McKinley-Ross Corp.

ADDENDUM TO TEST REPORT 94389-4

Water Switch Transmitter
Model: WMS500

Tested To The Following Standards:

FCC Part 15 Subpart C Sections 15.231 & RSS-210 Issue 8

Report No.: 94389-4A

Date of issue: January 9, 2014

A2LA ACCREDITED
Testing Certificates:
803.01, 803.02, 803.05, 803.06

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.

Testing the Future
CKC LABORATORIES, INC.

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ADMINISTRATIVE INFORMATION

Test Report Information

REPORT PREPARED FOR:

McKinley-Ross Corp.
100 Winters St.
West Point, VA 23181

Representative: Tahsin Durak /
Karen Whipkey F-Squared Laboratories
Customer Reference Number: 2520

REPORT PREPARED BY:

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

Project Number: 94389

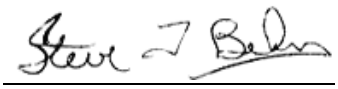
DATE OF EQUIPMENT RECEIPT: September 16, 2013
DATE(S) OF TESTING: September 16 - October 29, 2013
December 24, 2013

Revision History

Original: Testing of the Water Switch Transmitter, WMS500 to FCC 15.231 and RSS 210 Issue 8.
Addendum A: To insert new test data for section 15.231(a) Types of Momentary Signals and Section 15.231(b) Fundamental and Spurious Emissions. Testing performed with three flow switches attached to the EUT posts to demonstrate automatic triggering of the EUT. Added peripheral devices that were used or simulated during testing for all EUT ports. See Appendix A for new test data.

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.
110 Olinda Place
Brea, CA 92823

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
Brea A	US0060	SL2-IN-E-1146R	3082D-1	90473	A-0147

SUMMARY OF RESULTS

Standard / Specification: FCC Part 15 Subpart C 15.231 and RSS-210 Issue 8

Description	Test Procedure/Method	Results
AC Conducted	FCC Part 15 Subpart C Section 15.207 / ANSI C63.4	NA
Voltage Variation	FCC Part 15 Subpart C Section 15.31(e)	Pass
Types of Momentary Signals	FCC Part 15 Subpart C Section 15.231(a)	Pass
Types of Momentary Signals	Section A1.1.1 / RSS-210 Issue 8	Pass
Field Strength of Fundamental and Spurious Emissions	FCC Part 15 Subpart C Section 15.231(b) / DO1 DTS MEAS Guidance V03	Pass
Field Strength of Fundamental and Spurious Emissions	Section A1.1.2 / RSS-210 Issue 8 / DO1 DTS MEAS Guidance V03	Pass
-20dBc Occupied Bandwidth	FCC Part 15 Subpart C Section 15.231(c) / DO1 DTS MEAS Guidance V03	Pass
99% Bandwidth	Section A1.1.3 / RSS-210 Issue 8 / DO1 DTS MEAS Guidance V03	Pass
Frequency Stability	FCC Part 15 Subpart C Section 15.231(d)	NA
Frequency Stability	Section A1.1.4 / RSS-210 Issue 8	NA
Reduced Field Strengths	FCC Part 15 Subpart C Section 15.231(e)	NA
Reduced Field Strengths	Section A1.1.5 / RSS-210 Issue 8	NA

NA = Not Applicable

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

Water switch transmitter

Manuf: McKinley-Ross Corp.
Model: WMS500
Serial: None

PERIPHERAL DEVICES

The EUT was not tested with peripheral devices.

FCC PART 15 SUBPART C

This report contains EMC emissions test results under United States Federal Communications Commission (FCC) 47 CFR 15C requirements for Unlicensed Radio Frequency Devices, Subpart C - Intentional Radiators.

15.207 AC Conducted Emissions

Test Engineer:	Don Nguyen	**Test Procedure:**	15.207
Test Level:	NA		
Declarations: The manufacturer declares the EUT operates on a 9V battery.			

15.31(e) Voltage Variations

Test Data

Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • 714 993 6112

Customer: **McKinley-Ross Corp.**
Specification: **15.31e**
Work Order #: **94389** Date: 10/23/2013
Test Type: **Maximized Emissions** Time: 10:28:49
Equipment: **Water switch transmitter** Sequence#: 3
Manufacturer: McKinley-Ross Corp. Tested By: Don Nguyen
Model: WMS500
S/N: NA

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN00309	Preamp	8447D	3/29/2012	3/29/2014
T2	ANP05050	Cable	RG223/U	1/21/2013	1/21/2015
T3	ANP05198	Cable-Amplitude 15 to 45degC (dB)	8268	12/11/2012	12/11/2014
	ANP05198	Cable-Amplitude -15 to 15degC	8268	12/11/2012	12/11/2014
T4	AN02869	Spectrum Analyzer	E4440A	2/6/2013	2/6/2015
T5	AN00266A	Dipole Antenna	Type I-IV	8/31/2012	8/31/2014

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

Function	Manufacturer	Model #	S/N
Water switch transmitter*	McKinley-Ross Corp.	WMS500	NA

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

The EUT is placed on the wooden table lined with Styrofoam of 10 cm thickness. EUT is set to always transmitting mode.

Fundamental operating frequency: 433.92MHz
RBW=VBW=120kHz
Temp: 18°C, 57% Relative Humidity, 100.1kpa

Site A
15.31e. EUT is installed with fresh 9V battery.

Test Setup Photos

Test Setup 15.31e

X - Axis

Y - Axis

Z - Axis

15.231(a) Types of Momentary Signals

Test Data Sheets

Test Location:	CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • 714 993 6112		
Customer:	**McKinley-Ross Corp.**		
Specification:	**Types of Momentary Signals**		
Work Order #:	**94389**	Date:	10/23/2013
Test Type:	**Maximized Emissions**	Time:	10:28:49
Equipment:	**Water switch transmitter**	Sequence#:	3
Manufacturer:	McKinley-Ross Corp.	Tested By:	Don Nguyen
Model:	WMS500		
S/N:	NA		

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN00309	Preamp	8447D	3/29/2012	3/29/2014
T2	ANP05050	Cable	RG223/U	1/21/2013	1/21/2015
T3	ANP05198	Cable-Amplitude 15 to 45degC (dB)	8268	12/11/2012	12/11/2014
	ANP05198	Cable-Amplitude -15 to 15degC	8268	12/11/2012	12/11/2014
T4	AN02869	Spectrum Analyzer	E4440A	2/6/2013	2/6/2015
T5	AN00266A	Dipole Antenna	Type I-IV	8/31/2012	8/31/2014

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

Function	Manufacturer	Model #	S/N
Water switch transmitter*	McKinley-Ross Corp.	WMS500	NA

Support Devices:

Function	Manufacturer	Model #	S/N

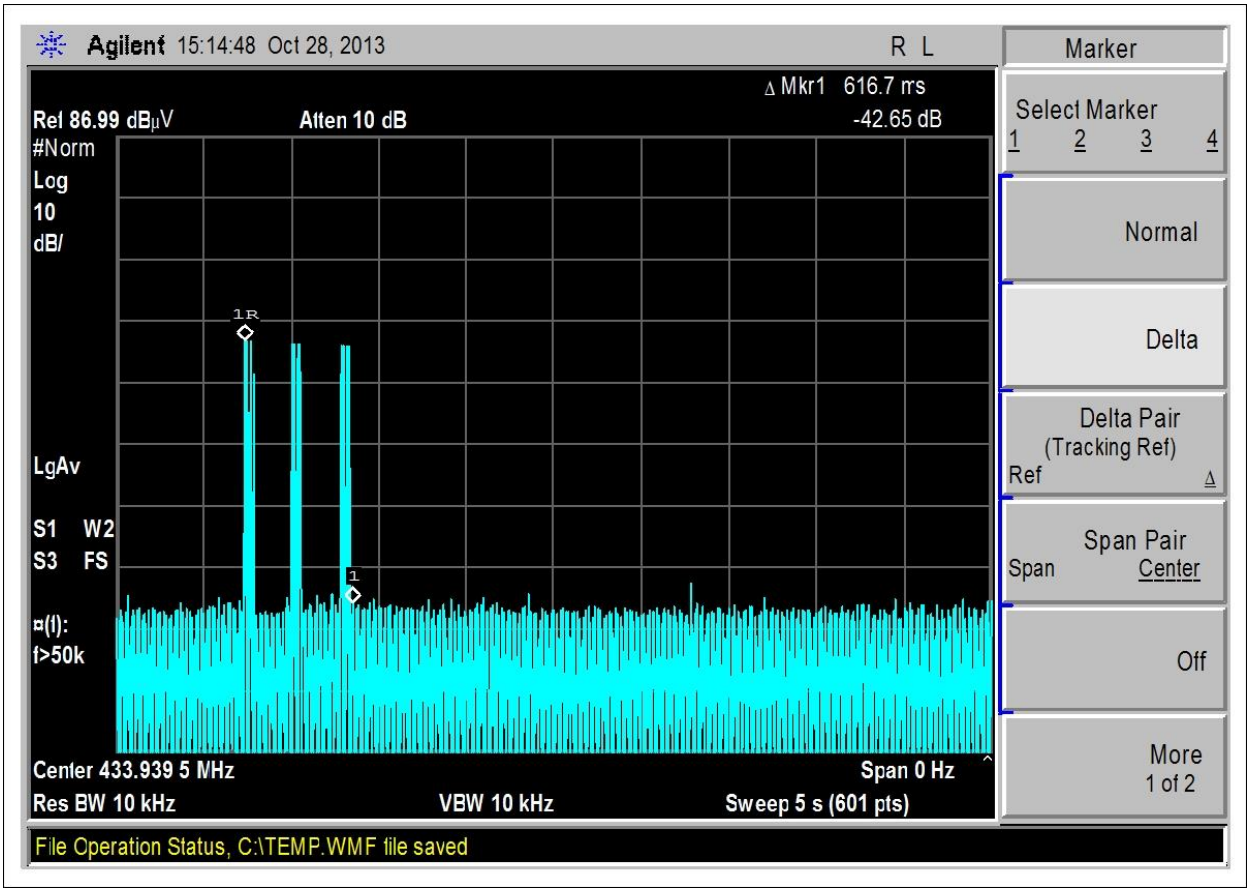
Test Conditions / Notes:

The EUT is placed on the wooden table lined with Styrofoam of 10 cm thickness. EUT is set to always transmitting mode. EUT is installed with new 9V battery.

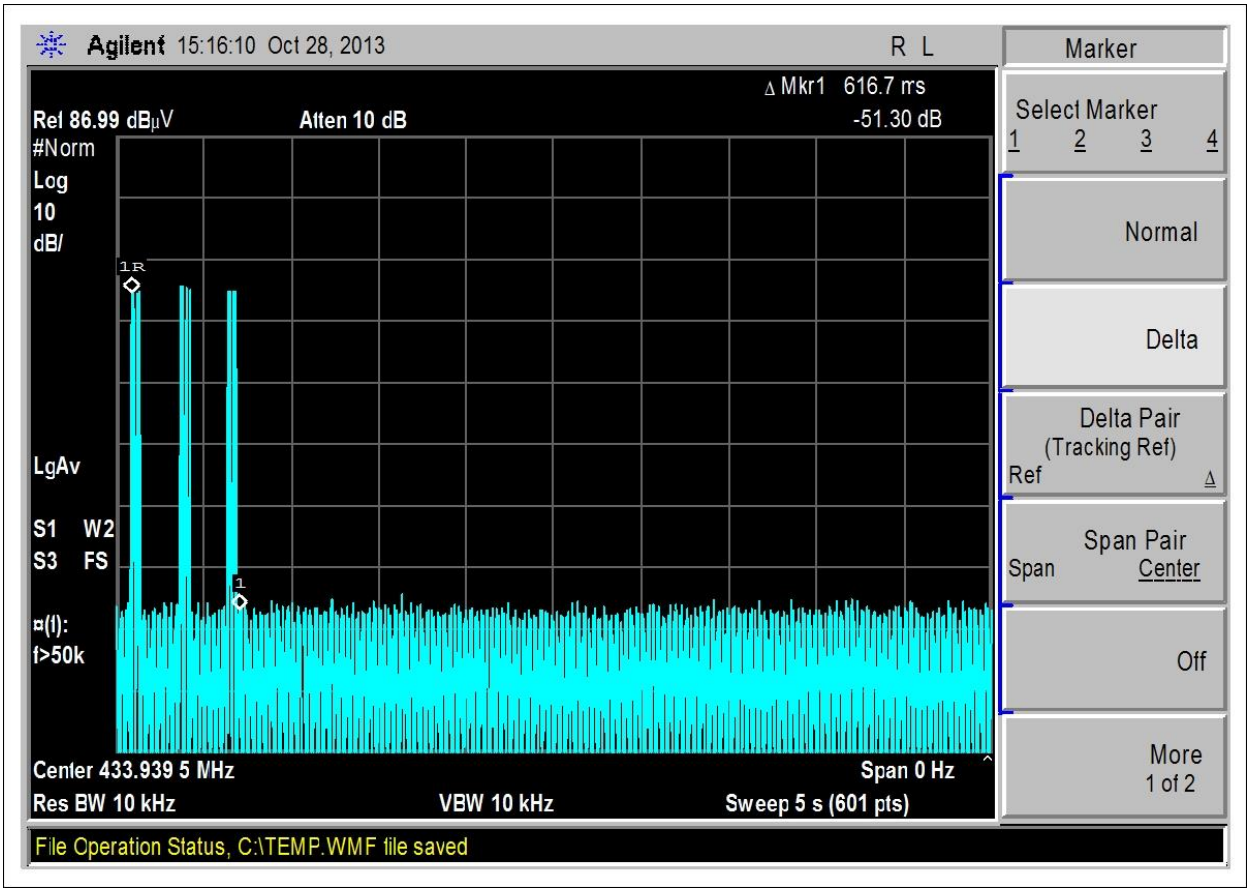
Fundamental operating frequency: 433.92MHz
RBW=VBW=120kHz
Temp: 18°C, 57% Relative Humidity, 100.1kpa

Site A

Test Data



Step 1: The switch was pressed and quickly released. The EUT transmitted and deactivated within 5 seconds.



Step 2: The switch was pressed and hold for 5 seconds then released. EUT transmitted and deactivated within 5 seconds.

Note: In both step1 and step 2, the EUT has achieved the requirements of 15.231a (1): "A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released."

Test Setup Photos

Test Setup

X - Axis

Y - Axis

Z - Axis

RSS-210 A1.1.1 / Types of Momentary Signals

Test Data Sheets

Test Location:	CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • 714 993 6112		
Customer:	**McKinley-Ross Corp.**		
Specification:	**Types of Momentary Signals**		
Work Order #:	**94389**	Date:	10/23/2013
Test Type:	**Maximized Emissions**	Time:	10:28:49
Equipment:	**Water switch transmitter**	Sequence#:	3
Manufacturer:	McKinley-Ross Corp.	Tested By:	Don Nguyen
Model:	WMS500		
S/N:	NA		

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN00309	Preamp	8447D	3/29/2012	3/29/2014
T2	ANP05050	Cable	RG223/U	1/21/2013	1/21/2015
T3	ANP05198	Cable-Amplitude 15 to 45degC (dB)	8268	12/11/2012	12/11/2014
	ANP05198	Cable-Amplitude -15 to 15degC	8268	12/11/2012	12/11/2014
T4	AN02869	Spectrum Analyzer	E4440A	2/6/2013	2/6/2015
T5	AN00266A	Dipole Antenna	Type I-IV	8/31/2012	8/31/2014

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

Function	Manufacturer	Model #	S/N
Water switch transmitter*	McKinley-Ross Corp.	WMS500	NA

Support Devices:

Function	Manufacturer	Model #	S/N

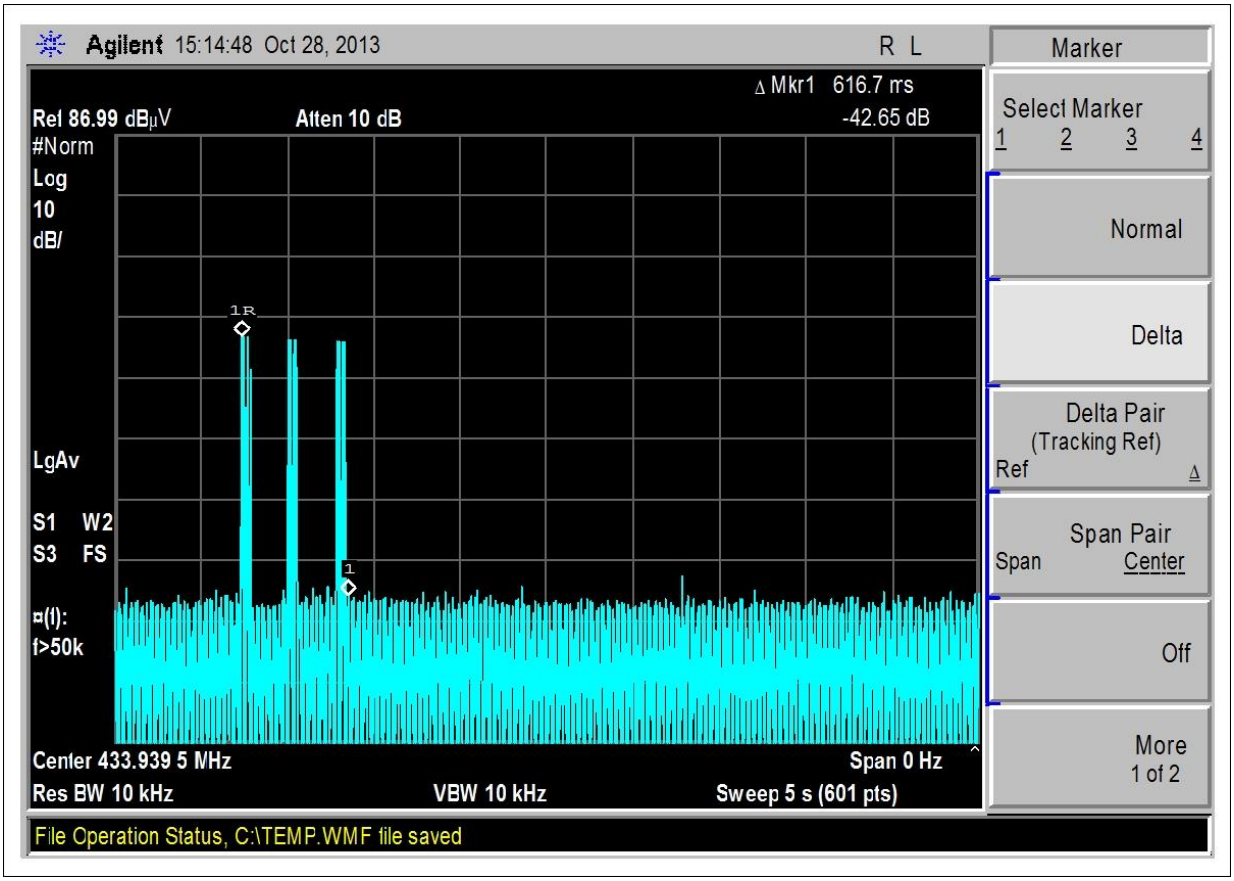
Test Conditions / Notes:

The EUT is placed on the wooden table lined with Styrofoam of 10 cm thickness. EUT is set to always transmitting mode. EUT is installed with new 9V battery.

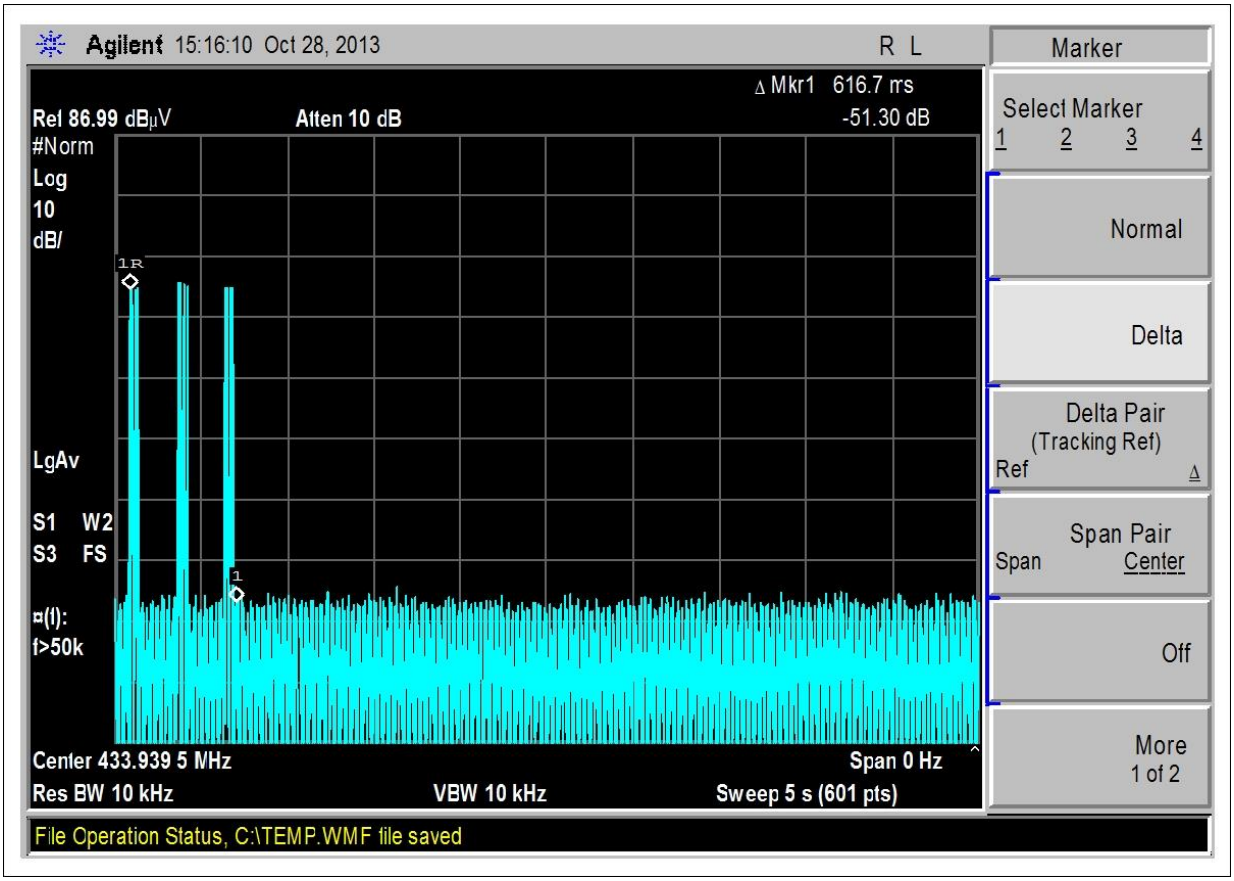
Fundamental operating frequency: 433.92MHz
RBW=VBW=120kHz
Temp: 18°C, 57% Relative Humidity, 100.1kpa

Site A

Test Data



Step 1: The switch was pressed and quickly released. The EUT transmitted and deactivated within 5 seconds.



Step 2: The switch was pressed and hold for 5 seconds then released. EUT transmitted and deactivated within 5 seconds.

Note: In both step 1 and step 2, the EUT achieved the requirements of A1.1.1 (a): “A manually operated transmitter shall be equipped with a push-to-operate switch and be under manual control at all transmission times. When released, the transmitter shall cease transmission (holdover time of up to 5 seconds is permitted).”

Test Setup Photos

Test Setup

X - Axis

Y - Axis

Z - Axis

15.231(b) Field Strength of Fundamental & Spurious Emissions

Test Data

Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • 714 993 6112

Customer: **McKinley-Ross Corp.**
Specification: **15.231(b) Fundamental Field Strength**
Work Order #: **94389** Date: 10/23/2013
Test Type: **Maximized Emissions** Time: 10:28:49
Equipment: **Water switch transmitter** Sequence#: 3
Manufacturer: McKinley-Ross Corp. Tested By: Don Nguyen
Model: WMS500
S/N: NA

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN00309	Preamp	8447D	3/29/2012	3/29/2014
T2	ANP05050	Cable	RG223/U	1/21/2013	1/21/2015
T3	ANP05198	Cable-Amplitude 15 to 45degC (dB)	8268	12/11/2012	12/11/2014
	ANP05198	Cable-Amplitude -15 to 15degC	8268	12/11/2012	12/11/2014
	AN02869	Spectrum Analyzer	E4440A	2/6/2013	2/6/2015
T4	AN00266A	Dipole Antenna	Type I-IV	8/31/2012	8/31/2014
T5	AN01234	Duty Cycle Correction Factor		10/23/2013	10/23/2015

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

Function	Manufacturer	Model #	S/N
Water switch transmitter*	McKinley-Ross Corp.	WMS500	NA

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

The EUT is placed on the wooden table lined with Styrofoam of 10 cm thickness. EUT is set to always transmitting mode.
EUT is installed with new 9V battery.

Fundamental operating frequency: 433.92MHz
RBW=VBW=120kHz
Temp: 18°C, 57% Relative Humidity, 100.1kpa

Site A

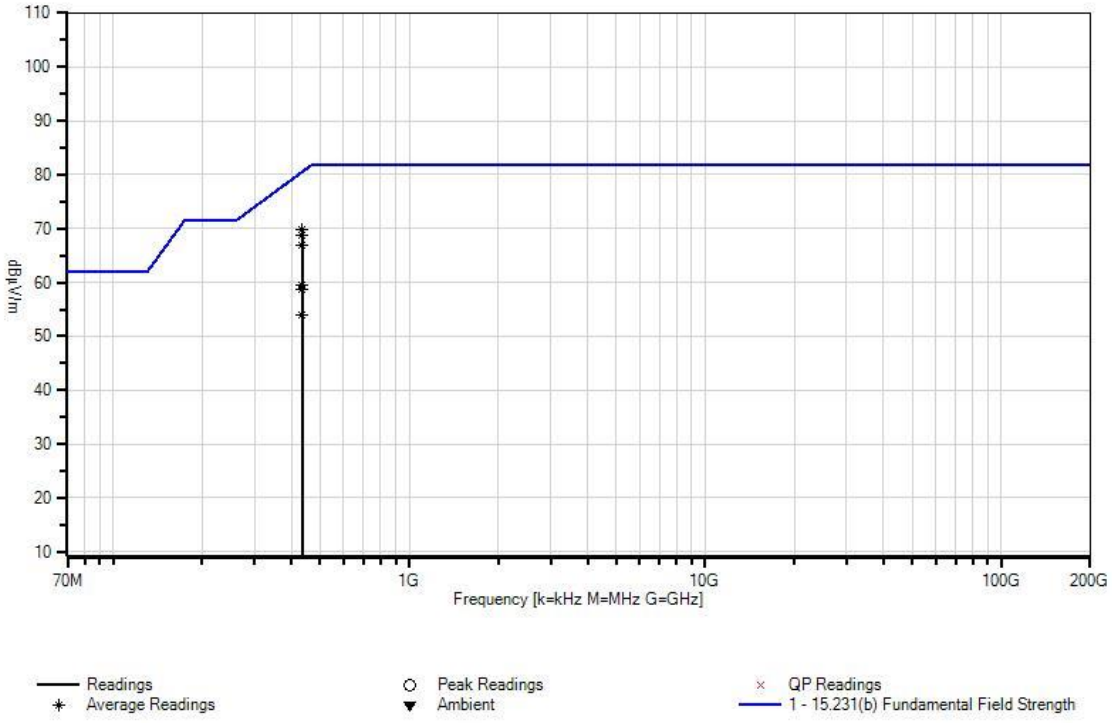
Emission is investigated with EUT rotating in three axes.
Duty cycle correction factor = 20log(dwell time/100 ms)= 20log(48.33/100)=-6.32db

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
			T5								
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	433.959M	77.9	-27.8	+0.4	+3.8	+21.9	+0.0	69.9	80.5	-10.6	Horiz
	Ave		-6.3						X axis		
2	433.955M	76.8	-27.8	+0.4	+3.8	+21.9	+0.0	68.8	80.5	-11.7	Horiz
	Ave		-6.3						Z axis		
3	433.955M	74.8	-27.8	+0.4	+3.8	+21.9	+0.0	66.8	80.5	-13.7	Vert
	Ave		-6.3						Y axis		
4	433.955M	67.5	-27.8	+0.4	+3.8	+21.9	+0.0	59.5	80.5	-21.0	Vert
	Ave		-6.3						X axis		
5	433.955M	66.6	-27.8	+0.4	+3.8	+21.9	+0.0	58.6	80.5	-21.9	Vert
	Ave		-6.3						Z axis		
^	433.955M	94.0	-27.8	+0.4	+3.8	+21.9	+0.0	92.3	80.5	+11.8	Vert
			+0.0						Y axis		
^	433.955M	85.2	-27.8	+0.4	+3.8	+21.9	+0.0	83.5	80.5	+3.0	Vert
			+0.0						X axis		
^	433.955M	84.5	-27.8	+0.4	+3.8	+21.9	+0.0	82.8	80.5	+2.3	Vert
			+0.0						Z axis		
9	433.955M	61.9	-27.8	+0.4	+3.8	+21.9	+0.0	53.9	80.5	-26.6	Horiz
	Ave		-6.3						Y axis		
^	433.955M	99.0	-27.8	+0.4	+3.8	+21.9	+0.0	97.3	80.5	+16.8	Horiz
			+0.0						Z axis		
^	433.959M	97.8	-27.8	+0.4	+3.8	+21.9	+0.0	96.1	80.5	+15.6	Horiz
			+0.0						X axis		
^	433.955M	78.7	-27.8	+0.4	+3.8	+21.9	+0.0	77.0	80.5	-3.5	Horiz
			+0.0						Y axis		

CKC Laboratories, Inc. Date: 10/23/2013 Time: 10:28:49 McKinley-Ross Corp. WO#: 94389
15.231(b) Fundamental Field Strength Test Distance: 3 Meters Sequence#: 3 Ext ATTN: 0 dB



Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • 714 993 6112

Customer: **McKinley-Ross Corp.**
Specification: **15.231(b) Spurious Field Strength (433.92 MHz Transmitter)**
Work Order #: **94389** Date: 10/23/2013
Test Type: **Maximized Emissions** Time: 14:01:28
Equipment: **Water switch transmitter** Sequence#: 4
Manufacturer: McKinley-Ross Corp. Tested By: Don Nguyen
Model: WMS500
S/N: NA

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN00309	Preamp	8447D	3/29/2012	3/29/2014
T2	ANP05050	Cable	RG223/U	1/21/2013	1/21/2015
T3	ANP05198	Cable-Amplitude 15 to 45degC (dB)	8268	12/11/2012	12/11/2014
	ANP05198	Cable-Amplitude -15 to 15degC	8268	12/11/2012	12/11/2014
T4	AN00266A	Dipole Antenna	Type I-IV	8/31/2012	8/31/2014
T5	AN02869	Spectrum Analyzer	E4440A	2/6/2013	2/6/2015
T6	AN00786	Preamp	83017A	6/20/2012	6/20/2014
T7	AN00849	Horn Antenna	3115	4/13/2012	4/13/2014
T8	AN02946	Cable	32022-2-2909K-36TC	7/31/2013	7/31/2015
T9	ANP05421	Cable	Sucoflex 104A	2/8/2012	2/8/2014
T10	ANP05988	Cable	LDF1-50	3/12/2012	3/12/2014
T11	AN03169	High Pass Filter	HM1155-11SS	7/30/2013	7/30/2015
T12	AN01234	Duty Cycle Correction Factor		10/23/2013	10/23/2015
	AN00314	Loop Antenna	6502	6/29/2012	6/29/2014

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

Function	Manufacturer	Model #	S/N
Water switch transmitter*	McKinley-Ross Corp.	WMS500	NA

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

The EUT is placed on the wooden table lined with Styrofoam of 10 cm thickness. EUT is set to always transmitting mode.
EUT is installed with new 9V battery.

Fundamental operating frequency: 433.92MHz

Frequency Range: 9KHz-4.7GHz
9 kHz -150 kHz; RBW=200 Hz, VBW=200 Hz;
150 kHz-30 MHz; RBW=9 kHz, VBW=9 kHz;
30 MHz-1000 MHz; RBW=120 kHz, VBW=120 kHz,
1000 MHz-47000MHz; RBW=1 MHz, VBW=1 MHz.

Temp: 18°C, 57% Relative Humidity, 100.1kpa
Site A
Emission is investigated with EUT rotating in three axes.
Duty cycle correction factor = 20log(dwell time/100 ms)= 20log(48.33/100)=-6.32db

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 T12	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	3905.570M	58.2	+0.0	+0.0	+0.0	+0.0	+0.0	53.8	54.0	-0.2	Horiz
	Ave		+0.0	-38.0	+31.7	+1.0			Z axis		
			+1.6	+5.3	+0.3	-6.3					
2	3905.620M	58.1	+0.0	+0.0	+0.0	+0.0	+0.0	53.7	54.0	-0.3	Vert
	Ave		+0.0	-38.0	+31.7	+1.0			Z axis		
			+1.6	+5.3	+0.3	-6.3					
3	3905.550M	57.9	+0.0	+0.0	+0.0	+0.0	+0.0	53.5	54.0	-0.5	Horiz
	Ave		+0.0	-38.0	+31.7	+1.0			Y axis		
			+1.6	+5.3	+0.3	-6.3					
4	3905.620M	56.3	+0.0	+0.0	+0.0	+0.0	+0.0	51.9	54.0	-2.1	Horiz
	Ave		+0.0	-38.0	+31.7	+1.0			X axis		
			+1.6	+5.3	+0.3	-6.3					
^	3905.550M	69.2	+0.0	+0.0	+0.0	+0.0	+0.0	71.1	54.0	+17.1	Horiz
			+0.0	-38.0	+31.7	+1.0			Z axis		
			+1.6	+5.3	+0.3	+0.0					
^	3905.550M	68.7	+0.0	+0.0	+0.0	+0.0	+0.0	70.6	54.0	+16.6	Horiz
			+0.0	-38.0	+31.7	+1.0			Y axis		
			+1.6	+5.3	+0.3	+0.0					
^	3905.620M	67.2	+0.0	+0.0	+0.0	+0.0	+0.0	69.1	54.0	+15.1	Horiz
			+0.0	-38.0	+31.7	+1.0			X axis		
			+1.6	+5.3	+0.3	+0.0					
8	3905.680M	56.1	+0.0	+0.0	+0.0	+0.0	+0.0	51.7	54.0	-2.3	Vert
	Ave		+0.0	-38.0	+31.7	+1.0			X axis		
			+1.6	+5.3	+0.3	-6.3					
9	2169.740M	61.8	+0.0	+0.0	+0.0	+0.0	+0.0	57.3	60.8	-3.5	Vert
			+0.0	-38.4	+27.9	+0.7			Z axis		
			+1.3	+3.8	+0.2	+0.0					

10	867.917M	56.6	-27.2	+0.7	+5.7	+27.8	+0.0	57.3	60.8	-3.5	Horiz
	Ave		+0.0	+0.0	+0.0	+0.0			X axis		
			+0.0	+0.0	+0.0	-6.3					
11	867.913M	56.4	-27.2	+0.7	+5.7	+27.8	+0.0	57.1	60.8	-3.7	Horiz
	Ave		+0.0	+0.0	+0.0	+0.0			Z axis		
			+0.0	+0.0	+0.0	-6.3					
12	3905.600M	54.5	+0.0	+0.0	+0.0	+0.0	+0.0	50.1	54.0	-3.9	Vert
	Ave		+0.0	-38.0	+31.7	+1.0			Y axis		
			+1.6	+5.3	+0.3	-6.3					
^	3905.620M	69.1	+0.0	+0.0	+0.0	+0.0	+0.0	71.0	54.0	+17.0	Vert
			+0.0	-38.0	+31.7	+1.0			Z axis		
			+1.6	+5.3	+0.3	+0.0					
^	3905.680M	66.2	+0.0	+0.0	+0.0	+0.0	+0.0	68.1	54.0	+14.1	Vert
			+0.0	-38.0	+31.7	+1.0			X axis		
			+1.6	+5.3	+0.3	+0.0					
^	3905.600M	64.6	+0.0	+0.0	+0.0	+0.0	+0.0	66.5	54.0	+12.5	Vert
			+0.0	-38.0	+31.7	+1.0			Y axis		
			+1.6	+5.3	+0.3	+0.0					
16	1735.862M	68.5	+0.0	+0.0	+0.0	+0.0	+0.0	56.0	60.8	-4.8	Vert
	Ave		+0.0	-38.5	+27.1	+0.4			X axis		
			+1.1	+3.4	+0.3	-6.3					
17	3471.630M	59.8	+0.0	+0.0	+0.0	+0.0	+0.0	55.3	60.8	-5.5	Horiz
	Ave		+0.0	-38.4	+32.6	+1.0			Z axis		
			+1.5	+4.9	+0.2	-6.3					
18	3471.520M	59.7	+0.0	+0.0	+0.0	+0.0	+0.0	55.2	60.8	-5.6	Vert
	Ave		+0.0	-38.4	+32.6	+1.0			Z axis		
			+1.5	+4.9	+0.2	-6.3					
^	3471.520M	71.3	+0.0	+0.0	+0.0	+0.0	+0.0	73.1	60.8	+12.3	Vert
			+0.0	-38.4	+32.6	+1.0			Z axis		
			+1.5	+4.9	+0.2	+0.0					
20	867.917M	54.3	-27.2	+0.7	+5.7	+27.8	+0.0	55.0	60.8	-5.8	Vert
	Ave		+0.0	+0.0	+0.0	+0.0			Y axis		
			+0.0	+0.0	+0.0	-6.3					
21	4339.590M	46.3	+0.0	+0.0	+0.0	+0.0	+0.0	47.9	54.0	-6.1	Horiz
			+0.0	-37.9	+31.2	+0.9			Y axis		
			+1.7	+5.5	+0.2	+0.0					
22	1735.840M	66.8	+0.0	+0.0	+0.0	+0.0	+0.0	54.3	60.8	-6.5	Horiz
	Ave		+0.0	-38.5	+27.1	+0.4			Y axis		
			+1.1	+3.4	+0.3	-6.3					
23	4339.620M	44.8	+0.0	+0.0	+0.0	+0.0	+0.0	46.4	54.0	-7.6	Horiz
			+0.0	-37.9	+31.2	+0.9			X axis		
			+1.7	+5.5	+0.2	+0.0					
24	1735.790M	65.7	+0.0	+0.0	+0.0	+0.0	+0.0	53.2	60.8	-7.6	Horiz
	Ave		+0.0	-38.5	+27.1	+0.4			Z axis		
			+1.1	+3.4	+0.3	-6.3					
25	3471.600M	57.5	+0.0	+0.0	+0.0	+0.0	+0.0	53.0	60.8	-7.8	Horiz
	Ave		+0.0	-38.4	+32.6	+1.0			Y axis		
			+1.5	+4.9	+0.2	-6.3					
26	867.917M	51.9	-27.2	+0.7	+5.7	+27.8	+0.0	52.6	60.8	-8.2	Vert
	Ave		+0.0	+0.0	+0.0	+0.0			X axis		
			+0.0	+0.0	+0.0	-6.3					

27	2169.860M	56.6	+0.0	+0.0	+0.0	+0.0	+0.0	52.1	60.8	-8.7	Vert
			+0.0	-38.4	+27.9	+0.7			X axis		
			+1.3	+3.8	+0.2	+0.0					
28	4339.580M	43.4	+0.0	+0.0	+0.0	+0.0	+0.0	45.0	54.0	-9.0	Horiz
			+0.0	-37.9	+31.2	+0.9			Z axis		
			+1.7	+5.5	+0.2	+0.0					
29	1735.850M	63.9	+0.0	+0.0	+0.0	+0.0	+0.0	51.4	60.8	-9.4	Vert
	Ave		+0.0	-38.5	+27.1	+0.4			Y axis		
			+1.1	+3.4	+0.3	-6.3					
30	867.909M	49.9	-27.2	+0.7	+5.7	+27.8	+0.0	50.6	60.8	-10.2	Vert
	Ave		+0.0	+0.0	+0.0	+0.0			Z axis		
			+0.0	+0.0	+0.0	-6.3					
^	867.917M	68.0	-27.2	+0.7	+5.7	+27.8	+0.0	75.0	60.8	+14.2	Vert
			+0.0	+0.0	+0.0	+0.0			Y axis		
			+0.0	+0.0	+0.0	+0.0					
^	867.917M	62.2	-27.2	+0.7	+5.7	+27.8	+0.0	69.2	60.8	+8.4	Vert
			+0.0	+0.0	+0.0	+0.0			X axis		
			+0.0	+0.0	+0.0	+0.0					
^	867.909M	59.6	-27.2	+0.7	+5.7	+27.8	+0.0	66.6	60.8	+5.8	Vert
			+0.0	+0.0	+0.0	+0.0			Z axis		
			+0.0	+0.0	+0.0	+0.0					
34	1735.830M	62.8	+0.0	+0.0	+0.0	+0.0	+0.0	50.3	60.8	-10.5	Horiz
	Ave		+0.0	-38.5	+27.1	+0.4			X axis		
			+1.1	+3.4	+0.3	-6.3					
^	1735.840M	79.5	+0.0	+0.0	+0.0	+0.0	+0.0	73.3	60.8	+12.5	Horiz
			+0.0	-38.5	+27.1	+0.4			Y axis		
			+1.1	+3.4	+0.3	+0.0					
^	1735.790M	78.2	+0.0	+0.0	+0.0	+0.0	+0.0	72.0	60.8	+11.2	Horiz
			+0.0	-38.5	+27.1	+0.4			Z axis		
			+1.1	+3.4	+0.3	+0.0					
^	1735.830M	74.2	+0.0	+0.0	+0.0	+0.0	+0.0	68.0	60.8	+7.2	Horiz
			+0.0	-38.5	+27.1	+0.4			X axis		
			+1.1	+3.4	+0.3	+0.0					
38	3037.690M	59.0	+0.0	+0.0	+0.0	+0.0	+0.0	50.2	60.8	-10.6	Vert
	Ave		+0.0	-38.6	+29.0	+0.9			Z axis		
			+1.5	+4.5	+0.2	-6.3					
39	2169.870M	54.6	+0.0	+0.0	+0.0	+0.0	+0.0	50.1	60.8	-10.7	Horiz
			+0.0	-38.4	+27.9	+0.7			X axis		
			+1.3	+3.8	+0.2	+0.0					
40	867.917M	49.3	-27.2	+0.7	+5.7	+27.8	+0.0	50.0	60.8	-10.8	Horiz
	Ave		+0.0	+0.0	+0.0	+0.0			Y axis		
			+0.0	+0.0	+0.0	-6.3					
^	867.917M	71.5	-27.2	+0.7	+5.7	+27.8	+0.0	78.5	60.8	+17.7	Horiz
			+0.0	+0.0	+0.0	+0.0			X axis		
			+0.0	+0.0	+0.0	+0.0					
^	867.913M	70.2	-27.2	+0.7	+5.7	+27.8	+0.0	77.2	60.8	+16.4	Horiz
			+0.0	+0.0	+0.0	+0.0			Z axis		
			+0.0	+0.0	+0.0	+0.0					
^	867.917M	60.6	-27.2	+0.7	+5.7	+27.8	+0.0	67.6	60.8	+6.8	Horiz
			+0.0	+0.0	+0.0	+0.0			Y axis		
			+0.0	+0.0	+0.0	+0.0					

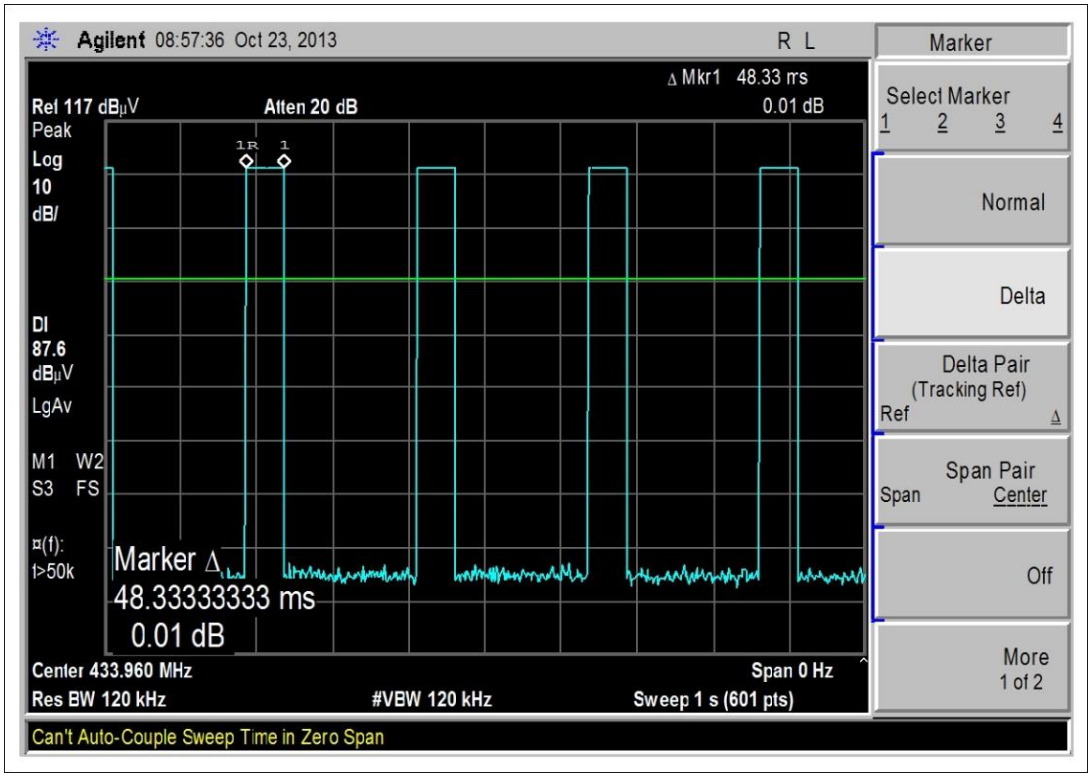
44	3471.650M	54.4	+0.0	+0.0	+0.0	+0.0	+0.0	49.9	60.8	-10.9	Vert
	Ave		+0.0	-38.4	+32.6	+1.0			Y axis		
			+1.5	+4.9	+0.2	-6.3					
45	2169.790M	54.4	+0.0	+0.0	+0.0	+0.0	+0.0	49.9	60.8	-10.9	Vert
			+0.0	-38.4	+27.9	+0.7			Y axis		
			+1.3	+3.8	+0.2	+0.0					
46	3471.650M	54.3	+0.0	+0.0	+0.0	+0.0	+0.0	49.8	60.8	-11.0	Horiz
	Ave		+0.0	-38.4	+32.6	+1.0			X axis		
			+1.5	+4.9	+0.2	-6.3					
^	3471.630M	72.0	+0.0	+0.0	+0.0	+0.0	+0.0	73.8	60.8	+13.0	Horiz
			+0.0	-38.4	+32.6	+1.0			Z axis		
			+1.5	+4.9	+0.2	+0.0					
^	3471.600M	68.1	+0.0	+0.0	+0.0	+0.0	+0.0	69.9	60.8	+9.1	Horiz
			+0.0	-38.4	+32.6	+1.0			Y axis		
			+1.5	+4.9	+0.2	+0.0					
^	3471.650M	63.9	+0.0	+0.0	+0.0	+0.0	+0.0	65.7	60.8	+4.9	Horiz
			+0.0	-38.4	+32.6	+1.0			X axis		
			+1.5	+4.9	+0.2	+0.0					
50	3037.700M	58.4	+0.0	+0.0	+0.0	+0.0	+0.0	49.6	60.8	-11.2	Horiz
	Ave		+0.0	-38.6	+29.0	+0.9			Z axis		
			+1.5	+4.5	+0.2	-6.3					
51	1735.890M	61.9	+0.0	+0.0	+0.0	+0.0	+0.0	49.4	60.8	-11.4	Vert
	Ave		+0.0	-38.5	+27.1	+0.4			Z axis		
			+1.1	+3.4	+0.3	-6.3					
^	1735.862M	81.5	+0.0	+0.0	+0.0	+0.0	+0.0	75.3	60.8	+14.5	Vert
			+0.0	-38.5	+27.1	+0.4			X axis		
			+1.1	+3.4	+0.3	+0.0					
^	1735.850M	77.1	+0.0	+0.0	+0.0	+0.0	+0.0	70.9	60.8	+10.1	Vert
			+0.0	-38.5	+27.1	+0.4			Y axis		
			+1.1	+3.4	+0.3	+0.0					
^	1735.890M	73.5	+0.0	+0.0	+0.0	+0.0	+0.0	67.3	60.8	+6.5	Vert
			+0.0	-38.5	+27.1	+0.4			Z axis		
			+1.1	+3.4	+0.3	+0.0					
55	1301.900M	58.3	+0.0	+0.0	+0.0	+0.0	+0.0	42.2	54.0	-11.8	Horiz
	Ave		+0.0	-39.2	+24.4	+0.5			X axis		
			+1.0	+2.9	+0.6	-6.3					
56	3471.680M	53.3	+0.0	+0.0	+0.0	+0.0	+0.0	48.8	60.8	-12.0	Vert
	Ave		+0.0	-38.4	+32.6	+1.0			X axis		
			+1.5	+4.9	+0.2	-6.3					
^	3471.650M	64.0	+0.0	+0.0	+0.0	+0.0	+0.0	65.8	60.8	+5.0	Vert
			+0.0	-38.4	+32.6	+1.0			Y axis		
			+1.5	+4.9	+0.2	+0.0					
^	3471.680M	62.5	+0.0	+0.0	+0.0	+0.0	+0.0	64.3	60.8	+3.5	Vert
			+0.0	-38.4	+32.6	+1.0			X axis		
			+1.5	+4.9	+0.2	+0.0					
59	2603.750M	59.4	+0.0	+0.0	+0.0	+0.0	+0.0	48.5	60.8	-12.3	Horiz
	Ave		+0.0	-38.4	+27.2	+0.8			Z axis		
			+1.4	+4.2	+0.2	-6.3					
60	1301.870M	56.4	+0.0	+0.0	+0.0	+0.0	+0.0	40.3	54.0	-13.7	Horiz
	Ave		+0.0	-39.2	+24.4	+0.5			Y axis		
			+1.0	+2.9	+0.6	-6.3					

^	1301.900M	67.8	+0.0	+0.0	+0.0	+0.0	+0.0	58.0	54.0	+4.0	Horiz	
			+0.0	-39.2	+24.4	+0.5			X axis			
			+1.0	+2.9	+0.6	+0.0						
^	1301.870M	65.1	+0.0	+0.0	+0.0	+0.0	+0.0	55.3	54.0	+1.3	Horiz	
			+0.0	-39.2	+24.4	+0.5			Y axis			
			+1.0	+2.9	+0.6	+0.0						
^	1301.790M	59.2	+0.0	+0.0	+0.0	+0.0	+0.0	49.4	54.0	-4.6	Horiz	
			+0.0	-39.2	+24.4	+0.5			Z axis			
			+1.0	+2.9	+0.6	+0.0						
64	3037.740M	55.9	+0.0	+0.0	+0.0	+0.0	+0.0	47.1	60.8	-13.7	Horiz	
	Ave		+0.0	-38.6	+29.0	+0.9			Y axis			
			+1.5	+4.5	+0.2	-6.3						
65	3037.710M	55.8	+0.0	+0.0	+0.0	+0.0	+0.0	47.0	60.8	-13.8	Vert	
	Ave		+0.0	-38.6	+29.0	+0.9			X axis			
			+1.5	+4.5	+0.2	-6.3						
66	1301.850M	56.0	+0.0	+0.0	+0.0	+0.0	+0.0	39.9	54.0	-14.1	Vert	
	Ave		+0.0	-39.2	+24.4	+0.5			Y axis			
			+1.0	+2.9	+0.6	-6.3						
67	2603.770M	57.4	+0.0	+0.0	+0.0	+0.0	+0.0	46.5	60.8	-14.3	Horiz	
	Ave		+0.0	-38.4	+27.2	+0.8			X axis			
			+1.4	+4.2	+0.2	-6.3						
68	1301.860M	55.6	+0.0	+0.0	+0.0	+0.0	+0.0	39.5	54.0	-14.5	Vert	
	Ave		+0.0	-39.2	+24.4	+0.5			X axis			
			+1.0	+2.9	+0.6	-6.3						
^	1301.850M	64.9	+0.0	+0.0	+0.0	+0.0	+0.0	55.1	54.0	+1.1	Vert	
			+0.0	-39.2	+24.4	+0.5			Y axis			
			+1.0	+2.9	+0.6	+0.0						
^	1301.860M	64.9	+0.0	+0.0	+0.0	+0.0	+0.0	55.1	54.0	+1.1	Vert	
			+0.0	-39.2	+24.4	+0.5			X axis			
			+1.0	+2.9	+0.6	+0.0						
^	1301.890M	60.7	+0.0	+0.0	+0.0	+0.0	+0.0	50.9	54.0	-3.1	Vert	
			+0.0	-39.2	+24.4	+0.5			Z axis			
			+1.0	+2.9	+0.6	+0.0						
72	3037.690M	54.9	+0.0	+0.0	+0.0	+0.0	+0.0	46.1	60.8	-14.7	Horiz	
	Ave		+0.0	-38.6	+29.0	+0.9			X axis			
			+1.5	+4.5	+0.2	-6.3						
^	3037.700M	70.7	+0.0	+0.0	+0.0	+0.0	+0.0	68.2	60.8	+7.4	Horiz	
			+0.0	-38.6	+29.0	+0.9			Z axis			
			+1.5	+4.5	+0.2	+0.0						
^	3037.740M	66.5	+0.0	+0.0	+0.0	+0.0	+0.0	64.0	60.8	+3.2	Horiz	
			+0.0	-38.6	+29.0	+0.9			Y axis			
			+1.5	+4.5	+0.2	+0.0						
^	3037.690M	65.1	+0.0	+0.0	+0.0	+0.0	+0.0	62.6	60.8	+1.8	Horiz	
			+0.0	-38.6	+29.0	+0.9			X axis			
			+1.5	+4.5	+0.2	+0.0						
76	3037.750M	54.5	+0.0	+0.0	+0.0	+0.0	+0.0	45.7	60.8	-15.1	Vert	
	Ave		+0.0	-38.6	+29.0	+0.9			Y axis			
			+1.5	+4.5	+0.2	-6.3						
^	3037.690M	71.5	+0.0	+0.0	+0.0	+0.0	+0.0	69.0	60.8	+8.2	Vert	
			+0.0	-38.6	+29.0	+0.9			Z axis			
			+1.5	+4.5	+0.2	+0.0						

^	3037.710M	66.9	+0.0	+0.0	+0.0	+0.0	+0.0	64.4	60.8	+3.6	Vert
			+0.0	-38.6	+29.0	+0.9			X axis		
			+1.5	+4.5	+0.2	+0.0					
^	3037.750M	64.7	+0.0	+0.0	+0.0	+0.0	+0.0	62.2	60.8	+1.4	Vert
			+0.0	-38.6	+29.0	+0.9			Y axis		
			+1.5	+4.5	+0.2	+0.0					
80	2603.700M	55.6	+0.0	+0.0	+0.0	+0.0	+0.0	44.7	60.8	-16.1	Horiz
	Ave		+0.0	-38.4	+27.2	+0.8			Y axis		
			+1.4	+4.2	+0.2	-6.3					
^	2603.750M	70.9	+0.0	+0.0	+0.0	+0.0	+0.0	66.3	60.8	+5.5	Horiz
			+0.0	-38.4	+27.2	+0.8			Z axis		
			+1.4	+4.2	+0.2	+0.0					
^	2603.770M	68.0	+0.0	+0.0	+0.0	+0.0	+0.0	63.4	60.8	+2.6	Horiz
			+0.0	-38.4	+27.2	+0.8			X axis		
			+1.4	+4.2	+0.2	+0.0					
^	2603.700M	65.1	+0.0	+0.0	+0.0	+0.0	+0.0	60.5	60.8	-0.3	Horiz
			+0.0	-38.4	+27.2	+0.8			Y axis		
			+1.4	+4.2	+0.2	+0.0					
84	2603.740M	55.3	+0.0	+0.0	+0.0	+0.0	+0.0	44.4	60.8	-16.4	Vert
	Ave		+0.0	-38.4	+27.2	+0.8			Z axis		
			+1.4	+4.2	+0.2	-6.3					
85	2169.760M	55.1	+0.0	+0.0	+0.0	+0.0	+0.0	44.3	60.8	-16.5	Horiz
	Ave		+0.0	-38.4	+27.9	+0.7			Z axis		
			+1.3	+3.8	+0.2	-6.3					
^	2169.760M	64.7	+0.0	+0.0	+0.0	+0.0	+0.0	60.2	60.8	-0.6	Horiz
			+0.0	-38.4	+27.9	+0.7			Z axis		
			+1.3	+3.8	+0.2	+0.0					
^	2169.800M	56.5	+0.0	+0.0	+0.0	+0.0	+0.0	52.0	60.8	-8.8	Horiz
			+0.0	-38.4	+27.9	+0.7			Y axis		
			+1.3	+3.8	+0.2	+0.0					
88	4339.630M	41.7	+0.0	+0.0	+0.0	+0.0	+0.0	37.0	54.0	-17.0	Vert
	Ave		+0.0	-37.9	+31.2	+0.9			X axis		
			+1.7	+5.5	+0.2	-6.3					
^	4339.630M	49.4	+0.0	+0.0	+0.0	+0.0	+0.0	51.0	54.0	-3.0	Vert
			+0.0	-37.9	+31.2	+0.9			X axis		
			+1.7	+5.5	+0.2	+0.0					
^	4339.540M	48.1	+0.0	+0.0	+0.0	+0.0	+0.0	49.7	54.0	-4.3	Vert
			+0.0	-37.9	+31.2	+0.9			Z axis		
			+1.7	+5.5	+0.2	+0.0					
^	4339.590M	40.2	+0.0	+0.0	+0.0	+0.0	+0.0	41.8	54.0	-12.2	Vert
			+0.0	-37.9	+31.2	+0.9			Y axis		
			+1.7	+5.5	+0.2	+0.0					
92	2603.790M	54.1	+0.0	+0.0	+0.0	+0.0	+0.0	43.2	60.8	-17.6	Vert
	Ave		+0.0	-38.4	+27.2	+0.8			Y axis		
			+1.4	+4.2	+0.2	-6.3					
93	2603.760M	53.9	+0.0	+0.0	+0.0	+0.0	+0.0	43.0	60.8	-17.8	Vert
	Ave		+0.0	-38.4	+27.2	+0.8			X axis		
			+1.4	+4.2	+0.2	-6.3					
^	2603.740M	65.5	+0.0	+0.0	+0.0	+0.0	+0.0	60.9	60.8	+0.1	Vert
			+0.0	-38.4	+27.2	+0.8			Z axis		
			+1.4	+4.2	+0.2	+0.0					

^	2603.790M	63.5	+0.0 +0.0 +1.4	+0.0 -38.4 +4.2	+0.0 +27.2 +0.2	+0.0 +0.8 +0.0	+0.0	58.9	60.8 Y axis	-1.9	Vert
^	2603.760M	63.4	+0.0 +0.0 +1.4	+0.0 -38.4 +4.2	+0.0 +27.2 +0.2	+0.0 +0.8 +0.0	+0.0	58.8	60.8 X axis	-2.0	Vert

Duty Cycle Test Plot



Test Setup Photos

Test Setup

X - Axis

Y - Axis

Z - Axis

RSS-210 A1.1.2 / Field Strength of Fundamental & Spurious Emissions

Test Data

Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • 714 993 6112

Customer: **McKinley-Ross Corp.**
Specification: **RSS 210 A1.1.2(1) Fundamental Field Strength**
Work Order #: **94389** Date: 10/23/2013
Test Type: **Maximized Emissions** Time: 10:28:49
Equipment: **Water switch transmitter** Sequence#: 3
Manufacturer: McKinley-Ross Corp. Tested By: Don Nguyen
Model: WMS500
S/N: NA

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN00309	Preamp	8447D	3/29/2012	3/29/2014
T2	ANP05050	Cable	RG223/U	1/21/2013	1/21/2015
T3	ANP05198	Cable-Amplitude 15 to 45degC (dB)	8268	12/11/2012	12/11/2014
	ANP05198	Cable-Amplitude -15 to 15degC	8268	12/11/2012	12/11/2014
	AN02869	Spectrum Analyzer	E4440A	2/6/2013	2/6/2015
T4	AN00266A	Dipole Antenna	Type I-IV	8/31/2012	8/31/2014
T5	AN01234	Duty Cycle Correction Factor		10/23/2013	10/23/2015

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

Function	Manufacturer	Model #	S/N
Water switch transmitter*	McKinley-Ross Corp.	WMS500	NA

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

The EUT is placed on the wooden table lined with Styrofoam of 10 cm thickness. EUT is set to always transmitting mode.
EUT is installed with new 9V battery.

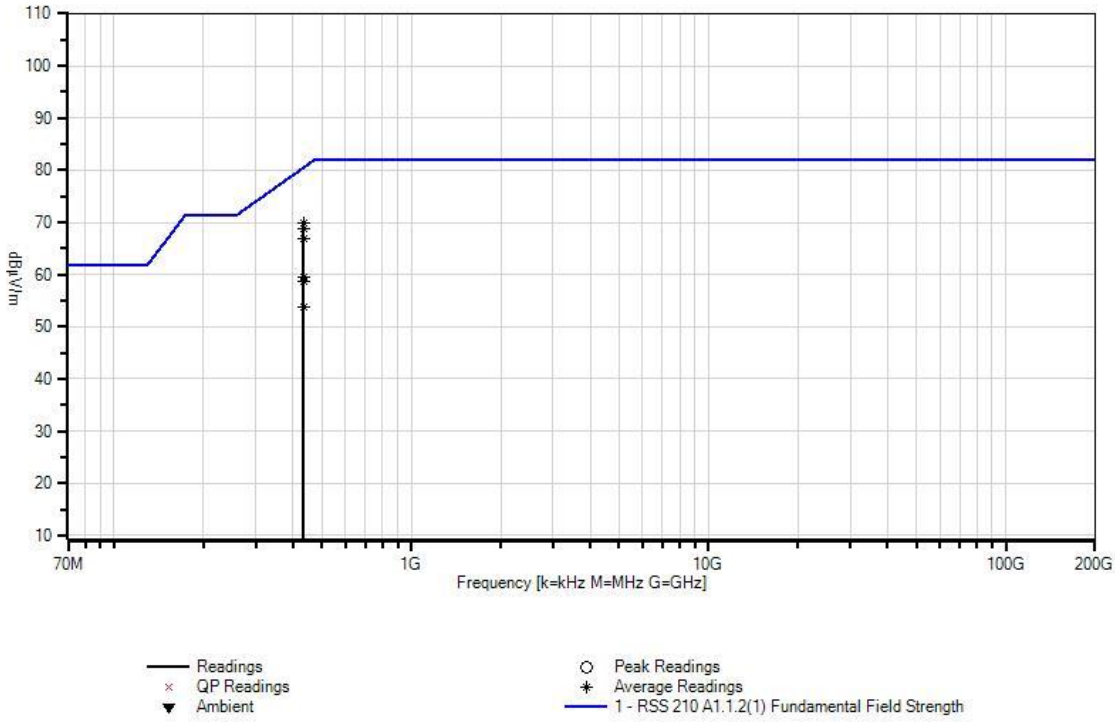
Fundamental operating frequency: 433.92MHz
RBW=VBW=120kHz
Temp: 18°C, 57% Relative Humidity, 100.1kpa
Site A
Emission is investigated with EUT rotating in three axes.
Duty cycle correction factor = 20log(dwell time/100 ms)= 20log(48.33/100)=-6.32db

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
			T5								
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	433.959M	77.9	-27.8	+0.4	+3.8	+21.9	+0.0	69.9	80.5	-10.6	Horiz
	Ave		-6.3						X axis		
2	433.955M	76.8	-27.8	+0.4	+3.8	+21.9	+0.0	68.8	80.5	-11.7	Horiz
	Ave		-6.3						Z axis		
3	433.955M	74.8	-27.8	+0.4	+3.8	+21.9	+0.0	66.8	80.5	-13.7	Vert
	Ave		-6.3						Y axis		
4	433.955M	67.5	-27.8	+0.4	+3.8	+21.9	+0.0	59.5	80.5	-21.0	Vert
	Ave		-6.3						X axis		
5	433.955M	66.6	-27.8	+0.4	+3.8	+21.9	+0.0	58.6	80.5	-21.9	Vert
	Ave		-6.3						Z axis		
^	433.955M	94.0	-27.8	+0.4	+3.8	+21.9	+0.0	92.3	80.5	+11.8	Vert
			+0.0						Y axis		
^	433.955M	85.2	-27.8	+0.4	+3.8	+21.9	+0.0	83.5	80.5	+3.0	Vert
			+0.0						X axis		
^	433.955M	84.5	-27.8	+0.4	+3.8	+21.9	+0.0	82.8	80.5	+2.3	Vert
			+0.0						Z axis		
9	433.955M	61.9	-27.8	+0.4	+3.8	+21.9	+0.0	53.9	80.5	-26.6	Horiz
	Ave		-6.3						Y axis		
^	433.955M	99.0	-27.8	+0.4	+3.8	+21.9	+0.0	97.3	80.5	+16.8	Horiz
			+0.0						Z axis		
^	433.959M	97.8	-27.8	+0.4	+3.8	+21.9	+0.0	96.1	80.5	+15.6	Horiz
			+0.0						X axis		
^	433.955M	78.7	-27.8	+0.4	+3.8	+21.9	+0.0	77.0	80.5	-3.5	Horiz
			+0.0						Y axis		

CKC Laboratories, Inc. Date: 10/23/2013 Time: 10:28:49 McKinley-Ross Corp. WO#: 94389
RSS 210 A1.1.2(1) Fundamental Field Strength Test Distance: 3 Meters Sequence#: 3 Ext ATTN: 0 dB



Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • 714 993 6112

Customer: **McKinley-Ross Corp.**
Specification: **RSS 210 A.1.1 Table A Spurious Field Strength (433.92 MHz Transmitter)**
Work Order #: **94389** Date: 10/23/2013
Test Type: **Maximized Emissions** Time: 14:01:28
Equipment: **Water switch transmitter** Sequence#: 4
Manufacturer: McKinley-Ross Corp. Tested By: Don Nguyen
Model: WMS500
S/N: NA

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN00309	Preamp	8447D	3/29/2012	3/29/2014
T2	ANP05050	Cable	RG223/U	1/21/2013	1/21/2015
T3	ANP05198	Cable-Amplitude 15 to 45degC (dB)	8268	12/11/2012	12/11/2014
	ANP05198	Cable-Amplitude -15 to 15degC	8268	12/11/2012	12/11/2014
T4	AN00266A	Dipole Antenna	Type I-IV	8/31/2012	8/31/2014
T5	AN02869	Spectrum Analyzer	E4440A	2/6/2013	2/6/2015
T6	AN00786	Preamp	83017A	6/20/2012	6/20/2014
T7	AN00849	Horn Antenna	3115	4/13/2012	4/13/2014
T8	AN02946	Cable	32022-2-2909K-36TC	7/31/2013	7/31/2015
T9	ANP05421	Cable	Sucoflex 104A	2/8/2012	2/8/2014
T10	ANP05988	Cable	LDF1-50	3/12/2012	3/12/2014
T11	AN03169	High Pass Filter	HM1155-11SS	7/30/2013	7/30/2015
T12	AN01234	Duty Cycle Correction Factor		10/23/2013	10/23/2015
	AN00314	Loop Antenna	6502	6/29/2012	6/29/2014

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

Function	Manufacturer	Model #	S/N
Water switch transmitter*	McKinley-Ross Corp.	WMS500	NA

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

The EUT is placed on the wooden table lined with Styrofoam of 10 cm thickness. EUT is set to always transmitting mode.
EUT is installed with new 9V battery.

Fundamental operating frequency: 433.92MHz

Frequency Range: 9KHz-4.7GHz
9 kHz -150 kHz; RBW=200 Hz, VBW=200 Hz;
150 kHz-30 MHz; RBW=9 kHz, VBW=9 kHz;
30 MHz-1000 MHz; RBW=120 kHz, VBW=120 kHz,
1000 MHz-47000 MHz; RBW=1 MHz, VBW=1 MHz.

Temp: 18°C, 57% Relative Humidity, 100.1kpa
Site A

Emission is investigated with EUT rotating in three axes.

Duty cycle correction factor = 20log(dwell time/100 ms)= 20log(48.33/100)=-6.32db

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 T12	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	3905.570M	58.2	+0.0	+0.0	+0.0	+0.0	+0.0	53.8	54.0	-0.2	Horiz
	Ave		+0.0	-38.0	+31.7	+1.0			Z axis		
			+1.6	+5.3	+0.3	-6.3					
2	3905.620M	58.1	+0.0	+0.0	+0.0	+0.0	+0.0	53.7	54.0	-0.3	Vert
	Ave		+0.0	-38.0	+31.7	+1.0			Z axis		
			+1.6	+5.3	+0.3	-6.3					
3	3905.550M	57.9	+0.0	+0.0	+0.0	+0.0	+0.0	53.5	54.0	-0.5	Horiz
	Ave		+0.0	-38.0	+31.7	+1.0			Y axis		
			+1.6	+5.3	+0.3	-6.3					
4	3905.620M	56.3	+0.0	+0.0	+0.0	+0.0	+0.0	51.9	54.0	-2.1	Horiz
	Ave		+0.0	-38.0	+31.7	+1.0			X axis		
			+1.6	+5.3	+0.3	-6.3					
^	3905.550M	69.2	+0.0	+0.0	+0.0	+0.0	+0.0	71.1	54.0	+17.1	Horiz
			+0.0	-38.0	+31.7	+1.0			Z axis		
			+1.6	+5.3	+0.3	+0.0					
^	3905.550M	68.7	+0.0	+0.0	+0.0	+0.0	+0.0	70.6	54.0	+16.6	Horiz
			+0.0	-38.0	+31.7	+1.0			Y axis		
			+1.6	+5.3	+0.3	+0.0					
^	3905.620M	67.2	+0.0	+0.0	+0.0	+0.0	+0.0	69.1	54.0	+15.1	Horiz
			+0.0	-38.0	+31.7	+1.0			X axis		
			+1.6	+5.3	+0.3	+0.0					
8	3905.680M	56.1	+0.0	+0.0	+0.0	+0.0	+0.0	51.7	54.0	-2.3	Vert
	Ave		+0.0	-38.0	+31.7	+1.0			X axis		
			+1.6	+5.3	+0.3	-6.3					
9	867.917M	56.6	-27.2	+0.7	+5.7	+27.8	+0.0	57.3	60.8	-3.5	Horiz
	Ave		+0.0	+0.0	+0.0	+0.0			X axis		
			+0.0	+0.0	+0.0	-6.3					

10	2169.740M	61.8	+0.0	+0.0	+0.0	+0.0	+0.0	57.3	60.8	-3.5	Vert
			+0.0	-38.4	+27.9	+0.7			Z axis		
			+1.3	+3.8	+0.2	+0.0					
11	867.913M	56.4	-27.2	+0.7	+5.7	+27.8	+0.0	57.1	60.8	-3.7	Horiz
	Ave		+0.0	+0.0	+0.0	+0.0			Z axis		
			+0.0	+0.0	+0.0	-6.3					
12	3905.600M	54.5	+0.0	+0.0	+0.0	+0.0	+0.0	50.1	54.0	-3.9	Vert
	Ave		+0.0	-38.0	+31.7	+1.0			Y axis		
			+1.6	+5.3	+0.3	-6.3					
^	3905.620M	69.1	+0.0	+0.0	+0.0	+0.0	+0.0	71.0	54.0	+17.0	Vert
			+0.0	-38.0	+31.7	+1.0			Z axis		
			+1.6	+5.3	+0.3	+0.0					
^	3905.680M	66.2	+0.0	+0.0	+0.0	+0.0	+0.0	68.1	54.0	+14.1	Vert
			+0.0	-38.0	+31.7	+1.0			X axis		
			+1.6	+5.3	+0.3	+0.0					
^	3905.600M	64.6	+0.0	+0.0	+0.0	+0.0	+0.0	66.5	54.0	+12.5	Vert
			+0.0	-38.0	+31.7	+1.0			Y axis		
			+1.6	+5.3	+0.3	+0.0					
16	1735.862M	68.5	+0.0	+0.0	+0.0	+0.0	+0.0	56.0	60.8	-4.8	Vert
	Ave		+0.0	-38.5	+27.1	+0.4			X axis		
			+1.1	+3.4	+0.3	-6.3					
17	3471.630M	59.8	+0.0	+0.0	+0.0	+0.0	+0.0	55.3	60.8	-5.5	Horiz
	Ave		+0.0	-38.4	+32.6	+1.0			Z axis		
			+1.5	+4.9	+0.2	-6.3					
18	3471.520M	59.7	+0.0	+0.0	+0.0	+0.0	+0.0	55.2	60.8	-5.6	Vert
	Ave		+0.0	-38.4	+32.6	+1.0			Z axis		
			+1.5	+4.9	+0.2	-6.3					
^	3471.520M	71.3	+0.0	+0.0	+0.0	+0.0	+0.0	73.1	60.8	+12.3	Vert
			+0.0	-38.4	+32.6	+1.0			Z axis		
			+1.5	+4.9	+0.2	+0.0					
20	867.917M	54.3	-27.2	+0.7	+5.7	+27.8	+0.0	55.0	60.8	-5.8	Vert
	Ave		+0.0	+0.0	+0.0	+0.0			Y axis		
			+0.0	+0.0	+0.0	-6.3					
21	4339.590M	46.3	+0.0	+0.0	+0.0	+0.0	+0.0	47.9	54.0	-6.1	Horiz
			+0.0	-37.9	+31.2	+0.9			Y axis		
			+1.7	+5.5	+0.2	+0.0					
22	1735.840M	66.8	+0.0	+0.0	+0.0	+0.0	+0.0	54.3	60.8	-6.5	Horiz
	Ave		+0.0	-38.5	+27.1	+0.4			Y axis		
			+1.1	+3.4	+0.3	-6.3					
23	1735.790M	65.7	+0.0	+0.0	+0.0	+0.0	+0.0	53.2	60.8	-7.6	Horiz
	Ave		+0.0	-38.5	+27.1	+0.4			Z axis		
			+1.1	+3.4	+0.3	-6.3					
24	4339.620M	44.8	+0.0	+0.0	+0.0	+0.0	+0.0	46.4	54.0	-7.6	Horiz
			+0.0	-37.9	+31.2	+0.9			X axis		
			+1.7	+5.5	+0.2	+0.0					
25	3471.600M	57.5	+0.0	+0.0	+0.0	+0.0	+0.0	53.0	60.8	-7.8	Horiz
	Ave		+0.0	-38.4	+32.6	+1.0			Y axis		
			+1.5	+4.9	+0.2	-6.3					
26	867.917M	51.9	-27.2	+0.7	+5.7	+27.8	+0.0	52.6	60.8	-8.2	Vert
	Ave		+0.0	+0.0	+0.0	+0.0			X axis		
			+0.0	+0.0	+0.0	-6.3					

27	2169.860M	56.6	+0.0	+0.0	+0.0	+0.0	+0.0	52.1	60.8	-8.7	Vert
			+0.0	-38.4	+27.9	+0.7			X axis		
			+1.3	+3.8	+0.2	+0.0					
28	4339.580M	43.4	+0.0	+0.0	+0.0	+0.0	+0.0	45.0	54.0	-9.0	Horiz
			+0.0	-37.9	+31.2	+0.9			Z axis		
			+1.7	+5.5	+0.2	+0.0					
29	1735.850M	63.9	+0.0	+0.0	+0.0	+0.0	+0.0	51.4	60.8	-9.4	Vert
	Ave		+0.0	-38.5	+27.1	+0.4			Y axis		
			+1.1	+3.4	+0.3	-6.3					
30	867.909M	49.9	-27.2	+0.7	+5.7	+27.8	+0.0	50.6	60.8	-10.2	Vert
	Ave		+0.0	+0.0	+0.0	+0.0			Z axis		
			+0.0	+0.0	+0.0	-6.3					
^	867.917M	68.0	-27.2	+0.7	+5.7	+27.8	+0.0	75.0	60.8	+14.2	Vert
			+0.0	+0.0	+0.0	+0.0			Y axis		
			+0.0	+0.0	+0.0	+0.0					
^	867.917M	62.2	-27.2	+0.7	+5.7	+27.8	+0.0	69.2	60.8	+8.4	Vert
			+0.0	+0.0	+0.0	+0.0			X axis		
			+0.0	+0.0	+0.0	+0.0					
^	867.909M	59.6	-27.2	+0.7	+5.7	+27.8	+0.0	66.6	60.8	+5.8	Vert
			+0.0	+0.0	+0.0	+0.0			Z axis		
			+0.0	+0.0	+0.0	+0.0					
34	1735.830M	62.8	+0.0	+0.0	+0.0	+0.0	+0.0	50.3	60.8	-10.5	Horiz
	Ave		+0.0	-38.5	+27.1	+0.4			X axis		
			+1.1	+3.4	+0.3	-6.3					
^	1735.840M	79.5	+0.0	+0.0	+0.0	+0.0	+0.0	73.3	60.8	+12.5	Horiz
			+0.0	-38.5	+27.1	+0.4			Y axis		
			+1.1	+3.4	+0.3	+0.0					
^	1735.790M	78.2	+0.0	+0.0	+0.0	+0.0	+0.0	72.0	60.8	+11.2	Horiz
			+0.0	-38.5	+27.1	+0.4			Z axis		
			+1.1	+3.4	+0.3	+0.0					
^	1735.830M	74.2	+0.0	+0.0	+0.0	+0.0	+0.0	68.0	60.8	+7.2	Horiz
			+0.0	-38.5	+27.1	+0.4			X axis		
			+1.1	+3.4	+0.3	+0.0					
38	3037.690M	59.0	+0.0	+0.0	+0.0	+0.0	+0.0	50.2	60.8	-10.6	Vert
	Ave		+0.0	-38.6	+29.0	+0.9			Z axis		
			+1.5	+4.5	+0.2	-6.3					
39	2169.870M	54.6	+0.0	+0.0	+0.0	+0.0	+0.0	50.1	60.8	-10.7	Horiz
			+0.0	-38.4	+27.9	+0.7			X axis		
			+1.3	+3.8	+0.2	+0.0					
40	867.917M	49.3	-27.2	+0.7	+5.7	+27.8	+0.0	50.0	60.8	-10.8	Horiz
	Ave		+0.0	+0.0	+0.0	+0.0			Y axis		
			+0.0	+0.0	+0.0	-6.3					
^	867.917M	71.5	-27.2	+0.7	+5.7	+27.8	+0.0	78.5	60.8	+17.7	Horiz
			+0.0	+0.0	+0.0	+0.0			X axis		
			+0.0	+0.0	+0.0	+0.0					
^	867.913M	70.2	-27.2	+0.7	+5.7	+27.8	+0.0	77.2	60.8	+16.4	Horiz
			+0.0	+0.0	+0.0	+0.0			Z axis		
			+0.0	+0.0	+0.0	+0.0					
^	867.917M	60.6	-27.2	+0.7	+5.7	+27.8	+0.0	67.6	60.8	+6.8	Horiz
			+0.0	+0.0	+0.0	+0.0			Y axis		
			+0.0	+0.0	+0.0	+0.0					

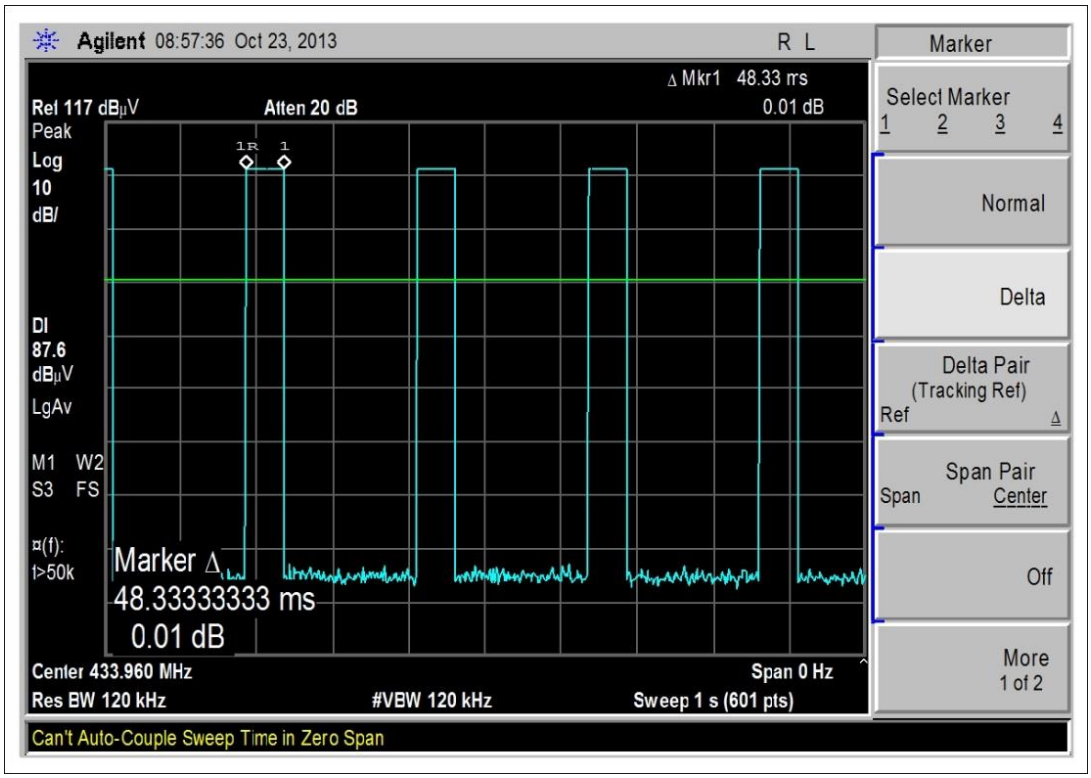
44	3471.650M	54.4	+0.0	+0.0	+0.0	+0.0	+0.0	49.9	60.8	-10.9	Vert
	Ave		+0.0	-38.4	+32.6	+1.0			Y axis		
			+1.5	+4.9	+0.2	-6.3					
45	2169.790M	54.4	+0.0	+0.0	+0.0	+0.0	+0.0	49.9	60.8	-10.9	Vert
			+0.0	-38.4	+27.9	+0.7			Y axis		
			+1.3	+3.8	+0.2	+0.0					
46	3471.650M	54.3	+0.0	+0.0	+0.0	+0.0	+0.0	49.8	60.8	-11.0	Horiz
	Ave		+0.0	-38.4	+32.6	+1.0			X axis		
			+1.5	+4.9	+0.2	-6.3					
^	3471.630M	72.0	+0.0	+0.0	+0.0	+0.0	+0.0	73.8	60.8	+13.0	Horiz
			+0.0	-38.4	+32.6	+1.0			Z axis		
			+1.5	+4.9	+0.2	+0.0					
^	3471.600M	68.1	+0.0	+0.0	+0.0	+0.0	+0.0	69.9	60.8	+9.1	Horiz
			+0.0	-38.4	+32.6	+1.0			Y axis		
			+1.5	+4.9	+0.2	+0.0					
^	3471.650M	63.9	+0.0	+0.0	+0.0	+0.0	+0.0	65.7	60.8	+4.9	Horiz
			+0.0	-38.4	+32.6	+1.0			X axis		
			+1.5	+4.9	+0.2	+0.0					
50	3037.700M	58.4	+0.0	+0.0	+0.0	+0.0	+0.0	49.6	60.8	-11.2	Horiz
	Ave		+0.0	-38.6	+29.0	+0.9			Z axis		
			+1.5	+4.5	+0.2	-6.3					
51	1735.890M	61.9	+0.0	+0.0	+0.0	+0.0	+0.0	49.4	60.8	-11.4	Vert
	Ave		+0.0	-38.5	+27.1	+0.4			Z axis		
			+1.1	+3.4	+0.3	-6.3					
^	1735.862M	81.5	+0.0	+0.0	+0.0	+0.0	+0.0	75.3	60.8	+14.5	Vert
			+0.0	-38.5	+27.1	+0.4			X axis		
			+1.1	+3.4	+0.3	+0.0					
^	1735.850M	77.1	+0.0	+0.0	+0.0	+0.0	+0.0	70.9	60.8	+10.1	Vert
			+0.0	-38.5	+27.1	+0.4			Y axis		
			+1.1	+3.4	+0.3	+0.0					
^	1735.890M	73.5	+0.0	+0.0	+0.0	+0.0	+0.0	67.3	60.8	+6.5	Vert
			+0.0	-38.5	+27.1	+0.4			Z axis		
			+1.1	+3.4	+0.3	+0.0					
55	1301.900M	58.3	+0.0	+0.0	+0.0	+0.0	+0.0	42.2	54.0	-11.8	Horiz
	Ave		+0.0	-39.2	+24.4	+0.5			X axis		
			+1.0	+2.9	+0.6	-6.3					
56	3471.680M	53.3	+0.0	+0.0	+0.0	+0.0	+0.0	48.8	60.8	-12.0	Vert
	Ave		+0.0	-38.4	+32.6	+1.0			X axis		
			+1.5	+4.9	+0.2	-6.3					
^	3471.650M	64.0	+0.0	+0.0	+0.0	+0.0	+0.0	65.8	60.8	+5.0	Vert
			+0.0	-38.4	+32.6	+1.0			Y axis		
			+1.5	+4.9	+0.2	+0.0					
^	3471.680M	62.5	+0.0	+0.0	+0.0	+0.0	+0.0	64.3	60.8	+3.5	Vert
			+0.0	-38.4	+32.6	+1.0			X axis		
			+1.5	+4.9	+0.2	+0.0					
59	2603.750M	59.4	+0.0	+0.0	+0.0	+0.0	+0.0	48.5	60.8	-12.3	Horiz
	Ave		+0.0	-38.4	+27.2	+0.8			Z axis		
			+1.4	+4.2	+0.2	-6.3					
60	1301.870M	56.4	+0.0	+0.0	+0.0	+0.0	+0.0	40.3	54.0	-13.7	Horiz
	Ave		+0.0	-39.2	+24.4	+0.5			Y axis		
			+1.0	+2.9	+0.6	-6.3					

^	1301.900M	67.8	+0.0	+0.0	+0.0	+0.0	+0.0	58.0	54.0	+4.0	Horiz	
			+0.0	-39.2	+24.4	+0.5			X axis			
			+1.0	+2.9	+0.6	+0.0						
^	1301.870M	65.1	+0.0	+0.0	+0.0	+0.0	+0.0	55.3	54.0	+1.3	Horiz	
			+0.0	-39.2	+24.4	+0.5			Y axis			
			+1.0	+2.9	+0.6	+0.0						
^	1301.790M	59.2	+0.0	+0.0	+0.0	+0.0	+0.0	49.4	54.0	-4.6	Horiz	
			+0.0	-39.2	+24.4	+0.5			Z axis			
			+1.0	+2.9	+0.6	+0.0						
64	3037.740M	55.9	+0.0	+0.0	+0.0	+0.0	+0.0	47.1	60.8	-13.7	Horiz	
	Ave		+0.0	-38.6	+29.0	+0.9			Y axis			
			+1.5	+4.5	+0.2	-6.3						
65	3037.710M	55.8	+0.0	+0.0	+0.0	+0.0	+0.0	47.0	60.8	-13.8	Vert	
	Ave		+0.0	-38.6	+29.0	+0.9			X axis			
			+1.5	+4.5	+0.2	-6.3						
66	1301.850M	56.0	+0.0	+0.0	+0.0	+0.0	+0.0	39.9	54.0	-14.1	Vert	
	Ave		+0.0	-39.2	+24.4	+0.5			Y axis			
			+1.0	+2.9	+0.6	-6.3						
67	2603.770M	57.4	+0.0	+0.0	+0.0	+0.0	+0.0	46.5	60.8	-14.3	Horiz	
	Ave		+0.0	-38.4	+27.2	+0.8			X axis			
			+1.4	+4.2	+0.2	-6.3						
68	1301.860M	55.6	+0.0	+0.0	+0.0	+0.0	+0.0	39.5	54.0	-14.5	Vert	
	Ave		+0.0	-39.2	+24.4	+0.5			X axis			
			+1.0	+2.9	+0.6	-6.3						
^	1301.850M	64.9	+0.0	+0.0	+0.0	+0.0	+0.0	55.1	54.0	+1.1	Vert	
			+0.0	-39.2	+24.4	+0.5			Y axis			
			+1.0	+2.9	+0.6	+0.0						
^	1301.860M	64.9	+0.0	+0.0	+0.0	+0.0	+0.0	55.1	54.0	+1.1	Vert	
			+0.0	-39.2	+24.4	+0.5			X axis			
			+1.0	+2.9	+0.6	+0.0						
^	1301.890M	60.7	+0.0	+0.0	+0.0	+0.0	+0.0	50.9	54.0	-3.1	Vert	
			+0.0	-39.2	+24.4	+0.5			Z axis			
			+1.0	+2.9	+0.6	+0.0						
72	3037.690M	54.9	+0.0	+0.0	+0.0	+0.0	+0.0	46.1	60.8	-14.7	Horiz	
	Ave		+0.0	-38.6	+29.0	+0.9			X axis			
			+1.5	+4.5	+0.2	-6.3						
^	3037.700M	70.7	+0.0	+0.0	+0.0	+0.0	+0.0	68.2	60.8	+7.4	Horiz	
			+0.0	-38.6	+29.0	+0.9			Z axis			
			+1.5	+4.5	+0.2	+0.0						
^	3037.740M	66.5	+0.0	+0.0	+0.0	+0.0	+0.0	64.0	60.8	+3.2	Horiz	
			+0.0	-38.6	+29.0	+0.9			Y axis			
			+1.5	+4.5	+0.2	+0.0						
^	3037.690M	65.1	+0.0	+0.0	+0.0	+0.0	+0.0	62.6	60.8	+1.8	Horiz	
			+0.0	-38.6	+29.0	+0.9			X axis			
			+1.5	+4.5	+0.2	+0.0						
76	3037.750M	54.5	+0.0	+0.0	+0.0	+0.0	+0.0	45.7	60.8	-15.1	Vert	
	Ave		+0.0	-38.6	+29.0	+0.9			Y axis			
			+1.5	+4.5	+0.2	-6.3						
^	3037.690M	71.5	+0.0	+0.0	+0.0	+0.0	+0.0	69.0	60.8	+8.2	Vert	
			+0.0	-38.6	+29.0	+0.9			Z axis			
			+1.5	+4.5	+0.2	+0.0						

^	3037.710M	66.9	+0.0	+0.0	+0.0	+0.0	+0.0	64.4	60.8	+3.6	Vert
			+0.0	-38.6	+29.0	+0.9			X axis		
			+1.5	+4.5	+0.2	+0.0					
^	3037.750M	64.7	+0.0	+0.0	+0.0	+0.0	+0.0	62.2	60.8	+1.4	Vert
			+0.0	-38.6	+29.0	+0.9			Y axis		
			+1.5	+4.5	+0.2	+0.0					
80	2603.700M	55.6	+0.0	+0.0	+0.0	+0.0	+0.0	44.7	60.8	-16.1	Horiz
	Ave		+0.0	-38.4	+27.2	+0.8			Y axis		
			+1.4	+4.2	+0.2	-6.3					
^	2603.750M	70.9	+0.0	+0.0	+0.0	+0.0	+0.0	66.3	60.8	+5.5	Horiz
			+0.0	-38.4	+27.2	+0.8			Z axis		
			+1.4	+4.2	+0.2	+0.0					
^	2603.770M	68.0	+0.0	+0.0	+0.0	+0.0	+0.0	63.4	60.8	+2.6	Horiz
			+0.0	-38.4	+27.2	+0.8			X axis		
			+1.4	+4.2	+0.2	+0.0					
^	2603.700M	65.1	+0.0	+0.0	+0.0	+0.0	+0.0	60.5	60.8	-0.3	Horiz
			+0.0	-38.4	+27.2	+0.8			Y axis		
			+1.4	+4.2	+0.2	+0.0					
84	2603.740M	55.3	+0.0	+0.0	+0.0	+0.0	+0.0	44.4	60.8	-16.4	Vert
	Ave		+0.0	-38.4	+27.2	+0.8			Z axis		
			+1.4	+4.2	+0.2	-6.3					
85	2169.760M	55.1	+0.0	+0.0	+0.0	+0.0	+0.0	44.3	60.8	-16.5	Horiz
	Ave		+0.0	-38.4	+27.9	+0.7			Z axis		
			+1.3	+3.8	+0.2	-6.3					
^	2169.760M	64.7	+0.0	+0.0	+0.0	+0.0	+0.0	60.2	60.8	-0.6	Horiz
			+0.0	-38.4	+27.9	+0.7			Z axis		
			+1.3	+3.8	+0.2	+0.0					
^	2169.800M	56.5	+0.0	+0.0	+0.0	+0.0	+0.0	52.0	60.8	-8.8	Horiz
			+0.0	-38.4	+27.9	+0.7			Y axis		
			+1.3	+3.8	+0.2	+0.0					
88	4339.630M	41.7	+0.0	+0.0	+0.0	+0.0	+0.0	37.0	54.0	-17.0	Vert
	Ave		+0.0	-37.9	+31.2	+0.9			X axis		
			+1.7	+5.5	+0.2	-6.3					
^	4339.630M	49.4	+0.0	+0.0	+0.0	+0.0	+0.0	51.0	54.0	-3.0	Vert
			+0.0	-37.9	+31.2	+0.9			X axis		
			+1.7	+5.5	+0.2	+0.0					
^	4339.540M	48.1	+0.0	+0.0	+0.0	+0.0	+0.0	49.7	54.0	-4.3	Vert
			+0.0	-37.9	+31.2	+0.9			Z axis		
			+1.7	+5.5	+0.2	+0.0					
^	4339.590M	40.2	+0.0	+0.0	+0.0	+0.0	+0.0	41.8	54.0	-12.2	Vert
			+0.0	-37.9	+31.2	+0.9			Y axis		
			+1.7	+5.5	+0.2	+0.0					
92	2603.790M	54.1	+0.0	+0.0	+0.0	+0.0	+0.0	43.2	60.8	-17.6	Vert
	Ave		+0.0	-38.4	+27.2	+0.8			Y axis		
			+1.4	+4.2	+0.2	-6.3					
93	2603.760M	53.9	+0.0	+0.0	+0.0	+0.0	+0.0	43.0	60.8	-17.8	Vert
	Ave		+0.0	-38.4	+27.2	+0.8			X axis		
			+1.4	+4.2	+0.2	-6.3					
^	2603.740M	65.5	+0.0	+0.0	+0.0	+0.0	+0.0	60.9	60.8	+0.1	Vert
			+0.0	-38.4	+27.2	+0.8			Z axis		
			+1.4	+4.2	+0.2	+0.0					

^	2603.790M	63.5	+0.0 +0.0 +1.4	+0.0 -38.4 +4.2	+0.0 +27.2 +0.2	+0.0 +0.8 +0.0	+0.0	58.9	60.8 Y axis	-1.9	Vert
^	2603.760M	63.4	+0.0 +0.0 +1.4	+0.0 -38.4 +4.2	+0.0 +27.2 +0.2	+0.0 +0.8 +0.0	+0.0	58.8	60.8 X axis	-2.0	Vert

Duty Cycle Test Plot



Test Setup Photos

Test Setup

X - Axis

Y - Axis

Z - Axis

15.231(c) -20dBc Occupied Bandwidth

Test Data

Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • 714 993 6112
Customer: **McKinley-Ross Corp.**
Specification: **Occupied Bandwidth**
Work Order #: **94389** Date: 10/23/2013
Test Type: **Maximized Emissions** Time: 10:28:49
Equipment: **Water switch transmitter** Sequence#: 3
Manufacturer: McKinley-Ross Corp. Tested By: Don Nguyen
Model: WMS500
S/N: NA

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN00309	Preamp	8447D	3/29/2012	3/29/2014
T2	ANP05050	Cable	RG223/U	1/21/2013	1/21/2015
T3	ANP05198	Cable-Amplitude 15 to 45degC (dB)	8268	12/11/2012	12/11/2014
	ANP05198	Cable-Amplitude -15 to 15degC	8268	12/11/2012	12/11/2014
T4	AN02869	Spectrum Analyzer	E4440A	2/6/2013	2/6/2015
T5	AN00266A	Dipole Antenna	Type I-IV	8/31/2012	8/31/2014

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

Function	Manufacturer	Model #	S/N
Water switch transmitter*	McKinley-Ross Corp.	WMS500	NA

Support Devices:

Function	Manufacturer	Model #	S/N

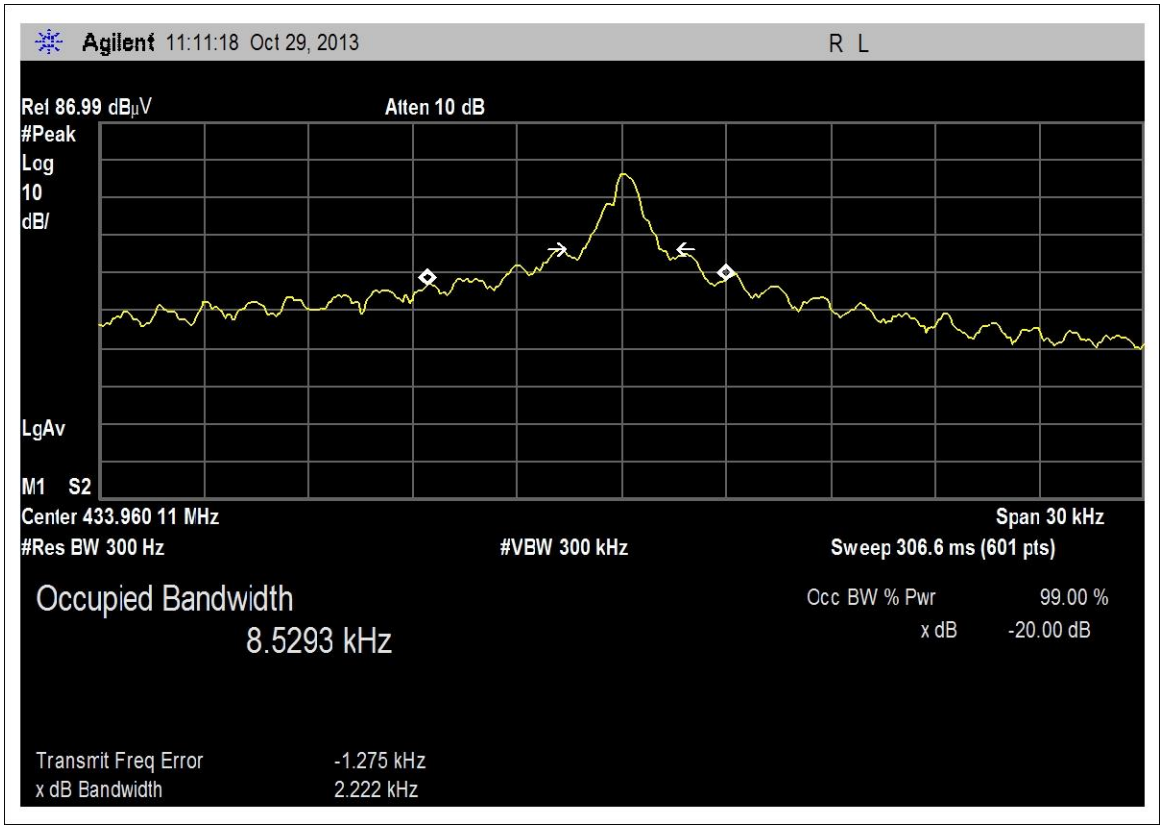
Test Conditions / Notes:

The EUT is placed on the wooden table lined with Styrofoam of 10 cm thickness. EUT is set to always transmitting mode. EUT is installed with new 9V battery.

Fundamental operating frequency: 433.92MHz
RBW=VBW=120kHz
Temp: 18°C, 57% Relative Humidity, 100.1kpa

Site A

Test Data



Occupied Bandwidth is less than limit of 0.25% of center frequency
=0.25%*433.96MHz=1.085MHz

Test Setup Photos

Test Setup

X - Axis

Y - Axis

Z - Axis

RSS-210 A1.1.3 / 99% Bandwidth

Test Data

Test Location:	CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • 714 993 6112		
Customer:	**McKinley-Ross Corp.**		
Specification:	**99% Bandwidth**		
Work Order #:	**94389**	Date:	10/23/2013
Test Type:	**Maximized Emissions**	Time:	10:28:49
Equipment:	**Water switch transmitter**	Sequence#:	3
Manufacturer:	McKinley-Ross Corp.	Tested By:	Don Nguyen
Model:	WMS500		
S/N:	NA		

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN00309	Preamp	8447D	3/29/2012	3/29/2014
T2	ANP05050	Cable	RG223/U	1/21/2013	1/21/2015
T3	ANP05198	Cable-Amplitude 15 to 45degC (dB)	8268	12/11/2012	12/11/2014
	ANP05198	Cable-Amplitude -15 to 15degC	8268	12/11/2012	12/11/2014
T4	AN02869	Spectrum Analyzer	E4440A	2/6/2013	2/6/2015
T5	AN00266A	Dipole Antenna	Type I-IV	8/31/2012	8/31/2014

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

Function	Manufacturer	Model #	S/N
Water switch transmitter*	McKinley-Ross Corp.	WMS500	NA

Support Devices:

Function	Manufacturer	Model #	S/N

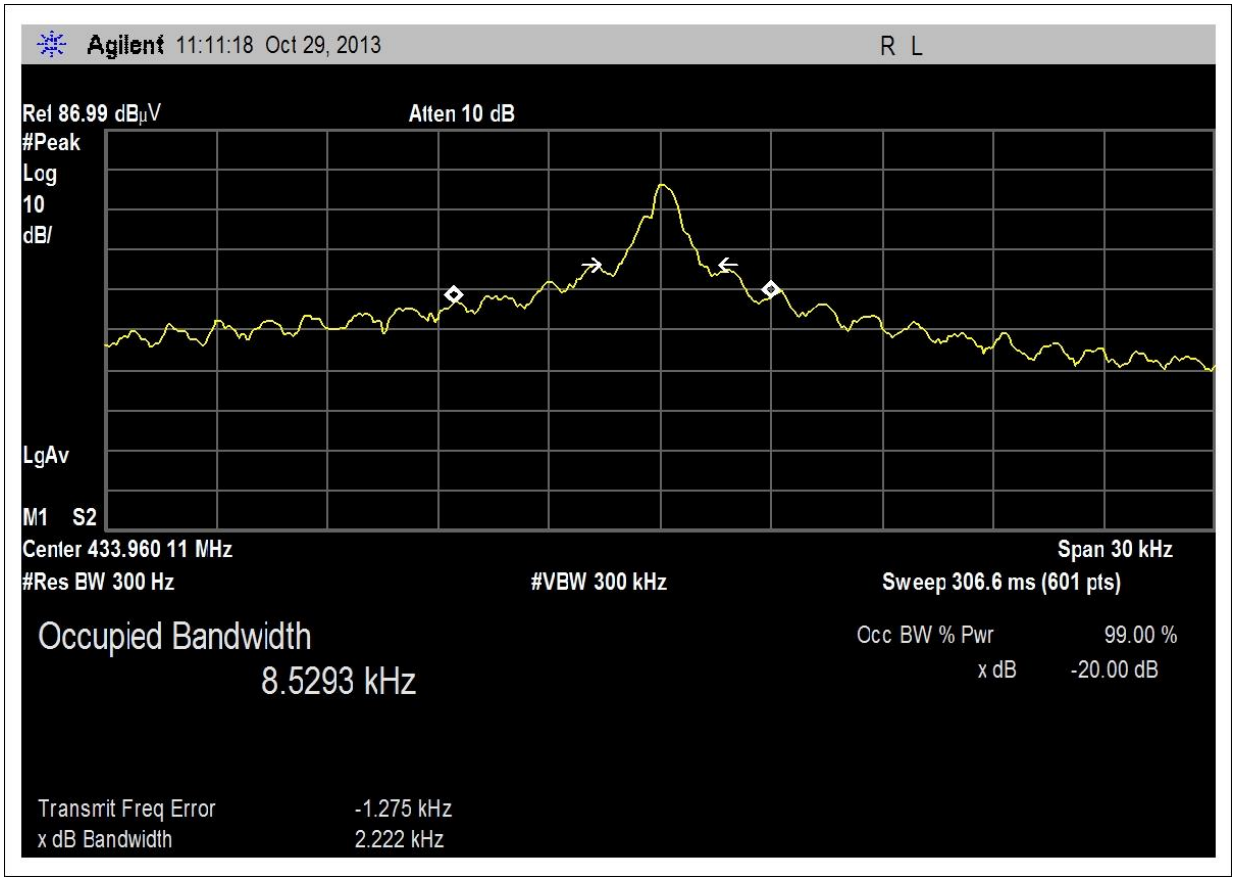
Test Conditions / Notes:

The EUT is placed on the wooden table lined with Styrofoam of 10 cm thickness. EUT is set to always transmitting mode.
EUT is installed with new 9V battery.

Fundamental operating frequency: 433.92MHz
RBW=VBW=120kHz
Temp: 18°C, 57% Relative Humidity, 100.1kpa

Site A

Test Data



Occupied Bandwidth is less than limit of 0.25% of center frequency
=0.25%*433.96MHz=1.085MHz

Test Setup Photos

Test Setup

X - Axis

Y - Axis

Z - Axis

15.231(d) Frequency Stability

Test Engineer:	Don Nguyen	**Test Procedure:**	15.231(d)
Test Level:	NA		
Declarations: The manufacturer declares the operating frequency of the EUT is 433.92MHz which is outside of band 40.66-40.70MHz. The EUT was tested with a new battery.			

RSS-210 A1.1.4 / Frequency Stability

Test Engineer:	Don Nguyen	**Test Procedure:**	15.231(d)
Test Level:	NA		
Declarations: The manufacturer declares the operating frequency of the EUT is 433.92MHz which is outside of band 40.66-40.70MHz. The EUT was tested with a new battery.			

Reduced Field Strengths

Test Engineer:	Don Nguyen	**Test Procedure:**	15.231(e)
Test Level:	NA		
Declarations: The manufacturer declares the manually operated transmitter employing a switch automatically deactivated the transmitter within not more than 5 seconds of being released.			

RSS-210 A1.1.5 / Reduced Field Strengths

Test Engineer:	Don Nguyen	**Test Procedure:**	15.231(e)
Test Level:	NA		
Declarations: The manufacturer declares the manually operated transmitter employing a switch automatically deactivated the transmitter within not more than 5 seconds of being released.			

APPENDIX A: TEST DATE – 12/24/2013

SUMMARY OF RESULTS

Standard / Specification: FCC Part 15 Subpart C 15.231 and RSS-210 Issue 8

Description	Test Procedure/Method	Results
Types of Momentary Signals	FCC Part 15 Subpart C Section 15.231(a)	Pass
Types of Momentary Signals	Section A1.1.1 / RSS-210 Issue 8	Pass
Field Strength of Fundamental and Spurious Emissions	FCC Part 15 Subpart C Section 15.231(b) / DO1 DTS MEAS Guidance V03	Pass
Field Strength of Fundamental and Spurious Emissions	Section A1.1.2 / RSS-210 Issue 8 / DO1 DTS MEAS Guidance V03	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

Water Switch Transmitter
Manuf: McKinley-Ross Corp.
Model: WMS500
Serial: None

PERIPHERAL DEVICES

The EUT was tested with the following peripheral devices:

Flow Switch (3)
Manuf: McKinley-Ross Corp.
Model: NA
Serial: NA

FCC PART 15.231

15.231(a) Types of Momentary Signals

Test Conditions / Setup

Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • 714 993 6112

Customer: **McKinley-Ross Corp.**
Specification: **Types of Momentary Signals**
Work Order #: **94389** Date: 12/24/2013
Test Type: **Maximized Emissions** Time: 11:39:33
Equipment: **Water switch transmitter** Sequence#: 6
Manufacturer: McKinley-Ross Corp. Tested By: Don Nguyen
Model: WMS500
S/N: NA

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN00266A	Dipole Antenna	Type I-IV	8/31/2012	8/31/2014
T2	AN01234	Duty Cycle Correction Factor		10/23/2013	10/23/2015
T3	AN00010	Preamp	8447D	3/29/2012	3/29/2014
T4	ANP04382	Cable	LDF-50	8/30/2012	8/30/2014
T5	ANP05555	Cable	RG223/U	6/19/2012	6/19/2014
T6	ANP05569	Cable	RG-214/U	6/19/2012	6/19/2014
	AN02672	Spectrum Analyzer	E4446A	9/4/2012	9/4/2014

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

Function	Manufacturer	Model #	S/N
Water switch transmitter*	McKinley-Ross Corp.	WMS500	NA

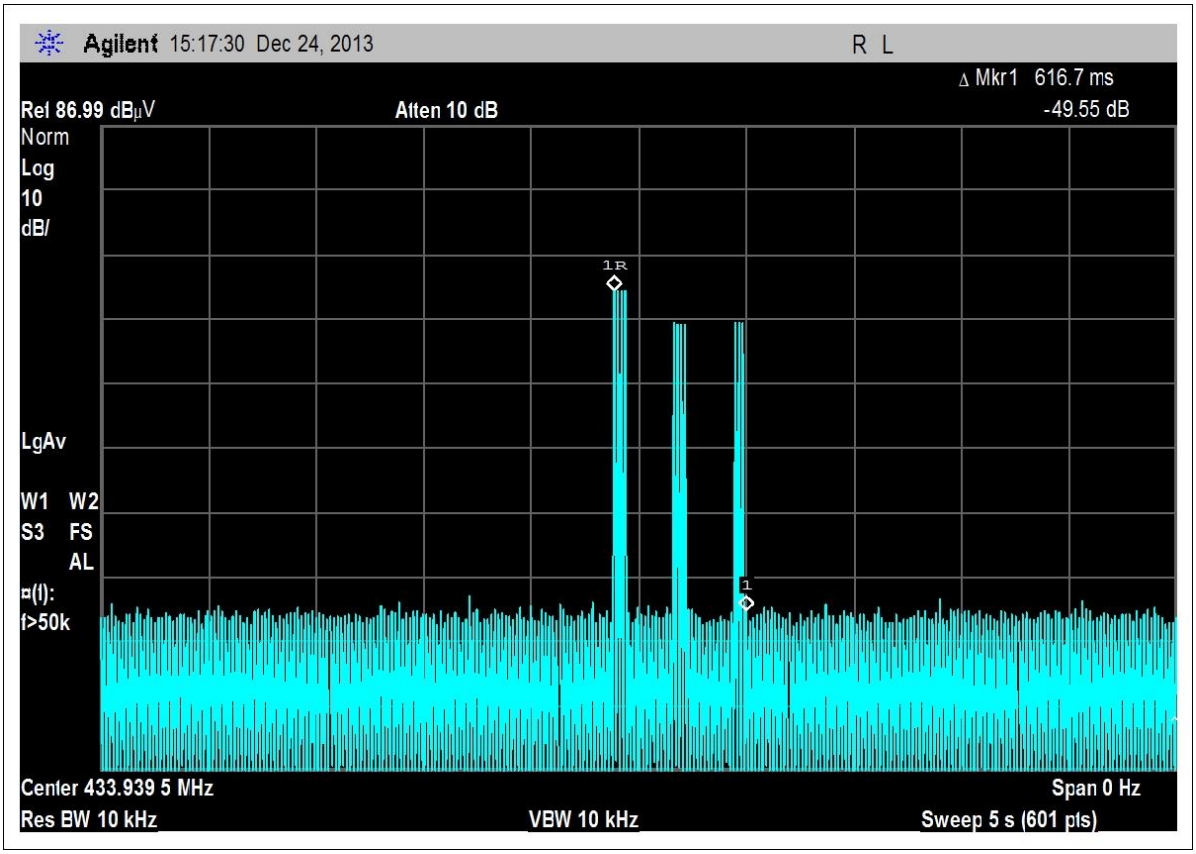
Support Devices:

Function	Manufacturer	Model #	S/N
Flow switch	McKinley-Ross Corp.	NA	NA
Flow switch	McKinley-Ross Corp.	NA	NA
Flow switch	McKinley-Ross Corp.	NA	NA

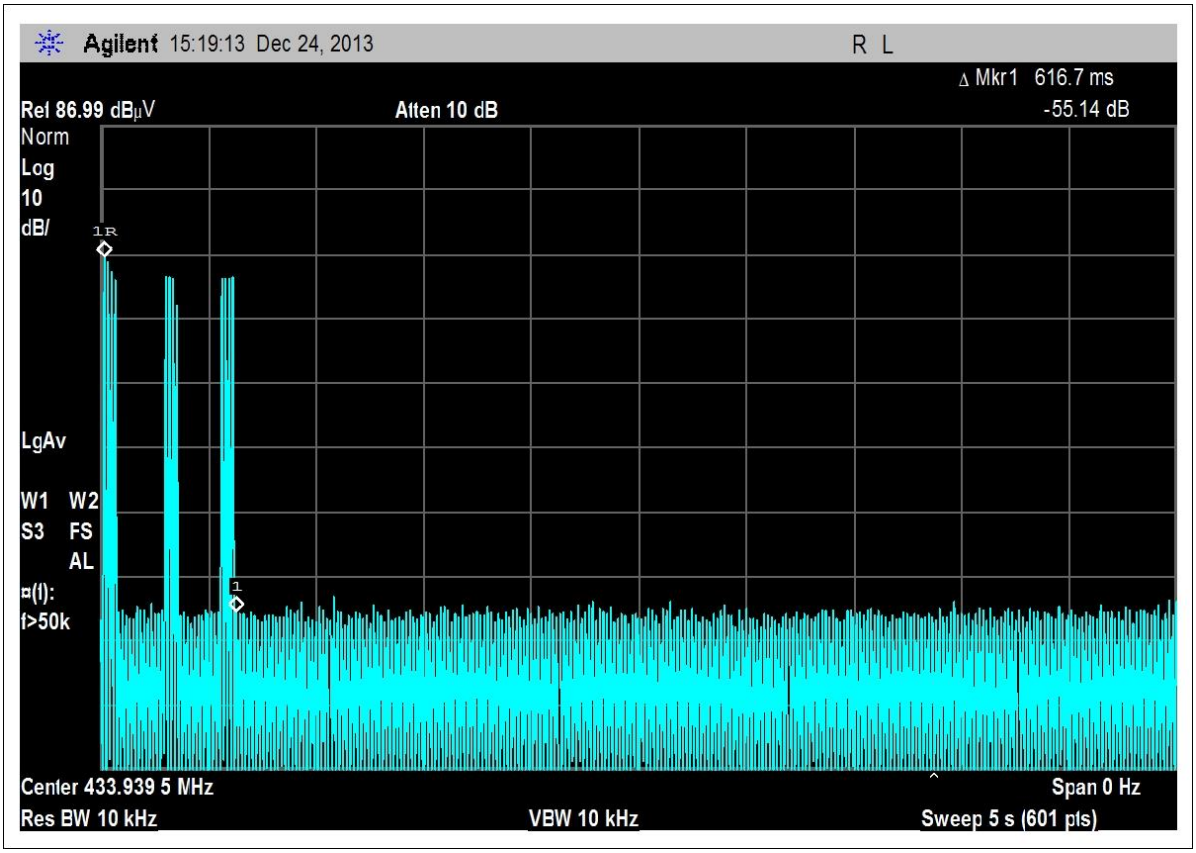
Test Conditions / Notes:

The EUT is placed on the wooden table lined with Styrofoam of 10 cm thickness. EUT is set to always transmitting mode. Three input terminals of EUT are connected to three support flow switches. The EUT is installed with new 9V battery. Fundamental operating frequency: 433.92MHz RBW=VBW=120kHz
Temp: 20°C, 31% Relative Humidity, 100.1kpa
Site D
Emission is investigated with EUT rotating in three axes.
Duty cycle correction factor = 20log(dwell time/100 ms)= 20log(48.33/100)=-6.32db

Test Data



Step 1: The switch was pressed and quickly released. EUT transmitted and deactivated within 5 seconds.

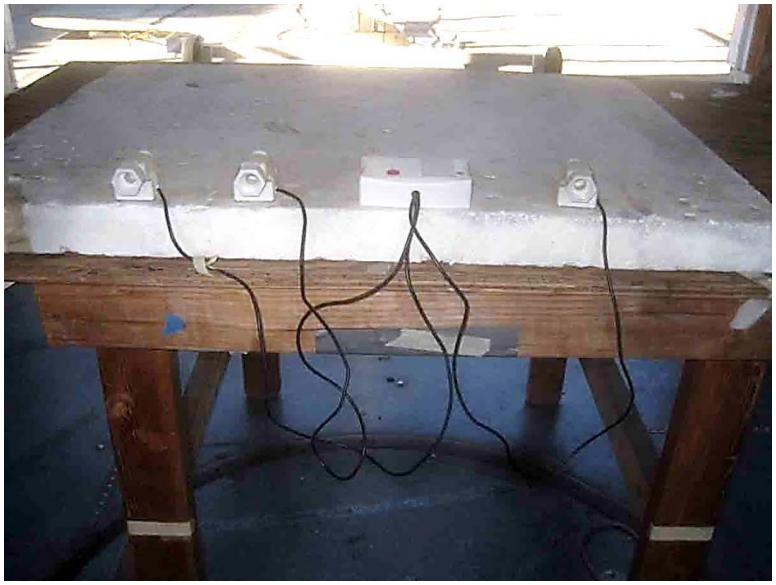


Step 2: The switch was pressed and held for 5 seconds then released. The EUT transmitted and deactivated within 5 seconds.

In both steps, the EUT was tested per 15.231a
(1) A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released.
(2) A transmitter activated automatically shall cease transmission within 5 seconds after activation.

Note: The manufacturer declares the manual switch operation also simulates automatic triggering from external peripherals.

Test Setup Photos



Overall Test Setup

X Axis

Y Axis

Z Axis

RSS-210 A1.1.1 / Types of Momentary Signals

Test Conditions / Setup

Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • 714 993 6112

Customer: **McKinley-Ross Corp.**
Specification: **Types of Momentary Signals**
Work Order #: **94389** Date: 12/24/2013
Test Type: **Maximized Emissions** Time: 11:39:33
Equipment: **Water switch transmitter** Sequence#: 6
Manufacturer: McKinley-Ross Corp. Tested By: Don Nguyen
Model: WMS500
S/N: NA

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN00266A	Dipole Antenna	Type I-IV	8/31/2012	8/31/2014
T2	AN01234	Duty Cycle Correction Factor		10/23/2013	10/23/2015
T3	AN00010	Preamp	8447D	3/29/2012	3/29/2014
T4	ANP04382	Cable	LDF-50	8/30/2012	8/30/2014
T5	ANP05555	Cable	RG223/U	6/19/2012	6/19/2014
T6	ANP05569	Cable	RG-214/U	6/19/2012	6/19/2014
	AN02672	Spectrum Analyzer	E4446A	9/4/2012	9/4/2014

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

Function	Manufacturer	Model #	S/N
Water switch transmitter*	McKinley-Ross Corp.	WMS500	NA

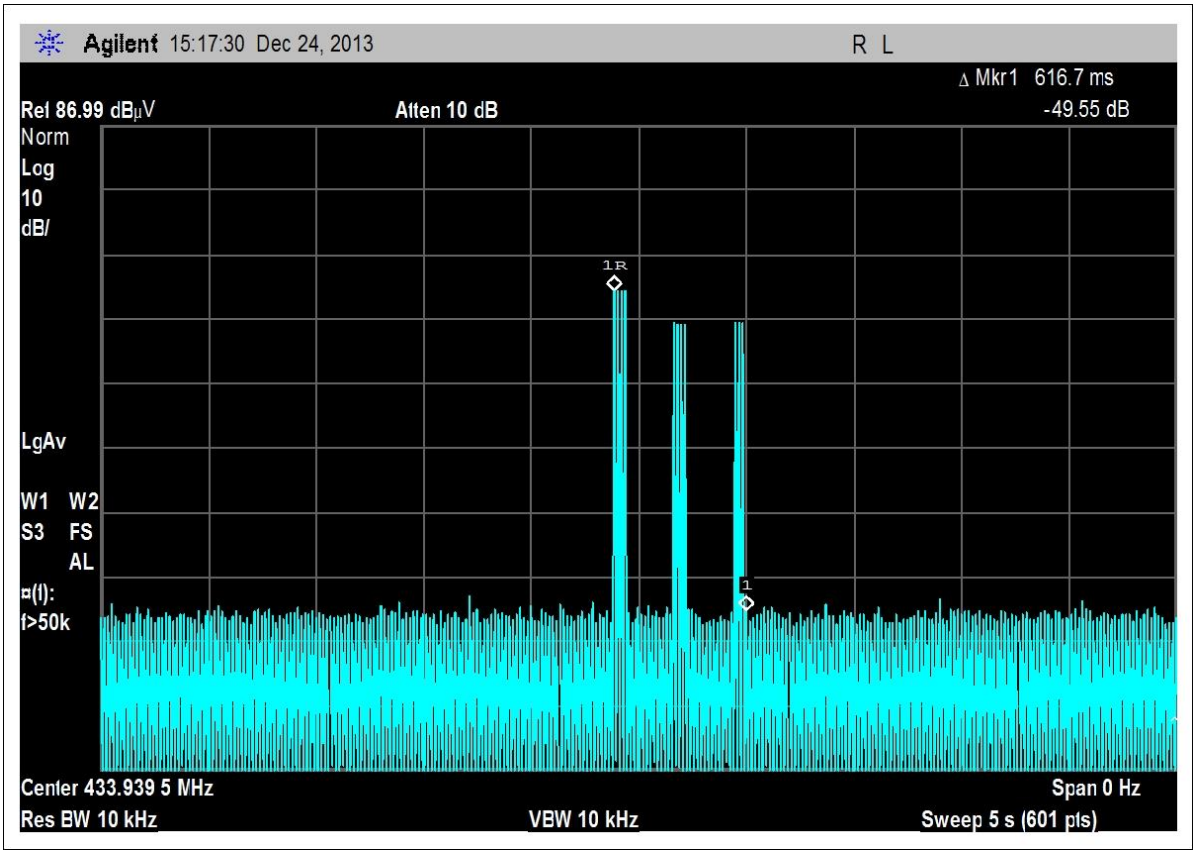
Support Devices:

Function	Manufacturer	Model #	S/N
Flow switch	McKinley-Ross Corp.	NA	NA
Flow switch	McKinley-Ross Corp.	NA	NA
Flow switch	McKinley-Ross Corp.	NA	NA

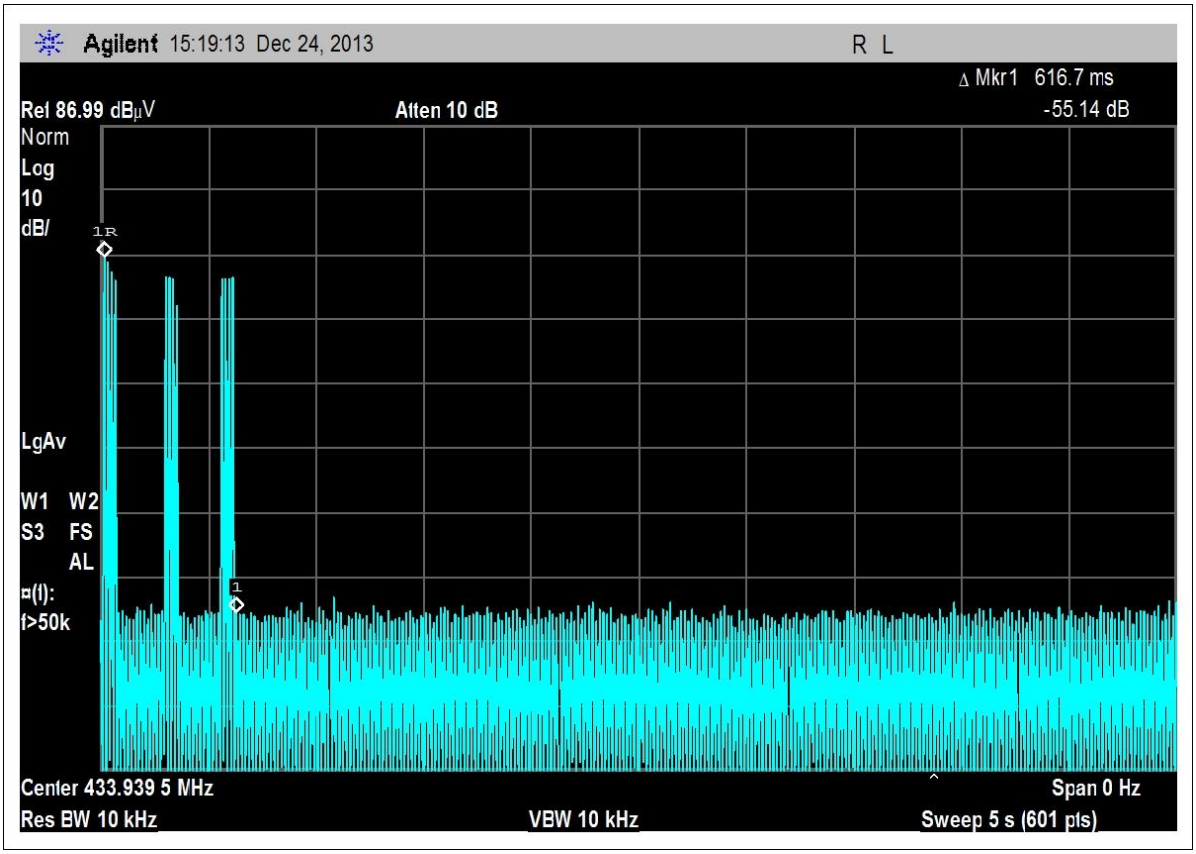
Test Conditions / Notes:

The EUT is placed on the wooden table lined with Styrofoam of 10 cm thickness. EUT is set to always transmitting mode. Three input terminals of EUT are connected to three support flow switches. The EUT is installed with new 9V battery.
Fundamental operating frequency: 433.92MHz
RBW=VBW=120kHz
Temp: 20°C, 31% Relative Humidity, 100.1kpa
Site D
Emission is investigated with EUT rotating in three axes.
Duty cycle correction factor = 20log(dwell time/100 ms)= 20log(48.33/100)=-6.32db

Test Data



Step 1: The switch was pressed and quickly released. EUT transmitted and deactivated within 5 seconds.

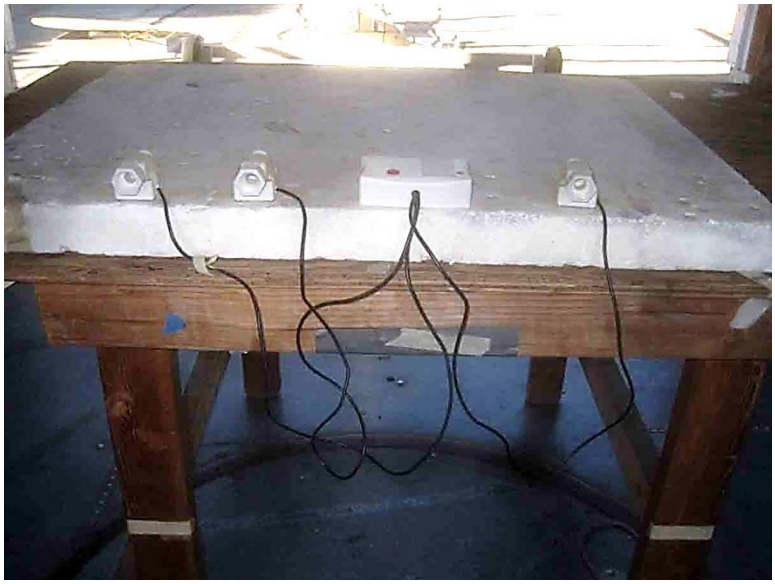


Step 2: The switch was pressed and hold for 5 seconds then released. The EUT transmitted and deactivated within 5 seconds.

In both steps, EUT testing performed to A1.1.1
(a) A manually operated transmitter shall be equipped with a push-to-operate switch and be under manual control at all transmission times. When released, the transmitter shall cease transmission (holdover time of up to 5 seconds is permitted).
(b) A transmitter activated automatically shall cease transmission within 5 seconds after activation (i.e. maximum 5 seconds of operation).

Note: The manufacturer declares the manual switch operation also simulates automatic triggering from external peripherals.

Test Setup Photos



Overall Test Setup

X Axis

Y Axis

Z Axis

15.231(b) Field Strength of Fundamental & Spurious Emissions

Test Data

Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • 714 993 6112

Customer: **McKinley-Ross Corp.**
Specification: **15.231(b) Fundamental Field Strength**
Work Order #: **94389** Date: 12/24/2013
Test Type: **Maximized Emissions** Time: 11:39:33
Equipment: **Water switch transmitter** Sequence#: 6
Manufacturer: McKinley-Ross Corp. Tested By: Don Nguyen
Model: WMS500
S/N: NA

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN00266A	Dipole Antenna	Type I-IV	8/31/2012	8/31/2014
T2	AN01234	Duty Cycle Correction Factor		10/23/2013	10/23/2015
T3	AN00010	Preamp	8447D	3/29/2012	3/29/2014
T4	ANP04382	Cable	LDF-50	8/30/2012	8/30/2014
T5	ANP05555	Cable	RG223/U	6/19/2012	6/19/2014
T6	ANP05569	Cable	RG-214/U	6/19/2012	6/19/2014
	AN02672	Spectrum Analyzer	E4446A	9/4/2012	9/4/2014

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

Function	Manufacturer	Model #	S/N
Water switch transmitter*	McKinley-Ross Corp.	WMS500	NA

Support Devices:

Function	Manufacturer	Model #	S/N
Flow switch	McKinley-Ross Corp.	NA	NA
Flow switch	McKinley-Ross Corp.	NA	NA
Flow switch	McKinley-Ross Corp.	NA	NA

Test Conditions / Notes:

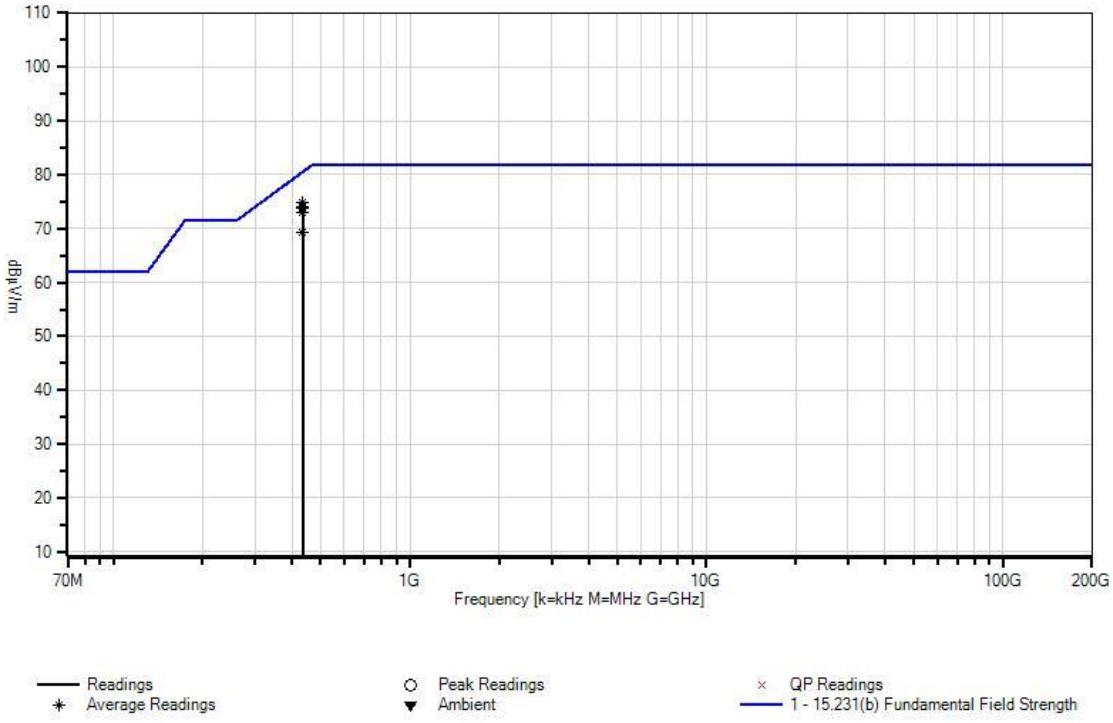
The EUT is placed on the wooden table lined with Styrofoam of 10 cm thickness. EUT is set to always transmitting mode. Three input terminals of EUT are connected to three support flow switches. The EUT is installed with new 9V battery.
Fundamental operating frequency: 433.92MHz
RBW=VBW=120kHz
Temp: 20°C, 31% Relative Humidity, 100.1kpa
Site D
Emission is investigated with EUT rotating in three axes.
Duty cycle correction factor = 20log(dwell time/100 ms)= 20log(48.33/100)=-6.32db

Ext Attn: 0 dB

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	T1 T5	T2 T6	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	433.953M	81.6	+21.9	-6.3	-27.5	+2.4	+0.0	74.8	80.5	-5.7	Horiz
	Ave		+0.4	+2.3					Y axis		
2	433.953M	80.8	+21.9	-6.3	-27.5	+2.4	+0.0	74.0	80.5	-6.5	Vert
	Ave		+0.4	+2.3					Y axis		
3	433.953M	80.5	+21.9	-6.3	-27.5	+2.4	+0.0	73.7	80.5	-6.8	Vert
	Ave		+0.4	+2.3					X axis		
4	433.953M	79.7	+21.9	-6.3	-27.5	+2.4	+0.0	72.9	80.5	-7.6	Horiz
	Ave		+0.4	+2.3					X axis		
5	433.953M	76.2	+21.9	-6.3	-27.5	+2.4	+0.0	69.4	80.5	-11.1	Vert
	Ave		+0.4	+2.3					Z axis		
^	433.953M	94.5	+21.9	+0.0	-27.5	+2.4	+0.0	94.0	80.5	+13.5	Vert
			+0.4	+2.3					Y axis		
^	433.953M	94.3	+21.9	+0.0	-27.5	+2.4	+0.0	93.8	80.5	+13.3	Vert
			+0.4	+2.3					X axis		
^	433.953M	89.9	+21.9	+0.0	-27.5	+2.4	+0.0	89.4	80.5	+8.9	Vert
			+0.4	+2.3					Z axis		
9	433.948M	76.0	+21.9	-6.3	-27.5	+2.4	+0.0	69.2	80.5	-11.3	Horiz
	Ave		+0.4	+2.3					Z axis		
^	433.953M	95.2	+21.9	+0.0	-27.5	+2.4	+0.0	94.7	80.5	+14.2	Horiz
			+0.4	+2.3					Y axis		
^	433.953M	93.6	+21.9	+0.0	-27.5	+2.4	+0.0	93.1	80.5	+12.6	Horiz
			+0.4	+2.3					X axis		
^	433.948M	89.6	+21.9	+0.0	-27.5	+2.4	+0.0	89.1	80.5	+8.6	Horiz
			+0.4	+2.3					Z axis		

CKC Laboratories, Inc. Date: 12/24/2013 Time: 11:39:33 McKinley-Ross Corp. WO#: 94389
15.231(b) Fundamental Field Strength Test Distance: 3 Meters Sequence#: 6 Ext ATTN: 0 dB



Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • 714 993 6112

Customer: **McKinley-Ross Corp.**
Specification: **15.231(b) Spurious Field Strength (433.92 MHz Transmitter)**
Work Order #: **94389** Date: 12/24/2013
Test Type: **Maximized Emissions** Time: 14:49:55
Equipment: **Water switch transmitter** Sequence#: 5
Manufacturer: McKinley-Ross Corp. Tested By: Don Nguyen
Model: WMS500
S/N: NA

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN00314	Loop Antenna	6502	6/29/2012	6/29/2014
T1	AN01234	Duty Cycle Correction Factor		10/23/2013	10/23/2015
T2	AN03169	High Pass Filter	HM1155-11SS	7/30/2013	7/30/2015
T3	AN00787	Preamp	83017A	5/31/2013	5/31/2015
T4	ANP06360	Cable	L1-PNMNM-48	8/29/2012	8/29/2014
T5	AN01646	Horn Antenna	3115	4/13/2012	4/13/2014
T6	AN02945	Cable	32022-2-2909K-36TC	10/30/2013	10/30/2015
T7	ANP04382	Cable	LDF-50	8/30/2012	8/30/2014
	AN02672	Spectrum Analyzer	E4446A	9/4/2012	9/4/2014
T8	AN00010	Preamp	8447D	3/29/2012	3/29/2014
T9	ANP05555	Cable	RG223/U	6/19/2012	6/19/2014
T10	ANP05569	Cable	RG-214/U	6/19/2012	6/19/2014
T11	AN00266A	Dipole Antenna	Type I-IV	8/31/2012	8/31/2014

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

Function	Manufacturer	Model #	S/N
Water switch transmitter*	McKinley-Ross Corp.	WMS500	NA

Support Devices:

Function	Manufacturer	Model #	S/N
Flow switch	McKinley-Ross Corp.	NA	NA
Flow switch	McKinley-Ross Corp.	NA	NA
Flow switch	McKinley-Ross Corp.	NA	NA

Test Conditions / Notes:

The EUT is placed on the wooden table lined with Styrofoam of 10 cm thickness. EUT is set to always transmitting mode. Three input terminals of EUT are connected to three support flow switches.
EUT is installed with new 9V battery.
Fundamental operating frequency: 433.92MHz
Frequency Range: 9KHz-4.7GHz
9 kHz -150 kHz; RBW=200 Hz, VBW=200 Hz;
150 kHz-30 MHz; RBW=9 kHz, VBW=9 kHz;
30 MHz-1000 MHz; RBW=120 kHz, VBW=120 kHz,
1000 MHz-47000 MHz; RBW=1 MHz, VBW=1MHz.
Temp: 22°C, 34% Relative Humidity, 100.1kpa
Site D
Emission is investigated with EUT rotating in three axes.
Duty cycle correction factor = 20log(dwell time/100 ms)= 20log(48.33/100)=-6.32db

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	3471.469M	60.9	-6.3	+0.2	-39.9	+3.9	+0.0	60.2	60.8	-0.6	Vert
	Ave		+32.3	+1.0	+8.1	+0.0			Y axis		
			+0.0	+0.0	+0.0						
^	3471.469M	74.2	+0.0	+0.2	-39.9	+3.9	+0.0	79.8	60.8	+19.0	Vert
			+32.3	+1.0	+8.1	+0.0			Y axis		
			+0.0	+0.0	+0.0						
3	3471.611M	59.5	-6.3	+0.2	-39.9	+3.9	+0.0	58.8	60.8	-2.0	Horiz
	Ave		+32.3	+1.0	+8.1	+0.0			Z axis		
			+0.0	+0.0	+0.0						
4	3471.628M	59.4	-6.3	+0.2	-39.9	+3.9	+0.0	58.7	60.8	-2.1	Vert
	Ave		+32.3	+1.0	+8.1	+0.0			Z axis		
			+0.0	+0.0	+0.0						
5	4339.410M	47.2	+0.0	+0.2	-39.8	+4.5	+0.0	51.3	54.0	-2.7	Horiz
			+31.0	+1.0	+7.2	+0.0			Y axis		
			+0.0	+0.0	+0.0						
6	3471.544M	58.7	-6.3	+0.2	-39.9	+3.9	+0.0	58.0	60.8	-2.8	Horiz
	Ave		+32.3	+1.0	+8.1	+0.0			Y axis		
			+0.0	+0.0	+0.0						
7	3905.544M	52.3	-6.3	+0.3	-39.9	+4.2	+0.0	50.5	54.0	-3.5	Vert
	Ave		+31.4	+1.0	+7.5	+0.0			Z axis		
			+0.0	+0.0	+0.0						
8	3905.419M	51.0	-6.3	+0.3	-39.9	+4.2	+0.0	49.2	54.0	-4.8	Vert
	Ave		+31.4	+1.0	+7.5	+0.0			Y axis		
			+0.0	+0.0	+0.0						
^	3905.419M	64.6	+0.0	+0.3	-39.9	+4.2	+0.0	69.1	54.0	+15.1	Vert
			+31.4	+1.0	+7.5	+0.0			Y axis		
			+0.0	+0.0	+0.0						
10	3905.586M	50.8	-6.3	+0.3	-39.9	+4.2	+0.0	49.0	54.0	-5.0	Vert
	Ave		+31.4	+1.0	+7.5	+0.0			X axis		
			+0.0	+0.0	+0.0						
^	3905.544M	66.2	+0.0	+0.3	-39.9	+4.2	+0.0	70.7	54.0	+16.7	Vert
			+31.4	+1.0	+7.5	+0.0			Z axis		
			+0.0	+0.0	+0.0						
^	3905.586M	64.2	+0.0	+0.3	-39.9	+4.2	+0.0	68.7	54.0	+14.7	Vert
			+31.4	+1.0	+7.5	+0.0			X axis		
			+0.0	+0.0	+0.0						
13	3471.636M	56.0	-6.3	+0.2	-39.9	+3.9	+0.0	55.3	60.8	-5.5	Horiz
	Ave		+32.3	+1.0	+8.1	+0.0			X axis		
			+0.0	+0.0	+0.0						
^	3471.611M	73.1	+0.0	+0.2	-39.9	+3.9	+0.0	78.7	60.8	+17.9	Horiz
			+32.3	+1.0	+8.1	+0.0			Z axis		
			+0.0	+0.0	+0.0						
^	3471.544M	72.3	+0.0	+0.2	-39.9	+3.9	+0.0	77.9	60.8	+17.1	Horiz
			+32.3	+1.0	+8.1	+0.0			Y axis		
			+0.0	+0.0	+0.0						

^	3471.636M	69.8	+0.0	+0.2	-39.9	+3.9	+0.0	75.4	60.8	+14.6	Horiz
			+32.3	+1.0	+8.1	+0.0			X axis		
			+0.0	+0.0	+0.0						
17	3905.586M	50.3	-6.3	+0.3	-39.9	+4.2	+0.0	48.5	54.0	-5.5	Horiz
	Ave		+31.4	+1.0	+7.5	+0.0			X axis		
			+0.0	+0.0	+0.0						
18	4339.536M	44.1	+0.0	+0.2	-39.8	+4.5	+0.0	48.2	54.0	-5.8	Horiz
			+31.0	+1.0	+7.2	+0.0			X axis		
			+0.0	+0.0	+0.0						
19	3905.561M	49.3	-6.3	+0.3	-39.9	+4.2	+0.0	47.5	54.0	-6.5	Horiz
	Ave		+31.4	+1.0	+7.5	+0.0			Z axis		
			+0.0	+0.0	+0.0						
^	3905.586M	63.8	+0.0	+0.3	-39.9	+4.2	+0.0	68.3	54.0	+14.3	Horiz
			+31.4	+1.0	+7.5	+0.0			X axis		
			+0.0	+0.0	+0.0						
^	3905.561M	62.7	+0.0	+0.3	-39.9	+4.2	+0.0	67.2	54.0	+13.2	Horiz
			+31.4	+1.0	+7.5	+0.0			Z axis		
			+0.0	+0.0	+0.0						
22	3905.461M	49.3	-6.3	+0.3	-39.9	+4.2	+0.0	47.5	54.0	-6.5	Horiz
	Ave		+31.4	+1.0	+7.5	+0.0			Y axis		
			+0.0	+0.0	+0.0						
^	3905.461M	62.5	+0.0	+0.3	-39.9	+4.2	+0.0	67.0	54.0	+13.0	Horiz
			+31.4	+1.0	+7.5	+0.0			Y axis		
			+0.0	+0.0	+0.0						
24	867.903M	52.5	-6.3	+0.0	+0.0	+0.0	+0.0	54.0	60.8	-6.8	Horiz
	Ave		+0.0	+0.0	+3.5	-27.5			X axis		
			+0.6	+3.4	+27.8						
25	3471.636M	54.1	-6.3	+0.2	-39.9	+3.9	+0.0	53.4	60.8	-7.4	Vert
	Ave		+32.3	+1.0	+8.1	+0.0			X axis		
			+0.0	+0.0	+0.0						
^	3471.628M	72.9	+0.0	+0.2	-39.9	+3.9	+0.0	78.5	60.8	+17.7	Vert
			+32.3	+1.0	+8.1	+0.0			Z axis		
			+0.0	+0.0	+0.0						
^	3471.636M	67.6	+0.0	+0.2	-39.9	+3.9	+0.0	73.2	60.8	+12.4	Vert
			+32.3	+1.0	+8.1	+0.0			X axis		
			+0.0	+0.0	+0.0						
28	4339.494M	42.4	+0.0	+0.2	-39.8	+4.5	+0.0	46.5	54.0	-7.5	Vert
			+31.0	+1.0	+7.2	+0.0			Z axis		
			+0.0	+0.0	+0.0						
29	3037.661M	58.7	-6.3	+0.2	-39.7	+3.7	+0.0	53.0	60.8	-7.8	Horiz
	Ave		+29.4	+0.8	+6.2	+0.0			Z axis		
			+0.0	+0.0	+0.0						
30	4339.494M	41.3	+0.0	+0.2	-39.8	+4.5	+0.0	45.4	54.0	-8.6	Horiz
			+31.0	+1.0	+7.2	+0.0			Z axis		
			+0.0	+0.0	+0.0						
31	3037.594M	57.2	-6.3	+0.2	-39.7	+3.7	+0.0	51.5	60.8	-9.3	Horiz
	Ave		+29.4	+0.8	+6.2	+0.0			Y axis		
			+0.0	+0.0	+0.0						
32	4339.536M	40.3	+0.0	+0.2	-39.8	+4.5	+0.0	44.4	54.0	-9.6	Vert
			+31.0	+1.0	+7.2	+0.0			X axis		
			+0.0	+0.0	+0.0						

33	867.903M	49.5	-6.3	+0.0	+0.0	+0.0	+0.0	51.0	60.8	-9.8	Vert
	Ave		+0.0	+0.0	+3.5	-27.5			Y axis		
			+0.6	+3.4	+27.8						
34	3037.686M	56.6	-6.3	+0.2	-39.7	+3.7	+0.0	50.9	60.8	-9.9	Horiz
	Ave		+29.4	+0.8	+6.2	+0.0			X axis		
			+0.0	+0.0	+0.0						
^	3037.661M	72.4	+0.0	+0.2	-39.7	+3.7	+0.0	73.0	60.8	+12.2	Horiz
			+29.4	+0.8	+6.2	+0.0			Z axis		
			+0.0	+0.0	+0.0						
^	3037.594M	71.0	+0.0	+0.2	-39.7	+3.7	+0.0	71.6	60.8	+10.8	Horiz
			+29.4	+0.8	+6.2	+0.0			Y axis		
			+0.0	+0.0	+0.0						
^	3037.686M	70.2	+0.0	+0.2	-39.7	+3.7	+0.0	70.8	60.8	+10.0	Horiz
			+29.4	+0.8	+6.2	+0.0			X axis		
			+0.0	+0.0	+0.0						
38	867.903M	49.1	-6.3	+0.0	+0.0	+0.0	+0.0	50.6	60.8	-10.2	Horiz
	Ave		+0.0	+0.0	+3.5	-27.5			Z axis		
			+0.6	+3.4	+27.8						
39	867.903M	47.7	-6.3	+0.0	+0.0	+0.0	+0.0	49.2	60.8	-11.6	Vert
	Ave		+0.0	+0.0	+3.5	-27.5			X axis		
			+0.6	+3.4	+27.8						
40	2603.736M	57.7	-6.3	+0.2	-39.7	+3.4	+0.0	48.8	60.8	-12.0	Horiz
	Ave		+27.1	+0.7	+5.7	+0.0			X axis		
			+0.0	+0.0	+0.0						
41	3037.686M	54.0	-6.3	+0.2	-39.7	+3.7	+0.0	48.3	60.8	-12.5	Vert
	Ave		+29.4	+0.8	+6.2	+0.0			X axis		
			+0.0	+0.0	+0.0						
42	3037.678M	53.9	-6.3	+0.2	-39.7	+3.7	+0.0	48.2	60.8	-12.6	Vert
	Ave		+29.4	+0.8	+6.2	+0.0			Z axis		
			+0.0	+0.0	+0.0						
43	867.903M	46.6	-6.3	+0.0	+0.0	+0.0	+0.0	48.1	60.8	-12.7	Vert
	Ave		+0.0	+0.0	+3.5	-27.5			Z axis		
			+0.6	+3.4	+27.8						
^	867.903M	61.6	+0.0	+46.5	-42.8	+1.9	+0.0	71.0	60.8	+10.2	Vert
			+0.0	+0.3	+3.5	+0.0			Y axis		
			+0.0	+0.0	+0.0						
^	867.903M	60.5	+0.0	+46.5	-42.8	+1.9	+0.0	69.9	60.8	+9.1	Vert
			+0.0	+0.3	+3.5	+0.0			Z axis		
			+0.0	+0.0	+0.0						
^	867.903M	59.9	+0.0	+46.5	-42.8	+1.9	+0.0	69.3	60.8	+8.5	Vert
			+0.0	+0.3	+3.5	+0.0			X axis		
			+0.0	+0.0	+0.0						
47	2603.644M	57.0	-6.3	+0.2	-39.7	+3.4	+0.0	48.1	60.8	-12.7	Horiz
	Ave		+27.1	+0.7	+5.7	+0.0			Y axis		
			+0.0	+0.0	+0.0						
48	867.903M	46.3	-6.3	+0.0	+0.0	+0.0	+0.0	47.8	60.8	-13.0	Horiz
	Ave		+0.0	+0.0	+3.5	-27.5			Y axis		
			+0.6	+3.4	+27.8						
^	867.903M	65.6	+0.0	+46.5	-42.8	+1.9	+0.0	75.0	60.8	+14.2	Horiz
			+0.0	+0.3	+3.5	+0.0			X axis		
			+0.0	+0.0	+0.0						

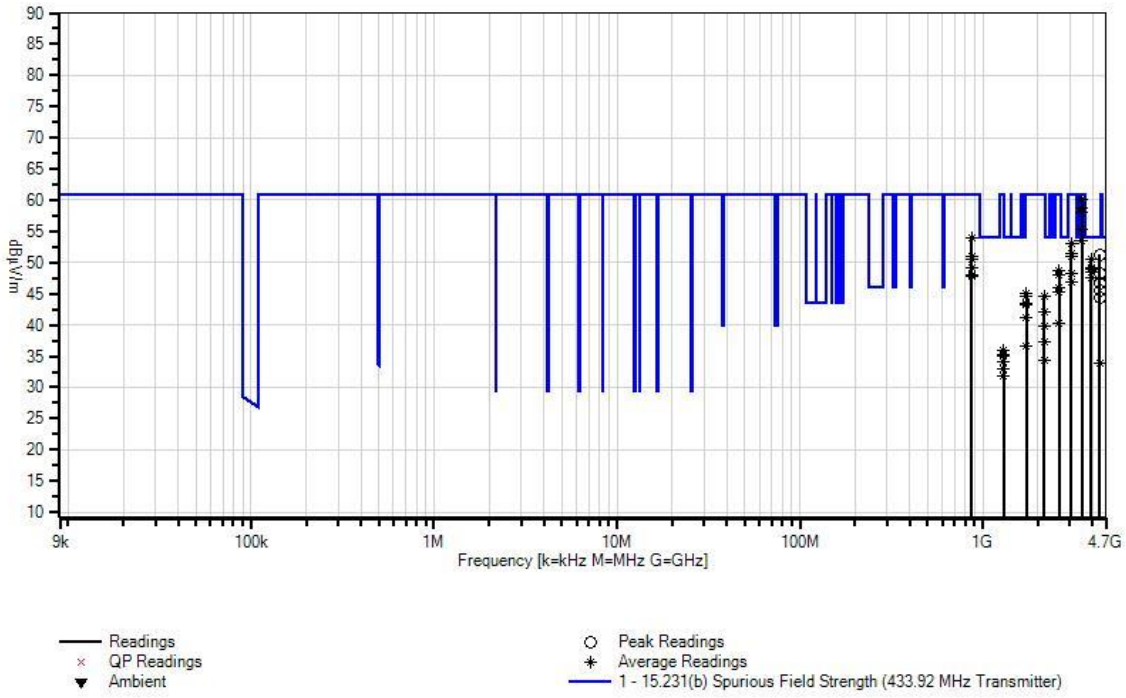
^	867.903M	62.9	+0.0 +0.0 +0.0	+46.5 +0.3 +0.0	-42.8 +3.5 +0.0	+1.9 +0.0	+0.0	72.3	60.8 Z axis	+11.5	Horiz
^	867.903M	60.4	+0.0 +0.0 +0.0	+46.5 +0.3 +0.0	-42.8 +3.5 +0.0	+1.9 +0.0	+0.0	69.8	60.8 Y axis	+9.0	Horiz
52	3037.652M Ave	52.6	-6.3 +29.4 +0.0	+0.2 +0.8 +0.0	-39.7 +6.2 +0.0	+3.7 +0.0	+0.0	46.9	60.8 Y axis	-13.9	Vert
^	3037.678M	67.7	+0.0 +29.4 +0.0	+0.2 +0.8 +0.0	-39.7 +6.2 +0.0	+3.7 +0.0	+0.0	68.3	60.8 Z axis	+7.5	Vert
^	3037.686M	67.4	+0.0 +29.4 +0.0	+0.2 +0.8 +0.0	-39.7 +6.2 +0.0	+3.7 +0.0	+0.0	68.0	60.8 X axis	+7.2	Vert
^	3037.652M	65.5	+0.0 +29.4 +0.0	+0.2 +0.8 +0.0	-39.7 +6.2 +0.0	+3.7 +0.0	+0.0	66.1	60.8 Y axis	+5.3	Vert
56	2603.736M Ave	54.8	-6.3 +27.1 +0.0	+0.2 +0.7 +0.0	-39.7 +5.7 +0.0	+3.4 +0.0	+0.0	45.9	60.8 X axis	-14.9	Vert
57	2603.711M Ave	54.8	-6.3 +27.1 +0.0	+0.2 +0.7 +0.0	-39.7 +5.7 +0.0	+3.4 +0.0	+0.0	45.9	60.8 Z axis	-14.9	Horiz
^	2603.736M	71.2	+0.0 +27.1 +0.0	+0.2 +0.7 +0.0	-39.7 +5.7 +0.0	+3.4 +0.0	+0.0	68.6	60.8 X axis	+7.8	Horiz
^	2603.644M	70.4	+0.0 +27.1 +0.0	+0.2 +0.7 +0.0	-39.7 +5.7 +0.0	+3.4 +0.0	+0.0	67.8	60.8 Y axis	+7.0	Horiz
^	2603.711M	68.4	+0.0 +27.1 +0.0	+0.2 +0.7 +0.0	-39.7 +5.7 +0.0	+3.4 +0.0	+0.0	65.8	60.8 Z axis	+5.0	Horiz
61	2603.728M Ave	54.1	-6.3 +27.1 +0.0	+0.2 +0.7 +0.0	-39.7 +5.7 +0.0	+3.4 +0.0	+0.0	45.2	60.8 Z axis	-15.6	Vert
62	1735.828M Ave	55.3	-6.3 +27.0 +0.0	+0.3 +0.6 +0.0	-39.8 +5.2 +0.0	+2.7 +0.0	+0.0	45.0	60.8 Z axis	-15.8	Vert
63	1735.836M Ave	54.8	-6.3 +27.0 +0.0	+0.3 +0.6 +0.0	-39.8 +5.2 +0.0	+2.7 +0.0	+0.0	44.5	60.8 X axis	-16.3	Vert
64	2169.694M Ave	53.0	-6.3 +27.5 +0.0	+0.2 +0.8 +0.0	-39.7 +5.7 +0.0	+3.3 +0.0	+0.0	44.5	60.8 Y axis	-16.3	Horiz
65	1735.794M Ave	53.7	-6.3 +27.0 +0.0	+0.3 +0.6 +0.0	-39.8 +5.2 +0.0	+2.7 +0.0	+0.0	43.4	60.8 Z axis	-17.4	Horiz
66	1735.794M Ave	53.5	-6.3 +27.0 +0.0	+0.3 +0.6 +0.0	-39.8 +5.2 +0.0	+2.7 +0.0	+0.0	43.2	60.8 X axis	-17.6	Horiz

67	1301.844M	50.2	-6.3	+0.6	-40.5	+2.4	+0.0	35.9	54.0	-18.1	Horiz
	Ave		+24.5	+0.6	+4.4	+0.0			Z axis		
			+0.0	+0.0	+0.0						
68	2169.786M	50.6	-6.3	+0.2	-39.7	+3.3	+0.0	42.1	60.8	-18.7	Horiz
	Ave		+27.5	+0.8	+5.7	+0.0			X axis		
			+0.0	+0.0	+0.0						
69	1301.852M	49.6	-6.3	+0.6	-40.5	+2.4	+0.0	35.3	54.0	-18.7	Vert
	Ave		+24.5	+0.6	+4.4	+0.0			X axis		
			+0.0	+0.0	+0.0						
70	1301.853M	49.4	-6.3	+0.6	-40.5	+2.4	+0.0	35.1	54.0	-18.9	Vert
	Ave		+24.5	+0.6	+4.4	+0.0			Z axis		
			+0.0	+0.0	+0.0						
71	1735.769M	51.5	-6.3	+0.3	-39.8	+2.7	+0.0	41.2	60.8	-19.6	Horiz
	Ave		+27.0	+0.6	+5.2	+0.0			Y axis		
			+0.0	+0.0	+0.0						
^	1735.794M	67.0	+0.0	+0.3	-39.8	+2.7	+0.0	63.0	60.8	+2.2	Horiz
			+27.0	+0.6	+5.2	+0.0			Z axis		
			+0.0	+0.0	+0.0						
^	1735.794M	66.8	+0.0	+0.3	-39.8	+2.7	+0.0	62.8	60.8	+2.0	Horiz
			+27.0	+0.6	+5.2	+0.0			X axis		
			+0.0	+0.0	+0.0						
^	1735.769M	65.0	+0.0	+0.3	-39.8	+2.7	+0.0	61.0	60.8	+0.2	Horiz
			+27.0	+0.6	+5.2	+0.0			Y axis		
			+0.0	+0.0	+0.0						
75	1301.844M	48.3	-6.3	+0.6	-40.5	+2.4	+0.0	34.0	54.0	-20.0	Horiz
	Ave		+24.5	+0.6	+4.4	+0.0			X axis		
			+0.0	+0.0	+0.0						
76	4339.369M	36.1	-6.3	+0.2	-39.8	+4.5	+0.0	33.9	54.0	-20.1	Vert
	Ave		+31.0	+1.0	+7.2	+0.0			Y axis		
			+0.0	+0.0	+0.0						
^	4339.369M	46.4	+0.0	+0.2	-39.8	+4.5	+0.0	50.5	54.0	-3.5	Vert
			+31.0	+1.0	+7.2	+0.0			Y axis		
			+0.0	+0.0	+0.0						
78	2603.652M	49.2	-6.3	+0.2	-39.7	+3.4	+0.0	40.3	60.8	-20.5	Vert
	Ave		+27.1	+0.7	+5.7	+0.0			Y axis		
			+0.0	+0.0	+0.0						
^	2603.736M	68.9	+0.0	+0.2	-39.7	+3.4	+0.0	66.3	60.8	+5.5	Vert
			+27.1	+0.7	+5.7	+0.0			X axis		
			+0.0	+0.0	+0.0						
^	2603.728M	67.7	+0.0	+0.2	-39.7	+3.4	+0.0	65.1	60.8	+4.3	Vert
			+27.1	+0.7	+5.7	+0.0			Z axis		
			+0.0	+0.0	+0.0						
^	2603.652M	62.6	+0.0	+0.2	-39.7	+3.4	+0.0	60.0	60.8	-0.8	Vert
			+27.1	+0.7	+5.7	+0.0			Y axis		
			+0.0	+0.0	+0.0						
82	2169.786M	48.4	-6.3	+0.2	-39.7	+3.3	+0.0	39.9	60.8	-20.9	Vert
	Ave		+27.5	+0.8	+5.7	+0.0			X axis		
			+0.0	+0.0	+0.0						
83	1301.819M	47.3	-6.3	+0.6	-40.5	+2.4	+0.0	33.0	54.0	-21.0	Horiz
	Ave		+24.5	+0.6	+4.4	+0.0			Y axis		
			+0.0	+0.0	+0.0						

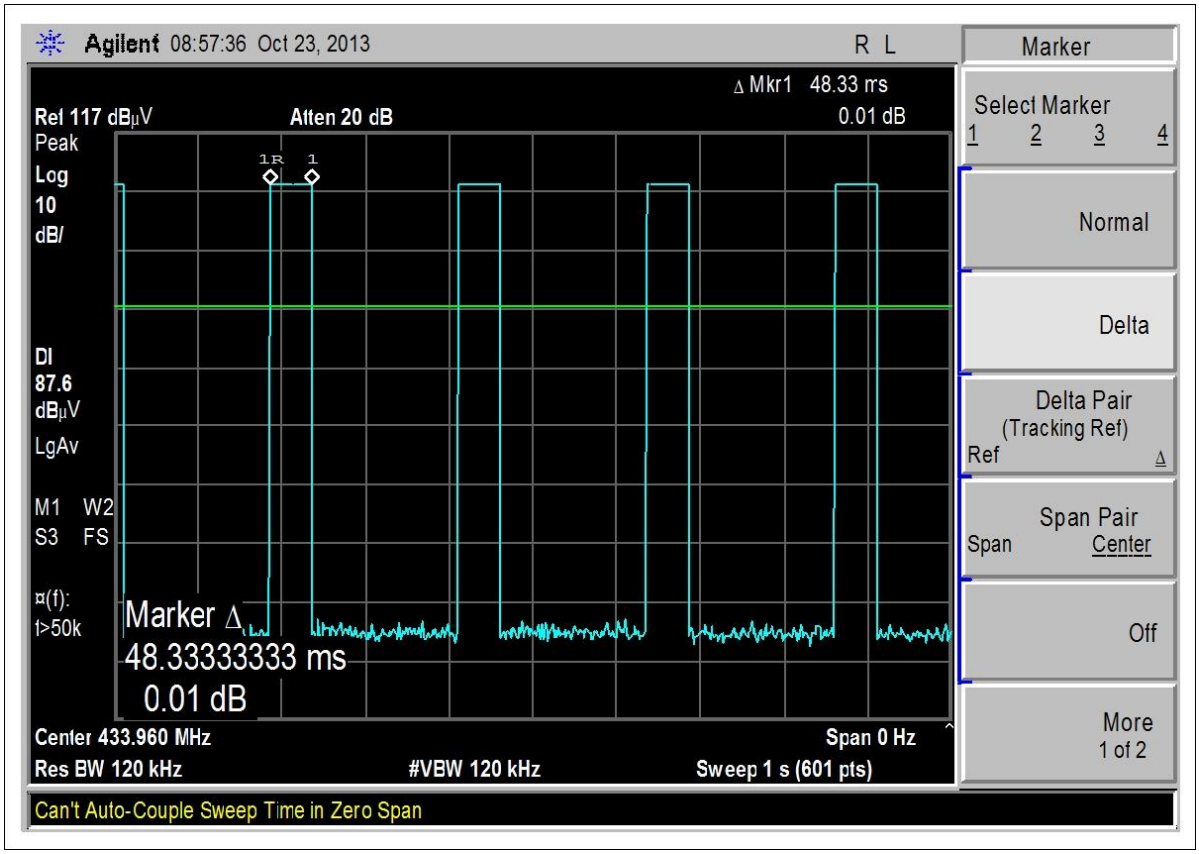
^	1301.844M	63.6	+0.0	+0.6	-40.5	+2.4	+0.0	55.6	54.0	+1.6	Horiz
			+24.5	+0.6	+4.4	+0.0			Z axis		
			+0.0	+0.0	+0.0						
^	1301.844M	61.9	+0.0	+0.6	-40.5	+2.4	+0.0	53.9	54.0	-0.1	Horiz
			+24.5	+0.6	+4.4	+0.0			X axis		
			+0.0	+0.0	+0.0						
^	1301.819M	60.5	+0.0	+0.6	-40.5	+2.4	+0.0	52.5	54.0	-1.5	Horiz
			+24.5	+0.6	+4.4	+0.0			Y axis		
			+0.0	+0.0	+0.0						
87	2169.744M	48.3	-6.3	+0.2	-39.7	+3.3	+0.0	39.8	60.8	-21.0	Horiz
	Ave		+27.5	+0.8	+5.7	+0.0			Z axis		
			+0.0	+0.0	+0.0						
^	2169.694M	66.8	+0.0	+0.2	-39.7	+3.3	+0.0	64.6	60.8	+3.8	Horiz
			+27.5	+0.8	+5.7	+0.0			Y axis		
			+0.0	+0.0	+0.0						
^	2169.786M	64.0	+0.0	+0.2	-39.7	+3.3	+0.0	61.8	60.8	+1.0	Horiz
			+27.5	+0.8	+5.7	+0.0			X axis		
			+0.0	+0.0	+0.0						
^	2169.744M	61.7	+0.0	+0.2	-39.7	+3.3	+0.0	59.5	60.8	-1.3	Horiz
			+27.5	+0.8	+5.7	+0.0			Z axis		
			+0.0	+0.0	+0.0						
91	1301.802M	46.1	-6.3	+0.6	-40.5	+2.4	+0.0	31.8	54.0	-22.2	Vert
	Ave		+24.5	+0.6	+4.4	+0.0			Y axis		
			+0.0	+0.0	+0.0						
^	1301.853M	63.3	+0.0	+0.6	-40.5	+2.4	+0.0	55.3	54.0	+1.3	Vert
			+24.5	+0.6	+4.4	+0.0			Z axis		
			+0.0	+0.0	+0.0						
^	1301.852M	62.9	+0.0	+0.6	-40.5	+2.4	+0.0	54.9	54.0	+0.9	Vert
			+24.5	+0.6	+4.4	+0.0			X axis		
			+0.0	+0.0	+0.0						
^	1301.802M	59.5	+0.0	+0.6	-40.5	+2.4	+0.0	51.5	54.0	-2.5	Vert
			+24.5	+0.6	+4.4	+0.0			Y axis		
			+0.0	+0.0	+0.0						
95	2169.778M	45.9	-6.3	+0.2	-39.7	+3.3	+0.0	37.4	60.8	-23.4	Vert
	Ave		+27.5	+0.8	+5.7	+0.0			Z axis		
			+0.0	+0.0	+0.0						
96	1735.752M	46.8	-6.3	+0.3	-39.8	+2.7	+0.0	36.5	60.8	-24.3	Vert
	Ave		+27.0	+0.6	+5.2	+0.0			Y axis		
			+0.0	+0.0	+0.0						
^	1735.828M	68.8	+0.0	+0.3	-39.8	+2.7	+0.0	64.8	60.8	+4.0	Vert
			+27.0	+0.6	+5.2	+0.0			Z axis		
			+0.0	+0.0	+0.0						
^	1735.836M	68.0	+0.0	+0.3	-39.8	+2.7	+0.0	64.0	60.8	+3.2	Vert
			+27.0	+0.6	+5.2	+0.0			X axis		
			+0.0	+0.0	+0.0						
^	1735.752M	62.2	+0.0	+0.3	-39.8	+2.7	+0.0	58.2	60.8	-2.6	Vert
			+27.0	+0.6	+5.2	+0.0			Y axis		
			+0.0	+0.0	+0.0						

100	2169.702M Ave	42.8	-6.3 +27.5 +0.0	+0.2 +0.8 +0.0	-39.7 +5.7 +0.0	+3.3 +0.0	+0.0	34.3	60.8 Y axis	-26.5	Vert
^	2169.786M	61.6	+0.0 +27.5 +0.0	+0.2 +0.8 +0.0	-39.7 +5.7 +0.0	+3.3 +0.0	+0.0	59.4	60.8 X axis	-1.4	Vert
^	2169.778M	59.4	+0.0 +27.5 +0.0	+0.2 +0.8 +0.0	-39.7 +5.7 +0.0	+3.3 +0.0	+0.0	57.2	60.8 Z axis	-3.6	Vert
^	2169.702M	56.3	+0.0 +27.5 +0.0	+0.2 +0.8 +0.0	-39.7 +5.7 +0.0	+3.3 +0.0	+0.0	54.1	60.8 Y axis	-6.7	Vert

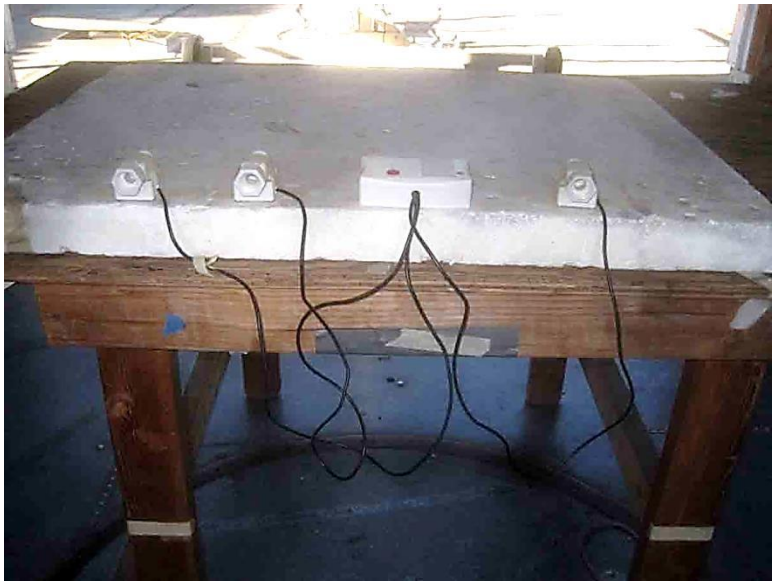
CKC Laboratories, Inc. Date: 12/24/2013 Time: 14:49:55 McKinley-Ross Corp. WO#: 94389
15.231(b) Spurious Field Strength (433.92 MHz Transmitter) Test Distance: 3 Meters Sequence#: 5 Ext ATTN: 0 dB



Duty Cycle Test Plot



Test Setup Photos



Overall Test Setup

X Axis

RSS-210 A1.1.2 / Field Strength of Fundamental & Spurious Emissions

Test Data

Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • 714 993 6112

Customer: **McKinley-Ross Corp.**
Specification: **RSS 210 A1.1.2(1) Fundamental Field Strength**
Work Order #: **94389** Date: 12/24/2013
Test Type: **Maximized Emissions** Time: 11:39:33
Equipment: **Water switch transmitter** Sequence#: 6
Manufacturer: McKinley-Ross Corp. Tested By: Don Nguyen
Model: WMS500
S/N: NA

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN00266A	Dipole Antenna	Type I-IV	8/31/2012	8/31/2014
T2	AN01234	Duty Cycle Correction Factor		10/23/2013	10/23/2015
T3	AN00010	Preamp	8447D	3/29/2012	3/29/2014
T4	ANP04382	Cable	LDF-50	8/30/2012	8/30/2014
T5	ANP05555	Cable	RG223/U	6/19/2012	6/19/2014
T6	ANP05569	Cable	RG-214/U	6/19/2012	6/19/2014
	AN02672	Spectrum Analyzer	E4446A	9/4/2012	9/4/2014

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

Function	Manufacturer	Model #	S/N
Water switch transmitter*	McKinley-Ross Corp.	WMS500	NA

Support Devices:

Function	Manufacturer	Model #	S/N
Flow switch	McKinley-Ross Corp.	NA	NA
Flow switch	McKinley-Ross Corp.	NA	NA
Flow switch	McKinley-Ross Corp.	NA	NA

Test Conditions / Notes:

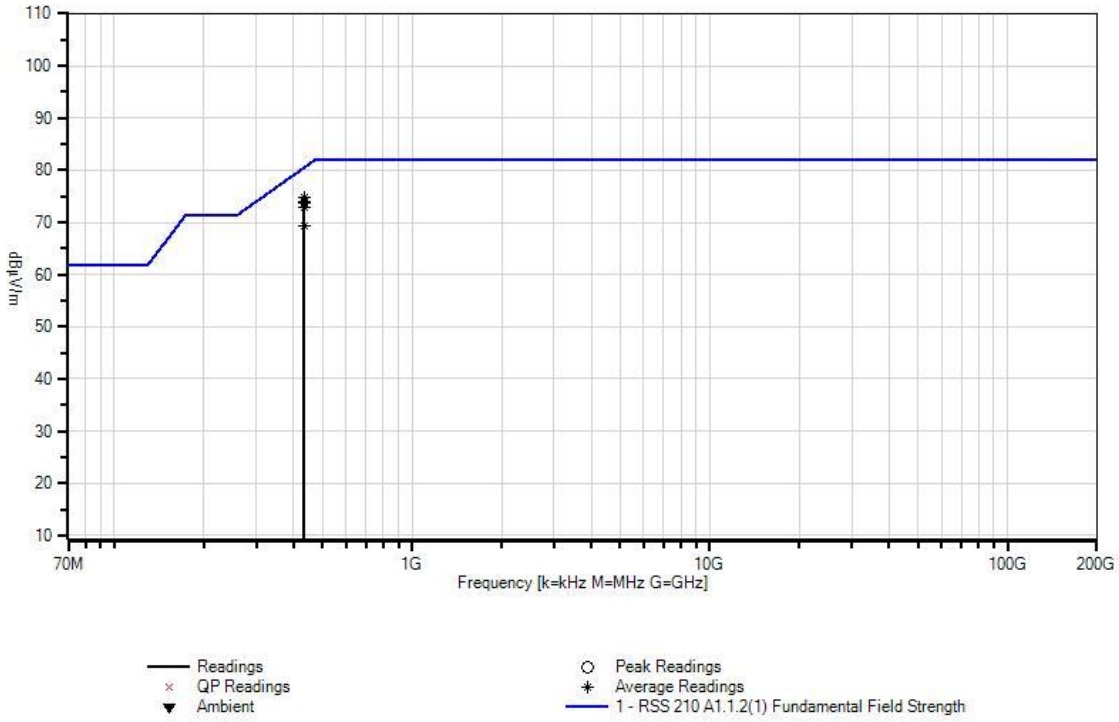
The EUT is placed on the wooden table lined with Styrofoam of 10 cm thickness. EUT is set to always transmitting mode. Three input terminals of EUT are connected to three support flow switches.
EUT is installed with new 9V battery.
Fundamental operating frequency: 433.92MHz
RBW=VBW=120kHz
Temp: 20°C, 31% Relative Humidity, 100.1kpa
Site D
Emission is investigated with EUT rotating in three axes.
Duty cycle correction factor = 20log(dwell time/100 ms)= 20log(48.33/100)=-6.32db

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
			T5	T6							
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	433.953M	81.6	+21.9	-6.3	-27.5	+2.4	+0.0	74.8	80.5	-5.7	Horiz
	Ave		+0.4	+2.3					Y axis		
2	433.953M	80.8	+21.9	-6.3	-27.5	+2.4	+0.0	74.0	80.5	-6.5	Vert
	Ave		+0.4	+2.3					Y axis		
3	433.953M	80.5	+21.9	-6.3	-27.5	+2.4	+0.0	73.7	80.5	-6.8	Vert
	Ave		+0.4	+2.3					X axis		
4	433.953M	79.7	+21.9	-6.3	-27.5	+2.4	+0.0	72.9	80.5	-7.6	Horiz
	Ave		+0.4	+2.3					X axis		
5	433.953M	76.2	+21.9	-6.3	-27.5	+2.4	+0.0	69.4	80.5	-11.1	Vert
	Ave		+0.4	+2.3					Z axis		
^	433.953M	94.5	+21.9	+0.0	-27.5	+2.4	+0.0	94.0	80.5	+13.5	Vert
			+0.4	+2.3					Y axis		
^	433.953M	94.3	+21.9	+0.0	-27.5	+2.4	+0.0	93.8	80.5	+13.3	Vert
			+0.4	+2.3					X axis		
^	433.953M	89.9	+21.9	+0.0	-27.5	+2.4	+0.0	89.4	80.5	+8.9	Vert
			+0.4	+2.3					Z axis		
9	433.948M	76.0	+21.9	-6.3	-27.5	+2.4	+0.0	69.2	80.5	-11.3	Horiz
	Ave		+0.4	+2.3					Z axis		
^	433.953M	95.2	+21.9	+0.0	-27.5	+2.4	+0.0	94.7	80.5	+14.2	Horiz
			+0.4	+2.3					Y axis		
^	433.953M	93.6	+21.9	+0.0	-27.5	+2.4	+0.0	93.1	80.5	+12.6	Horiz
			+0.4	+2.3					X axis		
^	433.948M	89.6	+21.9	+0.0	-27.5	+2.4	+0.0	89.1	80.5	+8.6	Horiz
			+0.4	+2.3					Z axis		

CKC Laboratories, Inc. Date: 12/24/2013 Time: 11:39:33 McKinley-Ross Corp. WO#: 94389
RSS 210 A1.1.2(1) Fundamental Field Strength Test Distance: 3 Meters Sequence#: 6 Ext ATTN: 0 dB



Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • 714 993 6112

Customer: **McKinley-Ross Corp.**
Specification: **RSS 210 A.1.1 Table A Spurious Field Strength (433.92 MHz Transmitter)**
Work Order #: **94389** Date: 12/24/2013
Test Type: **Maximized Emissions** Time: 14:49:55
Equipment: **Water switch transmitter** Sequence#: 5
Manufacturer: McKinley-Ross Corp. Tested By: Don Nguyen
Model: WMS500
S/N: NA

***Test Equipment*:**

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN00314	Loop Antenna	6502	6/29/2012	6/29/2014
T1	AN01234	Duty Cycle Correction Factor		10/23/2013	10/23/2015
T2	AN03169	High Pass Filter	HM1155-11SS	7/30/2013	7/30/2015
T3	AN00787	Preamp	83017A	5/31/2013	5/31/2015
T4	ANP06360	Cable	L1-PNMNM-48	8/29/2012	8/29/2014
T5	AN01646	Horn Antenna	3115	4/13/2012	4/13/2014
T6	AN02945	Cable	32022-2-2909K-36TC	10/30/2013	10/30/2015
T7	ANP04382	Cable	LDF-50	8/30/2012	8/30/2014
	AN02672	Spectrum Analyzer	E4446A	9/4/2012	9/4/2014
T8	AN00010	Preamp	8447D	3/29/2012	3/29/2014
T9	ANP05555	Cable	RG223/U	6/19/2012	6/19/2014
T10	ANP05569	Cable	RG-214/U	6/19/2012	6/19/2014
T11	AN00266A	Dipole Antenna	Type I-IV	8/31/2012	8/31/2014

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

Function	Manufacturer	Model #	S/N
Water switch transmitter*	McKinley-Ross Corp.	WMS500	NA

Support Devices:

Function	Manufacturer	Model #	S/N
Flow switch	McKinley-Ross Corp.	NA	NA
Flow switch	McKinley-Ross Corp.	NA	NA
Flow switch	McKinley-Ross Corp.	NA	NA

Test Conditions / Notes:

The EUT is placed on the wooden table lined with Styrofoam of 10 cm thickness. EUT is set to always transmitting mode. Three input terminals of EUT are connected to three support flow switches. EUT is installed with new 9V battery. Fundamental operating frequency: 433.92MHz
Frequency Range: 9KHz-4.7GHz
9 kHz -150 kHz; RBW=200 Hz, VBW=200 Hz;
150 kHz-30 MHz; RBW=9 kHz, VBW=9 kHz;
30 MHz-1000 MHz; RBW=120 kHz, VBW=120 kHz,
1000 MHz-47000 MHz; RBW=1 MHz, VBW=1MHz.
Temp: 22°C, 34% Relative Humidity, 100.1kpa
Site D
Emission is investigated with EUT rotating in three axes.
Duty cycle correction factor = 20log(dwell time/100 ms)= 20log(48.33/100)=-6.32db

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	3471.469M	60.9	-6.3	+0.2	-39.9	+3.9	+0.0	60.2	60.8	-0.6	Vert
	Ave		+32.3	+1.0	+8.1	+0.0			Y axis		
			+0.0	+0.0	+0.0						
^	3471.469M	74.2	+0.0	+0.2	-39.9	+3.9	+0.0	79.8	60.8	+19.0	Vert
			+32.3	+1.0	+8.1	+0.0			Y axis		
			+0.0	+0.0	+0.0						
3	3471.611M	59.5	-6.3	+0.2	-39.9	+3.9	+0.0	58.8	60.8	-2.0	Horiz
	Ave		+32.3	+1.0	+8.1	+0.0			Z axis		
			+0.0	+0.0	+0.0						
4	3471.628M	59.4	-6.3	+0.2	-39.9	+3.9	+0.0	58.7	60.8	-2.1	Vert
	Ave		+32.3	+1.0	+8.1	+0.0			Z axis		
			+0.0	+0.0	+0.0						
5	4339.410M	47.2	+0.0	+0.2	-39.8	+4.5	+0.0	51.3	54.0	-2.7	Horiz
			+31.0	+1.0	+7.2	+0.0			Y axis		
			+0.0	+0.0	+0.0						
6	3471.544M	58.7	-6.3	+0.2	-39.9	+3.9	+0.0	58.0	60.8	-2.8	Horiz
	Ave		+32.3	+1.0	+8.1	+0.0			Y axis		
			+0.0	+0.0	+0.0						
7	3905.544M	52.3	-6.3	+0.3	-39.9	+4.2	+0.0	50.5	54.0	-3.5	Vert
	Ave		+31.4	+1.0	+7.5	+0.0			Z axis		
			+0.0	+0.0	+0.0						
8	3905.419M	51.0	-6.3	+0.3	-39.9	+4.2	+0.0	49.2	54.0	-4.8	Vert
	Ave		+31.4	+1.0	+7.5	+0.0			Y axis		
			+0.0	+0.0	+0.0						
^	3905.419M	64.6	+0.0	+0.3	-39.9	+4.2	+0.0	69.1	54.0	+15.1	Vert
			+31.4	+1.0	+7.5	+0.0			Y axis		
			+0.0	+0.0	+0.0						
10	3905.586M	50.8	-6.3	+0.3	-39.9	+4.2	+0.0	49.0	54.0	-5.0	Vert
	Ave		+31.4	+1.0	+7.5	+0.0			X axis		
			+0.0	+0.0	+0.0						
^	3905.544M	66.2	+0.0	+0.3	-39.9	+4.2	+0.0	70.7	54.0	+16.7	Vert
			+31.4	+1.0	+7.5	+0.0			Z axis		
			+0.0	+0.0	+0.0						
^	3905.586M	64.2	+0.0	+0.3	-39.9	+4.2	+0.0	68.7	54.0	+14.7	Vert
			+31.4	+1.0	+7.5	+0.0			X axis		
			+0.0	+0.0	+0.0						
13	3905.586M	50.3	-6.3	+0.3	-39.9	+4.2	+0.0	48.5	54.0	-5.5	Horiz
	Ave		+31.4	+1.0	+7.5	+0.0			X axis		
			+0.0	+0.0	+0.0						
14	3471.636M	56.0	-6.3	+0.2	-39.9	+3.9	+0.0	55.3	60.8	-5.5	Horiz
	Ave		+32.3	+1.0	+8.1	+0.0			X axis		
			+0.0	+0.0	+0.0						
^	3471.611M	73.1	+0.0	+0.2	-39.9	+3.9	+0.0	78.7	60.8	+17.9	Horiz
			+32.3	+1.0	+8.1	+0.0			Z axis		
			+0.0	+0.0	+0.0						

^	3471.544M	72.3	+0.0 +32.3 +0.0	+0.2 +1.0 +0.0	-39.9 +8.1 +0.0	+3.9 +0.0	+0.0	77.9	60.8 Y axis	+17.1	Horiz
^	3471.636M	69.8	+0.0 +32.3 +0.0	+0.2 +1.0 +0.0	-39.9 +8.1 +0.0	+3.9 +0.0	+0.0	75.4	60.8 X axis	+14.6	Horiz
18	4339.536M	44.1	+0.0 +31.0 +0.0	+0.2 +1.0 +0.0	-39.8 +7.2 +0.0	+4.5 +0.0	+0.0	48.2	54.0 X axis	-5.8	Horiz
19	3905.561M Ave	49.3	-6.3 +31.4 +0.0	+0.3 +1.0 +0.0	-39.9 +7.5 +0.0	+4.2 +0.0	+0.0	47.5	54.0 Z axis	-6.5	Horiz
^	3905.586M	63.8	+0.0 +31.4 +0.0	+0.3 +1.0 +0.0	-39.9 +7.5 +0.0	+4.2 +0.0	+0.0	68.3	54.0 X axis	+14.3	Horiz
^	3905.561M	62.7	+0.0 +31.4 +0.0	+0.3 +1.0 +0.0	-39.9 +7.5 +0.0	+4.2 +0.0	+0.0	67.2	54.0 Z axis	+13.2	Horiz
22	3905.461M Ave	49.3	-6.3 +31.4 +0.0	+0.3 +1.0 +0.0	-39.9 +7.5 +0.0	+4.2 +0.0	+0.0	47.5	54.0 Y axis	-6.5	Horiz
^	3905.461M	62.5	+0.0 +31.4 +0.0	+0.3 +1.0 +0.0	-39.9 +7.5 +0.0	+4.2 +0.0	+0.0	67.0	54.0 Y axis	+13.0	Horiz
24	867.903M Ave	52.5	-6.3 +0.0 +0.6	+0.0 +0.0 +3.4	+0.0 +3.5 +27.8	+0.0 -27.5	+0.0	54.0	60.8 X axis	-6.8	Horiz
25	3471.636M Ave	54.1	-6.3 +32.3 +0.0	+0.2 +1.0 +0.0	-39.9 +8.1 +0.0	+3.9 +0.0	+0.0	53.4	60.8 X axis	-7.4	Vert
^	3471.628M	72.9	+0.0 +32.3 +0.0	+0.2 +1.0 +0.0	-39.9 +8.1 +0.0	+3.9 +0.0	+0.0	78.5	60.8 Z axis	+17.7	Vert
^	3471.636M	67.6	+0.0 +32.3 +0.0	+0.2 +1.0 +0.0	-39.9 +8.1 +0.0	+3.9 +0.0	+0.0	73.2	60.8 X axis	+12.4	Vert
28	4339.494M	42.4	+0.0 +31.0 +0.0	+0.2 +1.0 +0.0	-39.8 +7.2 +0.0	+4.5 +0.0	+0.0	46.5	54.0 Z axis	-7.5	Vert
29	3037.661M Ave	58.7	-6.3 +29.4 +0.0	+0.2 +0.8 +0.0	-39.7 +6.2 +0.0	+3.7 +0.0	+0.0	53.0	60.8 Z axis	-7.8	Horiz
30	4339.494M	41.3	+0.0 +31.0 +0.0	+0.2 +1.0 +0.0	-39.8 +7.2 +0.0	+4.5 +0.0	+0.0	45.4	54.0 Z axis	-8.6	Horiz
31	3037.594M Ave	57.2	-6.3 +29.4 +0.0	+0.2 +0.8 +0.0	-39.7 +6.2 +0.0	+3.7 +0.0	+0.0	51.5	60.8 Y axis	-9.3	Horiz
32	4339.536M	40.3	+0.0 +31.0 +0.0	+0.2 +1.0 +0.0	-39.8 +7.2 +0.0	+4.5 +0.0	+0.0	44.4	54.0 X axis	-9.6	Vert

33	867.903M	49.5	-6.3	+0.0	+0.0	+0.0	+0.0	51.0	60.8	-9.8	Vert
	Ave		+0.0	+0.0	+3.5	-27.5			Y axis		
			+0.6	+3.4	+27.8						
34	3037.686M	56.6	-6.3	+0.2	-39.7	+3.7	+0.0	50.9	60.8	-9.9	Horiz
	Ave		+29.4	+0.8	+6.2	+0.0			X axis		
			+0.0	+0.0	+0.0						
^	3037.661M	72.4	+0.0	+0.2	-39.7	+3.7	+0.0	73.0	60.8	+12.2	Horiz
			+29.4	+0.8	+6.2	+0.0			Z axis		
			+0.0	+0.0	+0.0						
^	3037.594M	71.0	+0.0	+0.2	-39.7	+3.7	+0.0	71.6	60.8	+10.8	Horiz
			+29.4	+0.8	+6.2	+0.0			Y axis		
			+0.0	+0.0	+0.0						
^	3037.686M	70.2	+0.0	+0.2	-39.7	+3.7	+0.0	70.8	60.8	+10.0	Horiz
			+29.4	+0.8	+6.2	+0.0			X axis		
			+0.0	+0.0	+0.0						
38	867.903M	49.1	-6.3	+0.0	+0.0	+0.0	+0.0	50.6	60.8	-10.2	Horiz
	Ave		+0.0	+0.0	+3.5	-27.5			Z axis		
			+0.6	+3.4	+27.8						
39	867.903M	47.7	-6.3	+0.0	+0.0	+0.0	+0.0	49.2	60.8	-11.6	Vert
	Ave		+0.0	+0.0	+3.5	-27.5			X axis		
			+0.6	+3.4	+27.8						
40	2603.736M	57.7	-6.3	+0.2	-39.7	+3.4	+0.0	48.8	60.8	-12.0	Horiz
	Ave		+27.1	+0.7	+5.7	+0.0			X axis		
			+0.0	+0.0	+0.0						
41	3037.686M	54.0	-6.3	+0.2	-39.7	+3.7	+0.0	48.3	60.8	-12.5	Vert
	Ave		+29.4	+0.8	+6.2	+0.0			X axis		
			+0.0	+0.0	+0.0						
42	3037.678M	53.9	-6.3	+0.2	-39.7	+3.7	+0.0	48.2	60.8	-12.6	Vert
	Ave		+29.4	+0.8	+6.2	+0.0			Z axis		
			+0.0	+0.0	+0.0						
43	867.903M	46.6	-6.3	+0.0	+0.0	+0.0	+0.0	48.1	60.8	-12.7	Vert
	Ave		+0.0	+0.0	+3.5	-27.5			Z axis		
			+0.6	+3.4	+27.8						
^	867.903M	61.6	+0.0	+46.5	-42.8	+1.9	+0.0	71.0	60.8	+10.2	Vert
			+0.0	+0.3	+3.5	+0.0			Y axis		
			+0.0	+0.0	+0.0						
^	867.903M	60.5	+0.0	+46.5	-42.8	+1.9	+0.0	69.9	60.8	+9.1	Vert
			+0.0	+0.3	+3.5	+0.0			Z axis		
			+0.0	+0.0	+0.0						
^	867.903M	59.9	+0.0	+46.5	-42.8	+1.9	+0.0	69.3	60.8	+8.5	Vert
			+0.0	+0.3	+3.5	+0.0			X axis		
			+0.0	+0.0	+0.0						
47	2603.644M	57.0	-6.3	+0.2	-39.7	+3.4	+0.0	48.1	60.8	-12.7	Horiz
	Ave		+27.1	+0.7	+5.7	+0.0			Y axis		
			+0.0	+0.0	+0.0						
48	867.903M	46.3	-6.3	+0.0	+0.0	+0.0	+0.0	47.8	60.8	-13.0	Horiz
	Ave		+0.0	+0.0	+3.5	-27.5			Y axis		
			+0.6	+3.4	+27.8						
^	867.903M	65.6	+0.0	+46.5	-42.8	+1.9	+0.0	75.0	60.8	+14.2	Horiz
			+0.0	+0.3	+3.5	+0.0			X axis		
			+0.0	+0.0	+0.0						

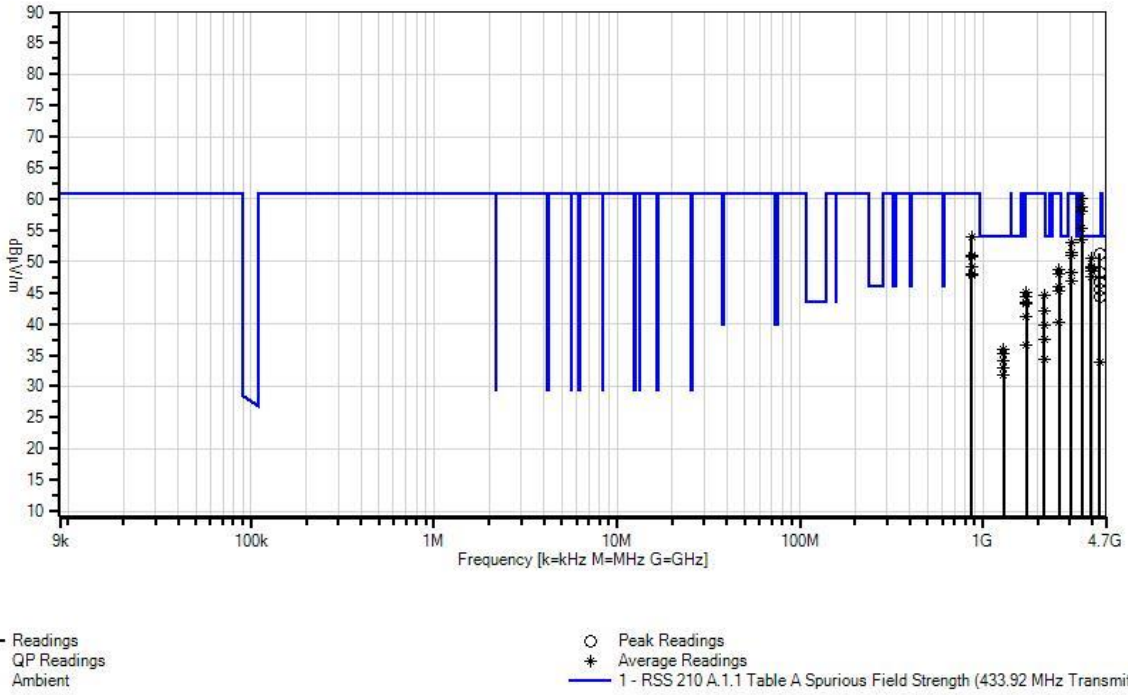
^	867.903M	62.9	+0.0 +0.0 +0.0	+46.5 +0.3 +0.0	-42.8 +3.5 +0.0	+1.9 +0.0	+0.0	72.3	60.8 Z axis	+11.5	Horiz
^	867.903M	60.4	+0.0 +0.0 +0.0	+46.5 +0.3 +0.0	-42.8 +3.5 +0.0	+1.9 +0.0	+0.0	69.8	60.8 Y axis	+9.0	Horiz
52	3037.652M Ave	52.6	-6.3 +29.4 +0.0	+0.2 +0.8 +0.0	-39.7 +6.2 +0.0	+3.7 +0.0	+0.0	46.9	60.8 Y axis	-13.9	Vert
^	3037.678M	67.7	+0.0 +29.4 +0.0	+0.2 +0.8 +0.0	-39.7 +6.2 +0.0	+3.7 +0.0	+0.0	68.3	60.8 Z axis	+7.5	Vert
^	3037.686M	67.4	+0.0 +29.4 +0.0	+0.2 +0.8 +0.0	-39.7 +6.2 +0.0	+3.7 +0.0	+0.0	68.0	60.8 X axis	+7.2	Vert
^	3037.652M	65.5	+0.0 +29.4 +0.0	+0.2 +0.8 +0.0	-39.7 +6.2 +0.0	+3.7 +0.0	+0.0	66.1	60.8 Y axis	+5.3	Vert
56	2603.736M Ave	54.8	-6.3 +27.1 +0.0	+0.2 +0.7 +0.0	-39.7 +5.7 +0.0	+3.4 +0.0	+0.0	45.9	60.8 X axis	-14.9	Vert
57	2603.711M Ave	54.8	-6.3 +27.1 +0.0	+0.2 +0.7 +0.0	-39.7 +5.7 +0.0	+3.4 +0.0	+0.0	45.9	60.8 Z axis	-14.9	Horiz
^	2603.736M	71.2	+0.0 +27.1 +0.0	+0.2 +0.7 +0.0	-39.7 +5.7 +0.0	+3.4 +0.0	+0.0	68.6	60.8 X axis	+7.8	Horiz
^	2603.644M	70.4	+0.0 +27.1 +0.0	+0.2 +0.7 +0.0	-39.7 +5.7 +0.0	+3.4 +0.0	+0.0	67.8	60.8 Y axis	+7.0	Horiz
^	2603.711M	68.4	+0.0 +27.1 +0.0	+0.2 +0.7 +0.0	-39.7 +5.7 +0.0	+3.4 +0.0	+0.0	65.8	60.8 Z axis	+5.0	Horiz
61	2603.728M Ave	54.1	-6.3 +27.1 +0.0	+0.2 +0.7 +0.0	-39.7 +5.7 +0.0	+3.4 +0.0	+0.0	45.2	60.8 Z axis	-15.6	Vert
62	1735.828M Ave	55.3	-6.3 +27.0 +0.0	+0.3 +0.6 +0.0	-39.8 +5.2 +0.0	+2.7 +0.0	+0.0	45.0	60.8 Z axis	-15.8	Vert
63	2169.694M Ave	53.0	-6.3 +27.5 +0.0	+0.2 +0.8 +0.0	-39.7 +5.7 +0.0	+3.3 +0.0	+0.0	44.5	60.8 Y axis	-16.3	Horiz
64	1735.836M Ave	54.8	-6.3 +27.0 +0.0	+0.3 +0.6 +0.0	-39.8 +5.2 +0.0	+2.7 +0.0	+0.0	44.5	60.8 X axis	-16.3	Vert
65	1735.794M Ave	53.7	-6.3 +27.0 +0.0	+0.3 +0.6 +0.0	-39.8 +5.2 +0.0	+2.7 +0.0	+0.0	43.4	60.8 Z axis	-17.4	Horiz
66	1735.794M Ave	53.5	-6.3 +27.0 +0.0	+0.3 +0.6 +0.0	-39.8 +5.2 +0.0	+2.7 +0.0	+0.0	43.2	60.8 X axis	-17.6	Horiz

67	1301.844M	50.2	-6.3	+0.6	-40.5	+2.4	+0.0	35.9	54.0	-18.1	Horiz
	Ave		+24.5	+0.6	+4.4	+0.0			Z axis		
			+0.0	+0.0	+0.0						
68	2169.786M	50.6	-6.3	+0.2	-39.7	+3.3	+0.0	42.1	60.8	-18.7	Horiz
	Ave		+27.5	+0.8	+5.7	+0.0			X axis		
			+0.0	+0.0	+0.0						
69	1301.852M	49.6	-6.3	+0.6	-40.5	+2.4	+0.0	35.3	54.0	-18.7	Vert
	Ave		+24.5	+0.6	+4.4	+0.0			X axis		
			+0.0	+0.0	+0.0						
70	1301.853M	49.4	-6.3	+0.6	-40.5	+2.4	+0.0	35.1	54.0	-18.9	Vert
	Ave		+24.5	+0.6	+4.4	+0.0			Z axis		
			+0.0	+0.0	+0.0						
71	1735.769M	51.5	-6.3	+0.3	-39.8	+2.7	+0.0	41.2	60.8	-19.6	Horiz
	Ave		+27.0	+0.6	+5.2	+0.0			Y axis		
			+0.0	+0.0	+0.0						
^	1735.794M	67.0	+0.0	+0.3	-39.8	+2.7	+0.0	63.0	60.8	+2.2	Horiz
			+27.0	+0.6	+5.2	+0.0			Z axis		
			+0.0	+0.0	+0.0						
^	1735.794M	66.8	+0.0	+0.3	-39.8	+2.7	+0.0	62.8	60.8	+2.0	Horiz
			+27.0	+0.6	+5.2	+0.0			X axis		
			+0.0	+0.0	+0.0						
^	1735.769M	65.0	+0.0	+0.3	-39.8	+2.7	+0.0	61.0	60.8	+0.2	Horiz
			+27.0	+0.6	+5.2	+0.0			Y axis		
			+0.0	+0.0	+0.0						
75	1301.844M	48.3	-6.3	+0.6	-40.5	+2.4	+0.0	34.0	54.0	-20.0	Horiz
	Ave		+24.5	+0.6	+4.4	+0.0			X axis		
			+0.0	+0.0	+0.0						
76	4339.369M	36.1	-6.3	+0.2	-39.8	+4.5	+0.0	33.9	54.0	-20.1	Vert
	Ave		+31.0	+1.0	+7.2	+0.0			Y axis		
			+0.0	+0.0	+0.0						
^	4339.369M	46.4	+0.0	+0.2	-39.8	+4.5	+0.0	50.5	54.0	-3.5	Vert
			+31.0	+1.0	+7.2	+0.0			Y axis		
			+0.0	+0.0	+0.0						
78	2603.652M	49.2	-6.3	+0.2	-39.7	+3.4	+0.0	40.3	60.8	-20.5	Vert
	Ave		+27.1	+0.7	+5.7	+0.0			Y axis		
			+0.0	+0.0	+0.0						
^	2603.736M	68.9	+0.0	+0.2	-39.7	+3.4	+0.0	66.3	60.8	+5.5	Vert
			+27.1	+0.7	+5.7	+0.0			X axis		
			+0.0	+0.0	+0.0						
^	2603.728M	67.7	+0.0	+0.2	-39.7	+3.4	+0.0	65.1	60.8	+4.3	Vert
			+27.1	+0.7	+5.7	+0.0			Z axis		
			+0.0	+0.0	+0.0						
^	2603.652M	62.6	+0.0	+0.2	-39.7	+3.4	+0.0	60.0	60.8	-0.8	Vert
			+27.1	+0.7	+5.7	+0.0			Y axis		
			+0.0	+0.0	+0.0						
82	2169.786M	48.4	-6.3	+0.2	-39.7	+3.3	+0.0	39.9	60.8	-20.9	Vert
	Ave		+27.5	+0.8	+5.7	+0.0			X axis		
			+0.0	+0.0	+0.0						
83	2169.744M	48.3	-6.3	+0.2	-39.7	+3.3	+0.0	39.8	60.8	-21.0	Horiz
	Ave		+27.5	+0.8	+5.7	+0.0			Z axis		
			+0.0	+0.0	+0.0						

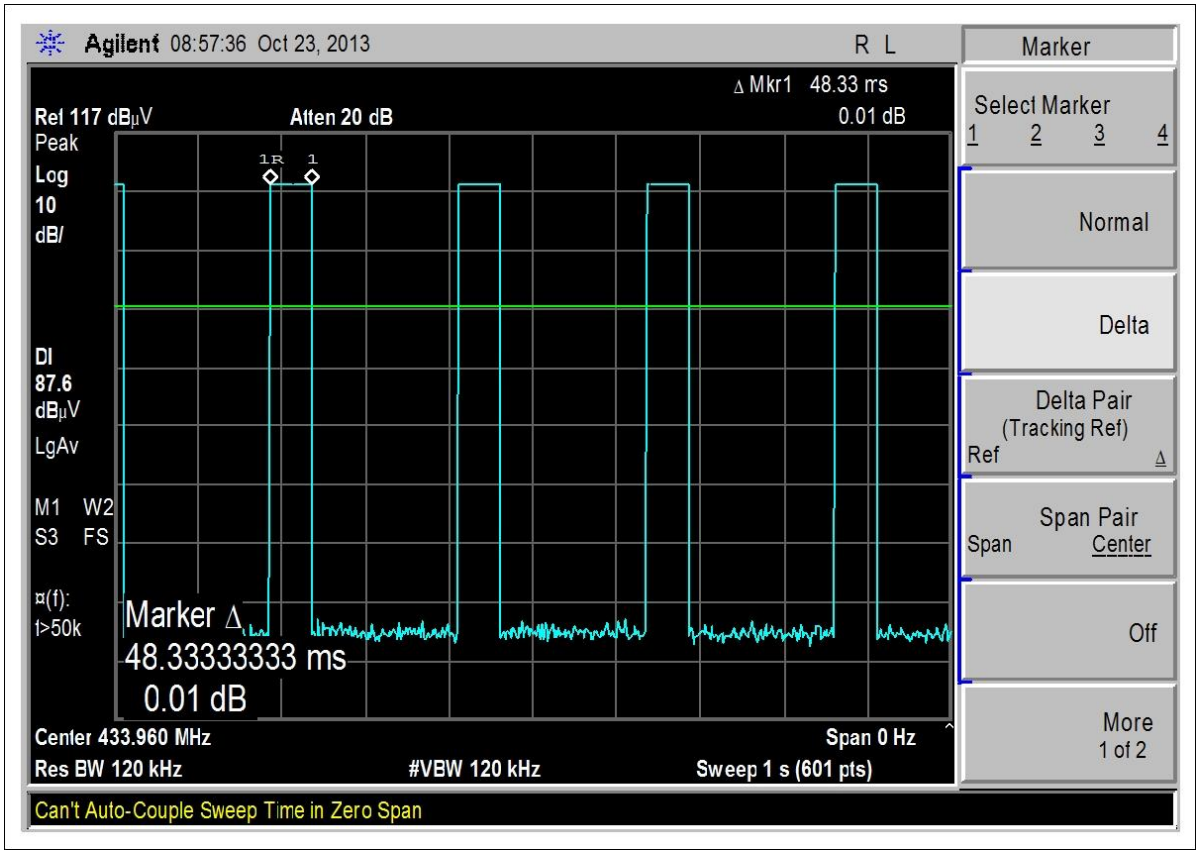
^	2169.694M	66.8	+0.0 +27.5 +0.0	+0.2 +0.8 +0.0	-39.7 +5.7 +0.0	+3.3 +0.0	+0.0	64.6	60.8 Y axis	+3.8	Horiz
^	2169.786M	64.0	+0.0 +27.5 +0.0	+0.2 +0.8 +0.0	-39.7 +5.7 +0.0	+3.3 +0.0	+0.0	61.8	60.8 X axis	+1.0	Horiz
^	2169.744M	61.7	+0.0 +27.5 +0.0	+0.2 +0.8 +0.0	-39.7 +5.7 +0.0	+3.3 +0.0	+0.0	59.5	60.8 Z axis	-1.3	Horiz
87	1301.819M Ave	47.3	-6.3 +24.5 +0.0	+0.6 +0.6 +0.0	-40.5 +4.4 +0.0	+2.4 +0.0	+0.0	33.0	54.0 Y axis	-21.0	Horiz
^	1301.844M	63.6	+0.0 +24.5 +0.0	+0.6 +0.6 +0.0	-40.5 +4.4 +0.0	+2.4 +0.0	+0.0	55.6	54.0 Z axis	+1.6	Horiz
^	1301.844M	61.9	+0.0 +24.5 +0.0	+0.6 +0.6 +0.0	-40.5 +4.4 +0.0	+2.4 +0.0	+0.0	53.9	54.0 X axis	-0.1	Horiz
^	1301.819M	60.5	+0.0 +24.5 +0.0	+0.6 +0.6 +0.0	-40.5 +4.4 +0.0	+2.4 +0.0	+0.0	52.5	54.0 Y axis	-1.5	Horiz
91	1301.802M Ave	46.1	-6.3 +24.5 +0.0	+0.6 +0.6 +0.0	-40.5 +4.4 +0.0	+2.4 +0.0	+0.0	31.8	54.0 Y axis	-22.2	Vert
^	1301.853M	63.3	+0.0 +24.5 +0.0	+0.6 +0.6 +0.0	-40.5 +4.4 +0.0	+2.4 +0.0	+0.0	55.3	54.0 Z axis	+1.3	Vert
^	1301.852M	62.9	+0.0 +24.5 +0.0	+0.6 +0.6 +0.0	-40.5 +4.4 +0.0	+2.4 +0.0	+0.0	54.9	54.0 X axis	+0.9	Vert
^	1301.802M	59.5	+0.0 +24.5 +0.0	+0.6 +0.6 +0.0	-40.5 +4.4 +0.0	+2.4 +0.0	+0.0	51.5	54.0 Y axis	-2.5	Vert
95	2169.778M Ave	45.9	-6.3 +27.5 +0.0	+0.2 +0.8 +0.0	-39.7 +5.7 +0.0	+3.3 +0.0	+0.0	37.4	60.8 Z axis	-23.4	Vert
96	1735.752M Ave	46.8	-6.3 +27.0 +0.0	+0.3 +0.6 +0.0	-39.8 +5.2 +0.0	+2.7 +0.0	+0.0	36.5	60.8 Y axis	-24.3	Vert
^	1735.828M	68.8	+0.0 +27.0 +0.0	+0.3 +0.6 +0.0	-39.8 +5.2 +0.0	+2.7 +0.0	+0.0	64.8	60.8 Z axis	+4.0	Vert
^	1735.836M	68.0	+0.0 +27.0 +0.0	+0.3 +0.6 +0.0	-39.8 +5.2 +0.0	+2.7 +0.0	+0.0	64.0	60.8 X axis	+3.2	Vert
^	1735.752M	62.2	+0.0 +27.0 +0.0	+0.3 +0.6 +0.0	-39.8 +5.2 +0.0	+2.7 +0.0	+0.0	58.2	60.8 Y axis	-2.6	Vert
100	2169.702M Ave	42.8	-6.3 +27.5 +0.0	+0.2 +0.8 +0.0	-39.7 +5.7 +0.0	+3.3 +0.0	+0.0	34.3	60.8 Y axis	-26.5	Vert

^	2169.786M	61.6	+0.0 +27.5 +0.0	+0.2 +0.8 +0.0	-39.7 +5.7 +0.0	+3.3 +0.0	+0.0	59.4	60.8 X axis	-1.4	Vert
^	2169.778M	59.4	+0.0 +27.5 +0.0	+0.2 +0.8 +0.0	-39.7 +5.7 +0.0	+3.3 +0.0	+0.0	57.2	60.8 Z axis	-3.6	Vert
^	2169.702M	56.3	+0.0 +27.5 +0.0	+0.2 +0.8 +0.0	-39.7 +5.7 +0.0	+3.3 +0.0	+0.0	54.1	60.8 Y axis	-6.7	Vert

CKC Laboratories, Inc. Date: 12/24/2013 Time: 14:49:55 McKinley-Ross Corp. WO#: 94389
RSS 210 A.1.1 Table A Spurious Field Strength (433.92 MHz Transmitter) Test Distance: 3 Meters Sequence#: 5
Ext ATTN: 0 dB



Duty Cycle Test Plot



Test Setup Photos

Overall Test Setup

X Axis

Y Axis

Z Axis

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 dBµV/m, the spectrum analyzer reading in dBµV 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.