.0	46.1	82.2	-36.1	Vert
			-28.0	+7.7	+0.4	+0.3			Low		99
			+0.0	+0.0	+0.0						
14	40.650M	59.0	+0.2	+0.0	+0.0	+0.0	+0.0	45.7	82.2	-36.5	Vert
			-28.1	+13.9	+0.4	+0.3	360		High		172
			+0.0	+0.0	+0.0						
15	1099.936M	58.3	+0.9	+0.0	-36.3	+0.3	+0.0	44.2	82.2	-38.0	Vert
			+0.0	+0.0	+0.0	+0.0			High		99
			+0.0	+1.2	+19.8						
16	879.952M	41.9	+0.9	+0.0	+0.0	+0.0	+0.0	42.4	82.2	-39.8	Horiz
			-27.5	+22.9	+2.0	+2.2			High		97
			+0.0	+0.0	+0.0						
17	870.444M	41.7	+0.9	+0.0	+0.0	+0.0	+0.0	42.1	82.2	-40.1	Horiz
			-27.5	+22.8	+2.0	+2.2			Low		99
			+0.0	+0.0	+0.0						
18	879.932M	41.5	+0.9	+0.0	+0.0	+0.0	+0.0	42.0	82.2	-40.2	Vert
			-27.5	+22.9	+2.0	+2.2	360		High		165
			+0.0	+0.0	+0.0						
19	870.432M	41.6	+0.9	+0.0	+0.0	+0.0	+0.0	42.0	82.2	-40.2	Vert
			-27.5	+22.8	+2.0	+2.2	360		Low		164
			+0.0	+0.0	+0.0						
20	53.700M	61.0	+0.2	+0.0	+0.0	+0.0	+0.0	41.8	82.2	-40.4	Vert
			-28.0	+7.9	+0.4	+0.3	360		High		172
			+0.0	+0.0	+0.0						
21	66.340M	62.0	+0.2	+0.0	+0.0	+0.0	+0.0	41.7	82.2	-40.5	Vert
			-28.0	+6.6	+0.5	+0.4			Low		99
			+0.0	+0.0	+0.0						
22	1319.921M	53.7	+1.1	+0.0	-35.5	+0.3	+0.0	41.7	82.2	-40.5	Vert
			+0.0	+0.0	+0.0	+0.0	360		High		101
			+0.0	+1.4	+20.7						
23	440.001M	48.1	+0.6	+0.0	+0.0	+0.0	+0.0	40.5	82.2	-41.7	Vert
			-28.1	+17.1	+1.4	+1.4			High		154
			+0.0	+0.0	+0.0						
24	66.450M	60.5	+0.2	+0.0	+0.0	+0.0	+0.0	40.2	82.2	-42.0	Vert
			-28.0	+6.6	+0.5	+0.4	360		High		172
			+0.0	+0.0	+0.0						
25	1099.952M	53.8	+0.9	+0.0	-36.3	+0.3	+0.0	39.7	82.2	-42.5	Horiz
			+0.0	+0.0	+0.0	+0.0	360		High		99
			+0.0	+1.2	+19.8						

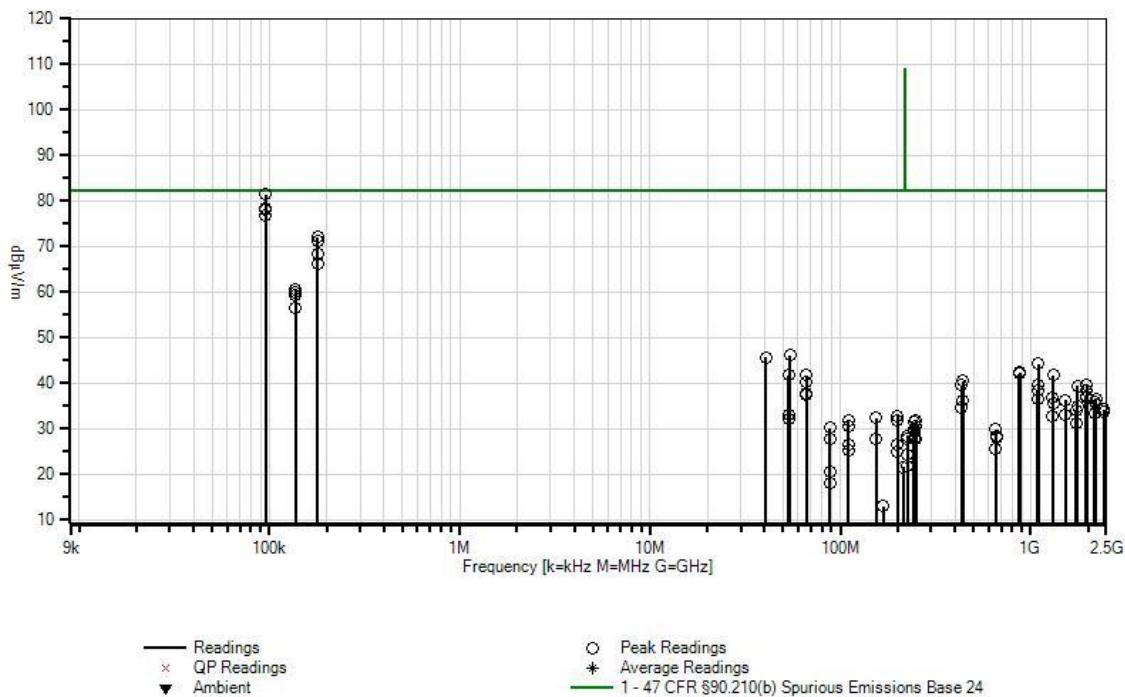
26	1979.866M	44.2	+1.4	+0.0	-34.3	+0.4	+0.0	39.7	82.2	-42.5	Vert
			+0.0	+0.0	+0.0	+0.0	360		High		102
			+0.0	+1.7	+26.3						
27	435.230M	47.1	+0.6	+0.0	+0.0	+0.0	+0.0	39.5	82.2	-42.7	Vert
			-28.0	+17.0	+1.4	+1.4	266		Low		114
			+0.0	+0.0	+0.0						
28	1759.886M	46.7	+1.3	+0.0	-34.7	+0.3	+0.0	39.4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

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

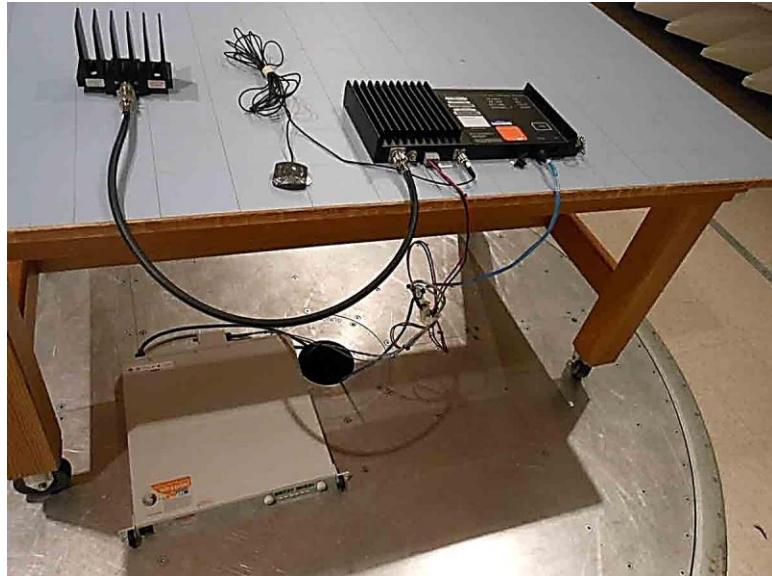
60	110.670M	46.1	+0.3	+0.0	+0.0	+0.0	+0.0	30.6	82.2	-51.6	Vert
			-27.9	+10.8	+0.7	+0.6			Low		99
			+0.0	+0.0	+0.0						
61	249.990M	42.7	+0.5	+0.0	+0.0	+0.0	+0.0	30.6	82.2	-51.6	Vert
			-27.1	+12.5	+1.0	+1.0	360		High		138
			+0.0	+0.0	+0.0						
62	88.440M	48.0	+0.3	+0.0	+0.0	+0.0	+0.0	30.2	82.2	-52.0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

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

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  $\text{dB}\mu\text{V}/\text{m}$ , the spectrum analyzer reading in  $\text{dB}\mu\text{V}$  was corrected by using the following formula. This reading was then compared to the applicable specification limit.

<b>SAMPLE CALCULATIONS</b>	
Meter reading	(dB $\mu$ V)
+ Antenna Factor	(dB)
+ Cable Loss	(dB)
- Distance Correction	(dB)
- Preamplifier Gain	(dB)
= Corrected Reading	(dB $\mu$ V/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.

<b>MEASURING EQUIPMENT BANDWIDTH SETTINGS PER FREQUENCY RANGE</b>			
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.