

Itron, Inc.

TEST REPORT FOR

AMR Transceiver Device for Endpoint Installation Model: 900 BCR

Tested To The Following Standards:

FCC Part 15 Subpart C Sections 15.247
(Partial Testing - Radiated Spurious Emissions Only)

Report No.: 92785-8

Date of issue: June 11, 2013



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

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

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ADMINISTRATIVE INFORMATION

Test Report Information

REPORT PREPARED FOR:

ltron, Inc.
2111 N. Molter Road
Liberty Lake, WA 99019

REPRESENTATIVE: Jay Holcomb
Customer Reference Number: 52031

DATE OF EQUIPMENT RECEIPT:

DATE(S) OF TESTING:

REPORT PREPARED BY:

Morgan Tramontin
CKC Laboratories, Inc.
5046 Sierra Pines Drive
Mariposa, CA 95338

Project Number: 92785

January 8, 2013

January 8, 2013

Report Authorization

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



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

Test Facility Information



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

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

Software Versions

CKC Laboratories Proprietary Software	Version
EMITest Emissions	5.00.14
Immunity	5.00.07

Site Registration & Accreditation Information

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

SUMMARY OF RESULTS

Standard / Specification: FCC Part 15 Subpart C 15.247

Description	Test Procedure/Method	Results
Radiated Spurious Emissions	FCC Part 15 Subpart C Section 15.247(d) / 15.209	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

AMR Transceiver Device for Endpoint Installation

Manuf: Itron, Inc.
Model: 900 BCR
Serial: 67400772

3dB glass mount antenna

Manuf: Tessco
Model: MM3-925SMA
Serial: None

AMR Transceiver Device for Endpoint Installation

Manuf: Itron, Inc.
Model: 900 BCR
Serial: 37400023

5dB Magnetic Mount

Manuf: PCTel
Model: Z3182
Serial: None

PERIPHERAL DEVICES

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

BCR Charging/USB Connection Station

Manuf: Itron, Inc.
Model: None
Serial: None

Laptop

Manuf: Lenovo
Model: E530 ThinkPad Edge
Serial: MP-0PB79

Laptop

Manuf: Dell
Model: Latitude E6410
Serial: JBDPWN1

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.

15.247(d) Radiated Spurious Emissions

Test Data Sheets

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

Customer:	Itron, Inc.		
Specification:	15.247(d) / 15.209 Radiated Spurious Emissions	Date:	1/8/2013
Work Order #:	92785	Time:	09:01:08
Test Type:	Radiated Scan	Sequence#:	1
Equipment:	AMR transceiver device for endpoint installation	Tested By:	Rodney MacInnes
Manufacturer:	Itron, Inc.		
Model:	900 BCR		
S/N:	37400023		

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN01517	Preamp	8447D	2/24/2011	2/24/2013
T2	AN01993	Biconilog Antenna	CBL6111C	3/2/2012	3/2/2014
T3	AN03227	Cable	32026-29080-29080-84	5/2/2011	5/2/2013
T4	ANP05360	Cable	RG214	12/3/2012	12/3/2014
T5	ANP05366	Cable	RG-214	10/14/2011	10/14/2013
T6	AN02872	Spectrum Analyzer	E4440A	7/23/2011	7/23/2013
T7	AN03170	High Pass Filter	HM1155-11SS	9/6/2011	9/6/2013
T8	AN01271	Preamp	83017A	8/18/2011	8/18/2013
T9	AN03123	Cable	32026-2-29801-12	10/14/2011	10/14/2013
T10	ANP05546	Cable	Heliacx	9/7/2012	9/7/2014
T11	ANP05965	Cable	Various	8/26/2011	8/26/2013
T12	AN01467	Horn Antenna-ANSI C63.5 Calibration	3115	10/19/2011	10/19/2013
T13	AN03209	Preamp	83051A	3/5/2013	3/5/2015
T14	ANP06241	Attenuator	54A-10	3/16/2012	3/16/2014
T15	ANP06242	Attenuator	54A-10	3/16/2012	3/16/2014
T16	ANDCCF	Duty Cycle Correction Factor		5/30/2013	5/30/2015
	AN00052	Loop Antenna	6502	5/16/2012	5/16/2014

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
3dB glass mount antenna	Tessco	MM3-925SMA	
AMR transceiver device for endpoint installation	Itron, Inc.	900 BCR	67400772
AMR transceiver device for endpoint installation*	Itron, Inc.	900 BCR	37400023

Support Devices:

Function	Manufacturer	Model #	S/N
BCR Charging/USB connection Station	Itron, Inc.		
Laptop	Lenovo	E530 ThinkPad Edge	MP-0PB79
Laptop	Dell	Latitude E6410	JBDPWN1

Test Conditions / Notes:

The EUT is placed in the center of the turntable on a styrofoam table 80cm above the ground plane, EUT is installed in device cradle attached to computer through USB to fiber adaptor.
 Test Freq: 9kHz - 10GHz

ISM FM Modulation

Fundamental Freq: 908MHz, 915.85MHz, 923.8MHz

Firmware setting = 63, 63, 63

Emission profile evaluated with Tessco MM3-925SMA 3dB glass mount antenna

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-10,000 MHz;RBW=1 MHz,VBW=1 MHz.

15.31(e) compliance: a freshly charged battery is installed

Test method in accordance with FCC document: DA 00-705

Temperature: 22°C
 Pressure: 101.5kPa
 Humidity: 35%

Duty Cycle correction factor applied: -14.8 dBuV

Software: MC3SuperRaptorTest
 Version: 4.0.1.5

Note:
 The data in January was Re-evaluated and Validated.
 The Dell Latitude laptop was used in May and the Lenovo ThinkPad was used in January!!!!

900BCR S/N: 67400772 is the January test subject
 900BCR S/N: 37400023 is the May test subject

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	T7	T8					
			T9	T10	T11	T12					
	MHz	dB μ V	T13	T14	T15	T16	Table	dB μ V/m	dB μ V/m	dB	Ant
1	1831.843M	70.6	+0.0	+0.0	+1.3	+0.0	+0.0	53.7	54.0	-0.3	Vert
			+0.0	+0.0	+0.4	+0.0	247				99
			+0.3	+0.0	+1.6	+24.9					
			-30.6	+0.0	+0.0	-14.8					
2	1816.000M Ave	73.8	+0.0	+0.0	+1.3	+0.0	+0.0	53.6	54.0	-0.4	Vert
			+0.0	+0.0	+0.4	-34.6	271				106
			+0.3	+2.4	+0.0	+24.8					
			+0.0	+0.0	+0.0	-14.8					
^	1816.000M	74.1	+0.0	+0.0	+1.3	+0.0	+0.0	53.9	54.0	-0.1	Vert
			+0.0	+0.0	+0.4	-34.6	271				106
			+0.3	+2.4	+0.0	+24.8					
			+0.0	+0.0	+0.0	-14.8					
4	1847.450M	72.5	+0.0	+0.0	+1.3	+0.0	+0.0	52.7	54.0	-1.3	Vert
			+0.0	+0.0	+0.4	-34.6	360				128
			+0.3	+2.5	+0.0	+25.1					
			+0.0	+0.0	+0.0	-14.8					
5	2771.283M	66.7	+0.0	+0.0	+1.6	+0.0	+0.0	50.8	54.0	-3.2	Horiz
			+0.0	+0.0	+0.3	-33.9	360				166
			+0.5	+3.0	+0.0	+27.4					
			+0.0	+0.0	+0.0	-14.8					
6	1815.895M	67.5	+0.0	+0.0	+1.3	+0.0	+0.0	50.5	54.0	-3.5	Horiz
			+0.0	+0.0	+0.4	+0.0					169
			+0.3	+0.0	+1.6	+24.8					
			-30.6	+0.0	+0.0	-14.8					
7	1831.892M	69.3	+0.0	+0.0	+1.3	+0.0	+0.0	49.2	54.0	-4.8	Horiz
			+0.0	+0.0	+0.4	-34.6	-16				158
			+0.3	+2.4	+0.0	+24.9					
			+0.0	+0.0	+0.0	-14.8					
8	1847.650M	68.8	+0.0	+0.0	+1.3	+0.0	+0.0	49.0	54.0	-5.0	Horiz
			+0.0	+0.0	+0.4	-34.6					154
			+0.3	+2.5	+0.0	+25.1					
			+0.0	+0.0	+0.0	-14.8					
9	132.006M QP	53.4	-28.8	+11.7	+0.3	+0.7	+0.0	38.0	43.5	-5.5	Vert
			+0.7	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
^	132.006M	57.1	-28.8	+11.7	+0.3	+0.7	+0.0	41.7	43.5	-1.8	Vert
			+0.7	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
11	108.013M QP	54.4	-28.8	+10.6	+0.3	+0.6	+0.0	37.7	43.5	-5.8	Vert
			+0.6	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					

^	108.013M	59.4	-28.8	+10.6	+0.3	+0.6	+0.0	42.7	43.5	-0.8	Vert
			+0.6	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
13	2723.815M	61.5	+0.0	+0.0	+1.6	+0.0	+0.0	48.2	54.0	-5.8	Horiz
			+0.0	+0.0	+0.3	+0.0	360				99
			+0.5	+0.0	+2.1	+27.2					
			-30.2	+0.0	+0.0	-14.8					
14	2723.825M	62.9	+0.0	+0.0	+1.6	+0.0	+0.0	46.8	54.0	-7.2	Vert
			+0.0	+0.0	+0.3	-33.9	8				134
			+0.5	+3.0	+0.0	+27.2					
			+0.0	+0.0	+0.0	-14.8					
15	131.990M	50.5	-28.8	+11.7	+0.3	+0.7	+0.0	35.1	43.5	-8.4	Horiz
			+0.7	+0.0	+0.0	+0.0					128
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
16	2747.800M	61.0	+0.0	+0.0	+1.6	+0.0	+0.0	45.0	54.0	-9.0	Horiz
			+0.0	+0.0	+0.3	-33.9	360				115
			+0.5	+3.0	+0.0	+27.3					
			+0.0	+0.0	+0.0	-14.8					
17	144.030M	49.3	-28.7	+11.6	+0.4	+0.7	+0.0	34.0	43.5	-9.5	Horiz
			+0.7	+0.0	+0.0	+0.0	198				128
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
18	2771.242M	60.0	+0.0	+0.0	+1.6	+0.0	+0.0	44.1	54.0	-9.9	Vert
			+0.0	+0.0	+0.3	-33.9					127
			+0.5	+3.0	+0.0	+27.4					
			+0.0	+0.0	+0.0	-14.8					
19	168.020M	50.0	+0.0	+0.0	+0.4	+0.0	+0.0	33.5	43.5	-10.0	Vert
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
20	2747.942M	56.9	+0.0	+0.0	+1.6	+0.0	+0.0	40.9	54.0	-13.1	Vert
			+0.0	+0.0	+0.3	-33.9					164
			+0.5	+3.0	+0.0	+27.3					
			+0.0	+0.0	+0.0	-14.8					
21	73.856M	47.2	+0.0	+0.0	+0.3	+0.0	+0.0	26.6	40.0	-13.4	Vert
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
22	114.327M	45.4	+0.0	+0.0	+0.3	+0.0	+0.0	29.2	43.5	-14.3	Vert
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
23	3695.367M	51.9	+0.0	+0.0	+1.9	+0.0	+0.0	39.0	54.0	-15.0	Vert
			+0.0	+0.0	+0.3	-33.6	360				153
			+0.4	+3.3	+0.0	+29.6					
			+0.0	+0.0	+0.0	-14.8					
24	44.700M	41.2	-28.9	+11.8	+0.2	+0.4	+0.0	25.0	40.0	-15.0	Horiz
	QP		+0.3	+0.0	+0.0	+0.0	360				118
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					

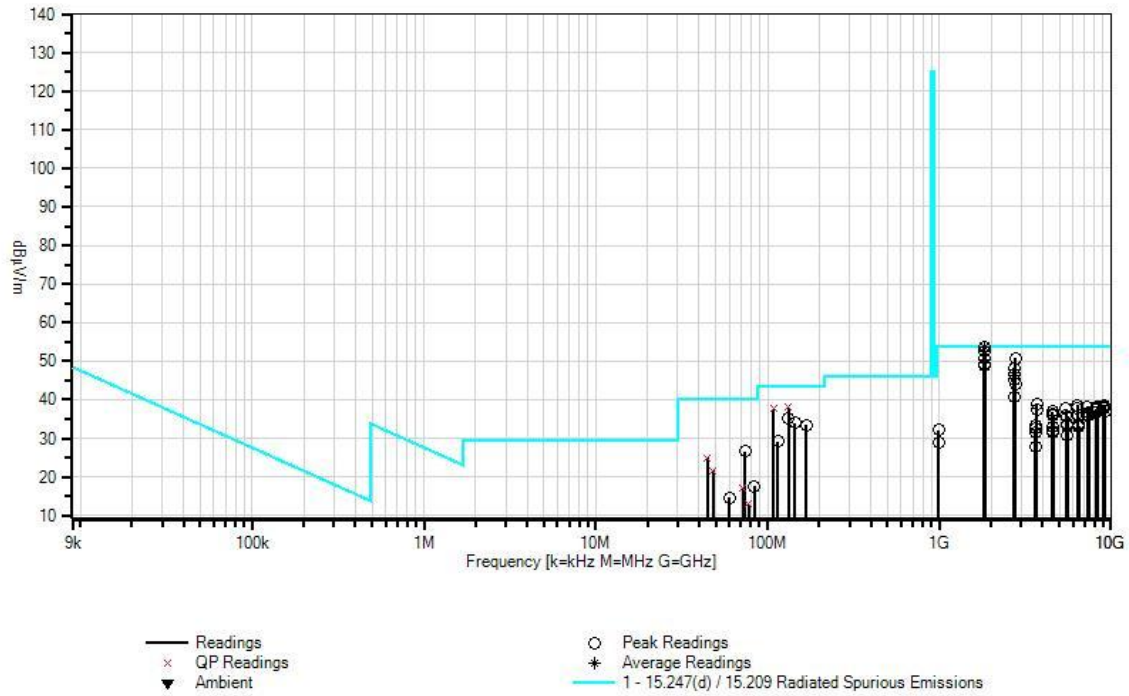
^	44.700M	45.8	-28.9	+11.8	+0.2	+0.4	+0.0	29.6	40.0	-10.4	Horiz
			+0.3	+0.0	+0.0	+0.0					126
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
26	6356.683M	44.3	+0.0	+0.0	+2.8	+0.0	+0.0	38.7	54.0	-15.3	Vert
			+0.0	+0.0	+0.4	-34.0					148
			+0.5	+5.0	+0.0	+34.5					
			+0.0	+0.0	+0.0	-14.8					
27	9080.825M	39.4	+0.0	+0.0	+4.6	+0.0	+0.0	38.6	54.0	-15.4	Vert
			+0.0	+0.0	+0.2	-34.2	360				99
			+0.8	+5.9	+0.0	+36.7					
			+0.0	+0.0	+0.0	-14.8					
28	9078.683M	39.1	+0.0	+0.0	+4.6	+0.0	+0.0	38.3	54.0	-15.7	Horiz
			+0.0	+0.0	+0.2	-34.2					156
			+0.8	+5.9	+0.0	+36.7					
			+0.0	+0.0	+0.0	-14.8					
29	9158.575M	39.3	+0.0	+0.0	+4.6	+0.0	+0.0	38.3	54.0	-15.7	Horiz
			+0.0	+0.0	+0.2	-34.1					111
			+0.8	+6.0	+0.0	+36.3					
			+0.0	+0.0	+0.0	-14.8					
30	7263.350M	42.4	+0.0	+0.0	+3.2	+0.0	+0.0	38.2	54.0	-15.8	Vert
			+0.0	+0.0	+0.3	-34.5	360				111
			+0.5	+5.4	+0.0	+35.7					
			+0.0	+0.0	+0.0	-14.8					
31	8316.467M	40.3	+0.0	+0.0	+4.1	+0.0	+0.0	38.2	54.0	-15.8	Horiz
			+0.0	+0.0	+0.2	-34.5	360				134
			+0.9	+5.7	+0.0	+36.3					
			+0.0	+0.0	+0.0	-14.8					
32	8316.467M	40.3	+0.0	+0.0	+4.1	+0.0	+0.0	38.2	54.0	-15.8	Vert
			+0.0	+0.0	+0.2	-34.5					155
			+0.9	+5.7	+0.0	+36.3					
			+0.0	+0.0	+0.0	-14.8					
33	6355.593M	40.2	+0.0	+0.0	+2.8	+0.0	+0.0	37.9	54.0	-16.1	Horiz
			+0.0	+0.0	+0.4	+0.0					126
			+0.5	+0.0	+3.3	+34.5					
			-29.0	+0.0	+0.0	-14.8					
34	8242.258M	40.3	+0.0	+0.0	+4.0	+0.0	+0.0	37.7	54.0	-16.3	Vert
			+0.0	+0.0	+0.2	-34.6					130
			+0.8	+5.6	+0.0	+36.2					
			+0.0	+0.0	+0.0	-14.8					
35	9157.850M	38.6	+0.0	+0.0	+4.6	+0.0	+0.0	37.6	54.0	-16.4	Vert
			+0.0	+0.0	+0.2	-34.1	360				122
			+0.8	+6.0	+0.0	+36.3					
			+0.0	+0.0	+0.0	-14.8					
36	5448.075M	45.2	+0.0	+0.0	+2.3	+0.0	+0.0	37.6	54.0	-16.4	Horiz
			+0.0	+0.0	+0.3	-33.5	241				123
			+0.4	+4.5	+0.0	+33.2					
			+0.0	+0.0	+0.0	-14.8					
37	8243.117M	40.2	+0.0	+0.0	+4.0	+0.0	+0.0	37.6	54.0	-16.4	Horiz
			+0.0	+0.0	+0.2	-34.6	360				115
			+0.8	+5.6	+0.0	+36.2					
			+0.0	+0.0	+0.0	-14.8					

38	8171.025M	40.3	+0.0	+0.0	+4.0	+0.0	+0.0	37.5	54.0	-16.5	Horiz
			+0.0	+0.0	+0.2	-34.6	360				104
			+0.8	+5.6	+0.0	+36.0					
			+0.0	+0.0	+0.0	-14.8					
39	3695.458M	50.3	+0.0	+0.0	+1.9	+0.0	+0.0	37.4	54.0	-16.6	Horiz
			+0.0	+0.0	+0.3	-33.6					153
			+0.4	+3.3	+0.0	+29.6					
			+0.0	+0.0	+0.0	-14.8					
40	9238.925M	38.7	+0.0	+0.0	+4.5	+0.0	+0.0	37.2	54.0	-16.8	Horiz
			+0.0	+0.0	+0.1	-34.1					148
			+0.9	+6.0	+0.0	+35.9					
			+0.0	+0.0	+0.0	-14.8					
41	4540.075M	47.2	+0.0	+0.0	+2.1	+0.0	+0.0	36.9	54.0	-17.1	Vert
			+0.0	+0.0	+0.3	-33.4					125
			+0.2	+4.0	+0.0	+31.3					
			+0.0	+0.0	+0.0	-14.8					
42	9240.217M	38.4	+0.0	+0.0	+4.5	+0.0	+0.0	36.9	54.0	-17.1	Vert
			+0.0	+0.0	+0.1	-34.1	360				132
			+0.9	+6.0	+0.0	+35.9					
			+0.0	+0.0	+0.0	-14.8					
43	8173.800M	39.4	+0.0	+0.0	+4.0	+0.0	+0.0	36.7	54.0	-17.3	Vert
			+0.0	+0.0	+0.2	-34.6					144
			+0.8	+5.6	+0.0	+36.1					
			+0.0	+0.0	+0.0	-14.8					
44	7391.767M	40.3	+0.0	+0.0	+3.3	+0.0	+0.0	36.6	54.0	-17.4	Horiz
			+0.0	+0.0	+0.2	-34.5					132
			+0.6	+5.5	+0.0	+36.0					
			+0.0	+0.0	+0.0	-14.8					
45	7391.767M	40.3	+0.0	+0.0	+3.3	+0.0	+0.0	36.6	54.0	-17.4	Vert
			+0.0	+0.0	+0.2	-34.5	360				138
			+0.6	+5.5	+0.0	+36.0					
			+0.0	+0.0	+0.0	-14.8					
46	7325.350M	40.7	+0.0	+0.0	+3.2	+0.0	+0.0	36.6	54.0	-17.4	Horiz
			+0.0	+0.0	+0.2	-34.6					118
			+0.5	+5.5	+0.0	+35.9					
			+0.0	+0.0	+0.0	-14.8					
47	4618.792M	46.4	+0.0	+0.0	+2.1	+0.0	+0.0	36.2	54.0	-17.8	Vert
			+0.0	+0.0	+0.3	-33.5					99
			+0.1	+4.1	+0.0	+31.5					
			+0.0	+0.0	+0.0	-14.8					
48	7264.067M	40.3	+0.0	+0.0	+3.2	+0.0	+0.0	36.1	54.0	-17.9	Horiz
			+0.0	+0.0	+0.3	-34.5					99
			+0.5	+5.4	+0.0	+35.7					
			+0.0	+0.0	+0.0	-14.8					
49	7328.108M	40.2	+0.0	+0.0	+3.2	+0.0	+0.0	36.1	54.0	-17.9	Vert
			+0.0	+0.0	+0.2	-34.6	360				146
			+0.5	+5.5	+0.0	+35.9					
			+0.0	+0.0	+0.0	-14.8					
50	5448.075M	43.6	+0.0	+0.0	+2.3	+0.0	+0.0	36.0	54.0	-18.0	Vert
			+0.0	+0.0	+0.3	-33.5					99
			+0.4	+4.5	+0.0	+33.2					
			+0.0	+0.0	+0.0	-14.8					

51	4540.050M	46.2	+0.0	+0.0	+2.1	+0.0	+0.0	35.9	54.0	-18.1	Horiz
			+0.0	+0.0	+0.3	-33.4	96				102
			+0.2	+4.0	+0.0	+31.3					
			+0.0	+0.0	+0.0	-14.8					
52	6411.525M	41.5	+0.0	+0.0	+2.8	+0.0	+0.0	35.8	54.0	-18.2	Horiz
			+0.0	+0.0	+0.4	-34.0	360				116
			+0.5	+5.0	+0.0	+34.4					
			+0.0	+0.0	+0.0	-14.8					
53	47.990M QP	39.8	-28.9	+9.8	+0.2	+0.4	+0.0	21.6	40.0	-18.4	Horiz
			+0.3	+0.0	+0.0	+0.0	269				118
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
^	47.990M	44.8	-28.9	+9.8	+0.2	+0.4	+0.0	26.6	40.0	-13.4	Horiz
			+0.3	+0.0	+0.0	+0.0					126
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
55	5543.158M	42.9	+0.0	+0.0	+2.4	+0.0	+0.0	35.6	54.0	-18.4	Vert
			+0.0	+0.0	+0.3	-33.6	360				134
			+0.4	+4.6	+0.0	+33.4					
			+0.0	+0.0	+0.0	-14.8					
56	5495.783M	41.1	+0.0	+0.0	+2.4	+0.0	+0.0	33.7	54.0	-20.3	Horiz
			+0.0	+0.0	+0.3	-33.5					139
			+0.4	+4.5	+0.0	+33.3					
			+0.0	+0.0	+0.0	-14.8					
57	6410.875M	39.4	+0.0	+0.0	+2.8	+0.0	+0.0	33.7	54.0	-20.3	Vert
			+0.0	+0.0	+0.4	-34.0					116
			+0.5	+5.0	+0.0	+34.4					
			+0.0	+0.0	+0.0	-14.8					
58	3663.883M	46.5	+0.0	+0.0	+1.9	+0.0	+0.0	33.5	54.0	-20.5	Vert
			+0.0	+0.0	+0.3	-33.6	360				119
			+0.4	+3.4	+0.0	+29.4					
			+0.0	+0.0	+0.0	-14.8					
59	5495.325M	40.8	+0.0	+0.0	+2.4	+0.0	+0.0	33.4	54.0	-20.6	Vert
			+0.0	+0.0	+0.3	-33.5	360				99
			+0.4	+4.5	+0.0	+33.3					
			+0.0	+0.0	+0.0	-14.8					
60	6467.200M	39.0	+0.0	+0.0	+2.8	+0.0	+0.0	33.3	54.0	-20.7	Horiz
			+0.0	+0.0	+0.3	-34.0	360				134
			+0.5	+5.1	+0.0	+34.4					
			+0.0	+0.0	+0.0	-14.8					
61	6464.417M	38.8	+0.0	+0.0	+2.8	+0.0	+0.0	33.1	54.0	-20.9	Vert
			+0.0	+0.0	+0.3	-34.0					138
			+0.5	+5.1	+0.0	+34.4					
			+0.0	+0.0	+0.0	-14.8					
62	4618.550M	43.1	+0.0	+0.0	+2.1	+0.0	+0.0	32.9	54.0	-21.1	Horiz
			+0.0	+0.0	+0.3	-33.5	360				155
			+0.1	+4.1	+0.0	+31.5					
			+0.0	+0.0	+0.0	-14.8					
63	3631.825M	45.6	+0.0	+0.0	+1.9	+0.0	+0.0	32.5	54.0	-21.5	Vert
			+0.0	+0.0	+0.3	-33.6	360				117
			+0.4	+3.4	+0.0	+29.3					
			+0.0	+0.0	+0.0	-14.8					

64	990.100M	31.2	+0.0	+0.0	+0.9	+0.0	+0.0	32.2	54.0	-21.8	Vert
			+0.0	+0.0	+0.0	+0.0	360				99
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
65	4579.642M	42.1	+0.0	+0.0	+2.1	+0.0	+0.0	31.8	54.0	-22.2	Horiz
			+0.0	+0.0	+0.3	-33.5	360				132
			+0.1	+4.1	+0.0	+31.4					
			+0.0	+0.0	+0.0	-14.8					
66	84.040M	36.7	-28.9	+8.4	+0.3	+0.6	+0.0	17.6	40.0	-22.4	Horiz
			+0.5	+0.0	+0.0	+0.0					126
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
67	4579.592M	41.8	+0.0	+0.0	+2.1	+0.0	+0.0	31.5	54.0	-22.5	Vert
			+0.0	+0.0	+0.3	-33.5					143
			+0.1	+4.1	+0.0	+31.4					
			+0.0	+0.0	+0.0	-14.8					
68	3663.883M	44.4	+0.0	+0.0	+1.9	+0.0	+0.0	31.4	54.0	-22.6	Horiz
			+0.0	+0.0	+0.3	-33.6					174
			+0.4	+3.4	+0.0	+29.4					
			+0.0	+0.0	+0.0	-14.8					
69	72.000M QP	38.0	-28.9	+6.9	+0.3	+0.5	+0.0	17.2	40.0	-22.8	Horiz
			+0.4	+0.0	+0.0	+0.0	347				125
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
^	72.000M	43.8	-28.9	+6.9	+0.3	+0.5	+0.0	23.0	40.0	-17.0	Horiz
			+0.4	+0.0	+0.0	+0.0					126
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
71	5540.950M	38.1	+0.0	+0.0	+2.4	+0.0	+0.0	30.8	54.0	-23.2	Horiz
			+0.0	+0.0	+0.3	-33.6					104
			+0.4	+4.6	+0.0	+33.4					
			+0.0	+0.0	+0.0	-14.8					
72	990.100M	27.9	+0.0	+0.0	+0.9	+0.0	+0.0	28.9	54.0	-25.1	Horiz
			+0.0	+0.0	+0.0	+0.0					128
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
73	60.030M	35.8	-28.9	+6.7	+0.2	+0.5	+0.0	14.7	40.0	-25.3	Horiz
			+0.4	+0.0	+0.0	+0.0					126
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
74	3631.895M	39.5	+0.0	+0.0	+1.9	+0.0	+0.0	27.8	54.0	-26.2	Horiz
			+0.0	+0.0	+0.3	+0.0	305				99
			+0.4	+0.0	+2.1	+29.3					
			-30.9	+0.0	+0.0	-14.8					
75	77.987M QP	32.7	-28.9	+7.7	+0.3	+0.6	+0.0	12.9	40.0	-27.1	Horiz
			+0.5	+0.0	+0.0	+0.0					100
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					
^	77.950M	40.9	-28.9	+7.6	+0.3	+0.6	+0.0	21.0	40.0	-19.0	Horiz
			+0.5	+0.0	+0.0	+0.0					126
			+0.0	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0	+0.0					

CKC Laboratories, Inc. Date: 1/8/2013 Time: 09:01:08 Itron, Inc. WO#: 92785
 Test Distance: 3 Meters Sequence#: 1 Vert
 Itron, Inc. AMR transceiver device for endpoint installation P/N: 900 BCR



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

Customer: **Itron, Inc.**
 Specification: **15.247(d) / 15.209 Radiated Spurious Emissions**
 Work Order #: **92785** Date: 1/8/2013
 Test Type: **Radiated Scan** Time: 16:30:25
 Equipment: **AMR transceiver device for endpoint installation** Sequence#: 2
 Manufacturer: Itron, Inc. Tested By: Rodney MacInnes
 Model: 900 BCR
 S/N: 37400023

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN01517	Preamp	8447D	2/24/2011	2/24/2013
	AN01993	Biconilog Antenna	CBL6111C	3/2/2012	3/2/2014
T1	AN03227	Cable	32026-29080-29080-84	5/2/2011	5/2/2013
T2	ANP05360	Cable	RG214	12/3/2012	12/3/2014
T3	ANP05366	Cable	RG-214	10/14/2011	10/14/2013
	AN02872	Spectrum Analyzer	E4440A	7/23/2011	7/23/2013
T4	AN03170	High Pass Filter	HM1155-11SS	9/6/2011	9/6/2013
T5	AN01271	Preamp	83017A	8/18/2011	8/18/2013
T6	AN03123	Cable	32026-2-29801-12	10/14/2011	10/14/2013
T7	ANP05546	Cable	Heliac	9/7/2012	9/7/2014
T8	AN01467	Horn Antenna-ANSI C63.5 Calibration	3115	10/19/2011	10/19/2013
T9	ANDCCF	Duty Cycle Correction Factor		5/30/2013	5/30/2015
T10	AN01996	Biconilog Antenna	CBL6111C	3/2/2012	3/2/2014
T11	AN02308	Preamp	8447D	4/3/2012	4/3/2014
T12	ANP05435	Attenuator	PE7015-10	10/5/2012	10/5/2014
	AN00052	Loop Antenna	6502	5/16/2012	5/16/2014

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
5dB magnetic mount	PCTel	Z3182	
AMR transceiver device for endpoint installation*	Itron, Inc.	900 BCR	37400023
AMR transceiver device for endpoint installation	Itron, Inc.	900 BCR	67400772

Support Devices:

Function	Manufacturer	Model #	S/N
BCR Charging/USB connection Station	Itron, Inc.		
Laptop	Lenovo	E530 ThinkPad Edge	MP-0PB79
USB 2.0 Kit	S.I. Tech	2172	
Laptop	Dell	Latitude E6410	JBDPWN1

Test Conditions / Notes:

The EUT is placed in the center of the turntable on a styrofoam table 80cm above the ground plane, EUT is installed in device cradle attached to computer through USB to fiber adaptor.
 Freq Tested: 9kHz - 10GHz

ISM FM Modulation

Freq: 908MHz, 915.85MHz, 923.8MHz

Firmware setting = 63, 63, 63

Emission profile evaluated with PCTel Z3182 5dB magnetic mount

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-10,000 MHz;RBW=1 MHz,VBW=1 MHz.

15.31(e) compliance: a freshly charged battery is installed

Emission profile of the EUT rotated along three orthogonal axis was investigated. Recorded data represent worse case emission.

Test method in accordance with FCC document: DA 00-705

Temperature: 21.2°C
 Pressure: 101.5kPa
 Humidity: 35%

Duty Cycle correction factor applied: -14.8 dBuV

Note: 900 BCR S/N: 67400772 is the January test subject
 900 BCR S/N: 37400023 is the May test subject

The data in January was Re-evaluated and Validated.
 The Dell Latitude laptop was used in May and the Lenovo think pad was used in January!!!!

Ext Attn: 0 dB

Measurement Data:		Reading listed by margin.						Test Distance: 3 Meters				
#	Freq	Rdng	T1	T2	T3	T4	Dist	Corr	Spec	Margin	Polar	
	MHz	dB μ V	T5	T6	T7	T8						
			T9	T10	T11	T12	Table	dB μ V/m	dB μ V/m	dB	Ant	
1	59.920M	49.4	+0.2	+0.5	+0.4	+0.0	+0.0	37.0	40.0	-3.0	Vert	
	QP		+0.0	+0.0	+0.0	+0.0					120	
			+0.0	+5.3	-28.0	+9.2						
^	59.920M	54.0	+0.2	+0.5	+0.4	+0.0	+0.0	41.6	40.0	+1.6	Vert	
			+0.0	+0.0	+0.0	+0.0					120	
			+0.0	+5.3	-28.0	+9.2						
3	2724.200M	66.7	+1.6	+0.0	+0.0	+0.3	+0.0	50.6	54.0	-3.4	Horiz	
			-33.9	+0.5	+3.0	+27.2	360				160	
			-14.8	+0.0	+0.0	+0.0						

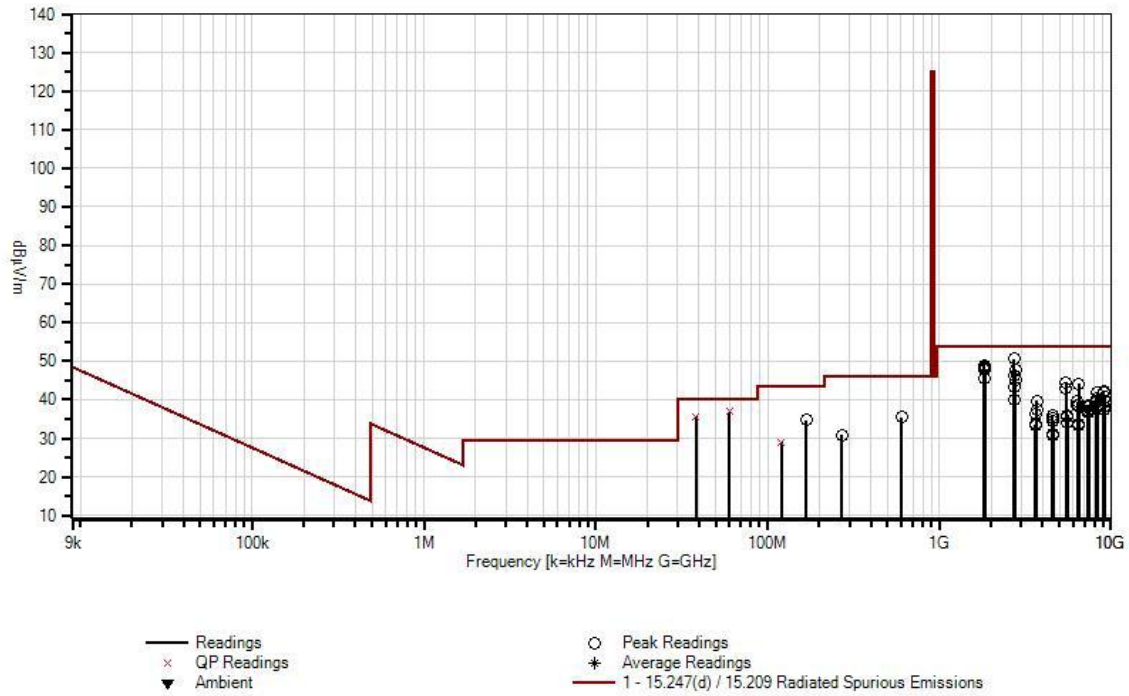
4	38.500M QP	39.9	+0.2 +0.0 +0.0	+0.4 +0.0 +13.9	+0.3 +0.0 -28.1	+0.0 +0.0 +9.1	+0.0	35.7	40.0	-4.3	Vert 120
^	38.500M	44.0	+0.2 +0.0 +0.0	+0.4 +0.0 +13.9	+0.3 +0.0 -28.1	+0.0 +0.0 +9.1	+0.0	39.8	40.0	-0.2	Vert 120
6	1831.933M	69.0	+1.3 -34.6 -14.8	+0.0 +0.3 +0.0	+0.0 +2.4 +0.0	+0.4 +24.9 +0.0	+0.0 360	48.9	54.0	-5.1	Horiz 142
7	1831.967M	68.7	+1.3 -34.6 -14.8	+0.0 +0.3 +0.0	+0.0 +2.4 +0.0	+0.4 +24.9 +0.0	+0.0	48.6	54.0	-5.4	Vert 156
8	1816.108M	68.4	+1.3 -34.6 -14.8	+0.0 +0.3 +0.0	+0.0 +2.4 +0.0	+0.4 +24.8 +0.0	+0.0	48.2	54.0	-5.8	Horiz 156
9	1847.625M	67.8	+1.3 -34.6 -14.8	+0.0 +0.3 +0.0	+0.0 +2.5 +0.0	+0.4 +25.1 +0.0	+0.0	48.0	54.0	-6.0	Vert 150
10	1815.892M	68.1	+1.3 -34.6 -14.8	+0.0 +0.3 +0.0	+0.0 +2.4 +0.0	+0.4 +24.8 +0.0	+0.0 360	47.9	54.0	-6.1	Vert 155
11	2771.275M	63.6	+1.6 -33.9 -14.8	+0.0 +0.5 +0.0	+0.0 +3.0 +0.0	+0.3 +27.4 +0.0	+0.0	47.7	54.0	-6.3	Horiz 139
12	2724.175M	62.2	+1.6 -33.9 -14.8	+0.0 +0.5 +0.0	+0.0 +3.0 +0.0	+0.3 +27.2 +0.0	+0.0	46.1	54.0	-7.9	Vert 100
13	1847.625M	65.5	+1.3 -34.6 -14.8	+0.0 +0.3 +0.0	+0.0 +2.5 +0.0	+0.4 +25.1 +0.0	+0.0 360	45.7	54.0	-8.3	Horiz 161
14	167.700M	41.1	+0.4 +0.0 +0.0	+0.8 +0.0 +9.8	+0.8 +0.0 -27.5	+0.0 +0.0 +9.4	+0.0	34.8	43.5	-8.7	Vert 120
15	2771.200M	61.1	+1.6 -33.9 -14.8	+0.0 +0.5 +0.0	+0.0 +3.0 +0.0	+0.3 +27.4 +0.0	+0.0 360	45.2	54.0	-8.8	Vert 100
16	5448.242M	52.1	+2.3 -33.5 -14.8	+0.0 +0.4 +0.0	+0.0 +4.5 +0.0	+0.3 +33.2 +0.0	+0.0	44.5	54.0	-9.5	Vert 171
17	6466.333M	49.8	+2.8 -34.0 -14.8	+0.0 +0.5 +0.0	+0.0 +5.1 +0.0	+0.3 +34.4 +0.0	+0.0 360	44.1	54.0	-9.9	Vert 158
18	2747.508M	59.5	+1.6 -33.9 -14.8	+0.0 +0.5 +0.0	+0.0 +3.0 +0.0	+0.3 +27.3 +0.0	+0.0	43.5	54.0	-10.5	Horiz 156
19	600.800M	30.0	+0.7 +0.0 +0.0	+1.6 +0.0 +20.0	+1.7 +0.0 -28.3	+0.0 +0.0 +9.7	+0.0	35.4	46.0	-10.6	Vert 120
20	5447.783M	50.6	+2.3 -33.5 -14.8	+0.0 +0.4 +0.0	+0.0 +4.5 +0.0	+0.3 +33.2 +0.0	+0.0	43.0	54.0	-11.0	Horiz 112

21	9079.142M	43.1	+4.6	+0.0	+0.0	+0.2	+0.0	42.3	54.0	-11.7	Horiz
			-34.2	+0.8	+5.9	+36.7					99
			-14.8	+0.0	+0.0	+0.0					
22	9079.667M	42.7	+4.6	+0.0	+0.0	+0.2	+0.0	41.9	54.0	-12.1	Vert
			-34.2	+0.8	+5.9	+36.7	360				106
			-14.8	+0.0	+0.0	+0.0					
23	8314.050M	43.9	+4.1	+0.0	+0.0	+0.2	+0.0	41.8	54.0	-12.2	Vert
			-34.5	+0.9	+5.7	+36.3	360				155
			-14.8	+0.0	+0.0	+0.0					
24	9238.458M	42.1	+4.5	+0.0	+0.0	+0.1	+0.0	40.6	54.0	-13.4	Horiz
			-34.1	+0.9	+6.0	+35.9	360				149
			-14.8	+0.0	+0.0	+0.0					
25	8314.883M	42.3	+4.1	+0.0	+0.0	+0.2	+0.0	40.2	54.0	-13.8	Horiz
			-34.5	+0.9	+5.7	+36.3					108
			-14.8	+0.0	+0.0	+0.0					
26	2747.517M	55.9	+1.6	+0.0	+0.0	+0.3	+0.0	39.9	54.0	-14.1	Vert
			-33.9	+0.5	+3.0	+27.3	360				99
			-14.8	+0.0	+0.0	+0.0					
27	9237.858M	41.3	+4.5	+0.0	+0.0	+0.1	+0.0	39.8	54.0	-14.2	Vert
			-34.1	+0.9	+6.0	+35.9					108
			-14.8	+0.0	+0.0	+0.0					
28	8242.983M	42.4	+4.0	+0.0	+0.0	+0.2	+0.0	39.8	54.0	-14.2	Horiz
			-34.6	+0.8	+5.6	+36.2	360				102
			-14.8	+0.0	+0.0	+0.0					
29	3695.358M	52.6	+1.9	+0.0	+0.0	+0.3	+0.0	39.7	54.0	-14.3	Horiz
			-33.6	+0.4	+3.3	+29.6	360				143
			-14.8	+0.0	+0.0	+0.0					
30	8172.650M	42.4	+4.0	+0.0	+0.0	+0.2	+0.0	39.7	54.0	-14.3	Horiz
			-34.6	+0.8	+5.6	+36.1	360				152
			-14.8	+0.0	+0.0	+0.0					
31	6356.367M	45.1	+2.8	+0.0	+0.0	+0.4	+0.0	39.5	54.0	-14.5	Horiz
			-34.0	+0.5	+5.0	+34.5					99
			-14.8	+0.0	+0.0	+0.0					
32	120.210M	34.3	+0.3	+0.7	+0.6	+0.0	+0.0	29.0	43.5	-14.5	Vert
	QP		+0.0	+0.0	+0.0	+0.0					120
			+0.0	+11.6	-27.8	+9.3					
^	120.200M	48.6	+0.3	+0.7	+0.6	+0.0	+0.0	43.3	43.5	-0.2	Vert
			+0.0	+0.0	+0.0	+0.0					120
			+0.0	+11.6	-27.8	+9.3					
34	8171.617M	41.8	+4.0	+0.0	+0.0	+0.2	+0.0	39.1	54.0	-14.9	Vert
			-34.6	+0.8	+5.6	+36.1					106
			-14.8	+0.0	+0.0	+0.0					
35	269.600M	32.8	+0.5	+1.1	+1.1	+0.0	+0.0	30.8	46.0	-15.2	Vert
			+0.0	+0.0	+0.0	+0.0					120
			+0.0	+12.7	-27.1	+9.7					
36	6356.608M	44.2	+2.8	+0.0	+0.0	+0.4	+0.0	38.6	54.0	-15.4	Vert
			-34.0	+0.5	+5.0	+34.5					168
			-14.8	+0.0	+0.0	+0.0					
37	8244.083M	41.1	+4.0	+0.0	+0.0	+0.2	+0.0	38.5	54.0	-15.5	Vert
			-34.6	+0.8	+5.6	+36.2					132
			-14.8	+0.0	+0.0	+0.0					

38	7391.242M	42.2	+3.3	+0.0	+0.0	+0.2	+0.0	38.5	54.0	-15.5	Horiz
			-34.5	+0.6	+5.5	+36.0	360				155
			-14.8	+0.0	+0.0	+0.0					
39	6467.083M	44.1	+2.8	+0.0	+0.0	+0.3	+0.0	38.4	54.0	-15.6	Horiz
			-34.0	+0.5	+5.1	+34.4					103
			-14.8	+0.0	+0.0	+0.0					
40	9157.633M	39.3	+4.6	+0.0	+0.0	+0.2	+0.0	38.3	54.0	-15.7	Horiz
			-34.1	+0.8	+6.0	+36.3					158
			-14.8	+0.0	+0.0	+0.0					
41	7390.067M	41.9	+3.3	+0.0	+0.0	+0.2	+0.0	38.2	54.0	-15.8	Vert
			-34.5	+0.6	+5.5	+36.0					99
			-14.8	+0.0	+0.0	+0.0					
42	7263.350M	42.3	+3.2	+0.0	+0.0	+0.3	+0.0	38.1	54.0	-15.9	Horiz
			-34.5	+0.5	+5.4	+35.7					139
			-14.8	+0.0	+0.0	+0.0					
43	9158.808M	38.5	+4.6	+0.0	+0.0	+0.2	+0.0	37.5	54.0	-16.5	Vert
			-34.1	+0.8	+6.0	+36.3	360				106
			-14.8	+0.0	+0.0	+0.0					
44	3695.383M	50.2	+1.9	+0.0	+0.0	+0.3	+0.0	37.3	54.0	-16.7	Vert
			-33.6	+0.4	+3.3	+29.6					122
			-14.8	+0.0	+0.0	+0.0					
45	7264.075M	41.2	+3.2	+0.0	+0.0	+0.3	+0.0	37.0	54.0	-17.0	Vert
			-34.5	+0.5	+5.4	+35.7	360				130
			-14.8	+0.0	+0.0	+0.0					
46	7327.475M	41.0	+3.2	+0.0	+0.0	+0.2	+0.0	36.9	54.0	-17.1	Vert
			-34.6	+0.5	+5.5	+35.9	360				104
			-14.8	+0.0	+0.0	+0.0					
47	7329.475M	40.6	+3.2	+0.0	+0.0	+0.2	+0.0	36.5	54.0	-17.5	Horiz
			-34.6	+0.5	+5.5	+35.9					153
			-14.8	+0.0	+0.0	+0.0					
48	3663.400M	49.2	+1.9	+0.0	+0.0	+0.3	+0.0	36.2	54.0	-17.8	Horiz
			-33.6	+0.4	+3.4	+29.4					158
			-14.8	+0.0	+0.0	+0.0					
49	5542.542M	43.4	+2.4	+0.0	+0.0	+0.3	+0.0	36.1	54.0	-17.9	Vert
			-33.6	+0.4	+4.6	+33.4					101
			-14.8	+0.0	+0.0	+0.0					
50	4539.792M	46.4	+2.1	+0.0	+0.0	+0.3	+0.0	36.1	54.0	-17.9	Vert
			-33.4	+0.2	+4.0	+31.3					131
			-14.8	+0.0	+0.0	+0.0					
51	5542.333M	42.9	+2.4	+0.0	+0.0	+0.3	+0.0	35.6	54.0	-18.4	Horiz
			-33.6	+0.4	+4.6	+33.4	360				156
			-14.8	+0.0	+0.0	+0.0					
52	4539.875M	45.4	+2.1	+0.0	+0.0	+0.3	+0.0	35.1	54.0	-18.9	Horiz
			-33.4	+0.2	+4.0	+31.3	360				140
			-14.8	+0.0	+0.0	+0.0					
53	4619.083M	44.6	+2.1	+0.0	+0.0	+0.3	+0.0	34.4	54.0	-19.6	Horiz
			-33.5	+0.1	+4.1	+31.5					135
			-14.8	+0.0	+0.0	+0.0					
54	4618.933M	44.5	+2.1	+0.0	+0.0	+0.3	+0.0	34.3	54.0	-19.7	Vert
			-33.5	+0.1	+4.1	+31.5	360				126
			-14.8	+0.0	+0.0	+0.0					

55	5495.517M	41.4	+2.4	+0.0	+0.0	+0.3	+0.0	34.0	54.0	-20.0	Horiz
			-33.5	+0.4	+4.5	+33.3					114
			-14.8	+0.0	+0.0	+0.0					
56	5495.517M	41.4	+2.4	+0.0	+0.0	+0.3	+0.0	34.0	54.0	-20.0	Vert
			-33.5	+0.4	+4.5	+33.3	360				163
			-14.8	+0.0	+0.0	+0.0					
57	6412.883M	39.6	+2.8	+0.0	+0.0	+0.4	+0.0	33.9	54.0	-20.1	Horiz
			-34.0	+0.5	+5.0	+34.4	360				131
			-14.8	+0.0	+0.0	+0.0					
58	3632.275M	46.7	+1.9	+0.0	+0.0	+0.3	+0.0	33.6	54.0	-20.4	Horiz
			-33.6	+0.4	+3.4	+29.3					139
			-14.8	+0.0	+0.0	+0.0					
59	3663.883M	46.5	+1.9	+0.0	+0.0	+0.3	+0.0	33.5	54.0	-20.5	Vert
			-33.6	+0.4	+3.4	+29.4	360				157
			-14.8	+0.0	+0.0	+0.0					
60	6411.192M	39.0	+2.8	+0.0	+0.0	+0.4	+0.0	33.3	54.0	-20.7	Vert
			-34.0	+0.5	+5.0	+34.4					153
			-14.8	+0.0	+0.0	+0.0					
61	3632.233M	46.4	+1.9	+0.0	+0.0	+0.3	+0.0	33.3	54.0	-20.7	Vert
			-33.6	+0.4	+3.4	+29.3	360				125
			-14.8	+0.0	+0.0	+0.0					
62	4579.617M	41.6	+2.1	+0.0	+0.0	+0.3	+0.0	31.3	54.0	-22.7	Horiz
			-33.5	+0.1	+4.1	+31.4	360				102
			-14.8	+0.0	+0.0	+0.0					
63	4578.467M	41.0	+2.1	+0.0	+0.0	+0.3	+0.0	30.7	54.0	-23.3	Vert
			-33.5	+0.1	+4.1	+31.4					140
			-14.8	+0.0	+0.0	+0.0					

CKC Laboratories, Inc. Date: 1/8/2013 Time: 16:30:25 Itron, Inc. WO#: 92785
 Test Distance: 3 Meters Sequence#: 2 Vert
 Itron, Inc. AMR transceiver device for endpoint installation P/N: 900 BCR



Test Setup Photos



3dBi Overall Test Setup



5dBi Overall Test Setup

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	(dB μ V)
+	Antenna Factor	(dB)
+	Cable Loss	(dB)
-	Distance Correction	(dB)
-	Preamplifier Gain	(dB)
=	Corrected Reading	(dB μ V/m)

TEST INSTRUMENTATION AND ANALYZER SETTINGS

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

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.