SmartLabs, Inc.

TEST REPORT FOR

RemoteLinc 2 INSTEON Wireless Controller, 2444Ax

Tested To The Following Standards:

FCC Part 15 Subpart C Sections 15.249 and RSS-210 Issue 8

Report No.: 92090-4

Date of issue: July 29, 2011



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.

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TABLE OF CONTENTS

Administrative Information	3
Test Report Information	3
Report Authorization	3
Test Facility Information	4
Site Registration & Accreditation Information	4
Summary of Results	5
Conditions During Testing	5
Equipment Under Test	6
Peripheral Devices	6
FCC Part 15 Subpart C	7
15.31(e) Voltage Variations	7
15.207 Conducted Emissions	11
15.249 / 2.1049 Occupied Bandwidth	12
15.249 FCC_Bandedge	17
15.249(a) RF Power Output	23
15.249 (d) Radiated Spurious Emissions	29
RSS-210	48
99 % Bandwidth	48
Supplemental Information	53
Measurement Uncertainty	53
Fmissions Test Details	53



ADMINISTRATIVE INFORMATION

Test Report Information

REPORT PREPARED FOR: REPORT PREPARED BY:

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Representative: Matthew Carter Project Number: 92090

Customer Reference Number: 11-3MC0622-01

DATE OF EQUIPMENT RECEIPT: July 27, 2011

DATE(S) OF TESTING: July 27, 2011

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.

Steve J Be

Page 3 of 54 Report No.: 92090-4



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

Site Registration & Accreditation Information

Location	CB #	JAPAN	CANADA	FCC
Brea D	US0060	R-1256, C-1319, T-1660 & G-255	3082D-2	100638

Page 4 of 54 Report No.: 92090-4



SUMMARY OF RESULTS

Standard / Specification: FCC Part 15 Subpart C Section 15.249 & RSS-210 Issue 8

Description	Test Procedure/Method	Results
Voltage Variations	FCC Part 15 Subpart C Section 15.31(e)	Pass
Conducted Emissions	FCC Part 15 Subpart C Section 15.207 / ANSI C63.4 (2003)	NA
Occupied Bandwidth	FCC Part 15 Subpart C Section 15.249 / 2.1049	Pass
Bandedge	FCC Part 15 Subpart C 15.249	Pass
RF Power Output	FCC Part 15 Subpart C Section 15.249(a)	Pass
Field Strength of Spurious Emissions	FCC Part 15 Subpart C Section 15.249(d)	Pass
99% Occupied Bandwidth	RSS-210 Issue 8	Pass

Conditions During Testing

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

A fully charged EUT simulates a fresh battery installed during the test.

Page 5 of 54 Report No.: 92090-4



EQUIPMENT UNDER TEST (EUT)

EQUIPMENT UNDER TEST

RemoteLinc 2 INSTEON Wireless Controller

Manuf: SmartLabs, Inc.

Model: 2444Ax Serial: NA

PERIPHERAL DEVICES

The EUT was not tested with peripheral devices.

Page 6 of 54 Report No.: 92090-4



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.

15.31(e) Voltage Variations

Test Conditions/ Set up

The EUT is placed on the wooden table lined with Styrofoam of 10 cm thickness. Orientated in three orthogonal operating positions, the EUT is set in constant transmit mode. No load is connected to the EUT for evaluation of RF parameter. The EUT operates on battery power. The EUT power is designed to be mechanically switched off during charge cycle via dedicated USB charging port.

TX freq = 914.5-915.5 MHz

72°F, 53% Relative Humidity
Frequency range of measurement = 914.5 - 915.5MHz
30 MHz-1000 MHz; RBW=120 kHz, VBW=120 kHz.

Note: 15.31(e) A fully charged EUT simulates a fresh battery installed during the test.

Engineer Name: Don Nguyen

Test Equipment								
Asset/Serial #	Description	Model	Manufacturer	Cal Date	Cal Due			
P04382	Cable	LDF-50	Andrew	9/3/2010	9/3/2012			
02869	Spectrum Analyzer	E4440A	Agilent	2/12/2011	2/12/2013			
00010	Preamp	8447D	HP	3/19/2010	3/19/2012			
00851	Biconilog Antenna	CBL6111C	Schaffer	3/8/2010	3/8/2012			
P05555	Cable	RG223/U	Pasternack	8/18/2010	8/18/2012			
P05569	Cable	RG-214/U	Pasternack	8/18/2010	8/18/2012			

Page 7 of 54 Report No.: 92090-4



Test Setup Photos



X AXIS FRONT VIEW



X AXIS BACK VIEW





Y AXIS FRONT VIEW



Y AXIS BACK VIEW





Z AXIS FRONT VIEW



Z AXIS FRONT VIEW



15.207 Conducted Emissions

NA = Conducted Emissions is not applicable because the EUT is battery powered.

Page 11 of 54 Report No.: 92090-4



15.249 / 2.1049 Occupied Bandwidth

Test Conditions / Set up

The EUT is placed on the wooden table lined with Styrofoam of 10 cm thickness. Orientated in three orthogonal operating positions, the EUT is set in constant transmit mode. No load is connected to the EUT for evaluation of RF parameter. The EUT operates on battery power. The EUT power is designed to be mechanically switched off during charge cycle via dedicated USB charging port.

TX freq = 914.5-915.5 MHz

72°F, 53% Relative Humidity
Frequency range of measurement = 914.5 - 915.5MHz
30 MHz-1000 MHz; RBW=120 kHz, VBW=120 kHz.

Note: A fully charged EUT simulates a fresh battery installed during the test.

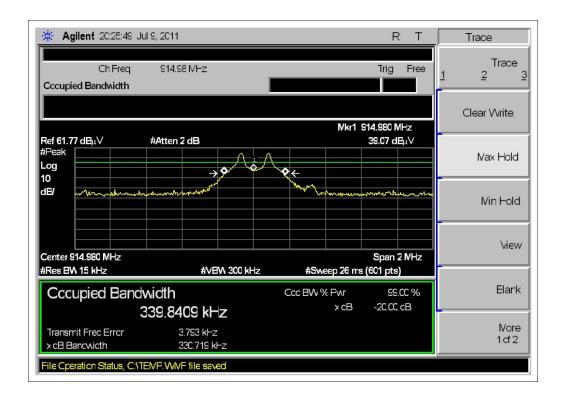
Engineer Name: Don Nguyen

Test Equipment								
Asset/Serial #	Description	Model	Manufacturer	Cal Date	Cal Due			
P04382	Cable	LDF-50	Andrew	9/3/2010	9/3/2012			
02869	Spectrum Analyzer	E4440A	Agilent	2/12/2011	2/12/2013			
00010	Preamp	8447D	HP	3/19/2010	3/19/2012			
00851	Biconilog Antenna	CBL6111C	Schaffer	3/8/2010	3/8/2012			
P05555	Cable	RG223/U	Pasternack	8/18/2010	8/18/2012			
P05569	Cable	RG-214/U	Pasternack	8/18/2010	8/18/2012			

Page 12 of 54 Report No.: 92090-4



Test Data





Test Setup Photos



X AXIS FRONT VIEW



X AXIS BACK VIEW





Y AXIS FRONT VIEW



Y AXIS BACK VIEW





Z AXIS FRONT VIEW



Z AXIS BACK VIEW



15.249 FCC_Bandedge

Test Conditions / Set up

The EUT is placed on the wooden table lined with Styrofoam of 10 cm thickness. Orientated in three orthogonal operating positions, the EUT is set in constant transmit mode. No load is connected to the EUT for evaluation of RF parameter. The EUT operates on battery power. The EUT power is designed to be mechanically switched off during charge cycle via dedicated USB charging port.

TX freq = 914.5-915.5 MHz

72°F, 53% Relative Humidity
Frequency range of measurement = 914.5 - 915.5MHz
30 MHz-1000 MHz; RBW=120 kHz, VBW=120 kHz.

Note: A fully charged EUT simulates a fresh battery installed during the test.

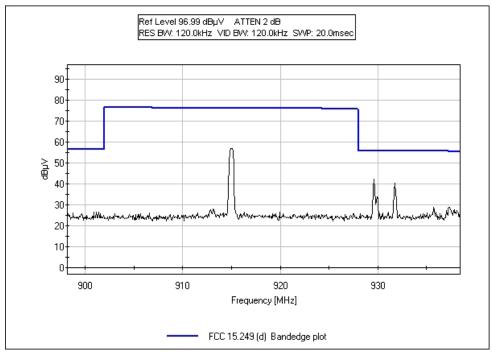
Engineer Name: Don Nguyen

Test Equipment								
Asset/Serial # Description Model Manufacturer Cal Date Cal Due								
P04382	Cable	LDF-50	Andrew	9/3/2010	9/3/2012			
02869	Spectrum Analyzer	E4440A	Agilent	2/12/2011	2/12/2013			
00010	Preamp	8447D	HP	3/19/2010	3/19/2012			
00851	Biconilog Antenna	CBL6111C	Schaffer	3/8/2010	3/8/2012			
P05555	Cable	RG223/U	Pasternack	8/18/2010	8/18/2012			
P05569	Cable	RG-214/U	Pasternack	8/18/2010	8/18/2012			

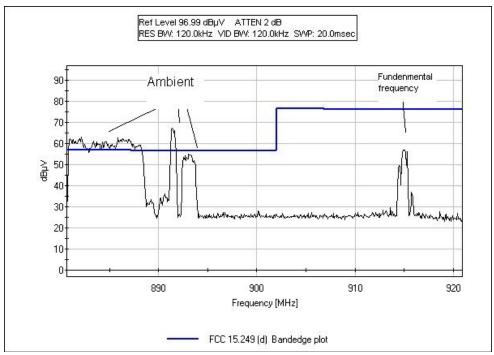
Page 17 of 54 Report No.: 92090-4



Test Data

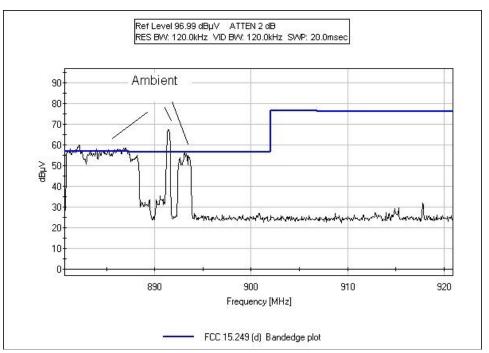


BANDEDGE CENTER

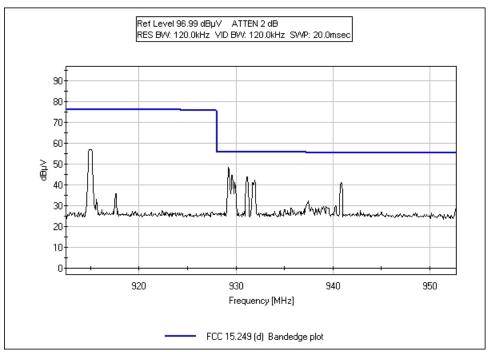


BANDEDGE LEFT





BANDEDGE LEFT Tx OFF



BANDEDGE RIGHT



Test Setup Photos



X AXIS FRONT VIEW



X AXIS BACK VIEW





Y AXIS FRONT VIEW



Y AXIS BACK VIEW





Z AXIS FRONT VIEW



Z AXIS BACK VIEW



15.249(a) RF Power Output

Test Data Sheet

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

Customer: SmartLabs, Inc.

Specification: 15.249 Carrier and Spurious Emissions (902-928 MHz Transmitter) Work Order #: 92090 Date: 7/27/2011 Test Type: **Maximized Emissions** Time: 10:13:50 Equipment: Sequence#: 2

RemoteLinc 2 INSTEON Wireless

Controller

Manufacturer: SmartLabs, Inc. Tested By: Don Nguyen

Model: 2444Ax S/N: NA

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN00010	Preamp	8447D	3/19/2010	3/19/2012
T2	AN00851	Biconilog Antenna	CBL6111C	3/8/2010	3/8/2012
T3	ANP04382	Cable	LDF-50	9/3/2010	9/3/2012
T4	ANP05555	Cable	RG223/U	8/18/2010	8/18/2012
T5	ANP05569	Cable	RG-214/U	8/18/2010	8/18/2012
	AN02869	Spectrum Analyzer	E4440A	2/12/2011	2/12/2013
	AN01646	Horn Antenna	3115	8/18/2010	8/18/2012
	AN02946	Cable	32022-2-2909K-	9/14/2009	9/14/2011
			36TC		
	ANP05988	Cable	LDF1-50	3/12/2010	3/12/2012
	AN03169	High Pass Filter	HM1155-11SS	9/14/2009	9/14/2011
	AN00787	Preamp	83017A	4/8/2011	4/8/2013

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N	
RemoteLinc 2 INSTEON Wireless Controller*	SmartLabs Inc	2444Ax	NA	•

Support Devices:

Function	M	M = J = 1 H	C/NI	
Function	Manufacturer	Model #	3 /1 N	

Page 23 of 54 Report No.: 92090-4



Test Conditions / Notes:

The EUT is placed on the wooden table lined with Styrofoam of 10 cm thickness.

Orientated in three orthogonal operating positions, the EUT is set in constant transmit mode. No load is connected to the EUT for evaluation of RF parameter.

EUT operates on battery power.

TX freq = 914.5-915.5 MHz

The EUT power is designed to be mechanically switched off during charge cycle via dedicated USB charging port.

Frequency range of measurement

30Mhz- 1 GHz, RBW=120 kHz, VBW=120 kHz

15.31(e) A fully charged EUT simulates a fresh battery installed during the test.

72°F, 53% Relative Humidity

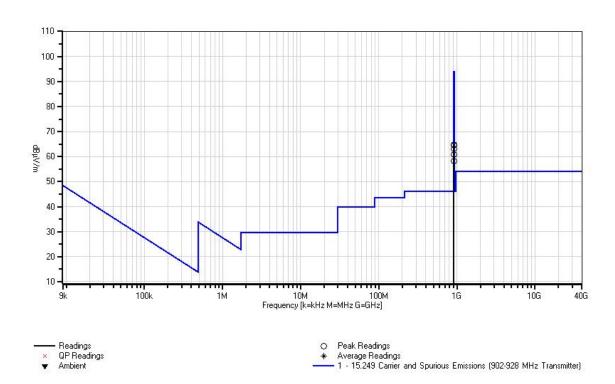
Ext Attn: 0 dB

Measu	rement Data:	Re	eading lis	ted by ma	argin.		Te	est Distanc	e: 3 Meters	1	
#	Freq	Rdng	T1 T5	T2	Т3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	$dB\mu V$	dB	dB	dB	dB	Table	$dB\muV/m$	$dB\muV/m$	dB	Ant
1	914.900M	61.0	-27.5	+23.3	+3.3	+0.6	+0.0	64.8	94.0	-29.2	Horiz
			+4.1						Z axis		
2	915.060M	60.9	-27.5	+23.3	+3.3	+0.6	+0.0	64.7	94.0	-29.3	Vert
			+4.1						Y axis		
3	915.070M	60.9	-27.5	+23.3	+3.3	+0.6	+0.0	64.7	94.0	-29.3	Horiz
			+4.1						Z axis		
4	914.900M	60.9	-27.5	+23.3	+3.3	+0.6	+0.0	64.7	94.0	-29.3	Vert
			+4.1						Y axis		
5	914.900M	60.6	-27.5	+23.3	+3.3	+0.6	+0.0	64.4	94.0	-29.6	Vert
			+4.1						Z axis		
6	915.070M	60.6	-27.5	+23.3	+3.3	+0.6	+0.0	64.4	94.0	-29.6	Vert
			+4.1						Z axis		
7	914.900M	59.4	-27.5	+23.3	+3.3	+0.6	+0.0	63.2	94.0	-30.8	Horiz
			+4.1						X axis		
8	915.070M	59.2	-27.5	+23.3	+3.3	+0.6	+0.0	63.0	94.0	-31.0	Horiz
			+4.1						X axis		
9	914.900M	56.9	-27.5	+23.3	+3.3	+0.6	+0.0	60.7	94.0	-33.3	Horiz
			+4.1						Y axis		
10	915.060M	56.9	-27.5	+23.3	+3.3	+0.6	+0.0	60.7	94.0	-33.3	Horiz
			+4.1						Y axis		
11	914.910M	54.5	-27.5	+23.3	+3.3	+0.6	+0.0	58.3	94.0	-35.7	Vert
			+4.1						X axis		
12	915.070M	54.4	-27.5	+23.3	+3.3	+0.6	+0.0	58.2	94.0	-35.8	Vert
			+4.1						X axis		

Page 24 of 54 Report No.: 92090-4



CKC Laboratories, Inc. Date: 7/27/2011 Time: 10:13:50 SmartLabs, Inc. WO#: 92090 15.249 Carrier and Spurious Emissions (902-928 MHz Transmitter) Test Distance: 3 Meters Sequence#: 2 Ext ATTN: 0 dB





Test Setup Photos



X AXIS FRONT VIEW



X AXIS BACK VIEW





Y AXIS FRONT VIEW



Y AXIS BACK VIEW





Z AXIS FRONT VIEW



Z AXIS BACK VIEW



15.249 (d) Radiated Spurious Emissions

Test Data Sheet

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

Customer: SmartLabs, Inc.

Specification:15.249 Carrier and Spurious Emissions (902-928 MHz Transmitter)Work Order #:92090Date: 7/27/2011Test Type:Maximized EmissionsTime: 10:13:50

Equipment: RemoteLinc 2 INSTEON Wireless Sequence#: 2

Controller

Manufacturer: SmartLabs, Inc. Tested By: Don Nguyen

Model: 2444Ax S/N: NA

Test Equipment:

1 cst Lqu	pincini				
ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN00010	Preamp	8447D	3/19/2010	3/19/2012
T2	AN00851	Biconilog Antenna	CBL6111C	3/8/2010	3/8/2012
T3	ANP04382	Cable	LDF-50	9/3/2010	9/3/2012
T4	ANP05555	Cable	RG223/U	8/18/2010	8/18/2012
T5	ANP05569	Cable	RG-214/U	8/18/2010	8/18/2012
T6	AN02869	Spectrum Analyzer	E4440A	2/12/2011	2/12/2013
T7	AN01646	Horn Antenna	3115	8/18/2010	8/18/2012
Т8	AN02946	Cable	32022-2-2909K-	9/14/2009	9/14/2011
			36TC		
Т9	ANP05988	Cable	LDF1-50	3/12/2010	3/12/2012
T10	AN03169	High Pass Filter	HM1155-11SS	9/14/2009	9/14/2011
T11	AN00787	Preamp	83017A	4/8/2011	4/8/2013
	AN00314	Loop Antenna	6502	6/30/2010	6/30/2012

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N	
RemoteLinc 2 INSTEON Wireless Controller*	SmartLabs, Inc.	2444Ax	NA	

Support Devices:

			~ ~ ~	
Hunction	Manufacturer	Model #	S/N	

Page 29 of 54 Report No.: 92090-4



Test Conditions / Notes:

The EUT is placed on the wooden table lined with Styrofoam of 10 cm thickness.

Orientated in three orthogonal operating positions, the EUT is set in constant transmit mode. No load is connected to the EUT for evaluation of RF parameter.

EUT operates on battery power.

TX freq = 914.5-915.5 MHz

The EUT power is designed to be mechanically switched off during charge cycle via dedicated USB charging port.

Frequency range of measurement = 9 kHz- 10 GHz. 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-10000 MHz; RBW=1 MHz, VBW=1 MHz

15.31(e) A fully charged EUT simulates a fresh battery installed during the test.

72°F, 53%Relative Humidity

Ext Attn: 0 dB

Measu	rement Data:	Re	eading lis	ted by ma	argin.		Τe	est Distanc	e: 3 Meters	S	
#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
			T5	T6	T7	T8					
			T9	T10	T11						
	MHz	dΒμV	dB	dB	dB	dB	Table	$dB\mu V/m$	$dB\mu V/m$	dB	Ant
1	1829.990M	49.4	+0.0	+0.0	+4.9	+0.0	+0.0	45.5	54.0	-8.5	Horiz
			+0.0	+0.0	+26.6	+0.5			Y axis		
			+3.2	+0.3	-39.4						
2	3659.990M	40.3	+0.0	+0.0	+7.0	+0.0	+0.0	45.1	54.0	-8.9	Horiz
			+0.0	+0.0	+31.5	+0.7			Y axis		
			+5.1	+0.2	-39.7						
3	7151.400M	28.7	-39.4	+35.6	+1.1	+11.0	+0.0	44.7	54.0	-9.3	Vert
			+7.5	+0.0	+0.2	+0.0			Y axis		
			+0.0	+0.0	+0.0						
4	5489.990M	32.8	+0.0	+0.0	+9.3	+0.0	+0.0	44.3	54.0	-9.7	Vert
			+0.0	+0.0	+34.0	+0.9			X axis		
			+6.4	+0.1	-39.2						
5	7319.990M	27.6	+0.0	+0.0	+11.0	+0.0	+0.0	44.2	54.0	-9.8	Vert
			+0.0	+0.0	+36.0	+1.1			Z axis		
			+7.6	+0.2	-39.3						
6	6404.990M	31.1	+0.0	+0.0	+10.3	+0.0	+0.0	44.1	54.0	-9.9	Horiz
			+0.0	+0.0	+34.3	+1.0			Y axis		
			+6.9	+0.1	-39.6						
7	5489.990M	32.6	+0.0	+0.0	+9.3	+0.0	+0.0	44.1	54.0	-9.9	Vert
			+0.0	+0.0	+34.0	+0.9			Z axis		
			+6.4	+0.1	-39.2						
8	4574.990M	35.5	+0.0	+0.0	+8.4	+0.0	+0.0	44.0	54.0	-10.0	Vert
			+0.0	+0.0	+32.5	+0.8			Z axis		
			+5.9	+0.3	-39.4						

Page 30 of 54 Report No.: 92090-4



9 2342.400M 45.0 -39.4 +28.1 +0.6 +5.5 +0.0 43.7 54.0 -10.3 Horiz +3.7 +0.0 +0.0 +0.0
+0.0 +0.0 +0.0 +0.0 10 4574.990M 35.2 +0.0 +0.0 +8.4 +0.0 +0.0 43.7 54.0 -10.3 Horiz +0.0 +0.0 +32.5 +0.8 Y axis +5.9 +0.3 -39.4 11 6404.990M 30.5 +0.0 +0.0 +10.3 +0.0 +0.0 43.5 54.0 -10.5 Vert +0.0 +0.0 +34.3 +1.0 X axis +6.9 +0.1 -39.6 12 1829.990M 47.3 +0.0 +0.0 +4.9 +0.0 +0.0 43.4 54.0 -10.6 Vert +0.0 +0.0 +26.6 +0.5 Z axis
10 4574.990M 35.2 +0.0 +0.0 +8.4 +0.0 +0.0 43.7 54.0 -10.3 Horiz +0.0 +0.0 +0.0 +32.5 +0.8 Y axis +5.9 +0.3 -39.4 11 6404.990M 30.5 +0.0 +0.0 +10.3 +0.0 +0.0 43.5 54.0 -10.5 Vert +0.0 +0.0 +34.3 +1.0 X axis +6.9 +0.1 -39.6 12 1829.990M 47.3 +0.0 +0.0 +4.9 +0.0 +0.0 43.4 54.0 -10.6 Vert +0.0 +0.0 +0.0 +26.6 +0.5 Z axis
+0.0 +0.0 +32.5 +0.8 Y axis +5.9 +0.3 -39.4 11 6404.990M 30.5 +0.0 +0.0 +10.3 +0.0 +0.0 43.5 54.0 -10.5 Vert +0.0 +0.0 +34.3 +1.0 X axis +6.9 +0.1 -39.6 12 1829.990M 47.3 +0.0 +0.0 +4.9 +0.0 +0.0 43.4 54.0 -10.6 Vert +0.0 +0.0 +26.6 +0.5 Z axis
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11 6404.990M 30.5 +0.0 +0.0 +10.3 +0.0 +0.0 43.5 54.0 -10.5 Vert +0.0 +0.0 +34.3 +1.0 X axis +6.9 +0.1 -39.6 12 1829.990M 47.3 +0.0 +0.0 +4.9 +0.0 +0.0 43.4 54.0 -10.6 Vert +0.0 +0.0 +26.6 +0.5 Z axis
+0.0 +0.0 +34.3 +1.0 X axis +6.9 +0.1 -39.6 12 1829.990M 47.3 +0.0 +0.0 +4.9 +0.0 +0.0 43.4 54.0 -10.6 Vert +0.0 +0.0 +26.6 +0.5 Z axis
+6.9 +0.1 -39.6 12 1829.990M 47.3 +0.0 +0.0 +4.9 +0.0 +0.0 43.4 54.0 -10.6 Vert +0.0 +0.0 +26.6 +0.5 Z axis
12 1829.990M 47.3 +0.0 +0.0 +4.9 +0.0 +0.0 43.4 54.0 -10.6 Vert +0.0 +0.0 +26.6 +0.5 Z axis
+0.0 +0.0 +26.6 +0.5 Z axis
+3.2 +0.3 -39.4
13 6404.990M 30.3 +0.0 +0.0 +10.3 +0.0 +0.0 43.3 54.0 -10.7 Vert
+0.0 +0.0 +34.3 +1.0 Z axis
+6.9 +0.1 -39.6
14 5489.990M 31.7 +0.0 +0.0 +9.3 +0.0 +0.0 43.2 54.0 -10.8 Horiz
+0.0 +0.0 +34.0 +0.9 Y axis
+6.4 +0.1 -39.2
15 2137.450M 44.8 -39.4 +27.6 +0.6 +5.4 +0.0 42.7 54.0 -11.3 Horiz
+3.5 +0.0 +0.2 +0.0 Y axis
+0.0 +0.0 +0.0
16 2146.550M 44.7 -39.4 +27.6 +0.6 +5.4 +0.0 42.6 54.0 -11.4 Horiz
+3.5 +0.0 +0.2 +0.0 X axis
+0.0 +0.0 +0.0
17 6404.990M 29.4 +0.0 +0.0 +10.3 +0.0 +0.0 42.4 54.0 -11.6 Vert
+0.0 +0.0 +34.3 +1.0 Y axis
+6.9 +0.1 -39.6
18 3659.990M 37.4 +0.0 +0.0 +7.0 +0.0 +0.0 42.2 54.0 -11.8 Vert
+0.0 +0.0 +31.5 +0.7 Z axis
+5.1 +0.2 -39.7
19 5489.990M 30.7 +0.0 +0.0 +9.3 +0.0 +0.0 42.2 54.0 -11.8 Vert
+0.0 +0.0 +34.0 +0.9 Y axis
+6.4 +0.1 -39.2
20 2323.400M 43.3 -39.4 +28.0 +0.6 +5.5 +0.0 41.9 54.0 -12.1 Horiz
+3.7 +0.0 +0.2 +0.0 Y axis
+0.0 +0.0 +0.0
21 2322.750M 43.2 -39.4 +28.0 +0.6 +5.5 +0.0 41.8 54.0 -12.2 Vert
+3.7 +0.0 +0.2 +0.0 Y axis
+0.0 +0.0 +0.0
22 2744.990M 40.7 +0.0 +0.0 +6.3 +0.0 +0.0 41.8 54.0 -12.2 Horiz
+0.0 +0.0 +29.3 +0.6 Y axis
+4.3 +0.3 -39.7
23 6357.800M 28.6 -39.5 +34.3 +1.0 +10.3 +0.0 41.7 54.0 -12.3 Horiz
+6.9 +0.0 +0.1 +0.0 Z axis
+0.0 +0.0 +0.0
24 4574.990M 33.2 +0.0 +0.0 +8.4 +0.0 +0.0 41.7 54.0 -12.3 Vert
+0.0 +0.0 +32.5 +0.8 Y axis
+5.9 +0.3 -39.4
25 4574.990M 33.0 +0.0 +0.0 +8.4 +0.0 +0.0 41.5 54.0 -12.5 Vert
+0.0 +0.0 +32.5 +0.8 X axis
+5.9 +0.3 -39.4



		21.0									
26	5013.400M	31.0		+33.3	+0.9	+9.3	+0.0		54.0	-12.6	Horiz
			+6.0	+0.0	+0.2	+0.0			X axis		
			+0.0	+0.0	+0.0						
27	4575.000M	32.8	+0.0	+0.0	+8.4	+0.0	+0.0	41.3	54.0	-12.7	Horiz
			+0.0	+0.0	+32.5	+0.8			Z axis		
			+5.9	+0.3	-39.4						
28	3659.800M	36.5	-39.7	+31.5	+0.7	+7.0	+0.0	41.3	54.0	-12.7	Horiz
			+5.1	+0.0	+0.2	+0.0			X axis		
	-10-1-03-		+0.0	+0.0	+0.0						
29	2186.450M	43.0	-39.4	+27.7	+0.6	+5.5	+0.0	41.2	54.0	-12.8	Vert
			+3.6	+0.0	+0.2	+0.0			X axis		
		• • • •	+0.0	+0.0	+0.0					4.0.0	
30	6405.740M	28.0	+0.0	+0.0	+10.3		+0.0	41.0	54.0	-13.0	Horiz
			+0.0	+0.0	+34.3	+1.0			Z axis		
			+6.9	+0.1	-39.6						
31	5674.800M	29.3	-39.3	+34.1	+0.9	+9.5	+0.0	41.0	54.0	-13.0	Vert
			+6.4	+0.0	+0.1	+0.0			Z axis		
			+0.0	+0.0	+0.0						
32	771.450M	31.8	+0.0	+0.0	+0.0		+0.0	32.8	46.0	-13.2	Vert
			+0.0	+0.0	+0.0	-27.9			Z axis		
			+21.7	+0.6	+3.5						
33	3659.990M	36.0	+0.0	+0.0	+7.0		+0.0		54.0	-13.2	Vert
			+0.0	+0.0	+31.5	+0.7			Y axis		
			+5.1	+0.2	-39.7						
34	664.580M	33.5	+0.0	+0.0	+0.0		+0.0		46.0	-13.4	Horiz
			+0.0	+0.0	+0.0	-28.0			X axis		
			+20.4	+0.5	+3.3						
35	2744.990M	39.5	+0.0	+0.0	+6.3	+0.0	+0.0	40.6	54.0	-13.4	Vert
			+0.0	+0.0	+29.3	+0.6			Z axis		
			+4.3	+0.3	-39.7						
36	952.640M	27.8	+0.0	+0.0	+0.0	+3.4	+0.0	32.4	46.0	-13.6	Vert
			+0.0	+0.0	+0.0	-27.5			X axis		
			+23.9	+0.6	+4.2						
37	838.680M	30.0	+0.0	+0.0	+0.0		+0.0	32.4	46.0	-13.6	Horiz
			+0.0	+0.0	+0.0	-27.7			X axis		
			+22.5	+0.7	+3.8						
38	2630.750M	40.0	-39.6	+28.9	+0.6		+0.0	40.3		-13.7	Vert
			+4.1	+0.0		+0.0			Z axis		
	00010000		+0.0	+0.0	+0.0						• •
39	2754.950M	39.0	-39.7	+29.4	+0.6	+6.4	+0.0	40.3	54.0	-13.7	Vert
			+4.3	+0.0	+0.3	+0.0			Z axis		
	2.50 0000		+0.0	+0.0	+0.0		0.0	40.0		40-	** .
40	3660.000M	35.5	+0.0	+0.0	+7.0	+0.0	+0.0	40.3	54.0	-13.7	Horiz
			+0.0	+0.0	+31.5	+0.7			Z axis		
	0.550.00000		+5.1	+0.2	-39.7		0.0	40.5		4.2.0	**
41	3659.990M	35.4	+0.0	+0.0	+7.0	+0.0	+0.0	40.2	54.0	-13.8	Vert
			+0.0	+0.0	+31.5	+0.7			X axis		
	4444 4003 5	22.2	+5.1	+0.2	-39.7		0.0	40.0		110	TT .
42	4441.400M	32.2	-39.4	+32.3	+0.8	+8.1	+0.0	40.0	54.0	-14.0	Horiz
1			+5.7	+0.0	+0.3	+0.0			Y axis		
			+0.0	+0.0	+0.0						



43	1829.990M	43.8		+0.0	+4.9	+0.0	+0.0		54.0	-14.1	Vert
			+0.0	+0.0	+26.6	+0.5			X axis		
			+3.2	+0.3	-39.4						
44	78.900M	43.0	+0.0	+0.0	+0.0	+1.1	+0.0	25.8	40.0	-14.2	Vert
			+0.0	+0.0	+0.0	-27.1			X axis		
			+7.4	+0.2	+1.2						
45	33.650M	34.4	+0.0	+0.0	+0.0	+0.6	+0.0		40.0	-14.5	Vert
			+0.0	+0.0	+0.0	-27.2			Z axis		
1.5	021.0653.6	27.2	+16.8	+0.1	+0.8	2.4	0.0	21.4	460	116	X7 .
46	931.065M	27.2	+0.0	+0.0	+0.0	+3.4	+0.0		46.0	-14.6	Vert
			+0.0	+0.0	+0.0	-27.5			Z axis		
477	210605016	41.0	+23.6	+0.6	+4.1		0.0	20.4	7.4.0	116	TT :
47	2186.850M	41.2	-39.4	+27.7	+0.6		+0.0	39.4	54.0	-14.6	Horiz
			+3.6	+0.0	+0.2	+0.0			Y axis		
40	2241.2503.5	10.6	+0.0	+0.0	+0.0		0.0	20.2	7.4.0	117	X7 .
48	2341.250M	40.6	-39.4	+28.1	+0.6	+5.5	+0.0	39.3	54.0	-14.7	Vert
			+3.7	+0.0	+0.2	+0.0			X axis		
40	7.00.05014	20.2	+0.0	+0.0	+0.0	. 2.1	. 0. 0	21.2	46.0	140	X7 .
49	769.650M	30.2	+0.0	+0.0	+0.0	+3.1	+0.0	31.2	46.0	-14.8	Vert
			+0.0	+0.0	+0.0	-27.9			X axis		
50	1004 45014	40.6	+21.7	+0.6	+3.5	. 5 1	. 0. 0	20.2	540	140	17
50	1884.450M	42.6	-39.3	+26.8	+0.5		+0.0	39.2	54.0	-14.8	Vert
			+3.2	+0.0	+0.3	+0.0			Z axis		
<i>E</i> 1	2507.750M	20.0	+0.0	+0.0	+0.0	. 5.0	. 0. 0	20.1	540	140	X 74
51	2587.750M	39.0	-39.6	+28.8	+0.6		+0.0	39.1	54.0	-14.9	Vert
			+4.1	+0.0	+0.3	+0.0			Y axis		
50	2744 00014	37.9	+0.0	+0.0	+0.0	.00	. 0. 0	20.0	54.0	15.0	V
32	2744.990M	37.9	$+0.0 \\ +0.0$	$+0.0 \\ +0.0$	+6.3	+0.0 +0.6	+0.0	39.0		-15.0	Vert
			+4.3	+0.0	+29.3 -39.7	+0.0			X axis		
52	2745.000M	37.9	+0.0	+0.3	+6.3	+0.0	+0.0	20.0	54.0	-15.0	Horiz
33	2743.000WI	31.9	+0.0	+0.0	+29.3	+0.6	+0.0	39.0	Z axis	-13.0	110112
			+4.3	+0.0	-39.7	+0.0			Z axis		
5.4	1191.050M	46.9	-40.5	+24.5	+0.4	+3.0	100	38.0	54.0	-15.1	Vort
34	1191.030WI	40.7	+2.5	+0.0	+0.4	+0.0	+0.0	30.9	X axis	-13.1	Vert
			+0.0	+0.0	+0.0	+0.0			A dais		
55	4106.400M	32.1	-39.6	+32.4	+0.8	_{+7 3}	+0.0	38.7	54.0	-15.3	Vert
33	1100.4001	J4.1	+5.4			+0.0		30.7	Z axis	13.3	v C11
			+0.0	+0.0	+0.0	10.0			_ unio		
56	1829.990M	42.6	+0.0	+0.0	+4.9	+0.0	+0.0	38.7	54.0	-15.3	Vert
	1027.770111	.2.0	+0.0	+0.0	+26.6	+0.5	10.0	20.7	Y axis	10.0	, 011
			+3.2	+0.3	-39.4	. 0.0					
57	2744.990M	37.6	+0.0	+0.0	+6.3	+0.0	+0.0	38.7	54.0	-15.3	Vert
5,	_,, , , , , , , , , , , , , , , , ,	27.0	+0.0	+0.0	+29.3	+0.6	. 0.0	20.7	Y axis	10.0	. 510
			+4.3	+0.3	-39.7						
58	67.150M	43.0	+0.0	+0.0	+0.0	+1.0	+0.0	24.2	40.0	-15.8	Vert
	2201.2	.2.0	+0.0	+0.0	+0.0	-27.1		_ · · · -	Y axis	-2.0	. 510
			+5.9	+0.2	+1.2	_,,,					
59	3097.800M	35.0	-39.8	+30.4	+0.7	+7.0	+0.0	38.1	54.0	-15.9	Horiz
			+4.6	+0.0	+0.2	+0.0			Z axis		
			+0.0	+0.0	+0.0						
·											



	022 120 /	27.0	. 0. 0	. 0. 0	. 0. 0	. 2.1	. 0. 0	20.0	46.0	160	X 7 ,
60	832.120M	27.8		+0.0	+0.0	+3.1	+0.0		46.0	-16.0	Vert
			+0.0	+0.0	+0.0	-27.7			Y axis		
(1	1020 0001/	41.7	+22.4	+0.7	+3.7	.00	. 0. 0	27.0	540	16.0	II.a.i.a
01	1830.000M	41.7	+0.0	+0.0	+4.9	+0.0	+0.0		54.0	-16.2	Horiz
			+0.0 +3.2	+0.0 +0.3	+26.6 -39.4	+0.5			Z axis		
62	3239.800M	34.1	-39.8	+30.6	+0.7	+7.1	+0.0	27.6	54.0	-16.4	Vert
02	3239.800WI	34.1	-39.8 +4.7	+30.0	+0.7	+7.1	+0.0		Y axis	-10.4	vert
			+4.7	+0.0	+0.2	+0.0			1 axis		
63	45.050M	38.4	+0.0	+0.0	+0.0	+0.8	±0.0	23.4	40.0	-16.6	Horiz
03	45.050W	30.4	+0.0	+0.0	+0.0	-27.2	+0.0		Z axis	-10.0	110112
			+10.2	+0.2	+1.0	-21.2			Z axis		
64	763.650M	28.0	+0.0	+0.0	+0.0	+3.1	+0.0	28.9	46.0	-17.1	Vert
04	703.030111	20.0	+0.0	+0.0	+0.0	-27.9	10.0		Y axis	17.1	VCIT
			+21.6	+0.6	+3.5	21.7			1 uxis		
65	1557.000M	42.5	-39.5	+25.5	+0.5	+4.4	+0.0	36.8	54.0	-17.2	Horiz
0.5	1007.0001.1	12.3	+3.0	+0.0	+0.4	+0.0	10.0	20.0	Z axis	17.2	HOHE
			+0.0	+0.0	+0.0	. 0.0			2 4.115		
66	2142.550M	38.8	-39.4	+27.6	+0.6	+5.4	+0.0	36.7	54.0	-17.3	Vert
			+3.5	+0.0	+0.2	+0.0			Z axis		
			+0.0	+0.0	+0.0						
67	2099.050M	38.5	-39.3	+27.5	+0.5	+5.3	+0.0	36.2	54.0	-17.8	Vert
			+3.5	+0.0	+0.2	+0.0			X axis		
			+0.0	+0.0	+0.0						
68	1784.000M	40.4	-39.4	+26.4	+0.5	+4.8	+0.0	36.2	54.0	-17.8	Horiz
			+3.2	+0.0	+0.3	+0.0			Z axis		
			+0.0	+0.0	+0.0						
69	936.765M	23.6	+0.0	+0.0	+0.0	+3.4	+0.0	27.9	46.0	-18.1	Vert
			+0.0	+0.0	+0.0	-27.5			X axis		
			+23.7	+0.6	+4.1						
70	1592.250M	41.2	-39.5	+25.7	+0.5	+4.4	+0.0	35.7	54.0	-18.3	Vert
			+3.0	+0.0	+0.4	+0.0			Z axis		
			+0.0	+0.0	+0.0						
71	2010.050M	38.5	-39.3	+27.2	+0.5	+5.1	+0.0	35.6	54.0	-18.4	Horiz
			+3.4	+0.0	+0.2	+0.0			Z axis		
			+0.0	+0.0	+0.0						
72	940.635M	23.1	+0.0	+0.0	+0.0		+0.0	27.5		-18.5	Vert
			+0.0	+0.0	+0.0	-27.5			Z axis		
			+23.7	+0.6	+4.2						
73	720.050M	27.2	+0.0	+0.0	+0.0	+3.0	+0.0	27.3	46.0	-18.7	Vert
			+0.0	+0.0	+0.0	-27.9			Z axis		
	1500 0003 5	44.0	+21.0	+0.6	+3.4		0.0	27.1	F 1 0	10.0	TT :
74	1520.000M	41.0	-39.5	+25.4	+0.5	+4.4	+0.0	35.1	54.0	-18.9	Horiz
			+2.9	+0.0	+0.4	+0.0			X axis		
75	1014 500%	20.2	+0.0	+0.0	+0.0	, F 1	.0.0	24.0	F 4 O	10.1	II.
/5	1914.500M	38.3	-39.3	+26.9	+0.5	+5.1	+0.0	34.9		-19.1	Horiz
			+3.2 +0.0	+0.0	+0.2	+0.0			X axis		
76	797.000M	25.2		+0.0	+0.0	₁ 2 1	ι Ο Ο	26.8	46.0	10.2	Vont
/6	/9/.000MI	23.2	$+0.0 \\ +0.0$	+0.0 +0.0	+0.0	+3.1 -27.8	+0.0	∠0.8	46.0 Z axis	-19.2	Vert
			+22.0	+0.0 +0.7	+0.0 +3.6	-21.8			L axis		
			±∠∠.U	+0.7	+3.0						



77	1405 25014	10.0	20.7	. 25 1	.0.5	. 1.2	. 0. 0	24.4	510	10.6	V 7 4
//	1425.350M	40.9			+0.5	+4.3	+0.0		54.0	-19.6	Vert
			+2.8 +0.0	$^{+0.0}_{+0.0}$	+0.5 +0.0	+0.0			Y axis		
70	812.650M	24.4	+0.0	+0.0	+0.0	+3.1	+0.0	26.2	46.0	-19.7	Vert
/8	812.030W	24.4	+0.0 +0.0	+0.0 +0.0	+0.0 +0.0	+3.1 -27.8	+0.0	20.5	Z axis	-19.7	vert
			+22.2	+0.0	+3.7	-27.0			Z axis		
79	691.200M	26.0	+0.0	+0.7	+0.0	+3.0	+0.0	25.8	46.0	-20.2	Vert
19	091.200W	20.0	+0.0	+0.0	+0.0	+3.0 -27.9	+0.0	23.8	X axis	-20.2	V CI t
			+20.7	+0.6	+3.4	-21.9			A anis		
80	631.130M	26.6	+0.0	+0.0	+0.0	+2.9	±0.0	25.3	46.0	-20.7	Horiz
00	031.1301	20.0	+0.0	+0.0	+0.0	-28.0	10.0	23.3	Z axis	-20.7	110112
			+20.1	+0.5	+3.2	20.0			Z uxis		
81	767.780M	23.9	+0.0	+0.0	+0.0	+3.1	+0.0	24 9	46.0	-21.1	Horiz
01	707.70011	23.7	+0.0	+0.0	+0.0	-27.9	10.0	21.7	Z axis	21.1	HOHE
			+21.7	+0.6	+3.5	21.7			Z unis		
82	667.100M	25.2	+0.0	+0.0	+0.0	+2.9	+0.0	24.4	46.0	-21.6	Vert
02	007.100171	23.2	+0.0	+0.0	+0.0	-28.0	10.0	2	Z axis	21.0	, 611
			+20.5	+0.5	+3.3	_0.0					
83	704.180M	23.7	+0.0	+0.0	+0.0	+3.0	+0.0	23.6	46.0	-22.4	Horiz
	, , , , , , , , , , , , , , , , , , , ,		+0.0	+0.0	+0.0	-27.9			Z axis		
			+20.8	+0.6	+3.4						
84	630.300M	24.5		+0.0		+2.9	+0.0	23.2	46.0	-22.8	Vert
			+0.0	+0.0	+0.0	-28.0			Z axis		
			+20.1	+0.5	+3.2						
85	613.080M	24.7	+0.0	+0.0	+0.0	+2.8	+0.0	23.1	46.0	-22.9	Horiz
			+0.0	+0.0	+0.0	-28.0			X axis		
			+19.9	+0.6	+3.1						
86	571.280M	25.4	+0.0	+0.0	+0.0	+2.7	+0.0	23.0	46.0	-23.0	Horiz
			+0.0	+0.0	+0.0	-28.0			Z axis		
			+19.4	+0.5	+3.0						
87	656.130M	24.0	+0.0	+0.0	+0.0	+2.9	+0.0	23.0	46.0	-23.0	Horiz
			+0.0	+0.0	+0.0	-28.0			Y axis		
			+20.4	+0.5	+3.2						
88	553.230M	25.5	+0.0	+0.0	+0.0	+2.7	+0.0	22.8	46.0	-23.2	Horiz
			+0.0	+0.0	+0.0	-28.0			Z axis		
			+19.1	+0.5	+3.0						
89	32.800M			+0.0	+0.0				40.0	-23.3	Horiz
			+0.0	+0.0	+0.0	-27.2			X axis		
			+17.3	+0.1	+0.8						
90	651.100M	23.5	+0.0	+0.0	+0.0	+2.9	+0.0	22.4		-23.6	Vert
			+0.0	+0.0	+0.0	-28.0			X axis		
			+20.3	+0.5	+3.2						
91	612.950M	23.2	+0.0	+0.0	+0.0	+2.8	+0.0	21.6		-24.4	Vert
			+0.0	+0.0	+0.0	-28.0			Z axis		
0.2	500 0503 5	22.0	+19.9	+0.6	+3.1		0.0	21.0	460	27.0	TT .
92	539.350M	23.9	+0.0	+0.0	+0.0	+2.7	+0.0	21.0		-25.0	Horiz
			+0.0	+0.0	+0.0	-28.0			Y axis		
0.2	400.0003.5	215	+18.9	+0.5	+3.0	.0.	.0.0	20.0	460	25.2	
93	488.200M	24.5	+0.0	+0.0	+0.0	+2.6	+0.0	20.8		-25.2	Horiz
			+0.0	+0.0	+0.0	-27.8			Z axis		
			+18.1	+0.5	+2.9						

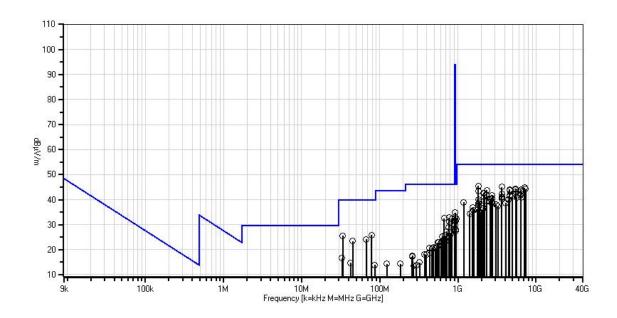


											
94	42.150M	28.5	+0.0	+0.0		+0.7	+0.0		40.0	-25.2	Horiz
			+0.0	+0.0	+0.0	-27.2			Y axis		
			+11.8	+0.1	+0.9						
95	510.800M	24.1	+0.0	+0.0	+0.0	+2.6	+0.0		46.0	-25.3	Horiz
			+0.0	+0.0	+0.0	-27.9			X axis		
			+18.5	+0.5	+2.9						
96	466.350M	25.0	+0.0	+0.0	+0.0	+2.5	+0.0		46.0	-25.4	Horiz
			+0.0	+0.0	+0.0	-27.7			Y axis		
	100 1 703 7	27.0	+17.6	+0.4	+2.8	2.4		20.5	450		**
97	432.150M	25.8	+0.0	+0.0	+0.0	+2.4	+0.0		46.0	-25.4	Vert
			+0.0	+0.0	+0.0	-27.5			Y axis		
			+16.9	+0.4	+2.6						
98	517.650M	23.8	+0.0	+0.0	+0.0	+2.6	+0.0	20.5	46.0	-25.5	Vert
			+0.0	+0.0	+0.0	-27.9			X axis		
			+18.6	+0.5	+2.9						
99	86.350M	30.1	+0.0	+0.0	+0.0	+1.2	+0.0		40.0	-26.0	Horiz
			+0.0	+0.0	+0.0	-27.1			Y axis		
100			+8.3	+0.2	+1.3			100			
100	433.100M	24.0	+0.0	+0.0	+0.0		+0.0		46.0	-27.2	Horiz
			+0.0	+0.0	+0.0	-27.5			Z axis		
101	252 252 5	24.5	+16.9	+0.4	+2.6	2.2	0.0	10.1	450	27.0	** .
101	373.850M	24.6	+0.0	+0.0	+0.0		+0.0		46.0	-27.9	Horiz
			+0.0	+0.0	+0.0	-27.1			Y axis		
102	202 (70) 1	240	+15.5	+0.4	+2.4	2.4		10.0	450	20.0	**
102	393.650M	24.0	+0.0	+0.0	+0.0		+0.0	18.0	46.0	-28.0	Vert
			+0.0	+0.0	+0.0	-27.3			Z axis		
102	261.05034	27.0	+16.0	+0.4	+2.5	. 1.0	. 0. 0	17.6	46.0	20.4	77 '
103	261.850M	27.0	+0.0	+0.0	+0.0	+1.9	+0.0		46.0	-28.4	Horiz
			+0.0	+0.0	+0.0	-26.5			Z axis		
104	258.400M	26.8	+12.8	+0.3	+2.1	+1.0	+ O O	17.2	46.0	-28.8	Vert
104	238.400M	20.8	$+0.0 \\ +0.0$	+0.0 +0.0	+0.0 +0.0	+1.9	+0.0	17.2		-20.0	vert
			+0.0	+0.0	+0.0	-26.5			Z axis		
105	123.100M	26.7		+0.0	+0.0	+1.3	+ O O	111	43.5	-29.1	Horiz
103	123.100M	20.7	+0.0	+0.0	+0.0 +0.0	+1.3 -27.0	+0.0	14.4	X axis	-29.1	HOHZ
			+0.0 $+11.8$	+0.0	+1.4	-27.0			A axis		
106	182.900M	28.7		+0.2	+0.0	⊥1 5	+0.0	1/1/3	43.5	-29.2	Vert
100	102.700W	20.7	+0.0	+0.0	+0.0 +0.0				Y axis	-47.4	v CI t
			+8.9	+0.0	+1.7	-20.0			1 4113		
107	324.350M	22.8	+0.0	+0.0	+0.0	+2.1	+0.0	15.0	46.0	-31.0	Horiz
107	32 4 .3301 v 1	22.0	+0.0	+0.0	+0.0	-26.7	10.0	15.0	X axis	31.0	110112
			+14.1	+0.4	+2.3	20.7			21 4/110		
108	293.650M	22.8	+0.0	+0.0	+0.0	+2.0	+0.0	14.0	46.0	-32.0	Vert
		0	+0.0	+0.0	+0.0	-26.5	. 0.0	1	X axis	52.0	, 011
			+13.2	+0.3	+2.2	_0.0					
109	270.100M	22.9	+0.0	+0.0	+0.0	+2.0	+0.0	13.7	46.0	-32.3	Horiz
	2,0.100111	,	+0.0	+0.0	+0.0	-26.5	. 0.0	13.7	Z axis	32.3	110112
			+12.9	+0.3	+2.1	20.5			- 44113		
110	927.555M	30.7	+0.0	+0.0	+0.0	+3.4	+0.0	34.8	94.0	-59.2	Vert
		20.7	+0.0	+0.0	+0.0	-27.5	. 0.0	20	Y axis	<u>.</u>	. 526
			+23.5	+0.6	+4.1						
L			2								



111	914.345M	29.3	+0.0	+0.0	+0.0	+3.3	+0.0	33.1	94.0	-60.9	Vert
			+0.0	+0.0	+0.0	-27.5			X axis		
			+23.3	+0.6	+4.1						
112	918.860M	28.8	+0.0	+0.0	+0.0	+3.3	+0.0	32.7	94.0	-61.3	Vert
			+0.0	+0.0	+0.0	-27.5			Z axis		
			+23.4	+0.6	+4.1						
113	927.620M	27.4	+0.0	+0.0	+0.0	+3.4	+0.0	31.5	94.0	-62.5	Vert
			+0.0	+0.0	+0.0	-27.5			Z axis		
			+23.5	+0.6	+4.1						
114	919.280M	25.8	+0.0	+0.0	+0.0	+3.3	+0.0	29.7	94.0	-64.3	Horiz
			+0.0	+0.0	+0.0	-27.5			Y axis		
			+23.4	+0.6	+4.1						

CKC Laboratories, Inc. Date: 7/27/2011 Time: 10:13:50 SmartLabs, Inc. WO#: 92090 15.249 Carrier and Spurious Emissions (902-928 MHz Transmitter) Test Distance: 3 Meters Sequence#: 2 Ext. ATTN: 0 dB





O Peak Readings

Average Readings

1 - 15,249 Carrier and Spurious Emissions (902-928 MHz Transmitter)



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

Customer: SmartLabs, Inc.

Specification: 15.249 Carrier and Spurious Emissions (902-928 MHz Transmitter) Work Order #: 92090 Date: 7/27/2011 Test Type: **Radiated Scan** Time: 11:23:10 Sequence#: 3

Equipment: **RemoteLinc 2 INSTEON Wireless**

Controller

Manufacturer: SmartLabs, Inc. Tested By: Don Nguyen

Model: 2444Ax S/N: NA

Test Equipment:

1 est Equi	ipineni.				
ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN00787	Preamp	83017A	4/8/2011	4/8/2013
T2	AN01646	Horn Antenna	3115	8/18/2010	8/18/2012
Т3	AN02946	Cable	32022-2-2909K-	9/14/2009	9/14/2011
			36TC		
T4	ANP04382	Cable	LDF-50	9/3/2010	9/3/2012
T5	ANP05988	Cable	LDF1-50	3/12/2010	3/12/2012
T6	AN02869	Spectrum Analyzer	E4440A	2/12/2011	2/12/2013
T7	AN03169	High Pass Filter	HM1155-11SS	9/14/2009	9/14/2011
Т8	AN00010	Preamp	8447D	3/19/2010	3/19/2012
Т9	AN00851	Biconilog Antenna	CBL6111C	3/8/2010	3/8/2012
T10	ANP05555	Cable	RG223/U	8/18/2010	8/18/2012
T11	ANP05569	Cable	RG-214/U	8/18/2010	8/18/2012
	AN00314	Loop Antenna	6502	6/30/2010	6/30/2012

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N	
RemoteLinc 2 INSTEON Wireless Controller	SmartLabs, Inc.	2444Ax	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.

Orientated in three orthogonal operating positions, the EUT is set in constant transmit mode. No load is connected to the EUT for evaluation of RF parameter.

EUT operates on battery power.

TX freq = 914.5-915.5 MHz

The EUT power is designed to be mechanically switched off during charge cycle via dedicated USB charging port.

15.31(e) A fully charged EUT simulates a fresh battery installed during the test.

Frequency range of measurement = 9 kHz- 10 GHz. 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-10000 MHz; RBW=1 MHz, VBW=1 MHz

72°F, 53% Relative Humidity

Page 38 of 54 Report No.: 92090-4



Ext Attn: 0 dB

Measu	rement Data:	Re	Reading listed by margin.				Te	est Distanc	e: 3 Meters	3	
#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
			T5	T6	T7	T8					
			T9	T10	T11						
	MHz	dΒμV	dB	dB	dB	dB	Table	$dB\mu V/m$	$dB\muV/m$	dB	Ant
1	7151.400M	28.7	-39.4	+35.6	+1.1	+11.0	+0.0	44.7	54.0	-9.3	Vert
			+7.5	+0.0	+0.2	+0.0			Y axis		
			+0.0	+0.0	+0.0						
2	2342.400M	45.0	-39.4	+28.1	+0.6	+5.5	+0.0	43.7	54.0	-10.3	Horiz
			+3.7	+0.0	+0.2	+0.0			X axis		
			+0.0	+0.0	+0.0						
3	2137.450M	44.8	-39.4	+27.6	+0.6	+5.4	+0.0	42.7	54.0	-11.3	Horiz
			+3.5	+0.0	+0.2	+0.0			Y axis		
			+0.0	+0.0	+0.0						
4	2146.550M	44.7	-39.4	+27.6	+0.6	+5.4	+0.0	42.6	54.0	-11.4	Horiz
			+3.5	+0.0	+0.2	+0.0			X axis		
			+0.0	+0.0	+0.0						
5	2323.400M	43.3	-39.4	+28.0	+0.6	+5.5	+0.0	41.9	54.0	-12.1	Horiz
			+3.7	+0.0	+0.2	+0.0			Y axis		
			+0.0	+0.0	+0.0						
6	2322.750M	43.2	-39.4	+28.0	+0.6	+5.5	+0.0	41.8	54.0	-12.2	Vert
			+3.7	+0.0	+0.2	+0.0			Y axis		
			+0.0	+0.0	+0.0						
7	6357.800M	28.6	-39.5	+34.3	+1.0	+10.3	+0.0	41.7	54.0	-12.3	Horiz
			+6.9	+0.0	+0.1	+0.0			Z axis		
			+0.0	+0.0	+0.0						
8	5013.400M	31.0	-39.3	+33.3	+0.9	+9.3	+0.0	41.4	54.0	-12.6	Horiz
			+6.0	+0.0	+0.2	+0.0			X axis		
			+0.0	+0.0	+0.0						
9	3659.800M	36.5	-39.7	+31.5	+0.7	+7.0	+0.0	41.3		-12.7	Horiz
			+5.1	+0.0	+0.2	+0.0			X axis		
			+0.0	+0.0	+0.0						
10	2186.450M	43.0	-39.4	+27.7	+0.6	+5.5	+0.0	41.2		-12.8	Vert
			+3.6	+0.0	+0.2	+0.0			X axis		
			+0.0	+0.0	+0.0						
11	5674.800M	29.3	-39.3	+34.1	+0.9	+9.5	+0.0	41.0		-13.0	Vert
			+6.4	+0.0	+0.1	+0.0			Z axis		
			+0.0	+0.0	+0.0						
12	771.450M	31.8	+0.0	+0.0		+3.1	+0.0	32.8	46.0	-13.2	Vert
			+0.0	+0.0	+0.0	-27.9			Z axis		
			+21.7	+0.6	+3.5						
13	664.580M	33.5	+0.0	+0.0	+0.0	+2.9	+0.0	32.6		-13.4	Horiz
			+0.0	+0.0	+0.0	-28.0			X axis		
			+20.4	+0.5	+3.3						
14	952.640M	27.8	+0.0	+0.0	+0.0	+3.4	+0.0	32.4		-13.6	Vert
			+0.0	+0.0	+0.0	-27.5			X axis		
			+23.9	+0.6	+4.2						
15	838.680M	30.0	+0.0	+0.0	+0.0	+3.1	+0.0	32.4		-13.6	Horiz
			+0.0	+0.0	+0.0	-27.7			X axis		
			+22.5	+0.7	+3.8						

Page 39 of 54 Report No.: 92090-4



16	2630.750M	40.0			+0.6	+6.0	+0.0		54.0	-13.7	Vert
			+4.1	+0.0	+0.3	+0.0			Z axis		
	05540505	200	+0.0	+0.0	+0.0			40.5	<u> </u>		**
17	2754.950M	39.0	-39.7	+29.4	+0.6	+6.4	+0.0	40.3	54.0	-13.7	Vert
			+4.3	+0.0	+0.3	+0.0			Z axis		
4.0	4444 4003 5	22.2	+0.0	+0.0	+0.0	0.1	0.0	40.0	F 1 0	110	TT .
18	4441.400M	32.2	-39.4	+32.3	+0.8	+8.1	+0.0		54.0	-14.0	Horiz
			+5.7	+0.0	+0.3	+0.0			Y axis		
10	7 0.0001.6	42.0	+0.0	+0.0	+0.0		0.0	27.0	40.0	110	**
19	78.900M	43.0	+0.0	+0.0	+0.0	+1.1	+0.0	25.8	40.0	-14.2	Vert
			+0.0	+0.0	+0.0	-27.1			X axis		
20	22 (50) 5	24.4	+7.4	+0.2	+1.2		0.0		40.0		**
20	33.650M	34.4	+0.0	+0.0	+0.0		+0.0	25.5	40.0	-14.5	Vert
			+0.0	+0.0	+0.0	-27.2			Z axis		
2.1	024 0 653 5	25.2	+16.8	+0.1	+0.8		0.0	21.1	450	11.5	**
21	931.065M	27.2	+0.0	+0.0	+0.0	+3.4	+0.0	31.4	46.0	-14.6	Vert
			+0.0	+0.0	+0.0	-27.5			Z axis		
22	2106.0503.5	41.2	+23.6	+0.6	+4.1		.0.0	20.4	£40	11.	TT .
22	2186.850M	41.2	-39.4	+27.7	+0.6		+0.0	39.4		-14.6	Horiz
			+3.6	+0.0	+0.2	+0.0			Y axis		
22	2241 25015	40.6	+0.0	+0.0	+0.0		.0.0	20.2	F 4 O	1 4 7	V I4
23	2341.250M	40.6	-39.4	+28.1	+0.6		+0.0	39.3	54.0	-14.7	Vert
			+3.7	+0.0	+0.2	+0.0			X axis		
24	760 65014	20.2	+0.0	+0.0	+0.0	, 2.1	.00	21.2	460	140	V I
24	769.650M	30.2	+0.0	+0.0	+0.0		+0.0	51.2	46.0	-14.8	Vert
			+0.0	+0.0	$+0.0 \\ +3.5$	-27.9			X axis		
25	1004 450M	42.6	+21.7	+0.6		. 5 1	.00	20.2	54.0	140	V4
25	1884.450M	42.6	-39.3 +3.2	$+26.8 \\ +0.0$	+0.5 +0.3	+5.1 +0.0	+0.0	39.2	Z axis	-14.8	Vert
			+0.0	+0.0 +0.0	+0.3	+0.0			Z axis		
26	2587.750M	39.0	-39.6	+28.8	+0.6	+5.9	+0.0	39.1	54.0	-14.9	Vert
20	2367.730WI	39.0	-39.0 +4.1	+28.8	+0.0	+0.0	+0.0	39.1	Y axis	-14.9	vert
			+4.1 +0.0	+0.0	+0.0	+0.0			1 4315		
27	1191.050M	46.9	-40.5	+24.5	+0.0	+3.9	±0.0	38.0	54.0	-15.1	Vert
	1171.030141	+0.7	+2.5	+24.3	+0.4	+0.0	+0.0	30.9	X axis	-13.1	v CI t
			+2.3 +0.0	+0.0 +0.0	+0.0	FU.U			1x ax18		
28	4106.400M	32.1	-39.6	+32.4	+0.8	⊥7 3	+0.0	38.7	54.0	-15.3	Vert
20	1100.40011	J∠.1	+5.4					50.1	Z axis	13.3	V 011
			+0.0	+0.0	+0.0	10.0			a unio		
29	67.150M	43.0	+0.0	+0.0	+0.0	+1.0	+0.0	24.2	40.0	-15.8	Vert
	07.13011	13.0	+0.0	+0.0	+0.0	-27.1		- 1.2	Y axis	13.0	, 510
			+5.9	+0.2	+1.2	-/.1					
30	3097.800M	35.0	-39.8	+30.4	+0.7	+7.0	+0.0	38.1	54.0	-15.9	Horiz
	2070001.1	22.0	+4.6	+0.0	+0.2	+0.0		20.1	Z axis	10.7	
			+0.0	+0.0	+0.0						
31	832.120M	27.8	+0.0	+0.0	+0.0	+3.1	+0.0	30.0	46.0	-16.0	Vert
		_,	+0.0	+0.0	+0.0	-27.7		20.0	Y axis	10.0	
			+22.4	+0.7	+3.7						
32	3239.800M	34.1	-39.8	+30.6	+0.7	+7.1	+0.0	37.6	54.0	-16.4	Vert
			+4.7	+0.0	+0.2	+0.0			Y axis		
			+0.0	+0.0	+0.0						
L											



- 22	45.0503.5	20.4		0.0		0.0		22.4	10.0	4	** .
33	45.050M	38.4		+0.0		+0.8	+0.0		40.0	-16.6	Horiz
			+0.0	+0.0	+0.0	-27.2			Z axis		
2.4	T (2 (T2) f	20.0	+10.2	+0.2	+1.0			20.0	4.5.0		**
34	763.650M	28.0	+0.0	+0.0	+0.0	+3.1	+0.0		46.0	-17.1	Vert
			+0.0	+0.0	+0.0	-27.9			Y axis		
2.5	1555 0003 5	40.7	+21.6	+0.6	+3.5		0.0	2.5.0	7.4.0	17.0	** '
35	1557.000M	42.5	-39.5	+25.5	+0.5	+4.4	+0.0	36.8	54.0	-17.2	Horiz
			+3.0	+0.0	+0.4	+0.0			Z axis		
2.5	21.42.5503.5	20.0	+0.0	+0.0	+0.0		0.0	267	710	17.0	T. 7
36	2142.550M	38.8	-39.4	+27.6	+0.6	+5.4	+0.0	36.7	54.0	-17.3	Vert
			+3.5	+0.0	+0.2	+0.0			Z axis		
27	2000 05015	20.5	+0.0	+0.0	+0.0	5.0	0.0	26.2	710	17.0	T 7
37	2099.050M	38.5	-39.3	+27.5	+0.5	+5.3	+0.0	36.2	54.0	-17.8	Vert
			+3.5	+0.0	+0.2	+0.0			X axis		
20	15010001	10.1	+0.0	+0.0	+0.0	4.0		2 . 2	7.4.0	15.0	** .
38	1784.000M	40.4	-39.4	+26.4	+0.5	+4.8	+0.0	36.2	54.0	-17.8	Horiz
			+3.2	+0.0	+0.3	+0.0			Z axis		
20	02676514	22.6	+0.0	+0.0	+0.0	2.4	0.0	27.0	46.0	10.1	T 7
39	936.765M	23.6	+0.0	+0.0	+0.0		+0.0	27.9	46.0	-18.1	Vert
			+0.0	+0.0	+0.0	-27.5			X axis		
40	1500 0503 5	41.0	+23.7	+0.6	+4.1	4.4	0.0	25.5	710	10.2	T. 7
40	1592.250M	41.2	-39.5	+25.7	+0.5		+0.0	35.7	54.0	-18.3	Vert
			+3.0	+0.0	+0.4	+0.0			Z axis		
- 44	2010 0 703 7	20.7	+0.0	+0.0	+0.0		0.0	27.5	7.4.0	10.4	** '
41	2010.050M	38.5	-39.3	+27.2	+0.5	+5.1	+0.0	35.6	54.0	-18.4	Horiz
			+3.4	+0.0	+0.2	+0.0			Z axis		
10	0.40 (0.53.5)	22.1	+0.0	+0.0	+0.0	2.4	0.0	27.5	460	10.7	T. 7
42	940.635M	23.1	+0.0	+0.0	+0.0	+3.4	+0.0	27.5	46.0	-18.5	Vert
			+0.0	+0.0	+0.0	-27.5			Z axis		
10	720.0501.6	27.2	+23.7	+0.6	+4.2	2.0	0.0	27.2	46.0	10.7	T. 7
43	720.050M	27.2	+0.0	+0.0	+0.0	+3.0	+0.0	27.3	46.0	-18.7	Vert
			+0.0	+0.0	+0.0	-27.9			Z axis		
4.4	1530 00015	41.0	+21.0	+0.6	+3.4	4.4	0.0	25.1	710	10.0	
44	1520.000M	41.0	-39.5	+25.4	+0.5	+4.4	+0.0	35.1	54.0	-18.9	Horiz
			+2.9	+0.0	+0.4	+0.0			X axis		
4.5	1014 5003 5	20.2	+0.0	+0.0	+0.0	, F 1	.0.0	24.0	540	10.1	II.
45	1914.500M	38.3	-39.3	+26.9	+0.5		+0.0			-19.1	Horiz
			+3.2	+0.0	+0.2	+0.0			X axis		
1.0	797.000M	25.2	+0.0	+0.0	+0.0	12.1	ι Ο Ο	26.0	46 O	10.2	Vont
46	/9/.UUUIVI	25.2	+0.0	+0.0	+0.0	+3.1	+0.0	26.8	46.0	-19.2	Vert
			$+0.0 \\ +22.0$	$+0.0 \\ +0.7$	+0.0	-27.8			Z axis		
47	1425 250M	40.9			+3.6	+4.2	+0.0	211	54.0	-19.6	Vert
4/	1425.350M	40.9	-39.7 +2.8	$+25.1 \\ +0.0$	+0.5 +0.5	+4.3 +0.0	+0.0	34.4	Y axis	-19.0	vert
			+2.8 +0.0	+0.0 +0.0	+0.3 +0.0	+0.0			1 4318		
48	812.650M	24.4	+0.0	+0.0		+3.1	+0.0	26.3	46.0	-19.7	Vert
40	012.03UM	<i>∠</i> 4.4	+0.0	+0.0	$^{+0.0}_{+0.0}$	+3.1 -27.8	+0.0	20.3	Z axis	-19./	vert
			+0.0	+0.0	+3.7	-21.8			L axis		
49	691.200M	26.0	+22.2 $+0.0$	+0.7	+0.0	+3.0	+0.0	25.8	46.0	-20.2	Vert
49	071.200101	20.0	+0.0	+0.0 +0.0	+0.0	+3.0 -27.9	+0.0	23.0	X axis	-20.2	v eit
			+20.7	+0.6	+3.4	-41.9			A axis		
<u> </u>			±∠U.7	±0.0	±3.4						



Section		121 1207 5										
10	50	631.130M	26.6		+0.0			+0.0			-20.7	Horiz
Temperature State State							-28.0			Z axis		
+0.0		5 5 5 6 6	22.0						240	4.5.0		** '
121.7	51	767.780M	23.9					+0.0			-21.1	Horiz
S2 667.100M 25.2							-27.9			Z axis		
Ho			27.2				2.0		211	4.5.0		**
1.00	52	667.100M	25.2					+0.0			-21.6	Vert
S3 704.180M							-28.0			Z axis		
+0.0		=0.4.4003.5										
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	53	704.180M	23.7					+0.0			-22.4	Horiz
S4 630.300M							-27.9			Z axis		
100												
+20.1	54	630.300M	24.5					+0.0	23.2		-22.8	Vert
S5 613.080M							-28.0			Z axis		
+0.0												
19.9	55	613.080M	24.7					+0.0	23.1		-22.9	Horiz
56 571.280M 25.4 +0.0 +0.0 +0.0 +2.7 +0.0 23.0 46.0 -23.0 Horiz 57 656.130M 24.0 +0.0 +0.0 +0.0 +2.9 +0.0 23.0 46.0 -23.0 Horiz 58 553.230M 25.5 +0.0 +0.0 +0.0 +2.7 +0.0 22.8 46.0 -23.2 Horiz 59 32.800M 25.5 +0.0 +0.0 +0.0 +2.7 +0.0 22.8 46.0 -23.2 Horiz 59 32.800M 25.1 +0.0 +0.0 +0.0 +2.7 +0.0 22.8 46.0 -23.2 Horiz 60 651.100M 23.5 +0.0 +0.0 +0.0 +0.0 +0.0 27.2 X axis 61 612.950M 23.2 +0.0 +0.0 +0.0 +2.9 +0.0 22.4 46.0 -23.6 Vert 40.0 +0.0 +0.0							-28.0			X axis		
+0.0												
19.4 +0.5 +3.0 +0.0 +0.0 +2.9 +0.0 23.0 46.0 -23.0 Horiz +20.4 +0.5 +3.2 +20.4 +0.5 +3.2 +20.4 +0.5 +3.2 +20.4 +0.5 +3.2 +20.4 +0.5 +3.2 +20.4 +0.5 +3.0 +19.1 +0.5 +3.0 +19.1 +0.5 +3.0 +19.1 +0.5 +3.0 +19.1 +0.5 +3.0 +17.3 +0.1 +0.8 +17.3 +0.1 +0.8 +17.3 +0.1 +0.8 +20.3 +0.5 +3.2 +20.3 +0.5 +3.0 +20.5 +0.0 +0.0 +0.0 +0.0 +2.8 +0.0 21.0 46.0 -23.0 Horiz +0.0 +0.0 +0.0 +2.7 +0.0 21.0 46.0 -25.0 Horiz +0.0 +0.0 +0.0 +2.6 +0.0 20.8 46.0 -25.2 Horiz +18.1 +0.5 +2.9 +2.9 +2.5 +0.0 +0.0 +0.0 +0.0 +2.6 +0.0 20.8 46.0 -25.2 Horiz +18.1 +0.5 +2.9 +18.1 +0.5 +2.9 +2.9 +2.5 +0.0 +0.0 +0.0 +2.7 +0.0 14.8 40.0 -25.2 Horiz +11.8 +0.1 +0.9 +0.0 +0.0 +2.6 +0.0 20.7 46.0 -25.2 Horiz +18.5 +0.5 +2.9 +18.5 +0.5	56	571.280M	25.4					+0.0	23.0		-23.0	Horiz
57 656.130M 24.0 +0.0 +0.0 +0.0 +2.9 +0.0 23.0 46.0 -23.0 Horiz 58 553.230M 25.5 +0.0 +0.0 +0.0 +2.7 +0.0 22.8 46.0 -23.2 Horiz 59 32.800M 25.1 +0.0 +0.0 +0.0 +0.0 +0.0 22.8 46.0 -23.2 Horiz 59 32.800M 25.1 +0.0 +0.0 +0.0 +0.6 +0.0 16.7 40.0 -23.3 Horiz 60 651.100M 23.5 +0.0							-28.0			Z axis		
+0.0												
1-20.4 1-0.5 1-3.2 1-20.4 1-0.5 1-3.2 1-20.4 1-20.5 1-20.	57	656.130M	24.0					+0.0			-23.0	Horiz
58 553.230M 25.5 +0.0 +0.0 +0.0 +2.7 +0.0 22.8 46.0 -23.2 Horiz 59 32.800M 25.1 +0.0 +0.0 +0.0 +0.0 +0.0 +0.0 -23.3 Horiz 59 32.800M 25.1 +0.0 +0.0 +0.0 +0.0 -27.2 X axis 60 651.100M 23.5 +0.0 +0.0 +0.0 +2.9 +0.0 22.4 46.0 -23.6 Vert 40.0 +0.0 +0.0 +0.0 +2.8 +0.0 22.4 46.0 -23.6 Vert 40.3 +0.5 +3.2 -3.0 -3.2 -3.0 X axis X axis 61 612.950M 23.2 +0.0 +0.0 +0.0 +2.8 +0.0 21.6 46.0 -24.4 Vert 40.0 +0.0 +0.0 +2.8 +0.0 21.0 46.0 -25.0 Horiz 40.0 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td>-28.0</td><td></td><td></td><td>Y axis</td><td></td><td></td></td<>							-28.0			Y axis		
+0.0												
19.1 +0.5 +3.0 +0.0	58	553.230M	25.5					+0.0	22.8		-23.2	Horiz
59 32.800M 25.1 +0.0 +0.0 +0.0 +0.6 +0.0 16.7 40.0 -23.3 Horiz 60 651.100M 23.5 +0.0 +0.0 +0.0 +2.9 +0.0 22.4 46.0 -23.6 Vert 61 612.950M 23.2 +0.0 +0.0 +0.0 +2.8 +0.0 21.6 46.0 -24.4 Vert 62 539.350M 23.9 +0.0 +0.0 +0.0 +2.8 +0.0 21.6 46.0 -24.4 Vert 62 539.350M 23.9 +0.0 +0.0 +2.8 +0.0 21.6 46.0 -24.4 Vert 62 539.350M 23.9 +0.0 +0.0 +2.8 +0.0 21.0 46.0 -25.0 Horiz 63 488.200M 24.5 +0.0 +0.0 +2.6 +0.0 20.8 46.0 -25.2 Horiz 64 42.150M 28.5 +0.0							-28.0			Z axis		
+0.0												
17.3	59	32.800M	25.1					+0.0	16.7		-23.3	Horiz
60 651.100M 23.5 +0.0 +0.0 +0.0 +2.9 +0.0 22.4 46.0 -23.6 Vert 61 612.950M 23.2 +0.0 +0.0 +0.0 +2.8 +0.0 21.6 46.0 -24.4 Vert 61 612.950M 23.2 +0.0 +0.0 +0.0 +2.8 +0.0 21.6 46.0 -24.4 Vert 62 539.350M 23.9 +0.0 +0.0 +0.0 +2.7 +0.0 21.0 46.0 -25.0 Horiz 63 488.200M 24.5 +0.0 +0.0 +0.0 +2.7 +0.0 21.0 46.0 -25.0 Horiz 63 488.200M 24.5 +0.0 +0.0 +0.0 +2.6 +0.0 20.8 46.0 -25.2 Horiz 64 42.150M 28.5 +0.0 +0.0 +0.0 +0.7 +0.0 14.8 40.0 -25.2 Horiz +0.0							-27.2			X axis		
+0.0		651 1003 F					2.0	0.0	22.4	450	22.5	**
+20.3	60	651.100M	23.5					+0.0	22.4		-23.6	Vert
61 612.950M 23.2 +0.0 +0.0 +0.0 +2.8 +0.0 21.6 46.0 -24.4 Vert +0.0 +0.0 +0.0 +0.0 -28.0 Z axis 62 539.350M 23.9 +0.0 +0.0 +0.0 +2.7 +0.0 21.0 46.0 -25.0 Horiz +0.0 +18.9 +0.5 +3.0 63 488.200M 24.5 +0.0 +0.0 +0.0 +2.6 +0.0 20.8 46.0 -25.2 Horiz +0.0 +0.0 +0.0 +0.0 -27.8 Z axis 64 42.150M 28.5 +0.0 +0.0 +0.0 +0.0 +0.7 +0.0 14.8 40.0 -25.2 Horiz +0.0 +0.0 +0.0 +0.0 -27.2 Y axis 65 510.800M 24.1 +0.0 +0.0 +0.0 +2.6 +0.0 20.7 46.0 -25.3 Horiz +0.0 +0.0 +0.0 +0.0 -27.2 Y axis 66 466.350M 25.0 +0.0 +0.0 +0.0 +2.6 +0.0 20.7 46.0 -25.3 Horiz +0.0 +0.0 +0.0 +0.0 -27.9 X axis 66 466.350M 25.0 +0.0 +0.0 +0.0 +2.5 +0.0 20.6 46.0 -25.4 Horiz +0.0 +0.0 +0.0 +0.0 -27.7 Y axis							-28.0			X axis		
+0.0 +0.0 +0.0 +0.0 -28.0 Z axis 62 539.350M 23.9 +0.0 +0.0 +0.0 +2.7 +0.0 21.0 46.0 -25.0 Horiz 63 488.200M 24.5 +0.0 +0.0 +0.0 +2.6 +0.0 20.8 46.0 -25.2 Horiz 64 42.150M 28.5 +0.0 +0.0 +0.0 +0.7 +0.0 14.8 40.0 -25.2 Horiz 65 510.800M 24.1 +0.0 +0.0 +0.0 +2.6 +0.0 20.7 46.0 -25.2 Horiz 65 510.800M 24.1 +0.0 +0.0 +0.0 +2.6 +0.0 20.7 46.0 -25.3 Horiz 66 466.350M 25.0 +0.0 +0.0 +0.0 +2.6 +0.0 20.7 46.0 -25.3 Horiz 66 466.350M 25.0 +0.0 +0.0 +0.0 +2.5 +0.0 20.6 46.0 -25.4 Horiz 40 +0.0	<i>c</i> 1	612 0503 f	22.2				2.0	0.0	21.6	460	24.4	¥7.
19.9	61	612.950M	23.2					+0.0	21.6		-24.4	Vert
62 539.350M 23.9 +0.0 +0.0 +0.0 +2.7 +0.0 21.0 46.0 -25.0 Horiz +0.0 +0.0 +0.0 +0.0 -28.0 Y axis 63 488.200M 24.5 +0.0 +0.0 +0.0 +2.6 +0.0 20.8 46.0 -25.2 Horiz +0.0 +0.0 +0.0 +0.0 -27.8 Z axis 64 42.150M 28.5 +0.0 +0.0 +0.0 +0.0 +0.0 +0.0 +0.0 +0							-28.0			Z axis		
63 488.200M 24.5 +0.0 +0.0 +0.0 +2.6 +0.0 20.8 46.0 -25.2 Horiz 64 42.150M 28.5 +0.0 +0.0 +0.0 +0.0 +0.7 +0.0 14.8 40.0 -25.2 Horiz 65 510.800M 24.1 +0.0 +0.0 +0.0 +2.6 +0.0 20.7 46.0 -25.3 Horiz 65 510.800M 24.1 +0.0 +0.0 +0.0 +2.6 +0.0 20.7 46.0 -25.3 Horiz 40.0 +0.0 +0.0 +2.6 +0.0 20.7 46.0 -25.3 Horiz 40.0 +0.0 +0.0 -27.9 X axis X axis 40.0 +0.0 +0.0 +2.5 +0.0 20.6 46.0 -25.4 Horiz 40.0 +0.0 +0.0 +2.5 +0.0 20.6 46.0 -25.4 Horiz 40.0 +0.0 +0.0 +2.5 +0.0 20.6 46.0 -25.4 Horiz	<i>(</i> 2	520 250M	22.0				.07	.0.0	21.0	460	25.0	II.
+18.9 +0.5 +3.0 63 488.200M 24.5 +0.0 +0.0 +0.0 +2.6 +0.0 20.8 46.0 -25.2 Horiz 64 +0.0 +0.0 +0.0 +0.0 +0.7 +0.0 14.8 40.0 -25.2 Horiz 64 +0.0 +0.0 +0.0 +0.0 +0.0 +0.0 +2.72 Y axis 65 510.800M 24.1 +0.0 +0.0 +0.0 +2.6 +0.0 20.7 46.0 -25.3 Horiz +0.0 +0.0 +0.0 +2.6 +0.0 20.7 46.0 -25.3 Horiz +0.0 +0.0 +0.0 -27.9 X axis 66 466.350M 25.0 +0.0 +0.0 +2.5 +0.0 20.6 46.0 -25.4 Horiz +0.0 +0.0 +0.0 +2.5 +0.0 20.6 46.0 -25.4 Horiz +0.0 +0.0 +0.0 -27.7 Y axis	62	339.33UM	23.9					+0.0			-25.0	HOIIZ
63 488.200M 24.5 +0.0 +0.0 +0.0 +2.6 +0.0 20.8 46.0 -25.2 Horiz +0.0 +0.0 +0.0 +0.0 +0.0 -27.8 Z axis 64 42.150M 28.5 +0.0 +0.0 +0.0 +0.0 +0.7 +0.0 14.8 40.0 -25.2 Horiz +0.0 +0.0 +0.0 +0.0 -27.2 Y axis 65 510.800M 24.1 +0.0 +0.0 +0.0 +2.6 +0.0 20.7 46.0 -25.3 Horiz +0.0 +0.0 +0.0 +0.0 -27.9 X axis 66 466.350M 25.0 +0.0 +0.0 +0.0 +2.5 +0.0 20.6 46.0 -25.4 Horiz +0.0 +0.0 +0.0 +0.0 -27.7 Y axis							-28.U			r axis		
Ho	62	400 200N #	245				12.6	ι Ο Ο	20.0	460	25.2	IIoi-
+18.1 +0.5 +2.9 64 42.150M 28.5 +0.0 +0.0 +0.0 +0.0 +0.0 14.8 40.0 -25.2 Horiz +0.0 +0.0 +0.0 -27.2 Y axis +11.8 +0.1 +0.9 65 510.800M 24.1 +0.0 +0.0 +0.0 +2.6 +0.0 20.7 46.0 -25.3 Horiz +0.0 +0.0 +0.0 -27.9 X axis +18.5 +0.5 +2.9 66 466.350M 25.0 +0.0 +0.0 +0.0 +2.5 +0.0 20.6 46.0 -25.4 Horiz +0.0 +0.0 +0.0 -27.7 Y axis	63	488.∠UUM	24.5					+0.0	20.8		-25.2	HOIIZ
64 42.150M 28.5 +0.0 +0.0 +0.0 +0.0 +0.0 14.8 40.0 -25.2 Horiz +0.0 +0.0 +0.0 +0.0 -27.2 Y axis 65 510.800M 24.1 +0.0 +0.0 +0.0 +2.6 +0.0 20.7 46.0 -25.3 Horiz +0.0 +0.0 +0.0 +0.0 -27.9 X axis 66 466.350M 25.0 +0.0 +0.0 +0.0 +2.5 +0.0 20.6 46.0 -25.4 Horiz +0.0 +0.0 +0.0 +0.0 -27.7 Y axis							-21.8			Z axis		
+0.0 +0.0 +0.0 -27.2 Y axis +11.8 +0.1 +0.9 65 510.800M 24.1 +0.0 +0.0 +0.0 +2.6 +0.0 20.7 46.0 -25.3 Horiz +0.0 +0.0 +0.0 -27.9 X axis +18.5 +0.5 +2.9 66 466.350M 25.0 +0.0 +0.0 +0.0 +2.5 +0.0 20.6 46.0 -25.4 Horiz +0.0 +0.0 +0.0 -27.7 Y axis	<i>C A</i>	42 150M	20 5				10.7	ι Ο Ο	140	40.0	25.2	IIoi-
+11.8 +0.1 +0.9 65 510.800M 24.1 +0.0 +0.0 +0.0 +2.6 +0.0 20.7 46.0 -25.3 Horiz +0.0 +0.0 +0.0 -27.9 X axis +18.5 +0.5 +2.9 66 466.350M 25.0 +0.0 +0.0 +0.0 +2.5 +0.0 20.6 46.0 -25.4 Horiz +0.0 +0.0 +0.0 -27.7 Y axis	04	42.13UM	28.5					+0.0	14.8		-25.2	попх
65 510.800M 24.1 +0.0 +0.0 +0.0 +2.6 +0.0 20.7 46.0 -25.3 Horiz +0.0 +0.0 +0.0 -27.9 X axis +18.5 +0.5 +2.9 66 466.350M 25.0 +0.0 +0.0 +0.0 +2.5 +0.0 20.6 46.0 -25.4 Horiz +0.0 +0.0 +0.0 -27.7 Y axis							-21.2			1 axis		
+0.0 +0.0 +0.0 -27.9 X axis +18.5 +0.5 +2.9 66 466.350M 25.0 +0.0 +0.0 +0.0 +2.5 +0.0 20.6 46.0 -25.4 Horiz +0.0 +0.0 +0.0 -27.7 Y axis	45	510 900M	24.1				126	ι Ο Ο	20.7	16 N	25.2	Uoria
+18.5 +0.5 +2.9 66 466.350M 25.0 +0.0 +0.0 +0.0 +2.5 +0.0 20.6 46.0 -25.4 Horiz +0.0 +0.0 +0.0 -27.7 Y axis	65	310.800M	24.1					+0.0	20.7		-25.5	HOIIZ
66 466.350M 25.0 +0.0 +0.0 +0.0 +2.5 +0.0 20.6 46.0 -25.4 Horiz +0.0 +0.0 +0.0 -27.7 Y axis							-21.9			A axis		
+0.0 +0.0 +0.0 -27.7 Y axis	66	166 250N	25.0				12.5	ι Ο Ο	20.6	16 N	25.4	Uoria
	00	400.33UM	25.0					+0.0	∠0.0		-25.4	попи
+17.0 +0.4 +2.0							-21.1			r axis		
				+1/.0	+0.4	+2.8						

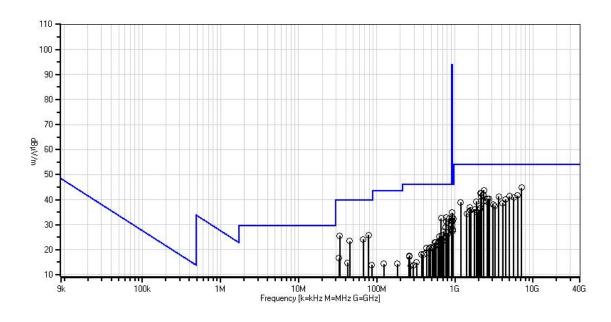


67	432.150M	25.8	+0.0	+0.0	+0.0	+2.4	+0.0	20.6	46.0	-25.4	Vert
		_2.0	+0.0	+0.0	+0.0	-27.5			Y axis		
			+16.9	+0.4	+2.6						
68	517.650M	23.8	+0.0	+0.0	+0.0	+2.6	+0.0	20.5	46.0	-25.5	Vert
			+0.0	+0.0	+0.0	-27.9			X axis		
			+18.6	+0.5	+2.9						
69	86.350M	30.1	+0.0	+0.0	+0.0	+1.2	+0.0		40.0	-26.0	Horiz
			+0.0	+0.0	+0.0	-27.1			Y axis		
			+8.3	+0.2	+1.3						
70	433.100M	24.0	+0.0	+0.0	+0.0		+0.0	18.8	46.0	-27.2	Horiz
			+0.0	+0.0	+0.0	-27.5			Z axis		
			+16.9	+0.4	+2.6						
71	373.850M	24.6	+0.0	+0.0	+0.0		+0.0	18.1	46.0	-27.9	Horiz
			+0.0	+0.0	+0.0	-27.1			Y axis		
	202 5727	2	+15.5	+0.4	+2.4		0.0	400		•	**
72	393.650M	24.0	+0.0	+0.0	+0.0		+0.0	18.0		-28.0	Vert
			+0.0	+0.0	+0.0	-27.3			Z axis		
72	261.05034	27.0	+16.0	+0.4	+2.5	, 1.0	.00	17.6	460	20.4	II!-
/3	261.850M	27.0		+0.0	+0.0		+0.0	17.6	46.0	-28.4	Horiz
			+0.0	+0.0	+0.0	-26.5			Z axis		
74	258.400M	26.8	+12.8	+0.3	+2.1	+1.Ω	+0.0	17.2	46.0	-28.8	Vert
/4	230.4UUWI	∠0.8	+0.0	+0.0 +0.0	+0.0	+1.9 -26.5	+0.0	17.2	Z axis	-20.0	vert
			+0.0	+0.0	+0.0	-20.3			L axis		
75	123.100M	26.7		+0.0	+0.0	+1.3	+0.0	14.4	43.5	-29.1	Horiz
13	123.100101	20.7	+0.0	+0.0	+0.0	-27.0	10.0	17.7	X axis	-47.1	HUHL
			+11.8	+0.2	+1.4	27.0			21 unio		
76	182.900M	28.7	+0.0	+0.0	+0.0	+1.5	+0.0	14.3	43.5	-29.2	Vert
, ,	102.001.1	_0.,	+0.0	+0.0	+0.0	-26.8	. 0.0	11.3	Y axis	->	. 510
			+8.9	+0.3	+1.7	_0.0					
77	324.350M	22.8	+0.0	+0.0	+0.0	+2.1	+0.0	15.0	46.0	-31.0	Horiz
			+0.0	+0.0	+0.0	-26.7			X axis		
			+14.1	+0.4	+2.3						
78	293.650M	22.8	+0.0	+0.0	+0.0	+2.0	+0.0	14.0	46.0	-32.0	Vert
			+0.0	+0.0	+0.0	-26.5			X axis		
			+13.2	+0.3	+2.2						
79	270.100M	22.9	+0.0	+0.0	+0.0			13.7	46.0	-32.3	Horiz
			+0.0	+0.0	+0.0	-26.5			Z axis		
			+12.9	+0.3	+2.1						
80	927.555M	30.7	+0.0	+0.0	+0.0	+3.4	+0.0	34.8	94.0	-59.2	Vert
			+0.0	+0.0	+0.0	-27.5			Y axis		
			+23.5	+0.6	+4.1						
81	914.345M	29.3	+0.0	+0.0	+0.0	+3.3	+0.0	33.1	94.0	-60.9	Vert
			+0.0	+0.0	+0.0	-27.5			X axis		
			+23.3	+0.6	+4.1						



82	918.860M	28.8	+0.0	+0.0	+0.0	+3.3	+0.0	32.7	94.0	-61.3	Vert
			+0.0	+0.0	+0.0	-27.5			Z axis		
			+23.4	+0.6	+4.1						
83	927.620M	27.4	+0.0	+0.0	+0.0	+3.4	+0.0	31.5	94.0	-62.5	Vert
			+0.0	+0.0	+0.0	-27.5			Z axis		
			+23.5	+0.6	+4.1						
84	919.280M	25.8	+0.0	+0.0	+0.0	+3.3	+0.0	29.7	94.0	-64.3	Horiz
			+0.0	+0.0	+0.0	-27.5			Y axis		
			+23.4	+0.6	+4.1						

CKC Laboratories, Inc. Date: 7/27/2011 Time: 11:23:10 SmartLabs, Inc. WO#: 92090 15:249 Carrier and Spurious Emissions (902-928 MHz Transmitter) Test Distance: 3 Meters Sequence#: 3 Ext ATTN: 0 dB









Test Setup Photos



X AXIS FRONT VIEW



X AXIS BACK VIEW





Y AXIS FRONT VIEW



Y AXIS BACK VIEW





Z AXIS FRONT VIEW



Z AXIS BACK VIEW



RSS-210

99 % Bandwidth

Test Conditions / Setup

The EUT is placed on the wooden table lined with Styrofoam of 10 cm thickness. Orientated in three orthogonal operating positions, the EUT is set in constant transmit mode. No load is connected to the EUT for evaluation of RF parameter. The EUT operates on battery power. The EUT power is designed to be mechanically switched off during charge cycle via dedicated USB charging port.

TX freq = 914.5-915.5 MHz

72°F, 53% Relative Humidity
Frequency range of measurement = 914.5 - 915.5MHz
30 MHz-1000 MHz; RBW=120 kHz, VBW=120 kHz.

Note: A fully charged EUT simulates a fresh battery installed during the test.

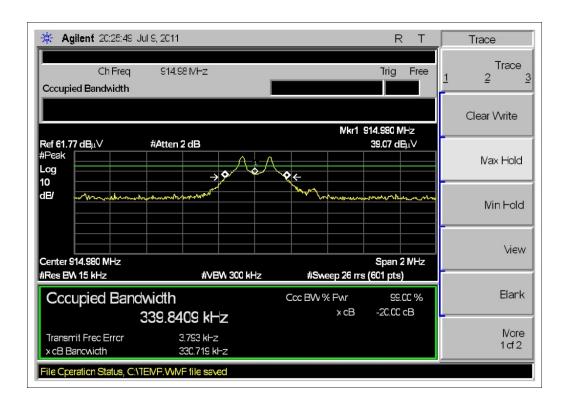
Engineer Name: Don Nguyen

	Test Equipment							
Asset/Serial #	Description	Model	Manufacturer	Cal Date	Cal Due			
P04382	Cable	LDF-50	Andrew	9/3/2010	9/3/2012			
02869	Spectrum Analyzer	E4440A	Agilent	2/12/2011	2/12/2013			
00010	Preamp	8447D	HP	3/19/2010	3/19/2012			
00851	Biconilog Antenna	CBL6111C	Schaffer	3/8/2010	3/8/2012			
P05555	Cable	RG223/U	Pasternack	8/18/2010	8/18/2012			
P05569	Cable	RG-214/U	Pasternack	8/18/2010	8/18/2012			

Page 48 of 54 Report No.: 92090-4



Test Data





Test Setup Photos



X AXIS FRONT VIEW



X AXIS BACK VIEW





Y AXIS FRONT VIEW



Y AXIS BACK VIEW





Z AXIS FRONT VIEW



Z AXIS BACK VIEW



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

The cables were routed consistent with the typical application by varying the configuration of the test sample. Interface cables were connected to the available ports of the test unit. The effect of varying the position of the cables was investigated to find the configuration that produced maximum emissions. Cables were of the type and length specified in the individual requirements. The length of cable that produced maximum emissions was selected.

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

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

CORRECTION FACTORS

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

Page 53 of 54 Report No.: 92090-4



	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. 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
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 "Peak" mode. Whenever a "Quasi-Peak" or "Average" reading is listed as one of the highest readings, this is indicated as a "QP" or an "Ave" on the appropriate rows of the data sheets. 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/receiver readings recorded all emissions at their peak value as the frequency band selected was scanned. By combining this function with another feature of the measuring device called "peak hold," the measuring device had the ability to measure transients 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

When the true peak values exceeded or were within 2 dB of the specification limit, quasi-peak measurements were taken using the quasi-peak detector.

Average

For certain frequencies, average measurements may be made using the spectrum analyzer/receiver. 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.

Page 54 of 54 Report No.: 92090-4